भारतीय राष्ट्रीय राजमार्ग प्राधिकरण
(सड़क परिवहन और राजमार्ग मंत्रालय, भारत सरकार)
National Highways Authority of India
(Ministry of Road Transport and Highways, Government of India)
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सत्यमेव जयते

भा रा रा प्रा NHAI

भाराराप्रा/ नीति दिशानिर्देश/ मानक दस्तावेज/ 2026
नीति परिपत्र सं. 11.114/2026 दिनांक 27th सितम्बर 2026

{(ई-ऑफिस फाइल सं. CDMDIV-25/18/2026-CMD Division (कम्प्युटर सं. 323385 पर लिया गया निर्णय)}

NHAI/ Policy Guidelines/ Standard Documents/ 2026
Policy Circular No. 11.114 / 2026 dated 27th September, 2026

{(Decision taken on E-Office File No. CDMDIV-25/18/2026-CMD Division (Comp No. 323385)}

विषय: हाइब्रिड वार्षिकी मॉडल (एचएएम) परियोजनाओं के लिए संशोधित मॉडल रियायत करार (एमसीए) के संबंध में।

Sub: Revised Model Concession Agreement (MCA) for Hybrid Annuity Model (HAM) Projects. reg:-

सड़क परिवहन और राजमार्ग मंत्रालय द्वारा ओएम संख्या आरडबल्यू/एनएच-24036/28/2025-बीपीएंडएसपी (कंप्यूटर संख्या 248457) दिनांक 18.09.2026 के माध्यम से आईएमसी की सहमति के अनुसार एचएएम परियोजनाओं के लिए संशोधित एमसीए अग्रेषित किया जाता है। इसकी एक प्रति तत्काल प्रभाव से कार्यान्वयन हेतु **संलग्न** की गई है।

Ministry of Road Transport and Highways, vide OM No. RW/NH-24036/28/2025-BP&SP (C.No. 248457) dated 18.09.2026, has forwarded revised MCA for HAM Projects as per consensus of the IMC. A copy of the same is **attached** herewith for implementation with immediate effect.

2. यह सक्षम प्राधिकारी के अनुमोदन से जारी किया जाता है।
This issues with the approval of Competent Authority.

संलग्नक: यथोपरी।
Encl.: As stated above.

27/09/26

(सीएस. संजय कुमार पटेल/ CS. Sanjay Kumar Patel)
प्रभारी मुख्य महाप्रबंधक(समन्वय) (i/c) Chief General Manager (Coord.)

प्रति/ To:

भाराराप्रा मुख्यालय/आरओ/पीआईयू/सीएमयू/साइट कार्यालयों के सभी अधिकारी।
All Officers of NHAI HQ/ ROs/ PIUs/ CMUs/ Site Offices.

प्रतिलिपि/ Copy to:

1. पुस्तकालय की साइट पर प्रकाशन के लिए पुस्तकालय को।
Library for hosting the Circular on Library site.

2. परिचालन के लिए वेब एडमिन को।
Web Admin for Circulation.

3. सचिव, सड़क परिवहन और राजमार्ग मंत्रालय के प्रधान निजी सचिव को सूचनार्थ।
PPS to Secretary, MoRT&H for Kind Information.

F. No. RW/NH-24036/28/2025-BP&SP (C. No. 248457)
Government of India
Ministry of Road Transport & Highways
(P&P Section)
Transport Bhawan, 1, Parliament Street, New Delhi-110001

Dated: 18th September, 2026

OFFICE MEMORANDUM

Subject: Model Concession Agreement (MCA) for Hybrid Annuity Model (HAM).

Considering the key challenges faced by various stakeholders, detailed deliberations were held over the proposed changes by the Inter-Ministerial Committee (IMC) comprising of Ministry of Road Transport and Highways, NITI Aayog, Department of Economic Affairs, Department of Financial Services and Department of Legal Affairs constituted for this purpose, in the meetings of IMC.

2. As per consensus of the IMC, emerged over the proposed changes in the MCA for HAM, the revised MCA for HAM for Highway Projects incorporating the changes is forwarded herewith for taking further necessary action.

Encl: As above

(Harleen Kaur)
Director (Highways)
Telephone No. 011-23718575

To

1. Chairman, NHAI
2. DG(RD) & SS, MORTH
3. MD, NHIDCL

Copy to:

1. CEO, NITI Aayog
2. Secretary, Department of Financial Services
3. Secretary, Department of Legal Affairs
4. Secretary, Department of Economic Affairs

Copy also to:

1. PS to Hon'ble Minister, RT&H
2. PS to Shri Ajay Tamta, Hon'ble Minister of State, RT&H
3. PS to Shri Harsh Malhotra, Hon'ble Minister of State, RT&H
4. PSO to Secretary (RT&H)
5. PPS to AS&FA
6. O/o all Additional Secretaries/Joint Secretaries in the MoRTH
7. CE(BP&SP), MoRTH
8. CEO, NHLML
9. Director (Technical), NIC, MORTH to upload the revised Model Concession Agreement (MCA) for HAM Projects on the website of MORTH.

Public Private Partnership
In
Highway Development

MODEL CONCESSION AGREEMENT

FOR

HYBRID ANNUITY MODEL (HAM) PROJECTS

Government of India
New Delhi
September 2026

हरलीन कौर / Harleen Kaur
निदेशक / Director
सड़क परिवहन एवं राजमार्ग मंत्रालय
Ministry of Road Transport & Highways
भारत सरकार / Govt. of India
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Model Concession Agreement

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Part I

Preliminary

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CONCESSION AGREEMENT

THIS AGREEMENT[1] is entered into on this the……. day of, 20.....

BETWEEN

1 [The President of India through the Ministry of Road Transport & Highways, Government of India represented by: Director General (Road Development) & Special Secretary, Ministry of Road Transport & Highways, Transport Bhawan, 1, Parliament Street, New Delhi 110001/ CE (NH) PWD, State of _____; <address> / Director General (Border Road). _____/ Chairman, National Highways Authority of India, G-5 & 6, Sector 10, Dwarka, New Delhi-110075/ MD, NHIDCL←------ address>/DGBR <.....address>] (strike out whichever is not applicable) (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

2 {…….LIMITED}[2], a company incorporated under the provisions of the Companies Act, 2013 with CIN _____and having its registered office at <insert registered office address of the party>, (hereinafter referred to as the "**Concessionaire**" which expression shall, unless repugnant to the context or meaning thereof, include its successors and permitted assigns and substitutes) of the Other Part.

WHEREAS:

(A) The Government of India had [entrusted to the Authority the development, maintenance and management of National Highway No. **[3] including the section from km**** to km **** (approx. ***** km)[4]].

(B) The Authority had resolved to [augment the existing road from km ** to km ** (approximately *** km) on the *** section of National Highway No.** (hereinafter called the "NH -**") in ***** by ____Laning thereof/develop an access controlled)] National Highway along greenfield/existing or combination thereof alignment, on Hybrid Annuity basis in accordance with the terms and conditions to be set forth in a concession agreement to be entered into.

(C) The Authority had accordingly adopted a single stage two parts bidding process and accordingly invited proposals by its [Notice/Request for Proposals No.*** dated ***](the "**Request for Proposals" or "RFP")** for qualification short listing of bidders for construction, operation and maintenance of the above referred section of NH-** on Hybrid Annuity basis.

(D) The Authority had prescribed the technical and commercial terms and conditions in the RFP, and invited bids comprising technical and financial bids from the bidders for undertaking the Project.

---

[1] Serially numbered footnotes in this Model Concession Agreement are for guidance of the Authority and should be omitted from the draft Concession Agreement forming part of Bid Documents. Footnotes marked "$" or in other non-numerical characters shall be retained in the draft Concession Agreement

[2] The provisions in curly parenthesis and the blank spaces shall be retained in the draft Concession Agreement and shall be suitably modified/ filled after completion of the bid process to reflect the particulars relating to the selected bidder/consortium

[3] All asterisks in this Model Concession Agreement should be substituted by project-specific particulars in the draft Concession Agreement forming part of Bid Documents. Further, in case of National Expressway, NH should be replaced with NE in the entire document

[4] All project-specific provisions in this Model Concession Agreement have been enclosed in square parenthesis and may be modified, as necessary, before issuing the draft Concession Agreement forming part of Bid Documents

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(E) After evaluation of the bids received, the Authority had technically qualified certain bidders including, *interalia*, the {the selected bidder/ consortium comprising……,……and (collectively the **"Consortium"**) with……as its lead member (the **"Lead Member"**)} and accepted the financial bid of the{selected bidder/ Consortium} and issued its Letter of Award No. …….. dated …… (hereinafter called the **"LOA"**) to the {selected bidder/ Consortium} requiring, inter alia, the execution of this Concession Agreement within 45 (forty five) days of the date of issue thereof.

(F) {The selected bidder/ Consortium has since promoted and incorporated the Concessionaire as a company under the Companies Act 2013, solely for the purpose of undertaking the Project and has requested the Authority to accept the Concessionaire as the entity which shall undertake and perform the obligations and exercise the rights of the {selected bidder/ Consortium} under the LOA, including the obligation to enter into this Concession Agreement pursuant to the LOA for undertaking the Project.}

(G) {By its letter dated_____, the Concessionaire has also joined in the said request of the selected bidder/ Consortium to the Authority to accept it as the entity which shall undertake and perform the obligations and exercise the rights of the selected bidder/ Consortium including the obligation to enter into this Concession Agreement pursuant to the LOA. The Concessionaire has further represented to the effect that it has been promoted by the selected bidder/ Consortium for the purposes hereof and has delivered to the Authority a legal opinion with respect to the authority of the Concessionaire to enter into this Concession Agreement and the enforceability of the provisions thereof}.

(H) The Authority has agreed to the said request of the {selected bidder/ Consortium} and the Concessionaire, and has accordingly agreed to enter into this Concession Agreement with the Concessionaire for implementation of the Project on Hybrid Annuity basis, subject to and on the terms and conditions set forth hereinafter.

NOW, THEREFORE, in consideration of the foregoing and the respective covenants and agreements set forth in this Concession Agreement, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, the Parties agree as follows:

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ARTICLE 1

DEFINITIONS AND INTERPRETATION

1.1 Definitions

The words and expressions beginning with capital letters and defined in this Agreement (including those in Article 48) 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.

1.2 Interpretation

1.2.1 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 juridical or 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 (to the extent permitted under this Agreement) 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, soil & material investigation, design, developing, engineering, procurement, delivery, transportation, installation, processing, fabrication, testing, commissioning and other activities incidental to the construction of the Project Highway in accordance with this Agreement, and **"construct"** or **"build"** shall be construed accordingly;

(g) references to "**development**" include, unless the context otherwise requires, design, finance, construction, rehabilitation, renovation, refurbishing, augmentation, upgradation and other activities incidental thereto, 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) reference to a **"business day"** shall be construed as reference to a day (other than a Sunday) on which banks in Delhi are generally open for business;

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(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 only if and to extend 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 initiation of corporate insolvency resolution process, liquidation, winding-up, reorganisation, dissolution, arrangement, or proceeding for the protection or relief of creditors;

(s) save and except as otherwise provided in this Agreement, any reference, at any time, to any agreement, deed, instrument, license or document of any description shall be construed as reference to that agreement, deed, instrument, license or other document as amended, varied, supplemented, modified or suspended at the time of such reference; provided that this sub-clause (s) 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, authorization, notice, communication, information or report required under or pursuant to this Agreement, from or by any party or the Independent Engineer, shall be valid and effective only if it is in writing under the hand of a duly authorized representative of such Party or the Independent Engineer, as the case may be, in this behalf and not otherwise;

(u) the Schedules and Recitals to this Agreement forms 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, 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 (the **"Damages"**); and

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(x) Time shall be of the essence in the performance of the Parties' respective obligations. If any time period specified herein is extended, such extended time shall also be of the essence.

1.2.2 Unless expressly provided otherwise in this Agreement, any Documentation required to be provided or furnished by the Concessionaire to the Authority and/ or the Independent Engineer shall be provided free of cost in such manner and format as may be specified by the Authority.

1.2.3 The Concessionaire acknowledges and agrees that it has been duly advised and guided by its professional advisors and legal counsel to understand the full extent, scope and implications of this Agreement, and accordingly, the rule of contra proferentem shall not apply to the interpretation of any provisions of this Agreement.

1.2.4 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, clauses and schedules

1.4.1 This Agreement, and all other agreements and documents forming part of or referred to therein are to be taken as mutually explanatory and complementary, 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. the Agreement at (a) above shall prevail over the agreements and documents at (b) above to the extent of such conflict or inconsistency.

1.4.2 Subject to provisions of Clause 1.4.1, in case of any ambiguity or discrepancy 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 of a general nature;

(b) between the clauses of this Agreement and the Schedules, the clauses shall prevail and between Schedules and Annexes, the Schedules shall prevail unless expressly stated otherwise;

(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 Specifications and Standards shall prevail;

(e) between the dimension scaled from the Drawing and its specific written dimension, the specific written dimension shall prevail; and

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(f) between any value written in numerals and that in words, the value written in words shall prevail.

1.4.3 For the avoidance of doubt, it is clarified that replies to pre-bid queries issued by the Authority are solely for the purpose of clarification and in case of any ambiguity or discrepancy between the replies to the pre-bid queries and this Agreement, the provisions of this Agreement shall prevail.

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Part II

The Concession

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ARTICLE 2

SCOPE OF THE PROJECT

2.1 Scope of the Project

The Scope of the Project (the **"Scope of the Project"**) shall mean and include, during the Concession Period:

(a) design the Project Highway in conformity with this Agreement and in accordance with the Specifications and Standards set forth in Schedule D and procure the finance to implement the project in accordance with the provisions of this Agreement;

(b) 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;

(c) operation and maintenance of the Project Highway in accordance with the provisions of this Agreement and the applicable laws; and

(d) performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement in a timely, efficient and diligent manner and matters incidental thereto or necessary for the performance of any or all the obligations of the Concessionaire under this Agreement.

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ARTICLE 3

GRANT OF CONCESSION

3.1 The Concession

3.1.1 Subject to and in accordance with the provisions of this Agreement, the Applicable Laws and the Applicable Permits, the Authority hereby grants to the Concessionaire the concession set forth herein including the exclusive right, license and authority to construct, operate and maintain the Project (the "**Concession**") during the Construction Period of ***** ( ) days and Operation Period of [15 (Fifteen) years] commencing from COD, and the Concessionaire hereby accepts the Concession and agrees to implement the Project subject to and in accordance with the terms and conditions set forth herein.

3.1.2 Subject to and in accordance with the provisions of this Agreement, the Concession hereby granted shall oblige or entitle (as the case may be) the Concessionaire to:

(a) Right of Way and license to the Site for the purpose of and to the extent conferred by the provisions of this Agreement;

(b) finance and construct the Project Highway;

(c) manage, operate and maintain the Project Highway and regulate the use thereof by third parties in accordance with the provisions of this Agreement and the Applicable Law;

(d) deleted;

(e) perform and fulfill all of the Concessionaire's obligations in accordance with the provisions of this Agreement;

(f) bear and pay all costs, expenses and charges in connection with or incidental to the performance of the obligations of the Concessionaire under this Agreement without any entitlement to compensation or extension of time, except as expressly provided under this Agreement; and

(g) neither assign, transfer or sublet or create any lien or Encumbrance on this Agreement, or the Concession hereby granted or on the whole or any part of the Project Highway nor transfer, lease or part possession thereof directly or indirectly, save and except as expressly permitted by this Agreement or the Substitution Agreement.

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ARTICLE 4

CONDITIONS PRECEDENT

4.1 Conditions Precedent

4.1.1 Save and except as expressly provided in Articles 4,5,6,7,8,9,10,24,34,44 and 47, or unless the context otherwise requires, the respective rights and obligations of the Parties under this Agreement shall be subject to the satisfaction in full of the conditions precedent specified in this Clause 4.1 (the "**Conditions Precedent**").

4.1.2 The Concessionaire may, only upon providing the Performance Security and Additional Performance Security, if applicable, to the Authority in accordance with Article 9, at any time after [60 (sixty)] days from the date of this Agreement or on an earlier day acceptable to the Authority, by notice require the Authority to satisfy all of the Conditions Precedent set forth in this Clause 4.1.2 within a period of 60 (sixty) days of the notice, or such longer period not exceeding a period of 90 (ninety) days as may be specified therein. The Conditions Precedent required to be satisfied by the Authority shall be deemed to have been fulfilled when the Authority shall have:

(a) procured Concessionaire the Right of Way to the Site in accordance with the provisions of Clauses 10.3.1 and 10.3.2;

(b) deleted;

(c) procured Concessionaire the Right of Way to *****[5];

(d) procured approval of the Railway and/ or Inland Waterways [and/or **** (to be specified)] authorities in the form of a general arrangement drawing that would enable the Concessionaire to construct road over bridges/ under bridges at level crossings/ bridges across waterways and river on the Project Highway in accordance with the Specifications and Standards and subject to the terms and conditions specified in such approval;]

(e) procured all Applicable Permits relating to environmental protection of the Site;

(f) appointed the Independent Engineer in accordance with the provisions of Clause 23.1 and 23.7; and

(g) procured forest and wildlife clearance for and in respect of land forming part of the Right of Way under Clause 10.3.1 and 10.3.2, including permission for cutting trees

For avoidance of doubt, it is expressly clarified that no obligation of the Authority to satisfy the Condition Precedent shall arise unless and until such securities have been duly furnished and are valid and subsisting.

4.1.3 The Conditions Precedent required to be satisfied by the Concessionaire within a period of 150 (one hundred and fifty) days from the date of this Agreement shall be deemed to have been fulfilled when the Concessionaire shall have:

(a) provided Performance Security to the Authority along with the Additional Performance Security, if required in terms of Clause 9.1 and Clause 9.7 of this Agreement. For the avoidance of doubt, it is clarified and agreed that the

[5] If completion of construction on any part of the Site is considered critical for issue of Provisional/ Completion Certificate, such part shall be specified in this Sub-clause so that it does not form part of the Appendix referred to in Clause 10.3.1, on or after the Appointed Date.

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Concessionaire is required to provide the Performance Security and the Additional Performance Security, if required, within 60 days of signing of this Agreement;

(b) executed and procured execution of the Escrow Agreement;

(c) executed and procured execution of the Substitution Agreement;

(d) procured all the Applicable Permits specified in Part-I of Schedule-E unconditionally or if subject to conditions, then all such conditions required to be fulfilled by the date specified therein shall have been satisfied in full and such Applicable Permits are in full force and effect;

(e) executed the Financing Agreements and delivered to the Authority true copy thereof, duly attested by a Director of the Concessionaire for the Authority's record and reference;

(f) delivered to the Authority true copy of the Financial Package and the Financial Model including the details as per format prescribed at Schedule Y, duly attested by a Director of the Concessionaire, along with soft copy of the Financial Model in Microsoft Excel or a substitute thereof which is workable, formulae linked, interactive, and containing the financials as appraised and adopted by Senior Lenders for the Authority's record and reference;

(g) delivered to the Authority {from the Consortium Members, their respective} confirmation, in original, of the correctness of the representations and warranties set forth in Sub-clauses (k), (l) and (m) of Clause 7.1 of this Agreement; and

(h) delivered to the Authority a legal opinion from the legal counsel of the Concessionaire with respect to the authority of the Concessionaire to enter into this Agreement and the enforceability of the provisions thereof.

4.1.4 Each Party shall make all reasonable endeavors to satisfy the Conditions Precedent within the time stipulated and shall provide the other Party with such reasonable cooperation as may be required to assist that Party in satisfying the Conditions Precedent for which that Party is responsible. It is agreed between the Parties that the obligation to fulfill each parties Conditions Precedent is an independent obligation of the respective Party.

4.1.5 The Parties shall notify each other in writing at least once a month on the progress made in satisfying the Conditions Precedent. Each Party shall promptly inform the other Party when any Condition Precedent for which it is responsible has been satisfied.

4.2 Damages for delay by the Authority

In the event that (i) the Authority does not procure fulfillment of any or all of the Conditions Precedent set forth in Clause 4.1.2 within the period specified therein, and (ii) the delay has not occurred as a result of breach of this Agreement by the Concessionaire or due to Force Majeure, the Authority shall pay to the Concessionaire Damages in an amount calculated at the rate of 0.1% (zero point one per cent) of the Performance Security for each day's delay until the fulfillment of such Conditions Precedent, subject to the maximum amount equal to the Bid Security.

4.3 Damages for delay by the Concessionaire

In the event that (i) the Concessionaire does not procure fulfillment of any or all of the Conditions Precedent set forth in Clause 4.1.3 within the time period specified therein, and (ii) the delay has not occurred as a result of failure to fulfill the obligations under Clause 4.1.2 or any other breach of this Agreement by the Authority, or due to Force Majeure, the Concessionaire shall pay to the Authority Damages in an amount calculated

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at the rate of 0.2% (zero point two per cent) of the Performance Security for each day's delay until the fulfillment of such Conditions Precedent subject to the maximum amount equal to the Bid Security. Provided, however, that no Damages shall be payable under this Clause 4.3 for any period for which Damages have already been paid under Clause 24.1.1. Provided further that such Damages for delay by the Concessionaire for fulfilment of Conditions Precedent shall be payable within 15 (fifteen) days of achievement of fulfilment of Conditions Precedent.

4.4 Commencement of Concession Period

The date on which Financial Close is achieved and all the Conditions Precedent specified in Clause 4.1 are satisfied and confirmed in writing by the Authority shall be the Appointed Date which shall be the date of commencement of the Concession Period. For the avoidance of doubt, the Parties agree that the Concessionaire may be, upon declaration of the Appointed Date hereunder, entitled to commence construction on the Project.

4.5 Deemed Termination upon delay

Without prejudice to the provisions of Clauses 4.2 and 4.3, and subject to the provisions of Clause 9.2, the Parties expressly agree that in the event the Appointed Date does not occur, for any reason whatsoever, before the 1st (first) anniversary of the date of this Agreement or the extended period provided in accordance with this Agreement, all rights, privileges, claims and entitlements of the Concessionaire under or arising out of this Agreement shall be deemed to have been irrevocably waived by, and to have ceased with the concurrence of the Concessionaire, and this Agreement shall be deemed to have been terminated by mutual agreement of the Parties unless the Parties mutually agree ,prior to such expiry, to extend the period by not more than 6 (six) months. Provided that any such extension shall not absolve the parties from the liability to pay Damages under Clauses 4.2 and 4.3. For the avoidance of doubt, it is clarified that such deemed Termination shall operate automatically, conclusively and absolutely without the requirement of any further act, or notice, and notwithstanding any discussions, correspondence, engagements or actions between the Parties. Provided, further that in the event the Appointed Date does not occur for reasons solely attributable to the Concessionaire, the Authority shall be entitled to encash and appropriate the Performance Security to the extent of an amount equal to the Bid Security, after deducting any Damages already paid by the Concessionaire under Clause 4.3 and/or Clause 24.1.1.

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ARTICLE 5

OBLIGATIONS OF THE CONCESSIONAIRE

5.1 Obligations of the Concessionaire

5.1.1 Subject to and on the terms and conditions of this Agreement, the Concessionaire shall, at its own cost, risk and expense, procure finance for and undertake the design, engineering, procurement, construction, development, operation and maintenance of the Project Highway and observe, fulfill, comply with and perform all its obligations set out in this Agreement or arising hereunder.

5.1.2 The Concessionaire shall comply with all Applicable Laws and Applicable Permits (including renewals as required) in the performance of its obligations under this Agreement.

5.1.3 Save and except as otherwise provided in this Agreement or Applicable Laws, as the case may be, the Concessionaire shall, in discharge of all its obligations under this Agreement, conform with and adhere to Good Industry Practice at all times.

5.1.4 The Concessionaire 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 (other than those set forth in Clause 4.1.2) and obtain and keep in force and effect such Applicable Permits in conformity with Applicable Laws;

(b) procure, as required, the appropriate proprietary rights, licenses, agreements and permissions for materials, methods, processes, know-how and systems used or incorporated into the Project Highway;

(c) perform and fulfill its obligations under the Financing Agreements;

(d) make reasonable efforts to maintain harmony and good industrial relations among the personnel employed by it or its Contractors in connection with the performance of its obligations under this Agreement;

(e) upon written request from the Authority, make reasonable efforts to facilitate the acquisition of land and procuring of environmental and forest clearances required for the purposes of the Agreement;

(f) ensure and procure that its Contractors comply with all Applicable Permits and Applicable Laws in the performance by them of any of the Concessionaire's obligations under this Agreement;

(g) always act in a manner consistent with the provisions of this Agreement and not cause or fail to do any act, deed or thing, whether intentionally or otherwise, which may in any manner be violative of any of the provisions of this Agreement;

(h) support, cooperate with and facilitate the Authority in the implementation and operation of the Project in accordance with the provisions of this Agreement;

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(i) transfer the Project Highway to the Authority upon Termination of this Agreement, in accordance with the provisions of this Agreement;

(j) ensure that the EPC Contractor and any other Sub-Contractor or person working on the Highway should comply with safety and welfare measures for labour, in accordance with the Applicable Laws and Good Industry Practice; and

(k) not unnecessarily or improperly interfere 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, and shall be solely responsible for traffic management and safety during the Concession Period.

5.1.5 The Concessionaire shall comply with all requirements of the Escrow Bank to ensure that the Authority is provided with a secure facility for real-time online viewing and downloading of Escrow Account statement at all times during the Concession Period.

5.2 Obligations relating to Project Agreements

5.2.1 It is expressly agreed that the Concessionaire shall, at all times, be responsible and liable for all its obligations under this Agreement notwithstanding anything contained in the Project Agreements or any other agreement, and no default under any Project Agreement or any other agreement shall excuse the Concessionaire from its obligations or liability hereunder.

5.2.2 Subject to Clause 5.2.3, the Concessionaire shall submit to the Authority the drafts of all Project Agreements, and any amendments or replacements thereto, for its review and comments, and the Authority shall have the right but not the obligation to undertake such review and provide its comments, if any, to the Concessionaire within 30 (thirty) days of the receipt of such drafts. Within 7 (seven) days of execution of any Project Agreement or amendment thereto, the Concessionaire shall submit to the Authority a true copy thereof, duly attested by a Director of the Concessionaire, for its record. For the avoidance of doubt, it is agreed that the review and comments hereunder shall be limited to ensure compliance with the terms of this Agreement. It is agreed that any failure or omission of the Authority to review and/or comment hereunder shall not be construed or deemed as acceptance or endorsement of any such agreement or document by the Authority. It is further agreed that no review and/or observations of the Authority and/or its failure to review and/or convey its observations on any document shall relieve the Concessionaire of its obligations and liabilities under this Agreement in any manner nor shall the Authority be liable, responsibility or obligation in relation to any Project Agreement in any manner whatsoever.

5.2.3 The Concessionaire shall submit to the Authority the drafts of any agreement and amendments thereto proposed to be entered with the EPC-Contractor or by the Concessionaire or EPC Contractor with any Sub-Contractor, for the performance of any part of the Works with value more than 8% of Bid Project Cost, including details of the relevant experience of the said Contractor/Sub-Contractor, prior to entering into any such contract. The Authority shall examine the particulars of the said entity from the eligibility perspective and may, no later than 30 (thirty) business days from the date of receiving the communication from the Concessionaire, not to proceed with the entity, and the Concessionaire shall comply therewith. In the event, any contract referred above, the proposed entity who has, over the preceding 3 (three) financial years (including the current year for consideration of 3 years or till signing of this Agreement), not undertaken at least one work of a similar nature with a contract value exceeding 40% (forty per cent) of the value of the contract to be awarded hereunder, and not received payments in respect thereof amounting to at least such 40% (forty per cent), the Authority may, within the aforesaid

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period, require the Concessionaire not to proceed with such contract, and the Concessionaire shall comply therewith unconditionally.

5.2.4 The Concessionaire shall not make any addition, replacement or amendments to any of the Financing Agreements without the prior written consent of the Authority if such addition, replacement or amendment has, or may have, the effect of imposing or increasing any financial liability, risk or obligation on the Authority. In the event that any replacement or amendment is made without such consent, the Concessionaire shall not enforce such replacement or amendment nor permit enforcement thereof against the Authority. The Authority shall review and provide its comments, if any, to the Concessionaire within 30 (thirty) days of the receipt of such request. For the avoidance of doubt, the Authority acknowledges and agrees that it shall not unreasonably withhold its consent for restructuring or rescheduling of the outstanding debt provided that always the Authority's liability in respect of the restructured or rescheduled debt shall remain limited to Debt Due.

5.2.5 The Concessionaire shall procure that each of the Project Agreements contains provisions that entitle the Authority to step into such agreement, in its sole discretion, in substitution of the Concessionaire in the event of Termination or Suspension (the "**Covenant**"). For the avoidance of doubt, it is expressly agreed that in the event the Authority does not exercise such rights of substitution within a period not exceeding 90 (ninety) days from the Transfer Date, the Project Agreements shall be deemed to cease to be in force and effect on the Transfer Date without any liability whatsoever on the Authority and the Covenant shall expressly provide for such eventuality. The Concessionaire expressly agrees to include the Covenant in all its Project Agreements and undertakes that it shall, in respect of each of the Project Agreements, procure and deliver to the Authority an acknowledgment and undertaking, in a form acceptable to the Authority, from the counter party(ies) of each of the Project Agreements, where under such counter party(ies) shall acknowledge and accept the Covenant and undertake to be bound by the same and not to seek any relief or remedy whatsoever from the Authority in the event of Termination or Suspension.

5.2.6 Notwithstanding anything to the contrary contained in this Agreement, the Concessionaire agrees and acknowledges that selection or replacement of the Design-in-Charge, EPC Contractor/Sub-Contractor and an O&M Contractor shall be subject to the prior approval of the Authority from eligibility, national security and public interest perspective, the decision of the Authority in this regard shall be final, conclusive and binding on the Concessionaire, and the Concessionaire undertakes that it shall not give effect to any such selection or contract without prior approval of the Authority. For the avoidance of doubt, it is expressly agreed that approval of the Authority hereunder shall be limited to eligibility, National security and public interest perspective, the Authority shall endeavor to convey its decision thereon expeditiously and in matters not involving national security no later than 30 days from receipt of such request. It is also agreed that the Authority shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve the Concessionaire or its Contractors from any liability or obligation under this Agreement.

5.3 Obligations relating to Change in Ownership

5.3.1 The Concessionaire shall not undertake or permit any Change in Ownership, except with the prior written approval of the Authority subject to the following conditions:

i) no objection from the Senior Lenders; and

ii) achievement of COD and completion of Punch List items excluding only such the Punch List items as pending solely for reasons attributable to the Authority.

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Provided further that the Change in Ownership shall not be considered by the Authority where proceeding for imposition of Damages or Termination of this Agreement has been initiated. Subject to fulfillment of all conditions, the Authority acknowledges and agrees to provide its decision for Change in Ownership within 30 (thirty) days thereafter.

5.3.2 Notwithstanding anything to the contrary contained in this Agreement, the Concessionaire agrees and acknowledges that:

(i) any acquisitions of Equity by an acquirer, either by itself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any Equity, which results in the acquirer holding, in aggregate of 25% (twenty-five per cent) or more of the total Equity of the Concessionaire; or

(ii) acquisition of any control directly or indirectly of the Board of Directors of the Concessionaire by any person either by individually or together with any person or persons acting in concert,

shall constitute a Change in Ownership requiring prior approval of the Authority from national security and public interest perspective, the decision of the Authority in this behalf being final, conclusive and binding on the Concessionaire, The Concessionaire undertakes that it shall not give effect to any such acquisition of Equity or control of the Board of Directors of the Concessionaire whether directly or indirectly without such prior approval of the Authority. For the avoidance of doubt, it is expressly agreed that approval of the Authority hereunder shall be limited to national security and public interest perspective, and the Authority shall endeavor to convey its decision thereon expeditiously. It is also agreed that the Authority shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve the Concessionaire from any liability or obligation under this Agreement. The Concessionaire shall ensure that all pending Disputes, claims, arbitration, conciliation and mediation proceedings, court proceedings and outstanding dues, if any, against the Authority in respect of this Agreement are fully settled or expressly unconditionally waived in writing prior to making any request for Change in Ownership.

For the purposes of this Clause 5.3.2:

(i) the expression **"acquirer", "control"** and **"person acting in concert"** shall have the meaning ascribed thereto in the Securities and Exchange Board of India (Substantial Acquisition of Shares and Takeover) Regulations, 2011 or any statutory re-enactment thereof as in force as on the date of acquisition of Equity, or the control of the Board of Directors, as the case may be, of the Concessionaire;

(ii) the indirect transfer or control of legal or beneficial ownership of Equity shall mean transfer of the direct or indirect beneficial ownership or control of any company or companies whether in India or abroad which results in the acquirer acquiring control over the shares or voting rights of shares of the Concessionaire; and

(iii) power to appoint, whether by contract or by virtue of control or acquisition of shares of any company holding directly or through one or more companies (whether situated in India or abroad) the Equity of the Concessionaire, not less than half of the directors on the Board of Directors of the Concessionaire or of any company, directly or indirectly whether situated in India or abroad, having ultimate control of 25% (twenty five per cent) or more of the Equity of the Concessionaire shall

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constitute acquisition of control, directly or indirectly, of the Board of Directors of the Concessionaire.

5.4 Obligations relating to employment of foreign nationals

The Concessionaire acknowledges, agrees and undertakes that employment of foreign personnel by the Concessionaire and/or its 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 and will always be of the Concessionaire and, notwithstanding anything to the contrary contained in this Agreement, refusal of or inability to obtain any such permits and approvals by the Concessionaire or any of its contractors or sub-contractors shall not constitute Force Majeure Event, and shall not in any manner excuse the Concessionaire from the performance and discharge of its obligations and liabilities under this Agreement.

5.5 Employment of trained personnel

The Concessionaire shall ensure that the personnel engaged by it in the performance of its obligations under this Agreement are at all times adequately qualified, skilled and properly trained for their respective function and the Concessionaire shall remain fully responsible for all acts and omissions of such personnel.

5.6 Sole purpose of the Concessionaire

The Concessionaire agrees that it has been set up exclusively for the sole purpose of exercising the rights and observing and performing its obligations and liabilities under this Agreement, and the Concessionaire shall not, except with the prior written consent of the Authority, be or become directly or indirectly engaged, concerned or interested in any business other than as envisaged herein or undertake any transaction that may prejudice the interests of the Authority.

5.7 Branding of Project Highway

The Project Highway or any part thereof shall not be branded in any manner to advertise, display or reflect the name or identity of the Concessionaire or its shareholders. The Concessionaire undertakes that it shall not, in any manner, use the name or entity of the Project Highway to advertise or display its own identity, brand equity or business interests, including those of its shareholders, whether directly or indirectly save and except as may be necessary in the normal course of business.

For the avoidance of doubt, it is agreed that the Concessionaire may display its own name at a spot where other public notices are displayed for the Users. It is further agreed that the Project Highway shall be known, promoted, displayed and advertised by the name of *****.

5.8 Facilities for Persons with Disability and Senior Citizens

The Concessionaire shall, in conformity with the guidelines issued from time to time by Government Instrumentality provide a barrier free environment for persons with disability and senior citizens using the Project Highway at its own cost and responsibility, and shall ensure continued compliance throughout the Concession Period.

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5.9 Obligations relating to Local Content

The Concessionaire [Class I Local Supplier/ Class II Local Supplier/ Non Local Supplier] undertakes to ensure Local Content in the Project Highway of at least [50%/20%] in compliance 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 from time to time till Bid Due Date and the provisions under Rule 144(xi) of the General Financial Rules GFR, 2017.

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ARTICLE 6

OBLIGATIONS OF THE AUTHORITY

6.1 Obligations of the Authority

6.1.1 The Authority shall, at its own cost and expense undertake, comply with and perform all its obligations expressly set out in this Agreement or arising hereunder.

6.1.2 The Authority agrees to provide support to the Concessionaire and undertakes to observe, comply with and perform, subject to and in accordance with the provisions of this Agreement and Applicable Laws, the following:

(a) upon written request from the Concessionaire, and subject to the Concessionaire complying with Applicable Laws, provide reasonable support and assistance to the Concessionaire in procuring Applicable Permits required from any Government Instrumentality for implementation and operation of the Project;

(b) upon written request from the Concessionaire, provide reasonable assistance to the Concessionaire in obtaining access to all necessary infrastructure facilities and utilities, including water and electricity;

(c) procure to the extent of the powers conferred upon the Authority under Chapter IV of the Control of National Highways (Land and Traffic) Act, 2002, that no barriers 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 or law and order or collection of inter-state taxes;

(d) deleted;

(e) subject to and in accordance with Applicable Laws, grant to the Concessionaire the authority to regulate use of the Project;

(f) assist the Concessionaire in procuring police assistance for regulation of traffic, removal of trespassers and security on or at the Project Highway in accordance with this Agreement and Applicable Law;

(g) not do or omit to do any act, deed or thing which may in any manner is violating of any of the provisions of this Agreement;

(h) support, cooperate with and facilitate the Concessionaire in the implementation and operation of the Project in accordance with the provisions of this Agreement; and

(i) upon written request from the Concessionaire and subject to the provisions of Clause 5.4, provide reasonable assistance to the Concessionaire and any expatriate personnel of the Concessionaire or its Contractors to obtain applicable visas and work permits for discharging their respective obligations under this Agreement and the Project Agreements.

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6.2 Maintenance obligations prior to Appointed Date

6.2.1 During the Development Period, the Concessionaire shall maintain the existing lane(s) of the Project Highway in a pothole free condition and ensure that the quality of service, traffic worthiness and safety standards are maintained in accordance with Good Industry Practice.

The cost of such maintenance arising from normal wear & tear, shall be reimbursed by the Authority to the Concessionaire on quarterly basis at the rate of [Rs. ****/-][6] per km per month subject to certification by the Independent Engineer. In the event of any material deterioration or damage other than normal wear and tear, the Authority shall reimburse the Concessionaire for the cost and expenses incurred in undertaking such special repair, as determined by the Independent Engineer in accordance with Clause 16.2 and approved by the Authority. For the avoidance of doubt, the Concessionaire shall undertake only routine maintenance during the Development Period in accordance with the provisions of this clause, and shall undertake special repairs only for ensuring the safe operation of the Project Highway, or in the event of excessive deterioration or damage caused due to unforeseen events such as earthquake, floods or torrential rain etc. In the event of delay in the Appointed Date due to Force Majeure or for reasons solely attributable to the Authority, the Authority shall continue to reimburse the cost of such maintenance arising from normal wear and tear on the same terms and at the rate specified above.

6.2.2 In the event of a default by the Concessionaire in discharging its obligations under Clause 6.2.1, the Authority shall be entitled to levy and recover Damages at the rate of 0.2% (zero point two per cent) of the Performance Security for each day of such default.

6.2.3 Deleted.

6.3 Deleted.

6.4 Obligations relating to refinancing

Upon a written request made by the Concessionaire to this effect, the Authority shall, in conformity with any regulations or guidelines that may be notified by the Government or the Reserve Bank of India, as the case may be, permit and enable the Concessionaire to secure refinancing in whole or in part, of the Debt Due on such terms as may be agreed upon between the Concessionaire and the entity providing such refinancing; provided, however, that the refinancing hereunder shall be utilized for the Project only and shall always be subject to the prior approval of the Authority. The Authority shall endeavor to convey its decision on such request of the Concessionaire within 30 days of receipt of a proposal, together with all requisite details and supporting documents, by the Authority. For the avoidance of doubt, it is clarified that the tenure of debt refinanced hereunder may be determined mutually between the Senior Lenders and the Concessionaire, but the repayment thereof shall be completed no later than 1 (one) year prior to the expiry of Concession Period. Provided, further that such refinancing shall not, under any circumstances, increase, modify or extend the liability of the Authority nor shall it be construed to create any obligation, representation, guarantee, or assurance whether express or implied, on the part of the Authority.

[6] To be specified based on policy of the Authority w.r.t. cost of maintenance works.

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ARTICLE 7

REPRESENTATIONS AND WARRANTIES

7.1 Representations and Warranties of the Concessionaire

The Concessionaire represents and warrants to the Authority that:

(a) it is duly organized 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 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) it has the financial standing and capacity to undertake the Project in accordance with the terms of this Agreement;

(d) this Agreement constitutes its legal, valid and binding obligation, enforceable against it in accordance with the terms hereof, and its obligations under this Agreement shall at all times remain -will be legally valid, binding and enforceable against it in accordance with the terms hereof;

(e) 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 hereunder including any obligation, liability or responsibility hereunder;

(f) the information furnished in the Bid and as updated on or before the date of this Agreement is true, accurate and complete in all respects and does not omit any material fact;

(g) the execution, delivery and performance of this Agreement will not conflict with, result in the breach of, constitute a default under, or accelerate performance required by any of the terms of its Memorandum and Articles of Association {or those of any member of the Consortium} 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;

(h) 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;

(i) 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;

(j) 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

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

(k) it shall at no time undertake or permit any Change in Ownership except in accordance with the provisions of Clause 5.3 and shall ensure that the {selected bidder/ Consortium Members}, together with {its/ their} Associates, hold not less than 51% (fifty-one percent) of its issued and paid up Equity as on the date of this Agreement; and that each Consortium Member whose technical and financial capacity was evaluated for the purposes of selection in response to the Request for Proposals shall hold not less than 26% (twenty six per cent) of such Equity which shall also be not less than 5% (five per cent) of the Total Project Cost during the Construction Period and one year thereafter. The said period of six months shall be reckoned from date of completion of Punch List excluding the Punch List items pending due to reasons attributable to the Authority.

Provided further that any such request made under Clause 5.3, shall at the option of the Authority, be required to be accompanied by a suitable no objection letter from Senior Lenders;

(l) {the selected bidder/ Consortium Members and its/their} Associates have the financial standing and resources to fund the required Equity and to raise the debt necessary for undertaking and implementing the Project in accordance with this Agreement;

(m) {the selected bidder/ each Consortium Member} is duly organized and validly existing under the laws of the jurisdiction of its incorporation and has requested the Authority to enter into this Agreement with the Concessionaire pursuant to the Letter of Award, and has agreed to and unconditionally accepted the terms and conditions set forth in this Agreement;

(n) all its rights and interests in the Project Highway shall pass to and vest in the Authority on the Transfer Date, free and clear of all liens, claims and Encumbrances, without any further act or deed on its part or that of the Authority, and that none of the Project Assets shall be acquired by it subject to any agreement under which a security interest or other lien or Encumbrance is retained by any person, save and except as expressly provided in this Agreement;

(o) 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;

(p) 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 Concession or entering into this Agreement or for influencing or attempting to influence any officer or employee of the Authority in connection therewith;

(q) all information provided by the {selected bidder/ Consortium Members} in response to the Request for Proposals or otherwise, is to the best of its knowledge and belief, true and accurate in all material respects; and

(r) all undertakings and obligations of the Concessionaire arising from the Request for Proposals including the integrity pact or otherwise shall be binding on the Concessionaire as if they form part of this Agreement.

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7.2 Representations and Warranties of the Authority

The Authority represents and warrants to the Concessionaire 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 Applicable Laws to authorize the execution, delivery and performance of this Agreement;

(c) it has the financial standing and capacity to perform its obligations under this Agreement as expressly provided herein;

(d) this Agreement constitutes a legal, valid and binding obligation enforceable against it in accordance with the terms hereof;

(e) there are no actions, suits or proceedings 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 default or breach of this Agreement or which individually or in the aggregate may result in any material impairment of its ability to perform its obligations under this Agreement;

(f) 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;

(g) it has complied with Applicable Laws in all material respects;

(h) it has the right, power and authority to manage and operate the Project; and

(i) it has good and valid right to the Site, and has power and authority to grant a license in respect thereto to the Concessionaire.

7.3 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 right, remedy or obligation of either Party under this Agreement.

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ARTICLE 8

DISCLAIMER

8.1 Disclaimer

8.1.1 The Concessionaire acknowledges that prior to the submission of its Bid and execution of this Agreement, the Concessionaire has, after a complete and careful examination and having had full opportunity to conduct site visits, made an independent evaluation of the Site, the Request for Proposals, the Scope of the Project, Specifications and Standards, existing structures, local conditions, physical qualities of ground, subsoil and geology, traffic conditions, climatic conditions, availability of construction materials, access to the Site, environmental conditions, and all information provided by the Authority or otherwise obtained, procured or gathered from any source whatsoever. The Concessionaire further acknowledges that site visit(s) prior to bidding were strongly advised and encouraged, and that it has either undertaken such site visit(s) or consciously elected not to do so at its own risk and responsibility 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. The Authority makes no representation or warranty 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 Concessionaire confirms that it shall have no claim whatsoever against the Authority in this regard.

8.1.2 The Concessionaire acknowledges and hereby accepts the risk of inadequacy, mistake or error in or relating to any of the matters set forth in Clause 8.1.1 above and hereby acknowledges and agrees that the Authority shall not be liable for the same in any manner whatsoever to the Concessionaire, {the Consortium Members and their} Associates or any person claiming through or under any of them.

8.1.3 The Parties agree that any mistake or error in or relating to any of the matters set forth in Clause 8.1.1 above shall not vitiate this Agreement, or render it voidable.

8.1.4 In the event that either Party becomes aware of any mistake or error relating to any of the matters set forth in Clause 8.1.1 above, that Party shall immediately notify the other Party, specifying the mistake or error; provided, however, that a failure on part of the Authority to give any notice pursuant to this Clause 8.1.4 shall not prejudice or dilute the disclaimer of the Authority contained in Clause 8.1.1 and shall not in any manner shift to the Authority any risks assumed by the Concessionaire pursuant to this Agreement or create any implied obligation, liability or estoppel against the Authority.

8.1.5 Except as otherwise provided in this Agreement, all risks relating to the Project shall be borne by the Concessionaire and the Authority shall not be liable in any manner whatsoever for such risks or the consequences thereof.

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Part III

Development and Operations

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ARTICLE 9

PERFORMANCE SECURITY

9.1 Performance Security

9.1.1 The Concessionaire shall, for the performance of its obligations hereunder during the Construction Period , provide to the Authority as an absolute, irrevocable and unconditional security, no later than 60 (sixty) days from the date of this Agreement, in the form of Insurance Surety Bond (issued by insurance company authorized by Insurance Regulatory and Development Authority of India), or irrevocable e-Bank Guarantee or any form acceptable to the Government of India from a Bank for a sum equivalent to Rs. ***** Crore (Rupees ***** crore)[7] in the form set forth in Schedule-F (the **"Performance Security").** Until such time the Performance Security is provided by the Concessionaire pursuant hereto and the same comes into effect, the Bid Security shall remain in force and effect, and upon such provision of the Performance Security pursuant hereto, the Authority shall release the Bid Security to the Concessionaire.

9.1.2 Notwithstanding anything to the contrary contained in this Agreement, in the event Performance Security is not provided by the Concessionaire within a period of 60 (sixty) days from the date of this Agreement, the Authority may encash the Bid Security and appropriate the proceeds thereof as genuine pre-estimated Damages, and thereupon all rights, privileges, claims and entitlements of the Concessionaire under or arising out of this Agreement shall be deemed to have been waived by, and to have ceased with the concurrence of the Concessionaire, and this Agreement shall be deemed to have been terminated by mutual agreement of the Parties.

9.2 Appropriation of Performance Security

Upon occurrence of a Concessionaire Default or failure to meet any Condition Precedent, the Authority shall, without prejudice to its other rights and remedies hereunder or in law, be entitled to encash and appropriate the relevant amount from the Performance Security as Damages for such Concessionaire Default or for failure to meet any Condition Precedent. Upon such encashment and appropriation from the Performance Security, the Concessionaire 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 Concessionaire shall, within the time so granted, replenish or furnish fresh Performance Security as aforesaid failing which and the Authority shall be entitled to immediate terminate this Agreement in accordance with Article 37. Upon replenishment or furnishing of a fresh Performance Security, as the case may be, as aforesaid, the Concessionaire shall be entitled to an additional Cure Period of 90 (ninety) days for remedying the Concessionaire Default or to meet any Condition Precedent and in the event of the Concessionaire not curing its default or meeting such Condition Precedent 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 37.

9.3 Release of Performance Security

The Performance Security shall remain in force and effect for the Construction Period of the Project. Provided further the Performance Security shall be released earlier upon the Concessionaire achieving the Project Milestone-III on or before the date specified in

[7] Calculated @ [3% (three per cent)] of the Bid Project Cost

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Schedule G; provided, however, that the Performance Security shall not be released if the Concessionaire is in breach of this Agreement or Project Milestone III has not been achieved on or before the date specified in Schedule G. Upon a written request made by the Concessionaire for release of the Performance Security along with the particulars which establish satisfaction of the requirements specified in this Clause 9.3, the Authority shall release the Performance Security forthwith. For the avoidance of doubt, it is clarified that the release of the Performance Security by the Authority shall not, be construed as a certification of satisfactory or adequate performance of obligation by the Concessionaire under this Agreement. Further, in the event that any breach, default, or non-compliance by the Concessionaire is discovered or arises after the release of the Performance Security, the Concessionaire shall remain fully liable and responsible for all such obligations, and the Authority shall be entitled to pursue all remedies available to it under this Agreement.

9.4 **[**Deleted]

9.5 **[**Deleted]

9.6 References to Performance Security

References to Performance Security occurring in this Agreement for and in respect of any period prior to the delivery of the Performance Security by the Concessionaire to the Authority, or in respect of any period subsequent to the expiry or release thereof, as the case may be, shall be construed solely for the purposes of calculating the amount of Damages payable by the Concessionaire.

9.7 Additional Performance Security

Where the Bid Project Cost of the Selected Bidder is lower by more than 10% (ten per cent) than the Estimated Bid Project Cost, the Concessionaire shall along with the Performance Security provide to the Authority an irrevocable and unconditional Insurance Surety Bond (issued by insurance company authorized by Insurance Regulatory and Development Authority of India set forth in Annexure II of Schedule-F) or e-Bank Guarantee from a Bank for a sum equivalent to Rs. ***** crore (Rupees ***** crore)[8] in the form set forth in Schedule-F (the "Additional Performance Security"), to be modified, *mutatis mutandis*, for this purpose as security to the Authority. The requirement of furnishing the Additional Performance Security shall be a Condition Precedent. Failure to maintain the Additional Performance Security shall be treated as Concessionaire Default as per Clause 37.1.1.

9.8 Appropriation and Release of Additional Performance Security

Notwithstanding anything contrary contained in this Agreement, if this Agreement is terminated, except for Authority Default or due to the Force Majeure, prior to achievement of the Project Milestone III, the Authority shall have the right to encash the Additional Performance Security in addition to the Performance Security. Provided however, the Additional Performance Security shall be released one year after the Commercial Operation Date after certification of Independent Engineer of adherence to laid down Specification & Standards and Quality.

[8] Calculated @ 10% of the difference in the Estimated Project Cost and the Bid Project Cost

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ARTICLE 10

RIGHT OF WAY

10.1 The Site

The site of the Project Highway shall comprise the land, buildings, road works and other structures appurtenant thereto, as described in Schedule-A and in respect of which the Right of Way shall be provided and granted by the Authority to the Concessionaire as a licensee under and in accordance with this Agreement (**the "Site"**). For the avoidance of doubt, it is hereby acknowledged and agreed that all references to the Site shall be construed as references to the land, buildings, road works and other structures appurtenant thereto required for [***-Laning] the Project as set forth in Schedule-A.

10.2 License and Right of Way

10.2.1 The Authority hereby grants to the Concessionaire license to the Site for carrying out any surveys, investigations and soil tests that the Concessionaire may deem necessary during the Development Period, it being expressly agreed and understood that the Authority shall have no liability whatsoever in respect of survey, investigations and tests carried out or work undertaken by the Concessionaire on or about the Site pursuant hereto in the event of Termination or otherwise.

10.2.2 In consideration of the Project, this Agreement and the covenants and warranties on the part of the Concessionaire herein contained, the Authority, in accordance with the terms and conditions set forth herein, hereby grants to the Concessionaire, commencing from the Appointed Date, leave and license rights in respect of all the land (along with any buildings, constructions or immovable assets, if any, thereon) comprising the Site which is described, delineated and shown in Schedule-A hereto (the **"Licensed Premises"**), on an "as is where is" basis, free from Encumbrances, to develop, operate and maintain the said Licensed Premises, together with all and singular rights, liberties, privileges, easements and appurtenances whatsoever to the said Licensed Premises, hereditaments or premises or any part thereof belonging to or in any way appurtenant thereto or enjoyed therewith, for the duration of the Concession Period and, for the purposes permitted under this Agreement, and for no other purpose whatsoever.

10.2.3 The license and Right of Way granted by this Agreement to the Concessionaire shall always be subject to existing Right of Way and the Concessionaire shall perform its obligations in a manner that [two lanes] of the Project Highway or an alternative thereof are open to traffic at all times during the Construction Period.

10.2.4 It is expressly agreed that the license granted hereunder shall terminate automatically and forthwith, without the need for any action to be taken by the Authority to terminate the license, upon the Termination of this Agreement for any reason whatsoever. For the avoidance of doubt, the Parties expressly agree that notwithstanding any temporary or permanent structures erected on the Site by the Concessionaire or its sub-licensees, the license in respect of the Site shall automatically terminate, without any further act of the Parties, upon Termination of this Agreement.

10.2.5 The Concessionaire hereby irrevocably appoints the Authority (or its nominee) to be its true and lawful attorney, to execute and sign in the name of the Concessionaire a transfer or surrender of the license granted hereunder at any time after the Concession Period has expired or has been terminated earlier in terms hereof, a sufficient proof of which will be the declaration of any duly authorized officer of the Authority, and the Concessionaire consents to it being registered for this purpose.

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10.2.6 It is expressly agreed that trees on the Site are property of the Authority except that the Concessionaire shall be entitled to exercise usufructuary rights thereon during the Concession Period.

10.3 Procurement of the Site

10.3.1 Pursuant to the notice specified in Clause 4.1.2, the Authority Representative, the Independent Engineer and the Concessionaire shall, on a mutually agreed date and time, inspect the Site and prepare a memorandum containing an inventory of the Site including the land, buildings, structures, road works, trees and any other immovable property on or attached to the Site duly supported by moving images and videos obtained using drones or any other mechanism acceptable to the Authority. The memorandum shall include only the Site for which Right of Way is granted to the Concessionaire, upon possession by the Authority. Such memorandum shall have appended thereto an appendix (the **"Appendix"**) specifying in reasonable detail those parts of the Site in respect of which Right of Way has not been granted to the Concessionaire including the areas where of Right of Way remains unacquired and/or where possession has not been taken by the Authority. Signing of the memorandum, in 2 (two) counterparts (each of which shall constitute an original), by the authorized representatives of the Parties in the presence of Independent Engineer shall, subject to the provisions of Clause 10.2.2, be deemed to constitute a valid license and Right of Way to the Concessionaire for free and unrestricted use and development of the Site during the Concession Period under and in accordance with the provisions of this Agreement and for no other purpose whatsoever. For the avoidance of doubt, it is agreed that valid license and Right of Way with respect to the parts of the Site as set forth in the Appendix shall be deemed to have been granted to the Concessionaire upon Site thereto being provided by the Authority to the Concessionaire.

10.3.2 Without prejudice to the provisions of Clause 10.3.1, the Parties hereto agree that on or prior to the Appointed Date, the Authority shall have granted Right of Way for minimum [90%] of the Construction Zone, so that completion of work in this granted Right of Way shall be sufficient to construct and achieve COD of the Project. The Appendix shall not include more than [10% ten per cent] of the Construction Zone.

10.3.3 On and after signing the memorandum referred to in Clause 10.3.1, and until the Transfer Date, the Concessionaire shall maintain a round-the-clock vigil over the Site and shall ensure and procure that no encroachment thereon takes place, and in the event of any encroachment or occupation on any part thereof, the Concessionaire shall report such encroachment or occupation forthwith to the Authority and undertake its removal at its cost and expenses.

10.3.4 The Authority shall make best efforts to procure and grant, no later than 240 (two hundred and forty) days from the Appointed Date, the Right of Way to the Concessionaire in respect of all land included in the Appendix, and in the event of delay for any reason beyond 240 days, the works corresponding to Right of Way in the Appendix not granted shall be deemed to be removed from the Scope of the Project and the provisions of Clause 16.6.1 shall apply to such works and without any requirement of further notification, communication or action by the Authority, and any engagement, correspondence or interaction between the Parties in this regard shall not dilute or affect the automatic operation of this Clause 10.3.4 and in accordance with Clause 16.6.1, the Independent Engineer shall proceed to assess the cost of reduction in the Scope of the Project.

10.3.5 Upon receiving Right of Way in respect of any land included in the Appendix, the Concessionaire shall complete the Construction Works thereon within a reasonable period to be determined by the Independent Engineer in accordance with Good Industry Practice; provided that the issuance of Provisional Certificate shall not be affected or delayed on

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account of possession of any part of the Site not being granted to the Concessionaire or any construction on such part of the Site remaining incomplete on the date of Tests on account of the delay or denial of possession of such part of the Site thereto. For the avoidance of doubt, it is expressly agreed that Construction Works on all lands for which Right of Way is granted within 240 (two hundred and forty) days of the Appointed Date shall be completed before the Project Completion Date.

10.3.6 The Concessionaire shall, by notice given to the Authority no later than 60 (sixty) days from [the Appointed Date or the date of Change of Scope Order, as the case may be,] submit a request to the Authority for additional land required for construction of works specified in Change of Scope Order issued under Article 16, in accordance with this Agreement. Failure to submit such notice within the stipulated period shall disentitle the Concessionaire from raising any claim in respect of non-availability of such land. Upon receipt of such request, the Authority shall determine if the land is required for the Project and on determination of such requirement, may initiate and undertake proceedings for acquisition of such land under the provisions of the National Highways Act, 1956 and shall take all such steps as may be reasonably necessary for acquisition of such land. Upon acquisition, such land shall form part of the Site; and shall be deemed to be included in the Appendix referred to in this Clause 10.3 and dealt in accordance with the provisions thereof.

10.3.7 The Parties expressly agree that the obligation to provide land for 90% (Ninety per cent) of the Construction Zone shall mean and imply provision of land that shall enable the Concessionaire to undertake construction on at least 90% (Ninety per cent) of the length of the Project.

10.4 Site to be free from Encumbrances

Subject to the provisions of Clause 10.3, the Site shall be made available by the Authority to the Concessionaire pursuant hereto free from all Encumbrances and without the Concessionaire being required to make any payment to the Authority on account of any costs, compensation, expenses and charges for the acquisition for the duration of the Concession Period, except insofar as otherwise expressly provided in this Agreement. For the avoidance of doubt, it is agreed that existing Rights of Way, easements, privileges, liberties and appurtenances to the Licensed Premises shall not be deemed to be Encumbrances. It is further agreed that the Concessionaire accepts and undertakes to bear any and all risks arising out of the inadequacy or physical condition of the Site.

10.5 Protection of Site from Encumbrances

During the Concession Period, the Concessionaire shall protect the Site from any and all occupations, encroachments or Encumbrances, and shall not place or create nor permit any Contractor or other person claiming through or under the Concessionaire to place or create any Encumbrance or security interest over all or any part of the Site or the Project Assets, or on any rights of the Concessionaire therein or under this Agreement, save and except as otherwise expressly set forth in this Agreement.

10.6 Special/temporary right of way

The Concessionaire shall bear all costs and charges for any special or temporary right of way required by it in connection to the Site. The Concessionaire 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.

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10.7 Access to the Authority and Independent Engineer

The license, Right of Way and right to the Site granted to the Concessionaire hereunder shall always be subject to the right of access of the Authority and the Independent Engineer and their employees and agents for inspection, viewing and exercise of their rights and performance of their obligations under this Agreement.

10.8 Geological and archaeological finds

It is expressly agreed that mining, geological or archaeological rights do not form part of the license granted to the Concessionaire under this Agreement and the Concessionaire 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 concerned Government Instrumentality. The Concessionaire 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 Authority or 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 Concessionaire 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.

10.9 Deleted.

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ARTICLE 11

UTILITIES, ASSOCIATED ROADS AND TREES

11.1 Existing utilities and roads

Notwithstanding anything to the contrary contained herein, the Concessionaire shall ensure that the respective entities owning the existing roads, Right of Way or utilities on, under or above the Site are enabled by it to keep such utilities in continuous satisfactory use, if necessary, by providing suitable temporary or permanent diversions with the authority of the controlling body of that road, right of way or utility.

11.2 Shifting of obstructing utilities

11.2.1 The Concessionaire shall, subject to Applicable Laws and with facilitation of the Authority, undertake the shifting of any utility (including electric lines, water pipes and telephone cables), to an appropriate location or alignment, if such utility or obstruction adversely affects the execution of Construction 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 part of Bid Project Cost. The Authority shall pay the supervision charges and shutdown charges as provided by the utility owning entity for electrical transmissions systems of voltage 400kv and above to the Concessionaire, for the period specified by the utility owning entity but not for any delay on the part of the Concessionaire. The Concessionaire shall, within 60 (sixty) days from the Appointed Date, identify any existing utilities not included in Schedule B, if any, and notify the Authority forthwith and the cost of shifting of such utilities, shall be treated as Change of Scope. The Authority shall provide necessary assistance to the Concessionaire in obtaining the cost estimates for shifting of such utilities from the entity owning such utility, as the case may be.

The Concessionaire shall execute such utility shifting works under the supervision of the concerned utility owning agency and Independent Engineer (IE) in accordance with the provisions of this Agreement. In the event of any delay in shifting of utilities, the Concessionaire shall be responsible for failure to perform any of its obligations hereunder unless such failure is a direct consequence of delay on the part of the concerned utility owning agency, and duly recorded by the Independent Engineer.

The Concessionaire may undertake the shifting of utilities at any time after the signing of this Concession Agreement but before COD.

11.2.2 In the event this Agreement is terminated prior to the Appointed Date, the Authority shall reimburse the Concessionaire the cost incurred towards shifting of utilities undertaken during the Development Period, subject to acceptance of work by concerned utility owning agency and certification by the Independent Engineer. Such reimbursement shall be limited to the actual work executed at the Site and shall be payable at the rates specified in the approved estimates of the concerned utility owning agency, provided that such shifting of utilities has been undertaken in accordance with Clause 11.2.1.

11.3 New utilities and roads

11.3.1 The Concessionaire shall, subject to such conditions as may be specified by the Authority, allow access to, and use of the Site for laying telephone lines, water pipes, electric cables or other public utilities. Where such access or use causes any financial loss to the Concessionaire, it may require the user of the Site to pay compensation or damages in accordance with the policies of the Authority issued from time to time for laying of utilities.

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For the avoidance of doubt, it is clarified that such use of the Site shall not, in any manner relieve the Concessionaire of its obligation to maintain the Project Highway in accordance with this Agreement and any damage caused due to such use shall be restored by the Concessionaire forthwith.

11.3.2 The Authority may, by notice require the Concessionaire to connect any adjoining road to the Project Highway other than that specified in Schedule-B. Upon receipt of a notice hereunder, the connecting portion thereof falling within the Site shall be constructed by the Concessionaire at the Authority's cost in accordance with Article 16, and the maintenance thereof shall be undertaken by the Concessionaire in accordance with the provisions of Clause 17.1.3 and payment for maintenance shall be made in accordance with Article 16.2.2.

11.3.3 The Authority may by notice require the Concessionaire 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 and maintained by the Concessionaire upon advance payment of the cost to be made by the beneficiary entity in accordance with the amount and period as determined by the Authority with the assistance of Independent Engineer.

11.3.4 For the avoidance of doubt, any connecting road constructed prior to the Appointed Date and falling within the Site shall be maintained by the Concessionaire upon advance payment to be made by the beneficiary entity in accordance with the provisions of this Clause 11.3.3.

11.4 Felling of trees

The Authority shall obtain Applicable Permits for felling of trees by the Concessionaire, if and only if such trees cause a material adverse effect on the construction, operation or maintenance of the Project Highway. The cost of such felling shall be borne by the Concessionaire. For the avoidance of doubt, 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.

11.5 Dismantling of structures

The Concessionaire shall at its own cost dismantle all structures located on lands forming part of the Site, including patta lands, abadi lands, assigned lands or any other category of land for which possession has been handed over by the Authority. The Concessionaire shall further, at its own cost, dispose of the dismantled material in its sole discretion as may be deemed appropriate, subject to compliance with Applicable Laws, including all environmental guidelines and regulations and clear the Site for undertaking construction in accordance with this Agreement.

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ARTICLE 12

CONSTRUCTION OF THE PROJECT HIGHWAY

12.1 Obligations prior to commencement of construction

Prior to commencement of Construction Works, the Concessionaire shall:

(a) submit to the Authority and the Independent Engineer its detailed design, construction methodology, Quality Assurance Plan, and the procurement, engineering and chainage wise construction time schedule for completion of the Project Highway in accordance with the Project Completion Schedule as set forth in Schedule-G;

(b) appoint its representative duly authorized to deal with the Authority in respect of all matters under or arising out of or relating to this Agreement;

(c) undertake, do and perform all such acts, deeds and things as may be necessary or required before commencement of construction under and in accordance with this Agreement, Applicable Laws and Applicable Permits;

(d) make its own arrangements for quarrying of materials needed for the Project Highway under and in accordance with Applicable Laws and Applicable Permits and;

(e) appoint a person as Design in Charge, who will supervise the EPC Contractor's design unit and shall be responsible for supervision of all surveys, investigations, data collection and designs of the Project (the "**Design-in-Charge**").

12.2 Maintenance during Construction Period

12.2.1 During the Construction Period, the Concessionaire shall maintain, at its cost, the existing lane(s) of the Project Highway in a pothole free condition and ensure that the quality of service, traffic worthiness and safety standards are maintained and are at no time materially inferior as compared to the condition prevailing on the date of signing of this Agreement and shall, in any event, conform at all times to the minimum safety, serviceability and maintenance standards prescribed and Good Industry Practice and shall undertake the necessary repair and maintenance works for this purpose; provided that the Concessionaire may, at its cost, interrupt and divert the flow of traffic if such interruption and diversion is necessary for the efficient progress of Construction Works and conforms to Good Industry Practice; provided further that such interruption and diversion shall be undertaken by the Concessionaire only with the prior written approval of the Independent Engineer which approval shall not be unreasonably withheld.

For the avoidance of doubt, it is agreed that the Concessionaire shall at all times be responsible for ensuring safe operation of the Project Highway.

12.2.2 Prior to diversion of traffic, the Concessionaire shall strengthen/construct the service /diversion road to cater for the traffic in accordance with the Specifications & Standards and additional application standards issued by the Ministry/Authority.

12.2.3 In the event of default by the Concessionaire in discharging the obligations specified in Clause 12.2.1, the Authority may levy and recover Damages equal to 0.2% (zero point two per cent) of the Performance Security for each day of default hereunder, without prejudice to the Authority's right to undertake such maintenance at the risk and cost of the Concessionaire.

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12.2.4 The Parties expressly agree that the Concessionaire shall, within 7 (seven) days of signing of this Agreement and with prior notice to the Authority, undertake a video recording of the condition and status of the Project Highway, from an altitude sufficient to capture both ends of the Right of Way or through such other mechanism as may be acceptable to the Authority, in the presence of the Authority Representative. Such recording shall be compiled into a digital video disc or any substitute thereof, and shall provide copy of such recording to the Authority shall be submitted within 2 (two) days of the recording. The Authority may, at its discretion, undertake a separate video recording of the Project Highway in the presence of the Concessionaire's representative, within 7 (seven) days from the date of submission of video recording by the Concessionaire, and substitute its video recording for that which was undertaken by the Concessionaire, by providing a copy of such recording to the Concessionaire with 7 (seven) days of such recording. The Parties further agree that the final video recording whether undertaken by the Concessionaire or substituted by the Authority, shall serve as conclusive evidence of the status and condition of the Project Highway as on the date of such recording.

12.3 Drawings

In respect of the Concessionaire's obligations relating to the Drawings of the Project Highway as set forth in Schedule-H, the following shall apply:

(a) the Concessionaire shall prepare and submit, with reasonable promptness and in such sequence as is consistent with the Project Completion Schedule, 3 (three) copies each of all Drawings to the Independent Engineer for review. The Concessionaire shall ensure that Drawings related to structures are either approved by the concerned Governmental Instrumentality or prepared in accordance with standard drawings that have been issued by the concerned Governmental Instrumentality;

(b) By submitting the Drawings for review to the Independent Engineer, the Concessionaire shall be deemed to have represented that it has determined and verified that the design and engineering, including the field construction criteria related thereto, are in conformity with the Scope of the Project, Specifications and Standards;

(c) within 15 (fifteen) days of the receipt of the Drawings, the Independent Engineer shall review the same and convey its observations to the Concessionaire with particular reference to their conformity or otherwise with the Scope of the Project and the Specifications and Standards. The Concessionaire shall not be obliged to await the observations of the Independent Engineer on the Drawings submitted pursuant hereto beyond the said 15 (fifteen) days period and may begin or continue Construction Works at its own discretion and risk. Provided, however, that any such commencement or continuation shall not affect its responsibility to rectify any non-conforming works at its own cost;

(d) If the aforesaid observations of the Independent 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 Concessionaire and resubmitted to the Independent Engineer for review. The Independent Engineer shall give its observations, if any, within 7 (seven) days of receipt of the revised Drawings;

(e) No review and/or observation of the Independent Engineer and/or its failure to review and/or convey its observations on any Drawings shall relieve the Concessionaire of its obligations and liabilities under this Agreement in any manner nor shall the Independent Engineer or the Authority be liable for the same in any manner;

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(f) Without prejudice to the foregoing provisions of this Clause 12.3, the Concessionaire shall submit to the Authority for review and comments, its Drawings relating to alignment of the Project Highway, finished road level, location and layout of the Toll Plaza[s] and general arrangement drawings of major bridges, flyovers, tunnels, ROBs/ RUBs and grade separators, [together with such drawings as are consistent with the approved general arrangement drawings procured by the Authority in accordance with Clause 4.1.2(d)] and the Authority shall have the right but not the obligation to undertake such review and provide its comments, if any, within 30 (thirty) days of the receipt of such Drawings. The provisions of this Clause 12.3 shall apply mutatis mutandis to the review and comments hereunder; and

(g) Within 90 (ninety) days of COD, the Concessionaire shall furnish to the Authority and the Independent Engineer a complete set of as-built Drawings, in 2 (two) hard copies and in its editable digital format or in such other medium or manner as may be acceptable to the Authority, reflecting the Project 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.

12.4 Construction of the Project Highway

12.4.1 On or after the Appointed Date, the Concessionaire shall undertake construction of the Project as specified in Schedule-B and Schedule-C and in conformity with the Specifications and Standards set forth in Schedule-D. The [*** (*** in words) day] from the Appointed Date shall be the scheduled date for completion of the Project (the **"Scheduled Completion Date"**) and the Concessionaire agrees and undertakes that the Project shall be completed on or before the Scheduled Completion Date.

12.4.2 The Concessionaire shall construct the Project Highway in accordance with the Project Completion Schedule set forth in Schedule-G. In the event that the Concessionaire fails to achieve any milestone within a period of 90 (ninety) days from the date set forth for such Project Milestone in Schedule-G, unless such failure has occurred due to Force Majeure or for reasons solely attributable to the Authority, it shall pay Damages to the Authority in a sum calculated at the rate of 0.1% (zero point one per cent) of the amount of Performance Security for delay of each day until such milestone is achieved; provided that if any or all Project Milestones or the Scheduled Completion Date are extended in accordance with the provisions of this Agreement, the dates set forth in Schedule-G shall be deemed to be modified accordingly and the provisions of this Agreement shall apply as if Schedule-G has been amended as above; provided further that in the event Project Completion Date is achieved on or before the Scheduled Completion Date, the Damages paid under this Clause 12.4.2 shall be refunded by the Authority to the Concessionaire, but without any interest thereon. For the avoidance of doubt, it is agreed that recovery of Damages under this Clause 12.4.2 shall be without prejudice to the rights of the Authority under this Agreement, including the right of Termination thereof.

12.4.3 In the event that the Project is not completed and COD does not occur within 270 (two hundred and seventy) days from the Scheduled Completion Date, unless the delay is on account of reasons attributable to the Authority or due to Force Majeure, the Authority shall be entitled to terminate this Agreement.

12.5 Deleted.

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ARTICLE 13

MONITORING OF CONSTRUCTION

13.1 Monthly progress reports

During the Construction Period, the Concessionaire shall, no later than 7 (seven) days after the close of each month, furnish to the Authority, Lenders' Representative and the Independent Engineer, and upload on the Authority's designated portal/website, a monthly report on physical and financial progress of the construction works and shall promptly give such other relevant information including invoices of materials Such as steel, cement, bitumen and aggregates) as may be required by the Independent Engineer. The Concessionaire shall ensure that a functional location tracking system is installed in each construction vehicle and shall provide the Authority, through its central server, real-time records indicating the location and movement of all such vehicles, which shall include the following information:

(i) Real- time location data of each construction vehicle.

(ii) Timestamps indicating the start and end times of vehicle movements.

(iii) Mileage covered by each vehicle.

The Concessionaire shall be responsible for ensuring the accuracy and integrity of the location tracking system data.

13.2 Inspection

During the Construction Period, the Independent Engineer shall inspect every kilometre of the Project Highway at least once a month duly supported by video recording captured using a drone or such other mechanism acceptable to the Authority and shall make a report of such inspection (the "**Inspection Report**") stating in reasonable detail the defects or deficiencies, if any, with particular reference to the Scope of the Project and Specifications and Standards. The Independent Engineer shall send a copy of the Inspection Report along with the video recording to the Authority and the Concessionaire within 7 (seven) days of such inspection and the Independent Engineer shall also upload it on Authority's designated portal/website promptly and upon receipt thereof, the Concessionaire shall rectify and remedy the defects or deficiencies, if any, stated in the Inspection Report. Such inspection or submission of Inspection Report or video recording or lack thereof by the Independent Engineer shall not relieve or absolve the Concessionaire of its obligations and liabilities hereunder in any manner whatsoever. The Authority on a written request from the Lenders' Representative shall be obliged to provide a copy of such Inspection Report. The Authority reserves the right to host the video on its website for public viewing.

13.3 Tests

13.3.1 For determining that the Construction Works conform to the Specifications and Standards, the Independent Engineer shall require the Concessionaire to carry out or cause to be carried out Tests, at such location, time and frequency and in such manner as may be specified by the Independent Engineer from time to time, in accordance with Good Industry Practice for quality assurance. The size of sample for such tests shall, to the extent possible, not exceed 10% (ten per cent) of the quantity and/or number of tests prescribed by IRC

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and/or MoRTH for the construction works undertaken by the Authority through their contractors. The Concessionaire shall, with due diligence, carry out or cause to be carried out all the tests, at its own cost, in accordance with the instructions of the Independent Engineer and furnish the results thereof to the Independent Engineer and the Authority. Provided, however, that the Authority reserves the right to require certain tests to be undertaken by an independent agency, at its own cost, for the purpose of authenticating the results of the tests carried out or caused to be carried out by the Concessionaire; and in the event of any discrepancy, the results obtained from such independent agency shall be final and binding on the Parties. For the avoidance of doubt, the costs to be incurred on any Test which is undertaken for determining the rectification of any defect or deficiency in construction shall be borne solely by the Concessionaire.

13.3.2 In the event that results of any tests conducted under this Clause 13.3 establish any defects or deficiencies in the Construction Works, the Concessionaire shall carry out remedial measures at its own cost, risk and expense and furnish a report to the Independent Engineer in this behalf. The Independent Engineer shall require the Concessionaire to carry out or cause to be carried out tests to determine that such remedial measures have brought the Construction Works into compliance with the Specifications and Standards, and the procedure set forth in this Clause 13.3 shall be repeated until such Construction Works conform to the Specifications and Standards. For the avoidance of doubt, it is agreed that tests pursuant to this Clause 13.3 shall be undertaken in addition to and independent of the tests that shall be carried out by the Concessionaire for its own quality assurance in accordance with Good Industry Practice. It is also agreed that a copy of the results of such tests shall be sent by the Concessionaire to the Independent Engineer forthwith.

13.4 Delays during construction

Without prejudice to the provisions of Clause 12.4.2, if the Concessionaire does not achieve any of the Project Milestones or the Independent Engineer shall have reasonably determined that the rate of progress of Construction Works is such that [***-Laning] is not likely to be achieved by the Scheduled Completion Date, it shall notify the Concessionaire to this effect, and the Concessionaire shall, within 15 (fifteen) days of such notice, inform the Independent Engineer in reasonable detail about the steps it proposes to take to expedite progress and submit a revised schedule as provided in accordance with Clause 12.1 (a) for achieving the Project Milestones or Project Completion Date, as the case may be.

For the avoidance of doubt, submission of such revised schedule shall not be construed as approval thereof by the Authority or the Independent Engineer, nor shall it relieve the Concessionaire of its obligation to achieve the Project Milestones and the Scheduled Completion Date in accordance with this Agreement.

Further, if the Independent Engineer reports that the progress achieved by the Concessionaire over any continuous period of three months is less than 75% of the revised schedule, the Authority may, without prejudice to the rights of the Authority under this Agreement, invoke termination as per Clause 37.1.1 (w) of this Agreement.

13.5 Suspension of unsafe Construction Works

13.5.1 Upon recommendation of the Independent Engineer to this effect, the Authority may by notice require the Concessionaire to suspend forthwith the whole or any part of the Construction Works if, in the reasonable opinion of the Authority, such work threatens the safety of the Users and pedestrians.

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13.5.2 The Concessionaire shall, pursuant to the notice under Clause 13.5.1, suspend the Construction 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 and the Users. The Concessionaire may by notice require the Independent 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 Independent Engineer, the Authority shall either revoke such suspension or instruct the Concessionaire 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 13.5 shall be repeated until the suspension hereunder is revoked. For the avoidance of doubt, it is agreed that any such remedial measures undertaken shall not in any manner relieve the Concessionaire of its obligations under this Agreement.

13.5.3 Subject to the provisions of Clause 34.7, all reasonable costs incurred for maintaining and protecting the Construction Works or part thereof during the period of suspension (the "**Preservation Costs**"), shall be borne by the Concessionaire; 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.

13.5.4 If suspension of Construction Works is for reasons not attributable to the Concessionaire, the Independent Engineer shall, after due consideration of the comments of the Authority, determine any extension of the dates set forth in the Project Completion Schedule to which the Concessionaire is reasonably entitled, and shall notify the Authority accordingly whereupon the Authority shall extend such Project Completion Schedule dates in accordance with the recommendations of the Independent Engineer. In the event that the Scheduled Completion Date is extended pursuant hereto, the Concession Period shall be deemed to be extended by a period equal in length to the period of extension of the Scheduled Completion Date. For the avoidance of doubt, it is clarified that such extension of the Project Completion Schedule shall constitute the sole and exclusive remedy available to the Concessionaire under this Clause 13.5.4, and the Authority shall not be liable for any other costs, claims, damages or incidental consequences arising out of or in relation to such suspension or extension.

13.6 Video recording

During the Construction Period, the Concessionaire shall provide to the Authority for every calendar month, a video recording through drone or such other mechanism as may be acceptable to the Authority, capturing the status and progress of Construction Work for that month from an altitude sufficient to capture both ends of the Right of Way and compile the said recording into digital video disc, or such other digital format as may be specified by the Authority. The first such video recording shall be provided to the Authority within 7 (seven) days of the Appointed Date and thereafter, no later than 15 (fifteen) days following the end of each month. Such video recording shall be carried out in accordance with the standard operating procedure or guidelines of the Authority from time to time, and shall also be uploaded by the Concessionaire on the Authority's designated portal/website. The Independent Engineer shall ensure that the features and quality of the video recording conform to the standard operating procedure or guidelines of the Authority and the video is not distorted/tampered with. The Independent Engineer shall also review and analyse each of the said video recordings and incorporate its observations, if any, in the Inspection Report. The Concessionaire shall be responsible for ensuring the accuracy, completeness, and integrity of the video recording. The Authority reserves the right to host such video recordings on its website for public viewing. Notwithstanding anything to the contrary

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contained in this Agreement, in case of any discrepancy in information/data captured through video recording under this Clause 13.6 or location tracking system under Clause 13.1, the information/data captured through video recording under this Clause shall prevail.

13.7 Quality of materials and workmanship

The Concessionaire 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.

13.8 Quality control system

13.8.1 The Concessionaire shall establish a quality control mechanism to ensure compliance with the provisions of this Agreement (the "**Quality Assurance Plan**" or "**QAP**").

13.8.2 "**Quality Assurance Plan**" shall include submission of the following by the Concessionaire to Independent Engineer and Authority:

a. an organization chart of the quality control system, clearly indicating all personnel involved along with their respective duties and responsibilities, the procedures and performas to be adopted for quality control documentation, and the prescribed frequency of inspections;

b. a 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.

13.8.3 The Independent Engineer shall, within 15 (fifteen) days of receipt of the Quality Assurance Plan, convey its approval to the Concessionaire, indicating modifications required, if any. The Concessionaire shall, to the extent necessary for compliance with the provisions of Clause 13.8, incorporate the suggested modifications in the Quality Assurance Plan. The Authority reserves the right to host the Quality Assurance Plan on its website for public viewing.

13.8.4 The Concessionaire 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.

13.8.5 The cost of testing of construction, materials and workmanship under Article 13 shall be borne by the Concessionaire.

13.9 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 construction of the Project, and issue appropriate directions to the Independent Engineer and the Concessionaire to undertake remedial action in the event the Construction Works are not in accordance with the provisions of this Agreement.

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13.10 External technical audit

13.10.1 At any time during the Construction Period, the Authority reserves the right to appoint an external technical auditor to conduct an audit of the quality of the works. The Auditor shall carry out the tests and/ or collect samples for testing in the laboratory in the presence of the representatives of the Concessionaire and the Independent Engineer. The timing, the testing equipment, and the sample size of such 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 Concessionaire and the Independent Engineer for undertaking remedial action in accordance with this Agreement.

13.10.2 Upon completion of the remedial measures by the Concessionaire, the Auditor shall undertake a closure audit and this process shall be repeated till the remedial measures have brought the works in compliance with the Specifications and Standards. The Concessionaire shall provide all assistance as may be required by the auditor for the conduct of its audit hereunder. Notwithstanding anything contained in this Clause 13.10, the external technical audit shall not affect any obligations of the Concessionaire or the Independent Engineer under this Agreement.

13.11 Inspection of construction records

The Authority shall have the right to inspect, at any time, the records, registers, test results, reports, invoices, certifications and all other documentation of the Concessionaire relating to the Construction Works.

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ARTICLE 14

COMPLETION CERTIFICATE

14.1 Tests

14.1.1 At least 30 (thirty) days prior to the likely completion of the Project Highway, the Concessionaire shall notify the Independent Engineer and the Authority of its intent to subject the Project Highway to Tests. The date and time of each of the Tests shall be determined by the Independent Engineer in consultation with the Concessionaire, and notified to the Authority who may designate its representative to witness the Tests. The Concessionaire shall provide such assistance as the Independent Engineer may reasonably require for conducting the Tests. In the event of the Concessionaire and the Independent Engineer failing to mutually agree on the dates for conducting the Tests, the Concessionaire shall fix the dates by providing not less than 10 (ten) days' notice to the Independent Engineer, and the Authority.

14.1.2 All Tests shall be conducted in accordance with Schedule-I duly supported by video recording at the cost and expense of the Concessionaire. The Independent Engineer shall observe, monitor and review the results of the Tests to determine compliance of the Project Highway with Specifications and Standards and if it is reasonably anticipated or determined by the Independent Engineer during the course of any Test that the performance of the Project Highway 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 Concessionaire to remedy and rectify the defects or deficiencies. Upon completion of each Test, the Independent Engineer shall provide to the Concessionaire and the Authority copies of all Test data including detailed Test results. For the avoidance of doubt, it is expressly agreed that the Independent Engineer may require the Concessionaire 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 with Specifications and Standards. The video recording including Test results may be placed on Authority website for public viewing.

14.2 Completion Certificate

Subject to the provisions of Clause 14.5, upon completion of Construction Works and the Independent Engineer determining the Tests to be successful, it shall forthwith issue to the Concessionaire and the Authority a certificate substantially in the form set forth in Schedule-J (the **"Completion Certificate"**).

14.3 Provisional Certificate

14.3.1 Subject to the provisions of Clause 14.3.2 and 14.5, the Independent Engineer may, at the request of the Concessionaire, issue a provisional certificate of completion substantially in the form set forth in Schedule-J (the **"Provisional Certificate"**) if the Tests are successful and the Project Highway can be safely and reliably placed in commercial operation though certain works or things forming part thereof are outstanding and not yet complete. In such a case, the Provisional Certificate shall have appended thereto a list of outstanding items, categorized as (i) those attributable to the Concessionaire, and (ii) those not attributable to the Concessionaire, signed jointly by the Independent Engineer and the Concessionaire (the **"Punch List"**); provided that the Independent Engineer shall not withhold the Provisional Certificate for reason of any work remaining incomplete if the delay in completion thereof is attributable to the Authority; provided further that the Punch List shall also include the cost of completion for each of the outstanding items in accordance with the Clause 16.6.1.

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14.3.2 The Parties hereto expressly agree that a Provisional Certificate under this Clause 14.3 may, upon request of the Concessionaire to this effect, be issued for operating part of the Project Highway, if the Concessionaire has completed construction of 100% (hundred per cent) of the Site made available to the Concessionaire up to 240 days from the Appointed Date, except any pending Punch List items. Upon issue of such Provisional Certificate, the provisions of Article 15 shall apply to such completed part, and the rights and obligations of the Concessionaire for and in respect of such completed part of the Project shall be construed accordingly.

14.4 Completion of Punch List items

14.4.1 All items in the Punch List shall be completed by the Concessionaire within 90 (ninety) days of the date of issue of the Provisional Certificate and for any delay thereafter, other than for reasons solely attributable to the Authority or due to Force Majeure, the Authority shall be entitled to recover Damages from the Concessionaire to be calculated and paid for each day of delay until all items are completed, at the lower of (a) 0.1% (zero point one per cent) of the Performance Security, and (b) 0.2% (zero point two per cent) of the cost of completing such items as estimated by the Independent Engineer. Subject to payment of such Damages, the Concessionaire shall be entitled to a further period not exceeding 120 (one hundred and twenty) days for completion of the Punch List items.

If completion of these items is delayed beyond an aggregate of 210 days, the Authority would be entitled to withhold from Annuity Payment, twice the cost of completing such items. For the avoidance of doubt, it is agreed that if completion of any item is delayed for reasons solely attributable to the Authority or due to Force Majeure, the completion date thereof shall be determined by the Independent Engineer in accordance with Good Industry Practice, and such completion date shall be deemed to be the date of issue of the Provisional Certificate for the purposes of Damages, if any, payable for such item under this Clause 14.4.1. Any amount withheld shall be released on completion of the items in the Punch List and issue of the Completion Certificate.

14.4.2 Upon completion of all Punch List items, the Independent Engineer shall issue the Completion Certificate. Failure of the Concessionaire to complete any of the Punch List items within the time set forth in Clause 14.4.1 except due to, Force Majeure Event or for reasons solely attributable to the Authority, the Authority shall have the discretion to get the Punch List items completed at the risk and cost of the Concessionaire, and to recover its cost from the Annuity payable to the Concessionaire. In addition to recovery of the aforesaid cost, a sum equal to 20% (twenty per cent) of such cost shall be recovered by the Authority from the Annuity payable as Damages. For the avoidance of doubt, the right of the Authority under this Clause 14.4.2 shall be without prejudice to its rights and remedies provided under Clause 14.4.1.

14.5 Withholding of Provisional or Completion Certificate

14.5.1 (a) If the Independent Engineer determines, that the Project Highway or any part thereof does not conform to the provisions of this Agreement and cannot be safely and reliably placed in commercial operation, it shall within 15 (fifteen) days of conducting Tests, notify the Authority and the Concessionaire of the defects and deficiencies in the Project Highway. Upon receipt of such notice, the Concessionaire shall promptly remedy and rectify the defects or deficiencies and thereupon Tests shall be undertaken in accordance with this Article 14. Such procedure shall be repeated as necessary until the defects or deficiencies are rectified.

(b) If the Independent Engineer determines that the Tests are successful, and the Project Highway can be safely and reliably placed in commercial operation, it shall notify the same to the Authority and the Concessionaire within 15 (fifteen) days of conducting the Tests.

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Upon receipt of such a notice, and after conducting its own inspection, if the Authority is of the opinion that the Project Highway is not fit or safe for commercial operation, it shall, within 21 (twenty-one) days of receiving such notice, notify the Independent Engineer and the Concessionaire of the defects and deficiencies in the Project Highway. Upon receipt of such notice, the Independent Engineer shall, within 7 (seven) days of receiving of notice of the Authority, either issue or withhold issuance of the Provisional Certificate or Completion Certificate, as the case may be. If the Independent Engineer decides to withhold issuance of the Provisional Certificate or Completion Certificate, as the case may be, it shall notify the Authority and the Concessionaire of the defects and deficiencies in the Project Highway. Upon receipt of such notice, the Concessionaire shall promptly remedy and rectify such defects or deficiencies and thereupon Tests shall be undertaken in accordance with this Article 14. Such procedure shall be repeated as necessary until the defects or deficiencies are rectified.

14.5.2 Notwithstanding anything to the contrary contained in Clause 14.5.1, the Authority may, at any time after receiving a report from the Independent Engineer under that Clause, direct the Independent Engineer to issue a Provisional Certificate or Completion Certificate under Clause 14.3 or 14.2 respectively, as the case may be and such direction shall be complied forthwith.

14.6 Rescheduling of Tests

If the Independent Engineer certifies to the Authority and the Concessionaire that it is unable to issue the Completion Certificate or Provisional 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 Concessionaire shall be entitled to re-schedule the Tests and hold the same as soon as reasonably practicable.

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ARTICLE 15

ENTRY INTO COMMERCIAL SERVICE

15.1 Commercial Operation Date (COD)

The Construction Period of Project shall be deemed to be complete when the Completion Certificate or the Provisional Certificate, as the case may be, is issued under the provisions of Article 14, and accordingly the commercial operation date of the Project shall be the date on which such Completion Certificate or the Provisional Certificate is issued, whichever is earlier (the **"COD"**). The Project Highway shall enter into commercial service on COD whereupon the Concessionaire shall be entitled to demand and collect Annuity Payments in accordance with the provisions of this Agreement.

15.2 Damages for delay

Subject to the provisions of Clause 12.4, if COD does not occur prior to the 91st (ninety first) day after the Scheduled Completion Date, unless the delay is on account of reasons solely attributable to the Authority or due to Force Majeure, the Concessionaire shall pay Damages to the Authority in a sum calculated as follow:

i. at the rate of 0.1% (zero point one per cent) of the amount of Performance Security for delay of each day until 180 (one hundred eighty) days after the Scheduled Completion Date; and.

ii. at the rate of 0.2% (zero point two per cent) of the amount of Performance Security of each day beyond 180 days i.e., 181st days until COD is achieved. Upon failure of the Concessionaire to pay the said Damages, the same shall be recovered from the Escrow as Damages.

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ARTICLE 16

CHANGE OF SCOPE

16.1 Change of Scope

16.1.1 The Authority may, notwithstanding anything to the contrary contained in this Agreement, require the provision of additional works and services which are not included in the Scope of the Project as contemplated by this Agreement or to make modifications/ alterations in the Scope of the Project (the **"Change of Scope"**). Any such Change of Scope shall be made in accordance with the provisions of this Article 16 and the costs thereof shall be expended by the Concessionaire and reimbursed to it by the Authority in accordance with Clause 16.3.

16.1.2 If the Concessionaire determines at any time that a Change of Scope is necessary for providing safer and improved services to the Users, it shall by notice in writing require the Authority to consider such Change of Scope. The Authority shall, within 60 (sixty) days of receipt of such notice, either accept such Change of Scope with modifications, if any, and initiate proceedings therefor in accordance with this Article 16 or inform the Concessionaire in writing of its reasons for not accepting such Change of Scope.

16.1.3 Any works or services which are provided under and in accordance with this Article 16 shall form part of the Project Highway and the provisions of this Agreement shall apply mutatis mutandis to such works or services.

16.2 Procedure for Change of Scope

16.2.1 In the event of the Authority determining that a Change of Scope is necessary, it shall issue to the Concessionaire a notice specifying in reasonable detail the works and services contemplated thereunder (the **"Change of Scope Notice"**).

16.2.2 Upon receipt of a Change of Scope Notice, the Concessionaire shall, with due diligence, provide to the Authority and also to Independent Engineer such information as is necessary, together with detailed proposal in support of:

(a) the impact, if any, that 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; and

iii. proposed modifications, if any, to the Scheduled Completion Date of the Project Highway.

(c) The Parties agree that the cost and time for implementation of the proposed Change of Scope shall be determined as follows: -

(i) for items of work for which rates are specifically provided in Schedule B, such rates shall be used for determining the costs. These rates shall be adjusted to reflect variation in Price Index, determined with reference to the Price Index applicable on the first day of the relevant Accounting Year of the Change of Scope Order, and the Price Index prevailing on the Bid Due Date;

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(ii) for items of work not covered under Clause 16.2.2(c)(i) and where the schedule of rates of the relevant circle of the State Public Works Department (NH) prevailing as on the date of the Change of Scope Order is available, such rates shall be adopted for determining the cost. In the event the schedule of rates prevailing as on the date of the Change of Scope Order is not available, the applicable rates from the latest available schedule shall be adjusted using the Price Index applicable on the first day of the relevant Accounting Year of the Change of Scope Order.

For items of work not covered under the above-mentioned schedule of rates, the cost shall be determined based on the MORTH Standard Data Book. In the event that the MORTH Standard Data Book does not contain the necessary specifications for any particular item, the Independent Engineer shall determine the cost based on the prevailing market rates in accordance with Good Industry Practice.

(iii) in the event of alteration/modification in the Scope of the Project, the cost of existing items of work, that are being altered or modified, shall also be determined in accordance with the provisions of this Clause 16.2.2(c), and the cost of such Change of Scope shall be determined after reducing the cost of the existing items of work that are being altered/modified;

(iv) design charges shall be determined at the rate of 1% (one percent) of the cost of the Change of Scope. For the avoidance of doubt, it is clarified that in the event of alteration/modification in the Scope of the Project, design charges shall be determined at the rate of 1% (one percent) of the cost of the Change of Scope without reducing the cost of the existing works being altered/modified;

(v) the reasonable time for completion of works under the Change of Scope shall be determined by the Independent Engineer in accordance with Good Industry Practice; and

(vi) in the event of a Change of Scope, the Authority shall make payment to the Concessionaire for the O&M Expenses attributable to such Change of Scope at a rate of 0.70% (zero point seven per cent) per annum of the cost of the Change of Scope. Such O&M Expenses shall be subject to adjustment to reflect variation in the Price Index, determined with reference to the Price Index applicable on the first day of the relevant Accounting Year for which the O&M Expenses are payable and the Price Index prevailing on the date of issuance of the Change of Scope Order.

16.2.3 Upon receipt of information set forth in Clause 16.2.2, if the Authority decides to proceed with the Change of Scope, it shall convey its preferred option to the Concessionaire, and the Parties shall, with assistance of the Independent Engineer, thereupon make efforts in good faith to agree upon the time and costs for implementation thereof. Upon reaching an agreement, the Authority shall issue an order **(**the **"Change of Scope Order"**) requiring the Concessionaire to proceed with the performance thereof. In the event that the Parties are unable to agree, the Authority may, by issuing a Change of Scope Order, require the Concessionaire to proceed with the performance thereof pending resolution of the Dispute, or carry out the works in accordance with Clause 16.5. The Concessionaire shall not suspend or delay the execution of such works on account of such disagreement.

16.2.4 The provisions of this Agreement, insofar as they relate to Construction Works and Tests, shall apply mutatis mutandis to the works undertaken by the Concessionaire under this Article 16.

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16.3 Payment for Change of Scope

Within 30 (thirty) days of issuing a Change of Scope Order, the Authority shall make an advance payment to the Concessionaire in a sum equal to 10% (ten per cent) of the cost of Change of Scope as agreed hereunder, and in the event of a Dispute, 10% (ten per cent) of the cost assessed by the Independent Engineer. The Concessionaire shall, after commencement of work, including the O&M works attributable to the Change of Scope present to the Authority bills for payment on monthly basis in respect of the works in progress on reaching of a stage, if any, specified in the Change of Scope Order, or for completed works, as the case may be, supported by such Documentation as is reasonably sufficient for the Authority to determine the accuracy thereof. Within 30 (thirty) days of receipt of such bills, the Authority shall disburse to the Concessionaire such amounts as are certified by the Independent Engineer as reasonable and after making a proportionate deduction for the advance payment made hereunder, and in the event of any Dispute, final adjustments thereto shall be made under and in accordance with the Dispute Resolution Procedure.

16.4 Restrictions on certain works

16.4.1 Notwithstanding anything to the contrary contained in this Article 16, but subject to the provisions of Clause 16.4.2, the Authority shall not require the Concessionaire to undertake any works or services if such works or services are likely to delay completion of the Project by the Scheduled Completion Date; provided that in the event, the Authority considers such works or services to be essential, it may issue a Change of Scope Order, subject to the condition that the works forming part of or affected by such Change of Scope Order shall not be reckoned for purposes of determining completion of the Project and issuing the Provisional Certificate, without relieving the Concessionaire of its obligation to execute such works within the time determined by the Independent Engineer.

16.4.2 Notwithstanding anything to the contrary contained in this Article 16, the Concessionaire shall be entitled to deny any Change of Scope Order if it causes the cumulative costs relating to all the Change of Scope Orders to exceed 10% (ten per cent) of the Bid Project Cost in any continuous period of 3 (three) years immediately preceding the date of such Change of Scope Order or if such cumulative costs exceed 20% (twenty per cent) of the Bid Project Cost at any time during the Concession Period.

16.5 Power of the Authority to undertake works

16.5.1 Notwithstanding anything to the contrary contained in Clauses 16.1.1 and 16.3, the Authority may, after giving notice to the Concessionaire and considering its reply thereto, and recommendation of Independent Engineer (IE) thereon, award any works or services, contemplated under Clause 16.1.1, to any person as determined by the Authority. It is also agreed that the Concessionaire shall provide access, assistance and cooperation to the person who undertakes the works or services hereunder.

16.5.2 The works undertaken in accordance with this Clause 16.5 shall conform to the Specifications and Standards and shall be carried out in a manner that minimizes disruption in operation of the Project Highway. The provisions of this Agreement, insofar as they relate to Construction Works and Tests, shall apply *mutatis mutandis* to the works carried out under this Clause 16.5.

16.6 Reduction in Scope of the Project

16.6.1 If the Concessionaire shall have failed to complete any Construction Works on account of Force Majeure or for reasons attributable to the Authority or under the provision of Clause 10.3.4 of this Agreement, the Authority shall follow the following process for calculation of total cost of reduced scope

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I. Upon direction by the Authority, the Independent Engineer shall assess the civil cost of the reduced scope, as per the schedule of rates applicable on the Bid Due Date.

II. The civil cost of the reduced scope shall be multiplied by the 0.99[9] to arrive at the estimated cost of reduced scope.

On or before a Payment Milestone immediately succeeding the date of finalization of such reduction in scope, the Bid Project Cost shall be reduced by the total cost of reduced scope and all payments made or to be made to the Concessionaire shall be suitably adjusted and recoveries, if any, shall be made from the payment to be released on that Payment Milestone immediately succeeding the date of finalization of reduction in scope.

It is agreed that upon the reduction of scope and revision of Bid Project Cost, all references to Bid Project Cost would mean the revised Bid Project Cost and all the payments would be calculated as per the revised Bid Project Cost. For the avoidance of doubt and by way of illustration, if (a) The Quoted Bid Price is INR 1000.00 Cr (Rupees one thousand crore); (b) the civil cost of the reduced scope, as per the schedule of rates applicable on the Bid Due Date is INR 100.00 Cr (Rupees one hundred crore; and (c) the multiplying factor of Estimated Project Cost to Bid Project Cost is 0.99, then the total cost of reduced scope shall be INR 99.00 Cr (Rupees Ninety-Nine Crore); and revised Bid Project Cost shall be INR 901.00 Cr (Nine Hundred and One crore).

16.6.2 For determining the obligations of the Concessionaire under this Clause 16.6, the provisions of Clauses 16.1, 16.2 and 16.4 shall apply *mutatis mutandis*.

16.7 Effect of Change in Scope on the O&M Costs

Pursuant to the provisions if this Article 16, if the Change in Scope leads to a reduction or increase in the length of the Project Highway, the O&M Payments as provided in Clause 23.7 shall be reduced or increased in proportion to the reduction or increase in the length of the Project Highway.

[9] 0.9*1.1 = 0.99

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ARTICLE 17

OPERATION AND MAINTENANCE

17.1 O&M obligations of the Concessionaire

17.1.1 During the Operation Period, the Concessionaire shall operate and maintain the Project Highway in accordance with this Agreement either by itself, or through the O&M Contractor and if required, modify, repair or otherwise make improvements to the Project Highway to comply with the provisions of this Agreement, Applicable Laws and Applicable Permits, and conform to Specifications and Standards and Good Industry Practice. The obligations of the Concessionaire hereunder shall include:

(a) permitting safe, smooth and uninterrupted use of the Project Highway during normal operating conditions;

(b) minimizing disruption in the event of accidents or other incidents affecting the safety and use of the Project Highway by providing a rapid and effective response and maintaining liaison with emergency services of the State;

(c) carrying out periodic preventive maintenance of the Project Highway;

(d) undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;

(e) undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;

(f) preventing, with the assistance of concerned law enforcement agencies, any unauthorized use of the Project Highway;

(g) preventing, with the assistance of the concerned law enforcement agencies, any encroachments on the Project;

(h) protection of the environment and provision of equipment and materials thereof;

(i) operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway;

(j) maintaining a public relations unit to interface with and attend to suggestions from the Users, government agencies, media and other agencies; and

(k) complying with Safety Requirements in accordance with Article 18.

17.1.2 The Concessionaire shall remove promptly from the Project Highway all surplus construction machinery and materials, waste materials (including hazardous materials and waste water), rubbish and other debris (including, accident debris) and keep the Project Highway in a clean, tidy and orderly condition, and in conformity with Applicable Laws, Applicable Permits and Good Industry Practice. [For the avoidance of doubt, it is agreed that the debris and material excavated shall be carried to and the location identified by the Independent Engineer and / or the Authority].

17.1.3 The Concessionaire shall maintain, in conformity with Good Industry Practice, all stretches of approach road, over-passes, under-passes or other structures situated on the Site but not forming part of the carriageway.

17.1.4 During the Operation Period, the Concessionaire shall provide to the Authority, for each quarter, a video recording through drone or such other mechanism as may be acceptable to

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the Authority, capturing the status of O&M of the Project Highway for that quarter from an altitude sufficient to capture both ends of the Right of Way and compile the said recording into a compact disc or digital video disc, as the case may be. The first such video recording shall be provided to the Authority within 15 (fifteen) days of the close of first quarter of the Operation Period and thereafter, no later than 15 (fifteen) days following the end of each quarter. Such video recording shall be carried out in accordance with the standard operating procedure or guidelines issued by the Authority from time to time, and shall also be uploaded by the Concessionaire on the Authority's designated portal/website. The Independent Engineer shall ensure that the features and quality of the video recording conforms to the standard operating procedure or guidelines and the video is not distorted/tampered with. The Independent Engineer shall also review and analyse each of the said video recordings and incorporate its observations, if any, in the O&M Inspection Report. The Concessionaire shall be responsible for ensuring the accuracy, completeness and integrity of the video recording. The Authority reserves the right to host such video recordings on its website for public viewing.

17.2 Maintenance Requirements

The Concessionaire shall procure that at all times during the Operation Period; the Project Highway conforms to the maintenance requirements set forth in Schedule-K (the **"Maintenance Requirements"**). In the event of any extraordinary occurrence or special event (including, religious gatherings, political events, or other similar events) that may cause a surge in traffic on the Project Highway, the Authority, police department, or State may issue directions, save and except any directions with regard to the collection of Fee, to the Concessionaire for the management of traffic. The Concessionaire shall promptly comply with such directions, and shall cooperate and coordinate to ensure the safe and efficient management of traffic.

17.3 Maintenance Manual

17.3.1 No later than 180 (one hundred and eighty) days prior to the Scheduled [Four***-Laning] Date, the Concessionaire shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "Maintenance Manual") for the regular and preventive maintenance of the Project Highway in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Concessionaire shall also upload the Maintenance Manual on the Authority's designated portal/website and ensure that it is readily accessible to the public. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause 17.3 shall apply, *mutatis mutandis*, to such revision.

17.3.2 Without prejudice to the provision of Clause 17.3.1, the Maintenance Manual shall, in particular, include provisions for maintenance of Project Assets and shall provide for life cycle maintenance, routine maintenance and reactive maintenance which may be reasonably necessary for maintenance and repair of the Project Assets, including replacement thereof, such that their overall condition conforms to Good Industry Practice.

17.3.3 The Concessionaire shall publish the scheduled dates for major or periodic maintenance on the Authority's designated portal/website at least 3 (three) days prior to the date on which such maintenance is scheduled and ensure that such information shall be updated regularly.

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17.4 Maintenance Program

17.4.1 On or before COD and no later than 45 (forty-five) days prior to the beginning of each Accounting Year during the Operation Period, as the case may be, the Concessionaire shall provide to the Authority and the Independent Engineer, its proposed annual program of preventive, urgent and other scheduled maintenance (the **"Maintenance Program"**) to comply with the Maintenance Requirements, Maintenance Manual and Safety Requirements. Such Maintenance Program shall include:

(a) preventive maintenance schedule;

(b) arrangements and procedures for carrying out urgent repairs;

(c) criteria to be adopted for deciding maintenance needs;

(d) intervals and procedures for carrying out inspection of all elements of the Project Highway;

(e) intervals at which the Concessionaire shall carry out periodic maintenance;

(f) arrangements and procedures for carrying out safety related measures; and

(g) intervals for major maintenance works and the scope thereof.

17.4.2 Within 15 (fifteen) days of receipt of the Maintenance Program, the Independent Engineer shall review the same and convey its comments to the Concessionaire with particular reference to its conformity with the Maintenance Requirements, Maintenance Manual and Safety Requirements.

17.4.3 The Concessionaire may modify the Maintenance Program as may be reasonable in the circumstances, and the procedure specified in Clauses 17.4.1 and 17.4.2 shall apply *mutatis mutandis* to such modifications.

17.5 Safety, vehicle breakdowns and accidents

17.5.1 The Concessionaire 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 including the setting up of temporary traffic cones and lights, and 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.

17.5.2 The Concessionaire's responsibility for rescue operations on the Project Highway shall be limited to an initial response to any particular incident until such time that the competent authority takes charge and shall include prompt removal of vehicles or debris or any other obstruction, which may endanger or interrupt the smooth flow of traffic. [For this purpose, it shall maintain and operate a round-the-clock vehicle rescue post with one mobile crane having the capacity to lift a truck with a Gross Vehicle Weight of 30,000 (thirty thousand) kilograms and one additional mobile crane having the capacity to lift a truck with a Gross Vehicle Weight of 15,000 (fifteen thousand) kilograms].

17.5.3 In the event of any accident involving a motor vehicle occurring on the Project Highway, the Concessionaire shall, through a qualified safety auditor with experience in crash investigation, undertake an in-depth study on the causes and analysis of the accident as intended under Section 135 of The Motor Vehicle Act, 1988. The Concessionaire shall provide such analysis to the Authority within a period of 15 (fifteen) days from the date of

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such accident and such analysis shall be hosted on the Authority's designated portal/website for public viewing. The Concessionaire shall undertake prompt remedial action to prevent recurrence of accidents including improvement in road design, installing safety features and other traffic management measures. Notwithstanding anything contrary contained in this Agreement, the analysis and the remedial action undertaken by the Concessionaire pursuant to this Clause 17.5.3 shall not be considered a Change of Scope and shall be deemed to be part of the Concessionaire's obligations under this Agreement.

17.5.4 (i) In the event another (i.e., second) accident occurs within one year of the previous accident or the date of completion of the remedial action based on the crash investigation taken by the Concessionaire as reported by the Independent Engineer, whichever is later, and is within a distance of 500 (five hundred) metres of the location of the first accident resulting in a fatality or grievous injury of the Project Highway, and it is indicated in the crash investigation conducted in accordance with Clause 17.5.3 that such accident was caused by any defect or deficiency in the Project, the Concessionaire shall be liable to pay [Rs. 25 lakh (Rupees twenty-five lakh)] for each fatality in such accident and [Rs. 10 lakh (Rupees ten lakh)] for each grievous injury in such accident to the Authority, subject to adjustment as provided in the Clause 17.5.4 (iii) below.

(ii) In the event third or subsequent accident occurs within one year of the second accident as specified hereinabove and the third or subsequent accident has occurred within a 500 (five hundred) metre stretch involving both earlier accidents and such accident results in a fatality or grievous injury, and it is indicated in the Crash Investigation conducted in accordance with Clause 17.5.3 that such accident was caused by any defect or deficiency in the Project, the Concessionaire shall be liable to pay [Rs. 50 lakh (Rupees fifty lakh)] for each fatality in such accident and [Rs. 25 lakh (Rupees twenty-five lakh)] for each grievous injury in such accident to the Authority, subject to adjustment as provided in the Clause 17.5.4 (iii) below.

(iii) The amount payable under Clauses 17.5.4 (i) to 17.5.4 (ii) shall be adjusted in accordance with the Price Index from the Bid Due Date to the first day of the current month of the relevant Accounting Year in which the amount is determined.

(iv) The liabilities set forth above shall be without prejudice to any other rights or remedies available to the Authority under this Agreement or under Applicable Laws.

17.5.5 The Concessionaire shall, (i) identify and coordinate with service station providers located in proximity to the Project Highway, for the purpose of offering assistance to Users in the event of vehicle breakdowns; (ii) publish the details of the service stations, including their locations, services offered, service charges payable by the Users and contact information, on the Authority's designated portal/ website and at conspicuous locations along the Project Highway.

17.6 De-commissioning due to Emergency

17.6.1 If, in the reasonable opinion of the Concessionaire, there exists an Emergency which warrants de-commissioning and closure to traffic of the whole or any part of the Project Highway, the Concessionaire shall be entitled to de-commission and close the whole or any part of the Project Highway to traffic for so long as such Emergency and the consequences thereof warrant; provided that such de-commissioning and particulars thereof shall be notified by the Concessionaire to the Authority without any delay, and the Concessionaire shall diligently carry out and abide by any reasonable directions that the Authority may give for dealing with such Emergency.

17.6.2 The Concessionaire shall re-commission the Project Highway or the affected part thereof as quickly as practicable after the circumstances leading to its de-commissioning and

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closure have ceased to exist or have so abated as to enable the Concessionaire to re-commission the Project Highway and shall notify the Authority of the same without any delay.

17.6.3 Any decommissioning or closure of any part of the Project Highway and the re-commissioning thereof shall, as soon as practicable, be brought to the notice of affected persons by means of public announcements/notice.

17.7 Lane closure

17.7.1 The Concessionaire shall not close any lane of the Project Highway for undertaking maintenance or repair works except with the prior written approval of the Independent Engineer. Such approval shall be sought by the Concessionaire through a written request to be made to the Independent Engineer, and a copy thereof furnished to the Authority, at least 7 (seven) days before the proposed closure of such lane and shall be accompanied by particulars thereof. Within 3 (three) days of receiving such request, the Independent Engineer shall grant permission with such modifications as it may deem necessary and a copy of such permission shall be sent to the Authority and the local police. Upon obtaining permission, the Concessionaire shall at its own cost comply with the measures for management of traffic as directed by the Authority and/or the local police, if any, and shall also publish the details of scheduled lane closure on Authority's designated portal/website and update the status thereof on regular basis.

17.7.2 The provisions of Clause 17.7.1 shall not apply to de-commissioning under Clause 17.6.1 or to closure of any lane for a period not exceeding 2 (two) hours in a day at any time of the day and 6 (six) hours in a day at a time specified by the Independent Engineer as off-peak hours when the flow of traffic is comparatively lower.

17.7.3 Upon receiving the permission pursuant to Clause 17.7.1, the Concessionaire shall be entitled to close the designated lane for the period specified therein, and in the event of any delay in re-opening such lane, the Concessionaire shall pay Damages to the Authority calculated at the rate of 0.5 % (zero point Five per cent) of the Performance Security, for each day of delay until that lane has been re-opened for traffic.

17.8 Damages for breach of maintenance obligations

17.8.1 In the event that the Concessionaire fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of this Agreement and the Authority shall be entitled to recover Damages, to be calculated and paid for each day of delay for all defects until the breach is cured, at the rate of 10% (ten percent) of the cost of such repair or rectification as estimated by the Independent Engineer. Recovery of such Damages shall be without prejudice to the rights of the Authority under this Agreement, including the right of Termination thereof.17.8.2. The Damages set forth in Clause 17.8.1 may be assessed and specified forthwith by the Independent Engineer; provided that the Authority may, in its discretion, demand a smaller sum as Damages, if in its opinion, the breach has been cured promptly and the Concessionaire is otherwise in compliance with its obligations hereunder. The Concessionaire shall pay such Damages forthwith.

17.9 Authority's right to take remedial measures

17.9.1 In the event the Concessionaire 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 Program, as the case may be, and fails to commence remedial works within 15 (fifteen) days of receipt of the O&M Inspection Report or a notice in this behalf from the Authority or the Independent Engineer, as the case may be, the Authority shall, without prejudice to its rights under this Agreement including Termination thereof, be entitled to

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undertake such remedial measures at the risk and cost of the Concessionaire, and to recover its cost from the Concessionaire. In addition to recovery of the aforesaid cost, a sum equal to 20% (twenty per cent) of such cost shall be recovered by the Authority from the Concessionaire as Damages. For the avoidance of doubt, the right of the Authority under this Clause 17.9.1 shall be without prejudice to its rights and remedies provided under Clause 17.8.

17.9.2 The Authority shall have the right, which the Concessionaire hereby expressly grants, to recover the costs and Damages specified in Clause 17.9.1 directly from the Escrow Account as if such costs and Damages were project expenditure and for that purpose, the Concessionaire hereby agrees to give irrevocable instructions to the Escrow Bank to make payment from the Escrow Account in accordance with the instructions of the Authority under this Clause 17.9.2 and debit the same to O&M Expenses under the Clause 4.1.1 (d) and 4.2 (d) of the Escrow Agreement.

17.10 Overriding powers of the Authority

17.10.1 If in the reasonable opinion of the Authority, the Concessionaire is in material breach of its obligations under this Agreement and, in particular, the construction and Maintenance Requirements, and such breach is causing or likely to cause material hardship or danger to the Users, the Authority may, without prejudice to any of its rights under this Agreement including Termination thereof, by notice require the Concessionaire to take reasonable measures immediately for rectifying or removing such hardship or danger, as the case may be.

17.10.2 In the event that the Concessionaire, upon notice under Clause 17.10.1, fails to rectify or remove any hardship or danger within a reasonable period, the Authority may exercise overriding powers under this Clause and take over the performance of any or all the obligations of the Concessionaire 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 deemed to be O&M expenses, and the Authority shall be entitled to recover them from the Concessionaire in accordance with the provisions of Clause 17.9 along with the Damages specified therein.

17.10.3 In the event of a national emergency, civil commotion or any other act specified in Clause 34.3, the Authority may take over the performance of any or all the obligations of the Concessionaire to the extent deemed necessary by it and exercise such control over the Project Highway or give such directions to the Concessionaire 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 34. It is also agreed that the Concessionaire shall comply with such instructions as the Authority may issue in pursuance of the provisions of this Clause 17.10, and shall provide assistance and cooperation to the Authority, on a best effort basis, for performance of its obligations hereunder.

17.11 Restoration of loss or damage to the 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 Concession Period from any cause whatsoever, the Concessionaire 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.

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17.12 Modifications to the Project Highway

The Concessionaire shall not carry out any material modifications to the Project Highway, save and except where such modifications are necessary for the Project Highway to operate in conformity with the Specifications and Standards, Maintenance Requirements, Good Industry Practice and Applicable Laws; provided that the Concessionaire shall notify the Independent Engineer of the proposed modifications along with particulars thereof at least 15 (fifteen) days before commencing work on such modifications and shall reasonably consider any suggestions that the Independent Engineer may make within 15 (fifteen) days of receiving the Concessionaire's proposal. For the avoidance of doubt, all modifications made hereunder shall comply with the Safety Requirements, Specifications and Standards, Applicable Laws and the provisions of this Agreement.

17.13 Excuse from performance of obligations

The Concessionaire shall not be considered in breach of its obligations under this Agreement if any part of the Project Highway is not available to traffic on account of any of the following for the duration thereof:

(a) an event of Force Majeure;

(b) measures taken to ensure the safe use of the Project Highway except when unsafe conditions occurred because of failure of the Concessionaire to perform its obligations under this Agreement; or

(c) compliance with a request from the Authority or the directions of any Government Instrumentality, the effect of which is to close all or any part of the Project Highway:

Provided that the Concessionaire shall be considered to be in breach of its obligations if such request or directions has been issued due to default of the Concessionaire.

Provided that any such non-availability of the Project Highway and particulars thereof, including the cause, extent, location and expected duration of such non-availability, shall be notified by the Concessionaire to the Authority and the Independent Engineer without any delay.

Provided further that the Concessionaire shall keep all unaffected parts of the Project Highway open to traffic, provided they can be operated safely.

17.14 Deleted.

17.15 Advertising on the Site

The Concessionaire shall not undertake or permit any form of commercial advertising, display or hoarding at any place on the Site; provided that this restriction shall not apply to the Toll Plaza[s], rest areas, bus shelters and telephone booths located on the Project Highway if the advertising thereon does not, in the opinion of the Authority, distract the Users or violates extant guidelines of MoRT&H. All advertising on the Project Highway shall also conform to Good Industry Practice. For the avoidance of doubt, it is agreed that the rights of the Concessionaire hereunder shall be subject to Applicable Laws, as in force and effect from time to time, and no compensation shall be claimed on account thereof. The Authority reserves the right to direct the removal of any advertisement that (i) is obscene, indecent, or offensive; (ii) compromises or is likely to compromise national security or public order; (iii) promotes or perpetuates discrimination based on caste, colour, religion, race, gender, disability or any other protected characteristic; (iv) violates any applicable laws or regulations or guidelines; or (v) is against public interest. Upon receipt of such direction, the Concessionaire shall promptly, at its own cost, remove the offending advertisement.

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ARTICLE 18

SAFETY REQUIREMENTS

18.1 Safety Requirements

18.1.1 The Concessionaire shall comply with the provisions of this Agreement, Applicable Laws and Applicable Permits and conform to Good Industry Practice for securing the safety of the Users. In particular, the Concessionaire shall develop, implement and administer a surveillance and safety program for providing a safe environment on or about the Project Highway, and shall comply with the Safety Requirements set forth in Schedule-L (the **"Safety Requirements"**).

18.1.2 The Authority shall appoint an experienced and qualified firm or organization (the **"Safety Consultant"**) for carrying out safety audit of the Project Highway in accordance with the Safety Requirements, and shall take all other actions necessary for securing compliance with the Safety Requirements. For the avoidance of doubt, the payment to the Safety Consultant shall be borne by the Authority.

18.2 Expenditure on Safety Requirements

All costs and expenses arising out of or relating to Safety Requirements shall be borne by the Concessionaire to the extent such costs and expenses form part of the works and services included in the Scope of the Project, and works and services, if any, not forming part of the Scope of the Project shall be undertaken and funded in accordance with the provisions of Article 16.

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ARTICLE 19

MONITORING OF OPERATION AND MAINTENANCE

19.1 Monthly status reports

19.1.1 During Operation Period, the Concessionaire shall, no later than 7 (seven) days after the close of each month, furnish to the Authority and the Independent Engineer, and upload on the Authority's designated portal/website a monthly report stating in reasonable detail the condition of the Project Highway including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Independent Engineer . In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification and measures taken for rectification thereof.

19.1.2 During Operation Period, the Concessionaire shall, no later than 10 (ten) days after the close of each month, furnish and upload on the Authority's designated portal/website a monthly management report in such format as may be specified by the Authority and/or the Independent Engineer from time to time which shall include a summary of:

(a) key performance indicators achieved in the month, along with an analysis of reasons for failures, if any, and proposals to remedy the same;

(b) key operational hurdles and deliverables in the succeeding month along with strategies for addressing the same and for otherwise improving the Project Highway's operational performance; and

(c) key financial parameters for the month, as benchmarked against the monthly budget and the reasons for shortfall, if any, and proposals to remedy the same.

19.2 Inspection

The Independent Engineer shall inspect every kilometer of the Project Highway at least once a month. It shall make a report of such inspection (the **"O&M Inspection Report"**) stating in reasonable detail the defects or deficiencies, if any, with particular reference to the Maintenance Requirements, Maintenance Manual, the Maintenance Program, encroachments, unauthorized entry and exists, unauthorized medium cuts and other Safety Requirements, and send a copy thereof to the Authority and the Concessionaire within 7 (seven) days of such inspection along with a video recording of such inspection captured through drone or such other mechanism as may be acceptable to the Authority. The Independent Engineer shall also upload such video recording on the Authority's designated portal/website promptly. The Authority on a written request from the Lenders' Representative shall be obliged to provide a copy of such O&M Inspection Report.

19.3 Tests

19.3.1 For determining that the Project Highway conforms to the Maintenance Requirements, the Independent Engineer shall require the Concessionaire to carry out, or cause to be carried out, tests specified by it in accordance with Good Industry Practice. The Concessionaire shall, with due diligence, carry out or cause to be carried out all such tests, at its own cost, in accordance with the instructions of the Independent Engineer and furnish the results of such tests forthwith to the Independent Engineer and the Authority. Provided, however, that the Authority reserves the right to require certain tests to be undertaken by an independent agency, at its own cost, for the purpose of authenticating the results of the tests carried out or caused to be carried out by the Concessionaire; and in the event of any

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discrepancy, the results obtained from such independent agency shall be final and binding on the Parties.

19.3.2 The Concessionaire shall be responsible for carrying out the pavement condition assessment of the Project Highway through a **Network Survey Vehicle (NSV)** in accordance with the provisions of **IRC: SP: 108-2015** and such other guidelines, circulars, or directions as may be issued or amended by the Ministry of Road Transport and Highways (MoRTH) and/or the Authority from time to time.

19.3.3 The Concessionaire shall carry out such NSV-based pavement condition surveys, **at intervals not exceeding six (6) months** during the operation and maintenance period or as otherwise directed by the Authority or the Independent Engineer, for the purpose of evaluating the following pavement performance parameters:

(a) pavement roughness (International Roughness Index – IRI);

(b) surface distress including cracking, potholes, ravelling, and patching;

(c) rut depth and surface texture; and

(d) road geometry including cross-fall, gradient, curvature, and carriageway width.

19.3.4 The data collected from the NSV survey shall be geo-referenced and submitted by the Concessionaire to the Authority and the Independent Engineer in both raw and processed formats, including digital video logs, GIS-based maps, and analytical summaries indicating the condition indices for each homogeneous section of the Project Highway.

19.3.5 The results of the NSV assessment shall be utilized for:

(a) monitoring the performance of the pavement;

(b) determining the periodic and routine maintenance requirements; and

(c) assessing compliance with the performance standards and service level requirements prescribed under this Agreement.

19.3.6 The entire cost and arrangements for conducting NSV-based surveys, including equipment, personnel, data processing, and reporting, shall be borne solely by the Concessionaire, without any financial obligation on the part of the Authority.

19.3.7 The Independent Engineer/Authority shall have the right to verify the NSV survey data and methodology and may, at its discretion, direct the Concessionaire to carry out re-surveys or validation checks if the data is found inconsistent, inaccurate, or non-compliant with the prescribed standards.

19.4 Remedial measures

19.4.1 The Concessionaire shall promptly undertake repair or rectification of the defects or deficiencies and implement remedial measures, if any, set forth in the O&M Inspection Report or in the test results referred to in Clause 19.3 and furnish a report in respect thereof to the Independent Engineer and the Authority within 15 (fifteen) days of receiving the O&M Inspection Report or the test results, as the case may be; provided that where the remedying of such defects or deficiencies is likely to take more than 15 (fifteen) days, the Concessionaire shall submit progress reports of the repair works once every week until such works are completed in conformity with this Agreement.

19.4.2 The Independent Engineer shall require the Concessionaire to carry out or cause to be carried out tests, at its own cost, to determine that such remedial measures have brought the Project Highway into compliance with the Maintenance Requirements and the

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procedure set forth in this Clause 19.4 shall be repeated until the Project Highway conforms to the Maintenance Requirements. In the event that remedial measures are not completed by the Concessionaire in conformity with the provisions of this Agreement, the Authority shall be entitled to recover Damages from the Concessionaire under and in accordance with the provisions of Clause 17.8.

19.5 Reports of unusual occurrence

The Concessionaire shall, prior to the close of each day, send to the Authority and the Independent Engineer, by e-mail, a report stating accidents and unusual occurrences on the Project Highway relating to the safety and security of the Users and the Project Highway. A weekly and monthly summary of such reports shall also be sent within 3 (three) days of the closing of each week and month, as the case may be. For the purposes of this Clause 19.6, accidents and unusual occurrences on the Project Highway shall include:

(a) death or injury to any person;

(b) damaged or dislodged fixed equipment;

(c) any damage or obstruction on the Project Highway, which results in slow down of the services being provided by the Concessionaire;

(d) disablement of any equipment during operation;

(e) communication failure affecting the operation of the Project Highway;

(f) smoke or fire;

(g) unauthorized median cuts;

(h) unauthorized entry and exits;

(i) unauthorized occupation;

(j) flooding of the Project; and

(k) such other relevant information as may be required by the Authority or the Independent Engineer.

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ARTICLE 20

TRAFFIC REGULATION

20.1 Traffic regulation by the Concessionaire

The Concessionaire shall regulate traffic on the Project Highway in accordance with Applicable Laws and subject to the supervision and control of the State authorities [or a substitute thereof] empowered in this behalf under Applicable Laws.

20.2 Police assistance

For regulating the use of Project Highway in accordance with Applicable Laws and this Agreement, the Authority shall assist the Concessionaire in procuring police assistance from the State Police Department [or a substitute thereof].

20.3 Deleted.

20.4 Deleted.

20.5 Deleted.

20.6 Deleted.

20.7 Deleted.

20.8 Deleted.

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ARTICLE 21

EMERGENCY MEDICAL AID

21.1 Medical Aid Posts

For providing emergency medical aid during the Operation Period, as set forth in this Agreement, the Concessionaire shall procure and operate a round-the-clock basic life support ambulance service, staffed with paramedics, at [each of the Toll Plazas for victims of accidents on the Project Highway] and shall ensure that such ambulance service is linked to the national emergency response system to enable prompt coordination and response.

21.2 Deleted.

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ARTICLE 22

TRAFFIC CENSUS

22.1 Traffic census

The Concessionaire shall install and maintain electronic/computerized traffic counting and classification equipment at [each of] the Toll Plaza[s]. The Concessionaire shall also install, maintain weighing platforms (weigh-in-motion type) for recording, on a sample basis and in accordance with Applicable Laws and specifications prescribed by the Authority, the weight of commercial goods vehicles using the Project Highway.

For the avoidance of doubt, it is clarified that the Authority shall own all such data and information, and the Concessionaire shall have no rights therein other than for purposes of discharging its obligations under this Agreement.

22.2 Control Room and Data Connectivity

The Concessionaire shall establish and maintain a control room with adequate computer systems with round-the-clock operational connectivity to the networks of the Authority and other related entities, to enable real-time and uninterrupted exchange of data and information, necessary for efficient and transparent regulation and management of traffic. To facilitate this and for the purpose of ATMS, the Concessionaire shall lay optical fiber cables along the Project Highway as specified by the Authority ensuring seamless data exchange and integration with the Authority's systems.

To facilitate the Authority in setting up of automatic traffic management system and electronic enforcement, the Concessionaire shall install and maintain gantries on the Project Highway at the locations as specified in Schedule C for fixing various types of cameras or any other electronic devices.

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ARTICLE 23

INDEPENDENT ENGINEER

23.1 Appointment of Independent Engineer

The Authority shall appoint a consulting engineering firm in accordance with the selection criteria set forth in Schedule-M, to be the independent consultant under this Agreement (the **"Independent Engineer"**). The appointment shall be made no later than 60 (sixty) days from the date of this Agreement and shall be for a period of 4 years or six (6) months after COD, whichever is earlier[10] unless terminated prior thereto. On expiry or Termination of the aforesaid period, the Authority may in its discretion renew the appointment or appoint another firm pursuant to Schedule M to be the Independent Engineer for a further term of 3 (three) years and such procedure shall be repeated after expiry of each appointment.

23.2 Duties and functions

23.2.1 The Independent Engineer shall discharge its duties and functions substantially in accordance with the terms of reference set forth in Schedule-N.

23.2.2 A true copy of all communications sent by the Authority to the Independent Engineer and by the Independent Engineer to the Authority shall be sent forthwith by the Independent Engineer to the Concessionaire.

23.2.3 A true copy of all communications sent by the Independent Engineer to the Concessionaire and by the Concessionaire to the Independent Engineer shall be sent forthwith by the Independent Engineer to the Authority.

23.2.4 Independent Engineer shall periodically submit data on the progress / status of construction works, financial progress and other requisite details at such interval, as mentioned in the TOR, which shall enable the Authority for updating the Authority's designated portal/website, substantially in the format prescribed at Appendix – IV.

23.2.5 The Independent Engineer shall monitor redressal of genuine grievances of the Users by promptly forwarding such grievances to the Concessionaire for appropriate action and ensuring timely redressal by Concessionaire, followed by reporting compliance to the affected Users. For the avoidance of doubt, it is clarified that responsibility for redressal of such grievances shall rest solely with the Concessionaire, and neither the Independent Engineer nor the Authority shall incur any liability on account therefor.

23.3 Remuneration

The remuneration, cost and expenses of the Independent Engineer shall be paid by the Authority and subject to the limits set forth in Schedule-M, one-half of such remuneration, cost and expenses shall be reimbursed by the Concessionaire to the Authority within 15 (fifteen) days of receiving a statement of expenditure from the Authority.

23.4 Termination of appointment

23.4.1 The Authority may, terminate the appointment of the Independent Engineer at any time.

23.4.2 If the Concessionaire has reason to believe that the Independent Engineer is not discharging its duties and functions in a fair, efficient and diligent manner, it may make a written representation to the Authority and seek Termination of the appointment of the

[10] The appointment of the Independent Engineer shall be for Construction Period plus 6 months

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Independent Engineer. Upon receipt of such representation, the Authority shall hold a tripartite meeting with the Concessionaire and Independent Engineer for an amicable resolution of the Dispute, and if any difference or disagreement between the Independent Engineer and the Concessionaire remains unresolved after a period of 30 days, the Dispute shall be settled by Authority within 30 days thereafter and the decision of the Authority shall be final. In the event that the appointment of the Independent Engineer is terminated hereunder, the Authority shall appoint another Independent Engineer in accordance with Clause 23.1 forthwith.

23.4.3 Without prejudice to the provisions of Clause 23.4.1 and Clause 23.4.2, the Authority may in its discretion appoint an interim Independent Engineer from another project within the State or a neighboring State of the Project for a period not exceeding 6 (six) months or until the appointment of another Independent Engineer in accordance with Clause 23.1, whichever is earlier.

23.5 Authorized signatories

(a) The Authority shall require the Independent Engineer to designate and notify to the Authority and the Concessionaire up to 2 (two) persons employed in its firm to sign for and on behalf of the Independent Engineer and any communication or document required to be signed by the Independent Engineer shall be valid and effective only if signed by any of the designated persons; provided that the Independent Engineer may, by notice in writing, substitute any of the designated persons by any of its employees.

(b) The designated person(s) shall have been in employment with the consulting engineering firm appointed as Independent Engineer for a period of not less than 5 (five) years immediately preceding the date of such designation, or for a period equal to the duration of such consulting engineering firm's existence, if such duration is less than 5 (five) years

23.6 Dispute resolution

If either Party disputes issuance of or omission to issue any advice, instruction, decision, direction or award of the Independent Engineer, or, as the case may be, the assertion or failure to assert jurisdiction, the Dispute shall be resolved in accordance with the Dispute Resolution Procedure; provided that pendency of such Dispute shall not relieve the Concessionaire of its obligation to comply with the instructions of the Independent Engineer or the Authority in the interim.

23.7 Interim arrangement

In the event that the Authority does not appoint an Independent Engineer, or the Independent Engineer so appointed has relinquished its functions or defaulted in discharge thereof, the Authority may, in the interim, designate and authorize any person to discharge the functions of the Independent Engineer in accordance with the provisions of this Agreement, save and except that such person shall not exercise any functions relating to review, comment, approval or inspection as specified in this Agreement for and in respect of the Independent Engineer, and such functions shall be discharged as and when an Independent Engineer is appointed in accordance with the provisions of this Agreement. Provided, however, that nothing contained in this Clause 23.7 shall in any manner restrict the rights of the Authority to enforce compliance of the provisions of this Agreement.

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Part IV

Financial Covenants

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ARTICLE 24

FINANCIAL CLOSE

24.1 Financial Close

24.1.1 The Concessionaire hereby agrees and undertakes that it shall achieve Financial Close for an amount-

i) not greater than the product of sum of Total Project Cost, applicable GST on Total Project Cost and Price Index Multiple during the Construction Period estimated on the basis of the Price Index for the preceding 3 years prior to bid due date calculated on Total Project Cost; and

ii) not less than 90% of the Total Project Cost and applicable GST on Total Project Cost

within 150 (one hundred and fifty) days from the date of this Agreement. In the event of delay in achieving the Financial Close, the Concessionaire shall be entitled to a further period not exceeding [120 (one hundred and twenty)] days, subject to payment of Damages to the Authority in a sum calculated at the rate of 0.2% (zero point two per cent) of the Performance Security for each day of delay; provided that the Damages specified herein shall be payable every week in advance and the period beyond the said 150 (one hundred and fifty) days shall be granted only to the extent of Damages so paid; provided further that no Damages shall be payable if such delay in Financial Close has occurred solely as a result of any default or delay by the Authority in procuring satisfaction of the Conditions Precedent specified in Clause 4.1.2 or due to Force Majeure.

For the avoidance of doubt, the amount of Financial Close shall include the equity component of the Total Project Cost.

24.1.2 The Concessionaire shall, upon occurrence of Financial Close, notify the Authority forthwith and shall have provided to the Authority, at least 2 (two) days prior to the Financial Close, true copy of the Financial Package and the Financial Model, duly attested by a Director of the Concessionaire, along with soft copy of the Financial Model in Microsoft Excel or any substitute thereof containing financials as appraised and adopted by Senior Lenders.

24.1.3 In the event the Concessionaire achieves Financial Close and fulfils all Conditions Precedent under Clause 4.1.3 within 105 days from the date of this Agreement, the Concessionaire shall be eligible for reduction in Performance Security by 0.50% of the Bid Project Cost.

24.2 Termination due to failure to achieve Financial Close

24.2.1 Notwithstanding anything to the contrary contained in this Agreement, but subject to Clause 34.6.1, in the event that Financial Close does not occur, for any reason whatsoever, within the period set forth in Clause 24.1.1 or the extended period provided thereunder, all rights, privileges, claims and entitlements of the Concessionaire under or arising out of this Agreement shall be deemed to have been waived by and to have ceased with the concurrence of the Concessionaire and the Concession Agreement shall be deemed to have been terminated by mutual agreement of the Parties. For the avoidance of doubt, it is clarified that the Concessionaire shall not be entitled to any compensation, Damages, or other relief whatsoever on account of such Termination.

24.2.2 Upon Termination under Clause 24.2.1, the Authority shall be entitled to encash the Bid Security and appropriate the proceeds thereof as Damages. For the avoidance of doubt, it is expressly agreed that if the Bid Security shall have been substituted by Performance Security, the Authority shall be entitled to encash therefrom an amount equal to Bid

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Security without prejudice to any other rights or remedies available to the Authority under this Agreement or Applicable Law.

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ARTICLE 25

PAYMENT OF BID PROJECT COST

25.1 Bid Project Cost

The Parties expressly agree that the cost of construction of the Project, as on the Bid Date, which is due and payable by the Authority to the Concessionaire, shall be deemed to be Rs…… (Rupees…….) (the **"Bid Project Cost "**)[£]. The Parties further agree that the Bid Project Cost specified hereinabove for payment to the Concessionaire shall be inclusive of the cost of construction, interest during construction, working capital, physical contingencies and all other costs, expenses and charges for and in respect of construction of the Project whether foreseen or unforeseen, save and except any additional costs arising on account of variation in Price Index, Change of Scope, Change in Law, Force Majeure or breach of this Agreement, which costs shall be due and payable to the Concessionaire in accordance with the provisions of the Agreement. The Bid Project Cost shall be exclusive of GST, which shall be paid to the Concessionaire by the Authority at the applicable rates. For the avoidance of doubt, the Bid Project Cost specified herein represents the amount due and payable by the Authority to the Concessionaire and may be less than, equal to, or more than the Estimated Project Cost.

25.2 Adjusted Bid Project Cost

25.2.1 The Bid Project Cost specified in Clause 25.1 shall be revised from time to time in accordance with the provisions of this Clause 25.2 to reflect the variation in Price Index occurring after the Reference Index Date immediately preceding the Bid Date.

25.2.2 The Bid Project Cost adjusted for variation between the Price Index occurring between the Reference Index Date preceding the Bid Date and the Reference Index Date immediately preceding the Appointed Date shall be deemed to be the Bid Project Cost at commencement of construction.

25.2.3 For every month occurring after the Appointed Date, the Authority shall compute the variation in Price Index occurring between the Reference Index Date preceding the Bid Date and the Reference Index Date preceding the date of invoice, and shall express the latter as a multiple of the former (the "**Price Index Multiple**"). All invoices to be submitted by the Concessionaire to the Authority for and in respect of the Construction Period shall be the product of the relevant proportion of the Bid Project Cost and the Price Index Multiple applicable on the date of invoice. For the avoidance of doubt and by way of illustration, if (a) the Price Index on the Reference Index Date preceding the Bid Date, say January 31, 2016, is 200 (two hundred); (b) the invoice is submitted on October 15, 2017; and (c) the Price Index as on September 30, 2017 is 210 (two hundred and ten), then the Price Index Multiple for determination of the amount due in respect of such invoice shall be 1.05 (one point zero five).

The **Adjusted Bid Project Cost** shall be determined by multiplying the Bid Project Cost (BPC) by the **Price Index Multiple**, which shall be calculated in the ratio of **70:30** between the Wholesale Price Index (WPI) and the Consumer Price Index (CPI) respectively, in accordance with the following formula:

Price Index Multiple = $(0.7*(WPI_t/WPI_0) + (0.3*(CPI_t/CPI_0)$

Adjusted Bid Project Cost =BPC*Price Index Multiple

Where:

[£]Bid Project Cost shall be the amount specified in the Bid of the selected Bidder.

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WPI_t and CPI_t represent the values of WPI and CPI, respectively, preceding the date of invoice as published by the Government of India; and

WPI_o and CPI_o represent the values of WPI and CPI, respectively, on the Bid Due Date.

Illustration:
If the Bid Project Cost is **₹1000 crore**, the Base Indices at the Bid Due Date are $\mathbf{WPI_o = 120}$ and $\mathbf{CPI_o = 150}$, and the Indices preceding the date of invoice are $\mathbf{WPI_t = 132}$ and $\mathbf{CPI_t = 165}$, then:

Price Index Multiple = (0.7×132/120) + (0.3×165/150) = (0.7×1.10) + (0.3×1.10) = 1.10

Accordingly, the **Adjusted Bid Project Cost** shall be:

Adjusted Bid Project Cost=1000×1.10= Rs. 1100 Crore

Thus, in this example, the BPC of ₹1000 crore is escalated to ₹1100 crore, reflecting an inflation adjustment under the 70:30 WPI–CPI weightage, calculated with reference to the indices prevailing prior to a month the Invoice Date.

25.3 Payment of Bid Project Cost

25.3.1 [40% (forty per cent) of the Bid Project Cost, adjusted for the Price Index Multiple, shall be due and payable to the Concessionaire in 10 (ten) equal instalments of 4% (four per cent)] each during the Construction Period in accordance with the provisions of Clause 25.4.

25.3.2 The remaining Bid Project Cost, adjusted for the Price Index Multiple, shall be due and payable in [30 (thirty)] biannual installments commencing from the 180th (one hundred and eightieth) day of COD in accordance with the provisions of Clause 25.6.

25.4 Payment during Construction Period

Upon receiving a report from the Independent Engineer certifying the achievement of the below mentioned Payment Milestones[11], the Authority shall disburse, within 15 (fifteen) days of the receipt of each such report, an instalment equal to 4% (four per cent) of the Bid Project Cost, adjusted for the Price Index Multiple as applicable on the Reference Index Date preceding the date of that report.

For the purpose of this Clause 25.4, the Payment Milestone for release of payment during Construction Period shall be as under:

(a) I (first) Payment Milestone - On achievement of 5% Physical Progress

(b) II (second) Payment Milestone - On achievement of 10% Physical Progress

(c) III (third) Payment Milestone – On achievement of 20% Physical Progress

(d) IV (fourth) Payment Milestone - On achievement of 30% Physical Progress

(e) V (fifth) Payment Milestone – On achievement of 40% Physical Progress

(f) VI (sixth) Payment Milestone – On achievement of 50% Physical Progress

(g) VII (seventh) Payment Milestone – On achievement of 60% Physical Progress

[11] Independent Engineer, during finalization of design, shall upfront decide weightages of all the items in due consultation with the Authority responsible for making payments and recommended percentage physical progress achievements based on the above decided weightages for the entire construction period. The weightages shall be fixed as per format in Annexure - I of Schedule G of this Agreement

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(h) VIII (eighth) Payment Milestone – On achievement of 70% Physical Progress

(i) IX (ninth) Payment Milestone – On achievement of 80% Physical Progress

(j) X (tenth) Payment Milestone – On achievement of 90% Physical Progress

Provided that in case of Change of Scope, the Physical Progress shall be recalculated to account for the changed scope.

25.5 Early Completion

Upon Completion of the project prior to Schedule Completion Date, O&M period shall commence forthwith. Further no payment in addition to Annuity Payments specified in Article 25.6 shall be payable on account of early completion.

25.6 Annuity Payments during Operation Period

25.6.1 The **"Completion Cost"** shall be the summation of A, B, C, D, E, F, G, H, I, J and K below:

A. 5% of the Bid Project Cost adjusted for the Price Index Multiple as applicable on the Reference Index Date preceding the date of report confirming 5% Physical Progress.

B. Another 5% of the Bid Project Cost adjusted for the Price Index Multiple as applicable on the Reference Index Date preceding the date of report confirming 10% Physical Progress.

C. Another 10% of the Bid Project Cost adjusted for the Price Index Multiple as applicable on the Reference Index Date preceding the date of report confirming 20% Physical Progress.

D. Another 10% of the Bid Project Cost adjusted for the Price Index Multiple as applicable on the Reference Index Date preceding the date of report confirming 30% Physical Progress.

E. Another 10% of the Bid Project Cost adjusted for the Price Index Multiple as applicable on the Reference Index Date preceding the date of report confirming 40% Physical Progress.

F. Another 10% of the Bid Project Cost adjusted for the Price Index Multiple as applicable on the Reference Index Date preceding the date of report confirming 50% Physical Progress.

G. Another 10% of the Bid Project Cost adjusted for the Price Index Multiple as applicable on the Reference Index Date preceding the date of report confirming 60% Physical Progress.

H. Another 10% of the Bid Project Cost adjusted for the Price Index Multiple as applicable on the Reference Index Date preceding the date of report confirming 70% Physical Progress.

I. Another 10% of the Bid Project Cost adjusted for the Price Index Multiple as applicable on the Reference Index Date preceding the date of report confirming 80% Physical Progress.

J. Another 10% of the Bid Project Cost adjusted for the Price Index Multiple as applicable on the Reference Index Date preceding the date of report confirming 90% Physical Progress.

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K. Another 10% of the Bid Project Cost adjusted for the Price Index Multiple as applicable on the Reference Index Date preceding the COD.

The Parties acknowledge and agree that the Authority has paid a portion of the Completion Cost as payments during Construction Period pursuant to Clause 25.4 of this Agreement. The balance Completion Cost remaining shall be due and payable during the Operation Period in accordance with the provisions of Clause 25.6.2.

25.6.2 The Completion Cost remaining to be paid in pursuance of the provisions of Clause 25.6.1 shall be due and payable in biannual instalments over a period of 15 (fifteen) years commencing from COD, (the **"Annuity Payments"**). The 1st (first) instalment of Annuity Payments shall be due and payable within [15 (fifteen)] days of the 180th (one hundred and eightieth) day of COD and the remaining instalments shall be due and payable within 15 (fifteen) days of completion of each of the successive six months ("the **Annuity Payment Date"**). For the avoidance of doubt, the last Annuity Payment Date would be adjusted to in such a way that it falls at the end of the Operation Period.

25.6.3 Each of the Annuity Payments due and payable during the years following the COD shall be as under[12]:

Annuity following the COD	Percentage of Completion Cost remaining to be paid on COD
1st Annuity	2.10%
2nd Annuity	2.17%
3rd Annuity	2.24%
4th Annuity	2.31%
5th Annuity	2.38%
6th Annuity	2.45%
7th Annuity	2.52%
8th Annuity	2.60%
9th Annuity	2.68%
10th Annuity	2.76%
11th Annuity	2.84%
12th Annuity	2.93%
13th Annuity	3.02%
14th Annuity	3.11%
15th Annuity	3.20%
16th Annuity	3.30%
17th Annuity	3.40%
18th Annuity	3.50%
19th Annuity	3.61%
20th Annuity	3.72%
21st Annuity	3.83%
22nd Annuity	3.94%
23rd Annuity	4.06%
24th Annuity	4.18%
25th Annuity	4.25%
26th Annuity	4.25%
27th Annuity	4.44%
28th Annuity	4.71%
29th Annuity	4.75%

[12] The schedule may be customized based on the duration of the Operations Period

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30th Annuity	4.75%

Each of the biannual installments payable hereunder shall be paid along with interest as specified in Clause 25.6.4.

25.6.4 Interest shall be due and payable on the reducing balance of Completion Cost at an interest rate equal to the average of one year MCLR of top 5 Scheduled Commercial Banks[13] plus 1%. Such interest shall be due and payable biannually along with each instalment specified in Clause 23.6.3. For the avoidance of doubt and by way of illustration, the Parties agree that interest on the Completion Cost remaining to be paid, calculated from COD and until the 180th (one hundred and eightieth) day of COD, shall be due and payable to the Concessionaire along with the first Annuity Payment and interest on **[14]% (** per cent) of the percentage of Completion Cost remaining to be paid on COD, calculated from first Annuity payment date and until the 1st (first) anniversary of COD, shall be due and payable along with the second Annuity Payment due and payable under this Agreement. The Parties further agree that interest shall be calculated based on the number of days a particular average of one year MCLR of top 5 Scheduled Commercial Banks was applicable during the period of calculation. For the purpose of illustration, assuming that the balance Completion Cost remaining to be paid is Rs. 100 crores on the 1st Annuity Payment Date, the applicable average of one year MCLR of top 5 Scheduled Commercial Banks plus 1% for the first 75 days is 8% and thereafter it is revised to 7.5% and remains unchanged till the 2nd Annuity Payment Date, the interest would be calculated as ((100*9%*75)/365)+((100*8.5%*105)/365). For the avoidance of doubt[15], the Interest would be calculated on simple interest basis and no compounding of the same would be undertaken.

25.7 O&M Payments

25.7.1 The Parties acknowledge and agree that all O&M Expenses shall be borne by the Concessionaire and in lieu thereof; a lump sum financial support in the form of biannual payments shall be due and payable by the Authority:

(a) For flexible perpetual pavement including structures: no maintenance charges shall be paid for the first year; 0.40% of the Bid Project Cost each for the second, third and fourth year; 0.60% of the Bid Project Cost each for the subsequent years till laying of the renewal layer or end of Concession 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 Concessionaire @ 2.4% of Bid Project Cost. After laying of the renewal layer, the Concessionaire shall be paid @ 0.40% of the original Bid Project Cost each for the next four years and @0.60% of the original Bid Project Cost each till laying of the second renewal layer or end of Concession Period, whichever is earlier. After laying of the renewal layer, the Concessionaire shall be paid @0.40% of the original Bid Project Cost each for the remaining years till the end of Concession Period.

[13] The Authority shall declare the list of Top 5 Scheduled Commercial Banks on 1st September every calendar year based on the balance sheet size as declared in their annual reports, The 1 year MCLR of the top 5 Scheduled commercial banks shall be taken at the start of every quarter

[14] To be finalized on the basis of the outstanding Completion Cost Annuity pursuant to the payment of 1st Annuity as provided in the Annuity payment schedule in Clause 25.6.3

[15] Assuming that the total number of days between 1st Annuity payment date and 2nd Annuity date are 180. In case the number of days are different the calculation may be appropriately changed

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(b) For rigid pavement with 10 years maintenance period including structures: no maintenance charges shall be paid for the first year; 0.20% of the Bid Project Cost each for the second, third & fourth year, 0.40% of the Bid Project Cost each for fifth, sixth, seventh & eighth year, 0.60% of the Bid Project Cost each till the end of Concession Period.

(c) For stand-alone Bridge/ Tunnel works: the Concessionaire shall be paid no maintenance charges shall be paid for the first year; 0.20% of the Bid Project Cost each for the next five years, 0.40% of the Bid Project Cost each for the remaining years till the end of Concession Period.

(d) The Parties further acknowledge and agree that any O&M Expenses in excess of the O&M Payments shall be borne solely by the Concessionaire, save and except as expressly provided in this Agreement. For avoidance of doubt, it is clarified that the O&M Payments will be subject to any Change in Scope of the Project of the Concessionaire under Article 16 of this Agreement.

25.7.2 Above amount for the performance of Concessionaire maintenance obligations shall be, inclusive of all taxes. The amount payable for maintenance shall be adjusted on account of variation of Price Index preceding the date of invoice, as illustrated in Clause 25.2.3. It is further agreed that the Bid Project Cost hereunder shall be reckoned with reference to the amount specified in Clause 25.1, which shall be adjusted to the extent of Change of Scope and reduction in scope, but shall not include any price adjustments in pursuance of variation of Price Index.

25.7.3 Deleted

25.8 Mobilization Advance

The Authority shall, on request of the Concessionaire, make an advance payment in a sum not exceeding 10% (ten per cent) of the Total Project Cost (the **"Mobilization Advance"**). This advance payment shall be made in two equal instalments. The Concessionaire may request the Authority for the first instalment of the advance payment at any time after the Appointed Date, along with furnishing a Bank Guarantee in a form satisfactory to the Authority. The Concessionaire may request the Authority for the second instalment of the advance payment at any time, after 60 (sixty) days from the Appointed Date, along with furnishing a Bank Guarantee in a form satisfactory to the Authority. The first and second instalments of the Mobilization Advance shall be paid by the Authority within 30 (thirty) days of receipt of the respective requests in this behalf from the Concessionaire. The rate of interest on the Mobilization Advance shall be equal to the average of one-year MCLR of top 5 Scheduled Commercial Banks[16] plus 1.25 percent, compounded annually. The Mobilization Advance shall be deducted by the Authority in 10 (ten) equal instalments from each of the payments to be made by the Authority to the Concessionaire in accordance with the provisions of Clause 25.4 along with interest.

Provided further that in case the Concessionaire procures and registers under the Motor Vehicle Act 1988, after the award and within 90 days of Appointed Date, a new construction machinery/equipment powered by alternate fuel (Electric/Hydrogen/Biofuel) and Automated Intelligent Construction Machinery as notified by the Authority, prior to the Bid Due Date, the rate of interest shall be reduced by 50% (fifty percent) on proportion of the advance utilised for such purpose. For the

[16] The Authority shall declare the list of Top 5 Scheduled Commercial Banks on 1st September every calendar year based on the balance sheet size as declared in their annual reports, The 1 year MCLR of the top 5 Scheduled commercial banks shall be taken at the start of every quarter.

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avoidance of doubt, the proof of registration shall be taken from the Vahan data base of MoRTH.

The Concessionaire would be at liberty to either submit a substitute Bank Guarantee for the residual amount or multiple Bank Guarantees for such residual amount in replacement of the existing Bank Guarantee. As the advance is recovered from the running bills/ stage payments, the Bank Guarantee for the amount equivalent to the amount of advance recovered may be released on the request of the Concessionaire.

25.9 Treatment of incomplete works

25.9.1 The Parties acknowledge and agree that in the event COD occurs upon issuance of a Provisional Certificate, the Annuity Payments and O&M Payments specified in this Article 25 shall be made as if all works comprising the Project have been completed. The works remaining incomplete shall be completed by the Concessionaire in accordance with the provisions of this Agreement and thereupon, the Completion Certificate shall be issued forthwith.

25.9.2 In the event the Authority determines that any incomplete works referred to in Clause 25.9.1 are not required to be completed for any reason, it shall modify the Scope of the Project in accordance with the provisions of Article 16 and the Completion Cost, Annuity Payments and O&M Payments shall be reduced on account of such Change of Scope as per the provisions of Article 16.

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ARTICLE 26

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ARTICLE 27

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ARTICLE 28

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ARTICLE 29

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ARTICLE 30

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ARTICLE 31

ESCROW ACCOUNT

31.1.1 Escrow Account

31.1.1 The Concessionaire shall, prior to the Appointed Date, open and establish an Escrow Account with a Bank (the "Escrow Bank") in accordance with this Agreement read with the Escrow Agreement.

31.1.2 The nature and scope of the Escrow Account are fully described in the Agreement (the "Escrow Agreement") to be entered into amongst the Concessionaire, the Authority, the Escrow Bank and the Senior Lenders through the Lenders' Representative, which shall be substantially in the form set forth in Schedule-O.

31.1.3 The Concessionaire shall ensure that the Escrow Bank shall provide to the Authority with a secure facility for real-time online viewing and downloading of the Escrow account statement at all times during the Concession Period.

31.2 Deposits into Escrow Account

The Concessionaire shall deposit or cause to be deposited the following inflows and receipts into the Escrow Account:

(a) all funds constituting the Financial Package;

(b) all revenues from or in respect of the Project Highway, including the proceeds of any rentals, deposits, capital receipts or insurance claims; and

(c) all payments by the Authority, after deduction of any outstanding payments.

Provided that the Authority may, until the Escrow Account is open and established, deposit the amount for maintenance, as provided in Clause 6.2.1, into a designated bank account of the Concessionaire.

Provided further that the Senior Lenders may make direct disbursements to the EPC Contractor in accordance with the express provisions contained in this behalf in the Financing Agreements.

31.3 Withdrawals during Concession Period

31.3.1 The Concessionaire shall, at the time of opening the Escrow Account, give irrevocable instructions, by way of an Escrow Agreement, to the Escrow Bank instructing, *inter alia*, that deposits in the Escrow Account shall be appropriated in the following order every month, or at shorter intervals as necessary, and if not due in a month then appropriated proportionately in such month and retained in the Escrow Account and paid out therefrom in the month when due:

(a) All taxes due and payable by the Concessionaire for and in respect of the Project Highway;

(b) All payments relating to construction of the Project Highway, subject to and in accordance with the conditions, if any, set forth in the Financing Agreements;

(c) O&M Expenses, subject to the ceiling, if any, set forth in the Financing Agreements;

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(d) O&M Expenses and other costs and expenses incurred by the Authority in accordance with the provisions of this Agreement, and certified by the Authority as due and payable to it;

(e) Any amounts due and payable to the Authority;

(f) Monthly proportionate provision of Debt Service due in an Accounting Year;

(g) All payments damages, costs or recoveries certified by the Authority as due and payable to it by the Concessionaire; and the Concessionaire hereby agrees to give irrevocable instructions to the Escrow Bank to make payment from the Escrow Account in accordance with the instructions of the Authority under Clause 17.9.2 and debit the same to O&M Expenses.

(h) Monthly proportionate provision of debt service payments due in an Accounting Year in respect of Subordinated Debt;

(i) Any reserve requirements set forth in the Financing Agreements; and

(j) Balance, if any, in accordance with the instructions of the Concessionaire.

For the avoidance of doubt, it is clarified that expenses and payments other than those expressly specified above, including incurred for bid preparation and associated activities by the selected bidder or the Concessionaire, shall not be eligible for withdrawal under the Escrow Agreement.

31.3.2 The Concessionaire shall not in any manner modify the order of payment specified in Clause 31.3.1, except with the prior written approval of the Authority.

31.4 Withdrawals upon Termination

31.4.1 Notwithstanding anything to the contrary contained in this Agreement, all amounts standing to the credit of the Escrow Account shall, upon Termination, be appropriated in the following order:

(a) All taxes due and payable by the Concessionaire for and in respect of the Project Highway;

(b) Deleted;

(c) 90% (ninety per cent) of Debt Due excluding Subordinated Debt;

(d) All payments and Damages certified by the Authority as due and payable to it by the Concessionaire and any claims in connection with or arising out of Termination; and the Concessionaire hereby agrees to give irrevocable instructions to the Escrow Bank to make payment from the Escrow Account in accordance with the instructions of the Authority under Clause 17.9.2 and debit the same to O&M Expenses;

(e) Retention and payments relating to the liability for defects and deficiencies set forth in Article 39;

(f) Outstanding Debt Service including the balance of Debt Due;

(g) Outstanding Subordinated Debt;

(h) Incurred or accrued O&M Expenses;

(i) Any other payments required to be made under this Agreement; and

(j) Balance, if any, in accordance with the instructions of the Concessionaire:

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Provided that no appropriations shall be made under sub-clause (j) of this Clause 31.4.1 until a Vesting Certificate has been issued by the Authority under the provisions of Article 38.

31.5 The provisions of this Article 31 and the instructions contained in the Escrow Agreement shall remain in full force and effect until the obligations set forth in Clause 31.4.1 have been discharged.

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ARTICLE 32

INSURANCE

32.1 Insurance during Concession Period

32.1.1 The Concessionaire shall effect and maintain at its own cost, during the Construction Period and the Operation Period, such insurances for such maximum sums as may be required under the Financing Agreements, and Applicable Laws provided that the coverage shall not be less than the engineering, procurement and construction cost specified in the Financing Agreement and shall also include such other insurances as may be necessary or prudent in accordance with Good Industry Practice. The Concessionaire shall also effect and maintain such insurances as may be necessary for mitigating the risks that may devolve on the Authority as a consequence of any act or omission of the Concessionaire during the Construction Period. The Concessionaire shall procure that in each insurance policy; the Authority shall be a co-insured and that the insurer shall pay the proceeds of insurance into the Escrow Account. For the avoidance of doubt, the level of insurance to be maintained by the Concessionaire after repayment of Senior Lenders' dues in full shall be determined on the same principles as applicable for determining the level of insurance prior to such repayment of Senior Lenders' dues.

32.1.2 Without prejudice to Clause 32.1.1, the Concessionaire shall, after the COD, procure and maintain Insurance Cover including the following:

(a) insurance against loss, damage or destruction of the Project Assets, including assets handed over by the Authority to the Concessionaire, at replacement value;

(b) comprehensive third-party liability insurance including injury to or death of personnel of the Authority or others caused by the Project;

(c) the Concessionaire's general liability arising out of or in relation to the Concession;

(d) insurance covering liability to third parties for loss of goods or property damage;

(e) workmen's compensation insurance; and

(f) any other insurance that may be necessary to protect the Concessionaire and its employees.

32.2 Notices to the Authority

No later than 45 (forty-five) days prior to the commencement of the Construction Period or the Operation Period, as the case may be, the Concessionaire shall by notice in writing or in such manner and format as the Authority may specify, furnish to the Authority, in reasonable detail, the information in respect of the insurances that it proposes to effect and maintain in accordance with this Article 32. Within 30 (thirty) days of receipt of such notice, the Authority may require the Concessionaire 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.

32.3 Evidence of Insurance Cover

All insurances obtained by the Concessionaire in accordance with this Article 32 shall be maintained with insurers on terms consistent with Good Industry Practice. Within 15 (fifteen) days of obtaining any Insurance Cover, the Concessionaire shall furnish to the

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Authority, notarized true copies of the certificate(s) of insurance, copies of insurance policies and premium 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 nonrenewal has been delivered by the Concessionaire to the Authority.

32.4 Remedy for failure to insure

If the Concessionaire 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 premium and recover the costs thereof from the Concessionaire, 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 Concessionaire.

32.5 Waiver of subrogation

All insurance policies in respect of the insurance obtained by the Concessionaire pursuant to this Article 32 shall include a waiver of any and all rights of subrogation or recovery of the insurers thereunder against, interalia, 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.

32.6 Concessionaire's waiver

The Concessionaire 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 Concessionaire 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 Concessionaire 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.

32.7 Application of insurance proceeds

The proceeds from all insurance claims, except life and injury, shall be paid to the Concessionaire by credit to the Escrow Account and it shall, notwithstanding anything to the contrary contained in Clause 31.3, apply such proceeds first towards for any necessary repair, reconstruction, reinstatement, replacement, improvement or delivery of the Project, and the balance remaining, if any, shall be applied in accordance with the provisions contained in this behalf in the Financing Agreements.

32.8 Compliance with conditions of insurance policies

The Concessionaire expressly acknowledges and undertakes to fully indemnify the Authority from and against all losses and claims arising from the Concessionaire's failure to comply with conditions imposed by the insurance policies effected in accordance with this Agreement.

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ARTICLE 33

ACCOUNTS AND AUDIT

33.1 Audited accounts

33.1.1 The Concessionaire shall maintain books of accounts recording all its receipts (including all revenues derived/collected by it from or on account of the Project Highway and/or its use), income, expenditure, payments (including payments from the Escrow Account), assets and liabilities, in accordance with this Agreement, Good Industry Practice, Applicable Laws and Applicable Permits. The Concessionaire shall upload its Balance Sheet, Cash Flow Statement and Profit and Loss Account, along with a report thereon by its Statutory Auditors, on Authority's website and shall also provide copy to the Authority within 180 (one hundred and eighty) days of the close of the Accounting Year to which they pertain and such audited accounts, save and except where expressly provided to the contrary, shall form the basis of payments by either Party under this Agreement. The Authority shall have the right to inspect the records of the Concessionaire during office hours and require copies of relevant extracts of books of accounts, duly certified by the Statutory Auditors, to be provided to the Authority for verification of basis of payments and in the event of any discrepancy or error being found, the same shall be rectified and such rectified account shall form the basis of payments by either Party under this Agreement.

The Authority reserves the right to host the Balance Sheet, Cash Flow Statement and Profit and Loss Account, along with a report thereon by Statutory Auditors on its website for public viewing.

33.1.2 The Concessionaire shall, within 30 (thirty) days of the close of each quarter of an Accounting Year, furnish to the Authority its unaudited financial results in respect of the preceding quarter, in the manner and form prescribed by the Securities and Exchange Board of India for publication of quarterly results by the companies listed on a stock exchange or in such other format as may be specified by the Authority.

33.1.3 On or before the thirty-first day of May each Year, the Concessionaire shall provide to the Authority, for the preceding Accounting Year, a statement duly audited by its Statutory Auditors giving summarized information on revenues derived from the Project, and such other information as the Authority may reasonably require.

33.2 Appointment of auditors

33.2.1 The Concessionaire shall appoint, and have during the subsistence of this Agreement as its Statutory Auditors, a firm chosen by it from the mutually agreed list of 10 (ten) reputable firms of chartered accountants (the **"Panel of Chartered Accountants"**), such list to be prepared substantially in accordance with the criteria set forth in Schedule-P. All fees and expenses of the Statutory Auditors shall be borne by the Concessionaire.

33.2.2 The Concessionaire may terminate the appointment of its Statutory Auditors after a notice of 45 (forty-five) days to the Authority, subject to the replacement Statutory Auditors being appointed from the Panel of Chartered Accountants.

33.2.3 Notwithstanding anything to the contrary contained in this Agreement, the Authority shall have the right, but not the obligation, to appoint at its cost from time to time and at any time, another firm (the **"Additional Auditors**) as may be decided by the Authority to audit and verify all those matters, expenses, costs, realizations and things which the Statutory Auditors are required to do, undertake or certify pursuant to this Agreement.

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33.3 Certification of claims by Statutory Auditors

Any claim or document provided by the Concessionaire to the Authority in connection with or relating to receipts, income, payments, costs, expenses, accounts or audit, and any matter incidental thereto shall be valid and effective only if certified by its Statutory Auditors. For the avoidance of doubt, such certification shall not be required for exchange of information in the normal course of business including the submission of any periodic information in pursuance of the provisions of this Agreement, save and except where such certification is expressly provided.

33.4 Set-off

In the event any amount is due and payable by the Authority to the Concessionaire, it may set-off any sums payable to it by the Concessionaire and pay the balance remaining. Any exercise by the Authority of its rights under this Clause shall be without prejudice to any other rights or remedies available to it under this Agreement or otherwise.

33.5 Dispute resolution

In the event of there being any difference between the findings of the Additional Auditors and statuary Auditor of the Concessionaire and the certification provided by the Statutory Auditors, such auditors shall meet to resolve the differences and if they are unable to resolve the same, such Dispute shall be resolved by the Authority by recourse to the Dispute Resolution Procedure and pending such resolution, the Authority may act on the findings of the Statutory Auditors for provisional adjustment of payments.

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Part V

Force Majeure and Termination

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ARTICLE 34

FORCE MAJEURE

34.1 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 34.2, 34.3 and 34.4 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 reasonably foreseen, prevented or overcome by exercise of due diligence and following Good Industry Practice and (iii) has a demonstrable Material Adverse Effect on the Affected Party to perform its obligations under this Agreement.

For the avoidance of doubt, it is clarified that (i) any ordinary commercial risks; (ii) increase in costs of labour, materials, fuel or utilities; or (iii) regular or seasonal weather conditions including annual monsoons, delays or difficulties in obtaining Applicable Permits, shall not constitute a Force Majeure Event.

34.2 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 ionizing radiation, fire or explosion (to the extent of contamination or radiation or fire or explosion originating from a source external to the Site) that could not have been reasonably foreseen based on data or information available for the period of 10 (ten) years prior to the Bid Due Date;

(b) strikes or boycotts (other than those involving the Concessionaire, 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 7 (seven) days in an Accounting Year, and not being an Indirect Political Event set forth in Clause 34.3;

(c) any failure or delay of a Contractor but only to the extent caused by another Non-Political Event and which does not result in any offsetting compensation being payable to the Concessionaire by or on behalf of such Contractor;

(d) any judgement or order of any court of competent jurisdiction or statutory authority made against the Concessionaire in any proceedings for reasons other than (i) failure of the Concessionaire or any person acting on his behalf_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.

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For the avoidance of doubt, any directions, including rules and regulations, measures, etc., issued by the Government, State Government or Government Instrumentality to mitigate the effects of the aforementioned events shall also be considered as Non-Political Event.

34.3 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, riot, insurrection, terrorist or military action, civil commotion or politically motivated sabotage that causes damage to the project exceeding an aggregate period of 7 (seven) days in an Accounting Year;

(b) industry-wide or State-wide strikes or industrial action interrupting supplies and services to the Project Highway during the period of construction for a continuous period of 24 (twenty-four) hours and exceeding an aggregate period of 7 (seven) days in an Accounting Year;

(c) any boycott, agitation, economic upheaval or similar occurrence which prevents construction of the Project by the Concessionaire for an aggregate period exceeding 7 (seven) days in an Accounting Year;

(d) any failure or delay of a Contractor to the extent caused by any Indirect Political Event and which does not result in any offsetting compensation being payable to the Concessionaire by or on behalf of such Contractor;

(e) deleted;

(f) any event or circumstances of a nature analogous to any of the foregoing.

For the avoidance of doubt, any directions, including rules and regulations, measures etc., issued by the Government, State Government or Government Instrumentality to mitigate the effects of the aforementioned events shall also be considered as Indirect Political Event.

34.4 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 accordance with the provisions thereof cannot be dealt with under and in of Article 41 and its effect, in financial terms, exceeds the sum specified in Clause 41.1;

(b) compulsory acquisition in national interest or expropriation of any Project Assets or rights of the Concessionaire or of the Contractors;

(c) unlawful or unauthorized or without jurisdiction revocation of, or refusal to renew or grant without valid cause, any clearance, license, permit, authorization, no objection certificate, consent, approval or exemption required by the Concessionaire or any of the Contractors to perform their respective obligations under this Agreement and the Project Agreements; provided that such delay, modification, denial, refusal or revocation did not result from the Concessionaire's or any Contractor's inability or failure to comply with any condition relating to grant, maintenance or renewal of such clearance, license, authorization, no objection certificate, exemption, consent, approval or permit;

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(d) any failure or delay of a Contractor but only to the extent caused by another Political Event and which does not result in any offsetting compensation being payable to the Concessionaire by or on behalf of such Contractor; or

(e) any event or circumstance of a nature analogous to any of the foregoing.

34.5 Duty to report Force Majeure Event

34.5.1 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 34 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 establishing occurrence and causation;

(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.

34.5.2 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 not later than 7 (seven) 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.

34.5.3 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 34.5.1, and such other information as the other Party may reasonably request the Affected Party to provide failing which the Affected Party shall not be entitled to any relief for or in respect of a Force Majeure Event.

34.6 Effect of Force Majeure Event on the Concession

34.6.1 Upon the occurrence of any Force Majeure Event prior to the Appointed Date, the period set forth in Clause 4.1 for fulfillment of Conditions Precedent and in Clause 24.1.1 for achieving Financial Close shall be extended by a period equal in length to the duration of the Force Majeure Event.

34.6.2 At any time after the Appointed Date, if any Force Majeure Event occurs:

(a) before COD, the Construction Period and the dates set forth in the Project Completion Schedule shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists; or

(b) after COD, the Concessionaire shall be entitled to receive Annuity Payments plus interest due and payable under this Agreement.

Provided any payment to be made under this clause shall be subject to deduction of outstanding dues of the Authority, if any. It is clarified that the Concessionaire shall continue to perform its O&M obligations in accordance with this Agreement to the extent not prevented by the Force Majeure Event.

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34.7 Allocation of costs arising out of Force Majeure

34.7.1 Upon occurrence of any Force Majeure Event prior to the Appointed Date, the Parties shall bear their respective costs and no Party shall be required to pay to the other Party any costs thereof.

34.7.2 Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the Project (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 Concessionaire, 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 Concessionaire; 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 Concessionaire.

I. For the avoidance of doubt, upon occurrence of a Force Majeure Event during the Construction Period and prior to the COD, Force Majeure Costs shall mean escalation cost, prolongation cost, interest on Debt Due, O&M Expenses, and all other costs directly attributable to the Force Majeure Event. It is hereby expressly agreed by the Parties that escalation cost, prolongation cost and payment of interest on Debt Due for the purposes of this Clause 34.7.2 shall be limited to the extent determined herein below:

i. Deleted;

ii. prolongation costs shall be determined as the product of 8% of the value of incomplete work and the period of delay attributable to the Force Majeure Event, divided by the period specified in Clause 12.4.1;

iii. interest on Debt Due, for the period of delay attributable to the Force Majeure Event;

For the avoidance of doubt, the incomplete work referred to in this Clause 34.7.2 shall be limited to the portion of the work that remains unfinished due to the occurrence of a Force Majure Event, and shall specifically exclude any work that was incomplete due to delays attributable to the Concessionaire prior to the occurrence of such Force Majeure Event. The value of such work shall be assessed as of the Bid Due Date by Independent Engineer, in accordance with the methodology set out in Clause 16.2.2(c).

II. upon occurrence of a Force Majeure Event after the COD till Transfer Date, Force Majeure Costs shall mean (a) interest on Debt Due and (b) O&M expenses as determined from original Financing Agreements. Provided that such O&M Expenses shall not exceed 0.7% (zero-point seven percent) of the Bid Project Cost per annum and shall be adjusted for inflation using the applicable Price Index from the Bid Due Date to the first day of the relevant Accounting Year for which the Force Majeure Costs are to be determined.

34.7.3 Save and except as expressly provided in this Article 34, neither Party shall be liable in any manner whatsoever to the other Party in respect of any loss, damage, cost, expense,

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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.

34.8 Termination Notice for Force Majeure Event

If a Force Majeure Event subsists for a period of 180 (one hundred and eighty) days or more within a continuous period of 365 (three hundred and sixty five) 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 34, 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) day's 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.

34.9 Termination Payment for Force Majeure Event

34.9.1 If Termination is on account of a Non-Political Event, the Authority shall make a Termination Payment to the Concessionaire in an amount to be calculated as under:

(i) Prior to COD:

Payment Milestone	Basis of calculation for Termination payment
1st Payment Milestone	90% Debt Due or 0.68% of Bid Project Cost, whichever is lower
2nd Payment Milestone	90% Debt Due or 1.35% of Bid Project Cost, whichever is lower
3nd Payment Milestone	90% Debt Due or 5.4% of Bid Project Cost, whichever is lower
4th Payment Milestone	90% Debt Due or 9.45% of Bid Project Cost, whichever is lower
5th Payment Milestone	90% Debt Due or 13.5% of Bid Project Cost, whichever is lower
6th Payment Milestone	90% Debt Due or 17.55% of Bid Project Cost, whichever is lower
7th Payment Milestone	90% Debt Due or 21.60% of Bid Project Cost, whichever is lower
8th Payment Milestone	90% Debt Due or 25.65% of Bid Project Cost, whichever is lower
9th Payment Milestone	90% Debt Due or 29.70% of Bid Project Cost, whichever is lower
10th Payment Milestone	90% Debt Due or 33.75% of Bid Project Cost, whichever is lower

For the avoidance of doubt, it is clarified that in case of Termination happening in between two Payment Milestones, for the purpose of calculation of Debt Due, the milestone achieved would only be considered; provided further the above payment so calculated above shall be reduced by Insurance Cover.

(ii) In case Termination occurs on or after COD, the Authority shall make a Termination Payment to the Concessionaire in an amount equal to 75% (seventy five percent) of Annuity Payments remaining unpaid for and in respect of the remaining Concession Period, including interest thereon up to the Transfer Date.

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Provided further the above payment so calculated above shall be reduced by Insurance Cover.

34.9.2 a If Termination is on account of an Indirect Political Event, the Authority shall make Termination Payment to the Concessionaire in an amount equal to:

(i) In case Termination occurs prior to COD:

(a) Debt Due payment calculated as per the table below less Insurance Cover; provided that if any insurance claims forming part of the Insurance Cover are not admitted and paid, then 80% (eighty per cent) of such unpaid claims shall be included in the computation of Debt Due. Further the Debt Due would be calculated as per the table provided below:

Payment Milestone	**Basis of calculation for Debt Due**
1st Payment Milestone	Debt Due or **0.75% of Bid Project Cost**, whichever is lower
2nd Payment Milestone	Debt Due or **1.50% of Bid Project Cost**, whichever is lower
3nd Payment Milestone	Debt Due or **6.00% of Bid Project Cost**, whichever is lower
4th Payment Milestone	Debt Due or **10.50% of Bid Project Cost**, whichever is lower
5th Payment Milestone	Debt Due or **15.00% of Bid Project Cost**, whichever is lower
6th Payment Milestone	Debt Due or **19.50% of Bid Project Cost**, whichever is lower
7th Payment Milestone	Debt Due or **24.00% of Bid Project Cost**, whichever is lower
8th Payment Milestone	Debt Due or **28.50% of Bid Project Cost**, whichever is lower
9th Payment Milestone	Debt Due or **33.00% of Bid Project Cost**, whichever is lower
10th Payment Milestone	Debt Due or **37.50% of Bid Project Cost**, whichever is lower

For the avoidance of doubt, it is clarified that in case of Termination happening in between two Payment Milestones, for the purpose of calculation of Debt Due, the milestone achieved would only be considered; and

(b) 100% (one hundred cent) of the Adjusted Equity;

(ii) In case Termination occurs on or after COD, the Authority shall make a Termination Payment to the Concessionaire in an amount equal to 100% (one hundred percent) of Annuity Payments remaining unpaid for and in respect of the remaining Concession Period, including interest calculated from the date of last Annuity Payment prior to Termination and up to the Transfer Date.

34.9.3 If Termination is on account of a Political Event, the Authority shall make a Termination Payment to the Concessionaire in an amount that would be payable under Clause 37.3.3 as if it were an Authority Default.

34.10 Deleted

34.11 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:

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(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.

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ARTICLE 35

COMPENSATION FOR BREACH OF AGREEMENT

35.1 Compensation for default by the Concessionaire

Subject to the provisions of Clause 35.6 and 37.6 in the event of the Concessionaire being in material breach or default of this Agreement, it shall pay to the Authority by way of compensation, all direct costs suffered or incurred by the Authority as a consequence of such material breach or default, within 30 (thirty) days of receipt of the demand supported by necessary particulars thereof; provided, however, no compensation shall be payable under this Clause 35.1 for any material breach or default for which Damages are expressly specified and payable under this Agreement or for any indirect or remote losses incurred by the Authority.

35.2 Compensation for default by the Authority before COD

Subject to the provisions of Clause 35.6, 35.7 and 37.6, in the event of the Authority being in material default or breach of this Agreement at any time after the Appointed Date and before COD, it shall pay to the Concessionaire by way of compensation, the direct costs incurred or loss suffered by the Concessionaire as which are directly and demonstrably attributable to such material default or breach within 30 (thirty) days of receipt of the demand, supported by necessary particulars thereof; provided that no such compensation shall be payable for any material breach or default in respect of which Damages have been expressly provided for in this Agreement. It is hereby agreed by the Parties, that compensation payable by the Authority under this Clause 35.2 shall be limited to the extent determined hereinbelow:

i) Deleted;

ii) prolongation costs which shall be determined as the product of 8% (eight percent) of the value of incomplete work and the period of delay solely attributable to the Authority, divided by the period specified in Clause 12.4.1.

For the avoidance of doubt, the incomplete work shall refer only to the portion of the work that remain unfinished due to reasons attributable solely to the Authority and not due to any act, omission or concurrent delay of the Concessionaire. The value of such work shall be assessed as on the Bid Due Date by the Independent Engineer, in accordance with the methodology specified in Clause 16.2.2 (c).

S. No.	Particulars	Details
a)	**Appointed Date**	01.01.2023
b)	**Construction Period**	730 days
c)	Scheduled Completion Date	01.01.2025
d)	COD	01.07.2025
e)	Delay attributable to Concessionaire	180 days
f)	Delay attributable to Authority	(i) RoW for Work A (value as on Bid Due Date Rs. 20 crore) was handed over after 15 days of Scheduled Completion Date and the reasonable period for construction was 45 days i.e. total delay of 60 days,

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		(ii) RoW for Work B (value as on Bid Due Date Rs. 30 crore) was handed over after 30 days of Scheduled Completion Date and the reasonable period for construction was 60 days i.e. total delay of 90 days, and (ii) RoW for Work C (value as on Bid Due Date Rs. 50 crore) was handed over after 150 days of Scheduled Completion Date and the reasonable period for construction was 90 days i.e. total delay of 240 days.
g)	Value of incomplete work due to delay attributable to Authority	Rs. 100 crores
h)	**Value of incomplete work due to delay attributable to Concessionaire**	Rs. 150 crores (out of which work corresponding to Rs. 50 crore was completed by the Concessionaire in 60 days from Scheduled Completion Date and the balance Rs. 100 crore was completed in 180 days from Scheduled Completion Date.
i)	**Total Value of incomplete work**	Rs. 250 crores
j)	Price Index on initial Scheduled Completion Date	150
k)	Price Index on COD	165

Compensation payable by the Authority		
(i)	**Prolongation cost**	
	Prolongation cost = {8%×₹20 crore × (60/730)} + {8%×₹30 crore × (90/730)} + {8%×₹50 crore × (240/730)} =Rs. 0.13 + Rs. 0.30 + Rs. 1.32 = Rs. 1.74 crore	
	Total compensation payable	**Rs. 1.74 crore**

35.3 [Deleted]

35.4 Deleted

35.5 Deleted

35.6 Mitigation of costs and damage

The Affected Party shall make all reasonable efforts to mitigate or limit the costs and damage arising out of or as a result of breach of Agreement by the other Party.

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ARTICLE 36

SUSPENSION OF CONCESSIONAIRE'S RIGHTS

36.1 Suspension upon Concessionaire Default

Upon occurrence of a Concessionaire 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 any or all rights of the Concessionaire under this Agreement and pursuant hereto and (ii) exercise such rights itself and perform the obligations hereunder or authorize 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 Concessionaire and may extend up to a period not exceeding 180 (one hundred and eighty) days from the date of issue of such notice.

36.2 Authority to act on behalf of Concessionaire

36.2.1 During the period of Suspension, the Authority shall be entitled to make withdrawals from the Escrow Account for meeting the O&M Expenses and for meeting the costs incurred by it for remedying and rectifying the cause of Suspension, and thereafter for defraying the expenses specified in Clause 31.3.

36.2.2 During the period of Suspension hereunder, all rights and liabilities vested in the Concessionaire in accordance with the provisions of this Agreement shall continue to vest in the Concessionaire and all things done or actions taken, including expenditure incurred by the Authority for discharging the obligations of the Concessionaire under and in accordance with this Agreement and the Project Agreements, shall be deemed to have been done or taken for and on behalf of the Concessionaire and the Concessionaire undertakes to indemnify the Authority for all costs incurred during such period. The Concessionaire hereby licenses and sub-licenses respectively, the Authority or any other person authorized by it under Clause 36.1 to use during Suspension, all Intellectual Property belonging to or licensed to the Concessionaire with respect to the Project and its design, engineering, construction, operation and maintenance, and which is used or created by the Concessionaire in performing its obligations under the Agreement.

36.3 Revocation of Suspension

36.3.1 In the event that the Authority shall have rectified or removed the cause of Suspension within a period not exceeding 180 (One hundred Eighty) days from the date of Suspension, it shall revoke the Suspension forthwith and restore all rights of the Concessionaire 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.

36.3.2 Upon the Concessionaire having cured the Concessionaire Default within a period not exceeding 180 (one hundred eighty) days from the date of Suspension, the Authority shall revoke the Suspension forthwith and restore all rights of the Concessionaire under this Agreement.

36.4 Substitution of Concessionaire

At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders shall be entitled to substitute the Concessionaire, under and in accordance with the Substitution Agreement and upon receipt of notice thereunder from the Lenders' Representative, the Authority shall withhold Termination for a period not exceeding 180

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(one hundred and eighty) days from the date of Suspension for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

36.5 Termination

36.5.1 At any time during the period of Suspension under this Article 36, the Concessionaire may by notice require the Authority to revoke the Suspension and issue a Termination Notice. Subject to the rights of the Lenders' Representative and the Authority to undertake substitution in accordance with the provisions of this Agreement and within the period specified in Clause 36.4, the Authority shall, within 15 (fifteen) days of receipt of such notice, terminate this Agreement under and in accordance with Article 37.

36.5.2 Notwithstanding anything to the contrary contained in this Agreement, in the event that Suspension is not revoked within 180 (one hundred and eighty) days from the date of Suspension hereunder, the Concession 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 Concessionaire Default.

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ARTICLE 37

TERMINATION

37.1 Termination for Concessionaire Default

37.1.1 Save as otherwise provided in this Agreement, in the event that any of the defaults specified below shall have occurred and the Concessionaire 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 Concessionaire shall be deemed to be in default of this Agreement (the "**Concessionaire 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 the following:

(a) The Performance Security has been encashed and appropriated in accordance with Clause 9.2 and the Concessionaire fails to replenish or provide fresh Performance Security within a Cure Period of 30 (thirty) days;

(b) subsequent to the replenishment or furnishing of fresh Performance Security in accordance with Clause 9.2, the Concessionaire fails to meet any Condition Precedent or cure the Concessionaire Default, as the case may be, for which whole or part of the Performance Security was appropriated, within a Cure Period of 90 (ninety) days;

(c) the Concessionaire does not achieve the latest outstanding Project Milestone due in accordance with the provisions of Schedule-G and continues to be in default for 90 (ninety) days;

(d) the Concessionaire abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of the Authority;

(e) COD does not occur within the period specified in Clause 12.4.3;

(f) the Concessionaire is in breach of the Maintenance Requirements or the Safety Requirements, as the case may be;

(g) the Concessionaire has failed to make any payment to the Authority within the period specified in this Agreement;

(h) an Escrow Default has occurred and the Concessionaire fails to cure the default within a Cure Period of 15 (fifteen) days;

(i) upon occurrence of a Financial Default, the Lenders' Representative has by notice required the Authority to undertake Suspension or Termination, as the case may be, in accordance with the Substitution Agreement and the Concessionaire fails to cure the default within the Cure Period specified hereinabove;

(j) a breach of any of the Project Agreements by the Concessionaire has caused a Material Adverse Effect;

(k) the Concessionaire creates any Encumbrance in breach of this Agreement;

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(l) the Concessionaire repudiates this Agreement or otherwise takes any action or evidences or conveys an intention not to be bound by the Agreement;

(m) a Change in Ownership has occurred in breach of the provisions of Clause 5.3;

(n) there is a transfer, pursuant to law either of (i) the rights and/or obligations of the Concessionaire under any of the Project Agreements or of (ii) all or part of the assets or undertaking of the Concessionaire and such transfer causes a Material Adverse Effect;

(o) an execution levied on any of the assets of the Concessionaire has caused a Material Adverse Effect;

(p) filing of an application for initiating corporate insolvency resolution process by any person under the Insolvency and Bankruptcy Code, 2016 against the Concessionaire, its promoters or persons having influence or control over the Concessionaire or its promoters, as the case may be, which has a potential to impact the Project in the opinion of the Authority or further, admission of an application for initiating corporate_insolvency resolution process by an adjudicating authority under the Insolvency and Bankruptcy Code, 2016 against the Concessionaire, its promoters or persons having influence or control over the Concessionaire or its promoters, as the case may be or if a trustee or receiver is appointed for the Concessionaire or for the whole or material part of its assets that has a material bearing on the Project;

(q) the Concessionaire 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;

(r) a resolution for winding up of the Concessionaire is passed, or any petition for winding up of the Concessionaire is admitted by a court of competent jurisdiction and a provisional liquidator or receiver is appointed and such order has not been set aside within 90 (ninety) days of the date thereof or the Concessionaire is ordered to be wound up by a 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 Concessionaire are transferred to the amalgamated or reconstructed entity and that the amalgamated or reconstructed entity has unconditionally assumed the obligations of the Concessionaire under this Agreement and the Project Agreements and provided that:

(i) the amalgamated or reconstructed entity has the capability and operating experience necessary for the performance of its obligations under this Agreement and the Project Agreements;

(ii) the amalgamated or reconstructed entity has the financial standing to perform its obligations under this Agreement and the Project Agreements and has a credit worthiness at least as good as that of the Concessionaire as at the Appointed Date; and

(iii) each of the Project Agreements remains in full force and effect;

(s) any representation or warranty of the Concessionaire herein contained which is, found to be materially false, incorrect or misleading or the Concessionaire is at any time hereafter found to be in breach thereof;

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(t) the Concessionaire 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;

(u) the Concessionaire has failed to fulfill any obligation, for which failure Termination has been specified in this Agreement;

(v) the Concessionaire commits a default in complying with any other provision of this Agreement if such default causes a Material Adverse Effect on the Authority.

(w) the Concessionaire fails in achieving the rate of progress as per revised schedule in accordance with Clause 13.4 of this Agreement during the Construction Period;

(x) the Concessionaire repudiates the Supplementary Agreement on any ground whatsoever or takes any action or does any act, omission of conduct, or otherwise evidences or conveys an intention not to be bound by the Supplementary Agreement; or

(y) the Concessionaire renders itself to be or is rendered incapable of, for any reason, performance of any of its obligations as set out in this Agreement.

37.1.2 Without prejudice to any other rights or remedies which the Authority may have under this Agreement, upon occurrence of a Concessionaire Default, the Authority shall be entitled to terminate this Agreement by issuing a Termination Notice to the Concessionaire; provided that before issuing the Termination Notice, the Authority shall by a notice inform the Concessionaire of its intention to issue such Termination Notice and grant 15 (fifteen) days to the Concessionaire 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, subject to the provisions of Clause 37.1.3.

37.1.3 Subject to the provisions of clause 37.1.4, the Authority shall, if there be Senior Lenders, send a copy of its notice of intention to issue a Termination Notice referred to in Clause 37.1.2 to inform the Lenders' Representative and grant 15 (fifteen) days to the Lenders' Representative, for making a representation on behalf of the Senior Lenders stating the intention to substitute the Concessionaire in accordance with the Substitution Agreement. In the event the Authority receives such representation on behalf of Senior Lenders, it shall, in its discretion, either withhold Termination for a period not exceeding 180 (one hundred and eighty) days from the date of such representation or exercise its right of Suspension, as the case may be, for enabling the Lenders' Representative to exercise the Senior Lenders' right of substitution in accordance with the Substitution Agreement:

Provided that the Lenders' Representative may, instead of exercising the Senior Lenders' right of substitution, procure that the default specified in the notice is cured within the aforesaid period of 180 (one hundred and eighty) days and upon such curing thereof, the Authority shall withdraw its notice referred to above and restore all the rights of the Concessionaire, unless the Authority has exercised or proceeds to exercise its right under clause 37.1.4.

37.1.4 Substitution of the Concessionaire by the Authority.

Notwithstanding anything to the contrary contained in this Agreement, if a notice of intention to terminate is issued by the Authority during the Construction Period, the Authority, in public interest, may substitute the Concessionaire by completing such

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substitution within a period of 90 (ninety) days from the date of issuance of a notice to the Lenders' Representative, without prejudice to any other rights or remedies available to it under this Agreement. For this purpose, the Authority may invite, negotiate and procure offers through public auction or tender for the takeover and transfer of the Project, including the Concession, to a Nominated Company. Such substitution shall be subject to the Nominated Company assuming all liabilities and obligations of the Concessionaire under or arising out of this Agreement, including obligations owed to the Authority and to the Senior Lenders to the extent of the Debt Due. During and upon such substitution, the Authority shall ensure that the Debt Due of the Senior Lenders is duly considered and protected. It is expressly agreed that any consideration received by the Authority pursuant to such substitution, including any premium or excess amount, after providing for the Debt Due and other amounts payable in accordance with this Agreement, shall not be payable or passed on, whether directly or indirectly, to the Concessionaire to whom the notice of intention to terminate has been issued.

37.2 Termination for Authority Default

37.2.1 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 Concessionaire or due to Force Majeure. The defaults referred to herein shall include the following:

(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 Concessionaire;

(b) the Authority has failed to make any payment to the Concessionaire within the period specified in this Agreement;

(c) 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.

37.2.2 Without prejudice to any other right or remedy which the Concessionaire may have under this Agreement, upon occurrence of an Authority Default, the Concessionaire shall, subject to the provisions of the Substitution Agreement, be entitled to terminate this Agreement by issuing a Termination Notice to the Authority; provided that before issuing the Termination Notice, the Concessionaire shall by a notice inform the Authority of its intention to issue the Termination Notice and grant 30 (thirty) days to the Authority to make a representation, and may after the expiry of such 30 (thirty) days, whether or not it is in receipt of such representation, issue the Termination Notice.

37.3 Termination Payment

37.3.1 Upon Termination on account of a Concessionaire Default during the Operation Period, the Authority shall pay to the Concessionaire, by way of Termination Payment, 90% of Debt Due less Insurance Cover; provided that if any insurance claims forming part of the Insurance Cover are not admitted and paid, then 80% (eighty per cent) of such unpaid claims shall be included in the computation of Debt Due. The Concessionaire hereby acknowledges that no Termination Payment shall be due or payable to it on account of a Concessionaire Default occurring prior to COD save and except in accordance with Clause 37.3.2.

37.3.2 Notwithstanding to the provisions of Clause 37.3.1 upon Termination on account of Concessionaire Default during the Construction Period, the Termination Payment shall be

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based on the Payment Milestone achieved which is in terms of the Physical Progress made by the Concessionaire in the Project and the Termination Payment corresponding to the achieved Payment Milestone shall be as follows:

Payment Milestone	**Basis of calculation for Termination Payment**
1st Payment Milestone	NIL
2nd Payment Milestone	NIL
3rd Payment Milestone	50% of Debt Due or 3.00% of Bid Project Cost , whichever is lower
4th Payment Milestone	55% of Debt Due or 5.78% of Bid Project Cost , whichever is lower
5th Payment Milestone	60% of Debt Due or 9.00% of Bid Project Cost , whichever is lower
6th Payment Milestone	65% of Debt Due or 12.68% of Bid Project Cost , whichever is lower
7th Payment Milestone	70% of Debt Due or 16.80% of Bid Project Cost , whichever is lower
8th Payment Milestone	75% of Debt Due or 21.38% of Bid Project Cost , whichever is lower
9th Payment Milestone	80% of Debt Due or 26.40% of Bid Project Cost , whichever is lower
10th Payment Milestone	85% of Debt Due or 31.88% of Bid Project Cost , whichever is lower

For the avoidance of doubt, it is clarified that in case of Termination happening in between two Payment Milestones, for the purpose of calculation of Termination Payment, the milestone achieved would only be considered.

37.3.3 Upon Termination on account of an Authority Default, the Authority shall pay to the Concessionaire, by way of Termination Payment, an amount equal to:

(i) In case the Termination occurs prior to COD

(a) Debt Due payment calculated as per the table below less Insurance Cover; provided that if any insurance claims forming part of the Insurance Cover are not admitted and paid, then 80% (eighty per cent) of such unpaid claims shall be included in the computation of Debt Due. Further the Debt Due would be calculated as per the table provided below:

Payment Milestone	**Basis of calculation for Debt Due payment**
1stPayment Milestone	Debt Due or **0.75% of Bid Project Cost**, whichever is lower
2ndPayment Milestone	Debt Due or **1.50% of Bid Project Cost**, whichever is lower
3rd Payment Milestone	Debt Due or **6.00% of Bid Project Cost**, whichever is lower
4th Payment Milestone	Debt Due or **10.50% of Bid Project Cost**, whichever is lower
5th Payment Milestone	Debt Due or **15.00% of Bid Project Cost**, whichever is lower
6th Payment Milestone	Debt Due or **19.50% of Bid Project Cost**, whichever is lower

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7th Payment Milestone	Debt Due or **24.00% of Bid Project Cost**, whichever is lower
8th Payment Milestone	Debt Due or **28.50% of Bid Project Cost**, whichever is lower
9th Payment Milestone	Debt Due or **33.00% of Bid Project Cost**, whichever is lower
10th Payment Milestone	Debt Due or **37.50% of Bid Project Cost**, whichever is lower

For the avoidance of doubt, it is clarified that in case of Termination happening in between two Payment Milestones, for the purpose of calculation of Debt Due, the milestone achieved would only be considered; and

(b) 120% (one hundred and twenty per cent) of the Adjusted Equity;

(ii) In case the Termination occurs on or after COD, the Authority shall pay to the Concessionaire, by way of Termination Payment, an amount equal to sum of Annuity Payments remaining unpaid in respect of the Concession Period, including interest thereon for the period from the date of last annuity payment up to the Transfer Date.

37.3.4 Termination Payment shall become due and payable to the Concessionaire within 30 (thirty) days of a demand being made by the Concessionaire to the Authority with the necessary particulars and subject to verification, certification and adjustment in accordance with this Agreement, including set-off of any amounts payable by the Concessionaire to the Authority and in the event of any delay, the Authority shall pay interest at a rate equal to 2% (two per cent) above the daily average Bank Rate 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.

37.3.5 The Concessionaire expressly agrees acknowledges and confirms that Termination Payment under this Article 37 shall constitute a full final and complete settlement and discharge of all claims demands, entitlements, liabilities and causes of action whatsoever, whether present or future, known or unknown, direct or indirect of the Concessionaire on account of Termination of this Agreement for any reason whatsoever and that the Concessionaire or any shareholder thereof shall not have any further right or claim under any law, treaty, convention, contract or otherwise.

37.4 Certain limitations on Termination Payment

37.4.1 During the Construction Period, Termination Payment due and payable under this Agreement shall be computed with reference to the Debt Due in accordance with the provisions of this Agreement. The Parties also agree that for the purposes of computing Termination Payment, the Debt Due shall at no time exceed 85% (eighty-five per cent) of the Total Project Cost.

37.5 Other rights and obligations of the Authority

Upon Termination for any reason whatsoever, the Authority shall:

(a) be deemed to have taken possession and control of the Project Highway forthwith on an "as is where is" basis;

(b) Deleted;

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(c) Deleted;

(d) require the Concessionaire to comply with the Divestment Requirements set forth in Clause 38.1; and

(e) succeed upon election by the Authority, without the necessity of any further action by the Concessionaire, to the interests of the Concessionaire under such of the Project Agreements as the Authority may in its discretion deem appropriate and shall upon such election be liable to the Contractors only for compensation accruing and becoming due and payable to them under the terms of their respective Project Agreements from and after the date the Authority elects to succeed to the interests of the Concessionaire. For the avoidance of doubt, the Concessionaire acknowledges and agrees that all sums claimed by such Contractors as being due and owing for works and services performed or accruing on account of any act, omission or event prior to such date shall constitute debt between the Concessionaire and such Contractors and the Authority shall not in any manner be liable for such sums. It is further agreed that in the event the Authority elects to cure any outstanding defaults under such Project Agreements, the amount expended by the Authority for this purpose shall be deducted from the Termination Payment.

37.6 Survival of rights

Notwithstanding anything to the contrary contained in this Agreement, but subject to the provisions of Clause 37.3.5, 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 contract. All rights and obligations of either Party under this Agreement, including Termination Payments and Divestment Requirements, shall survive the Termination to the extent such survival is necessary for giving effect to such rights and obligations.

37.7 Mutual Foreclosure

37.7.1 Without prejudice to any provision of this Agreement, the Authority and Concessionaire may foreclose this Agreement by mutual consent in circumstances which does not constitute any Party's default. Such a foreclosure can occur in any of the following 2 (two) categories as per the mutual consent of the Authority and the Concessionaire:

a. Type A Foreclosure: Foreclosure with mutual consent without any liability or consequential future liability for either Party
b. Type B Foreclosure: Foreclosure with mutual consent with compensation to the Concessionaire including any pending settlements / claims as per the provisions under Clause 37.7.2

37.7.2 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 a reasonable time-frame 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.

37.7.3 In either case of the other Party agreeing to the proposed foreclosure as specified in Clause 37.7.1 or otherwise, and with prior written approval of the Lenders' Representative, the Parties may negotiate the terms and conditions of the Mutual Foreclosure Agreement and

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this Agreement shall stand terminated upon execution of the Mutual Foreclosure Agreement

37.7.4 In the event the Parties mutually agree to foreclose this Agreement as a Type B Foreclosure under Clause 37.7.1, the Authority shall be liable to compensate the Concessionaire as per the provisions under Clause 37.7.3.

37.7.5 Any attempt or endeavour for foreclosure by mutual agreement under this clause shall, subject to the rights and obligations of the Parties surviving under this Clause, 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. For the avoidance of doubt, it is agreed that all the rights, claims, and obligations of either party arising under this Agreement shall cease upon execution of the Mutual Foreclosure Agreement hereunder.

37.7.6 For the avoidance of doubt, it is clarified that such foreclosure shall not affect the Concessionaire in any way if it wishes to bid in future projects of the Authority.

37.8 Deleted

37.9 Continuity upon Termination

In case of Termination under Clause 37 and notwithstanding pendency of any judicial/quasi-judicial proceedings, the Authority, in accordance with its responsibility of developing and maintaining "in proper repair all national highways" under Section 5 of The National Highways Act, 1956, in public interest, may appoint/engage another contractor to execute or complete the Project with or without appropriate changes or modifications. Such an appointment or engagement shall be without prejudice to Concessionaire's liabilities and obligations under Clause 39 and similar such clauses.

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ARTICLE 38

DIVESTMENT OF RIGHTS AND INTEREST

38.1 Divestment Requirements

38.1.1 Upon Termination, the Concessionaire shall comply with and conform to the following Divestment Requirements:

(a) notify to the Authority forthwith the location and particulars of all Project Assets;

(b) deliver forthwith the actual or constructive possession of the Project Highway, free and clear of all Encumbrances, save and except to the extent set forth in the Substitution Agreement;

(c) cure all Project Assets, including the road, bridges, structures and equipment, of all defects and deficiencies so that the Project Highway is compliant with the Maintenance Requirements; provided that in the event of Termination during the Construction Period, all Project Assets shall be handed over on 'as is where is' basis after bringing them to a safe condition;

(d) deliver and transfer relevant records, reports, Intellectual Property and other licenses pertaining to the Project Highway and its design, engineering, construction, operation and maintenance, including all programmers and manuals pertaining hereto and complete 'as built' Drawings as on the Transfer Date. For the avoidance of doubt, the Concessionaire represents and warrants that the Intellectual Property delivered hereunder shall be adequate and complete for the design, engineering, construction, operation and maintenance of the Project Highway and shall be assigned to the Authority free of any Encumbrance;

(e) Transfer and/or deliver all Applicable Permits to the extent permissible under Applicable Laws;

(f) execute such deeds of conveyance, documents and other writings as the Authority may reasonably require for conveying, divesting and assigning all the rights, title and interest of the Concessionaire in the Project Highway Assets, including manufacturers' warranties in respect of any plant or equipment and the right to receive outstanding insurance claims to the extent due and payable to the Authority, absolutely unto the Authority or its nominee; and

(g) Comply with all other requirements as may be prescribed or required under Applicable Laws for completing the divestment and assignment of all rights, title and interest of the Concessionaire in the Project Highway, free from all Encumbrances, absolutely unto the Authority or to its nominee.

38.1.2 Subject to the exercise by the Authority of its rights under this Agreement or under any of the Project Agreements to perform or procure the performance by a third party of any of the obligations of the Concessionaire, the Parties shall continue to perform their obligations under this Agreement, notwithstanding the issuance of any Termination Notice, until the Termination of this Agreement becomes effective in accordance with its terms.

38.2 Inspection and cure

Not earlier than 90 (ninety) days prior to Termination but not later than 15 (fifteen) days prior to the effective date of such Termination, the Independent Engineer shall verify, after giving due notice to the Concessionaire specifying the time, date and place of such verification and/or inspection, compliance by the Concessionaire with the Maintenance

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Requirements, and if required, cause appropriate tests to be carried out at the Concessionaire's cost for this purpose. Defaults, if any, in the Maintenance Requirements shall be cured by the Concessionaire at its cost and the provisions of Article 39 shall apply, mutatis mutandis, in relation to curing of defects or deficiencies under this Article 38.

38.3 Cooperation and assistance on transfer of Project

38.3.1 The Parties shall cooperate on a best effort basis and take all necessary measures, in good faith, to achieve a smooth transfer of the Project in accordance with the provisions of this Agreement so as to protect the safety of and avoid undue delay or inconvenience to the Users, other members of the public or the lawful occupiers of any part of the Site.

38.3.2 The Parties shall provide to each other, 9 (nine) months prior to the Transfer Date in the event of Termination by efflux of time and immediately in the event of either Party conveying to the other Party its intent to issue a Termination Notice, as the case may be, as much information and advice as is reasonably practicable regarding the proposed arrangements for operation of the Project following the Transfer Date. The Concessionaire shall further provide such reasonable advice and assistance as the Authority, its Concessionaire or agent may reasonably require for operation of the Project until the expiry of 6 (six) months after the Transfer Date.

38.3.3 The Authority shall have the option to purchase or hire from the Concessionaire at a fair market value and free from any Encumbrance all or any part of the plant and machinery used in connection with the Project but which does not form part of the assets specified in Clause 38.1.1 and is reasonably required in connection with operation of the Project.

38.4 Vesting Certificate

The divestment of all rights, title and interest in the Project Highway shall be deemed to be complete on the date when all of the Divestment Requirements have been fulfilled, and the Authority shall, without unreasonable delay, thereupon issue a certificate substantially in the form set forth in Schedule-Q (the **"Vesting Certificate"**), which will have the effect of constituting evidence of divestment by the Concessionaire of all of its rights, title and interest in the Project Highway and their vesting in the Authority pursuant hereto. It is expressly agreed that any defect or deficiency in the Divestment Requirements shall not in any manner be construed or interpreted as restricting the exercise of any rights by the Authority or its nominee on, or in respect of the Project Highway on the footing that all Divestment Requirements have been complied with by the Concessionaire.

38.5 Deleted

38.6 Divestment costs etc.

38.6.1 The Concessionaire shall bear and pay all costs incidental to divestment of all of the rights, title and interest of the Concessionaire in the Project Highway in favor of the Authority upon Termination, save and except that all stamp duties payable on any deeds or Documents executed by the Concessionaire in connection with such Divestment shall be borne by the Authority.

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ARTICLE 39

DEFECTS LIABILITY AFTER TERMINATION

39.1 Liability for defects after Termination

The Concessionaire shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 (one hundred and twenty) days after Termination and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during the aforesaid period. In the event that the Concessionaire fails to repair or rectify such defect or deficiency within a period of 15 (fifteen) days from the date of notice issued by the Authority in this behalf or within such shorter period as may be specified by the Authority in cases involving safety, traffic disruption or risk to public interest, the Authority shall be entitled to get the same repaired or rectified at the Concessionaire's risk and cost so as to make the Project Highway conform to the Maintenance Requirements. All costs incurred by the Authority including costs of temporary or emergency measures hereunder shall be reimbursed by the Concessionaire to the Authority within 15 (fifteen) days of receipt of demand thereof and in the event of default in reimbursing such costs, the Authority shall be entitled to recover the same from the Escrow Account under the provisions of Clause 39.2 or from the Performance Guarantee or any amounts payable by Authority to the Concessionaire under this Agreement provided thereunder. For the avoidance of doubt, the provisions of this Article 39 shall not apply if Termination occurs prior to COD.

39.2 Retention in Escrow Account

39.2.1 Notwithstanding anything to the contrary contained in this Agreement, but subject to the provisions of Clause 39.2.3, a sum equal to 15% (fifteen per cent) of the Annuity Payment due and payable immediately preceding the Transfer Date shall be retained in the Escrow Account for a period of 120 (one hundred and twenty) days after Termination for meeting the liabilities or till the defects and deficiencies in the Project Highway are rectified to the satisfaction of the Independent Engineer after due consideration of the comments of the Authority, whichever is later, if any, arising out of or in connection with the provisions of Clause 39.1.

39.2.2 Without prejudice to the provisions of Clause 39.2.1, the Independent Engineer shall carry out an inspection of the Project at any time between 210 (two hundred and ten) and 180 (one hundred and eighty) days prior to the Termination and if it recommends that the status of the Project is such that a sum larger than the amount stipulated in Clause 39.2.1 should be retained in the Escrow Account and for a period longer than the aforesaid 120 (one hundred and twenty) days, the amount recommended by the Independent Engineer shall be retained in the Escrow Account for the period specified by it.

39.2.3 The Concessionaire may, for the performance of its obligations under this Article 39, provide to the Authority an Insurance Surety Bond (issued by Insurance Company authorized by Insurance Regulatory and Development Authority of India) or a e-Bank Guarantee from a Bank for a sum equivalent to the amount determined under Clause 39.2.1 or 39.2.2, as the case may be and for the period specified therein, substantially in the form set forth in Schedule-F (the **"Performance Guarantee**"), to be modified, *mutatis mutandis*, for this purpose and the Authority shall, without prejudice to its other rights and remedies hereunder or in law, be entitled to encash and appropriate the required amounts from the Performance Guarantee for undertaking the repairs or rectification at the Concessionaire's risk and cost in accordance with the provisions of this Article 39. Upon furnishing of a Performance Guarantee under this Clause 39.2.3, the retention of funds in

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the Escrow Account in terms of Clause 39.2.1 or 39.2.2, as the case may be, shall be dispensed with.

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Part VI

Other Provisions

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ARTICLE 40

ASSIGNMENT AND CHARGES

40.1 Restrictions on assignment and charges

40.1.1 Subject to Clauses 40.2 and 40.3, this Agreement shall not be assigned by the Concessionaire to any person, save and except with the prior consent of the Authority, which consent the Authority shall be entitled to decline without assigning any reason.

40.1.2 Subject to the provisions of Clause 40.2, the Concessionaire shall not create nor permit to subsist any Encumbrance or otherwise transfer or dispose of all or any of its rights and benefits under this Agreement or any Project Agreement to which the Concessionaire is a party whether directly or indirectly, except with prior consent of the Authority, which consent the Authority shall be entitled to decline without assigning any reason.

40.2 Permitted assignment and charges

The restraints set forth in Clause 40.1 shall not apply to:

(a) liens arising by operation of law (or by an Agreement evidencing the same) in the ordinary course of business of the Project Highway;

(b) mortgages/pledges/hypothecation of goods/assets other than Project Assets, Project Highway and any rights therein and their related documents of title, arising or created in the ordinary course of business of the Project Highway and as security only for indebtedness to the Senior Lenders under the Financing Agreements and/or for working capital arrangements for the Project. For the avoidance of doubt, the Senior Lenders would be entitled to create a lien on the Escrow Account, subject to Project Highway and any rights therein and without prejudice to the rights of the Authority under this Agreement;

(c) assignment of rights, interest and obligations of the Concessionaire to or in favor of the Lenders' Representative as nominee and for the benefit of the Senior Lenders, to the extent covered by and in accordance with the Substitution Agreement as security for financing provided by Senior Lenders under the Financing Agreements; and

(d) Liens or encumbrances required by any Applicable Law.

40.3 Substitution Agreement

40.3.1 The Lenders' Representative, on behalf of Senior Lenders or the Authority may exercise the right to substitute either (i) the Concessionaire or (ii) the selected bidder / Consortium Members pursuant to the agreement for substitution of the Concessionaire (the **"Substitution Agreement"**) to be entered into amongst the Concessionaire, the Authority and the Lenders' Representative, on behalf of Senior Lenders, substantially in the form set forth in Schedule-R.

40.3.2 Upon substitution of the Concessionaire under and in accordance with the Substitution Agreement, the Nominated Company substituting the

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Concessionaire shall be deemed to be the Concessionaire under this Agreement and shall enjoy all rights and be responsible for all obligations of the Concessionaire under this Agreement as if it were the Concessionaire; provided that all amounts, liabilities, dues and obligations arising out of or in relation to (i) Taxes; (ii) any amount incurred by the Authority at the risk and cost of the Concessionaire; (iii) O&M Expenses in accordance with this Agreement; and (iv) Concession Fee, whether due, accrued or payable as on the date of substitution or arising thereafter, together with payment or consideration in connection with such substitution shall stand transferred to and shall be assumed and discharged by the Nominated Company. All other liabilities or Dispute(s) not covered above shall remain with the Concessionaire and be resolved in accordance with the Dispute Resolution Procedure. Provided further where the Concessionaire is in breach of this Agreement on the date of such substitution, the Authority shall by notice grant a Cure Period of 120 (one hundred and twenty) days to the Nominated Company substituting the Concessionaire for curing such breach.

40.3.3 The Lenders' Representative, on behalf of Senior Lenders may also exercise the right to substitute the selected bidder/Consortium Members together with all shareholders of the Concessionaire under and in accordance with Clause 3A of the Substitution Agreement. Upon such Substitution, the Concessionaire shall continue as the same entity, and all amounts, liabilities, dues, and obligations of the Concessionaire under this Agreement shall remain with the Concessionaire.

40.4 Harmonious Substitution

40.4.1 The Lenders' Representative, on behalf of the Senior Lenders and based on the representation made by the Concessionaire, may exercise the right to substitute all the shareholders of the Concessionaire (the "**Harmonious Substitution**") upon the occurrence of any of the following events:

(i) where the delay in execution or completion of the Project is on account of non-fulfilment of the obligations of the Authority under the Concession Agreement namely land acquisition, environmental clearances, and other statutory or regulatory approvals and clearances, and the Authority has failed to cure it within the Cure Period;

(ii) where the Concessionaire has failed to infuse the required Equity, as notified by the Lenders' Representative to the Authority, or as evidenced by the records of the Escrow Account and a notice is issued by the Authority to the Concessionaire in respect thereof, with a copy to the Lenders' Representative; or where the Concessionaire has failed to mobilise the requisite resources and the Concessionaire has failed to cure it within the Cure Period; or

(iii) the Project has achieved COD and the Concessionaire seeks to exit the Project for its own convenience.

40. 5 Procedure for Harmonious Substitution

40.5.1 Within 15 (fifteen) days of the occurrence of any of the events under Clause 40.4.1, the Concessionaire shall submit a written request to the Lenders' Representative, with a copy to the Authority, seeking Harmonious Substitution in accordance with the provisions of Clause 40.5.

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40.5.2 Upon receipt of such request, the Lenders' Representative shall independently assess the merits thereof and determine whether the proposed Harmonious Substitution is in the interest of the Project and the Senior Lenders. If so satisfied, the Lenders' Representative may, within 30 (thirty) days of receipt of such request from the Concessionaire, exercise its right of Harmonious Substitution by issuing a notice to the Concessionaire along with particulars thereof, with a copy to the Authority for its information and record.

40.5.3 The Lenders' Representative shall undertake and complete the Harmonious Substitution within 120 (one hundred and twenty) days from the date of issuance of the notice by the Lenders' Representative under Clause 40.5.2.

40.5.4 The Lenders' Representative, in consultation with the Concessionaire, shall invite, negotiate and procure offers for such Harmonious Substitution, either by private negotiation or public auction or tender.

40.5.5 The selection of the Designated Company for such Harmonious Substitution and the valuation of the Equity of the Concessionaire shall be determined with the mutual consent of the Concessionaire and the Lenders' Representative, subject to the following:

(i) where COD has not been achieved, the Designated Company shall satisfy the financial and technical qualifications prescribed by the Authority for the selection of bidders for the award of the Concession; and

(ii) where COD has been achieved, the substituting entity acquiring at least 51% (fifty-one per cent) of the equity shareholding in the Concessionaire shall have adequate experience of operating and maintaining the completed highway projects by itself or through its Associates.

40.5.6 The Lenders' Representative shall submit the proposal for Harmonious Substitution to the Authority for its approval, which shall include the details of the Designated Company that fulfils the requisite eligibility criteria and requirements specified in the RFP, the Equity valuation and all key terms of the Harmonious Substitution agreed among the Senior Lenders, existing shareholders, Concessionaire and Designated Company.

40.5.7 Upon receipt of the proposal from the Lenders' Representative, the Authority shall satisfy itself on the eligibility and credentials of the Designated Company prior to according its concurrence to such Harmonious Substitution.

40.5.8 If the Authority has any objection to the proposal in favour of the Designated Company selected by the Lenders' Representative, the Authority shall, within 15 (fifteen) days from the date of the proposal made by the Lenders' Representative, pass a reasoned order after affording a hearing to the Lenders' Representative. If no such objection is raised by the Authority within the said period of 15 (fifteen) days, the Designated Company shall be deemed to have been accepted. In the event of such objection by the Authority, the Lenders' Representative may propose another Designated Company. For the avoidance of doubt, it is clarified

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that the Lenders' Representative shall submit the proposal sufficiently in advance to enable the Authority to examine the same. The Authority shall not consider any proposal received less than 30 (thirty) days prior to the expiry of the period specified in Clause 40.5.3.

40.5.9 Where Harmonious Substitution is effected under Clause 40.4.1(ii), at the time of according its concurrence to the proposal of the Lenders' Representative, the Authority shall recover from the Concessionaire all Damages and other amounts due and payable by the Concessionaire for its defaults under the Concession Agreement; provided that the aggregate amount recoverable under this Clause shall not exceed 1% (one per cent) of the Bid Project Cost.

40.5.10 Where Harmonious Substitution is effected under Clause 40.4.1(i), no amount specified in Clause 40.5.9 shall be payable by the Concessionaire. Prior to such Harmonious Substitution, the Authority shall cure the defaults attributable to it and shall pay to the Concessionaire all Damages and other amounts due and payable by the Authority for its defaults under the Concession Agreement; provided that the aggregate amount payable to the Concessionaire by the Authority under this Clause 40.5.10 shall not exceed 1% (one per cent) of the Bid Project Cost.

40.5.11 The right of Harmonious Substitution under Clause 40.4.1(i) may be exercised only once during the Construction Period.

40.5.12 Upon the Harmonious Substitution being effected through the replacement of all the existing shareholders by the Designated Company, the Authority shall grant the Concessionaire such period as the Authority may deem fit to meet Concessionaire's obligations under the Concession Agreement; provided that such period shall not be less than the aggregate of (a) the period remaining until the Scheduled [***-Laning] Date, as modified in accordance with Clause 12.4.2, as on the date of issuance of the notice by the Lenders' Representative under Clause 40.5.2, and (b) the period elapsed in effecting the Harmonious Substitution from the date of such notice. No compensation shall be payable on account of such period granted by the Authority.

40.5.13 The applicability of price index for extended period shall be determined as part of Harmonious substitution.

40.5.14 The Authority shall be fully discharged of any claims by the earlier shareholders or the Concessionaire for any delays or any other action till the transfer of shareholding of the Concessionaire to the Designated Company.

40.5.15 Post such Harmonious Substitution, the Concessionaire shall ensure compliance with Clause 5.3, Clause 7.1(k) and the definition of "Change in Ownership" under Clause 48.1 of the Concession Agreement.

40.5.16 In the event that the Harmonious Substitution is not completed within 120 (one hundred and twenty) days from the date of issuance of the notice by the Lenders'

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Representative under Clause 40.5.2 the Concession Agreement shall be terminated forthwith upon issuance of a Termination Notice by the Party entitled to do so in accordance with the provisions of the Concession Agreement. Upon such Termination, the Authority shall pay to the Concessionaire a Termination Payment equal to: (a) the amount payable on account of Authority Default under Clause 37.3.3 of the Concession Agreement in the case of Harmonious Substitution initiated under Clause 40.4.1(i); or (b) the amount payable on account of Concessionaire Default under Clause 37.3.2 of the Concession Agreement in the case of Harmonious Substitution initiated under Clause 40.4.1(ii).

40.5.17 The procedure prescribed under the other Articles of the Concession Agreement and the Substitution Agreement shall continue to apply, save and except to the extent modified by the provisions of Clause 40.4.

40.6 Assignment by the Authority

Notwithstanding anything to the contrary contained in this Agreement, the Authority may, after giving 60 (sixty) days' notice to the Concessionaire, assign and/ or transfer any of its rights and benefits and/or obligations under this Agreement to an assignee who is, in the reasonable opinion of the Authority, capable of fulfilling all of the Authority's then outstanding obligations under this Agreement.

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ARTICLE 41

CHANGE IN LAW

41.1 Increase in costs

If as a result of Change in Law, the Concessionaire suffers an increase in costs or other financial burden, the aggregate financial effect of which exceeds the higher of **Rs. 1 crore (Rupees one crore)** [17] or 2% (two per cent) of the total Annuity Payments (the **"Threshold Limit"**) in any Accounting Year, the Concessionaire may so notify the Authority and propose amendments to this Agreement so as to place the Concessionaire in the same financial position as it would have enjoyed had there been no such Change in Law resulting in costs increase or other financial burden as aforesaid. Upon notice by the Concessionaire, the Parties shall meet, as soon as reasonably practicable as but no later than 30 (thirty) days from the date of notice and either agree on amendments to this Agreement or on any other mutually agreed arrangement:

Provided that if no agreement is reached within 90 (ninety) days of the aforesaid notice, the Concessionaire may by notice require the Authority to pay an amount that would place the Concessionaire in the same financial position that it would have enjoyed had there been no such Change in Law and within 15 (fifteen) days of receipt of such notice, along with particulars thereof, the Authority shall pay the amount specified therein; provided that if the Authority shall dispute such claim of the Concessionaire, the same shall be settled in accordance with the Dispute Resolution Procedure. For the avoidance of doubt, it is agreed that this Clause 41.1 shall be restricted to changes in law directly affecting the Concessionaire's costs of performing its obligations under this Agreement and while determining the amount payable to the Concessionaire, the Threshold Limit shall not be deducted from such amount.

Provided further, that if the Change in Law, except where such Change in Law is on account of any change in the rates of any of the Taxes, results in increase in cost of construction after the Scheduled Completion Date, the Authority shall not be liable to pay any amount toward such increase cost if any delay in achieving the COD is attributable to the Concessionaire.

For the avoidance of doubt, it is clarified that the Concessionaire shall not be entitled to any benefit on account of any Change in Law which is a direct consequence of Non-Political Force Majeure event or Indirect Political Force Majeure event as mentioned in Clause 34.2 and Clause 34.3.

41.2 Reduction in costs

If as a result of Change in Law, the Concessionaire benefits from a reduction in costs or other financial gains, the aggregate financial effect of which exceeds in any Accounting Year, the Authority may so notify the Concessionaire and propose amendments to this Agreement so as to place the Concessionaire in the same financial position as it would have enjoyed had there been no such Change in Law

[17] This amount may, in the discretion of the Authority, be suitable increased, but in no case exceeding an amount of Rs. 1 Cr. For every Rs. 500 Cr. of Estimated Project Cost. A similar modification should also be made in Clause 41.2.

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resulting in decreased costs or other financial gains as aforesaid. Upon notice by the Authority, the Parties shall meet, as soon as reasonably practicable as but no later than 30 (thirty) days from the date of notice and either agree on such amendments to this Agreement or on any other mutually agreed arrangement.

Provided that if no Agreement is reached within 90 (ninety) days of the aforesaid notice, the Authority may by notice require the Concessionaire to pay an amount that would place the Concessionaire in the same financial position that it would have enjoyed had there been no such Change in Law and within 15 (fifteen) days of receipt of such notice, along with particulars thereof, the Concessionaire shall pay the amount specified therein to the Authority; provided that if the Concessionaire shall dispute such claim of the Authority, the same shall be settled in accordance with the Dispute Resolution Procedure. For the avoidance of doubt, it is agreed that this Clause 41.2 shall be restricted to changes in law directly affecting the Concessionaire's costs of performing its obligations under this Agreement and while determining the amount payable to the authority, the Threshold Limit shall not be deducted.

41.3 Deleted

41.4 Restriction on cash compensation

The Parties acknowledge and agree that the demand for cash compensation under this Article 41 shall be restricted to the effect of Change in Law during the respective Accounting Year and shall be made at any time after commencement of such year, but no later than one year from the close of such Accounting Year. Any demand for cash compensation payable for and in respect of any subsequent Accounting Year shall be made after the commencement of the Accounting Year to which the demand pertains, but no later than 2 (two) years from the close of such Accounting Year.

41.5 [Deleted]

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ARTICLE 42

LIABILITY AND INDEMNITY

42.1 General indemnity

42.1.1 The Concessionaire shall 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 claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by the Concessionaire of any of its obligations under this Agreement or any related Agreement or on account of any defect or deficiency in the provision of services by the Concessionaire to the Authority or to any User or from any negligence of the Concessionaire under contract 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.

42.1.2 The Authority shall indemnify, defend, save and hold harmless the Concessionaire against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature arising out of (a) defect in title and/or the rights of the Authority in the land comprised in the Site and/or (b) breach by the Authority of any of its obligations under this Agreement or any related Agreement, which materially and adversely affect the performance by the Concessionaire of its obligations under this Agreement, save and except that where any such claim, suit, proceeding, action and/or demand has arisen due to a negligent act or omission or breach of any of its obligations under any provision of this Agreement or any related Agreement, and/or breach of its statutory duty on the part of the Concessionaire, its subsidiaries, affiliates, contractors, servants or agents, the same shall be the liability of the Concessionaire.

42.2 Indemnity by the Concessionaire

42.2.1 Without limiting the generality of Clause 42.1, the Concessionaire 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 Concessionaire to comply with Applicable Laws and Applicable Permits;

(b) payment of taxes required to be made by the Concessionaire in respect of the income or other taxes of the Concessionaire's contractors, suppliers and representatives; or

(c) non-payment of amounts due as a result of materials or services furnished to the Concessionaire or any of its Contractors which are payable by the Concessionaire or any of its Contractors.

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42.2.2 Without limiting the generality of the provisions of this Article 42, the Concessionaire 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 Concessionaire or by the Concessionaire's Contractors in performing the Concessionaire'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 injunction is granted, the Concessionaire 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/injuncted, the Concessionaire shall promptly make every reasonable effort to secure for the Authority a license, at no cost to the Authority, authorizing continued use of the infringing work. If the Concessionaire is unable to secure such license within a reasonable time, the Concessionaire 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.

42.3 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 42 (the **"Indemnified Party"**) it shall notify the other Party (the **"Indemnifying Party"**) within 30 (thirty) 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. In the event that 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.

42.4 Defense of claims

42.4.1 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 42, the Indemnifying Party shall be entitled, at its option, to assume and control the defense 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

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Indemnified Party for the reasonable cost and expenses incurred by the Indemnified Party prior to the assumption by the Indemnifying Party of such defense. 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.

42.4.2 If the Indemnifying Party has exercised its rights under Clause 42.3, 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).

42.4.3 If the Indemnifying Party exercises its rights under Clause 42.3, 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 authorized in writing by the Indemnifying Party;

(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 defense of such action;

(c) the Indemnifying Party shall not, in fact, have employed independent counsel reasonably satisfactory to the Indemnified Party, to assume the defense 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 defenses 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 42.4.3 shall be applicable, the counsel for the Indemnified Party shall have the right to direct the defense 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.

42.5 No consequential claims

Notwithstanding anything to the contrary contained in this Article 42, the indemnities herein provided shall not include any claim or recovery in respect of any cost, expense, loss or damage of an indirect, incidental or consequential nature, including loss of profit, except as expressly provided in this Agreement.

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42.6 Survival on Termination

The provisions of this Article 42 shall survive Termination.

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ARTICLE 43

RIGHTS AND TITLE OVER THE SITE

43.1 Licensee rights

For the purpose of this Agreement, the Concessionaire shall have rights to the use of the Site as sole licensee subject to and in accordance with this Agreement and to this end; it may regulate the entry and use of the Project Highway by third parties in accordance with and subject to the provisions of this Agreement.

43.2 Access rights of the Authority and others

43.2.1 The Concessionaire shall allow free access to the Site at all times for the authorized representatives and vehicles of the Authority and/or its contractors, Senior Lenders and the Independent Engineer and for the persons and vehicles duly authorized by any Government Instrumentality to inspect the Project Highway and to investigate any matter within their authority and upon reasonable notice (except in cases of emergency, safety or statutory inspection where no notice shall be required), the Concessionaire shall provide to such persons reasonable assistance necessary to carry out their respective duties and functions.

43.2.2 The Concessionaire shall, for the purpose of operation and maintenance of any utility or road specified in Article 11, allow free access to the Site at all times for the authorized persons and vehicles of the controlling body of such utility or road.

43.3 Property taxes

All property taxes on the Site shall be payable by the Authority as owner of the Site; provided, however, that any such taxes payable by the Concessionaire under Applicable Laws for use of the Site shall not be reimbursed or payable by the Authority.

43.4 Restriction on sub-letting

The Concessionaire shall not sub-license or sub-let the whole or any part of the Site, save and except as may be expressly set forth in this Agreement; provided that nothing contained herein shall be construed or interpreted as restricting the right of the Concessionaire to appoint Contractors for the performance of its obligations hereunder including for operation and maintenance of all or any part of the Project Highway.

43.5 Stamp Duty on Licence

The Parties agree that stamp duty, if any, due and payable on the grant of licence comprising this Agreement shall be paid by the Authority. Provided, however, that the Authority may require the Concessionaire to pay such stamp duty, which shall be reimbursed by the Authority to the Concessionaire within 15 (fifteen) days of receiving the demand thereof.

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ARTICLE 44

DISPUTE RESOLUTION

44.1 Dispute resolution

44.1.1 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"**) shall, in the first instance, be attempted to be resolved amicably.

44.1.2 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.

44.2 Escalation of Dispute

In the event of any Dispute(s) between the Parties remains unresolved within 30 (thirty) days of the notice in writing referred to in Clause 44.1.1 or such longer period as may be mutually agreed by the Parties, either party may refer the Dispute to arbitration or conciliation in accordance with the provisions of clause 44.3.

44.3 Arbitration, Conciliation and Adjudication of Dispute

44.3.1 Any Dispute between the Parties, the sum of which is less than Rupees 10 crore which remains unresolved between the Parties through the mechanisms available/ prescribed in the Agreement, which has not been agreed upon/ reached settlement by the Parties, will be referred either to SAROD, (a Society registered under Society's Act, 1860 vide Registration no. S/RS/SW1049/2013) duly represented by Government/ Authority and National Highways Builders Federation (NHBF) or to India International Arbitration Centre ("IIAC").

44.3.1.1 The appointment of Tribunal, Code of conduct for Arbitrators and fees and expenses of SAROD/IIAC and the Arbitral Tribunal shall also be governed by the Rules of SAROD as amended from time to time or the India International Arbitration Centre Act 2019 and the regulations framed thereunder as amended from time to time. The rules of SAROD are placed at Appendix III.

44.3.1.2 Subject to the provisions of The Limitation Act, 1963, as amended from time to time, Arbitration may be commenced during or after the Concession Period, provided that the obligations of Authority and the Concessionaire shall not be altered by reason of the Arbitration being conducted during the Concession Period.

44.3.1.3 The venue of Arbitration shall be New Delhi or a place selected by governing body of SAROD or IIAC, as the case may be, and the language for all documents and communications between the Parties shall be English.

44.3.1.4 Each Party shall bear its own costs and expenses incurred in connection with the arbitral proceedings.

44.3.1.5 The arbitrators shall make a reasoned award (the **"Award"**). Any Award made in any arbitration held pursuant to this Article shall be final and binding on the Parties

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as from the date it is made, and the concessionaire and the authority agree and undertake to carry out such award without delay.

44.3.1.6 The Concessionaire and the Authority agree that the Award may be enforced against the Concessionaire and/or the Authority, as the case may be, and their respective assets wherever situated.

44.3.2 Any Dispute between the Parties, the sum of which is of value Rupees 10 Crores or above, which remains unresolved between the Parties through the mechanisms available or prescribed in the Agreement, which has not been agreed upon/ reached settlement by the Parties, will be resolved by Conciliation as per the Arbitration and Conciliation Act, 1996.

44.3.3 The Concessionaire and the Authority agree that the Award or a settlement Agreement may be enforced against the Concessionaire and/or the Authority, as the case may be and their respective assets wherever situated.

44.3.4 This Agreement and the rights and obligations of the Parties shall remain in full force and effect, pending the Award or settlement 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.

44.3.5 This provision relating to Conciliation under the Arbitration and Conciliation Act, 1996 shall cease to apply once the provisions relating to substitution of conciliation process by mediation are notified under Mediation Act, 2023. Thereafter "Conciliation" herein be referred to as Mediation as per the provisions of the Mediation Act 2023.

44.3.6 Notwithstanding anything to the contrary contained in the Agreement, it is agreed that any Dispute between the Parties the sum of which is of value equal to or above Rupees 10 Crores shall not be referred to Arbitration. It is further agreed that all declaratory disputes or non-monetary disputes shall not be referred to Arbitration. For the avoidance of doubt, it is clarified that nothing herein shall prevent the Parties from seeking resolution of such Disputes through civil courts.

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ARTICLE 45

DISCLOSURE

45.1 Disclosure of Specified Documents

The Concessionaire shall make available for inspection by any person, copies of this Concession Agreement, any contract signed by Concessionaire with EPC Contractor, any contract signed by EPC Contractor with any other agency including a Sub-Contractor with value more than 8% of Bid Project Cost, the Maintenance Manual, the Maintenance Program, the Maintenance Requirements and the Safety Requirements (hereinafter collectively referred to as the **"Specified Documents"**), free of charge, during normal business hours on all working days at the Site and the Concessionaire's Registered Office and shall also upload the Specified Documents on the Authority's designated portal/website. The Concessionaire shall prominently display at the Site, public notices stating the availability of the Specified Documents for such inspection and shall provide copies of the same to any person upon payment of copying charges on a 'no profit no loss' basis. The Authority reserves the right to host the Specified Documents on its website for public viewing.

45.2 Disclosure of Documents relating to safety

The Concessionaire shall make available for inspection by any person copies of all Documents and data relating to safety of the Project Highway, free of charge, during normal business hours on all working days, at the Concessionaire's Registered Office. The Concessionaire shall make copies of the same available to any person upon payment of copying charges on a 'no profit no loss' basis.

45.3 Notwithstanding the provisions of Clauses 45.1 and 45.2, the Authority shall be entitled to direct the Concessionaire, from time to time, to withhold the disclosure of Protected Documents (as defined herein below) to any person in pursuance of the aforesaid Clauses.

Explanation:

The expression Protected Documents shall mean such of the Specified Documents or documents referred to in Clauses 45.1 and 45.2, or portions thereof, the disclosure of which the Authority is entitled to withhold under the provisions of the Right to Information Act, 2005.

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ARTICLE 46

REDRESSAL OF PUBLIC GRIEVANCES

46.1 Complaints Register

46.1.1 The Concessionaire shall maintain a public relations office at the Site where it shall keep a register (the **"Complaint Register"**) open to public access at all times for recording of complaints by any person (the **"Complainant"**). Information relating to the availability of and access to the Complaint Register shall be prominently displayed by the Concessionaire at each the Site so as to bring it to the attention of all Users.

46.1.2 The Complaint Register shall be securely bound and each page thereof shall be duly numbered. It shall have appropriate columns including the complaint number, date, name and address of the Complainant, substance of the complaint and the action taken by the Concessionaire. Immediately after a complaint is registered, the Concessionaire shall give a receipt to the Complainant stating the date and complaint number.

46.1.3 Without prejudice to the provisions of Clauses 46.1.1 and 46.1.2, the Authority may, in consultation with the Concessionaire, specify the procedure for making complaints in electronic form and for responses thereto.

46.2 Redressal of complaints

46.2.1 The Concessionaire shall inspect the Complaint Register every day and take prompt and reasonable action for redressal of each complaint. The action taken shall be briefly noted in the Complaint Register and a reply stating the particulars thereof shall be sent by the Concessionaire to the Complainant under a certificate of posting and in electronic form as specified by the Authority.

46.2.2 Within 7 (seven) days of the close of each month, the Concessionaire shall send to the Authority and to the Independent Engineer a true photocopy each of all the pages of the Complaint Register on which any entry has been recorded during the course of such month and upon perusal thereof, the Authority may, in its discretion, advise the Concessionaire to take such further action as the Authority may deem appropriate for a fair and just redressal of any grievance. The Concessionaire shall consider such advice and inform the Authority of its decision thereon and if the Authority is of the opinion that the Complainant is entitled to further relief, the Authority may advise the Complainant to seek appropriate remedy under the Consumer Protection Act, 2019, at his own risk and cost.

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ARTICLE 47

MISCELLANEOUS

47.1 Governing law and jurisdiction

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

47.2 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 judgment 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 judgment that may be made or given in connection therewith).

47.3 Deleted

47.4 Depreciation and Interest

47.4.1 For the purposes of depreciation under Applicable Laws, the property representing the capital investment made by the Concessionaire in the Project shall be deemed to be acquired and owned by the Concessionaire. For the avoidance of doubt, the Authority shall not in any manner be liable in respect of any claims for depreciation to be made by the Concessionaire under Applicable Laws.

47.4.2 Unless otherwise specified, any interest payable under this Agreement shall accrue on a daily outstanding basis and shall be calculated on a simple interest basis.

47.5 Delayed payments

47.5.1 The Parties hereto agree that payments due and payable in accordance with the express provisions of this Agreement 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

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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 the average of one year MCLR of top 5 Scheduled Commercial Banks plus 2% (two per cent) and recovery thereof shall be without prejudice to the rights of the Parties under this Agreement including Termination thereof.

47.6 Waiver

47.6.1 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 nor be construed as a waiver of any statutory or contractual right of the Authority.

47.6.2 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 or as creating any estoppel against the Authority.

47.7 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 Independent Engineer of any Project Agreement, Document or Drawing submitted by the Concessionaire nor any observation or inspection of the construction, operation or maintenance of the Project nor the failure to review, approve, comment, observe or inspect hereunder shall relieve or absolve the Concessionaire from its obligations, duties and liabilities under this Agreement, Applicable Laws and Applicable Permits; and

(b) the Authority shall not be liable to the Concessionaire by reason of any review, comment, approval, observation or inspection referred to in Sub-clause (a) above.

47.8 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 agreements between the Parties or any representation by either Party not contained in a binding legal agreement executed by both Parties.

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47.9 Survival

47.9.1 Termination shall:

(a) Not relieve the Concessionaire 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.

47.9.2 All obligations surviving Termination shall only survive for a period of 3 (three) years following the date of such Termination.

47.10 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 unless made a part of this Agreement. For the avoidance of doubt, the Parties hereto agree that any obligations of the Concessionaire arising from the Request for Proposals shall be deemed to form part of this Agreement and treated as such.

47.11 Severability

If for any reason whatsoever, 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.

47.12 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.

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47.13 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 including any Concessionaire's Contractor.

47.14 Successors and assigns

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

47.15 Notices

Any notice or other communication to be given by any Party to the other Party under or in connection shall:

(a) in the case of the Concessionaire, be given by 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 Concessionaire may from time to time designate by notice to the Authority; provided communications that notices or other to be given to an address outside the Delhi may, if they are subsequently acknowledgement confirmed by sending a copy thereof by registered due, air mail or by courier, be sent by e-mail to the number as the Concessionaire may from time to time designate by notice to the Authority.

{Attention:

Designation:

Address:

Email;}

(b) in the case of the Authority, be given by e-mail and by letter delivered by hand at the address given below and be addressed to the person named below 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 Concessionaire; provided that if the Concessionaire does not have an office in the Delhi it may send such notice by e-mail and by registered acknowledgement due, air mail or by courier.

{Attention:

Designation:

Address:

Email:}; 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

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delivery; provided that in the case of e-mail, it shall be deemed to have been delivered working day following the date of its delivery.

47.16 Supplementary Agreement

The Parties agree that the Parties may execute a Supplementary Agreement novating any terms and conditions of this Agreement.

47.17 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.

47.18 Counterparts

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

47.19 Limitation on damages payable by the Concessionaire

During the Construction Period, the Parties agree that the aggregate damages payable by the Concessionaire under or in accordance with, Clause 12.2.2, Clause 12.4.2 and Clause 15.2 shall not exceed 10% (ten percent) of the Estimated Project Cost as specified in the RFP.

During the Operation Period, the Parties agree that the aggregate Damages payable by the Concessionaire under, or in accordance with, Clause 14.4.1 and Clause 17.8 shall not exceed 10% (ten percent) of the Estimated Project Cost.

For the avoidance of doubt, it is clarified that interest accrued on such Damages shall not be covered for the purpose of this Clause 47.19.

47.20 Limited reliance on the Financial Model/ Financial Package

The reliance on the Financial Model/ Financial Package shall be limited to as specified in this Agreement and no part of the Financial Model, including the expected rate of return/ traffic volume etc., shall be binding on the Parties. The Authority shall not be liable to allow any claim with reference to the Financial Model/ Financial Package as compensation on account of any loss derived from the assumptions made in the Financial Model/ Financial Package.

47.21 Retention of Video Recording

The Concessionaire shall preserve and store all video recordings required under this Agreement during the Development Period, Construction Period and the Operation Period. Video recordings made during the Development Period and Construction Period shall be retained for a minimum period of 1 (one) year from the COD, and video recordings made during the Operation Period shall be retained for a minimum period of 3 (three) years from the date of such recording, or until the final resolution of any related dispute, whether through conciliation, mediation, or court proceedings, whichever is later. Provided, however, that this requirement shall not apply to video recordings that are hosted on the Authority's designated portal/website or are otherwise made available to the Authority.

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47.22 Liability of the Content uploaded on the Authority's designated portal/website

47.22.1 The Concessionaire agrees and acknowledges that the Authority assumes no responsibility or liability whatsoever, in respect of any information, data, video recording, report, Document, notice pertaining to the Project provided by the Concessionaire and uploaded or published on the Authority's designated portal/website (the "**Content**") in accordance with this Agreement.

47.22.2 The Authority shall have no obligation to review, verify, validate, or approve any such Content, nor shall it be responsible for ensuring its compliance with any applicable legal, contractual, technical, or regulatory standards. The Concessionaire shall bear sole and absolute responsibility for ensuring that all the Content is accurate, complete, up-to-date, and fully compliant with the Agreement and all Applicable Laws, rules, regulations, directions, and notifications issued by any Government Instrumentality.

47.22.3 The Concessionaire expressly acknowledges and agrees that it shall be solely responsible for:

a. ensuring that all content uploaded or published on the website is accurate, complete, and in strict conformity with this Agreement and instructions issued by the Authority from time to time; and

b. at its cost and expense, defending, addressing, and resolving any claims, complaints, or proceedings arising from or in connection with the content, including any errors, omissions, or non-compliance and shall be responsible for all liability, civil or criminal or claims, and shall fully indemnify, defend and hold harmless the Authority from and against any and all losses, damages, costs, liabilities, penalties, or expenses incurred in connection therewith.

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ARTICLE 48

DEFINITIONS

48.1 Definitions

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;

"Additional Performance Security" shall have the meaning as set forth in Clause 9.7;

"**Adjusted Equity**" means the Equity funded in Indian Rupees and adjusted on the first day of the current month (the "Reference Date"), in the manner set forth below, to reflect the change in its value on account of depreciation and variations in Price Index, and for any Reference Date occurring:

(a) on or before COD, the Adjusted Equity shall be a sum equal to the Equity funded in Indian Rupees and expended on the Project, revised to the extent of one half of the variation in Price Index occurring between the first day of the month of Appointed Date and the Reference Date;

(b) from COD and until the 4th (fourth) anniversary thereof, an amount equal to the Adjusted Equity as on COD shall be deemed to be the base (the "Base Adjusted Equity") and the Adjusted Equity hereunder shall be a sum equal to the Base Adjusted Equity, revised at the commencement of each month following COD to the extent of variation in Price Index occurring between COD and the Reference Date;

(c) after the 4th (fourth) anniversary of COD, the Adjusted Equity hereunder shall be a sum equal to the Base Adjusted Equity, reduced by [0.42% (zero point four two per cent)][18] thereof at the commencement of each month following the 4th (fourth) anniversary of COD and the amount so arrived at shall be revised to the extent of variation in Price Index occurring between COD and the Reference Date;

(d) For the avoidance of doubt, the Adjusted Equity shall, in the event of Termination, be computed as on the Reference Date immediately preceding the Transfer Date; provided that no reduction in the Adjusted Equity shall be made for a period equal to the duration, if any, for which the Concession Period is extended, but the revision on account of Price Index shall continue to be made;

"Affected Party" shall have the meaning as set forth in Clause 34.1;

"Agency" shall have the meaning as set forth in Clause 5.2.6;

[18] This number shall be substituted in each case by the figure arrived at upon dividing 100 by the number of months comprising the Concession Period. For example, the figure for a 20 year Concession Period shall be 100/ 240 = 0.416 rounded off to two decimal points i.e. 0.42

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"Agreement" or "**Concession Agreement**" means this Agreement, its Recitals, and the Schedules hereto and any amendments thereto made in accordance with the provisions contained in this Agreement;

"Annuity Payments" shall have the meaning as set forth in Clause 25.6.2;

"Annuity Payment Date" shall have the meaning as set forth in Clause 25.6.2;

"Appendix" shall have the meaning as set forth in Clause 10.3.1;

"Applicable Laws" means all laws, brought into force and effect by GOI or the State Government including rules, regulations and notifications made thereunder, and judgments, 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, licenses, permits, authorizations, 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 during the subsistence of this Agreement;

"Appointed Date" means the date on which Financial Close is achieved and every Condition Precedent is satisfied, in accordance with the provisions of this Agreement, and such date, to be notified by the Authority, shall be the date of commencement of the Concession Period;

"Associate" or "Affiliate" means, in relation to either Party {and/or Consortium Members}, a person who controls, is controlled by, or is under the common control with such Party {or Consortium 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);

"Authority" shall have the meaning attributed thereto in the array of Parties as set forth in the Recitals;

"Authority Default" shall have the meaning as set forth in Clause 37.2.1;

"**Authority Indemnified Persons**" shall have the meaning set forth in Clause 42.1.1;

"Authority Representative" means such person or persons as may be authorized 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 fulfill any obligations of the Authority under this Agreement;

"Bank" means a bank incorporated in India and having a minimum net worth of Rs. 1,000 crore (Rupees one thousand crore) or any other bank acceptable to Senior Lenders, but does not include a bank in which any Senior Lender has an interest;

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"Bank Rate" means the rate of interest specified by the Reserve Bank of India from time to time in pursuance of section 49 of the Reserve Bank of India Act, 1934 or any replacement of such Bank Rate for the time being in effect;

"Bid" means the documents in their entirety comprised in the bid submitted by the {selected bidder/Consortium} in response to the Request for Proposals in accordance with the provisions thereof and **"Bids"** shall mean the bids submitted by any and all pre-qualified bidders;

"Bid Due Date" means the last date on which the Bid may have been submitted in accordance with the provisions of the Request for Proposals;

"Bid Project Cost" shall have the meaning as set forth in Clause 25.1;

"Bid Security" means the security provided by the Concessionaire to the Authority along with the Bid in a sum of Rs. **** Crore (Rupees **** Crore), in accordance with the Request for Proposals, and which is to remain in force until substituted by the Performance Security;

"COD" or "Commercial Operation Date" shall have the meaning as set forth in Clause 15.1;

"Car" or "Jeep" or "van" or "light motor vehicle" shall have the meaning set forth in Fee Rules;

"CPI (IW)" means the Consumer Price Index for Industrial Workers as published by the Labour Bureau, Government of India and shall include any index which substitutes the CPI (IW), and any reference to CPI (IW) shall, unless the context otherwise requires, be construed as a reference to the latest monthly CPI published no later than 30 (thirty) days prior to the date of consideration hereunder;

"Change in Law" means the occurrence of any of the following after the Bid that have a direct effect on the Project:

(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 entered into effect until the Bid Date;

(d) A change in the interpretation or application of any Indian law by a judgment 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 Bid Date; or

(e) Any change in the rates of any of the Taxes;

"Change in Ownership" means a transfer of the direct and/or indirect legal or beneficial ownership of any shares, or securities convertible into shares, that causes the aggregate holding of the {selected bidder/ Consortium Members},together with {its/their} Associates, in the total Equity to decline below 51% (fifty one per cent) thereof during Construction Period and until the expiry of one year from the date of completion of the Punch List items that remain pending for reasons solely attributable to the Authority six months thereafter; provided that any material

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variation (as compared to the representations made by the Concessionaire during the bidding process for the purposes of meeting the minimum conditions of eligibility or for evaluation of its application or bid, as the case may be,) in the proportion of the equity holding of {the selected bidder/ any Consortium Member} to the total Equity, if it occurs prior to completion of the aforesaid period of one year, shall constitute Change in Ownership;

"Change of Scope" shall have the meaning as set forth in Clause 16.1.1;

"Company" means the company acting as the Concessionaire under this Agreement;

"**Completion Certificate**" shall have the meaning as set forth in Clause 14.2;

"**Completion Cost**" shall have the meaning as set forth in Clause 25.6.1;

"**Concession**" shall have the meaning as set forth in Clause 3.1.1;

"**Concessionaire**" shall have the meaning attributed thereto in the array of Parties as set forth in the Recitals;

"**Concession Period**" means the period starting on and from Appointed Date and ending on the Transfer Date. For avoidance of doubt, it is clarified that the Concession Period shall include the Construction Period plus a fixed period of [15 years] of Operations Period from the COD;

"**Concessionaire Default**" shall have the meaning as set forth in Clause 37.1.1;

"**Conditions Precedent**" shall have the meaning as set forth in Clause 4.1.1;

"**Consortium**" shall have the meaning as set forth in Recital (D);

"**Consortium Member**" means a company specified in Recital (D) as a member of the Consortium;

"**Construction Period**" means the period beginning from the Appointed Date and ending on COD;

"**Construction Works**" means all works and things necessary to complete the Project in accordance with this Agreement;

"**Construction Zone**" consists of the Main Carriage Way including entry/exit points, median, paved and earthen shoulders, major bridges, flyover, areas for structures including ROBs and RUBs including their approaches, tunnel including approaches to its portals at both ends, and a parallel working space for accommodating slopes/retaining structures etc.;

"Content" shall have the meaning set forth in clause 47.22.1;

"Contractor" means the person or persons, as the case may be, with whom the Concessionaire has entered into any of the EPC Contract, the O&M Contract or any other material agreement or contract for construction, operation and/or maintenance of the Project or matters incidental thereto, but does not include a person who has entered into an agreement for providing financial assistance to the Concessionaire;

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"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 by the Concessionaire requires any reasonable action by the Concessionaire that must be approved by the Authority or the Independent Engineer hereunder, the applicable Cure Period shall be extended by the period taken by the Authority or the Independent Engineer to accord their approval;

"DBFOT" or "Design, Build, Finance, Operate and Transfer" shall have the meaning as set forth in Recital (A);

"Damages" shall have the meaning as set forth in Sub-clause (w) of Clause 1.2.1;

"Debt Due" means the aggregate of the following sums expressed in Indian Rupees outstanding on the Transfer Date:

(a) the principal amount of the debt provided by the Senior Lenders under the Financing Agreements for financing the Total Project Cost (the "principal") but excluding any part of the principal that had fallen due for repayment two years prior to the Transfer Date;

(b) all accrued interest, financing fees and charges payable under the Financing Agreements on, or in respect of, the debt referred to in Sub-clause (a) above until the Transfer Date but excluding (i) any interest, fees or charges that had fallen due one year prior to the Transfer Date, (ii) any penal interest or charges payable under the Financing Agreements to any Senior Lender, and (iii) any pre-payment charges in relation to accelerated repayment of debt except where such charges have arisen due to Authority Default; and

(c) any Subordinated Debt which is included in the Financial Package and disbursed by lenders for financing the Total Project Cost;

provided that if all or any part of the Debt Due is convertible into Equity at the option of Senior Lenders and/or the Concessionaire, it shall for the purposes of this Agreement be deemed to be Debt Due even after such conversion and the principal thereof shall be dealt with as if such conversion had not been undertaken;

"Debt Service" means the sum of all payments on account of principal, interest, financing fees and charges due and payable in an Accounting Year to the Senior Lenders for and in respect of Debt Due under the Financing Agreements;

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"Design-in-Charge" shall have the meaning set forth in Clause 12.1(e);

"Development Period" means the period from the date of this Agreement until the Appointed Date;

"Dispute" shall have the meaning as set forth in Clause 44.1.1;

"Dispute Resolution Procedure" means the procedure for resolution of Disputes as set forth in Article 44;

"Divestment Requirements" means the obligations of the Concessionaire for and in respect of Termination as set forth in Clause 38.1;

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

"Drawings" means all of the drawings, calculations and documents pertaining to the Project as set forth in Schedule-H, and shall include 'as built' drawings of the Project;

"Estimated Project Cost" means the Estimated Project Cost as specified in the RFP;

"Estimated Bid Project Cost" means the Estimated Bid Project Cost as specified in RFP;

"EPC Contract" means the engineering, procurement and construction contract or contracts entered into by the Concessionaire with one or more Contractors for, inter alia, engineering and construction of the Project in accordance with the provisions of this Agreement;

"EPC Contractor" means the person or persons, as the case may be, with whom the Concessionaire has entered into the EPC Contract or contract for construction of the Project or matters incidental thereto, but does not include a person who has entered into an agreement for providing financial assistance to the;

"Emergency" means a condition or situation that is likely to endanger the security of the individuals on or about the Project, 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, 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 payees or beneficiaries or any similar arrangement under any insurance policy pertaining to the Project, where applicable herein but excluding (i) utilities referred to in Clause 11.1 and (ii) any proceeding, claims or litigation pending before arbitrator(s) or any court of law relating to the enhancement or determination of compensation in respect of land already acquired for the Project Highway;

"Equity" means the sum expressed in Indian Rupees representing the paid up equity share capital of the Concessionaire for meeting the equity component of the Total Project Cost, and for the purposes of this Agreement shall include convertible

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instruments or other similar forms of capital, which shall compulsorily convert into equity share capital of the Company, and any interest-free funds advanced by any shareholder of the Company for meeting such equity component;

"Escrow Account" means an Account which the Concessionaire shall open and maintain with a Bank in which all inflows and outflows of cash on account of capital and revenue receipts and expenditures shall be credited and debited, as the case may be, in accordance with the provisions of this Agreement, and includes the Sub-Accounts of such Escrow Account;

"Escrow Agreement" shall have the meaning as set forth in Clause 31.1.2;

"Escrow Bank" shall have the meaning as set forth in Clause 31.1.1;

"Escrow Default" shall have the meaning as set forth in Schedule-O;

"**Financial Close**" means the fulfillment of all conditions precedent to the initial availability of funds under the Financing Agreements which shall be communicated by the Lender's Representative to the Authority in writing. Such communication from Lender's Representative shall be treated as date on which the Financial Close is achieved;

"Financial Default" shall have the meaning as set forth in Schedule-R;

"Financial Model" means the financial model adopted by Senior Lenders, setting forth the capital and operating costs of the Project and revenues therefrom on the basis of which financial viability of the Project has been determined by the Senior Lenders, and includes a description of the assumptions and parameters used for making calculations and projections therein;

"Financial Package" means the financing package indicating the total capital cost of the [**** Laning] and the means of financing thereof, as set forth in the Financial Model and approved by the Senior Lenders, and includes Equity, all financial assistance specified in the Financing Agreements and Subordinated Debt, if any;

"Financing Agreements" means the agreements executed by the Concessionaire in respect of financial assistance to be provided by the Senior Lenders by way of loans, guarantees, subscription to non-convertible debentures and other debt instruments including loan agreements, guarantees, notes, debentures, bonds and other debt instruments, security agreements, and other documents relating to the financing (including refinancing) of the Total Project Cost, and includes amendments or modifications made in accordance with Clause 5.2.2;

"Force Majeure" or "Force Majeure Event" shall have the meaning ascribed to it in Clause 34.1;

[**"***-Laning"** or **"***-Lane"**] means the construction and completion of all works included in or constituting a [***-lane] Project Highway, as specified in Article 2 read with Schedule-B and Schedule-C;

"GOI" means the Government of India**;**

"Good Industry Practice" means the practices, methods, techniques, designs, standards, skills, diligence, efficiency, reliability and prudence which are generally

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and reasonably expected from a reasonably skilled and experienced operator 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 Concessionaire in accordance with this Agreement, Applicable Laws and Applicable Permits in reliable, safe, economical and efficient manner and for providing safe, economical, reliable and efficient use of the Project;

"Government" means the Government of the India;

"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 or the performance of all or any of the services or obligations of the Concessionaire under or pursuant to this Agreement;

"Indemnified Party" means the Party entitled to the benefit of an indemnity pursuant to Article 42;

"Indemnifying Party" means the Party obligated to indemnify the other Party pursuant to Article 42;

"Independent Engineer" shall have the meaning as set forth in Clause 23.1;

"Indirect Political Event" shall have the meaning as set forth in Clause 34.3;

"Insurance Cover" means the aggregate of the maximum sums insured under the insurances taken out by the Concessionaire pursuant to Article 32, and includes all insurances required to be taken out by the Concessionaire under Clause 32.2 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, programs 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;

"LOA" or "Letter of Award" means the letter of award referred to in Recital (D);

"Lead Member" shall have the meaning set forth in Recital (D);

"Lenders' Representative" means the person duly authorized by the Senior Lenders to act for and on behalf of the Senior Lenders with regard to matters arising out of or in relation to this Agreement, and includes his successors, assigns and substitutes;

"Licensed Premises" shall have the meaning as set forth in Clause 10.2.2;

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"MoRTH" means the Ministry of Road Transport and Highways or any substitute thereof dealing with highways;

"Maintenance Manual" shall have the meaning as set forth in Clause 17.3.1;

"Maintenance Program" shall have the meaning as set forth in Clause 17.4.1;

"Maintenance Requirements" shall have the meaning as set forth in Clause 17.2;

"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;

"Mediator Act" means the Mediation Act, 2023 and shall include modifications to or any re-enactment thereof, as in force from time to time;

"Nominated Company" means a company selected by the Lenders' Representative and proposed to the Authority or selected by the Authority, as per the case may be, for substituting the Concessionaire in accordance with the provisions of the Substitution Agreement;

"Mutual Foreclosure Agreement" shall mean the agreement executed under Clause 37.7 pursuant to the execution of which all rights, claims and obligations of the Parties arising under the Agreement shall cases;

"Non-Political Event" shall have the meaning as set forth in Clause 34.2;

"O&M" means the operation and maintenance of the Project and includes all matters connected with or incidental to such operation and maintenance, and provision of services and facilities, in accordance with the provisions of this Agreement;

"O&M Contract" means the operation and maintenance contract that may be entered into between the Concessionaire and the O&M Contractor for performance of all or any of the O&M obligations;

"O&M Contractor" means the person, if any, with whom the Concessionaire has entered into an O&M Contract for discharging O&M obligations for and on behalf of the Concessionaire;

"O&M Expenses" means expenses incurred by or on behalf of the Concessionaire or by the Authority, as the case may be, for all O&M including (a) cost of salaries and other compensation to employees, (b) cost of materials, supplies, utilities and other services, (c) premier for insurance, (d) all taxes, duties, cess and fees due and payable for O&M, (e) all repair, replacement, reconstruction, reinstatement, improvement and maintenance costs, (f) payments required to be made under the O&M Contract or any other contract in connection with or incidental to O&M, and (g) all other expenditure required to be incurred under Applicable Laws, Applicable Permits or this Agreement;

"O&M Inspection Report" shall have the meaning as set forth in Clause 19.2;

"O&M Payments" shall have the meaning as set forth in Clause 25.7.1**;**

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"Operation Period" means the operation and maintenance period of 15 (fifteen) years commencing from COD and ending on the Transfer Date;

"Panel of Chartered Accountants" shall have the meaning set forth in Clause 33.2.1;

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

"**Payment Milestone"** shall have the meaning as set forth in Clause 25.4;

"Performance Guarantee" shall have the meaning as set forth in Clause 39.2.3;

"Performance Security" shall have the meaning as set forth in Clause 9.1.1;

"Physical Progress" shall mean the physical construction of the Project completed by the Concessionaire and shall be measured as per the assessment done by the Independent Engineer in accordance with Clause 25.4 of this Agreement;

"Political Event" shall have the meaning as set forth in Clause 34.4;

"Price Index" shall comprise:

(a) 70% (seventy per cent) of WPI; and
(b) 30% (thirty per cent) of CPI (IW),

Which constituents may be substituted by such alternative index or indices as the Parties may by mutual consent determine;

"Price Index Multiple" shall have the meaning set forth in 25.2.3;

"Project" means the construction, operation and maintenance of the Project 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 Highway and all Project Assets, and its subsequent development and augmentation in accordance with this Agreement;

"Project Agreements" means this Agreement, the Financing Agreements, EPC Contract, O&M Contract, and any other material agreements or contracts that may be entered into by the Concessionaire with any person in connection with matters relating to, arising out of or incidental to the Project, but does not include the Escrow Agreement, Substitution Agreement, or any agreement for procurement of goods and services involving a consideration of up to Rs.5 crore (five crore)[19];

"Project Assets" means all physical and other assets relating to and forming part of the Site including (a) rights over the Site in the form of license, Right of Way or otherwise; (b) 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, kilometer-stones, toll plaza(s), electrical systems, communication systems, rest areas, relief centers, maintenance depots and administrative offices]; (c) Project Facilities situated on the Site; (d) all rights of the Concessionaire under the Project

[19] This number shall be substituted in each case by the figure arrived at upon dividing 100 by the number of months com

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Agreements; (e) financial assets, such as receivables, security deposits etc.; (f) insurance proceeds; and (g) Applicable Permits and authorizations relating to or in respect of the Project;

"Project Completion Date" means the date on which the Completion Certificate or the Provisional Certificate, as the case may be, is issued under the provisions of Article 14

"Project Completion Schedule" means the progressive Project Milestones set forth in Schedule-G for completion of the Project 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 road as specified in Schedule A and all Project Assets, and its subsequent development and augmentation in accordance with this Agreement;

"Project Milestones" means the project milestones as set forth in Schedule-G;

"Provisional Certificate" shall have the meaning as set forth in Clause 14.3;

"Punch List" shall have the meaning ascribed to it in Clause 14.3.1 and, if applicable, shall only include any or all of the below:

(i) plantation of avenue trees along the edge of the RoW and other landscaping works within RoW;
(ii) completion of work on Provision of Unlined Roadside Drains;
(iii) lining of roadside drains in identified stretches;
(iv) construction of rest areas, as approved;
(v) completion of Fencing Works of RoW;
(vi) turfing on embankment slopes in identified sections;
(vii) pointing to Stone Masonry works in identified Cross Drainage Structures;
(viii) stone Pitching at identified locations;
(ix) any other item as specifically agreed by the Authority, excluding items related to the main carriageway for which the Site is made available to the Concessionaire within 240 (two hundred forty) days from the Appointed Date;

"Quality Assurance Plan" or "QAP" shall have the meaning set forth in Clause 13.8;

"RBI" means the Reserve Bank of India, as constituted and existing under the Reserve Bank of India Act, 1934, including any statutory modification or replacement thereof, and its successors;

"Re.", "Rs." or "Rupees" or "Indian Rupees" means the lawful currency of the Republic of India;

"Reference Exchange Rate" means, in respect of any one currency that is to be converted into another currency in accordance with the provisions of this Agreement, the exchange rate as of 12.00 (twelve) noon on the relevant date quoted

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in Delhi by the State Bank of India, and in the absence of such rate, the average of similar rates quoted in Delhi by the Bank of India and the Bank of Baroda;

"Reference Index Date" means, in respect of the specified date or month, as the case may be, that last day of the preceding month with reference to which the Price Index or any constituent thereof is revised and in the event such revision has not been notified, the last such Price Index or any constituent thereof shall be adopted provisionally and used until the Price Index or such constituent thereof is revised and notified;

"Request for Proposals" or "RFP" shall have the meaning as set forth in Recital (C);

"Right of Way" or "ROW" means the constructive possession of the Site, together with all way leaves, easements, unrestricted access and other rights of way, howsoever described, necessary for construction, operation and maintenance of the Project in accordance with this Agreement;

"Safety Consultant" shall have the meaning as set forth in Clause 18.1.2;

"Safety Requirements" shall have the meaning as set forth in Clause 18.1.1;

"Scheduled Completion Date" shall have the meaning as set forth in Clause 12.4.1;

"Scope of the Project" shall have the meaning as set forth in Clause 2.1;

"Senior Lenders" means the financial institutions, banks, non-banking financial companies, multilateral lending agencies, trusts, funds and agents or trustees of debenture holders, including their successors and assignees, who have agreed to guarantee or provide finance to the Concessionaire under any of the Financing Agreements for meeting all or any part of the Total Project Cost and who hold pari passu charge on the assets, rights, title and interests of the Concessionaire. Provided that for the purpose of this definition, financial institutions, banks, and multilateral lending agencies shall at least have a net worth of Rs. 1,000 Crore (Rs. one thousand crore), and non-banking financial companies shall at least have a net worth of Rs. 500 Crore (Rs. five hundred crore);

"Site" shall have the meaning as set forth in Clause 10.1;

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

"State" means the State ……. / or the Union Territory of …….., as the case may be, and "**State Government**" means the government of that State;

"Statutory Auditors" means a reputable firm of chartered accountants acting as the statutory auditors of the Concessionaire under the provisions of the Companies Act, 2013, including any re-enactment or amendment thereof, for the time being in force, and appointed in accordance with Clause 33.2.1;

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"Subordinated Debt" means the aggregate of the following sums expressed in Indian Rupees or in the currency of debt, as the case may be, outstanding as on the Transfer Date:

(a) the principal amount of debt provided by lenders or the Concessionaire's shareholders for meeting the Total Project Cost and subordinated to the financial assistance provided by the Senior Lenders, limited to maximum outstanding amount on Transfer Date computed as per Schedule X; and

(b) all accrued interest on the debt referred to in Sub-clause (a) above, but restricted to the lesser of:

(i) the actual applicable interest rate; and

(ii) in the case of loans denominated in Indian Rupees, a rate equal to 5% (five per cent) above the Bank Rate; and

in the case of loans denominated in foreign currency, the relevant Alternative Reference Rate applicable to such currency, or such other benchmark rate as may be recognised or permitted by the Reserve Bank of India, plus a margin of 2% (two per cent) but does not include any interest that had fallen due 1 (one) year prior to the Transfer Date.

Provided that, where the relevant Alternative Reference Rate is discontinued, ceases to be published, or becomes non-representative, the applicable interest rate shall be determined in accordance with a fallback mechanism:

(i) consistent with the guidelines, directions, or advisories issued by the Reserve Bank of India from time to time; and

(ii) acceptable to the Senior Lenders, and such fallback rate shall be deemed to be the applicable benchmark for the purposes of this Agreement."

Provided further that if all or any part of the Subordinated Debt is convertible into Equity at the option of the lenders and/or the Concessionaire's shareholders, it shall for the purposes of this Agreement be deemed to be Subordinated Debt even after such conversion and the principal thereof shall be dealt with as if such conversion had not been undertaken;

"Supplementary Agreement" shall mean the agreement executed between the Parties novating any term and/or condition of the Agreement, upon the execution of which all rights and claims of the Concessionaire in respect of the novated terms and conditions shall cases;

"Sub Contractor" Entity engaged by EPC Contractor for execution of work on project Highway;

"Substitution Agreement" shall have the meaning as set forth in Clause 40.3;

"Suspension" shall have the meaning as set forth in Clause 36.1;

"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

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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 and the Concession hereunder;

"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 the Authority to the Concessionaire, under and in accordance with the provisions of this Agreement, upon Termination;

"Tests" means the tests set forth in Schedule-I to determine the completion of the Project in accordance with the provisions of this Agreement;

"Total Project Cost" means 60 % (sixty percent)[20] of the Bid Project Cost specified in Clause 25.1;

provided that in the event Price Index increases, on an average, by more than 3% (three per cent) per annum for the period between the Bid Date and COD, the amount hereinbefore specified shall be increased such that the effect of increase in Price Index, in excess of such 3% (three per cent), is reflected in the Total Project Cost;
provided further that in the event of Termination, the Total Project Cost shall be deemed to be modified to the extent of variation in WPI or Reference Exchange Rate occurring in respect of Debt Due, as the case may be, in accordance with the provisions of this Agreement;

Provided also that the Total Project Cost shall not exceed 60% of the actual capital expenditure on the Project and capitalized in the books of accounts of the Concessionaire as certified by the Statutory Auditor;

"Transfer Date" means the date on which this Agreement and the Concession hereunder expires pursuant to the provisions of this Agreement or is terminated by a Termination Notice;

"User" means a person who uses or intends to use the Project or any part thereof in accordance with the provisions of this Agreement and Applicable Laws;

"Vesting Certificate" shall have the meaning as set forth in Clause 38.4; and

"WPI" means the Wholesale Price Index for all commodities as published by the Ministry of Industry, GOI and shall include any index which substitutes the WPI, and any reference to WPI shall, unless the context otherwise requires, be construed

[20] Prising the Concession Period. For example, the figure for a 20 year Concession Period shall be 100/ 240 = 0.416

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as a reference to the latest monthly WPI published for the period ending with the preceding month.

IN WITNESS WHEREOF THE PARTIES HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DAY, MONTH AND YEAR FIRST ABOVE WRITTEN.

SIGNED, SEALED AND DELIVERED For and on behalf of THE AUTHORITY by: (Signature) (Designation) (Name) (Address) (Fax No.) (e-mail)	THE COMMON SEAL OF CONCESSIONAIRE has been affixed pursuant to the resolution passed by the Board of Directors of the Concessionaire at its meeting held on the [] day of []20[] hereunto affixed in the presence of[] Director, who has signed these Presents in token thereof and, Company Secretary/Authorized Officer who has countersigned the same in token thereof: (Signature) (Designation) (Name) (Address) (Fax No.) (e-mail)

In the presence of:

1. 2.

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Schedules

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SCHEDULE - A

(See Clause 10.1)

SITE OF THE PROJECT

1 **The Site**

1.1 Site of the Project shall include the land, buildings, structures and road works as described in Annexure-I of this Schedule-A.

1.2 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 Concessionaire, and such inventory shall form part of the memorandum referred to in Clause 10.3.1 of the Agreement.

1.3 Additional land required for [Toll Plazas, or for] construction of works specified in the Change of Scope Order issued under Clause 16.2.3 of this Agreement shall be acquired in accordance with the provisions of Clause 10.3.6 of this Agreement. Upon acquisition, such land shall form part of the Site and vest in the Authority.

1.4 The dates of handing over the Right of Way to the Contractor are specified in Annexure-II of this Schedule-A.

1.5 The Proposed center line coordinates are given in Annexure-II and the alignment plan and profile is given in Annexure-III of this schedule.

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Annexure - I (Schedule-A)

Site for Project

[Note 1: Through suitable drawings and description in words, the land, buildings, structures and road works comprising the Site shall be specified briefly but precisely in this Annexure-I.]

[Note 2: Description of the land shall include reference to the relevant land acquisition notification(s) for and in respect of the Site.]

1. Site

The Site of the Project Highway comprises the section of National Highway ** commencing from Km *** to Km *** i.e. the *** - *** section in the State of ***. The land, carriageway and structures comprising the Site are described below.

2. Land

The Site of the Project Highway comprises the land (sum total of the land already in possession and land to be possessed) as described below:

S. No.	Chainage (In Km)		Construction Zone within ROW (In m)	Total ROW (In m)	Date of Handover of Construction Zone	Date of Handover of Balance ROW
	From	To				

3. Carriageway

The present carriageway of the Project Highway is as per Annexure A-1:

Sr. No.	**Existing Chainage (Km)**		**Length (km)**	**Carriageway Width (m)**	**Remarks**
	From	**To**			
1.					
2.					
3.					

4. Major Bridges

The Site includes the following Major Bridges:

S. No	Chainage (in Km)	Type of Structure	No. of Spans	Width (In m)

5. Railway Over Bridges

The Site includes the following Railway Over Bridges:

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S. No.	Chainage (in Km)	Type of Structure	No. of Spans	Width (In m)

6. Railway Level Crossings

The Site includes the following railway level crossings:

Sr. No.	Design Chainage (km)	Remarks
Nil		

7. Grade Separators

The Site includes the following Grade Separators:

S.No	Chainage (in Km)	Type of Structure	No. of Spans	Width (In m)

8. Major Junctions

The details of major junctions are as follows:

Sr. No.	Location (km)	Side	At grade/ Separated	Category of Cross road
1.				
2.				
3.				
4.				

9. Minor Junctions

The details of minor junctions are as follows:

Sr. No.	Chainage (Km)	Junction Type	Road Leading To	
			Left	Right
1.				
2.				

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10. Bypasses

The details of the existing bypasses:

Sr. No.	Name of bypass (town)	Existing Chainage (km)		Design Length (in Km)
		From	To	
1				

11. Minor Bridges

The Site includes the following Minor Bridges:

S.No	Chainage (in Km)	Type of Structure	No. of Spans	Width (In m)

12. Culverts

The Site has the following culverts:

Sr. No.	Chainage (km)	Type of Culvert	Span / Opening with Span Length (m)	Width (m)
1.				
2.				
3.				

13. Bus bays

The details of Bus bays on the site are as follows:

Sr. No.	Chainage (Km)	Length (m)	Left Hand Side	Right Hand Side
Nil				

14. Truck Lay Byes

The details of truck lay byes/toll plaza are as follows:

Sr. No.	Chainage (Km)	Length (m)	Side	Type
1.				
2.				
3.				

15. Toll plaza

The details of toll plaza are as follows:

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Sr. No.	Chainage (Km)	Length (m)	Side	Type
1.				
2.				
3.				

16. Road Side Drains

The details of roadside drains are as follows:

Sr. No.	Location		Type	
	From (Km)	To (km)	Masonry/cc (Pucca)	Earthen (Kutcha)
1.				
2.				

Earthen toe drains are available in some stretches.

Total number of structures

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

[(a) No. of Major Bridges
**

(b) No. of Railway Over Bridges
**

(c) No. of Grade Separators
**

(d) No. of Minor Bridges
**

(e) No. of Vehicular and Non-Vehicular Underpasses **

(f) No. of Box Culverts
**

(g) No. of Pipe Culverts
**

(h) No. of Slab Culverts
**

17. Bus bays and Truck Lay byes

The total number of bus bays and truck lay byes on the Project is noted below:

[(a) No. of Bus bays on LHS

(b) No. of Bus bays on RHS

(C) No. of Truck lay-byes on LHS

(d) No. of Truck lay-byes on RHS

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18. Tunnel

The Site includes the following tunnel which was

Constructed at the cost noted below:

(c) Tunnel at km *** to km *** of SH-** costing Rs.** crore]

**

**

20. Utility

The existing utility to be shifted/ relocated are listed in **Appendix A-II**

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Annexure - II

(Schedule-A)

[in case of Greenfield]

COORDINATE

Sl. No.	Chainage (Km)	Proposed Centerline Coordinate	
		Latitude	Longitude
1			
2			
3			

Reference Permanent Bench Mark (CORS)

S. No.	Chainage (Km)	Latitude	Longitude	RL

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Annexure – III
(Schedule-A)

Alignment Plans

Following drawings are enclosed in digital form as **Annexure –III**

- Alignment Plan & Longitudinal Profile
- Proposed center line coordinates.
- Major Junctions
- GAD of Structures
- Traffic Signage Plan
- Utility Relocation Plan

Note

- *Finished road level indicated in the alignment plan shall be followed by the Contractor/Concessionaire 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. The Contractor/Concessionaire shall, however, improve/upgrade the Road profile as indicated in Annexure-III based on site/design requirement.*
- *Traffic Signage plan of the Project Highway showing numbers & location of traffic signs is enclosed in Schedule A. The Contractor/Concessionaire shall, however, improve/upgrade upon the traffic signage plan as indicated based on site/design requirement as per the relevant specifications/IRC Codes/Manual.*

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Appendix A-I

Existing Carriageway Width

Sr. No.	Existing Chainage (Km)		Length (km)	Carriageway Width (m)	Remarks
	From	To			
1.					
2.					
3.					
4.					

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Appendix A-II

a. Electrical Utilities

The site includes the following electrical utilities

i. Extra HighTension lines (EHT Lines)

Sr. No.	Chainage (km)		Length along (in Km)				Crossing (Nos)			
	From	To	400 Kv	220 Kv	132 Kv	66 Kv	400 Kv	220 Kv	132 Kv	66 Kv
1.										
2.										

ii. **Other Utilities**

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SCHEDULE - B

(See Clause 2.1)

DEVELOPMENT OF THE PROJECT HIGHWAY

1 Development of the Project

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

2 [*-Laning][21]**

2.1 ****-Laning shall include the ****-Lane Project as described in Annexure-I of this Schedule-B and Annexure-I of Schedule-C.

2.2 ****-Laning shall be completed by the Concessionaire in conformity with the Specifications and Standards set forth in Annexure-I of Schedule-D].

2.3 Details of the items for determining cost of Change of Scope, in accordance with the provisions of this Agreement, are set forth in Annexure-III of Schedule-B.

[21] This is a sample of Schedule B and for all project, may be modified or substituted to reflect project-specific requirements

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Annexure - I

(Schedule-B)

Description of [***-Laning][22]

[Indicative Description of [*-Laning] of Annexure – I (Schedule-B)**

1. **Development of the Project Highway**

The Project Highway shall generally follow the horizontal alignment shown in the plan specified in **Annexure- III of Schedule-A**, unless otherwise specified by the Authority. Notwithstanding anything to the contrary contained in this Agreement or IRC:SP:84 2019 / IRC:SP:87 2019 (Manual), 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 Annexures shall be treated as minimum requirement. Based on site/design requirement, the Concessionaire shall finalize their Detailed Designs (Development Stage) including plan & profile of the project highway and submit the same to Authority & Independent Engineer (IE) for its review(s) and Safety Audit by Safety Auditor before the start of the execution of project. The designs so reviewed shall not be in contradiction with the scope of 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 Concessionaire 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 Concessionaire/ Contractor shall be capable of delivering accuracy as per the applicable IRC specifications. During the Construction Period, the Concessionaire 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 (Al-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) finalized by Authority.]

[22] This template is applicable to highway projects. It may be suitably revised in ease of other projects

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1.1 Width of Carriageway

1.1.1 [Four / Six-Laning] with paved shoulders shall be undertaken. The paved carriageway shall be [18.2/25.2] metre for [Four/Six Laning] (including paved shoulder and kerb shyness/edge strip). The earthen shoulder shall be 2 metre on either sides and Edge strip shall be minimum 0.6m as per clause No. 2.5.3 IRC: SP:84-2019/ IRC:SP:87-2019.

1.1.2 In built - up areas and approaches to grade separated structures/bridges/ROBs with full height RE wall/Full or partial height retaining wall, the width of paved carriageway shall be 20m/27m for flush/raised median (including 2.5m paved shoulder and 0.5m shyness width) and 20.2 m /27.2m for depressed medians (including 2.5m paved shoulder and 0.6m edge strip) for four/six laning respectively.

Built-up stretches for the Project are as follows:

S. No.	Existing Chainage (Km)		Design Chainage (Km)	Length	Side	Village No.
	From	To				
1.						
2.						
3.						
4.						

1.1.3 Typical Cross section

The Project Expressway shall be constructed to [8 lane fully access controlled Expressway configuration with paved shoulders with or without connecting Roads.] Typical cross sections for different segments of the project expressway shall be as **Appendix B-I (A)**.

The Loops/Ramps of Interchanges shall be constructed with the lane configuration including paved shoulders except toll plaza as given in **Appendix B-I (B).** At toll plaza location, the lane width shall be as per lane requirement and taper.

The cross road at vehicular overpass locations shall be constructed with lane configuration as given in **Appendix B-1(C)**.

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 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.

1.2 Width of Median

1.2.1 The minimum width of median including kerb shyness in shall be accordance with

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the TCS 1.1.3. Further, it shall not be less than 7 metre for depressed median and 5 metre for flush median. In built up section the width of median shall not be less than 2.5 metre.

2 Geometric Design and General Features

2.1 General:

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:

The project road shall be designed for ruling design speed of 100 Kmph for plain and rolling terrain and 60 Kmph for mountainous and steep terrain. (clause No. 2.2 IRC:SP:84-2019/ IRC:SP:87-2019)

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.

Sr. No.	Stretch (Design Chainage) Km		Type of deficiency	Remarks
	From	To		

2.3.2 Realignments:

The existing road shall be realigned and improved to the standards as specified in the manual at the following locations:

Sr. No.	Existing Chainage (Km)		Design Chainage (Km)		Length (Km)
	From	To	From	To	

2.3.3 Bypasses:

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

Sr. No.	Name of bypass	Existing Chainage (Km)		Design Chainage (Km)		Length (Km)
		From	To	From	To	

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2.4 Right of Way

Details of the Right of Way along Project Highways and Side Roads are given in Annexure-II of Schedule-A.

2.5 Type of shoulders

2.5.1 The Design Specification of paved shoulder shall conform to the requirements specified in paragraph 5.10 of the manual.

2.5.2 Paved shoulders and strip on median side shall be of same specification and pavement composition as of main carriageway.

2.5.3 The overlay on the main carriageway pavement and on the paved shoulders shall be uniform in thickness and composition.

2.5.4 In Built-up sections, footpaths/fully paved shoulder shall be provided with width 1.5m/2.5m respectively.

2.5.5 In open country, paved shoulders of 1.5m width shall be provided.

2.5.6 The Design Specification of earthern shoulder shall conform to the requirements specified in paragraph 5.11 of the manual.

2.5.7 The earthen shoulder of 2.0m width on shoulder side shall be provided with top 150 mm on earthen shoulder with well graded natural, moorum, gravel, crushed stone or combination thereof, confirming to Clause 401 of MoRTH specification.

2.6 Lateral and Vertical Clearance at Underpasses

2.6.1 In case of VUP/ LVUP/ SVUP, the proposed structure, the finished road level in VUP/ LVUP/ SVUP shall be kept 150 mm above the ground level/service road/ cross road (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 the manual.

2.7 Lateral and vertical clearances at Overpasses

2.7.1 Lateral and vertical clearances for overpasses shall be as per paragraph 2.11 of the Manual.

(Clause No. 2.11 IRC: SP:84-2019/ IRC: SP:87-2019)

2.7.2 Lateral clearance: The width of the opening at the Overpasses shall be as follows:

Sr. No.	Location Chainage (Km)	Span/opening (m)	Remarks

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2.8 Service roads/Slip roads/Connecting Roads:

2.8.1 Service Road: The height of embankment of service road shall confirm to clause 4.2.1.

2.8.2 The Service roads shall be constructed at the locations & for the lengths indicated below:

Sr. No.	Design Chainage (Km)		Length (km)		Paved Carriageway Width including shyness (m)	Total Length (Km)	Remarks
	From	To	LHS	RHS			

2.8.3 The Parking bays shall be provided along service road at following locations:

S.No.	Design Chainage of Parking Bay		Remarks
	LHS service road	RHS service road	

2.8.4 Slip Road: The height of embankment of slip road shall confirm to clause 4.2.1.

The Slip roads shall be constructed at the locations and for the lengths indicated below:

Sr. No.	Design Chainage (Km)		Length (km)		Paved Carriageway Width including shyness (m)	Total	Remarks
	From	To	LHS	RHS			

2.8.5 **Separator between Main Carriageway and Service/Slip Road**

A separator with Crash Barrier/ pedestrian guard Rail between main carriageway and service/slip road shall be provided to prevent the pedestrians, local vehicles and animals entering the highway.

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 Concessionaire in accordance with the approved plan & profile and design approved from the Independent 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 (COS). For increase and decrease beyond 5% COS as per provision of the contract shall be given on incremental basis. Any additional requirement at new location shall be dealt as per Article 16 in CoS clause as per respective CA.

For avoidance of doubt, if the total length of service roads for the project to be constructed is 100 km, and the total length of service roads for the

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project constructed is 130 km then the length for COS shall be determined as follows:

L= total length of service roads for the project as stipulated to be constructed= 100 Km

L1= total length of service roads actually executed= 130 Km

Length qualifying for COS: = {130-(100+5%)} =25 Km

(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 shall not be treated as change of scope.

2.9 Grade Separated Structures (Clause no. 3.4 IRC: SP: 84 :2019/ IRC: SP: 87 :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 Annexure-III of schedule A are minimum requirement and only for guidance and any increase in levels shall not constitute any change of scope.

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 (refer fig 3.8 to 3.10 IRC: SP:84-2019/ refer fig 3.1 to 3.3 IRC: SP:87-2019).**

The requisite particulars are given below:

2.9.1 Vehicle Overpass (VOP)

Sr. No.	Design Chainage (Km)	LHS Roadway Width (m)	RHS Roadway Width (m)	Super Structure Provision in Median	Span Arrangement (m)	Minimum Vertical Clearance (m)	Skew Angle (to be specified)	Remarks
1								
2								
3								
4								

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2.9.2 Vehicle Underpasses (VUP)

Sr. No.	Design Chainage (Km)	LHS Roadway Width (m)	RHS Roadway Width (m)	Super Structure Provision in Median	Span Arrangement (m)	Minimum Vertical Clearance (m)	Skew Angle (to be specified)	Remarks
1								
2								
3								
4								

2.9.3 Light Vehicle Underpasses (LVUP)

Sr. No.	Design Chainage (Km)	LHS Roadway Width (m)	RHS Roadway Width (m)	Super Structure Provision in Median	Span Arrangement (m)	Minimum Vertical Clearance (m)	Skew Angle (to be specified)	Remarks
1								
2								
3								
4								

2.9.4 Small Vehicle Underpasses (SVUP)

Sr. No.	Design Chainage (Km)	LHS Roadway Width (m)	RHS Roadway Width (m)	Super Structure Provision in Median	Span Arrangement (m)	Minimum Vertical Clearance (m)	Skew Angle (to be specified)	Remarks
1								
2								
3								
4								

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2.9.5 Cattle and Pedestrian underpasses

Sr. No.	Design Chainage (Km)	LHS Roadway Width (m)	RHS Roadway Width (m)	Super Structure Provision in Median	Span Arrangement (m)	Minimum Vertical Clearance (m)	Skew Angle (to be specified)	Remarks
1								
2								
3								
4								

2.9.6 Flyover

Sr. No.	Design Chainage (Km)	LHS Road way	RHS Roadway Width (m)	Super Structure Provisions in Median	Span Arrangement (m)	Minimum Vertical Clearance	Skew Angle (To be Specified	Remarks
1.								
2.								

2.9.7 Viaduct

Sr. No.	Design Chainage (Km)	LHS Road way	RHS Roadway Width (m)	Super Structure Provisions in Median	Span Arrangement (m)	Minimum Vertical Clearance	Skew Angle (To be Specified	Remarks

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2.9.8 Tunnel

Sr. No.	Design Chainage (Km)		Tunnel Configuration (Single/Twin)	LHS	RHS	Remarks
	From	To				
1.						
2.						
3.						
4.						

2.9 Note: i) Inspection steps shall be provided on both the sides of carriageways in underpasses without slip roads

ii) Any deviation in skew angle beyond 5% from the schedule given above shall attract change of scope to be dealt in accordance with Article 16.

2.9.9 Interchanges (IC)

(clause No. 3.4 IRC: SP:84-2019/ IRC: SP:87-2019)

Sr. No	Design Chainage (km)	Name of structure	Span Arrangement (m)	Total Width (m)	Typical Cross Section	Remarks

[Note: Layout, Geometric Design and Typical Cross Sections of Interchange is included in Annexure III to schedule-B.]

2.9.10 Details of Ramps, Cross Roads and Connecting Roads at Interchanges (IC)

Sr. No.	Carriageway Widths including Kerb Shyness	Length (m)	Description of Ramps, Crossroads and Connecting Roads	Remarks

[Note: Layout, Geometric Design and Typical Cross Sections of Ramps, Cross Roads and Connecting Roads of Interchange is included in Annexure V to schedule-B.]

2.10 Typical Cross Section (TCS) of the Project Highway

The Project Highway shall be constructed to Four/Six lane configuration. Typical cross sections required to be developed in different sections of the Project Highway are given below**.**

S.No	Design Chainage (Km)		Length (Km)	TCS	Remarks
	From	To			
1					
2					

[The Design Consultant shall take full care in designing the cross section confirming to the details given above.]

Note:

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(i) Any variations in the lengths specified in the above table shall not constitute a Change of Scope

(ii) Lengths mentioned in the above list for cross section types concerned to structures are inclusive of structure length.

(iii) RE wall shall be provided for full height on all structures.

(iv) Toe wall (0.6m ht) to be provided where ROW is restricted and water bodies along the proposed highway on the sections specified in Schedule-B.

(v) Chainages may be adjusted according to location of structures as per site conditions.

(vi) Carriageway width tapering shall be provided 1 in 50 as per manual (Clause no 2.5.4. IRC: SP:84-2019/ IRC: SP:87-2019). 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/ IRC: SP:87-2019)

(vii) 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 Separated Intersections

All at-grade intersections and grade separated intersections shall be as per Section 3 of the manual. Existing at-grade intersections 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 and grade separated intersections.

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)

3.1.1 Major Junctions:

Sr. No.	Design Chainage (Km)	Junction Type	Leads to		Median Opening	Category of Cross Road	Carriageway width of cross road	Length of crossroad to be developed	
			Left	Right				LHS	RHS
1									
2.									

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3.1.2 Minor Intersections:

Sr. No.	Design Chainage (Km)	Junction Type	Leads to		Median Opening	Category of Cross Road	Carriageway width of crossroad	Length of crossroad to be developed	
			Left	Right				LHS	RHS
1									
2.									

Note:

(a) Typical Layout as per type Designs for Intersections on National Highways, 1992, Geometric Design and Typical Cross Sections of Major Junction is included in Annexure – IV to schedule-B.

(b) Type of Junction to be improved as per type Designs for Intersections on National Highways, 1992

(c) The Concessionaire 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 the manual. Auxiliary lanes including storage, acceleration and deceleration lane along with physical islands to be provided. The cross road at the junctions which are having 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 cross road at the gradient not more than 1:50.

(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.

(e) "For 6 Lane projects" For U-turn, Self-Regulated U-Turn facility shall be created. "For 4 Lane projects" U-turn facility shall be created.

3.2 At-Grade Intersections below Grade Separators/ Interchanges:

These shall be provided as given at clause 2.9.1, 2.9.2, 2.9.3, 2.9.4 as and where required of this Annexure-I of the Schedule B. (clause No. 3.4.7 of IRC: SP:84- 2019/ clause No. 3.2.4 of IRC: SP:87-2019) **(clause No. 3.4.7 of IRC: SP:84-2019/ clause No. 3.2.4 of IRC: SP:87-2019)**

Sr. No.	Design Chainage (Km)	Junction Type	Leads to		U-Turn provision in Viaduct Spans	Category of Cross Road	Carriageway width of crossroad	Length of crossroad to be developed	
			Left	Right				LHS	RHS
1									
2.									

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Note:

(i) The Concessionaire 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.

(ii) Junction improvement under grade separators shall be carried out as per manual with proper entry/exit to crossroads and slip/service roads, etc. Auxiliary lanes including storage, acceleration and deceleration lane along with physical islands to be provided.

(iii) Location of grade-separated structures are indicative. Exact location should be decided in consultation with Independent Engineer

(iv) [Intersection Layout, Entry/Exit, Right Turning Lane, U-Turns, Geometric Design and Typical Cross Sections of Interchange is included in Annexure-III to schedule-B.]

(v) 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

Construction of road embankment/cuttings shall conform to the Specifications and Standards given in section 4 of the manual. Notwithstanding anything to the contrary contained in this Agreement or Manual, the difference of the proposed profile and the existing ground level of the project highway as indicated in the Annexure-III of Schedule A shall be treated as minimum requirement.

Based on site/design requirement, the Concessionaire shall design the alignment plans and profiles of the project highway based on site/design requirement mentioned in Schedule B with approval from the Independent Engineer/Authority Engineer within the available Right of Way. In case of green field stretches / realignments stretches / bypasses/ full reconstruction of existing stretches (if the existing stretches have been overtopped in past during rains /floods), the bottom of subgrade shall be 1000 mm above highest flood level (HFL)/ ground water table/ Natural ground level /pond level, whichever is higher.

For stability of slope upto 3 metre height the turfing can be adopted. For the slope from 3-6 metre suitable, geocell, geo-grid, geo-green etc. can be provided with suitable drainage chutes and suitable energy dissipators 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 and energy dissipators etc. shall be provided for effective drainage of the water.

Reference MoRTH Circular No. RW/NH-33044/27/2024/S&R (P&B) (Comp. no. – 243038) dated 23.09.2024, for construction of road embankment, utilization of inert material, wherever it is provided on site by local bodies, shall be necessarily explored and soil from borrow areas can be utilized only after such options/ quantity are exhausted without any additional cost to Authority.

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Protection measures for cut slopes be provided as per specifications wherever steep cutting section is involved simultaneously with cutting of slopes. Unprotected slopes shall not be permitted at any point of time.

5 Pavement design

5.1 Pavement design shall be carried out in accordance with Section 5 of the Manual.[23]

5.1.1 The Concessionaire shall develop 3D Digital Models and use suitable System of Automated & Intelligent Machine-aided Construction (Al-MC) for Motor Graders and Paver and the same in Compactors and Dozers to ensure Quality Standards as per IRC Specifications and Productivity improvement. Further, the Concessionaire 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 Concessionaire shall have Features and Specifications mentioned at Schedule D.

5.2 Type of Pavement and Design requirement

The pavement shall be flexible/rigid type for entire length of project highway except for toll plaza locations where rigid pavement shall be provided.

5.2.1 Design Period and Strategy: - Pavement shall be constructed for the entire length of Project Highway including paved shoulders.

Design Period and Strategy Pavement shall be constructed for the entire length of Project Highway including paved shoulders. Stage construction shall not be permitted.

The CBR and the corresponding minimum pavement crust mentioned in this para shall be applicable for conventional designs and will not be applicable in cases if Concessionaires /Contractor choose to opt other New/Alternate material and Technology. For use of new / alternate material/ technology, the design parameter shall be in accordance with the Ministry Circular RW\NH-34049\01\2020-S&R (P&B) dated 20.09.2024.

5.2.2 Recommended Pavement Design: - Notwithstanding anything to the contrary contained in this Agreement or the manual, the Concessionaire shall design the pavement of main carriageway for design traffic of ___ MSA.

5.2.3 The pavement for service road/crossroad shall be designed for _____ MSA of projected traffic subject to minimum as follows:

(i)Service Roads in Builtup areas for minimum 20 MSA

(ii)Service Roads in Rural Area for minimum 10 MSA

5.3 In order to meet the intended functional requirement of respective pavement layers on main carriageway, the minimum thickness of respective pavement layers for main carriageway and connecting crossroads/ service roads/ slip roads/ entry/exit locations, acceleration/ deceleration lane, right turning lanes shall, however, in no

[23] As an when applicable

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case be less than as given below:

5.3.1 Pavement thickness of Main carriageway, paved shoulder, median side paved strip, entry/exit locations, acceleration/ deceleration lane, right turning lanes, toll plazas are given below:

5.3.1.1 Bituminous Surface Course with Granular Base and Sub-base

Pavement Composition	**Minimum Crust Thickness (mm)**

5.3.1.2 Bituminous Surface Course with CTSB, CTB and Granular Crack Relief Layer

Pavement Composition	**Minimum Crust Thickness (mm)**
Subgrade	
CTSB	
CTB	
AIL	
DBM	
BC	

5.3.1.3 Bituminous Surface Course with CTSB, CTB and SAMI

Pavement Composition	**Minimum Crust Thickness (mm)**
Subgrade	
CTSB	
CTB	
DBM	
BC	

5.3.1.4 Bituminous Surface Course with CTSB and Emulsion / Foam Bitumen Stabilised RAP/ Virgin Aggregate

Pavement Composition	**Minimum Crust Thickness (mm)**
Subgrade	
CTSB	
CTB	
DBM	
BC	

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5.3.1.5 Geo-Grid with GSB/WMM

Pavement Composition	**Minimum Crust Thickness (mm)**
Subgrade	
GSB	
Geo-Grid	
WMM	
DBM	
BC	

5.3.1.6 DLC/ PQC

Pavement Composition	Minimum Crust Thickness (mm)
Subgrade	
GSB	
DLC	
PQC	

5.3.2 Crossroads

5.3.2.1 Bituminous Surface Course with Granular Base and Sub-base

Pavement Composition	**Minimum Crust Thickness (mm)**
Subgrade	
GSB	
WMM	
DBM	
BC	

5.3.2.2 Bituminous Surface Course with CTSB, CTB and Granular Crack Relief Layer

Pavement Composition	**Minimum Crust Thickness (mm)**
Subgrade	
CTSB	
CTB	
AIL	
DBM	
BC	

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5.3.2.3 Bituminous Surface Course with CTSB, CTB and SAMI

Pavement Composition	Minimum Crist Thickness (mm)
Subgrade	
CTSB	
CTB	
DBM	
BC	

5.3.2.4 Bituminous Surface Course with CTSB and Emulsion / Foam Bitumen Stabilised RAP/ Virgin Aggregate

Pavement Composition	Minimum Crist Thickness (mm)
Subgrade	
CTSB	
RAP	
DBM	
BC	

5.3.2.5 DLC/ PQC

Pavement Composition	Minimum Crist Thickness (mm)
Subgrade	
GSB	
DLC	
PQC	

5.4 **Reconstruction of Stretches with New pavement (**Clause No. 5.9.4 IRC: SP:84-2019/ IRC: SP:87-2019)

The following stretches of the existing road shall be dismantled/milled and reconstructed. These shall be designed as new pavement.

Sr. No.	**Design Chainage**		**Pavement Composition**	**Remarks**
	From	**To**		
			Same as 5.3.1/ 5.3.2/5.3.3	

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:

Sr. No.	**Design Chainage**		**Overlay Pavement Composition**	**Remarks**
	From	**To**		

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6 Roadside Drainage

a. Drainage system

Drainage system including surface and subsurface drains for the Project Highway including crossroads shall be provided as per section 6 of the manual. RCC Drain cum footpaths shall conform to the cross- sectional features and other details as given in Annexures to Schedule-B and shall be provided as under:

Sr. No.	Design Chainage (Km)		Length (m)		Width of Drain (m)	Total Length (m)
	From	To	LHS	RHS		
1						
2						
3						
4						
	Sub Total on Each Side					
	Total					

b. Load bearing RCC Drain locations are as follows:

S. No.	Design Chainage (Km)		Length (m)		Min bottom Width *min depth of Drain	Min Width of Footpath (m)	Total Length (m)	Remarks
	Sub Total on Each Side							
	Total							

c. Details of Lined Drain

S. No.	Design Chainage (Km)		Length (m)		Min bottom Width *min depth of Drain	Min Width of Footpath (m)	Total Length (m)	Remarks
	Sub Total on Each Side							

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	Total					

d. Unlined Drains

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.

e. 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.

Sr. No.	Design Chainage (KM)		Total Length	Remarks
	From	To		

f. 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.

(Clause No. 2.15 IRC: SP:84-2019/ IRC: SP:87-2019)

g. Drainage where Embankment Height is more than 3m (Clause 6.4 IRC: SP:84-2019/ IRC: SP:87-2019)

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. (Clause No. 6.8.2.4 of IRC: SP:84-2019/ IRC: SP:87-2019)

h. 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. (Clause No. 6.8 IRC: SP:84-2019/ IRC: SP:87-2019)

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i. Drainage for Underpass and Subways Structures

A suitable drainage arrangement for draining storm water from Underpass and Subways shall be provided. (Clause No. 6.8.3 IRC: SP:84-2019/ IRC: SP:87-2019)

j. Drainage arrangement of Retaining Structures

Vertical Drop-down drainage pipes of HDPE with suitable cleaning provision shall be provided at suitable interval. Drainage fixtures and dropdown pipes shall be of HDPE material not less than 100mm dia.

7. Design of Structures

7.1 General

Project Highway is proposed to be constructed to Four/ Six-lane configuration with provision for widening to six/eight-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 to be designed for Special Vehicle (SV) loading, Class 70R, Class A and congestion factor, whichever is critical, as per latest IRC provisions.

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 as continuous slab to reduce the number of expansion joints on the MJB/ ROBs/ flyover/ Interchange etc.

i. 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.

ii. 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 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).

iii. 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.

Details of Structures with footpaths

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Sr. No.	Location at km	Skew Angle	Footpath Width (m)		Remarks
			Left	Right	
1					
2					
3					

iv. All bridges shall be high level bridges.

v. All structures shall be designed to carry utility services on outer side of RCC barrier/Railing as per site requirement.

vi. Cross section of the new culverts and bridges at deck level for the Project Highway shall conform to the typical cross sections given in Section 2.10 of the Schedule-B.

7.2 Culverts

7.2.1 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 existing RCC pipe culverts:

The existing culverts at the following locations shall be re-constructed as new culverts:

Sr. No	Design Chainage	Culvert Type	Skew Angle	Span/ Opening (m)	New/ Reconstruction	Culvert Crossing Type (Balancing/Stream, etc)	Remarks
		Pipe					

7.2.3 Widening of existing RCC pipe culverts

All existing culverts which are to be retained shall be widened (measured from inside to inside of Parapet/ headwall) 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.

Sr. No	Design Chainage	Culvert Type	Skew Angle	Span/ Opening (m)	Repairs / Rehabilitation proposals	Culvert Crossing Type (Balancing / Stream, etc)	Remarks
		pipe			**Replacement /Provision of Railing, floor protection, railing, parapet etc. per relevant IRC codes and specifications.**		

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7.2.4 Construction of Box Culverts:

New 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:

Sr. No	Design Chainage (km)	Span Arrangement (m)	Skew Angle	Culvert Crossing Type	Remarks
1					
2					
3					
4					

7.2.5 Widening of existing box culverts

All existing culverts which are to be retained shall be widened (measured from inside to inside of Parapet/ headwall) 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.

Sr. No	Design Chainage	Culvert Type	Skew Angle	Span/ Opening (m)	Repairs / Rehabilitation proposals	Culvert Crossing Type (Balancing/ Stream, etc)	Remarks
		Box			Replacement /Provision of Railing, floor protection, railing, parapet etc. per relevant IRC codes and specifications.		

7.2.6 Box Type Structures on Crossroads:

Sr. No	Design Chainage (km)	Span Arrangement (m)	Type (Box/Pipe)	Length of Culvert	Remark
1					
2					
3					
4					

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7.2.7 **Utility ducts in bypasses** (Greenfield as well as Brownfield projects which are being upgraded) in form of NP-4 RCC Pipe dia 600 mm shall be provided across the Project Highway @ 0.50 km c/c and along with inspection chamber for crossing of utilities.

Location for utility ducts

S.No	**Design chainage (km)**		**Remarks**
	From	**To**	
1			
2			

7.3 Bridges

7.3.1 Existing bridges to be re-constructed/widened:

(i) Existing bridges proposed for reconstructed as new structures:

Sr. No.	Design Chainage (Km)	Square Clear Span Arrangement (m)	Type of Crossing	Total Proposed Width (m)		Typical Cross Section	Skew Angle	Remarks
				MCW	SR			

(ii) Existing narrow bridges proposed to be retained and widened:

(iii) All Major and Minor Bridges are to be designed for approach protection with concrete Toe wall with filter media and stone/ block pitching up to HFL of bridge +0.6 m with full height stone/ block pitching in cone filling portion of all four sides of abutments.

(iv) Provisions of steps shall be provided on both the sides of the carriageway.

(v) In GAD of River Bridges the hydraulic aspect considered in design of GAD such as catchment area, design discharge, stream velocity & scour depth, bearing capacity of the founding strata etc. should be stipulated by the Concessionaire/ contractor.

(vi) In case of canal crossings Bridges the service, road or canal bund roads should be accommodated in the proposed span with appropriate vertical clearance of 4.5 metres and location of abutment shall be out of canal banks.

7.3.2 Additional New Bridges

New bridges at the following locations on the Project Highway shall be constructed. GADs for the new bridges are attached in the drawings folder.

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Sr. No	Design Chainage (Km)	Total Proposed length (m)	Type of Crossing	Total Proposed width (m)		Typical Cross Section of Manual	Skew Angle
				MCW	SR		
1							
2							
3							
4							
5							

(i) All Major and Minor Bridges are to be designed for approach protection with concrete Toe wall with filter media and stone/ block pitching up to HFL of bridge +0.6 m with full height stone/ block pitching in cone filling portion of all four sides of abutments.

(ii) All river bridges & underpasses without slip roads shall be provided with steps for accessing the bottom in all four-cone filling portion for easy accessibility of bridges and approaches.

7.3.2.1

New Canal Crossings as Major Bridge								
Sr. No.	**Design Chainage (Km)**	**Square Clear Span Arrangement (m)**	**Type of Crossing**	**Total Proposed width (m)**		**Typical Cross Section of Manual**	**Skew Angle**	**Remarks**
				MCW	SR			
1.								

7.3.2.2

New Minor Bridge								
Sr. No.	**Design Chainage (Km)**	**Square Clear Span Arrangement (m)**	**Type of Crossing**	**Total Proposed width (m)**		**Typical Cross Section of Manual**	**Skew Angle**	**Remarks**
				MCW	SR			
1.								
2.								
3.								

7.3.2.3

New Minor Bridge as Canal Structure								
Sr. No.	**Design Chainage (Km)**	**Square Clear Span Arrangement (m)**	**Type of Crossing**	**Total Proposed width (m)**		**Typical Cross Section of Manual**	**Skew Angle**	**Remarks**
				MCW	SR			
1.								
2.								
3.								

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7.3.3 In case of canal crossings Bridges the service road or canal bund roads should be accommodated in the proposed span with appropriate vertical clearance of 4.5 metres and location of abutment shall be out of canal banks.

7.3.4 The railings of existing bridges shall be replaced by crash barriers at the following locations:

Sr.No	Design Chainage		Length (km)	Remarks
	From	To		
1				
2				
3				
4				

7.3.5 The existing bridges/ RoB/ Grade Separators/ RUB retained on the project highway shall be upgraded and rehabilitation measures/proposals shall be specified as follows:

Sr. No.	Location at km	Rehabilitation Proposals	Remarks
1		Replacement /Provision of Bearings, Expansion Joints, Wearing coat, footpath, Lighting, floor protection, etc. as per relevant IRC codes and specifications.	
2			
3			

7.3.6 Structures in marine environment:

Sr. No.	Location at km	Span	Remarks
1			
2			
3			

7.4 Railroad Bridges (ROB/RUB)

7.4.1 Design, construction & detailing of ROB/RUB shall be as specified in Section 7 of the manual.

7.4.2 Road over bridges (road over rail) shall be provided at the following locations, as per GAD drawings attached:

Sr. No.	Design Chainage (Km)	Proposed Span Arrangement (m)	Type of super-structure (i.e. Bow string, simply supported composite structure etc.	Name of crossing	Total Width m)	Skew Angle	Remarks
1							
2							

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Note:

[The details of span and type of super-structure have to be mentioned as per approved GAD by the railways].

(i) If the length/width of the span/ type of super-structure is changed due to any reason the COS shall be considered.

(ii) 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.

(iii) The ROB shall be constructed and maintained by the Concessionaire under supervision of the Railways.

(iv) All charges payable to the Railways like D&G, Capitalized maintenance, signaling, cabling, OHE modification, any other Utility Shifting pertaining to Railway Department, earthing etc. except P&E charges shall be borne by the Concessionaire.

(v) Reference NHAI GM (ROB/RUB) Letter No. 139024, dated 06.08.2019, the instrumentation for measurement of vibration shall be installed.

(vi) All bridges and structures shall be designed for severe exposure conditions in accordance with IRC:112-2020. In addition, steel reinforcement shall be provided with corrosion protection through the use of Fusion Bonded Epoxy Coating (FBEC), or by using galvanized steel or stainless-steel reinforcement.

(vii) For major bridges over any water body minimum Design Discharge for 100 years return period -

(viii) For major bridges over any water body maximum Silt factor -

(ix) For major bridges over any water body minimum velocity of water at bridge location -

(x) For major structures type of foundation -

(xi) For major bridges over any water body Total length of structure (minimum) -

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 be considered under Change of Scope.

(xii) For major bridges over any water body founding level of foundation cannot be raised above the founding level shown in the GAD.

(xiii) If the founding level of foundation required is deeper than the founding level shown in GAD due to reasons well established and approved by the Authority, the extra depth of foundation shall come under the clause of Change of Scope.

(xiv) Well/ pile cap top level cannot be lowered below the level shown in the GAD.
If the founding level of foundation required is deeper than the founding level shown in GAD due to reasons well established and approved by the Authority, the extra depth of foundation shall come under the clause of Change of Scope.

(xv) Diameter of well foundation shown in the GAD cannot be reduced further.
If the diameter of well foundation required is more than the diameter shown in GAD due to reasons well established and approved by the Authority, the extra diameter of foundation shall come under the clause of Change of Scope.

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(xvi) Diameter of well foundation shown in the GAD cannot be reduced further. If the diameter of well foundation required is more than the diameter shown in GAD due to reasons well established and approved by the Authority, the extra diameter of foundation shall come under the clause of Change of Scope.+D198+D199

(xvii) 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.

(xviii) Individual length of spans proposed in GAD are not to be reduced

(xix) Maximum scour level for piers shall not be above RL _____

(xx) Maximum scour level for abutments shall not be above RL___

(xxi) Project highway is proposed to be constructed with a 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.

(xxii) An inspection gallery along with a caged ladder (access from the deck slab) to be provided at each pier location for facilitating regular inspection of bridge structures. An indicative General Arrangement Drawing (GAD) has been prepared and is attached at Appendix-A which may be made a part of Concession/Contract Agreement. For location where access for the deck slab is not possible from the top, the same may be provided from the bottom i.e. by providing staircase along the pier upto the top of pier cap along with an inspection platform all around the pier cap as shown in the indicative GAD. If this is not feasible, then some other kind of arrangement has to be made to provide access to the top of pier cap for inspecting bearings, underneath the box/slab structures etc.

(xxiii) 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. An indicative picture is shown below :

(xxiv) Project highway is proposed to be constructed to four lane configuration with provision for widening in future. As such, superstructure of all bridges, culverts

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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.

7.4.3 Road under bridges (road under railway line) shall be provided at the following level crossings, as per GAD drawings attached:

Sr. No.	Design Chainage	Proposed Span Arrangement (m)	Name of crossing	Total Width (m)	Skew Angle	Remarks

[Note: caution should be exercised wherever the ROB is being provided in lieu of existing level crossing, the RUB must be proposed so that the existing railway crossing must be closed.]

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 and 3 of Annexure-I of Schedule-B.

7.6 FoB/ Skywalks

FoB/Skywalks shall be provided in builtup areas/ near schools. [**detailed drawings of FoB in schedule B shall be provided]**

Sr. No.	Location at km	FoB Type	Remarks
1			
2			

7.7 A summary of Culverts, Bridges and Structures is as follows:

S. No.	Name of Structure	Total Numbers	Remarks
1.	Major Bridge	3	
2.	Minor Bridge	10	
3.	ROB	2	
4.	VUP (Single Span)	6	
5.	VUP (Multi Span)	2	
6.	LVUP	11	
7.	SVUP	5	
8.	Boxes for passage of pedestrians	12	
9.	Flyover	1	
10.	Viaduct	2	
11.	Tunnel	2	
12.	Cattle and Pedestrian underpasses	2	
13.	FoB	2	
14.	Box Culverts	42	
15.	Pipe Culverts	44	

Reference MoRTH Circular No. RW/NH-34049/01/2020-S&R(B)(Comp. No. – 182692) dated 24.06.2025, the following items/ finished products shall be mandatorily of precast concrete (PCC/RCC/PSC as applicable) :

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i. Box Culverts
ii. Storm Water Drain cum Footpath
iii. Chute drain with dissipation chamber
iv. Boundary Wall/ Toe Wall/ Fence
v. RCC Crash barrier/ RS Wall Friction Slab-cum-Crash Barrier
vi. Kerbs/ Channels
vii. Pedestrian Railing/ Median Railing

7.8 Span lengths for all the culvert and structures under this clause (7) are the base lengths for the Contract. Any authorized/ approved increase or decrease in the span length or/ and type/ specification of the structures will be subject to positive/ negative change of scope.

7.9 Authority 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 Concessionaire 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 Independent Engineer free of cost within a time as specified by the Authority and/or the Independent Engineer.

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 IRC:SP: 84/87

8.2 Traffic Signs:

Traffic signs shall be provided as per IRC 67 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 and MoRTH circular no RW/NH-2923/02/2019-S&R (P&B) dated 01.01.2020.

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.

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The details of the location are as below:

S.No.	Item	LHS		RHS		Total Length (m)	Remarks
		(From)	(To)	(From)	(To)		
1	W-beam Single faced metal crash barrier						
2	Thrie-beam Single faced metal crash barrier						
3	wire rope safety barrier						
4	W-beam Double faced metal crash barrier						
5	Thrie-beam Double faced metal crash barrier						
6	Concrete Single faced barriers						
7	Concrete Double faced barriers						
8	Pedestrian guardrails						
9	End Treatment for Steel Barriers						

[The specific locations are to be mentioned.]

9 Roadside Furniture

9.1 It shall be provided as per the details mentioned in Schedule-C.

10 Hazardous Locations

10.1 The safety barriers shall be provided at the following hazardous location such as ponds, well, electric sub-station, Electric tower, spilt carriageway, etc.

Sr. No.	Location Stretch		Type of Safety Barrier	LHS/ RHS
	From (Km)	To (Km)		

11 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.

Sr. No.	Design Chainage (Km)		Length (m)	Side	Height (m)	Retaining Structure/ Toe Wall	Details of Foundation Treatment	Type of Safety Barrier	Remarks
	From	To							

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12 Open Well within RoW

The Open well shall be identified and appropriate treatment shall be provided.

Sr. No.	Design Chainage	Well Dimension	Well Depth	Filling Material for Well	Slab on Top of Well Yes/No	Remarks
1				Sand		
2						
3						

13 Shifting of Utilities

The Concessionaire shall undertake the work of shifting of any utility (including electric lines, water pipes, gas pipelines and telephone cables) to an appropriate location or alignment, in accordance with the provisions of Concession Agreement.

13.1 Shifting of obstructing utilities indicated in Schedule A to an appropriate location in accordance with standards and specifications of concerned Utility Owing Department is part of the scope of work of the Concessionaire. Copy of utility relocation plan is enclosed in Annexure – VI. The specifications of concerned Utility Owing Department shall be applicable.

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 Concessionaire 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 Concessionaire 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 Concessionaire to Utility Owning Department whenever asked by the Concessionaire. The decision/ Approval of utility owning department shall be binding on the Concessionaire.

13.3 The dismantled material/ scrap of existing Utility to be shifted/ dismantled shall belong to the Concessionaire who would be free to dispose-off the dismantled material as deemed fit by them unless the Concessionaire 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 Concessionaire 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

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as and when Concessionaire 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 Concessionaire.

13.7 All the Electrical crossings less than or equal to 66 KV shall be underground.

14 Work Zone Traffic Management Plans (Clause No. 7.19 IRC: SP:84-2019/ IRC: SP:87-2019) Annexure – II of 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.

Sr. No.	Design Chainage (Km)		Construction Activity	Diversion	Traffic Management Plan	Barricading Type – III/IV/CC Barrier with lighting along barrier	Deployment of Flagman in Habitation/ Schools/ Hospital, etc.	Remarks
	From	To						
			Widening of Pavement					
			VUP					
			Bridge Widening					

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Appendix B-I (A)

Applicable Stretches of Typical Cross Section (Main Expressway)

Sl. No.	Chainage (Km)		Length (Km)	TCS Type
	From	To		
1	77+000	77+025	0.025	TCS 1
2	77+025	77+350	0.325	TCS 5
3	77+350	77+950	0.600	TCS 1
4	77+950	78+475	0.525	TCS 5
5	78+475	79+030	0.555	TCS 1
6	79+030	79+100	0.070	TCS 1
7	79+100	79+650	0.550	TCS 5
8	79+650	80+640	0.990	TCS 1
9	80+640	80+980	0.340	TCS 2
10	80+980	81+400	0.420	TCS 1
11	81+400	81+575	0.175	TCS 5
12	81+575	81+660	0.085	TCS 1
13	81+660	82+650	0.990	TCS 3
14	82+650	82+800	0.150	TCS 1
15	82+800	83+175	0.375	TCS 5
16	83+175	84+550	1.375	TCS 1
17	84+550	84+725	0.175	TCS 5
18	84+725	84+825	0.100	TCS 1
19	84+825	84+900	0.075	TCS 5
20	84+900	85+050	0.150	TCS 1
21	85+050	85+130	0.080	TCS 1
22	85+130	85+300	0.170	TCS 3
23	85+300	85+390	0.090	TCS 3
24	85+390	86+300	0.910	TCS 1
25	86+300	86+850	0.550	TCS 5
26	86+850	91+730	4.880	TCS 1
27	91+730	92+000	0.270	TCS 2

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Sl. No.	Chainage (Km)		Length (Km)	TCS Type
	From	To		
28	92+000	95+200	3.200	TCS 1
29	95+200	95+625	0.425	TCS 3
30	95+625	96+160	0.535	TCS 1
31	96+160	96+257	0.097	Major Structure
32	96+257	97+600	1.343	TCS 1
33	97+600	97+925	0.325	TCS 5
34	97+925	100+450	2.525	TCS 1
35	100+450	100+600	0.150	TCS 2
36	100+600	101+200	0.600	TCS 1
37	101+200	102+750	1.550	TCS 5
38	102+750	103+400	0.650	TCS 1

Note:

- *The lane configuration and width of all structures shall be as per respective paragraph appendices of this schedule.*
- *If the paved carriageway width of structure is more than the carriageway width of approaches, then proper pavement tapering (as per manual) shall be provided.*

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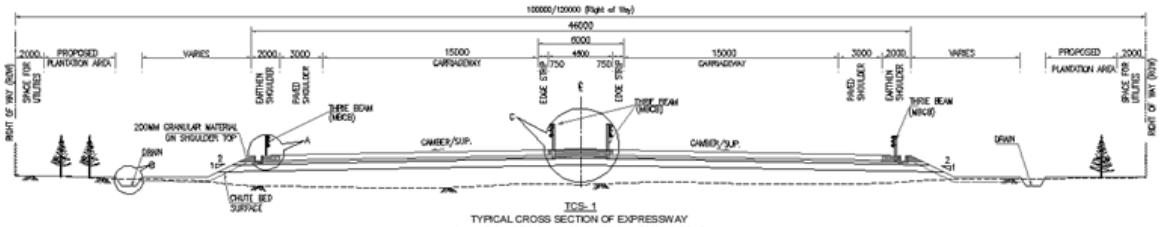
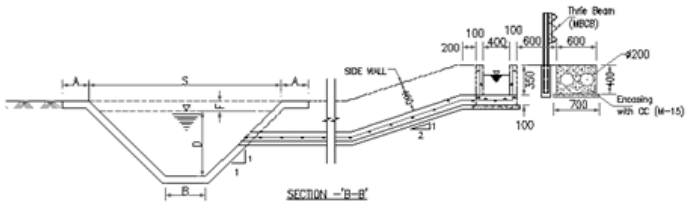
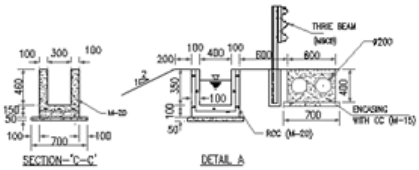
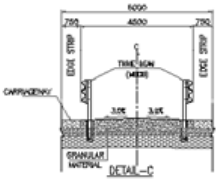


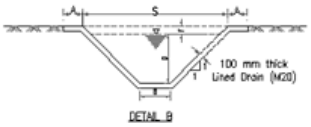
TCS-1

TYPICAL CROSS SECTION OF EXPRESSWAY
8-LANE DIVIDED C/W WITHOUT CONNECTING ROAD





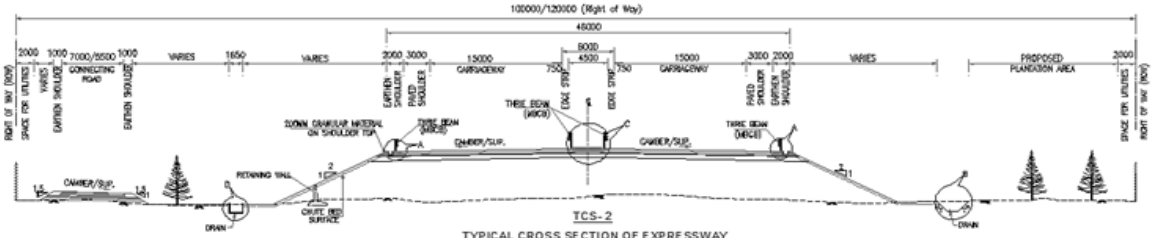




Detail of Drain – "B" (Toe Drain)

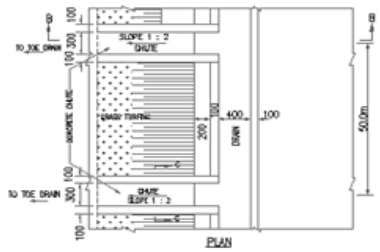
S. No.	Dimensions(in mm)				
	A	B	D	F	S
1	400	600	790	150	2480

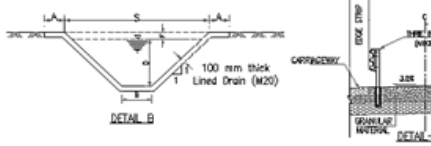
Notes:
1. All Dimensions are in mm unless otherwise specified.

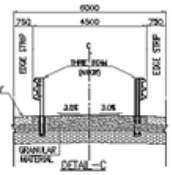


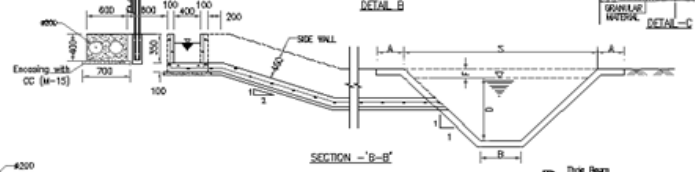
TCS-2

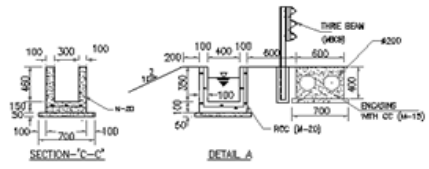
TYPICAL CROSS SECTION OF EXPRESSWAY
8-LANE DIVIDED C/W WITH LEFT SIDE CONNECTING ROAD

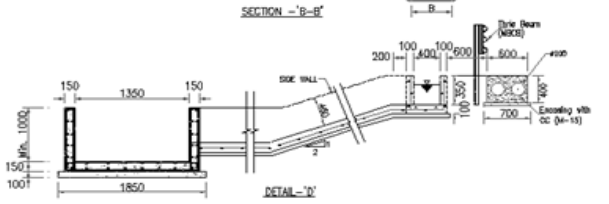












Detail of Drain – "B" (Toe Drain)

S. No.	Dimensions(in mm)				
	A	B	D	F	S
1	400	600	790	150	2480

Notes:
1. All Dimensions are in mm unless otherwise specified.
2. Retaining wall shall be provide to restrict Toe Line, wherever required to accommodate within ROW

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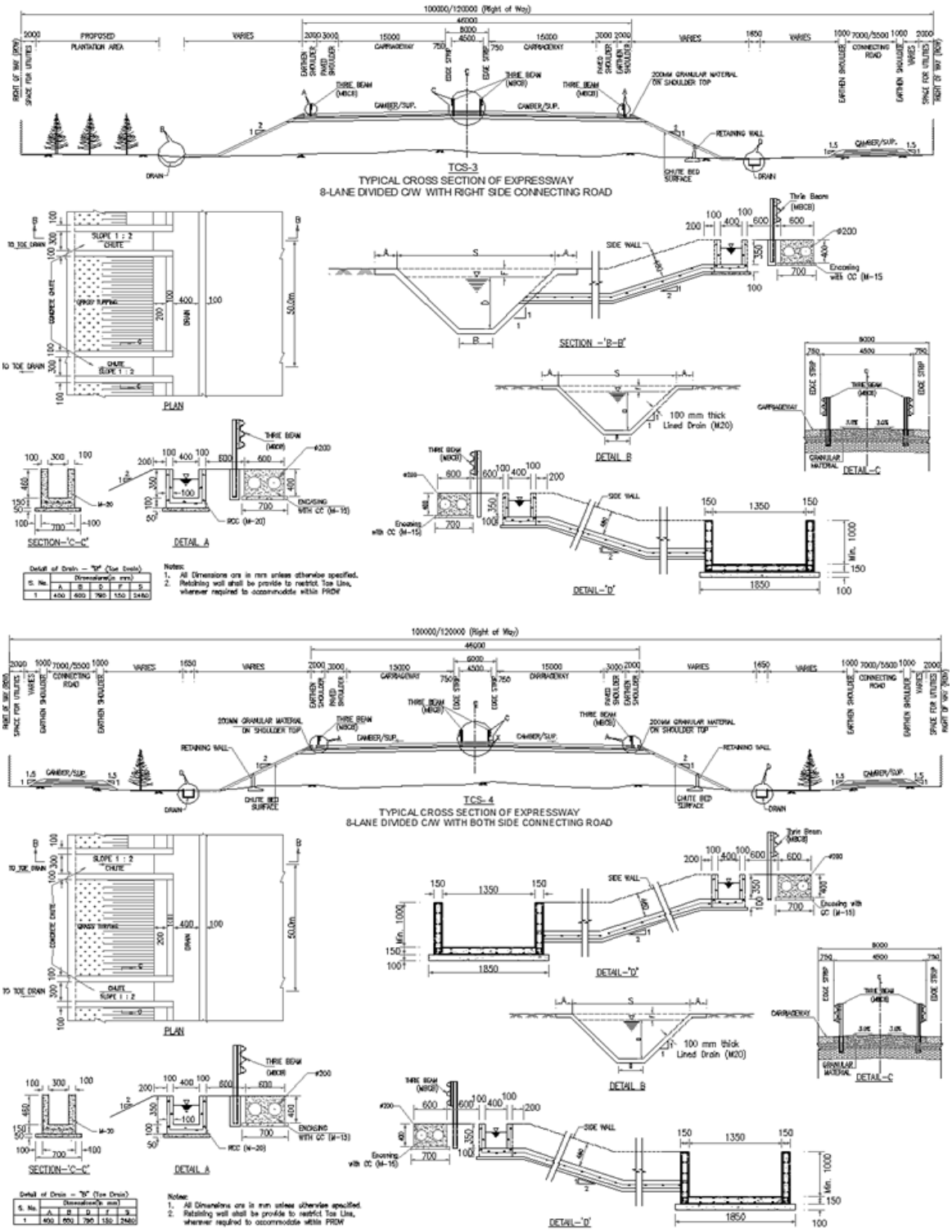

Default of Drain – "B" (Toe Drain)

S. No.	Dimensions (in mm)				
	A	B	D	F	S
1	400	600	750	150	2480

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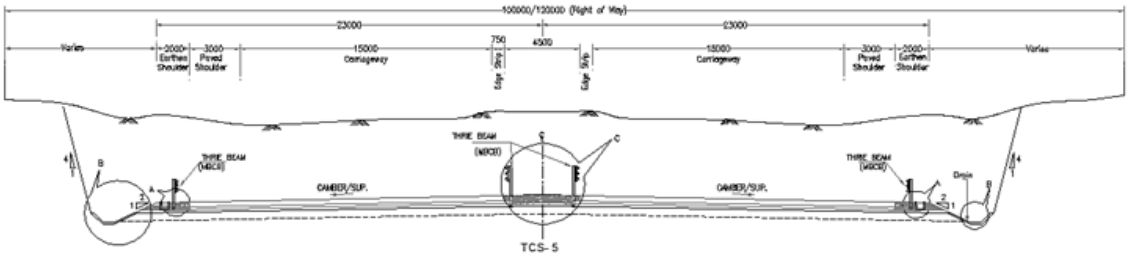
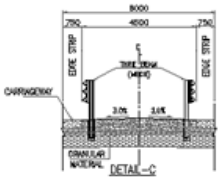
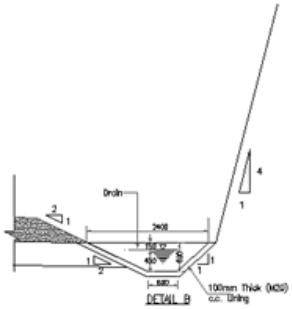
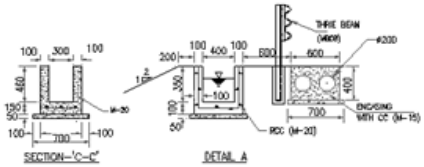


TCS- 5

TYPICAL CROSS SECTION OF EXPRESSWAY
8-LANE DIVIDED C/W WITHOUT CONNECTING ROAD IN CUTTING SECTION







Detail of Drain - "B" (Toe Drain)

S. No.	Dimensions (in mm)				
	A	B	C	F	S
1	400	600	780	150	2400

Notes:
1. All Dimensions are in mm unless otherwise specified.

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Appendix B-I (B)

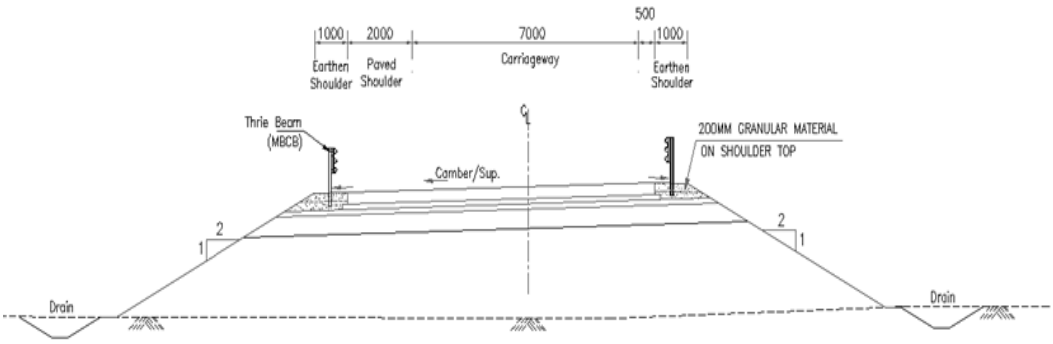
Typical Cross Section (Loop/Ramp)

Minimum lane configurations of Loops / Ramps for each interchange are as follows:

Interchange No & Chainage (on VME in Km)	Description	Lane Configuration	Length (km)	TCS Type
Int. 3 (78+638)	Mumbai to Dahanu	2	950	TCS 6
	Dahanu to Vadodara	2	850	TCS 6
	Vadodara to Dahanu	2	930	TCS 6
	Dahanu to Mumbai	2	930	TCS 6

Note:

- *The width of Paved Carriageway shall be minimum as given in TCS. However where toll plaza has to be constructed on Loop/Ramp, the width of Paved Carriageway shall be as per the width of toll plaza lane configuration given in Schedule C including taper length as per manual.*
- *The lane configuration and width of all structures shall be as per respective paragraph of this schedule.*
- *The above lengths are tentative and minimum specified without acceleration / deceleration lane and taper length. The acceleration / deceleration lane and taper shall be constructed as per Schedule D.*



TCS-06

TYPICAL CROSS SECTION FOR LOOPS & RAMPS (2-LANE)

Notes:
1. All Dimensions are in mm unless otherwise specified.

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Appendix B-I (C)

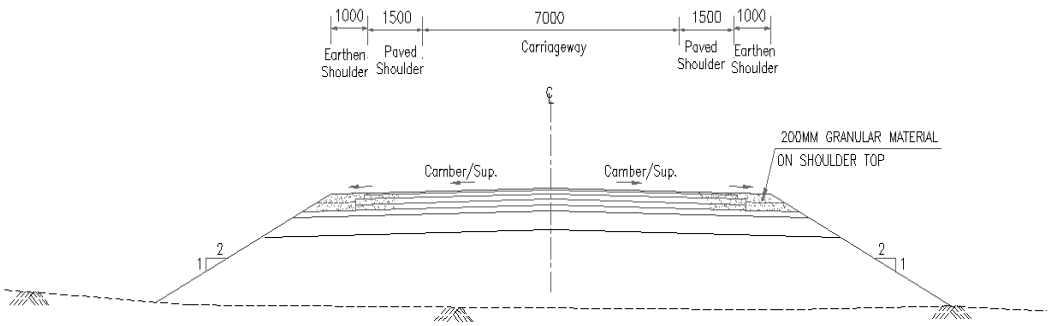
Applicable Stretches of Typical Cross Section (Crossroad at VOP location)

The cross road at vehicular overpass locations shall be constructed to the lane configuration as given below:

Location of VOP on VME	Chainage(Km)		Length(Km)	TCS Type
	From	To		
89+308	0+000	1+00	1.0	TCS 7/Structure
101+912	0+000	0+375	0.375	TCS 7/Structure
102+365	0+000	0+300	0.300	TCS 7/Structure

Note:

- *The width of structures shall be constructed as per respective clauses / appendices mentioned in this schedule.*



TCS- 07

TYPICAL CROSS SECTION FOR CROSS ROADS AT VEHICULAR OVERPASS LOCATIONS

Notes:
1. All Dimensions are in mm unless otherwise specified.

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Annexure - II

(Schedule-B)

DELETED

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Annexure - III

(Schedule-B)

(see Clause 16.2.2(c)(i))

Items for Change of Scope

Sr. No.	Description/Specification of Items	Quantity	Per Unit Rate	Amount
1.	**Road Portion (MCW)**			
(a)	[2L/4L/6L] Main Carriageway + 2.5 m PS; Pavement [Flexible/Rigid]; Embankment Height [1 m or as applicable]; Design Traffic [MSA as per Schedule]; Design Life [20/30 years]; Min Effective CBR of 8% for Flexible Pavement or Min K-Value of 55 Mpa/m for Rigid Pavement including Protection Works, Drainage, Road Furniture/Safety Barriers, Road Marking, Highway Lighting, Median & Avenue Plantation, etc. including all works to complete the Road Cross Section.	1 km	Per Sqm Paved area.	**[**]**
2.	**Road Portion (SR)**			
(c)	[7m/7.5m] Service Road; Pavement [Flexible/Rigid]; Embankment Height [1 m or as applicable]; Design Traffic [10 MSA/20 MSA for Flexible Pavement or 1,300–1,400 /2,600–2,800 CVPD for Rigid Pavement]; Design Life [20/30 years]; Min Effective CBR of 8% or Min K-Value of 55 Mpa/m for Rigid Pavement including Protection works, Drainage, Road Furniture/Safety Barriers, Road Marking, Highway Lighting, Median and Avenue Plantation, etc. including all works to complete the Cross Section of Service Road.	1 km	Per Sqm Paved area.	**[**]**
3.	**Elevated Structures like Flyovers / VUP/ LVUP/ SVUP**			
3.1	**Flyovers / VUP/PUP including approaches**			
(a)	Flyover with RE Wall; Span (15m + 25m + 15m); Height (5.5m); [Pile/Open] Foundation as per Geotechnical Investigation (Seismic Zone as applicable); Super-Structure [RCC/ PSC Girder]; Design Load (SV Loading + Edge Loading); Approaches as per ISD; Design Traffic (as per Schedule); Design Life [20/30 years]; Min Effective CBR 8%;	Structure (Area to be Mentioned as per lane Configuration of the Structure) +	Per Sqm of Structure Area.	**[**]**

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	Bearing & Expansion Joints, Drainage Facility, Road Furniture/Safety Barriers, Road Marking, Highway Lighting, Median Plantation, etc. complete including all works to complete the Cross Section. Design Life of RE Wall of 50 years with minimum backfill properties of C = 0 and ø = Min 30.	Approach	Per Sqm of paved Area of approach	
(b)	VUP with RE Wall Span [20/30m]; Height (5.5 m); [Pile/Open] Foundation as per Geo technical Investigation (Seismic Zone as applicable); Super-Structure [RCC/ PSC Girder/Box Type]; Design Load (SV Loading + Edge Loading); approaches as per ISD; Design Traffic (as per Schedule); Design Life [20/30 years]; Min Effective CBR 8%; Bearing & Expansion Joints, Drainage Facility, Road Furniture/Safety Barriers, Road Marking, Highway Lighting, Median Plantation, etc. complete including all works to complete the Cross Section. Design Life of RE Wall of 50 years with minimum backfill properties of C = 0 and ø = Min 30.	Structure (Area to be Mentioned as per lane Configuration of the Structure) + Approach	Per Sqm of Structure Area. Per Sqm of paved Area of approach	**[**]**
3.2	**LVUP/ SVUP/PUP**			
(a)	LVUP [0 to 30 Degree Skew Angle] with RE Wall; Span (12 m); Height (4 m); Foundation Design as per applicable Seismic Zone; Super-Structure (Box Type); Design Load (SV Loading; Edge Loading); Approaches as per ISD; Design Traffic (as per Schedule); Design Life [20/30 years]; Min Effective CBR 8%; Bearings & Expansion Joints, Drainage Facility, Road Furniture/Safety Barriers, Road Marking, Highway Lighting, Median Plantation, etc. complete including all works to complete the Cross Section. Design Life of RE wall of 50 years with minimum backfill properties of C = 0 and ø = Min 30.	Structure (Area to be Mentioned as per lane Configuration of the Structure) + Approach	Per Sqm of Structure Area. Per Sqm of paved Area of approach	**[**]**
(b)	SVUP [0 to 30 Degree Skew Angle] with RE Wall (Panel) as per ISD; Span (7 m); Height (4 m); (Seismic Zone as applicable); Super-Structure (Box Type); Design (SV Loading + Edge Loading); Approaches as per ISD; Design Traffic (as per Schedule); Design Life [20/30 years]; Min Effective CBR 8%; Bearings & Expansion Joints, Drainage Facility, Road Furniture/Safety	Structure (Area to be Mentioned as per lane Configuration of the Structure) +	Per Sqm of Structure Area.	**[**]**

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	Barriers, Markings, Highway Lighting, Median Plantation, etc. complete including all works to complete the Cross Section. Design Life of RE wall of 50 years with minimum backfill properties of C = 0 and ø = Min 30.	Approach	Per Sqm of paved Area of approach	
(c)	PUP [0 to 30 Degree Skew Angle] with RE Wall (Panel); Span (7 m); Height (3 m); (Seismic Zone as applicable); Super-Structure (Box Type); Design (SV Loading + Edge Loading); Approaches as per ISD; Design Traffic (as per Schedule); Design Life [20/30 years]; Min Effective CBR 8% Bearings & Expansion Joints, Drainage Facility, Road Furniture/Safety Barriers, Markings, Highway Lighting, Median Plantation, etc. complete including all works to complete the Cross Section. Design Life of RE Wall of 50 years with minimum backfill properties of C = 0 and ø = Min 30.	Structure (Area to be Mentioned as per lane Configuration of the Structure) + Approach	Per Sqm of Structure Area. Per Sqm of paved Area of approach	**[**]**
4.	**Longitudinal Drain**			
(a)	Lined Covered Drain for Width of 1.5 m and Min Depth of 1m and Max Depth [1.5/2/2.5 m] including weep holes at GSB level and Steel Grating at Carriageway level as a storm water inlet and providing filler Joint with water stopper at every 30m.	1km	Per Rm	**[**]**
(b)	Lined Trapezoidal Drain with 75 mm M-20 Grade; 600 mm extendable horizontal portion above Lined Drain; Bottom Width of 600 mm; Depth (Min 600 mm and Max 1.5 m); Side Slope of 1:1 for Lined Drain.	1km	Per Rm	**[**]**
(c)	Load Bearing Drain; Shape ;Width of 1.5 m and Min. Depth of 1m and Max Depth [1.5/2/2.5 m]; Min 100 mm thickness with M25 Grade; Slape Cover to be designed as per Class A loading; including weep holes at GSB level and Steel Grating at Carriageway level as a storm water inlet and providing filler Joint with water stopper at every 30m.	1km	Per Rm	**[**]**
5.	**Cross Drainage Structure (Box/ Pipe Culvert)**			
(a)	Pipe Culvert with Dia [600/1200 mm]; NP4, HDPE including Protection Work (i.e., Apron, Stone Pitching on slope, etc.) and Head Wall/ Chamber, Encasing, Bedding with M-15 Grade, Cradles, etc.	1 No.	Per Rm	**[**]**
(b)	Box Culvert: [2m x 2/3/4m or 3m x 2/3/4m or 4m x 2/3/4m] including Protection work (i.e., Apron, Curtain Wall, Return / Wing	1 No.	Per Rm	**[**]**

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	Wall, Approach Slab, Quadrant Pitching, etc.) and Crash Barrier/ Parapet Wall.			
6.	**Minor Bridge**			
(a)	Span [6/10/15/20m] x Depth (Based on Hydraulic Requirement), Seismic Zone as applicable; Super-Structure [RCC/PSC Girder/Box Type]; Design (SV Loading + Edge Loading); Bearings & Expansion Joints; Protection Work (i.e., Apron, Curtain Wall, Return/Retaining / Wing Wall, Approach Slab, etc.); Crash Barrier/ Parapet Wall; Footpath, Highway Lighting on Structure + Approach of height upto 3m, etc.	1 No.	Per Sqm of Structure Area	**[**]**
7.	**FOB**			
(a)	Steel Foot Over Bridge with Staircase (MCW + Service Road) including all required Civil works.	1 No.	Per ton of Structural Steel	**[**]**
(b)	Steel Foot Over Bridge with Ramp (MCW + Service Road) including all required Civil works.	1 No	Per ton of Structural Steel	**[**]**
8.	**Retaining Wall/Toe Wall**			
(a)	Toe wall of Height [0.5/1/2/3m] excluding foundation depth; Min. Embankment Slope of 1:1.5 with backfill material (C= 0 & Min ø = 30) including PCC; Weep holes; Filter/Geo-Composite material behind Toe Wall with proper arrangement to dispose water received from the Embankment Slope above Toe Wall	1 km	Per Rmt length for Different heights.	**[**]**
(b)	Retaining Wall 4m / 5m / 6m / 7m /8m / 9m / 10m height (excluding foundation depth) with backfill material of C= 0 and ø = Min 30, PCC, Weep holes; Filter/Geo-composite material behind Retaining Wall and Crash barrier with proper arrangement to dispose water received from Carriageway	1 km	Per Rmt length for Different heights.	**[**]**
9.	**Safety Barriers**			
(a)	W-Beam Metal Crash Barrier; Thickness (3 mm); Post Spacing (2m center to center); Height from ground (Top of Beam) of 700 mm fixing beam to posts using spacer blocks and bolts.	1 km	Per Rmt	**[**]**
(b)	Thrie-Beam Metal Crash Barrier; Thickness (3 mm); Post Spacing (2m center to center); Height from ground (Top of Beam) of 810 mm fixing beam to posts using spacer blocks and bolts.	1 km	Per Rmt	**[**]**
(c)	New Jersey Crash Barrier (Concrete Barrier); Height (1.07m); Width at Base (610 mm); Width at Top (200 mm); Slope of Faces (1:4 on Both Sides); Min Wall Thickness (150 mm)	1 km	Per Rmt	**[**]**

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10.	Road Side Furniture			
(a)	Bus Bay; Width (Min 3m); Length [18m/30m]; Taper Length [15m for entry and 15m for exit]; Pavement Design should be same as Service Road/Main Carriageway With lighting	1 No.	Per Sqm	**[**]**
(b)	Bus Shelter; Min Platform Width of 2m; Platform Height of 150 mm above; Min Shelter Height of 2.5m; Shelter Length of Min 5m; Structure [Steel/RCC] including lighting and drainage facility with lighting	1 No.	Per Sqm	**[**]**
(c)	******	***	****	***

Note : All the items to be designed as per applicable IRC & Good Engineering Practice.

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SCHEDULE - C

(See Clause 2.1)
PROJECT FACILITIES

1.1 The Concessionaire 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
   a. Kilometre and Hectometre Stones
   b. Traffic Signs
   c. Overhead Signs
   d. Road Marking
   e. Road Delineators
   f. Reflective Pavement Markers & Solar Studs
   g. Traffic Impact Attenuators
   h. Boundary wall and Fencing
   i. Kerb/MBCB/antiglare measures in median
   j. Noise Barriers
c) Operation and Maintenance centers
d) Truck lay-byes
e) Bus Bay and Bus shelter
f) Pedestrian Facilities
g) Highway Lighting
h) Environmental Management Plan
i) Environmental Management Plan
j) Land Scaping and Tree Plantation
k) Advanced Traffic Management System (ATMS)
l) Highway Patrol Units
m) Emergency medical services
n) Crane Service
o) Vehicle rescue post
p) Instrumentation for monitoring of cut slopes
q) Instrumentation for monitoring of bridges
r) Instrumentation for monitoring of Reinforced Soil walls
s) Installation of Multi Lane Free Flow (MLFF) Tolling System.

2 **Project Facilities for [***-Laning]**

Project Facilities forming part of [***-Laning] and to be completed on or before the Project Completion Date have been described in Annexure-I of this Schedule-C.

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Annexure – I

(Schedule-C)

Project Facilities[24]

The Concessionaire shall construct the Project Facilities described in this Annexure-I to form part of the [**** Lane] Project. The Project Facilities shall Include:

a) Toll Plaza
b) Roadside furniture
    a. Kilometre and Hectometre Stones
    b. Traffic Signs
    c. Overhead Signs
    d. Road Marking
    e. Road Delineators
    f. Reflective Pavement Markers & Solar Studs
    g. Traffic Impact Attenuators
    h. Boundary wall and Fencing
    i. Kerb/MBCB/antiglare measures in median
    j. Noise Barriers
c) Operation and Maintenance centers
d) Truck lay-byes
e) Bus Bay and Bus shelter
f) Pedestrian Facilities
g) Highway Lighting
h) Rainwater Harvesting
i) Environmental Management Plan
j) Land Scaping and Tree Plantation
k) Advanced Traffic Management System (ATMS)
l) Highway Patrol Units
m) Emergency medical services
n) Crane Service
o) Vehicle rescue post
p) Instrumentation for monitoring of cut slopes
q) Instrumentation for monitoring of bridges
r) Instrumentation for monitoring of Reinforced Soil walls
s) Installation of Multi Lane Free Flow (MLFF) Tolling System

2 Description of Project Facilities

Each of the Project Facilities is briefly described below:

(a) Toll Plaza(s);

Tolling system shall be provided in entire length of the project and the same is integrated with the adjoining packages. The Concessionaire shall install Multi Lane Free Flow (MLFF) Tolling System as under and as specified in Schedule-D (Para 5):

(i) The Concessionaire shall implement Automatic Number Plate Recognition (ANPR) Camera and RFID (FASTAG) based Barrier Less Multi Lane Free Flow (MLFF) Tolling System at the proposed Toll Plaza location on the Highway stretch.

(ii) The Solution shall be integrated with e-Notice Module developed by National Informatics Center (NIC) through Central Clearing House (CCH) wherein the violators will be issued e-Notice in case they cross the Toll Plaza with FASTag that

[24] This template is applicable to highway projects. It may be suitably revised in case of other projects.

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is not valid and functional. The Authority shall provide assistance in integrating the system with the e-Notice Module prepared by NIC.

(iii) The e-Notice shall be issued to the violators by NIC for amount equal to two times the fee applicable to that category of vehicles as per sub-rule (2) of rule 4 of the National Highways Fee (Determination of Rates and Collection) Rules 2008.

(iv) In case of non-payment of fees against the e-Notice within prescribed time, the road user shall have restrictions on the VAHAN based services like NOC, re-registration, insurance etc of vehicle as proposed by the Ministry in Gazette Notification No GSR467 (E) dated 11.07.2025.

(v) 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-CP, Bib Cock—CP, Health Faucet, W/c Bib cock, Wash Basin angle cock. One WC shall be provided for specially challenged persons.

(vi) Medium speed Weigh in Motion (MSWIM) devices shall be provided. In addition to MSWIM, Static weigh Bridge (SWBs) shall be provided on each direction.

(b) Roadside Furniture;

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/ Stones**	(2X No. of Kms)+2	The KM/ Hectometer stones/ marker can be Concrete/ Stones and shall be placed on both outer side of the earthen shoulder. 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 signs. Km/ Hectometer stones are required to provide on main carriageway and Service Road, both if continuous service road is provided throughout project length (Service Road length is more than 1 Km).

2.2 Traffic Signs

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. **(Clause No. 9.2 IRC: SP:84-2019/ IRC: SP:87-2019)**

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All sign shall be of Micro Prismatic Grade Sheeting Corresponding to Class C sheeting as per ASTM D 4956 Type VIII, IX and XI. **(Clause No. 9.2.3 IRC: SP:84-2019/ IRC: SP:87-2019)**

All shoulder mounted signs shall be supported on GI Pipes. 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 x V metre (V is design speed in Kmph). **(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	Both
a	Start of Project	
b	End of project	
c	Toll plaza location on both side	
2	Overhead Cantilever Gantry signs	Either left or right
a	At all major locations of crossroads i.e NH, SH, MDR (start of grade separated structure/at grade interchange)	Either left or right
b	At major trauma center, roads leading to religious places or any other important location	Both sides
3.	Double/Butterfly Cantilever	On Gore Area of Exit Locations of Access Controlled Highway/ Expressway.

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 (DPR Consultant has to give the number required for each sign)	Remarks
I	**Mandatory/Regulatory**		
1	Stop signs		
2	Give Way Signs		
3	Prohibitory signs		

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S.No.	Road Signs	Number (DPR Consultant has to give the number required for each sign)	Remarks
4	No Parking signs		
5	No Stopping signs		
6	Speed Limit signs (Circular)		
7	Speed Limit signs (Vehicle Type)		
8	Vehicle Control signs		
9	Restriction Ends sign		
10	Compulsory Direction Control and other signs		
II	**Cautionary/Warning**		
1	Left/Right Curve		
2	Left / Right Curve with side road		
2	Right/Left Hairpin Bend		
3	Right/Left Reverse Bend		
4	Series of Bends		
5	270 Degree Loop		
6	Side Road		
7	Y-intersection		
8	Cross Road		
9	Roundabout		
10	Traffic Signals		
11	T-Intersection		
12	Major Road Ahead		
13	Staggered Inter-section		
14	Merging Traffic Ahead		
15	Narrow Road Ahead		
16	Road Widens		
17	Narrow Bridge Ahead		
18	Steep Ascent/Descent		
20	Reduced Carriageway		
21	Start /End of Dual Carriageway		
23	Gap in Median		
24	Pedestrian Crossing		
25	Pedestrian crossing with backing board		
26	School Ahead		
27	Built Up Area		

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S.No.	Road Signs	Number (DPR Consultant has to give the number required for each sign)	Remarks
28	Two Way Operation (on main carriage way /service road		
29	Two Way Traffic on Cross Road Ahead		
30	Danger Warning Sign		
31	Deaf or Blind Persons Likely on Road Ahead		
32	Cycle Crossing		
33	Cycle Route Ahead (Warning for Cycles on road ahead)		
34	Dangerous Dip		
35	Speed Breaker		
36	Rumble Strip		
37	Rough Road		
38	Dangerous Ditch		
39	Slippery Road		
40	Slippery Road because of Ice		
41	Opening or Swing Bridge		
42	Overhead Cable		
43	Play Ground Ahead		
44	Quay Side or River Bank		
45	Sudden Side Winds		
46	Tunnel Ahead Warning		
47	Falling Rocks		
48	Cattle Crossing		
49	Wild Animals likely to be on Road Ahead		
50	Queues Likely Ahead		
51	Low flying Air Craft		
52	Unguarded Railway Crossing		
53	Guarded Railway Crossing		
54	Crash prone area ahead		
55	U- Turn		
III	**Chevron Signs**		
1	Single Chevron		
2	Double Chevron		
3	Triple Chevron		
IV	**Object Hazard Marker Sign**		

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S.No.	Road Signs	Number (DPR Consultant has to give the number required for each sign)	Remarks
1	Left /Right side Object Hazard Marker		
2	Two way Object Hazard Marker		
V	**Informatory/Guide**		
1	Direction and Place Identification signs		
2	Stack Type Advance Direction Sign (Shoulder Mounted)		
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	Flag Type Direction Sign		
7	Reassurance Sign		
8	Place Identification Sign		
9	Truck Lay -By		
10	Toll Booth Ahead		
11	Weigh Bridge Ahead		
12	Shoulder Mounted Sign in Advance of a Grade Separated Junction/ Interchange		
13	Expressway Sign		
14	Gantry Mounted advance Direction Sign Ahead of a Flyover in Urban/City Roads		Instead of continuous sign board, Separate Signs shall be provided for each information
15	Gantry Mounted advance Direction Sign Ahead of a Grade Separated Junction		
16	Gantry Mounted advance Direction Sign Ahead of a At Grade Intersection		
17	Gantry Mounted Advance Direction Sign for Interchange		
18	Cantilever Gantry Mounted Advance Direction Sign for Interchange		
19	Lane Dedicated Gantry Sign		
20	Definition/Supplementary Plates		
21	Tourism Related Sign		
22	Tourist Destination Direction Information Signs Without Photograph		

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S.No.	Road Signs	Number (DPR Consultant has to give the number required for each sign)	Remarks
23	Tourist Destination Direction Information Signs With Photograph		
24	Finger Destination direction Information Sign for Pedestrians		
25	Tourist Map Information Sign		
26	Boundary Sign at Entrance to a City/Place		
27	Boundary Sign at Entrance to a Tourist Destination		
VI	**Facility Information signs**		
1	Eating Place		
2	Light Refreshment		
3	Resting Place		
4	First Aid Post		
5	Toilet		
6	Filling Station(Fuel Pump)		
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		
19	Home Zone		
20	Camp Site		
21	Airport		
22	Golf Course		
23	National Heritage		
24	No Through Road		
25	No Through Side Road		
26	Toll Road Ahead		
27	Guide Sign on Toll Lane Portal		
28	Country Border		

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S.No.	Road Signs	Number (DPR Consultant has to give the number required for each sign)	Remarks
29	Entry Ramp for Expressway		
30	Exit Ramp for Expressway		
31	Expressway Symbol		
32	End of Expressway		
33	Bus Stop		
34	Bus Lane		
35	Contra Flow Bus Lane		
36	Cycle Lane		
37	Contra Flow Cycle Lane		
38	Holiday Chalets		
39	Emergency Exit		
VII	**Other Useful Information Signs**		
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		
VIII	**Route Maker Signs**		
1	State Highway Route Marker Sign		
2	National Highway Route Marker Sign		
3	Asian Highway Route Marker Sign		
4	Expressway Route Marker Sign		

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[Note: The locations of the placement of signages shall be finalized in consultation with Independent Engineer/ Authority, as per site requirement.]

2.3 Road Marking (Clause No. 9.2 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)**

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). **(Clause No. 2.4 of IRC: 35)**

S.No.	Item	Unit		Remarks
		Length (m)	Number	
1	Longitudinal Marking			
2	Transverse Marking			
3	Hazard Marking			
4	Block Marking			
5	Arrow Marking			
6	Directional Marking			
7	Facility Marking			
8	Center Line			
9	Traffic Lane Lines			
10	No Overtaking Lines			
11	Warning Lines			
12	Border or Edge Lines			
13	Longitudinal Markings for Undivided Roads			
14	Longitudinal Markings for divided Roads			
15	Longitudinal Markings for Ramps/Slip Roads/One Way Streets			
16	Stop Line			
17	Give Way Lines			
18	Diagonal Markings			
19	Chevron Markings			
20	Continuity Line			
21	Word Messages			
22	Lane Change			
23	Merging/Diverging Markings			
24	Hatch Markings			
25	Raised Profile Edge Lines			
26	Lane Reduction / Narrowing Situations and Transitions (lane Balancing)			
27	Directional Arrows			
28	Mandatory Turn Arrows			
29	Guidance Arrows			
30	Deflection Arrows			
31	Bifurcation Arrows			
32	Arrows on Side Road Approaches			

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S.No.	Item	Unit		Remarks
		Length (m)	Number	
33	Arrows on Main Road Approaches			
34	Word Messages			
35	Yellow Box Markings			
36	Ghost Island			
37	Marking for Speed Breakers			
38	Pedestrian Crossing			
39	Markings when highway passes through settlement fig 9.4 of IRC SP 84/87			
40	Transverse Bar Markings			
41	Busbay Marking			
42	Truck Lay-by Markings			
43	Toll Plaza Marking			
44	School Zone Markings			
45	Object Markings within Carriageway			
46	Objects Markings Adjacent to Carriageway			
47	i. Subway Piers, Abutments, Culverts Head Walls, Concrete Barrier			
48	ii. Electrical Poles			
49	iii. Guard Rails			
50	iv. Trees			
51	v. Kerbs			
52	Directional Markings as per Annexure: A 6			
53	Facility Markings as per Annexure A.7 of IRC 35			

[Note: The locations of the marking shall be finalized in consultation with Independent Engineer/Authority, as per site requirement.]

2.4 Road Delineators

(Clause No. 9.4 IRC: SP:84-2019/ IRC: SP:87-2019)

S.No.	Item	Number/ Length (m)	Remarks
1	Roadway Indicators		
2	Median Marker on Median/RCC Barrier **(Clause 4 of IRC 79 2019)**		
3	Object Markers		

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S.No.	Item	Number/ Length (m)	Remarks
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 iv. On Exit from Main carriageway		
5.	Solar Blinkers on Median Opening, on exit from main carriageway and traffic islands of grade separated intersections		

[Note: The locations of the marking shall be finalized in consultation with Independent Engineer/Authority, as per site requirement.]

2.5 Reflective Pavement Markers & Solar Studs

The Prismatic Retro-Reflective type confirming to ASTM D-4280 Pavement Markers & Solar Power Studs on Highway shall be provided in accordance with Schedule - D.

(Clause No. 9.5 IRC: SP:84-2019/ IRC: SP:87-2019

S.No.	Item	Number	Location	Remarks
A. – For 4/ 6 Lane Projects				
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 to truck lay bye / bus bay, start of service road, chevron/diagonal markings on gorge	
3	Yellow / Amber Colour one coloured face Road Studs		Median side edge line, zebra crossing	
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 changing	
B– For 2 Lane PS Projects				
5	White Colour Two coloured face Road Studs		Traffic lane line & center of carriageway	Bi-directional carriageway
6	Red Colour Two coloured face Road Studs		Left hand edge of the carriageway, entry to	

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S.No.	Item	Number	Location	Remarks
			truck lay bye / bus bay, start of service road, chevron/diagonal markings on gorge	
7	Green Colour Two 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 changing	
8.	Solar Studs on Major/Minor bridge, RoB, and all structures (Interchange/Flyover/VUP) and Builtup areas, In storage lane of median opening and Exit/Entry from main carriageway			

2.6 Traffic Impact Attenuators (Clause No. 9.6 IRC: SP:84-2019/ IRC: SP:87-2019)

2.6.1 Provide Impact Attenuators in Gore Areas

It shall be self-restoring confirming to section 10.6 of IRC SP 99 i.e. Manual of Specifications and Standards for Expressways at following locations

S.No.	Item	Chainage / Number	Remarks
1	On flyover/grade separated structure at exit from main carriageway		
2	On Island of Toll Plaza		
3	Any other location which Safety Hazard		

2.6.2 Providing End Terminals (Clause No. -----, IRC SP 99)

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		
2	Structures Ends		

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S. No.	Item	Chainage / Number	Remarks
3	Any other location which Safety Hazard		

2.7 Boundary wall and Fencing (Clause No. 12.2 IRC: SP:84-2019/ IRC: SP:87-2019)

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 Annexure A.

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.

In case Chainlink fencing, provide detailed drawings as Annexure A.

In case of Pre cast panel fencing, provide cast in situ coping beam on top of fencing. provide detailed drawings as Annexure A

2.8 Kerb/MBCB/antiglare measures in the median

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 (as indicated in Schedule-B) 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). 200 mm X 200 mm (100 mm above FRL) kerb of CC M25 Mix shall be provided in case of flush median to prevent spreading of soil on carriageway (clause No. 6.3.2 IRC:SP:84-2019/ IRC:SP:87-2019). The MBCB (Metal beam crash barrier) face to match with paving face for the carriageway on the median side. Suitable anti-glare measures shall be proposed in the built up section. Specification (Size, Spacing, Height etc.) to be specified (Clause No. 2.5.6 & 2.5.7 IRC: SP:84- 2019/ IRC: SP:87-2019)

2.9 Noise Barriers

The Concessionaire shall carry out tests/ monitor various parameters impacting the environment of the Project Highway keeping in view the guidelines of the Ministry of Environment and Forests and submit proposals for mitigation of adverse environment impact including provision of noise barriers, etc. for review and comments of the IE, if any and undertake implementation of the proposals in consultation with the IE at the location specified in Schedule B. Provision of IRC: SP:108- 2015 shall be complied with

3. Operation and Maintenance centers

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 &

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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. (**Clause No. 12.15 IRC: SP:84-2019/ IRC: SP:87-2019)**

4. Deleted

5. Truck lay-byes: (Clause No. 12.6 **IRC: SP:84-2019/ IRC: SP:87-2019)**)

5.1 The truck lay-bye shall be provided at below given location and as per the design mentioned in Schedule-D.

Sr. No.	Design Chainage	Side	Remarks
1			
2			

5.2 **Toilet block**

Toilet block along with Janitor room on each Truck Lay bye shall be provided. The toilet block shall consist of atleast 1 block for bathing, atleast 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.

5.3 **Truck Lay Bye Pavement: Provide pavement composition (Flexible/ Rigid/ Paver Blocks)**

Pavement Composition (Flexible/Rigid/ Paver Blocks)

6. Bus Bay and Bus shelter:

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: **(Clause No. 12.7 IRC: SP:84-2019/ IRC: SP:87-2019)**

6.1 Bus Bays

Bus Bays with tapers shall be provided along with passenger's shelters shall be constructed at the following locations

Sr. No.	Design (Existing) Chainage (Km)		Entry Taper Length	Bus Bay Length	Exit Taper Length	Remark
	Left	Right				

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6.2 Kerb Side Bus Stop with Pedestrian shelter

Kerb Side Bus Stop with Pedestrian shelter shall be provided at the following locations.

Sr. No.	Design (Existing) Chainage (Km)		Pedestrian Shelter Length	Remark
	Left	Right		

6.3 Bus Bay Pavement

Provide pavement composition (Flexible/Rigid/ Paver Blocks) as follows:

Pavement Composition (Flexible/Rigid/ Paver Blocks)

7. Pedestrian Facilities;

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. **(Clause No. 9.8 IRC: SP:84-2019/ IRC: SP:87-2019)**

The details are as mentioned below:

S.No.	Pedestrian facilities	Chainage		Side	Remarks
		From	To		
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				
2	Footpath paving including fixing of Tactile pavers				
3	Pedestrian Crossing i. With Zebra Marking ii. With Tabletop Crossing iii. At Intersections iv. At Schools				

8. Highway Lighting

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,

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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: (Clause No. 12.5 IRC: SP:84-2019/ IRC: SP:87-2019)

S.No.	Lighting facilities	Chainage		Side	Lighting Source: Electricity Board/ Generator/ Solar
		From	To		
1	**Toll Plaza area:** The lighting in and around toll plaza, toll booths, office building, on the approach road, etc. shall be as per Section 12 of the Manual. In addition to at least two high mast light shall be provided on either side of toll plaza				
2	**Rest Areas:** The entire Rest areas shall be provided with lighting with average illumination to 40 Lux				
3	**Truck lay-bye:** The entire area of truck lay-byes and 50m length of the project highway on its either side shall be illuminated at night to provide an average illumination of 40Lux. Suitable designed electric poles having aesthetic appeal and energy saving bulbs (LED) may be used to provide required illumination. Alternatively, photo voltaic lamps may be used				
4	**Bus Bay & bus shelter locations**: The entire bus bay & bus shelter area shall be provided with Lighting (Average illumination of 40Lux.).				
	Grade separated structures, interchanges, flyovers, underpasses (vehicular/ pedestrian) and Vehicle overpasses: Lighting requirement shall be as per section 12 of the manual. The top and underside of the grade separated structures including service road/ slip road, interchange area at the ground level up to 50m beyond the point from where flaring of the main carriageway takes place shall be provided with lighting. Also, on all legs of at grade interchange/ crossings the lighting shall be provided 50m beyond the point of Centre on all legs. The minimum illumination shall be 40 Lux., at the extreme edge of the Highway				
6	**Built-up sections** on the project highway both in the median of main carriageway and on the service roads on both sides				

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S.No.	Lighting facilities	Chainage		Side	Lighting Source: Electricity Board/ Generator/ Solar
		From	To		
7	**On Median Openings provide 1 nos. high mast lighting of 25m height**				
8	**On Major Bridges and its approaches higher than 3m**				

9. **Rainwater Harvesting**

The provision of rainwater harvesting shall be provided at every 500m 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 rain water harvesting shall be provided along the side drains at the lowest point/ where the water stagnates. The type and location of rain water harvesting is as follows:

S.No.	Rain water Harvesting Type	Chainage	Side	Depth of Recharge Structure
1	Type 1 confirming to clause 10.7.2 of IRC SP 42			
2	Type 2 confirming to clause 10.7.3 of IRC SP 42			
3	Type 3 confirming to clause 10.7.4 of IRC SP 42			
4	Type 4 confirming to clause 10.7.5 of IRC SP 42			

10. **Environmental Management Plan [Attach MOEF Mitigation Report in Schedule-D]**

The Concessionaire 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/ Concessionaire.

11. **Land Scaping and Tree Plantation (Section 11 of** IRC: SP:84-2019/ IRC: SP:87-2019)

The Concessionaire 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.

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Sl. No.	Types of Plantation	Location (Km)	Number of trees to be planted	Remarks
1	Shrubs	In median except Structures+ First row from side of drain	1 row of 333 plants for the median of 2-3 metre at every km. and 2 rows of 333 plants (staggered) for the median of 3 metre and more	Ornamental type plantation shall be provided
2	Land Scaping	O & M Centers, Vacant land parcels, land within loops of flyovers, Toll Plaza building and surroundings Vacant space below the flyovers	Landscaping plans will be submitted by the Concessionaire/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	1 row of 333 plants on each side of project highway.	Minimum _____ nos. of trees of desired type in two rows per Km. @10 m c/c near edge of ROW on both side (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 Concessionaire shall maintain the trees and shrubs in good condition during concession period as per the concession agreement.

12. **Advanced Traffic Management System (ATMS)**

The Concessionaire is required to design, install, operate and maintain Advanced Traffic Management System (ATMS) as part of the project facilities. Advanced Traffic Management System shall be provided as per standards and specifications

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specified in the manual and as per NHAI circular …… and shall be maintained throughout the contract period. (NHAI Policy Circular No--------)

The ATMS components to be deployed shall inter alia include:

12.1 General

The ATMS Project shall broadly include the following sub-systems to be provided as per the standards & specifications mentioned in NHAI Policy Circular No……...:

12.1.1 Video Surveillance System / Traffic Monitoring Camera System (TMCS)

12.1.2 Video Incident Detection System (VIDS)

12.1.3 Vehicle Actuated Speed Display System (VASDS)

12.1.4 Fixed and Portable Variable Message Sign (VMS) System

12.1.5 Communication Network with OFC Backbone

12.1.6 Common ATMS Command & Control Center for Km. _____ to Km._____.

12.1.7 Power Supply for Field Equipment as well as for ATMS Command & Control Center

12.1.8 Operation & Maintenance (O&M) of the entire ATMS Facility

12.1.9 Maintenance Vehicle

12.2 The requirements stated herein shall be construed as minimum requirement and meeting the respective requirements individually shall not relieve the Contractor from the responsibility. The entire system should function efficiently as an integrated solution during the entire O&M period.

12.2.1 Video Surveillance System / Traffic Monitoring Camera System (TMCS)

(i) The system monitors vehicular and other road related activity along the highway stretch through PTZ Camera mounted on Poles. Generally, the camera should be placed at a distance not greater than 1km so as to effectively monitor all the lanes of the entire stretch of Highway. In case certain stretches include regular curves, ramps etc not allowing central line of sight, then additional TMCS camera shall be put to ensure effective surveillance of the entire stretch. The TMCS cameras should also be placed on the following Junctions below the Grade Separated Structure.

(ii) The TMCS should also be provided at the following Junctions so as to monitor the traffic at the following junctions:

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Sl No	Location (Km)	LHS/ RHS/ BHS	Remarks

12.2.2 Video Incident Detection System (VIDS)

The VIDS include Gantry Mounted ANPR Cameras, Overview Cameras and associated incident detection software system to effectively detect pre-defined actionable incidents which triggers enforcement and incident response system. The VIDS should also act as Automatic Traffic Counting and Classifying (ATCC) system. The VIDS should be provided at following locations:

Sl No	Location (Km)	Remarks	Availability of Full Gantry**

** [The table should include a column informing whether Full Gantry is available at that location or not. VIDS system requires full Gantry on both LHS & RHS]

12.2.3 Vehicle Actuated Speed Display (VASD) System

The VASD system shall include gantry mounted Radar and Speed Display system for each lane to warn the road users of their speed. The system shall act as a Speed Calming Measure. VASD System should be provided at following locations along the Expressways:

Sl No	Location (Km)	Remarks	Availability of Full Gantry**

** [The table should include a column informing whether Full Gantry is available at that location or not. VIDS system requires full Gantry on both LHS & RHS]

12.2.4 Variable Message Sign (VMS) System

The VMS shall provide road users advance information of road conditions ahead and shall be controlled from the local ATMS Control centre. The VMS shall be installed at following locations:

12.2.4.1 Fixed VMS

12.2.4.1.1 Gantry (M Type)

Sl No	Location (Km)	Remarks	Availability of Full Gantry**

** [The table should include a column informing whether Full Gantry is available at that location or not. VIDS system requires full Gantry on both LHS & RHS]

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12.2.4.1.2 Cantilever (L Type)

Sl No	Location (Km)	Remarks	Availability of Full Gantry**

** [The table should include a column informing whether Full Gantry is available at that location or not. VIDS system requires full Gantry on both LHS & RHS]

12.2.4.2 Portable VMS

The Contractor shall provide ……. (Nos) Trolley Mounted Portable VMS

12.2.5 Communication Network with OFC Backbone

The entire Expressway stretch shall be provided with minimum 24 Core OFC Backbone as per the standards & specifications. The short haul connections like between field equipment to access points, access points to OFC backbone etc shall be done with minimum 12 Core cable. The OFC shall be laid strictly as per the Standards and Specification.

12.2.6 ATMS Command and Control Center

The ATMS Command and Control Centre structure will be constructed by Concessionaire of Authority at Km…... The ATMS Contractor shall set up and operate the ATMS Command and Control Center as per the Standards and Specification. The ATMS Contractor shall undertake any additional civil works, interior works, MEP works, for setting up the Command Center, including all additional related electrical, lighting, electrical connection, DG set, power backup, HVAC works, access control, building CCTV, PTZ cameras outside building, firefighting system, alarm, fire extinguishers, raised floor, housekeeping, building cleaning, maintenance, recurring charges including electricity bills, telephone bills, DG fuel, servicing, security.

12.2.7 Power Supply for ATMS Command & Control Center and Field Equipment

The Contractor shall ensure 24x7 supply for the ATMS Command and Control Centre and Field Equipment with supply power from Electricity Department as primary source supported by UPS renewable power (solar etc) and DG Set of adequate capacity.

There shall be NO obligation of Authority with regard to providing power/ electricity supply/connections for testing commission, operation & maintenance of any component of the ATMS. Further, the following points are to also be observed by the ATMS contractor:

a. The Contractor shall perform all the necessary application procedures to the Power Company required for the power to be supplied to the Traffic Management Centre, Sub-Centre and the field equipment in their own name. All the expenses charged by Power Companies regarding such applications and execution of work shall be borne by the Contractor as

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part of the scope of this contract. Any damage to the highway during such execution of work shall have to be repaired by the ATMS Contractor to the pre-existing condition without any cost implications to Authority.

b. The Contractor shall make all necessary arrangements for the electricity needed for the execution of the Works and O&M period for the entire period of the Contract. In case electricity is not made available through electricity companies, alternate electricity arrangement such as through renewable energy/DG Set should be made by the Contractor. Under no circumstances authority shall grant an extension of time for achieving the milestones if the contractor is unable to make the electricity arrangement either for the execution of the work or for the O&M activities.

c. The fixed charges, installation charges, recurring charges, electricity bill, DG set fuel, maintenance etc. for each field equipment, TMC, Control Centre, Sub-centre, Contractor's site office, or any other facility being used by the Contractor under the scope of this Contract shall be in the scope of the Contractor only for the entire Contract period i.e., Design phase, procurement, installation, testing, trail-run, commissioning, operations, and maintenance period. The Authority shall not be responsible for any provision for power supply during implementation as well as operations and maintenance period.

12.2.8 Operation & Maintenance (O&M) of the entire ATMS Facility.

a. The O&M period after the successful completion of works shall include Operation & Maintenance of the entire ATMS Facility as per the Service Level Agreement (SLA) with Qualified Manpower mentioned in Standards & Specifications including supply of adequate spares, parts, consumables and maintenance equipment required for the facility. The Contractor shall maintain required spare parts to maintain required service levels.

b. The Contractor shall have sufficient infrastructure and capability to keep/store spares required for maintenances and will at all times during the contract period maintain sufficient inventory of spares and consumables for operating and maintaining the ATMS and to meet the Service Level requirements.

c. Before the start of O&M Period, the Contractor shall deploy the O&M Personal mentioned at Appendix-C of Standards & Specification with prior approval of the Authority.

12.2.9 Maintenance Vehicle

The ATMS Contractor shall keep adequate numbers of dedicated vehicles (minimum 1 vehicle per 50km) to attend the maintenance requirement during the Operation & Maintenance period.

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13. Highway Patrol Units

Highway Patrol units shall be established and operate at toll plaza location as per Schedule-D Clause 12.10 (strictly as per details mentioned in Annexure-C), which shall continuously patrol the highway in a stretch not exceeding 50 km (if the stretch is more than 50 km additional 1 number of patrol vehicle per 50 km or less shall be provided). The vehicle shall be brand new with fuel, driver, and insurance all-inclusive for the entire contract period. Highway Patrol units shall be fitted with GPS and GSM based vehicle tracker system. Highway Patrol Vehicles shall be stationed on layby constructed on Project Highway @ every 20 km of each Toll Plaza. **(Clause No. 12.10 IRC: SP:84-2019/ IRC: SP:87-2019)**

14. Emergency medical services

The Concessionaire shall, at its own cost, construct a medical aid post at each toll plaza with a minimum size of 5 x 5 sq.m with a toilet (to be used for the patients of minimum size of 3 x3 sq.m) and hand it over to the Authority, no later than 30 (thirty) days prior to PCOD/COD. The Medical Aid Post(s) shall be deemed to be part of the project and shall vest in the Authority. Medical Aid Post shall be set up at Administrative Block with round-the-clock services for victims of accidents on the Project Highway.

One number Ambulance shall be provided in a stretch not exceeding 50 km (if the stretch is more than 50 km additional 1 number of ambulances per 50 km or less shall be provided). The Ambulance shall be brand new with fuel, driver, medical staff and insurance all-inclusive for the entire contract period. Ambulance fitted with GPS and GSM based vehicle tracker system shall be provided to be integrated with the Video Incident Detection System with ATMS, as per Schedule-D, Clause 12.11 (strictly as per details mentioned in Annexure-D), along with all necessary manpower (including paramedical staff), medicines, equipment's etc. and shall be maintained in an effective manner throughout the contract period starting from the appointed date. Ambulance shall be stationed on layby constructed on Project Highway @ every 20 km of each Toll Plaza **(Clause No. 12.11 IRC: SP:84-2019/ IRC: SP:87-2019)**

15. Crane Service:

Crane Service shall be provided on project highway, as specified in the manual Clause 12.12. One number crane shall be provided in a stretch not exceeding 50 km (if the stretch is more than 50 km additional 1 number of crane per 50 km or less shall be provided). Crane having capacity of minimum 20T shall be made available. The crane shall be brand new with fuel, driver, and insurance all-inclusive for the entire contract period. Cranes shall be stationed on layby constructed on Project Highway @ every 20 km of each Toll Plaza. **(Clause No. 12.12 IRC: SP:84-2019/ IRC: SP:87-2019)**

16 Vehicle rescue post

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17 Instrumentation for monitoring of cut slopes having depth of cutting more than [10 metre]

Requisite instrumentation to be undertaken for measuring pore water pressure, change in angle of slope, displacement or deformation, pressure on shotcrete, force on anchor bolt, etc. for monitoring of cut slopes having depth of cutting more than [10 metre]. The data acquisition system is to be set up, the data is to be analysed to determine the condition of the cut slopes and such data including analysis thereof shall be transmitted to the central system of the Authority in the format as specified by the Authority.

18 Instrumentation for monitoring of each bridge span more than [40] metre

Requisite sensors are to be embedded/ installed each of bridge span more than [40] metre and analysed using suitable software tools/ models to determine the condition of each of such bridge span in respect of parameters like strain, deflection, vibration, tilt, displacement, temperature, loss of prestress, corrosion, scour, etc. The data acquisition system is to be set up, the data is to be analysed to determine the condition of each of such bridge span and such data including analysis thereof shall be transmitted to the central system of the Authority in the format as specified by the Authority.

19 Instrumentation for monitoring of each Reinforced Soil walls having height more than [10] metre

Requisite instrumentation to be undertaken for measuring critical parameters of Reinforced Soil walls having height of more than [10] metre such as facia panel displacement and tilt, lateral deformation of the retained soil, reinforcement strain and loss of stress, facia and reinforcement connection loads, joint openings, vertical settlement, lateral earth pressure, pore water pressure, drainage performance, foundation movement, scour / erosion at toe, etc. The data acquisition system is to be set up, the data is to be analysed to determine the condition of each of such RS walls and such data including analysis thereof shall be transmitted to the central system of the Authority in the format as specified by the Authority.

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Annexure - II

(Schedule-C)

DELETED

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Annexure - III

(Schedule-C)

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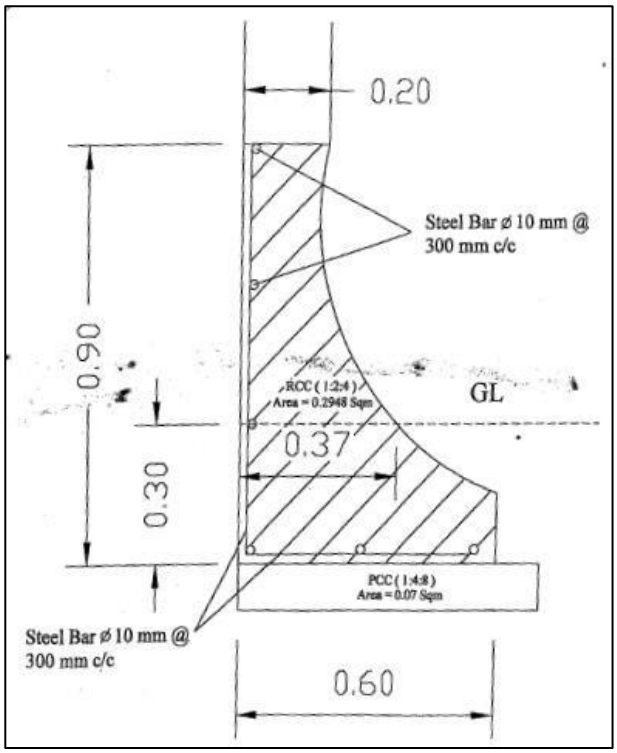
Annexure-IV Schedule C Standard Drawing for Boundary Wall



Annexure-IV Safety during construction

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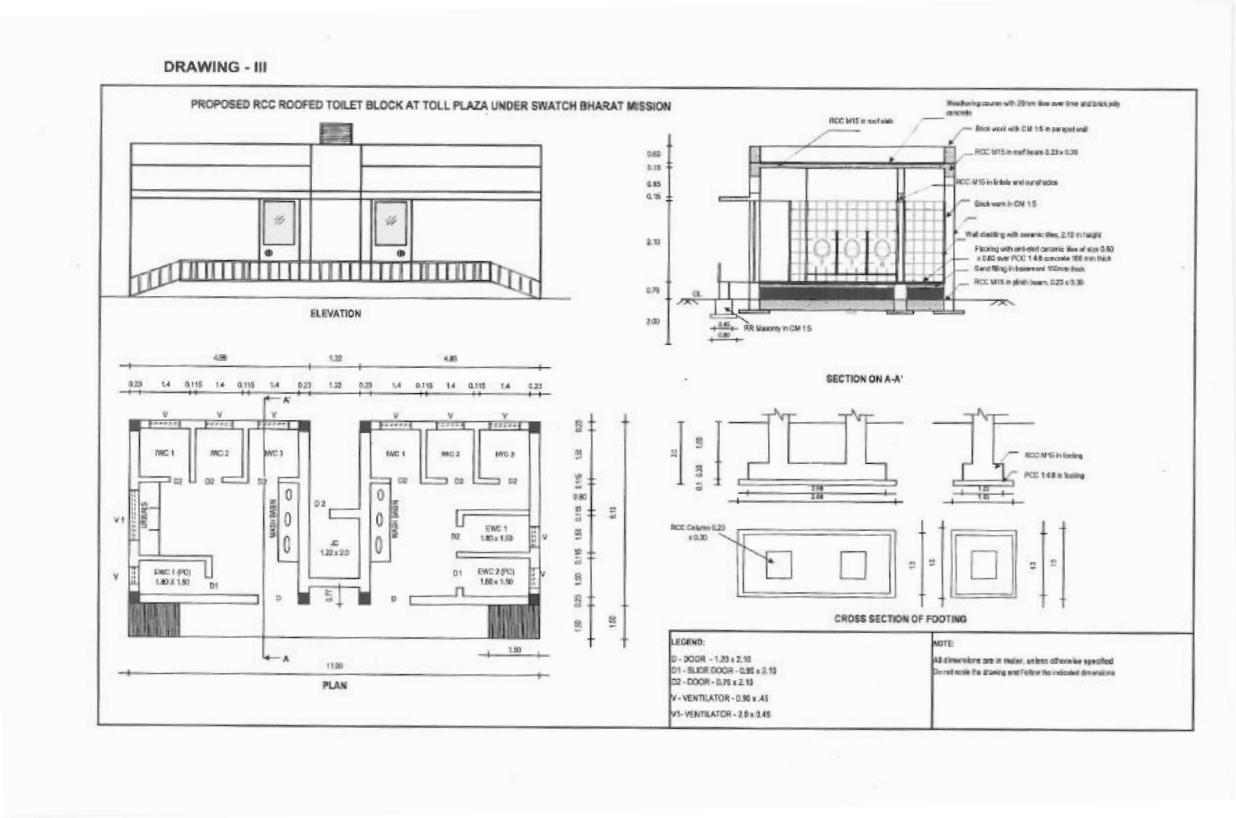
Annexure-V Schedule C Standard Drawing for Toilet



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SCHEDULE - D

(See Clause 2.1)

SPECIFICATIONS AND STANDARDS

1 [25] [***-Laning]

The Concessionaire shall comply with the Specifications and Standards set forth in Annexure-I of this Schedule-D for construction of the [***-Lane] Project Highway.

2. Deleted

[25] This template is applicable to highway projects. It may be suitably revised in case of other projects

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Annexure - I (Schedule-D)

Specifications and Standards for the Project[26]

1 Manual of Specifications and Standards to apply

Subject to the provisions of Paragraph 2 of this Annexure-I, [***-Laning] of the Project Highway shall conform to the Manual of Specifications and Standards for DBFOT Road Projects published by [the Authority/MORTH on ****.] (An authenticated copy of the Manual has been provided to the Concessionaire as part of the bid documents.)

2 [Deviations from the Manual

Notwithstanding anything to the contrary contained in the aforesaid Manual, the following Specifications and Standards shall apply to the [***-Lane] Project Highway, and for purposes of this Agreement, the aforesaid Manual shall be deemed to be amended to the extent set forth below:]

[Note 1: Deviations from the aforesaid Manual shall be listed out here. Such deviations shall be specified only if they are considered essential in view of project-specific requirements. Approval of the MORTH/Executive Committee of the Authority shall be obtained if such deviations increase the Project costs by more than Rs. 5 lakh per km.]

[Note 2: See Note below Schedule-D.]

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 Concessionaire

The Concessionaire 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 Concessionaire shall be

[26] This template is applicable to highway projects. It may be suitably revised in case of other projects

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Capable of delivering accuracy as per the applicable IRC specifications. During the Construction Period, the Concessionaire 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 the Authority. Detailed specifications of this Technology are elaborated in subsequent Paras.

3.3 Construction of the Project (detailed specification)

Concessionaire 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, the Concessionaire 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 Concessionaire shall have following Features and Specifications:

(i) Centralized Monitoring Software (CMS) for Preparing Design Data for Field Systems and Processing Results:

A Concessionaire 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 MoRT&H Specification.
- Number of Passes bade 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 MoRT6H (Table 300-1 and 300-2).
- Weak spot w.r.t. Intelligent Compaction Measurement Value (ICNV, in conformity with clause 4.3.3.2 of IRC: SP:97-1013 page 23) to bring the conformity as per section 305 & 903.2 of MoRT6H (Table 300-1 6 300-2).
- Granular/ Bituminous layer beyond the tolerance limits, as specified in clause 902 (Table 900-1) of MoRT&H Specification.
- Laying and Rolling Temperature achieved by Asphalt Paver/ Compactor/ Pneumatic Rollers, with respect to specified minimum Target Temperature

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as per IRC Guidelines (like clause-507 of MoRT6H 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 Concessionaire shall utilize Motor Grader controlled with GNSS Machine Control System in the Construction of Embankment, Subgrade & GSB Surface Grades. The requirement includes the finishing of Final Surface Level of Embankment, Subgrade & GSB as per Clause 902 of MoRT&H 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 Concessionaire 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 trader 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 & 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 & 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 Concessionaire 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 Dashboord/ 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 & 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,

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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 & Time Stamp, Longitude/ Latitude, Easting/ Northing, Local Easting/ Locol 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.

4. Pile Integrity Test using Cross hole sonic logging Test:

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. Hence Pile Integrity testing should be done using cross hole sonic logging test.

5. Multi Lane Free Flow (MLFF) Tolling System

1. **MLFF Project**

a. The Concessionaire shall implement MLFF based tolling facility by installing new Gantries on main carriageway of the highway (minimum 02 (01 Main & 01 redundant)) for each direction (LHS & RHS) for MLFF based tolling within approx. 350m of existing fee plaza.

i. The Concessionaire shall be fully responsible for ensuring the continuous safety, security, and illumination of the installed gantries, covering all necessary measures to protect the infrastructure and provide clear visibility under all weather and lighting conditions.

ii. The Concessionaire shall be required to submit detailed design drawings including design calculations of gantries which should be approved from any of the Indian Institute of Technology (IIT)/ National Institute of Technology (NIT).

b. The MLFF Project shall broadly include, but not limited to the following components to be provided as per the functional and technical specifications mentioned in Schedule-C:

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1. Radio Frequency Identification (RFID) Reader
2. Radio Frequency Identification (RFID) Antenna
3. Automatic Number Plate Reader (ANPR) Camera System and Application
4. IR Illuminator
5. Audit Surveillance Camera System
6. Detectors – Radar
7. Detectors-Lidar
8. Networking and Communications
9. Software Application, Dashboard and Portal
10. MLFF Control Center
11. Power Supply for Field Equipment as well as for MLFF Control Center
12. Operation & Maintenance (O&M) of the entire MLFF Facility

c. Integration with CCH: The Concessionaire must process transactions from the MLFF Plaza Server in an online-only mode, ensuring toll fare calculations and transaction processing to Central Clearing House (CCH) as per NETC guidelines as amended from time to time. The host system should be capable of supporting both online and offline transaction processing based on internet connectivity availability.

d. Compliance with Interface Control Document (ICD) 2.5 or latest: The Concessionaire must ensure to comply with ICD 2.5 or latest specifications for processing the transactions.

e. Integration with TMCC –

   i. All Transactional Data: The Concessionaire shall integrate the MLFF System with the Toll Monitoring and Control Centre (TMCC) software or any such software, via API for the purpose of sharing all transactional data.

   ii. Equipment Health Monitoring: All Critical MLFF equipment shall be integrated with TMCC software for monitoring the real time health status. The SLA of MLFF equipment shall be calculated based on TMCC software and through other measures by IHMCL. Concessionaire shall strictly ensure provisioning of necessary arrangement including but not limited to proper network infrastructure, mapping of correct IP address etc. for reflection of correct uptime of equipment on TMCC dashboard.

f. Future integration with advanced technologies: The Concessionaire's solution should include API based integration with future tolling technologies like GNSS and NHAI Applications like Raj Marg Yatra etc. or, Advance Traffic Management System (ATMS), any other similar system at no extra cost. The API for the same shall be provided by the Authority.

2. **Data Retention and Handover**

a) **Data Retention Period**:

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The Concessionaire shall ensure the retention of the following data for the specified durations throughout the Concession Agreement:

i. **ANPR and Audit Surveillance Camera Images**: Minimum retention period of **180 days**

ii. **Video Recordings**: Minimum retention period of **30 days**.

iii. **Transaction Data and Reports**: Retention throughout the Concession Agreement.

iv. **Images, videos of all e**-Notice cases and other dispute cases shall be retained till the time the e-Notice or such case is disposed of.

b) **Data Handover:**

Upon the expiry or termination of the Concession Agreement, the Concessionaire shall hand over all retained transaction data, including images, videos, and reports, in a complete and organized manner to the Authority.

c) **Data Access and Evidence Provision**:

a. During the Concession period, the Concessionaire shall provide requisite image evidence and video recordings to the Authority within the defined storage limits upon request.

b. The data shall be made available promptly to assist the Authority in its operations, audits, or legal proceedings.

d) **Compliance and Penalty**:

The Concessionaire shall ensure compliance with the above requirements. Non-compliance may result in penalties or other actions as deemed appropriate by the Authority.

e) **Confidentiality and Security**:

The Concessionaire shall ensure the confidentiality and security of the retained data, preventing unauthorized access, misuse, or loss during the retention and handover period.

3. **Point of Sale (POS) setup for Sale of FASTag and Plaza Specific Discount Pass**

The Concessionaire is responsible for setting up a 24*7 POS at the Control Centre Building for issuance of FASTag as per NETC Guidelines and providing services of Plaza Specific Discount Pass.

The POS executive should be trained to assist road users with making payments for e-Notices.

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SCHEDULE - E

(See Clause 4.1.3)

APPLICABLE PERMITS

1 Applicable Permits

1.1 Concessionaire

The Concessionaire shall obtain, as required under the Applicable Laws, the following Applicable Permits on or before the Appointed Date, save and except to the extent of a waiver granted by the Authority in accordance with this Agreement***:***

(a) Permission of the State Government for extraction of boulders from quarry;

(b) Permission of Pollution Control Board and such other competent authority as required by law for installation of crushers;

(c) License for use of explosives;

(d) Permission of the State Government for drawing water from river/reservoir;

(e) License from Inspector of factories or other competent authority for setting up Batching Plant;

(f) Clearance of Pollution Control Board for setting up Batching Plant;

(g) Clearance of Pollution Control Board and such other competent authority as required by law for Asphalt Plant;

(h) Permission of State Government and such other competent authority as required by law for borrow earth;

(i) Permission of State Government for cutting of trees, if required by law; and

(j) Any other permits or clearances required under Applicable Laws.

Provided that the aforementioned Applicable Permits shall be held either in the name of the Concessionaire or in the name of a party having a valid agreement with the Concessionaire, and that such agreement shall be submitted to the Authority.

1.2 Applicable Permits, as required, relating to environmental protection shall have been procured by the Authority as a Condition Precedent.

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Schedule F

(See Clause 9.1)

PERFORMANCE SECURITY

The Chairman,
National Highways Authority of India
New Delhi

WHEREAS:

(A) …….. (the "Concessionaire") and [The President of India through the Ministry of Road Transport & Highways, Government of India represented by: Director General (Road Development) & Special Secretary, Ministry of Road Transport & Highways, Transport Bhawan, 1, Parliament Street, New Delhi 110001/ CE (NH) PWD, State of _____; <address> / Director General (Border Road). _____/Chairman, National Highways Authority of India, G-5 & 6, Sector 10, Dwarka, New Delhi-110075/ MD, NHIDCL, PTI Building, Parliament Street, New Delhi/DGBR <.....address>] (strike out whichever is not applicable) (the "Authority") have entered into a Concession Agreement dated …….. (the "Agreement") whereby the Authority has agreed to the Concessionaire undertaking [Four-Laning of the ***** section of National Highway No. **] on design, build, operate and transfer ("DBOT Annuity or Hybrid Annuity") basis, subject to and in accordance with the provisions of the Agreement.

(B) The Agreement requires the Concessionaire to furnish a Performance Security to the Authority in a sum of Rs. ***** cr. (Rupees ***** crore) (the "**Guarantee Amount**") as security for due and faithful performance of its obligations, under and in accordance with the Agreement, during the Construction Period (as defined in the Agreement).

(C) We, …….. through our Branch at ……. (the "**Bank**") have agreed to furnish this Bank 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 Concessionaire's obligations during the Construction 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 Concessionaire, such sum or sums upto 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

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therein.

2. A letter from the Authority, under the hand of an Officer not below the rank of General Manager in the National Highways Authority of India, that the Concessionaire 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 Concessionaire is in default in due and faithful performance of its obligations during the Construction Period under the Agreement and its decision that the Concessionaire is in default shall be final, and binding on the Bank, notwithstanding any differences between the Authority and the Concessionaire, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Concessionaire 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 Concessionaire 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 Concessionaire 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 Concessionaire 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 Concessionaire, 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 Concessionaire 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 Concessionaire 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 until the earlier of the 1st (first) anniversary of the Appointed Date

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or compliance of the conditions specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee, no later than 6 (six) months from the date of expiry of 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 Performance Security shall remain in force and effect for the Construction Period of the Project. Provided further the Performance Security shall be released earlier upon the Concessionaire achieving the Project Milestone-III on or before the date specified in Schedule G; provided, however, that the Performance Security shall not be released if the Concessionaire is in breach of this Agreement or Project Milestone III has not been achieved on or before the date specified in Schedule G. Upon a written request made by the Concessionaire for release of the Performance Security along with the particulars which establish satisfaction of the requirements specified in Clause 9.3, duly certified by a statutory auditor of the Concessionaire, the Authority shall release the Performance Security forthwith.

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 the construction period of [two year] or until it is released earlier by the Authority pursuant to the provisions of the Agreement.

12. This Guarantee shall also be operatable at our…….. Branch at New Delhi, from whom, confirmation regarding the issue of this guarantee or extension / renewal thereof shall be made available on demand. In the contingency of this guarantee being invoked and payment thereunder claimed, the said branch shall accept such invocation letter and make payment of amounts so demanded under the said invocation.

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

S. No.	**Particulars**	**Details**
1.	Name of Beneficiary	[*****]
2.	Name of Bank	[*****]

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3.	Account No.	[*****]
4.	IFSC Code	[*****]

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

SIGNED, SEALED AND DELIVERED

For and on behalf 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.

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Annexure I of Schedule F

(See Clause 25.8)

Format for Guarantee for Mobilization Advance

To

---------- (name of the authority)

----------[address of Authority]

WHEREAS:

A …….. (the "Concessionaire") and the Chairman, National Highways Authority of "India (the "Authority") have entered into a Concession Agreement dated (the "Agreement") whereby the Authority has agreed to the Concessionaire undertake ..... on Hybrid Annuity Model, subject to and in accordance with the provisions of the Agreement.

B In accordance with Clause 25.8 of the Agreement, the Authority shall make to the Concessionaire an interest bearing (@average of one year MCLR of top 5 Scheduled Commercial Banks plus 1.25%, compounded annually) advance payment (herein after called "Mobilization Advance") not exceeding 10% (ten per cent) of the Bid Project Cost; and that the Mobilization Advance shall be made in [one/two][27] installment(s) subject to the concessionaire furnishing an irrevocable and unconditional guarantee by a scheduled bank for an amount equivalent to 110% (one hundred and ten percent) of such installment to remain effective till the complete and full payment of the installment of the Mobilization Advance as security for compliance with its obligations in accordance with the Agreement. The amount of {first/second}[28] installment of the Mobilization Advance is Rs.--------- Cr. (Rupees------ Crore) and the amount of this Guarantee is Rs. ---- Cr. (Rupees---- crore) (the "Guarantee Amount")[29].

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 installment of Mobilization Advance 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,

[27] Please strike out whichever is not applicable as per Clause 25.8 of the Agreement.

[28] Please delete in case of Mobilization Advance is to be made in one/single installment

[29] The Guarantee amount should be equivalent to 110% of the value of applicable installment.

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reservation, recourse, contest or protest, and without any reference to the Concessionaire, such sum or sums upto 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 in the Ministry of Road Transport & Highways, that the Concessionaire has committed default in the due and faithful performance of all or any of its obligations for the repayment of the installment of the Mobilization Advance 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 Concessionaire is in default in due and faithful performance of its obligations during and under the Agreement and its decision that the Concessionaire is in default shall be final, and binding on the Bank, notwithstanding any differences between the Authority and the Concessionaire, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Concessionaire for any reason whatsoever.

3. The Bank further also agrees that the Authority at its option shall be entitled to in enforce this Guarantee against the Bank as principal debtor, in the first instance without proceeding against the Concessionaire and notwithstanding any security or other guarantee that the Authority may have in relation to the Concessionaire's liability.

4. 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 Concessionaire 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.

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

6. 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 Mobilization Advance 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 Concessionaire, 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 Concessionaire 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

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under this Guarantee and the Bank hereby waives all of its rights under any such law.

7. 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 Mobilization Advance.

8. 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 9 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.

9. The Guarantee shall cease to be in force and effect on _____12 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.

10. 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.

11. 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.

12. This Guarantee shall come into force with immediate effect and shall remain in force and effect up to the date specified in paragraph 9 above or until it is released earlier by the Authority pursuant to the provisions of the Agreement.

13. This guarantee shall be operatable at our ……Branch at New Delhi, from whom, confirmation regarding the issue of this guarantee or extension/renewal thereof shall be made available on demand. In the contingency of this guarantee being invoked and payment thereunder claimed, the said branch shall accept such invocation letter and make payment of amounts so demanded under the said invocation.

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

S. No.	Particulars	Details

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1.	Name of Beneficiary	[*****]
2.	Name of Bank	[*****]
3.	Account No.	[*****]
4.	IFSC Code	[*****]

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.

(iii) 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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Annexure II of Schedule F

(See Clauses 9.1)

FORM OF SURETY BOND

Performance Security

To

---------- (name of the authority)

----------[address of Authority]

WHEREAS:

(A) ---------- (the "**Concessionaire**") and …….. (the "Concessionaire") and [The President of India through the Ministry of Road Transport & Highways, Government of India represented by: Director General (Road Development) & Special Secretary, Ministry of Road Transport & Highways, Transport Bhawan, 1, Parliament Street, New Delhi 110001/ CE (NH) PWD, State of _____; <address> / Director General (Border Road). _____/Chairman, National Highways Authority of India, G-5 & 6, Sector 10, Dwarka, New Delhi-110075/ MD, NHIDCL, PTI Building, Parliament Street, New Delhi/DGBR <.....address>] (the "**Authority**") have entered into a Concession Agreement dated……. (the "**Agreement**") whereby the Authority has agreed to the Concessionaire undertaking [***-Laning of the ***** section of National Highway No. **] on design, build, finance, operate and transfer ("DBFOT") basis, subject to and in accordance with the provision of the Agreement.

(B) The Agreement requires the Concessionaire to furnish a Performance Security to the Authority in a sum of Rs *** Crore (Rupees *** Crore) (the "**Surety Bond Amount**") as security for due and faithful performance of its obligations, under and in accordance with the Agreement, during the Construction Period (as defined in the Agreement)

(C) We, …… through our branch at …… (the "**Surety Insurer**") have agreed to furnish this Surety Bond by way of Performance Security.

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

1. The Surety Insurer herby unconditionally and irrevocably guarantees the due and faithful performance of the Concessionaire's obligations during the Construction 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 Concessionaire, such sum or sums upto an aggregate sum of the Surety Bond 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.

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2. A letter from the Authority, under the hand of an officer not below the rank of General Manger in the National Highways Authority of India, that the Concessionaire 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 Surety Insurer. The Surety Insurer further agrees that the Authority shall be the sole judge as to whether the Concessionaire is in default in due and faithful performance of its obligations during the Construction Period under the Agreement and its decision that the Concessionaire is in default shall be final, and binding on the Surety Insurer, notwithstanding any differences between the Authority and the Concessionaire, 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 Surety Bond, the Authority shall be entitled to act as if the Surety Insurer were the principal debtor and any change in the constitution of the Concessionaire and/or the Surety Insurer, 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 Surety Insurer under this Surety Bond.

4. It shall not be necessary, and the Surety Insurer hereby waives any necessity, for the Authority to proceed against the Concessionaire before presenting to the Surety Insurer its demand under this Surety Bond.

5. The Authority shall have the liberty, without affecting in any manner the liability of the Surety Insurer under this Surety Bond, to vary at any time, the terms and conditions of the Agreement or to extend the time or period for the compliance with, fulfillment and/ or performance of all or any of the obligations of the Concessionaire 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 Concessionaire, 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 Surety Insurer 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 Concessionaire 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 Surety Insurer from its liability and obligation under this Surety Bond and the Surety Insurer hereby waives all of its rights under any such law.

6. This Surety Bond is in addition to and not in substitution of any other Surety Bond 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 Concessionaire under the Agreement.

7. Notwithstanding anything contained hereinbefore, the liability of the Surety Insurer under this Surety Bond is restricted to the Surety Bond Amount and this Surety Bond will remain in force until the earlier of the 1 (first) anniversary of the Appointed Date or compliance of the conditions specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Surety Insurer under this Surety Bond, no later than 6 (six) months from the date of expiry of this Surety Bond, all

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rights of the Authority under this Surety Bond shall be forfeited and the Surety Insurer shall be relieved from its liabilities hereunder.

8. The Performance Security shall cease to be in force and effect when the Concessionaire shall have expended on Project construction an aggregate sum not less than 20% (twenty per cent) of the Total Project cost which is deemed to be Rs. ** cr. (Rupees *** crore) for the purposes of this Surety Bond, and provided the Concessionaire is not in breach of this Agreement. Upon request made by the Concessionaire for release of the Performance Security alongwith the particulars required hereunder, duly certified by a statutory auditor of the Concessionaire, the Authority shall release the Performance Security forthwith.

9. The Surety Insurer undertakes not to revoke this Surety Bond 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 Surety Bond and the undersigned has full powers to do so on behalf of the Surety Insurer.

10. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Surety Insurer at its above referred branch, which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.

11. This Surety Bond shall come into force with immediate effect and shall remain in force and effect for a period of one year and six months or until it is released earlier by the Authority pursuant to the provisions of the Agreement.

12. This Surety Bond shall also be operatable at our……. Branch at New Delhi, from whom, confirmation regarding the issue of this bond or extension/renewal thereof shall be made available on demand. In the contingency of this bond been invoked and payment thereunder claimed, the said branch shall accept such invocation on letter and make payment of amounts so demanded under the said invocation.

13. This Surety Bond 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.

Signed and sealed this Day of 23.....at.....

SIGNED, SEALED AND DELIVERED

For and on behalf of the surety insurer by:

(Signature)

(Name)

(Designation)

(Code Number)

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(Address)

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SCHEDULE - G

(See Clause 12.1)

PROJECT COMPLETION SCHEDULE

1 Project Completion Schedule

During Construction Period, the Concessionaire shall comply with the requirements set forth in this Schedule-G for each of the Project Milestones and the Scheduled Completion Date (the "Project Completion Schedule"). Within 15 (fifteen) days of the date of each Project Milestone, the Concessionaire shall notify the Authority of such compliance along with necessary particulars thereof.

2 Project Milestone-I

2.1 Project Milestone-I shall occur on the date falling on the [120th (one hundred and twentieth)] day from the Appointed Date (the "Project Milestone-I").

2.2 Prior to the occurrence of Project Milestone-I, the Concessionaire shall have commenced construction of the Project Highway [including submission of the approved general arrangement drawing of all bridges, ROBs, flyover, viaduct, interchanges with bore log data, obtained approval of foundation drawings thereof from concerned Governmental Instrumentality] and expended not less than 10% (ten per cent) of the total capital cost set forth in the Financial Package and conveyed to the Independent Engineer, the nature and extent of physical progress comprising such expenditure so as to enable the Independent Engineer to determine that the physical progress is reasonably commensurate with the expenditure incurred. Provided, however, that at least one-half of the expenditure referred to hereinabove shall have been incurred on physical works which shall not include advances of any kind to any person or expenditure of any kind on plant and machinery.

3 Project Milestone-II

3.1 Project Milestone-II shall occur on the date falling on the [270th (two hundred and seventieth)] day from the Appointed Date (the "Project Milestone-II").

3.2 Prior to the occurrence of Project Milestone-II, the Concessionaire shall have commenced [construction of all bridges, ROBs, flyover, viaduct, interchanges and obtained approval from Governmental Instrumentality for drawings of sub-structure and superstructure, quality assurance plan, welding procedure specifications sheet, temporary arrangement drawing and launching scheme and expended not less than 35% (thirty five per cent)] of the total capital cost set forth in the Financial Package and conveyed to the Independent Engineer, the nature and extent of physical progress comprising such expenditure so as to enable the Independent Engineer to determine that the physical progress is reasonably commensurate with the expenditure incurred. Provided, however, that at least 25% (twenty-five per cent) of the total capital cost set forth in the Financial Package shall have been incurred on physical works which shall not include advances of any kind to any person or expenditure of any kind on plant and

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machinery.

4 Project Milestone-Ill

4.1 Project Milestone-Ill shall occur on the date falling on the [365th (three hundred and sixty fifth)] day from the Appointed Date (the "Project Milestone-Ill").

4.2 Prior to the occurrence of Project Milestone-III, the Concessionaire shall have commenced [construction of all Project Facilities, superstructure of all bridges, ROBs, flyover, viaduct, interchanges including fabrication of girders, obtained inspection certificate of concerned Governmental Instrumentality and expended not less than 70% (Seventy per cent)] of the total capital cost set forth in the Financial Package and conveyed to the Independent Engineer, the nature and extent of physical progress comprising such expenditure so as to enable the Independent Engineer to determine that the physical progress is reasonably commensurate with the expenditure incurred. Provided, however, that at least 60% (sixty per cent) of the total capital cost set forth in the Financial Package shall have been incurred on physical works which shall not include advances of any kind to any person or expenditure of any kind on plant and machinery.

5 Scheduled Completion Date

5.1 The Scheduled Completion Date shall be the [550th (five hundred and fiftieth)] day from the Appointed Date.

5.2 On or before the Scheduled Completion Date, the Concessionaire shall have completed the Project in accordance with this Agreement.

6 Extension of period

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.

7. Physical Progress

The Independent Engineer, during finalization of design, shall upfront decide weightages of all the items in due consultation with the Authority and the Concessionaire, recommend percentage physical progress achievements based on the above decided weightages for the entire Construction Period. The weightages shall be fixed as per format in Annexure - I of this Schedule.

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Annexure-I of Schedule G

Format for Weightages for Project Highway with Flexible Pavements

Weightages

1 Proportions of the contract price to the EPC Contractor for different stages of Construction of the Project Highway shall be as specified below:

Item	Stage for measurement of Physical Progress	Unit	Qty.	Weightage in percentage to the contract price
1	2	3	4	5
Road works including culverts, minor bridges, underpasses, overpasses, approaches to ROB/RUB/ Major Bridges/ Structures (but excluding service roads)	**A- Widening and strengthening of existing road**			
	(1) Earthwork up to top of the sub-grade	Km	[***]	[***]
	(2) Granular work (sub-base, base, shoulders)			
	(a) GSB	Km	[***]	[***]
	(b) WMM	Km	[***]	[***]
	(3) Shoulders	Km	[***]	[***]
	(4) Bituminous work			
	(a) DBM	Km	[***]	[***]
	(b) BC	Km	[***]	[***]
	(5) Rigid Pavement			
	Concrete work	Km	[***]	[***]
	(6) Widening and repair of culverts	No.	[***]	[***]
	(7) Widening and repair of minor bridges	No.	[***]	[***]

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	B- New realignment/bypass			
	(1) Earthwork up to top of the sub-grade	Km	[***]	[***]
	(2) Granular work (sub-base, base, shoulders)			
	(a) GSB	Km	[***]	[***]
	(b) WMM	Km	[***]	[***]
	(3) Shoulders	Km	[***]	[***]
	(4) Bituminous work			
	(a) DBM	Km	[***]	[***]
	(b) BC	Km	[***]	[***]
	(5) Rigid Pavement			
	Concrete work	Km	[***]	[***]
	C- New culverts, minor bridges, underpasses, overpasses on existing road, realignments, bypasses:			
	(1) Culverts	No.	[***]	[***]
	(2) Minor bridges			
	(a) Foundation	No.	[***]	[***]
	(b) Sub-structure	No.	[***]	[***]
	(c) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	(3) Cattle/Pedestrian underpasses			
	(a) Foundation	No.	[***]	[***]
	(b) Sub-structure	No.	[***]	[***]

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	(c) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	(4) Pedestrian overpasses			
	(a) Foundation	No.	[***]	[***]
	(b) Sub-structure	No.	[***]	[***]
	(c) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	(5) Grade separated structures			
	(a) Underpasses			
	(i) Foundation	No.	[***]	[***]
	(ii) Sub-structure	No.	[***]	[***]
	(iii) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	(b) Overpass			
	(i) Foundation	No.	[***]	[***]
	(ii) Sub-structure	No.	[***]	[***]
	(iii) Super-structure (including crash barriers etc. complete) If pre-cast	No.	[***]	[***]

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	girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.			
	(c) Flyover			
	(i) Foundation	No.	[***]	[***]
	(ii) Sub-structure	No.	[***]	[***]
	(iii) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	(d) Foot over Bridge	No.	[***]	[***]
Major Bridge works and ROB/RUB	**A- Widening and repairs of Major Bridges**			
	(1) Foundation			
	(a) Open Foundation	No.	[***]	[***]
	(b) Pile Foundation/Well Foundation	No.	[***]	[***]
	(2) Sub-structure	No.	[***]	[***]
	(3) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	B- Widening and repair of			
	(a) ROB			

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	(1) Foundation	No.	[***]	[***]
	(2) Sub-structure	No.	[***]	[***]
	(3) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	(b) RUB			
	(1) Foundation	No.	[***]	[***]
	(2) Sub-structure	No.	[***]	[***]
	(3) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	C- New Major Bridges			
	(1) Foundation	No.	[***]	[***]
	(a) Open Foundation	No.	[***]	[***]
	(b) Pile Foundation/Well Foundation	No.	[***]	[***]
	(2) Sub-structure	No.	[***]	[***]
	(3) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	D- New rail-road bridges			

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	(a) ROB			
	(1) Foundation	No.	[***]	[***]
	(2) Sub-structure	No.	[***]	[***]
	(3) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	(b) RUB			
	(1) Foundation	No.	[***]	[***]
	(2) Sub-structure	No.	[***]	[***]
	(3) Super-structure (including crash barriers etc. complete**)** If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
Structures (elevated sections, reinforced earth)	(1) Foundation	No.	[***]	[***]
	(2) Sub-structure	No.	[***]	[***]
	(3) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	(4) Reinforced Earth Wall (includes Approaches of ROB, Underpasses, Overpasses, Flyover etc. If RE-wall is used with facia panels/blocks, 5% of weightage of the stage in	Sqm	[***]	[***]

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	percentage to contract price is assigned to the casting of such facia panels/blocks for one complete approach.			
Electrical and Public Health Utilities	EHT line	Km	[***]	[***]
	EHT crossing	No.	[***]	[***]
	HT/LT lines (including Transformers if any)	Km	[***]	[***]
	HT/LT crossings	No.	[***]	[***]
	Water pipeline	Km	[***]	[***]
	Water pipeline crossings	No.	[***]	[***]
	Sewage line	Km	[***]	[***]
	Sewage line crossings	No.	[***]	[***]
Other Works	**(i) Service roads/ Slip Roads**	Km	[***]	[***]
	(ii) Toll Plaza	No.	[***]	[***]
	(iii) Road side drains	Km	[***]	[***]
	(iv) Road signs, markings, km stones, safety devices, ….			
	(a)Road signs, markings, km stones, ….	Km	[***]	[***]
	(b) Concrete Crash Barrier/ W-Beam Crash Barrier in Road work	Km	[***]	[***]
	(v) Project facilities			
	(a) Bus bays	No.	[***]	[***]
	(b) Truck lay-byes	No.	[***]	[***]
	(c) Rest areas	No.	[***]	[***]
	(vi) Repairs to bridges/structures	No.	[***]	[***]
	(vii) Road side plantation	Km	[***]	[***]
	(viii) Protection works			
	(a) Boulder Pitching on slopes	Km	[***]	[***]

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	(b) Toe/Retaining wall	Km	[***]	[***]
	(ix) Tunnel			
	(a) Excavation	Metre	[***]	[***]
	(b) Construction of support system including rock bolting, lining etc.	Metre	[***]	[***]
	(c) On complete completion of tunnel	Metre	[***]	[***]
	(x) Miscellaneous	Lump sum	[***]	[***]
			Total	**100.00%**

* The above list is illustrative and may require modification as per the scope of the work.

** Measurement of Progress

For example, if the total length of bituminous work to be done is 100 km, the physical progress of bituminous work shall be determined as follows:

Physical progress of bituminous work =Weightage for bituminous work x (L'/L)

L = Total length of bituminous work in km

L' = Executed length of bituminous work in km

Likewise, the Physical Progress corresponding to the other stages shall be computed, and the aggregate of such stage wise progress shall constitute the overall Physical Progress achieved.

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Annexure-II of Schedule G

Format for Weightages for Project Highway with Rigid Pavements

Weightages

1 Proportions of the contract price to the EPC Contractor for different stages of Construction of the Project Highway shall be as specified below:

Item	Stage for measurement of Physical Progress	Unit	Qty.	Weightage in percentage to the contract price
1	2	3	4	5
Road works including culverts, minor bridges, underpasses, overpasses, approaches to ROB/RUB/ Major Bridges/ Structures (but excluding service roads)	**A- Widening and strengthening of existing road**			
	(1) Earthwork up to top of the sub-grade	Km	[***]	[***]
	(2) Granular work (sub-base, shoulders)			
	GSB	Km	[***]	[***]
	(3) Shoulders	Km	[***]	[***]
	(4) Bituminous work	Km	[***]	[***]
	(5) Rigid Pavement			
	(a) DLC	Km	[***]	[***]
	(b) PQC	Km	[***]	[***]
	(6) Widening and repair of culverts	No.	[***]	[***]
	(7) Widening and repair of minor bridges	No.	[***]	[***]
	B- New realignment/bypass			

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	(1) Earthwork up to top of the sub-grade	Km	[***]	[***]
	(2) Granular work (sub-base, shoulders)			
	GSB	Km	[***]	[***]
	(3) Shoulders	Km	[***]	[***]
	(4) Bituminous work	Km	[***]	[***]
	(5) Rigid Pavement			
	(a) DLC	Km	[***]	[***]
	(b) PQC	Km	[***]	[***]
	C- New culverts, minor bridges, underpasses, overpasses on existing road, realignments, bypasses:			
	(1) Culverts	No.	[***]	[***]
	(2) Minor bridges			
	(a) Foundation	No.	[***]	[***]
	(b) Sub-structure	No.	[***]	[***]
	(c) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	(3) Cattle/Pedestrian underpasses			
	(a) Foundation	No.	[***]	[***]
	(b) Sub-structure	No.	[***]	[***]
	(c) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the	No.	[***]	[***]

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	contract price is assigned to the casting of such precast girders/ segments.			
	(4) Pedestrian overpasses			
	(a) Foundation	No.	[***]	[***]
	(b) Sub-structure	No.	[***]	[***]
	(c) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	(5) Grade separated structures			
	(a) Underpasses			
	(i) Foundation	No.	[***]	[***]
	(ii) Sub-structure	No.	[***]	[***]
	(iii) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	(b) Overpass			
	(i) Foundation	No.	[***]	[***]
	(ii) Sub-structure	No.	[***]	[***]
	(iii) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to	No.	[***]	[***]

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	the casting of such precast girders/ segments.			
	(c) Flyover			
	(i) Foundation	No.	[***]	[***]
	(ii) Sub-structure	No.	[***]	[***]
	(iii) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	(d) Foot over Bridge	No.	[***]	[***]
Major Bridge works and ROB/RUB	**A- Widening and repairs of Major Bridges**			
	(1) Foundation			
	(a) Open Foundation	No.	[***]	[***]
	(b) Pile Foundation/Well Foundation	No.	[***]	[***]
	(2) Sub-structure	No.	[***]	[***]
	(3) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	B- Widening and repair of			
	(a) ROB			
	(1) Foundation	No.	[***]	[***]
	(2) Sub-structure	No.	[***]	[***]

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	(3) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	(b) RUB			
	(1) Foundation	No.	[***]	[***]
	(2) Sub-structure	No.	[***]	[***]
	(3) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	C- New Major Bridges			
	(1) Foundation	No.	[***]	[***]
	(a) Open Foundation	No.	[***]	[***]
	(b) Pile Foundation/Well Foundation	No.	[***]	[***]
	(2) Sub-structure	No.	[***]	[***]
	(3) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	D- New rail-road bridges			
	(a) ROB			
	(1) Foundation	No.	[***]	[***]

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	(2) Sub-structure	No.	[***]	[***]
	(3) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	(b) RUB			
	(1) Foundation	No.	[***]	[***]
	(2) Sub-structure	No.	[***]	[***]
	(3) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
Structures (elevated sections, reinforced earth)	(1) Foundation	No.	[***]	[***]
	(2) Sub-structure	No.	[***]	[***]
	(3) Super-structure (including crash barriers etc. complete) If pre-cast girders/ segments are used, 40% of the weightage of the stage in percentage to the contract price is assigned to the casting of such precast girders/ segments.	No.	[***]	[***]
	(4) Reinforced Earth Wall (includes Approaches of ROB, Underpasses, Overpasses, Flyover etc. If RE-wall is used with facia panels/blocks, 5% of weightage of the stage in percentage to contract price is assigned to the casting of	Sqm	[***]	[***]

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	such facia panels/blocks for one complete approach.			
Electrical and public health utilities	EHT line	Km	[***]	[***]
	EHT crossing	No.	[***]	[***]
	HT/LT lines (including Transformers if any)	Km	[***]	[***]
	HT/LT crossings	No.	[***]	[***]
	Water pipeline	Km	[***]	[***]
	Water pipeline crossings	No.	[***]	[***]
	Sewage line	Km	[***]	[***]
	Sewage line crossings	No.	[***]	[***]
Other Works	**(i) Service roads/ Slip Roads**	Km	[***]	[***]
	(ii) Toll Plaza	No.	[***]	[***]
	(iii) Road side drains	Km	[***]	[***]
	(iv) Road signs, markings, km stones, safety devices, ….			
	(a)Road signs, markings, km stones, ….	Km	[***]	[***]
	(b) Concrete Crash Barrier/ W-Beam Crash Barrier in Road work	Km	[***]	[***]
	(v) Project facilities			
	(a) Bus bays	No.	[***]	[***]
	(b) Truck lay-byes	No.	[***]	[***]
	(c) Rest areas	No.	[***]	[***]
	(vi) Repairs to bridges/structures	No.	[***]	[***]
	(vii) Road side plantation	Km	[***]	[***]
	(viii) Protection works			
	(a) Boulder Pitching on slopes	Km	[***]	[***]
	(b) Toe/Retaining wall	Km	[***]	[***]

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	(ix) Tunnel			
	(a) Excavation	Metre	[***]	[***]
	(b) Construction of support system including rock bolting, lining etc.	Metre	[***]	[***]
	(c) On complete completion of tunnel	Metre	[***]	[***]
	(x) Miscellaneous	Lump sum	[***]	[***]
			Total	**100.00%**

* The above list is illustrative and may require modification as per the scope of the work.

** Measurement of Progress

For example, if the total length of bituminous work to be done is 100 km, the physical progress of bituminous work shall be determined as follows:

Physical progress of bituminous work =Weightage for bituminous work x (L'/L)

L = Total length of bituminous work in km

L' = Executed length of bituminous work in km

Likewise, the Physical Progress corresponding to the other stages shall be computed, and the aggregate of such stage wise progress shall constitute the overall Physical Progress achieved.

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SCHEDULE - H

(See Clause 12.3)

DRAWINGS

1 Drawings

In compliance of the obligations set forth in Clause 12.3 of this Agreement, the Concessionaire shall furnish to the Independent Engineer, free of cost, all Drawings listed in Annexure-I of this Schedule-H.

2 Additional drawings

If the Independent Engineer determines that for discharging its duties and functions under this Agreement, it requires any drawings other than those listed in Annexure-I, it may by notice require the Concessionaire to prepare and furnish such drawings forthwith. Upon receiving a requisition to this effect, the Concessionaire shall promptly prepare and furnish such drawings to the Independent Engineer, as if such drawings formed part of Annexure-I of this Schedule-H.

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Annexure - I (Schedule-H)

List of Drawings

[Note: The Authority shall describe in this Annexure-I, all the Drawings that the Concessionaire is required to furnish under Clause 12.3.]

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SCHEDULE - I

(See Clause 14.1.2)

TESTS[30]

1 Schedule for Tests

1.1 The Concessionaire shall, no later than 30 (thirty) days prior to the likely completion of the Project, notify the Independent Engineer and the Authority of its intent to subject the Project to Tests, and no later than 7 (seven) days prior to the actual date of Tests, furnish to the Independent Engineer and the Authority detailed inventory and particulars of all works and equipment forming part of the Project.

1.2 The Concessionaire shall notify the Independent Engineer of its readiness to subject the Project to Tests at any time after 7 (seven) days from the date of such notice, and upon receipt of such notice, the Independent Engineer shall, in consultation with the Concessionaire, determine the date and time for each Test and notify the same to the Authority who may designate its representative to witness the Tests. **In the event of the Concessionaire and the Independent Engineer failing to mutually agree on the dates for conducting the Tests, the Concessionaire shall fix the dates by providing not less than 10 (ten) days notice to the Independent Engineer and the Authority.** The Independent Engineer shall thereupon conduct the Tests itself or cause any of the Tests to be conducted in accordance with Article 14 and this Schedule-I.

2 Tests

2.1 In pursuance of the provisions of Clause 14.1.2 of this Agreement, the Independent Engineer shall conduct, or cause to be conducted, the Tests specified in this Paragraph 2.

2.2 Visual and physical Test: The Independent Engineer shall conduct a visual and physical check of the Project to determine that all works and equipment forming part thereof conform to the provisions of this Agreement.

2.3 Test drive: The Independent Engineer shall undertake a test drive of the Project by a Car and by a fully loaded Truck to determine that the quality of service conforms to the provisions of the Agreement.

2.4 Riding quality Test: Riding quality of each lane of the carriageway shall be checked with the help of network survey vehicle equipped with a class-1 laser profilometer in accordance with Specifications and Standards and the maximum permissible roughness for purposes of this Test shall be [1,800 (one thousand and eight hundred)] mm for each kilometer.

2.5 Pavement Composition Test: The thickness and composition of the pavement structure shall be checked on a sample basis by digging pits to determine conformity of such pavement structure with Specifications and Standards. The sample shall consist of one pit in each direction of travel to be chosen at random

[30] This template is applicable to highway projects. It may be suitably revised in case of other projects.

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in each stretch of 5 (five) kilometers of the Project. The first pit for the sample shall be selected by the Independent Engineer through an open draw of lots and every fifth kilometer from such first pit shall form part of the sample for this pavement quality Test.

2.6 Cross-section Test: The cross-sections of the Project shall be checked on a sample basis through physical measurement of their dimensions for determining the conformity thereof with Specifications and Standards. For the road portion, the sample shall consist of one spot to be selected at random in each stretch of 1(one) kilometer of the Project. The first spot for the sample shall be selected by the Independent Engineer through an open draw of lots and the spots located at every one kilometer from such first spot shall form part of the sample. For the bridge portion, one spot shall be selected at random by the Independent Engineer in each span of the bridge.

2.7 Structural Test for structures: All major and minor bridges, including over bridges, underpasses and flyovers, constructed by the Concessionaire 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 Independent Engineer. All Structures with a span of 15 (fifteen) metres or more shall also be subjected to load testing .

2.8 Other Tests: The Independent Engineer may require the Concessionaire to carry out or cause to be carried tests on reflectivity of road markings, road signs and illumination levels (lux) of lighting and any additional Tests, in accordance with Good Industry Practice, for determining the compliance of the Project Highway with Specifications and Standards.

2.9 Environmental audit: The Independent Engineer shall carry out a check to determine conformity of the Project with the environmental requirements set forth in Applicable Laws and Applicable Permits.

2.10 Safety review: Safety audit of the Project shall have been undertaken by the Safety Consultant as set forth in Schedule-L, and on the basis of such audit, the Independent Engineer shall determine conformity of the Project with the provisions of this Agreement.

3 Agency for conducting Tests

All Tests set forth in this Schedule-I shall be conducted by the Independent Engineer or such other agency or person as it may specify in consultation with the Authority.

4 Provisional/ Completion Certificate

Upon successful completion of Tests, the Independent Engineer shall issue the Provisional Certificate or the Completion Certificate, as the case may be, in accordance with the provisions of Article 14.

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5 Tests during construction

Without prejudice to the provisions of this Schedule-I, tests during construction shall be conducted in accordance with the provisions of Clause 13.3.1.

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SCHEDULE - J

(See Clause 14.2 & 14.3)

COMPLETION CERTIFICATE

1 I/We,…….. (Name of the Independent Engineer), acting as Independent Engineer, under and in accordance with the Concession Agreement dated ……..(the "Agreement"), for development and operation of the ……..Project (the "Project") on design, build, operate and transfer (the "DBOT Annuity or Hybrid Annuity") basis, through……(Name of Concessionaire), hereby certify that the Tests specified in Article 14 and Schedule-I of the Agreement have been successfully undertaken to determine compliance of the Project with the provisions of the Agreement, and I/We am/are satisfied that the Project can be safely and reliably placed in commercial service of the Users thereof. It is certified that rain water harvesting and artificial recharging arrangements have been provided by the Concessionaire in accordance with Schedule C of the Agreement, and that these systems are fully functional. Detailed information, including location-wise chainage, is provided in the Annexure-__.

2. It is certified that, in terms of the aforesaid Agreement, all works forming part of the Project have been completed, and the Project is hereby declared fit for entry into commercial operation on this the day of 20

SIGNED, SEALED AND DELIVERED

For and on behalf of **INDEPENDENT ENGINEER by:**

(Signature)

(Name)

(Designation)

(Address)

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PROVISIONAL CERTIFICATE

1 I/We,…… (Name of the Independent Engineer), acting as Independent Engineer, under and in accordance with the Concession Agreement Dated…… (the "Agreement"), for development and operation of the Project (the "Project") on design, build, operate and transfer (the "DBOT Annuity or Hybrid Annuity") basis through……(Name of Concessionaire), hereby certify that the Tests specified in Article 14 and Schedule-I of the Agreement have been undertaken for the Project/section……. of the Project to determine compliance thereof with the provisions of the Agreement.

2 Construction Works forming part of the Project/section of the Project that were found to be incomplete and/or deficient have been specified in the Punch List appended hereto, duly categorizing the list of outstanding items as (i) those attributable to the Concessionaire, and (ii) those not attributable to the Concessionaire, and the Concessionaire has agreed and accepted that it shall complete and/or rectify all such works in the time and manner set forth in the Agreement. [Some of the incomplete works have been delayed as a result of reasons attributable to the Authority or due to Force Majeure and the Provisional Certificate cannot be withheld on this account. Though the remaining incomplete works have been delayed as a result of reasons attributable to the Concessionaire,][δ] I/We am/are satisfied that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the Project/section…….. of the Project, pending completion thereof.

3 In view of the foregoing, I/We am/are satisfied that the Project/section of the Project can be safely and reliably placed in commercial service of the Users thereof, and in terms of the Agreement, the Project/section of the Project is hereby provisionally declared fit for entry into commercial operation on this the …… day of…… 20

ACCEPTED, SIGNED, SEALED	**SIGHNED, SEALED AND**
AND DELIVERED	**DELIVERED**
FOR AND ON BEHALF OF	FOR AND ON BEHALF OF
CONCESSIONAIRE by:	**INDEPENDENT ENGINEER BY:**
(Signature)	(Signature)
(Name and Designation)	(Name and Signature)
(Address)	(Address)

[δ]May be struck out if not applicable. Also strike out other parts which are not applicable.

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भारत सरकार / Govt. of India
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SCHEDULE - K

(See Clause 17.2)

MAINTENANCE REQUIREMENTS

1 Maintenance Requirements

1.1 The Concessionaire shall, at all times, operate and maintain the Project in accordance with the provisions of the Agreement, Applicable Laws and Applicable Permits. In particular, the Concessionaire shall, at all times during the Operation Period, conform to the Maintenance Requirements set forth in this Schedule-K (the "Maintenance Requirements").

1.2 The Concessionaire shall repair or rectify any defect or deficiency set forth in Paragraph 2 of this Schedule-K within the time limit specified therein and any failure in this behalf shall constitute a breach of the Agreement. Upon occurrence of any breach hereunder, the Authority shall be entitled to recover Damages as set forth in Clause 17.8 of the Agreement, without prejudice to the rights of the Authority under the Agreement, including Termination thereof.

2. Repair/rectification of defects and deficiencies

2.1 The obligations of the Concessionaire in respect of Maintenance Requirements shall include repair and rectification of the defects and deficiencies specified in Annexure - I of this Schedule - K within the time limit set forth therein.

2.2 The Concessionaire shall at all times maintain an adequate inventory of spares and consumables to meet the Maintenance Requirements.

3 Other defects and deficiencies

3.1 In respect of any defect or deficiency not specified in Annexure - I of this Schedule-K, the Concessionaire shall undertake repair or rectification in accordance with Good Industry Practice and within the time limit specified by the Independent Engineer.

3.2 In respect of any defect or deficiency not specified in Annexure - I of this Schedule-K, the Independent 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 Concessionaire in accordance with Good Industry Practice and within the time limit specified by the Independent Engineer.

4 Extension of time limit

Notwithstanding anything to the contrary specified in this Schedule-K, if the nature and extent of any defect or deficiency justifies more time for its repair or rectification than the time specified herein, the Concessionaire shall be entitled to additional time in conformity the Good Industry Practice. Such additional time shall be determined by the Independent Engineer and conveyed to the Concessionaire and the Authority with reasons thereof.

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5 Emergency repairs/restoration

Notwithstanding anything to the contrary contained in this Schedule-K, if any defect, deficiency or deterioration in the Project poses a hazard to safety or risk of damage to property, the Concessionaire shall promptly take all reasonable measures for eliminating or minimizing such danger.

6 Daily Inspection by the Concessionaire

The Concessionaire shall, through its engineer, undertake a daily visual inspection of the Project and maintain a record thereof in a register to be kept in such form and manner as the Independent Engineer may specify. Such record shall be kept in safe custody of the Concessionaire and shall be open to inspection by the Authority and the Independent Engineer at any time during office hours.

7 Divestment Requirements

All defects and deficiencies specified in this Schedule-K shall be repaired and rectified by the Concessionaire so that the Project conforms to the Maintenance Requirements on the Transfer Date.

8 Display of Schedule - K

The Concessionaire shall display copy of this Schedule –K at the site along with the complaint register stipulated in Article 46.

9 Additional operations & maintenance requirements

9.1 The Concessionaire shall take all such actions and do all such things, including organizing itself, adopting measures and standards, executing procedures such as inspection procedures, highway patrols, engaging and managing contractors, agents, employees, and shall secure:

(a) The safety of Users of the Project Highway, workers, or other persons on the Project Highway and other adjoining roads and/or facilities thereon;

(b) Unimpaired performance of statutory duties and functions of the Authority and other Governmental Instrumentality in relation to the Project Highway and/or other adjoining roads and facilities; and ensure that:

9.1.1 Adequate safety measures taking into account Schedule-L are taken up on the Construction Zone.

9.1.2 Delay to Users of the Project Highway and of adjoining roads or facilities are minimized.

9.1.3 Risk of adverse effects on the environment and on the amenity enjoyed by the owners and occupiers of property and/or land adjacent to the Project Highway, adjoining roads and facilities is minimized.

9.1.4 Accidents and emergencies on the Project Highway and facilities thereon are responded to as quickly as possible and their adverse effects are minimized.

9.1.5 Risk of disturbance or damage or destruction to property of third party is minimized.

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9.1.6 Members of the public are treated with due courtesy and consideration.

9.1.7 Users shall be provided adequate information and forewarning of any event on or any other matter affecting the Project Highway which shall enable them to minimize any adverse consequences on them of that event or matter.

9.1.8 Member of the public and others shall be given adequate opportunity to bring to the attention of the Concessionaire any matter affecting its ability to meet the Maintenance Requirements.

9.1.9 Traffic data and data relating to the operation and maintenance of the Project Highway and its facilities and events on the Project Highway are collected and disseminated such that the Authority and other Governmental Instrumentality with statutory duties or function in relation to the Project Highway or adjoining road are able to perform those duties and functions efficiently.

9.1.10 The Project Facilities provided under Schedule-B, Schedule-C & Change of Scopes, as applicable, shall be maintained in order to fulfil the requirements set forth in the Concession Agreement.

9.1.11 The scope for maintenance includes the following obligations:

(a) Improvement – this includes improvement of the existing assets as per requirement of the Concession Agreement and safety audit.

(b) Maintenance of Civil works& Assets – this includes maintenance of civil works and all the assets as per requirement of the Concession Agreement.

(c) Road Maintenance – this includes routine maintenance, preventive maintenance, periodic maintenance as per IRC 82:2015, Design overlay in accordance with IRC SP:87, disaster maintenance including exigencies and inspections.

(d) Traffic management – this includes enforcement of regulations together with the relevant authorities. This also includes hazard response, information gathering and dissemination and Road patrol etc.

(e) Safety – this includes accident prevention, after care & enforcement.

(f) Facility maintenance – this includes periodic inspections, routine maintenance, rehabilitation and expansion planning.

(g) Road property management –this includes management of access, encroachment and ribbon development.

(h) Maintaining public relations unit to interface with and attend to suggestions from users of the Project Highway, the media, Government Instrumentality and other external agencies.

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9.1.12 The broad limit of responsibilities of the Concessionaire shall be as described below, as per contractual obligations:

(a) The Concessionaire's responsibility shall be limited to maintenance of all areas within the Right of Way of the Project Highway, including to all features such as interchanges, Toll Plaza, street lighting facilities, traffic light facilities, advance traffic management system ("ATMS") and other facilities present within the Project Highway.

(b) Limit of maintenance by the Concessionaire for another road joining or crossing the contract limit shall be according to the following condition:

(i) Where the other road crosses an underpass, the Concessionaire shall be responsible to maintain the crossing structure, viz., culverts, bridges and their abutments and related facilities such as drainage, turfing and related works in accordance with the provisions of the Concession Agreement.

(ii) The Concessionaire shall be responsible for maintenance of the road surface, and the roadside drains if any of the other roads that are within 100m beyond the Right of Way of Project Highway, where the other road crosses an underpass.

(c) The Concessionaire shall be responsible for maintaining all the street lighting, traffic light system, structures, roadway surface and the related facilities such as drainage, turfing etc. within the interchanges, and such maintenance shall be extended until the end of the flare and the deceleration and acceleration lanes of the interchanges.

(d) The Concessionaire shall be responsible for maintaining all cross roads indicated in Schedule-B up to Right of Way of the Project Highway and their flares to junctions at any interchange within the Project Highway, whichever is more.

(e) For setting out the limit of maintenance for the Concessionaire, the Authority shall be responsible for negotiating with the local authorities or where required, with other relevant third parties. The Concessionaire shall maintain all the drainage system within the Right of Way including the culvert crossings and the drains. However, the Concessionaire shall not be liable to maintain rivers and the streams under the jurisdiction of Irrigation Department except when such maintenance of the Project Highway is required as a result of exceptional discharge.

(f) Report formats- In accordance with Article 17 of the Concession Agreement, the Concessionaire shall submit a Maintenance Program for the next year prepared in accordance with inventory of all assets created during COD of the project along with the deployment schedule of manpower & other resources with testing facilities.

(g) The asset performance created by the Concessionaire as per the scope of the Concession Agreement shall be assessed by the Independent Engineer as per

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consultancy agreement and shall be honored by the Concessionaire pertaining to the outcome of equipment-based monitoring provisions, as applicable.

10 Traffic management and lane closure:

10.1 Traffic management during operation and maintenance of the Project Highway is a critical responsibility of the Concessionaire. It is essential to ensure safety of the road users as well as the maintenance workers simultaneously throughout the Concession Period. It is usual activity to carry out various types of maintenance works at different stages and at different periods as per site requirement. Also, it is a vital activity during unforeseen and/or emergency situations arising on account of natural causes or accidents or administrative reasons.

10.2 Traffic management shall be required during planned schedule like routine and periodic maintenance activities. However, traffic management will also be called for during unscheduled activities such as

10.2.1 Emergency situation arising on account of

(a) Force Majeure;
(b) accident/incident on the Project Highway;
(c) any extraordinary occurrence or special event (including, religious gatherings, political events, or other similar events) that may cause a surge in traffic on the Project Highway;

10.2.2 Special repairs required on account of deficiency/ failure of an element of the Project Highway; and

10.2.3 Default of the Concessionaire with respect to any O&M activity on the Project Highway.

10.3 The basic principles to be followed for maintenance works in this Project Highway shall be as follows:

(a) Work programme schedule shall be prepared in a manner that diversion roads for the main traffic are minimized. Two-lanes of carriageway shall be available to the maximum extent possible.

(b) Measures shall be taken such that the traffic is guided from a closed lane onto the operating lane without any conflict with the traffic from the opposite direction.

(c) The activity of maintenance of pavement surface and/or strengthening/ renewal of the pavement structure shall not be taken up in a continuous length of more than 2 kilometers at a time to avoid long detour of the traffic.

(d) The traffic diversion road where provided shall be appropriately designed for the traffic plying on the main carriageway. It shall also be properly maintained during its operation period.

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(e) During traffic detour involving traffic diversion, adequate safety measures as per Specifications & Schedule-L shall be followed.

(f) Proper and adequate information about the maintenance activity shall be notified to the Users of the Project Highway on variable message sign boards (VMS) well before approaching the work site. Provided further, scheduled dates for major or periodic maintenance shall be published on the Authority's designated portal/website atleast 3 (three) days prior to the date on which such maintenance is scheduled, and such information shall be updated regularly. Traffic management and diversion arrangement at the work site shall be as per IRC SP55: 2014 or subsequent updates thereof. In addition to this, Robot Flagman and other advanced traffic diversion devices shall be used for diversion arrangement.

10.4 Traffic management plan and programme for a planned scheduled construction and/or maintenance activity shall be prepared in advance of that activity keeping above in view and be approved by the Independent Engineer/ Authority as the case may be.

10.5 In case of unscheduled activities, described as above, an emergency traffic management for the affected reach of the Project Highway shall be prepared and implemented in line with the guidelines set forth as per Standards and Specifications, complying with Article-18 & Schedule-L. This emergency traffic management plan shall take into account the various requirements spelt out in the Concession Agreement as well as in this schedule.

10.6 Traffic management and lane closures requirements during emergency situations arising on the Project Highway needing Traffic management are detailed below:

(a) This stage could arise any time and shall have to be addressed based on its own merits. The extent of traffic management shall be assessed as per the site requirement and situation.

(b) The nature of emergency requirement will determine the type and extent of the traffic diversion.

(c) Traffic management plan in emergency shall be prepared and implemented as per Standards and Specifications set forth in Schedule-L.

(d) Directions issued by the Authority, police department, or State shall be complied with to ensure the safe and efficient management of traffic on the Project Highway.

11 Implementation of Asset Management Framework during Operation Period:

11.1 Introduction

(a) Asset Management is a systematic process of maintaining assets, upgrading and operating assets combining engineering principles with sound business practice and economic rationale, and providing tools to facilitate a more organized and flexible approach to making the decisions necessary to achieve expectations. Objective of Asset maintenance shall be to fulfil the requirements mentioned in 9.1 with optimum allocation of resources for management, operation,

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preservation, and maintenance of highway infrastructure asset ("**Asset Management**").

(b) Basic common requirement for Asset Management are:

(i) Establish a complete inventory of all road asset with all its elements
(ii) Provide a clear picture of the current condition/performance of the road assets
(iii) Create Real Time Database of the Asset Inventory and Condition with all-time data availability to all stakeholders
(iv) Estimate future demand of traffic and service needs
(v) Estimate maintenance needs and costs
(vi) Prioritize objectives related to the desired quality and performance of the road
(vii) Define a strategy (Asset Management Plan) (This includes both Operation and Maintenance Plan)
(viii) Implementation of Asset Management Plan

(c) As requirement of maintenance manual under Article 17 of the Concession Agreement, the Concessionaire shall in accordance with this schedule and Standards and Specifications also evolve an Asset Management Manual as per Article 17 of the Concession Agreement. The same shall be submitted to Independent Engineer. Independent Engineer upon finding this Asset Management Manual in accordance with Schedules, Concession Agreement and the best industry practice of the day shall approve the same.

(d) The Asset Management Manual prepared by the Concessionaire shall set out the Asset Management standards and details of the Operations & Maintenance activities to be undertaken during the Concession Period, so that the Project Facilities shall at all times conform to the Design Requirements/specifications.

(e) The Asset Management Manual shall include without limitation the following aspects:

(i) Organization structure with responsibilities of key personnel;
(ii) Traffic Management Plan including the Corridor Control Plan;
(iii) Safety Management Programme Including the Emergency Response Protocol;
(iv) Inspection Procedures, Parameters, Frequency and Schedule;
(v) Routine and Periodic Maintenance Intervention Levels;
(vi) Asset Management Project Deliverables and Tolerance Criteria;
(vii) Environment Management Plan;
(viii) Maintenance Program;
(ix) Management Information System;
(x) Report Formats.

(f) As per clause 17.4.1 of the Concession Agreement, the Concessionaire shall submit an annual Asset Management Plan/Maintenance Program for the next year prepared in accordance with Asset Management Manual.

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(g) The Asset Management System should be capable of monitoring real time compliance of the Asset Management Plan and provide necessary feedback to all stake holders.

(h) In order to determine the Asset Performance Parameters for the Base Year, the Concessionaire shall carry out Revalidation &Testing on the road project to arrive at Base Year Parameters, on O&M commencement date. Initial Maintenance Requirement shall be assessed/revalidated based on Base Year Performance Parameters. Independent Engineer may audit the Revalidation and Testing processes. The data to be collected for performance indicator along-with recommended revalidation/testing procedures are as mentioned in the following table:

Description of Data	**Recommended Process**
Asset Inventory (Highway, Structures, Road Furniture, Facilities)	Visual Survey Manual Validation of Past Data
Pavement Distress – (Cracking and other visual distress)	Network Survey Vehicle or ROMDAS or equivalent technology
Roughness Value (IRI), Rutting, Skid Resistance	Network Survey Vehicle (Laser Profilometer) or ROMDAS or equivalent technology
Deflection Value/Remaining Life	Falling Weight Deflectometer
Condition Survey of Structures	Updation of Past Data by Visual Condition Survey and thorough Inspection using Mobile Bridge Inspection Unit
Condition Survey of Road Furniture, Facilities	Updation of Past Data by Visual Condition Survey and thorough Inspection using Retro Reflectometer
Traffic Data	7-day ATCC based traffic Volume Count Survey backed by Video
Axle Load Data	2-days Axle Load Survey with axle Pad
Encroachment Data	Survey to be carried out including Geotagged Images
Aerial Imaging of the Asset	Drone, LiDAR or equivalent technology
Utility Mapping	Ground Penetration Radar, Visual Inspection

(i) The Concessionaire in-accordance of provisions of the Concession Agreement shall plan/ programme inspections of the Project Highway classified in the following categories for effective O&M/Asset Management System Implementation:

(i) Routine Inspection: Routine Visual Inspections are to be carried out by highway/bridge maintenance engineers having knowledge of highway/road structures. The purpose of visual inspection is to report the obstacles to traffic, defects and deficiencies of pavement/structure, missing or damages to safety

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barrier (crash barriers) and traffic signs installed or erected on highway. Such inspections should be done daily. The visual inspection may be carried out by visual assessment with careful observation of the specific object/item of the Project Facilities for identification and for quantification of the deficiencies or damages of the Project Facilities. Geotagging Cameras and Distance Measuring Devices shall be used to update base asset performance parameters on daily basis. If timely inspection and reporting of these safety related deficiencies are not done, they could lead to accidents or severe maintenance problems.

(ii) Close Inspection: Close inspections for assessment of defects/deficiencies of Project Highway shall be periodic in nature and would require detailed examination of all elements of the Project Highway. Close inspection may be visual or may involve investigations to be carried out using instruments. The frequency of close inspections would depend upon the nature of the elements of Project Highway. This inspection is to be carried out by the Highway/Bridge Engineer having good knowledge of Highway with theoretical background to analyse the nature, and extent of defects/deficiencies, suggest suitable remedial measures to rectify/remedy them and quantify repair work.

(iii) Thorough Inspection: A thorough inspection is comprehensive and detailed assessment of defects/deficiencies of the Project Highway with the aid of standard equipment and non-destructive testing. Such an inspection is to be carried out on the basis of comprehensive checklist of items related to the materials, condition of element of Project Highway. A checklist is to be prepared well in advance of inspection. The thorough inspection should be undertaken during the most critical weather condition. Thorough inspection carried out will offer the most critical evaluation of the performance of the Project Highway elements.

Besides being a qualified Highway/Bridge engineer, the inspection team leader must be familiar with design and construction features of the Highway /Bridges to be inspected so that the condition can be properly and accurately assessed for a meaningful report and quantification of repair works. The competence of team leader to recognize any structural distress/deficiencies and assess its seriousness with complete recommendation for appropriate repairs are important pre-requisites for entrusting this assignment to him.

After thorough visual inspection and detailed condition survey of various bridge components at 5 years interval and also when whenever distress serious distress observed in the conditional survey following test shall need to be carried out

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S. No	Name of Tests	Minimum no. of tests sample per span/pier/abutment	Minimum no. of spans to tested in a bridge	Frequency of testing
1	Ultra-Pulse Velocity Test	3	1 span for every 3 spans	5 Years
2	Rebound Hammer Test	3	1 span for every 3 spans	5 Years
3	Half Cell Potential Test	3	1 span for every 3 spans	5 Years
4	Carbonation Depth	3	1 span for every 3 spans	5 Years
5	Transient Dynamic Response test	3	1 span for every 3 spans	5 Years
6	Laser vibrometer test (only for span greater than 30 m)	1 at mid span	1 span for every 3 spans	10 Years

The Concessionaire shall strictly maintain the assets of the Project Highway and adhere to the Project deliverables and Tolerance Criteria as mentioned in Annexure-I.

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ANNEXURE – I

(Schedule-K)

Repair/Rectification of Defects and Deficiencies[31]

The Concessionaire shall repair and rectify the defects and deficiencies specified in this Annexure- I of Schedule–K within the time limit set forth herein.

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	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 (http://www.tfhrc.com/pavement/lttp/reports/03031/)	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

[31] This template is applicable to highway projects. It may be suitably revised in case of other projects.

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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					
byes etc. as applicable)	Bleeding	Nil	< 1 % of area	Daily	Unit like Scale, Tape, odometer etc.		3-7 days	MORT&H Specification 3004.4
	Ravelling/ 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
	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	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

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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**					
	Other Pavement Distresses			Bi-Annually		for Classification of Automatic Pavement Condition Survey Equipment	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 **Minimum SN** / **Traffic Speed (Km/h)** 36 / 50 33 / 65 32 / 80 31 / 95 31 / 110		Bi-Annually	SCRIM (Sideway-force Coefficient Routine Investigation Machine or equivalent)	IRC:SP:83-2008	180 days	IRC:SP:83-2008

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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					
Emabankment/ 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 criterion, the Concessionaire shall strictly maintain the rigid pavements as per requirements in the following tables.

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Table -2:Maintenance Criteria for Rigid Pavements:

S.No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case d < D/2	For the case d > D/2
CRACKING						
1	**Single Discrete Cracks Not intersecting with any joint**	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 > lm. Within 7days
			3	w = 0.5 - 1.5 mm, discernible from fast-moving car		
			4	w = 1.5 - 3.0 mm	Seal, and stitch if L > l m. Within 7 days	Staple or Dowel Bar Retrofit, FDR for affected portion. Within 15days
			5	w > 3 mm.		
2	**Single Transverse (or Diagonal) Crack intersecting with one or more joints**	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	

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S.No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case d < D/2	For the case d > D/2
			5	w > 6 mm, usually associated with spalling, and/or slab rocking under traffic	Not Applicable, as it may be full depth	Full Depth Repair Dismantle and reconstruct affected. Portion with norms and specifications - See Para 5.5 & 9.2 Within 15days
3	**Single Longitudinal Crack intersecting with one or more joints**	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, discernable 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 > l 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	
			5	w > 12 mm, usually associated with spalling,		Full Depth Repair Dismantle and reconstruct affected portion as per norms

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S.No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case d < D/2	**For the case d > D/2**
				and/or slab rocking under traffic		and specifications - See Para 5.6.4 Within 15 days
4	**Multiple Cracks intersecting with one or more joints**	w = width of crack	0	Nil, not discernible	No Action	-
			1	w < 0.2 mm, hair cracks	Seal, and stitch if L > l m. Within 15 days	
			2	w = 0.2 - 0.5 mm. discernible from slow vehicle		
			3	w = 0.5 - 3.0 mm, discernible from fast vehicle	Full depth repair within 15 days	Dismantle, Reinstate 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	**Corner Break**	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 Within 7 days	Seal with epoxy seal with epoxy Within 7days
			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	Full depth repair

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					For the case d < D/2	**For the case d > D/2**
			4	w > 1.5 mm; L > 0.6 m or three corners broken	IRC:SP: 83-2008) Within 15 days	
			5	three or four corners broken		Reinstate sub-base, and reconstruct the slab as per norms and specifications within 30days
6	**Punchout (Applicable to Continuous Reinforced Concrete Pavement (CRCP) only)**	w = width of crack L = length (m/m2)	0	Nil, not discernible		No Action
			1	w < 0.5 mm; L < 3 m/m^2	Not Applicable, as it may be full depth	Seal with low viscosity epoxy to secure broken parts. Within 15days
			2	either w > 0.5 mm or L < 3 m/m^2		
			3	w > 1.5 mm and L < 3 m/m^2		
			4	w > 3 mm, L < 3 m/m^2 and deformation		Full depth repair - Cut out and replace damaged area taking care not to damage reinforcement. Within 30days
			5	w > 3 mm, L > 3 m/m^2 and deformation		
Surface Defects						
7		r = area damaged surface/total surface of slab (%)	0	Nil, not discernible	**Short Term**	**Long Term**
					No action.	Not Applicable

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					For the case d < D/2	**For the case d > D/2**
	Ravelling or Honeycomb type surface	h = maximum depth of damage	1	r < 2 %	Local repair of areas damaged and liable to be damaged. Within 15 days	
			2	r = 2 - 10 %		
			3	r = 10-25%	Bonded Inlay, 2 or 3 slabs if affecting. Within 30 days	
			4	r = 25 - 50 %		
			5	r > 50% and h > 25 mm	Reconstruct slabs, 4 or more slabs if affecting. Within 30 days	
8	**Scaling**	r = damaged surface/total surface of slab (%) h = maximum depth of damage	0	Nil, not discernible	**Short Term**	**Long Term**
					No action.	Not Applicable
			1	r <**2 %**	Local repair of areas damaged and liable to be damaged. Within 7days	
			2	r = 2 - 10 %		
			3	r = 10 - 20%	Bonded Inlay within 15 days	
			4	r = 20 - 30 %		
			5	r > 30 % and h > 25 mm	Reconstruct slab within 30 days	
9	**Polished Surface/Glazing**	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	

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					For the case d < D/2	**For the case d > D/2**
			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	**Popout (Small Hole), Pothole Refer Para 8.4**	n = number/m^2 d = diameter h = maximum depth	0	d < 50 mm; h < 25 mm; n < 1 per 5 m^2	No action.	Not Applicable
			1	d = 50 - 100 mm; h < 50 mm; n < 1 per 5 m^2	Partial depth repair 65 mm deep. Within 15 days	
			2	d = 50 - 100 mm; h > 50 mm; n < 1 per 5 m^2		
			3	d = 100 - 300 mm; h < 100 mm n < 1 per 5 m^2	Partial depth repair 110mm i.e.10 mm more than the depth of the hole. Within 30 days	
			4	d = 100 - 300 mm; h > 100 mm; n < 1 per 5 m^2		
			5	d > 300 mm; h > 100 mm: n > 1 per 5 m^2	Full depth repair. Within 30 days	
Joint Defects						
11	**Joint Seal Defects**		0	Difficult to discern.	**Short Term**	**Long Term**
					No action.	Not Applicable

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					For the case d < D/2	For the case d > D/2
		loss or damage L = Length as % total joint length	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	**Spalling of Joints**	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.	

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					For the case d < D/2	**For the case d > D/2**
					H = w + 20% of w. Within 30 days	
13	**Faulting (or Stepping) in Cracks or Joints**	f = difference of level	0	not discernible, < 1 mm	No action.	No action.
			1	f < 3 mm		
			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	**Blowup or Buckling**	**h = vertical displacement from normal profile**	0	Nil, not discernible	**Short Term**	**Long Term**
					No Action	
			1	h < 6 mm		
			2	h = 6 - 12 mm	Install Signs to Warn Traffic within 7 days	
			3	h = 12 - 25 mm		
			4	h > 25 mm	Full Depth Repair. Within 30 days	
			5	shattered slabs, ie 4 or more pieces	Replace broken slabs.	

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					For the case d < D/2	**For the case d > D/2**
					Within 30 days	
15	**Depression**	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 within 7 days	
			3	h = 30 - 50 mm		
			4	h > 50 mm or > 20% joints	Strengthen subgrade.Reinstate pavement at normal level if L < 20 m.	
			5	h > 100 mm	Within 30 days	
16	**Heave**	h = positive vertical displacement from normal profile. L = length	0	Not discernible. h < 5 mm	**Short Term**	**Long Term**
					No action.	scrabble
			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	**Bump**		0	h < 4 mm	No action.	

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					For the case d < D/2	**For the case d > D/2**
		h = vertical displacement from normal profile	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	**Lane to Shoulder Dropoff**	f = difference of level	0	Nil, not discernible < 3mm	**Short Term**	**Long Term**
					No action.	
			1	f = 3 - 10 mm	Spot repair of shoulder within 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 30days
			4	f = 50 - 75 mm		
			5	f > 75 mm		
Drainage						
19	**Pumping**		0	not discernible	No Action	

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S.No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case d < D/2	**For the case 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 to 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	-do-	

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Table -3:Maintenance Criteria for Safety Related Items and Other Furniture Items:

<table>
<tr><th>Asset Type</th><th>Performance Parameter</th><th>Level of Service (LOS)</th><th>Frequency of Measurement</th><th>Testing Method</th><th>Recommended Remedial measures</th><th>Time limit for Rectification</th><th>Specifications and Standards</th></tr>
<tr><td>Highway</td><td>Availability of Safe Sight Distance</td><td>As per IRC SP :84-2014, a minimum of safe stopping sight distance shall be available throughout.
<table>
<tr><th>Design Speed, kmph</th><th>Desirable Minimum Sight Distance (m)</th><th>Safe Stopping Sight Distance (m)</th></tr>
<tr><td>100</td><td>360</td><td>180</td></tr>
<tr><td>80</td><td>260</td><td>130</td></tr>
</table></td><td>Monthly</td><td>Manual Measurements with Odometer along with video/image backup</td><td colspan="2">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, blinkers, etc. shall be applied during the period of rectification.</td><td>IRC:SP 84-2014</td></tr>
<tr><td>Pavement Marking</td><td>Wear</td><td><70% of marking remaining</td><td>Bi-Annually</td><td>Visual Assessment as per Annexure-F</td><td>Re - painting</td><td>Cat-1 Defect – within 24 hours

Cat-2 Defect – within 2 months</td><td>IRC:35-2015</td></tr>
</table>

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<table>
<tr><th>Asset Type</th><th>Performance Parameter</th><th>Level of Service (LOS)</th><th>Frequency of Measurement</th><th>Testing Method</th><th>Recommended Remedial measures</th><th>Time limit for Rectification</th><th>Specifications and Standards</th></tr>
<tr><td></td><td></td><td></td><td></td><td>of IRC:35-2015</td><td></td><td></td><td></td></tr>
<tr><td></td><td>Day time Visibility</td><td>During expected life Service Time
11 Cement Road - 130mcd/m^2/lux
12 Bituminous Road - 100mcd/m^2/lux</td><td>Monthly</td><td>As per Annexure-D of IRC:35-2015</td><td>Re - painting</td><td>Cat-1 Defect – within 24 hours
Cat-2 Defect – within 2 months</td><td>IRC:35-2015</td></tr>
<tr><td></td><td>Night Time Visibility</td><td><u>Initial and Minimum Performance for Dry Retro reflectivity during night time:</u>
<table>
<tr><th rowspan="2">Design Speed</th><th colspan="2">(RL) Retro Reflectivity (mcd/m^2/lux)</th></tr>
<tr><th>Initial (7 days)</th><th>Minimum Threshold level (TL) & warranty period required up to 2 years</th></tr>
</table></td><td>Bi-Annually</td><td>As per Annexure-E of IRC:35-2015</td><td>Re - painting</td><td>Cat-1 Defect – within 24 hours
Cat-2 Defect – within 2 months</td><td>IRC:35-2015</td></tr>
</table>

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		Up to 65 | 200 | 80 65 - 100 | 250 | 120 Above 100 | 350 | 150 <u>Initial and Minimum Performance for Night Visibility under wet condition (Retro reflectivity):</u> 13 Initial 7 days Retro reflectivity: 100 mcd/m^2/lux 14 Minimum Threshold Level: 50 mcd/m^2/lux					
	Skid Resistance	Initial and Minimum performance for Skid Resistance: 15 Initial (7days): 55BPN 16 Min. Threshold: 44BPN *Note: shall be considered under urban/city traffic condition encompassing the	Bi-Annually	As per Annexure-G of IRC:35-2015		Within 24 hours	IRC:35-2015

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Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
		locations like pedestrian crossings, bus bay, bus stop, cycle track intersection delineation, transverse bar markings etc.					
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	Change of signboard	48 hours in case of Mandatory Signs, Cautionary and Informatory Signs (Single and Dual post signs)	IRC:67-2012

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Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
				with ASTM D 4956-09.		1 Month in case of Gantry/Cantilever Sign boards	
Kerb	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 86:1983
	Kerb Painting	Functionality: Functioning of Kerb painting as intended	Daily	Visual with video/image backup	Kerb Repainting	Within 7-days	IRC 35:2015
Other Road Furniture	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	Functionality: Functioning of guardrail as intended	Daily	Visual with video/image backup	Rectification	Within 15 days	IRC:SP:84-2014
	Traffic Safety Barriers	Functionality: 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	Functionality: Functioning of End Treatment as intended	Daily	Visual with video/image backup	Rectification	Within 7 days	IRC:SP:84-2014, IRC:119-2015

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Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
	Attenuators	Functionality: 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	Functionality: Functioning of Guard Posts and Delineators as intended	Daily	Visual with video/image backup	Rectification	Within 15 days	IRC: 79 - 1981
	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	Functionality: Functioning of Traffic Blinkers as intended	Daily	Visual with video/image backup	Rectification	Within 7 days	IRC:SP:84-2014
Highway Lighting System	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	24 hours	IRC:SP:84-2014
		No minor failure in the lighting system	Monthly	-	Rectification of failure	8 hours	IRC:SP:84-2014

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	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
Trees and Plantation including median plantation	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
	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

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Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
Rest Areas	Cleaning of toilets	-	Daily	-	-	Every 4 hours	
	Defects in electrical, water and sanitary installations	-	Daily	-	Rectification	24 hours	
Other Project Facilities and Approach roads	Damage or deterioration in Approach Roads, pedestrian facilities, truck lay-bys, bus-bays, bus-shelters, cattle crossings, Rain Water Harvesting/ Artificial Recharge Unit Traffic Aid Posts, Medical Aid Posts and other works		Daily	-	Rectification	15 days	IRC:SP 84-2014

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Table 4: Maintenance Criteria for Structures and Culverts:

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
Pipe/box/slab culverts	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
	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 Delamination of concrete not more than 0.25 sq.m. Cracks wider than 0.3 mm not more	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

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Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
		than 1m aggregate length					
	Protection works in good condition	Damaged of rough stone apron or bank revetment not more than 3 sq.m, damage to solid apron (concrete apron) not more than 1 sq.m	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 before onset of rainy season whichever is earlier.	IRC: SP 40-1993 and IRC:SP:13-2004.
Bridges including ROBs Flyover etc. as applicable	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
Bridge -Super Structure	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.

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Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
	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 before carrying out the repairs to affected concrete portion with epoxy ortar/concrete.	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					
	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.

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Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
	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.
	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 vibro-meters	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	Cleaning of expansion joint gaps thoroughly	3 days	MORTH specifications 2600 and IRC SP: 40-1993.

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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			
	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 Mobile Bridge Inspection Unit	Cleaning of drainage spouts thoroughly. Replacement of missing/broken down take pipes with a minimum pipe extension of 500mm below soffit of slab. Providing sealant around the drainage spout if any leakages observed.	3 days	MORTH specification 2700.
Bridge-substructure	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/guiniting and micro concreting depending on type of defect noticed	30 days	IRC SP: 40-1993 and MORTH specification 2800.

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Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
	Bearings	Delamination of bearing reinforcement not more than 5%, cracking or tearing of rubber not more than 2 locations per side, no rupture of reinforcement or rubber	Bi-Annually	Detailed condition survey as per IRC SP: 35-1990 using Mobile Bridge Inspection Unit	In case of failure of even one 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.	3 months	MORTH specification 2810 and IRC SP: 40-199.
Bridge Foundations	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

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Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
	Protection works in good condition	Damaged of rough stone apron or bank revetment not more than 3 sq.m, damage to solid apron (concrete apron) not more than 1 sq.m	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 before onset of rainy season whichever is earlier.	IRC: SP 40-1993 and IRC:SP:13-2004.
Note: Any Structure during the entire concession 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 Concessionaire.							

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Table 5: Maintenance Criteria for Hill Roads

In addition to above, for hill roads the following provisions for maintenance is also to done.

Sl. No.	Parameter	Time limit for Rectification
(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

<u>Note:</u> 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.

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SCHEDULE - L

(See Clause 18.1.1)

SAFETY REQUIREMENTS[32]

1. Guiding principles

1.1 Safety Requirements aim at reduction in injuries, loss of life and damage to property resulting from accidents on or about the Project, irrespective of the person(s) at fault.

1.2 Users of the Project include motorised and non-motorized vehicles as well as pedestrians and animals involved in, or associated with accidents. Vulnerable Road Users (VRU) include pedestrians as well as riders of motorized two-wheelers, bicycles and other vehicles which do not provide adequate occupant protection.

1.3 Safety Requirements apply to all phases of construction, operation and maintenance with emphasis on identification of factors associated with accidents, consideration of the same, and implementation of appropriate remedial measures.

1.4 Safety Requirements include measures associated with traffic management and regulation such as road signs, pavement marking, traffic control devices, roadside furniture, highway design elements, enforcement and emergency response.

2 Obligations of the Concessionaire

The Concessionaire shall abide by the following insofar as they relate to safety of the Users:

(a) Applicable Laws and Applicable Permits;

(b) Manual for Safety in Road Design, issued by MoRTH;

(c) Relevant Standards/Guidelines of IRC relating to safety, road geometries, bridges, culverts, road signs, pavement marking and roadside furniture;

(d) Provisions of this Agreement; and

(e) Good Industry Practice.

3 Appointment of Safety Consultant

For carrying out safety audit of the Project under and in accordance with this Schedule-L, the Authority shall appoint from time to time, one or more qualified firms or organisations as its consultants (the "Safety Consultant"). The Safety Consultant shall employ a team comprising, without limitation, one road safety expert and one traffic planner to undertake safety audit of the Project.

4 Safety measures during Development Period

4.1 No later than 90 (ninety) days from the date of this Agreement, the Authority shall appoint a Safety Consultant for carrying out safety audit at the design stage of the Project. The Safety Consultant shall collect data on all fatal crashes and other road accidents which occurred on the Project in the preceding two years by obtaining copies of the relevant First Information Reports (FIRs) from the police stations having jurisdiction. The information contained in such FIRs shall be summarised in the form prescribed by the Authority for this

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purpose and the data shall be analysed for the type of victims killed or injured, impacting vehicles, location of accidents and other relevant factors.

4.2 The Concessionaire shall provide to the Safety Consultant, in four copies, the relevant drawings containing the design details that have a bearing on safety of Users (the "Safety Drawings"). Such design details shall include horizontal and vertical alignments; sightlines; layouts of intersections; interchanges; road cross-section; bridges and culverts; side drains; provision for parked vehicles, slow moving vehicles (tractors, bullock carts, bicycles) and pedestrians; bus bays; truck lay-bys; and other incidental or consequential information. The Safety Consultant shall review the design details and forward 3 (three) copies of the Safety Drawings with its recommendations, if any, to the Independent Engineer who shall record its comments, if any, and forward one copy each to the Authority and the Concessionaire.

4.3 The accident data and the design details shall be compiled, analysed and used by the Safety Consultant for evolving a package of recommendations consisting of safety related measures for the Project. The safety audit shall be completed in a period of three months and a report thereof (the "Safety Report") shall be submitted to the Authority, in 5 (five) copies. One copy each of the Safety Report shall be forwarded by the Authority to the Concessionaire and the Independent Engineer forthwith.

4.4 The Concessionaire shall endeavor to incorporate the recommendations of the Safety Report in the design of the Project, as may reasonably be required in accordance with Applicable Laws, Applicable Permits, Manuals and Guidelines of the Authority, Specifications and Standards, and Good Industry Practice. If the Concessionaire does not agree with any or all of such recommendations, it shall state the reasons thereof and convey them to the Authority forthwith. In the event that any or all of the works and services recommended in the Safety Report fall beyond the scope of Schedule-B, Schedule-C or Schedule-D, the Concessionaire shall make a report thereon and seek the instructions of the Authority for funding such works in accordance with the provisions of Article 18.

4.5 Without prejudice to the provisions of Paragraph 4.4, the Concessionaire and the Independent Engineer shall, within 15 (fifteen) days of receiving the Safety Report, send their respective comments thereon to the Authority, and no later than 15 (fifteen) days of receiving such comments, the Authority shall review the same along with the Safety Report and by notice direct the Concessionaire to carry out any or all of the recommendations contained therein with such modifications as the Authority may specify; provided that any works or services required to be undertaken hereunder shall be governed by the provisions of Article 18.

5 Safety measures during Construction Period

5.1 A Safety Consultant shall be appointed by the Authority, no later than 4 (four) months prior to the expected COD, for carrying out a safety audit of the completed Construction Works.

5.2 The Safety Consultant shall collect and analyses the accident data for the preceding two years in the manner specified in Paragraph 4.1 of this Schedule- L. It shall study the Safety Report for the Development Period and inspect the Project to assess the adequacy of safety measures. The Safety Consultant shall complete the safety audit within a period of 4 (four) months and submit a Safety Report recommending a package of additional road safety measures, if any, that are considered essential for reducing accident hazards on the Project. Such recommendations shall be processed, mutatis mutandis, and acted upon in the manner set forth in Paragraphs 4.3, 4.4 and 4.5 of this Schedule-L.

5.3 The Concessionaire shall make adequate arrangements during the Construction Period for the safety of workers and road Users in accordance with the guidelines of IRC for safety in

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construction zones, and notify the Authority and the Independent Engineer about such arrangements.

6 Safety measures during Operation Period

6.1 The Concessionaire shall develop, implement and administer a surveillance and safety program for Users, including correction of safety violations and deficiencies and all other actions necessary to provide a safe environment in accordance with this Agreement.

6.2 [The Concessionaire shall establish a Highway Safety Management Unit (the "HSMU") to be functional on and after COD, and designate one of its officers to be in-charge of the HSMU. Such officer shall have specialist knowledge and training in road safety and traffic engineering by having attended a course conducted by a reputed organization on the subject.]

6.3 The Concessionaire shall keep a copy of every FIR recorded by the Police with respect to any accident occurring on the Project. In addition, the Concessionaire shall also collect data for all cases of accidents not recorded by the Police but where a vehicle rolled over or had to be towed away. The information so collected shall be summarized in the form prescribed by the Authority for this purpose. The Concessionaire shall also record the exact location of each accident on a road map. The aforesaid data shall be submitted to the Authority at the conclusion of every quarter and to the Safety Consultant as and when appointed.

6.4 The Concessionaire shall submit to the Authority before the 31st(thirty first) May of each year, an annual report (in ten copies) containing, without limitation, a detailed listing and analysis of all accidents of the preceding Accounting Year and the measures taken by the Concessionaire pursuant to the provisions of Paragraph 6.1 of this Schedule-L for averting or minimizing such accidents in future.

6.5 Once in every Accounting Year, a safety audit shall be carried out by the Safety Consultant to be appointed by the Authority. It shall review and analyses the annual report and accident data of the preceding year, and undertake an inspection of the Project. The Safety Consultant shall complete the safety audit within a period of 1 (one) month and submit a Safety Report recommending specific improvements, if any, required to be made to the road, bridges, culverts, markings, signs, road furniture and Project Facilities, including cattle crossings and pedestrian crossings. Such recommendations shall be processed, mutatis mutandis, and acted upon in the manner set forth in Paragraphs 4.3, 4.4 and 4.5 of this Schedule-L.

6.6 The Concessionaire shall through a qualified safety auditor with experience in crash investigation, undertake an in-depth study on the causes and analysis of any accident involving a motor vehicle occurring on the Project Highway, as intended under Section 135 of The Motor Vehicle Act, 1988. The Concessionaire shall provide such analysis to the Authority within a period of 15 (fifteen) days from the date of such accident and such analysis shall be hosted on the Authority's designated portal/website for public viewing. The Concessionaire shall undertake prompt remedial action to prevent recurrence of accidents including improvement in road design, installing safety features and other traffic management measures.

7 Costs and expenses

Costs and expenses incurred in connection with the Safety Requirements set forth herein, including the provisions of Paragraph 2 of this Schedule-L, shall be met in accordance with Article 18, Provided that the remuneration of the Safety Consultant, safety audit, and costs incidental thereto, shall be borne by the Authority Concessionaire.

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SCHEDULE - M

(See Clause 23.1)

SELECTION OF INDEPENDENT ENGINEER[33]

1 Selection of Independent Engineer

1.1 The provisions of the Model Request for Proposals for Selection of Technical Consultants, issued by the MoRTH vide its letter No. [RW/NH-39011/30/2015-P&P(Pt-l) dated 15.02.2019], as amended from time to time or any substitute thereof shall apply for selection of an experienced firm to discharge the functions and duties of an Independent Engineer. Provided, however, that no entity which is owned or controlled by the Authority shall be eligible for appointment as the Independent Engineer hereunder.

1.2 The Authority shall invite expressions of interest from consulting engineering firm to undertake and perform the duties and functions set forth in Schedule-N and in accordance with pre-determined criteria.

1.3 Deleted.

1.4 In the event that the Authority shall follow the selection process specified in the Model RFP for selection of Technical Consultants, as published by the Ministry of Finance/ Planning Commission, the selection process specified in this Schedule-M shall be deemed to be substituted by the provisions of the said Model RFP and the Concessionaire shall be entitled to scrutinise the relevant records forming part of such selection process

1.5 The appointment shall be made no later than 90 (ninety) days from the date of this Agreement and shall be for a period of [4 (four) years or 6 months after COD, whichever is earlier], unless terminated prior thereto. On expiry or termination of the aforesaid period, the Authority may in its discretion renew the appointment, or appoint another firm pursuant to the provisions of this Schedule-M to be the Independent Engineer for a term of 3 (three) years, and such procedure shall be repeated after expiry of each appointment

2 Terms of Reference

The Terms of Reference for the Independent Engineer shall substantially conform to Schedule-N.

3 Fee and expenses

3.1 In determining the nature and quantum of duties and services to be performed by the Independent Engineer during the Development Period and Construction Period, the Authority shall endeavor that payments to the Independent Engineer on account of fee and expenses do not exceed 3% (three per cent) of the Bid Project Cost. Payments not exceeding such 3% (three per cent) shall be borne equally by the Authority and the Concessionaire in

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accordance with the provisions of this Agreement and any payments in excess thereof shall be borne entirely by the Authority.

3.2 The nature and quantum of duties and services to be performed by the Independent Engineer during the Operation Period shall be determined by the Authority in conformity with the provisions of this Agreement and with due regard for economy in expenditure. All payments made to the Independent Engineer on account of fee and expenses during the Operation Period shall be borne equally by the Authority and the Concessionaire.

4 Selection every three years

No later than 3 (three) years from the date of appointment of Independent Engineer pursuant to the provisions of Paragraph 1 of this Schedule-M, and every 3 (three) years thereafter, the Authority shall engage another firm in accordance with the criteria set forth in this Schedule-M.

5 Appointment of government entity as Independent Engineer

Notwithstanding anything to the contrary contained in this Schedule, the Authority may in its discretion appoint a government-owned entity as the Independent Engineer; provided that such entity shall be a body corporate having as one of its primary function 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 Independent Engineer.

6. Interim Independent Engineer

The Authority may, in its discretion, appoint an interim Independent Engineer from another project within the State or a neighboring state of the Project for a period not exceeding 6 (six) months or until the appointment of another Independent Engineer in accordance with this Schedule, whichever is earlier.

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SCHEDULE - N

(See Clause 23.2.1)

TERMS OF REFERENCE FOR INDEPENDENT ENGINEER[34]

1 Scope

1.1 These Terms of Reference for the Independent Engineer (the "TOR") are being specified pursuant to the Concession Agreement dated (the "Agreement"), which has been entered into between the Authority and the "Concessionaire") for Two-Laning of the section (km to km) of State Highway No in the State on design, build, operate and transfer (the "DBOT Annuity or Hybrid Annuity") basis, and a copy of which is annexed hereto and marked as Annexure-A to form part of this TOR.

1.2 This TOR shall apply to construction, operation and maintenance of the [***-Lane] Project Highway.

2 Definitions and interpretation

2.1 The words and expressions beginning with or in capital letters used in this TOR 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.

2.2 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.

2.3 The rules of interpretation stated in Clauses 1.2, 1.3 and 1.4 of the Agreement shall apply, mutatis mutandis, to this TOR.

3 Role and functions of the Independent Engineer

3.1 The role and functions of the Independent Engineer shall include the following:

(I) review of the Drawings and Documents as set forth in Paragraph 4;

(ii) Review, inspection and monitoring of Construction Works as set forth in Paragraph 5; conducting Tests on completion of construction and issuing Completion/ Provisional Certificate as set forth in Paragraph 5

(iv) Review, inspection and monitoring of O&M as set forth in Paragraph 6;

(v) review, inspection and monitoring of Divestment Requirements as set forth in Paragraph 7;

(vi) determining, as required under the Agreement, the costs of any works or services and/or their reasonableness;

(vii) determining, as required under the Agreement, the period or any extension thereof, for performing any duty or obligation;

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(viii) Assisting the Parties in resolution of Disputes as set forth in Paragraph 9; and

(ix) Undertaking all other duties and functions in accordance with the Agreement.

3.2 The Independent Engineer shall discharge its duties in a fair, impartial and efficient manner, consistent with the highest standards of professional integrity and Good Industry Practice.

4 Development Period

4.1 During the Development Period, the Independent Engineer shall undertake a detailed review of the Drawings to be furnished by the Concessionaire along with supporting data, including the geo-technical and hydrological investigations, characteristics of materials from borrow areas and quarry sites, topographical surveys and traffic surveys. The Independent Engineer shall complete such review and send its comments/ observations to the Authority and the Concessionaire within 15 (fifteen) days of receipt of such Drawings. In particular, such comments shall specify the conformity or otherwise of such Drawings with the Scope of the Project and Specifications and Standards.

4.2 The Independent Engineer shall review any modified Drawings or supporting Documents sent to it by the Concessionaire and furnish its comments within 7 (seven) days of receiving such Drawings or Documents.

4.3 The Independent Engineer shall review the Drawings sent to it by the Safety Consultant in accordance with Schedule-L and furnish its comments thereon to the Authority and the Concessionaire within 7 (seven) days of receiving such Drawings. The Independent Engineer shall also review the Safety Report and furnish its comments thereon to the Authority within 15 (fifteen) days of receiving such report.

4.4 The Independent Engineer shall review the detailed design, construction methodology, quality assurance procedures and the procurement, engineering and construction time schedule sent to it by the Concessionaire and furnish its comments within 15 (fifteen) days of receipt thereof.

4.5 Upon reference by the Authority, the Independent Engineer shall review and; comment on the EPC ContOract or any other contract for construction, operation and maintenance of the Project, and furnish its comments within 7 (seven) days from receipt of such reference from the Authority.

5 Construction Period

5.1 In respect of the Drawings, Documents and Safety Report received by the Independent Engineer for its review and comments during the Construction Period, the provisions of Paragraph 4 shall apply, mutatis mutandis.

5.2 The Independent Engineer shall review the monthly progress report furnished by the Concessionaire and send its comments thereon to the Authority and the Concessionaire within 7 (seven) days of receipt of such report.

5.3 The Independent Engineer shall inspect the Construction Works and every kilometre of the Project once every month duly supported by video recording captured using a drone or such other mechanism acceptable to the Authority, preferably after receipt of the monthly progress report from the Concessionaire, but before the 20th (twentieth) day of each month in any case, and make out a report of such inspection (the "Inspection Report") setting forth an overview of the status, progress, quality and safety of construction, including the work methodology adopted, the materials used and their sources including invoices of materials (i.e., steel, cement, bitumen and aggregates), and conformity of Construction Works with the Scope of the Project and the Specifications and Standards. In a separate section of the

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Inspection Report, the Independent Engineer shall describe in reasonable detail the lapses, defects or deficiencies observed by it in the construction of the Project Highway. **The Independent Engineer shall ensure that the features and quality of the video recordings submitted by the Concessionaire during the Construction Period** conforms to the standard operating procedure or guidelines of the Authority**,** and are **free from distortion or tampering.** The Inspection Report shall also contain a review of the such video recordings and maintenance of the existing lanes in conformity with the provisions of the Agreement. The Independent Engineer shall send a copy of its Inspection Report **along with the video recording captured during such inspection,** to the Authority and the Concessionaire within 7 (seven) days of the inspection **and the Independent Engineer shall also upload it on Authority's** designated portal/**website promptly**

5.4 The Independent Engineer may inspect the Project more than once in a month if any lapses, defects or deficiencies require such inspections.

5.5 For determining that the Construction Works conform to Specifications and Standards, the Independent Engineer shall require the Concessionaire to carry out, or cause to be carried out, tests on a sample basis at such location, time and frequency and in such manner, to be specified by the Independent Engineer from time to time in accordance with Good Industry Practice for quality assurance. For purposes of this Paragraph 5.5, 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 the Authority (the "Quality Control Manuals") or any modification/substitution thereof shall be deemed to be tests conforming to Good Industry Practice for quality assurance. The Independent Engineer shall issue necessary directions to the Concessionaire for ensuring that the tests are conducted in a fair and efficient manner, and shall monitor and review the results thereof.

5.6 The sample size of the tests, to be specified by the Independent Engineer under Paragraph 5.5, shall comprise 10% (ten per cent) of the quantity or number of tests prescribed for each category or type of tests in the Quality Control Manuals;

5.7 The timing of tests referred to in Paragraph 5.5, and the criteria for acceptance/ rejection of their results shall be determined by the Independent 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 Concessionaire for its own quality assurance in accordance with Good Industry Practice.

5.8 In the event that the Concessionaire carries out any remedial works for removal or rectification of any defects or deficiencies, the Independent Engineer shall require the Concessionaire to carry out, or cause to be carried out, tests to determine that such remedial works have brought the Construction Works into conformity with the Specifications and Standards, and the provisions of this Paragraph 5 shall apply to such tests.

5.9 In the event that the Concessionaire fails to achieve any of the Project Milestones, the Independent Engineer shall undertake a review of the progress of construction and identify potential delays, if any. If the Independent Engineer shall determine that completion of the Project is not feasible within the time specified in the Agreement, it shall require the Concessionaire to indicate within 15 (fifteen) days the steps proposed to be taken to expedite progress, and the period within which COD shall be achieved. Upon receipt of a report from the Concessionaire, the Independent Engineer shall review the same and send its comments to the Authority and the Concessionaire forthwith.

5.10 If at any time during the Construction Period, the Independent Engineer determines that the Concessionaire has not made adequate arrangements for the safety of workers and Users in the zone of construction or that any work is being carried out in a manner that threatens the

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safety of the workers and the Users, it shall make a recommendation to the Authority forthwith, identifying the whole or part of the Construction Works that should be suspended for ensuring safety in respect thereof.

5.11 In the event that the Concessionaire carries out any remedial measures to secure the safety of suspended works and Users, it may, by notice in writing, require the Independent Engineer to inspect such works, and within 3 (three) days of receiving such notice, the Independent Engineer shall inspect the suspended works and make a report to the Authority forthwith, recommending whether or not such suspension may be revoked by the Authority.

5.12 If suspension of Construction Works is for reasons not attributable to the Concessionaire, the Independent Engineer shall review the request of the Concessionaire for the extension of dates set forth in the Project Completion Schedule, to the extent the Concessionaire is reasonably entitled, and may recommend the Authority Concessionaire

5.13 The Independent Engineer shall carry out, or cause to be carried out, all the Tests specified in Schedule-I and issue a Completion Certificate or Provisional Certificate, as the case may be. For carrying out its functions under this Paragraph 5.13 and all matters incidental thereto, the Independent Engineer shall act under and in accordance with the provisions of Article 14 and Schedule-I.

5.14 Upon reference from the Authority, the Independent Engineer shall make a fair and reasonable assessment of the costs of providing information, works and services as set forth in Article 16 and certify the reasonableness of such costs for payment by the Authority to the Concessionaire.

5.15 The Independent Engineer shall aid and advise the Concessionaire in preparing the Maintenance Manual.

5.16 The Independent Engineer shall obtain from the Concessionaire a copy of all the Concessionaire's quality control records and documents before the Completion Certificate is issued pursuant to Clause 14.2.

5.17 Upon reference from the Authority, the Independent Engineer shall undertake the assessment of cost of civil works, as per applicable schedule of rates, in accordance with the Agreement.

6 Operation Period

6.1 In respect of the Drawings, Documents and Safety Report received by the Independent Engineer for its review and comments during the Operation Period, the provisions of Paragraph 4 shall apply, mutatis mutandis.

6.2 The Independent Engineer shall review the annual Maintenance Program furnished by the Concessionaire and send its comments thereon to the Authority and the Concessionaire within 15 (fifteen) days of receipt of the Maintenance Program.

6.3 The Independent Engineer shall review the monthly status report furnished by the Concessionaire and send its comments thereon to the Authority and the Concessionaire within 7 (seven) days of receipt of such report.

6.4 The Independent Engineer shall inspect every kilometer of the Project once every month duly supported by video recording captured using a drone or such other mechanism acceptable to the Authority, preferably after receipt of the monthly status report from the Concessionaire, but before the 20th (twentieth) day of each month in any case, and make out an O&M Inspection Report setting forth an overview of the status, quality and safety of O&M including its conformity with the Maintenance Requirements and Safety Requirements. The Independent Engineer shall ensure that the features and quality of the video recordings submitted by the Concessionaire during the Operation Period conforms to

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the standard operating procedure or guidelines of the Authority, and are free from distortion or tampering. The O&M Inspection Report shall also contain a review of the such video recordings and in a separate section of the O&M Inspection Report, the Independent Engineer shall describe in reasonable detail the lapses, defects or deficiencies observed by it in O&M of the Project Highway, **along with recommended remedial measures**. The Independent Engineer shall send a copy of its O&M Inspection Report along with the video recording captured during such inspection, to the Authority and the Concessionaire within 7 (seven) days of the inspection.

6.5 The Independent Engineer may inspect the Project more than once in a month, if any lapses, defects or deficiencies require such inspections.

6.6 The Independent Engineer shall in its O&M Inspection Report specify the tests, if any, that the Concessionaire shall carry out, or cause to be carried out, for the purpose of determining that the Project 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 Concessionaire in this behalf.

6.7 In respect of any defect or deficiency referred to in Paragraph 3 of Schedule- K, the Independent 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.

6.8 The Independent Engineer shall determine if any delay has occurred in completion of repair or remedial works in accordance with the Agreement, and shall also determine the Damages, if any, payable by the Concessionaire to the Authority for such delay.

6.9 The Independent Engineer shall examine the request of the Concessionaire for closure of any lane(s) of the carriageway for undertaking maintenance/repair thereof, keeping in view the need to minimize disruption in traffic and the time required for completing such maintenance/repair in accordance with Good Industry Practice. It shall grant permission with such modifications, as it may deem necessary, within 3 (three) days of receiving a request from the Concessionaire. Upon expiry of the permitted period of closure, the Independent Engineer shall monitor the re-opening of such lane(s), and in case of delay, determine the Damages payable by the Concessionaire to the Authority under Clause 17.7.

6.10 The Independent Engineer shall monitor and review the curing of defects and deficiencies by the Concessionaire as set forth in Clause 19.4.

6.11 In the event that the Concessionaire notifies the Independent Engineer of any modifications that it proposes to make to the Project, the Independent Engineer shall review the same and send its comments to the Authority and the Concessionaire within 15 (fifteen) days of receiving the proposal.

6.12 The Independent Engineer shall undertake traffic sampling, as and when required by the Authority, under and in accordance with the provisions of this Agreement.

6.13 Upon reference from the Authority, the Independent Engineer shall undertake the assessment of cost of civil works, as per applicable schedule of rates, in accordance with the Agreement

7 Termination

7.1 At any time, not earlier than 90 (ninety) days prior to Termination but not later than 15 (fifteen) days prior to such Termination, the Independent Engineer shall, in the presence of a representative of the Concessionaire, inspect the Project for determining compliance by

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the Concessionaire with the Divestment Requirements set forth in Clause 38.1 and, if required, cause tests to be carried out at the Concessionaire's cost for determining such compliance. If the Independent Engineer determines that the status of the Project is such that its repair and rectification would require a larger amount than the sum set forth in Clause 39.2, it shall recommend retention of the required amount in the Escrow Account and the period of retention thereof.

7.2 The Independent Engineer shall inspect the Project once in every 15 (fifteen) days during a period of 90 (ninety) days after Termination for determining the liability of the Concessionaire under Article 39, in respect of the defects or deficiencies specified therein. If any such defect or deficiency is found by the Independent Engineer, it shall make a report in reasonable detail and send it forthwith to the Authority and the Concessionaire.

8 Determination of costs and time

8.1 The Independent Engineer shall determine the costs, and/or their reasonableness, that are required to be determined by it under the Agreement.

8.2 The Independent Engineer shall determine the period, or any extension thereof, that is required to be determined by it under the Agreement.

9 Assistance in Dispute resolution

9.1 When called upon by either Party in the event of any Dispute, the Independent Engineer shall mediate and assist the Parties in arriving at an amicable settlement.

9.2 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 Independent Engineer shall specify such meaning, scope and nature by issuing a reasoned written statement relying on good industry practice and authentic literature.

10 Other duties and functions

The Independent Engineer shall perform all other duties and functions specified in the Agreement.

11 Miscellaneous

11.1 The Independent Engineer shall notify its programmer of inspection to the Authority and to the Concessionaire, who may, in their discretion, depute their respective representatives to be present during the inspection.

11.2 A copy of all communications, comments, instructions, Drawings or Documents sent by the Independent Engineer to the Concessionaire pursuant to this TOR, and a copy of all the test results with comments of the Independent Engineer thereon shall be furnished by the Independent Engineer to the Authority forthwith.

11.3 The Independent Engineer shall obtain, and the Concessionaire shall furnish in 2 (two) …….. Copies thereof, all communications and reports required to be submitted, under this Agreement, by the Concessionaire to the Independent Engineer, whereupon the Independent Engineer shall send 1 (one) of the copies to the Authority along with its comments thereon.

11.4 The Independent 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.

11.5 Upon completion of its assignment hereunder, the Independent Engineer shall duly classify and list all Drawings, Documents, results of tests and other relevant records, and hand them

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over to the Authority or such other person as the Authority may specify, and obtain written receipt thereof. Two copies of the said documents shall also be furnished in their editable digital format or in such other medium or manner as may be acceptable to the Authority.

11.6 Wherever no period has been specified for delivery of services by the Independent Engineer, the Independent Engineer shall act with the efficiency and urgency necessary for discharging its functions in accordance with Good Industry Practice.

12. Assistance to Authority in review of book of accounts

12.1 Upon receipt of copy of books of accounts from Authority, the Independent Engineer shall review the Escrow account statements with respect to the provisions of the Escrow agreement, books of accounts for information pertaining (a) the traffic count (b) Fee determination thereof, and (c) Project costs, and (d) such other information relating or resulting from other duties and functions of Independent Engineer in accordance with the Agreement, as the Authority may reasonably require and submit its report within 10 days.

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SCHEDULE -O

(See Clause 31.1.2)

ESCROW AGREEMENT

THIS ESCROW AGREEMENT is entered into on this the day of 20 AMONGST

1 Limited, a company incorporated under the provisions of the Companies Act, 2013 and having its registered office at (hereinafter referred to as the "Concessionaire" which expression shall, unless repugnant to the context or meaning thereof, include its successors, permitted assigns and substitutes);

2 (insert name and particulars of Lenders' Representative) and having its registered office at acting for and on behalf of the Senior Lenders as their duly authorized agent with regard to matters arising out of or in relation to this Agreement (hereinafter referred to as the "Lenders' Representative" which expression shall, unless repugnant to the context or meaning thereof, include its successors and substitutes);

3 (insert name and particulars of the Escrow Bank) and having its registered office at (hereinafter referred to as the "Escrow Bank" which expression shall, unless repugnant to the context or meaning thereof, include its successors and substitutes); and

4 The President of India/ Governor of represented by and having its principal offices at (hereinafter referred to as the "Authority" which expression shall, unless repugnant to the context or meaning thereof, include its administrators, successors and assigns).

WHEREAS:

(A) The Authority has entered into a Concession Agreement dated with the Concessionaire (the "Concession Agreement") for the Project (the "Project") on design, build, operate and transfer (the "DBOT Annuity or Hybrid Annuity") basis, and a copy of which is annexed hereto and marked as Annexure-A to form part of this Agreement.

(B) Senior Lenders have agreed to finance the Project in accordance with the terms and conditions set forth in the Financing Agreements.

(C) The Concession Agreement requires the Concessionaire to establish an Escrow Account, inter alia, on the terms and conditions stated therein.

NOW, THEREFORE, in consideration of the foregoing and the respective covenants and agreements set forth in this Agreement, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, the Parties agree as follows:

1 DEFINITIONS AND INTERPRETATION

1.1 Definitions

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:

"Agreement" means this Escrow Agreement and any amendment thereto made in accordance with the provisions contained herein;

"Concession Agreement" means the Concession Agreement referred to in Recital (A) above and annexed hereto as Annexure-A, and shall include all of its Recitals and Schedules and any amendments made thereto in accordance with the provisions contained in this behalf therein;

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"Cure Period" means the period specified in this Agreement for curing any breach or default of any provision of this Agreement by the Concessionaire, and shall commence from the date on which a notice is delivered by the Authority or the Lenders' Representative, as the case may be, to the Concessionaire asking the latter to cure the breach or default specified in such notice;

"Escrow Account" means an escrow account established in terms of and under this Agreement, and shall include the Sub-Accounts;

"Escrow Default" shall have the meaning ascribed thereto in Clause 6.1;

"Lenders' Representative" means the person referred to as the Lenders' Representative in the foregoing Recitals;

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

"Payment Date" means, in relation to any payment specified in Clause 4.1, the date(s) specified for such payment; and

"Sub-Accounts" means the respective sub-accounts of the Escrow Account, into which the monies specified in Clause 4.1 would be credited every month and paid out if due, and if not due in a month then appropriated proportionately in such month and retained in the respective sub-accounts and paid out therefrom on the Payment Date(s).

1.2 Interpretation

1.2.1 References to Lenders' Representative shall, unless repugnant to the context or meaning thereof, mean references to the Lenders' Representative, acting for and on behalf of Senior Lenders.

1.2.2 The words and expressions beginning with capital letters and defined in this Agreement shall have the meaning ascribed thereto herein, and the words and expressions used in this Agreement and not defined herein but defined in the Concession Agreement shall, unless repugnant to the context, have the meaning ascribed thereto in the Concession Agreement.

1.2.3 References to Clauses are, unless stated otherwise, references to Clauses of this Agreement.

1.2.4 The rules of interpretation stated in Clauses 1.2, 1.3 and 1.4 of the Concession Agreement shall apply, mutatis mutandis, to this Agreement.

2 ESCROW ACCOUNT

2.1 Escrow Bank to act as trustee

2.1.1 The Concessionaire hereby appoints the Escrow Bank to act as trustee for the Authority, the Lenders' Representative and the Concessionaire in connection herewith and authorizes the Escrow Bank to exercise such rights, powers, authorities and discretion as are specifically delegated to the Escrow Bank by the terms hereof together with all such rights, powers, authorities and discretion as are reasonably incidental hereto, and the Escrow Bank accepts such appointment pursuant to the terms hereof.

2.1.2 The Concessionaire hereby declares that all rights, title and interest in and to the Escrow Account shall be vested in the Escrow Bank and held in trust for the Authority, the Lenders' Representative and the Concessionaire, and applied in accordance with the terms of this Agreement. No person other than the Authority, the Lenders' Representative and the Concessionaire shall have any rights hereunder as the beneficiaries of or as third party beneficiaries under this Agreement.

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2.2 Acceptance of Escrow Bank

The Escrow Bank hereby agrees to act as such and to accept all payments and other amounts to be delivered to and held by the Escrow Bank pursuant to the provisions of this Agreement. The Escrow Bank shall hold and safeguard the Escrow Account during the term of this Agreement and shall treat the amount in the Escrow Account as monies deposited by the Concessionaire, Senior Lenders or the Authority with the Escrow Bank. In performing its functions and duties under this Agreement, the Escrow Bank shall act in trust for the benefit of, and as agent for, the Authority, the Lenders' Representative and the Concessionaire or their nominees, successors or assigns, in accordance with the provisions of this Agreement.

2.3 Establishment and operation of Escrow Account

2.3.1 Within 30 (thirty) days from the date of this Agreement, and in any case prior to the Appointed Date, the Concessionaire shall open and establish the Escrow Account with the (name of Branch) Branch of the Escrow Bank. The Escrow Account shall be denominated in Rupees.

2.3.2 The Escrow Bank shall maintain the Escrow Account in accordance with the terms of this Agreement and its usual practices and applicable regulations, and pay the maximum rate of interest payable to similar customers on the balance in the said account from time to time.

2.3.3 The Escrow Bank and the Concessionaire shall, after consultation with the Lenders' Representative, agree on the detailed mandates, terms and conditions, and operating procedures for the Escrow Account, but in the event of any conflict or inconsistency between this Agreement and such mandates, terms and conditions, or procedures, this Agreement shall prevail.

2.4 Escrow Bank's fee

The Escrow Bank shall be entitled to receive its fee and expenses in an amount, and at such times, as may be agreed between the Escrow Bank and the Concessionaire. For the avoidance of doubt, such fee and expenses shall form part of the O&M Expenses and shall be appropriated from the Escrow Account in accordance with Clause 4.1.

2.5 Rights of the Parties

2.5.1 Save and except as otherwise provided in the Concession Agreement, the rights of the Authority, the Lenders' Representative and the Concessionaire in the monies held in the Escrow Account are set forth in their entirety in this Agreement and the Authority, the Lenders' Representative and the Concessionaire shall have no other rights against or to the monies in the Escrow Account.

2.5.2 The Authority shall have the right to access a secure facility for real-time online viewing and downloading of the Escrow Account statements at all times during the Concession Period.

2.6 Substitution of the Concessionaire

The Parties hereto acknowledge and agree that upon substitution of the Concessionaire with the Nominated Company, pursuant to the Substitution Agreement, it shall be deemed for the purposes of this Agreement that the Nominated Company is a Party hereto and the Nominated Company shall accordingly be deemed to have succeeded to the rights and obligations of the Concessionaire under this Agreement on and with effect from the date of substitution of the Concessionaire with the Nominated Company.

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3 DEPOSITS INTO ESCROW ACCOUNT

3.1 Deposits by the Concessionaire

3.1.1 The Concessionaire agrees and undertakes that it shall deposit into and/or credit the Escrow Account with:

(a) All monies received in relation to the Project from any source, including the Senior Lenders, lenders of Subordinated Debt and the Authority;

(b) All funds received by the Concessionaire from its shareholders, in any manner or form;

(c) Any other revenues; rentals, deposits or capital receipts, as the case may be, from or in respect of the Project; and

(d) All proceeds received pursuant to any insurance claims.

Notwithstanding anything to the contrary contained in this Agreement, in the event the Concessionaire fails to pay the Concession Fee for 2 (two) consecutive months, the Authority shall have right to recover such Concession Fee due and payable to it by the Concessionaire from the Fee collected through electronic toll collection

3.1.2 The Concessionaire may at any time make deposits of its other funds into the Escrow Account, provided that the provisions of this Agreement shall apply to such deposits.

3.2 Deposits by the Authority

The Authority agrees and undertakes that, as and when due and payable, it shall deposit into and/or credit the Escrow Account with:

(a) Grant and any other monies disbursed by the Authority to the Concessionaire;

(b) All revenues collected by the Authority in exercise of its rights under the Concession Agreement; and

(c) Termination Payments

Provided that, notwithstanding the provisions of Clause 4.1.1, the Authority shall be entitled to appropriate from the aforesaid amounts, any amounts due and payable to it by the Concessionaire, and the balance remaining shall be deposited into the Escrow Account.

Provided further that the Authority may, until the Escrow Account is opened and established, deposit the payment for maintenance as provided under Clause 6.2.1 of the Concession Agreement into a designated bank account of the Concessionaire.

3.3 Deposits by Senior Lenders

The Lenders' Representative agrees, confirms and undertakes that the Senior Lenders shall deposit into and/or credit the Escrow Account with all disbursements made by them in relation to or in respect of the Project; provided that notwithstanding anything to the contrary contained in this Agreement, the Senior Lenders shall be entitled to make direct payments to the EPC Contractor under and in accordance with the express provisions contained in this behalf in the Financing Agreements.

3.4 Interest on deposits

The Escrow Bank agrees and undertakes that all interest accruing on the balances of the Escrow Account shall be credited to the Escrow Account; provided that the Escrow Bank shall be entitled to appropriate therefrom the fee and expenses due to it from the

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Concessionaire in relation to the Escrow Account and credit the balance remaining to the Escrow Account.

4 WITHDRAWALS FROM ESCROW ACCOUNT

4.1 Withdrawals during Concession Period

4.1.1 At the beginning of every month, or at such shorter intervals as the Lenders' Representative and the Concessionaire may by written instructions determine, the Escrow Bank shall withdraw amounts from the Escrow Account and appropriate them in the following order by depositing such amounts in the relevant Sub-Accounts for making due payments, and if such payments are not due in any month, then retain such monies in such Sub-Accounts and pay out therefrom on the Payment Date(s):

(a) All taxes due and payable by the Concessionaire for and in respect of the Project;

(b) [Deleted];

(c) All payments relating to construction of the Project, subject to and in accordance with the conditions, if any, set forth in the Financing Agreements;

(d) O&M Expenses, subject to the ceiling, if any, set forth in the Financing Agreements;

(e) O&M Expenses and other costs and expenses incurred by the Authority in accordance with the provisions of the Concession Agreement, and certified by the Authority as due and payable to it;

(f) Any amounts due and payable to the Authority;

(g) Monthly proportionate provision of Debt Service due in an Accounting Year;

(h) all payments and Damages certified by the Authority as due and payable to it by the Concessionaire pursuant to the Concession Agreement;

(i) Monthly proportionate provision of debt service payments due in an Accounting Year in respect of Subordinated Debt;

(j) any reserve requirements set forth in the Financing Agreements; and

(k) Balance, if any, in accordance with the instructions of the Concessionaire.

4.1.2 No later than 60 (sixty) days prior to the commencement of each Accounting Year, the Concessionaire shall provide to the Escrow Bank, with prior written approval of the Lenders' Representative, details of the amounts likely to be required for each of the payment obligations set forth in this Clause 4.1; provided that such amounts may be subsequently modified, with prior written approval of the Lenders' Representative, if fresh information received during the course of the year makes such modification necessary.

4.2 Withdrawals upon Termination upon Termination of the Concession Agreement, all amounts standing to the credit of the Escrow Account shall, notwithstanding anything in this Agreement, be appropriated and dealt with in the following order:

(a) All taxes due and payable by the Concessionaire for and in respect of the Project;

(b) [Deleted];

(c) 90% (ninety per cent) of Debt Due excluding Subordinated Debt;

(d) all payments and Damages certified by the Authority as due and payable to it by the Concessionaire pursuant to the Concession Agreement, including any claims in connection with or arising out of Termination;

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निदेशक / Director
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(e) Retention and payments arising out of, or in relation to, liability for defects and deficiencies set forth in Article 33 of the Concession Agreement;

(f) Outstanding Debt Service including the balance of Debt Due;

(g) Outstanding Subordinated Debt;

(h) Incurred or accrued O&M Expenses;

(i) Any other payments required to be made under the Concession Agreement; and

(j) Balance, if any, in accordance with the instructions of the Concessionaire: Provided that the disbursements specified in Sub-clause (i) of this Clause 4.2 shall be undertaken only after the Vesting Certificate has been issued by the Authority.

4.3 Application of insufficient funds:

Funds in the Escrow Account shall be applied in the serial order of priority set forth in Clauses 4.1 and 4.2, as the case may be. If the funds available are not sufficient to meet all the requirements, the Escrow Bank shall apply such funds in the serial order of priority until exhaustion thereof.

4.4 Application of insurance proceeds

Notwithstanding anything in this Agreement, the proceeds from all insurance claims, except life and injury, shall be deposited into and/or credited to the Escrow Account and utilized for any necessary repair, reconstruction, reinstatement, replacement, improvement, delivery or installation of the Project, and the balance remaining, if any, shall be applied in accordance with the provisions contained in this behalf in the Financing Agreements.

4.5 Withdrawals during Suspension

Notwithstanding anything to the contrary contained in this Agreement, the Authority may exercise all or any of the rights of the Concessionaire during the period of Suspension under Article 36 of the Concession Agreement. Any instructions given by the Authority to the Escrow Bank during such period shall be complied with as if such instructions were given by the Concessionaire under this Agreement and all actions of the Authority hereunder shall be deemed to have been taken for and on behalf of the Concessionaire.

5 OBLIGATIONS OF THE ESCROW BANK

5.1 Segregation of funds

Monies and other property received by the Escrow Bank under this Agreement shall, until used or applied in accordance with this Agreement, be held by the Escrow Bank in trust for the purposes for which they were received, and shall be segregated from other funds and property of the Escrow Bank.

5.2 Notification of balances

7(seven) business days prior to each Payment Date (and for this purpose the Escrow Bank shall be entitled to rely on an affirmation by the Concessionaire and/or the Lenders' Representative as to the relevant Payment Dates), the Escrow Bank shall notify the Lenders' Representative of the balances in the Escrow Account and Sub-Accounts as at the close of business on the immediately preceding business day.

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5.3 Communications and notices

In discharge of its duties and obligations hereunder, the Escrow Bank:

(a) May, in the absence of bad faith or gross negligence on its part, rely as to any matters of fact which tight reasonably be expected to be within the knowledge of the Concessionaire upon a certificate signed by or on behalf of the Concessionaire;

(b) may, in the absence of bad faith or gross negligence on its part, rely upon the authenticity of any communication or document believed by it to be authentic;

(c) shall, within 5 (five) business days after receipt, deliver a copy to the Lenders' Representative of any notice or document received by it in its capacity as the Escrow Bank from the Concessionaire or any other person hereunder or in connection herewith; and

(d) shall, within 5 (five) business days after receipt, deliver a copy to the Concessionaire of any notice or document received by it from the Lenders' Representative in connection herewith.

5.4 No set off

The Escrow Bank agrees not to claim or exercise any right of set off, banker's lien or other right or remedy with respect to amounts standing to the credit of the Escrow Account. For the avoidance of doubt, it is hereby acknowledged and agreed by the Escrow Bank that the monies and properties held by the Escrow Bank in the Escrow Account shall not be considered as part of the assets of the Escrow Bank and being trust property, shall in the case of bankruptcy or liquidation of the Escrow Bank, be wholly excluded from the assets of the Escrow Bank in such bankruptcy or liquidation.

5.5 Regulatory approvals

The Escrow Bank shall use its best efforts to procure, and thereafter maintain and comply with, all regulatory approvals required for it to establish and operate the Escrow Account. The Escrow Bank represents and warrants that it is not aware of any reason why such regulatory approvals will not ordinarily be granted to the Escrow Bank.

6 ESCROW DEFAULT

6.1 Escrow Default

6.1.1 Following events shall constitute an event of default by the Concessionaire (an "Escrow Default") unless such event of default has occurred as a result of Force Majeure or any act or omission of the Authority or the Lenders' Representative:

(a) the Concessionaire commits breach of this Agreement by failing to deposit any receipts into the Escrow Account as provided herein and fails to cure such breach by depositing the same into the Escrow Account within a Cure Period of 5 (five) business days;

(b) the Concessionaire causes the Escrow Bank to transfer funds to any account of the Concessionaire in breach of the terms of this Agreement and fails to cure such breach by depositing the relevant funds into the Escrow Account

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or any Sub-Account in which such transfer should have been made, within a Cure Period of 5 (five) business days; or

(c) the Concessionaire commits or causes any other breach of the provisions of this Agreement and fails to cure the same within a Cure Period of 5 (five) business days.

6.1.2 Upon occurrence of an Escrow Default, the consequences thereof shall be dealt with under and in accordance with the provisions of the Concession Agreement.

7 TERMINATION OF ESCROW AGREEMENT

7.1 Duration of the Escrow Agreement

This Agreement shall remain in full force and effect so long as any sum remains to be advanced or is outstanding from the Concessionaire in respect of the debt, guarantee or financial assistance received by it from the Senior Lenders, or any of its obligations to the Authority remain to be discharged, unless terminated earlier by consent of all the Parties or otherwise in accordance with the provisions of this Agreement.

7.2 Substitution of Escrow Bank

The Concessionaire may, by not less than 45 (forty five) days prior notice to the Escrow Bank, the Authority and the Lenders' Representative, terminate this Agreement and appoint a new Escrow Bank, provided that the new Escrow Bank is acceptable to the Lenders' Representative and arrangements are made satisfactory to the Lenders' Representative for transfer of amounts deposited in the Escrow Account to a new Escrow Account established with the successor Escrow Bank.

The termination of this Agreement shall take effect only upon coming into force of an Escrow Agreement with the substitute Escrow Bank.

7.3 Closure of Escrow Account

The Escrow Bank shall, at the request of the Concessionaire and the Lenders' Representative made on or after the payment by the Concessionaire of all outstanding amounts under the Concession Agreement and the Financing Agreements including the payments specified in Clause 4.2, and upon confirmation of receipt of such payments, close the Escrow Account and Sub- Accounts and pay any amount standing to the credit thereof to the Concessionaire. Upon closure of the Escrow Account hereunder, the Escrow Agreement shall be deemed to be terminated.

8 SUPPLEMENTARY ESCROW AGREEMENT

8.1 Supplementary escrow agreement

The Lenders' Representative and the Concessionaire shall be entitled to enter into a supplementary escrow agreement with the Escrow Bank providing, inter alia, for detailed procedures and documentation for withdrawals from Sub- Accounts pursuant to Clause 4.1.1 and for matters not covered under this Agreement such as the rights and obligations of Senior Lenders and lenders of Subordinated Debt, investment of surplus funds, restrictions on withdrawals by the Concessionaire in

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the event of breach of this Agreement or upon occurrence of an Escrow Default, procedures relating to operation of the Escrow Account and withdrawal therefrom, reporting requirements and any matters incidental thereto; provided that such supplementary escrow agreement shall not contain any provision which is inconsistent with this Agreement and in the event of any conflict or inconsistency between provisions of this Agreement and such supplementary escrow agreement, the provisions of this Agreement shall prevail.

9 INDEMNITIES

9.1 General indemnity

9.1.1 The Concessionaire will indemnify, defend and hold the Authority, Escrow Bank and the Senior Lenders, acting through the Lenders' Representative, harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of any breach by the Concessionaire of any of its obligations under this Agreement or on account of failure of the Concessionaire to comply with Applicable Laws and Applicable Permits.

9.1.2 The Authority will indemnify, defend and hold the Concessionaire harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of failure of the Authority to fulfil any of its obligations under this Agreement materially and adversely affecting the performance of the Concessionaire's obligations under the Concession Agreement or this Agreement other than any loss, damage, cost and expense arising out of acts done in discharge of their lawful functions by the Authority, its officers, servants and agents.

9.1.3 The Escrow Bank will indemnify, defend and hold the Concessionaire harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of failure of the Escrow Bank to fulfil its obligations under this Agreement materially and adversely affecting the performance of the Concessionaire's obligations under the Concession Agreement other than any loss, damage, cost and expense, arising out of acts done in discharge of their lawful functions by the Escrow Bank, its officers, servants and agents.

9.2 Notice and contest of claims

In the event that any Party hereto receives a claim from a third party in respect of which it is entitled to the benefit of an indemnity under Clause 9.1 or in respect of which it is entitled to reimbursement (the "Indemnified Party"), it shall notify the other Party responsible for indemnifying such claim hereunder (the "Indemnifying Party") within 15 (fifteen) days of receipt of the claim 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. In the event that the Indemnifying Party wishes to contest or dispute the claim, it may conduct the proceedings in the name of the Indemnified Party and shall bear all costs involved in contesting the same. The Indemnified Party shall provide all cooperation and assistance in contesting any claim and shall sign all such writings and documents as the Indemnifying Party may reasonably require.

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10 DISPUTE RESOLUTION

10.1 Dispute resolution

10.1.1 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) among the Parties, and so notified in writing by any Party to the other Parties shall, in the first instance, be attempted to be resolved amicably.

10.1.2 Any dispute, difference or claim arising out of or in connection with this Agreement, which has not been resolved amicably, shall be decided finally by reference to Conciliation in accordance with the provisions of the Arbitration and Conciliation Act, 1996. The provision relating to Conciliation under the Arbitration and Conciliation Act, 1996 shall cease to apply once the provisions relating to substitution of conciliation process by mediation are notified under Mediation Act, 2023. Thereafter "Conciliation" herein be referred to as Mediation as per the provisions of the Mediation Act 2023.

10.1.3 Any dispute the sum of which is of value less than Rupees 10 Crores which remains unresolved through Conciliation under Arbitration and Conciliation Act, 1996 or otherwise, will be referred either to SAROD, (a Society registered under Society's Act, 1860 vide Registration no. S/RS/SW1049/2013) duly represented by Government/Authority and National Highways Builders Federation (NHBF) or to India International Arbitration Centre ("IIAC").

10.1.3.1 The appointment of Tribunal, Code of conduct for Arbitrators and fees and expenses of SAROD/IIAC and the Arbitral Tribunal shall also be governed by the Rules of SAROD as amended from time to time or India International Arbitration Centre Act, 2019 and the regulations thereunder as amended from time to time.

10.1.3.2 The Arbitrators shall issue a reasoned award and such award shall be final and binding on the Parties. The venue of arbitration shall be Delhi and the language of arbitration shall be English.

10.1.4 Notwithstanding anything to the contrary contained in this Agreement, it is agreed that any dispute, difference or claim arising out of or in connection with this Agreement the sum of which is of value Rupees 10 Crores or above, which has not been agreed upon/ reached settlement by the parties through Conciliation under Arbitration and Conciliation Act, 1996 or otherwise, shall not be referred to Arbitration. It is further agreed that all declaratory disputes or non-monetary disputes shall not be referred to Arbitration. For the avoidance of doubt, it is clarified that nothing herein shall prevent the Parties from seeking resolution of such Disputes through civil courts.

11. MISCELLANEOUS PROVISIONS

11.1 Governing law and jurisdiction

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

11.2 Waiver of sovereign immunity The Authority unconditionally and irrevocably:

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(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 Authority 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 judgment 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 judgment that may be made or given in connection therewith).

11.3 Priority of agreements

In the event of any conflict between the Concession Agreement and this Agreement, the provisions contained in the Concession Agreement shall prevail over this Agreement.

11.4 Alteration of terms

All additions, amendments, modifications and variations to this Agreement shall be effectual and binding only if in writing and signed by the duly authorized representatives of the Parties.

11.5 Waiver

11.5.1 Waiver by any Party of a default by another 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.

11.5.2 Neither the failure by any 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 any Party to another Party shall be treated or deemed as waiver of such breach or acceptance of any variation or the relinquishment of any such right hereunder.

11.6 No third party beneficiaries This Agreement is solely for the benefit of the Parties and no other person or entity shall have any rights hereunder.

11.7 Survival

11.7.1 Termination of this Agreement:

(a) shall not relieve the Parties of any obligations hereunder which expressly or by implication survive termination hereof; and

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(b) except as otherwise provided in any provision of this Agreement expressly limiting the liability of either Party, shall 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.

11.7.2 All obligations surviving the cancellation, expiration or termination of this Agreement shall only survive for a period of 3 (three) years following the date of such termination or expiry of this Agreement.

11.8 **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 dispute resolution under Clause 10.1 of this Agreement or otherwise.

11.9 Successors and assigns

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

11.10 Notices

All notices or other communications to be given or made under this Agreement shall be in writing and shall either be delivered personally or sent by courier or registered post with an additional copy to be sent by e-mail. The address for service of each Party, its e-mail are set out under its name on the signing pages hereto. A notice shall be effective upon actual receipt thereof, save that where it is received after 5.30 (five thirty) p.m. on a business day, or on a day that is not a business day, the notice shall be deemed to be received on the first business day following the date of actual receipt. Without prejudice to the foregoing, a Party giving or making a notice or communication e-mail shall promptly deliver a copy thereof personally, or send it by courier or registered post to the addressee of such notice or communication. It is hereby agreed and acknowledged that any Party may by notice change the address to which such notices and communications to it are to be delivered or mailed. Such change shall be effective when all the Parties have notice of it.

11.11 **Language**

All notices, certificates, correspondence and proceedings under or in connection with this Agreement shall be in English.

11.12 **Authorized representatives**

Each of the Parties shall, by notice in writing, designate their respective authorized representatives through whom only all communications shall be made. A Party

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hereto shall be entitled to remove and/or substitute or make fresh appointment of such authorized representative by similar notice.

11.13 Original Document

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

IN WITNESS WHEREOF THE PARTIES HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN.

THE COMMON SEAL OF CONCESSIONAIRE has been affixed pursuant to the resolution passed by the by theBoard of Directors of the Concessionaire has been affixed For and on behalf of pursuant to the resolution passed by the SENIOR LENDERS by the Board of Directors of the Concessionaire Lenders Representative: at its meeting held on the day of 20 hereunto affixed in the presence of , Director, who has signed these presents in token thereofand Company Secretary / Authorized Officer who has countersigned the same in token thereof[¥]

AND DELIVERED
For and on behalf of SENIOR LENDERS by the Lender's representative:

(Signature)

(Name)

(Designation)

(Address)

(Fax No.)

(E-mail address)

SIGNED, SEALED AND

DELIVERED

For and on behalf of

THE ESCROW BANK by

(Signature)

(Name)

(Designation)

(Signature)

(Name)

(Designation)

(Address)

(Fax N°)

(E-mail address)

SIGNED, SEALED AND

DELIVERED

For and on behalf of

THE AUTHORITY by

(Signature)

(Name)

(Designation)

[¥]To be affixed in accordance with the articles of association of the Concessionaire and the resolution passed by its Board of Directors.

हरलीन कौर / Harleen Kaur
निदेशक / Director
सड़क परिवहन एवं राजमार्ग मंत्रालय
Ministry of Road Transport & Highways
भारत सरकार / Govt. of India
नई दिल्ली / New Delhi-110001

(Address) (Address)

(Fax No.) (Fax No.)

(E-mail address) (E-mail address)

SIGNED, SEALED

In the presence of:

हरलीन कौर / Harleen Kaur
निदेशक / Director
सड़क परिवहन एवं राजमार्ग मंत्रालय
Ministry of Road Transport & Highways
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SCHEDULE - P

(See Clause 33.2.1)

PANEL OF CHARTERED ACCOUNTANTS

1 Panel of Chartered Accountants

Pursuant to the provisions of Clause 33.2.1 of the Agreement, the Authority and the Concessionaire shall prepare a mutually agreed panel of 10 (ten) reputable firms of Chartered Accountants having their registered offices in India (the "Panel of Chartered Accountants"). The criteria for preparing such Panel and the procedure to be adopted in this behalf shall be as set forth in this Schedule-P.

2 Invitation for empanelment

2.1 The Authority shall invite offers from all reputed firms of Chartered Accountants who fulfil the following eligibility criteria, namely:

(a) the firm should have conducted statutory audit of the annual accounts of at least one hundred companies registered under the Companies Act, 1956/2013, including any re-enactment or amendment thereof, of which at least ten should have been public sector undertakings;

(b) The firm should have at least 5 (five) practicing Chartered Accountants on its rolls, each with a minimum experience of ten years in the profession;

(c) The firm or any of its partners should not have been disqualified or black-listed by the Comptroller and Auditor General of India or the Authority; and

(d) The firm should have an office in the State or in an adjacent State with at least 2 (two) practicing Chartered Accountants on its rolls in such State.

2.2 Interested firms meeting the eligibility criteria shall be required to submit a statement of their capability including the bio-data of all the practicing Chartered Accountants on its rolls. In particular, each firm shall be required to furnish year-wise information relating to the names of all the companies with an annual turnover exceeding Rs. 25,00,00,000 (Rs. twenty-five crore) whose annual accounts were audited by such firm in any of the preceding 5 (five) Accounting Years

3 Evaluation and selection

3.1 The information furnished by each firm shall be scrutinized and evaluated by the Authority and 1 (one) point shall be awarded for each annual audit of the companies specified in Paragraph 2.2 above. (For the avoidance of doubt and by way of illustration, a firm which has conducted audit of the annual accounts of any such company for 5 (five) years shall be awarded 5 (five) points).

3.2 The Authority shall prepare a list of all the eligible firms along with the points scored by each such firm and 10 (ten) firms scoring the highest points shall be identified and included in the draft Panel of Chartered Accountants.

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4 Consultation with the Concessionaire

The Authority shall convey the aforesaid panel of firms to the Concessionaire for scrutiny and comments, if any. The Concessionaire shall be entitled to scrutinize the relevant records of the Authority to ascertain whether the selection of firms has been undertaken in accordance with the prescribed procedure and it shall send its comments, if any, to the Authority within 15 (fifteen) days of receiving the aforesaid panel.

5 Mutually agreed panel

5.1 The Authority shall, after considering all relevant factors including the comments, if any, of the Concessionaire, finalize and constitute a panel of 10 (ten) firms which shall be deemed to be the mutually agreed Panel of Chartered Accountants.

5.2 After completion of every 5 (five) years from the date of preparing the mutually agreed Panel of Chartered Accountants, or such earlier period as may be agreed between the Authority and the Concessionaire, a new panel shall be prepared in accordance with the provisions of this Schedule-P.

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SCHEDULE - Q

(See Clause 38.4)

VESTING CERTIFICATE

1 The[The President of India through the Ministry of Road Transport & Highways, Government of India represented by: Director General (Road Development) & Special Secretary, Ministry of Road Transport & Highways, Transport Bhawan, 1, Parliament Street, New Delhi 110001/ CE (NH) PWD, State of _____; <address> /Director General (Border Road). _____/Chairman, National Highways Authority of India, G-5 & 6, Sector 10, Dwarka, New Delhi-110075/MD, NHIDCL, PTI Building, Parliament Street, New Delhi/DGBR <.....address>] (strike out whichever is not applicable) (the **"Authority"**) refers to the Concession Agreement dated …….. (the **"Agreement"**) entered into between the Authority and ……. (the **"Concessionaire"**) for [Four-Laning and subsequent Six-Laning] of the ******* Section of National Highway No.*** (the **"Project Highway"**) on design, build, operate and transfer (**"DBOT Annuity or Hybrid Annuity"**) basis.

2 The Authority hereby acknowledges compliance and fulfilment by the Concessionaire of the Divestment Requirements set forth in Clause 38.1 of the Agreement on the basis that upon issue of this Vesting Certificate, the Authority shall be deemed to have acquired, and all title and interest of the Concessionaire in or about the Project shall be deemed to have vested unto the Authority, free from any encumbrances, charges and liens whatsoever.

3 Notwithstanding anything to the contrary contained hereinabove, it shall be a condition of this Vesting Certificate that nothing contained herein shall be construed or interpreted as waiving the obligation of the Concessionaire to rectify and remedy any defect or deficiency in any of the Divestment Requirements and/or relieving the Concessionaire in any manner of the same.

Signed this…… day of……., 20……. At……..

AGREED, ACCEPTED AND SIGNED	SIGNED, SEALED AND DELIVERED
For and on behalf of	for and on behalf of
CONCESSIONAIRE by:	AUTHORITY by:
(Signature)	(Signature)
(Name)	(Name)
(Designation)	(Designation)
(Address)	(Address)

In the presence of:

1. 2.

हरलीन कौर / Harleen Kaur
निदेशक / Director
सड़क परिवहन एवं राजमार्ग मंत्रालय
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SCHEDULE - R

(See Clause 40.3.1)

SUBSTITUTION AGREEMENT

THIS SUBSTITUTION AGREEMENT is entered into on this the……day of……..20…….

AMONGST

1 The [The President of India through the Ministry of Road Transport & Highways, Government of India represented by: Director General (Road Development) & Special Secretary, Ministry of Road Transport & Highways, Transport Bhawan, 1, Parliament Street, New Delhi 110001/ CE (NH) PWD, State of _____; <address> / Director General (Border Road). _____/Chairman, National Highways Authority of India, G-5 & 6, Sector 10, Dwarka, New Delhi-110075/ MD, NHIDCL, PTI Building, Parliament Street, New Delhi/DGBR <.....address>] (strike out whichever is not applicable) , represented by…….. and having its principal offices at …….. (Hereinafter referred to as the "Authority" which expression shall unless repugnant to the context or meaning thereof include its administrators, successors and assigns);

2 …….Limited, a company incorporated under the provisions of the Companies Act, 2013 and having its registered office at ……. (Hereinafter referred to as the **"Concessionaire"** which expression shall unless repugnant to the context or meaning thereof include its successors and permitted assigns and substitutes);

3 …….. (insert name and particulars of Lenders' Representative) and having its registered office at……., acting for and on behalf of the Senior Lenders as their duly authorized agent with regard to matters arising out of or in relation to this Agreement (hereinafter referred to as the "**Lenders' Representative"**, which expression shall unless repugnant to the context or meaning thereof include its successors and substitutes);

WHEREAS:

(A) The Authority has entered into a Concession Agreement dated……. With the Concessionaire (the **"Concession Agreement"**) for the…….....Project (the **"Project")** on design, build, operate and transfer basis (the **"DBOT Annuity or Hybrid Annuity"),** and a copy of which is annexed hereto and marked as Annexure-A to form part of this Agreement.

(B) Senior Lenders have agreed to finance the Project in accordance with the terms and conditions set forth in the Financing Agreements.

(C) Senior Lenders have requested the Authority to enter into this Substitution Agreement for securing their interests through assignment, transfer and substitution of the Concession to a Nominated Company in accordance with the provisions of this Agreement and the Concession Agreement.

(D) In order to enable implementation of the Project including its financing, construction, operation and maintenance, the Authority has agreed and undertaken to transfer and assign the Concession to a Nominated Company in accordance with the terms and conditions set forth in this Agreement and the Concession Agreement.

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निदेशक / Director
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नई दिल्ली / New Delhi-110001

NOW, THEREFORE, in consideration of the foregoing and the respective covenants and agreements set forth in this Agreement, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, the Parties agree as follows:

1 DEFINITIONS AND INTERPRETATION

1.1 Definitions

In this Substitution Agreement, the following words and expressions shall, unless repugnant to the context or meaning thereof, have the meaning hereinafter respectively assigned to them: **"Agreement"** means this Substitution Agreement and any amendment thereto made in accordance with the provisions contained in this Agreement;

"Financial Default" means occurrence of a material breach of the terms and conditions of the Financing Agreements or a continuous default in Debt Service by the Concessionaire for a minimum period of 3 (three) months;

"Lenders' Representative" means the person referred to as the Lenders' Representative in the foregoing Recitals;

"**Nominated Company"** means (i) a company selected by the Lenders' Representative and proposed to the Authority or selected by the Authority, as the case may be, for substituting the Concessionaire in accordance with the provisions of the Substitution Agreement or (ii) wherever the Selected Bidder/Consortium Members of the Concessionaire are sought to be substituted in accordance Clause 3A of this Agreement, the Concessionaire itself. ;

"Notice of Financial Default" shall have the meaning ascribed thereto in Clause 3.2.1; and

"Parties" means the parties to this Agreement collectively and "Party" shall mean any of the Parties to this Agreement individually.

1.2 Interpretation

1.2.1 References to Lenders' Representative shall, unless repugnant to the context or meaning thereof, mean references to the Lenders' Representative, acting for and on behalf of Senior Lenders.

1.2.2 References to Clauses are, unless stated otherwise, references to Clauses of this Agreement.

1.2.3 The words and expressions beginning with capital letters and defined in this Agreement shall have the meaning ascribed thereto herein, and the words and expressions used in this Agreement and not defined herein but defined in .the Concession Agreement shall, unless repugnant to the context, have the meaning ascribed thereto in the Concession Agreement.

1.2.4 The rules of interpretation stated in Clauses 1.2, 1.3 and 1.4 of the Concession Agreement shall apply, mutatis mutandis, to this Agreement.

2 ASSIGNMENT

2.1 Assignment of rights and title

The Concessionaire hereby agrees to assign the rights, title and interest in the Concession to, and in favor of, the Lenders' Representative pursuant to and in accordance with the provisions of this Agreement and the Concession Agreement by way of security in respect of financing by the Senior Lenders under the Financing Agreements.

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3 SUBSTITUTION OF THE CONCESSIONAIRE

3.1 Rights of substitution

3.1.1 Pursuant to the rights, title and interest assigned under Clause 2.1, the Lenders' Representative shall be entitled to substitute the Concessionaire by a Nominated Company under and in accordance with the provisions of this Agreement and the Concession Agreement. For the avoidance of doubt, it is clarified that the right of the Lenders' Representative to substitute the Concessionaire shall be without prejudice to the right of the Authority to substitute the Concessionaire in accordance with Clause 3.3.3 of this Agreement and the Concession Agreement.

3.1.2 The Authority hereby agrees to substitute the Concessionaire by endorsement on the Concession Agreement in favor of the Nominated Company in accordance with this Agreement. For the avoidance of doubt, it is clarified that the Senior Lenders or the Lenders' Representative shall not be entitled to operate and maintain the Project as Concessionaire either individually or collectively.

3.2 Substitution upon occurrence of Financial Default

3.2.1 Upon occurrence of a Financial Default, the Lenders' Representative may issue a notice to the Concessionaire (the "Notice of Financial Default") along with particulars thereof, and send a copy to the Authority for its information and record. A Notice of Financial Default under this Clause 3 shall be conclusive evidence of such Financial Default and it shall be final and binding upon the Concessionaire for the purposes of this Agreement.

3.2.2 Upon issue of a Notice of Financial Default hereunder, the Lenders' Representative may, without prejudice to any of its rights or remedies under this Agreement or the Financing Agreements, substitute the Concessionaire by a Nominated Company in accordance with the provisions of this Agreement.

3.2.3 At any time after the Lenders' Representative has issued a Notice of Financial Default, it may by notice require the Authority to suspend all the rights of the Concessionaire and undertake the operation and maintenance of the Project in accordance with the provisions of Article 30 of the Concession Agreement, and upon receipt of such notice, the Authority shall undertake Suspension under and in accordance with the provisions of the Concession Agreement. The aforesaid Suspension shall be revoked upon substitution of the Concessionaire by a Nominated Company, and in the event such substitution is not completed within 180 (one hundred and eighty) days from the date of such Suspension, the Authority may terminate the Concession Agreement forthwith by issuing a Termination Notice in accordance with the provisions of the Concession Agreement; Concessionaire

3.3 Substitution upon occurrence of Concessionaire Default

3.3.1 Upon occurrence of a Concessionaire Default, the Authority shall by a notice inform the Lenders' Representative of its intention to issue a Termination Notice and grant 15 (fifteen) days' time to the Lenders' Representative to make a representation, stating the intention to substitute the Concessionaire by a Nominated Company.

3.3.2 In the event that the Lenders' Representative makes a representation to the Authority within the period of 15 (fifteen) days specified in Clause 3.3.1, stating that it intends to substitute the Concessionaire by a Nominated Company, the Lenders' Representative shall be entitled to undertake and complete the substitution of the Concessionaire by a Nominated Company in accordance with the provisions of this Agreement within a period of 180 (one hundred and eighty) days from the date of such representation, and the Authority shall either withhold Termination or undertake Suspension for the aforesaid period of 180 (one hundred and eighty) days; provided that upon written request from the Lenders' Representative and

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the Concessionaire, the Authority shall extend the aforesaid period of 180 (one hundred and eighty) days by a period not exceeding 90 (ninety) days.

3.3.3 Notwithstanding anything to the contrary contained in this Agreement, the Authority reserves the right, in public interest, to substitute the Concessionaire upon issuing a notice to the Lenders' Representative, without prejudice to any other rights or remedies available to it under the Concession Agreement. During and upon such substitution, the Authority shall ensure that the Debt Due of the Senior Lenders is duly considered and protected.

3.4 Procedure for substitution

3.4.1 The Authority and the Concessionaire hereby agree that on or after the date of Notice of Financial Default or the date of representation to the Authority under Clause 3.3.2, as the case may be, the Lenders' Representative may, without prejudice to any of the other rights or remedies of the Senior Lenders, invite, negotiate and procure offers, either by private negotiations or public auction or tenders for the take over and transfer of the Project including the Concession to the Nominated Company upon such Nominated Company's assumption of the liabilities and obligations of the Concessionaire towards the Authority under the Concession Agreement and towards the Senior Lenders under the Financing Agreements. Similarly, in exercise of its rights by the Authority under Clause 3.3.3, the Authority may undertake a similar process through public auction or tender, provided that during and upon such substitution by the Authority, the Authority shall ensure that the Debt Due of the Senior Lenders is duly considered and protected.

3.4.2 To be eligible for substitution in place of the Concessionaire, the Nominated Company shall be required to fulfil the eligibility criteria that were laid down by the Authority for short listing the bidders for award of the Concession; provided that the Lenders' Representative may represent to the Authority that all or any of such criteria may be waived in the interest of the Project, and if the Authority determines that such waiver shall not have any material adverse effect on the Project, it may waive all or any of such eligibility criteria.

3.4.3 Upon selection of a Nominated Company, by the Lenders' Representative shall request the Authority to:

(a) Accede to transfer to the Nominated Company the right to construct, operate and maintain the Project in accordance with the provisions of the Concession Agreement;

(b) Endorse and transfer the Concession to the Nominated Company, on the same terms and conditions, for the residual Concession Period; and

(c) Enter into a Substitution Agreement with the Lenders' Representative and the Nominated Company on the same terms as are contained in this Agreement.

3.4.4 If the Authority has any objection to the transfer of Concession in favor of the Nominated Company selected by the Lender's Representation and proposed to the authority in accordance with this Agreement, it shall within 15 (fifteen) days from the date of proposal made by the Lenders' Representative, give a reasoned order after hearing the Lenders' Representative. If no such objection is raised by the Authority, the Nominated Company shall be deemed to have been accepted. The Authority shall thereupon transfer and endorse the Concession within 15 (fifteen) days of its acceptance/deemed acceptance of the Nominated Company; provided that in the event of such objection by the Authority, the Lenders' Representative may propose another Nominated Company whereupon the

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procedure set forth in this Clause 3.4 shall be followed for substitution of such Nominated Company in place of the Concessionaire.

3.4.5 The transfer of Concession hereunder to a Nominated Company may, notwithstanding anything to the contrary in this Agreement and the Concession Agreement, be undertaken by transfer of no less than 75% (seventy-five per cent) of the equity of the Concessionaire to the Nominated Company, and upon such transfer hereunder, the Concessionaire shall be deemed to be the Nominated Company under and in accordance with the provisions of this Agreement and the Concession Agreement.

3.5 Selection to be binding

The decision of the Lenders' Representative and the Authority in selection of the Nominated Company shall be final and binding on the Concessionaire. The Concessionaire irrevocably agrees and waives any right to challenge the actions of the Lenders' Representative or the Senior Lenders or the Authority taken pursuant to this Agreement including the transfer/assignment of the Concession in favor of the Nominated Company. The Concessionaire agrees and confirms that it shall not have any right to seek revaluation of assets of the Project or the Concessionaire's shares. It is hereby acknowledged by the Parties that the rights of the Lenders' Representative and the Authority are irrevocable and shall not be contested in any proceedings before any court of law and the Concessionaire shall have no right or remedy to prevent, obstruct or restrain the Authority or the Lenders' Representative from effecting or causing the transfer by substitution and endorsement of the Concession.

3.6 Rights and obligations of the Nominated Company

Upon substitution of the Concessionaire under and in accordance with this Agreement, the Nominated Company substituting the Concessionaire shall be deemed to be the Concessionaire under the Concession Agreement and shall enjoy all rights and be responsible for all obligations of the Concessionaire under this Agreement as if it were the Concessionaire; provided that all amounts, liabilities, dues and obligations arising out of or in relation to (i) Taxes; (ii) any amount incurred by the Authority at the risk and cost of the Concessionaire; (iii) O&M Expenses in accordance with Concession Agreement; and (iv) Concession Fee, whether due, accrued or payable as on the date of substitution or arising thereafter, together with payment or consideration in connection with such substitution shall stand transferred to and shall be assumed and discharged by the Nominated Company. All other liabilities or Dispute(s) not covered above shall remain with the Concessionaire.

3A. HARMONIOUS SUBSTITUTION OF THE CONCESSIONAIRE

3A.1 Events for Harmonious Substitution

The Lenders' Representative, on behalf of the Senior Lenders and based on the representation made by the Concessionaire, may exercise the right to substitute all the shareholders of the Concessionaire (the "**Harmonious Substitution**") upon the occurrence of any of the following events:

(i) where the delay in execution or completion of the Project is on account of non-fulfilment of the obligations of the Authority under the Concession Agreement namely land acquisition, environmental clearances, and other statutory or regulatory

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approvals and clearances, and the Authority has failed to cure it within the Cure Period;

(ii) where the Concessionaire has failed to infuse the required Equity, as notified by the Lenders' Representative to the Authority, or as evidenced by the records of the Escrow Account and a notice is issued by the Authority to the Concessionaire in respect thereof, with a copy to the Lenders' Representative; or where the Concessionaire has failed to mobilise the requisite resources and the Concessionaire has failed to cure it within the Cure Period; or

(iii) the Project has achieved COD and the Concessionaire seeks to exit the Project for its own convenience.

3A.2. Procedure for Harmonious Substitution

(i) Within 15 (fifteen) days of the occurrence of any of the events under Clause 3A.1, the Concessionaire shall submit a written request to the Lenders' Representative, with a copy to the Authority, seeking Harmonious Substitution in accordance with the provisions of this Clause 3A.

(ii) Upon receipt of such request, the Lenders' Representative shall independently assess the merits thereof and determine whether the proposed Harmonious Substitution is in the interest of the Project and the Senior Lenders. If so satisfied, the Lenders' Representative may, within 30 (thirty) days of receipt of such request from the Concessionaire, exercise its right of Harmonious Substitution by issuing a notice to the Concessionaire along with particulars thereof, with a copy to the Authority for its information and record.

(iii) The Lenders' Representative shall undertake and complete the Harmonious Substitution within 120 (one hundred and twenty) days from the date of issuance of the notice by the Lenders' Representative under Clause 3A.2(ii).

(iv) The Lenders' Representative, in consultation with the Concessionaire, shall invite, negotiate and procure offers for such Harmonious Substitution, either by private negotiation or public auction or tender.

(v) The selection of the Designated Company for such Harmonious Substitution and the valuation of the Equity of the Concessionaire shall be determined with the mutual consent of the Concessionaire and the Lenders' Representative, subject to the following:

a) where COD has not been achieved, the Designated Company shall satisfy the financial and technical qualifications prescribed by the Authority for the selection of bidders for the award of the Concession; and

b) where COD has been achieved, the substituting entity acquiring at least 51% (fifty-one per cent) of the equity shareholding in the Concessionaire shall have adequate

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experience of operating and maintaining the completed highway projects by itself or through its Associates.

(vi) The Lenders' Representative shall submit the proposal for Harmonious Substitution to the Authority for its approval, which shall include the details of the Designated Company that fulfils the requisite eligibility criteria and requirements specified in the RFP, the Equity valuation and all key terms of the Harmonious Substitution agreed among the Senior Lenders, existing shareholders, Concessionaire and Designated Company.

(vii) Upon receipt of the proposal from the Lenders' Representative, the Authority shall satisfy itself on the eligibility and credentials of the Designated Company prior to according its concurrence to such Harmonious Substitution.

(viii) If the Authority has any objection to the proposal in favour of the Designated Company selected by the Lenders' Representative, the Authority shall, within 15 (fifteen) days from the date of the proposal made by the Lenders' Representative, pass a reasoned order after affording a hearing to the Lenders' Representative. If no such objection is raised by the Authority within the said period of 15 (fifteen) days, the Designated Company shall be deemed to have been accepted. In the event of such objection by the Authority, the Lenders' Representative may propose another Designated Company. For the avoidance of doubt, it is clarified that the Lenders' Representative shall submit the proposal sufficiently in advance to enable the Authority to examine the same. The Authority shall not consider any proposal received less than 30 (thirty) days prior to the expiry of the period specified in Clause 3A.2(iii).

(ix) Where Harmonious Substitution is effected under Clause 3A.1(ii), at the time of according its concurrence to the proposal of the Lenders' Representative, the Authority shall recover from the Concessionaire all Damages and other amounts due and payable by the Concessionaire for its defaults under the Concession Agreement; provided that the aggregate amount recoverable under this Clause shall not exceed 1% (one per cent) of the Total Project Cost.

(x) Where Harmonious Substitution is effected under Clause 3A.1(i), no amount specified in Clause 3A.2(ix) shall be payable by the Concessionaire. Prior to such Harmonious Substitution, the Authority shall cure the defaults attributable to it and shall pay to the Concessionaire all Damages and other amounts due and payable by the Authority for its defaults under the Concession Agreement; provided that the aggregate amount payable to the Concessionaire by the Authority under this Clause 3A.2(x) shall not exceed 1% (one per cent) of the Total Project Cost.

(xi) The right of Harmonious Substitution under Clause 3A.1(i) may be exercised only once during the Construction Period.

(xii) Upon the Harmonious Substitution being effected through the replacement of all the existing shareholders by the Designated Company, the Authority shall grant the Concessionaire such period as the Authority may deem fit to meet Concessionaire's

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obligations under the Concession Agreement; provided that such period shall not be less than the aggregate of (a) the period remaining until the Scheduled [***-Laning] Date, as modified in accordance with Clause 12.4.2 of the Concession Agreement, as on the date of issuance of the notice by the Lenders' Representative under Clause 3A.2(ii), and (b) the period elapsed in effecting the Harmonious Substitution from the date of such notice. No compensation shall be payable, and no extension of the Concession Period shall be granted, on account of such period granted by the Authority.

(xiii) The applicability of price index for extended period shall be determined as part of Harmonious substitution.

(xiv) The Authority shall be fully discharged of any claims by the earlier shareholders or the Concessionaire for any delays or any other action till the transfer of shareholding of the Concessionaire to the Designated Company.

(xv) Following such Harmonious Substitution, the Concessionaire shall ensure compliance with Clause 5.3, Clause 7.1(k) and the definition of "Change in Ownership" under Clause 48.1 of the Concession Agreement.

(xvi) In the event that the Harmonious Substitution is not completed within 120 (one hundred and twenty) days from the date of issuance of the notice by the Lenders' Representative under Clause 3A.2(ii), the Concession Agreement shall be terminated forthwith upon issuance of a Termination Notice by the Party entitled to do so in accordance with the provisions of the Concession Agreement. Upon such Termination, the Authority shall pay to the Concessionaire a Termination Payment equal to: (a) the amount payable on account of Authority Default under Clause 37.3.2 of the Concession Agreement in the case of Harmonious Substitution initiated under Clause 3A.1(i); or (b) the amount payable on account of Concessionaire Default under Clause 37.8 of the Concession Agreement in the case of Harmonious Substitution initiated under Clause 3A.1(ii).

(xvii) The procedure prescribed under the other Articles of the Concession Agreement and the Substitution Agreement shall continue to apply, save and except to the extent modified by the provisions of Clause 3A.

4 PROJECT AGREEMENTS

4.1 Substitution of Nominated Company in Project Agreements

The Concessionaire shall ensure and procure that each Project Agreement contains provisions that entitle the Nominated Company to step into such Project Agreement, in its discretion, in place and substitution of the Concessionaire in the event of such Nominated Company's assumption of the liabilities and obligations of the Concessionaire under the Concession Agreement.

5 TERMINATION OF CONCESSION AGREEMENT

5.1 Termination upon occurrence of Financial Default

At any time after issue of a Notice of Financial Default, the Lenders' Representative may by a notice in writing require the Authority to terminate the Concession Agreement

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forthwith, and upon receipt of such notice, the Authority shall undertake Termination under and in accordance with the provisions of Article 37 of the Concession Agreement.

5.2 Termination when no Nominated Company is selected

In the event that no Nominated Company acceptable to the Authority is selected and recommended by the Lenders' Representative within the period of 180 (one hundred and eighty) days or any extension thereof as set forth in Clause 3.3.2, the Authority may terminate the Concession Agreement forthwith in accordance with the provisions thereof.

5.3 Realization of Debt Due

The Authority and the Concessionaire hereby acknowledge and agree that, without prejudice to their any other right or remedy, the Lenders' Representative is entitled to receive from the Concessionaire, without any further reference to or consent of the Concessionaire, the Debt Due upon Termination of the Concession Agreement. For realization of the Debt Due, the Lenders' Representative shall be entitled to make its claim from the Escrow Account in accordance with the provisions of the Concession Agreement and the Escrow Agreement.

6 DURATION OF THE AGREEMENT

6.1 Duration of the Agreement

This Agreement shall come into force from the date hereof and shall expire at the earliest to occur of the following events:

(a) Termination of the Agreement; or

(b) No sum remains to be advanced and no sum are outstanding to the Senior Lenders, under the Financing Agreements.

7 INDEMNITY

7.1 General indemnity

7.1.1 The Concessionaire will indemnify, defend and hold the Authority and the Lenders' Representative harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense of whatever kind and nature arising out of any breach by the Concessionaire of any of its obligations under this Agreement or on account of failure of the Concessionaire to comply with Applicable Laws and Applicable Permits.

7.1.2 The Authority will indemnify, defend and hold the Concessionaire harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of failure of the Authority to fulfil any of its obligations under this Agreement, materially and adversely affecting the performance of the Concessionaire's obligations under the Concession Agreement or this Agreement, other than any loss, damage, cost and expense, arising out of acts done in discharge of their lawful functions by the Authority, its officers, servants and agents.

7.1.3 The Lenders' Representative will indemnify, defend and hold the Concessionaire harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of failure of the Lenders' Representative to fulfil its obligations under this Agreement, materially and adversely affecting the performance of the Concessionaire's obligations under the Concession Agreement, other than any loss, damage, cost and expense, arising out of acts done in discharge of their lawful functions by the Lenders' Representative, its officers, servants and agents.

7.2 Notice and contest of claims

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In the event that any Party hereto receives a claim from a third party in respect of which it is entitled to the benefit of an indemnity under Clause 7.1 or in respect of which it is entitled to reimbursement (the "Indemnified Party"), it shall notify the other Party responsible for indemnifying such claim hereunder (the "Indemnifying Party") within 15 (fifteen) days of receipt of the claim and shall not settle or pay the claim without the prior approval of the Indemnifying Party, such approval not to be unreasonably withheld or delayed. In the event that the Indemnifying Party wishes to contest or dispute the claim, it may conduct the proceedings in the name of the Indemnified Party and shall bear all costs involved in contesting the same. The Indemnified Party shall provide all cooperation and assistance in contesting any claim and shall sign all such writings and documents as the Indemnifying Party may reasonably require.

8 DISPUTE RESOLUTION

8.1 Dispute resolution

8.1.1 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) among the Parties, and so notified in writing by any Party to the other Parties shall, in the first instance, be attempted to be resolved amicably.

8.1.2 Any dispute, difference or claim arising out of or in connection with this Agreement which has not been resolved amicably shall be decided by reference to Conciliation in accordance with the provisions of the Arbitration and Conciliation Act, 1996. The provision relating to Conciliation under the Arbitration and Conciliation Act, 1996 shall cease to apply once the provisions relating to substitution of conciliation process by mediation are notified under Mediation Act, 2023. Thereafter "Conciliation" herein be referred to as Mediation as per the provisions of the Mediation Act 2023.

8.1.3 Any dispute the sum of which is of value less than Rupees 10 Crores which remains unresolved through Conciliation under Arbitration and Conciliation Act, 1996 or otherwise, will be referred either to SAROD, (a Society registered under Society's Act, 1860 vide Registration no. S/RS/SW1049/2013) duly represented by Government/Authority and National Highways Builders Federation (NHBF) or to India International Arbitration Centre ("**IIAC**").

8.1.3.1 The appointment of Tribunal, Code of conduct for Arbitrators and fees and expenses of SAROD/IIAC and the Arbitral Tribunal shall also be governed by the Rules of SAROD as amended from time to time or India International Arbitration Centre Act, 2019 and the regulations thereunder as amended from time to time.

8.1.3.2 The Arbitrators shall issue a reasoned award and such award shall be final and binding on the Parties. The venue of arbitration shall be Delhi and the language of arbitration shall be English.

8.1.4 Notwithstanding anything to the contrary contained in this Agreement, it is agreed that any dispute, difference or claim arising out of or in connection with this Agreement the sum of which is of value Rupees 10 Crores or above, which has not been agreed upon/ reached settlement by the parties through Conciliation under Arbitration and Conciliation Act, 1996 or otherwise, shall not be referred to Arbitration. It is further agreed that all declaratory disputes or non-monetary

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disputes shall not be referred to Arbitration. For the avoidance of doubt, it is clarified that nothing herein shall prevent the Parties from seeking resolution of such Disputes through civil courts.

9 MISCELLANEOUS PROVISIONS

9.1 Governing law and jurisdiction

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

9.2 Waiver of sovereign immunity

The Authority 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 Authority 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 judgment 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 judgment that may be made or given in connection therewith).

9.3 Priority of agreements

In the event of any conflict between the Concession Agreement and this Agreement, the provisions contained in the Concession Agreement shall prevail over this Agreement.

9.4 Alteration of terms

All additions, amendments, modifications and variations to this Agreement shall be effectual and binding only if in writing and signed by the duly authorized representatives of the Parties

9.5 Waiver

9.5.1 Waiver by any Party of a default by another Party in the observance and performance of any provision of or obligations under this Agreement:

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(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.

9.5.2 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 another Party shall be treated or deemed as waiver of such breach or acceptance of any variation or the relinquishment of any such right hereunder.

9.6 **No third-party beneficiaries**

This Agreement is solely for the benefit of the Parties and no other person or entity shall have any rights hereunder.

9.7 Survival

9.7.1 Termination of this Agreement:

(a) Shall not relieve the Parties 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, shall 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.

9.7.2 All obligations surviving the cancellation, expiration or termination of this Agreement shall only survive for a period of 3 (three) years following the date of such termination or expiry of this Agreement.

9.8 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 dispute resolution under Clause 8 of this Agreement or otherwise.

9.9 Successors and assigns

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

9.10 Notices

हरलीन कौर / Harleen Kaur
निदेशक / Director
सड़क परिवहन एवं राजमार्ग मंत्रालय
Ministry of Road Transport & Highways
भारत सरकार / Govt. of India
नई दिल्ली / New Delhi-110001

All notices or other communications to be given or made under this Agreement shall be in writing, shall either be delivered personally or sent by courier or registered post with an additional copy to be sent by facsimile or e-mail. The address for service of each Party, its facsimile number and e-mail address are set out under its name on the signing pages hereto. A notice shall be effective upon actual receipt thereof, save that where it is received after 5.30 (five thirty) p.m. on any day, or on a day that is a public holiday, the notice shall be deemed to be received on the first working day following the date of actual receipt. Without prejudice to the foregoing, a Party giving or making a notice or communication by facsimile or e-mail shall promptly deliver a copy thereof personally, or send it by courier or registered post to the addressee of such notice or communication. It is hereby agreed and acknowledged that any Party may by notice change the address to which such notices and communications to it are to be delivered or mailed. Such change shall be effective when all the Parties have notice of it.

9.11 Language

All notices, certificates, correspondence and proceedings under or in connection with this Agreement shall be in English.

9.12 Authorized representatives

Each of the Parties shall by notice in writing designate their respective authorized representatives through whom only all communications shall be made. A Party hereto shall be entitled to remove and/or substitute or make fresh appointment of such authorized representative by similar notice.

9.13 Original Document

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

IN WITNESS WHEREOF THE PARTIES HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN

THE COMMON SEAL OFCONCESSIONAIRE has been affixed pursuant to the resolution passed by the Board of Directors of the Concessionaire at its meeting held on the……..day of the …….20……..here unto affixed in to the presence of……the Director, who has signed these presents in token thereof, ……Company Secretary /Authorized Officer who has countersigned the same in token thereof[¥].	SIGNED, SEALED AND DELIVERED For and behalf of THE AUTHORITY by:

[¥]To be affixed in accordance with the articles of association of the Concessionaire and the resolution passed by its Board of Directors

हरलीन कौर / Harleen Kaur
निदेशक / Director
सड़क परिवहन एवं राजमार्ग मंत्रालय
Ministry of Road Transport & Highways
भारत सरकार / Govt. of India
नई दिल्ली / New Delhi-110001

(Signature)	(Signature)
(Name)	(Name)
(Designation)	(Designation)
(Address)	(Address)
(Fax No.) (e-mail address)	(Fax No.) (e-mail address)

SIGNED, SEALED AND DELIVERED

For and on behalf of **SENIOR LENDERS** by the

Lenders' Representative:

(Signature)

(Name)

(Designation)

(Address)

(Fax No.)

(E-mail address)

In the presence of:

1. 2.

हरलीन कौर / Harleen Kaur
निदेशक / Director
सड़क परिवहन एवं राजमार्ग मंत्रालय
Ministry of Road Transport & Highways
भारत सरकार / Govt. of India
नई दिल्ली / New Delhi-110001

SCHEDULE –S

Deleted

हरलीन कौर / Harleen Kaur
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Ministry of Road Transport & Highways
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नई दिल्ली / New Delhi-110001

SCHEDULE –T

Deleted

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SCHEDULE –U

Deleted

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SCHEDULE –V

Deleted

हरलीन कौर / Harleen Kaur
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Ministry of Road Transport & Highways
भारत सरकार / Govt. of India
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SCHEDULE –W

Deleted

हरलीन कौर / Harleen Kaur
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Schedule X

Schedule for outstanding debt

Quarter end	Outstanding debt
1	100.00%
2	100.00%
3	99.24%
4	98.46%
5	97.66%
6	96.84%
7	96.00%
8	95.14%
9	94.26%
10	93.35%
11	92.41%
12	91.44%
13	90.44%
14	89.41%
15	88.35%
16	87.25%
17	86.11%
18	84.93%
19	83.71%
20	82.45%
21	81.15%
22	79.80%
23	78.40%
24	76.95%
25	75.45%
26	73.90%
27	72.30%
28	70.64%

हरलीन कौर / Harleen Kaur
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Ministry of Road Transport & Highways
भारत सरकार / Govt. of India
नई दिल्ली / New Delhi-110001

Quarter end	Outstanding debt
29	68.92%
30	67.14%
31	65.30%
32	63.40%
33	61.44%
34	59.41%
35	57.31%
36	55.14%
37	52.90%
38	50.59%
39	48.21%
40	45.75%
41	43.21%
42	40.59%
43	37.89%
44	35.11%
45	32.25%
46	29.30%
47	26.26%
48	23.13%
49	19.91%
50	16.60%
51	13.20%
52	9.70%
53	6.10%
54	2.50%

हरलीन कौर / Harleen Kaur
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नई दिल्ली / New Delhi-110001

Schedule Y
(See Clause 4.1.3(f))

FORMAT FOR INTIMATION FINANCIAL CLOSURE

(To be filled by Concessionaire and submitted at the time of Financial Close)

1. Details of the Project:

S. No.	Particulars	Details
A.	Project description	
B.	Type of Project	
C.	Location/ State	
D.	Length of Project (kms)	
E.	Bid Project Cost assessed by Authority (Rs. In cr.)	
F.	Bid Project Cost assessed by Senior Lenders (Rs. In Cr.)	
G.	Concession Period	
H.	Date of signing of Concession Agreement	
I.	Likely Appointed Date	
J.	Construction Period	
K.	Financing structure (Rs. In Cr.) Source of funding under different heads (Debt, Equity, Equity Support, etc.)	
L.	Scheduled [***-Laning] Date	

2. Details of Bid Project Cost:

S. No.	Particulars	Amount (Rs. Crore)
1.		
2.		
3.		
4.		

3. Financing Pattern:

S. No.	Particulars	Amount (Rs. Crore)
1.	Equity	
2.	Debt	
3.	…. Others (to be specified)	

4. Name of the Senior Lenders

S. No.	Name of the Bankers/Fls/NBFCs	Amount (Rs. Crore)
1.		
2.		
3.		

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नई दिल्ली / New Delhi-110001

5. Financing details

S. No.	Name of the Bankers/Fls/NBFCs	Amount (Rs. Crore)
1.	Rate of interest during Construction Period	
2.	Rate of interest during Operation Period	
3.	Average DSCR	
4.	Minimum DSCR	
5.	Project IRR	
6.	Equity IRR	
7.		

6. Amortization Schedule:

7. Sanction Letter containing the terms and conditions of the Facility sanctioned by the Senior Lenders for the Project

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Appendices

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APPENDIX I

LIST OF BID-SPECIFIC CLAUSES[35]

A Clauses with serially numbered footnotes

Appendix 1 (Footnote no 27)

B Clauses with non-numerical footnotes

1. Recital Para 2

2. Clause 16.5.1: Power of the Authority to undertake works

3. Signature/Execution Page of the Concession Agreement

4. Schedule J: Provisional Certificate

5. Schedule V: Substitution Agreement Signature /Execution Page

C. Clauses where curly brackets are used

1. Recitals Para 2

2. Recitals C, E, F, G and H

3. Clause 4.1.3(g): Conditions Precedent

4. Clause 7.1(g), (k), (l), (m) and (q): Representations and Warranties of the Concessionaire

5. Clause 8.1.2: Disclaimer

6. Clause 31.4.1(d): Withdrawals upon Termination

7. Article 48: Definitions

    1. "Associate or Affiliate'
    2. "Bid"
    3. "Change in Ownership"
    4. "Consortium"
    5. "Consortium Member"
    6. "Subsistence Revenue"
    7. "Bid Project Cost"

11. Schedule S: Escrow Agreement: Clause 4.2(d)

D. Clauses with blank spaces

1. Recital Para 2

2. Recitals C, E and G

3. Clause 25.1 Payment of Bid Project cost

4. Execution/Signature Page of the Concession Agreement

[35] This Appendix-I contains a list of clauses that would need to be to be suitably modified for reflecting bid-specific provisions after the Concessionaire has been selected. This Appendix-I may be included in the draft concession agreement forming part of the bid documents. It may however, be deleted when the Concession Agreement is to be executed.

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नई दिल्ली / New Delhi-110001

5. Schedule F: Performance Security

6. Schedule J: Completion Certificate and Provisional Certificate

7. Schedule N: Terms Of Reference for Independent Engineer: Clause 1.1

8. Schedule O: Escrow Agreement: Para 1, 2 and 3 and Recitals A, Clause 2.3.1, 4.2(d)

9. Schedule Q: Vesting Certificate

10. Schedule R: Substitution Agreement

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APPENDIX II

LIST OF PROJECT-SPECIFIC CLAUSES[36]

A Clauses with serially numbered footnotes

1. Recital: First Line (Footnote No. 1)
2. Recital Para A (Footnote No. 1, 2, 3, 4)
3. Clause 4.1.2 (c) (Footnote No. 5)
4. Clause 6.2.1 (Footnote No. 6)
5. Clause 9.1.1: Performance Security (Footnote No. 7)
6. Clause 9.7 (Footnote No. 8)
7. Clause 16.6.1 (Footnote No. 9)
8. Clause 23.1 (Footnote No. 10)
9. Clause 25.4 (Footnote No. 11)
10. Clause 25.6.3 (Footnote No. 12)
11. Clause 25.6.4 (Footnote No. 13, 14, 15)
12. Clause 25.8 (Footnote No. 16)
13. Clause 41.1 (Footnote No. 17)
14. Article 48 Definitions:
    - "Adjusted Equity" (Footnote No. 18)
    - "Project Agreements" (Footnote No. 19)
    - "Total Project Cost" (Footnote No. 20)
15. Schedule – B, Clause 2 (Footnote No. 21)
16. Annexure - I, Schedule B (Footnote No. 22)
17. Annexure - I, Schedule B, Clause 5.1 (Footnote No. 23)
18. Annexure - I, Schedule C (Footnote No. 24)
19. Schedule – D, Clause 1 (Footnote No. 25)
20. Annexure - I, Schedule D (Footnote No. 26)
21. Annexure - I, Schedule F (Footnote No. 27, 28, 29)
22. Schedule – I, Tests (Footnote No. 30)
23. Annexure - I, Schedule K (Footnote No. 31)
24. Schedule – L, Safety Requirements (Footnote No. 32)

[36] This Appendix –II contains a list of clauses that would need to be suitably modified prior to issue of bid documents for reflecting project-specific provisions. This Appendix-II should be omitted before issuing the draft concession agreement, forming part of the bid documents.

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25. Schedule – M, Selection of Independent Engineer (Footnote No. 33)

26. Schedule – N, Terms of Reference for Independent Engineer (Footnote No. 34)

27. Appendix I (Footnote No. 35)

28. Appendix II (Footnote No. 36)

B. Clauses with square parenthesis

1. Recitals A, B and C

2. Clause 3.1.1: The Concession

4. Clause 4.1.2 and sub clause (d): Provision to Conditions Precedent

5. Clause 10.1: The Site

6. Clause 10.2.3: Licence, Access and Right of Way

7. Clause 10.3.2: Procurement of the Site

8. Clause 10.3.6: Procurement of the Site

9. Clause 12.3 (f): Drawings

10. Clause 12.4.1: ***Four Laning of the Project Highway

11. Clause 13.4: Delays during construction
12. Clause 17.1.2: O&M obligations of the Concessionaire
13. Clause 17.3.1: Maintenance Manual
14. Clause 17.5.2: Safety, vehicle breakdowns and accidents
15. Clause 17.15: Advertising on the Site
16. Clause 20.1: Traffic regulation by the Concessionaire
17. Clause 20.2: Police assistance
18. Clause 21.1: Medical Aid Posts
19. Clause 22.1: Traffic census
20. Clause 24.1.1: Financial Close
21. Clause 25.3.1 and 25.3.2: Payment of Bid Project Cost
22. Clause 25.6.2: Annuity Payment during Operation Period
23. Clause 40.5.12: Procedure for Harmonious Substitution
24. Clause 45.1: Disclosure of Specified Documents
25. Article 48: Definitions

- "Adjusted Equity"
- "Financial Package"
- "***Four-Laning or ***Four-Lane"
- "Medical Aid Post"
- "PCU"
- "Project Agreements"
- "Project Assets"
- "Project Completion Schedule"

हरलीन कौर / Harleen Kaur
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नई दिल्ली / New Delhi-110001

- “Scheduled ***Four-Laning Date”
- “Tests”
- “Toll Plaza”
- “Total Project Cost”

26. Schedule A: Clause 1.1 1.3, and 2
27. Annexure - I, Schedule A: Site for Project
28. Annexure -II, Schedule A: Coordinate
29. Schedule B: Development of the Project Highway
30. Annexure - I, Schedule B: Description of ****Laning
31. Annexure -III, Schedule B: Item for Change of Scope
32. Schedule C: Project Facilities sub clause 1 (a) and from (j) upto (o), Para 2 and 3
33. Annexure - I, Schedule C: Project Facilities for ****Laning: sub clause 1 (a) and (g) and 2
34. Annexure - II, Schedule C: Project Facilities for ****Laning
35. Schedule D: Specification and Standards
36. Annexure - I, Schedule D: Specification and Standards for ****Laning
37. Annexure - II, Schedule D: Specification and Standards for ****Laning
38. Schedule F: Performance Security: Recital A
39. Schedule G: Project Completion Schedule: Clause 1, 2.1, 3.1, 3.2, 4.1, 4.2, 5.1, 5.2 and 6
40. Annexure - I, Schedule H:
41. Schedule I: Tests: Clause 2.3
42. Schedule J: Completion Certificate and Provisional Certificate
43. Schedule K: Maintenance Requirements
44. Annexure – I, Schedule K: Repair/Rectification of Defects and Deficiencies
45. Schedule M: Selection of Independent Engineer
46. Schedule N: Terms of Reference for Independent Engineer
47. Schedule O: Escrow Agreement
48. Schedule Q: Vesting Certificate

C. Clauses with asterisk

1. Recital A, B and C
2. Clause 3.1.1: Grant of Concession
3. Clause 4.1.2: Condition Precedent
4. Clause 5.7: Branding of Project Highway
5. Clause 6.2: Maintenance obligations prior to Appointed Date
6. Clause 9.1.1 and 9.7: Performance Security

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नई दिल्ली / New Delhi-110001

7. Clause 10.1: The Site

8. Clause 12.4: Construction of the Project Highway

9. Clause 13.4: Delays during construction

10. Clause 17.1: O&M obligations of the Concessionaire

11. Clause 25.6.4: Annuity payments during Operation Period

12. Clause 40.5.12: Harmonious Substitution

13. Article 48: Definitions

- "Bid security"
- "Project Highway"
- "State"
- "Total Project Cost"

14. Annexure - I, Schedule A

15. Annexure – I, Schedule B

16. Annexure – I, Schedule C

17. Annexure - I, Schedule D

18. Schedule F: Performance Security: Recital A and B

19. Annexure – II, Schedule F

20. Schedule J: Completion Certificate: Para 1, Provisional Certificate

21. Schedule Q: Terms of reference for Independent Engineer: Clause 1.1

22. Schedule R: Substitution Agreement Para A

23. Schedule O: Escrow Agreement: Para A

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Appendix-III: Arbitration Rules of the Society for Affordable Redressal of Disputes (SAROD) (SAROD'ARBITRATION RULES)

Under Clause 44.3.1.1

हरलीन कौर / Harleen Kaur
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नई दिल्ली / New Delhi-110001

ARBITRATION RULES OF SAROD

INDEX

Rule

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3. Notice, Calculation of Periods of Time

4. Commencement of Arbitration

5. Response by Respondent

6. Filing of Case Statement

7. Contents of Case Statement

8. Default in Filing and Serving Case Statement

9. Further Written Statement

10. SAROD to Provide Assistance

11. Appointment of Substitute Arbitrator

12. Multi-Party Appointment of the Tribunal

13. Appointment of Substitute Arbitrator

14. Independence and Impartiality of the Tribunal

15. Code of Ethics for Arbitrators

16. Challenges of Arbitrators

17. Decision on Challenge

18. Removal of the Tribunal

19. Re-hearing in the Event of Replacement of the Tribunal

20. Jurisdiction of the Tribunal

21. Fees of SAROD and Arbitral Tribunal

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24. Language of Arbitration

25. Conduct of the Proceeding

26. Communications between Parties and the Tribunal

27. Party Representatives

28. Hearings

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30. Witnesses

हरलीन कौर / Harleen Kaur
निदेशक / Director
सड़क परिवहन एवं राजमार्ग मंत्रालय
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31. Experts Appointed by the Tribunal

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हरलीन कौर / Harleen Kaur
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PREAMBLE

In order to seek speedy, affordable, just and reasonable Redressal of Dispute/Differences between NHAI/MoRTH/NHIDCL and Concessionaire/Contractor arising out of and during the course of execution of various contracts, a Society for Affordable Redressal of Disputes (SAROD) has been formed as a Society under Societies Registration Act, 1860 with registration No.S/RS/SW/l044/2013. It has been formed by NHAI/MoRTH/NHIDCL and National Highways Builders Federation (NHBF) with founding members as mentioned in the Memorandum of Association of SAROD.

SAROD ARBITRATION RULES

Rule 1 - Scope of Application

1.1 Where any agreement, submission or reference provides for arbitration at the Society for Affordable Redressal of Disputes ("SAROD"), or under the Arbitration Rules of the SAROD and where the case is a domestic arbitration shall be conducted in accordance with the following Rules, or such Rules as amended by the SAROD where the amendments take effect before the commencement of the Arbitration. Parties may adopt following clause for inclusion in the contract:-

"Any dispute or difference whatsoever arising between the parties and of or relating to the construction, interpretation, application, meaning, scope, operation or effect of this contract or the validity or the breach thereof, shall be settled by arbitration in accordance with the rules of arbitration of the "SAROD" and the award made in pursuance thereof shall be final and binding on the parties subject to Provisions of The Arbitration and Conciliation Act, 1996".

1.2 These rules shall come into effect from the day of approval by Governing Body of SAROD.

Rule 2 - Definitions

2.1 These Rules shall be referred to as "the SAROD Arbitration Rules".

2.2 In these Rules:

"**Act**" means the 'Arbitration and Conciliation Act 1996' of India and any statutory modifications or re-enactments thereof.

"SAROD" means the Society for Affordable Redressal of Disputes.

"SAROD Arbitrator Panel" means the list of persons admitted to serve as arbitrators under these Rules.

"NHAI" means National Highways Authority of India.

"NHBF" means the National Highways Builders Federation. 96

"GOVERNING BODY" means Governing Body of SAROD as defined in Article 9 of Memorandum of Association.

"PRESIDENT" means President of Governing Body of SAROD as defined in Rules &

Regulation of SAROD.

"**SECRETARY**" means Secretary of SAROD as defined in Rules & Regulation of SAROD.

"**TRIBUNAL**" means either a Sole Arbitrator or all arbitrators when more than one is appointed.

"**PARTY"** means a party to an arbitration agreement,

"**E-Arbitration**" means submission of pleadings, defence statement etc by E-mail and holding of proceedings via video conferencing.

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Rule 3 - Notice, Calculation of periods of Time

3.1 For the purposes of these Rules, any notice, including a notification, communication or proposal, is deemed to have been received if it is physically delivered to the addressee or if it is delivered at his habitual residence, place of business or mailing address, or, if none of these can be found after making reasonable inquiry, then at the addressee's last-known residence or place of business. Notice shall be deemed to have been received on the day it is so delivered.

3.2 For the purposes of calculating a period of time under these Rules, such period shall begin to run on the day following the day when a notice, notification, communication or proposal is received. If the last day of such period is an official holiday or a non-business day at the residence or place of business of the addressee, the period is extended until the first business day which follows. Gazetted public holidays or non-business days occurring during the running of the period of time are included in calculating the period.

3.3 Without prejudice to the effectiveness of any other form of written communication, written communication may be made by fax, email or any other means of electronic transmission effected to a number, address or site of a party.

3.4 The transmission is deemed to have been received on the day of transmission.

Rule 4 - Commencement of Arbitration

4.1 Any party wishing to commence an arbitration under these Rules ("the Claimant") shall file with the Secretary and serve on the other party {"the Respondent"), a written Notice of Arbitration ("the Notice of Arbitration") which shall include the following:

a. a request that the dispute be referred to arbitration;

b. the names, addresses, telephone numbers, fax numbers and email addresses of the parties to the dispute;

c. a reference to the arbitration clause or any separate arbitration agreement that is invoked and provide a copy of the arbitration clause or arbitration agreement;

d. a reference to the contract out of which the dispute arises and provide a copy of the contract where possible;

e. a brief statement describing the nature and circumstances of the dispute;

f. the relief or remedy sought, including the amount of claim if quantifiable at the time the Notice or Arbitration is filed;

g. a proposal as to the number of arbitrators (i.e. one or three), if the parties have not previously agreed on the number; and

h. the name of the Claimant's nominated arbitrator.

4.2 A filing fee of Rs. 10,000/- (Ten thousand) or any amount decided by Governing Body from time to time is payable at the time of filing the Notice of arbitration.

4.3 The date of filing of the Notice of Arbitration with the Secretary is the date of commencement of the arbitration for the purpose of these Rules.

Rule 5 - Response by Respondent

5.1 Within 14 days of receipt of the Notice of Arbitration, the Respondent shall file with the Secretary and serve upon on the Claimant, a Response including

a. A confirmation or denial of all or part of the claims;

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b. Brief statement of the nature and circumstances of any envisaged counterclaims;

c. A comment in response to any proposals contained in the Notice of Arbitration; and

d. The name of the respondent's nominated arbitrator.

5.2 A filing fee of Rs. 10,000/- or any amount decided by Governing Body from time to time is payable at the time of filing the Response.

5.3 In case parties have objection to the jurisdiction of Arbitral Tribunal, such objection shall be raised not later than 15 days of the commencement of Arbitration proceedings failing which it will be deemed that parties have waived their right to objection.

Rule *6* - Filing of Case Statements

6.1 Within 30 days after the filing of the Notice of Arbitration, the claimant must file with the Secretary and serve on the Respondent, a Statement of Claimant's Case alongwith all documents to be relied upon by the Claimant.

6.2 Within 30 days after the service of the statement of Claimant's Case, the Respondent must file with the Secretary and serve on the Claimant, a statement of respondent's defence and counterclaim (if any) along with all documents to be relied upon by the Respondent.

6.3 Within 30 days after the service of the statement of Respondent's defence, if the Claimant intends to challenge anything in the statement of Respondent's defence and/or counterclaim, the Claimant must then file with the Secretary and serve on the Respondent, a statement of claimant's reply and if necessary, defence to counterclaim.

6.4 No further case statements may be filed without the leave of the Tribunal or if a Tribunal has not been appointed, the Secretary.

6.5 The Tribunal or if a Tribunal has not been appointed, the Secretary, may upon the written application of a party, extend the time limits provided under this Rule,

6.6 Thy party required to file a case statement must at the same time deposit with the Secretary for eventual transmission to the Tribunal an additional copy or additional copies of the case statement, according to the number of arbitrators constituting or who will constitute the Tribunal.

Rule 7 - Contents of Case Statements

7.1 The case statements must contain the detailed particulars of the party's claim, defence or counterclaim and must thus contain a comprehensive statement of the facts and contentions of law supporting the party's position.

7.2 It must:

a. Set out all items of relief or other remedies sought together with the amount of all quantifiable claims and detailed calculations.

b. State fully its reasons for denying any allegation or statement of the other party.

c. State fully its own version of events if a party intends to put forward a version of events different from that given by the other party.

7.3 A case statement must be signed by or on behalf of the party making it.

Rule 8 - Default in Filing and Serving Case Statements

8.1 If the Claimant fails within the time specified under these Rules or as may be fixed by the Tribunal or by the Secretary, to submit its Statement of Case, the Tribunal or if a Tribunal has not

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been appointed, the Governing Body may issue an order for the termination of the arbitral proceedings or make such other directions as may be appropriate in the circumstances.

8.2 It the Respondent fails to submit a Statement of Respondent's Defence, the Tribunal may nevertheless proceed with the arbitration and make the award.

Rule 9 - Further Written Statements

9.1 The Tribunal will decide which further written statements, in addition to the case statement(s) already filed, are required from the parties and shall fix the periods of time for giving, filing and serving such statements.

9.2 All such further statements must be given to the Tribunal, filed with the Secretary and served on the Claimant or Respondent, whichever is applicable.

Rule 10 - SAROD to Provide Assistance

10.1 At the request of the Tribunal or either party, the Secretary will render such assistance as is required for the conduct of the arbitration, including arranging for facilities, suitable accommodation for sittings of the Tribunal, secretarial assistance or interpretation of these rules.

10.2 Any additional expenses incurred or to be incurred for any such arrangements shall be borne by the parties.

Rule 11 - Appointment of Tribunal

11.1 The disputes shall be decided by a Sole Arbitrator when the total claim of dispute is Rs. 3 Crores or less.

11.2 In all cases of disputes claimed for more than Rs. 3 Crores, the tribunal shall consist of odd number of Arbitrators to be nominated by the parties. The Presiding Arbitrator shall be appointed by the Arbitrators nominated by the parties from amongst the panel maintained by SAROD. For deciding the Presiding Arbitrator, a draw of lots can be carried out from amongst the names suggested by the Arbitrators nominated by the Parties, The eligibility criteria for empanelment of Arbitrators will be decided by the Governing Body.

11.3 If a Sole Arbitrator is to be appointed, the Governing Body will appoint the Arbitrator within 21 days from the date the Respondent's Statement of Defence and Counterclaim (if any) is filed or falls due, whichever is earlier. The Governing Body will appoint the Arbitrator from the panel of Arbitrators by draw of lots,

11.4 An Arbitrator/Presiding Arbitrator to be appointed under these Rules shall be a person on the SAROD Arbitration Panel as at the date of the appointment,

11.5 In the event of any party failing to appoint Arbitrator within 30 days of receipt of the notice of Arbitration, the Governing Body shall appoint the Arbitrator or Presiding Arbitrator as the case may be by a draw of lots.

Rule 12 - Multiparty appointment of the Tribunal

12.1 If there are more than 2 parties in the arbitration, the parties shall agree on the procedure for appointing the Tribunal within 21 days of the receipt of the Notice of Arbitration.

12.2 If the parties are unable to do so, upon the lapse of the 21 days time period mentioned herein, the Tribunal shall be appointed by the Governing Body as soon as practicable.

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Rule 13 - Appointment of Substitute Arbitrator

In the event of the death or resignation of any of the arbitrators, a substitute arbitrator must be appointed by the same procedure as in Rule 11 by which the arbitrator concerned was appointed, failing which, the Governing Body will make the appointment.

Rule 14 - Independence and Impartiality of the Tribunal

14.1 The Tribunal conducting arbitration under these Rules shall be and remain at all times independent and impartial, and shall not act as advocate for any party.

14.2 A prospective arbitrator shall disclose to those who approach him in connection with his possible appointment, any circumstances likely to give rise to justifiable doubts as to his impartiality or independence.

14.3 An arbitrator, once nominated or appointed, shall disclose any such circumstance referred to in Rule 14.2 to the Secretary and/ or to all parties.

Rule 15 - Code of Ethics for Arbitrators

An Arbitrator is a fountain of justice and emblem of equity, fairness and good conscience. Therefore he/she is expected to exhibit a noble conduct. The code of conduct prescribed by the Governing Body has to be adopted.

Appointment

15.1 A prospective arbitrator shall accept an appointment only if he is fully satisfied that he is able to discharge his duties without bias, he has an adequate knowledge of the language of the arbitration, and he is able to give to the arbitration the time and attention which the parties are reasonably entitled to expect, .

15.2 In this code, the masculine includes the feminine.

Disclosure

15.3 Deleted

15.4 A prospective arbitrator shall disclose all facts or circumstances that may give rise to justifiable doubts as to Ms impartiality or independence, such duty to continue thorough out

15.5 A prospective arbitrator shall disclose all facts or circumstances that may give rise to justifiable doubts as to Ms impartiality or independence, such duty to continue thorough out the arbitral proceedings with regard to new facts and circumstances, A prospective arbitrator shall disclose to the Secretary and any party who approaches him for a possible appointment:

(a) Any past or present close personal relationship or business relationship, whether direct or indirect, with any party to the dispute, or any representative of a party, or any person known to be a potentially important witness in the arbitration;

(b) The extent of any prior knowledge he may have of the dispute.

Bias

15.6 The criteria for assessing questions relating to bias are impartiality and independence. Partiality arises when an arbitrator favours one of the parties or where he is prejudiced in relation to the subject matter of the dispute. Dependence arises from relationships between an arbitrator and one of the parties, or with someone closely connected with one of the parties.

15.7 Any close personal relationship or current direct or indirect business relationship between an arbitrator and a party, or any representative of a party, or with a person who is known to be a

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potentially important witness, will normally give rise to justifiable doubts as to a prospective arbitrator's impartiality or independence. Past business relationships will only give rise to justifiable doubts if they are of such magnitude or nature as to be likely to affect a prospective arbitrator's judgment. He should decline to accept an appointment in such circumstances unless the parties agree in writing that he may proceed.

Communications

15.8 Before accepting an appointment, an arbitrator may only enquire as to the general nature of the dispute, the names of the parties and the expected time period required for the arbitration.

15.9 No arbitrator shall confer with any of the parties or their Counsel until after the Secretary gives notice of the formation of the Tribunal to the parties.

15.10 Throughout the arbitral proceedings, an arbitrator shall avoid any unilateral communications regarding the case with any party, or its representatives.

Fees

15.11 15.10 In accepting an appointment, an arbitrator agrees to the remuneration as prescribed in the rules of SAROD, and he shall make no unilateral arrangements with any of the parties or their Counsel for any additional fees or expenses without the agreement of all the parties and the consent of the Secretary of SAROD.

Conduct

15.12 Once the arbitration proceedings commence, the arbitrator shall acquaint himself with all the facts and arguments presented and all discussions relative to the proceedings so that he may properly understand the dispute.

15.13 Deleted

Confidentiality

15.14 The arbitration proceedings shall remain confidential. An arbitrator is in a relationship of trust to the parties and should not, at any time, use confidential information acquired during the course of the proceedings to gain personal advantage or advantage for others, or to affect adversely the interest of another.

15.15 This Code is not intended to provide grounds for the setting aside of any award.

Rule 16 - Challenge of Arbitrators

An arbitrator may be challenged if there are circumstances that give rise to justifiable doubts

16.1 as to his impartially or independence and also if he or she has committed any misconduct,

16.2 An arbitrator may also be challenged if he does not possess the qualifications required by the agreement of the parties,

16.3 A party may challenge an arbitrator appointed on its nomination or with its agreement only for reasons of which it becomes aware after the appointment has been made.

16.4 A party who intends to challenge an arbitrator shall file with the Secretary and serve on the other party or all other parties, whichever is applicable, a Notice of Challenge.

16.5 The Notice of challenge must be filed and served within 14 days from the appointment of the arbitrator or within 14 days after the circumstances mentioned in Rule 15.1 became known to that party.

16.6 The Notice of Challenge must state the reasons for the challenge.

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16.7 The arbitration shall be suspended until the challenge is resolved or decided upon.

16.8 When an arbitrator has been challenged by one party, the other party may agree to the challenge. The arbitrator may also, after the challenge, withdraw from his office. However, it is not implied in either case that there has been an acceptance of the validity of the grounds for the challenge. In both cases, the procedure provided in Rule 11 read with Rule 13, shall be used for the appointment of a substitute arbitrator.

Rule 17 - Decision on Challenge

17.1 If the other party does not agree to the challenge and the arbitrator does not withdraw, the decision on the challenge will be made by the Governing Body.

17.2 If the Governing Body sustains the challenge, a substitute arbitrator shall be appointed or chosen pursuant to the procedure applicable to the appointment of an arbitrator as provided in Rule 11 read with Rule 13. If the Governing Body dismisses the challenge, the arbitrator shall continue with the arbitration. 18.1 The Governing Body may on the application of a party remove an arbitrator:

18.2 The arbitrator(s) concerned is entitled to appear and be heard at the hearing of the application to remove him.

Rule 18 - Removal of **the Tribunal**

18.1 The Governing Body may on the application of a party remove an arbitrator:

a. Who is physically or mentally incapable of conducting the proceedings or where there are justifiable doubts as to his ability to do so; or

b. Who has refused or failed to use all reasonable dispatch in conducting the arbitration or making an award.

c. Who has continuously absented from attending the proceedings for more than 3 sitting without prior permission of Presiding Arbitrator/Governing Body of SAROD.

18.2 The arbitrator(s) concerned is entitled to appear and be heard at the hearing of the application to remove him.

18.3 Upon the removal of the arbitrator, a substitute arbitrator shall be appointed in accordance with Rule 11 read with Rule 13.

18.4 The Governing Body's decision on the application is final and is not subject to appeal or review.

Rule 19 - Re-hearing in the Event of Replacement of the Tribunal

If the sole or presiding Arbitrator is replaced, there shall be a re-hearing. If any other arbitrator is replaced, such re-hearing may take place at the discretion of the Tribunal.

Rule 20 - Jurisdiction of the Tribunal

20.1 The Tribunal shall have the power to rule on its own jurisdiction, including any objection with respect to the existence, termination or validity of the arbitration agreement. For that purpose, an arbitration agreement which forms part of a contract shall be treated as an agreement independent of the other terms of the contract. A decision by the Tribunal that the contract is null and void shall not entail ipso jure the invalidity of the arbitration agreement.

20.2 The plea that the Tribunal does not have jurisdiction shall be raised not later than in the Statement of Defense. A plea that the Tribunal is exceeding the scope of its authority shall be raised

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promptly after the Tribunal has indicated its intention to decide on the matter alleged to be beyond the scope of its authority. In either case the Tribunal may nevertheless admit a late plea under this Rule if it considers the delay justified. A party is not precluded from raising such a plea by the fact that he has nominated, or participated in the appointment of an arbitrator.

20.3 The Tribunal must rule on an objection that it lacks jurisdiction as a preliminary question upon the objection being raised. It may rule on an objection that it exceeds the scope of its authority either as a preliminary question or in an award on the merits, as it deems just and convenient. In addition to the jurisdiction to exercise the powers defined elsewhere in these Rules, the Tribunal shall have jurisdiction to determine any question of law arising in the arbitration; proceed with the arbitration not with sanding the failure or refusal of any party to comply with these Rules or with the Tribunal's orders or directions, or to attend any meeting or hearing, but only after giving that party written notice that it intends to do so; and to receive and take into account such written or oral evidence as it shall determine to be relevant, whether or not strictly admissible in law.

Rule 21 - Fees of SAROD and Arbitral Tribunal Fee Schedule

Registration Fee (Non - Refundable): Rs, 10,000/- or any amount **fixed** by Governing Body from time to time. The Schedule of Fees and allied expenditure shall be decided by Governing Body.

Rule 22- Transmission of File to the Tribunal

22.1 The Secretary shall, as soon as practicable transmit to the Tribunal, a file containing the Notice of Arbitration, the Response and all case statements.

22.2 The Tribunal shall as soon as practicable, after consultation with the parties, issue such orders and/or directions as are necessary for the conduct of the arbitration to conclusion, including a timetable for steps to be taken in the arbitration and for the hearing of the arbitration.

Rule 23 - Judicial Seat of Arbitration

23.1 Unless otherwise agreed by the parties, the judicial seat of arbitration shall be New Delhi.

23.2 Notwithstanding Rule 22.1 and 22.2, the Tribunal may, unless otherwise agreed by the parties, hold hearings and meetings anywhere convenient, subject to the provisions of Rule 28.2.

Rule 24 - Language of Arbitration

The language of arbitrators shall be English. In case of material existing are in any other language, other than English the same has to be translated to English language.

Rule 25 - Conduct of the Proceedings

The Tribunal shall have the widest discretion allowed by the Act to ensure the just, expeditious, economical and final determination of the dispute. The proceedings shall be conducted from 10.AM to 5PM with a recess of one hour.

Rule 26 - Communication between Parties and the Tribunal

26.1 Where the Tribunal sends any written communication to one party, it shall send a copy to the other party or parties as the case may be.

26.2 Where a party sends any written communication (including Statements, expert reports or evidentiary documents) to the Tribunal, the same shall be copied to the other party or all other parties, whichever is applicable, and show to the Tribunal that the same has been so copied.

26.3 The address of the parties for the purpose of all communications during the proceedings shall be those set out in the Notice of Arbitration, or as either party may at any time notify the Tribunal and the other party or parties, whichever is applicable.

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26.4 A copy of correspondence between the parties and the Tribunal shall be sent to the Secretary.

Rule 27 - Party Representatives

Any party may be represented by legal practitioners or any other representatives, subject to such proof of authority as the Tribunal may require. The names and addresses of such representatives must be notified to the other party or parties. In case one party is represented by non-legal person, another party will also be represented by non-legal person so as to maintain natural justice.

Rule 28 - Hearings

Unless the parties have agreed on documents-only arbitration, the tribunal shall hold a hearing

28.1 for the presentation of evidence by witnesses, including expert witnesses, or for oral submissions.

28.2 The Tribunal shall fix the date, time and place of any meetings and hearings in the arbitrations on the first hearing, and complete time table pertaining to all the activities of the Arbitration

e. g. submission of statement of claim, reply, counter claim, reply therein, admission and denial of documents, visit/inspection of site if any. The tribunal shall stick to the time table with without any deviations unless there are unavoidable circumstances warranting such deviation which will be with the prior permission of the tribunal.

28.3 Prior to the hearing, the Tribunal may provide the Parties with matters or questions to which it wishes them to give special consideration.

28.4 In the event that a party to the proceedings without sufficient cause, fails to appear at a hearing of which the notice has been given, the Tribunal may proceed with the arbitration and may make the Award after the party present has submitted evidence to prove its case.

28.5 All meetings and hearing shall be in private unless the parties agree otherwise.

Rule 29 - Documents Only Arbitration

29.1 The Disputes may be decided without an oral hearing if it is so agreed by the parties.

29.2.1 Where the parties agree to dispense with oral hearing, the Tribunal must be promptly informed by either of the parties, as soon as is practicable. The Tribunal must also be promptly informed it, at a later stage, the parties or either of them intends to apply for an oral hearing.

29.2.2 Parties may seek discovery of documents if they are not satisfied with existence of documents annexed with statement of claim, reply and counter claim by giving self-contained request to the Tribunal justifying the necessity for such documents. Decision of tribunal shall be final and binding upon the parties.

Rule 30 - Witnesses

30.1 The Tribunal may require each party to give notice of the names and designations of the witnesses it intends to call and reasons for legal necessity of such witness.

30.2 No party shall call any expert witness without the leave of the Tribunal.

30.3 Any witness who gives evidence may be questioned by each party or its representative subject to any rulings made by the Tribunal,

30.4 A Witness may be required by the Tribunal to testify under oath or affirmation.

30.5 Subject to such order or direction which the Tribunal may make, the testimony of witness may be presented in written form, either as signed statements or by duly sworn or affirmed affidavits,

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30.6 Any party may require a witness to attend an oral examination at a hearing. If the witness fails to attend, the Tribunal may place such weight on the written testimony as it thinks fit, or may exclude it altogether,

30.7 The Tribunal shall determine the admissibility, relevance, materiality and weight of the evidence given by any witness.

Rule 31 - Experts Appointed by the Tribunal

31.1 Unless otherwise agreed by the parties, the Tribunal may:

a. appoint one or more experts to report the Tribunal on specific issues;

b. require a party to give any such expert any relevant information or to produce, or to provide access to, any relevant documents, goods or property for inspection by the expert.

31.2 Unless otherwise agreed by the parties, if a party so requests or if the Tribunal deem it fit, the expert shall, after delivery of his written or oral report, participate in an oral hearing, at which the parties may question him and present expert witnesses in order to testify on the points at issue.

31.3 Rule 30.2 shall not apply to an assessor appointed by agreement of the parties, or to an expert appointed by the Tribunal to advise solely in relation to procedural matters.

Rule 32 - Rules applicable to substance of dispute- (1) Where the place of arbitration is situated in India,

32.1 In an arbitration, the arbitral tribunal shall decide the dispute submitted to arbitration in accordance with the substantive law for the time being in force in India;

Rule 33- Closure of Hearing

33.1 The Tribunal may inquire of the parties if they have any further proof to offer or witnesses to be heard or submission to make and, if there are none, declare the hearing closed.

33.2 The Tribunal may also, in view of exceptional circumstance, reopen the hearings at any time before the award is made.

Rule 34 - Additional Powers of the Tribunal

34.1 In addition to the powers conferred by the Act, the Tribunal shall also have the power to:-

a. Allow any party, upon such termsfas to costs and otherwise) as it shall determine, to amend claims or counterclaims;

b. Extend or abbreviate any time limits provided by these Rules;

c. Conduct such enquires as may appear to the Tribunal to be necessary or expedient;

d. Order the parties to make any property or thing available for inspection

e. Order any parties to produce to the Tribunal, and to the other parties for inspection, and to supply copies of any documents or classes of documents in their possession, custody or power which the Tribunal determines to be relevant;

f. Make orders or give directions to any party for interrogatories;

g.Make orders or give directions to any party for an interim injunction or any other interim measure;

h. Make such orders or give such directions as it deems fit in so far as they are not inconsistent with the Act or any statutory re-enactment thereof or such law which is applicable or these Rules.

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34.2 If the parties so agree, the Tribunal shall also have the power to add other parties (with their consent) to be joined in the arbitration and make a single Final Award determining all disputes between them.

Rule 35 - Deposits to Costs and Expenses

35.1 The Tribunal's fees and SAROD administration fees shall be ascertained in accordance with the Schedule of Fees in Force at the time of commencement of the arbitration.

35.2 The Claimant shall deposit with the SAROD half of the fees payable at the time of filing of the Statement of Case. The Respondent shall deposit with the SAROD one-half of the fees payable at the time of filing the Statement of Respondent's Defence and Counterclaim (if any). The balance of fees payable shall be paid 60 days before the date of the final hearing or on such other date that the Secretary may direct.

35.3 Where the amount of the claim or the counterclaim is not quantifiable at the time payment is due, the Secretary will make a provisional estimate. The fees will be adjusted in the light of such information as may subsequently become available. If the arbitration is settled or disposed of without a hearing, the amount of the Tribunal's fees and SAROD administration fees shall be finally determined by the Secretary who will have regard to all the circumstances of the case, including the stage of proceedings at which the arbitration is settled or otherwise disposed of.

35.4 The Secretary may from time-to-time direct parties to make one or more deposit(s) towards any further expenses incurred or to be incurred on behalf of or for the benefit of the parties.

35.5 All deposit(s) shall be made to and held by the SAROD. Any interest which may accrue on such deposit(s) shall be retained by the SAROD.

35.6 If a party fails to make the payments or deposits required or directed, the Tribunal may refuse to hear the claims or counterclaims, whichever is applicable, by the non-complying party, although it may proceed to determine claims or counterclaims by any party who has complied with orders.

35.7 The parties shall remain jointly and severally liable to the SAROD for payment of all such fees and expenses until they have been paid in full even if the arbitration is abandoned, suspended or concluded, by agreement or otherwise, before the final Award is made.

Rule 36 - Decision Making by the Tribunal

36.1 Where a Tribunal has been appointed, any direction, order, decision or award of the Tribunal must be made by the whole Tribunal or a majority. If an arbitrator refuses or fails to sign the Award, the signatures of the majority shall be sufficient, provided that the reason for the omitted signature is stated.

36.2 If there is no unanimity, the same shall be made by the majority arbitrators as well as by the dissenting Arbitrator alone as if acting as a sole arbitrator.

36.3 However, in the case of a three-member Tribunal the presiding arbitrator may, after consulting the other arbitrators, make procedural rulings alone.

Rule 37 - The Award

37.1 It will be mandatory for the parties to submit written synopsis of their arguments respectively which will form part of the arbitral proceedings.

37.2 The Tribunal shall assemble at the assigned place in SAROD and shall exercise utmost secrecy and confidentiality in writing the award,

37.3 Unless the Secretary extends the time or the parties agree otherwise, the Tribunal shall make its Award in writing within 30 days from the date on which the hearings are closed and shall state

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the reasons upon which its award is based. The award shall contain the date and shall be signed by the arbitrator or arbitrators.

37.4 The Tribunal may make interim awards or separate awards on different issues at different times.

37.5 All Awards must be submitted by the Tribunal to the Secretary and they shall be issued through the Secretary.

37.6 The Tribunal must deliver to the Secretary number of originals of the award sufficient for the parties and for filing with the Secretary.

37.7 The Secretary shall release the award to the parties only upon receipt of sufficient deposits to cover the fees and expenses due to the Tribunal and to the SAROD.

37.8 By agreeing to have arbitration under these Rules, the parties undertake to carry out the award without delay.

37.9 Stamp duty on award shall be payable by the party in whose favor the award has been pronounced.

Rule 38 - Additional Award

38.1 Within 30 days after the receipt of the award, either party, with notice to the Secretary and the other party may request the Tribunal to make an additional award as to claims presented in the arbitral proceedings but omitted from the award.

38.2 If the Tribunal considers the request for an additional award to be justified and considers that the omission can be rectified without any further hearings or evidence, it shall notify all the parties within 7 days of the receipt of the request, that it will make and additional award, and complete the additional award within 30 days after the receipt of the request.

Rule 39 - Correction of Awards

39.1 Within 30 days of receiving an Award, unless another period of time has been agreed upon by the parties, a party may by notice to the Secretary and the other party request the Tribunal to correct in the Award, any errors in computation, any clerical or typographical errors or any errors of similar nature.

39.2 If the Tribunal considers the request to be justified, it shall make the corrections) within 30 days of receiving the request. Any correction shall be notified in writing to the parties and shall become part of the Award.

39.3 The Tribunal may correct any error of the type referred to in Rule 37.1 on its own imitative within 30 days of the date of the Award.

Rule 40 - Settlement

40.1 If, the parties arrived at amicable settlement of the dispute during the currency proceedings, the parties shall file memo of settlement before the tribunal who shall either issue an order for the termination of the arbitral proceedings or, if requested by both parties and accepted by the Tribunal, record the settlement in the form of an arbitral award on agreed terms. The Tribunal is not obliged to give reasons for such an award,

40.2 The Parties shall:

Notify the Tribunal and the Secretary immediately if the arbitration is settled or otherwise

a. terminated:

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b. Make provision in any settlement for payment of all the costs of the arbitration and fees and expenses due to the SAROD and the Tribunal.

40.3 If the continuation of the arbitral proceedings becomes unnecessary or impossible for any reason not mentioned in Rule 38.1, before the award is made, the Tribunal shall inform the parties of its intention to issue an order for the termination of the proceedings. The Tribunal shall have the power to issue such an order unless party raises justifiable grounds for objection.

40.4 Copies of the order for termination of the arbitral proceedings or of the arbitral award on. agreed terms, signed by the Tribunal, shall be communicated by the Tribunal to the parties through the Secretary.

Rule 41 - Interest

The Tribunal may award interest on any sum awarded at such rate as applicable in fixed deposits of Sate Bank of India in respect of such periods ending not later than the date of the award as the Tribunal considers just.

Rule 42 - Costs

42.1 The Tribunal shall specify in the final award, the costs of the arbitrations and decide which party shall bear them and in what proportion they shall be borne.

42.2 In this Rule, “costs of the arbitration” shall include:

a. The fees and expenses of the Tribunal and the administration fees of the SAROD as determined by the Secretary in accordance with the Schedule of Fees;

b. The costs of tribunal appointed experts or of other assistance rendered: and

c. All expenses which are reasonably incurred by the SAROD in connection with the arbitration.

42.3 The Tribunal has power to order in its Award, that all or part of the legal or other costs (such as legal fees and expenses, costs incurred in respect of party appointed experts etc) of one party shall be paid by the other party.

Rule 43 - Waiver

A party which is aware of non-compliance with these Rules and yet proceeds with the arbitration without promptly stating its objection in writing to such non-compliance shall be deemed to have waived its right to object.

Rule 44 - Exclusion of Liability

44.1 The Tribunal, the President, the SAROD and any of its officers, employees or agents shall not be liable to any party for any act or omission in connection with any arbitration conducted under these Rules,

44.2 After the Award as been made and the possibilities of corrections and additional Awards have lapsed or been exhausted, neither the Tribunal nor the President shall be under any obligation to make any statement to any person about any matter concerning the arbitration, and no party shall seek to make any arbitrator or the President or the SAROD and any of its officers a witness in any legal proceedings arising out of the arbitration.

Rule 45 - General Provisions

45.1 In all matters not expressly provided for in these Rules, the President, the Secretary and the Tribunal shall act in the spirit of these Rules and shall make every reasonable effort to ensure the just, expeditious and economical conclusion of the arbitration.

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45.2 The Secretary may from time-to-time issue Practice Notes on the implementation of these Rules.

Rule 46 - Amendment to Rules

These Rules may from time to time be amended by the Governing Body of SAROD.

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APPENDIX-IV

FORMAT FOR THE PROGRESS OF THE PROJECT

(It is a sample format and may be modified as per the requirements of the project)

(under clause 23.2.4 and para 3.1 of Schedule-M)

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APPENDIX-IV*
FORMAT FOR THE PROGRESS OF THE PROJECT
(under clause 23.2.4 and para 3.1 (ix) of Schedule-Q)
Name of the Project:…… ……
State:……. NH No……. Length (in km):……
Authority BPC (INR in crore) …… Concessionaire BPC (INR in crore)…… Amount of Advances (INR in crore):……
Month and Year:-

BOQ item		Unit	As per the work programme at appointed date		Physical progress actual achieved (%)		Deficiency in the progress	Financial Expenditure excluding advances (INR in crore)			Remarks
			Physical (%)	Financial	Upto last month	Current Month		Upto last month	Current Month	Total	
Clearing and grubbing		Km									
Earthwork		Cum									
Subgrade		Cum									
Structural work	Culverts and Bridges										
	Sub Structure	M									
	Super Structure	Cum									
	VUP, PUP, CUP, etc.	Cum									
Pavement Layer	Pavement Layer 1	Cum									
	Pavement Layer 2	Cum									
	Pavement Layer 3	Cum									
Drainage & protection work		Km									
Project Facilities											
Miscellaneous Item											

It is a sample format and may be modified as per the requirements of the project

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