



# **National Highways Authority of India**

**(Ministry of Road Transport & Highways)**

**(Government of India)**

**"CONSTRUCTION OF EIGHT LANE EXPRESSWAY STARTING BEFORE KMP EXPRESSWAY AND ENDS AT CH. 47+000 NEAR KHANPUR GHATI (KM 18+500 TO KM 47+000) SECTION OF DELHI - VADODARA GREEN FIELD ALIGNMENT (NH-148N) ON EPC MODE UNDER BHARATMALA PARIYOJANA IN THE STATE OF HARYANA ON EPC MODE"**

## **ENGINEERING PROCUREMENT AND CONSTRUCTION (EPC) AGREEMENT**

**Between**

**National Highways Authority of India**

**G-5&6, Sector-10, Dwarka, New Delhi-110075**

**And**

**APCO Infratech Private Limited**

**4th Floor, Universal Trade Tower, Sohna Road,**

**Sector-49, Gurugram-122101 (Haryana)**

### **VOLUME-I**

**(EPC AGREEMENT, SCHEDULES & ANNEXURES)**

**July-2019**

**Part I**  
**Preliminary**



*Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near  
Khanpur Ghati (km 18+500 to km 47+500) section of Delhi Vadolura Green field Alignment (NH-14B N)  
an EPC mode under Bharatmala Pariyojana in the state of Haryana*



सत्यमेव जयते

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## Government of National Capital Territory of Delhi

### e-Stamp

Certificate No.	: IN-DL15238859773024R
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Account Reference	: IMPACC (IV) dl845303/DELHI/ DL-DLH
Unique Doc. Reference	: SUBIN-DL084530336414414331914R
Purchased by	: APCO INFRATECH PRIVATE LIMITED
Description of Document	: Article 5 General Agreement
Property Description	: Not Applicable
Consideration Price (Rs.)	: 0 (Zero)
First Party	: APCO INFRATECH PRIVATE LIMITED
Second Party	: NATIONAL HIGHWAYS AUTHORITY OF INDIA
Stamp Duty Paid By	: APCO INFRATECH PRIVATE LIMITED
Stamp Duty Amount (Rs.)	: 100 (One Hundred only)



Please write or type below this line.

### Engineering, Procurement and Construction Agreement

THIS AGREEMENT is entered into on this the 11<sup>th</sup> day of July, 2019

Between

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



*[Handwritten Signature]*

#### Statutory Alert:

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Chairman, National Highways Authority of India, G-5 & 6, Sector 10, Dwarka, New Delhi-110075 (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**

M/s APCO Infratech Private Limited, the selected bidder having its Corporate Office at 4<sup>th</sup> Floor, Universal Trade Tower, Sohna Road, Sector-49, Gurugram-122101 (Haryana), (hereinafter referred to as the "Contractor" which expression shall, unless repugnant to the context or meaning thereof, include its successors and permitted assigns) of the **Other Part.**

Whereas:

- A. The Government of India entrusted the development, maintenance and management of National Highway No. 148-N including the section from km 18+500 to km 47+000 (approx. 28.500 km) to the Authority;
- B. The Authority resolved to Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati from km 18+500 to km 47+500 (approximately 28.500 km) on the section of National Highway No.148-N (hereinafter called the "NH -148-N") in the state of Haryana by eight -Laning on Engineering, Procurement, Construction ("EPC") basis in accordance with the terms and conditions to be set forth in an agreement to be entered into.
- C. The Authority accordingly invited the proposals (the "Request for Proposals" or "RFP") from the eligible bidders as per the technical and commercial terms and conditions prescribed in the RFP for undertaking the Project.
- D. After evaluation of the bids received, the Authority accepted the bid of the selected bidder and issued its Letter of Acceptance No. NHA/BM/DELHI-Vadodara/2018/Pkg.2/131566 dated 05.03.2019 (hereinafter called the "LOA") to the selected bidder for rehabilitation and augmentation of the above section of NH -148-N at the Contract Price specified hereinafter, requiring the selected bidder to inter alia:
  - (i) to give his consent to enter into this Agreement and the enforceability of the provisions thereof, within 10 (ten) days of the date of issue of LOA;
  - (ii) submit Performance Security and Additional Performance Security (if any) as per RFP requirements, and
  - (iii) execute this Agreement within 10 days from the receipt of 50% of Performance Security and 50% of Additional Performance Security, if any.
- E. The Contractor has fulfilled the requirements specified in Recital (D) above;



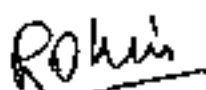
*[Handwritten signature]*



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

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 SIGNED, SEALED AND DELIVERED For and on behalf of

THE NATIONAL HIGHWAYS AUTHORITY OF INDIA by: M/s APCO Infratech Private Limited, by:

  
 रोहित कुमार गुप्ता / Rohin Kumar Gupta  
 (Rohin Kumar Gupta) / GM (Tech.)  
 भारतीय राष्ट्रीय राजमार्ग प्राधिकरण  
 National Highways Authority of India  
 भारत सरकार के राजमार्ग विभाग  
 (Ministry of Road Transport & Highways)  
 जी-5 एवं 6, सेक्टर-10, द्वारका, नई दिल्ली-75

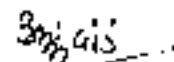
   
 (D Dilly Babu)  
 Joint Vice President (Business Development  
 and Tendering)  
 M/s APCO Infratech Private Limited

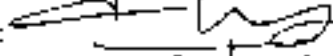
G- 5&6, Sector 10, Dwarka,  
 New Delhi 110 075, India

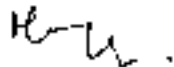
4th Floor, Universal Trade Tower, Sohna  
 Road, Sector-49, Gurugram-122101  
 (Haryana)


In the presence of Witnesses:

In the presence of Witnesses:

1. Signature:   
 Name:   
 Address:   
 अम जे. पंथे  
 सदस्य (परिचोपक)

1. Signature:   
 Name: V.N. Dubey  
 Address:

2. Signature:   
 Name:   
 Address: मनोज कुमार / Manoj Kumar  
 मुख्य महासंचालक (तकनी) / GM (Tech.)  
 भारतीय राष्ट्रीय राजमार्ग प्राधिकरण  
 National Highways Authority of India  
 सड़क परिवहन और राजमार्ग विभाग  
 (Ministry of Road Transport & Highways)  
 जी-5 एवं 6, सेक्टर-10, द्वारका, नई दिल्ली-75  
 G - 5 & 6, Sector - 10, Dwarka, New Delhi - 75

2. Signature:   
 Name: SUDHIR KUMAR  
 Address:



सत्यमेव जयते

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Government of National Capital Territory of Delhi

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Unique Doc. Reference	: SUBIN-DLDEL24530336415368007716R
Purchased by	: APCO INFRA TECH PRIVATE LIMITED
Description of Document	: Article 5 General Agreement
Property Description	: Not Applicable
Consideration Price (Rs.)	: 0 (Zero)
First Party	: APCO INFRA TECH PRIVATE LIMITED
Second Party	: NATIONAL HIGHWAYS AUTHORITY OF INDIA
Stamp Duty Paid By	: APCO INFRA TECH PRIVATE LIMITED
Stamp Duty Amount (Rs.)	: 100 (One Hundred only)



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### इंजीनियरी प्रापण और निर्माण करार

यह करार आज दिनांक 11, July, 2019 को निम्नलिखित के बीच किया गया

सड़क परिवहन और राजमार्ग मंत्रालय, भारत सरकार के जरिए भारत के राष्ट्रपति जिनका प्रतिनिधित्व अध्यक्ष, भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, जी-6 और 8, सेक्टर-10 द्वारका, नई दिल्ली-110075 करते हैं (जिसे इसमें इसके पश्चात् "प्राधिकरण" कहा गया है और जिसकी अभिव्यक्ति में जब तक इसके संदर्भ अथवा अर्थ से असंगत न हो, इसके प्रशासक, उत्तराधिकारी और वसूल्दारी शामिल होंगे) एक पक्ष:



*[Handwritten Signature]*

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#### Statutory Awar:

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और

एपको इंफ्राटेक प्राइवेट लिमिटेड अर्थात् चयनित बोलीदाता जिसका निगमित कार्यालय- चौथा तल, यूनिवर्सल ट्रेड टावर, सोहना रोड, सैक्टर-49, गुरुग्राम-122101 में है, (जिसे इसमें इसके पश्चात् "संविदाकार" कहा गया है और जिसकी अभिव्यक्ति में, जब तक इसके संदर्भ अथवा अर्थ से असंगत न हो, इसके उत्तराधिकारी और अनुसृत समनुदेशिनी शामिल होंगे) दूसरा पक्ष।

यत्:

- क) भारत सरकार ने 18+500 किमी से 47+000 किमी (लगभग 28.500 किमी) सेक्शन सहित राष्ट्रीय राजमार्ग सं.148-एन के विकास, अनुरक्षण और पंचधन का कार्य प्राधिकरण को सौंपा था।
- ख) प्राधिकरण ने किए जाने वाले करार में विहित शर्तों के अनुसार हरियाणा में राष्ट्रीय राजमार्ग - 148-एन (जिसे इसमें इसके पश्चात् "राष्ट्रीय राजमार्ग-148-एन" कहा गया है) के 18+500 किमी से 47+500 किमी (लगभग 28.500 किमी) तक केएमपी एक्सप्रेसवे से आरंभ होते हुए और खानपुर घाटी के पास घेनेज 47+000 पर समाप्त, 8 लेन एक्सप्रेसवे के निर्माण को इंजीनियरी, प्रापण, निर्माण ("ईपीसी") आधार पर 8 लेन का बनाने का संकल्प लिया था।
- ग) प्राधिकरण ने तकनीकी और वाणिज्यिक शर्तें निर्धारित की थीं और परियोजना को हाथ में लेने के लिए बोलीदाताओं से बोलियां ("प्रस्तावों के लिए अनुरोध" अथवा "आरएफपी") आमंत्रित की थीं।
- घ) प्राप्त बोलियों के मूल्यांकन के बाद प्राधिकरण ने चयनित बोलीदाता की बोली को स्वीकार कर लिया और इसके पश्चात् विनिर्दिष्ट संविदा मूल्य पर सरा-2 के उपर्युक्त सेक्शन के पुनरुद्धार और संवर्धन हेतु स्वीकृति पत्र संख्या NHA/BM/DELHI-Vadodara/2018/Pkg. 2/131568 तारीख 05.03.2018 (जिसे इसमें इसके पश्चात् "एनओए" कहा गया है) जारी कर दिया जिसमें अन्वयों के साथ-साथ चयनित बोलीदाता से निम्नलिखित अपेक्षित था:
- i) एनओए के जारी होने की तारीख से (10 दस) दिन के अंदर यह करार किए जाने और उसके प्रावधानों की प्रवर्तनीयता के संबंध में सहमति देना,
- ii) आर एफ पी की आवश्यकताओं के अनुसार निष्पादन प्रतिभूति और अतिरिक्त निष्पादन प्रतिभूति (यदि कोई हो) प्रस्तुत करना और
- iii) 50% निष्पादन प्रतिभूति और 50 %अतिरिक्त निष्पादन प्रतिभूति यदि कोई हो प्राप्ति होने की तारीख से 10 दिन के अंदर इस करार को निष्पादित करना,

च) संविदाकार ने उपर (इ) में विनिर्दिष्ट अपेक्षाओं को पूरा कर लिया है

अतः अब पूर्वोक्त तथा संबंधित प्रसंविदाओं और इस करार में उल्लिखित करारों को ध्यान में रखते हुए जिसकी पर्याप्तता और उपयुक्तता को एतद्द्वारा स्वीकार किया जाता है प्राधिकरण एतद्द्वारा इसमें विनिर्दिष्ट दायित्वों के मद्देनजर संविदा मूल्य अथवा ऐसी कोई अन्य राशि जो करार के प्रावधानों में विनिर्दिष्ट विधि तथा समय पर देख हो तथा कानूनी तौर पर बाध्यकारी हो का संविदाकार को भुगतान करने के लिए वचनबद्ध होता है। दोनों पक्ष निम्नलिखित के लिए सहमत हो गए हैं:



*[Handwritten signature]*

## Article 1

### Definitions and Interpretations

#### 1.1 Definitions

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

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

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

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

**"Affected Party"** shall have the meaning set forth in Clause 21.1,

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

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

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

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

Construction of **Expressway** starting before **KJAP Expressway** and ends at **Ch. 47+000** near **Khanpur Chatti (Kms 28+500 to Km 47+500)** section of **Delhi-Vadodara Green field Alignment (NH-148 N)** on EPC mode under **Public-Private Partnership** in the state of **Haryana**.





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

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

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

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

**"Authority's Engineer"** shall have the meaning set forth in Clause 10.7;

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

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

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

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

**"Bid"** means the documents in their entirety comprised in the bid submitted by the selected bidder in response to the Request for Proposal in accordance with the provisions thereof;

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

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

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

Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Rhaupur Ghat (km 500 to km 47+500) section of Delhi-Vadodra Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.



"Change of Scope" shall have the meaning set forth in Article 13;

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

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

"Change of Scope Order" shall have the meaning set forth in Clause 13.2 (v);

"Completion Certificate" shall have the meaning set forth in Clause 12.2;

"Construction" shall have the meaning set forth in Clause 1.2 (f);

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

"Construction Zone" shall have the meaning set forth in Clause 8.3 (1);

"Contract Price" means the amount specified in Clause 19.1 (i);

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

"Contractor Default" shall have the meaning set forth in Clause 23.1;

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

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

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

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

"Defects Liability Period" shall have the meaning set forth in Clause 17.1;

*Rohit*  
Construction of the 4<sup>th</sup> Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near  
Khanpur Ghat (km 18+000 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-118) on  
an EPC mode under the Anala Purvrajana in the state of Haryana.

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

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

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

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

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

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

**"EPC"** means engineering, procurement and construction;

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



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

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

**"GAB" or "General Arrangement Drawings"** shall have the meaning set forth in Clause 3.1 (iii) (b);

**"GOI" or "Government"** means the Government of India;

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



Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near  
Khanpur Ghata (RM-20-000 to km 47+300) section of Delhi-Vadodra Green field Alignment (NH-148 N)  
on EPC mode under Bharatmala Pariyojana in the state of Haryana.

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

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

**"IRC"** means the Indian Roads Congress;

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

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

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

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

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

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

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

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

*Construction of the Lane Expressway starting before KMP Expressway and ends at Ck. 47+500 near Khanpur Ghat (km 18+000 to km 47+500) section of Delhi Vadodara Green field Alignment (NH-178) on EPC mode of Contract under Public-Private Partnership in the state of Haryana.*

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

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

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

"**Maintenance Manual**" shall have the meaning ascribed to it in Clause 10.7;

"**Maintenance Programme**" shall have the meaning set forth in Clause 14.3;

"**Maintenance Period**" shall have the meaning set forth in Clause 14.1;

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

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

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

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

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

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

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

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

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

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

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

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

Construction of a 4-lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near  
Kharpur Ghata, Near 15<sup>th</sup> Mile, Km 47-500) section of Delhi-Vadodra Green field Alignment (NH-238 N)  
on EPC mode under the Pratiyogita Pariyojana in the state of Haryana.

"Programme" shall have the meaning set forth in Clause 10.1 (iii);

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

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

"Project Completion Date" means the date on which the Completion Certificate is issued;

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

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

"Project Highway" means the Site comprising the Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana and all Project Assets, and its subsequent development and augmentation in accordance with this Agreement;

"Project Milestone" means the project milestone set forth in Schedule-J;

"Proof Consultant" shall have the meaning set forth in Clause 10.2;

"Quality Assurance Plan" or "QAP" shall have the meaning set forth in Clause 11.2;

"Ru.", "Rs." or "Rupees" or "Indian Rupees" or "INR" means the lawful currency of the Republic of India;

"Request for Proposals" or "RFP" shall have the meaning set forth in Recital 'C';

"Retention Money" shall have the meaning set forth in Clause 7.5;

"Right of Way" means and refers to the total land required and acquired for the project, both in its width and length, together with all way leaves, easements, unrestricted access and other rights of way, howsoever described, necessary for

Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

construction and maintenance of the Project Highway in accordance with this Agreement;

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

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

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

"**Scope of the Project**" shall have the meaning set forth in Clause 2.1.

"**Section**" means a part of the Project Highway;

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

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

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

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

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



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

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

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

"**Termination**" means the expiry or termination of this Agreement;

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

  
Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Km 18+500 to Km 47+500) section of Delhi-Vadodara Green field Alignment (NH-148-N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

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

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

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

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

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




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

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

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

## 1.2 Interpretation

- (i) In this Agreement, unless the context otherwise requires,
- (a) references to any legislation or any provision thereof shall include amendment or re-enactment or consolidation of such legislation or any provision thereof so far as such amendment or re-enactment or consolidation applies or is capable of applying to any transaction entered into hereunder;
  - (b) references to laws of India or Indian law or regulation having the force of law shall include the laws, acts, ordinances, rules, regulations, bye laws or notifications which have the force of law in the territory of India and as from time to time may be amended, modified, supplemented, extended or re-enacted;
  - (c) references to a "person" and words denoting a natural person shall be construed as a reference to any individual, firm, company, corporation, society, trust, government, state or agency of a state or any association or partnership (whether or not having separate legal personality) of two or more of the above and shall include successors and assigns;

  
  
  
Construction of ~~High~~ **Four Lane Expressway** starting before **KMP Expressway** and ends at **Ch. 47+000** **Kharapur Ghat** (km 47+500) section of **Delhi-Vadodra Green field Alignment (NH-148 N)** on **FFC** mode under **thirteenth Five Year Plan** in the state of **Uttar Pradesh**.



- (d) the table of contents, headings or sub headings in this Agreement are for convenience of reference only and shall not be used in, and shall not affect, the construction or interpretation of this Agreement.
- (e) the words "include" and "including" are to be construed without limitation and shall be deemed to be followed by "without limitation" or "but not limited to" whether or not they are followed by such phrases;
- (f) references to "construction" or "building" include, unless the context otherwise requires, survey and investigation, design, developing, engineering, procurement, supply of plant, materials, equipment, labour, delivery, transportation, installation, processing, fabrication, testing, and commissioning of the Project Highway, including maintenance during the Construction Period, removing of defects, if any, and other activities incidental to the construction and "construct" or "build" shall be construed accordingly;
- (g) references to 'development' include, unless the context otherwise requires, construction, renovation, refurbishing, augmentation, up-gradation and other activities incidental thereto during the Construction Period, and "develop" shall be construed accordingly;
- (h) any reference to any period of time shall mean a reference to that according to Indian standard time;
- (i) any reference to day shall mean a reference to a calendar day;
- (j) references to a "business day" shall be construed as a reference to a day (other than a Sunday) on which banks in Delhi are generally open for business;
- (k) any reference to month shall mean a reference to a calendar month as per the Gregorian calendar;
- (l) references to any date, period or Project Milestone shall mean and include such date, period or Project Milestone as may be extended pursuant to this Agreement;
- (m) any reference to any period commencing "from" a specified day or date and "till" or "until" a specified day or date shall include both such days or dates; provided that if the last day of any period computed under this Agreement is not a business day, then the period shall run until the end of the next business day;
- (n) the words importing singular shall include plural and vice versa;
- (o) references to any gender shall include the other and the neutral gender;
- (p) "lakh" means a hundred thousand (100,000) and "crore" means ten million (10,000,000);
- (q) "indebtedness" shall be construed so as to include any obligation (whether incurred as principal or surety) for the payment or repayment of money, whether present or future, actual or contingent;

Construction of Four Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near  
 Khanpur Ghat (Km 38 - 40) to km 47+500) section of Delhi-Vadodra Green field Alignment (NH-748 N)  
 on EPC mode under Provisional Purification in the state of Haryana.

- (r) references to the "winding-up", "dissolution", "insolvency", or "reorganisation" of a company or corporation shall be construed so as to include any equivalent or analogous proceedings under the law of the jurisdiction in which such company or corporation is incorporated or any jurisdiction in which such company or corporation carries on business including the seeking of liquidation, winding-up, reorganisation, dissolution, arrangement, protection or relief of debtors;
- (s) save and except as otherwise provided in this Agreement, any reference, at any time, to any agreement, deed, instrument, licence or document of any description shall be construed as reference to that agreement, deed, instrument, licence or other document as amended, varied, supplemented, modified or suspended at the time of such reference; provided that this Clause shall not operate so as to increase liabilities or obligations of the Authority hereunder or pursuant hereto in any manner whatsoever;
- (t) any agreement, consent, approval, authorisation, notice, communication, information or report required under or pursuant to this Agreement from or by any Party or the Authority's Engineer shall be valid and effective only if it is in writing under the hand of a duly authorised representative of such Party or the Authority's Engineer, as the case may be, in this behalf and not otherwise;
- (u) the Schedules and Recitals to this Agreement form an integral part of this Agreement and will be in full force and effect as though they were expressly set out in the body of this Agreement;
- (v) references to Recitals, Articles, Clauses, Sub-clauses or Schedules in this Agreement shall, except where the context otherwise requires, mean references to Recitals, Articles, Clauses, Sub-clauses and Schedules of or to this Agreement, and references to a Paragraph shall, subject to any contrary indication, be construed as a reference to a Paragraph of this Agreement or of the Schedule in which such reference appears;
- (w) the Damages payable by either Party to the other of them, as set forth in this Agreement, whether on per item basis or otherwise, are mutually agreed genuine pre-estimated loss and damage likely to be suffered and incurred by the Party entitled to receive the same and are not by way of penalty or liquidated damages (the "Damages"); and
- (x) time shall be of the essence in the performance of the Parties' respective obligations. If any time period specified herein is extended for the reasons specified in the Agreement, such extended time shall also be of the essence.
- (ii) Unless expressly provided otherwise in this Agreement, any Documentation required to be provided or furnished by the Contractor to the Authority shall be provided free of cost and in three copies, and if the Authority is required to return any such Documentation with its comments and/or approval, it shall be entitled to retain two copies thereof.

Construction of Express Lane Expressway starting before IAP Expressway and ends at Ch. 47+000 near Khanpur Ghazi (Km 12+500 to Km 47+500) section of Delhi-Vododara Green field Alignment (NH-7) under an EPC mode under Public-Private Partnership in the state of Haryana.




- (iii) The rule of construction, if any, that a contract should be interpreted against the parties responsible for the drafting and preparation thereof, shall not apply.
- (iv) Any word or expression used in this Agreement shall, unless otherwise defined or construed in this Agreement, bear its ordinary English meaning and, for these purposes, the General Clauses Act, 1897 shall not apply.

### 1.3 Measurements and arithmetic conventions

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

### 1.4 Priority of agreements and errors/discrepancies

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

    
Construction of Right-of-Way Expressway starting before RMP Expressway and ends at Ch. 47+000 near  
Khanpur Ghat (km 42+500 to km 47+500) section of Delhi-Vadudara Green field Alignment (NH-148 N)  
on EPC mode under Bharatmala Pariyojana in the state of Haryana.

Part II  
Scope of Project



Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Kanpur Ghat (km 18+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-148 N) as EPC mode under Bharatmala Pariyojana in the state of Haryana.

## Article 2

### Scope of the Project

#### 2.1 Scope of the Project

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

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



Construction of Eight Lane Expressway starting before RMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (km 18+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana

## Article 3

### Obligations of the Authority

#### 3.1 Obligations of the Authority

- (i) The Authority shall, at its own cost and expense, undertake, comply with and perform all its obligations set out in this Agreement or arising hereunder.
- (ii) The Authority shall be responsible for the correctness of the Scope of the Project, Project Facilities, Specifications and Standards and the criteria for testing of the completed Works.
- (iii) The Authority shall, upon submission of the Performance Security as per the RFP by the Contractor, shall provide to the Contractor:
- (a) No less than 90% (ninety per cent) of the required Right of Way of the Construction Zone of total length of the Project Highway within a period of 30 (thirty) days from the date of this Agreement, which shall be in contiguous stretches of length not less than 5 (five) kilometre.
  - (b) approval of the general arrangement drawings (the "GAD") from railway authorities to enable the Contractor to construct road over-bridges/ under-bridges at level crossings on the Project Highway in accordance with the Specifications and Standards, and subject to the terms and conditions specified in such approval, within a period of 60 (sixty) days from the Appointed Date, and reimbursement of all the costs and expenses paid by the Contractor to the railway authorities for and in respect of the road over-bridges/ under bridges; and
  - (c) all environmental clearances as required under Clause 3.3.
- (iv) Delay in providing the Right of Way or approval of GAD by railway authorities, as the case may be, in accordance with the provisions of Clause 3.1 (iii) shall entitle the Contractor to Damages in a sum calculated in accordance with the provisions of Clause 8.3 of this Agreement and Time Extension in accordance with the provisions of Clause 10.5 of this Agreement. For the avoidance of doubt, the Parties agree that the Damages for delay in approval of GAD by the railway authorities for a particular road over-bridge/ under-bridge shall be deemed to be equal to the Damages payable under the provisions of Clause 8.3 for delay in providing Right of Way for a length of 2 (two) kilometre for each such road over-bridge/ under-bridge.
- (v) Notwithstanding anything to the contrary contained in this Agreement, the Parties expressly agree that the aggregate Damages payable under Clauses 3.1 (iv), 8.3 and 9.5 shall not exceed 1% (one per cent) of the Contract Price. For the avoidance of doubt, the Damages payable by the Authority under the aforesaid Clauses shall not be

*Construction of Four Lane Expressway starting before NMP Expressway and ends at Ch. 47+000 (near Khanpur Ghati (km 18+500 to Km 47+500) section of Delhi Gurgaon Green field Alignment) on EPC mode under Bharatmala Pariyojana in the state of Haryana.*



additive if they arise concurrently from more than one cause but relate to the same part of the Project Highway.

Both the parties agree that payment of such Damages shall be full and final settlement of all claims of the Contractor and such compensation shall be the sole remedy against delays of the Authority and both parties further agree that the payment of Damages shall be the final cure for the Contractor against delays of the Authority, without recourse to any other payments

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

### 3.2 Maintenance obligations prior to the Appointed Date

The Authority shall, prior to the Appointed Date, maintain the Project Highway, at its own cost and expense, so that its traffic worthiness and safety are at no time materially inferior as compared to its condition 10 (ten) days prior to the last date for submission of the Bid, and in the event of any material deterioration or damage other

*Rajiv*  
Consignment of *Digit Lone Expressway* starting before KMP Expressway and ends at Ch. 47+500 (near Khanpur Ehat) (km 42+500 to km 47+500) section of Delhi-Vadodra Green field Alignment on EPC mode under Bharatmala Pariyojana in the state of Haryana  
108-148  
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than normal wear and tear, undertake repair thereof. For the avoidance of doubt, the Authority shall undertake only routine maintenance prior to the Appointed Date, and it shall undertake special repairs only in the event of excessive deterioration or damage caused due to unforeseen events such as floods or earthquake.

### 3.3 Environmental Clearances

The Authority represents and warrants that the environmental clearances required for construction of the Project shall be procured by the Authority prior to the date of issue of LDA. For the avoidance of doubt, the present status of environmental clearances is specified in Schedule-A.

### 3.4 Deemed Termination upon delay

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



Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch 47+000 near Khanpur Ghat (km 118.500 to km 17+500) section of Delhi-Vadodra Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.



## Article 4

### Obligations of the Contractor

#### 4.1 Obligations of the Contractor

- (i) Subject to and on the terms and conditions of this Agreement, the Contractor shall undertake the survey, investigation, design, engineering, procurement, construction, and maintenance of the Project Highway and observe, fulfil, comply with and perform all its obligations set out in this Agreement or arising hereunder.
- (ii) The Contractor shall comply with all Applicable Laws and Applicable Permits [including renewals as required] in the performance of its obligations under this Agreement.
- (iii) Subject to the provisions of Clauses 4.2 (i) and 4.1 (ii), the Contractor shall discharge its obligations in accordance with Good Industry Practice and as a reasonable and prudent person.
- (iv) The Contractor shall remedy any and all loss, defects, or damage to the Project Highway from the Appointed Date until the end of the Construction Period at the Contractor's cost, save and except to the extent that any such loss, defect, or damage shall have arisen from any wilful default or neglect of the Authority.
- (v) The Contractor shall remedy any and all loss, defect or damage to the Project Highway during the Defects Liability Period at the Contractor's cost to the extent that such loss, defect or damage shall have arisen out of the reasons specified in Clause 17.3.
- (vi) The Contractor shall remedy any and all loss or damage to the Project Highway during the Maintenance Period at the Contractor's cost, including those stated in Clause 14.1 (ii), save and except to the extent that any such loss or damage shall have arisen on account of any wilful default or neglect of the Authority or on account of a Force Majeure Event.
- (vii) The Contractor shall, at its own cost and expense, in addition to and not in derogation of its obligations elsewhere set out in this Agreement:
  - (a) make, or cause to be made, necessary applications to the relevant Government Instrumentalities with such particulars and details as may be required for obtaining Applicable Permits set forth in Schedule F and obtain and keep in force and effect such Applicable Permits in conformity with the Applicable Laws;
  - (b) procure, as required, the appropriate proprietary rights, licences, agreements and permissions for Materials, methods, processes and systems used or incorporated into the Project Highway;

Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch 47+000 (near Rhanpur Chabutra) to km 47+500 section of Delhi-Tadodora Green field Alignment (NH-248-B) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

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

*Construction of 2-lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghazi (km 47+000 to km 47+500) section of Delhi-Vodadara Green field Alignment (NH-248A) an EPC mode under Bharatmala Pariyojana in the state of Haryana.*

- (x) The Contractor shall provide the documents of the Contractor specified in the Agreement, and all Contractors' personnel; Goods, consumables and other things and services, whether of a temporary or permanent nature, required in and for the execution, completion of Works and remedying defects.
- (xi) The Contractor shall perform the Works in conformity with the Project requirements and other requirements and standards prescribed under or pursuant to the Agreement.
- (xii) The Contractor shall carry out such work incidental and contingent to the original Scope of the Project to comply with Good Industry Practices.
- (xiii) The Contractor shall maintain required staff and necessary Contractor's equipment and materials within the reach of the Site during the Defects Liability Period so that any defects arising are promptly attended.

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

- (i) The Contractor, whether Joint Venture or sole, shall not sub-contract any Works in more than **49% (forty nine per cent)** of the Contract Price and shall carry out Works directly under its own supervision and through its own personnel and equipment in at least **51% (fifty one per cent)** of the Contract Price. Further, in case the Contractor is a Joint Venture, then the Lead Member shall carry out Works directly through its own resources (men, material and machines etc.) in at least **51% (fifty one per cent)** of total length of the Project Highway. Provided, however, that in respect of the Works carried out directly by the Contractor, it may enter into contracts for the supply and installation of Materials, Plant, equipment, road furniture, safety devices and labour, as the case may be, for such Works. For the avoidance of doubt, the Parties agree that the Contractor may sub-divide the aforesaid length of **51% (fifty one per cent)** in no more than 5 (five) sections of the Project Highway. The Parties further agree that all obligations and liabilities under this Agreement for the entire project Highway shall at all times remain with the Contractor.
- (ii) In the event any sub-contract for Works, or the aggregate of such sub-contracts with any Sub-contractor, exceeds 5% (five percent) of the Contract Price, the Contractor shall communicate the name and particulars, including the relevant experience of the Sub-contractor, to the Authority prior to entering into any such sub-contract. The Authority shall examine the particulars of the Sub-contractor from the national security and public interest perspective and may require the Contractor, no later than 15 (fifteen) business days from the date of receiving the communication from the Contractor, not to proceed with the sub-contract, and the Contractor shall comply therewith.
- (iii) In the event any sub-contract referred to in Clause 4.2 (ii) relates to a Sub-contractor who has, over the preceding 3 (three) years, not undertaken at least one work of a similar nature with a contract value exceeding 40% (forty per cent) of the value of the

sub-contract to be awarded hereunder, and received payments in respect thereof for an amount equal to at least such 40% (forty per cent), the Authority may, no later than 15 (fifteen) business days from the date of receiving the communication from the Contractor, require the Contractor not to proceed with such sub-contract, and the Contractor shall comply therewith without delay or demur.

- (iv) It is expressly agreed that the Contractor shall, at all times, be responsible and liable for all its obligations under this Agreement notwithstanding anything contained in the agreements with its Sub-contractors or any other agreement that may be entered into by the Contractor, and no default under any such agreement shall excuse the Contractor from its obligations or liability under this Agreement. However, in case of non compliance of the Contractor towards his obligations for payments to the approved Sub-contractor(s), which is likely to affect the progress of works, the authority reserves the right to intervene and direct the Contractor to release such outstanding payments to approved Sub-contractor(s) out of the payments due for the completed Works in the interest of work.

#### 4.3 Employment of foreign nationals

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

#### 4.4 Contractor's personnel

- (i) The Contractor shall ensure that the personnel engaged by it or by its Sub-contractors in the performance of its obligations under this Agreement are at all times appropriately and adequately qualified, skilled and experienced in their respective functions in conformity with Good Industry Practice. The Contractor will try to hire at least 10% (ten percent) trained workmen as per the National Skills Qualifications Framework. If necessary, the requisite workmen may be got trained by the Contractor at his cost through authorized training centres of the Directorate General of Training (DGT). The Contractor will organize training at project site/ sites for the trainees as and when required as per the training schedule finalized in consultation with the training centres. The trainees shall be paid stipend by the Contractor (subject to a maximum of Rs. 15,000/- per person) on the basis of minimum wages to compensate for loss of income during the training period.

Construction of Bidhi Janta Expressway starting before RMP Expressway and ends at Ch. 47+000 near  
Khanpur Ghali (km) 7+500 to 47+500 section of Bidhi-Vadudara Green field Alignment  
an EPC mode under Bidhi Janta Pariyojana in the state of Haryana.

- (ii) The Authority's Engineer may, for reasons to be specified in writing, direct the Contractor to remove any member of the Contractor's or Sub-contractor's personnel. Provided that any such direction issued by the Authority's Engineer shall specify the reasons for the removal of such person.
- (iii) The Contractor shall on receiving such a direction from the Authority's Engineer order for the removal of such person or persons with immediate effect. It shall be the duty of the Contractor to ensure that such persons are evicted from the Site within 10 (ten) days of any such direction being issued in pursuance of Clause 4.4 (ii). The Contractor shall further ensure that such persons have no further connection with the Works or Maintenance under this Agreement. The Contractor shall then appoint (or cause to be appointed) a replacement.

**4.5 Advertisement on Project Highway**

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

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

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

**4.7 Electricity, water and other services**

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

**4.8 Unforeseeable difficulties**

Except as otherwise stated in the Agreement:

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

**4.9 Co-ordination of the Works**

- (i) The Contractor acknowledges that in addition to the Agreement, it is also aware of terms of the other Project contracts and other agreements the Authority has

Construction of ~~the~~ <sup>the</sup> Expressway starting before KMP Expressway and ends at Ch. 42+000 near Kaurpur Ghad. (Ch. 47+500 to Ch. 47+500) section of Delhi-Vadodra Green field Alignment (NH-148 N) on EPC mode under ~~the~~ <sup>the</sup> Parityojana in the state of Haryana.

negotiated and entered into for performance of its obligations under the Agreement (copies of other contracts and other agreements are made available to the Contractor from time to time) and that the Contractor is fully aware of the consequences to the Authority which would or are likely to result from a breach by the Contractor of its obligations under the Agreement. In the event the actions of the Contractor result in the breach by the Authority of any or all of the other Project contracts and such breach imposes any liability on the Authority, the Contractor shall, (a) undertake all steps as may be possible to mitigate or neutralize the liability that has arisen, and (b) indemnify the Authority against any such liability and compensate the Authority to that extent.

- (ii) The Contractor shall be responsible for the co-ordination and proper provision of the Works, including co-ordination of other Contractors or Sub-contractors for the Project. The Contractor shall co-operate with the Authority in the co-ordination of the Works with the works under the other Project contracts. The Contractor shall provide all reasonable support for carrying out their work to:
- (a) any other contractors employed by the Authority;
  - (b) the workmen of the Authority;
  - (c) the workmen of any Governmental Instrumentality who may be employed in the execution of work on or near the Site; and
  - (d) such other persons as is required in the opinion of the Authority for successful completion of the Project.

#### 4.10 Environmental Measures

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

#### 4.11 Site Data

- (i) The Contractor shall be deemed to have inspected and examined the Site and its surroundings and to have satisfied himself before entering into the Agreement in all material respects including but not limited to:
- (a) the form and nature of the Site (including, *inter-alia*, the surface and sub-surface conditions and geo-technical factors);
  - (b) the hydrological and climatic conditions;
  - (c) the extent and nature of the works already completed and Materials necessary for the execution and completion of the Works and the remedying of any defects that includes already executed part also.

Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. Khanpur Ghosia (km 47+500 to km 47+500) section of Delhi-Vadodara Green field Alignment on EPC mode under Bharatmala Pariyojana in the state of Haryana

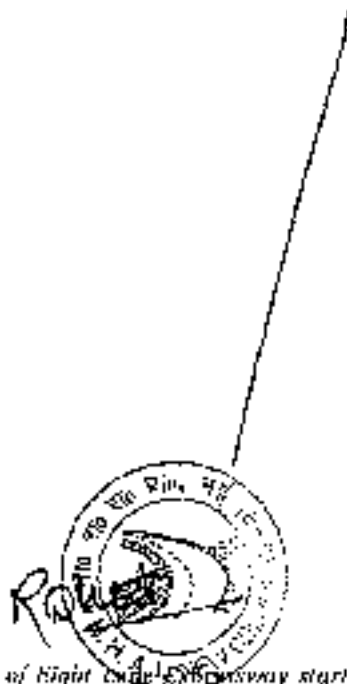
- (d) the suitability and the adequacy of the Site for the execution of the Works;
- (e) the means of access to the Site and the accommodation the Contractor may require;
- (f) arranging permits as required as per provisions of the Agreement.
- (g) the requirements of operation and maintenance; and
- (h) all other factors and circumstances affecting the Contractor's rights and obligations under the Agreement, the Contract Price and Time for Completion.

#### 4.12 Sufficiency of Contract Price

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

#### 4.13 Clearance of the Site

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



*Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch 47+600 near Rhaapur Ghati (km 18+500 to km 47+500) section of Delhi-Vadodra Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.*

## Article 5

### Representations and Warranties

#### 5-1 Representations and warranties of the Contractor

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

Construction of Delhi-Vadodara Expressway starting before KMP Expressway and ends at Ch. 47+000 near  
Khatipur Station (km 18+000 to km 47+500) section of Delhi-Vadodara Green field Allignment (NH-148 N)  
on EPC mode under the National Pariyojana in the state of Haryana.



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

Construction of Delhi-Lahore Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghāt (km: 18+500 to km: 47+500) section of Delhi-Vadodara Green field Alignment (NH-14) on EPC mode under *Shiksha Parivahan* in the state of Haryana.

- (e) No licenses or registered user or other rights have been granted or agreed to be granted to any third party in respect of such intellectual property rights.
  - (f) No act has been done or has been omitted to be done to entitle any authority or person to cancel, forfeit or modify any intellectual property rights.
  - (g) The Contractor shall notify the Authority of any adverse use of the intellectual property rights or confusingly or deceptively similar to the intellectual property rights
  - (h) The Contractor shall recognize the Authority's ownership and title to the Intellectual property rights and shall not at any time, either directly or indirectly, put to issue the validity or ownership of the intellectual property rights and it will not do any act or thing, either directly or indirectly, which in anyway impairs the validity and ownership of the intellectual property rights.
  - (i) The Contractor shall, promptly execute, acknowledge and deliver all documents which are requested by Authority to record with appropriate governmental agencies and authorities the fact that the Authority has the right to the use of the said intellectual property rights
  - (j) The Contractor shall not, for any reason, object to, or interfere in any way with the ownership, registration or use of the intellectual property rights by the Authority (or its licensee or assigns) for any purpose whatsoever.
- (iii) The Contractor is fully aware that the Agreement is Inter linked with the other Project contracts and the non-performance or deficient performance or default by the Contractor and/or any of the Contractor's personnel or Subcontractors under one among the said contracts will have bearing on the other contracts and the evaluation of the Contractor's performance under the Agreement and the Project itself.
- (iv) If at any time during the Defects Liability Period any Item of the Works or Project Facilities or any part thereof, do not conform to the Authority requirements and Specifications and Standards, or being so notified by the Authority, the Contractor shall promptly rectify/remedy such nonconformity to the satisfaction of the Authority solely at the Contractor's expense; failing which the Authority may reject or revoke Taking Over Certificate, and the Authority may proceed to correct the Contractor's nonconforming Work by the most expeditious means available, the costs of which shall be to the Contractor's account, or the Authority may retain the non-conforming Work and an equitable adjustment reducing the total Contract Price to reflect the diminished value of such non-conforming Work will be made by written amendment.
- (v) In addition to the other warranties, the Contractor represents and warrants as follows:
- (a) The Contractor has (or, if the technology does not currently exist, will have granted at the time of passing to The Employer) in and to the technology used in the equipment, materials, goods, Works, Contractor's documents, Drawings and Manuals ("Technology") -

Consent to Right of Use Expressway starting before NMP Expressway and ends at Ch. 41+000 near  
 Khonpur Circle (km 18+500 to km 17+500) section of Delhi- Vadodara Green field Alignment (NH-48 N)  
 on EPC mode under the umbrella Pariyojana in the state of Haryana



- i. all right, title and interest free of any lien, claim or restriction; and
  - ii. right to grant to the Authority the right to use the Technology for the purpose of this contract, free of any lien, claim or restriction and on the terms of license as required.
- (b) The Contractor has granted (or, if the technology does not currently exist, will grant at the time of passing to the Authority the property and title in and to the equipment, materials, goods, Works, spares, Contractor's documents, Drawings and Manuals in which it is used) to the Authority the right to use the Technology, free of any lien, claim or restriction.
- (vi) In addition to the other Warranties, the Contractor represents and warrants as follows:
- (a) No Technology contains any worm [i.e., a program that travels from one computer to another computer but does not attach itself to the operating system of the computer it enters], virus [i.e., a program that travels from one computer to another computer that attaches itself to the operating system it enters] or self-destruct capability.
  - (b) The Technology will not abnormally end or provide invalid or incorrect results as a result of date-dependent data.
  - (c) The Technology can accurately recognize, manage, accommodate, and manipulate date-dependent data, including single and multi-century formulas and leap years.
- (vii) No criminal proceedings instituted against any of the employees or Directors of the Contractor.
- (viii) Till date the services of the Contractor has not been terminated by any person for any breach or non-performance or negligence by the Contractor.

## 5.2 Representations and warranties of the Authority

The Authority represents and warrants to the Contractor that:

- (a) it has full power and authority to execute, deliver and perform its obligations under this Agreement and to carry out the transactions contemplated herein and that it has taken all actions necessary to execute this Agreement, exercise its rights and perform its obligations, under this Agreement;
- (b) it has taken all necessary actions under the Applicable Laws to authorize the execution, delivery and performance of this Agreement;
- (c) it has the financial standing and capacity to perform its obligations under this Agreement;

Construction of EPC for 3km Expressway starting before KMF Expressway and ends at Chk 47+000 near Khunpur Ghori (km 40+500 to km 47+500) section of Delhi-Vadodra Green field Alignment (NH-148) on EPC mode under Bharatnula Pariyojana in the state of Haryana

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

### 5.3 Disclosure

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



Construction of Eight Lane Expressway starting before KMP Expressway and ends at CH 47+900 near Khanpur Shahi (km 18+500 to km 47+500) section of Delhi-Vadodra Green field Alignment (NH-148 N) on EPC mode under Bharatnala Pariyojana in the state of Haryana

## Article 6

### Disclaimer

#### 6.1 Disclaimer

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



Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near  
Kinnapur Ghatt (km 18+500 to km 47+500) section of Bhihi- Vadodara Green field Alignment (NH-748 N)  
on EPC mode under Bharatmala Pariyojana in the state of Haryana.

Part III

Construction and Maintenance



Construction of eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 at  
Kiranpur Ghati (km 18+500 to km 47+500) section of Delhi-Vadodra Green field Alignment (NH-158 N)  
an EPC mode under Bharatmala Pariyojana in the state of Haryana.

## Article 7

### Performance Security

#### 7.1 Performance Security

(i) (A) Within 30 (thirty) days of receipt of Letter of Acceptance, the selected Bidder shall furnish to the Authority an irrevocable and unconditional guarantee from a Bank in the form set forth in Annex-1 of Schedule-G (the "Performance Security") for an amount equal to 5% (five percent) of its Bid Price. In case of bids mentioned below, the Selected Bidder, along with the Performance Security, shall also furnish to the Authority an irrevocable and unconditional guarantee from a Bank in the same form given at Annex-1 of Schedule-G towards an Additional Performance Security (the "Additional Performance Security") for an amount calculated as under:

(a) If the Bid Price offered by the Selected Bidder is lower than 10% but upto 20% of the estimated Project Cost, then the Additional Performance Security shall be calculated @20% of the difference in the (i) Estimated Project Cost (as mentioned in RFP)-10% of the Estimated Project Cost and (ii) the Bid Price offered by the selected Bidder.

(b) If the Bid Price offered by the Selected Bidder is lower than 20% of the Estimated Project Cost, then the Additional Performance Security shall be calculated @ 30% of the difference in the (i) Estimated Project Cost (as mentioned in RFP)-10% of the Estimated Project Cost and (ii) the Bid Price offered by the Selected Bidder.

(c) This Additional Performance Security shall be treated as part of the Performance Security.

(B) The Performance Security shall be valid until 60(sixty) days after the Defects Liability Period. The Additional Performance Security shall be valid until 28 (twenty eight) days after Project Completion Date.

(ii) The Selected Bidder has the option to provide 50% of the Performance Security and 50% of the Additional Performance Security, if any, within 30 (thirty) days of receipt of Letter of Acceptance, in any case before signing of the Contract Agreement and the remaining Performance Security and Additional Performance Security, if any, shall be submitted within 30 days of signing of this agreement.

(iii) In the event the Selected Bidder fails to provide the remaining Performance Security and Additional Performance Security, if any, as prescribed herein, it may seek extension of time for a further period upto 60 days by paying the Damages upfront along with the request letter seeking the extension. The Damages shall be the sum calculated at the rate of 0.01% (zero point zero one per cent) of the Bid Price offered by the Selected Bidder for each day until the Performance Security and Additional Performance Security, if any, is provided in full as prescribed herein. The damages at



Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Kharkha, Ghaziabad (km 18+500 to km 47+500) section of Delhi-Vadodra Green field Alignment on EPC mode under Bharatmala Pariyojana in the state of Haryana.



full rate as given above shall be applicable even if a part of the Performance Security and the Additional Performance Security is provided.

- (iv) For avoidance of any doubt, in case of failure of submission of Performance Security and Additional Performance Security, if any, within the additional 60 days' time period, the award shall be deemed to be cancelled/ withdrawn and the Bid Security shall be encashed and the proceeds thereof appropriated by the Authority. Thereupon all rights, privileges, claims and entitlements of the Contractor under or arising out of the Award shall be deemed to have been waived by, and to have ceased with the concurrence of the Contractor, and the Award shall be deemed to have been withdrawn by the Authority.

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

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

### 7.3 Appropriation of Performance Security

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



Construction of Sharda Expressway starting before KMP Expressway and ends at Ch. 47+000 under  
Khanpur Ghati (km 1R+500 to km 47+500) section of Delhi-Varanasi Green field Alignment (NH-148 N)  
an EPC mode under Bharatmala Pariyojana in the state of Haryana.



#### 7.4 Release of Performance Security

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

#### 7.5 Retention Money

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



Construction of Eight Lane Expressway starting before RMP Expressway and ends at Ch. 47+000 (near  
Khanpur Ghazi (km 1R+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-14S N)  
in EPC mode under Bharatmala Pariyojana in the state of Haryana.

## Article 8

### Right of Way

#### 8.1 The Site

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

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

#### 8.2 Procurement of the Site

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

Construction of EPC mode Expressway starting before KMP Expressway and ends at Ch. 47+000 near  
Khapur Chati (Ch. 3+500 to Ch. 17+500) section of Delhi Vadodara Green field Alignment (NH-48B)  
on EPC mode under Bharatmala Pariyojana in the state of Haryana.

shall be deemed to constitute a valid evidence of giving the relevant Right of Way to the Contractor.

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

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

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

- (i) In the event the Right of Way to any part of the Site is not provided by the Authority on or before the date(s) specified in Clause 8.2 for any reason other than Force Majeure or breach of this Agreement by the Contractor, the Authority shall pay

Construction of Land Accessway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghata (km 18+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.



Damages to the Contractor a sum calculated in accordance with the following formula for and in respect of those parts of the Site to which the Right of Way has not been provided:

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

Where,

C = the Contract Price;

L = length of the Project Highway in metres; and

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

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

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

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

- Main in carriageway
- Median (for 4 lane carriageway or more)
- Paved and earthen shoulders
- Area for Structures including RUBs/RURs
- Safety measures including Roadside Drains and Furniture.
- A parallel working space for accommodating slopes/retaining structures etc.

- (i) Notwithstanding anything to the contrary contained in this Agreement, the Contractor expressly agrees that Works on all parts of the Site for which Right of Way of Construction Zone is granted on the Appointed Date, or with respect to the parts of the Site provided in Schedule-A, no later than the date(s) specified therein, as the case may be, shall be completed before the Scheduled Completion Date and shall not qualify for any Time Extension under the provisions of Clause 8.3 (ii).

Construction of Right Lane Expressway starting before KMP Expressway and ends at Ch 47+000 near Khanpur Ghata (km: 46+500 to km: 47+500) section of Delhi-Vadodra Green field Alignment (NH-140-B) on EPC mode under Bharatmala Pariyojaya in the state of Haryana.

(iii) (a) Notwithstanding anything to the contrary contained in this Agreement, the Authority may at any time withdraw any Works forming part of this Agreement, subject to such Works not exceeding an aggregate value, such value to be determined in accordance with Schedule-H, equal to 10 (ten) percent of the Contract Price.

(b) Provided that if any Works cannot be undertaken within the municipal limits of a town or within any area falling in a reserved forest or wildlife sanctuary or the stretches where vacant access and Right of Way could not be handed over, as the case may be, because the requisite clearances or approvals or affected land parcels for commencing construction of Works therein have not been given within 180 (one hundred and eighty) days of the Appointed date, the affected Works shall be deemed to be withdrawn under the provisions of the Clause 8.3(iii)(a). Such Works shall not be computed for the purposes of the aforesaid ceiling of 10% (ten per cent) hereunder.

(c) Provided further that in case such stretches (as mentioned in Sub-Clause (b) above) can be handed over to the Contractor before the expiry of the original Scheduled Construction Period of the Project Highway, and the Contractor agrees to take up the work, the same may be allowed to be executed by him with corresponding Extension of Time, subject to the condition that the Contractor shall not be entitled to raise any claims on account of prolongation costs in this behalf.

(iv) In the event of withdrawal of Works under Clause 8.3 (iii) (a), the Contract Price shall be reduced by an amount equal to 90 (ninety) per cent of the value of the Works withdrawn and the Contractor shall not be entitled to any other compensation or Damages for the withdrawal of Works

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

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

#### 8.4 Site to be free from Encumbrances

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

Construction of Right Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khropur Ghos (km 47+500 to km 47+500) section of Delhi-Vardara Green field Alignment (NH-100) on EPC mode under Bharatmala Pariyojita in the state of Haryana

The Contractor accepts and undertakes to bear any and all risks arising out of the inadequacy or physical condition of the Site.

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

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

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

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

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

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

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

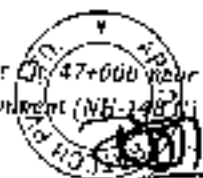
It is expressly agreed that mining, geological or archaeological rights do not form part of this Agreement with the Contractor for the Works, and the Contractor hereby acknowledges that it shall not have any mining rights or interest in the underlying minerals, fossils, antiquities, structures or other remnants or things either of particular geological or archaeological interest and that such rights, interest and property on or under the Site shall vest in and belong to the Authority or the concerned Government Instrumentality. The Contractor shall take all reasonable precautions to prevent its workmen or any other person from removing or damaging such interest or property

Construction of 2.5 Km Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Kharpur Ghat (km 49+500 to km 47+500) section of Delhi- Vadodra Green field Alignment on EPC mode under Bharatmala Pariyojana in the state of Haryana.

and shall inform the Authority forthwith of the discovery thereof and comply with such instructions as the concerned Government Instrumentality may reasonably give for the removal of such property. For the avoidance of doubt, it is agreed that any reasonable expenses incurred by the Contractor hereunder shall be reimbursed by the Authority. It is also agreed that the Authority shall procure that the Instructions hereunder are issued by the concerned Government Instrumentality within a reasonable period.



Construction of Four Lane Expressway starting before KMP Expressway and ends at Km 47+000 near  
Khanpur Shahi (km 46+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-24B)  
on ETC mode under Bharatmala Pariyojana in the state of Haryana.



## Article 9

### Utilities and Trees

#### 9.1 Existing utilities and roads

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


#### 9.2 Shifting of obstructing utilities

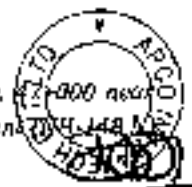
The Contractor shall, in accordance with Applicable Laws and with assistance of the Authority, undertake the work of shifting of any utility (including electric lines, water pipes, gas pipelines and telephone cables) to an appropriate location or alignment, if such utility or obstruction adversely affects the execution of Works or Maintenance of the Project Highway in accordance with this Agreement. The cost of such shifting, as per estimates prepared by the entity owning the utility and approved by the Authority, shall be reimbursed by the Authority to the Contractor. The scope of work of such shifting of Utilities shall be as indicated in Schedule-B. In the event of any delay of such shifting on the part of the contractor, an extension of time for completion of the project and no claims, in any manner, shall be admissible on this account against the Authority

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

#### 9.3 New utilities

- (i) The Contractor shall allow, subject to the permission from the Authority and such conditions as the Authority may specify, access to, and use of the Site for laying telephone lines, water pipes, electricity lines/ cables or other public utilities. Where such access or use causes any financial loss to the Contractor, it may require the user of the Site to pay compensation or damages as per Applicable Laws. For the avoidance of doubt, it is agreed that use of the Site under this Clause 9.3 shall not in any manner relieve the Contractor of its obligation to construct and maintain the Project Highway in accordance with this Agreement and any damage caused by such use shall be restored forthwith at the cost of the Authority.
- (ii) The Authority may, by notice, require the Contractor to connect any adjoining road to the Project Highway, and the connecting portion thereof falling within the Site shall be constructed by the Contractor at the Authority's cost in accordance with Article 10.

  
Construction of EPC Lane Expressway starting before KMP Expressway and ends at Ch. 47+900 near  
Khanpur Ghati (km 47+400 to km 47+500) section of Delhi-Vadodara Green field Alignment  
on EPC mode under Bharatmala Pariyojana in the state of Haryana.





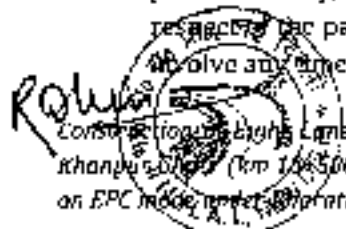

- (iii) The Authority may by notice require the Contractor to connect, through a paved road, any adjoining service station, hotel, motel or any other public facility or amenity to the Project Highway, whereupon the connecting portion thereof that falls within the Site shall be constructed by the Contractor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

#### 9.4 Felling of trees

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

#### 9.5 Dismantling of structures

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

Construction of High Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanda's Bridge (km 16+500 to km 47+500) section of Delhi-Vadodra Green field Alignment (NH-148) on EPC mode under Bharatnala Pariyojana in the state of Haryana.

## 9.6 Development Period

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



Construction of Light Pole Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khajpur Ghazi (Km 18+500 to Km 47+500) section of Delhi-Vadodra Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

## Article 10

### Design and Construction of the Project Highway

#### 10.1 Obligations prior to commencement of Works

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

in the periods for reviews under Clause 10.2;

Construction of 5 Lane Expressway starting before RMP Expressway and ends at Ch. 4+200 near Khanpur Ghat (km 39+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

- iii. the sequence and timing of inspections and tests specified in this Agreement, and
- iv. the particulars for the pre-construction reviews and for any other submissions, approvals and consents specified in the Agreement.

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

(c) Part III : Monthly cash flow forecast.

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

*Construction of 4 Lane Expressway starting before KMP Expressway and ends at km 47+000 near Khanpur Ghazi (km 16+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-708 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.*

thereon and seek the instructions of the Authority for Change in Scope. For the avoidance of doubt, the Safety Consultant to be engaged by the Contractor shall be independent of the design and implementation team of the Contractor.

## 10.2 Design and Drawings

- (i) Design and Drawings shall be developed in conformity with the Specifications and Standards set forth in Schedule-D. In the event, the Contractor requires any relaxation in design standards due to restricted Right of Way in any section, the alternative design criteria for such section shall be provided for review and approval of the Authority's Engineer.
- (ii) The Contractor shall appoint a proof check consultant (the 'Proof Consultant') after proposing to the Authority a panel of three (3) names of qualified and experienced firms from whom the Authority may choose one (1) to be the Proof Consultant. Provided, however, that if the panel is not acceptable to the Authority and the reasons for the same are furnished to the Contractor, the Contractor shall propose to the Authority a revised panel of three (3) names from the firms empanelled as proof consultants by the Ministry of Road Transport and Highways/NHAI for obtaining the consent of the Authority. The Contractor shall also obtain the consent of the Authority for two (2) key personnel of the Proof Consultant who shall have adequate experience and qualifications in highways and bridges respectively. The Authority shall, within 15 (fifteen) days of receiving a proposal from the Contractor hereunder, convey its decision, with reasons, to the Contractor, and if no such decision is conveyed within the said period, the Contractor may proceed with engaging of the Proof Consultant.
- (iii) The Proof Consultant shall:
- (a) evolve a systems approach with the Design Director so as to minimise the time required for final designs and construction drawings; and
  - (b) proof check the detailed calculations, drawings and designs, which have been approved by the Design Director.
- (iv) In respect of the Contractor's obligations with respect to the design and Drawings of the Project Highway as set forth in Schedule-I, the following shall apply:
- (a) The Contractor shall prepare and submit, with reasonable promptness and in such sequence as is consistent with the Project Completion Schedule, three (3) copies each of the design and Drawings, duly certified by the Proof Consultant, to the Authority's Engineer for its approval. Provided, however, that in respect of Major Bridges and Structures, the Authority's Engineer may require additional drawings for approval in accordance with Good Industry Practice.
  - (b) by submitting the Drawings for review and approval to the Authority's Engineer, the Contractor shall be deemed to have represented that it has determined and verified that the design and engineering, including field

Construction of 4 Lane Expressway starting before KMP Expressway and ends at Km 47+000 near Khampur Ghat (km 48+000 to km 47+500) section of Delhi- Vadodra Green field Alignment (001/48 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

construction criteria related thereto, are in conformity with the Scope of the Project, the Specifications and Standards and the Applicable Laws;

- (c) within 15 (fifteen) days of the receipt of the Drawings, the Authority's Engineer shall review the same and convey its approval/observations to the Contractor with particular reference to their conformity or otherwise with the Scope of the Project and the Specifications and Standards. Provided, however that in case of a major bridge or structure, the aforesaid period of 15 (fifteen) days may be extended up to 30 (thirty) days;
- (d) If the aforesaid observations of the Authority's Engineer indicate that the Drawings are not in conformity with the Scope of the Project or the Specifications and Standards, such Drawings shall be revised by the Contractor in conformity with the provisions of this Agreement and resubmitted to the Authority's Engineer for review and approval. The Authority's Engineer shall give its observations, if any, within 10 (ten) days of receipt of the revised Drawings. In the event the Contractor fails to revise and resubmit such Drawings to the Authority's Engineer for review/approval as aforesaid, the Authority's Engineer may withhold the payment for the affected works in accordance with the provisions of Clause 19.5 (iv). If the Contractor disputes any decision, direction or determination of the Authority's Engineer hereunder, the Dispute shall be resolved in accordance with the Dispute Resolution Procedure;
- (e) no review/approval and/or observation of the Authority's Engineer and/or its failure to review/approval and/or convey its observations on any Drawings shall relieve the Contractor of its obligations and liabilities under this Agreement in any manner nor shall the Authority's Engineer or the Authority be liable for the same in any manner; and if errors, omissions, ambiguities, inconsistencies, inadequacies or other Defects are found in the Drawings, they and the construction works shall be corrected at the Contractor's cost, notwithstanding any approval under this Article 10;
- (f) the Contractor shall be responsible for delays in submitting the Drawing as set forth in Schedule-I caused by reason of delays in surveys and field investigations, and shall not be entitled to seek any relief in that regard from the Authority; and
- (g) the Contractor warrants that its designers, including any third parties engaged by it, shall have the required experience and capability in accordance with Good Industry Practice and it shall indemnify the Authority against any damage, expense, liability, loss or claim, which the Authority might incur, sustain or be subject to arising from any breach of the Contractor's design responsibility and/or warranty set out in this Clause.
- (h) the Contractor shall ensure that all the designs and drawings shall be approved from the Authority's Engineer within 90 days (ninety) from the Date.

Construction of 4 Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 (near  
Khanpur Circle, Km 18+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-48 NJ)  
on EPC mode under BOT mode in the state of Haryana.

- (v) Any cost or delay in construction arising from review/approval by the Authority's Engineer shall be borne by the Contractor.
- (vi) Works shall be executed in accordance with the Drawings provided by the Contractor in accordance with the provisions of this Clause 10.2 and the approval of the Authority's Engineer thereon as communicated pursuant to the provisions of sub-Clause (c) & (d) of Clause 10.2 (iv). Such Drawings shall not be amended or altered without prior written notice to the Authority's Engineer. If a Party becomes aware of an error or defect of a technical nature in the design or Drawings, that Party shall promptly give notice to the other Party of such error or defect.
- (vii) Within 90 (ninety) days of the Project Completion Date, the Contractor shall furnish to the Authority and the Authority's Engineer a complete set of as-built Drawings, in 2 (two) hard copies and in micro film form or in such other medium as may be acceptable to the Authority, reflecting the Project Highway as actually designed, engineered and constructed, including an as-built survey illustrating the layout of the Project Highway and setback lines, if any, of the buildings and structures forming part of Project Facilities.

### 10.3 Construction of the Project Highway

- (i) The Contractor shall construct the Project Highway as specified in Schedule- B and Schedule-C, and in conformity with the Specifications and Standards set forth in Schedule-D. The Contractor shall be responsible for the correct positioning of all parts of the Works, and shall rectify any error in the positions, levels, dimensions or alignment of the Works. The 730th (seven hundred and thirtieth) day from the Appointed Date shall be the scheduled completion date (the "Scheduled Completion Date") and the Contractor agrees and undertakes that the construction shall be completed on or before the Scheduled Completion Date, including any extension thereof.
- (ii) The Contractor shall construct the Project Highway in accordance with the Project Completion Schedule set forth in Schedule-J. In the event that the Contractor fails to achieve any Project Milestone or the Scheduled Completion Date within a period of 30 (thirty) days from the date set forth in Schedule-J, unless such failure has occurred due to Force Majeure or for reasons solely attributable to the Authority, it shall pay Damages to the Authority of a sum calculated at the rate of 0.05% (zero point zero five percent) of the Contract Price for delay of each day reckoned from the date specified in Schedule -J and until such Project Milestone is achieved or the Project Highway is completed; provided that if the period for any or all Project Milestones or the Scheduled Completion Date is extended in accordance with the provisions of this Agreement, the dates set forth in Schedule-J shall be deemed to be modified accordingly and the provisions of this Agreement shall apply as if Schedule-J has been amended as above; provided further that in the event the Project Highway is completed within or before the Scheduled Completion Date including any Time Extension applicable for that work or section, the Damages paid under this Clause

Construction of Delhi Expressway starting before EMP Expressway and ends at Ch. 47+000 near  
 Khanpur Bypass (km: 18+500 to km: 47+500) section of Delhi-Vadudara Green field Alignment  
 on EPC mode under the Public-Private Partnership (PPP) mode in the state of Haryana.

10.3 (ii) shall be refunded by the Authority to the Contractor, but without any interest thereon.

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

For the avoidance of doubt, it is agreed that recovery of Damages under this Clause 10.3 (ii) shall be without prejudice to the rights of the Authority under this Agreement including the right of Termination thereof. The Parties further agree that Time Extension hereunder shall only be reckoned for and in respect of the affected Works as specified in Clause 10.5 (ii).

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

#### 10.4 Maintenance during Construction Period

- (i) During the Construction Period, the Contractor shall maintain, at its cost, the existing lane(s) of the Project Highway so that the traffic worthiness and safety thereof are at no time whatsoever inferior as compared to their condition on Appointed Date, and

Construction of Dual Lane Expressway starting before KMP Expressway and ends at Ch. 47+666 near Kharburah (Km 47+500 to Km 47+500) section of Delhi-Vadodra Green field Alignment (NH-148) on EPC mode under Bharatmala Pariyojana in the state of Haryana.



shall undertake the necessary repair and maintenance works for this purpose; provided that the Contractor may, at its cost, interrupt and divert the flow of traffic if such interruption and diversion is necessary for the efficient progress of Works and conforms to Good Industry Practice, provided further that such interruption and diversion shall be undertaken by the Contractor only with the prior written approval of the Authority's Engineer which approval shall not be unreasonably withheld. For the avoidance of doubt, it is agreed that the Contractor shall at all times be responsible for ensuring safe operation of the Project Highway. It is further agreed that in the event the Project includes construction of a bypass or tunnel and realignment of the existing carriageway, the Contractor shall maintain the existing highway in such sections until the new Works are open to traffic.

- (ii) Notwithstanding anything to the contrary contained in this Agreement, in the event of default by the Contractor in discharging the obligations specified in Clause 10.4 (i) above, the Authority shall get these maintenance works completed in the manner recommended by the Authority's Engineer to avoid public inconvenience at the risk and cost of the Contractor in order to keep the road in traffic worthy condition.

#### 10.5 Extension of time for completion

- (i) Without prejudice to any other provision of this Agreement for and in respect of extension of time, the Contractor shall be entitled to extension of time in the Project Completion Schedule (the "Time Extension") to the extent that completion of any Project Milestone is or will be delayed by any of the following, namely:
- (a) delay in providing the Right of Way of Construction Zone, environmental clearances or approval of railway authorities, specified in Clause 3.1 (iv);
  - (b) Change of Scope (unless an adjustment to the Scheduled Completion Date has been agreed under Article 13);
  - (c) occurrence of a Force Majeure Event;
  - (d) any delay, impediment or prevention caused by or attributable to the Authority, the Authority's personnel or the Authority's other contractors on the Site; and
  - (e) any other cause or delay which entitles the Contractor to Time Extension in accordance with the provisions of this Agreement.
- (ii) The Contractor shall, no later than 15 (fifteen) business days from the occurrence of an event or circumstance specified in Clause 10.5 (i), inform the Authority's Engineer by notice in writing, with a copy to the Authority, stating in reasonable detail with supporting particulars, the event or circumstances giving rise to the claim for Time Extension in accordance with the provisions of this Agreement. Provided that the period of 15 (fifteen) business days shall be calculated from the date on which the Contractor becomes aware, or should have become aware, of the occurrence of such an event or circumstance.

Construction of the 10.5 km long Expressway starting before KMP Expressway and ends at Km 47+000 (near Khanpur Buzurg) from Km 10+500 to Km 47+500) section of Delhi - Vadodra Green field Alignment (NH-148) on EPC mode under Public-Private Partnership in the state of Haryana

Provided further that notwithstanding anything to the contrary contained in this Agreement, Time Extension shall be due and applicable only for the Works which are affected by the aforesaid events or circumstances and shall not in any manner affect the Project Completion Schedule for and in respect of the Works which are not affected hereunder.

- (iii) On the failure of the Contractor to issue to the Authority's Engineer a notice in accordance with the provisions of Clause 10.5 (i) within the time specified therein, the Contractor shall not be entitled to any Time Extension and shall forfeit its right for any such claims in future. For the avoidance of doubt, in the event of failure of the Contractor to issue notice as specified in this clause 10.5 (iii), the Authority shall be discharged from all liability in connection with the claim.
- (iv) The Authority's Engineer shall, on receipt of the claim in accordance with the provisions of Clause 10.5 (ii), examine the claim expeditiously within the time frame specified herein. In the event the Authority's Engineer requires any clarifications to examine the claim, the Authority's Engineer shall seek the same within 15 (fifteen) days from the date of receiving the claim. The Contractor shall, on receipt of the communication of the Authority's Engineer requesting for clarification, furnish the same to the Authority's Engineer within 10 (ten) days thereof. The Authority's Engineer shall, within a period of 30 (thirty) days from the date of receipt of such clarifications, forward in writing to the Contractor its determination of Time Extension.

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

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

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



Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. A7+000 near Khajpur Ghati (km 18+500 to km 47+500) section of Delhi-Vadudara Green field Alignment (NH-48) on EPC mode under Bharatmala Pariyojana in the state of Haryana.



## 10.6 Incomplete Works

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

## 10.7 Maintenance Manual

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

## 10.8 As-Built Records

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

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

Intellectual property in the Authority's requirements and Specifications and Standards and all other documents and materials issued by the Authority or the Authority's Representative to the Contractor shall (as between the parties) remain the property of the Authority. The Contractor may, at its cost, copy, use and communicate any such documents for the purposes of the Contract. They shall not, without the consent of the Authority, be used, copied or communicated to a third party by the Contractor, except as necessary for the purposes of the Works under the Agreement.



*Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghazi (km 18+300 to km 47+500) section of Delhi-Vadodra Green field Alignment (NH-143 N) on EPC mode under Bharatnala Partyojana in the state of Haryana.*

## Article 11

### Quality Assurance, Monitoring and Supervision

#### 11.1 Quality of Materials and workmanship

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

#### 11.2 Quality control system

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

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

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

#### 11.3 Methodology

The Contractor shall, at least 15 (fifteen) days prior to the commencement of the construction, submit to the Authority's Engineer for review and consent the methodology proposed to be adopted for executing the Works, giving details of

Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near  
Khanpur (km 47+500 to km 47+500) section of Delhi- Vadodara Green field Alignment (NH-148A)  
on EPC mode under Bharatmala Pariyojana in the state of Haryana.

equipment to be deployed, traffic management and measures for ensuring safety. The Authority's Engineer shall complete the review and convey its consent to the Contractor within a period of 10 (ten) days from the date of receipt of the proposed methodology from the Contractor.

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

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

#### **11.5 External technical audit**

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

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

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

#### **11.7 Monthly progress reports**

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

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

*Contractor's Right Hand Expressway starting before RMP Expressway and ends at Ch. 47+000 near Khanpur (RMP from km 500 to km 47+500) section of Delhi-Vadodra Green field Alignment (RMP-158) on EPC mode under Bharatmala Pariyojana in the state of Haryana.*

- (a) an executive summary;
- (b) charts showing the status of Contractor's documents, construction and manufacturing and environmental works;
- (c) details of work subcontracted and the performance of Sub-contractors;
- (d) for the construction of each main part of the Works, the extent of progress (both quantity and percentage of the whole), the actual or expected dates of commencement, anticipated completion date of the activity, Contractor's inspections and tests;
- (e) records of manpower and Contractor's equipment on the Site;
- (f) copies for that month of quality assurance documents, test results and certificates;
- (g) safety statistics, accident data collection including details of any hazardous incidents and activities relating to environmental aspects and public relations;
- (h) comparisons of actual and planned progress, with details of any aspects which may jeopardise the completion in accordance with the Agreement, and the measures being (or to be) adopted to overcome such aspects;
- (i) details of any unresolved disputes or claims, in relation to the Project;
- (j) details of any revision to the cash flow estimate, together with a copy of the revised cash flow estimate;
- (k) status of various Applicable Permits and compliance of conditions therein;
- (l) details of various royalty payment and Insurances required to be taken by the Contractor; and
- (m) such other reports as may be required by the Authority for enabling the Authority to comply with its obligations under the other Project contracts.
- (n) details of defects by the Authority;
- (o) change in emission of any sewage or effluent of any nature whatsoever, whether qualitatively or quantitatively;
- (p) any Material Adverse Effect;
- (q) declaration towards compliance with Applicable Laws including but not limited to environmental and labour legislations;
- (r) declaration specifying compliance with all Manuals provided to the Contractor; and
- (s) any change in the flow of traffic in the existing Project Highway.

### 11.8 Inspection

- (1) The Authority's Engineer and its authorised representative shall at all reasonable

Construction of Right Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 (Khanpur Ghat, Km 26+500 to Km 47+500) section of Delhi-Vadudara Green field Alignment (NH-14A) on EPC mode under Bharatnala Pariyojana in the state of Haryana.

- (a) have full access to all parts of the Site and to all places from which natural Materials are being obtained for use in the Works; and
  - (b) during production, manufacture and construction at the Site and at the place of production, be entitled to examine, inspect, measure and test the Materials and workmanship, and to check the progress of manufacture of Materials.
- (ii) The Contractor shall give the Authority's Engineer and its authorised agents access, facilities and safety equipment for carrying out their obligations under this Agreement.
- (iii) The Authority's Engineer shall submit a monthly inspection report (the "Inspection Report") to the Authority and the Contractor bringing out the results of inspections and the remedial action taken by the Contractor in respect of Defects or deficiencies. For the avoidance of doubt, such inspection or submission of Inspection Report by the Authority's Engineer shall not relieve or absolve the Contractor of its obligations and liabilities under this Agreement in any manner whatsoever.

#### 11.9 Samples

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

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

#### 11.10 Tests

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

### 11.11 Examination of work before covering up

In respect of the work which the Authority's Engineer is entitled to examine, inspect, measure and/or test before it is covered up or put out of view or any part of the work is placed thereon, the Contractor shall give notice to the Authority's Engineer whenever any such work is ready and before it is covered up. The Authority's Engineer shall then either carry out the examination, inspection or testing without unreasonable delay, or promptly give notice to the Contractor that the Authority's Engineer does not require to do so. Provided, however, that if any work is of a continuous nature where it is not possible or prudent to keep it uncovered or incomplete, the Contractor shall notify the schedule of carrying out such work to give sufficient opportunity, not being less than 3 (three) business days' notice, to the Authority's Engineer to conduct its inspection, measurement or test while the work is continuing. Provided further that in the event the Contractor receives no response from the Authority's Engineer within a period of 3 (three) business days from the date on which the Contractor's notice hereunder is delivered to the Authority's Engineer, the Contractor shall be entitled to assume that the Authority's Engineer would not undertake the said inspection.




### 11.12 Rejection

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

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

### 11.13 Remedial work

- (i) Notwithstanding any previous test or certification, the Authority's Engineer may instruct the Contractor to:
- (a) remove from the Site and replace any Plant or Materials which are not in accordance with the provisions of this Agreement;
  - (b) remove and re-execute any work which is not in accordance with the provisions of this Agreement and the Specification and Standards; and

  
  
  
Construction of Right Lane Expressway starting before KMP Expressway and ends at Ch. Khanpur Ghazi (km 47+500) section of Delhi-Vadodra Green field Alignment (NH 48) on EPC mode under Bharatnagar Pariyojana in the state of Haryana



- (c) execute any work which is urgently required for the safety of the Project Highway, whether because of an accident, unforeseeable event or otherwise; provided that in case of any work required on account of a Force Majeure Event, the provisions of Clause 21.6 shall apply.
- (ii) If the Contractor fails to comply with the instructions issued by the Authority's Engineer under Clause 11.13 (i), within the time specified in the Authority's Engineer's notice or as mutually agreed, the Authority's Engineer may advise the Authority to have the work executed by another agency. The cost so incurred by the Authority for undertaking such work shall, without prejudice to the rights of the Authority to recover Damages in accordance with the provisions of this Agreement, be recoverable from the Contractor and may be deducted by the Authority from any monies due to be paid to the Contractor.

#### 11.14 Delays during construction

Without prejudice to the provisions of Clause 10.3 (ii), in the event the Contractor does not achieve any of the Project Milestones or the Authority's Engineer shall have reasonably determined that the rate of progress of Works is such that Completion of the Project Highway is not likely to be achieved by the end of the Scheduled Completion Date, it shall notify the same to the Contractor, and the Contractor shall, within 15 (fifteen) days of such notice, by a communication inform the Authority's Engineer in reasonable detail about the steps it proposes to take to expedite progress and the period within which it shall achieve the Project Completion Date.

#### 11.15 Quality control records and Documents

The Contractor shall hand over a copy of all its quality control records and documents to the Authority's Engineer before the Completion Certificate is issued pursuant to Clause 22.2. The Contractor shall submit Road Signage Plans to the Authority Engineer for approval at least 6 (six) months prior to expected completion of Project Highway.

#### 11.16 Video recording

During the Construction Period, the Contractor shall provide to the Authority for every calendar quarter, a video recording, which will be compiled into a 3 (three)-hour compact disc or digital video disc, as the case may be, covering the status and progress of Works in that quarter. The video recording shall be provided to the Authority no later than 15 (fifteen) days after the close of each quarter after the Appointed Date.

#### 11.17 Suspension of unsafe Construction Works

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

Construction of Road Expressway starting before RMP Expressway and ends at Ch. 46+000 near Ranganpur Ghati from 38+500 (km: 47+500) section of Delhi- Vadodara Green field Alignment on EPC mode under Bharatmala Pariyojana in the state of Haryana.

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

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

#### 11.18 Staff and Labour

##### (i) Engagement of Staff and Labour

- (a) The Contractor shall make its own arrangements for the engagement of all personnel and labour, local or otherwise, and for their payment, housing, feeding and transport.
- (b) The Contractor has verified/ shall verify the identity and address of all its employees and officials related to the Works by collecting necessary documentary proof.
- (c) The Contractor shall conduct pre-employment police verification of the employees and other staffs and shall furnish the police verification report of all such staff/ employees, if requested by the Employer who shall be performing the Works or any part thereof.
- (d) The Contractor hereby confirms that the Contractor shall not engage any person with a criminal record / conviction and shall bar any such person from participating directly or indirectly in performing the Works
- (e) The employees and personnel of the Contractor shall work under the supervision, control and direction of the Contractor and the Contractor shall

Construction of the 1.7km Expressway starting before KMP Expressway and ends at Ch 37+000 near Khanpur Ghatts (km 38+000 to km 47+500) section of Delhi-Vadodra Green field Alignment (NII-1403) an EPC mode under PPP scheme Pariyojana in the state of Haryana.



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

(ii) Returns of Labour

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

(iii) Persons in the Service of Others

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

(iv) Labour Laws

- (a) The Contractor shall obtain all relevant labour registrations and comply with all relevant labour laws applying to its employees, and shall duly pay them and afford to them all their legal rights.
- (b) The Contractor shall make all deductions of tax at source and all contributions to the Payment of Gratuity, Provident Fund (including Employees' contribution) and Employees' State Insurance Scheme as may be required by Applicable Laws and deposit the aforesaid contributed amount with the appropriate authority/(s).

- (c) The Contractor shall require all personnel engaged in the Works to obey all Applicable Laws and regulations. The Contractor shall permit Authority to witness labour payments for the Contractors direct labour, or the Subcontractors labour. The Contractor shall ensure that all its Subcontractors strictly comply with all labour laws.
- (d) Documentary evidence confirming compliance with Sub-Clause , as may be required from time to time, shall be provided to the Employer's Representative
- (e) The Employer shall not be liable for any delay/default of the Contractor in compliance of the labour laws.

(v) **Facilities for Staff and Labour**

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

(vi) **Health And Safety**

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

(vii) **Contractor's Personnel**

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

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

- (d) engages in any conduct which is prejudicial to safety, health, or the protection of the environment; or
- (e) makes errors in the discharge of his functions.

If appropriate and required by the Employer, the Contractor shall then appoint (or cause to be appointed) a suitable replacement person.

(viii) Disorderly Conduct

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



*Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch 47+000 near Kharupur Ghati (km 11+200 to km 47+300) section of Delhi-Vadodra Green field Alignment (NH-149 N) an EPC mode under Bharatmala Periyोजना in the state of Haryana.*

## Article 12

### Completion Certificate

#### 12.1 Tests on Completion

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

#### 12.2 Completion Certificate

- (i) Upon completion of all Works forming part of the Project Highway, and the Authority's Engineer determining the Tests to be successful and after the receipt of notarized true copies of the certificate(s) of insurance, copies of insurance policies and premium payment receipts in respect of the insurance defined in Article 20 and Schedule P of this Agreement, it shall, at the request of the Contractor forthwith issue to the Contractor and the Authority a certificate substantially in the form set forth in Schedule-I. (the "Completion Certificate").
- (ii) Upon receiving the Completion Certificate, the Contractor shall remove its equipment, materials, debris and temporary works from the Site within a period of 30 (thirty)

*Contract for Right Line Expressway starting before KMP Expressway and ends at Km 47+000 near  
Khanpur (Dist. Sonbhat) (km 18+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-140N)  
on EPC mode under Bharatmala Pariyojana in the state of Haryana.*

days thereof, falling which the Authority may remove or cause to be removed, such equipment, materials, debris and temporary works and recover from the Contractor an amount equal to 120% (one hundred and twenty per cent) of the actual cost of removal incurred by the Authority

- (iii) Without prejudice to the obligations of the Contractor specified in Articles 14 and 17, the property and ownership of all the completed Works forming part of the Project Highway shall vest in the Authority.

### 12.3 Rescheduling of Tests

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



Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Km 18+500 to km 47+500) section of Delhi-Vardolam Green field Alignment (NH-34) on EPC mode under Bharatnala Pariyojana in the state of Haryana.

## Article 13



### Change of Scope

#### 13.1 Change of Scope

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

#### 13.2 Procedure for Change of Scope

- (i) In the event of the Authority determining that a Change of Scope is necessary, it may direct the Authority's Engineer to issue to the Contractor a notice specifying in reasonable detail the Works and services contemplated thereunder (the "Change of Scope Notice"). The Contractor shall submit a detailed proposal as per Clause 13.2 (ii) within 15 days from the receipt of Change of Scope Notice.
- (ii) If the Contractor determines, not later than 90 days from the Appointed Date, that a Change of Scope to the Works is required, it shall prepare a proposal with relevant

  
Construction of 4 Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Shati (Ch. 16+500 to km 47+500) section of Delhi - Vadodra Green field Alignment (NH-148 N) on EPC mode under Bharatnala Pariyojana in the state of Haryana.



details as per Clause 13.2 (iii) at its own cost and shall submit to the Authority to consider such Change of Scope (the "Change of Scope Request").

(iii) Upon receipt of a Change of Scope Notice, the Contractor shall, with due diligence, provide to the Authority and the Authority's Engineer such information as is necessary, together with detailed proposal in support of:

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

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

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

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

For the avoidance of doubt, in case the cost as determined by the Contractor and the Authority reveals a difference of more than 10% (ten per cent), the

Construction of Right Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghosi (km 47.000 to km 47+500) section of Delhi-Udaodara Green field Alignment (NH-148 NH) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

cost as determined by the Authority shall be considered as final and binding on the Contractor.



- (c) The design charges shall be considered only for new works or items (i.e. the Works or items not similar to the works or items in the original scope) @ 1% (one per cent) of cost of such new works or items.
  - (d) The costs of existing works or items, which are being changed/ omitted shall also be valued as per above procedure and only net cost shall be considered.
  - (e) The reasonable time for completion of works to be taken under Change of Scope shall be determined by the Authority's Engineer on the basis of Good Industry Practice and if such time exceeds the Scheduled Completion Date, the issue of Completion Certificate shall not be affected or delayed on account of construction of Change of Scope items/ works remaining incomplete on the date of Tests.
- (v) Upon consideration of the detailed proposal submitted by the Contractor under the Clause 13.2 (iii), the Authority, within 15 (fifteen) days of receipt of such proposal, may in its sole discretion either accept such Change of Scope with modifications, if any, and initiate proceedings thereof in accordance with this Article 13 or reject the proposal and inform the Contractor of its decision and shall issue an order (the "Change of Scope Order") requiring the Contractor to proceed with the performance thereof.

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

- (a) issue a Change of Scope Order requiring the Contractor to proceed with the performance thereof at the rates and conditions approved by the Authority till the matter is resolved in accordance with Article 26;
  - or
  - (b) proceed in accordance with Clause 13.5.
- (vi) The provisions of this Agreement, insofar as they relate to Works and Tests, shall apply *mutatis mutandis* to the Works undertaken by the Contractor under this Article 13.

### 13.3 Payment for Change of Scope

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

  
Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch 47+000 near Khanpur Ghazi (km 47+500) section of Delhi - Vadodra Green field Alignment (NH-14B) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

#### 13.4 Restrictions on Change of Scope

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

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

- (i) In the event the Parties are unable to agree to the proposed Change of Scope Orders in accordance with Clause 13.2, the Authority may, after giving notice to the Contractor and considering its reply thereto, award such Works or services to any person or agency on the basis of open competitive bidding. It is also agreed that the Contractor shall provide assistance and cooperation to the person or agency who undertakes the works or services hereunder. The Contractor shall not be responsible for rectification of any Defects, but the Contractor shall carry out maintenance of such works after completion of Defect Liability Period of work by other person or agency during the remaining period of this agreement without any extra payment.
- (ii) The Works undertaken in accordance with this Clause 13.5 shall conform to the Specifications and Standards and shall be carried out in a manner that minimises the disruption in operation of the Project Highway. The provisions of this Agreement, insofar as they relate to Works and Tests, shall apply *mutatis mutandis* to the Works carried out under this Clause 13.5.



Construction of Flyover with Expressway starting before NMP Expressway and ends at Ch. 47+000 (near  
Khanpur Ghat) (km 18+500 to km 47+500) section of Delhi-Vaughan Green field Alignment (NH-749 N)  
on EPC mode under Bharatmala Pariyojana in the state of Haryana.

## Article 14

### Maintenance

#### 14.1 Maintenance obligations of the Contractor

- (i) The Contractor shall maintain the Project Highway for a period of 10 [ten] years, corresponding to the Defects Liability Period, commencing from the date of the Completion Certificate (the "Maintenance Period"). For the performance of its Maintenance obligations, the Contractor shall be paid:
- (a) For flexible pavement with 5 years Maintenance Period including structures: 0.25% of the Contract Price each for the first and second year; 0.5% of the Contract Price each for the third and fourth year and 1% of the Contract Price for the fifth year
  - (b) For rigid pavement with 10 years Maintenance Period including structures: 0.25% of the Contract Price each for the first, second and third year, 0.5% of the Contract Price each for fourth, fifth, sixth and seventh year, and 0.75% of the Contract Price each for eighth, ninth and tenth year.
  - (c) For flexible perpetual pavement with 10 years maintenance period including structures: 0.25% of the Contract Price each for the first, second and third year; 0.5% of the Contract Price each for the fourth, fifth and sixth year. The Contractor shall provide a renewal layer over the existing carriageway in the seventh year from issue of completion certificate. The requirement for this 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 determined based on the principles defined under clause 13.2(iii). After the laying of the renewal layer in the 7th year, the Contractor shall be paid @ 0.25% of the original Contract Price each for the seventh, eighth, ninth and tenth year.
  - (d) For stand-alone Bridge/ Tunnel works: the contractor shall be paid @ 0.25% of the Contract Price each for the first five years and @ 0.50% of the Contract Price each for the remaining period of five years.

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



Construction of 4 Lane Expressway starting before IEMP Expressway and ends at Ch. 47+000 near Khanpur Choti (Kil 47+500 to km 47+500) section of Delhi-Vadudara Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

- (ii) During the Maintenance Period, the Authority shall provide to the Contractor access to the Site for Maintenance in accordance with this Agreement. The obligations of the Contractor hereunder shall include:
- (a) permitting safe, smooth and uninterrupted flow of traffic on the Project Highway;
  - (b) undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
  - (c) undertaking repairs to structures;
  - (d) informing the Authority of any unauthorised use of the Project Highway;
  - (e) Informing the Authority of any encroachments on the Project Highway; and
  - (f) operation and maintenance of all communication, patrolling, and administrative systems necessary for the efficient maintenance of the Project Highway in accordance with the provisions of this Agreement.
- (iii) In respect of any Defect or deficiency not specified in Schedule-E, the Contractor shall, at its own cost, undertake repair or rectification in accordance with Good Industry Practice, save and except to the extent that such Defect or deficiency shall have arisen on account of any wilful default or neglect of the Authority or a Force Majeure Event.
- (iv) The Contractor shall remove promptly from the Project Highway any waste materials (including hazardous materials and waste water), rubbish and other debris (including, without limitation, accident debris) and keep the Project Highway in a clean, tidy and orderly condition, and in conformity with the Applicable Laws, Applicable Permits and Good Industry Practice.

#### 14.2 Maintenance Requirements

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

#### 14.3 Maintenance Programme

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

- (a) The condition of the road in the format prescribed by the Authority's

Construction of ~~the~~ *Long Expressway* starting before KMP Expressway and ends at Ch. 47+000 near Khunpur Ghery (km 1B+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-66 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

- (b) the proposed maintenance Works; and
- (c) deployment of resources for maintenance Works.

#### 14.4 Safety, vehicle breakdowns and accidents

- (i) The Contractor shall ensure safe conditions for the Users, and in the event of unsafe conditions, lane closures, diversions, vehicle breakdowns and accidents, it shall follow the relevant operating procedures for removal of obstruction and debris without delay. Such procedures shall conform to the provisions of this Agreement, Applicable Laws, Applicable Permits and Good Industry Practice.
- (ii) The Contractor shall maintain and operate a round-the-clock vehicle rescue post with 1 (one) mobile crane having the capacity to lift a truck with a Gross Vehicle Weight of 30,000 (thirty thousand) kilograms; and such post shall be located at each wayside amenities i.e. at 50 kms interval on either side. The Contractor shall promptly remove any damaged vehicles and debris from the Project Highway to enable safe movement of traffic and shall report all accidents to the police forthwith.

#### 14.5 Lane closure

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

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

- (i) In the event that the Contractor fails to repair or rectify any Defect or deficiency set forth in Schedule-E within the period specified therein, it shall be deemed as failure of performance of Maintenance obligations by the Contractor and the Authority shall be

*Contractor's Office: Phase Expressway starting before RMP Expressway and ends at Ch. 47+000 near Khandiyala (km 46+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-304N) on EPC mode under Bharatmala Pariyojana in the State of Haryana*

entitled to effect reduction in monthly lump sum payment for maintenance in accordance with Clause 19.7 and Schedule-M, without prejudice to the rights of the Authority under this Agreement, including Termination thereof.

- (ii) If the nature and extent of any Defect justifies more time for its repair or rectification than the time specified in Schedule E, the Contractor shall be entitled to additional time in conformity with Good Industry Practice. Such additional time shall be determined by the Authority's Engineer and conveyed to the Contractor and the Authority with reasons thereof.

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

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

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

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

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


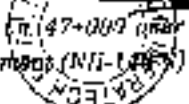
- (i) If in the reasonable opinion of the Authority, the Contractor is in material breach of its obligations under this Agreement and, in particular, the Maintenance Requirements, and such breach is causing or likely to cause material hardship or danger to the Users and pedestrians, the Authority may, without prejudice to any of its rights under this Agreement including Termination thereof, by notice require the Contractor to take reasonable measures immediately for rectifying or removing such hardship or danger, as the case may be.
- (ii) In the event that the Contractor, upon notice under Clause 14.9 (i), fails to rectify or remove any hardship or danger within a reasonable period, the Authority may exercise overriding powers under this Clause 14.9 (ii) and take over the performance of any or all the obligations of the Contractor to the extent deemed necessary by it for rectifying or removing such hardship or danger; provided that the exercise of such

overriding powers by the Authority shall be of no greater scope and of no longer duration than is reasonably required hereunder; provided further that any costs and expenses incurred by the Authority in discharge of its obligations hereunder shall be recovered by the Authority from the Contractor; and the Authority shall be entitled to deduct any such costs and expenses incurred from the payments due to the Contractor under Clause 19.7 for the performance of its Maintenance obligations.

- (iii) In the event of a national emergency, civil commotion or any other circumstances specified in Clause 21.3, the Authority may take over the performance of any or all the obligations of the Contractor to the extent deemed necessary by it, and exercise such control over the Project Highway or give such directions to the Contractor as may be deemed necessary; provided that the exercise of such overriding powers by the Authority shall be of no greater scope and of no longer duration than is reasonably required in the circumstances which caused the exercise of such overriding power by the Authority. For the avoidance of doubt, it is agreed that the consequences of such action shall be dealt in accordance with the provisions of Article 21. It is also agreed that the Contractor shall comply with such instructions as the Authority may issue in pursuance of the provisions of this Clause 14.9 (ii), and shall provide assistance and cooperation to the Authority, on a best effort basis, for performance of its obligations hereunder.

#### 14.10 Taking over Certificate

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

  
Construction of ~~Multi Lane Expressway~~ starting before KIDP Expressway and ends at ~~km 47+000 (near~~  
Khanpur Ghazi (km 47+000 to 47+500) section of Delhi-Vadodara Green field Alignment (NH-100)  
an EPC mode under Bharatmala Pariyojana in the state of Haryana. 



## Article 15

### Supervision and Monitoring during Maintenance

#### 15.1 Inspection by the Contractor

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

#### 15.2 Inspection and payments

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

### 15.3 Tests

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

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

### 15.4 Reports of unusual occurrence

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

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



*Construction of EPC mode Expressway starting before RMP Expressway and ends at Ch. 47 km near Khonpur Ghoti (km 18+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-14B N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.*

## Article 16

### Traffic Regulation

#### 16.1 Traffic regulation by the Contractor

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



Construction of Right of Way Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khangar Ghoti (km 18+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-140 N) on EPC mode under Bharatmala Pariyojana in the state of Gujarat.

## Article 17

### Defects Liability

#### 17.1 Defects Liability Period

- (i) The Contractor shall be responsible for all the Defects and deficiencies, except usual wear and tear in the Project Highway or any Section thereof, till the expiry of a period of commencing from the date of Completion Certificate (the "Defects Liability Period") as specified below:
- (a) 5 (five) years from the date of completion in case of a road being constructed with flexible pavement;
  - (b) 10 (ten) years from the date of completion in case of road being constructed with rigid pavement;
  - (c) 10 (ten) years from the date of completion in case of road being constructed with flexible pavement using perpetual design;
  - (d) 10 (ten) years from the date of completion in case of all stand-alone structures, e.g. Major Bridges/ and Tunnels;
  - (e) 10 (ten) years from the date of completion for the stretches where new technology/ material has been/ is proposed to be used.

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

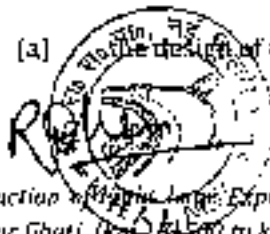
#### 17.2 Remediating Defects

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

#### 17.3 Cost of remedying Defects

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

- (a) the design of the Project;



Construction of ~~Phase 1~~ Expressway starting before KMP Expressway and ends at km 31+800 near Rhanpur Ghati (km 41+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-14B N) on FPC mode under Bharatmala Pariyojana in the state of Haryana.

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

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

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

**17.5 Extension of Defects Liability Period**

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



*Construction of Right of Way Expressway starting before KMP Expressway and ends at Ch. 47+000 near Kiraapur Ghat (km 20+500 to km 47+500) section of Delhi-Vadudara Green field Alignment (NH 148 N) on EPC mode under Bharatmala Paryojana in the state of Haryana.*

## Article 18

### Authority's Engineer

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

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

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

- (i) The Authority's Engineer shall perform the duties and exercise the authority in accordance with the provisions of this Agreement and substantially in accordance with the terms of reference ("Terms of Reference" or "TOR") set forth in Annexure-I of Schedule N, but subject to obtaining prior written approval of the Authority before determining:

(a) any Time Extension;

and any additional cost to be paid by the Authority to the Contractor.

Contract for *Ch. 47+000* Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khumpur Road (km 42+500 to km 47+500) section of Delhi-Vadodra Green field Alignment (NH-148 N) on EPC mode of execution in the state of Haryana

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

### 18.3 Delegation by the Authority's Engineer

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

### 18.4 Instructions of the Authority's Engineer

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

*Construction of Road and Expressway starting before KMP Expressway and ends of Ch 47+000 near Khanpur Ghazal (km 18+500 to km 47+500) section of Delhi-Vadudara Green field Alignment (NH-24R) as an EPC mode under Chhatrapati Paripajana in the state of Haryana.*



of the oral instructions from the Authority's Engineer. The Contractor shall obtain acknowledgement from the Authority's Engineer of the communication seeking written confirmation. In case of failure of the Authority's Engineer or its delegated assistant to reply to the Contractor within 2 (two) days of the receipt of the communication from the Contractor, the Contractor may not carry out the instructions.

- (iv) In case of any dispute on any of the instructions issued by the delegated assistant, the Contractor may refer the dispute to the Authority's Engineer, who shall then confirm, reverse or vary the instructions within 3 (three) business days of the dispute being referred.

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

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

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

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

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

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



terminated hereunder, the Authority shall appoint forthwith another Authority's Engineer in accordance with Clause 18.1 and 18.7 (i).

*[A large, handwritten signature or scribble, possibly reading 'R. K. ...', is written vertically across the page.]*



*Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khaapur Ghat (km 28+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-148 N) on EPC mode under Bharumala Pariyojana in the state of Gujarat.*

**Part IV**  
**Financial Covenants**

*Rev.* 



*Construction of ~~North~~ Expressway starting before KMP Expressway and ends at Ch. 47+000 near  
Khanpur Ghati (km 18+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-148 N)  
on EPC mode under Bharatmala Pariyojana in the state of Haryana.*

## Article 19



### Payments

#### 19.1 Contract Price

- (i) The Authority shall make payments to the Contractor for the Works on the basis of the lump sum price accepted by the Authority in consideration of the obligations specified in this Agreement for an amount of INR 1094,00,00,000/- (INR One Thousand Ninety Four Crore Only) (the "Contract Price"), which shall be subject to adjustments in accordance with the provisions of this Agreement. For the avoidance of doubt, the Parties expressly agree that the Contract Price shall not include the cost of Maintenance, which shall be paid separately in accordance with the provisions of Clause 19.7. The Parties further agree that save and except as provided in this Agreement, the Contract Price shall be valid and effective until issue of Completion Certificate.
- (ii) The Contract Price includes all duties, taxes, royalty, cess, charges, and fees that may be levied in accordance with the laws and regulations in force as on the Base Date on the Contractor's equipment, Plant, Materials and supplies acquired for the purpose of this Agreement and on the services performed under this Agreement. Nothing in this Agreement shall relieve the Contractor from its responsibility to pay any tax including any tax that may be levied in India on profits made by it in respect of this Agreement.
- (iii) The Contract Price shall not be adjusted for any change in costs stated in Clause 19.1 (ii) above, except as stated in Clauses 19.10 and 19.17.
- (iv) The Contract Price shall not be adjusted to take account of any unforeseen difficulties or costs, unless otherwise provided for in this Agreement.
- (v) Unless otherwise stated in this Agreement, the Contract Price covers all the Contractor's obligations for the Works under this Agreement and all things necessary for the Construction and the remedying of any Defects in the Project Highway.
- (vi) All payments under this Agreement shall be made in Indian Rupees.

#### 19.2 Advance Payment

- (i) The Authority shall make an interest-bearing advance payment (the "Advance Payment") @ "Bank Rate + 3%", equal to 10 % (ten percent) of the Contract Price, exclusively for mobilisation expenses. The Advance Payment for mobilisation expenses shall be made in two instalments each equal to 5% (five percent) of the Contract Price. The second 5% (five percent) mobilization advance would be released after submission of utilization certificate by the Contractor for the first 5% (five percent) advance already released earlier.

  
Construction of Right Lane Expressway starting before KMP Expressway and ends at Ch. 47+600 (near  
Khanpur Chatti (km 43+500 to km 47+500) section of Delhi-Vadodra Green field Alignment (NH-148 N)  
on EPC mode under Bharatmala Pariyojana in the state of Haryana.

(ii) In addition to above, the Authority shall make an additional interest-bearing Advance Payment against newly purchased key Construction equipment required for the works as per agreed Construction programme and brought to the site, if so requested by the Contractor subject to the same terms and conditions specified for Advance Payment for mobilisation expenses in this Agreement. The maximum of such advance shall be 5% (five per cent) of the Contract Price against Bank Guarantee. This advance shall be further subject to the condition that:

- (a) such new equipment are considered by the Authority's Engineer to be necessary for the works and
- (b) these new equipment should be procured in the name of Contractor and is verified by Authority's Engineer to have been brought to site.

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

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

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

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

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

of Clause 19.2

Construction of ~~the~~ Expressway starting before KMP Expressway and ends at Ch. 4+000 near Khanpur Ghat (km 18+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-148 W) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

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

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

- (i) The Authority shall make interim payments to the Contractor as certified by the Authority's Engineer on completion of a stage, in a length, number or area as specified and valued in accordance with the proportion of the Contract Price assigned to each item and its stage in Schedule-H.
- (ii) The Contractor shall base its claim for interim payment for the stages completed till the end of the month for which the payment is claimed, valued in accordance with Clause 19.3 (i), supported with necessary particulars and documents in accordance with this Agreement.
- (iii) Any reduction in the Contract Price arising out of Change of Scope or the works withdrawn under Clause 6.3 shall not affect the amounts payable for the items or stage payments thereof which are not affected by such Change of Scope or withdrawal. For avoidance of doubt and by way of illustration, the Parties agree that if the amount assigned to Major Bridges is reduced from Rs. 100 crore to Rs. 80 crore owing to Change of Scope or withdrawal of work, the reduction in payment shall be restricted

Construction of Right Lane Expressway starting before KMP Expressway and ends at Ch. 47+500 near Khanpur (km 18+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-150) on EPC mode under the name Pariyojana in the state of Haryana.

to relevant payments for Major Bridges only and the payment due in respect of all other stage payments under the item Major Bridges shall not be affected in any manner. The Parties further agree that the adjustments arising out of the aforesaid modifications shall be carried out in a manner that the impact of such modifications is restricted to the said Change of Scope or withdrawal, as the case may be, and does not alter the payments due for and in respect of items or stage payments which do not form part of such Change of Scope or withdrawal.

#### 19.4 Stage Payment Statement for Works

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

#### 19.5 Stage Payment for Works

- (i) Within 10 (ten) days of receipt of the Stage Payment Statement from the Contractor pursuant to Clause 19.4, the Authority's Engineer shall broadly determine the amount due to the Contractor and recommend the release of 90 (ninety) percent of the amount so determined as part payment against the Stage Payment Statement, pending issue of the Interim Payment Certificate by the Authority's Engineer. Within 10 (ten) days of the receipt of recommendation of the Authority's Engineer, the Authority shall make electronic payment directly to the Contractor's bank account.
- (ii) Within 15 (fifteen) days of the receipt of the Stage Payment Statement referred to in Clause 19.4, the Authority's Engineer shall determine and shall deliver to the Authority and the Contractor an IPC certifying the amount due and payable to the Contractor, after adjusting the payments already released to the Contractor against the said statement. For the avoidance of doubt, the Parties agree that the IPC shall specify all the amounts that have been deducted from the Stage Payment Statement and the reasons therefor.
- (iii) In cases where there is a difference of opinion as to the value of any stage, the Authority's Engineer's view shall prevail and interim payments shall be made to the Contractor on this basis; provided that the foregoing shall be without prejudice to the Contractor's right to raise a Dispute.
- (iv) The Authority's Engineer may, for reasons to be recorded, withhold from payment:
  - (a) the estimated value of work or obligation that the Contractor has failed to perform in accordance with this Agreement and the Authority's Engineer had notified the Contractor; and

Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch Khanpur Interchange (km 45+500 to km 47+500) section of Delhi-Vadodra Green field Alignment (N.B. 480) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

- (b) the estimated cost of rectification of work done being not in accordance with this Agreement.
- (v) Payment by the Authority shall not be deemed to indicate the Authority's acceptance, approval, consent or satisfaction with the work done.

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

- (i) The Contractor shall submit to the Authority's Engineer a monthly maintenance statement ("**Monthly Maintenance Statement**") in 3 (three) copies by the 7<sup>th</sup> (seventh) day of each month in the format set forth in Schedule-O for the Maintenance of the Project Highway during the previous month.
- (ii) The monthly lump sum amount payable for Maintenance shall be 1/12<sup>th</sup> (one-twelfth) of the annual cost of Maintenance as specified in Clause 14.1 (i).

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

- (c) Within 15 (fifteen) days of receipt of the Monthly Maintenance Statement from the Contractor pursuant to Clause 19.6, the Authority's Engineer shall verify the Contractor's monthly maintenance statement and certify the amount to be paid to the Contractor taking into account:

- (a) Compliance with the Maintenance Requirements; and
- (b) reduction for non-compliance with the Maintenance Requirement in accordance with Clause 19.7 (ii).

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

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



Construction of 4-lane Expressway starting before KMP Expressway and ends at Ch. Kanpur Ghosia (km 47+500) section of Delhi-Vadodara Green field Alignment (NH-148 N) on EPC mode under Anantnaga Pariyojana in the state of Haryana.

#### 19.8 Payment of Damages

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

#### 19.9 Time of payment and interest

- (i) The Authority shall pay to the Contractor any amount due under any payment certificate issued by the Authority's Engineer in accordance with the provisions of this Article 19, or in accordance with any other clause of this Agreement as follows:
  - (a) payment shall be made no later than 30 (thirty) days from the date of submission of the Stage Payment Statement by the Contractor to the Authority's Engineer for certification in accordance with the provisions of Clause 19.4 for an IPC; provided that, in the event the IPC is not issued by the Authority's Engineer within the aforesaid period of 30 (thirty) days, the Authority shall pay the amount shown in the Contractor's Stage Payment Statement and any discrepancy therein shall be added to, or deducted from, the next payment certificate issued to the Contractor; and
  - (b) payment shall be made no later than 30 (thirty) days from the date of submission of the Final Payment Certificate for Works along with the discharge submitted to the Authority's Engineer in accordance with the provisions of Clause 19.15 for certification.
- (ii) In the event of the failure of the Authority to make payment to the Contractor within the time period stated in this Clause 19.9, the Authority shall be liable to pay to the Contractor interest @ 9% (nine per cent) per annum, on all sums remaining unpaid from the date on which the same should have been paid, calculated in accordance with the provisions of sub-Clauses (a) and (b) of Clause 19.9 (i) and till the date of actual payment.

#### 19.10 Price adjustment for the Works

- (i) The amounts payable to the Contractor for Works shall be adjusted in accordance with the provisions of this Clause 19.10

*Construction of Ghazi Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Rhoopar Ghati (S.M.A.P. Km 47+500) section of Delhi-Vadodra Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.*



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

- (a) Price adjustment shall be applied on completion of the specified stage of the respective item of work in accordance with Schedule-II;
- (b) Adjustment for each item of work/stage shall be made separately;
- (c) The following expressions and meanings are assigned to the value of the work done:

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

- i. Road works; and
- ii. Other works

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

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

$$(i) \quad VRW = 0.95RW \times \left[ PL \times \frac{I_1 - I_0}{I_0} + PA \times \frac{A_1 - A_0}{A_0} + PF \times \frac{F_1 - F_0}{F_0} + PB \times \frac{B_1 - B_0}{B_0} + PM \times \frac{M_1 - M_0}{M_0} + PC \times \frac{C_1 - C_0}{C_0} + PS \times \frac{S_1 - S_0}{S_0} \right]$$

$$(ii) \quad VBR = 0.95BR \times \left[ PL \times \frac{I_1 - I_0}{I_0} + PA \times \frac{A_1 - A_0}{A_0} + PF \times \frac{F_1 - F_0}{F_0} + PM \times \frac{M_1 - M_0}{M_0} + PC \times \frac{C_1 - C_0}{C_0} + PS \times \frac{S_1 - S_0}{S_0} \right]$$

Where,

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

Construction of **Shri Lal Bahadur Shastri Expressway** starting before KMP Expressway and ends at Ch. 47+900 near Khanpur under (km 18+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-148 N) on EPC mode under the main Parayojana in the state of Haryana.



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

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

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

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

$A_0$  = The wholesale price index as published by the Ministry of Commerce & Industry, Government of India (hereinafter called "WPI") for "Manufacture of machinery for mining, quarrying and construction" for the month of the Base Date.

$A_1$  = The WPI for construction machinery for the month three months prior to the month to which the IPC relates.

$B_0$  = The official retail price of bitumen at the nearest refinery at Mathura on the Base Date.

$B_1$  = The official retail price of bitumen at nearest refinery at Mathura, on the first day of the month three months prior to the month to which the IPC relates.

$C_0$  = The WPI for Ordinary Portland Cement for the month of the Base Date.

$C_1$  = The WPI for Ordinary Portland Cement for the month three months prior to the month to which the IPC relates.

$F_0$  = The official retail price of high speed diesel (HSD) oil at the existing consumer pumps of Indian Oil Corporation ("IOC") in the State of Haryana on the Base Date.

$F_1$  = The official retail price of HSD at the existing consumer pumps of IOC in the State of Haryana on the first day of the month three months prior to the month to which the IPC relates.

$L_0$  = The consumer price index for industrial workers for the circle Gurugram in the State of Haryana, published by Labour Bureau, Ministry of Labour, Government of India, (hereinafter called "CPI") for the month of the Base Date.

$L_1$  = The CPI for the month three months prior to the month to which the IPC

- $M_0$  = The WPI for all commodities for the month of the Base Date.
- $M_T$  = The WPI for all commodities for the month three months prior to the month to which the IPC relates.
- $S_0$  = The WPI for Mild Steel -Long Products for the month of the Base Date.
- $S_1$  = The WPI for Mild Steel -Long Products for the month three months prior to the month to which the IPC relates.

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

Component	Item				
	Road Works				Major Bridges and Structures
	Earthwork, Granular work, and Other works	Bituminous work	Cement Concrete Pavement	Culverts, minor bridges and other structures	
Labour (PL)	20%	20%	20%	15%	15%
Cement (PC)	5%	Nil	20%	15%	15%
Steel (PS)	Nil	Nil	Nil	15%	20%
Bitumen (PB)	Nil	15%	Nil	Nil	Nil
Fuel and lubricants (PF)	10%	10%	10%	10%	10%
Other Materials (PM)	50%	40%	35%	30%	25%
Plant, machinery and spares (PA)	15%	15%	15%	15%	15%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

#### 19.11 Restrictions on price adjustment

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

Construction of Eight Lane Expressway starting before RMP Expressway and ends at Ch. 47+000 and Rhanpur Ghatl (km 18+500 to km 47+500) section of Delhi-Vadodra Green field Alignment (NH-146-N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

### 19.12 Price adjustment for Maintenance of Project Highway

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

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

Where

- V= Increase or decrease in the quarterly lump sum payment
- P= Quarterly lump sum payment due to the Contractor after adjusting any reduction in payment for non-compliance of the Maintenance Requirements
- W<sub>0</sub>= The wholesale price index (all commodities) for the month of the Base Date.
- W<sub>1</sub>= The wholesale price index (all commodities) for the first day of the quarter under consideration for determining the price adjustment.

### 19.13 Final Payment Statement

(i) Within 60 (sixty) days after receiving the Completion Certificate under Clause 12.2, the Contractor shall submit to the Authority's Engineer for consideration 6 (six) copies of a Final Payment Statement (the "Final Payment Statement") for Works, with supporting documents showing in detail, in the form prescribed by the Authority's Engineer:

- (a) the summary of Contractor's Stage Payment claims for Works as submitted in accordance with Clause 19.4;
- (b) the amounts received from the Authority against each claim; and
- (c) any further sums which the Contractor considers due to it from the Authority.

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

- i. an IPC for those parts of the Final Payment Statement which are not in dispute, along with a list of disputed items which shall then be settled in accordance with the provisions of Article 26; or
- ii. a Final Payment Certificate in accordance with Clause 19.15 if there are no disputed items.

(ii) If the Authority's Engineer does not prescribe the form referred to in Clause 19.13 (i) within 15 (fifteen) days of the date of issue of the Completion Certificate, the Contractor shall submit the statement in such form as it deems fit.

Construction of eight lane Expressway starting before RMP Expressway and ends at Ch. 47+800 near Rongpur Road (km 46+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-348-6) an EPC mode under Prasthavana Pariyojana in the state of Haryana.

#### 19.14 Discharge

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

#### 19.15 Final Payment Certificate

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

#### 19.16 Final payment statement for Maintenance

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

Construction of Delhi-Ludhiana Expressway starting before KMP Expressway and ends at Ch. 47+000 near  
Khanpur Ghuti (N.H. 15/500 to Km 47+500) section of Delhi-Vadodara Green Field Alignment (NH-230 B)  
on EPC mode under EPC/OT mode in the state of Haryana.

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

#### 19.17 Change in law

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

#### 19.20 Correction of Interim Payment Certificates

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

#### 19.19 Authority's claims

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

#### 19.20 Bonus for early completion

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

*Delhi Metro Rail Corporation Ltd. (DMRC) Engineer-in-Charge*  
Khanpur Depot (km 34+500 to km 47+300) section of Delhi-Vadodara green field Alignment (NH-148) on EPC mode under Bharatmala Pariyojna in the State of Haryana.

from the scope of work under clause 8.3 of this Contract Agreement and the Contract Price shall always be deemed to be the amount specified in Clause 19.1 (i) after excluding the Contract Price of the Works deemed to be deleted from the Scope of Work under clause 8.3 of this Contract Agreement, and shall exclude any revision thereof for any reason. The Parties also agree that bonus shall be payable only if each work for which Time Extension has been granted is completed within respective Extended Time.



Construction of Eight Lane Expressway starting before NMP Expressway and ends at Ch. 17+000 near  
Khanpur Ghazi (km 18+500 to km 17+500) section of Delhi-Vadodara Green field Alignment (NH-14B N)  
on EPC mode under Utharanchal Paryayana in the state of Haryana.

## Article 20

### Insurance

#### 20.1 Insurance for Works and Maintenance

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

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

*Contract for the construction of a 4-lane Expressway starting before KMP Expressway and ends at Ch. 37+000, near  
Khanpur Ghat (km 18+500 to km 47+500) section of Delhi- Vaidhara Green field Alignment (NH-148) as  
an EPC mode project, under the supervision of the National Highways Authority of India (NHAI).*



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

**20.2 Notice to the Authority**

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

**20.3 Evidence of Insurance Cover**

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

**20.4 Remedy for failure to insure**

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

## 20.5 Waiver of subrogation

All insurance policies in respect of fire insurance obtained by the Contractor pursuant to this Article 20 shall include a waiver of any and all rights of subrogation or recovery of the insurers thereunder against, *inter alia*, the Authority, and its assigns, successors, undertakings and their subsidiaries, Affiliates, employees, insurers and underwriters, and of any right of the insurers to any set-off or counterclaim or any other deduction, whether by attachment or otherwise, in respect of any liability of any such person insured under any such policy or in any way connected with any loss, liability or obligation covered by such policies of insurance.

## 20.6 Contractor's waiver

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

## 20.7 Cross liabilities

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

## 20.8 Accident or injury to workmen

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

## 20.9 Insurance against accident to workmen

The Contractor shall effect and maintain during the Agreement such insurances as may be required to insure the Contractor's personnel and any other persons employed by it on the Project Highway from and against any liability incurred in pursuance of this Article 20. Provided that for the purposes of this Clause 20.9, the

Contractor's personnel/any person employed by the Contractor shall include the Sub-contractor and its personnel. It is further provided that, in respect of any persons employed by any Sub-contractor, the Contractor's obligations to insure as aforesaid under this Clause 20.9 shall be discharged if the Sub-contractor shall have insured against any liability in respect of such persons in such manner that the Authority is indemnified under the policy. The Contractor shall require such Sub-contractor to produce before the Authority, when required, such policy of insurance and the receipt for payment of the current premium within 10 (ten) days of such demand being made by the Authority.

#### 20.10 Application of insurance proceeds

The proceeds from all insurance claims, except for life and injury, shall be applied for any necessary repair, reconstruction, reinstatement, replacement, improvement, delivery or installation of the Project Highway and the provisions of this Agreement in respect of construction of works shall apply *mutatis mutandis* to the works undertaken out of the proceeds of insurance.

#### 20.11 Compliance with policy conditions

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

#### 20.12 General Requirements of Insurance Policies

The Contractor must:

- (a) immediately deposit copies of the policies or certificates of any insurance which it is required to effect under the Contract, together with receipts for the premiums;
- (b) effect all insurances for which the Contractor is responsible with an insurer approved by the Authority;
- (c) make no material changes in the terms of any insurance without the Authority's approval;
- (d) in all respects comply with any conditions stipulated in the insurance policies which the Contractor is required to effect under the Agreement or which the Authority has effected in relation to the Facility and notified to the Contractor; and shall provide all assistance to the Authority in the application for, and finalization of, such comprehensive insurance package;
- (e) regardless of the extent of settlement of claims by the underwriters or the time taken for settlement of claims, the Contractor shall make good any loss, ~~not damage~~ at its own cost promptly;

Construction of Right Lane Expressway starting before NHP Expressway and ends at Ch 47+000 near Khanpur Ghat (Km 47+500) to Km 47+500) section of Delhi-Vadodara Green field Alignment (NH-48) as an EPC mode under Bharatnala Pariyojana in the state of Haryana.

- (f) provide all assistance to the Authority in the application for, and finalization of, such comprehensive insurance package;
- (g) pay the Contractor's share of the insurance premiums for insurance premiums allocated under such comprehensive insurance package policy to the insurances directly to the insurance provider promptly on demand. In case the Contractor fails to make such payment in time, the Authority may elect to pay the Contractor's share and adjust it against amounts payable to the Contractor under this Agreement;
- (h) in the case of occurrence of any event leading to an insurance claim, promptly follow the procedures specified by the insurance provider, and provide full cooperation and access to the insurance provider or its representative, to settle the claim expeditiously;
- (i) require all the Sub-Contractors providing equipment and materials or services to the Contractor or the Authority to obtain, maintain and keep in force during the time in which they are involved in the performance of the Works hereunder insurance coverage consistent with the Contractor's insurance obligations hereunder and the Contractor shall also be responsible for fulfillment of this requirement; and
- (j) the required insurance coverage and the Contractor's obligations-referred to shall in no way affect or limit the Contractor's liability with respect to its performance of the Works. Nothing in this Section shall limit or relieve the Contractor of its liabilities and obligations under this Agreement.



Construction of Eight Lane Expressway starting before KMP Expressway and ends at Km. 47+000 near  
Khanpur Ghosla (km. 46+500 to km. 47+500) section of Delhi-Vadodara Green field Alignment (NH-149 W)  
on EPC mode under Bharatmala Pariyojana in the state of Haryana.

Part V

Force Majeure and Termination



Construction of ~~Four~~ Lane Expressway starting before KMP Expressway and ends at Ch 47+000 near  
Khanpur Ghat: (km 26+500 to km 47+500) section of Delhi - Varanasi Green field Alignment (NH-148 N)  
on EPC mode under Bharatmala Pariyojana in the state of Haryana.

## Article 21

### Force Majeure

#### 21.1 Force Majeure

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

#### 21.2 Non-Political Event

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

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

Construction of EPC and Expressway starting before KMP Expressway and ends at Ch. 47+000 near  
Khanpur Ghati (km 47+000 to 47+500) section of Delhi-Vadodara Green field Alignment (NH-48 N)  
an EPC mode under Bharatmala Pariyojana in the state of Haryana.

### 21.3 Indirect Political Event

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

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

### 21.4 Political Event

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

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


Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 6+000 near  
Khanpur Ghati (km 18+000 to 500) section of Delhi-Vadodara Green field Alignment  
on EPC mode under Bharatmala Fortification in the state of Haryana.

## 21.5 Duty to report Force Majeure Event

- (i) Upon occurrence of a Force Majeure Event, the Affected Party shall by notice report such occurrence to the other Party forthwith. Any notice pursuant hereto shall include full particulars of:
- (a) the nature and extent of each Force Majeure Event which is the subject of any claim for relief under this Article 21 with evidence in support thereof,
  - (b) the estimated duration and the effect or probable effect which such Force Majeure Event is having or will have on the Affected Party's performance of its obligations under this Agreement;
  - (c) the measures which the Affected Party is taking or proposes to take for alleviating the impact of such Force Majeure Event; and
  - (d) any other information relevant to the Affected Party's claim.
- (ii) The Affected Party shall not be entitled to any relief for or in respect of a Force Majeure Event unless it shall have notified the other Party of the occurrence of the Force Majeure Event as soon as reasonably practicable, and in any event no later than 10 (ten) days after the Affected Party knew, or ought reasonably to have known, of its occurrence, and shall have given particulars of the probable material effect that the Force Majeure Event is likely to have on the performance of its obligations under this Agreement.
- (iii) For so long as the Affected Party continues to claim to be materially affected by such Force Majeure Event, it shall provide the other Party with regular (and not less than weekly) reports containing information as required by Clause 21.5 (i), and such other information as the other Party may reasonably request the Affected Party to provide.

## 21.6 Effect of Force Majeure Event on the Agreement

- (i) Upon the occurrence of any Force Majeure after the Appointed Date, the costs incurred and attributable to such event and directly relating to this Agreement (the "Force Majeure costs") shall be allocated and paid as follows.
- (a) upon occurrence of a Non-Political Event, the Parties shall bear their respective Force Majeure costs and neither Party shall be required to pay to the other Party any costs thereof,
  - (b) upon occurrence of an Indirect Political Event, all Force Majeure costs attributable to such Indirect Political Event, and not exceeding the Insurance Cover for such Indirect Political Event, shall be borne by the Contractor, and to the extent Force Majeure costs exceed such Insurance Cover, one half of such excess amount shall be reimbursed by the Authority to the Contractor for the Force Majeure events; and

  
Construction of Eight Lane Expressway starting before KMP Expressway and ends at LK 47+000 near  
Khanpur Ghāt (NH-147 from 47+500 to 47+500) section of Delhi- Vadodra Green field Alignment (NH-148) as  
an EPC mode under the National Pariyojana in the state of Haryana.



- (c) upon occurrence of a Political Event, all Force Majeure costs attributable to such Political Event shall be reimbursed by the Authority to the Contractor.
  - (d) For the avoidance of doubt, Force Majeure costs may include costs directly attributable to the Force Majeure Event, but shall not include debt repayment obligations, if any, of the Contractor.
- (ii) Save and except as expressly provided in this Article 21, neither Party shall be liable in any manner whatsoever to the other Party in respect of any loss, damage, cost, expense, claims, demands and proceedings relating to or arising out of occurrence or existence of any Force Majeure Event or exercise of any right pursuant hereto.
  - (iii) Upon the occurrence of any Force Majeure Event during the Construction Period, the Project Completion Schedule for and in respect of the affected Works shall be extended on a day for day basis for such period as performance of the Contractor's obligations is affected on account of the Force Majeure Event or its subsisting effects.

**21.7 Termination Notice for Force Majeure Event**

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

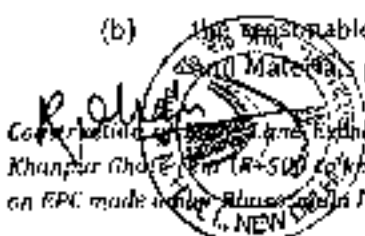
**21.8 Termination Payment for Force Majeure Event**

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

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

- (ii) If Termination is on account of an Indirect Political Event, the Termination Payment shall include:
  - (a) any sums due and payable under Clause 23.5; and
  - (b) the reasonable cost, as determined by the Authority's Engineer, of the Plant and Materials procured by the Contractor and transferred to the Authority for

Contract for the construction and Erection of a 1.5 km long Expressway starting before KMP Expressway and ends at Ch 47+000 near Khanpur Ghose (R-500) to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-30) on EPC mode under Public-Private Partnership in the State of Haryana.



use in Construction or Maintenance, only if such Plant and Materials are in conformity with the Specifications and Standards;

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

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

#### 21.9 Dispute resolution

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

#### 21.10 Excuse from performance of obligations

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

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



Construction of Eight Lane Expressway starting before KMP Expressway and ends at 131.45+000 near  
Manspur Ghati (km 18+500 to km 47+500) section of Delhi - Varanasi Green field Alignment (NH-148 N)  
on EPC mode under Bharatmala Pariyojana in the state of Haryana.

## Article 22

### Suspension of Contractor's Rights

#### 22.1 Suspension upon Contractor Default

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

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

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

#### 22.3 Revocation of Suspension

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



Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near  
Khanpur Ghati (Km 18+500 to Km 47+500) section of Delhi-Tadodara Green field Alignment (NH-148 N)  
on EPC mode under Bharatmala Pariyojana in the state of Haryana.

## 22.4 Termination

- (i) At any time during the period of Suspension under this Article 22, the Contractor may by notice require the Authority to revoke the Suspension and issue a Termination Notice. The Authority shall, within 15 (fifteen) days of receipt of such notice, terminate this Agreement under and in accordance with Article 23.
- (ii) Notwithstanding anything to the contrary contained in this Agreement, in the event that Suspension is not revoked within 90 (ninety) days from the date of Suspension hereunder, the Agreement shall, upon expiry of the aforesaid period, be deemed to have been terminated by mutual agreement of the Parties and all the provisions of this Agreement shall apply, *mutatis mutandis*, to such Termination as if a Termination Notice had been issued by the Authority upon occurrence of a Contractor Default.



Construction of Extra Lane Expressway starting before KMP Expressway and ends at Ctr. 47+000 near Khanpur Ghazi (km 18+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

## Article 23

### Termination

#### 23.1 Termination for Contractor Default

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

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

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

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

### 23.2 Termination for Authority Default

- (i) In the event that any of the defaults specified below shall have occurred, and the Authority fails to cure such default within a Cure Period of 90 (ninety) days or such longer period as has been expressly provided in this Agreement, the Authority shall be deemed to be in default of this Agreement (the "Authority Default") unless the default has occurred as a result of any breach of this Agreement by the Contractor or due to Force Majeure. The defaults referred to herein shall include:

*Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Roshni Chata (km 78+500 to km 97+500) section of Delhi-Varanasi Green field Alignment (NH-1) on EPC mode under BOT in the state of Haryana.*

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

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

### 23.3 Termination for Authority's convenience

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

Construction of Expressway starting before KMP Expressway and ends at Km 47+000 near  
 Khanda Road (km 4+500 to km 47+500) section of Delhi-Vadodra Green field Alignment (NH-30 N)  
 on E.P.C. mode under Bharatmala Pariyojana in the state of Haryana.



#### 23.4 Requirements after Termination

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

- (a) deliver all relevant records, reports, Intellectual Property and other licences pertaining to the Works, Maintenance, other design documents;
- (b) transfer and/or deliver all Applicable Permits to the extent permissible under Applicable Laws, and
- (c) vacate the Site within 15 (fifteen) days.

#### 23.5 Valuation of Unpaid Works

(i) Within a period of 45 (forty-five) days after Termination under Clause 23.1, 23.2 or 23.3, as the case may be, has taken effect, the Authority's Engineer shall proceed in accordance with Clause 23.5 to determine as follows the valuation of unpaid Works (the "Valuation of Unpaid Works"):

- (a) value of the completed stage of the Works, less payments already made;
- (b) reasonable value of the partially completed stages of works as on the date of Termination, only if such works conform with the Specifications and Standards; and
- (c) value of Maintenance, if any, for completed months, less payments already made, and shall adjust from the sum thereof (i) any other amounts payable or recoverable, as the case may be, in accordance with the provisions of this Agreement; and (ii) all taxes due to be deducted at source.

(ii) The Valuation of Unpaid Works shall be communicated to the Authority, with a copy to the Contractor, within a period of 30 (thirty) days from the date of Termination.

#### 23.6 Termination Payment

(i) Upon Termination on account of Contractor's Default under Clause 23.1, the Authority shall:

- (a) encash and appropriate the Performance Security, Additional Performance Security if any and Retention Money, or in the event the Contractor has failed to replenish or extend the Performance Security and Additional Performance Security if any, claim the amount stipulated in Clause 7.1, as agreed pre-determined compensation to the Authority for any losses, delays and cost of completing the Works and Maintenance, if any;
- (b) encash and appropriate the Bank Guarantee, if any, for and in respect of the outstanding Advance Payment and interest thereon; and

*Construction of 1.5 km Expressway starting before KMP Expressway and ends at Ch 47+000 near Khunpur Ghel (Ch 47+500) section of Delhi-Vadodara Green field Alignment (NH-142B) as an EPC mode under Bharatmala Pariyojana in the state of Haryana.*

- (c) pay to the Contractor, by way of Termination Payment, an amount equivalent to the Valuation of Unpaid Works after adjusting any other sums payable or recoverable, as the case may be, in accordance with the provisions of this Agreement.
- (ii) Upon Termination on account of an Authority Default under Clause 23.2 or for Authority's convenience under Clause 23.3, the Authority shall:
- return the Performance Security, Additional Performance Security and Retention Money forthwith;
  - encash and appropriate the bank guarantee, if any, for and in respect of the outstanding Advance Payment; and
  - pay to the Contractor, by way of Termination Payment, an amount equal to:
    - Valuation of Unpaid Works;
    - the reasonable cost of temporary works, as determined by the Authority's Engineer; and
    - 10% (ten per cent) of the cost of the Works and Maintenance that are not commenced or not completed,
 and shall adjust from the sum thereof (i) any other amounts payable or recoverable, as the case may be, in accordance with the provisions of this Agreement, and (ii) all taxes due to be deducted at source.
- (iii) Termination Payment shall become due and payable to the Contractor within 30 (thirty) days of a demand being made by the Contractor to the Authority with the necessary particulars, and in the event of any delay, the Authority shall pay interest at 9% (nine per cent) per annum, on the amount of Termination Payment remaining unpaid; provided that such delay shall not exceed 90 (ninety) days. For the avoidance of doubt, it is expressly agreed that Termination Payment shall constitute full discharge by the Authority of its payment obligations in respect thereof hereunder.
- (iv) The Contractor expressly agrees that Termination Payment under this Article 23 shall constitute a full and final settlement of all claims of the Contractor on account of Termination of this Agreement and that it shall not have any further right or claim under any law, treaty, convention, contract or otherwise.

### 23.7 Other rights and obligations of the Parties

Upon Termination for any reason whatsoever:

- property and ownership in all Materials, Plant and Works and the Project Highway shall, as between the Contractor and the Authority, vest in the Authority in whole; provided that the foregoing shall be without prejudice to

Construction of 1.80 Km long Expressway starting before KMP Expressway and ends at Ch. 47+500 near Kharpur Ghat (Km 18+500 to Km 47+500) section of Delhi-Vadodara Green field Alignment (NHA) in EPC mode under Public-Private Partnership in the state of Haryana.

- (b) risk of loss or damage to any Materials, Plant or Works and the care and custody thereof shall pass from the Contractor to the Authority; and
- (c) the Authority shall be entitled to restrain the Contractor and any person claiming through or under the Agreement from entering upon the Site or any part of the Project, which have not been vested in the Authority in accordance with the provisions of this Agreement.

### 23.8 Survival of rights


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

### 23.9 Foreclosure with mutual consent

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

*Construction of Eight Lane Expressway starting before KMP Expressway and ends at Km 47+600 (Near Kharapur Ghat) (old 187-500 to km 47+500) section of Delhi-Vadodra Green field Alignment (EPC-48 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.*

**Part VI**  
**Other Provisions**

  
Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near  
Khanpur Ch. (km 13+500 to km 47+500) section of Delhi - Vadodara Green field Alignment (NH-14B N)  
on EPC mode under Bharatmala Pariyojana in the state of Haryana.



## Article 24

### Assignment and Charges

#### 24.1 Restrictions on assignment and charges

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

#### 24.2 Hypothecation of Materials or Plant

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



Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Rhoopur Ghazi (NH-49-500th Km 47+500) section of Delhi-Vadodara Green field Alignment (NH-148 N) on ETC mode under Bharatmala Pariyojana in the state of Haryana.

## Article 25

### Liability and Indemnity

#### 25.1 General indemnity

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

#### 25.2 Indemnity by the Contractor

- (i) Without limiting the generality of Clause 25.1, the Contractor shall fully indemnify, hold harmless and defend the Authority and the Authority Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
- (a) failure of the Contractor to comply with Applicable Laws and Applicable Permits;
  - (b) payment of taxes required to be made by the Contractor in respect of the income or other taxes of the Sub-contractors, suppliers and representatives; or
  - (c) non-payment of amounts due because of Materials or services furnished to the Contractor or any of its Sub-contractors which are payable by the Contractor or any of its Sub-contractors.
- (ii) Without limiting the generality of the provisions of this Article 25, the Contractor shall fully indemnify, hold harmless and defend the Authority Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which the Authority Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other Intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by the Contractor or by the Sub-contractors in performing the Contractor's obligations or in any way incorporated in or related to the Project. If in any such suit, action, claim or proceedings, a temporary restraining order or preliminary injunction is granted, the Contractor shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation

or suspension of the injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, the Contractor shall promptly make every reasonable effort to secure for the Authority a licence, at no cost to the Authority, authorising continued use of the infringing work. If the Contractor is unable to secure such licence within a reasonable time, the Contractor shall, at its own expense, and without impairing the Specifications and Standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process or modify the same so that it becomes non-infringing.

### 25.3 Notice and contest of claims

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

### 25.4 Defence of claims

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

Construction of EPC mode Expressway starting before KMP Expressway and ends at C.C. 47+050 near Khanpur Chats (Km 10+500 to 47+500) section of Delhi-Vadodara Green field Alignment (NH-148) on EPC mode under Shiksha Pariyojana in the state of Haryana.

proceeding without the prior written consent of the Indemnifying Party (which consent shall not be unreasonably withheld or delayed).

- (iii) If the Indemnifying Party exercises its rights under Clause 25.3, the Indemnified Party shall nevertheless have the right to employ its own counsel, and such counsel may participate in such action, but the fees and expenses of such counsel shall be at the expense of the Indemnified Party, when and as incurred, unless:
- (a) the employment of counsel by such party has been authorised in writing by the Indemnifying Party; or
  - (b) the Indemnified Party shall have reasonably concluded that there may be a conflict of interest between the Indemnifying Party and the Indemnified Party in the conduct of the defence of such action; or
  - (c) the Indemnifying Party shall not, in fact, have employed independent counsel reasonably satisfactory to the Indemnified Party, to assume the defence of such action and shall have been so notified by the Indemnified Party; or
  - (d) the Indemnified Party shall have reasonably concluded and specifically notified the Indemnifying Party either:
    - i. that there may be specific defences available to it which are different from or additional to those available to the Indemnifying Party; or
    - ii. that such claim, action, suit or proceeding involves or could have a material adverse effect upon it beyond the scope of this Agreement.

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

#### 25.5 Survival on Termination

The provisions of this Article 25 shall survive Termination.



Construction of Eight Lane Expressway starting before KIAP Expressway and ends at Ch. 97+000 near Khaspur Ghat. (km 18+500 to km 47+500) section of Delhi- Vadodra Green field Alignment (NH-148 N) on EPC mode under Bharatmahi Pariyojana in the state of Haryana.



## Article 26

### Dispute Resolution

#### 26.1 Dispute Resolution

- (i) 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 in accordance with the conciliation procedure set forth in Clause 26.2.
- (ii) The Parties agree to use their best efforts for resolving all Disputes arising under or in respect of this Agreement promptly, equitably and in good faith, and further agree to provide each other with reasonable access during normal business hours to all non privileged records, information and data pertaining to any Dispute.

#### 26.2 Conciliation

In the event of any Dispute between the Parties, either Party may call upon the Authority's Engineer, or such other person as the Parties may mutually agree upon (the "Conciliator") to mediate and assist the Parties in arriving at an amicable settlement thereof. Failing mediation by the Conciliator or without the intervention of the Conciliator, either Party may require such Dispute to be referred to the Chairman of the Authority and the Chairman of the Board of Directors of the Contractor for amicable settlement, and upon such reference, the said persons shall meet no later than 7 (seven) business days from the date of reference to discuss and attempt to amicably resolve the Dispute. If such meeting does not take place within the 7 (seven) business day period or the Dispute is not amicably settled within 15 (fifteen) days of the meeting or the Dispute is not resolved as evidenced by the signing of written terms of settlement within 30 (thirty) days of the notice in writing referred to in Clause 26.1.1 or such longer period as may be mutually agreed by the Parties, either Party may refer the Dispute to arbitration in accordance with the provisions of Clause 26.3 but before resorting to such arbitration, the parties agree to explore conciliation by the Conciliation Committees of Independent Experts set up by the Authority in accordance with the procedure decided by the panel of such experts and notified by the Authority on its website including its subsequent amendments. In the event of the conciliation proceedings being successful, the parties to the dispute would sign the written settlement agreement and the conciliators would authenticate the same. Such settlement agreement would then be binding on the parties in terms of Section 73 of the Arbitration Act. In case of failure of the conciliation process even at the level of the Conciliation Committee, either party may refer the Dispute to arbitration in accordance with the provisions of Clause 26.3



*Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghazi (km 18+500 to km 47+500) section of Delhi- Vudodara Green field Alignment (NH-140 N) on FPC mode under Bharatnala Parity plan in the state of Haryana.*

### 26.3 Arbitration

- (i) Any Dispute which is not resolved amicably by conciliation, as provided in Clause 26.2, shall be finally settled by arbitration in accordance with the rules of arbitration of the Society For Affordable Redressal Of Disputes (SAROD).
- (ii) The parties expressly agree as under in case of arbitration of disputes:
- (a) There shall be no arbitration for a dispute involving a claim value upto INR 50 Lakh (INR fifty lakh). The Authority's Engineer shall give a reasoned decision in case of such dispute and the same shall be binding on both the parties.
  - (b) In case of a dispute involving claim value of above INR 50 Lakh (INR fifty lakh), but upto INR 50 Crore (INR fifty crore), the same shall be referred to a Sole Arbitrator. Authority shall within 30 (thirty) days propose names of 5 (five) Arbitrators from the list of Arbitrators maintained by SAROD (Society for Affordable Redressal of Disputes) and the Contractor shall within 30 (thirty) days select one name from the list of five and the name so selected by the Contractor shall be the Sole Arbitrator for the matter in dispute. In case Authority delays in providing the list of 5 (five) names, President, SAROD will provide 5 names within 30 (thirty) days of receipt of reference from aggrieved party in this regard. In case the Contractor fails in selecting one from the list of five, President, SAROD shall select one from the list of five provided by Authority within 30 (thirty) days of receipt of reference from aggrieved party in this regard.
  - (c) In case of a dispute involving a claim value of more than INR 50 Crore (INR fifty crore), the same shall be referred to an Arbitral Tribunal comprising 3 (three) Arbitrators. The Dispute shall be settled in accordance with the rules of Arbitration of the Society for Affordable Redressal of Disputes (SAROD).
  - (d) The venue of arbitration shall be Delhi, and the language of arbitration proceedings shall be English.
  - (e) The fees of the Arbitrators shall be as per the rates fixed by the Authority from time to time. The cost of arbitration shall be shared equally by the parties.
  - (f) Neither Party shall be entitled for any pre reference or pendent lite interest, i.e., interest from date of cause of action till date of Award by Arbitral Tribunal. The parties specifically agree that claim for any such interest shall not be considered and shall be void. The Arbitrator or Arbitral Tribunal shall have no power/ jurisdiction to award pre-reference or pendent lite interest in case of disputes.
- (iii) The Arbitrators shall make a reasoned award (the "Award"). Any Award made in any arbitration held pursuant to this Article 26 shall be final and binding on the Parties as from the date it is made, and the Contractor and the Authority agree and undertake to carry out such Award without delay.

Construction of the 2<sup>nd</sup> lane Expressway starting before KMF Expressway and ends at Ch. 47+500 near  
Khanpur Ghat (Km 18+500 to Km 47+500) section of Delhi-Vadodra Green field Alignment (NH-100A)  
on FPC mode under Bharat Mata Paryojana in the state of Haryana.

- (iv) The Contractor and the Authority agree that an Award may be enforced against the Contractor and/or the Authority, as the case may be, and their respective assets wherever situated.
- (v) This Agreement and the rights and obligations of the Parties shall remain in full force and effect, pending the Award in any arbitration proceedings hereunder. Further, the parties unconditionally acknowledge and agree that notwithstanding any dispute between them, each Party shall proceed with the performance of its respective obligations, pending resolution of Dispute in accordance with this Article.
- (vi) In the event the Party against whom the Award has been granted challenges the Award for any reason in a court of law, it shall make an interim payment to the other Party for an amount equal to 75% (seventy five per cent) of the Award, pending final settlement of the Dispute. The aforesaid amount shall be paid forthwith upon furnishing an irrevocable Bank Guarantee for a sum equal to 120% (one hundred and twenty per cent) of the aforesaid amount. Upon final settlement of the Dispute, the aforesaid interim payment shall be adjusted and any balance amount due to be paid or returned, as the case may be, shall be paid or returned with interest calculated at the rate of 10% (ten per cent) per annum from the date of interim payment to the date of final settlement of such balance.

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

In the event of constitution of a statutory regulatory authority, tribunal or commission, as the case may be, with powers to adjudicate upon disputes between the Contractor and the Authority, all Disputes arising after such constitution shall, instead of reference to arbitration under Clause 26.3, be adjudicated upon by such regulatory authority, tribunal or commission in accordance with the Applicable Law and all references to Dispute Resolution Procedure shall be construed accordingly. For the avoidance of doubt, the Parties hereto agree that the adjudication hereunder shall not be final and binding until an appeal against such adjudication has been decided by an appellate tribunal or court of competent jurisdiction, as the case may be, or no such appeal has been preferred within the time specified in the Applicable Law.



*Construction of High Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 to 47+200 Khajpur Ghati (km 18+500 to km 47+500) section of Delhi Vaidatura Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the State of Haryana.*

## Article 27

### Miscellaneous

#### 27.1 Governing law and jurisdiction

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

#### 27.2 Waiver of immunity

Each Party unconditionally and irrevocably:

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

#### 27.3 Delayed payments

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



Construction of Eight Lane Expressway starting before RMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (km 18+500 to km 47+500) section of Delhi-Vadodra Green field Alignment (NH-14R N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

#### 27.4 Waiver

- (i) Waiver, including partial or conditional waiver, by either Party of any default by the other Party in the observance and performance of any provision of or obligations under this Agreement:-
- (a) shall not operate or be construed as a waiver of any other or subsequent default hereof or of other provisions of or obligations under this Agreement;
  - (b) shall not be effective unless it is in writing and executed by a duly authorised representative of the Party; and
  - (c) shall not affect the validity or enforceability of this Agreement in any manner.
- (ii) Neither the failure by either Party to insist on any occasion upon the performance of the terms, conditions and provisions of this Agreement or any obligation thereunder nor time or other indulgence granted by a Party to the other Party shall be treated or deemed as waiver of such breach or acceptance of any variation or the relinquishment of any such right hereunder.

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

Except to the extent expressly provided in this Agreement:

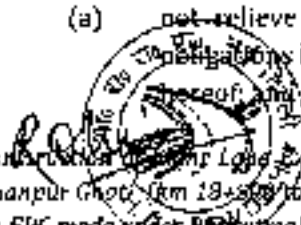

- (a) no review, comment or approval by the Authority or the Authority's Engineer of any Document or Drawing submitted by the Contractor nor any observation or inspection of the construction, or maintenance of the Project Highway nor the failure to review, approve, comment, observe or inspect hereunder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

#### 27.6 Exclusion of implied warranties etc.

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

#### 27.7 Survival

- (i) Termination shall:
- (a) not relieve the Contractor or the Authority, as the case may be, of any obligations hereunder which expressly or by implication survive Termination

Contract No.  *Expressway starting before KIM Expressway and ends at Ch. 47+000 near Khanpur Ghat, (km 18+500 to km 47+500) section of Delhi-Vadodara Green field Alignment*  *on EPC mode under BPC Yashwantrao Chavan Pariyojana in the state of Haryana.*

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

#### 27.8 Entire Agreement

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

#### 27.9 Severability

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

#### 27.10 No partnership

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

#### 27.11 Third parties

This Agreement is intended solely for the benefit of the Parties and their respective successors and permitted assigns, and nothing in this Agreement shall be construed

Construction of ERM to the Expressway starting before KMP Expressway and ends at Ch. 47+600 near Khanpur Bhatti (km 26+500 to km 47+500) section of Delhi - Vadodara Green field Alignment on EPC mode under Bharatmala Pariyojana in the state of Haryana.



to create any duty to, standard of care with reference to, or any liability to, any person not a Party to this Agreement

#### 27.12 Successors and assigns

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

#### 27.13 Notices

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

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

**Mr. D Dilly Babu-**  
**Joint Vice President**  
**(Business Development and Tendering)**  
4th Floor, Universal Trade Tower,  
Sohna Road, Sector-49, Gurugram-122101 (Haryana)

- (b) in the case of the Authority be given by facsimile or e-mail and by letter delivered by hand and be addressed to the Chairman of the Authority with a copy delivered to the Authority Representative or such other person as the Authority may from time to time designate by notice to the Contractor; provided that if the Contractor does not have an office in Delhi it may send such notice by facsimile or e-mail and by registered acknowledgement due, air mail or by courier; and
- (c) any notice or communication by a Party to the other Party, given in accordance herewith, shall be deemed to have been delivered when in the normal course of post it ought to have been delivered and in all other cases, it shall be deemed to have been delivered on the actual date and time of delivery; provided that in the case of facsimile or e-mail, it shall be deemed to have been delivered on the working day following the date of its delivery.



Construction of High Speed Expressway starting before RMP Expressway and ends at Ch. 47+000 near  
Itanpur (Dist. Noida, NH-25) to km 47+500) section of Delhi-Vododara Green field Alignment (NH 148 N)  
on E.C. mode under Bharatmala Pariyojane in the state of Haryana



**27.14 Language**

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

**27.15 Counterparts**

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



Construction of *Chhatrapati Expressway starting before KMR Expressway and ends at Ch. 47+000 near Kharpur Ghata (km 47+500) section of Delhi - Vadodra Greenfield Alignment (NH-248 N); an EPC mode under Bharatmala Pariyojana in the state of Haryana.*





### 27.16 Confidentiality

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

### 27.17 Copyright and Intellectual Property rights

(i) As between the Parties, the Contractor shall retain the copyright and other Intellectual Property rights in the Contractor's documents and other design documents made by (or on behalf of) the Contractor. The Contractor shall be deemed (by signing this Agreement) to give to the Authority a non-terminable transferable non-exclusive royalty-free licence to copy, use and communicate the Contractor's documents, including making and using modifications of them. This licence shall:

- (a) apply throughout the actual or intended working life (whichever is longer) of the relevant parts of the Works;
- (b) entitle any person in proper possession of the relevant part of the Works to copy, use and communicate the Contractor's documents for the purposes of completing, operating, maintaining, altering, adjusting, repairing and demolishing the Works; and
- (c) in the case of Contractor's documents which are in the form of computer programs and other software, permit their use on any computer on the Site and other places as envisaged by this Agreement, including replacements of any computers supplied by the Contractor.

(ii) The Contractor's documents and other design documents made by (or on behalf of) the Contractor shall not, without the Contractor's consent, be used, copied or communicated to a third party by (or on behalf of) the Authority for purposes other than those permitted under this Clause 27.17.

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

### 27.18 Limitation of Liability

(i) Neither Party shall be liable to the other Party for loss of use of any Works, loss of profit, loss of business, contract or for any indirect or consequential loss or damage which

Construction of Right Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (km 47+560) section of Delhi- Vadodara Green field alignment (NH-148) as an EPC mode under Bharatmala Pariyojana in the state of Haryana

may be suffered by the other Party in connection with this Agreement, save and except as provided under Articles 23 and 25.

- (ii) The total liability of one Party to the other Party under and in accordance with the provisions of this Agreement, save and except as provided in Articles 23 and 25, shall not exceed the Contract Price. For the avoidance of doubt, this Clause shall not limit the liability in any case of fraud, deliberate default or reckless misconduct by the defaulting Party.

#### 27.19 Care and Supply of Documents

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

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

- (i) As between the Parties, the Contractor shall retain the copyright and other Intellectual Property rights in the Contractor's Documents and other design documents made by (or on behalf of) the Contractor.
- (ii) The Contractor hereby gives to the Authority a non-terminable transferable nonexclusive royalty-free license to copy, use and communicate the Contractor's Documents, including making and using modifications of them. This license shall:
  - (a) apply through out the actual or intended working life (whichever is longer) of the relevant parts of the Works,
  - (b) entitle any person in proper possession of the relevant part of the Works to copy, use and communicate the Contractor's Documents for the purposes of completing, operating, maintaining, altering, adjusting, repairing and demolishing the Works, and
  - (c) in the case of Contractor's Documents which are in the form of computer programs and other software, permit their use on any computer on the Site and other places as envisaged by the Contractor, including replacements of any computers supplied by the Contractor.

Construction of Eight Lane Expressway starting before EMP Expressway and ends at (K. 47+000) near  
Khanpur Ghata (K. 18+500 to k.m 47+500) section of Delhi - Varanasi Green field Alignment (NH-142N)  
an EPC mode under Bharatmala Pariyojana in the state of Haryana.

- (ii) The Contractor's Documents and other design documents made by or on behalf of the Contractor shall not, without the Contractor's consent, be used, copied or communicated to a third party by (or on behalf of) the Authority for purposes other than those permitted under this Sub Clause.

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

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

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

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

#### **27.23 Term**

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

#### **27.24 Amendments**

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

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

The Contractor represents and warrants to the Authority that:

- (a) No representation or warranty by the Contractor contained herein or in any other document furnished by it to the Authority, or to any Governmental Instrumentality in relation to Applicable Permits contains or will contain any

Construction of a 4-lane Expressway starting before ICM Expressway and ends at Ch. Khampur under (km 13+500 to km 47+500) section of Delhi-Vadodra Green field Alignment on EPC mode under National Pariyojana in the state of Haryana.

untrue statement of material fact or omits or will omit to state a material fact necessary to make such representation or warranty not misleading; and

- (b) It warrants that no sums, in cash or kind, have been paid or will be paid by or on behalf of the Contractor, to any person by way of fees, commission or otherwise for securing or entering into the Contractor for influencing or attempting to influence any officer or employee of the Authority or GOI in connection therewith.

#### 27.26 No Agency

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



Construction of Right of Way Expressway starting before KMP Expressway and ends at CH 47+000 near Khanpur Gharti (km 13+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (Phase IV) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

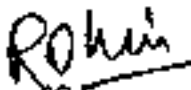
NOW, THEREFORE, in consideration of the foregoing and the respective covenants set forth in this Agreement, the sufficiency and adequacy of which is hereby acknowledged, the Authority hereby covenants to pay the Contractor, in consideration of the obligations specified herein, the Contract Price or such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



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

SIGNED, SEALED AND DELIVERED For and on behalf of

THE NATIONAL HIGHWAYS AUTHORITY OF INDIA by: M/s APCO Infratech Private Limited. by:

  
 रोहित कुमार गुप्ता / Rohin Kumar Gupta  
 (Rohin Kumar Gupta) / GM (Tech.)  
 भारतीय राष्ट्रीय राजमार्ग प्राधिकरण  
 National Highways Authority of India  
 भारत सरकार के सड़क परिवहन और राजमार्ग मंत्रालय  
 Ministry of Road Transport & Highways  
 National Highways, New Delhi, India  
 G - 5 & 6, Sector - 10, Dwarka, New Delhi - 75

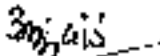
   
 (D Dilly Babu)  
 Joint Vice President (Business Development and Tendering)  
 M/s APCO Infratech Private Limited

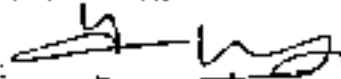
G- 5&6, Sector 10, Dwarka,  
 New Delhi 110 075, India

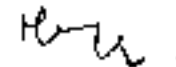
4th Floor, Universal Trade Tower, Sohna  
 Road, Sector-49, Gurugram-122101  
 (Haryana)


In the presence of Witnesses:

In the presence of Witnesses:

1. Signature:   
 Name:   
 Address: गार. ६, पॉड  
 लक्ष्म (परियोजना)

1. Signature:   
 Name: V.N. Dubey  
 Address:

2. Signature:   
 Name:   
 Address: मनोज कुमार / Manoj Kumar  
 मुख्य महाप्रबंधक (सफा) / CDM (Tech.)  
 भारतीय राष्ट्रीय राजमार्ग प्राधिकरण  
 National Highways Authority of India  
 सड़क परिवहन और राजमार्ग मंत्रालय  
 Ministry of Road Transport & Highways  
 जी-5 एवं 6, सेक्टर-10, द्वारका, नई दिल्ली-75  
 G - 5 & 6, Sector - 10, Dwarka, New Delhi - 75

2. Signature:   
 Name: SUDHIR KUMAR  
 Address:

हसके साक्ष्यस्वरूप दोनों पक्षों ने उस करार को ऊपर लिखी तिथि माह और वर्ष को निष्पादित किया और सौंप दिया।

हस्ताक्षर किए मुहरबंद किया और सौंप दिया  
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण के लिए  
और उसकी ओर से  
द्वारा:

*Rohin*

रोहिन कुमार गुप्ता / Rohin Kumar Gupta  
(रोहिन कुमार गुप्ता) / GM (Tech.)  
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण  
National Highways Authority of India  
सड़क परिवहन और राजमार्ग मंत्रालय  
Ministry of Road Transport & Highways  
जी-5 एच 6, सेक्टर-10, द्वारका, नई दिल्ली-75  
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, नई दिल्ली - 75

जी-5 और 6, सेक्टर-10 द्वारका,  
नई दिल्ली - 110075

निम्नलिखित की उपस्थिति में:

1. हस्ताक्षर : *Manoj*  
नाम: मनीज कुमार  
शाख (परियोजना)  
पता:

2. हस्ताक्षर : *Manoj Kumar*  
नाम: मनीज कुमार / Manoj Kumar  
मुख्य महाप्रबंधक (सक) / CGM (Tech.)  
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण  
National Highways Authority of India  
सड़क परिवहन और राजमार्ग मंत्रालय  
Ministry of Road Transport & Highways  
जी-5 एच 6, सेक्टर-10, द्वारका, नई दिल्ली-75  
G-5 & 6, Sector - 10, Dwarka, New Delhi - 75

हस्ताक्षर किए मुहरबंद किया और सौंप दिया  
एपको इंफ्राटेक प्राइवेट लिमिटेड के लिए और  
उसकी ओर से  
द्वारा:



*Dr. Anjali Bhat*

(डॉ. अंजली बाब)  
चैवाइट वाइस प्रेसिडेंट (बिजनेस डेवलपमेंट एंड  
टेंडरिंग)  
मेसर्स एपको इंफ्राटेक प्राइवेट लिमिटेड  
4 तल, यूनिवर्सल ट्रेड टावर, सोहना रोड, सेक्टर-49,  
गुरुग्राम-122101(हरियाणा)

निम्नलिखित की उपस्थिति में:

1. हस्ताक्षर : *Anjali Bhat*  
नाम: डॉ. अंजली बाब  
पता:

2. हस्ताक्षर : *Anjali Bhat*  
नाम: सुधीश कुमार  
पता:

## Schedules



Construction of Eight Lane Expressway starting before RMP Expressway and ends at Ch. 47+000 near  
Krupur Ghuti (km 47+000 to km 47+500) section of Delhi- Vadodra Green field Alignment (NH-148 N)  
on EPC mode under Bharatmala Pariyojana in the state of Haryana.



**SCHEDULE - A**  
(See Clause 2.1 and 8.1)

**SITE OF THE PROJECT**

**1 THE SITE**

- 1.1 Site of the Eight-Lane Project Highway shall include the land, buildings, structures and road works as described in Annex-I of this Schedule-A.
- 1.2 The dates of handing over the Right of Way to the Contractor are specified in Annex II of this Schedule-A.
- 1.3 An inventory of the Site including the land, buildings, structures, road works, trees and any other immovable property on, or attached to, the Site shall be prepared jointly by the Authority Representative and the Contractor, and such inventory shall form part of the memorandum referred to in Clause 8.2.1 of this Agreement.
- 1.4 The alignment plans of the Project Highway are specified in Annex-III. The proposed levels (minimum FRL) as indicated in the alignment plan shall be followed by the contractor. The contractor, however, improve/upgrade the Road Profile as indicated in Annexure-III based on site/design requirement.
- 1.5 The status of the environment clearances obtained or awaited is given in Annex IV.





**Annex - I**  
**(Schedule-A)**

**Site for Eight Laning**

**1.1 The Site**

The Site of the project highway is a section of Delhi - Vadodara National Highway No 148N commencing before KMP Expressway at Ch. 18+500 and ends at Ch. 47+000 near Khanpur Ghati passing through greenfield area in the State of Haryana. The land, carriageway and structures comprising the site are described below

**1.2 Description of the Project Highway**

The project highway is a Greenfield alignment passing through Hasanpur Sobna, Khalilpur, Mindkola, Ribbar, Pondai, Akharpur Natol, Bighwala, Kurthala, Chandaka, Mirka, Golpur, Jaisinghpur, Sanghal, PratapNagar, Devla Naupli, Rithah, Dandli kalan, Dadola & Khanpur Ghati villages. Latitude and longitude of the project corridor lies between 28°10'10"N, 77° 8'5.61"E and 27°55'29.24"N, 77°4'40.14"E. An index map showing the existing features of the Project Highway is given at Appendix A-I

**1.3 Terrain**

The terrain along the project stretch is predominantly plain terrain.

**2 Land**

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

**3 Carriageway**

There is an existing alignment as the proposed project is a new Greenfield alignment.

**4 Major Bridges**

The Site includes the following existing Major Bridges.

S. No.	Existing Clearance (Km)	Type of Structure			No. of Spans with span length (m)	Width (m)
		Foundation	Sub-structure	Superstructure		
Nil						

**5 Road over-bridges (ROB)/ Road under-bridges (RUB)**

The Site includes the following ROB (road over railway line)/RUB (road under railway line):



S. No.	Existing Chainage (Km)	Type of Structure		No. of Spans with span length (m)	Width (m)	ROB/ RUB
		Foundation	Superstructure			
Nil						

## 6 Grade separators

The Site includes the following grade separators

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

## 7 Minor bridges

The Site includes the following existing minor bridges:

S. No.	Existing Chainage (Km)	Type of structure			No. of Spans x length (m)	Overall Width (m)
		Type of Foundation	Sub Structure	Super Structure		
Nil						

## 8 Railway level crossings

The Site includes the following railway level crossings:

S. No.	Existing Chainage (Km)	Railway Chainage	Level Crossing No.	Remarks
Nil				

## 9 Underpasses (vehicular, non-vehicular)

The Site includes the following underpasses

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

## 10 Culverts

The Site has the following existing culverts:

S. No.	Existing Chainage (Km)	Type of Culvert	Spans/Opening x span length/Pipe dia. (m)	Overall Width (m)
Nil				

## 11 Bus bays

The stretch has the following Bus Bays /Bus Shelters:

S. No.	Chainage (km)	Bus Stop Name	Side	Remarks
Nil				

## 12 Truck Lay byes

The details of truck lay byes are as follows:

S. No.	Chainage (km)	Length (m)	Left Hand Side	Right Hand Side
Nil				

## 13 Road side drains

The Road Side Drains along the Project Highway is as follows:

S. No.	Location		Type	
	From km	to km	Masonry/ce (Pucca)	Earthen (Kutcha)
Nil				

## 14 Major junctions

The details of major junctions are as follows:

S. No.	Existing Chainage (Km)	At grade	Separated	Category of Cross Road			
				NH	SH	MDR	Others
Nil							

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

## 15 Minor junctions

The details of the minor junctions are as follows:

S. No.	Existing km	Type of Junction	Direction	Width of Road	Name of Place
Nil					

## 16 Bypasses

The details of the bypasses are as follows:



S. No.	Name of bypass (town)	Chainage (km)		Length (in Km)
		From km	to km	
Nil				

17 Details of any other Structures

S. No	Existing Chainage (Km)	Type of Structure	Height (m)	Remarks
Nil				

18 Submergence Locations

No existing road has been utilized as part of the project alignment hence submergence location is not applicable.

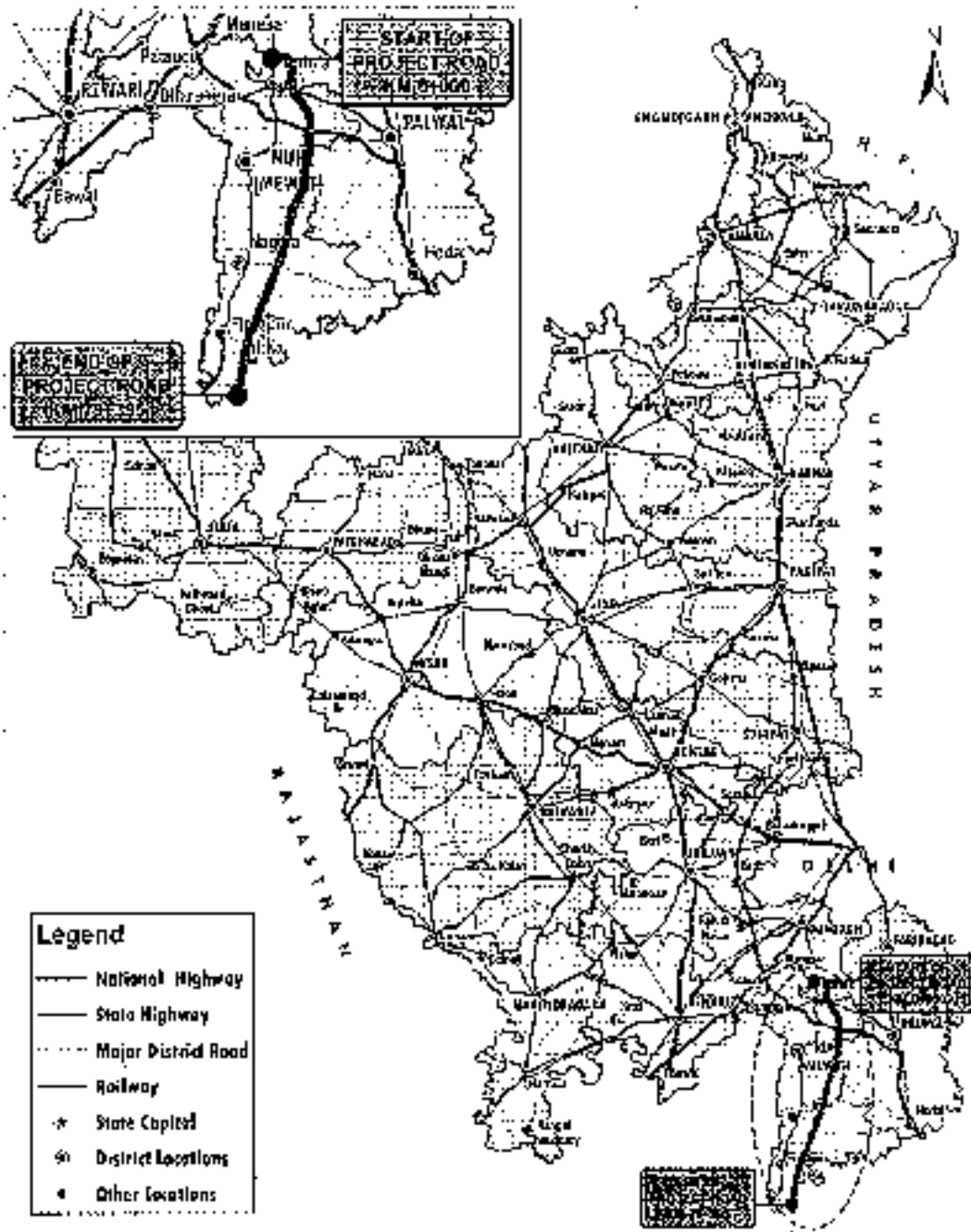
S. No.	Existing Chainage (Km)		Overtopping above the existing road (m)
	From	To	
Nil			



Construction of Right Lane divided carriageway starting before KMP Expressway and ends at Ch. 47+000 near Kisan Ghat (Ch. 18+500 to Ch. 47+000) section of Delhi - Vadodra Greenfield Alignment (NH-148B) on EPC Mode under Bharatmala Pariyojana in the State of Haryana

Appendix A-1

Index map of Project Highway



Construction of Eight Lane divided carriageway starting before RMP Expressway and ends at Ch. 47+000 near Kumpur Ghat (Ch. 16+500 to Ch. 47+000) section of Delhi - Vadodra Greenfield Highway (NH-14B) on EPC Mode under Bharatmala Pariyojana in the State of Haryana

**Annex II**  
**(Schedule-A)**

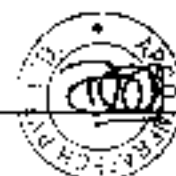
**Dates for providing Right of Way**

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

Sl. No	Chainage (Km)		Length (km)	Width (m)	Date of providing ROW*
	From	To			
(i) Full Right of Way (full width)	2	3	4	5	6
(a) Stretch	18.500	47.000	28.500	100.0	On Appointed Date
(ii) Part Right of Way (part width)	-	-	-	-	-
(iii) Balance Right of Way (width)	-	-	-	-	-

Additional Land at interchanges, toll plaza/bocinas, wayside amenities shall be provided on the appointed date as per Agreement.

The co-ordinates of the ROW are annexed



Construction of Eight Lane divided carriageway starting before EBF Expressway and ends at Ch. 47+000 near Khajur Ghat (Ch. 18+500 to Ch. 47+000) section of Delhi - Vidisha Greenfield Alignment (NH-14A), on EPC Mode under Bharatmala Pariyojana in the State of Haryana

Coordinates of Center Line & Right of Way

Sl. No.	Chainage (m)	Center Line		Left ROW Line		Right ROW Line	
		X/ Easting	Y/ Northing	X/ Easting	Y/ Northing	X/ Easting	Y/ Northing
1	18500	710998.96	3117640.47	711045.46	3117852.63	710948.46	3117828.31
2	18550	711009.12	3117791.97	711057.62	3117804.14	710960.63	3117779.81
3	18600	711021.29	3117743.47	711069.79	3117755.64	710972.78	3117731.31
4	18650	711033.45	3117694.98	711081.95	3117707.14	710984.95	3117682.81
5	18700	711045.62	3117646.48	711094.11	3117658.64	710997.12	3117634.32
6	18750	711057.78	3117597.98	711106.28	3117610.15	711009.28	3117585.82
7	18800	711069.94	3117549.48	711118.44	3117561.65	711021.45	3117537.32
8	18850	711082.11	3117500.99	711130.60	3117513.15	711033.61	3117488.82
9	18900	711094.27	3117452.49	711142.77	3117464.65	711045.77	3117440.32
10	18950	711106.43	3117403.99	711154.93	3117416.15	711057.94	3117391.83
11	19000	711118.60	3117355.49	711167.10	3117367.66	711070.10	3117343.33
12	19050	711130.76	3117306.99	711179.26	3117319.16	711082.26	3117294.83
13	19100	711142.93	3117258.50	711191.42	3117270.66	711094.43	3117246.33
14	19150	711155.09	3117210.00	711203.59	3117222.16	711106.59	3117197.83
15	19200	711167.25	3117161.50	711215.75	3117173.66	711118.76	3117149.34
16	19250	711179.42	3117113.00	711227.91	3117125.17	711130.92	3117100.84
17	19300	711191.58	3117064.50	711240.08	3117076.67	711143.08	3117052.34
18	19350	711203.74	3117016.01	711252.24	3117028.17	711155.25	3117003.84
19	19400	711215.91	3116967.51	711264.41	3116979.67	711167.41	3116955.35
20	19450	711228.07	3116919.01	711276.57	3116931.17	711179.57	3116906.85
21	19500	711240.24	3116870.51	711288.73	3116882.68	711191.74	3116858.35
22	19550	711252.40	3116822.02	711300.90	3116834.18	711203.90	3116809.85
23	19600	711264.57	3116773.52	711313.07	3116785.68	711216.07	3116762.35
24	19650	711276.73	3116725.02	711325.23	3116737.18	711228.23	3116715.85
25	19700	711288.90	3116676.52	711337.40	3116688.68	711240.40	3116669.35
26	19750	711301.06	3116628.02	711349.56	3116640.18	711252.56	3116623.85
27	19800	711313.23	3116579.52	711361.73	3116591.68	711264.73	3116577.35
28	19850	711325.39	3116531.02	711373.89	3116543.18	711276.89	3116531.85
29	19900	711337.56	3116482.52	711386.06	3116494.68	711289.06	3116486.35
30	19950	711349.72	3116434.02	711398.22	3116446.18	711301.22	3116440.85
31	20000	711361.89	3116385.52	711410.39	3116397.68	711313.39	3116395.35
32	20050	711374.05	3116337.02	711422.55	3116349.18	711325.55	3116350.85
33	20100	711386.22	3116288.52	711434.72	3116300.68	711337.72	3116305.35
34	20150	711398.38	3116240.02	711446.88	3116252.18	711349.88	3116260.85
35	20200	711410.55	3116191.52	711459.05	3116203.68	711362.05	3116215.35
36	20250	711422.71	3116143.02	711471.21	3116155.18	711374.21	3116170.85
37	20300	711434.88	3116094.52	711483.38	3116106.68	711386.38	3116125.35
38	20350	711447.04	3116046.02	711495.54	3116058.18	711398.54	3116080.85
39	20400	711459.21	3116007.52	711507.71	3116009.68	711410.71	3116035.35
40	20450	711471.37	3115959.02	711519.87	3115961.18	711422.87	3115990.85
41	20500	711483.54	3115910.52	711532.04	3115912.68	711435.04	3115945.35

Construction of Eight Lane divided highway starting before KMP Expressway and ends at Ch-47-000 near Kharpur Ghat (Ch-51-500 to Ch-57-000) section of Delhi - Vadodra Greenfield Alignment (NH-140) on R.F.C. Mode under Bharatmala Pariyojana in the State of Haryana



Sl. No.	Chainage (m)	Center Line		Left ROW Line		Right ROW Line	
		X/ Easting	Y/ Northing	X/ Easting	Y/ Northing	X/ Easting	Y/ Northing
42	20550	711020.52	3115879.17	711065.77	3115857.91	710975.26	3115900.43
43	20600	710999.25	3115833.92	711044.51	3115812.65	710954.00	3115855.18
44	20650	710977.99	3115788.66	711023.24	3115767.40	710932.74	3115809.92
45	20700	710956.73	3115743.41	711001.98	3115722.15	710911.47	3115764.67
46	20750	710935.47	3115698.15	710980.72	3115676.89	710890.21	3115719.42
47	20800	710914.20	3115652.90	710959.46	3115631.64	710868.95	3115674.16
48	20850	710892.94	3115607.65	710938.20	3115586.38	710847.69	3115628.91
49	20900	710871.79	3115562.34	710917.23	3115541.48	710826.35	3115583.20
50	20950	710851.60	3115516.60	710897.72	3115497.28	710805.49	3115535.93
51	21000	710833.42	3115470.03	710880.44	3115453.02	710786.41	3115487.04
52	21050	710817.59	3115422.61	710865.40	3115407.97	710769.79	3115437.25
53	21100	710804.16	3115374.45	710852.64	3115362.22	710755.67	3115386.68
54	21150	710793.14	3115325.68	710842.17	3115315.89	710744.11	3115335.48
55	21200	710784.58	3115276.43	710834.03	3115269.10	710735.12	3115283.76
56	21250	710778.42	3115226.81	710828.15	3115221.67	710728.68	3115231.96
57	21300	710773.88	3115177.02	710823.71	3115172.89	710724.05	3115181.16
58	21350	710769.80	3115127.19	710819.63	3115123.11	710719.97	3115131.26
59	21400	710765.73	3115077.35	710815.56	3115073.28	710715.89	3115081.43
60	21450	710761.65	3115027.52	710811.49	3115023.45	710711.82	3115031.59
61	21500	710757.58	3114977.69	710807.41	3114973.61	710707.75	3114981.76
62	21550	710753.51	3114927.81	710803.34	3114923.78	710703.67	3114931.93
63	21600	710749.43	3114878.02	710799.27	3114873.95	710699.60	3114882.09
64	21650	710745.36	3114828.18	710795.19	3114824.11	710695.52	3114832.26
65	21700	710741.28	3114778.35	710791.12	3114774.28	710691.45	3114782.42
66	21750	710737.21	3114728.52	710787.04	3114724.44	710687.38	3114732.59
67	21800	710733.14	3114678.68	710782.97	3114674.61	710683.30	3114682.76
68	21850	710729.06	3114628.85	710778.90	3114624.78	710679.23	3114632.92
69	21900	710724.99	3114579.02	710774.82	3114574.94	710675.16	3114583.09
70	21950	710720.92	3114529.18	710770.75	3114525.11	710671.08	3114533.26
71	22000	710716.84	3114479.35	710766.68	3114475.27	710667.01	3114483.42
72	22050	710712.77	3114429.51	710762.60	3114425.44	710662.94	3114433.59
73	22100	710708.70	3114379.68	710758.53	3114375.61	710658.86	3114383.75
74	22150	710704.62	3114329.85	710754.46	3114325.77	710654.79	3114333.92
75	22200	710700.55	3114280.01	710750.38	3114275.94	710650.71	3114284.09
76	22250	710696.47	3114230.18	710746.31	3114226.11	710646.64	3114234.25
77	22300	710692.40	3114180.35	710742.24	3114176.27	710642.57	3114184.42
78	22350	710688.33	3114130.51	710738.16	3114126.44	710638.49	3114134.59
79	22400	710684.25	3114080.68	710734.09	3114076.60	710634.42	3114084.75
80	22450	710680.18	3114030.84	710730.01	3114026.77	710630.35	3114034.92
81	22500	710676.11	3113981.01	710725.94	3113976.94	710626.27	3113985.08
82	22550	710672.03	3113931.18	710721.87	3113927.10	710622.20	3113935.25
83	22600	710667.96	3113881.34	710717.79	3113877.27	710618.13	3113885.42
84	22650	710663.89	3113831.51	710713.72	3113827.44	710614.05	3113835.58

Construction of Expressway alignment starting before KMP Expressway and ends at Ch. 17+000 near Khajurha Ghatak (LS+500/100/47-000) section of Delhi - Vadodra Greenfield Alignment (NH-14AN) on EPC Mode under Jaganmukta Pariyojana in the State of Haryana





Sl. No.	Chainage (m)	Center Line		Left ROW Line		Right ROW Line	
		X/ Easting	Y/ Northing	X/ Easting	Y/ Northing	X/ Easting	Y/ Northing
85	22700	710659.81	3113781.68	710709.65	3113777.60	710609.98	3113785.75
86	22750	710655.74	3113731.84	710705.57	3113727.77	710605.91	3113735.92
87	22800	710651.67	3113682.01	710701.50	3113677.93	710601.83	3113686.08
88	22850	710647.59	3113632.17	710697.43	3113628.10	710597.76	3113636.25
89	22900	710643.52	3113582.34	710693.35	3113578.27	710593.68	3113586.41
90	22950	710639.44	3113532.51	710689.28	3113528.43	710589.61	3113536.58
91	23000	710635.37	3113482.67	710685.20	3113478.60	710585.54	3113486.75
92	23050	710631.30	3113432.84	710681.13	3113428.77	710581.46	3113436.91
93	23100	710627.22	3113383.01	710677.06	3113378.93	710577.39	3113387.08
94	23150	710623.15	3113333.17	710672.98	3113329.10	710573.32	3113337.25
95	23200	710619.08	3113283.34	710668.91	3113279.26	710569.24	3113287.41
96	23250	710615.00	3113233.50	710664.84	3113229.43	710565.17	3113237.58
97	23300	710610.93	3113183.67	710660.76	3113179.60	710561.10	3113187.74
98	23350	710606.86	3113133.84	710656.69	3113129.76	710557.02	3113137.91
99	23400	710602.78	3113084.00	710652.62	3113079.93	710552.95	3113088.08
100	23450	710598.71	3113034.17	710648.54	3113030.10	710548.87	3113038.24
101	23500	710594.63	3112984.34	710644.47	3112980.26	710544.80	3112988.41
102	23550	710590.56	3112934.50	710640.39	3112930.43	710540.73	3112938.57
103	23600	710586.49	3112884.67	710636.32	3112880.59	710536.65	3112888.74
104	23650	710582.41	3112834.83	710632.25	3112830.76	710532.58	3112838.91
105	23700	710578.34	3112785.00	710628.17	3112780.93	710528.51	3112789.07
106	23750	710574.27	3112735.17	710624.10	3112731.09	710524.43	3112739.24
107	23800	710570.19	3112685.33	710620.03	3112681.26	710520.36	3112689.41
108	23850	710566.12	3112635.50	710615.95	3112631.42	710516.29	3112639.57
109	23900	710562.05	3112585.66	710611.88	3112581.59	710512.21	3112589.74
110	23950	710557.97	3112535.83	710607.81	3112531.76	710508.14	3112539.90
111	24000	710553.90	3112486.00	710603.73	3112481.92	710504.07	3112490.07
112	24050	710549.83	3112436.16	710599.66	3112432.09	710499.99	3112440.24
113	24100	710545.75	3112386.33	710595.59	3112382.26	710495.92	3112390.40
114	24150	710541.68	3112336.50	710591.51	3112332.42	710491.84	3112340.57
115	24200	710537.60	3112286.66	710587.44	3112282.59	710487.77	3112290.74
116	24250	710533.53	3112236.83	710583.36	3112232.75	710483.70	3112240.90
117	24300	710529.46	3112186.99	710579.29	3112182.92	710479.62	3112191.07
118	24350	710525.38	3112137.16	710575.22	3112133.09	710475.55	3112141.23
119	24400	710521.31	3112087.33	710571.14	3112083.25	710471.48	3112091.40
120	24450	710517.24	3112037.49	710567.07	3112033.42	710467.40	3112041.57
121	24500	710513.16	3111987.66	710563.00	3111983.59	710463.33	3111991.73
122	24550	710509.09	3111937.83	710558.92	3111933.75	710459.26	3111941.90
123	24600	710505.02	3111887.99	710554.85	3111883.92	710455.18	3111892.07
124	24650	710500.94	3111838.16	710550.78	3111834.08	710451.11	3111842.23
125	24700	710496.87	3111788.32	710546.70	3111784.25	710447.03	3111792.40
126	24750	710492.80	3111738.49	710542.63	3111734.42	710442.96	3111742.56
127	24800	710488.72	3111688.66	710538.55	3111684.58	710438.89	3111692.73

Construction of Right Lane divided expressway starting before RMP Expressway and ends at Ch. 47+000 near Khaspur Ghazi (Ch. 47+000) section of Delhi - Yadadava Greenfield Alignment (NH-149B) in EPC Mode under Bharatmala Pariyojana in the State of Haryana

Sl. No.	Chainage (m)	Center Line		Left ROW Line		Right ROW Line	
		X/ Easting	Y/ Northing	X/ Easting	Y/ Northing	X/ Easting	Y/ Northing
128	24850	710484.65	3111638.82	710534.48	3111674.75	710434.81	3111642.90
129	24900	710480.57	3111588.99	710530.41	3111584.92	710430.74	3111593.06
130	24950	710476.50	3111539.16	710526.33	3111535.08	710426.67	3111543.23
131	25000	710472.43	3111489.32	710522.26	3111485.25	710422.59	3111493.40
132	25050	710468.35	3111439.49	710518.19	3111435.41	710418.52	3111443.56
133	25100	710464.28	3111389.65	710514.11	3111385.58	710414.45	3111393.73
134	25150	710460.21	3111339.82	710510.04	3111335.75	710410.37	3111343.89
135	25200	710456.13	3111289.99	710505.97	3111285.91	710406.30	3111294.06
136	25250	710452.06	3111240.15	710501.89	3111236.08	710402.22	3111244.23
137	25300	710447.99	3111190.32	710497.82	3111186.25	710398.15	3111194.39
138	25350	710443.91	3111140.49	710493.75	3111136.41	710394.08	3111144.56
139	25400	710439.84	3111090.65	710489.67	3111086.58	710390.00	3111094.72
140	25450	710435.76	3111040.82	710485.60	3111036.74	710385.93	3111044.89
141	25500	710431.69	3110990.98	710481.52	3110986.91	710381.86	3110995.06
142	25550	710427.62	3110941.15	710477.45	3110937.08	710377.78	3110945.22
143	25600	710423.54	3110891.32	710473.38	3110887.24	710373.71	3110895.39
144	25650	710419.47	3110841.48	710469.30	3110837.41	710369.64	3110845.56
145	25700	710415.40	3110791.65	710465.23	3110787.58	710365.56	3110795.72
146	25750	710411.32	3110741.81	710461.16	3110737.74	710361.49	3110745.89
147	25800	710407.25	3110691.98	710457.08	3110687.91	710357.42	3110696.05
148	25850	710403.18	3110642.15	710453.01	3110638.07	710353.34	3110646.22
149	25900	710399.10	3110592.31	710448.94	3110588.24	710349.27	3110596.39
150	25950	710395.03	3110542.48	710444.86	3110538.41	710345.19	3110546.55
151	26000	710390.95	3110492.65	710440.79	3110488.57	710341.12	3110496.72
152	26050	710386.87	3110442.81	710436.70	3110438.65	710337.05	3110446.89
153	26100	710382.79	3110393.01	710432.62	3110388.73	710332.98	3110397.06
154	26150	710378.71	3110343.25	710428.54	3110338.89	710328.91	3110347.23
155	26200	710374.64	3110293.48	710424.46	3110289.06	710324.84	3110297.40
156	26250	710370.56	3110243.72	710420.38	3110239.22	710320.77	3110247.57
157	26300	710366.49	3110193.95	710416.30	3110189.39	710316.70	3110200.00
158	26350	710362.41	3110144.19	710412.22	3110139.55	710312.63	3110150.17
159	26400	710358.34	3110094.42	710408.14	3110089.71	710308.56	3110100.34
160	26450	710354.26	3110044.66	710404.06	3110039.88	710304.49	3110050.51
161	26500	710350.19	3109994.89	710400.00	3109989.04	710300.42	3109999.68
162	26550	710346.11	3109945.13	710395.92	3109939.21	710296.35	3109949.85
163	26600	710342.04	3109895.36	710391.84	3109889.37	710292.28	3109899.02
164	26650	710337.96	3109845.60	710387.76	3109839.54	710288.21	3109849.19
165	26700	710333.89	3109795.83	710383.68	3109789.71	710284.14	3109799.36
166	26750	710329.81	3109746.07	710379.60	3109740.00	710280.07	3109749.53
167	26800	710325.74	3109696.30	710375.52	3109690.17	710276.00	3109699.70
168	26850	710321.66	3109646.54	710371.44	3109640.34	710271.93	3109649.87
169	26900	710317.59	3109596.77	710367.36	3109590.51	710267.86	3109599.04
170	26950	710313.51	3109547.01	710363.28	3109540.68	710263.79	3109549.21

Construction of Right of Way boundary showing before KHP Expressway and ends at Ch. 47400 near Khanpur Ghata (Ch. 47400 to Ch. 47400) section of Delhi - Padoara Greenfield Alignment (NH-148B) on EPC Mode under Bharatmala Pariyojana in the State of Haryana

Sl. No.	Chainage (m)	Center Line		Left ROW Line		Right ROW Line	
		X/ Easting	Y/ Northing	X/ Easting	Y/ Northing	X/ Easting	Y/ Northing
171	27000	710213.66	3109509.27	710266.81	3109495.73	710170.52	3109522.77
172	27050	710204.93	3109461.20	710252.93	3109447.22	710156.92	3109475.17
172	27100	710190.71	3109413.26	710238.59	3109398.81	710142.85	3109427.72
174	27150	710176.02	3109365.47	710223.74	3109350.54	710128.30	3109380.40
175	27200	710160.85	3109317.83	710208.41	3109302.42	710113.28	3109333.24
176	27250	710145.28	3109270.31	710192.79	3109254.71	710097.75	3109285.92
177	27300	710129.68	3109222.81	710177.18	3109207.20	710082.18	3109238.41
178	27350	710114.07	3109175.31	710161.58	3109159.70	710066.57	3109190.91
179	27400	710098.47	3109127.80	710145.97	3109112.20	710050.97	3109143.41
180	27450	710082.86	3109080.30	710130.37	3109064.70	710035.36	3109095.91
181	27500	710067.26	3109032.80	710114.76	3109017.19	710019.76	3109048.40
182	27550	710051.65	3108985.30	710099.16	3108969.69	710004.15	3109000.90
183	27600	710036.05	3108937.79	710083.55	3108922.19	709988.55	3108953.40
184	27650	710020.44	3108890.29	710067.95	3108874.69	709972.94	3108905.90
185	27700	710004.84	3108842.79	710052.34	3108827.18	709957.34	3108858.39
186	27750	709989.23	3108795.29	710036.73	3108779.68	709941.73	3108810.89
187	27800	709973.63	3108747.78	710021.13	3108732.18	709926.12	3108763.39
188	27850	709958.02	3108700.28	710005.52	3108684.68	709910.52	3108715.89
189	27900	709942.42	3108652.78	709989.92	3108637.17	709894.91	3108668.39
190	27950	709926.81	3108605.28	709974.31	3108589.67	709879.31	3108620.88
191	28000	709911.21	3108557.78	709958.71	3108542.17	709863.70	3108573.38
192	28050	709895.60	3108510.27	709943.10	3108494.67	709848.10	3108525.88
193	28100	709880.00	3108462.77	709927.50	3108447.17	709832.49	3108478.38
194	28150	709864.39	3108415.27	709911.89	3108399.66	709816.89	3108430.87
195	28200	709848.79	3108367.77	709896.29	3108352.16	709801.28	3108383.37
196	28250	709833.18	3108320.26	709880.68	3108304.66	709785.68	3108335.87
197	28300	709817.58	3108272.76	709865.08	3108257.16	709770.07	3108288.37
198	28350	709801.97	3108225.26	709849.47	3108209.65	709754.47	3108240.86
199	28400	709786.37	3108177.76	709833.87	3108162.15	709738.86	3108193.36
200	28450	709770.76	3108130.25	709818.26	3108114.65	709723.26	3108145.86
201	28500	709755.16	3108082.75	709802.66	3108067.15	709707.65	3108098.36
202	28550	709739.55	3108035.25	709787.05	3108019.64	709692.05	3108050.85
203	28600	709723.94	3107987.75	709771.45	3107972.14	709676.44	3108003.35
204	28650	709708.34	3107940.24	709755.84	3107924.64	709660.84	3107955.85
205	28700	709692.73	3107892.74	709740.24	3107877.14	709645.23	3107908.35
206	28750	709677.13	3107845.24	709724.63	3107829.63	709629.63	3107860.84
207	28800	709661.52	3107797.74	709709.03	3107782.13	709614.02	3107813.34
208	28850	709645.92	3107750.23	709693.42	3107734.63	709598.42	3107765.84
209	28900	709630.32	3107702.73	709677.82	3107687.12	709582.81	3107718.34
210	28950	709614.71	3107655.23	709662.21	3107640.62	709567.21	3107670.84
211	29000	709600.11	3107607.73	709646.61	3107593.11	709551.61	3107623.34
212	29050	709584.51	3107560.23	709631.01	3107545.61	709536.01	3107575.84
213	29100	709568.91	3107512.73	709615.41	3107498.11	709520.41	3107528.34

Construction of Extra Lane divided carriageway starting before KMP Expressway and ends at Ch. 47+000 near Kiamar Chait (Ch. 47+500 to Ch. 47+000) section of Dr. B. R. Ambedkar Greenfield Alignment (NH-14B) on EPC Mode under Bharatmala Pariyojana in the State of Haryana

Sl. No.	Chainage (m)	Center Line		Left ROW Line		Right ROW Line	
		X/ Easting	Y/ Northing	X/ Easting	Y/ Northing	X/ Easting	Y/ Northing
214	29150	709563.90	3107461.79	709612.61	3107450.51	709515.19	3107473.07
215	29200	709553.03	3107412.98	709661.92	3107402.52	709504.14	3107423.45
216	29250	709547.97	3107364.01	709592.03	3107354.36	709493.91	3107373.66
217	29300	709533.73	3107314.87	709582.94	3107306.04	709484.57	3107323.70
218	29350	709525.31	3107265.58	709574.66	3107257.57	709475.96	3107273.59
219	29400	709517.71	3107216.16	709567.19	3107208.98	709468.23	3107223.35
220	29450	709511.94	3107166.63	709560.53	3107160.27	709461.35	3107172.99
221	29500	709504.99	3107116.98	709554.69	3107111.45	709455.30	3107122.51
222	29550	709499.88	3107067.24	709549.65	3107062.54	709450.10	3107071.95
223	29600	709495.59	3107017.43	709545.44	3107013.56	709445.74	3107021.30
224	29650	709492.13	3106967.55	709542.04	3106964.51	709442.22	3106970.59
225	29700	709489.50	3106917.62	709539.45	3106915.41	709439.55	3106919.83
226	29750	709487.70	3106867.65	709537.67	3106866.13	709437.72	3106869.18
227	29800	709486.17	3106817.67	709536.15	3106816.15	709436.20	3106819.20
228	29850	709484.65	3106767.70	709534.62	3106766.17	709434.67	3106769.22
229	29900	709483.12	3106717.72	709533.10	3106716.20	709433.15	3106719.24
230	29950	709481.60	3106667.74	709531.58	3106666.22	709431.62	3106669.27
231	30000	709480.08	3106617.77	709530.05	3106616.24	709430.10	3106619.29
232	30050	709478.55	3106567.79	709528.53	3106566.27	709428.57	3106569.32
233	30100	709477.03	3106517.81	709527.00	3106516.29	709427.05	3106519.34
234	30150	709475.50	3106467.84	709525.48	3106466.31	709425.53	3106469.36
235	30200	709473.98	3106417.86	709523.95	3106416.34	709424.00	3106419.39
236	30250	709472.45	3106367.88	709522.43	3106366.36	709422.48	3106369.41
237	30300	709470.93	3106317.91	709520.91	3106316.38	709420.95	3106319.43
238	30350	709469.40	3106267.93	709519.38	3106266.41	709419.43	3106269.45
239	30400	709467.88	3106217.95	709517.86	3106216.43	709417.90	3106219.48
240	30450	709466.36	3106167.98	709516.33	3106166.45	709416.38	3106169.50
241	30500	709464.83	3106118.00	709514.81	3106116.48	709414.85	3106119.52
242	30550	709463.31	3106068.02	709513.28	3106066.50	709413.33	3106069.55
243	30600	709461.78	3106018.05	709511.76	3106016.52	709411.81	3106019.57
244	30650	709460.26	3105968.07	709510.23	3105966.55	709410.28	3105969.59
245	30700	709458.73	3105918.09	709508.71	3105916.57	709408.76	3105919.62
246	30750	709457.21	3105868.12	709507.19	3105866.59	709407.23	3105869.64
247	30800	709455.69	3105818.14	709505.66	3105816.62	709405.71	3105819.66
248	30850	709454.16	3105768.16	709504.14	3105766.64	709404.18	3105769.69
249	30900	709452.64	3105718.19	709502.61	3105716.66	709402.66	3105719.71
250	30950	709451.11	3105668.21	709501.09	3105666.69	709401.14	3105669.73
251	31000	709449.59	3105618.23	709499.56	3105616.71	709399.61	3105619.76
252	31050	709448.06	3105568.26	709498.04	3105566.73	709398.09	3105569.78
253	31100	709446.54	3105518.28	709496.52	3105516.75	709396.56	3105519.80
254	31150	709445.01	3105468.30	709494.99	3105466.78	709395.04	3105469.83
255	31200	709443.49	3105418.33	709493.47	3105416.80	709393.51	3105419.85
256	31250	709441.97	3105368.35	709491.94	3105366.82	709391.99	3105369.87

Construction of 50m wide divided highway starting before RMP Expressway and ends at Ch. 47+000 near Khunpur Ghazi (N.H. 148) (C+000) section of Delhi - Paudana Greenfield Alignment (NH-148) in EPC Mode under Madhya Pradesh Project in the State of Haryana



Sl. No.	Chainage (m)	Center Line		Left ROW Line		Right ROW Line	
		X/ Easting	Y/ Northing	X/ Easting	Y/ Northing	X/ Easting	Y/ Northing
257	31300	709440.44	3105318.37	709490.42	3105316.85	709390.46	3105319.90
258	31350	709438.92	3105268.40	709488.89	3105266.87	709388.94	3105269.97
259	31400	709437.39	3105218.42	709487.37	3105216.89	709387.42	3105219.94
260	31450	709435.87	3105168.44	709485.85	3105166.92	709385.89	3105169.97
261	31500	709434.34	3105118.47	709484.32	3105116.94	709384.37	3105119.99
262	31550	709432.82	3105068.49	709482.80	3105066.96	709382.84	3105070.01
263	31600	709431.30	3105018.51	709481.27	3105016.99	709381.32	3105020.04
264	31650	709429.77	3104968.53	709479.75	3104967.01	709379.79	3104970.06
265	31700	709428.25	3104918.56	709478.22	3104917.03	709378.27	3104920.08
266	31750	709426.72	3104868.58	709476.70	3104867.06	709376.75	3104870.11
267	31800	709425.20	3104818.60	709475.17	3104817.08	709375.22	3104820.13
268	31850	709423.64	3104768.63	709473.61	3104766.94	709373.67	3104770.31
269	31900	709421.56	3104718.67	709471.49	3104716.05	709371.63	3104721.29
270	31950	709418.16	3104668.79	709467.98	3104664.57	709368.34	3104673.01
271	32000	709413.11	3104619.05	709462.76	3104613.17	709363.45	3104624.97
272	32050	709406.40	3104569.50	709455.83	3104561.97	709356.97	3104577.04
273	32100	709398.64	3104520.21	709447.20	3104511.02	709348.89	3104529.28
274	32150	709388.05	3104471.22	709436.87	3104460.41	709339.23	3104482.03
275	32200	709376.43	3104422.59	709424.86	3104410.16	709328.00	3104435.02
276	32250	709363.20	3104374.38	709411.19	3104360.34	709315.21	3104388.41
277	32300	709348.36	3104326.63	709395.86	3104311.00	709300.87	3104342.26
278	32350	709331.95	3104279.40	709378.90	3104262.20	709285.00	3104296.61
279	32400	709313.97	3104232.75	709360.32	3104213.99	709267.62	3104251.51
280	32450	709294.44	3104186.72	709340.14	3104166.43	709248.74	3104207.02
281	32500	709273.39	3104141.37	709318.39	3104119.57	709228.40	3104163.18
282	32550	709250.84	3104096.75	709295.09	3104073.46	709206.60	3104120.04
283	32600	709226.82	3104052.90	709270.26	3104028.15	709183.38	3104077.65
284	32650	709201.35	3104009.88	709244.94	3103983.69	709158.75	3104036.07
285	32700	709174.46	3103967.73	709216.15	3103940.14	709132.76	3103995.32
286	32750	709146.19	3103926.49	709186.99	3103897.60	709105.38	3103955.38
287	32800	709116.88	3103885.98	709157.18	3103856.38	709076.59	3103915.57
288	32850	709087.21	3103845.74	709127.41	3103816.04	709046.98	3103875.43
289	32900	709057.51	3103805.51	709097.74	3103775.82	709017.28	3103835.21
290	32950	709027.82	3103765.28	709068.04	3103735.59	708987.59	3103794.98
291	33000	708998.12	3103725.06	709038.35	3103695.36	708957.89	3103754.75
292	33050	708968.43	3103684.83	709008.65	3103655.14	708928.20	3103714.53
293	33100	708938.73	3103644.60	708978.96	3103614.91	708898.50	3103674.30
294	33150	708909.04	3103604.38	708949.26	3103574.68	708868.81	3103634.07
295	33200	708879.34	3103564.15	708919.57	3103534.45	708839.11	3103593.84
296	33250	708849.65	3103523.92	708889.87	3103494.23	708809.42	3103553.62
297	33300	708819.95	3103483.70	708860.18	3103454.00	708779.72	3103513.39
298	33350	708790.26	3103443.47	708830.48	3103413.77	708750.03	3103473.16
299	33400	708760.56	3103403.24	708800.79	3103373.55	708720.33	3103432.94

Sl. No.	Chainage (m)	Center Line		Left ROW Line		Right ROW Line	
		X/ Easting	Y/ Northing	X/ Easting	Y/ Northing	X/ Easting	Y/ Northing
300	33450	708720.87	3103363.02	708771.09	3103333.32	708690.64	3103392.71
301	33500	708701.17	3103322.79	708741.40	3103293.09	708660.94	3103352.48
302	33550	708671.47	3103282.56	708711.70	3103252.87	708631.25	3103312.26
303	33600	708641.78	3103242.34	708682.01	3103212.64	708601.55	3103272.03
304	33650	708612.08	3103202.11	708652.31	3103172.41	708571.86	3103231.80
305	33700	708582.39	3103161.88	708622.62	3103132.19	708542.16	3103191.58
306	33750	708552.69	3103121.65	708592.92	3103091.96	708512.47	3103151.35
307	33800	708523.00	3103081.43	708563.23	3103051.73	708482.77	3103111.12
308	33850	708493.30	3103041.20	708533.53	3103011.51	708453.08	3103070.90
309	33900	708463.61	3103000.97	708503.84	3102971.28	708423.38	3103030.67
310	33950	708433.91	3102960.75	708474.14	3102931.05	708393.69	3102990.44
311	34000	708404.22	3102920.52	708444.45	3102890.83	708363.99	3102950.22
312	34050	708374.52	3102880.29	708414.75	3102850.60	708334.30	3102909.99
313	34100	708344.83	3102840.07	708385.06	3102810.37	708304.60	3102869.76
314	34150	708315.13	3102799.84	708355.36	3102770.14	708274.91	3102829.54
315	34200	708285.44	3102759.61	708325.66	3102729.92	708245.21	3102789.31
316	34250	708255.74	3102719.39	708295.97	3102689.69	708215.52	3102749.08
317	34300	708226.05	3102679.16	708266.27	3102649.46	708185.82	3102708.85
318	34350	708196.35	3102638.93	708236.58	3102609.24	708156.13	3102668.63
319	34400	708166.66	3102598.70	708206.92	3102569.05	708126.40	3102628.35
320	34450	708137.25	3102558.27	708177.93	3102529.20	708096.56	3102587.34
321	34500	708108.75	3102517.19	708150.29	3102489.35	708067.22	3102545.02
322	34550	708081.61	3102475.20	708124.05	3102448.76	708039.17	3102501.63
323	34600	708055.89	3102432.32	708099.18	3102407.32	708012.59	3102457.33
324	34650	708031.61	3102388.62	708075.71	3102365.07	707987.50	3102412.17
325	34700	708008.79	3102344.13	708053.66	3102322.06	707963.93	3102366.20
326	34750	707987.48	3102298.90	708033.06	3102278.34	707941.90	3102319.46
327	34800	707967.68	3102252.99	708013.92	3102233.96	707921.44	3102272.02
328	34850	707949.38	3102206.46	707996.16	3102188.80	707902.61	3102224.12
329	34900	707932.10	3102159.54	707979.12	3102142.52	707885.09	3102176.57
330	34950	707915.11	3102112.52	707962.14	3102095.53	707868.09	3102129.51
331	35000	707898.13	3102065.49	707945.15	3102048.51	707851.10	3102082.48
332	35050	707881.14	3102018.47	707928.16	3102001.48	707834.11	3102035.45
333	35100	707864.15	3101971.44	707911.18	3101954.45	707817.12	3101988.43
334	35150	707847.16	3101924.42	707894.19	3101907.43	707800.14	3101941.40
335	35200	707830.17	3101877.39	707877.20	3101860.40	707783.15	3101894.38
336	35250	707813.19	3101830.36	707860.21	3101813.38	707766.16	3101847.35
337	35300	707796.84	3101783.47	707842.58	3101765.73	707749.09	3101801.21
338	35350	707777.70	3101736.88	707824.15	3101718.36	707731.26	3101755.39
339	35400	707758.80	3101690.59	707804.93	3101671.30	707712.67	3101709.88
340	35450	707739.13	3101644.62	707784.93	3101624.57	707693.32	3101664.68
341	35500	707718.69	3101598.99	707764.20	3101578.26	707673.19	3101619.71
342	35550	707697.50	3101553.48	707743.47	3101532.76	707652.47	3101574.21

Construction of Bypass Road from the Agency starting before KM# Expressway and ends at Ch. 47+000 near Khairpur Ghos (Ch. 47+000) section of Dhak - Padadwa Greenfield Alignment (NH 148N) on EPC Mode under Bidder's Responsibility in the State of Jharkhand.

Sl. No.	Chainage (m)	Center Line		Left ROW Line		Right ROW Line	
		X/ Easting	Y/ Northing	X/ Easting	Y/ Northing	X/ Easting	Y/ Northing
343	15600	707677.25	3101507.98	707722.75	3101487.26	707631.74	3101528.71
344	15650	707656.52	3101462.48	707702.03	3101441.75	707611.02	3101483.25
345	15700	707635.80	3101416.98	707681.30	3101396.25	707590.30	3101437.70
346	15750	707615.08	3101371.47	707660.58	3101350.75	707569.57	3101392.20
347	15800	707594.35	3101325.97	707639.85	3101305.25	707548.85	3101346.69
348	15850	707573.63	3101280.47	707619.13	3101259.74	707528.12	3101301.19
349	15900	707552.90	3101234.96	707598.41	3101214.24	707507.40	3101255.69
350	15950	707532.18	3101189.46	707577.68	3101168.74	707486.68	3101210.18
351	16000	707511.46	3101143.96	707556.96	3101123.23	707465.95	3101164.68
352	16050	707490.73	3101098.45	707536.23	3101077.73	707445.23	3101119.18
353	16100	707470.01	3101052.95	707515.51	3101032.23	707424.51	3101073.68
354	16150	707449.28	3101007.45	707494.79	3100986.72	707403.78	3101028.17
355	16200	707428.56	3100961.95	707474.06	3100941.22	707383.06	3100982.67
356	16250	707407.84	3100916.44	707453.34	3100895.72	707362.33	3100937.17
357	16300	707387.11	3100870.94	707432.62	3100850.22	707341.61	3100891.66
358	16350	707366.39	3100825.44	707411.89	3100804.71	707320.89	3100846.16
359	16400	707345.66	3100779.93	707391.17	3100759.21	707300.16	3100800.66
360	16450	707324.94	3100734.43	707370.44	3100713.71	707279.44	3100755.15
361	16500	707304.22	3100688.93	707349.72	3100668.20	707258.71	3100709.65
362	16550	707283.49	3100643.42	707329.00	3100622.70	707237.99	3100664.15
363	16600	707262.77	3100597.92	707308.27	3100577.20	707217.27	3100618.65
364	16650	707242.05	3100552.42	707287.55	3100531.69	707196.54	3100573.14
365	16700	707221.32	3100506.92	707266.82	3100486.19	707175.82	3100527.64
366	16750	707200.60	3100461.41	707246.10	3100440.69	707155.09	3100482.14
367	16800	707179.87	3100415.91	707225.38	3100395.19	707134.37	3100436.63
368	16850	707159.15	3100370.41	707204.65	3100349.68	707113.65	3100391.13
369	16900	707138.43	3100324.90	707183.93	3100304.18	707092.92	3100345.63
370	16950	707117.70	3100279.40	707163.21	3100258.68	707072.20	3100300.12
371	17000	707096.98	3100233.90	707142.48	3100213.17	707051.48	3100254.62
372	17050	707076.25	3100188.39	707121.76	3100167.67	707030.75	3100209.12
373	17100	707055.53	3100142.89	707101.03	3100122.17	707010.03	3100163.62
374	17150	707034.81	3100097.39	707080.31	3100076.67	706989.30	3100118.11
375	17200	707014.08	3100051.89	707059.59	3100031.16	706968.58	3100072.61
376	17250	706993.36	3100006.38	707038.86	3099985.66	706947.86	3100027.11
377	17300	706972.64	3099960.88	707018.14	3099940.15	706927.13	3099981.60
378	17350	706951.91	3099915.38	706997.41	3099894.65	706906.41	3099936.10
379	17400	706931.19	3099869.87	706976.69	3099849.15	706885.68	3099890.60
380	17450	706910.50	3099824.35	706955.96	3099803.65	706864.95	3099845.10
381	17500	706890.40	3099778.85	706935.23	3099758.15	706844.22	3099799.60
382	17550	706871.07	3099733.35	706914.50	3099712.65	706823.49	3099754.10
383	17600	706852.51	3099687.84	706893.77	3099667.15	706802.76	3099708.60
384	17650	706833.95	3099642.34	706873.04	3099621.65	706782.03	3099663.10
385	17700	706815.39	3099596.83	706852.31	3099576.15	706761.30	3099617.60

Construction of Right of Way and Accessory starting before KMP Expressway and ends at Ch. 47+000 near Khazipur Ghani (K. 28N550 to Ch. 47+000) section of Delhi - Fudoliara Greenfield Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana

Sl. No.	Chainage (m)	Center Line		Left ROW Line		Right ROW Line	
		X/ Easting	Y/ Northing	X/ Easting	Y/ Northing	X/ Easting	Y/ Northing
386	37750	706801.50	3099541.99	706818.93	3099529.17	706754.07	3099560.82
387	37800	706786.07	3099497.43	706833.76	3099482.40	706738.34	3099512.46
388	37850	706771.44	3099449.62	706819.37	3099435.39	706723.51	3099463.86
389	37900	706757.60	3099401.57	706805.76	3099388.14	706709.44	3099415.01
390	37950	706744.57	3099353.30	706792.95	3099340.67	706696.19	3099365.93
391	38000	706732.34	3099304.82	706780.93	3099293.00	706683.76	3099316.64
392	38050	706720.85	3099256.16	706769.54	3099244.79	706672.16	3099267.53
393	38100	706709.48	3099207.47	706758.17	3099196.10	706660.79	3099218.84
394	38150	706698.12	3099158.73	706746.81	3099147.41	706649.43	3099170.15
395	38200	706686.75	3099110.09	706735.44	3099098.72	706638.06	3099121.46
396	38250	706675.38	3099061.40	706724.07	3099050.03	706626.69	3099072.76
397	38300	706664.02	3099012.71	706712.71	3099001.34	706615.33	3099024.07
398	38350	706652.65	3098964.02	706701.34	3098952.65	706603.96	3098975.38
399	38400	706641.28	3098915.33	706689.97	3098903.96	706592.59	3098926.69
400	38450	706629.92	3098866.63	706678.61	3098855.27	706581.23	3098878.00
401	38500	706618.55	3098817.94	706667.24	3098806.58	706569.86	3098829.31
402	38550	706607.18	3098769.25	706655.87	3098757.89	706558.49	3098780.62
403	38600	706595.82	3098720.56	706644.51	3098709.20	706547.13	3098731.93
404	38650	706584.45	3098671.87	706633.14	3098660.50	706535.76	3098683.24
405	38700	706573.08	3098623.18	706621.77	3098611.81	706524.39	3098634.55
406	38750	706561.72	3098574.49	706610.41	3098563.12	706513.02	3098585.86
407	38800	706550.35	3098525.80	706599.04	3098514.43	706501.66	3098537.16
408	38850	706538.98	3098477.11	706587.67	3098465.74	706490.29	3098488.47
409	38900	706527.62	3098428.42	706576.31	3098417.05	706478.93	3098439.78
410	38950	706516.25	3098379.73	706564.94	3098368.36	706467.56	3098391.09
411	39000	706504.88	3098331.03	706553.57	3098319.67	706456.19	3098342.40
412	39050	706493.52	3098282.34	706542.21	3098270.98	706444.83	3098293.71
413	39100	706482.15	3098233.65	706530.84	3098222.29	706433.46	3098245.02
414	39150	706470.78	3098184.96	706519.47	3098173.60	706422.09	3098196.33
415	39200	706459.42	3098136.27	706508.11	3098124.90	706410.73	3098147.64
416	39250	706448.05	3098087.58	706496.74	3098076.21	706399.36	3098098.95
417	39300	706436.68	3098038.89	706485.38	3098027.52	706387.99	3098050.26
418	39350	706425.32	3097990.20	706474.01	3097978.83	706376.63	3098001.57
419	39400	706413.95	3097941.51	706462.64	3097930.14	706365.26	3097952.87
420	39450	706402.58	3097892.82	706451.28	3097881.45	706353.89	3097904.18
421	39500	706391.22	3097844.13	706439.91	3097832.76	706342.53	3097855.49
422	39550	706379.85	3097795.44	706428.54	3097784.07	706331.16	3097806.80
423	39600	706368.48	3097746.74	706417.18	3097735.38	706319.79	3097758.11
424	39650	706357.12	3097698.05	706405.81	3097686.69	706308.43	3097709.42
425	39700	706345.75	3097649.36	706394.44	3097638.00	706297.06	3097660.73
426	39750	706334.38	3097600.67	706383.08	3097589.31	706285.69	3097612.04
427	39800	706323.02	3097551.98	706371.71	3097540.61	706274.33	3097563.35
428	39850	706311.65	3097503.29	706360.34	3097491.92	706262.96	3097514.66

Construction of Right of Way (ROW) for Highway starting before Bypass Expressway and ends at Ch. 47+000 near Kuanpur Ghosi (Ch. 47+500 to 47+000) section of Delhi - Kandiana Greenfield Alignment (NH-148B) on SPC Mode under the Government of Punjab to the State of Haryana

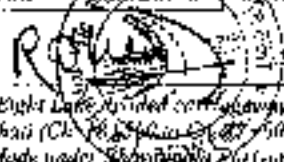


Sl. No.	Chainage (m)	Center Line		Left ROW Line		Right ROW Line	
		X/ Easting	Y/ Northing	X/ Easting	Y/ Northing	X/ Easting	Y/ Northing
429	39900	706500.29	3097454.60	706348.98	3097463.23	706251.59	3097465.97
430	39950	706288.92	3097405.91	706337.61	3097394.54	706240.23	3097417.28
431	40000	706277.55	3097357.22	706326.24	3097345.85	706228.86	3097368.58
432	40050	706266.19	3097308.53	706314.88	3097297.16	706217.49	3097319.89
433	40100	706254.82	3097259.84	706303.51	3097248.47	706206.13	3097271.20
434	40150	706243.45	3097211.14	706292.14	3097199.78	706194.76	3097222.51
435	40200	706232.09	3097162.45	706280.78	3097151.09	706183.39	3097173.82
436	40250	706220.72	3097113.76	706269.41	3097102.40	706172.03	3097125.13
437	40300	706209.35	3097065.07	706258.04	3097053.71	706160.66	3097076.44
438	40350	706197.99	3097016.38	706246.68	3097005.01	706149.29	3097027.75
439	40400	706186.62	3096967.69	706235.31	3096956.32	706137.93	3096979.06
440	40450	706175.25	3096919.00	706223.94	3096907.63	706126.56	3096930.37
441	40500	706163.89	3096870.31	706212.58	3096858.94	706115.19	3096881.68
442	40550	706152.52	3096821.62	706201.21	3096810.25	706103.83	3096832.98
443	40600	706141.15	3096772.93	706189.84	3096761.56	706092.46	3096784.29
444	40650	706129.79	3096724.24	706178.48	3096712.87	706081.10	3096735.60
445	40700	706118.42	3096675.55	706167.11	3096664.18	706069.73	3096686.91
446	40750	706107.05	3096626.85	706155.74	3096615.49	706058.36	3096638.22
447	40800	706095.69	3096578.16	706144.38	3096566.80	706047.00	3096589.53
448	40850	706084.32	3096529.47	706133.01	3096518.11	706035.63	3096540.84
449	40900	706072.95	3096480.78	706121.64	3096469.42	706024.26	3096492.15
450	40950	706061.59	3096432.09	706110.28	3096420.72	706012.90	3096443.46
451	41000	706050.22	3096383.40	706098.91	3096372.03	706001.53	3096394.77
452	41050	706038.85	3096334.71	706087.54	3096323.34	705990.16	3096346.08
453	41100	706027.49	3096286.02	706076.18	3096274.65	705978.80	3096297.39
454	41150	706016.12	3096237.33	706064.81	3096225.96	705967.43	3096248.69
455	41200	706004.75	3096188.64	706053.44	3096177.27	705956.06	3096200.00
456	41250	705993.39	3096139.95	706042.08	3096128.58	705944.70	3096151.31
457	41300	705982.02	3096091.26	706030.71	3096079.89	705933.33	3096102.62
458	41350	705970.65	3096042.56	706019.34	3096031.20	705921.96	3096053.93
459	41400	705959.29	3095993.87	706007.98	3095982.51	705910.60	3096005.24
460	41450	705947.92	3095945.18	705996.61	3095933.82	705899.23	3095956.55
461	41500	705936.55	3095896.49	705985.24	3095885.13	705887.86	3095907.86
462	41550	705925.19	3095847.80	705973.88	3095836.43	705876.50	3095859.17
463	41600	705913.82	3095799.11	705962.51	3095787.74	705865.13	3095810.48
464	41650	705902.45	3095750.42	705951.14	3095739.05	705853.76	3095761.79
465	41700	705891.09	3095701.73	705939.78	3095690.36	705842.40	3095713.09
466	41750	705879.72	3095653.04	705928.41	3095641.67	705831.03	3095664.40
467	41800	705868.35	3095604.35	705917.05	3095592.98	705819.66	3095615.71
468	41850	705856.99	3095555.66	705905.68	3095544.29	705808.30	3095567.02
469	41900	705845.62	3095506.96	705894.31	3095495.60	705796.93	3095518.33
470	41950	705834.25	3095458.27	705882.95	3095446.91	705785.56	3095469.64
471	42000	705822.89	3095409.58	705871.58	3095398.22	705774.20	3095420.95

Construction of Suburban Ring Road Highway starting before RMP Expressway and ends at Ch. 47+000 near Nangpur (about Ch. 47+500) on E/W (47+900) section of Delhi - Mathura Greenfield Alignment (NH-148B) on PPC Mode under Jharkhand Parity in the State of Jharkhand

Sl. No.	Chainage (m)	Center Line		Left ROW Line		Right ROW Line	
		X/ Easting	Y/ Northing	X/ Easting	Y/ Northing	X/ Easting	Y/ Northing
472	42050	705811.52	3095360.89	705860.21	3095349.53	705762.83	3095372.26
473	42100	705800.15	3095312.20	705848.85	3095300.83	705751.46	3095323.57
474	42150	705788.79	3095263.51	705837.48	3095252.14	705740.10	3095274.88
475	42200	705777.42	3095214.82	705826.11	3095203.45	705728.73	3095226.19
476	42250	705766.05	3095166.13	705814.75	3095154.76	705717.36	3095177.50
477	42300	705754.69	3095117.44	705803.38	3095106.07	705706.00	3095128.80
478	42350	705743.32	3095068.75	705792.01	3095057.38	705694.63	3095080.11
479	42400	705731.95	3095020.06	705780.65	3095008.69	705683.26	3095031.42
480	42450	705720.59	3094971.37	705769.28	3094960.00	705671.90	3094982.73
481	42500	705709.22	3094922.67	705757.91	3094911.31	705660.53	3094934.04
482	42550	705697.86	3094873.98	705746.55	3094862.62	705649.16	3094885.35
483	42600	705686.49	3094825.29	705735.18	3094813.93	705637.80	3094836.66
484	42650	705675.12	3094776.60	705723.81	3094765.24	705626.43	3094787.97
485	42700	705663.76	3094727.91	705712.45	3094716.54	705615.06	3094739.28
486	42750	705652.39	3094679.22	705701.08	3094667.85	705603.70	3094690.59
487	42800	705641.02	3094630.53	705689.71	3094619.16	705592.33	3094641.90
488	42850	705629.66	3094581.84	705678.35	3094570.47	705580.96	3094593.20
489	42900	705618.29	3094533.15	705666.98	3094521.78	705569.60	3094544.51
490	42950	705606.92	3094484.46	705655.61	3094473.09	705558.23	3094495.82
491	43000	705595.56	3094435.77	705644.25	3094424.40	705546.86	3094447.13
492	43050	705584.19	3094387.07	705632.88	3094375.71	705535.50	3094398.44
493	43100	705572.82	3094338.38	705621.51	3094327.02	705524.13	3094349.75
494	43150	705561.46	3094289.69	705610.15	3094278.33	705512.77	3094301.06
495	43200	705550.09	3094241.00	705598.78	3094229.64	705501.40	3094252.37
496	43250	705538.72	3094192.31	705587.41	3094180.94	705490.03	3094203.68
497	43300	705527.36	3094143.62	705576.05	3094132.25	705478.67	3094154.99
498	43350	705515.99	3094094.93	705564.68	3094083.56	705467.30	3094106.30
499	43400	705504.62	3094046.24	705553.31	3094034.87	705455.93	3094057.61
500	43450	705493.26	3093997.55	705541.95	3093986.18	705444.57	3094008.91
501	43500	705481.89	3093948.86	705530.57	3093937.49	705433.21	3093960.22
502	43550	705470.52	3093900.17	705519.21	3093888.80	705421.84	3093911.53
503	43600	705459.16	3093851.48	705507.84	3093840.11	705410.48	3093862.84
504	43650	705447.79	3093802.79	705496.48	3093791.42	705399.11	3093814.15
505	43700	705436.43	3093754.10	705485.11	3093742.73	705387.75	3093765.46
506	43750	705425.06	3093705.41	705473.75	3093694.04	705376.38	3093716.77
507	43800	705413.70	3093656.72	705462.38	3093645.35	705365.02	3093668.08
508	43850	705402.33	3093608.03	705451.02	3093596.66	705353.65	3093619.39
509	43900	705390.97	3093559.34	705439.65	3093547.97	705342.29	3093570.70
510	43950	705379.60	3093510.65	705428.29	3093499.28	705330.92	3093522.01
511	44000	705368.24	3093461.96	705416.92	3093450.59	705319.56	3093473.32
512	44050	705356.87	3093413.27	705405.56	3093401.90	705308.19	3093424.63
513	44100	705345.51	3093364.58	705394.19	3093353.21	705296.83	3093375.94
514	44150	705334.14	3093315.89	705382.83	3093304.52	705285.46	3093327.25

Construction of Right Lane provided on the highway starting before KMP Expressway and ends at Ch. 47+000 near Kharpur Ghazi (Ch. 78+500 to 87+500) section of Delhi - Palodara Greenfield Alignment (NH-14B) on F.P.C. Mode under Government of India to the State of Haryana



Sl. No.	Chainage (m)	Center Line		Left ROW Line		Right ROW Line	
		X/ Easting	Y/ Northing	X/ Easting	Y/ Northing	X/ Easting	Y/ Northing
515	44200	705314.77	3093269.11	705363.28	3093257.14	705266.19	3093281.08
516	44250	705302.77	3093220.50	705351.32	3093208.60	705254.22	3093232.53
517	44300	705290.80	3093172.02	705339.35	3093160.05	705242.26	3093183.98
518	44350	705278.84	3093123.47	705327.38	3093111.50	705230.29	3093135.43
519	44400	705266.87	3093074.92	705315.42	3093062.96	705218.32	3093086.89
520	44450	705254.90	3093026.37	705303.45	3093014.41	705206.36	3093038.34
521	44500	705242.94	3092977.83	705291.49	3092965.86	705194.39	3092989.79
522	44550	705230.97	3092929.28	705279.50	3092917.25	705182.44	3092941.31
523	44600	705218.63	3092880.83	705267.01	3092868.19	705170.26	3092893.47
524	44650	705206.69	3092832.53	705255.91	3092819.29	705157.48	3092845.77
525	44700	705192.28	3092784.36	705240.44	3092770.92	705144.12	3092797.81
526	44750	705178.82	3092736.21	705226.99	3092722.76	705130.67	3092749.65
527	44800	705165.38	3092688.05	705213.54	3092674.60	705117.23	3092701.50
528	44850	705151.94	3092639.89	705200.09	3092626.44	705103.78	3092653.34
529	44900	705138.49	3092591.73	705186.65	3092578.28	705090.33	3092605.18
530	44950	705125.04	3092543.57	705173.20	3092530.13	705076.88	3092557.02
531	45000	705111.59	3092495.42	705159.75	3092481.97	705063.44	3092508.86
532	45050	705098.15	3092447.26	705146.30	3092433.81	705049.99	3092460.71
533	45100	705084.70	3092399.10	705132.86	3092385.65	705036.54	3092412.55
534	45150	705071.25	3092350.94	705119.41	3092337.50	705023.09	3092364.39
535	45200	705057.80	3092302.79	705105.96	3092289.34	705009.65	3092316.23
536	45250	705044.36	3092254.63	705092.51	3092241.18	704996.20	3092268.08
537	45300	705030.91	3092206.47	705079.07	3092193.02	704982.75	3092219.92
538	45350	705017.46	3092158.31	705065.62	3092144.87	704969.30	3092171.76
539	45400	705004.01	3092110.16	705052.17	3092096.71	704955.85	3092123.60
540	45450	704990.56	3092062.00	705038.72	3092048.55	704942.41	3092075.45
541	45500	704977.12	3092013.84	705025.27	3092000.39	704928.96	3092027.29
542	45550	704963.67	3091965.68	705011.83	3091952.24	704915.51	3091979.13
543	45600	704950.22	3091917.53	704998.38	3091904.08	704902.06	3091930.97
544	45650	704936.77	3091869.37	704984.93	3091855.92	704888.62	3091882.82
545	45700	704923.33	3091821.21	704971.48	3091807.76	704875.17	3091834.66
546	45750	704909.88	3091773.05	704958.04	3091759.60	704861.72	3091786.50
547	45800	704896.43	3091724.89	704944.59	3091711.45	704848.27	3091738.34
548	45850	704882.98	3091676.74	704931.14	3091663.29	704834.83	3091690.18
549	45900	704869.54	3091628.58	704917.69	3091615.13	704821.38	3091642.03
550	45950	704856.09	3091580.42	704904.25	3091566.97	704807.93	3091593.87
551	46000	704842.33	3091532.35	704890.28	3091518.20	704794.37	3091545.51
552	46050	704827.78	3091484.22	704875.49	3091469.57	704780.06	3091497.47
553	46100	704812.43	3091436.93	704859.89	3091421.19	704764.97	3091452.68
554	46150	704796.29	3091389.61	704843.48	3091373.08	704749.10	3091406.14
555	46200	704779.37	3091342.56	704826.27	3091325.24	704732.46	3091359.88
556	46250	704761.06	3091295.80	704808.27	3091277.71	704715.05	3091313.90
557	46300	704743.15	3091249.34	704789.48	3091230.47	704696.87	3091268.21

Construction of Right of Way (ROW) starting before KHP Expressway and ends at Ch. 47100 near Khaspur Ghats (Ch. 47100 to Ch. 471000) section of Delhi - Vadodra Greenfield Alignment (NH 142N) on EPC Mode under the Public-Private Partnership in the State of Haryana

Sl. No.	Chainage (m)	Center Line		Left ROW Line		Right ROW Line	
		X/ Easting	Y/ Northing	X/ Easting	Y/ Northing	X/ Easting	Y/ Northing
558	46350	704723.92	3091203.20	704769.90	3091183.56	704677.94	3091222.84
559	46400	704703.97	3091157.35	704749.76	3091137.28	704658.18	3091177.43
560	46450	704683.89	3091111.56	704729.69	3091091.49	704638.10	3091131.64
561	46500	704663.82	3091065.77	704709.61	3091045.69	704618.02	3091085.85
562	46550	704643.74	3091019.98	704689.53	3090999.90	704597.95	3091040.05
563	46600	704623.66	3090974.19	704669.46	3090954.11	704577.87	3090994.26
564	46650	704603.59	3090928.39	704649.38	3090908.32	704557.80	3090948.47
565	46700	704583.51	3090882.60	704629.30	3090862.52	704537.72	3090902.68
566	46750	704563.43	3090836.81	704609.23	3090816.73	704517.64	3090856.88
567	46800	704543.36	3090791.02	704589.15	3090770.94	704497.57	3090811.09
568	46850	704523.28	3090745.22	704569.07	3090725.15	704477.49	3090765.30
569	46900	704503.21	3090699.43	704549.00	3090679.35	704457.41	3090719.51
570	46950	704483.13	3090653.64	704528.92	3090633.56	704437.34	3090673.72
571	47000	704463.05	3090607.85	704508.84	3090587.77	704417.26	3090627.92



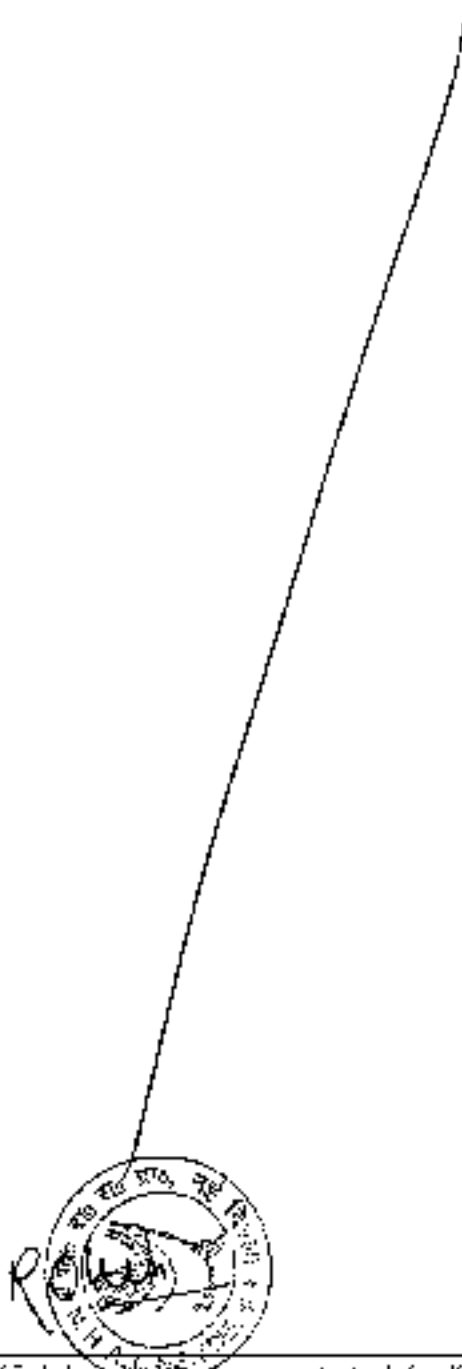
Construction of Eight Lane dual carriageway starting before KMP Expressway and ends at Ch. 471000 near Khandpur Ghazi (Ch. 181500 to Ch. 471000) section of Delhi - Yadadara Greenfield Alignment (NH-148B) on FPC Mode under Bharatmala Pariyojana in the State of Haryana



**Annex - III**  
**(Schedule-A)**

**Alignment Plans:**

The alignment of the Project Highway is enclosed in alignment plan. Finished road level indicated in the alignment plan shall be followed by the contractor as minimum FRL. In any case, the finished road level of the project highway shall not be less than those indicated in the alignment plan. The contractor shall, however, improve/upgrade the Road profile as indicated in Annexure-III based on site/design requirement.



Annex - IV  
(Schedule-A)

Environment Clearances  
Under Process



Construction of Eight Lane divided carriageway starting before KM<sup>0</sup> Expressway and ends at Ch 471 009 near Khampar Ghati (Ch. 184.500 to Ch. 471 000) section of Delhi - Vadodra Greenfield Alignment (NH-148N) on FPC Mode under Bharatmala Pariyojana in the State of Gujarat



**SCHEDULE - B**  
(See Clause 2.1)

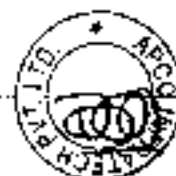
**DEVELOPMENT OF THE PROJECT HIGHWAY**

**1 Development of the Project Highway**

Development of the Project Highway shall include design and construction of the Project Highway as described in this Schedule-B and in Schedule C. The alignment plans of the Project Highway are specified in Annex-III of Schedule A and shall be deemed to be part of this Schedule B. The proposed profile of the project highway as indicated in the Annex-III of Schedule A shall be followed by the contractor (as minimum FRL) as given in the alignment plan. Based on site/design requirement, the Contractor may, however, improve/upgrade upon the alignment plans and profiles as indicated in Annexure III of Schedule A and raise the finished roadway level (FRL) with approval from the Authority's Engineer within the available Right of Way.

**2 Specifications and Standards**

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



**Annexure-I  
(Schedule B)**

**Description of the Project**

**Construction of Eight Lane divided carriageway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Ch. 18+500 to Ch. 47+000) section of Delhi Vadodara Greenfield Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana**

The Project Highway shall follow the alignment shown in the plan and profile specified in Annex III of Schedule-A, unless otherwise specified by the Authority. Notwithstanding anything to the contrary contained in this Agreement or IRC:SP:99-2013, the proposed profile of the project highway as indicated in the Annexure III of Schedule A shall be deemed to be part of this Schedule-B and shall be followed by the contractor. Based on Design/Site requirements, the contractor may, however, improve/upgrade upon the alignment plans and profile as indicated in Annexure-III of Schedule A and raise the finished roadway level with approval from Authority's Engineer within the available ROW. The same shall not constitute a change of scope, save and except any variations arising out of a change of scope expressly undertaken in accordance with the provision of Article 13.

**1.1 Width of carriageway**

- 1.2.1 Eight-lane divided carriageway shall be undertaken. The paved carriageway shall be provided as indicated below and referred to in paragraph 2.8 of this Schedule B and Annex 1 of Schedule D.
- 1.2.2 There is no built-up area as the alignment passes through greenfield.
- 1.2.3 Except as otherwise provided in this Agreement, the width shall be adjusted to fit into appropriate plans and cross sections developed in accordance with TCS enclosed
- 1.2.4 Except as otherwise provided in this Agreement, but subject to provisions of Annex 1 of this Schedule-B, the width of the paved carriageway shall conform to Section 1.2.1 of Schedule B.
- 1.2.5 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 and the same shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.

**2.0 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 IRC:SP:99-2013.

**2.2 Design speed**

The design speed shall be the ruling/minimum design speed specified in Clause 2.2 of the IRC:SP:99-2013.



### 2.3 Improvement of the existing road geometrics

In the following stretches, 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 proper road signs and safety measures shall be provided:

S. No.	Proposed Chainage (in km)		Type of Deficiency	Remarks
	Start	End		
	Nil			

### 2.4 Right of Way

Details of the Right of Way are given in Annex II of Schedule A.

### 2.5 Type of shoulders

The shoulder specification shall be as per Section 2 and Section 5 of IRC:SP:99-2013. The shoulder on the outer side (on either side of the carriageway) shall be 3m wide paved + 2m earthen. The shoulder composition is as follows:

- The compositions and specification of the paved shoulder and edge strip shall be as that of the main carriageway.
- The earthen shoulder shall be provided with 200mm thick layer of granular material for protection against erosion.

### 2.6 Service Roads/Slip Roads/Connecting Roads

Service Roads/ Slip Roads shall be constructed at the locations and for the lengths indicated below:

Sl. No.	Location of Service Roads/Slip Roads (Design Chainage in Km)		Right Hand Side (RHS)/Left Hand Side) or Both Sides	Length (m)	Remarks
	From	To			
A	Slip Road				
1	33+478	34+500	Both sides	1022	7 m wide for Wayside Amenities
2	34+622	35+100	Both sides	478	7 m wide for Entry & Exit from Nuh-Hodal road

Note: 1) Above length of the service/ slip/ connecting roads is indicative and minimum specified. The actual length of the service/ slip/ connecting roads shall be determined by the Contractor in accordance with the IRC:SP:99-2013 requirements with approval from the Authority's Engineer. Any increase in the length specified in this Clause of Schedule-B shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.

- The realignment of existing track to the SYUP outside the PROW and connecting roads between consecutive underpasses wherever required as per plan & profile uploaded with bid document and specified in Annex III of schedule A is to be constructed by the contractor as per site requirement in consultation with Authority Engineer and the same would not constitute any change of scope.
- Length of service roads given in above table excludes length across the project Expressway for proper connectivity of cross roads on either side of project expressway which shall be deemed to be included in the scope of work.

## 2.7 Grade separated structures

2.7.1 Grade separated structures shall be provided as per paragraph 2.13 of the IRC:SP:99-2013. Proposed levels at structure locations as shown in plan & profile specified in Annex III of schedule A are only for guidance and any changes in levels shall not constitute any change of scope. The requisite particulars are given below:

### SYUP

S. No.	Design Chainage (In Km)	Type of structure	Span Arrangement (m)	Total width (m)	Remarks
1	20-861	RCC Box	1x10.0x3.5	2 x 21.25	-
2	21-893	RCC Box	1x10.0x3.5	2 x 21.25	-
3	22-205	RCC Box	1x10.0x3.5	2 x 21.25	-
4	25-450	RCC Box	1x10.0x4.5	2 x 21.25	-
5	29-672	RCC Box	1x10.0x3.5	2 x 21.25	-
6	30-402	RCC Box	1x10.0x4.5	2 x 21.25	-
7	31-350	RCC Box	1x10.0x3.5	2 x 21.25	-
8	32-207	RCC Box	1x10.0x3.5	2 x 21.25	-
9	32+607	RCC Box	1x10.0x4.5	2 x 21.25	-
10	34+764	RCC Box	1x10.0x4.5	2 x 21.25	-
11	37+880	RCC Box	1x10.0x4.5	2 x 21.25	-
12	40-209	RCC Box	1x10.0x3.5	2 x 21.25	-
13	42-114	RCC Box	1x10.0x4.5	2 x 21.25	-
14	45-661	RCC Box	1x10.0x4.5	2 x 21.25	-
15	46-338	RCC Box	1x10.0x4.5	2 x 21.25	-

### IAUP

S. No.	Design Chainage (In Km)	Type of structure	Span Arrangement (m)	Total width (m)	Remarks
1	25+695	RCC T-beam	1x22.0x5.5	2x21.25	-
2	27+695	RCC T-beam	1x16.0x5.5	2x21.25	-
3	29+333	RCC T-beam	1x16.0x5.5	2x21.25	-
4	32+599	RCC T-beam	1x20.0x5.5	2x21.25	-
5	35+536	RCC T-beam	1x22.0x5.5	2x21.25	-

## VLP

S. No.	Design Chainage (In Km)	Span Arrangement (m)	Total width (m)	Remarks
1	3416.9	1x25.0x5.5	2x21.25	-
2	4319.5	1x45.0x5.5	2x21.25	-

## FLYOVER

S. No.	Design Chainage (In Km)	Span Arrangement (m)	Total width (m)	Remarks
1	22+861	3x45.0x5.5	2 x 21.25	At grade intersection below flyover shall be improved by providing rotary junction at ground level as per layout plan in Appendix B-2

## INTERCHANGE

S. No.	Design Chainage (In Km)	Span Arrangement (m)	Total width (m)	Remarks
1	18+994	1x35.0x5.5	39.0 + 21.25	Interchange with KMP Expressway
2	19+803 A	2x45.0x5.5	2 x 21.25	
3	19+803 B (On Ramp of KMP Interchange)	2x45.0x5.5	2 x 10.50	

## Detail of Loop and Ramps

S. No.	Description / Location	Length (m)	Remarks
1	Loop-1	1060	Refer Layout plan in Appendix B-1
2	Loop-2	1090	
3	Loop-3	1025	
4	Loop-4	1060	
5	Ramp-1	630	
6	Ramp-2	610	
7	Ramp-3	610	
8	Ramp-4	710	
9	Ramp-5	660	
10	Ramp-6	600	
11	Ramp-7	600	
12	Ramp-8	680	
Total Length		9335	

Note: The length of loops and ramps are minimum and likely to get changed as per site requirement; Any change as per site requirement may not constitute change of scope, save and except any

Construction of Expressway provided with flyovers starting before KMP Expressway and end at Ch. 47+000 near Adampur (Ghat) - 47+000 on EPC mode under the National Expressway in the State of Haryana

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variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.

## 2.8 Typical Cross Section of Project Highway

S. No.	Design Chainage		Length (m)	Description	TCS Type
	From	To			
1	18+500	18+585	85	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m	TCS-1
2	18+585	18+602	17	Typical Cross Section for 8 lane (2x4) for Major Bridge, Minor Bridge	TCS-3
3	18+602	18+975	2253	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m	TCS-1
4	18+975	19+010	35	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
5	19+010	19+170	160	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
6	19+170	19+758	588	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with RE Wall on both sides	TCS-4
7	19+758	19+848	90	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
8	19+848	20+855	1007	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
9	20+855	20+866	11	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
10	20+866	20+885	19	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
11	20+885	20+986	101	Typical Cross Section for 8 lane (2x4) for Major Bridge, Minor Bridge	TCS-3
12	20+986	21+555	569	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
13	21+555	21+685	130	Typical Cross Section for 8 lane (2x4) for Major Bridge, Minor Bridge	TCS-3
14	21+685	21+888	203	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
15	21+888	21+898	10	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
16	21+898	22+200	302	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
17	22+200	22+210	10	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2

S. No.	Design Chainage		Length (m)	Description	TCS Type
	From	To			
18	22+210	22+792	582	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
19	22+792	22+928	136	Typical Cross Section for 6 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
20	22+928	23+763	835	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
21	23+763	23+790	27	Typical Cross Section for 8 lane (2x4) for Major Bridge, Minor Bridge	TCS-3
22	23+790	24+494	704	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
23	24+494	24+523	29	Typical Cross Section for 8 lane (2x4) for Major Bridge, Minor Bridge	TCS-3
24	24+523	25+445	922	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
25	25+445	25+454	9	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
26	25+454	25+678	224	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
27	25+678	25+710	32	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
28	25+710	26+630	920	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
29	26+630	26+647	17	Typical Cross Section for 8 lane (2x4) for Major Bridge, Minor Bridge	TCS-3
30	26+647	27+405	758	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
31	27+405	27+432	27	Typical Cross Section for 8 lane (2x4) for Major Bridge, Minor Bridge	TCS-3
32	27+432	27+687	255	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
33	27+687	27+700	13	Typical Cross Section for 6 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
34	27+700	29+324	1624	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
35	29+324	29+340	16	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
36	29+340	29+666	326	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1

Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 4+1000 near Khanyu Ghazi (Ch. 18+000) section of Delhi - Pafadara Greenfield Alignment (NH-145N), on EPC Mode under Bharatmala Pariyojana in the State of Haryana

S. No.	Design Chainage		Length (m)	Description	TCS Type
	From	To			
37	29+666	29+676	10	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
38	29+676	30+397	721	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
39	30+397	30+407	10	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
40	30+407	31+345	938	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
41	31+345	31+355	10	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
42	31+355	31+896	541	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
43	31+896	31+913	17	Typical Cross Section for 8 lane (2x4) for Major Bridge, Minor Bridge	TCS-3
44	31+913	32+201	288	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
45	32+201	32+211	10	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
46	32+211	32+694	483	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
47	32+694	32+703	9	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
48	32+703	32+766	63	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
49	32+766	32+795	29	Typical Cross Section for 8 lane (2x4) for Major Bridge, Minor Bridge	TCS-3
50	32+795	32+823	28	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
51	32+823	32+839	16	Typical Cross Section for 8 lane (2x4) for Major Bridge, Minor Bridge	TCS-3
52	32+839	34+605	1766	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
53	34+605	34+631	26	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
54	34+631	34+759	128	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median & retaining wall on both sides	TCS-5
55	34+759	34+769	10	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
56	34+769	34+885	116	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with	TCS-5

Construction of Eight Lane (2x4) section starting before RMP Expressway and ends at Ch. 414+000 near Khatpur Ghani (Ch. 384+500 to Ch. 414+000) section of Delhi - Noida-Gurgaon Greenfield Alignment (NH-14B) on EPC Mode under the project programme in the State of Haryana



S. No.	Design Chainage		Length (m)	Description	TCS Type
	From	To			
				embankment height up to 2.5m.	
57	34+885	34+970	85	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
58	34+970	26+020	1050	Toll Plaza	
59	36+000	36+447	447	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
60	36+447	37+007	560	Typical Cross Section for 8 lane (2x4) for Major Bridge, Minor Bridge	TCS-3
61	35+007	37+275	268	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
62	37+275	37+291	16	Typical Cross Section for 8 lane (2x4) for Major Bridge, Minor Bridge	TCS-3
63	37+291	37+721	430	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
64	37+721	37+765	44	Typical Cross Section for 8 lane (2x4) for Major Bridge, Minor Bridge	TCS-3
65	37+765	37+875	110	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
66	37+875	27+885	10	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
67	37+885	38+850	965	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
68	38+850	38+869	19	Typical Cross Section for 8 lane (2x4) for Major Bridge, Minor Bridge	TCS-3
69	38+869	40+203	1334	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
70	40+203	40+213	10	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
71	40+213	40+450	237	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
72	40+450	40+555	105	Typical Cross Section for 8 lane (2x4) for Major Bridge, Minor Bridge	TCS-3
73	40+555	41+941	1386	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
74	41+941	41+958	17	Typical Cross Section for 8 lane (2x4) for Major Bridge, Minor Bridge	TCS-3
75	41+958	42+008	150	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with	TCS-1

Construction of Eight Lane dual carriage way starting before KMP Expressway and ends at Ch. 47+000 near Kanganer Ghazi (Ch. 15+555 to Ch. 37+900) section of Delhi - Yadadara Greenfield Alignment (NH-146B) on FPC Mode under Bharatmala Pariyojaya in the State of Haryana

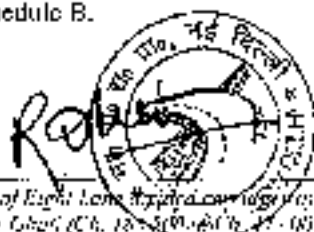
S. No.	Design Chainage		Length (m)	Description	TCS Type
	From	To			
				embankment height up to 2.5m	
76	42+108	42+118	10	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
77	42+118	42+442	324	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
78	42+442	42+468	26	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
79	42+468	43+920	1452	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
80	43+920	43+968	48	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
81	43+968	44+513	545	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
82	44+513	44+547	34	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
83	44+547	45+656	1109	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m	TCS-1
84	45+656	45+665	9	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
85	45+665	46+323	658	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1
86	46+323	46+346	23	Typical Cross Section for 8 lane (2x4) for VUP, SVUP, LVUP, Flyover	TCS-2
87	46+346	47+000	654	Typical Cross Section for 8 lane (2x4) in Plain & Rolling terrain with depressed median with embankment height up to 2.5m.	TCS-1

### 3. Intersections and grade separators

All intersections and grade separators shall be as per Section 2 of the IRC:SP:99-2013. Properly designed intersections shall be provided at the locations and of types and features given in the tables below:

- (a) At-grade intersections: Nil.
- (b) Grade separated intersections

The grade separated intersection shall be provided as specified in paragraph 2.7 of Annexure-I of schedule B.



Construction of Eight Lane Expressway (2x4) for starting beyond KMP Flyover and end at Ch. 47+000 and Chainage 468 (Ch. 18+300) to Ch. 47+000, section of 20.7 Km. in a Greenfield Alignment (NHAI) as an EPC Mode under Bharatmala Pariyojana in the State of Meghalay





**Note:**

- (i) Type of Junction to be improved as per IRC:SP:99-2013 and MOST type design for intersection on National Highways, 1992.
- (ii) Any other junction not mentioned above but observed during the construction of the project shall be improved as per IRC:SP:99-2013 requirements. The same shall not constitute a Change of Scope, save and except any variations arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.
- (iii) The contractor shall take up 'Detailed Engineering study' to ascertain further details of all intersections and treatment of the intersections shall be designed in accordance with the latest guidelines mentioned out in section 3 of IRC:SP:99-2013. The same shall not constitute a Change of Scope, save and except any variations arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.
- (iv) Junction improvement under grade separators/interchanges shall be carried out as per IRC:SP:99-2013 and given in typical lay-out annexed along with this Schedule B with proper entry/exit to cross roads and slip/service roads and pavement composition as indicated in clause 5.3 of this Schedule B.
- (v) Location and span arrangement of grade-separated structures are indicative. Exact location may be decided in consultation with Authority Engineer. Any Change in span arrangement shall not be treated as change of scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 16.

**4 Road embankment and cut section**

4.1 Construction of new road embankment/earthenings shall conform to the Specifications and Standards given in section 4 of the IRC:SP:99-2013 and the specified cross sectional details. Notwithstanding anything to the contrary contained in this Agreement or IRC:SP:99-2013, the proposed profile of the project highway as indicated in the Annex III of Schedule A shall be deemed to be part of this Schedule D and shall be followed by the contractor with minimum F&C, as indicated in the alignment plan. Based on site design requirement, the Contractor may, however, improve/upgrade upon the alignment plans and profiles as indicated in Annexure - III of Schedule A and raise the Finished Roadway Level (FRL) with approval from the Authority's Engineer within the available Right of Way.

**5 Pavement design**

5.1 Pavement design shall be carried out in accordance with Section-5 of the IRC:SP:99-2013.

**5.2 Type of pavement**

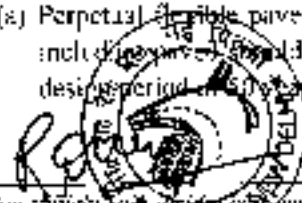
The pavement shall be flexible perpetual type for entire length of project corridor, except for connecting road and wayside amenities where flexible pavement shall be proposed.

**5.3 Design requirements**

**5.3.1 Design Period and strategy**

(a) Perpetual flexible pavement shall be constructed for the entire length of Project Corridor including all interchanges. Perpetual Flexible pavement shall be designed for a minimum design period of 50 years and minimum sub-grade CBR of 8%.

Construction of Right of Way for the proposed highway starting before KMP Expressway and ends at Ch-03 (NH-1) near Khatipur (Distt of Gh. 502) and at 47-0501 section of Delhi - Ludhiana Greenfield Alignment (NH-148C) on EPC Mode under Bharatmala Parikrama in the State of Haryana



(h) For slip/service roads to wayside amenities and interconnecting roads to VUPs/LVUPs/SVUPs, flexible pavement shall be provided for minimum 10 MSA traffic and subgrade CBR of 8%.

(c) Stage construction shall not be permitted.

### 5.3.2 Design Traffic

Notwithstanding anything to the contrary contained in this Agreement or the IRC:SP:99-2013, the Contractor shall design the pavement for a minimum design traffic as indicated below or as per the actual traffic, whichever is higher. The flexible pavement composition for main carriageway shall, however, in no case be less than as given below:

#### Main carriageway

Pavement layer	Pavement Type	Minimum Crust layer thickness (mm)
Stene Matrix Asphalt (SMA) with PMB 40 and minimum 2% Lime	Perpetual Flexible	50
Dense Bituminous Concrete (DBM) with VG-40 & minimum 2% Lime		250
Wet Mix Macadam (WMM)		150
Cement Treated Subbase with minimum 2% cement		200

*Note: The cement and lime content shall be consider in per mix design during construction, however in any case it shall not be less than as mentioned in table above.*

#### Connecting/Service/slip road (Flexible)

Pavement layer	Pavement Type	Minimum Crust layer thickness (mm)
Bituminous Concrete (BC)	Flexible	40
Dense Bituminous Concrete (DBM)		50
Wet Mix Macadam (WMM)		250
Granular Sub-base (GSB)		200

### 5.4 Reconstruction of stretches

The following stretches of the existing road shall be reconstructed. These shall be designed as new pavement.



Construction of Right Lane and Left Lane Carriageway starting before XMP Expressway and ends at Ch. 47+000 near Khannur Ghat (Ch. 16+500 to Ch. 47+000) section of Delhi - Fardola Greenfield alignment NH-148N on EPC Mode under Bharatnala Parojana in the State of Haryana

S. No.	Design Chainage		Remarks
	From	To	
	Nil		

## 6 Road side drainage

Drainage system including surface and subsurface drains for the Project Highway shall be provided as per section 9 of the IRC:SP:99-2013. Unlined Drains (except at ROB location) shall be provided in the entire project length which gets terminated at all cross road locations.

## 7 Design of structures

### 7.1 General

7.1.1 Project Highway is proposed to be constructed to eight-lane configuration with provision for widening to twelve-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. Special vehicle loading is to be considered in design of super-structure of all bridges, culverts and structures.

All bridges, culverts and structures shall be designed and constructed in accordance with section-6 of the IRC:SP:99-2013 and shall conform to the cross-sectional features and other details specified therein.

7.1.2 Width of the carriageway of new bridges and structures more than 60.0 m length having carriageway width less than 7.5m shall be as follows:

**NIL**

7.1.3 The following structures shall be provided with footpaths:

**NIL**

7.1.4 All bridges shall be high-level bridges.

7.1.5 The following structures shall be designed to carry utility services specified in table below:

S. No.	Design Chainage (Km)	Utility service to be carried	Remarks
	All Bridges to be Designed to carry Utility Services		

7.1.6 Cross-section of all structures including new culverts and bridges at deck level for the Project Highway shall conform to the typical cross-sections given in section 6 of the IRC:SP:99-2013 and TCS in Para 2.8.

### 7.2 Culverts

7.2.1 Overall width of all culverts shall be equal to the roadway width of the approaches.

7.2.2 Reconstruction of existing culverts - Nil

7.2.3 Widening of existing culverts Nil

Construction of 1.5m wide concrete drainage system along the highway starting before S.M.P. 1.5m roadway and over a 1.5m deep near Khengar Ghadi (K.G.) (K.G. - 099) section of D.D. (Tehsil Bhanwar Nagar, District Jhansi) on E.P.C. Mode under Sh. Mahesh Parryajana in the State of Karnataka

7.2.4 New culverts (given in table below) shall be constructed for width equal to the roadway width of the Project Highway & as per typical cross-section given in the TCS specified in Para 2.11 and alignment plan. The details are given as under:

S. No.	Design Chainage (km)	Proposed Span (m)	Type of Culvert
1	23+477	1x2.0x2.0	RCC Box
2	23+280	1x2.0x2.0	RCC Box
3	24+900	1x2.0x2.0	RCC Box
4	25+038	1x4.0x2.0	RCC Box
5	26+100	1x2.0x2.0	RCC Box
6	28+264	1x3.0x2.5	RCC Box
7	28+750	1x2.0x2.0	RCC Box
8	30+850	1x2.0x2.0	RCC Box
9	23+477	1x3.0x2.5	RCC Box
10	33+900	1x2.0x2.0	RCC Box
11	36+036	1x3.0x2.5	RCC Box
12	36+780	1x2.0x2.0	RCC Box
13	38+250	1x2.0x2.0	RCC Box
14	39+300	1x2.0x2.0	RCC Box
15	39+750	1x2.0x2.0	RCC Box
16	41+140	1x2.0x2.0	RCC Box
17	42+994	1x2.0x2.0	RCC Box
18	43+287	1x3.0x2.5	RCC Box
19	44+972	1x3.0x3.0	RCC Box
20	45+300	1x2.0x2.0	RCC Box
21	46+800	1x2.0x2.0	RCC Box

In addition to above, additional 30 nos. box culverts of size 2m x 2m shall be provided as per site requirements for facilitating access of farmers to field channels on either side of the carriageway. The location of such culverts shall be decided in consultation with Authority Engineer.

**Note:**

- The overall width of the above culverts shall be equal to Roadway width including the gap between main carriageway & service road, in case there is any service road. Any additional Barrel length required as per site conditions shall not constitute a Change of Scope, save and except any variations arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.
- Location of the above culverts are indicative and span arrangement is minimum specified. Exact location of these culverts may be decided in consultation with Authority Engineer. The actual roadway span/clearance of culverts shall be determined on the basis of detailed investigations by the Contractor in accordance with the Specifications and Standards. Any variations in

viway/span arrangements specified in this Schedule-B shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.

7.2.5 Repairs/replacements of railing/parapets, flooring and protection works of the existing culverts shall be undertaken as follows

S. No.	Existing Span Arrangement						Type of Repair Required
	Design Chainage (Km)	Structure Number	Type	No of Spans	Span length (m)	Overall Width (m)	
Nil.							

7.2.6 Floor protection works shall be as specified in the relevant IRC Codes and Specifications.

7.2.7 In case of culverts proposed for widening/repair as per details in Clause 7.2.3 above, the same shall be re-constructed if the design shows that these are unsafe for design loads. No change of scope shall be considered in such cases.

7.2.8 Floor protection works shall be as specified in the relevant IRC Codes and Specifications.

7.2.9 Utility ducts in form of NP-4 Duct Pipe dia 1.2m shall be provided across the Project Highway and along with inspection chamber for crossing of underground utilities in Built-up areas as per IRC:SP:99-2013 requirements. Location for such utility crossing shall be finalized in consultation with Authority Engineer.

**7.3 Bridges**

7.3.1 Existing bridges to be re-constructed/widened

The existing bridges at the following locations shall be re-constructed/widened: Nil

7.3.2 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.

**Major Bridges:**

S. No.	Design Chainage (In Km)	Span Arrangement (m)	Total width (m)	Remarks
1	20+936	4x25.0	2 x 21.25	-
2	36+477	1x62.0	2 x 21.25	

**Minor Bridges:**

S. No.	Design Chainage (In Km)	Span Arrangement (m)	Total width (m)	Remarks
Nil.				

S. No.	Design Chainage (In Km)	Span Arrangement (m)	Total width (m)	Remarks
1	13+594	1x16	2 x 21.25	-
2	21+570	1x20	2 x 21.25	-
3	23+777	1x20	2 x 21.25	-
4	24+515	1x16	2 x 21.25	-
5	26+639	1x16	2 x 21.25	-
6	27+417	1x18	2 x 21.25	-
7	31+905	1x16	2 x 21.25	-
8	32-781	1x20	2 x 21.25	-
9	32-831	1x16	2 x 21.25	-
10	37-283	1x16	2 x 21.25	-
11	37+744	1x30	2 x 21.25	-
12	38-960	1x18	2 x 21.25	-
13	40+514	1x35	2 x 21.25	-
14	41+950	1x16	2 x 21.25	-

7.3.3 The railings of existing bridges shall be replaced by crash barriers at the following locations: Nil

7.3.4 Repair/replacements of railing/parapets of the existing bridges shall be undertaken as follows: Nil

7.3.5 **Drainage system for bridge decks**

An effective drainage system for bridge decks shall be provided as specified in paragraph 9.80 of the IRC:SP:99-2013

7.3.6 Structures in marine environment: Nil

7.4 **Rail-road bridges**

7.4.1 Design, construction and detailing of ROB/RUB shall be as specified in section 6 of the IRC:SP 99 2013

7.4.2 Road over bridges (road over rail) shall be provided at the following locations, as per GAD drawings attached:

7.4.3 Road under bridges (road under railway line) shall be provided at the following level crossings, as per GAD drawings attached: Nil

S. No.	Design Chainage	Proposed Span Arrangement (m)	Name of crossing (m)	Total Width (m)
NIL				

**7.5 Grade separated structures**

The grade separator shall be provided as specified at para 2.7 of Annex-I of Schedule B

**7.6 Repairs and strengthening of Bridge/Structures**

The existing structures to be repaired/strengthened, and the nature and extent of repairs/strengthening required. Nil

**7.7 List of Major Bridges and Structures**

The following is the list of the Major Bridges and Structures:

S. No.	Name of the Structure	Total Numbers
1	ROB	NIL
2	Major Bridge	2
3	Major Bridge cum LVUP	Nil
4	Minor Bridge	14
8	SVUP	15
9	Flyover	4
10	VUP	2
11	VOP	Nil
12	LVUP	5
13	Interchange	1
14	Culverts	21

**8. Traffic control devices and road safety works**

8.1 Traffic control devices and road safety works shall be provided in accordance with Section 10 of the IRC:SP-99-2013.

**(a) Traffic Signs:**

Traffic signs include roadside signs, overhead signs and curb mounted signs along the entire Project Highway.

**(b) Pavement Marking:**

Pavement markings shall cover road marking for the entire Project Highway.

**(c) Safety Barrier:**

Provision of Three-beam crash barrier for a minimum length of 66.44 Km along the project highway shall be provided at the high embankment locations and details to be prepared as per site requirement in consultation with the Authority Engineer.

8.2 Sheet piling shall be provided in accordance with section 10.2.5 of the IRC:SP-99-2013.



## 9. Roadside furniture

- 9.1 Roadside furniture like km/Hectometer Stones, Railings, Traffic Impact Attenuators, Delineators shall be provided in accordance with the provisions of Section 10 and Section 12 of IRC:SP:99-2017.

S. No.	Project Facility	Location	Design Requirements
1	Traffic Signs and Pavement Markings	Entire length of project road	As per Schedule D
2	Kilometer and 200m stones	Entire length of project road	As per Schedule D
3	Road side Delineators	Horizontal curves of project road	As per Schedule D

- a) Road Boundary Wall shall be constructed as specified in Ministry Circular No. RW/NH-24036/27/2010-PPP dated 25.04.2018.
- b) Overhead Traffic Signs (excluding overhead signs at Toll Plaza): Location and Size

SN	Type of Sign	Numbers	Dimension
1	One Way Object Hazard Marker (OHM)	132	Width: 300mm Height: 900 mm
2	Height restriction (regulatory signs)	50	Diameter: 1200 mm
3	Speed Limit Signs (Regulatory Signs)	14	Diameter: 1200 mm
4	Merging Traffic Ahead (Cautionary Sign)	6	Diameter: 1200 mm
5	Two Way Object Hazard Marker (OHM)	6	Width: 450mm Height: 900 mm
6	Compulsory Keep Right Sign	5	Diameter: 1200 mm
7	U-Turn Prohibited Sign (at merging section of intersections)	4	Diameter: 1200 mm
8	Give way sign (Regulatory Signs)	10	Side, 1200 mm
9	Double Chevron Marker (at roundabout)	6	Width: 1550mm Height: 600 mm

## Overhead cantilever sign at KMP Interchange (Ch 19+800):

S. No.	Description/Type of Sign	Nos.	Location
1	Advance Directional Sign	2	19+700
			20+800

## Overhead cantilever sign at Rest Area (LHS Ch. 33-950):

S. No.	Description/Type of Sign	Nos.	Location
1	Rest Area information Sign	2	33+700
			33+200

## Overhead cantilever sign at Rest Area (RHS Ch. 34+015):

S. No.	Description/Type of Sign	Nos.	Location
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Construction of Express Lane divided interchange by starting before KMP Expressway and ends at Ch. 47+000 near Khamper Ghati (Ch. 47+000) section of Delhi - Padaraun Greenfield Alignment (NH-148N, an EPC Mode under Bharatmala Pariyojana in the State of Haryana





1	Rest Area information Sign	2	34+700
			36+200

**Overhead Gantry sign:**

S No.	Description/Type of Sign	Nos.	Location
1	Directional Sign (Supplementary)	6	20+400
			24+400
			30+600
			34+400
			40+100
			44+400

**10. Compulsory Afforestation**

Minimum 12,000 no. of trees are required to be planted by the contractor as compensatory afforestation in accordance with IRC:SP-99-2013 keeping in view IRC:SP-21-2009. Any increase in no. of trees shall not be treated as change of scope, save and except any variations arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.

**11. Hazardous Locations**

Safety barriers shall be provided at the following hazardous location in consultation with the NHAI/Authority Engineer.

Nil

**12. Toe Wall and Retaining Walls**

Retaining walls and protection works shall be provided at locations as indicated below and as provided in TCS schedule in cl. 2.8 of schedule-B.

S. No.	Design Chainage (Km)		Side	Length (m)	Remarks
	From	To			
1	34+630	34+884	Both	255	Minimum height is 0.5m
2	34+900	34+980	Left	80	Water body

**Note:** Above Length and height of Toe Wall/ Retaining wall is tentative and minimum specified. The actual length of Toe Wall/ Retaining wall shall be determined by the Contractor in accordance with the IRC:SP-99-2013 requirements with approval from the Authority's Engineer. Any increase in the length and height specified in this Clause of Schedule-B shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.

**13. Special Requirements for Hill Roads**

Nil

**14. Diversion of Irrigation Canal**

Contractor shall shift the existing irrigation canal at the locations detailed below for construction of project highway. The typical cross section of the existing canal is enclosed at appendix B-4 for reference. The actual cross-section of canal to be shifted and length shall be as per the site requirement and approval of concerned irrigation authority and no change of scope shall be allowed on account of this, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.

S.No.	Design Chainage (Kms)		Side	Length (m)	Remarks
	From	To			
1	24+000	24+515	Right	515	
2	24+515	25+000	Left	485	
3	38+650	38+860	Right	210	
4	38+860	39+070	Left	210	

**15. Rainwater Harvesting**

As per Ministry of Environment and Forests Notification, New Delhi dated 14.01.1997 (as amended on 13.01.1998, 05.01.1999 & 6.11.2000), the construction of rain water harvesting structure is mandatory in and around Water Crisis area, notified by the Central Ground Water Board. The provision of rain water harvesting be executed as per requirement of IRC SP: 42-2014 and TRC SP: 50-2013.

**16. Change of Scope**

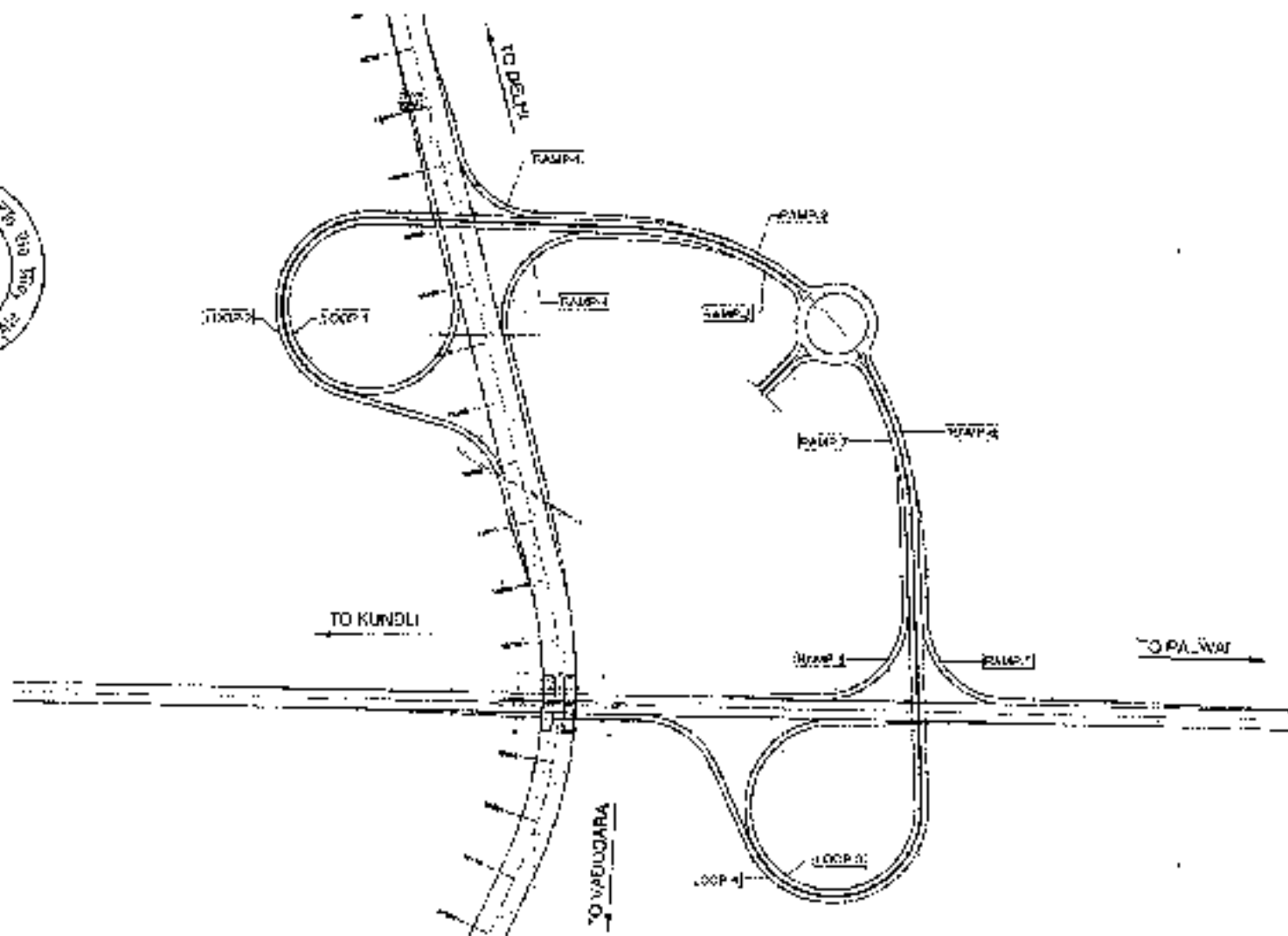
The length of Structures and bridges specified hereinabove shall be treated as an approximate assessment. The proposed span arrangement of above structures may be changed based on innovative design of structure, latest construction techniques and aesthetics of structures and the actual lengths of Structures and bridges as required on the basis of detailed investigations shall be determined by the Contractor in accordance with the Specifications and Standards. Any variations in the lengths specified in this Schedule-B shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.



Construction of Eight Lane divided carriageway starting before KMP Expressway and ends at Ch. 47+000 near Khatpur Ghati (Ch. 18+500 to Ch. 47+500) section of Delhi - Vadodara Greenfield Alignment (NH-148Y) on EPC Mode under Bharatmala Pariyojana in the State of Haryana

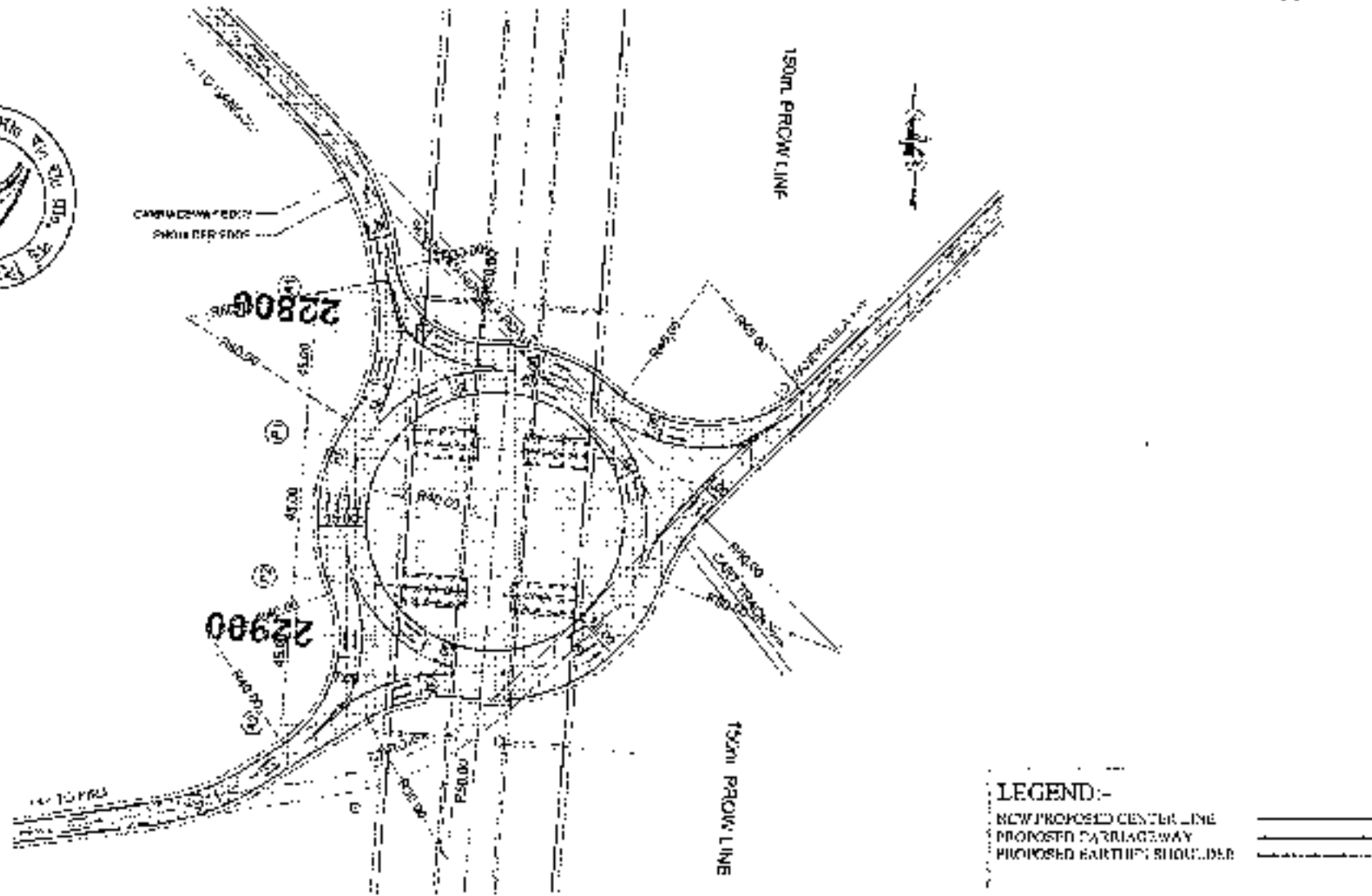


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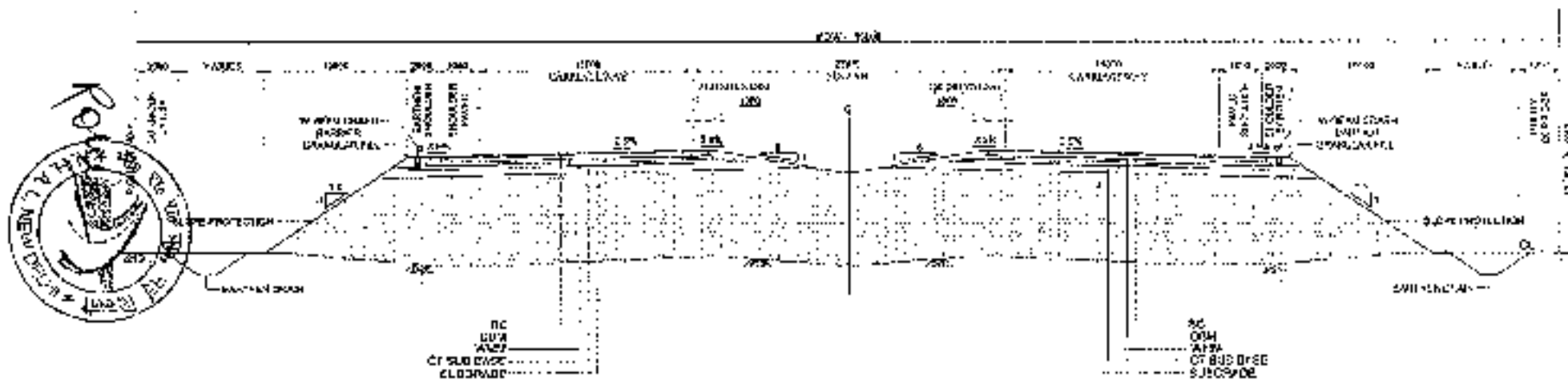


Construction of Eight Lane divided carriageway starting before RMP Expressway and ends at Ch 42-000 near Khanpur Ghat (Ch. 18+500 to Ch. 42+000) section of Delhi - Vadodara Greenfield Alignment (NH 148N) in EPC Mode under Bharatmala Pariyojana in the State of Haryana

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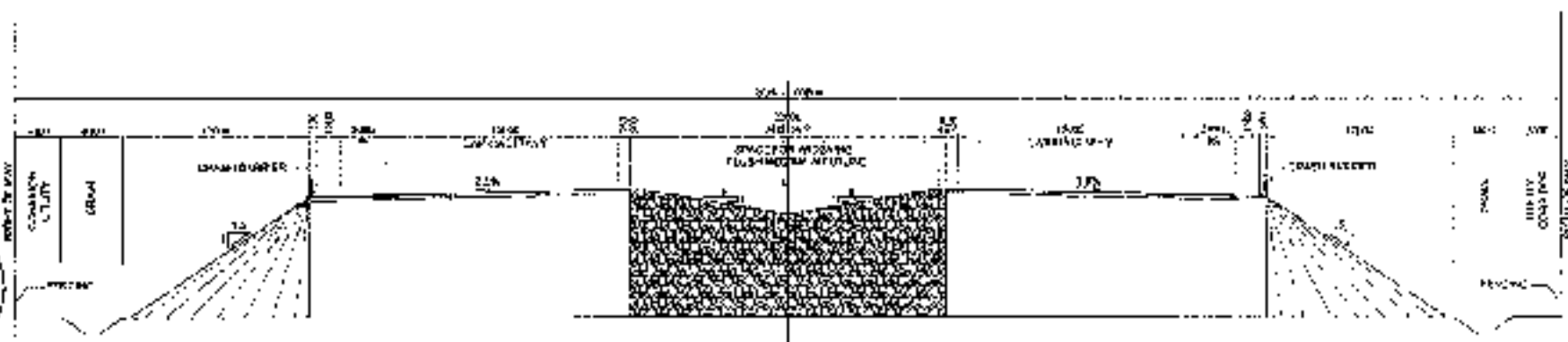


Construction of Eight Lane divided carriageway starting before KMP Expressway and ends at Ch. 47+000 near Khandar Ghah RA. 18+500 to Ch. 47+000 section of Delhi-Vadodra Greenfield Alignment (NH-198N) on FPC Mode under Bharatmala Pariyojana in the State of Rajasthan.



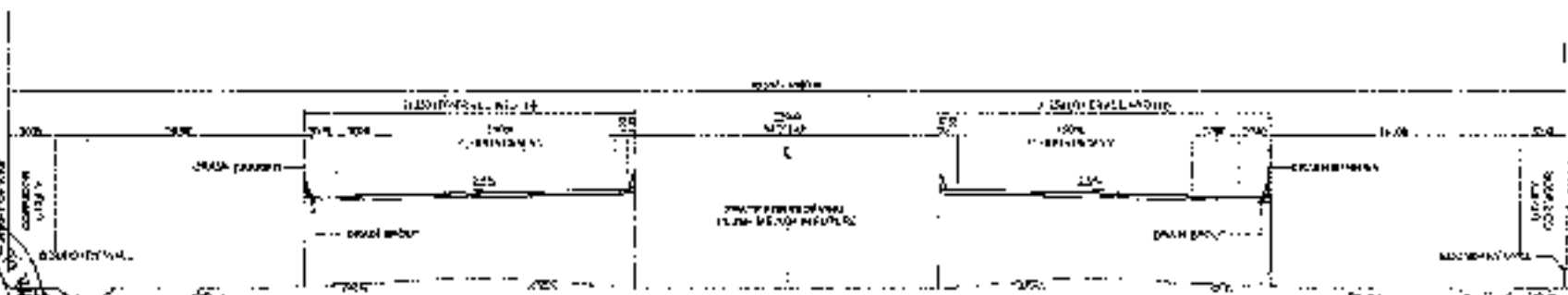
**TYPE-1 (STAGE-I)**  
**TYPICAL CROSS SECTION FOR 4 LANE (2x2) IN PLAIN & ROLLING TERRAIN**  
**WITH DEPRESSED MEDIAN**

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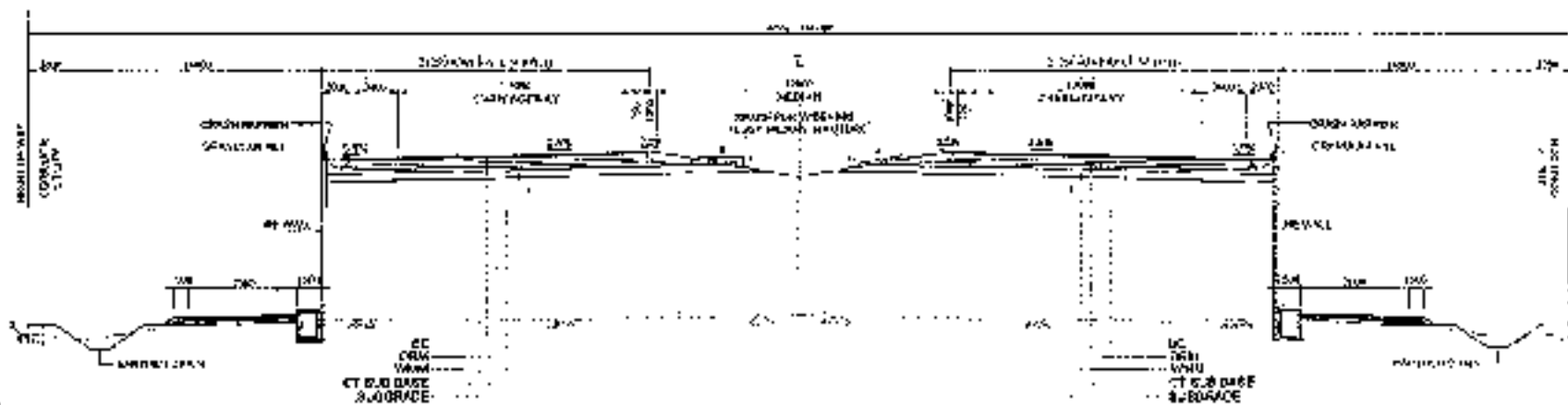
**TYPE-2 (STAGE-I)**  
**TYPICAL CROSS SECTION FOR 4 LANE (2x2) FOR V.L.P. S.V.P. L.V.P. FLYOVER**

100% of the above under consideration conditions in the case of flyovers



**TYPE-3 (STAGE-I)**  
**TYPICAL CROSS SECTION FOR 6 LANE (3+3) FOR MOE, MNB WITH DEPRESSED MEDIAN**

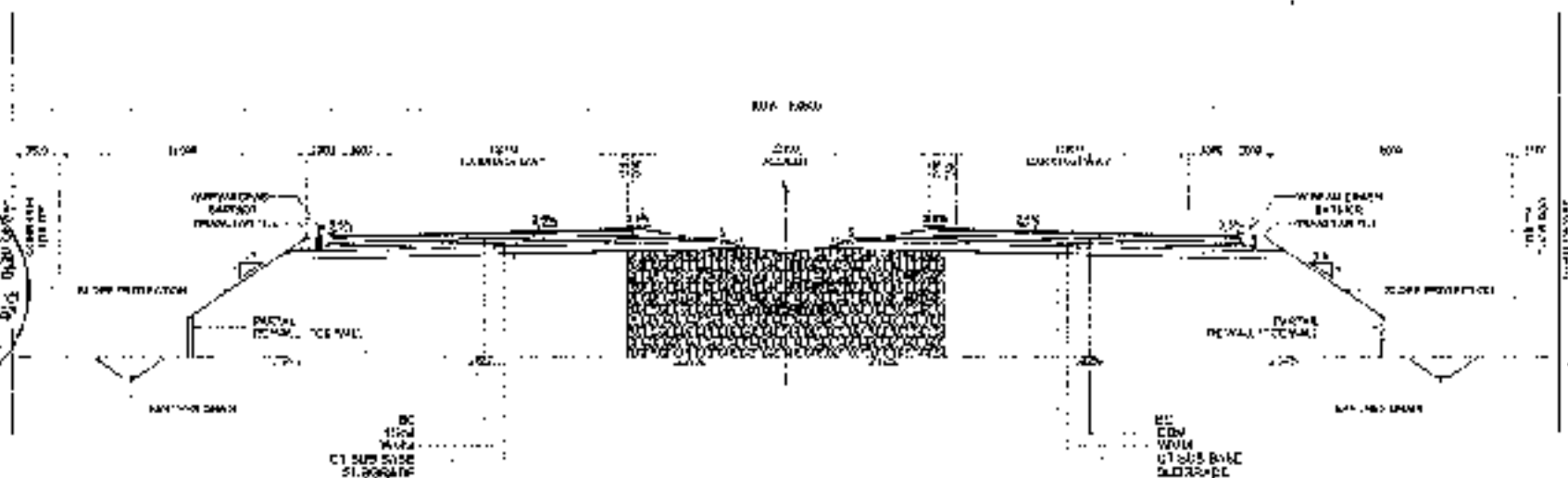
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**TYPE-4 (STAGE-I)**  
**TYPICAL CROSS SECTION FOR 8 LANE (4+4) IN PLAIN & ROLLING TERRAIN**



Construction of Eight Lane divided on highway starting before KMP Expressway and ends at Ch. 471096 near Khanpur Ghat (Ch. 461500 to Ch. 471050) section of Delhi - Vadodra Greenfield Alignment (NH-148B) on EPC Mode under Bharatmata Pariyojana in the State of Haryana



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**TYPE-S (STAGE-3)**  
**TYPICAL CROSS SECTION FOR 4 LANE (2x2) FOR VUP, SVLT, LVUP, FLYOVER/OTHER**  
**LOCATION WITH HIGH EMBANKMENT WITH DEPRESSED MEDIAN**



Construction of Eight Lane divided carriageway starting before KAP Expressway and ends at Ch 47-000 near Khanpur Ghazi (Ch 15+500 to Ch 47-000) section of Delhi - Faridkot Greenfield Alignment (N.T. 148A) of I.P. Medn under Bhankumari Pur, Ayana in the State of Haryana

**SCHEDULE C**  
*(See Clause 2.1)*  
**PROJECT FACILITIES**

- 1 **Project Facilities**
- 1.1 The Contractor shall construct the Project Facilities in accordance with the provisions of this Agreement. Such Project Facilities shall include:
- a) Toll plazas
  - b) Road side furniture
  - c) Operation and Maintenance Centers
  - d) Way side amenities / Service Areas
  - e) Smaller Parking Places with Toilet Facilities Service Area
  - f) Truck Parking Areas
  - g) Pedestrian Facilities/ Cattle Crossings
  - h) Lighting
  - i) Environmental Management Plan
  - j) Land Scaping and Tree Plantation
  - k) Advanced Traffic Management System (ATMS)
  - l) Utilities
  - m) Rain water harvesting
- 1.2 Project Facilities to be completed on or before project completion date have been described in Annex-I of this Schedule-C.



*Construction of Eight Lane divided carriageway starting before KMP Expressway and ends at Ch. 47+500 near Khamur Ghati (Ch. 18+500 to Ch. 47+000) section of Delhi - Yudhara Greenfield Alignment (NH-148N) on FPC Mode under Bharatmala Pariyojana in the State of Haryana*



**Annex - I**  
**(Schedule-C)**

**1 Project Facilities**

The Contractor shall construct the Project Facilities described in this Annex-I to form part of the Project Highway. The Project Facilities shall include:

- a) Toll plazas
- b) Road side furniture
- c) Operation and Maintenance Centers
- d) Way side amenities / Service Areas
- e) Smaller Parking Places with Toilet Facilities Service Area
- f) Truck Parking Areas
- g) Pedestrian Facilities/ Cattle Crossings
- h) Lighting
- i) Environmental Management Plan
- j) Land Scaping and Tree Plantation
- k) Advanced Traffic Management System (ATMS)
- l) Utilities
- m) Rain water harvesting

**2 Description of Project Facilities****2.1 Toll Plazas**

The Toll Plaza on main carriageway shall be provided as per Schedule D and minimum lane requirement in the opening year are as follows.

**Toll Plaza location and Minimum Lane Requirement in the Opening Year**

Chainage	Location	Direction (Entry: to highway, Exit: from Highway)	No. of toll lanes (Normal + ETC + Extra Wide)
35+500	On Main Carriageway	Entry	9+6+1
		Exit	9+6+1

Entry approach to each toll plaza shall be having Weigh in Motion equipment and tunnel shall be constructed for connecting toll booths and toll office for collection of toll fees as per Schedule D.

Based on the minimum toll lane requirement as given above, toll booths, toll plaza complex, weigh bridges, electrical systems, toll plaza and all other facilities required/mentioned in manual shall be provided as per Schedule D with approval from AIJ and NHAI. All the structures shall be RCC framed structure as per schedule D.

RE wall/Retaining wall shall be provided at toll plaza locations to restrict the embankment slope within the right of way.

No. of toll lanes specified above are minimum indicative. The Contractor shall design and provide toll lanes as per ITC:SP:99-2013 subject to minimum specified above. Any increase in



no. of toll lane shall not be treated as change of scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13

**2.2 Road side furniture**

**2.2.1 Kilometer and Hectometer Stones**

Kilometer and Hectometer stones shall be provided in accordance with **Schedule - D**.

**2.2.2 Road Signs.**

The Road Signs on Highway shall be provided in accordance with **Schedule - D**

**2.2.3 Road Marking**

The Road Marking on Highway shall be provided in accordance with **Schedule - D**.

**2.2.4 Road Delimiters**

The Road Delimiters on Highway shall be provided in accordance with **Schedule - D**

**2.2.5 Reflective Pavement Markers & Solar Studs**

The Reflective Pavement Markers & Solar Studs on Highway shall be provided in accordance with **Schedule - D**.

**2.2.6 Traffic Impact Attenuators**

The Traffic Impact Attenuators on Highway shall be provided in accordance with **Schedule - D**.

**2.2.7 Crash Barriers**

**Three Beam Steel Barriers**

Three beam metal crash barriers shall be provided in entire length on both sides of each main carriageway (i.e. on earthen shoulder of both side carriageway), Loops and Ramps excluding stretches covered by bridges and RE wall structures, where concrete barriers to be provided.

Concrete crash barriers shall be provided on bridges/structures, RE Walls/ retaining walls as specified in Schedule D.

**2.2.8 Boundary wall**

As the Highway is completely access controlled facility, boundary wall is its integral part to help enforcing of the acquired access rights.

Access control extends to the limits of the legal access control on the ramps i.e., along the ramps to the beginning of the taper on the local road

RCC boundary wall shall be provided along the entire length on either side (including transverse requirements at structure locations) in accordance with Schedule D and Guidelines vide circular No.RW/NI-24036/27/2010-PPP dated 25.04.2018.

**2.3 Operation and Maintenance centers**

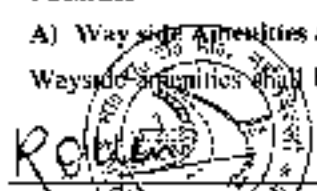
Dedicated operation and maintenance center shall be provided in accordance to Schedule D

**2.4 Way side Amenities / Service Areas**

**2.4.1 Facilities**

**A) Way side Amenities / Service Areas**

Wayside Amenities shall be a part of the Highway and shall be constructed with the minimum



facilities such as Parking areas (Trucks, Buses, Cars, Mini Buses), Fuel Station and garage for minor repair, Hotel/ Motel, Trauma Center, Rest Areas, Fast Food Centre, Travel Information Facilities, Toilets and Bath Facilities, space for Maintenance staff & Vehicle Service Station, Dormitory, Helipad, Generator room/ solar system area, Play Area & security personnel.

Separate area for Truck parking facilities to be provided in this way side amenity for truck parker. Truck parker to have separate Dhaba, Water Kiosk, weighing bridge, Motel, Toilet facility, Garage / workshop/ service centre as per schedule D

Wayside amenities of minimum about 37 Hectares shall be developed at the following location in accordance to Schedule - D. The layout with minimum number of units per facility and the minimum area per facility to be developed is given in Appendix C-1. However, the provisions given in Appendix C-1 shall be minimum.

Sl. No.	Location (Km)	Side
1	19+500	Left Side

**B) Smaller Parking places with Toilet Facilities Service Area**

Smaller parking area of about 1.10 hectares with Cafeteria/ Snacks corner, toilet facilities, fueling station and kiosks shall be constructed at the following locations in accordance to Schedule - D. The layout with minimum number of units per facility and the minimum area per facility to be developed is given in Appendix C-2. However, the provisions given in Appendix C-2 shall be minimum. The connecting Ramps from/to highway shall be provided as per Appendix C-2A.

Sl. No.	Location (Km)	Side
1	33+950	Left Side
2	34+015	Right Side

**2.4.2 Specifications and Standards for above facilities**

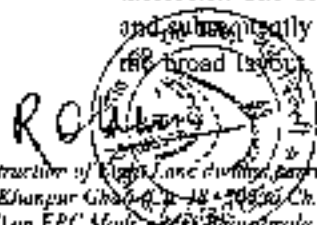
The Project shall be constructed in conformity with the Specifications and Standards specified in this schedule and Schedule-D.

**2.4.3 Scope of Work**

The project scope would include the following major activities:

**Design and Construction of the Project**

- (a) Geo-technical investigation
- (b) **Original Proposal** – The Contractor will be required to develop the detailed conceptual plan, layout plan, detailed architectural and structural designs, engineering drawings, construction methodology, quality assurance procedures, and the procurement, engineering and construction time schedule for all the areas and facilities forming a part of the Project using the basic layout plan provided by the Authority at the time of bidding and/or thereafter. The detailed development proposal for the site shall be submitted to the IE/AE and submitted to the Authority for approval. The Concessionaire shall not deviate from the broad layout, however the Concessionaire will be allowed to modify the site specific



- layout, subject to approval from the Authority, while developing at least the minimum areas and facilities for features marked as Mandatory in this Schedule.
- (c) The total covered area of the site after development of any facilities mentioned shall not be more than 20% of the total site area. For the Fuel station, the ground coverage shall be considered only for the actual area covered by the administrative buildings, equipment and other such objects and shall not include the open hardstand space for vehicle movement under the canopy.
  - (d) Review of all the site-specific information provided along with the bid documents carrying out necessary revisions or additions, preparation of all engineering drawings as required for proper execution and completion of the project as envisaged with the approval of the Authority in compliance with applicable local bye-laws, National Building Code and other standards mentioned in Schedule D. To save time and prevent wastage of effort, it is suggested that the Contractor gets the Line Plan of all the buildings in the Project reviewed by the Authority within 15 days of receiving the Letter of Award.
  - (e) Site Development, Procurement etc. for construction of the Project as per Design, Codes, Architectural and Engineering Drawings, complying all relevant codal provisions, Standards and Technical Specifications mentioned in schedule D. The Project shall include facilities specified above along with site boundary wall, roads / driveway, parking & pathway, roads marking and rumble strips / speed breakers for parking areas, septic tank/soakage well/sewer line, waste compost plant, water supply, storm water drain, street lighting with LED/CFL lamps, underground sump/overhead tank, firefighting, security features, HVAC, signage, landscaping, horticulture operations/ arboriculture etc., RO water plant, rainwater harvesting, provision for tube-bore wells & pumps including water tank, electrical substation / transformer, trenches / ducts for UG cables / pipeline, DG set, shading device, children play area, outdoor furniture, digital display wall system, solar power panel, provision for helipad, high mast lamp and hoarding board etc. Actual project facilities to be provided in a particular location will vary.
  - (f) Construction of modern user and environment friendly facilities as per the specifications approved by the Authority.  
The site shall be developed based on green design principles like GRIHA three star ratings for building norms, zero effluent discharge, use of recycled water, use of renewable energy system as an alternate source of power generation, bio-mechanization technology for generation of cooking gas, rainwater harvesting etc. to make the facility self-sustaining.
  - (g) **Fueling Station:** The Contractor shall establish the fuel station in the area earmarked for such fuel station and is required to fulfill the eligibility criteria as determined by the concerned Oil Marketing Companies (OMCs) for setting up of a fuel station with prior approval from Authority Engineer and NHAI.

#### 2.4.4 Project Facilities development

The Project Facilities may include the following activities; however the final detailed set of activities to be performed shall be submitted to the Authority Engineer and NHAI for approval prior to initiating development on the site:

Sl. No.	Description



Sl. No.	Description	
I (a)	<b>Site Development</b>	
	i. Site clearances & Area development	
	a. Leveling, Cutting & Filling Soil (Total Plot Area)	
	ii. 2. Cutting of Trees - As required to match site Specific Layouts.	
	b. Dismantling / Demolishing including disposal	
	c. Rerouting of ED, Water & Telephone Services (Above / Below Ground) including local liaising charges	
	d. Additional Felling/Cutting - To match levels indicated in the Site Specifications Drawings.	
	iii. 1. Construction of Retaining wall / Slope Stability Arrangements	
	2. Compound Wall, Fencing, Gate, Culvert & Kerbwall, Deceleration Zone, Acceleration Zone, Buffer Zone and Service / Access Road.	
	a. Compound Wall	
	b. Gate - Shall be provided for Entrance to Children Play Area	
	c. RCC Slab / Pipe Culvert (Outside the Premises)	
	d. Kerbwall - Parking Areas, Landscaping and Pathways	
	e. Bollards To be provided in front of Dhaba / Food Court / Restaurants / Kiosks	
	f. Access Road (outside the premises) / Approach road	
	g. Deceleration Zone (outside the premises)	
	h. Acceleration Zone (outside the premises)	
	i. Buffer Zone	
	j. Service Road (outside the premises) / Exit Road / Existing Service Roads including necessary crash barriers as per codes	
	I b.	<b>Services:-</b>
		i. Roads & Pathway as per MoRTH Specifications
	a. Roads / Driveway, Parking & Path way (BT / CC Paver Block). (All Driveway / Roads / Parking facing Dhaba / Food Court / Restaurants / and Kiosks within the premises shall be of CC Paver Blocks. All other areas inside the premises and approach roads outside premises shall be of BT.	

Sl. No.	Description
	<ul style="list-style-type: none"> <li>b. Roads Marking and Rumble Strips, Speed Breakers (Ready-made speed breakers with reflective arrow) for parking area.</li> </ul>
	ii. Sewer Line including Chambers, Manholes, Gully Trap, etc.
	iii. Water supply & Distribution System
	iv. Storm water drain with Gratings / Cover Slab
	v. External Electrical Works including Street Light
	vi. a. Underground Sump / RCC water Retaining Structures
	b. Fire Fighting
	vii. Signages:
	a. External Signages (Building Signages, Parking Signages, Prohibition Signages, Safety Signages, etc)
	b. Internal Signages
	c. Neon Signages
	d. Key Map Signages
	e. Highway Way finding Signages on the Main Road (on both sides of the project) - 1Km, 500m. and 100m
	f. Totem
	g. Frontlight / Backlight Facia for Food Court & Dhaba
<b>I c.</b>	<b>Landscaping And Arboriculture</b>
	a. Landscaping
	b. Horticulture Operations / Arboriculture
<b>II</b>	<b>Civil Work / Buildings (Including Internal services)</b>
	1. Food Court with Motel's - Capacity as indicated in Site Specific drawings
	2. a) Branded / AC Restaurant - As shown in Site Specific drawings
	3. Dhaba - As shown in the Site Specific drawings.
	4. Dormitory - As shown in the Site Specific drawings.
	5. Minor Repair shop - As shown in the Site Specific drawings.
	6. Trucks for misc. items - As shown in the Site Specific drawings.



Sl. No.	Description	
7	<b>Toilet Blocks</b>	
a	<b>Toilet Block (Near Food Court)</b> As shown in the Site Specific drawings. (The size of the Toilet Block shown is minimum required. The size may be increased retaining the same concept to accommodate more facilities by the Contractor at his own cost without reducing the parking facilities)	<b>Ladies Toilet:</b> IWC EWC Trough PC Toilet <b>Gents Toilet:</b> Urinals IWC EWC Trough PC Toilet
b	<b>Toilet Block (Car &amp; Bus user parking zone) - As shown in the Site-Specific drawings</b> (The size of the Toilet Block shown is minimum required. The size may be increased retaining the same concept to accommodate more facilities by the Contractor at his own cost without reducing the parking facilities)	<b>Ladies Toilet:</b> IWC EWC Trough <b>Gents Toilet:</b> Urinals IWC EWC Trough PC Toilet
c	<b>Toilet Block (Truck parking zone) - As shown in the Site-Specific drawings.</b> (The size of the Toilet Block shown is minimum required. The size may be increased retaining the same concept to accommodate more facilities by the Contractor at his own cost without reducing	<b>Ladies Toilet:</b> IWC EWC <b>Gents Toilet:</b>

*Reliance*




Sl. No.	Description
	the parking facilities)
	Urinals
	IWC
	EWC
	IWC
	FWC
	Trough
	Gents Toilet:
	Urinals
	IWC
	EWC
	Trough
	PC Toilet
9	Parking
	a) Car
	b) Car PC
	c) Bus
	d) Truck
	e) Trailer
III	Furniture & Fixtures
IV	Equipment
	a. Special Items of Work
	i. RO Water Plant
	ii. Rainwater Harvesting
	iii. Septic Tank & Soak Pit with Anaerobic Filter
	iv. Tube wells & pumps including overhead water tank and sump
	CCITV & Security system



Sl. No.	Description
	vi. Electrical substation/ Transformer / Panel Board, Earth pit / LT Switch Board / Panel Boards
	vii. Trenches/ Ducts for JO cables / Pipe line
	viii. DG Set(s)
	ix. Entertainment - Satellite TV & WIFI
	x. Shading Device As required for operations. (For certain openings / areas requiring protection from sun/rain. Shading device includes Awnings, Tension structures, etc.)
	xi. Outdoor Furniture
	xii. Children Play Area Developments
	xiii. Digital Display Wall System
	xiv. Advertisement Balloon
	xv. Helipad
	xvi. Solar Power Panel
	xvii. Hoarding Board
	xviii. High Mast Lamp & Lightning Arrester
	<b>b. Additional Green Building Features-</b>
	i. Solar Lighting
	ii. All Utility Connections, Deposits etc..
	iii. Provision for Cooking Gas from Food Waste
	<b>c. Other Equipments-</b>
	HYAC

### 2.5 Pedestrian Facilities / Cattle Crossings

Pedestrian/ Cattle Underpasses shall be provided at locations specified in Schedule - B.

### 2.6 Lighting

The Concessionaire shall provide lighting as per Schedule - D at following locations of the Project Highway.

- (i) Toll Plaza area

Construction of High Link Road starting from the existing before-EMD Expressway and ends at CH-47-61 near Kharque Dist (K-1) (K-2) (K-3) (K-4) section of Delhi - Gurgaon Greenfield Alignment (NH-149A) as EPC Mode under Bharatmala Programme in the State of Haryana

- (ii) Operation and maintenance centers
- (iii) Way side amenities / Service Areas
- (iv) Small parking places with toilet facilities
- (v) Truck Parking Areas
- (vi) Interchanges
- (vii) Flyovers
- (viii) Underpasses and Overpasses
- (ix) Traffic aid posts, vehicle rescue posts, medical aid posts and all other facility & service buildings
- (x) Interior illuminated signs
- (xi) Yellow flashing lights to alert drivers

In addition to the above locations the following locations shall be continuous Highway Lighting.

Sl. No.	Locations	Stretches	Remarks
1	Urban Areas	N/A	--
2	Stretches along Highway from start to end of approaches of all Service Areas (Way side amenities, Truck parking and smaller parking places with toilet facilities)	Locations as given in this Schedule C.	--

Minimum level illumination on locations of the Project Highway where exterior lighting is provided shall be 40 lux. In general code of practice for lighting of public thoroughfare IS 1944 shall be followed. All facility buildings shall be illuminated adequately.

The lighting fittings (with LED features) shall be powered by solar system with back up facilities (power and battery both) at all locations.

The solar system will be used for the entire highway. The solar panel at interchange toll plazas and bridges shall be grid connected whereas the other places shall be battery backup. The electrical connection with all its infrastructures shall be done by the contractor. Additional battery backup shall be provided.

## 2.7 Environmental Management Plan

The Contractor shall implement the Environmental Management plan & action Plan for undertaking possible mitigation measures in accordance with guidelines for Highway Projects of the Ministry of Environment and Forests and Wild life Department. The conditions & directions stipulated by the MOEF shall be made available by the Authority.

## 2.8 Land Scaping and Tree Plantation

The Contractor shall plant trees and shrubs of required numbers and types at the appropriate



Locations within Right of Way and in the land earmarked by the Authority for afforestation as per Schedule D at the following areas.

Sl. No.	Types of Plantation	Location (Km)	Remarks
1	Shrubs	In median except Structures	Ornamental type plantation shall be provided
2	Land Scaping	All interchanges/ Service Areas / Toll plazas / O & M Centers	Ornamental type plantation shall be provided
3	Plantations	Available open land within ROW	Minimum 60,000 nos. of trees of desired type in two rows @ 3 m c/c near edge of ROW on both side and three rows @ 3 m c/c on central median (As per Schedule D) preferably local varieties like Mango, Neem, Sheesham, Bahul, Peepal, Imli, etc. shall be planted

Drip irrigation system for median plantation by gravity/pressure sources with all necessary components / systems and emitting devices at plants shall be provided

The Contractor shall maintain the trees and shrubs in good condition during maintenance period as per the maintenance schedule.

#### 2.9 Advanced Traffic Management System (ATMS)

Advanced Traffic Management System (ATMS) shall be provided as per Schedule D as given in Schedule - B.

#### 2.10 Utilities

Provision of accommodating utilities shall be made within utility corridor on either side of Project Highway. Provision for crossing of Utility duct shall be provided as per manual.

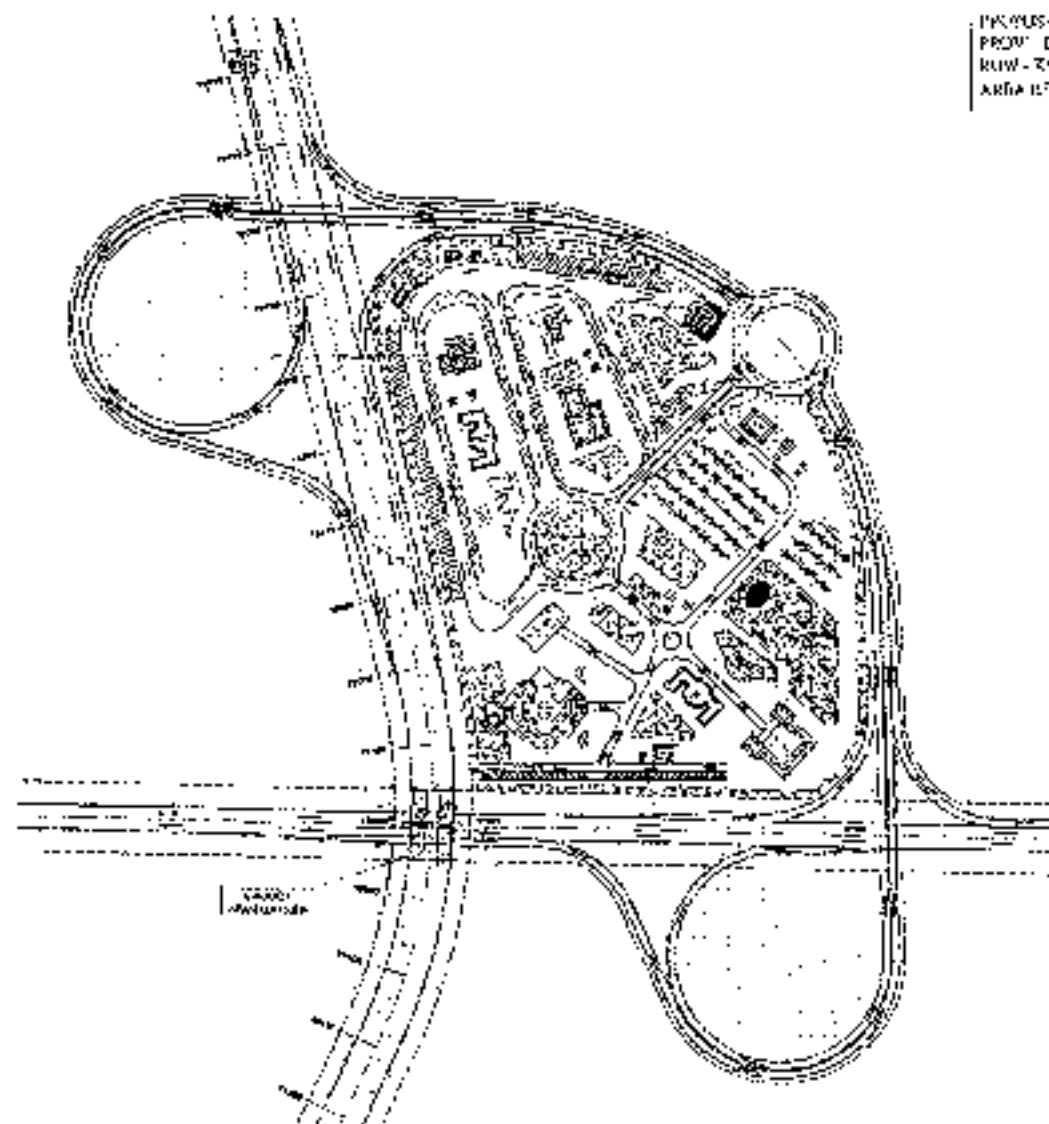
#### 2.12 Rain Water Harvesting

As per Ministry of Environment and Forests Notification, the construction of Rain Water harvesting structures is mandatory in and ground water crisis areas, notified by Central Ground Water Board.



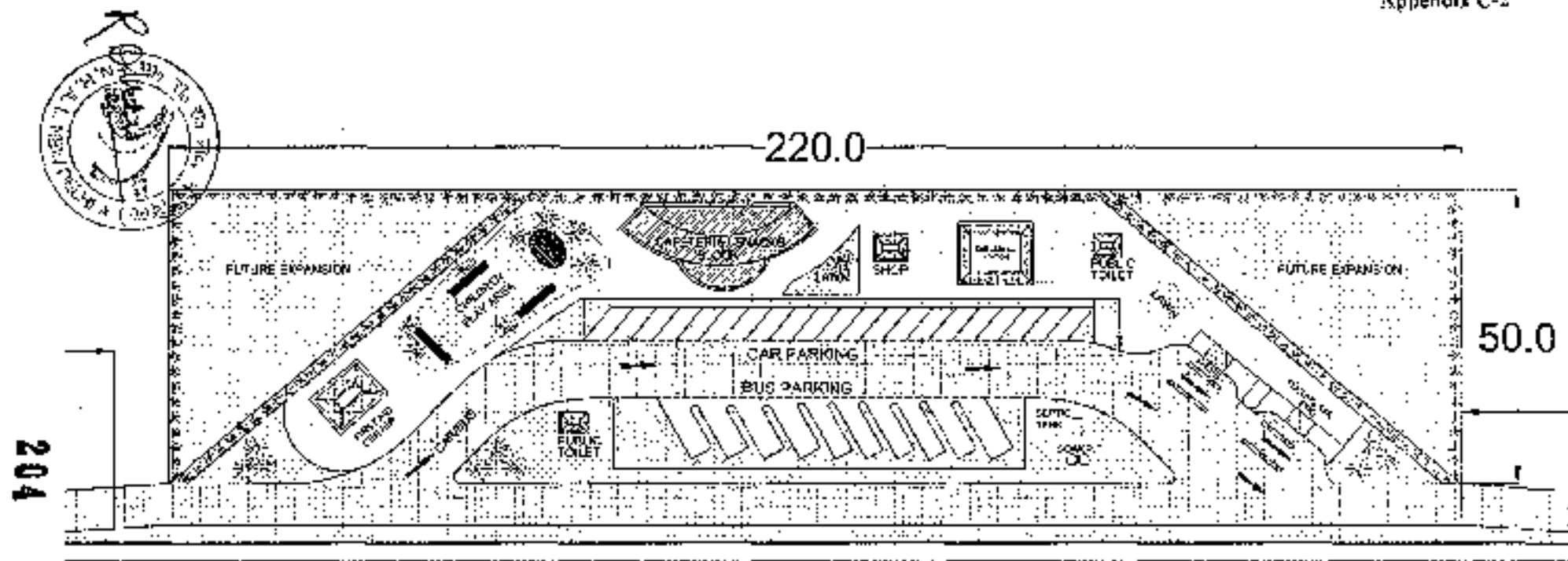
PROJECT  
PROV. DI  
R/W - 751  
AREA 15%

Appendix C-1

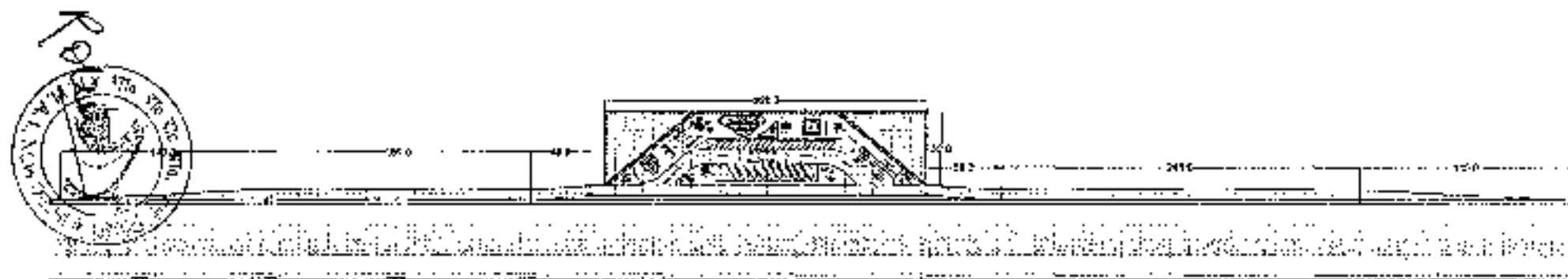


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Construction of Eight Lane divided carriageway starting before RMP Expressway and ends at Ch. 47-300 near Khanpur Ghata (Ch. 18-500 to Ch. 47+000) section of Delhi - Fodhala Greenfield Alignment (NIT-143N) on EPC Mode under Bharatnala Pariyojana in the State of Haryana



Construction of Eight Lane divided highway starting before KM<sup>2</sup> Expressway and ends at Ch. 47-000 near Khatwar Ghani (Ch. 15+500 to Ch. 47-900) section of Delhi - Vadodra Greenfield Alignment (01-1484) an EPC Mode under Bharatmala Pariyojana in the State of Haryana



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Construction of Light Lane at road carriageway starting before KMP Expressway and ends at Ch. 47+000 near Khampur Ghat (Ch. 18+500 to Ch. 47+000) section of Delhi - Faridkot Greenfield Alignment (NH-142N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana

**Corrigendum to Schedule:**  
**A, B & C**



# भारतीय राष्ट्रीय राजमार्ग प्राधिकरण

(सड़क परिवहन और राजमार्ग मंत्रालय)

## National Highways Authority of India

(Ministry of Road Transport and Highways)

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NHA/BM/Delhi/Vadodara/2018/Pkg 2

Dated: 02.11.2018

### Corrigendum-I

To

All applicants

Sub: Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghafi (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana - Reg.

The RFP, Technical Schedules and Plan and Profile from ch. km 33.000 to 35.000 as uploaded for the subject project have been amended and the amendment for the same is enclosed at Annex-A, B & D respectively.

2. The reply of pre-bid queries for the subject project has been enclosed at Annex-C
3. All other terms and conditions will remain same

*Rohin*  
2/11/18  
(Rohin Kumar Gupta)  
General Manager (T)  
Bharatmala





**Amendments in Technical Schedules**

**Schedule A**

**Clause 1.4: stands amended and shall be read as under:**

The alignment plans of the Project Highway are specified in Annex-III. The proposed levels (FRL) as indicated in the alignment plan shall be treated as an approximate assessment. The contractor shall design the Road Profile of the project highway based on site/design requirement mentioned in Schedule D.

**Annex-III (Schedule-A): stands amended and shall be read as under:**

**Alignment Plans:**

1. The alignment of the Project Highway is enclosed in alignment plan. Finished road level indicated in the alignment plan shall be treated as an approximate assessment. The contractor shall design the Road profile of the project highway based on site/design requirement mentioned in Schedule D
2. Traffic Signage plan of the Project Highway showing numbers & location of traffic signs is enclosed. The contractor shall, however, improve/upgrade upon the traffic signage plan as indicated in Annexure-III based on site/design requirement as per IRC: SP: 99-2013 & IRC: 67-2012.

**Schedule B**

**Clause 1: stands amended and shall be read as under:**

Development of the Project Highway shall include design and construction of the Project Highway as described in this Schedule-B and in Schedule-C. The alignment plans of the Project Highway are specified in Annex-III of Schedule A. The proposed profile of the project highway as indicated in the Annex-III of Schedule A shall be treated as an approximate assessment. Based on site/design requirement, the Contractor shall design the alignment plans and profiles of the project highway based on site/design requirement mentioned in Schedule D with approval from the Authority's Engineer within the available Right of Way.

**Annexure-I of Schedule B**

**Para 2 under Description of the Project: stands amended and shall be read as under:**

The Project Highway shall follow the horizontal alignment shown in the plan specified in Annex III of Schedule-A, unless otherwise specified by the Authority. Notwithstanding anything to the contrary contained in this Agreement or IRC:SP:99-2013, the proposed profile of the project highway as indicated in the Annexure-III of Schedule-A shall be



treated as an approximate assessment. Based on site/design requirement, the Contractor shall design the alignment plans and profiles of the project highway based on site/design requirement mentioned in Schedule D with approval from the Authority's Engineer within the available Right of Way. The same shall not constitute a change of scope, save and except any variations arising out of a change of scope expressly undertaken in accordance with the provision of Article 13.

**Clause 2.6:** stands amended and shall be read as under.

Service Roads / Slip Roads shall be constructed at the locations and for the lengths indicated below:

Sl. No.	Location of Service Roads/Slip Roads (Design Chainage in Km)		Right Hand Side (RHS)/Left Hand Side) or Both Sides	Length (m)	Remarks
	From	To			
<b>A</b>	<b>Slip Road</b>				
1	33+630	34+590	LHS	960	7 m wide for wayside amenities
2	33+385	34+345	RHS	960	
3	34+622	35+100	Both side	478	7 m wide for Entry & Exit from Nuh-Hodal road

**Clause 4:** stands amended and shall be read as under:

Construction of new road embankment/cuttings shall conform to the Specifications and Standards given in section 4 of the IRC:SP:99-2013 and the specified cross sectional details. Notwithstanding anything to the contrary contained in this Agreement or IRC:SP:99-2013, the proposed profile of the project highway as indicated in the Annex-III of Schedule shall be treated as an approximate assessment. Based on site/design requirement, the Contractor shall design the alignment plans and profiles of the project highway based on site/design requirement mentioned in Schedule D with approval from the Authority's Engineer within the available Right of Way.

**Clause 5.3.2 Design Traffic:** stands amended and shall be read as under:

Notwithstanding anything to the contrary contained in this Agreement or the IRC:SP:99-2013, the Contractor shall design the pavement of main carriageway as long life perpetual flexible pavement while the pavement for connecting/service/slip road shall be designed for design traffic of 10 MSA.

In order to meet the intended functional requirement of respective pavement layers as well as compaction of heavy bituminous layers on main carriageway, the minimum thickness of respective pavement layers for main carriageway and connecting/ service/slip road shall, however, in no case be less than as given below:

**Main carriageway**



Pavement Composition	Pavement Type	Minimum Crust Thickness (mm)
Stone Matrix Asphalt (SMA) as wearing course	Perpetual	50
Bituminous base course		250
Non-bituminous base course		150
Sub-base course		200

**Connecting/Service/Slip road**

Pavement Composition	Pavement Type	Minimum Crust Thickness (mm)
Bituminous Concrete (BC) as wearing course	Flexible	40
Bituminous base course		50
Non-bituminous base course		250
Sub-base course		200

**Clause 9. Roadside furniture; Shall be read as under:**

- 9.1 Roadside furniture like km/Hectometer Stones, Railings, Traffic Impact Attenuators, Delineators shall be provided in accordance with the provisions of Section 10 & Section 12 of IRC:SP:992013 and Traffic Signage plan as indicated in Annexure-III of Schedule-A & deemed to be part of this Schedule-B.

S. No.	Project Facility	Location	Design Requirements
1	Traffic Signs and Pavement Markings	Entire length of project road	As per Schedule D
2	Kilometer and 200m stones	Entire length of project road	As per Schedule D
3	Road side Delineators	Horizontal curves of project road	As per Schedule D

- 9.2 RCC boundary wall shall be provided along the entire length on either side (including transverse requirements at structure locations) as per typical layout drawing enclosed with the bid documents.

- 9.3 Traffic Signs (excluding overhead signs at Toll Plaza): Traffic sign boards as per details given below shall be provided in the project highway as per road signage plan indicated in Annexure-III of Schedule-A and deemed to be part of this Schedule-B

Sl. No.	Type of Sign
1	One Way Object Hazard Marker (OHM)
2	Two Way Object Hazard Marker (OHM)
3	Height restriction (Regulatory Sign)
4	Speed Limit Signs (Regulatory Sign)
5	Merging Traffic Ahead (Cautionary Sign)
6	Compulsory Keep Left Sign (Regulatory Sign)
7	Compulsory Ahead Sign (Regulatory Sign)



8	U-Turn Prohibited Sign (Regulatory Sign)
9	Give way sign (Regulatory Sign)
10	Chevron Marker (At Curves)
11	Triple Chevron Marker (At roundabout)
12	Reassurance Sign (Direction & Place Identification Sign)
13	Roundabout Sign (Cautionary Sign)
14	Left/ Right Hand Curve (Cautionary Sign)
15	Expressway Route Marker Sign
16	Entry/ Exit Expressway Sign (Information Sign)
17	End of Expressway Sign
18	Map type Advance Direction Sign
19	Flag type Advance Direction Sign
20	Advance Directional Sign (Overhead Cantilever/ Gantry)
21	Rest Area Information Sign (Overhead Cantilever/ Gantry)
22	Slogan Gantry

**Note:** The numbers and location of Traffic Signages shown in Traffic Signage plan as indicated in Annexure-III of Schedule-A are tentative and minimum specified. The actual numbers and location of Traffic Signages shall be determined by the Contractor in accordance with the IRC:SP:99-2013 requirements with approval from the Authority's Engineer. Any increase in the number and type of road sign boards specified in this Clause of Schedule-B shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.



**SCHEDULE - D**  
(See Clause 1.1)  
**SPECIFICATIONS AND STANDARDS**

**1. Construction**

The Concessionaire shall comply with the Specifications and Standards set forth in Annex-I of this Schedule D for construction of the Project Highway;

**2. Design Standards**

The Expressway including Project Facilities shall conform to design requirements set out in the following documents.



Construction of Light Lane ~~Expressway~~ ~~Expressway~~ starting before KMP Expressway and ends at Ch. 47+000 near Charpa Ghat (Ch. 15+200 to Ch. 47+000) section of Delhi - Yamuna Greenfield Alignment (NH-148N) on EPC Mode under *Bhagatmala Pariyojana* in the State of Haryana

**Annex I**  
(Schedule-D)

**SPECIFICATIONS AND STANDARDS FOR EXPRESSWAYS**

**1 Manual of Specifications and Standards to apply**

Eight lanes of the Project Highway shall conform to the 'Manual of Specifications and Standards for Expressways' published as IRC: SP: 99-2013 with all amendments and additions till date. (Referred to as "Manuals" in this Schedule) and *MORTH Specifications for Road and Bridge Works (5<sup>th</sup> revision)*. Where the specification for a work is not given, Good Industry Practice shall be adopted to the satisfaction of the Authority Engineer & Independent Engineer.

**2 Deviations from the Manual**

Notwithstanding anything to the contrary contained in the aforesaid Manual, the Specifications and Standards shall apply to the Project Highway, and for purposes of this Agreement, the aforesaid Manual shall be deemed to be amended to the extent set forth below:

Sl. No.	Clause No.	Details of Item	Description of Deviation
1	2.5.1	Median	The median shall be as given in Schedule B (TCS) Median shall include 0.75m wide edge strip on each side, which shall have same pavement configuration of Main Carriageway as per Clause no. 2.5.3 of Manual.
2	2.10	Lateral & vertical clearance at PUP/CUP/LVUP	The lateral and vertical clearance of all Light vehicular underpasses, Pedestrian underpasses/ cattle underpasses shall be as given in Schedule B.
3	2.12.3	Connecting Roads	The location & width of the connecting roads shall be as specified in Schedule B
4	2.16	Typical Cross Section	The typical cross section shall be as given in Schedule B.
5	5.2	Type of Pavement	The type of pavement shall as specified in Schedule B.
6	6.3	Overall width of structures	The Overall Deck Configuration of all structures shall be as per Schedule B and all Road Over Bridges shall be as per the GAD approved by Railways Authority.
7	10.7.2 (b)	Median Barriers	An additional length of 25m Tmc beam metal crash barrier shall be provided on right side of entry approach for all open median structures shall be constructed.
8	10.7.1 (i(a))	Road side safety barriers	Three beam metal crash barriers shall be provided in entire length on both sides of each main carriageway (i.e. on median and on earthen shoulder of both carriageway), Jumps and Ramps excluding stretches covered by bridges and RB wall structures, where concrete barriers to be provided.

Construction of Four Lane Divided Carriageway Starting before KMP Expressway and ends at Ch. 47+000 near Khasara Chak, Ch. 47+300 to Ch. 47+500 section of Delhi - Faridkot Greenfield Alignment (NH-149N) on EPC Mode under the Public-Private Partnership in the State of Haryana

Sl. No.	Clause No.	Details of Item	Description of Deviation
9	15.2 (i)	Specifications of Lighting Table 15.1 Minimum Level of Illumination.	The average level of Illumination shall be 40 Lux.
10	2.11.2	Vertical Clearance at VOP	6.0m Vertical Clearance shall be provided at all VOP Cross road over Expressway.
11	4.2.2	Embankment Fill Side Slope	In fill section the embankment side slope shall be minimum 2(H): 1 (V). The embankment height >6m shall be designed in accordance with IRC: 75.
12	Section 11	Traffic Management System	Additional specification for Traffic Management System shall be as given in Annex D of Schedule D
13	Section 13	Project Facilities	The project facilities and building structures shall be constructed in accordance to Annex III, Annex IV and Annex V of this Schedule.
14		Addition of New Clause to Structures in Marine /Aggressive Environment	Additional protection measures shall be taken as per IRC- SP: 80 with all amendments considering all structures in Marine/Aggressive Environment.
15	12.4.17	Street lighting	Swaged steel tubular pole with swan neck shall be used for road side lighting conforming to IS 2715-1980 controlled by suitable digital time switch.

  
 Construction of Eight Lane Divided Dual Carriageway starting before KMP Expressway and ends at Ch. 47+000  
 near Kharapur Ghats (Ch. 47+000 to Ch. 47+500) section of Delhi - Vrindavan Greenfield Alignment (NH-145N) on JPC Mode under Bharatmala Pariyojana in the State of Haryana



**Annex II**  
*(Schedule-D)*

**ADVANCED TRAFFIC MANAGEMENT SYSTEMS (ATMS)**

The following Specifications and Standards shall be applied in addition to 'Manual on Specifications and Standards for Expressways' published as IRC: SP: 99-2013 with all amendments and additions till date.

**1. Advanced Traffic Management Systems (ATMS)**

**1.1 General**

The work would cover design, supply, installation, commissioning and/or operation and maintenance of Advance Traffic Management Systems (which is one of the components of Intelligent Transport Systems - ITS). The system would include out-door equipment including emergency call boxes, variable message sign systems, meteorological data system, close circuit TV camera (CCTV) system, traffic counting and classification system and transmission system. The indoor equipment would comprise a large display board, central computer (with Network Management System - NMS), CCTV monitor system, call centre system or management of emergency call boxes housed in a control centre with uninterrupted power supply. Any new technology, meeting the requirements specified in these specifications should not be excluded. The systems shall meet following objectives:

- Smooth and uninterrupted traffic flow
- Enhance road safety
- Real time information and guidance to users
- Emergency assistance round the clock
- Alerts for abnormal road and weather conditions
- Reduced journey time and inconvenience

**1.2 System Requirement**

ATMS shall provide the following facilities to Expressway users:

- make emergency calls to Control Centre in case of accidents, breakdown, fire and ambulance,
- pre-warn the Expressway users about unusual condition on the road.

ATMS shall provide the following information/data to traffic managers for efficient and effective handling of traffic.

- information regarding location of any incident, incoming calls, help required and messages to be passed to third parties.
- Information regarding traffic congestion, speed and weather conditions

ATMS shall provide the following controls to traffic managers:

- change the variable message signs from the Control Centre.
- mobilize the movement of ambulances, cranes & patrolling vehicles.

ATMS shall provide online recording and reviewing of the voice & visual information for record and analysis.

Value Added Systems in information dissemination to users of the Project, may be taken up in future. These shall include the following:

- (i) Value Added Systems in the form of real time information on traffic conditions, unusual events, congestion levels, weather conditions etc.; to facilitate project users as also the operator.

Through relevant websites including that for the Project SPV/Concessionaire



- (iii) Subscription based alert systems
- (iv) Dedicated TV channels pertaining to traffic movement
- (v) Tie ups with FM radio channels or creation of dedicated AM radio channel
- (vi) Dedicated Toll Free Telephone Systems

Note: Local language is emphasized in above systems.

The ATMS shall among many things comprise following sub-systems:

- i. Communication backbone
- ii. Emergency Communication System
- iii. Mobile Communication System
- iv. Variable Message Sign System
- v. Meteorological Data System
- vi. Automatic traffic counter-count-classifier system
- vii. Video Surveillance System
- viii. Video Incident Detection System (VIDS)
- ix. Central Control Room (CCR)
- x. Weigh in motion for axle load measurement
- xi. Power Supply System

These systems shall have outdoor equipment consisting of ECBs, VMS panels, weather sensors, traffic sensors, video camera etc. The outdoor equipment shall be connected to the control centre through transmission system, preferably comprising optical fibre cable, copper cable and interface equipment. There shall be one control centre per package and shall be located at any one of the toll plazas or administrative building and shall have monitoring equipment, on line information acquisition equipment, processing equipment etc. It shall also have graphic display board showing the highway and the locations of equipment and of incidents.

### 1.3 Emergency Call System

#### *Purpose and General Information*

This is a communication medium to be installed on the Expressway and to be used by the road users to make alarm call to the CCR in case of accidents & other problems on the expressway.

#### *Location*

ECB shall be installed every 2km on either side of the road with one unit directly across the road from the other i.e. two call boxes every 2km. It shall be placed along the left side of the carriage-way for each direction of travel or the verge adjacent to the hard shoulders. At each location one ECB shall be master and the other slave. The master ECB shall be equipped with fibre optic interface, solar panel, battery back-up and voice communication mechanism and shall also comply with all the requirements specified in this section for ECBS. The slave ECB shall be equipped at least with activation button, vandal sensing mechanism, call progress indication (LED), microphone, speakers in a weather proof housing. To discourage motorists who break down near the start or finish of the expressway from leaving it to obtain assistance, no telephones should be provided within the first and the last 300meters.

To achieve maximum visibility, care should be taken to avoid siting telephones near structures (e.g. bridge piers), particularly where these are close to the hard shoulder on left hand bends.

Based on the above policy and the site condition, the location of the ECBs can be adjusted within 10% variation, however, only with the consent of the NHA.

The optical fiber and splicing boxes shall be placed in the central median.

#### *Main Components*

Main components of the Emergency Call subsystem are:

#### *Field components:*

Construction of eight lane divided carriageway starting before NH-1 Expressway and ends at Ch. 471 600 near Khajuri Chokri, NH-106 to Ch. 477-000 section of Delhi - Vidyalaya Greenfield Alignment (NH-149N) on J.P. Road under Bharatwala Purijojana in the State of Haryana



- a. Emergency Call Box - Master and Slave units
- b. (Solar) power supply
- c. Ground rail for protection
2. CCR components
  - a. ECB server
  - b. Headphone, speaker and microphone (Answering Unit)
  - c. Voice recorder/logger
  - d. Application software
  - e. Database software

**Functional Specifications**

1. The system shall be connected to the CCR over the OFC backbone.
2. ECB shall have loud speaker, microphone, solar panel, and battery and activation button with LED indicating conversation. It shall be housed in vandal proof casing and operate in expressway noise levels with built in diagnostic features.
3. The road user just needs to press the push button on the ECB and shall be connected to the CCR. In case the CCR operator is busy, the user shall hear a recorded message and shall hold till he/she is connected. The Master unit shall be connected to the CCR over the communication backbone. The Slave unit shall be connected to the CCR through the Master unit.
4. The CCR can also call any specific ECB for testing/calling, in which case the ECB shall ring. The ring shall go off when someone presses the push button and connects to the CCR.
5. The ECB shall have the following features :
  - a. Vandal proof casing with tamper detection switch
  - b. Push button
  - c. Activation LED
  - d. Loud speaker
  - e. Microphone
  - f. Two way communication between ECB and CCR
  - g. Solar panel with batteries
6. ECB shall have hands free operation.
7. Each ECB shall have usage instructions in Hindi, English, Marathi and Gujarati pasted or printed on it along with graphical instructions.
8. Reflective stickers facing the motorist shall be pasted on the ECB indicating that it is a phone.
9. The CCR software shall manage the calls to and from the ECB.
10. The ECB shall have Ringing Tone to indicate progress of call when button is pressed; Confidence Tone to indicate call is still connected when on hold and recorded message if line is busy.
11. There shall be up to four programmable auto dial numbers associated with the push button. The ECB shall automatically dial subsequent numbers if the first number is busy or unavailable.
12. The ECB shall automatically end call when CCR telephone is disconnected.
13. All calls shall be recorded in the CCR voice logger/recorder along with date/time stamp. The voice recorder shall check for following minimum fault conditions :

Failure of recording electronics

Failure of storage media used for recording



- Excessive recoverable errors on the storage medium
  - Lack of activity on a channel
  - Constant activity on a channel
  - Constant ringing on channel (answered calls)
14. ECBs shall be programmable from the CCR and from the field by laptop.
  15. The system shall have in built diagnostics and shall be able to detect activation of tamper switch, mic/speaker faulty, line faulty, low DC voltage on line, cross talk and short circuit. Any diagnosed problem shall trigger an audio video alarm in the ECB server at CCR.
  16. The diagnosed problems shall be stored in the system as events in the CCR. It should be possible to draw and print report of all such events on time and event category basis. ECB software at CCR shall allow recording and storing of maintenance and corrective action of each event when it is resolved.
  17. ECB shall be powered by DC batteries which in turn shall be charged by solar panel. The battery shall support 7 days of operation (under normal circumstances) with minimum talk time of 90 minutes over 3 days in succession in case there is no sunlight for this period.
  18. The ECB shall have tamper resistant screw bits on the outside and shall be security locked. It shall not be possible to open the ECB with normal tools or keys.
  19. ECB foundation shall be concrete. Cables (communication/power) shall enter from the base of the ECB foundation.
  20. Each ECB pillar shall be numbered.
  21. The ECB mic/speaker shall be located 1-1.5m above ground.
  22. The system shall not permit cancellation of any call before answering.
  23. CCR Equipment
    - a. The CCR equipment shall consist of an ECB server with large TFT display screen and voice logger for recording of all calls. It shall be possible to play back any call by time specified. Playback should not interfere with record function. The screen shall show the map of the expressway with all Emergency telephones marked in accordance with their actual locations.
    - b. The GUI shall be user friendly. ECBs shall be displayed in grey colour icons on the screen. When a call is initiated, the icon shall turn green and blink. When the call is in progress, the icon shall be green and stationary. On-hold calls shall be displayed in orange blinking. Faulty ECBs shall be displayed in red, without blink.
    - c. The software shall have the following features:
      - i. password protected & accessible only with relevant passwords
      - ii. date logging with the currently logged user/ operator details
      - iii. different levels of authorization for logging into the system
      - iv. automatic Call location identification
      - v. call disconnection by operator only
      - vi. operator call back facility
      - vii. automatic testing facility running in the background at operator selectable intervals
      - viii. operator initiated ECB test facility
      - ix. facility for holding at least 10 calls from ECB's

The following shall be recorded by the system software:

- i. Time of incoming call.
- ii. Time of call answering

Construction of Right Lane Guided carriageway starting before RMP Expressway and ends at Ch. 47+500 near Kharanpatti (Ch. 305 to Ch. 47+000) section of Duiu. Vadodara Greenfield Alignment (NS-148N) on E.C. Model No. Shoratzala Pariyojana in the State of Gujarat

- iii. Time of call termination
  - iv. Time of fault occurrence
  - v. Time of happening of events
  - e. It shall be possible to :
    - i. connect to any of the Calls on Hold
    - ii. hang up the call
    - iii. put on Hold the currently connected call
    - iv. call back any of the ECBS
    - v. monitor faults and events
    - vi. send e-mail to defined personnel intimating them about emergency
  - f. It shall be possible to draw the following minimum reports for each ECB as well as all/selected ECBS :
    - i. Call count based on time period selection
    - ii. Average call duration
    - iii. Average waiting period for on-hold calls
    - iv. Unanswered calls (count)
    - v. Fault and diagnostics report
    - vi. Incident category-wise report
    - vii. The reports shall be tabular as well as graphical.
24. The following technical specifications are advised for ECBS. However the system integrator/operator can choose any other technology as long as other requirements are met.
- a) Working : Works on VoIP
  - b) Communication : Ethernet type over optic fiber
  - c) Power : 12/24V DC, solar powered max 10W
  - d) Audio output : >95dB
  - e) Microphone : unidirectional, noise cancellation type
  - f) Wind speed resistance : 180kmph
  - g) Mean Opinion Score : Min 4.0
25. ECB shall connect to the Outdoor Technical Cabinet Switch on optic fiber port/copper port (Ethernet may also be used, wherever feasible).
26. The ECB shall be vandal resistant in construction. It shall be made of stainless steel/ Aluminium alloy/ FRP
27. ECB components shall be corrosion resistant; PCBs shall be coated to prevent water, moisture and fungus.
28. Each ECB shall be protected against external EMI, lightning and static by adequate shielding and earthing. The enclosure shall be provided with a grounding lug for connection to ground wire.
29. ECB enclosure shall be IP65 rated and shall be vermin and rodent proof. Doors shall be with labyrinthine seal, butyl-rubber gaskets, security locks, and metal hinges in conformity with IINE20124 standard.
30. The ECB shall operate in full duplex mode and use signaling which is audible to the user.
31. It shall be possible to adjust the acoustic properties

1.4 Variable Message Signs (VMS)

### **Purpose and General Information**

Variable Message Signs (VMSs) are to be installed for conveying the traffic conditions ahead to the drivers on real time basis as well as to display messages to support national road safety campaigns. It may also include the variable traffic speed limit depending upon the requirements.

Variable message signs (VMSs) shall provide traveler information for warning, regulating, routing, and managing the traffic in order to improve the overall traffic flow. The philosophy is to inform the driver of impending conditions with up-to-date information. The overall goal of VMS application is to provide permanently located signs that can be programmed remotely to communicate with the drivers the necessary information such that the driver can choose or be directed to the most appropriate route. The VMSs shall be controlled from the main CCR. Based on requirement, the VMS may be fixed or portable in nature.

VMSs shall be used during the following conditions:

- **Recurring Conditions**

Mainly peak-period traffic congestion where demand exceeds capacity for relatively short periods of time.

- **Non-recurring Conditions**

Caused by random or unpredictable incidents. An "incident" is defined as any non-recurring event that causes a reduction of roadway capacity or an abnormal increase in demand. Such events include traffic crashes, disabled vehicles, spilled cargo, expressway maintenance and construction projects and adverse weather conditions.

### **VMS Usage Priorities**

VMS should be used whenever pertinent messages will assist motorists to make helpful decisions. If, however, a situation arises, which requires the usage of a specific VMS for more than one ongoing condition, the following priority criteria should be used for displaying messages, in the order listed:

- **Safety**

Any VMS message that is necessary to provide safety to the motoring public has the highest priority. Examples include failure of an expressway bridge, roadway or any major incident. In general, safety messages should be kept current and relate to a specific safety campaign. The period of time that a specific message is displayed for a safety campaign should be limited to a few weeks. Motorists tend to ignore messages that are displayed for long periods of time.

- **Roadway Closure**

The VMS message shall include motorists regarding the roadway (particular carriageway, lanes of the expressway or cross road) closure is important because such a closure directly affects the route a driver would take.

- **Minor Traffic Impact**

A pre-warning message shall generally be used for planned full closures of carriageway of particular part of the expressway. The message shall be displayed no more than four days prior to the closure, and shall be immediately replaced with an appropriate message when the closure commences.

- **Pre-Warning**

This category includes construction lane closures, blocking-incidents, and delay information.

- **Test**

Test messages may be used to sign operation for testing the operating system and prior to placing a VMS into service.

- **Public Service Information**

Public service information messages do not require the drivers to make any unexpected maneuvers with regards to upcoming traffic conditions. Some examples include "Buckle Up," "Speed Kills" and "Don't Drink and Drive."

Various situations where VMS would be appropriate are as below.

- Incident signs as accidents, traffic diversions, incident management, monitor road work (near at work) adverse weather and road conditions and operation with lane control signals;
- Traveler information such as display of road construction activity in near future, messages for testing of the system, and special events that effect the traffic flow;
- Public service announcements like messages relating to driver safety campaign.

#### Location

VMS shall be provided as per locations determined later. A general policy adopted for locating VMSs is to provide VMS at an average interval of 10km in each direction (not necessarily on the same gantry) to guide and forewarn the users about the traffic and weather conditions on the Expressway.

The most critical locations for installing permanent VMSs are in advance of interchanges or expressways where drivers can have the opportunity to take some action in response to messages displayed on VMSs. A VMS should not compete with existing roadway signs.

Drivers generally do not anticipate using a different route until they see and read a VMS message. Drivers who are traveling in the inside lanes need ample time to read the message and change lanes to exit.

In general, a VMS should be permanently installed at the following locations:

- Upstream from major decision points (e.g., exit ramps, freeway-to-freeway interchanges, or intersection of major routes that will allow drivers to take an alternate route).
- Upstream of bottlenecks, if any
- Where regional information concerning weather conditions such as fog, wind, or dust is essential.

The portable VMS can be mounted at the back of the truck or similar vehicle. The VMS sign mounted on truck could be powered by solar energy or battery.

The exact location shall be adjusted for the maximum utility to the users based on the site conditions, however, only with the consent of the NHAI.

#### Major Components

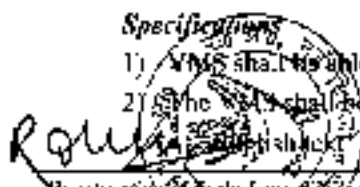
The design of the system will be modular except for the housing

Main components of the VMS subsystem shall be:

- Field components – consists of the sign module having:
  - a) VMS case
  - b) VMS sign (display modules)
  - c) Power supply
  - d) Diameter control (ambient light photo sensor system)
  - e) Microcontroller
- CCR components
  - a) VMS server
  - b) VMS Application software
  - c) VMS Database software

#### Specifications

- 1) VMS shall be able to display all colours.
- 2) The VMS shall be able to display the following:



Construction of Single Lane Divided carriageway starting before KMP Expressway and ends at LG 47+000 near Khanpur Ghat (NH-10) in Ch. 47 (500) section of Dehra - Vadodara Greenfield Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana

- Hindi text
  - Gujarati text
  - Marathi text
  - Numeric
  - Punctuation marks
  - Graphics
  - Preset messages – at least 10 preset messages shall be displayed and shall be able to change automatically and sequentially in programmable intervals of 1-10 minutes
- 3) The mounting structure to be provided for the VMS units shall be sturdy, aesthetically designed and capable of bearing wind loads at least up to 200 kN/m. The lowest hung part of the display board shall have vertical clearance of at least 5.5 m from the road level. It shall be provided with a walkway to allow at least 2 persons to carry out maintenance of the VMS without obstructing the carriageway. Safety barriers shall be provided at gantry support column (s) for their protection and for safety of road users. The concrete pedestal for support column should be flush with ground but in no case should protrude for more than 15 cm.
- 4) The minimum distance of VMS on an expressway should be 1.5 km. prior to decision point. The signs should be visible from a distance of 300m.
- 5) There should be clear distance between existing road sign and VMS. The minimum distance between road signs and VMS should be at least 250m.
- 6) The average driver of motorized vehicle at high rate of speed can comprehend two message panels. Each panel should be complete phrase and each phrase should be independent of the other. The messages should consist of:
- |  |                           |
|--|---------------------------|
| A problem statement                      | Road work/accident ahead  |
| An effect statement                      | Delay/congestion          |
| An attention statement for certain group | Motorist                  |
| An action statement                      | Take the next carriageway |
- 7) Software – The VMS application software shall be installed in the CCR and shall have the following features
- GUI display
  - Login/password protected access
  - Database for storing messages and history
  - Reports for – pre-configured messages, login time and user, date/time of display, fault history
- 8) Maintenance walkway shall be provided on the gantry at the rear of the sign- case. All component parts shall be easily and readily accessible by a single person for inspection and maintenance. There shall be room for a technician to work. The VMS should have in-built lighting to assist maintenance work during night.
- 9) Standards  
VMS shall be designed to comply to with the following protocols:
- EN 12966 parts 1,2 and 3
- 10) VMS shall be full matrix, one colour. It shall be made of modules and shall have equally spaced LED.
- 11) Text display – VMS shall be compliant to EN 12966 This includes the following for LED panel:

- Beam : B3
- Colour : C1
- Luminance : L3
- Temperature : T3
- Resistance to pollution : D3
- For wind pressure on enclosure refer EN 12899

12) Display specifications

Sign dimensions	:	Length 8000mm, height 2500mm
Pixel colour	:	True colour (36bit), text displayed in Amber colour
Pixel size	:	25mm
Pixel pitch	:	25mm
LED life	:	> 100,000 hours
Operating Voltage	:	AC 220V, 50Hz
Language	:	Hindi, English, Gujarati, Marathi
Character height	:	upto 450mm
Horizontal viewing angle	:	>80°
Viewing distance	:	15-306m
Ingress protection	:	IP65 for front (LED face); IP55 for rear
Communication	:	Serial, Ethernet, OPC

13) The LED Cluster shall consist of individual LEDs encapsulated in a resonated plastic housing proving protection to the elements under worst climatic conditions

14) The modules shall be individually addressable and field replaceable.

15) Failure of one LED module should not affect the output of any other.

16) The system design shall be such so as the display is legible from a distance of between 15m to 300 m in all weather and lighting conditions.

17) Elaborate Fault diagnostics shall be provided as per EN12966 or other equivalent international standards. Each pixel shall be monitored and feedback shall be provided for the healthy status. Minimum of following shall be provided :

- Power Failure at VMS
- Processor PCB Failure
- LED Cluster Failure
- Loss of incoming message / data not properly received.
- Temperature monitoring

18) The VMS shall withstand shock and vibration existing on the expressway.

19) Controller functionalities

- The controller unit shall provide brightness control facility. The intensity of the VMS shall have at least six levels and it shall select the correct level automatically depending on ambient light conditions. For this, the VMS shall have photo sensor and dimmer control.
- The controller unit shall provide the monitoring of ambient temperature of the housing.
- The controller shall be provided with a test port for local diagnostics via laptop

20) The VMS software should permit the following :

- Broadcast messages
- Specific address messages



- 21) It shall be possible to perform fault diagnostics from the central control room via the software.
- 22) Maintenance panels shall be provided on the rear of the housing.
- 23) Maintenance walkway shall be provided on the gantry at the rear of the sign case. All component parts shall be easily and readily accessible by a single person for inspection and maintenance. There shall be room for a technician to work. Access shall be made by entering the side of the housing. The housing shall be weather tight, and compliant to the NEMA 3R Standard. The bottom panel of the housing shall have a minimum of four drain holes, with snap-in, drain filter plug inserts.
- 24) Ventilation - The ventilation system shall be forced air. The system shall be designed to adequately cool the pixels from all sides along with the front and rear of the display module and all other internal components. The ventilation system shall have the following properties:
  - Positive pressure (exhaust fans are not acceptable).
  - The fans shall have ball or roller bearings, shall be permanently lubricated and shall require no periodic maintenance. The fans are to be positioned in such a manner so as to provide a balanced air flow to the ventilation system in the event of failure of any fan.

a) Sign-case

- All parts shall be made of corrosion resistant materials, such as plastic, stainless steel or aluminum. Painted steel is not acceptable. No self-tapping screws shall be used. The finish shall be matte black. The main body of the sign housing shall be constructed of aluminum with a natural mill finish. All exterior seams shall be continuously welded by an inert gas process, except for the coated fascia material. The sign-case shall be constructed of non-ferrous material to avoid rusting. The VMS sign-case shall have CFL lighting for maintenance during low light conditions.
- The performance of the sign, including the visibility and legibility of the display, shall not be impaired due to continuous vibration caused by wind, traffic or other factors.
- The angular alignment of the sign housing shall be adjustable in the vertical direction from (0 to 10 degrees) down in one-degree increments to optimize the viewing angle.
- The housing shall be capable to withstand the following conditions for Vibration Test
  1. Frequency range : 10- 50Hz
  2. Vibration amplitude : 0.35mm
  3. Duration of endurance : 20 sweeps cycle
  4. Duration at resonant frequency : 30 min: 1 min

The Gentries for the VMS shall be designed and the design shall be got approved from the NJAI. It includes all civil works like foundations etc, and shall be done as per relevant standards.

1.5 Automatic Traffic Counter-cum-Classifier (ATCC)

*Purpose and General Information*

- This system shall be used for identifying and recording all types of vehicles on the Expressway for effective monitoring and data collection at Control Centre. The system shall be capable of detecting and recording all types of vehicles plying on the Expressway.
- Besides the above vehicle classes, the system shall be capable of classifying any other vehicle categories as per need. Vehicle classification should be user selectable based on vehicle dimensions.

The system shall interface with the ATMS software for central monitoring.



**Location**

- ATCC is proposed to be installed at a suitable location. The final location may be adjusted as per the site condition, only with the consent of the NHAI/Traffic and Transportation expert.
- The ATCC cabinet shall be installed in median or on the side of the expressway at a distance of 2 to 3 meters from the soft shoulder.

**Major Components**

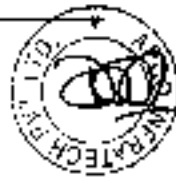
Main components are:

- a) Field components – consists of:
  - a. ATCC roadside cabinet / electronics/data logger
  - b. In road/non-intrusive sensors and cables
  - c. Field computer/laptop
  - d. Power supply
  - e. Lightning protection and earthing
- b) CCR components
  - a. ATCC server
  - b. Application software
  - c. Database software
  - d. Report printer

**Specifications**

- The ATCC should be designed for 8 lanes of traffic i.e. one cabinet/data logging unit should be able to record data for at least 8 lanes (4 in each direction)
- System shall use a combination of loop and piezo sensors or any other sensor mechanism (intrusive or non-intrusive) for correctly counting and classifying vehicles.
- Piezo sensor installation shall be in concrete. ASTM 1318-02 recommends a concrete pavement of 90mm (60mm before sensor and 30mm after) to ensure good accuracy.
- The ATCC shall detect all classes of vehicles as per toll classification scheme.
- One or more of the following information shall be generated by the ATCC for each lane to correctly count and classify the vehicle:
  - a. Vehicle length
  - b. Vehicle speed
  - c. Number of axles
  - d. Axle spacing
  - e. Axle load (WIM) and GVW
  - f. Vehicle profile
  - g. Vehicle image
  - h. Any other proven technology with the consent of the Engineer and NHAI
- 2. The ATCC shall provide the following additional information:
  - a. Occupancy
  - b. Headway
  - c. Gap
  - d. Average Speed
  - e. Flow rate
- c) Data logger (roadside electronics): The requisite number of entry and exit ports to communication system shall be provided. The logic unit shall be micro-processor based.

*Signature*  
Construction of EPC Link in the form of flyover starting before KMP Expressway and ends at Km. 47+000 near Khunpur, District, 180 Km from Ch. 47+000 section of Delhi - Yamuna Greenfield Alignment (NH-148B) on EPC Mode under Bid System in the State of Haryana



- The system shall be able to count and classify vehicle in each lane. There shall be an indication to display vehicle detection.
- d) Data logger shall have a Tamper Detection Alarm facility. Any effort to tamper with the data logger shall trigger an audio and visual alarm in the CCR.
  - e) Data collection: The system shall be capable of sending data to the ATMS Software which shall enable the Software to count and classify the vehicles, and provide other required information. Data collection shall be by RS232, RS422 or RS485 interface or IP connection.
  - f) Data Storage: The system should be able to upload data to the system as it occurs. The unit shall store data of at least two weeks in event of communication failure.
  - g) System Accuracy (@95% confidence), whichever is applicable
    - a. Vehicle length(m) :  $\pm 5\%$
    - b. Vehicle speed (kmph) :  $\pm 1.5\%$
    - c. Vehicle count(nos.) :  $\pm 1\%$
    - d. Number of axles (nos.) :  $\pm 2\%$
    - e. Axle spacing (m) :  $\pm 2\%$
    - f. Vehicle class :  $\pm 3\%$  for Class Car/Jeep/Van (of detected vehicles)  
 $\pm 5\%$  for Class LCV  
 $\pm 3\%$  for Class Truck/Bus (Two Axles)  
 $\pm 2\%$  for higher classes
    - g. Headway (in sec) :  $\pm 7\%$
    - h. Gap (cm) :  $\pm 8\%$
    - i. WIM accuracy :  $\pm 15\%$  on axle;  $\pm 10\%$  on GVW
    - j. Vehicle speed : 10-10% kmph
  - h) Coincidence detection (lane straddling): The ATCC shall be capable of determining and recording vehicles that straddle adjacent lanes. This reduces double counting of vehicles on sites where lane discipline is a problem.
  - i) Weather: The ATCC shall be capable of working with above mentioned accuracies, 24x7, in all weather conditions including heavy rain, dense fog and specified temperature range.
  - j) Reverse detection: The ATCC shall be capable of detecting and recording any vehicles traveling in reverse direction.
  - k) Data retrieval: The system shall be capable of data retrieval, direct data transfer through the Fiber Optic Network or locally through laptop.
  - l) Recording capability: The system shall have capability of recording vehicle counting and classification, speed, headway at set interval of 1-10 minutes.
  - m) Compatibility: The system shall have compatibility to transmit data over Optical Fiber Cable.
  - n) Fault monitoring : The system shall be capable of detecting and reporting the following fault events:
    - Mains power failure
    - Battery low voltage
    - Modem communication error
    - Laptop communication error
    - CPU reset
    - CPU failure
    - Sensor failure (for each sensor)



**Software**

The Application Software shall have the following features:

- It shall be GUI based
- The Opening Screen shall have password authentication.
- Communications Parameters setting
- Configuration Parameters setting
- Raw and Binned data Retrieval
- Vehicle by vehicle Real Time Traffic Display
- Diagnostic Functions – Status Test
- Vehicle Classification Configuration & Weight Limits

Specifications for OJK equipment

- Server – The server supplied shall be the latest available in the market at the time of supply. However, the minimum specifications are given in subsection on "Servers" under section "Miscellaneous Equipment".
  - Application Software
    - a. Shall be a single software for all data loggers in each package
    - b. Shall be Windows based
    - c. Shall have unlimited period use license for each package
    - d. All upgrades shall be free of cost.
    - e. Shall communicate to each data loggers in the field and
    - f. Shall be GUI based
    - g. Password protected
  - Database Software
    - a. Shall be password protected
    - b. records shall not be editable
    - c. Shall not be notepad, MS Word, Excel
  - Reports – system shall be able to generate reports. All reports can be time-wise, lane-wise, location-wise or total summary reports for all data loggers. The reports shall be in tabular and graphic forms. All reports shall be in metric units and decimal time format. The following are the minimum reports
    - a. Average Speed per Vehicle Category per Lane per Day
    - b. Traffic Volume per Vehicle Category per Lane per Day
    - c. Traffic Volume per Hour per Lane per Day
    - d. Axle Volume per Weight Band per Lane per Day
    - e. Volume (count) per Class per Lane
    - f. Average Speed per Class per Lane
    - g. Volume per Lane per Time Band
    - h. Volume per Speed Band per Lane
    - i. Overloaded Vehicles per Class per Lane
    - j. Average Speed per Category
    - k. Malfunction Management Report (fault report)
    - l. Traffic Volume by Category by Lane (binned data)
    - m. The reports shall be transferable to MS Excel and Acrobat pdf format.
- The calendar adjusted for leap years

**1.6 Video Surveillance System**

Construction of Video Surveillance System on viaduct starting before RMP Expressway and ends at Ch. 47+500 near Kharjuri Ghat, Km. 18-100 (Ch. 47+000) section of Delhi – Vadodra Greenfield Alignment (NH-143A) on EPC basis under Rajmimla Pariyojana in the State of Haryana



**Purpose and General Information**

The purpose of the Video surveillance system is to monitor specific areas of the expressway remotely from the CCR by use of cameras installed at such critical junctions. This shall help in managing incidents.

The system shall also record and store video for analysis and future reference.

**Major Components**

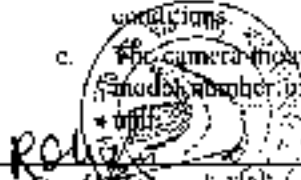
Major components are:

- Field components :
  - a) CCTV camera with housing
  - b) CCTV pole
  - c) Video transmission unit (encoder)
  - d) PTZ control
  - e) Power supply solar panel
  - f) Lightning protection and earthing
- CCR components
  - a) Server with OS
  - b) CCTV decoder/ switcher unit
  - c) PTZ control/joystick
  - d) Video Wall
  - e) DVR
  - f) Application software
  - g) Database software

**Functional Specifications**

- Camera
  - a. The CCTV shall be PTZ type video camera.
  - b. The Video Camera shall be of dome type to avoid pilferage, be resistant to vandalism and weather-proof. The dome shall be of smoked glass so that it shall not be possible to see the camera (inside the dome) from roadside.
  - c. PTZ Cameras shall have 6 or more pre-defined positions
  - d. The camera viewing distance of at least 1 km in each direction. The horizontal rotation shall be 360° continuous pan and vertical tilt shall be 90° down to 0° horizontal.
  - e. The video camera shall transmit a clear video even in low light and night conditions.
  - f. The camera and associated units shall be dust-proof and protected against water ingress.
  - g. The CCTV video camera roadside cabinet shall house the power supply system and video encoding and transmission equipment
  - h. CCTV video camera shall preferably run on solar power.
  - i. There must be a single encoder for each camera.
- Camera mounting
  - a. The camera shall be mounted on a properly designed pole of at least 10m height. The Video Camera mounting shall have easy accessibility for maintenance purposes while being protected from unauthorized access.
  - b. The mounting and equipment housing shall be able to withstand adverse weather conditions.
  - c. The camera mount should be of the same make as that of camera and suitable for the standard number offered as specified by the manufacturer and should be an integrated

*Construction of NH-104 from Delhi to Meerut via Gurgaon, Faridkot, Sonapat, and Meerut at Ch. 47+000 near Khajuro Ghat, NH-104 to Ch. 47+000, section of Delhi - Varanasi Greenfield Alignment (NH-104) on E.P. Mode under Bhavamaia Parayana in the State of Haryana*



- d. Should support the weight of camera and accessories in a wind speed of 180kmph (min).
- Camera control & display
  - a. The camera images from all cameras shall be transmitted to the CCR for monitoring and storage
  - b. All CCTV cameras shall be controlled by the CCR operator. Each camera shall be individually selectable and also the Pan, Tilt and Zoom functions for each camera.
  - c. The CCR shall have the facility to decode the video, record the video, display live and recorded video on a large video display and have PTZ controls.
  - d. The video from CCTV video cameras shall be viewed in the CCR on a video wall. The video wall shall be formed of expandable modules. The system shall allow CCR operator to blow individual images to fit the entire screen or any other size.
  - e. The CCTV video shall be recorded in the CCR in a DVR or computer
  - f. Privacy Zone Masking: the camera software shall blocks scenes/areas that should not be displayed.
  - g. The CCR shall be designed in a way to ergonomically seat the CCR operators. There shall be one operator for every 6 video images.
  - h. System to have facility of additional camera installation beyond the originally planned capacity.
- CCTV software and recording
  - a. The CCR shall have a server with latest specifications for image processing, control and display.
  - b. System shall be triplex i.e. it should provide facility of Viewing, Recording & Replay simultaneously.
  - c. CCR shall have facility to record all videos from all simultaneously and store at least 30 days of video. This may be done by a separate DVR or recording on the hard disk of the server. System shall have provision to automatically over-write the new information after the period of 30/31 days (First In First Out)
  - d. The old recording shall be overwritten by new recording after 30 days
  - e. The CCR Server shall have application software to control PTZ functions, select individual camera, playback video. It shall have access control (through password/login) so that no unauthorized person may view/edit any videos.
  - f. The software should be able to control all cameras i.e. PTZ control, Iris control, auto/manual focus, and color balance of camera, Selection of presets, Video tour selection etc.
  - g. The System should ensure that once recorded, the video cannot be altered, ensuring the audit trail is intact for evidential purposes.
  - h. System must provide built-in facility of watermarking or Digital certificate to ensure tamperproof recording so that these can be used as evidence at a later date, if so desired. The recording shall support audit trail feature.
  - i. The OS shall be off the shelf, preferably Windows.
  - j. The offered system shall have facility to export the desired portion of clipping (from a desired date/time to another desired date/time) on CD or DVD. Viewing of this recording shall be possible on standard PC using standard software like windows media player etc.
  - k. The software is required to generate reports of stored device configuration.
  - l. The system shall provide User activity log (audit trail) with user id, time stamp, and action performed, etc.



- m. The administrator should be able to add, edit & delete users with rights. It shall be possible to view ability / rights of each user of the cameras which can be viewed & controlled as per the permission assigned by the administrator.
  - n. The software for Employees should also be working on a browser based system for remote users. This will allow any authorized user to view the video of any desired camera on his monitor.
  - o. Retrieval: The CCTV application should allow retrieval of data instantaneously at any date / time interval chosen through search functionality of the application software. In case data is older than 30 days and available, the retrieval should be possible. The system should also allow for backup of specific data on any drives like CD/DVD/Blu ray Recorders or any other device in a format which can be replayed through a standard PC based software. Log of any such activity should be maintained by the system which can be audited at a later date.
  - p. Backup: Online backup should be maintained to protect against storage failure.
- Power
    - a. Surveillance CCTV System shall operate on 230 V, 50 Hz single phase power supply.
    - b. Power for all the equipment will be conditioned using on-line UPS with minimum 30minutes back up.
    - c. If any equipment operates on any voltage other than the supply voltage and supply frequency, necessary conversion/correction device for supply shall be supplied along with the equipment

## **1.7 Mobile Radio Communication System**

### ***Purpose and General information***

This Specification lays down the General, Functional and Technical requirements of Mobile Radio Communication System (MRCS) to be used as a sub-system of the Advanced Traffic Management System. All communication shall be to and from the CCR. The frequency band of operation is envisaged to be in the VHF band.

Mobile sets shall be installed in patrol vehicles, cranes and ambulances and shall communicate with CCR and also among themselves. The system shall use a pair of frequencies to be allotted to the concessionaire with the approval of relevant government bodies.

### ***Major Components***

The MRCS shall comprise of:

- Base Station Unit
  - Repeater Unit
  - Mobile Radio Unit
  - Control Centre Equipment
  - Rack
- a) **Base Station Unit:**
    - Transmitter
    - Receiver
    - Antenna with tower/mast
    - Switch
    - Radio Engineering terminal
    - Radio Operator terminal
    - Power Supply
  - b) **Repeater Unit:**
    - Transmitter



- Receiver
- Antenna with tower/mast
- Repeater
- Power Supply
- e) **Mobile Radio Unit:**
  - Transmitter
  - Receiver
  - Antenna with tower/mast
  - Control Unit
  - Power Supply
- d) **Control Centre Equipment:**
  - Network Management System
  - Headphone and microphone
  - Voice recorder (optional)

**Specifications**

- 1) The system shall establish voice communication on radio between the Control Centre and the emergency mobile vehicles such as ambulances, cranes & patrolling vehicles.
- 2) The system shall cover the entire route.
- 3) The topology of the communication system shall be cell centre (Repeater System).
- 4) All the Repeaters and Control Station shall be connected via Optical Fiber Cable (OFC) backbone or Fibernet port
- 5) There shall be minimum distortion in overlap areas of two towers
- 6) All communication shall be half duplex
- 7) The system shall use one pair of VHF frequency allocated by WPC. In case two pairs are allocated, they may be reused in alternate sections
- 8) The network shall be laid such that all the field mobiles are approachable to at least one Repeater.
- 9) The system design shall be modular in nature and easily configurable through on site programming.
- 10) The system shall have voice logger at the CCR to record all calls
- 11) The system shall have Operator PC and microphone & speaker for the CCR operator.
- 12) The system design shall be modular in concept.
- 13) The radio base/repeater units shall be connected over OFC.
- 14) The system shall have the following features:
  - Operate in half or full duplex mode
  - Operate in VHF preferably using one pair of frequency (i.e. two frequencies- one RX and one TX). If only one frequency is available, half duplex mode is acceptable.
  - Programmable VOX operation.
  - CCR / DTMF tones for Mobile to Repeater Communications.
  - Mobile/handheld to mobile/handheld communication.
  - Mobile/handheld to CCR communication
  - CCR to Mobile/handheld communication.
  - Group call communication
  - Broad Cast Communication







- Call Limit Timer
  - Digital display on mobile units
  - GPC connectivity. The mobile radio shall be integrated with the Fibre Optic Communication system.
  - PTT (Push To Talk)
- 15) The system shall work satisfactorily under adverse conditions like storm, rain, and vandalism resistant. The system shall be compact & rugged in design having ease of maintenance.
- 16) The system shall neither affect functioning of other telecom equipment installed adjacent or along it, nor get affected by the presence of other equipment/systems.
- 17) The Mobile Radio shall have provision for mounting the mobile set on ambulances, cranes and patrolling vehicles.
- 18) The walkie-talkies shall work on re-chargeable batteries with 24 hrs back-up. Mobile sets shall derive power from battery of the vehicle in which installed.
- 19) The equipment shall have facility to configure the network for individual, sub-group or broadcast mode of operation for both selective calling and group calling operation.
- 20) The system shall have the facility to terminate the mobile to mobile connection under the following conditions.
- One of the two parties hangs up
  - One of the two parties receives a call from the Control Centre
  - The duration of the conversation exceeds 5-minute limit

### 1.8 Meteorological Data System

#### *Purpose and General Information*

##### **Purpose**

The Meteorological Data System shall be capable of providing data regarding weather including Air Pollution parameters, atmospheric temperature, humidity, visibility, wind speed & direction. The information based on these data shall be made available to the road users through VMS so that they are forewarned of the weather conditions on the expressway.

##### **Air Quality Index (AQI):**

An Air Quality Index (AQI) has been developed by Central Pollution Control Board based on the dose-response relationship of various pollutants. This is called Indian AQI or IND-AQI (for India)

A minimum number of three pollutant parameters (Suspended Particulate Matter (SPM), Sulphur Dioxide (SO<sub>2</sub>) and Nitrogen Dioxide (NO<sub>2</sub>) are essential to calculate the AQI. Any additional information on other pollutants such as Respirable Particulate Matter (RSPM or PM<sub>10</sub>), Carbon Monoxide (CO) and Ozone (O<sub>3</sub>) are included to calculate conclusive and complete value of AQI.

The developed index is classified in five categories: Good (0-100), Moderate (101-200), Poor (201-300), Very poor (301-400) and severe (401-500).

The SPM, SO<sub>2</sub> and NO<sub>2</sub> shall be used and IND-AQI calculated.

##### **Location**

The Meteorological Data System shall be located at an interval of average 100km. However, required adjustment in the locations can be made only with the consent of the NIAI.

##### **Major Components**

The Meteorological Data System shall have following components:

- a) Sensor for atmospheric temperature
- b) Sensor for road surface temperature
- c) Sensor for humidity



- d) Sensor for visibility
- e) Sensor for wind speed & direction
- f) Sensor for air pollution parameters like SPM, NO<sub>2</sub> and SO<sub>2</sub>
- g) Data Acquisition Unit / Logger
- h) Control room computer
- i) Software – application, OS, database

**Specifications**

- 1) The Meteorological Data System shall provide data regarding
  - atmospheric temperature
  - humidity
  - visibility,
  - wind speed & direction
  - air pollution parameters - SPM, NO<sub>2</sub> and SO<sub>2</sub>.
- 2) The data from all sensors shall be fed into the data logger.
- 3) This information shall be made available to the users through the variable message signs as per requirement.
- 4) The Meteorological Data System shall have the facility to communicate through PUF/Optical fibre cable.
- 5) The Meteorological Data System shall be compact, rugged in design and have ease of maintenance.
- 6) The software in the CCR shall be capable of processing sensor data, store and retrieve it and draw reports.
- 7) The software shall also calculate AQI and generate reports.
- 8) All reports shall be tabular as well as graphical.
- 9) The weather data shall automatically be fed to the VMS subsystem. The VMS may also be then capable of display these data at fixed time intervals.
- 10) Specification of Application Software (in the CCR)
  - The application software for continuous air monitoring shall be Windows based
  - Provision of Calibration windows for analyzer calibration from computer.
  - Main windows for real time display of all major parameters with status of all analyzers and sensors.
  - Control Panel window for control of each analyzer.
  - Alarm window for alarms of all analyzers and sensors
  - Real time and multi curves / graphs for all parameters.
  - Historic multi curves/ graphs over user selectable time period.
  - Real time status & diagnostics for maintenance people.
  - Programmable down loading of data from Analyser
  - Report generation over user selectable time period.

**1.9 Video Incident Detection System (VIDS)**

**Purpose and General Information**

The purpose of the VIDS is to sense, detect and record the incident. The system shall be an intelligent image detection using camera. The VIDS shall have inbuilt intelligence to ascertain when the image has measurably deviated from the standard image originally recorded. A pilot run for VIDS is suggested before implementation

**Location**

Construction of Eight Lane divided and Nagendra Highway Bypass before KMP Expressway and end of Ch. 47+100 near Khanpur Chini (Ch. 18+500 to Ch. 37+000) section of Delhi - Vadodra Greenfield Alignment (NH-146N) on EPC Mode under Bharatmala Project in the State of Haryana



VIDS is established at strategic locations.

**Major Components**

The major components are

- Field components :
  - a) VID camera with housing
    - a) pole
    - b) Data transmission unit (encoder)
    - c) Power supply – solar panel
    - d) Lightning protection and earthing
  - CCR components
    - a) Server with OS
    - b) Data analyzer
    - c) DVR
    - d) Application software
    - e) Database software

**Functional Specifications**

The system shall capable to

- Measure traffic flow speed between 0 and design speed for up to 6 lanes
- Detect vehicles driving in wrong direction
- Detect stopped vehicles within 10 secs and for up to 16 detection zones
- Detect deceleration
- Detect fog/smoke
- Detect automatically types of traffic flow: normal, dense, delayed, congested and stop and go
- Monitor zone occupancy of the detection area
- Generate alarms for events: queue, stop, inverse direction, speed drop, no video signal, fog/smoke and error.

**1.10 OFC Backbone**

**Purpose and General Information**

The purpose of the OFC backbone is to transport voice, data, LAN and video services between the field equipment and CCR.

As the transmission system would be used as a backbone network, the system shall have following characteristics:

- a) High Availability
- b) High Reliability
- c) Dual ring configuration
- d) Easy to install and operate
- e) Scalability
- f) High degree of flexibility with respect to the types of interfaces

**Location**

OFC shall be laid all through the expressway. It may be laid on RHS or LHS of the main carriageway or in the median. Latent equipments shall be connected on OFC or copper.

**Major Components**

The major components are

- Optic fibers



- Ducts
- Manholes/pulling chambers

**Specifications**

- 1) Number of cores shall be sufficient to carry all data with 100% spare data carrying capacity.
- 2) Topology

Each backbone shall consist of access nodes (see section on OTC) interconnected by a dual physical fiber optic ring for redundancy.

The standby ring shall take over automatically with minimum delay whenever a problem occurs on the active ring. If a complete cable break occurs, which means that both the active and standby rings are interrupted, the system shall automatically perform a loop-back operation, isolating the fault, and maintaining communications of all user equipment connected to the network.

After a power failure, a ring reconfiguration or when a new node is added to the ring, the complete network shall start up automatically.

- 1) The backbone OFC shall connect to field switches (in outdoor cabinets) which are further connected to field devices (cameras etc.). The FCBs may directly be connected with each other i.e. without external field switches.
- 2) The backbone OFC shall be single mode fiber
- 3) Duct -HDPE ducts shall be used to carry OFC along the expressway. In areas where ducting is not possible, trenchless laying shall be done. Road crossovers shall be done using HDD.
- 4) All fiber optic cable runs installed shall be either main backbone cable or lateral cables. The main backbone cable shall be terminated in the Communications Node. The lateral fiber cables shall be terminated with a fan-out kit at the termination block in the field equipment cabinet.
- 5) Main backbone and lateral cables shall be suitable for conduit installation. Lateral cables that connect the main backbone cable to the equipment controller cabinets shall be completed with continuous runs of cable. All lateral cable shall include a maximum of three locations of appropriate strain relief within the field equipment cabinets.
- 6) All optical cables shall comply with International Telecommunications Union (ITU-T).
- 7) All optical cables shall be new, unused and of current design and manufacture.

**1.11 Outdoor Technical Cabinet (OTC)**

**Purpose and General Information**

There shall be data concentrators or integrator switches (also called "field switch" or simply "switch") installed along the expressway which shall connect the field equipment to the OFC backbone. The purpose of the Outdoor Technical Cabinet (OTC) is to house these field integrator switches or data concentrators along with other necessary equipment and accessories. The other purpose is to provide a secure and environment controlled surroundings to the equipment housed in it.

**Location**

The OTCs shall be located along the expressway on the central median.

**Major Components**

The OTC unit shall consist of

- a) Cabinet
- b) Data Concentrator or Integrator Switches
- c) Power supply and UPS



- d) Termination panels
- e) Environmental controls

**Specifications**

The functional specifications are as follows:

**1) Cabinet & environmental controls**

- The cabinet shall be mounted on concrete pads.
- It shall be lockable and shall have tamper proof labels affixed on it providing details of serial number, date of manufacture etc.
- It shall be weatherproof and shall not allow ingress of water and smoke. It shall maintain an internal temperature within the ambient range of all equipment housed in it. For this it shall have fans and heaters as necessary.
- It shall have a maintenance lamp which shall switch on automatically whenever the door is opened. The lamp shall be easily replaceable and shall be powered by the OTC's power supply.
- It shall be designed in such a manner that all the equipment mounted inside it are easily accessible. For this, it may have doors at the rear.
- It shall have two lifting eyes for lifting during installation.
- It shall have tamper switch and temperature sensors which give an alarm to the CCR if any tampering is being done or if the temperature goes out of the design limit. The sensors shall be connected to the CCR through the switch over NMS.
- The wires and connectors shall be neatly tied and harnessed through channels.
- It shall be properly earthed and have adequate protection from lightning.

**2) Power Supply**

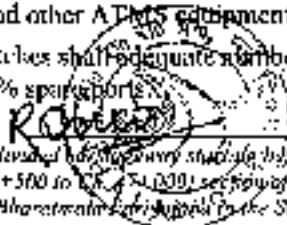
- The power supply shall be suitable for all the equipment housed in the cabinet. It may be DC or AC or a combination of both.
- The power supply / UPS shall have adequate protection from noise, surge and lightning. For this it may have fuse, MOV and circuit breaker.
- It shall be online type with automatic voltage regulation.
- It shall include sealed maintenance free batteries with backup time of at least 30minutes.
- It shall have overvoltage and over current shutdown.
- The power supply shall have a port which shall connect to the Data Concentrator switch. The data from this port shall notify the CCR of the health of the power supply through NMS.
- It shall have LEDs/display/audio alarm or other indicators on its cabinet which shall indicate health and fault conditions including input voltage, overload, battery charging etc.

**3) Termination panels**

- The termination panels shall be housed inside the cabinet.
- The communication cables from field equipment shall terminate in this panel.
- Patch chords shall be used to connect this panel to the Data Concentrator.

**4) Data Concentrator or Integrator switches**

- The switches shall connect to all field equipment and also to the OFC backbone.
- ECHs and other APTS equipment shall not be connected on the same switch.
- The switches shall have adequate number of ports to connect all field equipment. It shall also have 10% spare ports.



- The switch shall ports cable of handling all output types generated by the field equipment which may include analogue and digital - audio, video and data.

#### 1.12 Power Management System

##### *Functional specifications*

- 1) Solar power shall be preferred over State Electricity Board (mains) and DG power.
- 2) Mains power shall be preferred over DG.
- 3) Wherever DG is used, it shall be used to power as many equipment as possible.
- 4) UPS with minimum 60 min backup shall be used wherever DG power is used. The DG shall be rated to at least twice the UPS rating.
- 5) The preferred power distribution is as follows :
  - ECB - solar power
  - CCTV/VIDS - solar
  - VMS - DG
  - ATCC - solar
  - Mobile radio - DG
  - Meteorological Data System - DG
  - Outdoor cabinet - solar / DG
  - CCR - mains / DG

#### 1.13 Communication System

##### *Purpose and General information*

The purpose of the Communication System is to act as an interface between the field equipment and the CCR devices like displays and monitoring & control devices.

The communication system shall be "transparent" between field equipment and CCR i.e. it shall appear to the CCR device as if the remote field device is connected directly to it. The communication system shall be fast, reliable, support required data rates and have some built in redundancy.

##### *Location*

The communication system is located along the expressway and the CCR.

##### *Major components*

The communication system shall consist of:

- OFC (including termination panels, manholes, splicing, cables and connectors)
- OTC
- NMS
- Data concentrator at the CCR

##### *Functional specifications*

As defined in sections covering OFC, OTC and NMS

##### *Technical specifications*

As defined in sections covering OFC, OTC and NMS

#### 1.14 Network Management System (NMS)

##### *Purpose and General Information*

The Fibre Optic Transmission System shall be equipped with a user friendly, Microsoft® Windows® based Network Management System (NMS). The NMS shall allow the operator to manage and control multiple sub-networks in an efficient way.

The NMS shall have the following functionality: network configuration, configuration of services, monitoring, diagnostics, activation-deactivation of interface modules, bandwidth allocation, alarms and event logging and graphical network representation.

The network management hardware shall consist of a Personal Computer, which at the time of installation is the current industry standard. The NMS architecture shall be based on Employer-server technology. It shall be possible to connect multiple active Employers to the NMS server allowing network management from multiple and/or remote locations or by multiple users.

**Location**

Software at CCR

**Major Components**

- 1) Personal computer
- 2) NMS software

**Functional Specifications**

- 1) It shall be possible to connect the NMS system to the network at any node via Ethernet.
- 2) Using the NMS, it shall be possible to configure the hardware modules that make up the network: nodes, network cards, interface cards and optical transceivers.
- 3) The Network Management System shall allow the user to activate or deactivate an interface module.
- 4) It shall be possible to create various services over the network.
- 5) The NMS shall allocate the transmission channels to virtual point-to-point or multi-point services in order to achieve an optimal bandwidth allocation. It shall be possible to configure the network and the services without being connected to the network, either via the Graphical User Interface (GUI) or via scripting.
- 6) NMS shall display a simple map of the network in form of a tree.
- 7) NMS shall provide Real Time Management Information Bases (MIBs).
- 8) Automatic reconfiguration

The management platform shall not be critical in the reconfiguration sequence of the system. It will only report the event in detail to the network operator.

Relevant configuration details shall be stored in the Random Access Memory (RAM) module of each node. After configuration, the network shall continue to work autonomously and shall reconfigure in error situations. It is therefore necessary that the reconfiguration algorithm resides in the nodes themselves.

- 9) NMS database

The NMS shall contain the network database containing all kinds of information, sub-network names, node names, and node configurations including installed network and interface cards. It shall be possible to make the following on-line changes: activation or deactivation of interface cards, addition or removal of interface cards, and addition, changing or removal of services. Each change shall automatically update the database on the hard disk of the network management PC and the RAM memory of the relevant node(s). It shall be possible to use the database to restore the network configuration in case settings in one or more nodes are lost due to a hardware defect.

- 10) Fault and Alarm Management

It shall be possible to easily monitor the operation of the different sub-networks that make up the network. During normal operation, the NMS shall continuously poll all the network nodes. It shall compare the status of the network with the information resident in its network database. If a fault or change occurs, the GUI screen on the NMS PC will display an alarm message indicating the nature and location of possible errors or changes. The alarm message shall include, at least, the date, time, node, interface slot and/or interface port.



alarm severity and description. Via the GUI, it shall be possible to register following events: loss of synchronization, network reconfiguration, node failure, interface card errors and external alarms. It shall be possible to store the events in the NMS database.

Errors and unexpected conditions shall be reported by the network management system in another color than the one used upon correct operation.

11) Internal alarm forwarding

The NMS shall be capable, via an alarm relay card, of forwarding the status of internal alarms to other devices such as beepers or lamps. It shall be possible to use this alarm relay card to convey network alarms to a third party umbrella alarm management system. An SNMP agent on the management system shall offer basic alarm forwarding and retrieval to an SNMP-based umbrella management system. It shall be possible to forward internal alarms to third party equipment via CORBA (Common Object Request Broker Architecture).

12) External event Management

It shall be possible to display the status of external events on the NMS system. It shall also be possible to forward this alarm information to an alarm relay card connected to the NMS PC.

1.15 Central Control Room (CCR)

**Purpose and General Information**

The purpose of the CCR is to monitor the expressway and to provide information to the road user. The CCR also houses the central servers and data processing equipment.

The CCR shall provide the real-time information and assistance to the Expressway users, collect data for the use of expressway authorities and to monitor and control the Traffic on the expressway as per the requirements.

The CCR shall be designed for round the clock operations of monitoring, on-line information acquisition and processing the same for decision making. The CCR shall be the repository of all the data acquired from the field and their processing, storing, and archiving. All the information for real time monitoring of expressway shall be generated at the CCR and the relevant information shall be disseminated to the users through VMS, and to O&M teams through mobile radio.

**Location**

There shall be one CCR located in any toll plaza.

**Major Components**

- Emergency Call Operator Station (Emergency calls from HCB's)
- Mobile Call Operator Station (Mobile radio calls)
- Integrated Expressway Management / Traffic Manager station (Operating Variable Message Signs, Traffic Counting & Classifying System, Meteorological Data System, CCTV & Video Incident Detection)
- Video Wall
- Servers
- Switches
- Administration Computer and Network Printer
- Computer for NMS for fiber Optic Communication system
- CCTV camera equipment
- Video control equipment
- Computers for VMS, AVCC, Met, Traffic Control

Construction of 100% time divided 4-lane highway starting before KMP Expressway and ends at Ch. 47+050 near Khazurpur, Ch. 47+000 to Ch. 47+003 section of Delhi - Vardolera Greenfield Alignment (NH 143N) on EPC Mode under the National Parivahan in the State of Haryana





- A network printer
- An office computer (administration terminal)
- A power supply and backup system

**Functional Specification**

The CCR shall have the following functions and capabilities:

- 1) Real time images of the expressway locations (from camera locations) to the control centre.
- 2) Emergency communication system for communication from the predefined PCB locations to the control centre.
- 3) Real time information to the users from control centre (about the route conditions, traffic situation, etc.) using variable message signs installed on gantries.
- 4) Real time monitoring of the traffic situation and collection of traffic data using traffic counting and classifying system
- 5) Monitoring of the weather conditions
- 6) Dedicated Mobile Radio system for communication between the control centre, ambulances, patrol vehicles, etc.
- 7) Traffic Control System at the interchanges
- 8) Monitoring and control of the expressway traffic from the main control centre using integrated expressway system
- 9) Compilation, recording, analysis, processing, storage of traffic information and data
- 10) Monitoring and control of the various sub-systems and devices installed on the expressway
- 11) The following shall be the servers at CCR:
  - Server for Emergency Call System
  - Server for Video Surveillance system, VIDS system
  - Common server for VMS, ATCC, Meteorological Data System
  - Server for Mobile Radio Communication System

**1.16 Miscellaneous Equipment**

**Server**

Servers shall be located in the CCR and run application software. The server supplied shall be of the latest configuration at the time of installation. However the minimum specifications are as follows:

- |                        |   |
|------------------------|---|
| 1. OS                  | : Windows Server (Enterprise) preloaded   |
| 2. Processor           | : Quad Core, 3 GHz, 2x4MB shared cache, 1333MHz FSB                                     |
| 3. Memory              | : 8GB DDR2, 800MHz  |
| 4. Drive controllers   | : Integrated serial ATA controller with RAID0, 1,5 and 10, removable boot drive option. |
| 5. Hard drive          | : minimum 5 SATA drives of 500GB each, with RAID5                                       |
| 6. Network adapter     | : Dual embedded gigabit Ethernet NIC & PCI NIC  |
| 7. Optical drives      | : DVD/CD RW combo   |
| 8. Database            | : Oracle, MySQL or equivalent shall be included   |
| 9. Monitor             | : 19 inch TFT included  |
| 10. Keyboard and mouse | : included  |
| 11. Mounting           | : 19" rack mountable  |

### Printer

There shall be one network printer in the CCR for reports. The printer supplied shall be of the latest configuration at the time of installation. However the minimum specifications are as follows:

- 1) Print speed : upto 52ppm letter; upto 50ppm A4
- 2) Speed : first page out < 9sec
- 3) Resolution : min 1200x1200 dpi.

### UPS

UPS shall be installed wherever necessary, for backup of all electronic equipment so that overall service levels and requirements mentioned in this document are met.

UPS of adequate backup time shall be installed at least for

- a) All CCR equipment's
- b) Outdoor Technical Cabinets
- c) All other equipment wherever power backup is required

### Specifications

The UPS shall have the following specification:

- 1) Minimum backup time for UPS backed up by other power supply/DG shall be minimum 10 minutes. It shall be ensured by the vendor that power supply (combination of UPS, Solar, Generator, mains or any other supply) is provided in such a manner that all equipment is powered at all times, round the clock.
- 2) Input  
Nominal Input Voltage : 220 V AC  
Input Voltage Range : 140 V – 300 V AC on Full Load  
Nominal Input Frequency : 50 Hz  
Input Frequency Range : 45 – 55 Hz  
Input Power factor : >0.97 at 220 V AC for full resistive

### Modes of Operation

The UPS shall be designed to operate continuously at rated capacity as an on-line, automatic system in the following modes:

- 1) Normal - The inverter continuously supplies AC power to the critical load. The converter converts commercial AC power to regulated DC power which then serve as the inverter input and, simultaneously, as a float charge input to the storage battery.
- 2) Emergency - In the event of a commercial AC power failure, the inverter shall derive its input from the system battery, thus providing uninterrupted power to the critical load. This transition shall be accomplished without any switching or coupling, and with no interruption of power to the critical load from either a failure or restoration of the commercial AC power.
- 3) Recharge - Subsequent to restoration of commercial AC power, the converter shall automatically reactivate and provide DC power to the inverter, simultaneously recharging the system battery. This occurs automatically and without interruption to the critical load.
- 4) Bypass - In the event that the UPS must be taken off line due to an overload condition or UPS failure, the critical load shall be transferred to the bypass source via the static switch without interruption of power to the critical load. The static switch shall only be utilized for automatic emergency transfers. A re-transfer from bypass to inverter shall be performed automatically in overload conditions. A re-transfer shall be inhibited if satisfactory synchronization of the inverter and bypass is not accomplished.

**Diesel Generator**

The Concessionaire shall provide diesel generators wherever required (primarily for VMS and CCR). The rating of the DG set shall depend on the connected load, however DG of 10kVA single phase for VMS and 175kVA 3phase for CCR is suggested. The DG arrangement shall have the following requirements

- 1) DGs shall be provided in pairs i.e. two DGs per site with each running continuously for maximum 6 hours.
- 2) It shall be self-start with 12V DC starter motor
- 3) Battery charging Alternator
- 4) It shall be silent type.
- 5) Conform to BS 5514 / ISO 3046
- 6) Output per phase 220V  $\pm$ 1%, 50Hz
- 7) Instrument panel with starting switch & key, indication for battery voltage, water temperature, lube oil pressure, engine speed, engine hour counter, battery voltmeter, output voltage and frequency.

**Solar Panel**

The vendor shall provide Solar Panels of adequate capacity wherever required. The following are the minimum specifications.

- 1) Photo Voltaic (PV) cells shall be made of crystalline silicon
- 2) Cell encapsulation: ethylene vinyl acetate (EVA)
- 3) Mounting: pole mounted
- 4) Frame structure: Aluminum
- 5) Front side : Glass with thickness of min 3mm
- 6) Operating temp range ; -10 to +90 0C
- 7) Storage temp range ; -40 to +90 0C
- 8) Wind resistance: 60m/s

**Rack**

Equipment supplied at the CCR shall be rack mountable wherever possible. This includes servers, controllers, UPS, fiber patch panel etc.

**CCR Software**

The requirements of individual ATMS subsystems have been defined in relevant sections. The following are the integration requirements of application softwares of the ATMS subsystems:

Sl.	Subsystem	Requirements
1	FCB	<ul style="list-style-type: none"> <li>• Separate Server with application software, OS and database</li> </ul>
2	Video Surveillance System, VIDS	<ul style="list-style-type: none"> <li>• Separate Server with application software, OS and database</li> <li>• Video may be recorded in Server or DVR</li> </ul>
3	VMS, ATCC, Meteorological Data System, Mobile radio	<ul style="list-style-type: none"> <li>• Common server and database for all these applications.</li> <li>• The relevant weather and ATCC data shall automatically be fed to VMS.</li> </ul>
4	NMS	<ul style="list-style-type: none"> <li>• Can be run on any server</li> </ul>

**Features**

The following features are required from the ATMS software

Can be run on any server and database for all these applications. The relevant weather and ATCC data shall automatically be fed to VMS.



- 1) The following shall be provided as option :-
  - Although separate servers have been specified for separate applications, it shall also be possible to run any application from any server and all applications from one server in which case there shall be one common database.
  - One additional server to function as database server
- 2) Alarm conditions of each subsystem shall triggered in respective application software.
- 3) The software shall have facility to send e-mail to pre-configured e-mails as per the following :
  - Breakdown events -- to maintenance team
  - Emergency events -- to concerned relevant external authorities like police and to designated internal staff. Emergency events shall be triggered by the personnel manning the ECB, CCTV and Radio stations.The "e-mail send" process shall be configurable to "manual" and "automatic"
- 4) The configuration as shown in the table above is suggestive. However, as all computers / servers are on the network, it shall be possible to run any application on any computer.
- 5) The system software shall run on industry standard server platform.
- 6) The integrated ATMS software shall monitor and record online all data from all subsystems of ATMS

#### 1.17 Data Base Management

The database used by the ATMS software shall be an industry standard database like ORACLE, SQL, dbase etc. The system shall have facility to perform certain selected database operations only by authorized users.

#### 1.18 Storage

The system shall store at least 12 months of data. Older data may be archived. However, the system shall provide tools for the retrieval, manipulation and presentation of data. Data store shall be clearly marked with an indicator to show day or period type e.g. normal, holiday, weekly off; by reference to the system calendar. It shall be possible to export data to an external system for further analysis. Transfer shall be available in .xls, csv or any standard formats.

#### 1.19 Archive and Restore

This facility shall allow the archiving of the database to a tape/external HD/DVD. The data archived shall then be deleted from the database. Data may only be archived when it is more than two years old. Only one archive request may be outstanding at a time. Once archived, part or all of the data may be restored by copying from the tape back onto the system, where it remains for 30 days. Only one restore request may be outstanding at a time.

It shall be possible to define a series of notification levels which will raise an alarm when the disk space reaches a specified limit. This is used to alert an operator to the need to archive data.

#### 1.20 Database Back-Up

The system management procedures for producing daily and weekly back-ups shall not need any operator intervention

#### 1.21 Timetable and Calendar

The system shall have a time table facility. The timetable shall allow commands by day of the week, time of day, day type. The system calendar shall allow days to be marked as normal, holiday, weekly off, etc.

#### 1.22 System Log

The system shall retain a log of all events, alarms, timetable actions, and operator actions (together with operator usernames). In addition to system generated events the operators shall have facilities to enter events or incidents into the log. It shall be possible to search the log by time/date, event type, operator user name, strategy, location.

The log facility shall provide the means to:



- a) Record all important events that occur in the operation of the integrated Expressway management system, both manual and automatic. View and manage the status of alarm events,
- b) Collect and collate incident information from both manual and automatic sources,
- c) Allow the user to record routine operational messages,
- d) View all changes and actions taken on the ATMS,
- e) Record and view useful contact names and other details.

**1.23 Asset Management**

- a) The system shall incorporate a facility to store records of assets for ATMS.
- b) The asset register shall store data relating to location, type, and number of equipment as well as electricity ratings.

**1.24 User Management**

This facility shall provide the means to make user access to ATMS secure. Only the system administrator(s) shall have access to this facility and will set up details for other users. Each user shall have a username that needs to be configured so that it matches a PC log-in. Hence logging on to the PC will automatically mean that access to ATMS is available for the chosen users. Each user can also be configured to have access to none, some or all of the ATMS facilities.

**1.25 Availability Requirements**

The inability to perform any required function, the occurrence of unexpected action or degradation of performance below the specifications shall be considered as a failure. The Mean-time-between-failure (MTBF) shall be the average operating time accumulated by the total population of identical items between failures. The system supplier/Concessionaire shall submit MTBF and MTTR figures. The ATMS shall have an overall system availability of better than 99 percent. The ATMS shall be considered unavailable if any of its function cannot be properly executed and when any of the following conditions persist for more than 8 hours on the entire stretch.

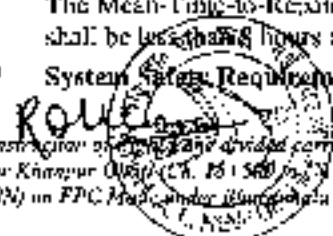
- i) Variable Message System Failure: No display/Improper Display of VMS or failure of their related transmission/control system which would render the VMS inoperative.
- ii) Emergency Call System Failure: Failure of any three consecutive Call boxes or failure of their related transmission system which would render the call boxes inoperative.
- iii) ATCC Failure: Failure of more than one ATCC or failure of their related transmission system which would render the ATCC inoperative.
- iv) Met Failure: Failure of more than one Met or failure of their related transmission system which would render the Met inoperative.
- v) Video Surveillance System Failure: Failure of more than two Video Cameras or failure of their related transmission/control system which would render the cameras inoperative.
- vi) Video Incident Detection System Failure: Failure of more than one Video Cameras or failure of their related transmission/control system which would render the cameras inoperative.
- vii) Display at Control Centre: Whenever Control Centre is unable to get display of messages initiated by the Control Centre in-charge.

In addition to the above the system shall be considered unavailable when failure of the integrated ATMS Software or its hardware persists for more than 8 hours.

**1.26 Maintainability Requirements**

The Mean-Time-to-Repair (MTTR) of the ATMS to full normal operation following a failure shall be less than 8 hours all inclusive.

**1.27 System Safety Requirements**



All metal enclosures shall be provided with an earthing terminal and earthing of all equipment shall be carried out in accordance with overall earthing policy

**1.28 Environmental/Climatic Requirements**

**Indoor Equipment:**

- Temperature (Operating) : 0°C to + 50°C
- Relative Humidity : up to 95% (non condensing)

**Outdoor Equipment**

- Temperature (Operating) : 5°C to + 60°C
- Relative Humidity : up to 95% (non-condensing)

The system and the equipment used as a minimum shall meet the following climatic and environmental requirements as specified in IS 9000:

Tests	Severities
Change of Temperature (Temp cycling) as per IS-9000 (part xiv/sec I)	(i) Low Temp 0°C - 3°C (ii) High Temp 60°C - 2°C
Rate of cooling and heating 1°C/m	(iii) Duration for each cycle 3 hours (iv) No of Cycles 3

**1.29 Warranty:** The Concessionaire/supplier of the advanced traffic management systems (ATMS) shall furnish the warranty/guarantee for successful commissioning and operation of ATMS for a minimum period of 5 years. The Concessionaire/supplier shall also furnish the certificate that there is no proprietary item and that the systems shall be interoperable. All components and equipment shall be tested for commissioning. The documents with regard to design, technical details, installation details, testing and commissioning, details of fault diagnostics, operation and maintenance manuals and reports shall be submitted to the NHAI by the Concessionaire/supplier

These guidelines include hardware and software functionalities. Alternately, some guidelines are available in "Specifications for Road and Bridge Works (Fifth Revision) published by IRC" also called Orange Book, Section 816.



Construction of Eight Lane divided carriageway starting before NMP Expressway and ends at Ch. 47+000 near Kharpur Ghati (Ch. 38+500 to Ch. 47+000) section of Delhi - Vadodra Greenfield Alignment (NH-14B) on EPC Mode under Bharatnala Prayojan in the State of Haryana

Annex - III  
(Schedule-D)

**SPECIFICATIONS AND STANDARDS FOR DEVELOPMENT OF PROJECT FACILITIES**

**General**

1. The content of the scope / specifications is not necessarily complete and all items required for proper functioning of the envisaged facilities is deemed to be included in the scope. In certain locations, the Concessionaire is permitted to make additions/improvements to the specifications of the facilities at his own cost for proper functioning of the Wayside Amenities with prior permission from Authority. For example, the Food Court may be provided with Aluminum glazing all around.
2. For execution of any item, if the specifications are not available or need to be changed as per the site specific requirement or as directed by NHAI, the same shall be borrowed from relevant MES/ CPWD specifications duly complying the relevant BIS Code provisions and IRC stipulations if available. However, the new or modified specifications shall be required to be approved by NHAI before incorporating the same in execution.

**I. a) Site Development**

**i. Site Clearances & Area Development: -**

- **Site Clearance, Leveling, Cutting & Filling of Soil (Total Plot Area) (for level ground):**

Scope includes cutting as required and/or, clearing vegetation bushes supplying, filling, spreading and consolidating of imported earth / murrum. Scope also includes transportation of unwanted earth from the site if found necessary.

- **Site Clearance**

Before site leveling work, area shall be cleaned by removing existing plantation, bushes etc., including suitable disposal of the same.

Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30 cm measured at a height of 1m above ground level and removal of rubbish to required distance of outside the periphery of the area cleared

- **General Site Excavation and Filling:  
Site Excavation (Cutting):**

Earth work in excavation in all kinds of soil/ordinary rock/hard rock (blasting prohibited) by mechanical means (Hydraulic excavator) / manual means over areas (not exceeding 30cm in depth, 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, hauling out the water, dewatering if necessary, for required lift including getting out the excavated soil and disposal of surplus excavated soil for required lead.

General site excavation and fill shall establish a uniform stable working surface in the site areas, provide for positive drainage compatible with natural drainage system around buildings and other structures, and provide adequate soil cover for underground utilities, Before the placement of fill material, the existing sub grade shall be prepared as follows:

- a) All vegetation, bushes, organic or otherwise incompetent material shall be removed. The remaining in-situ material shall be compacted to the depth and density determined by the detailed design. Compacted fill material shall consist of specified material obtained from an offsite source if not available within the limits of construction. This material shall be placed and compacted to the density and geometry determined by the detailed design. Slope stability,

moisture and density relationship and compaction requirements shall be determined as a result of the geotechnical field and laboratory investigations.

- b) Earth material shall be removed to the required lines and grades. Any remaining organic or otherwise incompetent material in an excavation shall be removed if so required. The remaining in-situ material shall be graded and compacted to the depth and density determined by the detailed design. Excavated material shall be used as general site fill or embankment fill provided it meets the necessary design requirements.
- c) The natural soil strata and fill material shall be tested for presence of sulphates and chlorides. In the event high percentages of such compounds are found to be present, required special treatment / coating shall be provided to the concrete and reinforcement surfaces for foundations and structures below ground for protection against the deterioration during the life-time of such structures.

• **Filling:**

**Moorum / Kankar / Gravel / Sand**

**Quality of moorum**

Moorum shall contain low plasticity (less than 6) & liquid limit should not be more than 20-binder material mixed with hard granular particles such as sand and / or gravel. Moorum shall be sound and hard of a quality not affected by weather, to be screened at the quarry and free from all impurities. Large lumps shall all be broken at the quarry and Moorum delivered at site must pass in every direction through a 63 mm ring. Moorum shall not contain more than 5% to 8% of fines passing a 75-micron sieve.

**Method of Filling**

Filling shall be permitted after removing vegetation, trees, roots, etc. in layers not exceeding 20 cm depth and manual consolidation will not be acceptable. Filling shall be done in 20 cm layers and every layer shall be power rolled with 8 to 10 tonne roller so as to achieve at least 95% of the Proctor density, with OMC. However, for the last four top layers of 20 cm, each layer shall be rolled to achieve 90% of the modified Proctor density at its OMC. Before start of work, the Concessionaire shall supply three samples of moorum from each quarry to cover the variations expected in the supply. These samples shall be tested in a recognized laboratory in accordance with latest IS codes.

- i. Sieve analysis, silt and clay content.
- ii. Liquid limit and plastic limit
- iii. Moisture content and dry density relationship at Standard Proctor Density.
- iv. Moisture content and dry density relationship at modified Proctor density
- v. CBR values after 48 hours soaking of the prepared samples consolidated to the maximum density at OMC indicated in items (iii) and (iv).

Carting away the excavated earth (by mechanical transport including loading, unloading, stacking) to an identified location.

ii. **a) Cutting of Trees: As required to match site Specific Layouts**

Identified and numbered trees including felling, Uprooting, Clearing and carting away from the premises and cleaning the area of all twigs, leaves etc. Scope includes obtaining necessary approvals from concerned Authorities such as Forest Department etc. if necessary depending on the girth of the trees. The Concessionaire shall be fully responsible for planting more trees than he had cut in the same site. (Central Govt. Regulations. Value of trees shall be to the credit of Concessionaire).



• **Tree Cutting:**

Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of various girth dimensions and removal of rubbish to the necessary distance outside the periphery of the area cleared.

Clearing grass and removal of the rubbish to the necessary distance outside the periphery of the area cleared.

Felling trees of the girth, including cutting of trunks and branches, removing the roots and stacking of serviceable material and disposal of unserviceable material for various girth dimensions.

It is the responsibility of concessionaire to take necessary permission / permits from concerned relevant local authorities for transportation of cut materials. He is required to pay mandatory charges, taxes, forest development charges etc, direct to the statutory agencies directly.

ii. **b) Dismantling / Demolishing including disposal:**

• **Dismantling:**

The term Dismantling implies carefully separating the parts without damage and removing. This may consist of dismantling one or more parts of the building as specified or as shown in the drawings.

**a) Precautions**

i. All usable materials obtained from dismantling shall be the property of the concessionaire unless otherwise specified.

Due care shall be taken to maintain the safety measures prescribed in IS:4130-1991 - Code of safety (2<sup>nd</sup> Revision).

ii. Necessary propping, shoring and or under pinning shall be provided to ensure the safety of the adjoining work or property before dismantling is taken up and the work shall be carried out in such a way that no damage is caused to the adjoining work or property. Wherever specified, temporary enclosures or partitions shall also be provided

iii. Necessary precautions shall be taken to keep down the dust nuisance to the minimum.

iv. Dismantling shall be done in a systematic manner. All materials which are likely to be damaged by dropping from a height or by demolishing roofs, masonry etc. shall be carefully removed first. The dismantled articles shall be removed manually or otherwise, lowered to the ground (and not thrown) and carting away to an identified area.

v. Where existing fixing is done by nails, screws, bolts, rivets, etc., dismantling shall be done by taking out the fixing with proper tools and not by tearing or ripping off.

vi. Any serviceable material, obtained during dismantling shall be separated out and the concessionaire shall be disposed off. All unserviceable materials rubbish etc. shall also be disposed off.

vii. The concessionaire shall maintain / Disconnect existing services, whether temporary or permanent.

• **Demolition:**

The term 'Demolition' implies breaking up. This shall consist of demolishing ~~whole~~ (including foundation) or part of work including all relevant items as specified or shown on the drawings



Demolition is not envisaged in most of the sites. However, Demolition is included in a particular location if indicated in this Concessionaire Agreement.

Demolition by manual / explosion technique of existing buildings and other unusable structures etc., as shown in the drawing. The scope shall include municipal / statutory approvals, if applicable. Demolition means removing the entire building including foundation and the same is filled with the good soil with proper consolidation and make ground surface ready for further activities. During demolition the concessionaire shall adhere to necessary safety codes and environmental norms. Value of salvage material shall be to the credit of Concessionaire.

**a) Precautions**

- i. Necessary propping, shoring and or under pinning shall be provided to ensure the safety of the adjoining work or property before demolishing taken up and the work shall be carried out in such a way that no damage is caused to the adjoining work or property. Wherever specified, temporary enclosures or partitions shall also be provided.
- ii. Necessary precautions shall be taken to keep down the dust nuisance to the minimum.
- iii. Any serviceable material obtained during demolishing shall be account of Concessionaire.
- iv. The demolition shall always be well planned before hand and shall generally be done in reverse order of the one in which the structure was constructed. The operations shall be got approved from the authority before starting the work.

Due care shall be taken to maintain the safety measures prescribed in IS:4130-1991 – Code of safety (2<sup>nd</sup> Revision).

**ii. c) Rerouting of Existing E.B. Water & Telephone Services Above / Below Ground - including local lionising charges:**

As required, if any of the locations cited under schedule 'C'. Scope includes excavation, removal / relaying etc., of all existing underground or overhead electrical, E.B, water, Telephone lines using the salvaged or new materials.

Scope includes obtaining necessary permission / approvals required if any from the concerned authorities.

**ii. d) Additional Filling/Cutting: To match levels indicated in the Site Specific Drawings.**

- Filling:
- Moorum / Kankar / Gravel / Sand

**Quality of moorum**

Moorum shall contain low plasticity (less than 6) & liquid limit should not be more than 20-binder material mixed with hard granular particles such as sand and / or gravel. Moorum shall be sound and hard of a quality not affected by weather, to be screened at the quarry and free from all impurities. Large lumps shall all be broken at the quarry and Moorum delivered at site must pass in every direction through a 63 mm ring. Moorum shall not contain more than 5% to 8% of fines passing a 75-micron sieve.

**Method of Filling**

Filling shall be permitted after removing vegetation, trees, roots, etc. in layers not exceeding 20 cm depth and manual consolidation will not be acceptable. Filling shall be done in 20 cm layers and every layer shall be power rolled with



8 to 10 tonne roller so as to achieve at least 95% of the Proctor density, with OMC. However, for the last four top layers of 70 cm, each layer shall be rolled to achieve 90% of the modified Proctor density at its OMC. Before start of work, the Concessionaire shall supply three samples of moorum from each quarry to cover the variations expected in the supply. These samples shall be tested in a recognized laboratory in accordance with latest IS codes.

- i) Sieve analysis, silt and clay content.
- ii) Liquid limit and plastic limit
- iii) Moisture content and dry density relationship at Standard Proctor Density.
- iv) Moisture content and dry density relationship at modified Proctor density.
- v) CBR values after 48 hours soaking of the prepared samples consolidated to the maximum density at OMC indicated in items (ii) and (iv).

The Concessionaire will also supply a box with locking arrangement to hold a part of the sample and a clear bottle for each sample. The moorum samples shall be put into the bottle upto 20% of its capacity and then filled with water upto 80%. When well soaked, it shall be well shaken and allowed to stand in order to settle the particles. An approximate layer of silt and clay on top of the coarser material will be marked. During progress of the work, if any sample by colour, texture, smell or otherwise appears to be outside the sample given or tested, using a test similar to the above site test. Till it is approved, the materials shall not be deposited at the site of filling.

• **Moisture Control**

The moisture content to be used where proctor density or modified proctor density is used shall be strictly controlled to within  $\pm 0.2\%$  of the optimum moisture determined in accordance with latest IS codes (Part II). Where the moisture is higher, the soil shall be raked and the moisture allowed evaporating before rolling is commenced. Water shall always be sprayed and not poured. Ponding shall never be allowed. In wet weather, the work may have to be suspended for which no extras would be payable to the Concessionaire. Care shall be taken to see that moisture is uniformly spread throughout the layer and where necessary, mixing with harrows or rakes shall be done.

• **Cutting:**

Earth work in excavation in all kinds of soil/ordinary rock/hard rock (Blasting Prohibited) by mechanical means (Hydraulic excavator) / manual means over areas required depth and for required area including dressing of sides and ramming of bottoms, bailing out the water, dewatering if necessary, lift as required including getting out the excavated soil/ordinary rock/hard rock and disposal of surplus excavated item for required lead.

III. 1) Construction of Retaining wall / Slope Stability Arrangements:

• **Slope protection**

- i) Slope protection shall protect earth slopes from erosion due to storm, water runoff and wind damage or other natural phenomena.
- ii) All earth slope surfaces subject to erosion shall be provided with slope protection. Slope protection shall consist of grass cover, geotextile fabric, ferns riprap, or other effective slope protection methods, the type of slope protection shall be determined by the expected velocities of storm water runoff and any other appropriate factors and shall be subject to the Owner's

iii) The extent of slope protection shall be defined by the amount of earth surface subject to erosion and the type of erosion present. The material shall be sound, durable, and able to resist the effects of abrasion.

• **Retaining Wall:**

Retaining wall shall be constructed by RCC / Random Rubble Masonry / Brick Masonry / Precast RCC slab / or other suitable structure as per design to withstand the well compacted filling material / soil. The dimensions of retaining wall to fulfill the design requirements and as per standard regular practice. The retaining wall shall be designed for SBC of natural soil to the extended plot area and conditions and to withstand the quantity of filling material. Necessary weep holes with filter media shall be provided as per standard specifications and market regular practice. The weep holes shall be provided in sufficient nos. at suitable interval to withstand earth pressure during wet condition of filling material / soil. Special attention shall be taken care while constructing the retaining walls structure, such that the adjacent buildings / structures / lands / objects stability will not be disturbed.

• **Slope stability with Dry Stone Pitching:**

For retaining of earth to match formation levels as required For driveway approach roads etc., stone pitching / alternative retaining arrangements for retaining to be provided to suite design requirements.

• **Stones**

These shall be clean, hard stones, free from decay and weathering. They shall be in block and hammer dressed on all sides.

The size of the pitching stones shall be approximately 22.5 cm in depth and not less than 15 cm. in any other direction.

• **Preparation of surface**

The sides and bottom of earth work to be pitched, shall be brought to the required slope and gradient and shall be compacted to a firm and even surface

• **Pitching**

Pitching shall be of 22.5cm depth unless specified otherwise. Profiles shall be put up by means of pegs and strings or by placing stones, at intervals of not more than 15 cm. Stones shall then be laid closely in position in between the profile and finally embedded with joints staggered and with exposed faces true to line, gradient and in uniform slope throughout.

Cross bands of approximately 22.5 cm. width through bond stones equal to the full depth of pitching shall be provided at an interval of approximately 3 metres centre to centre both longitudinally and transversely.

The interstices between adjacent stones shall be filled in with stones of proper size, well driven in with crow bars to ensure tight packing and complete filling of all interstices. Such filling shall be carried on simultaneously with the placing in position of the large stones and shall in no case be permitted to fall behind. Final wedging shall be done with the largest sized chip practicable, each chip being well driven home with a hammer so that no chip is possible of being picked up or removed by hand.

2. **Compound Wall, Fencing, Gate, Culvert & Kerb wall, Deceleration Zone, Acceleration Zone, Buffer Zone and Service / Access Road.**

**Compound Wall:**

Unless shown otherwise in the drawings, compound wall shall be built on the all the sides other than the future expansion areas and other than the frontage.



In normal conditions at site, the foundation of the compound wall shall be Stone / Brick masonry / RCC of adequate depth and width to meet the design requirements. However, the scope includes the construction of RCC retaining wall, or other foundations with retaining arrangements, if necessitated by design to cater site conditions. This is applicable for retaining structures also. The superstructure shall be of 230mm thick brick / ca blocks wall finished with coping and grooves of 20mm x 12mm as per drawing. Plastering and Painting is to be considered on both sides of the wall. Other equivalent or improved technologies may be approved subject to approval from I.E. The scope includes painting with acrylic cement paint as per specifications.

Refer drawing no. 1695/HMCL/C2/STD/AR/128

**b. 1) Chain link Fencing with Gate:** (Unless shown otherwise in the drawings, chain link fencing with gate shall be provided all around the Children's Play Area)

Providing and fixing G.I. chain link fabric fencing Made of G.I. wire of dia. 4 mm, PVC coated to achieve outer dia not less than 5 mm in required colour and shade of required width in mesh size 50x50 mm including strengthening with 2 mm dia wire or nuts, bolts and washers as required complete. The scope also includes necessary M.S hollow Tubes / M.S. angle frames all around fabric fencing. MS box section at suitable spacing with necessary foundation concrete etc., as shown in the drawing. The colour and shade of enamel paint for M.S hollow Tubes / M.S. angle frames & MS box section to match with the GI wire shall be as required.

Refer drawing no. 1695/HMCL/C3/STD/AR/134

• **Chain Link:**

The chain link shall be of approved make and of correct size, gauge etc. It shall be of M.S. or G.I. as specified of approved manufacture and of required size, gauge etc. The base materials of the wire shall be of good quality mild steel. The wire shall be Circular in section, free from rust, scale, cuts, welds and together defects and shall be uniformly galvanized if specified.

• **Fixing of the Chain Link Fencing to MS post:**

The chain link of specified height of fencing shall be fixed first to the end post with Necessary G.I. approved type U clamps threaded at both the ends and G.I. nut, bolts, washers etc. After fixing the chain link at the end post, it shall be stretched tightly and fixed to next post one after the other by the above mentioned clamps and bars etc. The point at the change in level of the fencing, top/bottom, necessary links shall be adjusted suitably as per the manufacturers specification. The entire link fence shall be painted with two coats of synthetic enamel paint of approved make and shade over a coat of approved primer or as specified in the BOQ item and drawing.

Refer drawing no. 1695/HMCL/C2/STD/AR/134

**b. 2) Barbed Wire Fencing:**

**As indicated in the Site Specific Layouts.**

- **Materials:** G.I. Barbed wire shall be as per IS 278 and angle iron shall be as per standard specification. The angle shall be of size 50 x 50 x 6 mm.
- **Spacing of Posts and Struts** The spacing of posts shall be 3.00 m centre to centre, unless otherwise specified to suit the dimensions of the area to be fenced. Every 15th Post but one end posts and corner post shall be strutted on both sides and end post on one side only.



- **Fixing of Posts and Struts** This shall be as per CPWD standard specifications. In addition, angle iron post at bottom shall be split and banded at right angle in opposite direction for 10 cm length to get proper grip.
- **Fixing G.I. Barbed Wire** The barbed wire shall be stretched and fixed in specified number of rows and two diagonals. The bottom row should be suitable high above ground and the rest at spacing of 17 cm centre to centre. The diagonal shall be stretched between adjacent posts from the top wire of one post to the bottom wire of 2nd post. The diagonal wire will be inter woven with horizontal wires by fixing the odd rows of wires first, then the diagonal cross wires and lastly even rows of wires. The barbed wire shall be held by tearing the holes of 10 mm dia in the post and tied with G.I. wire; turn buckles and straining bolts shall be used at the end post, if so specified.

c. **Gate:** Shall be provided for Entrance to Children Play Area.

*Refer drawing no. 1695/HMCL/C2/STD/AR/127*

d. **RCC Slab / Box Culvert:** (Unless shown otherwise, in the drawings, culverts shall be provided for a minimum length of 14m (each) in all entry and exit points.) Shall be masonry or RCC Box culvert covered (along road crossings) with RCC Slab gratings as necessary, with vent sizes and construction to fulfil the statutory norms.

*Refer drawing no. 1695/HMCL/C2/STD/AR/348j*

e. **Kerbwall:** All along the Driveway, Parking Areas, Landscaping and Path ways.

- **Kerb Stone (Precast)**
- **Laying**

Trenches shall first be made along the edge of the wearing course of the road to receive the kerb stones of cement concrete of specified grade. The bed of the trenches shall be compacted manually with steel rammers to a firm and even surface and then the stones shall be set in cement mortar of specified proportion.

The kerb stones with top 20 cm. wide shall be laid with their length running parallel to the road edge, true in line and gradient at a distance of 30 cm. from the road edge to allow for the channel and shall project about 12.5 cm. above the latter. The channel stones with top 20 cm. wide shall be laid in position in chamber with finished road surface and with sufficient slope towards the road gully chamber. The joints of kerb and channel stones shall be staggered and shall be not more than 10 mm. Wherever specified all joints shall be filled with mortar 1:3 (1 cement : 3 coarse sand) and pointed with mortar 1:2 (1 cement : 2 fine sand) which shall be cured for 7 days.

The necessary drainage openings of specified sizes shall be made through the kerb as per drawings for connecting to storm water drains.

- **Finishing** Berms and road edges shall be restored and all surplus earth including rubbish etc. disposed off.

*Refer drawing no. 1695/HMCL/C2/STD/AR/119*

f. **Bollards:** To be provided in front of Dhaba / Food Court / Restaurants / Kiosks.

Shall be of 900 mm height above. with spacing of 1200 mm etc above driveway level with base plate, stainless steel 304 grade, 200 mm dia with suitable foundation.

g. **Access Road (outside the premises) / Approach road:** As shown in the Site Specific Drawings.

All roads, driveway and parking areas with bituminous surface shall conform to MORTH / IRC:SP 84-2014 for 10 MSA traffic design classification subject to minimum requirements shown in drawings.

The formation levels and construction of Approach Roads & culverts shall be in accordance with statutory approval drawings of NHAI.

**h. Deceleration Zone (outside the premises):**

Layout and cross sections as shown in the Site Specific and standard Drawings

**i. Acceleration Zone (outside the premises):**

Layout and cross sections as shown in the Site Specific and standard Drawings

**j. Buffer Zone: As shown in the Site Specific Drawings**

All roads, driveway and parking areas with bituminous surface shall conform to MORTH / IRC:SP 84-2014 for 10 MSA traffic design classification subject to minimum requirements shown in drawings.

The formation levels and construction of Approach Roads & culverts shall be in accordance with statutory approval drawings of NHAI.

**k. Service Road (outside the premises) / Exit Road / Existing Service Roads including necessary crash barriers as per codes: As shown in the Site Specific Drawings.**

All roads, driveway and parking areas with bituminous surface shall conform to MORTH / IRC:SP 84-2014 for 10 MSA traffic design classification subject to minimum requirements shown in drawings

The formation levels and construction of Approach Roads & culverts shall be in accordance with statutory approval drawings of NHAI.

**l. Services:**

**i. Roads & Path way as per MORTH Specifications**

**a) Roads / Driveway, Parking & Path way (BT / CC Paver Block): (All Driveway / Roads / Parking facing Dhaba / Food Court / Restaurants / and Kiosks within the premises shall be of CC Paver Blocks. All other areas inside the premises and approach roads outside premises shall be of BT.**

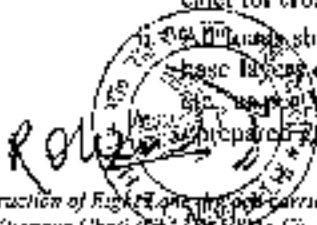
All roads, driveway and parking areas with bituminous surface shall conform to MORTH / IRC:SP 84-2014 for 10MSA traffic design classification subject to minimum requirements shown in drawings. CC paver blocks shall be of minimum M40 grade, 80mm thick conforming to BS (British Standards) 6717.

**• Basic Requirements**

The roads system shall be subjected to heavy vehicles and construction equipment during construction. All roads shall be subject to heavy wheel loads off-road haul trucks, wheel loaders, and scrapers. Road system shall be designed as per MORTH/ IRC:SP 84-2014 for 10MSA standards. All roads should be provided with adequate camber as per MORTH standards.

1. The access roads for way side amenities shall be constructed during the site preparation phase of construction with RCC box culvert at road junctions to cater for crossing of drains/cables etc. to avoid major road cuttings at later date.

2. All roads shall be constructed on prepared sub grade and stone sub base and base layers of granular sub-base / bitumea macadam & Bituminous concrete as per MORTH standards. The sub-grade for the road shall be the natural prepared ground, which shall be cleared of all loose material, organic matter,



grass etc, scarified, rolled and compacted to proctor density of 95%. All the roads shall be topped with Premix carpet followed by Seal Coat. The total thickness and composition of the layers of the pavement shall be provided as per MORTH standards

- iii. Crown of the Road shall be as required above the formation level.
- iv. At the time of handing over after completion of project, road shall be repaired including laying of new premix carpet & seal coat wherever required.

• **Road Sub-Grades**

- i. The sub-grades shall provide uniform and stable foundations for the roads
- ii. Prior to construction of road sub grades, all existing vegetation, organic or otherwise incompetent material, shall be removed. The remaining in situ material shall be graded and compacted to the depth and density determined by the detailed design prior to the placement of fill material. During excavation, earth material shall be removed to the required lines and grades, any remaining organic or otherwise incompetent material shall be removed. The remaining in-situ material shall be graded and compacted to the depth and density determined by the detailed design before proceeding with the sub-grade construction.
- iii. Embankment fill material shall consist of specified fill material obtained from excavation at other onsite grading areas, buildings, or roadbeds. This material shall be placed and compacted to the density and geometry determined by the detailed design to provide the strength required and to limit settlements within the allowable limits. Slope stability, moisture and density relationship, and compaction requirements shall be determined based on results of geo technical field and laboratory investigations
- iv. Borrow material in excess of that provided by the sources described above shall be obtained from borrow areas or from an offsite source if not available within the limits of construction at the cost of Concessionaire.
- v. Sub-grade excavation shall be accomplished in the same manner as for general site excavation.
- vi. The sizing criteria and material selection criteria for road sub-grades shall be as described in general site excavation.

• **Sub - grade**

Preparation and consolidation of sub grade with power road roller of 8 to 12 tone capacity after excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth.

• **Granular Sub-base**

Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications.

• **Wet Mix Macadam**

Providing, laying, spreading and compacting graded stone aggregate (size range 75 mm to 0.075 mm) to wet mix macadam (WMM) specification including premixing the material with water at OMC in for all leads & lifts, laying in uniform layers with mechanical paver finisher on sub-base / base course on well prepared surface and compacting with vibratory roller of 8 to





10 tonne capacity to achieve the desired density, complete as per specifications.

• **Dense Bituminous Macadam**

Providing and laying Dense Graded Bituminous Macadam using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications.

• **Bituminous concrete**

Providing and laying Bituminous concrete

• 30 mm compacted thickness with bitumen of grade VG-30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.

• 30 mm compacted thickness with bitumen of grade VG-30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Drum Type Hot Mix Plant of 60-90 TPH capacity.

• **Paver Block (as per BS codes)**

Providing and laying factory made coloured/gray chamfered edge Cement Concrete paver blocks of M40 grade, 80mm thick & size/shape, made by block making machine to attain superior smooth finish using PU or equivalent moulds, laid in required colour & pattern over 50mm thick compacted bed of fine sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with jamma/river sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand in footpath, parks, lawns, drive ways or light traffic parking etc complete as per manufacturer's specifications. 80mm thick C.C. paver block of M-40 grade with approved colour, design & pattern and as per standard specifications and as per BS Codes etc.. complete

b) **Roads Marking and Rumble Strips, Speed Breakers** (Ready made speed breakers with reflective arrow) for parking area.

Shall be required for safety. Marking shall be for parking, directions and carriageway, zebra crossings, etc. Marking compounds shall be as per MORTH / IRC standards.

• **Road Markings Strips** The colour width and layout of road markings shall be in accordance with the Code of Practice for Road Markings with paints, IRC : 35, and as specified in the drawings.

• **Materials** Road markings shall be of ordinary road marking paint (retro-reflective), hot applied thermoplastic compound as specified in the item.

• **Hot Applied Thermoplastic Road Marking General**

i) The thermoplastic material shall be homogeneously composed of aggregate, pigment, resin and glass reflectorising beads

The thermoplastic compound shall be screeded/extruded on to the pavement surface in a molten state by suitable machine capable of controlled preparation and laying with surface application of glass beads at a specific rate. Upon cooling to ambient pavement temperature, it shall



produce an adherent pavement marking, of specified thickness and width and capable of resisting deformation by traffic.

- iii) The thermoplastic material shall conform to ASTM D36/BS-3262-(Part 1).
- iv) The material shall meet the requirements of these specifications for a period of one year. The thermoplastic material must also melt uniformly with no evidence of skins or un-melted particles in the one year storage period. Any material not meeting the above requirements shall be replaced by the manufacturer/supplier/Concessionaire.
- v) **Marking:** Each container of the thermoplastic material shall be clearly and indelibly marked with the following information:
  - 1. The name, trade mark or other means of identification of manufacturer.
  - 2. Batch number
  - 3. Date of manufacture
  - 4. Colour (White or yellow)
  - 5. Maximum application temperature and maximum safe heating temperature
- vi) **Sampling and Testing:** The thermoplastic material shall be sampled and tested in accordance with the appropriate ASTM/BS method. A copy of certified test reports from the manufacturer of the thermoplastic material showing results of all tests specified herein and shall certify that the material meets all requirements of this Specification.

• **Preparation**

- i) The material shall be melted in accordance with the manufacturer's instructions in a heater fitted with a mechanical stirrer to give a smooth consistency to the thermoplastic material to avoid local overheating. The temperature of the mass shall be within the range specified by the manufacturer, and shall on no account be allowed to exceed the maximum temperature stated by the manufacturer. The molten material should be used as expeditiously as possible and for thermoplastic material which has natural binders or is otherwise sensitive to prolonged heating, the material shall not be maintained in a molten condition for more than 4 hours.
- ii) After transfer to the laying equipment, the material shall be maintained within the temperature range specified by the manufacturer for achieving the desired consistency for laying.

• **Properties of Finished Road Marking**

- i) The stripe shall not be slippery when wet.
- ii) The marking shall not lift from the pavement in freezing weather.
- iii) After application and proper drying, the stripe shall show no appreciable deformation or discolouration under traffic and under road temperatures upto 60°C.
- iv) The marking shall not deteriorate by contact with sodium chloride, calcium chloride or oil drippings from traffic.

The stripe or marking shall maintain its original dimensions and position. Cold ductility of the material shall be such as to permit normal placement with the road surface without chipping or cracking. (f) The



colour of White marking shall conform to IS Colour No. 356 as given in IS 164.

- **Application** Marking shall be done by fully /semi automatic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator as specified in item. For locations where painting cannot be done by machine, approved manual methods shall be used with prior approval. The Concessionaire shall maintain control over traffic while painting operations are in progress so as to cause minimum inconvenience to traffic compatible with protecting the workmen. The thermoplastic material shall be applied hot either by screeding or extrusion process. After transfer to the laying apparatus, the material shall be laid at a temperature within the range specified by the manufacturer for the particular method of laying being used. The paint shall be applied using a screed or extrusion machine. The pavement temperature shall not be less than 10°C during application. All surfaces to be marked shall be thoroughly cleaned of all dust, dirt, grease, oil and all other foreign matter before application of the paint. Thermoplastic paint shall be applied in intermittent or continuous lines of uniform thickness of at least 2.5 mm unless specified otherwise. Where arrows or letters are to be provided, thermoplastic compound may be hand sprayed. The minimum thickness specified is exclusive of surface applied glass beads. The finished lines shall be free from raggedness on sides and ends and be parallel to the general alignment of the carriageway. The upper surface of the lines shall be level, uniform and free from streaks

ii. **Sewer Lines including Chambers, Manholes, Gully Trap etc.**

The scope of work includes but not limited to the following:

- RCC NP2 class / PVC SWR pipes to achieve self cleaning velocity with R.C.C / Brick masonry Manholes. Manhole covers shall be of factory made ductile iron heavy duty covers (as per EN-124 Standards) complete as shown in drawings.
- Providing end fixing PVC SWR pipes, including all PVC fittings, including fixing the pipe with clamps at 1.00 m waste water lines. This includes jointing of pipes & fittings with one step PVC solvent cement and testing of joints complete.
- Discharge from Toilets shall be collected through underground pipe network of sewerage lines which preferably shall be running along the road (unless shown otherwise in the drawings). Sewer line shall be laid with required slope to attain the self cleaning velocity.
- Cement concrete pipes of class NP 2 as per IS. 458 shall be laid below ground as per IS: 783, for sewage disposal in all areas. Proper corrosion protection to the pipes shall also be provided as per requirement.
- RCC / Brick manholes with D1 cover shall be provided at every 30m along the length, at connection points, and at every change of alignment, gradient or diameter of a sewer pipeline. Details of manholes shall be as per IS 4111 (Part 1)

iii. **Water Supply & Distribution System:**

The scope of work includes but not limited to the following:

- All pipes below ground - D.I / G.I / CPVC SDR II class I.S. 15778/2007
- All pipes above ground - G.I / CPVC SDR II class I.S. 15778/2007.

Scope includes all control valves / chambers / pumps / tube wells complete as shown in drawings. All fixtures and fittings are CP Brass / PTMT. Terrace level Pressure pump of appropriate capacity to be provided to ensure the



required pressure at the far most tail of the line. Scope includes necessary provisions for hot water supply

- Providing and fixing Chlorinated Poly vinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete
- Providing and fixing gun metal gate valve with C.I. wheel of approved quality.
- Providing and fixing gun metal non-return valve of approved quality.
- Providing and fixing C.I. sluice valves (with cap) complete with bolts, nuts, rubber insertions etc.
- Constructing RCC / Masonry Chamber 30x30x50 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for stop cock, with C.I. surface box 100x100 x75 mm (inside) with hinged cover fixed in cement concrete slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12mm thick, finished with a floating coat of neat cement complete.
- Constructing RCC / Masonry Chamber 60x60x75 cm inside, (or as shown in the drawings) in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep ( inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size), i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete.
- Providing and fixing C.I. double acting air valve of approved quality with bolts, nuts, rubber insertions etc. complete.
- Providing and fixing enclosed type water meter (bulk type) conforming to IS : 2373 and tested by Municipal Board complete with bolts, nuts, rubber insertions etc.
- Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete

**iv. Storm Water Drain with Gratings / Cover Slab:**

The scope of work includes but not limited to the following:

- Cover slab with D.I. gratings to be provided at road / driveway crossings
- Storm water drains outside the premises shall be as per Statutory Norms / local bye-laws
- All storm water drainage shall generally be through open drains with ductile iron gratings, however all plant effluent drainage shall be through separate buried concrete pipes unless otherwise shown in the drawings.
- Open RCC rectangular section shall be provided for all drains. RCC drains excavated within and along both sides of peripheral roads of the area shall be covered with perforated precast RCC slabs of minimum 75mm thickness with provision of operable Ductile iron grill grating covers at about 4.0M intervals.



- Similarly, all artillery drains and the drains along the periphery of building shall also have perforated precast RCC covers of minimum 75 mm thickness with provision of openable Ductile iron grill grating covers at about 4.0 m intervals. In areas where vehicular loads would be applied, precast RCC covers of suitable thickness with / without perforations and designed for the vehicular loading shall be provided. The thickness of side walls and bottom slab of RCC drains shall be minimum as per design considerations. R.C. box/pre-cast RCC pipe culverts shall be provided for road crossing. All drains in the site shall be provided with heavy duty ductile iron grill grating.

v. **External Electrical Works Including Street Light**

The scope of work includes but not limited to the following:

- L.T. Supply shall be received from the respective state electricity board and L.T. distribution will be carried out through 1.1 Kv. Grade armoured cables laid underground trenches upto the building from L.T panel board. All electrical works shall be carried out as per CEC/CEA and shall comply with the Indian Electricity Rules, 1956 as amended to date.
- Cable size shall be finalized considering 0.95 power factor and the voltage drop in the cables shall be within permissible limits as per NBC 2005. Suitable derating factor of the cable due to temperature rise and grouping of cables etc. shall also be considered for selection of cables.
- Electrical works shall deem to include Telephone and/or data points, associated cabling and ducting works.

**General:**

- i) All equipments and materials for electrical works shall be suitable for continuous operations on 415 V / 240 V  $\pm$  10% (3 Phase/Single Phase), 50 Hz. AC System. Where the use of high voltage equipments is specified in particular works, all the respective equipments shall be suitable for continuous operation on such specified high voltage.
- ii) All electrical works shall be carried out complying with the Indian Electrical Rules, 1956 as amended to date.
- iii) All parts of electrical works shall be carried out as per appropriate CPWD General specifications for Electricity works, namely, Part I (Internal) 1994, Part II (External) 1994 work, and Part IV (Sub-station), 1982 all as amended to date.
- iv) All materials and components used shall conform to the relevant IS specifications amended to date.
- v) All internal and external wiring shall be concealed.

**Switch Boards**

- i) The main switch board shall be floor mounted, free standing cubical type and shall be factory built fabricated by one of the reputed switch board manufacturer. It shall be suitable for termination of the incoming cables/ bus trunking from top/ bottom. The switchboards shall be wall mounted, or floor mounted as feasible in site. But they shall be cubical design, unless otherwise specified and operable from front.
- ii) The capacity of switch gear, starters etc. shall be suitable for the requirements of loads fed/controlled. Starting currents shall be duly considered in case of motor loads / equipments.



- iii) Switch boards controlling motors shall house starters for motors, unless otherwise specified. Independent single phasing preventers for each such starter shall be provided.
- iv) One volt meter with selector switch, a set of indicating lamps and fuses for voltmeters and lamps shall be provided at each switchboard. One ammeter with CTS, and selector switch shall be provided with each motor starter. Instruments shall be flush mounted with the panel and have a glass index not higher than 1.5. The instruments and accessories shall be provided whether or not specifically indicated.
- v) The layout of bus bars and cable alleys shall be designed for convenient connections and inter-connections with the various switchgears. Connections from individual compartments to cable alleys shall be such as not to shut down healthy circuits in the event of maintenance work becoming necessary on a defective circuit.
- vi) Care shall be taken to provide adequate clearances between phase bus bars as well as between phase bus bars, neutral and earth.
- vii) Where terminations are done on the bus bars by drilling holes therein, extra cross section shall be provided for the bus bars. Alternatively, terminations may be made by clamping.
- viii) Provision shall be made for proper termination of cables at the switchboards such that there is no strain either on the cables, or on the terminators. Cables connected to the upper tiers shall be duly clamped within the switchboard.
- ix) Identification labels shall be provided against each switchgear and starter compartment, using plastic engraved labels.
- x) Metallic danger board conforming to relevant IS shall be fixed on each electrical switchboard.
- xi) Switchboard housing only isolators near cooling towers shall be housed in weather proof enclosure, to suit the site conditions.

#### Power Cabling

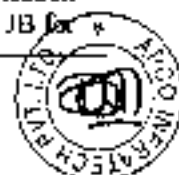
- i) Unless otherwise specified, the power cables shall be XLPE insulated, PVC outer sheathed aluminium conductor, armoured cables rated for 1100 V grade. The power cables shall be of 3 core for single phase, 4 core for sizes upto and including 25 sq.mm, 5-1/2 core for sizes higher than 25 sq.mm for 3 phase. Where high voltage equipments are to be fed, the cables shall be rated for continuous operation at the voltages to suit the same.
- ii) Cables shall be laid directly in ground or clamped on structures, as may be required. Cable ducts shall not be provided in rooms.

#### Power Factor Capacitors

- i) PF capacitors shall be provided for all motor loads of 5 HP and above. These capacitors shall come into circuit when the respective motor load is switched on. For this purpose, necessary interconnections between the capacitors and the motors/starters shall be included.
- ii) The power capacitors shall be of such value as to improve the PF to 0.95 lagging when the motor is running at full load. In the case of large size motors, the capacitors may be made in suitable banks so that the required banks of capacitors may be switched under partial load conditions. Such operations of individual banks shall be automatic.

#### 60) Swaged Pole for Street Lighting:

The tubular pole made up of M.S pipe conforming to IS specification 1239/1973, with a bottom plate 450mm x 450mm x 10 mm thick and JB for



cable termination. Installation includes construction of required foundation. All poles shall be erected properly. A Suitable base flange will be welded and plate reinforcements will be provided between base flange & pole. Lighting luminaires along with its control gear and lamp shall be aligned properly in order to ensure desired light distribution and to avoid glare. Fixing arrangements of luminaires shall be such that even during stormy weather conditions the fixtures shall not get misaligned. The typical arrangements for 6m street light pole are shown in Drawing No: 1695/II/MCL/C2/STD/ELE/112 - Typical street light pole arrangements

vi. a) **Underground Sump / RCC water Retaining Structures**

The scope of work includes but not limited to the following

- R.C.C. sump of required capacity as shown in the drawings. For sizes and design refer drawing no.1695/II/MCL/C2/STD/TWS/148g
- Design, supply and installation of submersible pump sets 2 nos. (1 working + 1 Stand by) of 3 phase electric motor frame with coupling guard and it's fasteners for pumping water from bore well (capacity as per site conditions and yield of tube well)
- All RCC structure for water storage shall be as per latest IS 6494 - 1988 (reaffirmed 2010)
- The grade of concrete shall be of M30.
- If the sump is located at the parking area, the cover slab shall be designed to take care of heavy vehicle load (maximum).

**Testing:**

- The tank shall thereafter be got filled into the full height immediately and water stored for a minimum period of seven days so as to observe any leakages / defects for necessary compliance. In the case of tanks whose external faces are exposed, the requirements of the test shall be deemed to be satisfied if the external faces shown no sign of leakage and remain apparently dry over the period of observation of seven days after allowing a seven days period for absorption after filling the tank for full height. If the structure does not satisfy the conditions of test, the period of test shall be extended for a further period of seven days and if specified limit is then reached, the structure may be considered a satisfactory.
- In the case of tanks whose external faces are exposed or can be left exposed prior to testing all leakages, wet patches and the like, shall be marked out on the outside of walls during test. The tank shall then be dewatered and the defects made good by grouting, waterproofing, plastering etc. as necessary to the entire satisfaction. The tank shall again be tested for leakage after rectification. The work shall not be accepted unless the water tightness is established.
- Pressure grouting shall be carried out in the event of any leakages in the underground sump as well as in any RCC structure.

vi. b) **Fire Fighting:**

The design and planning of Fire Protection Systems shall be done keeping in view the following criteria:

- a) National Building Code Sept 2005, Part IV for Fire Protection
- b) Local Bye-Laws and in consultation with local Chief Fire Officer.
- c) Relevant BIS codes: Specifically IS: 3044, IS: 5290 and IS: 5312, IS: 908 and IS: 2190, IS: 3844, IS: 15105, IS:15683
- d) NFPA & TAC Manual (for reference and guideline)

Construction of Right Lane divided Expressway starting before KMP Expressway and ends at Ch. 47+000 near Kumbhar Ghat (K. 47+000 to Ch. 47+400) section of Delhi - Zaidara Greenfield Alignment (NH 146N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana



The scope of work includes but not limited to the following:

- Providing and fixing of 6Kg ABC Dry powder (Stored pressure) type fire extinguisher. Pressurized with dry nitrogen gas at 1.5 bar. Design, Construction, and testing as per IS 15643 with fire rating 3A 21D, Body Hydro-tested at 35 bar, Operating temperature - 30°C to +55°C, external epoxy powder coating with PO red shade No.538 of IS 5, with standard accessories.

**vi. Signages:**

**a) External Signages**

- External Signages shall include Building Signages (as per branding requirements)
- Other signages such as way finding signages, parking, prohibition signages etc. shall be generally as per standard drawings at locations required for proper movement of vehicles and pedestrians.
- Traffic signages inside the premises and along the approach roads shall comply to IRC / McRTTI Standards

**b) Internal Signages**

As required for operations and branding: Prohibition signages are mandatory (No smoking / Non consumption of alcohol etc.)

Refer drawing no. 1695/11/MCL/C2/STD/AR/130

**Signages**

Supplying, providing and fixing of signages / Pictorial Signages for the wayside amenities, as per standards and regular market practice.

Providing and fixing of signages, modular curved frame technology, of various widths and lengths, to form suggested usages, made of aluminium extruded sections, duly protected all signages shall be provided with 0.6-0.8mm polycarbonate protecting film over the prints, of appropriate size, Model : (Ilusion by SIGNSUTRA or Equivalent of approved make.

**a. Way finding Signs**

• Ceiling direction sign board (300x1200mm)

• Direction arrows (300x400mm)

**• Toilets**

• Gents Wall Projected (both side) (210x250mm) Door plate (125x150mm) + a large picture for Man

• Ladies Wall Projected (both side) (210x250mm) Door plate (125x150mm) + a large picture for Woman

• Differently able Person Wall Projected (both side) (210x250mm) + a large picture Differently able Person Door plate (125x150mm)

**• Others**

• Dms/ Wall mounted Signage's

• Drinking Water

• Electric / AHU rooms

**• Prohibition Signage**

• No Smoking

• Restricted area-authorized personnel only

• Safety Notice- be kept clear to Emergency

• Exit Light with 2 Hr Backup (Exit)





- c) **Neon Signages**  
As required for operations and branding
- d) **Key Map Signages**  
As required for operations
- e) **Highway Way finding Signages on the Highway:-** Shall be provided at a distances of 1Km, 500m and 100m before the entry of the site on both sides of the project  
Design, construction and fabrication shall be in accordance with the standard drawings  
*Refer drawing no. 1695/HMCL/C2/STD/AR/132*
- f) **Totem (Minimum 2 Nos for each site - LHS or RHS)**  
A minimum of one totem (main totem) shall be provided. Design, construction and fabrication and number of other Totems shall be in accordance with the standard drawings. Refer drawing no. 1695/HMCL/C2/STD/AR/132
- g) **Front Light Facia for Faad Court & Dhaba**  
Shall be ACP of approved colour and shade with front lighting as shown in drawings.

**1.6 Landscaping and Arboriculture (as per site specific and standard drawings)**

- a) **Landscaping:**  
**Soil Preparation & Planting:** Treching in ordinary soil upto required depth as suggested for respective planting species and refilling the same pit with manure earth including all preparation and measures for plants like Groundcover (lawn), Shrubs, creepers, Climbers etc., with all leads and lifts.

Providing and planting Groundcover (lawn), Shrubs, Creepers, and Climbers etc., of suggested height and as per standard specification / as per best market methodology. Digging holes in ordinary soil and refilling the same with the excavated earth mixed with manure or sludge in the standard ratio, flooding with water, dressing including removal of rubbish and surplus earth with all leads and lifts. Providing and planting of ornamental flowering & foliage trees as indicated height in the drawing. *Note: The plants and tree, species to be selected to suit respective Agro-climatic conditions.*

**Sprinkler System:** Providing, laying and testing of HDPE pipe lines of required dia. with PTMT self revolving type sprinkler fittings at appropriate fixed location to cover the entire landscaped area for water supply including all necessary tools and tuckles. The water supply for the Arboriculture area may be tapped from the recycled water from up flow anaerobic filtered water of septic tank.

**Landscaping and Area development**

The landscaping and ground cover system having hard and soft treatment shall enhance the appearance of selected areas, enhance soil and slope stabilization on the generating station, and assist in reducing the noise level and fugitive dust generated by the plant.

Comprehensive landscaping & area development shall be provided included flower bed for seasonal flower, water body and fountains for important area

The landscaping system shall include a routine maintenance program. Expected maintenance for the area shall be as follows:

- Weeds and insect control for plant material and turf.
- Weed control



- Fertilization
- Mowing and trimming
- Pruning
- Watering

Landscaping and stabilization of the site should begin after excavation, trenching, backfilling, rough grading, surfacing and paving have been completed. Slopes of three-to-one (3:1) or steeper shall be stabilized as soon as possible after final grading.

b) Horticulture Operations/Arboriculture: -do-



Construction of Eight Lane divided carriageway Section before KMP Expressway and ends at Ch. 47+000 near Khajura (Ch. 18+000) to Ch. 47+000) section of Delhi - Yamotara Greenfield Alignment (NH-145N) as EPC Mode under Bharatmala Pariyojana in the State of Haryana

## II. Civil Works / Buildings:-

Foundation	Design as per Geo Technical Investigation, Hard Soil: Isolated Footing/ Combined Footing. Clay soil Raft Foundation/ Pile Foundation
Super Structure	1. Conventional / Pre Engineered Building/ Steel Structure / RCC Frame Structure with masonry Wall (Bricks min. designation class 50 or CC blocks) 2. Brick masonry with cement mortar 1:6, internal plastering (12mm) 1:4, External plastering (18mm - 1 <sup>st</sup> layer 12mm 1:5, 2 <sup>nd</sup> Layer brick 1:3)
Slabs/ Roofing	Steel deck sheet with RCC screed/ Double skin steel roof with insulation (Clip-Lock System) without drilling
Anti-termite Treatment	Applicable for all buildings as per CPWD DSR code numbers

## Schedule of finishes, Way side Amenities / Service Areas and Toll plaza

S. No.	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All S&I Top	Internal Painting	Ceiling	Joineries			Exterior Plaster Ceiling
									Doors	Window & Ventilators	Exterior	
1	FOOD PLAZA	Entry	Polished Kota Stone With White marble Strip	100mm High Skirting as per flooring material	20 mm thick polished Kota stone with edge finish		Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal door/rolling shutter with grill.	UPVC joineries Steel coil framed sections made of Galvanized coil coated or powder coated with (M.S. grills and fly proof mesh for kitchen and canteen)	Snowcrete Paints (outer surface of building).	Not Applicable
		Toilet	Ceramic Tiles (300 X300 MM)	Ceramic Tiles (300 X600mm) upto 2136 mm High								

Construction of Eight Lane divided carriageway starting before RMP Expressway and ends at Ch. 47+500 near Kharapur Ghata (Ch. 18+500 to Ch. 47+900) section of Delhi - Yamunapur Greenfield Alignment (NH-100) on EPC mode under Andhra Pradesh Government on the State of Andhra Pradesh.



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## Schedule of finishes - Way side Amenities / Service Areas and Toll plaza

S. No.	Buildings Name	Area	Flooring	Wall Skirting/ dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
		Restaurant, Departmental Store	Vitrified Tiles (600 X600 MM)	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Mineral Fibr False ceiling/ Metal False ceiling/ Seamless gypsum board false ceiling with multi surface paint (Emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal door/rolling shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (MS grills and fly proof mesh for kitchen, toilets and durability)	Snowcem Paints (outer surface of building).	Not Applicable
		Shop, Kiosk	Polished Kota Stone With White marble Strip	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Mineral fibre False ceiling/ Metal False ceiling/ Seamless gypsum board false ceiling with multi surface paint (Emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal door/rolling shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (MS grills and fly proof mesh for kitchen, toilets and durability)	Snowcem Paints (outer surface of building)	Not Applicable
		Open to Sky	Red sand stone	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Snowcem Paints (outer surface of building).	Not Applicable

Construction of Eight Lane divided carriage way starting before KMP Expressway and ends at Ch 47+050 near Kharpur Ghat (Ch. 18+500 to Ch. 47+050) section of Delhi - Varanasi Greenfield Alignment (NH-100) as EPC Mode under Bharatmala Parayana to the State of Haryana



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Schedule of finishes - Way side Amenities / Service Areas and Toll plaza												
S. No.	Buildings Name	Area	Flooring	Wall Skirting/ dado	Partition Walls	All Wall Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
		Staircase	Polished Kota Stone With White marble Strip	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Mineral fibre False ceiling/ Metal False ceiling/ Scan'net gypsum board false ceiling with anti surface paint (Emulsion paint)	ABS (Acrylate, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal door/trailing shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M S grills and fly proof mesh for kitchen, toilets and dormitory)	Snowcem Paints (outer surface of building).	Not Applicable
		Passage	Polished Kota Stone With White marble Strip	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>2 TRAVEL INFORMATION &amp; PASSENGER FACILITIES</b>												
		Passenger Information	Polished Kota Stone With White marble Strip	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylate, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal door/trailing shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M S grills and fly proof mesh for kitchen	Snowcem Paints (outer surface of building).	Not Applicable

Construction of Eight Lane divided carriageway starting before KMP Expressway, and ends at CR 47+500 near Khajpur Ghata (Ch. 38+500 to Ch. 47+000) section of Delhi - Jaipur Greenfield Alignment (NSI-143N) on EPC Mode under Bharatnala Pariyojana in the State of Haryana

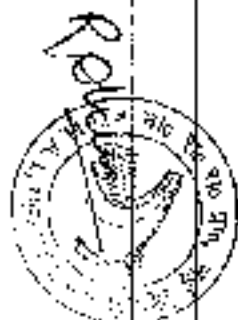


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Schedule of finishes - Way side Amenities / Service Areas and Toll plaza												
S. No.	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
		Travel Information	Vitrified Tiles (500 X600 MM)	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Main surface paint (plastic emulsion paint)	Main surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) erect Doors in wooder texture finish/Galva nized steel hellex metal decontrolling shutter with grill	UPVC Joineries' Steel roll formed sections made of Galvanized color coated or powder coated with (M.S grids and fly proof mesh for kitchen, toilets and dormitory)	Snowcoat Paints (outer surface of building)	Not Applicable
		TOILET	Ceramic Tiles (300 X300 MM)	Ceramic Tiles (300 X300mm) upto 2100 mm high		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) erect Doors in wooder texture finish/Galva nized steel hellex metal decontrolling shutter with grill	UPVC Joineries' Steel roll formed sections made of Galvanized color coated or powder coated with (M.S grids and fly proof mesh for kitchen, toilets and dormitory)	Snowcoat Paints (outer surface of building)	Not Applicable
		PASSAGE	Polished Kota Stone With	100mm High Skirting as per flooring material		20 mm thick polished Kota stone	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Construction of Right Lane divided carriage-way starting before RMP Expressway and ends at Ch. 47+100 near Khaspur Ghat (Ch. 18-500 to Ch. 47+500) section of Delhi - Vadodra Greenfield Alignment (N.T.T. - A.S.N) on NPC Mode under Bharatmala Pariyojana in the State of Haryana



## Schedule of finishes - Way side Amenities / Service Areas and Toll plaza

S. No.	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
			White marble Slab			with edge finish	emulsion paint	emulsion paint				
	<b>TOILET</b>											
	LADIES TOILET		Ceramic Tiles (300 X300 VM)	Ceramic Tiles (300 X600mm) upto 2100 mm high		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal door/shutter with grill	UPVC joineries Steel roll formed sections made of Galvanized color coated or powder coated with (MS grills and fly proof mesh for kitchen, toilets and sanitary)	Scowcam Paints (outer surface of building).	Not Applicable
	GENTS TOILET		Ceramic Tiles (300 X300 MM)	Ceramic Tiles (300 X600mm) upto 2100 mm high		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal door/shutter with grill	UPVC joineries Steel roll formed sections made of Galvanized color coated or powder coated with (MS grills and fly proof mesh for kitchen	Scowcam Paints (outer surface of building).	Not Applicable

Construction of Eight Lane divided carriageway starting before KMP Expressway and ends at Ch. 47+290 near Khanpur Ghazi (Ch. 13+500 to Ch. 47+000) section of Delhi - Vadodra Greenfield Alignment (NH-1400) in EPC Mode under Bharatmala Partnership in the State of Gujarat.

Schedule of finishes - Way side Amenities / Service Areas and Toll plaza												
S. No.	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Interiors		Exterior	External False Ceiling
									Doors	Window & Ventilators		
										interior and dormitory)		
	<b>DORMITORY</b>											
		Toilet	Ceramic Tiles (300 X300 MM)	Ceramic Tiles (300 X600mm) upto 2100 mm high	20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile Butadiene and Styrene) smart Doors in wooden texture Finish/Galvanized steel hollow metal door lining shutter with grill	UPVC joineries' Steel roll formed sections made of Galvanized color coated or powder coated with (M.S grill and fly proof mesh for kitchen, toilets and dormitory)	Sanitum Paints (interior surface of building).	Not Applicable	
		Room	Polished Kota Stone With Warm rubber Strip	100mm High Skirting as per flooring material	20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal door lining shutter with grill	UPVC joineries' Steel roll formed sections made of Galvanized color coated or powder coated with (M.S grills and fly proof mesh for kitchen.	Sanitum Paints (interior surface of building).	Not Applicable	

Construction of Eight Lane divided carriageway starting before KMP Expressway and ends at Ch. 47+000 near Khajuraho Ghat (Ch. 18+306 to Ch. 47+000) section of Delhi - Varanasi Greenfield Alignment (NH-100), on E.P. Made under Bharatnala Purvayama in the State of Haryana





Schedule of finishes\_ Way side Amenities / Service Areas and Toll plaza

S. No.	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
		Staircase	Polished Kota Stone With White marble Strip	100mm High Skirting as per flooring material	20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)		ABS (Acrylonite, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal counter rolling shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M S grills and fly proof mesh for kitchen, toilets and dormitory)	Screened Paints (outer surface of building).	Not Applicable
5	MOTEL.	Recreation	Vitrified Tiles (600 X600 MM)	100mm High Skirting as per flooring material	20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)		ABS (Acrylonite, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal counter rolling shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M S grills and fly proof mesh for kitchen, toilets and dormitory)	Screened Paints (outer surface of building)	Not Applicable

Construction of Eight Lane divided carriageway starting before KMP Expressway and ends at Ck. 47-090 near Nangpur Ghazi (Ck. 45+500 to Ck. 47-000) section of Delhi - Ludhiana Greenfield Alignment (PH-1482) on EPC Mode under Government Participation in the State of Haryana



Schedule of Finishes - Way side Amenities / Service Areas and Toll plaza

S. No.	Buildings Name	Area	Flooring	Wall Skirting/ dado	Partition Walls	All Sill Tops	Internal Paining	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
		Rooms	Vitrified Tiles (600 X600 MM)	100mm High Skirting as per flooring material		20 mm thick polished Kasa stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanneized steel hollow metal door/rolling shutter with grill.	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M S grills and fly proof mesh for kitchen, toilets and dormitory)	Snowcem Paints (outer surface of building).	Not Applicable
		Passage	Polished Kota Stone With White marble Strip	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile Butadiene and Styrene) smart Doors in wooden texture finish/Galvanneized steel hollow metal door/rolling shutter with grill.	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M S grills and fly proof mesh for kitchen, toilets and dormitory)	Snowcem Paints (outer surface of building).	Not Applicable
		Dining	Marble Stone	100mm High Skirting as per flooring material		20 mm thick polished Marble Stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder	Snowcem Paints (outer surface of building).	Not Applicable

Construction of Eight Lane divided carriage way starting before RMP Expressway and ends at Ch. 47+500 near Khaspur Ghata (CP- 18+500 to Ch. 47+000) section of Delhi - Jodhpur Greenfield Alignment (NH-1A2N) on N.P.L. Mode under Bharatmala Programme in the State of Haryana

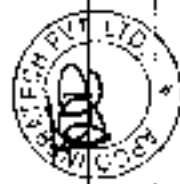
## Schedule of Finishes - Way side Amenities / Service Areas and Toll plaza

S. No.	Building Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Silt Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Windows & Ventilators		
		Kitchen	Marble Stone	100mm High Skirting as per flooring material	20 mm thick polished Marble Stone with edge finish		Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonite, Butadiene and Styrene) smart Doors in wooden texture finish Galva mixed steel hollow metal doorrolling shutter with grill	coated with (M S) grills and fly proof mesh for kitchen, toilet and dormitory.	Smooth Paints (outer surface of building).	Not Applicable
		Health Club	Marble Stone	100mm High Skirting as per flooring material	20 mm thick polished Marble Stone with edge finish		Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonite, Butadiene and Styrene) smart Doors in wooden texture finish Galva mixed steel hollow metal doorrolling shutter with grill	UPVC Joineries Steel roll formed sections made of Galvanized color coated or powder coated with (M S) grills and fly proof mesh for kitchen.	Smooth Paints (outer surface of building).	Not Applicable

Construction of Eight Lane divided carriageway starting before KMP Expressway and ends at Ch. 47+000 near Khunpur Ghat (Ch. 18+366 to Ch. 47+000), section of Delhi - Yashwantrao Chavan Road Alignment (NH-148B) on FPC Mode under Bharatmala Pariyojana in the State of Haryana



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Schedule of Finishes - Way side Amenities / Service Areas and Toll plaza												
S. No.	Buildings Name	Area	Flooring	Wall Skirting/ dadu	Partition Walls	AD Sill Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
		Shop	Marble Stone	100mm High Skirting as per flooring material		20 mm thick polished Marble Stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile Butadiene and Styrene) smart Doors in wooden texture Finish/Galvanized steel hollow metal doorrolling shutter with grill	UPVC junctions/ Steel roll formed sections made of Galvanized color coated or powder coated with (M.S grill's and fly proof mesh for kitchen, toilets and dormitory)	Smooth Paints (inter surface of building).	Not Applicable
		Toilet	Ceramic Tiles (300 X300 X10M)	Ceramic Tiles (300 X300mm) upto 2:00 mm high		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal doorrolling shutter with grill	UPVC junctions/ Steel roll formed sections made of Galvanized color coated or powder coated with (M.S grill's and fly proof mesh for kitchen, toilets and dormitory)	Smooth Paints (inter surface of building).	Not Applicable
		Staircase	Polished Kota Stone	100mm High Skirting as per flooring material		20 mm thick polished Kota stone	Multi surface paint	Multi surface paint	ABS (Acrylonitrile Butadiene	UPVC junctions/ Steel roll	Smooth Paints (inter	Not Applicable

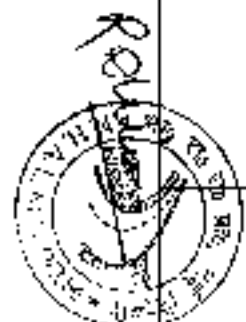
Construction of Eight Lane divided carriageway stretching before KMP Expressway and ends at Ch. 47+000 near Dhanu Ghati (Ch. 18+500 to Ch. 47+000), section of Delhi - Vadodra Greenfield Alignment NH-146N, an EPC Mode under Bharatmala Pariyojana in the State of Haryana

Schedule of finishes- Way side Amenities / Service Areas and Toll plaza												
S. No.	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Treat	Internal (painting)	Ceiling	Joineries		Exterior surface of building)	Exterior False Ceiling
									Doors	Window & Ventilators		
			With White scabie Slip			with edge finish	(plastic emulsion paint)	(plastic emulsion paint)	and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal door rolling shutter with grill	formed sections made of Galvanized color coated or powder coated with (M/S grills and fly proof mesh for kitchen, toilets and sanitary)	surface of building)	
	TRUSA	Reception	Marble Stone	80mm High Skirting as per flooring material	20 mm thick polished Marble Stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal door rolling shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M/S grills and fly proof mesh for kitchen, toilets and sanitary)	Smooth Paints (water surface of building).	Not Applicable	
		O.T.	Marble Stone	100mm High Skirting as per flooring material	20 mm thick polished Marble Stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture	UPVC joineries/ Steel roll formed sections made of Galvanized color coated	Smooth Paints (water surface of building).	Not Applicable	

Construction of Eight Lane divided carriageway starting before RMP Expressway and ends at Ch. 47+250 near Khajpur Bazar (Ch. 18+500 to Ch. 47+300) section of Delhi - Vadodra Greenfield Alignment (NH-148) on EPC Mode under Bharatmala Pariyojana in the State of Haryana.

Schedule of finishes - Way side Amenities / Service Areas and Toll plaza												
S No.	Buildings Name	Area	Flooring	Wall Skirting/ dado	Partition Walls	All SBI Tops	Internal Painting	Ceiling	Joineries			Exterior false Ceiling
									Doors	Window & Ventilators	Exterior	
									Iron/Galva nized steel hollow metal door/rolling shutter with grill	or powder coated with (M S grills and fly proof mesh for kitchen, toilets and dormitory)		
		Doctors Room	Vitrified Tiles (600 X600 MM)	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Galva nized steel hollow metal door/rolling shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M S grills and fly proof mesh for kitchen, toilets and dormitory)	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M S grills and fly proof mesh for kitchen, toilets and dormitory)	Not Applicable
		Ward	Polished Kota Stone With White marble Strip	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Galva nized steel hollow metal door/rolling	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M S grills and fly proof	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with	Not Applicable

Construction of Eight Lane divided carriage-way starting before KMP Expressway and ends at Ch. 47+300 near Khajpur Ghat (Ch. 38+300 to Ch. 47+300) section of Delhi - Vadodra Greenfield Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana.



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Schedule of finishes - Way side Amenities / Service Areas and Toll plaza												
S. No.	Building Name	Area	Flooring	Wall skirting/dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
		Store-rooms	Polished Kota Stone With White marble Strip	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	shutter with grill	mesh for kitchen, toilets and dormitory;	(M.S. grills and fly proof mesh for kitchen, toilets and dormitory)	
		Toilet	Ceramic Tiles (300 X300 MM)	Ceramic Tiles (300 X300mm) upto 2000 mm high		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal door/rolling shutter with grill	UPVC joineries' Steel roll formed sections made of Galvanized color coated or powder coated with (M.S. grills and fly proof mesh for kitchen, toilets and dormitory)	UPVC joineries' Steel roll formed sections made of Galvanized color coated or powder coated with (M.S. grills and fly proof mesh for kitchen, toilets and dormitory)	Not Applicable
												Not Applicable

Construction of Eight Lane divided carriageway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Ch. 18+200 to Ch. 47+000), section of Delhi - Vadodra Greenfield alignment PH-148N, on EPC Mode under Bharatmala Pariyojana in the State of Haryana



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Schedule of finishes - Way side Amenities / Service Areas and Toll plaza												
S. No.	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries		Kereler	Exterior Fake Ceiling
									Doors	Window & Ventilators		
									hollow metal door/shutter with grill	(M.S grills and fly proof mesh for kitchen, toilets and cotinatory)		
		Office	Ceramic Tiles (300 X300 MM)	Ceramic Tiles (300 X600mm) upto 2100 mm high	20 mm thick polished Kota stone with edge finish		Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal door/shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M.S grills and fly proof mesh for kitchen, toilets and cotinatory)	Smooth Paints (inter surface of building).	Not Applicable
		Toilet	Ceramic Tiles (300 X300 MM)	Ceramic Tiles (300 X600mm) upto 2100 mm high	20 mm thick polished Kota stone with edge finish		Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal door/shutter	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M.S grills and fly proof	Smooth Paints (inter surface of building)	Not Applicable

Construction of Eight Lane divided carriageway starting before RAMP Expressway and ends at Ch. 47+500 near Khajpur Ghats (Ch. 18+500 to Ch. 47+900) section of Delhi - Vardolara Greenfield Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojna in the State of Haryana





Schedule of Finishes - Way side Amenities / Service Areas and Toll plaza												
S. No.	Buildings Name	Area	Flooring	Wall cladding/ cladd	Partition Walls	All SID Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
									shutter with grill	mesh for kitchen, toilets and cornicery)		
<b>SERVICE STATIONS &amp; REPAIR SHOPS</b>												
		Service Bay	Fluorinated concrete flooring	110mm High Skating as per Drawing contract	20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wicker texture finish/Galvanized steel hollow metal door/rolling shutter with grill.	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with MS grills and fly proof mesh for kitchen, toilets and cornicery)	Snowrem Panels (outer surface of building).	Not Applicable	
		Office	Polished Kota Stone With White marble Strip	100mm High Skating as per Drawing contract	20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wicker texture finish/Galvanized steel hollow metal door/rolling shutter with grill.	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with MS grills and fly proof mesh for kitchen,	Snowrem Panels (outer surface of building).	Not Applicable	

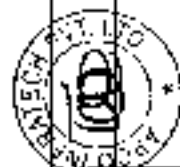
Construction of High Lane divided carriageway starting before EEP Expressway and ends at Ch. 47+000 near Khampur Ghats (Ch. 18+500 to Ch. 47+000) section of Delhi - Vashdara Greenfield Alignment (NH-149A) on EPC Mode under Bharatmala Pariyojana in the State of Haryana

Schedule of finishes - Way side Amenities / Service Areas and Toll plaza

S. No.	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior Finish Ceiling
									Doors	Window & Ventilators		
		toilet	Ceramic Tiles (300 X300 MM)	Ceramic Tiles (300 X500mm) upto 2135 mm high		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Galva mixed steel hollow metal door/shutter with grill.	UPVC junction/ Steel roll formed sections made of Galvanized color coated or powder coated with (M.S. grills and fly proof mesh for kitchen, toilets and dormitory)	Snowrem Panels (outer surface of building).	Not Applicable
9	<b>HIGHWAY PETROLING</b>											
		Parkings/ Generator/ Battery Rooms	Hardwite concrete flooring	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Galva mixed steel hollow metal door/shutter with grill	UPVC junction/ Steel roll formed sections made of Galvanized color coated or powder coated with (M.S. grills and fly proof mesh for kitchen, toilets and dormitory)	Snowrem Panels (outer surface of building)	Not Applicable



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Construction of Eight Lane dual carriageway starting before KMP Expressway and ends at Ch. 47+900 near Khanpur Ghata (Ch. 18+500 to Ch. 47+900) section of Delhi - Mathura Greenfield Alignment (MS-132) on EPC Mode under Bharatmala Pariyojana in the State of Haryana.

Schedule of finishes - Way side Amenities / Service Areas and Toll plaza												
S No.	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Tops	Internal Plating	Ceiling	Joineries			Exterior False Ceiling
									Doors	Window & Ventilators	Exterior	
		Offices/Kitchen/Partry	Polished Kota Stone With White marble Strip	100mm High Skirting as per Finishing material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal door/rolling shutter with grill	UPVC joineries/ Steel roll framed sections made of Galvanized color coated or powder coated with (MS grills and fly proof mesh for kitchen, toilets and dormitory)	Snowem Paints (outer surface of building).	Not Applicable
		Ticket	Ceramic Tiles (400 X300 MM)	Ceramic Tiles (300 X500mm) upto 2100 mm high		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture Finish/Galvanized steel hollow metal door/rolling shutter with grill.	UPVC joineries/ Steel roll lurned sections made of Galvanized color coated or powder coated with (MS grills and fly proof mesh for kitchen, toilets and dormitory)	Snowem Paints (outer surface of building).	Not Applicable
10	SHOPPING/COMMUNICATION CENTRE											
		Stops	Polished Kota Stone With	100mm High Skirting as per finishing material		20 mm thick polished Kota stone	Multi surface paint (plastic	Multi surface paint (plastic	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors	UPVC joineries/ Steel roll lurned sections made of Galvanized	Snowem Paints (outer	Not Applicable

Construction of Eight Lane divided carriageway starting before KAP Expressway and ends at Ch. 471500 near Kinnapur Ghat (Ch. 18+500 to Ch. 47+900) section of Delhi - Varanasi Greenfield Alignment (GFA-1408) on EPC Mode under Bipartite Memorandum of Understanding in the State of Uttar Pradesh.



Schedule of finishes - Way side Amenities/ Service Areas and Toll plaza												
S. No.	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All NIB Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
		Toilet	White marble Strip			with edge finish	emulsion paint	emulsion paint	in wooden texture finish /Gully mixed steel hollow metal door/rolling shutter with grill	color coated or powder coated with (M S grills and fly proof mesh for kitchen, toilets etc. dormitory)	surface of building	
			Ceramic Tiles (300 X300 X8mm)	Ceramic Tiles (300 X600mm) upto 2100 mm high		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) or in wooden texture finish/Gully mixed steel hollow metal door/rolling shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M S grills and fly proof mesh for kitchen, toilets and dormitory)	Spowern Paints (outer surface of building)	Not Applicable
11	<b>ELECTRICAL SUB STATION (ESS)</b>											
	HT Panel /LT Panel Rooms		Hardwate concrete flooring	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) or in wooden texture finish/Gully mixed steel hollow metal door/rolling shutter	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M S grills and fly proof	Spowern Paints (outer surface of building)	Not Applicable

Construction of Eight Lane divided carriage-way starting in Jark KMP Expressway and ends at Ch. 47+500 near Khaupur Ghata (Ch. 38+500 to Ch. 47+500) section of Dehri - Patildara Greenfield Alignment (NH-143) on EPC Mode under Bharatmala Pariyojani in the State of Haryana.

Schedule of finishes, Way Side Amenities / Services Areas and Toll plaza												
S. No.	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
		HT TR-1,2	Hardwax concrete flooring	100mm High Skirting as per flooring material		Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
		DG SET-1,2	Hardwax concrete flooring	Not Applicable		Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
		Tolls:	Ceramic Tiles (400 X300 MM)	Ceramic Tiles (300 X450mm) upto 2'000 mm high	20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal controlling shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (MS grill) and fly proof mesh for kitchen, toilets and dormitory)	Swisscon Paints (interior surface of building).	Not Applicable	
12	SPA	Reception	Marble Stone	100mm High Skirting as per flooring material	20 mm thick polished Marble Stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder	Swisscon Paints (interior surface of building).	Not Applicable	

Construction of Eight Lane divided carriageway starting before KMP Expressway and ends at Ch. 47+000 near Khaspur Ghazi (Ch. 18+506 to Ch. 47+000) section of Delhi - Yashpur Greenfield Alignment (NH-148N), an EPC Mode under Bharatmala Pariyojana in the State of Haryana

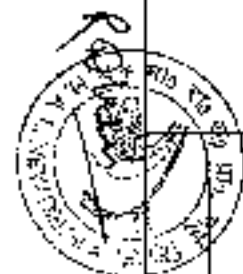


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Schedule of finishes - Why side Amenities / Service Areas and Toll plaza												
S. No.	Buildings Name	Area	Flooring	Wall skirting dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries		Exterior	Easter for False Ceiling
									Doors	Window & Ventilators		
									nized steel hollow metal door/bolling shutter with grill	coater with (M S grills and fly proof mesh for kitchen, toilets and dormitory)		
		Halls	Marble Stone	100mm High Skirting as per Lounging material	20 mm thick polished Marble Stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	AHS (Acrylonitrile, Butadiene and Styrene) sheet Doors in wooden texture finish/Galvanized steel hollow metal door/bolling shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M S grills and fly proof mesh for kitchen, toilets and dormitory)	Snowcon Paints (outer surface of building).	Not Applicable
		Toilet	Ceramic Tiles (300 X300 MM)	Ceramic Tiles (300 X300mm) upto 2100 mm high	70 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	AHS (Acrylonitrile, Butadiene and Styrene) sheet Doors in wooden texture finish/Galvanized steel hollow metal door/bolling shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M S grills and fly proof mesh for kitchen, toilets and dormitory)	Snowcon Paints (outer surface of building).	Not Applicable

Construction of Bypass Lane divided carriageway starting before KMP Expressway and ends at Ch. 471500 near Khropur Ghos (Ch. 18+500 to Ch. 471500) section of Delhi - Yadadura Greenfield Alignment (NH-148N) via EPC Mode under Bharatmala Pariyojana in the State of Jharkhand



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Schedule of finishes - Way side Amenities / Service Areas and Toll plaza												
S. No.	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
	HEALTH	Reception	Marble Stone	100mm High Skirting as per flooring material	20 mm thick polished Marble Stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Color mixed steel hollow metal door/rolling shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M.S grills and fly proof mesh for kitchen, toilets and dormitory)	Snowcem Paints (outer surface of building)	Not Applicable	
		Halls	Marble Stone	100mm High Skirting as per flooring material	20 mm thick polished Marble Stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Color mixed steel hollow metal door/rolling shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M.S grills and fly proof mesh for kitchen, toilets	Snowcem Paints (outer surface of building)	Not Applicable	

Construction of Eight Lane Divided carriageway starting before RMP Expressway and ends at Ch. 47+000 and Khunpur Ghat (Ch. 18+500 to Ch. 47+000) section of Delhi - Vadoinra Greenfield Alignment (NH-100) on EPC Mode under Bharatmala Pariyojana in the State of Haryana



Schedule of finishes_ Way side Amenities / Serv/Sec Areas and Toll plaza												
S. No.	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
		Urlet	Concrete Tiles (300 X300 MM)	Ceramic Tiles (300 X600mm) upto 3100 mm high		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) surface Doors in wooden texture Finish Galvanized steel hollow metal door/bolling shutter with grill	UPVC joineries: Steel roll formed sections made of Galvanized color coated or powder coated with (M.S) grills and fly proof mesh for kitchen, toilets and Corridor.	Stucco Paints (outer surface of building).	Not Applicable
14	<b>PETROL PUMP</b>											
		Petrol Pump	Heavy Duty Concrete Paver Blocks	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	ACP Canopy
15	<b>PARKINGS</b>											
		Pavements (Parkings)	Heavy Duty Concrete Paver Blocks	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	<b>INTERNAL ROADS</b>											
		Internal Road										
17	<b>DELOPAD</b>											

Construction of Eight Lane divided carriageway abutting before RMP Expressway and ends at (S. 47+000) near Kharwar (State (Ch. 184-500 to Ch. 47-000) section of Tolu - Fuldahra Greenfield Alignment: CH-148N) as EPC Mode under Bharatmala Pariyojana in the State of Haryana



Schedule of finishes - Way side Amenities / Service Areas and Toll plaza												
S No.	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries			Exterior False Ceiling
									Doors	Window & Ventilators	Exterior	
		Helipad										
<b>IS BOUNDARY WALL</b>												
		Boundary Wall/Barbed wire fencing										

Schedule of finishes - Smaller parking places with Toilet Facilities Service Area												
S No.	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
1.		Shop	Polished Kota Stone With White marble Strip	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface putty or plastic emulsion paint	Multi surface putty (plastic emulsion paint)	ABS (Acrylics, Benzidine and Styrene) smart Doors in warden texture finish (galvanized steel) hollow metal door rolling shutter with grill	UPVC joineries/ Steel roll formed sections type of Galvanized color coated or powder coated with (MS grills and fly proof mesh for kitchen, toilet and laboratory)	Snowcem Paints (outer surface of building).	Not Applicable
2.		Toilet	Ceramic Tiles (300	Ceramic Tiles (300 X600mm) upto 2100 mm high		20 mm thick polished	Multi surface	Multi surface	ABS (Acrylic)	UPVC joineries	Snowcem Paints	Not Applicable

Construction of Right Lane divided as Viapage starting before KM Expressway and ends at Ch. 47+005 near Khanpur Chauri R.O. 18+300 to Ch. 47+000; section of Delhi - Vadodra Greenfield Alignment (NH-148N) on IFC Mode under Bharatmala Prayojana in the State of Haryana

Schedule of finishes - Smaller Parking places with Toilet Facilities Service Area												
S No.	Buildings Name	Area	Flooring	Wall starting dado	Partition Walls	All SPT Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
			X300 MM)			Kota stone with edge finish	paint (plastic emulsion paint)	paint (plastic emulsion paint)	u. Handlere and System) smart Doors in wooden texture finish/Gate arized steel hollow metal door/ rolling shutter with grill	Steel roll formed sections made of Galvanized color coated or powder coated with CP S grills and fly proof mesh for kitchen, toilet & sanitary)	(water surface of building)	

Schedule of finishes - Service Areas for Truck Parking												
S No.	Buildings Name	Area	Flooring	Wall starting dado	Partition Walls	All SPT Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
1	FIRE STATION PLAZA	Office	Ceramic Tiles (300 X300 MM)	Ceramic Tiles (300 X500mm) upto 2100 mm High		20 mm thick polished Kota stone with edge finish	Multi stage paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal	LPVC windows Steel roll formed sections made of Galvanized color coated or powder coated with	Snowcem Paints (water surface of building)	Not Applicable

Construction of Eight Lane divided carriageway starting before KMP Expressway and ends at Ch. 47+005 also Khargpur Chak (Ch. 18+500 to Ch. 47+000), section of Delhi - Vadodara Greenfield Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana

Schedule of Finishes Service Areas for Truck Parking												
S. No	Buildings Name	Area	Flooring	Wall skirting/ clade	Partition Walls	AD SH Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
		Toilet	Ceramic Tiles (100 X300 MM)	Ceramic Tiles (500 X600mm) upto 2130 mm high		20 mm brick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	doors/shutter with grill	IMS grills and 1/2" proof mesh for kitchen, toilets and dormitory)		
2	TRUMA CENTRE	Reception	Marble Stone	100mm High Skirting as per flooring material.		20 mm brick polished Marble Stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) finish Doors in wooden texture finish/Galvanized steel hollow metal doors/shutter with grill.	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with IMS grills and 1/2" proof mesh for kitchen, toilets and dormitory)	Stone/ emulsion Paints (outer surface of building).	Not Applicable

Construction of Eight Lane divided carriageway starting before RMP Expressway and ends at Ch. 47+000 near Kumbpur Ghata (Ch. 15+500 to Ch. 47+000) section of Delhi - Vrindavan Greenfield Alignment (NH-1A/2) on E.P.C. Mode under Bharatmala Pariyojana in the State of Haryana

## Schedule of finishes\_ Service Areas for Truck Parking

S. No	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
		O.T.	Marble Stone	100mm High Skirting as per flooring material		20 mm thick polished Marble Stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooder texture finish/Galvanizad steel hollow metal doorrolling shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanizad color coated or powder coated with (MS grills and fly proof mesh for kitchen, toilets and dormitory)	Snowcrans Paints (outer surface of building).	Not Applicable
		Doctors Room	Vitrified Tiles (600 X 500 MM)	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooder texture finish/Galvanizad steel hollow metal doorrolling shutter with grill	UPVC Joineries/ Steel roll formed sections made of Galvanizad color coated or powder coated with (MS grills and fly proof mesh for kitchen,	Snowcrans Paints (outer surface of building).	Not Applicable

Construction of Eight Lane divided carriage-way starting before KMP Expressway and ends at Ch. 47+200 near Khaspur Ghat (Ch. 13+500 to Ch. 47+200) section of Delhi - Vardolara Greenfield Alignment (NH-148B) on EPC Mode under Bharatmala Pariyojana in the State of Haryana.

Schedule of finishes\_ Service Areas for Truck Parking

S. No	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Skil Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
		Ware	Polished Kota Stone With White marble Strip	100mm High Skirting as per flooring material	20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanneal steel hollow metal door with shutter with grill	LPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M.S grill and fly proof mesh for kitchen, toilets and dormitory)	Snowcem Paints (interior surface of building).	Not Applicable	
		Storage	Polished Kota Stone With White marble Strip	100mm High Skirting as per flooring material	20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized hollow metal door with shutter with grill	LPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M.S grill and fly proof mesh for kitchen, toilets and dormitory)	Snowcem Paints (interior surface of building).	Not Applicable	

Construction of Eight Lane divided overpass meeting before KMP Expressway and under at Ch. 47+000 and at Kharajpur Ghat (Ch. 18+500 to Ch. 47+000) on the Delhi - Vadodra Greenfield Alignment (NH-148N), on EPC Mode under Bharatmala Pariyojana in the State of Haryana



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Schedule of finishes Service Areas for Truck Parking												
S. No	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All NH Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior Evoke Ceiling
									Doors	Window & Ventilators		
		Toilet	Ceramic Tiles (300 X300 MM)	Ceramic Tiles (100 X600mm) upto 2100 mm high		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) screen Doors in wooden texture finish/Galvanized steel hollow metal door with shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with MS grills and fly proof mesh for kitchen, toilets and dormitory	Snowrem Paints (outer surface of building)	Not Applicable
<b>3 SHOPPING PLUS COMMUNICATION CENTRE</b>												
		Shops	Polished Kota Stone With White marble Strip	LED any High Shining as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) screen Doors in wooden texture finish/Galvanized steel hollow metal door with shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with MS grills and fly proof mesh for kitchen, toilets and dormitory	Snowrem Paints (outer surface of building)	Not Applicable

Construction of Eight Lane divided carriageway starting before RMP Expressway and ends at Ch. 57+000 near Kirti Pur Ghat (Ch. 15+250 to Ch. 47+000) section of Delhi - Vadodra Greenfield Alignment (SH-199) on EPC Mode under Anantnaga Parajit in the State of Haryana



Schedule of Bids for Service Areas for Truck Parking												
S. No	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
		Toilet	Ceramic Tiles (300 X300 MM)	Ceramic Tiles (300 X600mm) upto 2100 mm high		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylic, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanised steel hollow metal door/rolling shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with M.S grills and fly proof mesh for kitchen, toilets and dormitory)	Snowcem Paints (outer surface of building)	Not Applicable
<b>4</b>	<b>SERVICE CENTER &amp; MAINTENANCE WORKSHOP</b>											
		Repair, Maintenance & Washing Area	Darkenite concrete flooring	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylic, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanised steel hollow metal door/rolling shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with M.S grills and fly proof mesh for kitchen, toilets and dormitory)	Snowcem Paints (outer surface of building).	Not Applicable

Construction of Eight Lane divided carriageway starting before KMP Expressway and ends at Ch. 47+000 near Khajoor Ghati (Ch. 18+500 to Ch. 47+000) section of Delhi - Yamuna Greenfield Alignment (N1-146N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana

Schedule of Finishes - Service Areas for Truck Parking												
S. No	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior false Ceiling
									Doors	Window & Ventilators		
		Space PART Shop	Hardout concrete Flooring	100mm High Skirting as per drawing material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ADS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal door/shutter with grill	UPVC joineries/ Steel rail formed sections made of Galvanized color coated or powder coated with (MS grills and fly proof mesh for kitchen, toilets and dormitory)	Showroom Paints (outer surface of building).	Not Applicable
		Toilet	Ceramic Tiles (300 X300 MM)	Ceramic Tiles (300 X600mm) upto 2100 mm high		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ADS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture finish/Galvanized steel hollow metal door/shutter with grill	UPVC joineries/ Steel rail formed sections made of Galvanized color coated or powder coated with (MS grills and fly proof mesh for kitchen, toilets and dormitory)	Showroom Paints (outer surface of building).	Not Applicable

NITABA-1

Construction of Eight Lane divided carriageway starting before KAM Expressway and ends at Ch. 47+1000 near Khampur Ghat (Ch. 18+100 to Ch. 47+000) section of Delhi - Vadodra Greenfield Alignment (NH-14B) on EPC Mode under Bhoochakrta Pariyojana in the State of Haryana



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Schedule of finishes\_ Service Areas for Truck Parking

S. No	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All STI Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
		Toilet with Bath	Ceramic Tiles (300 X300 MM)	Ceramic Tiles (300 X500mm.) upto 2100 mm high		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in warden texture finish/Galvanized steel hollow metal door/controlling shutter with grill	UPVC joineries/ Steel mill formed sections made of Galvanized color coated or powder coated metal with M S grills and fly proof mesh for kitchen, toilets and dormitory)	Snowcem Paints (outer surface of building).	Not Applicable
		Store	Polished Kota Stone With White marble Strip	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in warden texture finish/Galvanized steel hollow metal door/controlling shutter with grill	UPVC joineries/ Steel mill formed sections made of Galvanized color coated or powder coated metal with M S grills and fly proof mesh for kitchen, toilets and dormitory)	Snowcem Paints (outer surface of building).	Not Applicable
		Cooking Area	Polished Kota Stone	100mm High Skirting as per flooring material		20 mm thick	Multi surface	Multi surface	Multi surface paint/plastic	UPVC joineries/	Snowcem Paints	Not Applicable

Construction of Eight Lane divided carriageway starting before KMP Expressway and ends at Ch. 47+500 near Khannur Ghata (Ch. 18+500 to Ch. 47+900) section of Delhi - Kashalera Greenfield Alignment (NH-148N) on EPC Mode under Shyamala Parayana in the State of Haryana



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Schedule of finishes_ Service Areas for Truck Parking												
S. No	Buildings Name	Area	Flooring	Wall cladding/ dado	Partition Walls	All STJ Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
			With White marble Strip			polished Kota stone with edge finish	paint (plastic emulsion paint)	paint (plastic emulsion paint)	emulsion paint)	Steel roll formed sections made of Galvanized color coated or powder coated with (M.S grille and fly proof mesh for kitchen, toilets and dormitory)	(outer surface of building).	
		Dining Area	Polished Kota Stone With White marble Strip	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M.S grille and fly proof mesh for kitchen, toilets and dormitory)	Showers Paints (outer surface of building).	Not Applicable
		Cloth Drying Area	Concrete Paver Blocks	Not Applicable		Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Construction of Eight Lane divided carriageway overing before KMP Expressway and under at Ch. 47+005 near Khajurahi Ghati (Ch. 18+366 to Ch. 47+005) section of Delhi - Varanasi Greenfield Alignment NH-14(N) as EPC Mode under Bharatmala Parayana in the State of Uttar Pradesh



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Schedule of finishes - Service Areas for Truck Parking												
S. No	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Silt Tops	Internal Painting	Ceiling	Interiors		Exterior	External False Ceiling
									Doors	Window & Ventilators		
6	DHABA-2	Toilet with Bath	Ceramic Tiles (300 X 300 MM)	Ceramic Tiles (300 X 600mm) upto 2100 mm high		20 mm. thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture / Galvanised steel hollow metal ductrolling shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with 20 S grills and fly proof mesh for kitchen, toilets and dormitory	Showroom Paints (outer surface of building)	Not Applicable
		Store	Polished Kota Stone With White marble Strip	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wooden texture / Galvanised steel hollow metal ductrolling shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with 20 S grills and fly proof mesh for kitchen, toilets and dormitory	Showroom Paints (outer surface of building)	Not Applicable
		Cooking Area	Polished Kota Stone	100mm High Skirting as per flooring material		20 mm thick	Multi surface	Multi surface	Multi surface paint (plastic	UPVC joineries/	Showroom Paints	Not Applicable

Construction of Eight Lane divided carriageway starting before RMP Expressway and ends at Ch. 47+000 near Khanpur Ghazi (Ch. 15+250 to Ch. 47+000) section of Delhi - Vadodra Greenfield alignment NH-142A on EPC Mode under Bharatmala Pariyojana in the State of Haryana



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Schedule of Finishes_ Service Areas for Truck Parking												
S. No	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
			With White marble Strip			polished Kota stone with edge finish	paint (plastic emulsion paint)	paint (plastic emulsion paint)	emulsion paint	Steel roll formed sections made of Galvanized color coated or powder coated with (M S grills and fly proof mesh for kitchen, toilets and dormitory)	(outer surface of building)	
		Dinning Area	Polished Kota Stone With White marble Strip	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with (M S grills and fly proof mesh for kitchen, toilets and dormitory)	Shower Pans (outer surface of building)	Not Applicable
		Clot Drying Area	CONCRETE PAVES BLOCKS	Not Applicable		Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
7	DORMITORY											

Construction of Eight Lane divided carriageway starting before Kaff Expressway and ends at Ch. 47+060 near Khampur (Distt) (Ch. 38+500 to Ch. 47+000) section of Delhi - Vidisha Greenfield Alignment (NH-48A) on EPC Mode under Bharatmala Programme in the State of Haryana

Schedule of Finishes_ Service Area for Truck Parking													
S. No	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Silt Tops	Internal Painting	Ceiling	Joints			Exterior	Exterior False Ceiling
									Doors	Window & Ventilators			
		Rest Area	Polished Kota Stone With White marble Strip	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	UPVC joineries Steel roll formed sections inside of Galvanized color coated or powder coated with (M.S grills and fly proof mesh for kitchen, toilet and dormitory)	Snowcon Paints (outer surface of building).	Not Applicable	
		Toilet with Bath	Ceramic Tiles (300 X300 MM)	Ceramic Tiles (300 X300mm) upto 2100 mm high		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) sheet Doors in wooden texture Finish Galvanized steel hollow metal doorrolling shutter with grill	UPVC joineries/ Steel roll formed sections inside of Galvanized color coated or powder coated with (M.S grills and fly proof mesh for kitchen, toilet and dormitory)	Snowcon Paints (outer surface of building).	Not Applicable	
A	MAINTENANCE OFFICE PLUS SECURITY ROOM												

Construction of Eight Lane divided carriageway starting before RMP Expressway and ends at Ch. 47+950 near Kharpur Ghat (Ch. 18+500 to Ch. 47+950) section of Delhi - Jaipur Greenfield Alignment (SI-14PN) as EPC Mode under Bharatmala Pariyojana in the State of Haryana



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Schedule of finishes_ Service Areas for Truck Parking												
S. No	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sid Top	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
		Office	Polished Kota Stone With White marble Strip	110mm High Skirting as per Lounging material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or primer coated with (V.S)grills and fly proof mesh for kitchen, toilet and dormitory)	Snow-on Paints (outer surface of building).	Not Applicable
		Toilet with Bath	Uranium Tiles (300 X300 MM)	Ceramic Tiles (300 X300mm) upto 2100 mm high		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) sheet. Doors in wood or repair. Flush/Galvanized steel hollow metal door/shutter with grill	UPVC joineries/ Steel roll formed sections made of Galvanized or coated or powder coated with (M.S)grills and fly proof mesh for kitchen, toilet and dormitory)	Snow-on Paints (outer surface of building).	Not Applicable
9												SECURITY ROOM

Construction of Eight Lane divided carriageway starting before ESI<sup>st</sup> Expressway and ends at Ch. 47+000 near Kisanpur Ghati (Ch. 18+506 to Ch. 47+000), section of Delhi - Yamuna Greenfield Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Uttar pradesh



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Schedule of finishes - Service Areas for Truck Parking													
S. No	Buildings Name	Area	Flooring	Wall skirting/dado	Partition Walls	All SFT Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior Wall-Ceiling	
									Doors	Window & Ventilators			
		Office	Polished Kota Stone With White marble Strip	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	UPVC 'similes' Steel roll formed sections made of Galvanized color coated or powder coated with (M.S grille and fly proof mesh for kitchen, toilets and dormitory)	Exterior Paints (outer surface of building).	Not Applicable
		Toilet with Bath	Ceramic Tiles (300 X300 MM)	Ceramic Tiles (300 X600mm) upto 2100 mm high		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) smart Doors in wouder texture finish/Galvanized steel hollow metal door/roll up shutter with grill.	UPVC 'similes' Steel roll formed sections made of Galvanized color coated or powder coated with (M.S grille and fly proof mesh for kitchen, toilets and dormitory)	Exterior Paints (outer surface of building).	Not Applicable	
10	SILENT/DEAD STORAGE												

Construction of Eight Lane divided carriageway starting before RMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Ch. 18+500 to Ch. 47+000) section of Delhi - Yadadani Greenfield Alignment GHI-14AN on EPC Mode under Shantwana Pariyojana in the State of Haryana



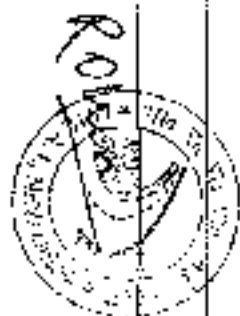
Schedule of finishes, Service Areas for Truck Parking												
S. No	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior false Ceiling
									Doors	Window & Ventilators		
		HALL	Hard top concrete flooring	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with M.S. grills and fly proof mesh for kitchen, toilets and dormitory)	Spowcem Paints (outer surface of building)	Not Applicable
11	<b>WASTE/GARBAGE DUMP &amp; TREATMENT AREA</b>											
		Hall	Polished Kota Stone with White marble Strip	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	UPVC joineries/ Steel roll formed sections made of Galvanized color coated or powder coated with M.S. grills and fly proof mesh for kitchen, toilets and dormitory)	Spowcem Paints (outer surface of building)	Not Applicable
12	<b>ELECTRICAL SUB STATION</b>											

Construction of Eight Lane divided carriageway leading before KMP Expressway and ends at Ch. 47+500 near Khampur Ghata (Ch. 38+500 to Ch. 47+500) section of Delhi - Yamunotri Greenfield Alignment GZI-143N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana



Schedule of finishes Service Areas for Truck Parking												
S. No.	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
		JIT PANEL JLT PANEL ROOM	Machine concrete flooring	100mm High Skirting as per flooring material		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint: (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) sheet. Doors in wooden texture finish/Galvan ized steel hollow metal downclining shutter with grill	UPVC windows/ Steel roll formed sections made of Galvanized color coated or powder coated with MS grills and fly proof mesh for kitchen, inlets and downclining	Stowcase Paints (inner surface of building)	Not Applicable
		HT TR-1,2	Machine concrete flooring	100mm High Skirting as per flooring material		Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
		DG SET-1,2	Machine concrete flooring	Not Applicable		Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
		TOILET	Ceramic tiles (300 x300 MM)	Ceramic Tiles (300 x300mm) upto 2100 mm high		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint: (plastic emulsion paint)	ABS (Acrylonitrile, Butadiene and Styrene) sheet. Doors in wooden texture finish/Galvan ized steel hollow metal downclining shutter with grill	UPVC windows/ Steel roll formed sections made of Galvanized color coated or powder coated with MS grills and fly proof mesh for kitchen,	Stowcase Paints (inner surface of building).	Not Applicable

Construction of Eight lane divided carriageway showing before KM<sup>2</sup> Expressway and ends at Ch. 47-1815  
and Kharajpur Ghani (Ch. 184-366 to Ch. 474-609) section of Delhi - Indore Greenfield alignment (NH-  
148B) on EPC Mode under Bharatmala Pariyojana in the State of Haryana



## Schedule of Finishes - Service Areas for Truck Parking

S. No	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries		Exterior	Ketoxy False Ceiling
									Doors	Window & Ventilators		
13	WATER RESERVOIR TANK											
14	DRINKING WATER KIOSK											
15	BORE WELL											
16	WEIGHING BRIDGE OFFICE											
		Route	Polished Kota Stone With White marble Strip	100mm High Skirting as per flooring material	20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonite Butadiene and Styrene) smart Doors in wooden texture finish/Galvan ized steel hollow metal countering shutter with grill	UPVC jamberes/ Steel roll formed sections made of Galvanized color coated or powder coated with (M.S grills and fly proof mesh for kitchen, toilets and dormitory)	Stucco Paints (outer surface of building).	Not Applicable
		Toilet	Ceramic Tiles (900 X600mm) upto 2100 mm high		20 mm thick polished Kota stone with edge finish	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	Multi surface paint (plastic emulsion paint)	ABS (Acrylonite Butadiene and Styrene) smart Doors in wooden texture finish/Galvan ized steel hollow metal countering	UPVC jamberes/ Steel roll formed sections made of Galvanized color coated or powder coated with (M.S grills	Stucco Paints (outer surface of building).	Not Applicable

Quarries nos. of Eight Tone divided into gateway standing before KMP Expressway and ends in Ch. 47-000 near Kuanpur Ghaut (Ch. 184-500 to Ch. 47-000) section of Delhi - Yamuna Greenfield Alignment NH-148B) on EPC Mode under Bharatmala Pariyojana in the State of Haryana

## Schedule of finishes - Service Areas for Truck Parking

S. No	Buildings Name	Area	Flooring	Wall skirting/ dado	Partition Walls	All Sill Tops	Internal Painting	Ceiling	Joineries		Exterior	Exterior False Ceiling
									Doors	Window & Ventilators		
									door with grill	and fly proof mesh for kitchen, toilets and dormitory		
	<b>WEIGHING BRIDGE</b>											
18	<b>UNLOADING- PLATFOR</b>											
		Unloading Platform	Hardworn concrete flooring	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
19	<b>PETROL PUMP</b>											
		petrol Pump	Heavy Duty Concrete Paver Blocks	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	ACT CANOPY
20	<b>PARKINGS</b>											
		Pavements (Parkings)	Heavy Duty Concrete Paver Blocks	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
21	<b>INTERNAL ROADS</b>											
		Internal Road										
22	<b>BOUNDARY WALL</b>											
		Boundary Wall/Barbed Wire Fencing										

Construction of Eight Lane divided carriageway starting before KMP Expressway and ends at Ch: 47+000 near Khajuri Ghat (Ch: 18+300 to Ch: 47+000) section of Delhi - Vashisht Greenfield Alignment (NH-198N), on EPC Mode under Bharatmala Pariyojana in the State of Haryana

**Colour Shades/ Finishing Schedule: for all the buildings**

- |   |   |
|---|---|
| 1. Polished Granite: Terra White/ Imperial White/ Raw Silk for flooring and wall Cladding.                            | 3. Vitrified Tiles: Matt finish/ Glossy finish or combination of both   |
| 2. Specifications superior to the above (Schedule of Finishes) may be considered subject to approval of the Authority | 4. Counter tops for wash basin / troughs: Blue Pearl / Polished Granite |
|   | 5. Colour scheme of all finishes shall be as approved by the Authority. |



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Construction of Eight Lane divided carriageway starting before KMP Bypass and ends at CA. 47+000  
near Khajuraho Ghat (Ch. 18+500 to Ch. 47+500) section of Delhi - Vadodra Greenfield alignment (NH-  
148N) an EPC Mode under Bharatmala Pariyojana in the State of Haryana

**III. Furniture & Fixtures:**

1. Furniture and fittings and overall ambience shall generally conform to minimum Two Star category standards as stipulated by the Department of Tourism, Govt. of India (Except for Dhaba and Dormitory).
2. The number of chairs / Beds / Table etc., shall not be less than the capacity indicated in the relevant schedules. Mismatch of tables and chairs is not permitted. The condition and quality of materials used shall be suitable such that the furniture continues to be of meticulous condition, without evidence of any wear and tear.
3. Scope of work under furniture and fittings includes but not limited to the following:
  - i) Tables, luggage, beds, clothes storage, seating, etc.
  - ii) Soft furniture including, mattress, pillows, cushions, curtains etc.
  - iii) Fittings such as mirrors, light fittings, heating appliances, light shades etc.
4. Basic specifications for finishing schedule of furniture shall be as follows:

Food Court												
Counter Tops	Finished with polished Granite Slab (18mm thick) / Acrylic Polymer or similar materials.											
Restaurant Table	Table top with polished granite slabs or Acrylic polymer slabs or similar materials supported by stainless steel frame / pedestal or with similar materials.											
Chairs	Modular chairs with legs of stainless steel or similar materials.											
Conference Hall												
Conference Table	Polished fittings wooden sofas / veneer with top and bottom Melamine finish or Factory made modular conference table.											
Chairs	Revolving Chairs with arms											
Specialty Restaurant	Shall conform to minimum standards specified under the food court. However, a higher standard of furniture and fittings to match the branding standards of the operator is permitted.											
Rooms												
Rooms	The furniture for rooms shall include the following											
	<table border="1"> <thead> <tr> <th>Twin Bed (900x1800)</th> <th>Mini Bar (800x600)</th> <th>Writing Table (1200x600)</th> <th>Luggage Rack</th> <th>Easy Chair</th> <th>Side Tables</th> </tr> </thead> <tbody> <tr> <td>Double Bed (1800x1800)</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Twin Bed (900x1800)	Mini Bar (800x600)	Writing Table (1200x600)	Luggage Rack	Easy Chair	Side Tables	Double Bed (1800x1800)				
Twin Bed (900x1800)	Mini Bar (800x600)	Writing Table (1200x600)	Luggage Rack	Easy Chair	Side Tables							
Double Bed (1800x1800)												
	The finishing of the furniture shall be of laminate or veneer with Melamine polish.											
Dhaba / Dormitory												
Dhaba/Dormitory	As required for operations to suite local conditions.											

**IV. Equipments:****a) Special Items of Work:-****i. RO Water Plant**

The scope of work includes but not limited to the following:

- Design, supply, erection, commissioning and testing of water treatment plant (Reverse Osmosis) of capacity 4000 Lph (litres per hour) for required treated water quality conforming IS, including the cost of all necessary accessories, fittings etc. complete

**Technical details:**

- FRP - Pressure sand filter with necessary fittings
- Antiscalent dosing system
- Complete set skid mounted RC plant of the said capacity and recovery system which shall consists of RO membranes, pressure vessels to house the membrane, micron cartridge filter, high pressure pumps and motor mounted in a skid etc. complete
- High pressure piping shall be in SS pipes and low pressure piping shall be in PVC pipes conforming to IS.
- Reject water disposal arrangements
- Water and electrical connection to the plant
- PH correction system
- Necessary civil works and piping works etc. complete

**Required Treated water quality**

- TDS < 100 PPM
- Hardness: < 50 PPM

**ii. Rainwater Harvesting**

(as per standard drawing No. 1695/HMCL/C2/STD/TWS/348d)

- Rainwater harvesting to be carried out as per drawings and / or as per statutory requirements. Scope includes
  - Trench without Recharge well, or
  - Trench with Recharge well
- Permission to install various Artificial Recharge structures and Recharge wells is governed by the prevailing rules and laws in the area.

**a. Trench without Recharge well**

Roof Top Area (Sq. m)	Highest Rainfall intensity (mtr/hr)	Run-off Coefficient	Run off / hr (cu.m)	Annual Runoff (cu.m)	Size of recharge Structure (mtr)
a	b	c	d (aXbXc)	e (aX0.54Xc)	LXBXE
100	0.025	0.8	2.0	43.20	1.2X1.2X1.4
200	0.025	0.8	4.0	86.40	1.8X1.5X1.5
300	0.025	0.8	6.0	129.6	2.4X1.8X1.4
400	0.025	0.8	8.0	172.8	2.7X2.1X1.4
500	0.025	0.8	10.0	216	3.3X2.1X1.5

**Points to be taken into consideration for implementation of the above structures:**

- Valid for buildings without basements (Cellar) and for areas for alluvial formation where ground water level is more than 5 meter upto 15 meter below ground level. Buildings with basements should adopt rain water harvesting through storage tank.



- Only the rain water from the roof top area has to be diverted to recharge structure through connection of down pipe.
- Before the onset of the monsoon all the catchment area (roof top) considered for recharge is to be cleaned. The recharge structures are to be in operation during the monsoon season only so as to avoid any contamination.
- A mesh should be provided at the roof so that leaves or any other solid waste/debris is prevented from entering the pit. By pass arrangement be provided before the collection chamber to reject the first showers.
- The depth of the inlet pipe should be within 10 cm below ground level for easy overflow through outlet pipe that has to be connected to storm water drain.
- Based on site condition length and breadth of the recharge chamber may be altered keepings its volumetric capacity the same.
- RCC slab thickness and reinforcement shall be dependent on structural loads. Access manhole frame and covers to be provided.
- Filter media of 1.0 meter thick will be in three layers comprising of 0.4 meter thick layer of boulders (5-20cm) at the bottom, 0.3 meter thick layer of gravels (5-10cm) in the middle and 0.3 meter thick layer of coarse sand (1.5-2.0mm) at the top so that the silt content that will come with runoff will be deposited on the top and can easily be removed
- A 10 cm thick layer of pea gravels will be provided over the coarse sand layer of the filter media.
- Prior to monsoon season the top most sand layer in the pit may be scrapped and replaces with the fresh and cleaned coarse sand. 1. Recharge chambers shall be checked and cleaned at 7 days interval or more frequently during rainy season.
- Recharge chambers shall be checked and cleaned at 7 days interval or more frequently during rainy season.

#### ii. Trench with Recharge well

Roof Top Area (Sq. m)	Highest Rainfall intensity (mm/hr)	Run-off Coefficient	Run off / hr (cu.m)	Annual Runoff (cu.m)	Size of recharge Structure (mtr)
a	b	c	d (aXbXc)	e (aX) 54Xc)	LXBXH
100	0.025	0.8	2.0	43.20	1.0X0.5X0.5
200	0.025	0.8	4.0	86.40	1.0X1.0X1.0
300	0.025	0.8	6.0	129.6	1.0X1.0X1.0
400	0.025	0.8	8.0	172.8	1.0X1.0X1.0
500	0.025	0.8	10.0	216	2.0X1.5X1.0

#### Points to be taken into consideration for implementation of the above structures:

- Valid for all buildings and for both alluvial and hard rock formation where ground water level is more than 15 meter below ground level
- Only the rain water from the roof top area has to be diverted to recharge structure through connection of down pipe.
- Before the onset of the monsoon all the catchment area (roof top) considered for recharge is to be cleaned. The recharge structures are to be in operation during the monsoon season only so as to avoid any contamination



- A mesh should be provided at the roof so that leaves or any other solid waste/debris is prevented from entering the pit. By-pass arrangement be provided before the collection chamber to reject the first showers.
- The depth of the inlet pipe should be within 10 cm below ground level for easy overflow through outlet pipe that has to be connected to storm water drain.
- Based on site condition length and breadth of the recharge chamber may be altered keeping its volumetric capacity the same.
- RCC slab thickness and reinforcement shall be dependent on structural loads. Access manhole frame and covers to be provided.
- Filter media of 1.6 meter thick will be in three layers comprising of 0.4 meter thick layer of boulders (5-20cm) at the bottom, 0.3 meter thick layer of gravels (5-10cm) in the middle and 0.3 meter thick layer of coarse sand (1.5-2.0mm) at the top so that the silt content that will come with runoff will be deposited on the top and can easily be removed.
- A 10 cm thick layer of pea gravels will be provided over the coarse sand layer of the filter media.
- Prior to monsoon season the top most sand layer in the pit may be scrapped and replaces with the fresh and cleared coarse sand.
- Recharge chambers shall be checked and cleaned at 7 days interval or more frequently during rainy season.
- Depth of the recharge wells should be kept 2to 3 meter above post monsoon water level and the slotted pipe must be placed against the granular (Sandy or Fracture) zone.
- On non-acceptance of water by the recharge well, the same may be cleaned using air compressor.

**iii. Septic Tank & Soak Pit with Anaerobic Filter:**

The scope of work includes but not limited to the following:

- Up-flow anaerobic filter type septic tank shall be provided. For sizes and design of septic tank refer drawing no. 1695/HMCL/C2/STD/TW 5/348h.
- Anaerobic filtered water may be recycled for watering of Arboriculture area.
- Construction of septic tank & soak pit for required capacity as per IS 2470 Part-I 1985 (As per drawing).

**iv. Tube wells & pumps including overhead water tank and sump:**

The scope of work includes but not limited to the following:

- Identification of points for drilling as recommended by authorised / certified agencies.
- Providing and constructing bore well of 165mm dia & 75 m depth / actual as per site condition including providing and fixing PVC casing pipes of approved quality 165mm dia including accessories, labour tools and required equipment etc., complete.
- Providing and fixing 160mm dia PVC casing pipes conforming to IS in bore well to a required depth etc., complete.
- Testing of water samples as per standard norms.

Supplying and fixing heavy duty clamp of size 900mmx100mmx15mm with bolts and nuts etc. complete.

Providing and fixing top cap of PVC Dummy (Heavy Duty) suitable for 165mm dia nominal bore PVC pipe etc. complete.





- Design, supply and installation of submersible pump sets of 3 phase electric motor, frame with coupling guard and J's fasteners for pumping water from bore well.

v. **CCTV & Security System:-**

- Design, Supply, Testing & Commissioning of Closed Circuit Television System (CCTV system) shall be provided an on-line display of video images on monitor including Digital Video Recorder (DVR) of suitable storage capacity for recording and play back. Cameras with suitable lenses shall be used to view specific areas of interest. Cameras shall be capable of delivering High Speed Motion JPEG images with Pan-Tilt-Zoom facilities including night vision and infrared provisions. The primary objective of implementing a CCTV system is to ensure effective surveillance of the area and also create a record for post event analysis. The following table lists the minimum requirements.

S. No.	Description	Unit	Location	Minimum Numbers		
				(Type-I) - Comprehensive Wayside Amenities	(Type-II) - Wayside Amenities for Car & Bus users including fuel station	(Type-III) - Wayside Amenities for Truck users including fuel station
Supply, Installation, Testing Commissioning of CCTV System comprising of following:						
1	1/4" Sony or similar Equivalent high performance CCD, Capable of operation at resolution of 500 TVL high resolution, True day/night, 3D intelligent positioning function, Powerful PTZ control, Programmable alarm triggering, 10x optical zoom & upto 12 Mtr coverage with wall or ceiling mount accessories as per specification.	Nos.	Public waiting area/stair case /exit	8	6	2
2	<b>Vari-focal Dome Camera</b>					
	1/3" Sony or similar Equivalent CCD Capable of operation at resolution of 500 TVL high resolution Super low illumination	Nos.	Entrance/ Exit of Food court, Dhaba, Bunked	4	3	1

	<ul style="list-style-type: none"> <li>• 1 day / night</li> <li>• Smart IR</li> <li>• 3-axis adjustment</li> </ul>	Restaurant etc.				
3	<b>650TVL IR Bullet Camera</b>					
	1/3" Sony or similar Equivalent EXVIEW HAD CCD II - 650 TVL high resolution <ul style="list-style-type: none"> <li>• Up to 110m IR range</li> <li>• Super low illumination,</li> <li>• Day / night auto switch - IP66 rating</li> </ul>	Nos.	Parking area/ compound wall fencing	3	2	2
4	Supply and laying of RG 6 Co axial Multistranded PVC insulated Cable in 1"-2mm thick FRLS PVC conduit in wall or ceiling etc. including associated civil works	each		as per site conditions	as per site conditions	as per site conditions
5	Supply and laying of 2 Core x 1.0 Sq.mm, CU Multistranded PVC insulated Cable (for camera power) in 1"-2mm thick FRLS PVC conduit in wall or ceiling etc. including associated civil works	meter		as per site conditions	as per site conditions	as per site conditions
6	Supply, Installation Testing & Commissioning of 32" LED Monitor	Nos.	control room / receipt counter	3	2	1
	Power Supply with Input 230VAC +/- 10%, Output 12V 1-2Volt load regulation & line regulation less than 0.1%, Electronic	each		15	11	5

Construction of 6-lane divided carriageway starting before KMP Expressway and ends at I.C. 471000 near Khayur Ghat I.C. 15+500 to I.C. 47+000) section of Delhi - Vasidara Greenfield Alignment (NH-149B) on EPC Mode under Bharatmala Pariyojana in the State of Haryana

	protection against overload & short circuit, output ripple less than 1 milli volt RMS, with Redundancy mode facility. 10 Amps output					
8	SITC of 16 Channel Networkable Digital Video Recorder with HDD to hold 60 days of video storage at minimum 2 CIF resolution and 4 FPS capable of 2 TB storage as per tender specification	Nos.	control room / receipt counter	3	2	1

v). **Electrical substation / Transformer / Panel Board / Earth pit / LT Switch Board / Panel Boards**

The scope of work includes but not limited to the following:

**LT Switch Board/Panel Boards**

- This specification covers the technical requirements for Design, Engineering, Manufacture, Testing at manufacture works of 433 V LV Panel complete with all accessories for efficient and trouble-free operation. The LT panel with metering arrangements shall be erected along the wall/compound wall as shown in the drawing No.:1695/DMCL/CW/STD/ET/0118

**Standards**

- The equipment covered by this specification shall, unless otherwise stated, be designed, constructed and tested in accordance with the latest revisions of relevant Indian Standards and shall conform to the regulations of Local Statutory Authorities.

IS:722	A.C electricity meters
IS:732	Code of practice for Electrical wiring installation
IS:375	Marking and arrangement for switchgear busbar main connections and auxiliary wiring
IS:1248	Direct acting electrical indicating instruments.
IS:13947	LV Switchgear and Control Gear.
IS: 2305	Current Transformers.
IS: 2824	Method for determining the comparative tracking index of solid insulating materials under moist conditions.
IS:3156	Voltage transformers
IS:3231	Electrical relays for power system protection
IS:3618	Phosphate treatment of iron and steel for protection against corrosion
IS:5082	Material data for aluminium bus bars.
	Guide for marking of insulated conductor.
	Code of practice of Phosphating of iron and steel.

- IS 8623 Specification for factory Built assemblies for Voltages upto 1000V A.C. and 1200V D.C.
- IS:4237 General requirement of switchgear and control gear for voltage not exceeding 1000V
- IS 2959 A.C. Contactors for voltage not exceeding 1000V
- BS 162 Specification for Electric Power Switchgear and Associated apparatus.
- IS:2834 Capacitors
- IS:1353 Guide for uniform system marking and identification of conductors and apparatus terminals
- IS:13701 Low voltage fuses.
- IS 13947 LV Switchgear and control gear

#### General

- The panel shall be factory built assembly, metal-enclosed, free standing, compartmentalized, modular type Main MV panel (Form 4B) and Sub Panels (Form 4A) suitable for indoor installation. The panel shall be dust and vermin proof and the enclosure shall provide a degree of protection of not less than IP-42/44. The panel shall be of uniform height not exceeding 2200mm. The fabrication shall be rigid, robust, flaw less and shall have a smooth finish.
- The board shall be fabricated out of sheet steel of not less than 2.0mm thickness. The internal partition shall of 1.6mm thick.
- The panel shall be extendable on either side by the addition of a module. It shall be possible to extend the switch board irrespective of the type of end panel. The busbars shall be suitably drilled for future extension.
- Incomers and outgoing feeders shall be provided with their own separate modules having separate doors. Isolating switch of each units shall be mechanically interlocked with its respective doors. Knob type screws shall be provided for securing the doors.
- The Number of Modules in one vertical panel shall not exceed six.
- All doors shall be provided with concealed hinges.
- All identical cover plates shall be interchangeable.
- The rear cover shall be Bolted type. No Hinged Door is acceptable.
- Each cable chamber shall have cable entry from top / bottom and suitable removable Aluminium gland plates shall be provided for this purpose. The cable chamber shall be provided with suitable supporting arrangement between the gland plate and terminals, in the middle.
- All feeder terminals shall be segregated fully and efficiently, using SMC / DMC / FRP Shroudes such that it shall be possible to work on one set of terminals when the other feeders are live.
- Due consideration shall be given to the following during design of the Switchgear Panel and locating the various components viz. Circuit Breakers, Instruments & Relays, Busbar and secondary wiring.
- Facility for inspection, maintenance & repair
- Minimum vibration and Noise
- Risk of accidental short circuit, open circuit and damage to personnel due to accidental contact with live parts.
- Inter changeability of Components
- Secure and vibration proof connection for power and control circuit
- Shielding of all live parts in feeder component and cable chamber.

- All retaining catches, screws and bolts for doors and covers shall be zinc passivated. Screws and bolts shall be captive. All covers, doors and joints shall be gasketed.
- Equipment to be mounted outside cubicles shall be flush mounted on cubicle door. No externally mounted equipment shall be mounted above 1.9m or below 0.4m from floor level. The panel shall be fabricated in suitable transport sections and assembled on rolled steel channel box frames, to form a continuous flush fronted switchboard.
- All components like ACB/MCCB/ Contactor shall be of same make & shall be suitably rated to achieve type - 2 co-ordination.
- Main Distribution Board shall be provided with Voltage Surge Devices and current related arc protection devices.

#### Busbars

- The busbars shall be air insulated and made up of high conductivity, electrolytic Aluminium.
- All busbars shall be fully screened by means of PVC sleeves in their own compartment running throughout the length of the panel both vertical as well as horizontal and also suitable allowance shall be made for bus expansion. Suitable segregation shall be provided in between busbar chamber and adjoining compartments.
- The busbars shall be 0.7 Amps per Sq. mm. of TPN with Neutral Bus being half the size of phase busbar.
- The busbar shall be PVC sleeved with colour strips of red, yellow, blue and black and the same shall be arranged in accordance with IS-375.
- The busbar shall be properly segregated, suitably braced with insulated supports (SMC) placed at appropriate intervals to withstand the electro magnetic stresses during short circuit.
- Minimum electrical clearances shall be maintained between phase, neutral and body as per standards.
- The insulation used shall be non - hygroscopic and shall be treated for preventing fungus growth. The main incoming busbars shall be brought up to the top rear busduct flange and shall be provided with necessary drilled holes for fixing the fish plates for connection to the busbars of the busduct.

#### Interconnection

- The interconnections of all the phases between the busbars and the incoming side of the switch control shall be accessible when the doors of the controls are opened.
- For each and every tapings from the busbars, separate connections shall be made.
- No direct tapings from the busbar shall be made for any feeder without control and protection. All interconnections shall be by rigid busbars only. Wherever lugs are used for terminations of rigid busbars, it shall be soldered and not crimped.

#### Breaking Capacity

- The circuit breaker shall have minimum service breaking capacity (Ics) equal to Ultimate breaking capacity (ICU)

#### Moulded Case Circuit Breaker

The MCCB shall conform to IS:13947 / IEC947 in all respects. The MCCB shall comply with the following: switching mechanism, contact system, arc extinguishing device, all



mounted in a moulded case, made of high strength heat resistant and flame retardant thermosetting insulating material.

- MCCB shall employ quick make and quick break switching mechanism independent of the speed of operation of the operating handle. The operating mechanism shall be trip free. The operating handle shall indicate the position of the MCCB in ON / OFF / TRIPPED. The operating handle shall have provision for door interlock and padlocking.
- The MCCB shall be provided with micro Processor based relay suitable for short circuit and overload and earth fault protection.
- The over load protection shall be field settable. MCCB shall be suitable for horizontal and vertical mounting and with line load reversibility. All MCCB shall be of current limiting type.
- MCCB shall be provided with RS 485 ports for Communication.
- MCCB in Main Panel shall be CAT B Type and Sub Panels shall be CAT A Type.

#### Indicating Lamps

- Indicating lamps shall be LED type.

#### Measuring Instruments

- Measuring instrument shall be of digital type with LED Display, they shall be capable of carrying the normal full load current (via CTs) and shall not be damaged by effects of rated fault current. The instruments shall have an accuracy class of 1.0 as per IS - 1248.

#### Control Wiring

- Panel shall be supplied with all internal wiring comprising of PVC insulated 1.1 KV grade, multi stranded flexible copper conductor of 2.5sqmm wire shall be used for current element & 1.5sqmm wires shall be used for voltage elements.
- Wiring associated with a particular phase shall be the colour of that phase viz. Red / Yellow, or Blue, wiring associated with earthing shall be with green colour insulation and for neutral it shall be with black colour insulation.
- Wiring shall be neatly laid and run on insulated cleats of limited compression type insulated straps.
- All cables shall have crimped terminations and shall be identified by means of glossy plastic ferrules at both ends, showing the wire number as indicated in the schematic diagrams. The ferrules shall be indelibly marked.
- Wiring to items mounted on hinged doors or wiring that is subject to movement, shall run in helical binding. The binding shall be securely anchored at both ends and sufficient slack provided to prevent any strain being imposed on wiring.

#### Terminal Block

- Terminal blocks shall preferably be grouped according to circuit functions and each terminal block group shall have at least 30% spare terminals. Terminal blocks for control circuit shall be of 650V grade with contact ratings not less than 10A and stud type.
- Not more than two wires shall be connected to any terminal block. Labels
- Labels shall be provided to describe the duty of or otherwise identify every instrument, or other item of equipment mounted internally and externally. Switch positions shall be fully identified. Wording shall be clear, concise and unambiguous.

Each label shall be permanently secured to the panel surface below the item to which it refers. The labels shall be engraved in plastic with white letters in black.



background. In addition to component labels, each cubicle door shall bear a large identification label and the panel shall include large, prominent overall identification label.

#### Printing

- Care shall be taken in workmanship and selection of materials to prevent the occurrence of any form of damage or corrosion due to damp or humid conditions.
- The Board shall be prepared, primed, filled and painted to the highest standards.
- All items shall be cleaned and deburred, after fabrication and welding is completed. External surfaces shall be filled and rubbed down as necessary to obtain a perfectly flat smooth surface, free from blemishes and imperfections.
- The painting process shall be using a seven tank phosphating system with primer coating within 4 hours of phosphating and two coats of Epoxy Powder Coating.
- The paint shall not rust especially in corners and holes. Mention colour RAL-7032 or else.

#### Tests

- The panel shall be completely assembled, wired, adjusted and tested for operation under simulated conditions to ensure accuracy of wiring, correctness of control scheme and proper functioning of all equipment.

#### Routine Tests

- The Vendor shall offer the panel for inspection and the following routine test shall be conducted during the inspection.
  1. Mechanical operation test
  2. Dielectric tests
  3. Physical check & dimension check megger test
- The typical LT panel/feeder pillar is shown in Drg.No: 1695/ IHMCL/ C2/STD /ELE/115 for typical Feeder pillar layout.

#### Earth pit Arrangements

- All electrical equipments shall be erected as per CEIG/CEA regulations and IS standards. The LT panel board and DG set in dry earth shall be pipe earth and the neutral of the DG set to be connected with Plate earth as shown in standard Drg. No: 1695/ IHMCL/ C2/STD /ELE/111 for pipe earthing, Drg. No: 1695/IHMCL/C2/STD/ELE/117 for plate earthing, Drg. No. 1695/IHMCL/C2/STD/ELE/116 for typical Grid earthing.

#### vi. Trenches/Ducts for UG cables / Pipe line

The scope of work includes but not limited to the following:

- Designing and construction of Trenches / Ducts as per Architectural and other service requirements including Earthwork excavation, concreting, Brickwork (or) RCC concrete walls to required width and depth, covering with suitable RCC cover slabs for driveway and non-driveway areas etc., complete. The Ducts / Trenches shall contain suitable fixtures, like angles, holdfasts etc., to run the cables & pipes lines etc., complete as per standard specifications and as per drawings No: Drg.No: 1695/IHMCL/C2/STD/ELE/115 - Cable Trench / cable laying details.

#### viii. DG Set(s)

This Specification covers the technical requirements of design, supply, testing and manufacture works, packing, forwarding with transit insurance, unloading on site, storage at provided space, installation, testing and commissioning of 100 % capacity Silent Power Diesel Generator (acoustic enclosure) complete with AMF panel and all accessories for efficient and trouble - free operation.



as per CEC/CEA regulation and IS specification. No DG set is envisaged for Village: Hat/Cam Bazaar,

- **Capacity:** The capacity and arrangement of DG set(s) shall be as shown in the site specific project drawings.
- **Standards:**
  - The Equipment covered by this specification shall, unless otherwise stated, be designed, constructed and tested in accordance with latest revision of relevant Indian Standards and shall conform to the regulations of local statutory Authorities
    - > IS 3046: Engine
    - > IS 10900/10902: Diesel Engine
    - > IS 8528: Alternator
    - > IS 13364 (Part II): Alternator self regulated
    - > IS 8528-4 -> Generator Controller
- **General requirements:**
  - All installations shall comply with the requirement of Indian electricity rules, 1956 as amended up to date. In case of items not covered by the above specification, the work shall be carried out.
  - **The following works shall be deemed to be included in their project cost whether specifically indicated in the schedule of work or not: -**
    - a. Diesel engine & Alternator of required capacity complete with all accessories.
    - b. Necessary battery for starting including connected cable work.
    - c. Necessary cable work between control panel and the alternator both for power and control as per site requirement.
    - d. Necessary earthing comprising of earth electrodes, neutral earthing, earth bar and loop earthing etc., as per schedule.
    - e. Duct for hot air from radiator wherever required.
    - f. Alternator to develop specified capacity under the site conditions at 0.8 P.F with an output voltage of 415 +/-5% 3phase 4 wire system.
    - g. Providing and installation of sound proof enclosure for controlling noise level of the D.G.Set within the parameters laid down by the Central/State Pollution Control Boards. (As per latest amendments)
    - h. Foundations for equipment including vibration isolation spring / pads.
    - i. Making good all damages caused to the existing structure during installation and restoring the same to their original finish.
    - j. Minor building works necessary for installation of equipments, foundation trench for fuel line & cable, making of opening in walls or in floors and restoring them to their original condition / finish and necessary grouting etc. as required.
    - k. All supports for exhaust & water pipes, chimney, bus trunking (if required), cables, anti-vibration pads etc. as are necessary.
    - l. All electrical work and neutral earthing, body earthing, required for engine & alternator, main board/control panels, and control wiring including loop earthing, as required to complete the works requirement.
    - m. All pipes, bus trunking and/or cable connections.





- n. PO: i.e. HSD oil and LDO oil for diesel engine for testing & commissioning and for trial run as per conditions of the contract
- o. Painting of all exposed metal surfaces of equipments and components with appropriate colour.
- p. Clearance/Approval of the complete installation from CPCB/State Pollution Control Board/Central Electricity Authority (CEA)/Local Bodies and other licensing authorities, wherever required.
- q. The exhaust pipe system shall be cladding as per CPCB/State Pollution Control Board

All DG sets will be tested on load of unity power factor for the rated KW rating. During testing, each of the DG sets covered under scope of work, shall be operated for a period of 12 hours or the rated KW at DG set's KW rating including one hour on 10% overload after continuous run of the 12 hours. During testing all controls/operations safeties will be checked and proper record will be maintained. Any defect/abnormality noticed during testing shall be rectified.

**a) Trial Run/Running-In-Period**

After successful testing of the DG Set, a trial run at available load will be carried out for 120 Hours or 15 Days whichever is earlier. The DG Set will be operated and a log of all relevant parameters will be maintained during this period. The arrangement of staff for trial run / running in period will be made at site by the successful tenderer. However, diesel shall be provided by client. The agency will be free to carry out necessary adjustments. The DG Set will be said to have successfully completed the trial run, if no break down or abnormal/unsatisfactory operation of any component of the entire installation included in the scope of work of the contract, occurs during this period. After this the DG Set will be made available for beneficial use. After the DG Set has operated without any major break down/trouble, it shall be taken over by the department subject to guarantee clause of this contract. This date of taking over of the DG Set, after trouble free operation during the trial run/running-in period, shall be considered as the date of acceptance / taking over for further correspondence.

**b) Safety measures**

All equipments shall incorporate suitable safety provisions to ensure safety of the operating personnel as per manufacturers' standard practice.

**c) Statutory Clearance(s)**

Approval / clearance of the complete installation shall be obtained by the Concessionaire from CPCB/ State pollution Control Boards/ Local Bodies/ Central Electricity Authority (CEA)/ other licensing authorities wherever required. However, application shall be made by Authority / Concessionaire and any statutory fee, as applicable, shall be paid by client & Contactor directly to the govt. authorities concerned.

**d) Guarantee**

All equipments shall be guaranteed, against unsatisfactory performance and/or break down due to defective design, workmanship or material, for a period of 12 months from the date of taking over the installation by the client & Contactor. The equipments or components, or any part thereof, so found defective during the guarantee period shall be forthwith repaired or replaced free of cost, to the satisfaction of the Independent Engineer / Authority. In case it is felt by the client that the delay is being caused by the Concessionaire in attending the defect/fault, the same will be carried out by the Concessionaire at the own risk and





- g. Plate Type lube oil cooler.
- h. Spin – on Filters-Fuel, Lube oil and by- Pass
- i. Dry type replaceable paper element air cleaner with restriction indicator.
- j. Flywheel housing and flywheel to suit single bearing alternator.
- k. Starting Motor –Electric. Battery charging alternator.
- l. First fill lube oil and coolant
- n) The Brushless alternator shall be comprising,
  - a. Self-Excited, Self regulated
  - b. Class 'F' insulation
  - c. Salient pole revolving field
  - d. Automatic voltage regulator
- l.i) The accessories shall be comprising,
  - a. Silencer suitability optimized to meet stringent sound emission standard as laid down by MOEF / CPCB
  - b. Base rail with integral fuel tank is provided with a drain Plug, air vent, inlet and outlet connections, Level indicator, Man hole etc.
  - c. Sub-Base Fuel tank of 700 liters capacity.
  - d. 2 x 12 V dry, uncharged batteries with connecting leads and terminals.
- o) The control panel is manufacture with 14/16 gauge CRCA sheet and is Powder Coated for weather –Proof and Long lasting finish and the control Panel consisting the following.
  - a. PC I.2 Controfflers
  - b. Aluminium Bus bar with suitable current carrying capacity with In /Out going terminals.
  - c. Instrument fuses duly wired and feroled
  - d. MCCB of Suitable rating with overload and circuit protections

• **Technical Requirement for Diesel Generator**

**Diesel engine:**

Diesel engine rated at 1500 RPM, air cooled, four strokes, electric start, conforming to BS: 5514 with capacity of 10% over loading for one hour in twelve hours duration having following accessories as scope of supply:

**Air Intake System**

- Air intake manifold.
- Dry type Air cleaner.

**Exhaust System**

- Turbocharger.
- Flexible connection.
- Exhaust manifold.
- Exhaust silencer.

**Coolant System**

- Radiator.

• Coolant additive concentrate.

**Lubricating System**

- Oil pan.

Construction of Right Lane and left lane highway starting before NNP Expressway and ends at Ch. 47+000 near Kisanpur Ghat P.O. (Ch. 39 to Ch. 47+000) section of Delhi. Vasantara Greenfield Airport (NII-1485) on EPC Mode under Bharatmala Pariyojana in the State of Haryana



- Engine mounted lube oil pump
- Lube oil filter

**Fuel System**

- In-line fuel system with Mechanical Governor.
- 12V DC solenoid coil.
- Spin-on fuel filter.

**Starting System**

- 12V DC electric starter.
- 12V DC battery charging.

**ix. Entertainment - Satellite TV & Wi-Fi****Wi-Fi System**

The scope of work includes but not limited to the following:

**A) Wireless Hardware Controller:**

- Supply installation testing and commissioning of Wireless Hardware Controller should have minimum 1 nos. of Gigabit Ethernet Ports (GBIC or SFP) and console port which includes Rack mountable 1U height.
- Each controller (primary and Redundant) should be ready for 5 Access points and should be scalable up to 15 Access Points with support for seamless roaming access across all connected Access Points..

**B) Indoor / outdoor access points:**

- Supply installation testing and commissioning of centrally managed Indoor/outdoor access points, Access points should be dual-band 2.4 GHz & 5GHz concurrent users with 802.11 a/b/g/n capability and Access Points should be able to handle a minimum of 15% concurrent usage of the total seating capacity (Restaurant + Food Court + Dhaba) of the Wayside Amenities and more would be preferred, Access points shall include Power adapters.
- Access points operating Frequency shall follow the standards of IEEE 802.11n: 2.4 - 2.484 GHz and 5.15 - 5.85 GHz, IEEE 802.11a: 5.15 - 5.85 GHz, IEEE 802.11b: 2.4 - 2.484 GHz.
- Access Points should preferably support Dual Polarized internal antennas.
- The access point should support following security mechanism WEP, WPA-PSK, WPA-TKIP, WPA2 AES, 802.11i.

**x. Shading Devices**

As required for operations.

(For certain openings / areas requiring protection from sun/rain.

Shading devices include Awnings, Tension structures, etc..)

xi. **Outdoor Furniture**

1. Outdoor seating: as required for operations

- (a) Euciant Bench / Post Bench / Siemese Bench / Jazz Bench : BuildIndia / Arhant or similar equivalents from other brands.

2. Dust bins: as required for operations

- (b) Poubelle Bin / SS dust bin / Aluminum Dust Bin : BuildIndia / Arhant or similar equivalents from other brands

xii. **Children Play Area Developments:**

- Children Play Area shall be provided as per marked in the drawings
- Surface shall be country grass & sand cushion as required.
- The following minimum Outdoor play equipments shall be provided:

1. Garden Multiplay System/ Multi-Activity Play System : Raj Equipment (India) Pvt. Ltd. / Kalia Recreations / BuildIndia / Arhant or similar equivalents from other brands.
2. Multi-Line Swing / Swings : Raj Equipment (India) Pvt. Ltd. / Kalia Recreations / BuildIndia / Arhant or similar equivalents from other brands
3. Boat Shape See Saw / See-Saw : Raj Equipment (India) Pvt. Ltd. / Kalia Recreations / BuildIndia / Arhant or similar equivalents from other brands
4. Snake Climber / Scramblers : Raj Equipment (India) Pvt. Ltd. / Kalia Recreations / BuildIndia / Arhant or similar equivalents from other brands
5. Chair Merry Go Round / Merry Go Round : Raj Equipment (India) Pvt. Ltd. / Kalia Recreations / BuildIndia / Arhant or similar equivalents from other brands.
6. Playground Slide / Slides : Raj Equipment (India) Pvt. Ltd. / Kalia Recreations / BuildIndia / Arhant or similar equivalents from other brands.
7. Cast Iron Park Bench / Bench - 2 Nos. : Raj Equipment (India) Pvt. Ltd. / Kalia Recreations / BuildIndia / Arhant or similar equivalents from other brands.

xiii. **Digital Display Wall system**

Supply, installation, testing, commissioning of digital display system comprising the following,

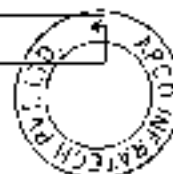
## A) P10 mm OUTDOOR FULL COLOUR LED VIDEO WALL:

To provide High professional Full HD display and provision of Vertical and Horizontal orientation of LED display board of minimum Display Size 2.0x3.0m and module size 160x160mm or 320x160mm along with customize display software and controller.



## Specification of P10MM Outdoor LED Video Wall

## P10 Full Color LED VIDEO WALL



Items	Unit	Parameter
Pixel Pitch	mm	10.00
Pixel Density	dots/sqm	10,000
Resolution of Module	dots	16*16
Module Size	mm	160*160 (DR) 320*160
Led Package	DIP Oval 346 lamp (DR) SMD.	
Pixel Configuration	1R1G1B	
Chip Brand of LEDs	Epistar/Cree/Nichia	
Cabinet Weight	kg/pc	20 (Approx.)
Brightness (White Balance)	nits(cd/sq.m)	7000
Red Wavelength	nm	620-625
Green Wavelength	nm	520-525
Blue Wavelength	nm	470-475
Scan Mode	1/2 Scan	
View Distance	M	5-100
Best View Distance	M	12.5-33
Viewing Angle Horizontal	deg.	110
Viewing Angle-Vertical	deg.	60
Module Maximum Power	W	33.4
Max. Power Consumption	W/sq.m	700
Avg. Power Consumption	W/sq.m	380
Working Voltage	5V	
Power Supply	AC 220V	
Waterproof Grade	IP65	
Refresh Rate	Hz/S	3,000
Frame Rate	Hz/S	≥ 60
Gray Scale	4096 grades gray	
Display Color	156*256*256	
Display Function	Text, news, advertising, flash, animation	
Input Signal	RF, S-Video, RGB, RGBHV, YUV, YC, SDI, HDSDI, DVI, EXGA, COMPOSITION, etc	

Construction of **Long Span** viaduct/overpass starting before **KMP Expressway** and ends at **Cu 47-500** near **Khanpur Chowk (Ck. 15600)** in **Cu. 47+300** section of **Delhi - Yashwantrao Chavan Greenfield Alignment (NH-148B)** on **E.P.C.** under **Public-Private Partnership** in the State of **Haryana**

Defective Dot Rate		<0 (000)
Life Span	hours	100,000
MTBF	hours	>10,000
Storage Temperature	°C	-35 -- 180
Working Temperature	°C	-20 -- 180
Working Humidity	10% - 90% RH	
Control System	Synchronization or A synchronization	
Warranty	2 years	
Working Environment	Outdoor	
Other Features	LED & ICs in Departed PCB	

**B) Fixing and installation of the display boards:**

- Physically fixing and erecting all LED displays on the ground at multiple locations (outdoor) with a pole height of about min.4 m above the ground. Location area will be made available at drawing. This work should include civil works-earth pit, foundation structure, super structure for digital display and earthing. Unit poles should be well painted for rust free and good shining color preferably silver.

**C) Display and Media Software, Servers and Networking:**

- Main Display control Server /PC (along with 1 standby as mirror image) with required customized software to capture data from FTP /AQMS server, process and then display retroactively in all indoor and outdoor display boards. development of Web portal, content development and SMS-alert service to mobile

**xiv. Advertisement Balloon**

- Sky balloon round shape with vinyl stick printing, 100 feet rope one time hydrogen filling with erection & transportation.
- Size 4.57m sphere shape, PVC tubing.
- As per drawing (No.1695/HMCL/C2/STD/AR/133) with logo as required for operations and branding

**xv. Helipad:**

- Helipad is envisaged in limited locations where feasible as shown in drawings.
- The proposed Helipad is designed for temporary operations with overall maximum dimension Helicopter - Bell 407 of size in accordance with Civil Aviation Requirements Section 4 - Aerodrome standards & Air traffic services, Series 'B' Part - II, 21<sup>st</sup> December, 2005 (Minimum safety requirement for temporary Helicopter Landing Areas).
- Helipad or helicopter sites are not required to be licensed unless they are to be used by a schedule transport service and/or for public transportation involving series of landing and/or hire and reward.

The site to be used for temporary helicopter operations should be a level piece of well drained ground, either good grass or solid surface free from loose stones. The Final Approach and Take off Area should be obstruction free.

**Final Approach and Take-off area (FATO)**

Construction of Single Lane divided carriageway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur (Bypass) 34+500 to Ch. 47+000 section of Delhi - Ferozpur Greenfield Alignment (NH-149B) on EPC Mode under Bharatmala Pariyojana in the State of Haryana



- The minimum dimensions of the FATO shall be 1.5 A x 1.5 A, where A equals the maximum overall length of the helicopter used. This area shall be without obstructions. The surface shall be suitable for forced landings and free from loose objects, which may endanger the safe performance of the flight.

#### Safety Area

- The Take-off and landing area should be surrounded by a safety area, the width of which should not be less than 10m. Within the safety area no obstacle must be higher than 1m. The surface shall be suitable for any forced landings, if required.

#### Approach and Take off climb surface

- An Approach and Take-off climb surface in an inclined plane sloping upwards (2%) from the end of the safety area and centered on a line passing through the centre of the FATO, should be available for a distance of at least 245 meters.
- The Approach and take-off climb surface should comprise:
  - a) An inner edge horizontal and equal in length to the minimum specified width of the FATO plus the safety area, perpendicular to the center line of the take off climb surface and located at the outer edge of the safety area; and
  - b) Two side edges originating at the ends of the inner edge and diverging uniformly at a specified rate of 10% from the vertical plane containing the centre line of the FATO.
- At least one 12 kg powder (LCP) fire extinguisher shall be available at the landing / take-off area, clearly marked and situated so that it can be used quickly in case of fire. A first aid box shall be placed within easy reach and clearly marked. The box shall be maintained in accordance with the instructions and its contents shall be supplemented whenever used.
- The planting of trees, landscaping and maintenance shall generally conform to Civil Aviation Requirements Section 4 - Aerodrome standards & Air traffic services, Series 'B' Part - II, 21st December, 2005 or any amendments issued (Minimum safety requirement for temporary Helicopter Landing Areas).
- The Helipad shall be as per drawing no.1695/HMCL/C2/STD/AR/13F.

#### xvi. Solar Power Panel

The scope of work includes but not limited to the following:

- The capacity of solar power panel shall be as shown in the drawings and as per technical specifications
- Supply of the complete systems, including all necessary components, sub components, spares, tools etc. as per technical specifications given elsewhere in this document.
- Erection and commissioning of the supplied systems on the specified site
- Providing the control room near the building along with necessary partition
- Providing pedestals if required for mounting of the P.C.T.'S and control panels
- Water pump with shed along with full GI C class piping as per IS 1239 for water supply for panels cleaning and washing along with water discharge piping.
- All structural drawings to be got approved from authority
- Any other work urgently required as per site conditions.

The bidder must also provide a detailed operation and maintenance manual specific to the installed systems.

The bidder shall provide the fabrication, supply and the installation of suitable support for the PV panels and other components whichever is required with the accessories.





- Civil work (grouting) for PV structure
- SPV Power plant shall be installed as per the specifications provided in the technical offer.
- Provide sealed & tested energy meter at consumption side & generation side of SPV Power Plant.
- Provide solar module with laminated plate inside the module showing name/logo of manufacturer, model no. and serial no. along with RFID.
- Transmission and Distribution line up to VCB. It shall be the responsibility of the tenderer to provide distribution system
- Supply of manual for Operation and Maintenance of all the system in English
- Supply and installation of control equipments required for the system.
- Training to the user for operation and maintenance of the system after three year.
- Any additional works not covered above, but necessary for the functioning of the system and required as per specifications incorporated.
- Regarding cabling work (external & internal) & construction of control room, the tenderer is required to visit the site and as per actual site conditions quote (including drawing & design) accordingly.
- The grid supply connection would be provided with auto change over.
- All cabling and load connections should be carried by the tenderer with proper synergy with the existing electrical systems of SU.
- The tenderer shall install LED lights only wherever to be installed, for lighting of the project area/ cabins.
- The tenderer will provide a minimum of 3 number of LED signages powered by Solar

#### Warranty/guarantee:

- The entire solar power plant should consist of...
  - a) The mechanical structures, electrical works including power conditioners with built in charge controllers, maximum power point tracker, distribution boards/digital meters / switchgear / transformer etc. and overall workmanship of the SPV power plant/system must be warranted against any manufacturing / design / installation defects for a minimum period of 5 years from the date of commissioning and handing over to SU.
  - b) The PV modules used in solar power plant / system must be warranted for their output peak watt capacity, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years from the date of commissioning and handing over to SU.
- Further, a comprehensive maintenance of the G/SPVS for Five years from the date of completion of Warranty period is also required. The prices for the same shall also be indicated in the bid with unit rate of each system/unit. The bidder shall have an established service setup
- The scope of work under warranty and maintenance periods includes supply of all required spares necessary for smooth operation of the system. List of minimum tools and racks proposed to be kept at site by the vendor during warranty and maintenance period shall be indicated in the bid.

#### Completeness of Equipment

All the fittings and accessories that might not have been mentioned specifically in the specification / tender but are required for the installation and commissioning of

the plant shall be deemed to be included in the specification and shall be supplied and furnished by the Concessionaire without any extra charge.

- The Concessionaire shall furnish following details in their technical bids:
  - a) The details of manufacturer from where the Concessionaire procures solar PV modules.
  - b) The Type of PV/PCL/Transformer/VCB proposed and their make

#### Codes and Standards

- All Equipment and accessories shall comply with the requirement of standards published by Bureau of Indian Standards (BIS). In case no BIS code exists the equipments shall meet the requirement of international standard including IEC/IEEE for design and installation of grid connected PV system. The list of standards adopted shall be indicated in the bid.
- The SPV Module must be provided with acceptable Test & Certified documents.
- The quality of equipment supplied shall be generally controlled to meet the guidelines for engineering design included in the standards and codes listed in the relevant IEC and other standards, such as:

Component	Standard description	Standard Number
Solar PV modules	Photovoltaic (PV) modules – Design qualification and type approval	IEC . 61646
Power Conditioning Unit including Inverter	Efficiency Measurements Environment Testing	IEC 61683 IEC 60068 2 (6,21,27,30,75,78)
Charge controller/MPPT units	Design Qualification Environmental Testing	IEC 62093 IEC 60068 2 (6,21,27,30,75,78)
String Monitoring Box 22 in 1 out	IP 65, Ambient Temperature, Max Altitude from sea level	EN: 60529 -20°C to +55°C and 1800M
Cables	General Test and Measuring Methods PVC insulated cables for working Voltages up to and including 1100 V- Dcr, UV resistant for outdoor installation	IEC 60189 IS 694/ IS 1554 IS/ IEC 69947
Transformer(405V-405V/11KV)	Constructed, IP-55 protection and tested	IS1180/IEC/BIS Standards
Switches/ Circuit Breakers/ Connectors	General Requirements Connectors- Safety	IS/ IEC 60947 part I, II, III EN 50521
Junction Boxes/ Enclosures	General Requirements	IP 65 (for outdoor) IP 21/42 (for indoor)
SPV System Design	PV Stand-alone System design verification	IEC 62124

Constitution of Bidder L1 will be decided as per awarding partying before NHP Expressway and ends at Ch. 47+000 near Khannar Chok (Ch. 47+000 to Ch. 47+050) on turn of Delhi - Vidadaia Greenfield Alignment (NH-148B) on EPC Mode under Bharatmala Pariyojana in the State of Haryana

Installation Practices	Electrical installation of buildings Requirements for SPV power supply systems	IEE 60364-7-712
	Recommended practice for utility interface of residential and intermediate PV systems	IEEE 929
	Guide for harmonic control and reactive compensation of Static Power Controllers.	IEEE 519
	Requirements for construction, testing and safety qualification	IEC 61730 part-1 & Part-2
	Basic environmental testing Procedure for Electronic and electrical items	IS 9000
	Recommended Criteria for terrestrial PV power systems	IEEE 928
	Measurement of Photovoltaic current-Voltage Characteristic	IEC 60904-1
	Photovoltaic system performance monitoring, measurement.	IEC 61724
	Testing of modules to be used in a highly corrosive environment.	IEC 61701
	Standard for Safety for Flat-Plate Photovoltaic Modules	ANSI UL 1703

- The bidders shall provide a sample copy of the type of test certificates/reports with the bid.
- Pre dispatch factory inspection (Factory Acceptance Test) shall be arranged by vendor. The test certificates/reports for equipment to be submitted.

#### Solar Photovoltaic Modules

- The total solar PV array capacity should not be less than 200Wp. The module type must be qualified as per IEC 61215 latest editions for multi - crystalline silicon SPV module conversion efficiency should be equal to or greater than 15% under STC. Modules must qualify to IEC61646/IEC 61730 Part I and II for safety qualification testing. Certificate for module qualification from IEC or equivalent to be submitted as part of the bid offer. Self undertaking from manufacturer / supplier that the modules being supplied are as per above.
- The PV module shall perform satisfactorily in humidity up to 100% with temperature between -40°C to +85°C. Since the modules would be used in a high voltage circuit, the high voltage insulation test shall be carried out on each module and a test certificate to that effect provided.
- The predicted electrical degradation of power generated not exceeding 20% of the minimum rated power over the 25 year period and not more than 10% after ten years period of the full rated original output (As per MNRE Standards)

General requirement for the PV modules and subsystems shall be the

materials (solar Cells) and technology employed in the module production processes shall have to be certified and a certificate giving details of major



- materials i.e. cells, Glass, back sheet, their makes and data sheets to be submitted for the modules being supplied by the bidder.
- The rated output power of any supplied module shall have tolerance of  $\pm 4.99\%$  as per MNRE standard specs.
  - The peak-power point voltage and the peak-power point current of any supplied module and/or any module string (series connected modules) shall not vary more than 2 (two) per cent from the respective arithmetic means for all modules and/or for all module strings, as the case may be. The rated power of the module specified in "watt Peak" under STC may not have any negative tolerance.
  - Except where specified, the front module surface shall consist of impact resistant, low-iron and high-transmission toughened glass.
  - The module frame, if any, shall be made of a corrosion-resistant material which shall be electrolytically compatible with the structural material used for mounting the modules.
  - The module shall be provided with a junction box with either provision of external screw terminal connection or sealed type and with arrangement for provision of by-pass diode. The box shall have hinged, weather proof lid with captive screws and cable gland entry points or may be of sealed type and IP65/IP67 rated.

#### **Inverter - power conditioning unit (pcu).**

- The stacks of redundant inverters with total equivalent capacity of 75Wp are required. Technical data sheet of the inverter proposed for the project indicating operating modes, protection, efficiency etc. should be provided.

#### **Common Technical Specification:**

Control Type	: Voltage Source, Microprocessor assisted, output regulation.
Output Voltage	: 1 Phase, 200 V /220 V AC
Frequency	: 50 Hz
Continuous rating	: 500VA Inverter at 25°C - to suit site condition
DC Link Voltage range	: 0 to 850 V
Power factor	: 1
Standard Conformation	: IEC 61683
Total Harmonic Distortion	: Less than 3%
Operating temperature Range	: -25° to 62°C
Housing cabinet	: PCU to be housed in suitable switch cabinet, Within IP 54 degree of ingress protection
PCU Efficiency	: 98.6 % and above at full load.
Power Control	: MPPT
Communication	: RS 485

#### **Other important Features/Protections required in the PCU:**

- Foul proof protection against Islanding.
- LED and piezoelectric keypad operator interface Menu driven
- Automatic fault conditions reset for all parameters like voltage, frequency and/or black out.
- MOV type surge arresters on AC and DC terminals for over voltage protection
- From lightning-induced surges as per IEC 62305-1

- PCU should be rated to operate at 0 - 62 deg. Centigrade unless provision for air conditioning is included in PCU
- All parameters should be accessible through an industrial standard communication link

#### Electrical safety, earthing and protection

- Internal Faults: In built protection for internal faults including excess temperature, commutation failure, and overload and cooling fan failure (if fitted) is obligatory.
- Galvanic Isolation: Galvanic Isolation is required to avoid any DC component being injected into the grid and the potential for AC components appearing at the array.
- Over Voltage Protection: Over Voltage Protection against atmospheric lightning discharge to the PV array is required. Protection is to be provided against voltage fluctuations in the grid itself and internal faults in the power conditioner, operational errors and switching transients.
- Earth fault supervision: An integrated earth fault device shall have to be provided to detect eventual earth fault on DC side and shall send message to the supervisory system
- Cabling practice. Cable connections must be made using PVC Cu cables, as per BIS standards. All cable connections must be made using suitable terminations for effective contact. The PVC Cu cables must be run in GL trays with covers for protection.
- Fast acting semiconductor type current limiting fuses at the main bus-bar to protect from the grid short circuit contribution.
- All exposed surfaces of ferrous parts shall be thoroughly cleaned, primed, and painted or otherwise suitably protected to survive a nominal 30 years design life of the unit.
- The PCU enclosure shall be weatherproof and capable of surviving climatic changes and should keep the PCU intact under all conditions in the room where it will be housed. The inverter shall be located indoor and should be either wall / pad mounted. Moisture condensation and entry of rodents and insects shall be prevented in the PCU enclosure.
- Components and circuit boards mounted inside the enclosures shall be clearly identified with appropriate permanent designations, which shall also serve to identify the items on the supplied drawings.
- All doors, covers, panels and cable exits shall be gasket or otherwise designed to limit the entry of dust and moisture. All doors shall be equipped with locks. All openings shall be provided with grills or screens with openings no larger than 0.95 cm. (about 3x8 inch).
- In the design and fabrication of the PCU the site temperature (-25° to 62°C), incident sunlight and the effect of ambient temperature on component life shall be considered carefully. Similar consideration shall be given to the heat sinking and thermal for blocking diodes and similar components.

#### Earthing Protection

- Each array structure of the PV yard should be grounded properly. The array structures shall be connected to earth pits as per IS Standards. In addition the lightning arrester/masts should also be provided inside the array field. Provision should be kept for earthing of the PV array at the time of maintenance work. All metal casing/spooling of the plant should be thoroughly grounded in accordance with



Indian electricity Act/IE Rules. Earth resistance should be tested in presence of the representative of PMC/Client after earthing by calibrated earth tester. PCC/ACDB & DCDB should be earthed properly.

**xvii. Hoarding Board (Minimum 2 Nos for each site - LHS or RHS)**

The scope of work includes but not limited to the following:

- Pre fabricated steel structure at all elevations for hoarding boards (double side - 6.00 x 1.80m) using structural steel sections ISMB/ISM conforming to IS 2062, using 20SWG plain GI sheet with cutting, welding or bolting, including painting with two coats of synthetic enamel paint 1st quality over two coats of zinc phosphite primer after necessary surface preparation using wire brush and sand paper with necessary earth work, PCC 1:3:6 Mix, RCC 1:1.5:3 Mix using 20mm metal including reinforcement, formwork etc as per drawing No. 1695/IHMCLR/2/STD/AR/137 & 137a

**xviii. High Mast Lamp & Lightning Arrester**

The scope of work includes but not limited to the following:

- This specification covers the technical requirements of design, manufacture, testing at manufacturer's works, packing, forwarding of 37m High Mast with 12 nos of LED IP 65 floodlight as per standard drawing.

**Application standards:**

- The equipment covered by this specification shall unless otherwise stated, be designed, manufactured and tested in accordance with the latest editions of the following Indian, International standards and shall conform to the regulations of the local authorities.
  - a) IS 875 (Part III) 1987 (Code and practices for design loads for structures)
  - b) IS 2062 : 2006 (Hot rolled low, medium and high Tensile structural steel)
  - c) BSEN 10025/DIN 17100 (Grades of MS plates)
  - d) BSEN 60529 (Degree of protection by Enclosures- IP code)
  - e) BS 5135 / AWS (Welding)
  - f) BS EN ISO 1461 : 1999 (Galvanizing)
  - g) BS EN 5649-4 : 1982 (Lighting columns, Recommendations for surface protection of metal lighting columns)
  - h) TR No 7 1996 of I E, UK (Specifications of Masts and foundations)

**General constructions:**

- The High Mast shall be designed to withstand the maximum wind speed as per IS-875. The top loading, i.e. the weight and the area of luminaries are to be considered to calculate maximum deflection of the pole and the same shall meet the requirement of BS- 5649 Part VI - 1982. The Mast shall be designed using limit state principle. The limit states to be considered are: (i) Ultimate and (ii) Serviceability; based on a design wind speed with a return period of 25 years. The total Height of the High Mast, with luminaries mounting carriage cum head frame and luminaries installed shall be measured as the vertical distance between the base flange plate and the plane in which the lamps lie in their operating position.

**Structure:**

- The High Mast shall be of continuously tapered, polygonal cross section; 20 sided, and shall be based on proven In-Tension design conforming to the standards referred above, to give an assured performance and reliable service. The structure shall be suitable for wind loading as per IS 875 part3 1987.

- The High Mast shall be manufactured using steel plates, conforming to BS-EN 10-025. The high mast shall be manufactured in two sections for each mast section shall be fabricated out of single plate duly folded and welded. The Mast shaft shall have polygonal cross section and shall be continuously tapered with single/double longitudinal welding. There shall not be any circumferential welding and pole shafts with more than two longitudinal welds shall not be acceptable. The welding of pole shaft shall be done by Submerged Arc Welding (SAW) process. No site welding and beveled joints shall be done on the mast. The minimum overlap distance shall be 1.5 times the diameter at penetration. The minimum top diameter and bottom diameter shall be as specified in data sheets and plate thickness shall be as per the structural design requirements. The calculation for civil design and foundation details shall be submitted by the vendor for Purchaser's approval after receipt of Soil Bearing Capacity. The mast shall be provided with fully penetrated flange, which shall be free from any lamination or incursion. The welded connection of the base flange shall be fully developed to the strength of the entire section. The base flange shall be provided with supplementary gussets between the bolt holes to ensure elimination of helical stress concentration.

#### Galvanizing:

- For environmental protection of the mast the entire fabricated mast shall be hot dip galvanized internally and externally as per BS EN ISO 1461 standards with an average coating thickness of minimum 85 micron. The galvanizing shall be done in single dipping only. Double dip-galvanized shafts with overlapping are not acceptable. Further, no post galvanizing painting, touch-up or rectification shall be allowed.

#### Door opening:

- An adequate door opening shall be provided as per the GTP such that the minimum distance from the mast flange plate to the bottom of the door opening shall twice the width of the door opening. The door shall be flush with the exterior surface. The door opening shall be such that it permits clear access to equipment like winches, cables, plug and socket, etc. and also facilitate easy removal of the winch. The door opening shall be complete with a close fitting, vandal resistant, weatherproof door, provided with heavy duty double internal lock with special paddle key. The minimum radius at the corners of openings shall be 20mm. The door opening shall be carefully designed and reinforced with welded steel section, so that the mast section at the base shall be unaffected and undue buckling of the cut portion is prevented.

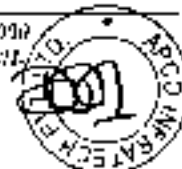
#### Dynamic loading for the mast:

- The mast structure shall be suitable to sustain an assumed maximum reaction arising from a wind speed as per IS 875 (Part-III) 1987 (three second gust) and shall be measured at a height of 10 meters above ground level. The design life of the mast shall be minimum of 25 years.

#### Lantern carriages

##### Fabrication:

- A fabricated raising and lowering type Lantern Carriage cam head frame shall be provided at the top of high mast shaft properly secured for fixing and holding the flood light fittings and control gear boxes. The Lantern Carriage shall be of special design and shall be of steel channel construction. The Lantern Carriage shall be so designed and fabricated to hold the required number of flood light fittings and the control gear boxes, and also have a perfect self-balance. The Lantern Carriage shall be fabricated in two/three halves and joined by bolted flanges with stainless steel bolts and nylon type stainless steel nuts to enable easy installation or removal from the erected mast. The inner lining of the carriage shall be provided with protective PVC arrangement, so that no damage is caused to the surface of the mast during the raising and lowering operation of the carriage. The entire Lantern



Carriage shall be hot dip galvanized after fabrication. The lantern carriage shall be fabricated out of M.S. channel with suitable reinforcements. Also a certificate to this effect quoting safe working load shall be supplied with each carriage. The carriage shall carry a permanently attached label stating the safe working load. Both the Mast Shaft and Luminaries Mounting Carriage shall be sourced from one manufacturer only so as to ensure compatibility and overall finish of the material.

#### Junction box:

- Weather proof junction box, made of Cast Aluminum shall be provided on the Carriage Assembly as required, from which the inter-connections to the designed number of the flood light luminaries and associated control gears fixed on the carriage shall be made.

#### Raising and lowering mechanism:

- For the installation and maintenance of the luminaries and lamps, it will be necessary to lower and raise the Lantern Carriage Assembly. To enable this, a suitable Winch Arrangement shall be provided, with the winch fixed at the base of the mast and the specially designed head frame assembly at the top.

#### Winch:

- The winch shall be of completely self sustaining type, without the need for brake shoe, springs or clutches. Each driving spindle of the winch shall be positively locked when not in use by gravity activated PAWLS. The capacity, operating speed, safe working load, recommended lubrication and serial number of the winch shall be clearly marked on each winch. The gear ratio of the winch shall be 53:1. However, the maximum working load shall be not less than 750 kg. The winch shall be self-lubricating type by means of an oil bath and the oil shall be readily available grades of reputed producers. The winch drums shall be grooved to ensure perfect seat for stable and tidy rope lay, with no chances of rope slippage. It shall be possible to operate the winch manually by a suitable handle and electrically by an external power tool also. It shall be possible to remove the double drum after dismantling, through the door opening provided at the base of the mast. A test certificate shall be furnished by the Concessionaire from the original equipment manufacturer, for each winch in support of the maximum load operated by the winch.

#### Stainless steel wire ropes:

- The suspension system shall essentially be without any intermediate joint and shall consist of only non-corrodible stainless steel of AISI 316 grade. The stainless steel wire ropes shall be of marine grade 7/19 construction, the central core being of the same material. The overall diameter of the rope shall not be less than 6mm for 16mts. The breaking load of each rope shall not be less than 2350 kg giving a factor of safety of over 5 for the system at full load as per the TR-7 referred to in the beginning of this specification. The end constructions of ropes by compression splices. Continuous lengths of stainless steel wire ropes shall be used in the system and no intermediate joints are acceptable in view of the required safety. No intermediate joints/ terminations, either bolted or else, shall be provided on the wire ropes between winch and lantern carriage. The design of the whole suspension system shall be such that the wire ropes can be removed and replaced from ground level without the necessity of lowering the mast or use of special equipment.

#### Electrical system, cable and cable connections:

The control panel at the bottom of the mast shall have facility for terminating up to 10KV, 4C x 25 sq. mm, Al conductor, armoured, XLPE incoming cable. The cabling from this panel shall be the trailing cable which is terminated at the weather proof junction box provided at the top. This cable shall be minimum 6 cores, 2.5 sq. mm; 1100V, electrolytic grade, EPR insulated, copper conductor and PCP sheathed





cable to get flexibility and endurance. The connections from the top junction box to the individual luminaires shall be made by using 3 core 4 sq. mm flexible or otherwise specified.

- PVC cables of reputed make. The cable shall run via metal ducts or tubes provided in luminaire's carriage up to individual luminaires and control gear units. All steel conduits shall be of heavy gauge welded type with hot dipped galvanized finish.

**Lightning spike:**

- One number heavy duty hot dip galvanized lightning spike shall be provided for each mast. The lightning spike shall be minimum 1.7 M in length (except for 12.5m where it will be 0.6m) and shall be provided at the centre of the head frame. It shall be bolted solidly to the head frame to get a direct conducting path to the earth through the mast. The lightning spike shall not be provided on the lantern carriage under any circumstances in view of safety of the system.

**Technical specifications:**

17m HIGHMAST Description Lighting Mast	Specification
High mast Height may incl. Luminaires Carriage	17
Material Construction	BSEN10025 or Equivalent
Welding	As per IS
No. of Sides	20
WIND LOAD DATA taken for this project	as per IS 875
<b>Mast Section Details</b>	
Top Diameter In mm	166
Base Diameter In mm	415
Number of Sections Nos	2
Top Sections lengthmm x thicknessmm	8375X3
Middle Section Length mm x thicknessmm	NA
Bottom Section Lengthmm x thicknessmm	8375 X 4
over lappingbetween Sections	375
Base Flange Diametermm	730
Base Flange Thicknessmm	25
P.C.D mmxHole Dimensionsmm	-
No. Of BoltsQty	12
Fabrication bolts Details	1200x30 mm
Anti Treatment protection for Mast	Galvanized



Thickness of Galvanisation:(min.)	min 65 micron for sheet thickness of 2mm up to 4 mm and 86 Microns for 5 mm and above.
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**High mast Drg. No: 1695/HMCL/C2/STD/ELE/114****IV b) Additional Green Building Features:-****a) Wind Mill**

Wind Mill is not envisaged in most of the locations. However, where such feature is envisaged, it shall be as required for operations, branding and for non conventional energy source.

Typical Specification for 20kw wind Turbine: Alternative similar specification shall also be considered

Type	Battery Charging or Grid Tied
<b>PERFORMANCE PARAMETERS:</b>	
Rated Electrical Power	20000W @ 10.5m/s
Rated Wind Speed	10.5 m/s
cut in	3.5 m/s
shut-down (high wind)	23 m/s
peak (survival)	50 m/s
<b>ROTOR</b>	
Type of Hub	Fixed Pitch
Rotor Diameter	10.5m
Swept Area	86.54 m <sup>2</sup>
Number of Blades	3
Rotor Speed @ rated wind speed	140 RPM
Location Relative to Tower	Down Wind
Rotor Tip Speed	47 m/s
Design Tip Speed	7
<b>BLADE</b>	
Length	5 m
Material	Class Fiber
Airfoil (type)	NACA 44012
Twist	16 outer blade
Root Chord	150 mm
Max Chord	450 mm
Tip Chord	160mm
Blade Trailing Edge	Tapered and Straight
System Weight	950 Kg

Blade Weight -approx	75 Kg
<b>GENERATOR</b>	
Type	PM Alternator
Voltage for Grid Tied system	415 - 3 Phase
Voltage for Grid Tied system	415 - 3 Phase
Rectifier	Applicable
Output Voltage	150 DC to 550 DC
Watts @ Rated Wind Speed	20000 Watts
Rated Generator RPM	150
Speed RPM (nominal)	200
Battery Bank (Min)	12 v 150 Ah 20 Nos
<b>TRANSMISSION</b>	
Type	Direct Drive
Ratio (rotor to gen. speed)	1 to 1
Lubrication	Grease
<b>YAW SYSTEM</b>	
Normal	By Tail Vane with Slip Ring
Structural	Yaw bearing mounted on tower top
<b>TOWER</b>	
Type	Lattice type
Tower Height	25 m
Options	30 m
<b>CONTROL SYSTEM</b>	
Type	PLC Based
Over speed Device	Mechanical Governor
Manual Brake	Electro Magnetic
<b>Inverter</b>	
Type	Sin Wave
Inverter Output Voltage	415 V AC

**b) Solar Lighting:****I. Internal lighting for Food Court and Toilet block (car & bus passenger):**

Solar panels are placed in terrace floor of food court for emergency lighting for areas indicated in the single line diagram.

**II. External lighting:**

Solar panels placed above EIS meter shed for 20% street lighting.

**External lighting for Village Haat / Gram Bazaar:**

500W street lights provided with solar panels, battery backup etc., in pole.

The scope of work includes but not limited to the following:

Const./Development Deptt. (unaided) carrying out starting before KMP Express way road ends at Ch. 47-000 near Rajinder Ghazi (Ch. 731 500 to Ch. 471 000) section of Delhi - Yadadri Greenfield Alignment: NH-148B on R.P.M. Mode under Bharatmala Pariyojana in the State of Haryana

- The Pole height shall be 5 meter and the LED luminaire efficiency shall be greater than 100 lux. The colour be warm white, power factor 0.95 with surge protection of 10 kV, total harmonic distortions less than 20%. IP rating shall be IP 65 and the system power is 45 Watts. Refer Drawing No.: 1695/111M/CL/02/STDA/1 3/119.
- c) **Provision for Cooking Gas (Bio Gas) from Food Waste:**
- The equipment shall provide cooking gas from kitchen waste for operations, efficiency and energy conservation.
  - The easily degradable waste material from kitchen mixed with wastewater from the kitchen shall be fed into the plant through the inlet chamber of the plant. This waste is converted into cooking gas with the help of a special type of anaerobic bacteria. The main component of the gas produced shall be methane which is a renewable source of energy.
  - The major components of the bio-gas plant shall include a digester tank, an inlet for feeding the kitchen waste, gas holder tank, an outlet for the digested slurry and the gas delivery system for taking out and utilizing the produced gas.
- d) **All Utility Connections, Deposits etc.**
- Scope of works includes Liaisoning and obtaining all utility connections including making necessary security deposits and all other related activities.
- e) **Other Equipments:-**

**HVAC**

The scope of work includes but not limited to the following:

- (i) All HVAC works shall conform to General Specifications for Heating, Ventilation, Air-Conditioning (HVAC) works 2004 and subsequent amendments, published by DGW, (PWD), New Delhi.
- (ii) Specialty Restaurants, Meeting Halls, Guest Rooms are to be air-conditioned mandatorily.
- (iii) Recommended types of systems include the following
  - a. Packaged type Air Conditioning Plants
  - b. VRV / VRF
  - c. Split units (including ductable)
  - d. Window units is prohibited. For split units / other systems, the outdoor units shall be placed in the terrace or away from the exposed facade. Drain pipes duly insulated shall be concealed and connected to nearest drains in the toilets or to the rain water downtake pipes.
- (iv) The scope of work to the extent relevant shall be deemed to include the following
  - a. Air-conditioning systems (outdoor units / plants / indoor units, AHUs / Fan coil units / cooling towers etc.)
  - b. Circulating pumps
  - c. Ducts
  - d. Insulations pipes, controls related electrical works, related plumbing works, mechanical ventilation systems and inspection, testing and commissioning of all the installations.
  - e. Water of required quality for proper functioning and operations.



Construction of Right of Way (ROW) and ingress/egress before NH Expressway and exit at Ch. 47+900 near Kuanpur (Ch. 48+500) to Ch. 47+000) section of Delhi - Vadodra Greenfield Alignment (NH-148) on EPC Model under Bharatmala Pariyojana in the State of Madhya Pradesh



Excavation and refilling of trenches in soil wherever the pipes are to be laid directly in ground, including necessary base treatment and supports. Sealing of all floor slab/wall openings provided by the Department or Concessionaire for pipes and cables, from fire safety point of view, after laying of the same, painting of all exposed metal surfaces of equipments and components with appropriate colour, making openings in the walls / floors / slabs or modification in the existing openings wherever provided for carrying pipeline, ducts, cables etc., providing wooden / metallic frames for fixing grills / diffusers, under deck insulation of top floor slab, if top floor is air-conditioned and if specified in schedule of work, Making good all damages caused to the structure during installation and restoring the same to their original finish.

g. Power supply, water supply and drainage as applicable for HVAC.

**(v) Quality of Materials and Workmanship**

- a. The components of the installation shall be of such design so as to satisfactorily function under all conditions of operation
- b. The entire work of manufacture/fabrication, assembly and installation shall conform to sound engineering practice. The entire installation shall be such as to cause minimum transmission of noise and vibration to the building structure.

**(vi) Care of the building**

- a. Care shall be taken by the Concessionaire during execution of the work to avoid damage to the building. He shall be responsible for repairing all such damages and restoring the same to the original finish at his cost. He shall also remove all unwanted and waste materials arising out of the installation from the site of work from time to time.

**(vii) Conformity with Statutory Acts, Rules, Standards and Codes**

All components shall conform to relevant Indian Standard Specifications, wherever existing, amended to date. A list of such standards is as follows.

All electrical works shall be carried out in accordance with the provisions of Indian Electricity Act, 2003 and Indian Electricity Rules, 1956 amended to date. They shall also conform to (IOWD) General Specifications for Electrical works, Part-I Internal, 1994 and Part-II External, 1994 and Part-IV (Sub-station) 1983, amended to date.

- a. IS-325 - Three Phase Induction Motors
- b. IS-1822 - Motors Starters of voltage not exceeding 1000 volts
- c. IS-3624 - Bourdon Tube Pressure and Vacuum Gauges
- d. IS 996 - Single phase small AC and Universal motors
- e. IS-1239 - Mild steel tubes, tubular and other wrought steel fittings
- f. IS-3559 - Electrically welded steel pipes for water, gas and sewage
- g. IS-277 - Galvanised steel sheets
- h. IS-655 - Metal air ducts
- i. IS 2516 - AC circuit breakers
- IS-900 - Code of practice for installation and maintenance of induction motors
- IS-1248 - Direct acting electrical indicating instruments
- IS-4183 - Specification for bonded glass wool/mineral wool



- |   |                                    |   |                            |
|---|------------------------------------|---|----------------------------|
| m | IS-4671 -                          | Specification for expanded polystyrene for thermal insulation purposes    |                            |
| n | IS-7856 -                          | Data for outside design conditions for air conditioning for summer months |                            |
| o | IS-8148 -                          | Packages for air conditioners   |                            |
| p | IS-5111 -                          | Testing of refrigerant compressors  |                            |
| * | Kitchen Equipments / Installation  |   | As required for operations |
| * | Mechanical Equipments, Pumps, etc. |   | As required for operations |
| * | Water Filtration System            |   | As required for operations |
| * | Other Equipments & Accessories     |   | As required for operations |

**Miscellaneous Items:****1. Earth work**

Earth work excavation in all kinds of soil/ordinary rock/hard rock by mechanical means (Hydraulic excavator)/ manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan and required depth) including dressing of sides and ramming of bottoms, bailing out water, dewatering if necessary, for required lift including getting out the excavated soil / rock and disposal of surplus excavated soil / rock with required lead.

Supply and filling with approved, good quality filling materials under plinth, foundation and wherever specified in layouts of not exceeding 200mm thick including breaking clods, storing, transportation, double handling, watering, compacting each layer with wooden / steel rammers to achieve 90 to 95% proctor density at optimum moisture content, all leads and bills, bailing / pumping out of water to keep site dry while filling; cost shall include, labour, machinery etc. complete as directed.

- with approved quality murrum brought from outside
- with approved quality river sand brought from outside
- with available excavated earth

Carting away the excavated earth (by mechanical transport including loading, unloading, stacking) to an identified location

- Lime, murrum, bldg rubbish
- Earth
- Excavated rock

Supplying and filling of Hardcore layer using 45 mm to 63 mm well graded hard broken stone metal and sand in void portion to required thickness including shuttering, watering, consolidation etc. complete.

**2. Mandatory waterproofing for toilets**

Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of W.C., kitchen and the like consisting of:

- I<sup>st</sup> course of applying cement slurry @ 4.4 kg/sq.m mixed with water proofing compound conforming to IS 2645 in recommended proportions including rounding off junction of vertical and horizontal surface.
- II<sup>nd</sup> course of 20 mm cement plaster 1:3 (1 cement: 3 coarse sand) mixed with water proofing compound in recommended proportion including rounding off junction of vertical and horizontal surface.
- III<sup>rd</sup> course of applying blown or residual bitumen applied hot at 1.7 kg. per sqm of

- d) 1<sup>st</sup> course of 400 micron thick PVC sheet. (Overlaps at joints of PVC sheet should be 100 mm wide and pasted to each other with bitumen @ 1.7 kg/sqm)

### 3. Mandatory waterproofing for terraces / roofing:

Providing and laying in situ seven course water proofing treatment with APP (Atactic Polypropylene) modified Polymeric membrane over roof consisting of first coat of bitumen primer as per IS 3384 @ 0.40 Kg per sqm, 2<sup>nd</sup>, 4<sup>th</sup> & 6<sup>th</sup> courses of bonding material @ 1.20 kg/sqm, which shall consist of blown type bitumen of grade 85/25 conforming to IS - 702 or residual bitumen 85/25 as per IS 73 where penetration of bitumen should not be more than 40 mm in accordance with IS 1303, 3<sup>rd</sup> and 5<sup>th</sup> layers of roofing membrane APP modified Polymeric membrane 2.0 mm thick of 2.00 Kg/sqm weight consisting of five layers prefabricated with centre core as 100 micron HMHDPE film sandwiched on both sides with polymeric mix and the polymeric mix is protected on both side with 20 micron HMHDPE film. 7<sup>th</sup>, the top most layer shall be finished with brick tiles of class designation 10 grouted with cement mortar 1:3 (1 cement: 3 fine sand) mixed with 2% integral water proofing compound by weight of cement over a 12 mm layer of cement mortar 1:3 (1 cement: 3 fine sand) and finished neat (item of laying brick tiles shall be paid for separately).

All exposed (external / internal) joints between R.C.C and masonry shall be covered with 300 mm wide chicken mesh before plastering for the purpose of avoidance of cracks

#### a) Surface Finish:

- i) **For accessible roof and terraces.** Surface finish shall be with brick tiles of class designation 100 or 20 mm thick precast PCC/hydraulically pressed clay tiles grouted with cement mortar 1:4 (1 cement : 4 fine sand ) with 2% integral water proofing compound by weight of cement over a 15 mm thick layer of cement mortar 1:4 (1 cement: 4 fine sand) and finished neat, as shown in Fig. 4K.
- ii) **For inaccessible roof:** After applying semi hot blown bitumen over membrane, provide aluminium paint as per manufacturers' instruction.

- b) **Preparation of Surface:** The surface to be treated shall have a minimum slope of 1 to 100. This grading shall be carried out with cement concrete or cement plaster with coarse sand, as desired, to the average thickness required and finished smooth. Such grading shall be paid for separately.

Junctions between the roof and vertical faces of parapet walls, chimneys etc. shall be chased by running triangular fillets 7.5 x 7.5 cm. size, cement concrete. At the drain mouths, the fillets shall be suitably cut back and rounded off for easy application of water proofing treatment and easy flow of water. Cement concrete where shall be 1:2:4 mix (1 Cement: 2 Coarse sand: 4 Graded stone aggregate 20 mm. Nominal size). The provision of fillets shall be deemed to be covered by the item of water proofing and shall not be measured or paid for separately.

In existing roof where gola and drip course are provided at the junction of roof and vertical face of parapet wall, chimney stacks, etc. These shall be dressed suitably and finished smooth so as to ensure an easy and gradual turning of the flashing. Any dismantlement or forming and finishing smooth the junction for forming the base of the flashing shall not be measured or paid for separately and shall be deemed to form part of the preparation of the surface.

While the grading of roof surface is being done, it shall be ensured that the outlet drain pipe has been fixed and mouth at the entrance have been eased and rounded off properly for easy flow of water. When any pipe passes through the roof to be made, angular fillet of shape shown in Fig. 4K shall be built around it for the water proofing treatment to be taken over it. These fillets shall not be measured



or paid for separately. For carrying over and tucking in the water proofing felts into the parapet walls, chimneys stacks etc. a horizontal groove 6.5 cm. deep, 7.5 cm. wide section with its lower edge at not less than 15 cm. above the graded roof surface shall be left on the inner face of the same; during construction if possible. When such groove has not been left, the same shall be cut out neatly and the base at rear of the groove shall be finished smooth with cement plaster 1:4 (1 cement: 4 coarse sand). Such cutting of the groove and its finishing smooth shall be part of the water proofing or paid for separately. No deduction shall be made either for not making the groove or when the latter has already been left in the masonry by the construction agency. Tucking in the water proofing felt will be required where the parapet wall exceeds 45 cm. in the height from the graded surface. Where the height is 45 cm. or less, no groove will be required as the water proofing treatment will be carried over the top of the parapet wall to its full thickness. In the case of low dividing walls of height 30 cm. or less, outlets therein shall be cut open for full height and the bottom and sides shall be rendered smooth and corners rounded and such treatment shall not be measured and paid for separately. Where expansion joints are left in the slab the provision of dwarf walls and/or RCC slabs for covering them and finishing the surface smooth shall be the responsibility of the construction agency, which and said the roof slab and will not be included in the operation of water proofing. The graded surface of the roof and concrete fillets and the faces of walls shall be thoroughly cleaned with wire brushed and all loose scales etc. removed. The surface shall then be dusted off. Any crack in the roof shall be cut to V section, cleaned and filled up flush with cement mortar slurry 1:4 (1 cement : 4 coarse sand) or blown type petroleum bitumen of IS grade 85/25, or approved quality conforming to IS 702. Such cleaning of the surface or treating the cracks shall not be paid for separately.

- c) **Treatment:** The water treatment shall be of five or seven course as specified. In seven course treatment, the first four courses shall be the same as for five course treatment. The fifth course shall be a layer of APP modified polymeric membrane. The sixth course shall be a coat of bonding material and the top most seventh course shall be of specified surface finish.

d) **Laying:**

- i) First course shall be a coat of bitumen primer @ 0.40 kg per sqm followed by subsequent course as per treatment required.
- ii) Drain outlets shall be given a four or six course treatment as specified for the roof in the description of the item in the manner specified for the flat roof surface. Water proofing treatment shall be carried into the drain pipe or outlets by at least 10 cm. The water proofing treatment laid on the roof surface shall overlap the upper edge of the water proofing treatment in the drain outlets by at least 10 cm.
- iii) The APP modified polymeric membrane shall be cut to the required length, brushed clean of dusting material and laid out flat on the roof to eliminate curls and subsequent stretching. The membrane shall normally be laid in length in the direction of the slope and laying shall be commenced at the lowest level and worked up to crest. The membrane shall not be laid in single piece of very long lengths as they are likely to shrink; 6 to 8 m are suitable lengths. The roof surface shall be cleaned and dry before starting the membrane treatment. Each length of membrane shall be laid in position and rolled up for a distance of half its length. The hot bonding material shall be poured on the roof across the full width of the rolled membrane as the latter steadily rolled out and pressed down. The pouring shall be so regulated that the correct weight of bonding material per unit area is spread uniformly over the surface. Excess bonding material that gets squeezed out at the ends



shall be levelled up as laying proceeds. When the first half of the strip of felt has been bonded to the roof, the other half shall be rolled up and then unrolled on the hot bonding material in the same way. Subsequent strips shall also be laid in the same manner.

Each strip shall overlap the preceding one by at least 7.5 cm. at the longitudinal edges and 10 cm. at the ends. All overlaps shall be firmly bonded with a blow lamp and leveling down unevenness. The fourth layer of bonding material in the five course treatment shall be carried out in a similar manner after the flashing has been completed.

- iv) In a seven course treatment the fifth layers of membrane shall be laid in the manner already described, taking care that laps in the membrane are staggered from those in the earlier layer. In case of inaccessible roof the sixth layer of bonding material shall be carried out after the flashing is done followed by aluminum paint as per manufacturer's instruction (See Fig. 4K).
- v) *High Parapet Walls, Chimney Stacks etc.* Membrane shall be laid as flashing wherever junctions of vertical and horizontal surfaces occur. Longitudinal laps shall be 10 cm. The lower layer of flashing membrane in a six course treatment shall overlap the roof water proofing by not less than 20 cm. while the upper layer shall overlap the roofing felt by 10 cm. The minimum overlap of the flashing membrane in five course treatment over the roofing membrane shall be 10 cm.

The flashing shall consist of the same five or seven course treatment as for the roof except that the final course shall be replaced by an application of 1.5 mm thick cement plaster 1:3 on the vertical and sloping faces only, of the flashing as shown in Fig 4K. The overlap along the length of flashing shall stagger with those in the second layer of flashing membrane (in a seven course treatment and with the joints in the roof membrane).

The upper edge of the finishing membrane shall be well tucked into the flashing grooves in the parapet, chimney stacks etc. to a depth of not less than 6.5 cm. Corresponding applications of bonding material shall also be made. The flashing treatment shall be firmly held in place in the grooves with wood edges at intervals and the grooves shall be filled up with cement mortar 1:4 (1 cement: 4 coarse sand) or cement concrete 1:2:4 (1 cement: 2 coarse sand : 4 graded stone aggregate 6 mm nominal size) and surface finished smooth with the rest of the wall. The cement work shall be cured for 7 days. When dry, the exposed plaster joints of grooves shall be painted with bitumen and two coats of bituminous solution shall be applied on the vertical and sloping surface of flashing (see Fig. 4K).

After the top flashing membrane layer has been fixed, the penultimate layer of bonding material shall be applied over the roofing membrane and the horizontal overlaps and vertical and sloping surfaces of the flashing at the specified rate.

- vi) *Low Parapet Walls:* Where parapet walls are of height 45 cm. or less, membrane flashings shall be provided in the same manner as for flashings in the case of high parapet walls except that the upper edge shall be carried up to the full height of the wall and taken right across the top of the parapet and down on the external vertical faces to a minimum distance of 5 cm. (Fig -4L & 4M)
- vii) *Low Dividing Walls.* Where low dividing walls or inverted beams are met with, the same shall be covered with a four or six layer treatment as for the roof, the latter being carried down both sides of the wall and overlapping the roofing treatment as in the case of flashing of high parapet

Drain outlets where formed in the low dividing walls, shall be given water proofing treatment of the same number of courses as specified for the flat roof surface. The bottom and sides shall be so treated that all overlaps are in the direction of flow of drainage.

- viii) **Expansion Joints:** Where the expansion joints are provided in the slabs, the joints and their cover slabs shall be suitably treated with water proofing. A typical sketch of an expansion joint with the RCC slabs on either side of the joint turned vertically up and dwarf walls by not less than 7.5 cm. and are provided with throatings on their underside along their length. The water proofing treatment shall be taken up the sloping junction fillets and the vertical faces of the walls to the underside of the cover slabs. The cover slabs are given the water proofing treatment like the roof slabs, after the cross joints between adjacent cover slabs are first sealed with 15 cm width of roofing felt stuck to them with bitumen. The water proofing treatment shall be carried down the sides of the cover slabs to their full thickness. Care shall be taken to see that overlaps if any in the roofing over the cover slabs stagger with the joints between cover slabs.

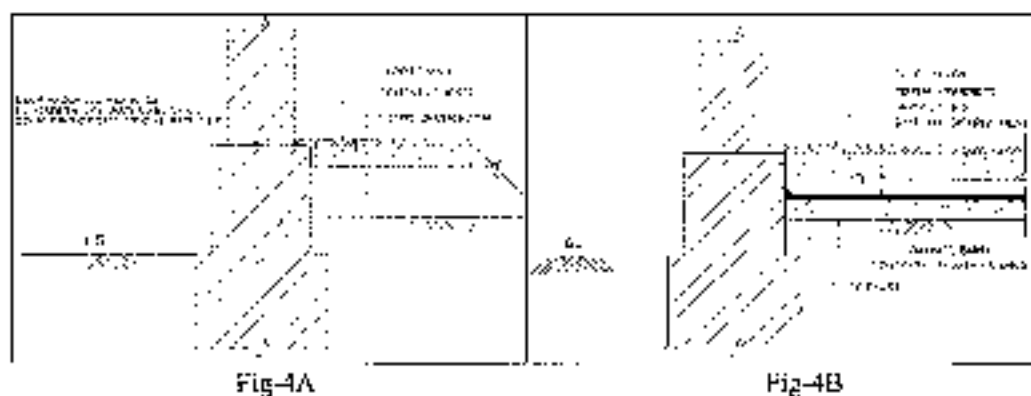
The formation of the expansion joints and provision of the cover slabs shall be the responsibility of the construction agency. The formation of the junction fillets and the water proofing treatment of the joint and cover slabs shall be carried out by the water proofing agency. Noting agency extra shall be paid for the sealing of the cross joints in the cover slab with 15 cm. width of bitumen strips.

- ix) **Pipes:** Where vertical pipe outlets are met with, 7.5 x 7.5 cm fillets of lime or cement concrete of the type and section shall be provided and flashing of four or six course treatment, same as for the roofing treatment shall be laid.

#### 4. Treatment to Ground/ Basement floor

- a) The moisture rising above ground level due to capillary action has to be dealt with suitably to obtain the maximum effects of damp-proofing in flooring in buildings like storage accommodation and industrial sheds, and buildings constructed in places where rise in sub soil water table is severe, the following points shall be taken into consideration (Fig 4A)
- The mortar bed on which the damp proofing treatment is to be laid shall be leveled and made free from projections liable to cause damage to the damp-proofing.
  - When the horizontal damp-proofing treatment is to be continued to vertical face, a cement mortar (1:4) fillet 75 mm in radius shall be provided at the junction between the horizontal and vertical faces, on which the damp-proofing treatment is to be laid, shall be finished smooth.
  - The damp-proofing treatment shall cover the full thickness of the walls excluding rendering, and shall not be set back from the wall face for painting, and

For effective damp-proofing in basement wall of residential building, a course of DPC in cement mortar 1:4 or cement concrete 1:2:4, 40 mm thick with necessary water proofing compound conforming to IS 2645-1975 may be laid below the course of brick on edges. The DPC so laid may also be extended vertically over the inner surface of the brick on edges of the basement wall. The floor finish on top may be taken up to the inner face of the superstructure. (Fig

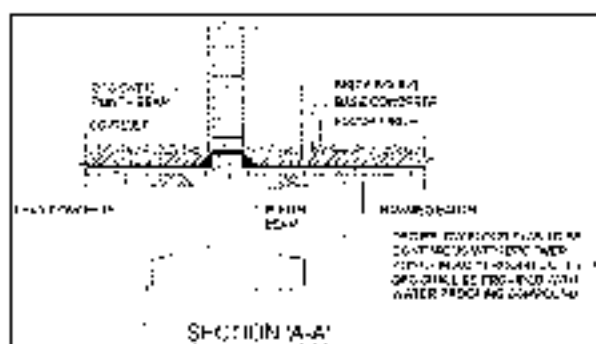


- b) For new construction in area having high water table, the ground floor shall be provided with following treatment:
  - i) Keeping in mind the high water table, the soil and the weather conditions, bricks of class higher than 100 Kg/cm<sup>2</sup> shall be used in all the walls of new constructions irrespective of the type of wall i.e. load bearing walls or infill walls of RCC framed construction.
  - ii) The damp proofing shall be provided in all the load bearing and RCC framed buildings. In RCC framed buildings, an integral water proofing compound shall be used in the concrete of columns up to the level of plinth beams as well as in the plinth beams. In RCC framed buildings, DPC shall also be provided under the infill walls (and over the plinth beams) as well as under the ground floor slabs as per details shown in Fig 3C and 3D. Care shall be taken to ensure that the DPC under the infill walls is contiguous with that under the floor slabs. In load bearing wall type of building also, an integral water proofing compound shall also used in the mortar of brick masonry up the level of plinth, DPC shall be provided as per the details shown in Fig-3D & 3E. The DPC can be of any type as per the recommendations of IS-4911-1986 and IS- 3067-1988. Polythene sheet DPC, though not approved by any Indian Code can also be provided with suitable polythene sheet conforming to BS: 6515



Suggestive detailing of DPC in area having high water table  
Fig-4C

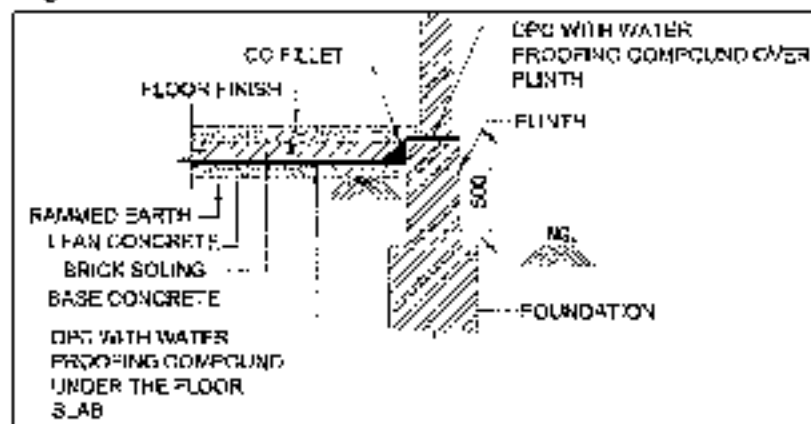




Typical elevation showing provision of DPC over plinth beam

Fig-4D

- iii) Care shall be taken that all rain water is carried well away from the base of walls. It shall also be ensured that the site is well drained and there is no possibility of ponding near walls and clayey soil should not be filled under the floor. Sand /broken bricks etc can be used to avoid capillary action. A minimum level difference of 450 mm shall be maintained between DPC and ground level.



Typical detailing of DPC in a typical RCC framed construction

Fig-4E

#### 5. RCC Precast Slab works

Providing, hoisting and fixing up to floor five level precast reinforced cement concrete cover slab in shelves including setting in cement mortar 1:3 (1 cement : 3 coarse sand), cost of required centering, shuttering, finishing with neat cement pointing on exposed surfaces but excluding the cost of reinforcement with 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size) etc. complete.

#### 6. Polycarbonate Sheet Roofing

##### 16.0mm Multilayer Top Seam Polycarbonate 'U' Panel System

Fabrication, Supply and erection of rectangular hollow section to the required profile of the structure and installation of Roof cover over MS structure for the specified area with 16mm thk Multilayer Top seam Polycarbonate 'U' Panel (Clear) standing seam system with Polycarbonate Top connector. Connector end caps and steel clamp, Sheet ends to be closed with Aluminium 'U' profile section and to ensure 100% water tight & leak proof. Counter sunk self drill tapping screws to be used for clamp fastening. MS tube structure shall be done as per design and painted one coat of zinc chromate yellow primer and two coats of enamel paint. (Steel work shall be paid separately).

Rectangular hollow section of suitable size as per design

- Powder coated (or) color oxidized

The Polycarbonate panel lengths shall be suitable size as per structure and should weigh 3.2kg/m<sup>2</sup> of 6 wall tight cell (5X4) structure having high impact strength - 15% (Jm) but light weight capable of transmitting 65% of light (Clear). It shall resist Temperature ranges upto 120°C. The sheet shall not have condensation even at high humidity and good physical properties in extreme weather conditions.

- It has good resistance to many chemicals (with the exception of solvents and alkalis) even for use in aggressive environments
- It exhibits excellent fire performance and in the event of fire it shall soften and open. Allowing smoke, heat and gases produced by the fire to escape. This venting property means that damage within buildings can be limited.
- And 10 years warranty on Polycarbonate sheets (refer complete warranty standards) and a 3 years weather breakage warranty.

#### Characteristics:

It has a good combination of Physical, thermal & optical properties.

#### Raw Material Properties

##### Physical Properties :

Density	:	1.2 g/cc
Water absorption	:	(24hrs@23°C) 0.35%
Water permeability (1mm thk)	:	< 2.28µ/m <sup>2</sup>

##### Thermal Properties:

Deflection temperature under load	:	135 - 140°C
Thermal conductivity	:	0.21 W/m°C
Thermal Transmittance (@) rate :	:	5.7 W/m <sup>2</sup> °C
Coefficient of linear expansion :	:	0.068 mm/mv°C

##### Mechanical Properties:

Tensile strength at yield	:	>60 MPa
Tensile strength at break	:	>70 MPa
Elongation at yield	:	6-8 %
Elongation at Break	:	>100 - 155%
Tensile Modulus of elasticity	:	>2300MPa

##### Solar Transmission Properties

Light Transmission (LT%)	:	67% (Clear)
Solar Heat gain co-efficient (SHGC)	:	0.53
Shading coefficient (SC)	:	0.71
Solar Transmission (ST%)	:	67%

- Resistance to impact 20mm diameter simulated hailstones impacting at 21m/s will not cause breakage. ( as per simulated hail tests)
- Resistance to specific compounds depends on concentration and temperature, duration of exposure and stress within the sheet. Contact with plastic coated metal sheets, wet wood preservatives, solvents and alkali cleaners should be avoided.
- Workability of Polycarbonate sheet should be as per the technical manual from the manufacturer, cutting of sheets should be through power tools and no drill is recommended above the Polycarbonate sheet at any joints / closures

#### Double Skin Metal Roofing with Rockwool insulation:

##### Top Sheet

Construction of Eight Lane divided carriageway starting before KMP Expansion and ends at Ch. 47+000 near Khandu Ligan (L.N. 18-500 to Ch. 47+000) section of Delhi - Vadodra Greenfield Alignment (NH-148B) on EPC Mode under Bharatmala Pariyojana in the State of Haryana

Supplying and Fixing Double Skin Metal Roofing comprising of External sheet - Colour coated KLIPLOCK H-Rib profiled sheets, 500 mm cover width, 47 mm crests at 250 mm centers made out of 0.55 mm thickness, Cold Rolled Steel 300 MPa yield stress with hot dip metallic coating of Aluminum zinc alloy (Galvalume) 150 gm / sq. m. total of both sides, having 20 microns Polyester coating on the exposed side. Special sheeting clips fabricated out of Galvanized Steel sheet (22 SWG with minimum 120 gms/sq.m Zinc coating) of width 250 mm shall be fixed to the 'Z' shaped sub-girts (50 x 50 x 50 mm size, made out of 1.6 mm. thick galvanized steel), with 25 mm self-drilling washer head fasteners. Kliplock Sheets shall then be pressed over the clips as per manufacturer's instructions complete as per standard specification, manufacturer specification, drawings. These sheets shall fixed along with Galvanized iron profile sheets and Rockwool insulation material

#### Bottom Sheet

Providing and fixing pre-coated galvanized steel sheet roofing accessories 0.50 mm 1.5% total coated thickness (TCT), Zinc coating 120gsm as per IS- 277 in 240mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns using self-drilling/self tapping screws or with polymer coated J or L hooks, bolts and nuts and or G.I. seam bolts and nuts, G.I. plain and bitumen washers complete, including necessary Ridges plain, Flashings/ Aprons & Gutter etc., complete

#### Insulation Material

Supply and Fixing the Rockwool Resin Bonded Rolls (RBR) Conforming to IS 8183/93. And having Density Of 150Kg/Cu,M and 50mm Thick, for Roofing Insulations etc., as per Manufacturers Specifications and other relevant Specifications etc., complete.

### 8. Plastering

Providing cement plaster of CM 1.3 mix, 6mm thick (ceiling) over concrete surface at all levels and locations, including preparing surfaces, scaffolding, curing etc., complete - 1:3 (1 cement: 3 fine sand)

Providing 18mm thick cement plaster (external) in two layers. Under layer 12mm thick cement plaster 1:5 (1 cement : 5 coarse sand) and a top layer 6mm thick cement plaster 1:3 (1 cement: 3 coarse sand) finished rough with sponge at all levels and locations, including preparing surfaces, scaffolding, curing etc., complete

Providing cement plaster of CM 1.4 mix, 12mm thick with water proofing material (for toilet area). Including preparing the surfaces, scaffolding, curing etc., complete

Providing 20mm thick plaster finish in C.M 1:4 (1 cement : 4 fine sand) with water proofing compound mixture of approved quality in the ratio of 1 Kg per bag of cement (50Kg) for plastering over RCC roof slab at all levels including surface preparation, scaffolding, curing, neat finish to line and level etc., complete.

Providing Decorative border in CM 1.2 of size 100mm x 25mm & 75mm x 25mm including necessary, curing scaffolding, labour charges etc., complete.

### 8. Rectify Group-25 VC Shield tile

Providing and laying rectified Glazed ceramic floor tiles (Rectify Group-25 VC Shield tile) of suitable size (thickness to be specified by the manufacturer) of 1st quality conforming to IS: 15622 of approved make and colour laid on 20mm thick cement mortar 1:4 (1 cement 4 coarse sand) including grouting the joints with white cement, etc., complete.

### 9. Granite (various finishes)

Providing and laying of Multi colour polished Granite (gang saw cut) stone for flooring and treads of steps and risers using single length upto 2m with 18mm thick Granite stone (sample of Granite approved over 20mm (average) thick base of CM 1:4 cement: 4 coarse sand) laid and jointed with grey cement slurry including



cutting 3 nos of grooves on granite stone to the length of steps, rubbing and polishing complete etc., complete.

Providing and fixing 18mm thick Blue Pearl Granite gang saw cut mirror polished (pre moulded and pre polished) machine cut for flooring, kitchen platforms, vanity counters, window sills, facias and similar locations, of required size and approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement : 4 coarse sand) joints treated with white cement and mixed with matching pigment, including rubbing, curing, moulding and polishing to edge to give high gloss finish etc., complete at all levels. (Gang saw granite of any colour and shade of slab area over 0.5 sqm).

Providing and laying 18mm thick (gang saw machine cut) polished granite slab for facias of required size of approved shade, colour and texture laid over 12mm thick base cement mortar 1:3 (1 cement : 3 coarse sand) and cement slurry of 3.30 kg/m<sup>2</sup> with joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edge to give high gloss finish etc. complete.

#### 10. PVC corner Beading

Providing and fixing of PVC Corner beading at corners of partition wall as per approved colour matching with dadoing wall tiles etc. including all labour and suitable adhesive charges as per standards.

#### 11. Stone Work In Dry Cladding

Providing and fixing dry cladding upto 10 metre heights with 30 mm thick gang saw cut Granite stone (machine cut edges) of uniform colour and size upto 1mx1m, fixed to structural steel frame work and/ or with the help of cramps, pins etc. and sealing the joints with approved weather sealant as per Architectural drawing

##### Structural Frame work for Dry Cladding

Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S square/ rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of M.S brackets/ lugs of angle iron/ flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2,4 (1 cement: 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps/ pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer and painted with two or more coats of epoxy paint. The frame work shall be fixed in true horizontal & vertical lines/planes.

##### Adjustable Stainless steel Cramps

Providing and fixing adjustable stainless steel cramps of approved quality, required shape and size, adjustable with stainless steel nuts, bolts and washer (total weight not less than 250 gms), for dry stone cladding fixed on frame work at suitable location, including making necessary recesses in stone slab, drilling required holes etc. complete.

#### 12. Unfired Flexi Clay (Cladding)

Clay tiles shall be MCM Travertine / MCM Sand Stone / MCM Cut Stone / MCM A-Series Facing Brick

##### Fully glazed fixed glazing

Providing and fixing aluminium powder coated of (not less than 50microns) approved colour with outer frame of 54.5 x 38 x 1.8 mtr with 8 mm thick float glass

with necessary accessories and Frosted glass sticker (3M) etc., complete and as per Drawing specification.

**13. FRP Doors for Toilets:**

Providing and fixing Fiber Glass Reinforced plastic (FRP) Door Frames of cross-section 90mm x 45mm having single rebate of 32mm x 15mm to receive shutter of 30mm thickness. The laminate shall be moulded with fire resistant grade unsaturated polyester resin and chopped mat. Doorframe laminate shall be 2mm thick and shall be filled with suitable wooden block in all the three legs. The frame shall be covered with fiberglass from all sides. M.S. stay shall be provided at the bottom to steady the frame.

**14. Galvanized steel door**

Supplying and fixing of factory made galvanized steel (Acoustic) door using Shakti-mel door or equivalent approved section with dam outer frame of suitable size (formed from 1.2mm thick G.S sheet) and shutter section of 46 mm thick fully (formed from 0.80mm thick G.S sheet), double skin shutter shell with lock seal joints at style edges in-fill with PUF (Polyurethane foam) honeycomb Kraft paper with vision panel of 5mm thick glass and shutter skin shall be finish with hair line finish, excluding cost of accessories such as door closer, hinges, handle, lock and screws etc. (Dorma or equivalent of approved make) including cost of all materials and labour, scaffolding charges etc., complete. (Single / Double leaf door)

Supplying and fixing of pressed steel Door frame from 1.20mm (18Gauge) thick galvanized steel sheet formed to single rebate profile of size 100 x 57mm finished with necessary approved painting, including cost of accessories such as all clamps, anchor fasteners in RCC surfaces if necessary etc., complete including cost of all labour, scaffolding, grouting the frame with (M-25 grade) concrete charges etc., complete door frames may be built into the brick or block walls using corrugated "TEE" anchors not welded to the frames (first fix). Frames may also be fixed on plastered openings with help of anchor Fasteners (second fix), etc. complete.

**Accessories:** Supplying and fixing of Door accessories with necessary fixtures, fittings and screws etc, including all labour charges for fixing and all applicable taxes as per manufactures specification.

**Floor Spring:** (Dorma - cat.no.BTS75V or equivalent of approved make) **Handles:**

- i) Handles (Kiech - PKC 2510 or equivalent of approved make)
- ii) Handles (Kiech - MH 2221S or equivalent of approved make)

**Locks / Other accessories:**

- i) Lock (Dorma-Narrow stile dead lock 917 or equivalent of approved make)
- ii) Lock (Dorma-Narrow stile dead lock 852 or equivalent of approved make)
- iii) Locks (Dorma - cat.no.US10 or equivalent of approved make)
- iv) Flush bolt-Tower Bolt (Dorma - 3101 lever action or equivalent of approved make)
- v) Hinges (Dorma - cat.no.BB4330 or equivalent of approved make)
- vi) Door stopper (Kiech - DSTHMS or equivalent of approved make)
- vii) Door closer (Dorma - TS73v or equivalent of approved make)
- viii) Magic eye (Dorma - TS73v or equivalent of approved make)

**15. Windows**

**Powder coated steel:**

Controlled steel coil made up of base steel as per IS 513 grade "D" quality, galvanized as per IS 277 with zinc coating of 120 grams/sq.mtr. The roll formed section should be powder coated with pure polyester powder up to 50-60 microns thick.

**Hardware:**



Windows should be with assembled high quality hardware made of either with high grade aluminum, CRCA electroplated or glass filled nylon. Gasket should be made up of EPDM.

**Top hung Ventilator:**

Top hung windows should be fabricated from roll formed sections made of galvanized color / powder coated steel with a combination of specially designed components made up of CRCA with zinc phosphate, nylon or high grade aluminum with powder coating. Section to section overlap, the gasket around glass and between frame & shutter are designed to give perfect sealing

**Fixed louvers:**

Fixed louvers should be fabricated from roll formed sections made of galvanized color / powder coated steel with a combination of specially designed components made up with zinc nylon.

**Adjustable louvers:**

Adjustable louvers are fabricated from roll formed sections made of galvanized color / powder coated steel with a combination of specially designed components made up with zinc nylon.

**16. Aluminium composite panel (ACP)**

Designing, fabricating, testing, installing and fixing in position Curtain Wall with Aluminium Composite Panel Cladding, with open grooves for linear as well as curvilinear portions of the building, for all heights and all levels etc including:

- a) Structural analysis & design and preparation of shop drawings for pressure equalisation or rain screen principle as required, proper drainage of water to make it watertight including checking of all the structural and functional design.
- b) Providing, fabricating and supplying and fixing panels of aluminium composite panel cladding in pan shape in metallic colour of approved shades made out of 4mm thick aluminium composite panel material consisting of 3mm thick FR grade mineral core sandwiched between two Aluminium sheets (each 0.5mm thick). The aluminium composite panel cladding sheet shall be coil coated, with Kynar 500 based PVDF / Lumilon based fluoro polymer resin coating of approved colour and shade on face # 1 and polymer (Service) coating on face # 2 as specified using stainless steel screws, nuts, bolts, washers, cleats, weather silicone sealant, backer rods etc
- c) The fastening brackets of Aluminium alloy 6005 T5 / MS with Hot Dip Galvanized with serrations and serrated washers to arrest the wind load movement, fasteners, SS 316 Pins and anchor bolts of approved make in SS 316, Nylon separators to prevent bi-metallic contacts all complete required to perform as per specification and drawing The item includes cost of all material & labour component, the cost of all mock ups at site, cost of all samples of the individual components for testing in an approved laboratory, field tests on the assembled working curtain wall with aluminium composite panel cladding, cleaning and protection of the curtain wall with aluminium composite panel cladding till the handing over of the building for occupation.

The Concessionaire shall provide curtain wall with aluminium composite panel cladding, having all the performance characteristics all complete, as per the Architectural drawings, as per item description, as specified, as per the approved shop drawings.

at Exterior  
Interior  
c) Fabricated Fins / Louvers

*Rohini*

**17. Gypsumboard Partition:**

Providing and fixing partition upto ceiling height consisting of G.I. frame and required board, including providing and fixing of frame work made of special section power pressed roll form G.I. sheet with zinc coating of 120 gms/sqm (both side inclusive), consisting of floor and ceiling channel 50mm wide having equal flanges of 32 mm and 0.50 mm thick, fixed to the floor and ceiling at the spacing of 610 mm centre to centre with dash fastener of 2.5 mm dia meter 50 mm length or suitable anchor fastener or metal screws with nylon plugs and the studs 48 mm wide having one flange of 34 mm and other flange 36 mm and 0.50 mm thick fixed vertically within flanges of floor and ceiling channel and placed at a spacing of 610 mm centre to centre by 6 mm dia bolts and nuts, including fixing of studs along both ends of partition fixed flush to wall with suitable anchor fastener or metal screws with nylon plugs at spacing of 450 mm centre to centre, and fixing of boards to both side of frame work by 25 mm long dry wall screws on studs, floor and ceiling channels at the spacing of 300 mm centre to centre. The boards are to be fixed to the frame work with joints staggered to avoid through cracks, M.S. fixing channel of 99 mm width (0.9 mm thick having two flanges of 9.5 mm each) to be provided at the horizontal joints of two boards, fixed to the studs using metal to metal flat head screws, including jointing and finishing to a flush finish with recommended jointing compound, jointing tape, angle heads at corners (25 mm x 25 mm x 0.5 mm), joint finisher and two coats of primer suitable for board as per manufacture's specification and direction of engineer in charge all complete.

- 75mm overall thickness partition with 12.5 mm thick double skin tapered edged plain Gypsum board conforming to IS: 7095 part I
- 56mm overall thickness Partition with 8mm thick double skin Calcium Silicate Board made with Calcareous & Siliceous materials reinforced with cellulose fiber manufactured through autoclaving process with Compressive Strength 225 kg/sq.cm, Bending Strength 100 kg./sq.cm
- 66mm overall thickness partition using 8mm thick double skin non- asbestos multipurpose cement board reinforced with cellulose fibre manufactured through autoclaving process (High pressure steam cured) as per IS : 14862 with suitable fibre cement screws

**18. Mineral Fibre False Ceiling:**

Providing & Fixing of Armstrong or equivalent Mineral Fibre Acoustical Suspended Ceiling System with DUNE PLANKS (MICRO LOOK) EDGE TILES WITH ARMSTRONG SUPRAFINE or equivalent of approved make 15 MM GRID. The tiles should have Humidity Resistance (RH) of 99%, NRC 0.5, Light Reflectance >85%, Thermal Conductivity  $k = 0.0520-0.057$  w/mK, Colour White, Fire Performance A2-s1,d0 in module size of 600 X 600 X 16 mm with Bio Block coating in the front & back of the tile, suitable for Green Building application, with Recycled content of 60%. The tile shall be laid on grid or equivalent of approved make with 15 mm wide T - section flanges color white having rotary stitching on all T sections. The T Sections have a Galvanizing of 120 grams per M2 & passed through 500 hrs of Salt test.

The above grid is suspended at every 1200mm etc. in both directions using 2.0mm thick adjustable pre-straightened GI suspension laying Prima Dune Premier Regular Edge ceiling tiles or equivalent of approved make of size 600mm x 600mm x 15mm having NRC 0.50, light reflectance of >85% (WT), thermal conductivity  $k=0.052-0.057$  W/mK, Humidity Resistance of 99% (having LIFETIME GUARANTEE against water damage), having Fire Performance CLASS "0" / CLASS 1 (BS 476), surface having 3 coats of white paint - crisp finely granulated with micro perforations, back of the tile shall be sand blasted and finished with a coat of protective paint over the formed grid etc

**19. Metal False Ceiling:**

**Interior**

Providing and fixing metal false ceiling tiles (of approved colour / wood finish) of size 600x600x60 mm with SUPRAFINE AL. or equivalent of approved make 15mm Grid System i.e. hot dipped galvanized steel section and powder coated white. The above grid is suspended at every 1200mm in both directions using 2 (mm) thick pre straighten GI wire NRC 0.90, Light reflectance of >88% (WT), thermal conductivity  $k = 0.040$  W/mDK, Humidity Resistance of 99% RH, and having Fire Performance CLASS A1.

**INSTALLATION:** To comprise main runner spaced at 1200mm centres securely fixed to the structural socket by approved hanger at 1200mm maximum centre. The last hanger at the end of each main runner should not be greater than 450mm from the adjacent wall. Flush fitting 1200mm long cross tees to be interlocked between main runners at 600mm centre to form 1200 x 600 mm module. Cut cross tees longer than 600mm require independent support. 600 x 600mm module to be formed by fitting 600mm long flush fitting cross tees centrally between the 1200 mm cross tees.

The wall angles or channel are to be secured to the walls at 450 mm maximum centres. THE SUSPENSION SYSTEM the accessories consist of M6 Anchor Fasteners with Vertical Hangers made of Galvanized steel of size 26 x 26 x 25 x 12mm with a Galvanized Thickness of 80g/ sq.m, A pre Straightened Hanger wire of dia - 2.68 mm of 1.83 m length., (vary to suit site condition) thickness of 80 g/sqm and a tensile strength of 344-413 MPa, along with Adjustable hook clips of 0.8mm thick, galvanized spring steel for 2.68 mm with a minimum pull strength of 110 kg. The adjustable clip also consists of a 3.5 mm acutline wire to be used with the main runner.

**Exterior****1. Material**

Cold Rolled Steel Confirming IS- 513 having minimum yield stress of 240 MPa and minimum tensile stress of 300 MPa. Base metal thickness for ceiling panels 0.45 mm & for carriers 0.55 mm

**2. Coating:**

Hot Dip Metallic coating -120 gms/m<sup>2</sup>. Zinc coating (galvanising) as per IS:277. Coating mass -120 gms/m<sup>2</sup>. (total of both sides) as determined by triple spot tests

Organic Coating: Organic coating with Modified Polyester paint on a continuous coil coating line.

Top side: 15 micron Modified Polyester over 5 micron Epoxy primer

Back side: 5 microns Alkyd backer coat.

Total coated thickness:

- a. for ceiling panels 0.50mm
- b. for carriers 0.60mm

Approximate mass of completed ceiling 4.95 kg/ m<sup>2</sup>

**3. Span**

The recommended span for wind loads shall be as per IS:875. In general, the spans for carriers and suspenders shall be 1200 mm etc.

**4. Dimensions:**

The overall height of the false ceiling shall be as per the structural drawings and instructions issued by IOC Divisional Engineers for various locations based on the site requirements etc. The false ceiling shall be strictly as per the approved shop drawings and any deviation will be accepted only with the prior approval of IOC. Recommended dimensions:

For Ceiling Panels: 150-F or 200-F Flush panel: 150 mm or 200 mm wide x 17 mm deep with tongue and groove interlocking arrangement. For Carriers: 34.5 mm wide x 48 mm span. However, this shall be checked for design wind loads and if found necessary, the

depth can be increased to 75 mm. However, no extra shall be paid for. Length for ceiling Panels: Up to 6000 mm; Length for Carriers: Up to 5000 mm

#### 5. Fixing Method:

The Ceiling panels shall be clipped onto carriers, which are suspended from steel trusses with the help of C.I. suspension angles of size 25 x 25 x 0.5 mm. thick by means of rigid suspension. The suspension system shall be rigid and meant for exteriors. The longitudinal joints of two panels shall be but jointed with a spectra. panel splice behind the joint. The carriers' joint of two carriers shall be jointed by means of carriers splices maintaining a nodule of 150 mm. the spans shall not exceed as recommended and manufacturer's recommendations for installation shall be followed.

#### 6. Appearance:

The false ceiling should be of white colour as per standard technical specification and should be erected with the bottom face truly at horizontal plane. If the canopy bottom chord members are placed inclined such as upward slope of cantilever portion (if required as per architectural requirement) then the plane of false ceiling shall be parallel to bottom chord of truss and/or as per architectural requirement. The false ceiling should also be provided to cover up any left over vertical portion on the front facia as directed by the site engineer. In such cases, The vertical surface of the false ceiling shall be flush with the back of facia. Concessionaires are required to obtain the details of the facia first and it is preferable to carry out the false ceiling work after the front facia work is completed.

#### 7. Painting:

The painting on all the roofing / false ceiling shall be got done in the manufacturing process before brought to site for erection. Any surface damage/ chipping etc. on the outer exposed surfaces of any components suffered during transit, handling, erection or any other cause has to be made good properly by the Concessionaire at his own expense and matching the shade with adjacent components as instructed.

#### 20. Veneering:

Supplying providing and fixing of green wall nut or equivalent veneering over the required areas using necessary, hardware and adhesive and shall be finished with approved colour and shade suitable required Melamine (Glossy) polishes etc., as per standard specification, as per manufacturer specification, drawings

#### 21. Texture Paint (Scratch Finish):

##### External Painting:

Exterior Texture finish (Spectrum Antonio wall finish or similar equivalent)

#### 22. Sanitary Fittings & Fixtures

Scope includes of all the sanitary fittings and fixtures as per site specific drawings, standard drawings and as per standard specifications.

#### Miscellaneous Items II:

##### 1. PRECONSTRUCTION ANTITERMITE TREATMENT

- 1.1 Preconstruction anti-termite chemical treatment shall be carried out to surface which include bottom end sides of excavation in foundation of walls/columns, the back filled earth in immediate contact with the foundation structure, top surface of filled earth under floors, junction of walls and floors, soil under plinth protection, soil along external perimeter of the buildings and soil surrounding the conduits/pipes of buildings all as specified in clause 3.26.1 to 3.26.11 of MFS SSR Part-I.

1.1.1 The work shall be got done as per IS-6313 Part-II 1981.

- 1.2 Preconstruction anti-termite treatment shall be got done through an approved specialised agency which is a member of Indian Pest Control Association holding valid licence as per clause 3.26.11 of Insecticides Act 1969. Persons employed to do the anti-termite

Contract No. NH-18/2018/1000 for construction of expressway starting before KMP Expressway and ends at CH 47+000 near Khajuri Suihi (CH 18+550 to CH 47+000) section of Delhi - Faridkot Greenfield Alignment (NH-145N) on EPC mode under Bharatmala Pariyojana in the State of Haryana



- treatment shall be qualified as per rule 10 of the rules framed under the insecticides Rule 1971.
- 1.3 Anti-termite treatment shall be carried out with any of the following chemicals/brands :-
- (a) Chloropyrifos 20% EC
    - i) Dursban - TC, manufactured by De-Nocil Ltd.
    - ii) Dornel, manufactured by Base India Limited.
    - iii) Termisafe, manufactured by Bayer (India) Ltd (iv) Rusban, manufactured by Jai Shree Rasayan Udyog Ltd
  - (b) Lincane 20% EC.
    - i) Gammax 20, manufactured by M/S India Pesticides Ltd.
    - ii) Karodane 20 EC, manufactured by M/S Kanoria Chemical & Industries Ltd.
- 1.4 Chemicals brought to site in sealed containers in 5 kg pack only, bearing ISI certificate marks shall only be permitted to be used. Chemicals shall be stored carefully at site. Empty containers shall be removed off the site promptly. If on a particular day the contents of one full container could not be used in the work the container should be got sealed at the end of the day and opened when required.
- 1.5 Should the Independent Engineer at any time during the construction or concession period finds that the buildings have been infested with termites the concessionaire shall, on demand in writing from the Independent Engineer specifying the building complained of, notwithstanding that the same may have been cleared earlier by the Independent Engineer, forthwith undertake to carry out such treatment which may be necessary to render the buildings free from termite infestation at his own expenses, till expiry of the concession period.
- 1.6 The concessionaire shall provide a plaster plate of requisite size in situation as decided by the Independent Engineer on any of the wall of each of the building. The plate shall be 15mm thick in cement mortar (1:4) indicating the Name of the Concessionaire, the date of completion of work and the probable date of expiry of antitermite treatment by engraving and painting (Black).
- 1.7 Testing of chemical is mandatory from approved laboratory before incorporation in the work. The cost of testing shall be borne by the Concessionaire.

## 2. CONCRETE WORK

### 2.1 GENERAL:

### 2.2 CEMENT:

#### 2.2.1 TYPE OF CEMENT:

Type of cement to be used in this contract shall be ordinary portland cement, grade 43, conforming to IS-8112-1989/ Portland Pozzolans Cement conforming to IS-1489-1991, unless otherwise specifically specified. However, Concessionaire may use OPC in lieu of PPC in all situation in the work

#### 2.2.2 PROCUREMENT:

2.2.2.1 Cement shall only be procured by the Concessionaire directly from any of the main producers of cement with makes specified in Annexure V of schedule D.

2.2.2.2 Use of PPC: While using PPC, the following requirements shall be met with:-

PPC shall meet the strength criteria of 43 grade OPC as laid down in IS 8112

- b) The minimum period before striking formwork given in clause 11.3.1 of IS 456 shall be suitably modified at site and approved by the Independent Engineer.
- c) Mixing of OPC and PPC shall not be allowed in a work.
- d) PPC Cement shall not be used in Overhead Reservoirs and Underground Sump. In these structures only OPC cement shall be used.
- e) While producing PPC, the following requirements are to be ensured and certificate to that effect from the manufacturer shall be submitted by the Concessionaire for each batch:
- The quality of fly ash used is strictly as per IS-1489 (Part-I)-1991.
  - The fly ash is inter-ground with clinker and not mixed with clinker.
  - The dry fly ash is transported in closed containers and stored in silos. Only pneumatic pumping has been used.
  - The fly ash has been received from thermal power plants using high temperature combustion above 1000 Degree Centigrade.
  - The fly ash content in PPC is less than 25% to achieve desired consistency.
- 2.2.2.3 Cement brought by the Concessionaire at site(s) of work shall be in jute/polythene/paper bags containing 50Kg cement in each bag originally sealed by manufacturer.
- 2.2.2.4 Concessionaire shall produce purchase vouchers, test certificates and other valid documentary proof to the entire satisfaction of the Independent Engineer for entire quantity of each consignment to prove that cement has been purchased from the main producers as in para 2.2.2.1 above.
- 2.2.3 TESTING OF CEMENT:
- 2.2.3.1 The Concessionaire shall submit the manufacturer's test certificate in original along with the test sheets giving the result of each physical test as applicable and the chemical composition of the cement or authenticated copy thereof, in accordance with BIS provisions duly signed by the manufacturer or his authorised representative with each consignment.
- 2.2.3.2 In addition to manufacturer's test certificate, the Independent Engineer shall also take random samples of cement drawn from various lots of each consignment as specified in IS Codes and get them tested from any one of the Govt. approved laboratories at his discretion or from SEMT CMI, Regional Research Laboratory or Zonal Laboratory, all as per IS-3535 (Method of Sampling Hydraulic Cement), IS-4031 (Method of Physical Test of Hydraulic Cement) 1985 and IS-4032 (Method of Chemical Analysis of Hydraulic Cement). Irrespective of results, cost of materials for such samples, cost of requisite handling & conveyance etc shall be borne by the Concessionaire. Cement from each consignment shall be allowed to be incorporated in the work only after the Independent Engineer is satisfied with the quality of cement brought by Concessionaire.
- 2.2.3.3 It shall be ensured that tested and untested cement is segregated and stored separately with distinct identification. Cement of different brands shall be stacked separately by the Concessionaire. The stacking of cement shall not be more than 10 bags high.
- 2.2.3.4 If the test results on samples of a particular consignment are not within acceptable limits, the matter shall be referred to the Project Director, whose decision regarding acceptability of such cement or removal from the site shall be final and binding. Cement rejected or any bag of cement in godown showing indication of any defect shall be segregated and removed by Concessionaire from the site within a specified time with due permission of the Independent Engineer for their removal.



## 2.2.4 STORAGE/CONSUMPTION OF CEMENT

- 2.2.4.1 Cement in bags shall be stored in proper leak proof/damp proof storage godown, over at least a 20cm high platform, away from walls in such manner as to prevent deterioration due to moisture or intrusion of foreign matter, all as specified in clause 4.2.1 of SSR Part-I.
- 2.2.4.2 For the purpose of keeping a record of cement procured and consumed in works, the Concessionaire shall maintain a properly bound register in the form approved by the Independent Engineer showing all procurements, quantity used in the work and balance in hand, at the end of each day and such other information as may be required to control the consumption of cement. Pages of the register shall be numbered and initialed by Independent Engineer. This register shall be signed by the Independent Engineer and the manager of the concerned Authority's Project office from time to time as instructed by the Authority.
- 2.2.4.5 Cement shall be used in order of which it is received. It shall be ensured that only one type/make of cement is used in any structural member.
- 2.2.4.6 Cement shall not be more than 02 months old and shall be consumed within next 02 months of its packing.

## 2.2.5 SCHEDULE OF SUPPLY:

The Concessionaire shall ensure that procurement action is taken immediately after acceptance of the contract so as to adhere to schedule of activities as per his approved work program submitted to achieve the COD.

- 2.2.6 The periodicity of striking the form work and curing for works with ordinary Portland cement, shall be as stipulated in clause 11.3 and 13.5 of IS 456 of 2000 and the same shall be suitably modified by the Independent Engineer when PPC is used.

## 2.3 AGGREGATES:

Aggregates for concrete work shall conform to specifications all as specified in clauses 4.4.1 to 4.4.7 of MFS SSR Part-I

### 2.3.1 FINE AGGREGATE (SAND):

Grading for fine aggregate shall be within the limits of grading zone I to III as given in clause 4.4.7.2 of MFS SSR Part-I. Crushed stone sand of grading I to IV may be used for concrete and masonry work only.

### 2.3.2 COARSE AGGREGATE:

Unless specified otherwise in these particular specifications coarse aggregate for all concrete work in all situations shall be graded crushed stone aggregate of approved quality. The Concessionaire may however use graded stone aggregate/all in aggregate graded of approved quality in lean concrete under foundation and sub base of floor. However, two types of aggregate shall not be mixed.

#### 2.3.2.1 GRADING OF COARSE AGGREGATE:

Graded aggregate of nominal sizes given hereunder, shall be used, unless specified otherwise in the specifications hereinafter:-

##### a) REINFORCED CEMENT CONCRETE:

- i) For elements of depth/thickness more than and including 100mm - 20mm
- ii) For elements of depth/thickness less than 100mm - 12.5mm

NOTE: However, in no case the nominal size of aggregate shall be greater than one fourth the minimum thickness of the member and further it should conform to the requirement given in Clause 5.3 of IS 456-2000.

##### PLAIN CEMENT CONCRETE:

- i) Under 30mm thickness: 12.5mm

- ii) 30 to 80mm thickness: 20mm  
 iii) Exceeding 80mm thickness: 40mm
- 2.4 WATER: Water shall conform to the requirements stipulated in Clause 5.4 of IS 456-2000
- 2.4.1 ADMIXTURE: Admixture, if used shall conform to the requirements stipulated in clause 5.5 of IS 456-2000
- 2.5 MIX OF CONCRETE FOR WORKS:  
 Unless otherwise specified elsewhere in these particular specifications, mix of cement concrete in various situations shall be as under :-

SITUATIONS	TYPE OF CONCRETE
a) Lean concrete under foundation of wall/plinth/stem beam/saps & in gaps between plinth beam/column footings.	M-10 (Nominal mix)
b) Foundation concrete under column footings	M-10 (Nominal mix)
c) PCC cills, PCC block for holder bats, holdfasts/lugs for doors, windows and ventilators, plugging for scaffolding holes and plinth protection	M-15 (Nominal mix)
d) PCC in bed blocks/plates, kerbs padding, benching, splash stones, coping and PCC in any other situation (except sub floor/sub base of floor and flooring) not covered above.	M-15 (Nominal mix)
e) All RCC works	M-25 (Design mix)

(f) SPECIFICATIONS FOR M-25 DESIGN MIX CONCRETE:

Specifications Reinforced Concrete (Below & above FFL)

Type of mix	: Design mix
Grade	: M-25
Type of cement	: OPC 43 Grade/PPC
Max Nominal size of agg	: 20mm
Min cement content	: 360 Kg/Cum
Max water cement ratio	: 0.50
workability	: 25-75mm slump
Exposure Conditions	: Moderate
Max temp of the concrete at the time of placing	: Prevailing ambient temp
Method of placing	: As specified.
Type of Aggregate specified	: Crushed stone aggregate as

Note : (i) PCC/RCC for other purposes shall be provided as specified in the relevant drawings

(ii) The minimum cement content for M-25 (design mix) shall not be less than 360 Kg per Cubic metre.

Design mix shall be got carried out by the Concessionaire from Govt Engineering College not approved lab. Minimum cement contents in trial mix, meeting the



- strength requirement as per IS-456-2000 shall be approved by the Independent Engineer and work shall be carried out accordingly
- 2.6.1 In case of any change in source/quality of materials, fresh design mix shall be carried out and approved by the Independent Engineer.
- 2.7 IMPORTANT REQUIREMENTS OF REINFORCED CEMENT CONCRETE/ PLAIN CEMENT CONCRETE:
- 2.7.1 (i) All the materials, workmanship, inspection and testing for the cement concrete of grade M-10 & M-15 (Normal mix) to be used for PCC work shall be as per the requirements given in section 2 of IS-456-2000.
- (ii) Testing of cement concrete cubes shall be carried out all as provided in IS 456: 2000. The confirmatory tests when required by the Independent Engineer shall, however, be carried out in site laboratory, for which necessary facilities for casting of samples, curing and conveyance of samples etc. shall be provided in the site laboratory by the concessionaire. In case, the Concessionaire or his authorised representative does not remain present during the time of testing of cubes, the testing shall nevertheless be done by the Independent Engineer at the site laboratory. The test reports shall be signed by the Independent Engineer and the concessionaire and the same shall be maintained as a record.
- (iii) Nominal mix shall be by volume if permitted by Independent Engineer.
- 2.7.2 All plain Cement concrete shall be mixed in a mechanical mixer with hopper of approved type. The coarse and fine aggregates for mixing of cement concrete shall be put in the hopper through measuring boxes. Under no circumstances measuring with other than proper measuring boxes shall be allowed. However, in case of small quantity (i.e. the quantity of concrete required being less than one batch of mix), the Concessionaire may, after obtaining written permission of the Independent Engineer be allowed hand mixing. Where hand mixing is permitted, it shall be carried out on a water tight platform and care shall be taken to ensure that mixing is continued until the concrete is uniform in colour and consistency.
- 2.7.3 All concrete for RCC work shall be consolidated/compacted by mechanical vibrators of approved type as specified in para 4.1.1.1 of MES SSR Part-I. Precast/cast-in-situ plain cement concrete shall, however, be rammed and consolidated by tamping and roding.
- 2.7.4 IMPORTANT REQUIREMENTS FOR M-25 (DESIGN MIX):
- 2.7.4.1 Compressive strength of cubes after 28 days shall be 25 N/Sqcm for M-25 (Design Mix). Design mix shall be made as per clause 16 and table 11 of IS 456-2000.
- 2.8 PRIMARY TESTS FOR TRIAL MIXES:
- (i) As soon as possible after receiving the order to commence work, the Concessionaire shall make the trial mixes for concrete in presence of the Independent Engineer, meeting the strength requirement as per IS-456-2000 and shall be approved by Independent Engineer.
- (ii) From each trial mix, nine number preliminary test cubes of size 15x15x15cms shall be made and tested in accordance with IS-516. Three of these cubes shall be tested at seven days (i.e. on 8th day from the date of casting) and another three at 28th days (i.e. 29th day from the date of casting) and the remaining three cubes of the finally approved mix shall be preserved by the Independent Engineer for one year after completion of work for test in case of subsequent check.

Table 2 of IS-456-2000. If the difference between highest and lowest values of 28 days from any one trial mix is more than 15 percent of the average strength of the three cubes, testing is to be discarded and a further trial mix made. Any cube of mix not found satisfactory will be destroyed.

- (iv) On the results of the above tests, the mixes actually to be used is to be agreed to and approved by the Independent Engineer.
- (v) The approval of the Independent Engineer will not absolve the Concessionaire of his responsibility for obtaining the required minimum strength.
- (vi) All tests in support of mix design shall be maintained as a record for the contract.

## 2.9 Batching and Mixing

- 2.9.1 All concreting shall be done using fully computerized automatic concrete batching plant of minimum capacity 8 to 10 Cum/hour with automatic admixture dispenser which shall be installed by the Concessionaire at site, calibrated and tested. The batching plant shall conform to IS-4925. It shall have the facilities of data print-outs, presetting the quantity to be weighed with automatic cut off when the same is achieved.
- 2.9.2 In case of non-availability of batched concrete, ready mix concrete (RMC) may be used. The concrete to site shall be transported by transit mixtures. All the precautions shall be taken during the transportation and handling of concrete to achieve the desired strength, durability, etc. as envisaged in the mix design. Concessionaire has to get approval from Independent Engineer regarding source of ready mix concrete by giving the details of such plants indicating name of owner/company, its location, technical establishment, past experience and text of Memorandum of understanding (proposed to be entered between purchaser and supplier) who, after satisfying himself about quality/capability of the company, shall give approval in writing (subject to drawl of MOU). The MOU shall be drawn with RMC plant owner/company and submitted to the Independent Engineer within a week of such approval. The Concessionaire will not be allowed to purchase ready-mixed concrete without completion of above formalities for use in this project. Notwithstanding the approval granted by the Independent Engineer in aforementioned manner, the Concessionaire shall be fully responsible for quality of concrete including input control, production, transportation and placement etc. The Independent Engineer will reserve the right to deploy his supervisor at plant site to inspect at any stage and reject the material/concrete etc. if he is not satisfied about quality of material/product.
- 2.9.3 The design mix concrete will be designed based on principle given in IS 456, IS 10262 and SP-23 for each class of concrete indicating that the concrete ingredients and proportions will result in concrete mix meeting requirement specified.
- 2.9.4 In case of use of admixture and/ or white cement, the mix shall be designed with these ingredients as well.
- 2.9.5 All measuring equipment shall be maintained in a clean and serviceable condition and their accuracy shall be checked at least once a month.
- 2.9.6 Only single sized stone aggregate shall be brought to site of work from the approved source. The grading of the stone aggregate shall be controlled by blending the aggregate of different sizes shall be stock-piled separately, preferably a day before use. The grading of coarse and fine aggregates shall be checked as frequently as possible and as directed by the Independent Engineer to ensure that the specified grading and quality of aggregate is maintained.

It is important to maintain the water cement ratio constant at its specified or approved value by making adjustment of the moisture contents of both fine and coarse

aggregates. The moisture contents in the aggregate shall be determined as frequently as possible in keeping with the weather conditions and as per the provisions of IS 2386 (Part-III).

### 2.10 TESTS

2.10.1 The followings tests shall be carried out during the execution of work. Tests shall be carried out in accordance with IS-516 and IS-1559. The Concessionaire shall provide all facilities and equipment for casting and curing of test cubes and conveyance of test cubes and other material for testing purpose to the site laboratory.

- a) Workability Test: Workability test shall be as per clause 7 of IS-456-2000
- b) Sampling and Strength of Concrete
  - i. Sampling: Minimum frequency of sampling of concrete of each grade shall be in accordance with clause 15.2 of IS-456-2000.
  - ii. Testing Specimen: A group of nine test specimens (15cm x 15cm x 15cm) cubes shall be made from each sample.
  - iii. Three cubes shall be tested at 7 days and three at 28 days for crushing strength and the remaining three cubes shall be kept as reserved exclusively for Independent Engineer/Authority use for subsequent testing and preserved for one year from completion of work. The Concessionaire cannot object testing of other cubes for a purpose as a matter of right.
  - iv. For the purpose of subsequent identification of the work test cubes, the concrete to which these pertain shall be cross referred and record of this maintained and signed by the Independent Engineer and the concessionaire or his authorised representative.

### 2.11 Acceptance Criteria

2.11.1 The concrete shall be deemed to comply with the strength requirement when the conditions given in clause 16 of IS-456 are met.

### 2.12 Placing and Compaction of Concrete

2.12.1 Concrete shall be transported without delay and incorporated in works at the position of laying within 20 minutes from the time of discharge from the mixer.

2.12.2 Mixed concrete shall be deposited in final position and solidly packed around reinforcement, carefully poured and consolidated by means of portable vibrators or mechanically operated and of the kind as suitable or a particular situation as directed by the Independent Engineer. Care shall be exercised that no voids or honey comb pockets are formed. The concrete shall not be laid in position for more than 1 meter Height in one concrete operation.

### 2.13 Water Cement Ratio

2.13.1 The water cement ratio for the concrete shall be as per IS-456-2000. To achieve this water cement ratio, the moisture contents in respect of coarse aggregate and fine aggregate shall be tested and kept on record. The frequency of testing of moisture contents in respect of coarse and fine aggregate shall be as specified in BIS code provisions. The amount of water required shall be adjusted depending upon the result of tests for the moisture contents carried out. For determination of moisture contents in aggregate IS-2386(Part III) may be referred to

### 2.14 Curing

2.14.1 The concrete shall be protected from premature drying for atleast 8 days after pouring and shall be cured as directed by the Independent Engineer for a period of not less than 14 days.

## 3. WOOD WORK AND JOINERY:

- 3.1.1 Timber for all joinery and wood work shall conform to specifications given in clause 7.3 of the MES SSR Part-I and shall be within the permissible limits of defects in clauses 7.4 and 7.5 of the MES SSR Part-I.
- 3.1.2 Timber shall be well seasoned whether air or kiln dried at the discretion of the Concessionaire (except factory made door shutters which shall be kiln seasoned only). The moisture contents of timber shall not exceed the limits laid down in clause 7.7 of MES Schedule Part-I.
- 3.2 PRESERVATION OF TIMBER:
- 3.2.1 Preserving antitermite treatment shall be carried out to all wood work and joinery fabricated by the Concessionaire at site. Factory made wood based boards are not to be treated at site with any chemical.
- 3.2.2 Chemical used for antitermite treatment to woodwork and joinery shall be copper naphenate or any other chemical specified in IS 401 applied in any one of the manners specified in the said IS.
- 3.3 SPECIES OF TIMBER: The species of timber and prefabricated wood products (i.e. plywood, wood particles board etc.) shall be as specified below:-
- |   |   |
|---|---|
| i) Paneled/glazed/wire gauzed shutter for doors (Styles, rails, glazing bars only, beading/ moulding fillets) | Factory made shutter using<br>IInd class hard wood (Hallook Wood) |
| ii) Any wood work not covered above and herein before   | First class soft wood (Deodar wood).                              |
- 3.3.1 Panelled shutters shall be provided with beading all-round the panel inserts on one side of door. The size of beading shall be 20mm in width and tapered thickness from 10mm to 5mm.
- 3.4 PARTICLE BOARD: Particle board shall be ISI marked exterior grade-I (medium density). Particle board shall be flat pressed, HWP grade bonded with phenol formaldehyde synthetic resin adhesive conforming to IS-3087 (Type-I Part-I) all as specified in Para 12.13 of MES SSR Part-I. Particle board shall be of uniform thickness and density throughout. Both the faces of particle board shall have sanded smooth finish. Where thickness of particle board has been shown as 20mm, it shall be read as 18/19mm.
- 3.5 PLYWOOD: Plywood where indicated shall be DWR grade bonded with phenol formaldehyde synthetic resin adhesive and marked with IS-303 for general purpose plywood and IS-1328 for decorative face plywood. Facing shall be of teak veneer or commercial veneer as per the relevant drawings/specifications.
- 3.6 The pre-laminated particle board in all situations shall be three layered exterior grade ISI marked (IS :12823 Gde I) with pre-lamination of approved shade on one side and balancing white on other side.
- 3.7 WORKMANSHIP
- 3.7.1 Joinery shall be wrought all over. Timber exposed to view shall be wrought and timber not exposed to view shall be clean sawn. The workmanship and fixing of joinery shall be as per clause 8.11 to 8.22 of MES SSR Part I.
- 3.7.2 The dimensions of the various components of joinery (other than block board shutters) shown on drawings, wherever at variance, shall supersede the standard dimensions mentioned in clause 8.20 of the MES SSR Part I.
- 3.7.3 Unless otherwise specified, all work both carpenter's and joiner's shall hold full dimensions as specified except that an allowance of 1.00mm shall be allowed for each wood surface. Wooden beads and fillets shall however, hold the full dimensions

as specified. The Concessionaire shall also maintain the overall sizes of the doors and windows etc. as specified.

- 3.7.4 Timber members up to 3.00 metre in length shall be in one piece.
- 3.7.5 Plugging to walls shall be done with wooden plugs as per clause 7.29 of the MES SSR Part-I.
- 3.8 **FACTORY MADE PANELLED/GAUGED/GLAZED SHUTTERS**
- 3.8.1 All paneled/glazed/wire gauged shutters of doors shall be factory made, manufactured in accordance with IS-1003, made of well selected kiln seasoned, chemically pressure treated, 2nd class hardwood (as approved by Independent Engineer). Styles, rails and glazing bars shall be as specified in clause 3.3 (i) hereinafter. Panel inserts shall be 12mm thick particle board commercial or both faces, conforming to specifications mentioned in clause 3.4 hereinafter. Thickness of shutter shall be 35mm thick. Factory made shutters shall be procured from the manufacturers as listed in Annexure V of Schedule D hereinafter.
- 3.8.2 A Tolerance of (plus/minus) 3mm on width and height only shall be allowed, provided the shutter snugly fits into the frame. The thickness of shutters given in drawing shall be the finished thickness and no tolerance on this shall be permissible.
- 3.8.3 The Independent Engineer should visit the factory when a lot of factory made paneled shutters are ready for despatch to site. The Independent Engineer should ascertain whether the testing facilities are available for seasoning, preservative treatment of timber and shutters are manufactured as per IS-1003 specifications.
- 3.8.4 Testing of shutters is mandatory from Govt approved lab as per IS-1003 Part-I before incorporation in the work. Shutters shall be allowed to be incorporated in the work only after the Independent Engineer is satisfied with the quality of the shutters brought by the Concessionaire.

#### 4. BUILDERS HARDWARE

##### 4.1 GENERAL:

- 4.1.1 Items and quantities:- Hardware fittings shall be provided according to the conventional scales for the similar work prevalent in the MES/CPWD works.
- 4.1.2 In case the size of particular fitting is not given in the drawings, it shall be of size as decided by the Independent Engineer.
- 4.1.3 All articles of builders hardware shall bear ISI marking. In case ISI marked articles are not manufactured, those shall conform to the relevant IS specifications given in the MES schedule for the relevant item.
- 4.1.4 Finish of articles shall be as specified in clause 9.2.4 of the MES SSR Part-I.
- 4.1.5 Screws used for fixing the articles of builders hardware shall be as specified in clause 9.2.6 of the MES Schedule(Part-I).

##### 4.2 ARTICLES.

###### 4.2.1 BUTT HINGES.

Butt hinges shall be cold rolled, mild steel, medium weight all as specified in clause 9.7.2 of MES SSR Part-I.

- 4.2.2 **WIRE CLOTH:** Wire cloth to be used for wire gauged shutters shall be galvanised mild steel with average width of aperture 1.18mm and nominal dia of wire 0.457mm all as specified in clause 9.25 and 9.32 of MES SSR Part-I

- 4.2.2.1 Stainless steel wire mesh for aluminium windows shall be with average width of aperture 1.40mm and nominal dia of wire 0.36mm

- 4.2.3 **DRAPERY RODS:** Drapery rods shall be of minimum 25mm dia plastic coated and shall be in one length per window/door and provided with one number Funnel and bracket on each end. Rings shall be of appropriate size and shall be provided at 1.5m



4.2.4 CURTAIN RODS. Curtain rod as specified shall be provided to doors & windows in the locations as indicated on the drawings. Curtain rods shall be of 19 mm here decorative powder coated aluminium pipe fixed in bracket all as specified by the manufacturer.

## 5 STEEL AND IRON WORK-

Note: Concessionaire shall make his own arrangements to procure steel and iron all as specified hereinafter

### 5.1 GENERAL:

5.1.1 Items of steel and iron brought to site by the Concessionaire for incorporation in the work shall be free from defects all as specified in clause 10.4 ) and 10.17.6 of SSR Part I and shall be conforming to IS specifications as given below -

- (i) Structural steel standard quality - Conforming to IS-2062
- (ii) Structural steel ordinary - Conforming to IS : 1977 quality
- (iii) Reinforcement steel - High strength deformed steel bars produced by Thermo-Mechanical Treatment Process (TMT steel bars of grades Fe 500) meeting all requirements of IS : 1786
- (iv) Galvanised Steel Sheets - Conforming to IS-277 (Plain and corrugated)
- (v) Fabric Reinforcement for concrete - Conforming to IS-1566

### 5.2 Materials

5.2.1 The Galvanised Iron Sheets and Fabric Reinforcement for concrete to be supplied by the Concessionaire shall be ISI marked and shall be procured from Main manufacturers.

5.2.2 The Structural steel supplied by the Concessionaire will only be procured from main producers namely SAIL, Rashtriya Ispat Nigam Ltd, TISCO or Secondary producers (as listed in Annexure V of Schedule D) who manufacture structural steel out of ISI marked billets and are having BIS certification of ISI marking on their products.

5.2.3 TMT steel supplied by the Concessionaire will be procured only from Main producers of steel namely SAIL, Rashtriya Ispat Nigam Ltd, TISCO.

5.2.4 Steel sections for railing, gates, fencing including angle iron posts/horns, guard bars, guard bars, grills, steel chowkhats, holdfasts etc which do not constitute structural members, can be procured from main producers/ secondary producers/ BIS marked manufacturers or their authorized dealers at the option of Concessionaire. The requirement of production of Test certificates and Testing will not be insisted upon for such steel sections.

### 5.3 Procurement :-

5.3.1 The IR for every lot of steel shall obtain the particulars of the manufacturer/supplier of steel from the Concessionaire separately.

5.3.2 The Independent Engineer shall verify the original documents in support of the purchase of steel and will retain certified true copy of the results in Independent Engineer's office.

5.3.3 The reinforcement steel will be procured from the storage depots of the main producers and not from their authorised agents/dealers. Similarly, Structural steel will be procured from the storage depots of the main producers/approved Secondary producers and not from their authorised agents/dealers.

5.4 Documentation: The Concessionaire shall submit original purchase vouchers from the manufacturer for the total quantity of steel supplied under each consignment to be incorporated in the work. The Independent Engineer along with the relevant documents before acceptance shall inspect all consignment received at the work site. The original vouchers and the Test Certificate shall be defaced by the Independent Engineer and kept on record in the office of the Independent Engineer only.

authenticated and with cross reference to the control number recorded in the Steel Acceptance Register. The Steel Acceptance Register will be signed by Independent Engineer and concessionaire. The entire quantity of all steel items shall be suitably recorded in the Measurement Book as not to be abstracted, before incorporation in the work and shall be signed by the Independent Engineer and the Concessionaire.

- 5.5 TOLERANCE: Rolling and cutting tolerance of structural steel products shall be as specified in IS-1852 of 1985. Tolerance on size and weight of reinforcement bars shall be as specified in clause 10.17.4 and 10.17.5 of SSR Part - 1. Steel with less weight than permissible shall not be used.
- 5.6 SCHEDULE OF SUPPLY: The Concessionaire shall ensure that procurement action is taken immediately after Financial Closure so as to adhere to schedule of activity.
- 5.7 STORAGE, ACCOUNTING, PRESERVATION AND MAINTENANCE:
- 5.7.1 Structural steelbars of different classification, sections, sizes and lengths shall be stacked separately. Steel shall be marked with distinct painting marks for easy identification. Steel shall be recorded in Measurement Book for record purpose only.
- 5.7.2 All steel shall be stored on dunnage atleast 15cm above ground level. Steel reinforcement shall be stored properly to prevent deterioration and corrosion. In case of long time storage, suitable protective measures like cement coating, provision of temporary shelter etc to save it from rusting/deterioration etc shall be taken. Any item of steel that has deteriorated or corroded or considered defective by Independent Engineer shall not be used in the work and shall be removed from the site of work.
- 5.8 Testing of Steel:-

The manufacturer is to carry out inspections and testing of steel in accordance with the relevant BIS provisions. The Concessionaire shall submit the manufacturer's test Certificate in original along with the Test Sheet giving the results of each mechanical test as applicable and the chemical composition of the steel or authenticated copy thereof, duly signed by the manufacturer with each consignment. The Independent Engineer shall also organise independent testing of random samples of steel drawn from various lots from Government approved Lab as per the recommended minimum frequency shown in the relevant BIS codes. Samples from each lot should be tested for quality and elongation. The elongation shall not be less than 18%. Cost of samples and transportation shall be governed as per condition of the contract. The records of such checks would be maintained in the steel test register.

- 5.8.1 Quality of steel shall be ascertained by following tests :-

(i) THERMO MECHANICALLY TREATED BARS: Tensile test, bend test and rebound test shall be carried out as per Clause 8 of IS-1786-1985. Test specimen shall be taken as per clause 10 of IS-1786-1985. Minimum tensile strength, yield stress and minimum elongation for TMT steel bars of grade FeD-500 shall be as per clause 7 of IS-1786-1985.

(ii) STRUCTURAL STEEL: Tensile test and bend test shall be carried out as per clause 7 & 8 of IS-2062. Minimum yield stress shall be 340 N/Sqmm.

(iii) CHEMICAL TEST: Chemical test shall be carried out to ascertain chemical composition which shall conform to the norms laid down in relevant ISI codes. For TMT bars, Chemical Composition shall be as given in relevant BIS codes.

- 5.8.1.1 If the test fails and steel has been incorporated in the work, the further execution of work with that steel will be stopped and matter shall be referred to the Authority. The decision of the Authority regarding acceptance of work with the steel which has failed in test as decided by the Authority or redoing the work with steel of proper specifications or any other decision shall be final and binding on the Concessionaire. In case Authority decides to remove the sub-standard steel, the work executed using

sub-standard steel shall also be demolished and site cleared by the Concessionaire without any extra cost to the Government.

#### 5.8.2 METHOD OF MEASUREMENT:

All items of steel brought at site shall be entered in Measurement Book for record purpose "Not to be abstracted" before incorporation in the work and shall be signed by Independent Engineer and the Concessionaire indicating the diameters and length of bars, quantities, voucher number with date.

#### 5.8.3 RECORD OF MEASUREMENTS:

Before casting of concrete, reinforcement incorporated shall be measured by rep of Independent Engineer and Concessionaire jointly. These measurements shall be entered in a register for the purpose of record and shall be signed by Concessionaire's rep and IE. Proper reference of Drawing, No., location, date etc. shall also be given therein.

#### 5.8.4 WEIGHT CONVERSION:

Conversion factor for various sections/sizes of steel shall be as per conversion tables given in SSR. Where conversion table is not available in SSR, IS conversion shall be used.

#### 5.9 STEEL REINFORCEMENT:

5.9.1 TMT bars shall be provided irrespective of whatsoever shown on drawings.

5.9.2 Reinforcement shall be fabricated and placed in position as specified in clause 10.17 to 10.22 of M&S Schedule (Part-I) without application of heat.

#### 5.10 WELDING:

Welding wherever required shall be by metal arc process in accordance with IS-816 and IS-823.

#### 5.11 HOLD FASTS/LUGS :

Flat iron Hold fasts/lugs shall be provided by welding, except those, to be provided to wooden chowkats which shall be fixed with bolts/nuts. Holes in wooden chowkats shall be plugged with hard wood plugs. The hold fasts/lugs shall be embedded in PCC 1:2:4 blocks of size 230x230x150mm for doors and 100x100x100mm for windows/ventilators respectively.

#### 5.12 ALUMINIUM DOORS :

Aluminium door shall be natural colour anodized of approved design, complete with all fixing arrangement including providing and fixing door handles, tower bolts and provision for fixing door springs/door closer and cylindrical lock including neoprene lining. The member shall be made out of extruded aluminium sections comprising of the following:-

a) Shutter Verticals members 47.62x44.45x3.18mm weighing 1.50Kg/RM

b) Shutter top members 47.62 x 44.45 x 3.18 weighing 1.50Kg/RM

c) Shutter Bottom member 114.30x44.45x3.18mm weighing 2.646 Kg/RM

d) Shutter lock rail 63.50 x 44.45 x 2.40mm weighing 1.679 Kg/RM

e) Frame work for aluminium doors shall be done using member 114.30x44.45x3.18mm weighing not less than 2.646 Kg per Running metre.

*Note for Clause 5.12. The above sections shall be from JINDAL/JINDAL extrusion. The Concessionaire is at liberty to choose section from approved makes with minor variation in sizes and weights as approved by Independent Engineer. The plain glass sheet of thickness 5.5mm for doors and 5mm for windows shall be used. Make of Glass shall be as mentioned in Annexure V of Schedule D.*

#### Rain Water Pipes and Accessories:

Construction of Right of Way divided carriageway starting before KMP Expressway and ends at Ch. 47+000 near Sahaibpur Ghat (Ch. 18+500 to Ch. 47+000) section of Delhi - Yadadava Greenfield Alignment (NH-148N) on E.C. Mode under Bharatmala Pariyojana in the State of Haryana



- 6.1 Where ever Rain water pipes shown on drawings, the same shall be of PVC (S.W.R) pipes Type 'A' conforming to IS:12592 and fittings conforming to IS:14735 of makes as specified in Annexure III of Schedule D. The pipes and fittings shall be secured to walls below all joints with mild steel holder but clamps as specified in clause 11.34.5 of the MES Schedule Part I.
- 6.2 The grating shall be of GI round type weighing not less than 0.5Kg each, provided and fixed at the inlet of rain water pipe.
- 6.3 Splash stones as specified hereinbefore shall be provided below the rain water pipe.
- 6.4 Spouts and pipe outlet shall be of GI tubing medium grade as per IS-1239. Size and length shall be as specified, wherever, the same is not shown on drawing it shall be 50mm bore, projecting 250mm beyond outer face of walls. Spout/GI Pipe/Conduit wherever passed through beam/RCC, it shall be put in position at the time of casting of beam/RCC.

### 7. FLOORING:

#### 7.1 GENERAL:

- 7.1.1 Ordinary portland cement/portland pozzolana cement for all flooring shall be used.
- 7.1.2 Provisions contained in clauses 13.15, 13.27, 13.32 & 13.38 of MES Schedule (Part-I) are to be adopted for laying floors and pavements.
- 7.1.3 Floors shall be laid to levels or to falls as specified and as directed by the IE.
- 7.1.4 Floor finish shall be extended over dwarf walls, doors and other openings.
- 7.1.5 - Blank -
- 7.1.6 The dividing line between the floors of different types wherever met between rooms, shall be determined on the basis of the finish visible when the doors are closed and the applicable finish shall accordingly be provided.
- 7.1.7 Floor finish over RCC slabs shall be laid all as specified in clause 13.32.5 of MES SSR Part I.
- 7.1.8 Sub base shall not be laid in panels.
- 7.1.9 Under layer and topping layers of cast-in-situ cement floors shall be laid in panels. In PCC floor length of panel shall not exceed 1.2 metre and length to width ratio not exc. 1.5 times. In case of terrazzo floor, size of panel shall not be more than 900x600mm. Not more than 2 dividing strips shall be meeting at any joint. Dividing strip shall be of plain glass 38mm wide and not less than 4mm thickness. Dividing strips shall be finished smooth with the top surface of floor. However, where different floor levels indicated to be provided, strips shall not be provided and flooring at junction shall be provided in the shape of fillet. The glass dividing strips shall not be provided in floors having thickness of top layer more than 40mm.
- 7.1.10 Important requirement for M 25 (Design Mix) shall be as specified in Clause No. 2.5 of Particular specification hereinbefore.
- 7.1.11 Non skid ceramic tiles shall be vitreous ceramic tiles of 1st quality. The size of tiles shall be 300mm x 300mm x not less than 7 mm thickness. The make of tile shall be as per Annexure V of Schedule 'D'.
- 7.1.12 MARBLE SLAB :
- Marble slab shall not be less than 18mm in thickness. The size of marble stone slab if the same is not mentioned in drawing shall not be less than 90cm in length and 60cm in width. In situations where the minimum size does not adjust in that case the size of same shall be as decided by Independent Engineer. The marble slab shall be plain white makrana, machine cut and polished. Marble shall be hard, sound, dense

and homogeneous in texture with crystalline and coarse grains all as specified in Clause 6.20.3, 6.20.4, 6.20.5 to 6.20.8 of SSR Part-I. Marble slab shall be bedded, jointed & pointed in neat cement slurry over 10mm thick screed layer of cement mortar 1:3.

#### 7.1.13 VITRIFIED TILES :-

Vitrified tiles shall be of first quality and shade. These shall be of Make as mentioned in Annexure V of Schedule D. The minimum size of tiles shall be 600mmx600mm x thickness not less than 9.5mm of classic series.

#### 7.2 TYPE AND COMPOSITION OF FLOORS

7.2.1 The minimum specifications for flooring for all buildings shall be provided as shown on drawings for Schedule of finishes.

#### 7.2.2 Base/Sub base/Sub floors/floors:-

Base/sub base/sub floors/floors shall be provided as per Schedule of finishes and as specified below -

#### 7.2.2.1 PCC FLOORING (EXCEPT PCC RAMP) :

40mm thick PCC M-20(Nominal mix) type B1, finished fair using extra cement over 75mm thick PCC M-10 (Nominal mix) sub base over 75mm thick sand filling over rammed earth in ground floor. Top layer shall be laid in panels not exceeding 1.2 sqm panels using 4mm thick and 38mm wide glass dividing strips. In first floor 40mm thick PCC M-20 (Nominal mix) type B1 finished fair using extra cement and using glass dividing strips shall be provided after applying neat cement slurry @ 3Kg of cement per Sqm on RCC slab.

#### 7.2.2.2 PCC FLOOR FOR RAMP OF SUB STATION BUILDING :

50mm thick PCC M-20 (Nominal mix) , spike rolling to surface or making impressions of expanded metal, whilst the concrete is green over 100mm thick hard core as specified here-in-before over rammed earth. Sides of ramp shall be plastered 15mm thick in CM 1:4.

#### 7.2.2.3 NON SKID TILE FLOORING :

Non skid tile flooring (size of Non skid tiles 300mm x 300mm x not less than 7 mm thick) shall be laid over 15mm thick screed in cement mortar 1:4, over 30mm thick PCC M-15 (Nominal mix) type B1 over 100mm thick PCC (1:5:10) type E2 over rammed earth for ground floor. In first floor non skid tile flooring shall be laid over 15mm thick screed in cement mortar 1:4, over 30mm thick PCC M-15 (Nominal mix) type B1 shall be provided after applying neat cement slurry @ 3Kg of cement per Square meter of RCC slab.

#### 7.2.2.4 KOTA STONE FLOORING :

Mirror Polished kota stone not less than 16mm thickness shall be laid on 20mm thick screed in Cement Mortar 1:4 over 30mm thick PCC M-15 (Nominal mix) over 100mm thick M-10 (Nominal mix) over 75mm thick sand filling over rammed earth in floors where indicated in sch of finishes. The size of kota stone shall not be less than 55cm in length and 55cm in width. The situation where the minimum size of kota stone does not adjust in that case size of kota stone will be decided by Independent Engineer whose decision in this regard shall be final and binding. The type and laying of kota stone shall be as specified clause No 12.47, 12.47.1 to 12.47.4 of SSR Part-I. In first floors Mirror Polished kota stone not less than 16mm thickness shall be laid on 20mm thick screed in Cement Mortar 1:4 after applying neat cement slurry i.e. 3 Kg per sqm of RCC slab.

#### 7.2.2.5 VITRIFIED TILES FLOORING :

Vitrified tiles flooring of size 600x600mm of thickness not less than 9.5mm shall be laid over 15mm thick screed in cement mortar 1:4 over 30mm thick PCC M-15 (Nominal mix) over 75mm thick PCC M-10 (Nominal mix) over rammed earth.

Vitrified tiles shall be fixed with adhesives as per manufacturer instructions. Colour

and design will be approved by Independent Engineer before commencement of the work. In first floor Vitrified tiles flooring shall be fixed with adhesives as per manufacturer instructions over 15mm thick screed in cement mortar 1:4, over 20mm thick PCC M-15 (Nominal mix) shall be provided after applying neat cement slurry @ 3Kg of cement per Square meter of RCC slab. Laying of vitrified tiles shall be as specified in clause 13.41 of SSR Part-I

#### 7.2.2.6 INTER LOCKING PAVERS (PORCH & RAMPS OF TRANSIT ACCN):

Precast concrete Interlocking paving blocks 60mm thick shall be of pattern (hexagon, rectangular etc) and of colour as approved by Independent Engineer. These Precast concrete Interlocking paving blocks shall be laid on 20mm thick cement mortar in (1:4) over 75mm thick PCC (1:5:10) type E 2 using 40mm graded stone aggregate over rammed earth. Interlocking paving blocks shall be procured from the manufacturers as mentioned in Annexure V of Schedule D.

#### 7.2.3 STEPS AND LANDING OF STAIR CASE

##### 7.2.3.1 STEPS AND LANDING OF STAIR CASE (Green marble finish):

Treads of steps & landing of stair case shall be provided with 16 to 18 mm thick Udaipur green/Bardola green marble stone machine cut set over 20 mm thick CM (1:4) and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing/grinding and polishing to achieve mirror polished surface. Riser shall be finished with 16 to 18 mm thick Udaipur green/Bardola green marble stone on 10 mm thick CM (1:3) and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing/grinding and polishing to achieve mirror polished surface over RCC steps and landings. For steps, green marble stone shall not be more than two pieces the in full length and shall be of equal width of Risers and Treads. Green marble stone skirting shall also be provided on the adjoining wall. In treads & landing of stair case, front edge of marble slab shall be bull nosed.

#### 7.2.4 STEPS

##### 7.2.4.2 STEPS (Kota Stone finish):

Wherever Kota stone finish shall be used, RCC/brick steps shall be provided with Kota stone. 16 to 18mm thick machine cut Kota stone slab set over 20 mm thick CM (1:4) on treads and 16 mm thick Kota stone on 15 mm thick CM (1:3) on risers shall be provided and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing/grinding and polishing to achieve mirror polished surface. For steps, Kota stone slab shall not be more than two pieces the in full length and shall be of equal width of Risers and Treads. However the sides of the steps shall be finished with 5mm thick plaster in CM (1:3) finished even and smooth without using extra cement.

#### 8. PLASTERING AND POINTING :

##### 8.1 GENERAL :

- 8.1.1 Plaster and skirting/dado shall be returned in jambs, soffits of lintels and windows etc.
- 8.1.2 Where plaster on concrete surface is shown to match the adjacent wall surface, the mix of plaster shall be same as for the wall surfaces.
- 8.1.3 All plastered surfaces shall be trowelled to even and smooth surfaces without using extra cement.
- 8.1.4 All external finishes shall be carried out upto 15cm below ground level except where plinth protection etc is provided.
- 8.1.5 The surface of cement plaster shall be finished thickness exclusive of dubbing, dusting, if any, however, be done in one operation with plaster.

- 8.1.6 All corners, angles, junctions shall be truly vertical or horizontal as the case may be and shall be carefully finished. Corners around joints, openings and junction of walls shall be rounded to maximum radius of 5mm.
- 8.2. MATERIALS
- 8.2.1 CEMENT - Refer clause 2.2 herein before.
- 8.2.2 SAND - It shall be as per clause 14.5.2 of SSR Part-I.
- 8.3 GROOVES AT THE JUNCTION OF MASONRY AND RCC
- 8.3.1 No grooves shall be provided at the junction of brick wall and RCC work on the internal surfaces of buildings. A strip of chicken wire mesh 15 cm wide having aperture approximately 12.5 mm in least dimension with a weight not less than 0.40 Kg per Sqm shall be fixed over the junction of RCC and brick work on the internal surfaces of buildings before plastering. The chicken wire mesh shall be fixed on the wall surface with the help of nails of suitable size. The chicken wire mesh shall be fixed in a manner that it covers 7.5cm of brick work and 7.5 cm of RCC work. However, in case of lintel band, chicken wire mesh shall be fixed covering whole width of lintel band and projecting 7.5 cm each on either side of brick work. After fixing of chicken wire mesh, 10mm thick plaster in CM (1:6), finished fair and even shall be applied as mentioned in Clause 11.4.1 here-in-after. However no such provision shall be required where columns/beams/slabs are projecting from external faces of wall.
- 8.3.1 10mm wide and 10mm deep continuous groove shall be provided in plaster throughout, at the junction of brick wall and RCC works on the external surfaces of buildings and edges shall be properly made up. However, no groove shall be provided at the junction of lintel band and brick masonry.
- 8.4. CEMENT PLASTERING :
- 8.4.1 Internal surfaces shall be plastered in cement mortar 1:6 over dubbing coat when required all as specified in clause 14.17 and 14.18 (where applicable) of MES Schedule (Part -I). The thickness of internal plaster exclusive of dubbing shall be 10mm. However, plaster on ceiling/soffit of slab shall be with cement and sand mortar (1:3), minimum 5mm thick finished even and smooth after removal of form work.
- 8.4.2 All external surfaces, except where otherwise indicated/specified, shall be plastered in cement mortar 1:4; 15mm thick in one coat mixed with water proofing admixture ( conform to IS 2645-Specifications for integral cement water proofing admixture) as approved as per manufacturer's instructions. For the purpose of the deviation the water proofing admixture shall be considered @ 0.4% by weight of cement
- 8.4.3 ROUGH CAST PLASTER:-  
Rough cast plaster shall be provided as per clause 14.22 of SSR Part-I. Under coat for rough cast plaster shall be in Cement Mortar 1:3; 10mm thick.
- 8.5 Where pointing is indicated, it shall be keyed pointing in cement mortar 1:3 as per clause 14.29 of MES SSR Part-I.
- 8.6 SKIRTING/DADO :
- 8.6.1 CEMENT SKIRTING:  
Where cement floor is indicated, cement skirting shall be provided unless otherwise indicated or specified. Skirting shall be finished even and smooth with steel trowel using extra cement. Height of skirting, unless otherwise mentioned, shall be 10 cm. The thickness of skirting shall be 5mm in cement mortar 1:3 over plastered surfaces and 10mm thick in cement mortar 1:6 ) as specified here-in-before.

**8.6.2 GLAZED TILES DADO :**

Where glazed tiles dado is indicated in drawings/Schedule of finishes, the same shall be with Glazed Tiles of size 300mmx200mm and not less than 6mm thick all as specified in clause 13.14 of MES SSR Part-I and shall be provided as specified in clause 13.40 of MES SSR Part-I. Glazed tiles shall be laid over 10mm thick screed in cement mortar 1:3. The tiles shall be glossy and shade shall be as approved by GE. Make of tiles shall be as mentioned in Annexure V of Schedule D. Height of dado, where not shown on drawings, shall be 1.20 metre .

**8.6.3 KOTA STONE SKIRTING:**

Where Kota stone skirting is indicated in drawings/Schedule of finishes, the same shall be with 15 to 18mm thick Kota stone laid over 10mm thick screed bed in cement mortar (1:3) and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing/grinding and polishing all as specified in MES SSR Part-I. The colour and shade of Kota stone in skirting shall be same as for floors as decided by Independent Engineer. Height of skirting shall be 100mm.

**8.6.4 VITRIFIED CERAMIC TILE SKIRTING**

Where vitrified tiles skirting is indicated in drawings/Schedule of finishes, the same shall be with Vitrified porcelain tile of shade, colour and texture as per flooring, shall be laid over 10mm thick screed in cement mortar (1:3). The tile will be laid with suitable adhesive as per manufacturers recommendations. After fixing the tile, the joints will be filled up with polymer based tile grout of colour matching with tile as per manufacturers recommendations. The height of skirting, unless and otherwise indicated shall be 150 mm.

**9. WHITE/COLOUR WASH/DISTEMPER/CEMENT BASE PAINT:**

**9.1 WHITE/COLOUR WASH:** White (lime) wash or colour wash shall be provided as indicated in drawings, all as specified in clause 15.2 & 15.12 of MES SSR Part-I. For white washing on ceiling adequate quantity of zinc oxide shall be added to lime wash for achieving egg white shade. Skirting and dado are not to be white/colour washed. Where number of coats are not indicated in Schedule of finishes, it shall be as under:-

- a) White wash: Three coats of white wash over prepared surfaces
- b) Colour wash: Two coats of colour wash over one coat of white wash over prepared surfaces.

**9.2. OIL BOUND DISTEMPER:**

**9.2.1 Oil bound distemper (Oil emulsion distemper),** where indicated on drawings/ schedule of finishes, shall be applied in two coats over a coat of primer after preparation of surfaces. Plastered surfaces shall be prepared smooth by using white cement putty of make JK white putty/ Birla white/Pata pigment, Make/brand of Distemper shall be as specified in Annexure III of Schedule D.

**9.3 WEATHER PROOF PAINT/COATING**

Weather proof paint/coat on external plastered surfaces, where indicated in Schedule of finishes/drawing shall be applied in two coats over a coat of primer after preparation of surfaces. The weather proof coat and primer shall be applied as per manufacturer's instructions. The brand of weather proof coat shall be of following manufacturer's :-

- (i) WEATHER COAT SMOOTH - Berger Paints
- (ii) APEX - Asian Paints
- Shalimar Paint
- Nerolac Paint

#### 9.4 CEMENT BASE PAINT

Cement base paint shall be provided in two coats as indicated in drawings, all specified in clause 15.7 and 15.15 of MES SSR Part-I. Shade shall be approved by Independent Engineer. Cement base paint shall conform to IS-5410-1992 as approved by Independent Engineer. Makes/brand of cement base paint shall be as specified in Annexure V of Schedule D.

#### 10. GLAZING

- 10.1. All glazing shall be with sheet glass of ordinary quality and shall conform to IS - 2835. Glass shall be free from all defects viz bubbles, waviness etc. and shall be of uniform thickness.
- 10.1.1. Glazing to steel windows/vents as shown on the relevant drawings/schedule of finishes shall be with 3mm thick sheet glass upto 0.5 sqm and 4mm thick beyond 0.5 sqm in each pane unless otherwise mentioned. Glass used shall be plain sheet glass except in baths /WC/Toilets/Lav as applicable where it shall be pinhead glass. Makes/brand of sheet glass shall be as specified in Annexure V of Schedule D.
- 10.1.2. The glazing to steel frames, shall be fixed with special spring glazing clips with putty and glazing to wooden joinery shall be fixed with wooden beading with putty all as specified in clauses 16.5 to 16.10.2 of MES SSR Part-I.

#### 11. PAINTING

- 11.1. All synthetic enamel paints and emulsion paints shall be of 1<sup>st</sup> quality manufactured by the standard firms as per Annexure V of Schedule D.
- 11.1.2. The Concessionaire shall inform the Independent Engineer, within three weeks of the financial closure, the brand/ names of the manufacturers of paint proposed to be used in the work and submit samples thereof to Independent Engineer before their use in work and obtain prior approval of Independent Engineer.
- 11.1.3. The Concessionaire shall, when required by the Independent Engineer, produce certificate from the manufacturer or their authorised agents to establish that the brand of paints purchased by the Concessionaire from them satisfy the requirements of the relevant IS.
- 11.1.4. Paints for priming coat, under coat and finishing coat shall be of the same brand.
- 11.1.5. Tint of paint, if not mentioned in drawings/schedule of finishes, will be as approved by the Independent Engineer.

#### 11.2. WORKMANSHIP :

- All wood work required to be painted shall be smoothed size and knotted and then applied with priming coat, stopping and filling (filler coat) shall be done after priming coat and surface rubbed down to a level and smooth surface and thereafter under coat and finishing coat shall be applied all as specified in clause 17.6 of MES SSR Part-I. Steel and iron work shall be painted in the manner as specified in clause 17.8 of MES SSR Part-I.
- 11.2.2. The surfaces of all wooden and steel or iron, where indicated in schedule of finishes to be painted, shall be given two coats (under coat and finishing coat) of synthetic enamel paint over a coat of pink primered oxide zinc chrome primer respectively.
- 11.2.3. The surfaces indicated in schedule of finishes to be aluminum painted shall be given two coats of aluminum paint conforming to IS-2339 over a coat of appropriate primer.
- 11.2.4. No treatment shall be given to reinforcement and galvanised fittings such as, GI tubing for hand rails, aluminum doors and windows etc.
- 11.2.5. Other steel surfaces, exposed to view but not covered in schedule of finishes or their finishing is not specifically indicated in any other drawings or specified

elsewhere shall be given two coats of synthetic enamel paint over a coat of red oxide Zinc chromate primer of tint as directed by the Independent Engineer.

11.2.6 Bottom of door shutter shall be given one coat of primer only

11.2.7 TARRING :

The back of wooden/steel chowkats in contact with stone/brick work/plaster etc. shall be given two coats of tar. Hold fast shall be given two coats of tar and sanded it.

11.3 FRENCH POLISH : French polish, shall be all as specified in clause 17.7.4 of MES SSR Part-I. Unless otherwise specified in drawing, wooden surfaces of built-in furniture shall be French polished.

11.4 CEMENT SLURRY : Portions of MS bolts, lugs, anchor bolts etc. embedded in concrete or masonry shall be treated with neat cement slurry.

11.5 ALUMINUM PAINT : Aluminium paint shall be provided in two coats (under coat and finishing only) over a coat of primer.

11.6 Irrespective of what is specified in drawings GI wire gauge fixed in doors/windows shall be painted with one coat of blue synthetic enamel paint.

11.7 HERITAGE TEXTURE FINISH: Granular Heritage finish shall be provided in the locations shown in drawings if any and as per manufacturers instructions. Make/manufacturer, Colour, shade, pattern of Heritage texture shall be as approved by the IE.

12. SUNDRY ITEMS, BUILT IN FURNITURE AND MISCELLANEOUS ITEMS :

12.1 PVC WATER STORAGE TANKS .

PVC water storage tanks wherever used shall be as per IS-12701 and shall be of make as mentioned in Annexure V of Schedule D. Rotational moulded three layered polyethylene water storage tanks shall be of the required capacity.

12.1.2 ACCESSORIES OF TANK :

Following accessories shall be provided with each water tank :-

- 20mm bore wash out GI tubing (medium grade) 10cm long with GI plug.
- 20mm bore GI over flow pipe medium grade fitted with brass anti mosquito rose coupling at end extended upto 150mm above the finished roof level.
- Ball PVC valve with polythene float and fly nut. ISI Marked of Make - Prayag, suitable for bore size of inlet pipe.
- Inlet and outlets of GI pipe 10cm long each of bore to suit the riser/down take pipe.

12.2 NUMBERING OF BUILDINGS/BLOCKS:

Numbering of all blocks (at both end walls) shall be done by the Concessionaire by engraving and painting black the requisite letters/figures on a cement plaster 13 plate format of size and shape as shown on drgs.

13. PLUMBING WORK:

13.1 GENERAL :

Plumbing work shall be carried out as specified in clause 18.13 to 18.22, 18.27A, 18.40 and 18.62 to 18.67 of MES SSR Part-I.

13.2 SOIL/WASTE/VENT PIPES/FITTINGS/ACCESSORIES :

Soil waste and vent pipes shall be PVC (SWR) pipes conforming to IS-13592:1992 with or without ears and with spigot and socket ends. All the pipes and fittings shall be as specified in clause 18.27A to 18.27A.4 of MES SSR Part-I.

13.3 LAYING/ FIXING TO WALL, JOINTING & TESTING

PVC (SWR) pipes and fittings shall be laid/ fixed to wall, jointed and tested as per clause 18.67.7A to 18.67.7A.1.3 of MES SSR Part-I.

NOTES: Where Nahani/floor traps of 22.5cm depth can not be accommodated in sunken floor, a 300mm x 300mm portion of the RCC slab shall be sunk to the extent it accommodates the Nahani trap without any additional cost.

13.4 SHORTER LENGTH

Except for WC connections, the Concessionaire may use pipe pieces without sockets in shorter lengths (less than one pipe length), where approved by the Independent Engineer and connect these to pipe fittings with double sockets/collars including additional joints as specified above.

13.5 TRENCHES FOR PIPE LINES

Excavation for trenches shall be done as per the width given in clause 5.2.3 of MES SSR Part-II and as specified hereinbefore and depth as required at site. The trenches shall be back filled after testing of pipes with excavated earth in layers not exceeding 250mm and surplus spoil disposed off to a distance not exceeding 50 metres.





**Annex - IV (Schedule-D)**  
**CODES AND STANDARDS**

1. **General: National Building Code of India - 2005**
2. **Code for Structural design and details:**

<b>CODE OF PRACTICE FOR LOADS AND COMBINATIONS</b>	
IS 875 Part I	Dead Loads - Unit weights of building Materials and stored materials.
IS 875 Part II	Imposed loads.
IS 875 Part III	Wind Loads.
IS 875 Part V	Special Loads and Combinations.
<b>CODES OF DESIGN AND FABRICATION FOR PRE - ENGINEERED BUILDING</b>	
IS 800 : 2007	General construction in steel
IS 808 : 1989	Dimensions for hot Rolled steel sections
IS 801 : 1975	Code of Practice for use of Cold Formed light gauge steel structural members in general building
IS 811	Code of Practice for use of Cold Formed light gauge structural steel sections
AISC : 2000	Design Code
IBC : 2002	Building Code
AISI : 2001	Perlin Code
ANS : 2006	Welding Code
SP - 38 (S&I): 1987	Handbook of typified designs for structures with steel Roof trusses
IS 816 : 1969	Code of Practice for use of metal arc welding for general construction in mild steel
IS 456 : 2000	Plain and Reinforced Concrete Code of Practice.
IS 1893: 2002	Criteria for Earthquake resistant design of structures
IS 6403: 1981	Code of Practice for determination of bearing capacity of shallow foundations
IS 1786: 2008	Specification for high strength deformed steel bars and wires for concrete reinforcement
IS 13920: 1983	Code of practice for ductile detailing of reinforced concrete Structures subjected to seismic forces.
SP - 16 (Design Aids for Reinforced Concrete)	Design aids for reinforced concrete to IS 456.
SP - 34 (1987)	Hand book on concrete reinforcement and detailing

3. All relevant BIS Code of India for Civil, Electrical, Water Supply, Sanitary, HVAC and Solar Panels.
4. Energy Conservation Code - 2007.
5. Roads / Driveway / Parking IRC 37-1984 / MORTH specifications.
6. Indian Electricity Rules / State Electricity Rules
7. ASHRAE Standards.
8. All local bylaws.
9. Hand Book of Water Supply and Drainage. BIS, SP-35.
10. CPWD - Specifications published by Director General (Works) CPWD, New Delhi including subsequent amendments, upto date correction slips, revisions.
  - a. CPWD Specifications 2009 (Volume I & II)
  - b. CPWD General Specifications for Electrical Works Part IV Sub Station - 2013
  - c. CPWD General Specifications for Electrical Works Part IV Sub Station - 2013.
  - d. CPWD General Specifications for Electrical Works Part VII D.G. Sets - 2013
  - e. General Specifications for Heating, Ventilation & Air-Conditioning(HVAC) - 2004
11. Specifications published by Director General (Works), MES, E-in-C branch, Kasrarea House New Delhi, including subsequent amendments, upto date correction slips, revisions.
  - a. MES SSR Part I 2009,
  - b. TPs issued by E-in-C branch for specified purpose from time to time.

**Note:** Any reference to codes and standards shall be deemed to include all subsequent revisions, upto date corrections slips, updates, amendments etc.



## Annex - V (Schedule-D)

## APPROVED MAKES

## MAKES OF PRODUCTS TO BE INCORPORATED IN WORKS

## Makes/Brand of B/R items

S No.	Name of Item	Makes/Brands/Manufactures	Remarks
1.	Chemical for anti termitic treatment : Chlorpyrifos / Lindane 20% EC / Gummax 20	(a) M/S Osolin, Bangalore (b) Lindane 20 EC (i) M/S Kamona Chemicals Ind. Ltd., (ii) M/S India Pesticides Ltd. Lucknow. (c) Chlorpyrifos Emulsifiable Concentrate (Conforming to IS- 8944 (2005). (i) M/S D Nosil Mumbai. (ii) M/S Pest Control Services, Delhi (iii) M/S Pest Control Corporation, Delhi  (iv) M/S Pest Control, Delhi. (v) M/S Pest Control & Fumigation Enterprises Delhi (vi) M/S Pest Control Services of India, New Delhi. (vii) M/S Dr Swarop's Pest Control.	
2	CP fittings (including Fancy Bib Taps, Stop Valves and Pillar taps, Surgical Basin mixer, Shower Rose etc.)	(a) Gem (b) Jaguar (c) Sona (d) Dupless (e) Parlo (f) MARC	
3.	Sanitary ware	(a) Noycer kermag (Standard) (b) IIR Johnson (1 <sup>st</sup> quality) (c) Hindware (1 <sup>st</sup> quality) (d) Parryware (Super fine), (e) Cera (First Quality)	All sanitary ware will be of 1 <sup>st</sup> quality & ISI marked.
4	Stainless Steel Sink	(a) Diamond (b) Nirali (c) Neal Kanth (d) Kotra (e) Parryware (f) AMCO	
5.	PVC Flushing System IS : 774-1984	(a) M/S Johnson Podder (b) Commander - Water Bird (c) Parryware-Shimlone	Dual lever type for WC.

Construction of High Speed divided carriage way starting before RMP Expressway and ends at Ch 474050 near Kharpur Ghat. (Rt. No. NH-100, 474+600) section of Delhi - Patindara (roadfield Alignment: NH-142N) on EPC Mode under Rajawala Parryware in the State of Haryana

S No.	Name of Item	Makes/Brands/Manufactures	Remarks
		(d) Hindustan Sanitaryware - Hindware	
6	Synthetic enamel Paint	(a) Asian Paints(Apeolite) (b) Shalimar Paints(Supertac Hi Gloss) (c) Goodlass Nerolac paints(Nerolac full gloss) (e) Jensen & Nicholson Paints Ltd (Trolac) (f) Berger Paints (Luxo Hi Gloss).	
7	Cement Based Paint	(a) Super Snow-cem. (b) Duracem. (c) Super Snow cem of snow white Industries Corp, Chennai (d) Super Powercem of Power Paint India Ltd, Noida. (e) Aquelac Paints. (f) ECOCEM (TATA product).	
8	Oil Bound distemper/Acrylic washable distemper	(a) Goodlass Nerolac(super Acrylic). (b) Shalimar Paints(No 1 Premium) Acrylic distemper). (c) Jensen & Nicholson (Jensoline Acrylic Distemper). (d) Asian Paints(Tractor Acrylic distemper). (e) Berger Paints (Bison Super). (f) ICI India (Maxilite Acrylic Distemper).	
9	Plastic emulsion Paint	(a) Goodlass Nerolac (All Escapes). (b) Shalimar Paints(Hussain collection). (c) Jensen & Nicholson (Special effect). (d) Asian Paints(Royal). (e) Berger Paints (Luxo: Silk Splender). (f) ICI India (Dulux Velvet touch).	
10	Exterior Emulsion Paint	(a) EDOPLIS (Exterior Emulsion Paint) Tata Product. (b) Goodlass Nerolac. (c) Shalimar Paints, Jensen & Nicholson. (d) Asian Paints (e) Berger Paints. (f) ICI India	
11	Mosaic /cement Flooring Tiles (ISI marked)	(a) Redius Tiles 375 Industrial Area-2, Panchkula (b) GICO Tiles, 124 Industrial Area Phase-1, Chandigarh (c) NITCO, Mumbai Gwalior Granite, Shahad Pratap Ashram Road, Gwalior	

Construction of E-4NH (4 lane divided carriageway) starting before KMP Expressway and ends at Ch 47-000 near Khazipur Chali (Ch 47-500 to Ch. 47-000) section of Delhi - Palasia Greenfield Alignment (NH-145N) as EPC Mode under Shiksha Puruskar in the State of Haryana

S No.	Name of Item	Makes/Brands/Manufactures	Remarks
		(e) B G Shirke Construction Technology Ltd 72-76 Mundhava Pune 411036.	
12.	PVC Tiles/Flooring (IS- 3463)	(a) Armstrong (b) Krishna Vinyl flooring (c) Polyfix.	
13.	Ceramic Tiles	(a) Kajaria (b) Sparzee (c) Johnson (d) Somani (e) Orient Ceramics (f) Bell (g) NITCO	
14.	Vitrified tiles (Normal /Anti acid)	(a) Murudeshwar Ceramic Ltd. (Navin Diamondtile) (b) Johnson Marbonite (c) Bell Grato (d) Euro Tiles (e) MARBITO (f) NITCO (g) Kajaria (h) Somani	
	Unfired Flex Clay Tiles (Cladding)	MCM travertine/ MCM sand stone/ MCM cut stone/ Facing Brick	
	Tiles Grouting	Bal Endura, Myk, Bostik, Fosroc	
	Epoxy, Artistic Dissipative & Anti-microbial flooring, Anti-microbial wall coating	Pedilite, Fosroc, Ardex - endura, Bostik	
	Locks/ Floorspring/ Door closer	Dorma, Ozone, Hafele	
	Glazing Sealant	GE sealant, Wacker, Silpruf	
	Resin based Adhesive	Fevicol, Vemicol, Aerabond, Dendrite	
	Tile Adhesive	Bal Endura, Myk Latite etc, CICO, Fosroc, Dendrite	
16.	Steel Windows Ventilators (As per IS-1038 of 1983) & Pressed steel door/ window frames/ cupboard shutters/ Steel lockers	Any make, ISI marked available on web site <a href="http://www.bis.org.in">www.bis.org.in</a> .	

Construction of Eight Lane dual carriage way connecting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Ch. 18+366 to Ch. 47+000) section of Delhi - Vindolava Greenfield Alignment NH-145N, an EPC Mode under Bharatmala Project in the State of Haryana

S No.	Name of Item	Makes/Brands/Manufactures	Remarks
17	Factory made wooden Panelled/ glazed/Wire Gauge Shutters	(a) M/S Drene Timber Technologists(P) Ltd, New Delhi (b) M/S Pioneer Timber Products, Chandigarh (c) M/S Chandigarh Timber Product, Chandigarh (d) M/S Everest trading Corporation, Pathankot (Dammal) (e) M/S Sarab Enterprises, Dammal(HP) Kuttal (J&K) (f) .....JLANK..... (g) M/S K C. Joinery Mills, Jammu (h) M/S Jain Wood Industries, Murtal Sonapat.	
18	Aluminium Section for Door/ Window	(a) Hindalco (b) Indal (c) Jindal	
20	Aluminium Composite Panel - General/ Colour  Flush doors (IS Marked)	Alomax, Euro Board, Alstane, Alacobond, Alpholic, Euramax, Jindal  (a) M/S Swastik Brand (b) M/S Mysore Wood Products. (c) Century Plywood (d) KFIPLY Industries Ltd Saababad Road Rampur-2449011 (e) Pioneer Timber, Chandigarh (f) Kolly Flush Door Pvt Ltd	
	Galvalume Steel Sheet and Galvanised iron profile sheet	Inter arch, metco, Toyd deck/Kirby	
	Poly carbonate Sheet	GE, Zestha, TLFILITE, Sakic	
21	Laminated Sheets	(a) Sungloss (b) Formica (c) Sunmica (d) Backlyte Hylom (e) Novateak Super Kitlam.	
22	Prelaminated particle board three layer Exterior Grade (ISI marked)	(a) Archdur, from Mysorechipboard (b) Greenlam, from Greenply (c) Novateak (d) Duro Board, Duroteck, Duromaruse (e) Novopan (f) Bhutan Board	

S No.	Name of Item	Makes/Brands/Manufacturers	Remarks
23.	Plywood for general purposes BWP grade (ISI Marked)	(a) Kitply (b) Mysore chip board (c) Century Plywood (d) Doroboard from Sharada Plywood	
24.	Integral water proofing compound (Powder/ Liquid) ISI marked (IS 2645 : 1975)	(a) Impermo (b) Pidilite (c) Ruff Chemicals (d) SIKA (e) M/S Sateem India Pvt Ltd, (f) Plastocrete 'N' (g) FWJ, India Ltd. (h) Hydro Tech Ltd (i) DWI Derna Br water proofing India Ltd (k) Fosrock (l) Chauksey Chemicals	
25.	Construction Chemical	(a) Chauksey chemicals (b) Fairmate (c) Pidilite (d) CIBA (e) Raft construction chemicals (f) Densol (g) Fosroc Chemicals (I) Ltd. (h) SAMROCK (i) MC Banchime Honoloy (k) CICO (l) Sunanda Specialties Pvt. Ltd. (m) Hari Om Polymers Pvt. Ltd.	
26.	Plain/Pinhead/Frosted glass/Structural glazing glass	(a) Hindustan Pilkington Glass Works (b) Saint Gobin (c) Modi Float (d) Triveni Float (e) INDO ASAHI	
27.	Looking Mirror	(a) Saint Gobin (b) Modi Float (c) Triveni Float Glass (d) Jolly (e) Hindustan Pilkington Glass Works (f) Swastik (g) BAWA	
28.	SGSW Pipe	(a) Perfect Jabalpur (b) Stone ware pipe Ltd. Chennai	

Construction of Eight Lane divided carriageway meeting before KMP Equatorial and ends at (D. 47-000) near Khanpur Ghati (NH-2) - NH-20 (D. 47-300) section of Delhi - Vadodra Greenfield Alignment (NH-124N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana



S No.	Name of Item	Makes/Brands/Manufactures	Remarks
		(c) Mysore Stone ware (d) TFC. Bhaskar	
29	Putty Oil	(a) Gold Mohar (b) M/S Shalimar Hardware (c) Burger (d) J&N	
30	PVC (Polythene) Rotational moulded) Insulated water Storage Tanks (ISI) Marked IS- 12701)	(a) Sintex (b) Polywell (c) JS Polyplast (d) Rotex (e) Polycor	
31	False Ceiling	(a) Anchor Ceiling Tiles (b) Gypboard (c) Eternal Everest (d) Armstrong (e) Hilux Calcium Silicate Boards (RAMCO)	
	Metal False Ceiling	Aura, Hunter Douglas, Armstrong	
	PTMT Fittings	Prayag or equivalent	
	Toughened Glass Handrail	Ozone. Dline, Saint Gobain	
	Wooden Flooring	Armstrong, Aura (ASPL), Pergo	
32.	CI (Centrifugally cast) pipes (ISI Marked)	(a) NICO Jayaswals Neco Ltd. Nagpur (b) Cial, Corporate Ispat Alloys Ltd (c) Ashukesh Iron Foundary	
33.	PVC rainwater/ Sewerage pipe (ISI Marked)	(a) Finolex (b) Supreme (c) Kisan (d) Prince	
34.	Bitumen/ bitumen Primer (ISI Marked)	(a) IOC (b) BPCL	
35.	Water proofing treatment to roof/ sunken floor	(a) Hyperplas by IWL India Ltd, Chennai (b) Multiplas by STP Texsa Limited Gurgaon (c) Bengal Aquaflux-Bengal Bitumen Sarita Vihar New Delhi (d) Superior Poly Plus 310 by STP Ltd	
36.	Cement	(a) Birla Cement (b) JK White (c) Tata Pigment	

Construction of 61.47 Km 2-lane divided carriageway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghani (Ch. 48+500 to Ch. 47+000) section of Delhi - Vadodra Greenfield Alignment (NH 148N) on EPC Mode under Bharatnala Purviyana in the State of Haryana



S No.	Name of Item	Makes/Brands/Manufactures	Remarks
37.	CJ Suro cast Pipes (ISI Marked IS: 17291)	(a) Adunk (b) BCC (c) AJC (d) Bajaj HIC (e) MIC	
38.	Cement (OPC & PPC)	(a) M/S ACC (b) M/S Birla Com Ltd (Cement division), (c) M/S Jay Pee Rewa Cement (d) M/S Ambuja Cement Ltd (e) M/S Shree Cement (f) M/S Century Cement (g) Ultra Tech Cement (h) Orient Cement (i) M/S Madras Cement Ltd. (k) M/S Saurashtra Cement Ltd. (l) M/S Lafarge Cement (m) M/S Andhra Cement Ltd. (n) M/S Dabnis Cement Ltd (o) M/S The India Cement Ltd (p) M/S Binani Cement Ltd (Bharat Brand) (q) M/S Mangalam Cement (r) M/S Grasim Cement (s) M/S JK Lakshmi Cement	
39.	PVC Doors, Windows, Panels/partitions	(a) Polycor, Polycor House B-65-66, Bais godam Jaipur. (b) Accure Polytech (P) Ltd. (c) Rajshree 10/1 South Tukogan, Kancharbagh Main Road, Indore 452001 (d) Sintex	
40.	Structural Steel	<b>Main Producer</b> - SAIL / TISCO / RINL / JINDAL.	
41.	NFTC Frame and shutters	M/S AM composites private ltd, Rama Krishna naker lane. Kolkata Or Any other equivalent make as approved by Accepting Officer.	

**LIST OF F/M ITEMS (BRANDS/MAKES)**

S No	Items	BIS Code	Approved Makes	Remarks
1.	HT VCB (11 KV Specified design and capacities)	Cat-A	(a) Crompton Greaves (b) Ktrloskar (c) ABB (d) AREVA T&D	
2.	HT VCB (33 KV Specified design and capacities)	Cat-A	(a) Siemens (b) ABB (c) AREVA T&D	
3.	Transformer (11 KV /33KV reqd Capacities) copper wound	Cat-A	(a) Blank (b) Siemens (c) AREVA T&D (d) ABB	IS 2705 IS-3156
4 (a)	Transformer below 500KVA	Cat-B	(a) Bhatia Bijlee (b) Voltamp (c) Universal transformer (d) Crompton Greaves (e) JK transformer (f) Electric Field	
4 (b)	Transformer 500KVA & above (11 KV / 0.433 KV & 33 KV/0.433 KV)	Cat-A	(a) Crompton Greaves (b) AREVA T&D (c) Siemens (d) ABB (e) BHEL	IS 2705 IS-3156
5.	Air break switch gung operated (11 KV & 33 KV)		(a) PACTIL (b) Jaipuria Brothers (c) BHEL (d) Atlas	
6.	XLPE Cable 11T Cable	Cat-A	(a) Polycab (b) Cable Corporation of India (c) Havells (d) Rallison	IS-7098
7.	CT & PT(11 KV Range)	Cat-A	(a) Crompton Greaves (b) AE (c) Control & System	
8.	CT & PT (33 KV)	Cat-A	(a) AREVA T&D (b) AE (c) ABB (d) Siemens	

Construction of 400 KV Line along the highway starting before KMP Expressway and ends at Ch. 47+000 near Khajurha Ghati (Ch. 75+00) to Ch. 47+000) section of Delhi - Varanasi Greenfield Alignment (NH-14B), an EPC Mode under Bidirectional Partnership to the State of Uttar Pradesh

S No	Items	BIS Code	Approved Makes	Remarks
9.	Battery Charger		(a) Standard (b) Psicle (c) AMCO (d) As per OEM with main equipment	
10	ACB	Cat A	(a) L&T (b) ABB (c) ALSTHOM (d) Siemens	IS-13118
11.	L1 Cables	Cat. B	(a) Universal cables (b) NICCO (c) Havells (d) Polycab (e) Anchor (f) Plaza (g) Capital	ISI Marked
12.	Cable joint and termination		(a) Birla 3M (b) Densons (c) Raychem. (d) M-SEAL	
13.	FRLS Wires for internal wiring with aluminum conductor	Cat-A	(i) Finolex (b) Havells (c) L&T (d) Plaza (e) Bonten	
14.	FRLS wires for internal wiring with (Copper conductor)	Cat-A	(a) Havells (b) Paragot. (c) Bonten (d) Plaza	IS -694
15	Switch fuse, fuse switches change over switches, Main switches	Cat-A	(a) GE (b) Siemens (c) L&T (d) ABB (e) Teqrané (f) Schneider (g) Control & Switchgears	
16.	Exhaust Fan/Air Circulations		(a) Crompton (b) Khaitan (c) Rajaj (d) Usha (e) Orient (f) Almonard	

Construction of Right of Way for the proposed highway starting before KMP Expressway and ends at Ch. 47+100 near Khanpur Gani (Ch. 46+500 to Ch. 47+000) section of Delhi - Yadauna Greenfield Alignment NH-148N, on EPC Mode under Bharatmala Pariyojana in the State of Haryana

S No	Items	BIS Code	Approved Makes	Remarks
17.	MCB/MCB Plug Socket/ ELCB/RCCB & MCB DB's	Cat-A	(a) ABB (b) Siemens (c) Legrand (d) L&T	
18.	MCCB	Cat-A	(a) ABB (b) Siemens (c) Legrand (d) Schneider MG Protec (e) L&T Sine	
19.	Plano Type Switch & Switch Socket	Cat-A	(a) Indo Asian (b) Legrand (c) Anchor	ISI Marked
20.	Modular Switches	Cat-A	(a) MK (b) Avc- Anchor (c) Legrand (d) North West	
21.	Induction Motors		(a) Siemens (b) Crompton (c) Kirloskar (d) BHEL (e) Jyoti (f) Mather- Platt	
22.	Steel Tubular Poles		(a) National tubing Co Kanpur (b) Bombay Tube & Store, Bombay (c) M/s Basantar Foundry & Fabrication, Samba (d) M/s Jai Bharat Poles Mfg & Engg Co Bombay (e) M/s Bharat Conduits & Steel Works, Kanpur (f) M/s Sohan Lal New Delhi (g) M/s Bajaj Electricals (h) Advance tubes, Jammu (i) M/s India Co Ltd Jamshedpur (k) Mohinder Industries Ludhiana (l) Surjeet Steel Industries (m) Vikram Industries Mohali (n) Ane GFE Industries Jammu	
23.	PCC Poles		(a) Kashmir Cement Samba (b) KB Industries	As specified

Construction of Right Hand Bypass starting before KMP Expressway and ends at Ch 47-099 near Khayra: (Ch. 47-099 to Ch. 47-000) section of Delhi - Yadadara Greenfield Alignment (NH 148B) on EPC mode under Bharatmala Pariyojana in the State of Haryana

S No	Items	BIS Code	Approved Makes	Remarks
			(e) Cement Fabrics, 385, Ind Area Ph-I Parbhkula (f) Punjab Prestressed Concrete Ltd. (g) Preeto Industries, Chandigarh (h) Precast Cement Product Samba	
24.	Single Phasing Prevention /Starters/ Contactors/Thermal Over load relay		(a) L&T (b) Siemens (c) ABB (d) Legrand (e) Controls and Switchgears (f) Minilec (g) Schneider (h) Havells (i) Crompton	
25.	KWH Meter Electronic type tamper proof digital optical port for communication with cover		(a) L&T (b) Havells (c) HPL (d) Jaipur	
26	Ammeter / voltmeter / Frequency Meter digital only		(a) AF (b) L&T (c) Schneider Electric (d) JPL somnath (e) As per OEM with main equipment (f) Legrand	
27	Fluorescent tube light/CFL fittings	Cat - A	(a) Philips (b) Raja (c) Wipro (d) Helionix	
28	Security light fittings	Cat A	(a) Philips (b) Crompton Greaves (c) Wipro (d) GE	
29	LT Joints (Epoxy) for cable joints		(a) Birls 3M (b) Densons (c) Siemens (d) Pierelli	
30	Flame Proof Fittings		(a) Bajaj (b) GFC (c) Flexipro	Certificate from recognized Govt agency.

Construction of Eight Lane Airport Expressway starting before KMP Expressway and ends at (C) 4/1000 near Khropoli Lihari (R.A. 387/1000) section of Delhi - Panipat Greenfield Alignment (NH-145N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana

S No	Items	BIS Code	Approved Makes	Remarks
31	Voltage Regulators /Voltage Stabilizer	Cat A	(d) Sudhir Swtch gears (e) Balige (a) AE Bombay (b) Brentford (c) Andrew yule	IS 8448
32	Indicating Lamps (LED Type)		(a) L&T (b) Siemens (c) Schneider Electric (d) Controls and Switchgears	
33	Selector Switches		(a) Kay Cee (b) L&T (c) Seimens (d) GE	
34	Insulators		(a) Jaipuria (b) Hulkan (c) Jayshree (d) Rashtriya Electrical (e) Southern Insulators	
35	ACSR/AI Conductor		(a) Alind (b) Bharat Conductor (c) NCCO	AI should be sourced from Nationally reputed firm
36	Capacitor Banks / PF Capacitor		(a) Alsthom (b) Siemens (Upcos) (c) Hapu (d) ABB (e) Crompton greaves	
37	Relay		(a) Schneider Electric (b) siemens (c) ABB (d) Alstrom (e) L&T (f) Bharia cutter hammer	IS 3231
38	Lightening Arrestor		(a) Alsthom (b) RHEL (c) OBIUM (d) Jaipuria	
39	Fans	Cat -	(a) Usha (b) Khaitan (c) Bajaj (d) Polar	

Construction of Delhi-Ludhiana divided carriageway starting before KMP Expressway and ends at CD 47-010 near Khajur Ghat (KHE) (NH-50) section of Delhi - Ludhiana (Greenfield Alignment) (NH-148N) on FPC Mode under Bharatmala Pariyojana in the State of Haryana

S No	Items	BIS Code	Approved Makes	Remarks
40	Submersible Cable		(a) Polycab (b) Finolex (c) Indostar	
41	Electric Luminaires T-5	Cat - A	(a) Philips (b) GE (c) Crompton Greaves (d) Wipro	
42	LT Circuit Breaker		(a) L&T (b) Siemens (c) Schneider (d) ABB (e) Connel & Switchgear	
43	HT circuit Breaker	Cat - A	(a) Kirloskar Electric (b) Alstom Ltd (c) BHEL (d) ABB	
44	LT Panel Boards / FPH	IS-86223	CPRi Approved factory made.	Design as per CA with IP 54 degree of protection & 65 KA short circuit test certificate from manufacturer.
45	Compact Substation		(a) ABB (b) Schneider (c) L&T (d) Asea T&D (e) Crompton	
46	Servo Voltage stabilizer three phase		(a) AF (b) Vintec (c) Brent Ford (d) Andrew-yale	
47	PVC Conduit Pipe		Any makes ISI Marked	
48	MS Conduite Pipe		Any makes ISI Marked	
49	PVC Insulating tape		Any make ISI Marked	

S No	Items	BIS Code	Approved Makes	Remarks
50	Chislers		(a) Racold (b) Bajaj (c) Ditz (d) Pecca (e) Sphere hot (f) vents	
51	Aerial obstruction light		(a) GFC (b) Philips (c) Bajaj	
52	Indicating Lamp (LED type)		(a) L&T (b) Siemens (c) Schneider (d) Electric (e) Controls & Switchgears	
53	Ceiling Rose		(a) Legrand (b) Crabree (c) Cora of Anchor (d) Coral of Havels	IS 371
54	Metal halide lights		(a) Philips (b) Crompton (c) Bajaj (d) Havels (e) Schneider (f) GE Lighting (g) Wipro	
55	Lugs/thimbles studs		(a) Dowells (b) Axis (c) Indiana	BS-91
56	Street light timer		(a) L&T (b) Legrand (c) Indo Asian (d) ABB (e) Siemens	
57	Lightning arrester		(a) Oblurr (b) Elpro (c) Alstom (d) Lemco	IS-3070 (Part-II)
58	Package unified substation		(a) ABB (b) Bliel (c) Schneider	

Construction of Eight Lane dual carriage way starting before KMP Expressway and ends at Ch. 47+000 near Kumbhar Ghati (Ch. 18+500) (R&E: 00-106) section of Delhi - Palodra Greenfield Alignment (NHI-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana



**WATER SUPPLY ITEMS**

S. No.	Item	Makes/Brand/Manufacturers	Remarks
1	Gate Valve	PARKO BIR, JAARC, L&I KIRLOSKAR	
2	Centrifugal Pump Including Mono Block Pump	KIRLOSKAR, BEACON, JYOTI, CROMPTON GREAVES, KSB, HE MATHER & PLATT	IS-9079
3	Submersible Pumps	KSB, KIRLOSKAR, JYOTI, ALAMA, BEACON	IS-5034
4	Vertical Turbine Pumps	KIRLOSKAR, JYOTI, KSB	
7	Sluice Valve (FN 1.0 IS-780-1964) (FN 1.6 IS-290-6 1969)	KIRLOSKAR, L&T	
8	Foot Valve (IS-4308 OF 1979)	KIRLOSKAR, L&T	
9	Air Release Valve	KIRLOSKAR, L&T	
10	Reflex Valve (IS-5412 OF 1969)	KIRLOSKAR, BEACON, LEADER, BIK	
11	CI Pipes (Centrifugally Cast/Vertically Cast) including Fittings	ELECTRO STEEL, KESORAM, KALINGA, TISCO, KEJRIWAL	IS-9525 & 8329
12	DI Pipes	ELECTROSTEEL, LANCO, JINDAL & JAI BALA J INDUSTRIES LTD, KOLKATA	IS-9525 & 8329
13	Composite Pipe/ Multi Layer Pipe	KITEC (PE-AL-PE), SPMC PPR PIPE, PPR PIPE (PRINCE)	
14	GI Pipes & MS Pipes	TATA, SWASTIK, JINDAL, PRAKASH SURYA, NIDHI, NOTE:- FOR INTERNAL WATER SUPPLY GI PIPE WITH ANTI CORROSTIVE PAINT SHALL BE USED	IS-1239 & 3589
16	Motor Starter	L & T, HAVELLS, C&S	IS-13947 (PART IV)
17	HDPE Pipe	HASTI, RELIANCE, RISHI, PRINCE	IS-4984
18	FRW Pipe	JINDAL, BST, TATA, TRUPATI	
19	Non Return Valve	KIRLOSKAR, L&T	IS-5372 (PART-II)
20	Water Level Indicator	AKASH, PHOTRON, PUMPIER	
21	CI Fittings for Pressure Pipes	NECO, CIAL, JAYASWAL NECO LTD, NAGPUR, KEJRIWAL, KOLKATA, RAI IRON	(IS-1538 PART I TO XXII)

Construction of Right of Way (ROW) for NH-47 starting before KMP Expressway and ends at I.K. 47+000  
near Kharapur Ghat (Ch. 47+000 to Ch. 47+006) section of Dehu Padoda a Greenfield Alignment (NH  
148N) on EPC Mode under Bharatmala Pariyojana in the State of Jharkhand

S. No.	Item	Makes/Brand/Manufacturers	Remarks
22	CI Fittings for Pressure Pipes	ANY ISI MARKED MAKE	(IS-1592)
23	Ball Valve	GENERAL MACHINE TOOLS & ENGINEERING WORKS, DRIPLESS FAUCETS, DELHI	(IS-1793)
24	Self Closing TAP	ELITE, ANCHOR, JAARC	(IS-1711)
25	Pillar Taps	GEM, JAARC, PLUMBER, ELITE, ANCHOR, ESS-ESS, PARKO, JAQUAR, MARC, DRIPLESS	(IS-1795)
26	High Density Polyethylene Pipes	FINOLEX, SUPREME, KISAN, PRINCE, TIRUPATI	(IS-4984)
27	Cast Iron Specials for Asbestos Cement Pressure Pipes	ANY ISI MARKED MAKE	(IS-5531)
28	Fabricated High Density Polyethylene Fittings	ANY ISI MARKED MAKE	(IS-8360 PART I TO II)
31	Rotation Moulded Polyethylene (PVC) Water Storage Tanks	SINTEX INDUSTRIES LTD, GURAT, POLYCON, DI-PLAST, ROTEX, JS POLYPLAST, GANGA	(IS-12701)
32	GI Pipes	TATA, JINDAL, ZENITH, BST, SWASTIC, PRAKASH	
33	CI BFB Taps & Stop Valves	JAGUAR, PLUMBER, PARKO, JAARC, ESS-ESS, GEM, DRIPLESS, ELITE	
	CI manhole covers and CI grating	IVC, KIRLOSKAR, ZOLOTO	
	Solar water Heater	TATA BP SOLAR, HONEYWELL, BOSCH, V-GAARD	
	Water filter cum purifier	AQUAGAARD, KENT, PUREIT, ELECTROLUX, LIVPURE	

**AIR CONDITIONING**

S No	Items	Make/Manufacturers	Remarks
1.	Motor Protection circuit breaker (MPCB)	L&T, ABB, SIEMENS	
2	Compressor	KIRLOSKAR, ACCEL, TECHUMSIL, VOLTAS, CARRIER	
3.	Electric motor	NGEF, SIEMENS, ALSTOM, KIRLOSKAR, BHARAT BILF	
4.	Motor starter	L&T, NEEF, SIEMENS, HAVELS, C&S	
5.	Cooling coil (HU)	VOLTAS, BLUE STAR, ACCEL	

Construction of EPC under divided responsibility starting before KMP Expressway and ends at Ch 47+000 near Khempur Chals (Ch. 47+500 to Ch. 48+000) section of Delhi - Patahara Greenfield Alignment (NH-148N) on EPC Mode under Shyamprakash Enterprises in the State of Haryana

S No	Items	Make/Manufacturers	Remarks
6.	Condenser	VOLTAS, BLUE STAR, ACCEL	
7.	Air filter	TENACITY, ATHLETE, PUROLATOR, AIR TECH	
8.	Cooling tower	PAJARPUR, MAHIR	
9.	Expansion valve	DANFOSS, SPORLON, ALCO, INDOFOSS	
10.	Thermostat	RANCO, DANFOSS, HONEYWELL, INDOFOSS	
11.	Humidistat	PENN, RANCO, HONEYWELL, INDOFOSS, DANFOSS	
12.	HP/LP cut out	PENN, RANCO, DANFOSS, INDOFOSS	
13.	Gauges	H GURU, FIEBIG	
14.	Thermometers	RENUTROL, H GURU, SCIENTIFIC, AIRCOOL	
15.	Hot water generator	THERMEX, RAPID, CONTROL, ZENITH, SANT	
16.	Strip heaters	RACOLD, DASS PASS, MEI CROWN, HOTWEL	
17.	Shut off valve	RENUTROL, DANFOSS, MEI, SANT	
18.	Chiller	VOLTAS, BLUE STAR, ACCEL	
19.	Tools	JHALANI, TAPARIA	
20.	Split type A/C	BLUE STAR, DAIKAN, LG, FEEDER LLOYD CORP LTD, HATACHI	IS-3191 (P-II)
21.	Package type	BLUE STAR, BATLIBOL, VOLTAS, FEEDERS LLOYD CORP LTD, CARRIER	
22.	Chilling package unit	VOLTAS, BLUE STAR, KIRLOSKAR, BATLIBOL, ACCEL, CARRIER	
23.	Pump mono block	KIRLOSKAR, CROMPTON, KSB BRACON, JYOTI	
24.	Butterfly valve	AMCO, KIRLOSKAR	
25.	GI sheet (Class, 8120 gm/cm <sup>2</sup> )	KHUSHAN, SAIL, TATA, JINDIA	

**MISCELLANEOUS ITEMS**

1.	Advance Lightening Protection Unit	ERICO, PHEONEX, TERCEL, PRAGATI, ELECTROCOM	
2.	Refrigerators	GODREJ, WHIRLPOOL, VOLTAS, LG, SAMSUNG	
3.	Water Cooler	VOLTAS, BLUE STAR	
4.	Aviation Obstruction Light	GEC, PHILIPS, BAJAJ, WIPRO	

Construction of 12.75 Km divided carriageway starting before KMP Expressway and ends in Ch. 47+50 near Kinapur Ghani (Ch. 47+000 to 47+500) section of Delhi - Ferozshah Crossfield Alignment (NH-148A) on EPC Mode under the National Highway Project in the State of Haryana

5	Water Softening Plant	SCALE GUARD, AQUAMA, MAGNETISER
6.	Rubber Mat (Electrical Insulating Mat) 11111	SUNTEX ENTERPRISES, DUNLOP

**FIRE ALARM & FIRE FIGHTING**

S No.	Items	Make/Manufacturers	Remarks
1	Valves	LEADER/HEAVY DUTY/SANT	
2	Synthetic House	COSMOS, GETECH, BRIG	IS- 636-1988
3.	M/s Pipe	JINDAL/ISSAR/TATA	
4.	Branch And Coupler	MINIMAX/WINCO/GETECH	
5.	Rubber Hose	GETECH, COSMOS, NITTE	
6.	House Reel Drum	COSMOS/GETECH/NITTE	
7.	House Box	GETECH, COSMOS, NITTE	
8.	Hydrant Valve	MINIMAX/WINCO/GETECH, NITTE, COSMOS	
9.	Pressure Switch	INDFOSS/SWITZER	
10.	Pressure Gauge	H GURU/GLYCERINE FILLED/FIEBIG	
11.	Pumping Unit	KIRLOSKAR/MATHER & PLATT/BEACON/COSMOS	
12.	Panel	BIRTEL/HAVELLS, COSMOS	
13.	Priming Tank	GETECH/NITTE/COSMOS	
14.	NRV	LEADER, KIRLOSKAR/G/SARKAR/ KALPANA/VENUS, ZOLOTO, NETA	
15.	Wrapping And Coating	TWL: APPROVED AS PER ISJ	
16.	Bolts	UNBREAKO/LPS(HIGH TENSION AND GALVANIZED), ISI MARKED	
17.	Gaskets	APPROVED AS PER ISJ	
18.	Fire Extinguisher	GETECH/MINAMAX/CEASEFIRE/COS MOS, REAL VALVE	
19.	Fire Bucket	GETECH/MINAMAX/NITTE/ COSMOS	
20.	Sprinkler	GETECH/GLOBE	
21.	Nozzle	GETECH/GLOBE/COSMOS	
22.	Foam Proportionator	CHEMGUARD USA/EQUIVALENT UL LISTED	
23.	Foam Monitor	CHEMGUARD USA/EQUIVALENT UL LISTED	

Construction of Eight Lane (Four Lanes in each direction) starting before KMP Expressway and ends at Ch. 42406a) near Khanpur Ghat (L.R. 422500 to 424000) section of Delhi, Faridkot three-lane field Alignment (N1-1436) on EPC Mode under Bharatmala Pariyojna in the State of Haryana

S No.	Items	Make/Manufacturers	Remarks
24.	Alcohol Resistant AFFF Solution 3%	CHEMGUARD USA/EQUIVALENT UL LISTED	
25.	Diaphragm Operated Pressure Balancing Valve	CHEMGUARD USA/EQUIVALENT UL LISTED	
26.	Foam Pumps	EDWARD USA/UL LISTED	
27.	Deluge Valve	GE TECH/HD (EQUIVALENT)	
28.	Flow Switch	NOTIFIER/SYSTEM SENSOR	
29.	Sprinkler Annunciation Panel	COSMOS/ GE TECH SAFEZONE	
30.	Perming Tank	LOCAL MAKE/FABRICATED	
31.	Foot Valve	KIRLOSKAR/OPADHYAYA/SARKAR	
32.	Air Cushion Vessel	COSMOS, NITE, GE TECH	
33.	Air Release Valve	META/LEADER/GG	
34.	Drain Valve	META/LEADER/ZOLOTO	
35.	Battery	EXIDE/AVCO/AMARAJA	
36.	PC	IBM/HCL/HP /Lenova	
37.	Smoke/Optical Heater Detection	VALCN, NITIN, VIJAY, BOCKING & EL WARE, WIZ MART, APOLLO CONNITIN FIRE PROTECTION, INDUSTRIES LTD	
38.	Manual Call Point Fire	MINIMIN, MILIN, VIJAY, MILTRON NEW FIRE, CFS/LE PHOTONICS	
39.	Control Panel	STAIAGE INDUSTRIES, MILTON LTD, VIJAY FIRE PROTECTION, PHOTONIC PVT LTD, MILTAN INDUSTRIES	
40.	Fire Hydrant Landing Valves/ Fire Brigade Connection	MINIMAX/SAFETY/NEW AGE/VIJAY/ SAFEGUARD	IS-5290-1983
41.	Installation Valve	SPRAY SAFE/HT	
42.	Fire House Pipes (First Aid Hose Reel)	JAYSREE/MINIMAX/NEW AGE/SAFEEX	
43.	Branch Pipe Nozzle And Couplings	MINIMAX/NEW AGE/SAFEEX	IS-903-1984
44.	Pumps	KIRLOSKAR/BEACON/MATHER & PLATT/WASP/KSB/JYOTUBE/VOLTA S/ CROMPTON GREAVES	

Construction of Eight Lanes Bypass for Highway starting before KSI Expressway and ends at CH 41+000 near Khajur Chali (CN. NH 30) to CH 47+050 section of Delhi - Haldwari Greenfield Alignment (NH-148) on EPC Mode under Bharatnala Pariyojana in the State of Haryana

S No.	Items	Make/Manufacturers	Remarks
45.	Motors	KERLOSKAR/ALSTOM/SIEMENS/ JYOTI/CROMPTON/NGEE.	
46.	HFC 227 BA/HCFE Blend B Modular	COSMOS, NITIE, GE TECH	
47.	HFC 227 BA/HCFE Blend B Extinguisher	COSMOS, NITIE, GE TECH	
48.	AEROSOL.	DYNAM CO, NITIE, DYNAMITA NOBLE	



Construction of Eight (see details) Bidding starting before KMP Expressway and ends at Co-47-056 near Khajipar, Ghazi (Co-18-500 to Eht-47-000) section of Delhi - Yamotara Greenfield Alignment (NH-14SN) on EPC Mode under Bharatmala Pariyojana in the State of Haryana



## Schedule - E

(See Clauses 2.1 and 14.2)

### Maintenance Requirements

#### 1. Maintenance Requirements

- (i) The Contractor shall, at all times maintain the Project Highway in accordance with the provisions of this Agreement, Applicable Laws and Applicable Permits.
- (ii) The Contractor shall repair or rectify any Defect or deficiency set forth in Paragraph 2 of this Schedule-E within the time limit specified therein and any failure in this behalf shall constitute non-fulfillment of the Maintenance obligations by the Contractor. Upon occurrence of any breach hereunder, the Authority shall be entitled to effect reduction in monthly lump sum payment as set forth in Clause 14.6 of this Agreement, without prejudice to the rights of the Authority under this Agreement, including Termination thereof.
- (iii) All Materials, works and construction operations shall conform to the MORTH Specifications for Road and Bridge Works, and the relevant IRC publications. Where the specifications for a work are not given, Good Industry Practice shall be adopted.

[Specify all the relevant documents]

#### 2. Repair/rectification of Defects and deficiencies

The obligations of the Contractor in respect of Maintenance Requirements shall include repair and rectification of the Defects and deficiencies specified in Annex - I of this Schedule-E within the time limit set forth therein.

#### 3. Other Defects and deficiencies

In respect of any Defect or deficiency not specified in Annex - I of this Schedule-E, the Authority's Engineer may, in conformity with Good Industry Practice, specify the permissible limit of deviation or deterioration with reference to the Specifications and Standards, and any deviation or deterioration beyond the permissible limit shall be repaired or rectified by the Contractor within the time limit specified by the Authority's Engineer.

#### 4. Extension of time limit

Notwithstanding anything to the contrary specified in this Schedule E, if the nature and extent of any Defect or deficiency justifies more time for its repair or rectification than the time specified herein, the Contractor shall be entitled to additional time in conformity with Good Industry Practice. Such additional time shall be determined by

Construction of High Speed Expressway starting before KMP Expressway and ends at Cn. 47+000 near  
Rangpur Ghati (km 11+500 to km 12+500) section of Delhi-Vadodra Green field Alignment (MS-149) on  
an EPC mode under Bharatmala Project in the state of Haryana.

the Authority's Engineer and conveyed to the Contractor and the Authority with reasons thereof.

**5. Emergency repairs/restoration**

Notwithstanding anything to the contrary contained in this Schedule-E, if any Defect, deficiency or deterioration in the Project Highway poses a hazard to safety or risk of damage to property, the Contractor shall promptly take all reasonable measures for eliminating or minimizing such danger.

**6. Daily inspection by the Contractor**

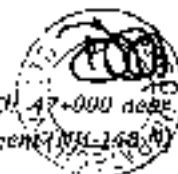
The Contractor shall, through its engineer, undertake a daily visual inspection of the Project Highway and maintain a record thereof in a register to be kept in such form and manner as the Authority's Engineer may specify. Such record shall be kept in safe custody of the Contractor and shall be open to inspection by the Authority and the Authority's Engineer at any time during office hours.

**7. Pre-monsoon inspection / Post-monsoon inspection**

The Contractor shall carry out a detailed pre-monsoon inspection of all bridges, culverts and drainage system before [1st June] every year in accordance with the guidelines contained in IRC: SP35. Report of this inspection together with details of proposed maintenance works as required on the basis of this inspection shall be sent to the Authority's Engineer before the [10th June] every year. The Contractor shall complete the required repairs before the onset of the monsoon and send to the Authority's Engineer a compliance report. Post monsoon inspection shall be done by the [30th September] and the inspection report together with details of any damages observed and proposed action to remedy the same shall be sent to the Authority's Engineer.

**8. Repairs on account of natural calamities**

All damages occurring to the Project Highway on account of a Force Majeure Event or wilful default or neglect of the Authority shall be undertaken by the Authority at its own cost. The Authority may instruct the Contractor to undertake the repairs at the rates agreed between the Parties.



Construction of Eight Lane Expressway starting before RMP Expressway and ends at CH 47+000 near  
Khanpur Ghat (km 18+500 to NH 47+500) section of Delhi- Vadodra Green field Alignment NH-169  
on EPC mode under Bharatmala Pariyojana in the state of Haryana.



## Annex - I

(Schedule E)

### Repair/rectification of Defects and deficiencies

The Contractor shall repair and rectify the Defects and deficiencies specified in this Annex-I of Schedule-E within the time limit set forth in the table below.

Nature of Defect or deficiency		Time limit for repair/ rectification
<b>ROADS</b>		
<b>(a) Carriageway and paved shoulders</b>		
(i)	Breach or blockade	Temporary restoration of traffic within 24 hours; permanent restoration within 15 (fifteen) days
(ii)	Roughness value exceeding 2,200 mm in a stretch of 1 km (as measured by a calibrated bump integrator)	120 (one hundred and twenty) days
(iii)	Pol holes	24 (twenty four) hours
(iv)	Any cracks in road surface	15 (fifteen) days
(v)	Any depressions, rutting exceeding 10 mm in road surface	30 (thirty) days
(vi)	Bleeding/skidding	7 (seven) days
(vii)	Any other defect/distress on the road	15 (fifteen) days
(viii)	Damage to pavement edges	15 (fifteen) days
(ix)	Removal of debris, dead animals	6 (six) hours
<b>(b) Granular earth shoulders, side slopes, drains and culverts</b>		
(i)	Variation by more than 1 % in the prescribed slope of camber/cross fall (shall not be less than the camber on the main carriageway)	7 (seven) days
(ii)	Edge drop at shoulders exceeding 40 mm	7 (seven) days

Construction of the Link Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghata (Ch. 18+500 to Km 47+500) section of Delhi-Vadodra Green field Alignment (NH-145) on EPC mode under Public-Private Partnership in the state of Haryana.

	Nature of Defect or deficiency	Time limit for repair/ rectification
(iii)	Variation by more than 15% in the prescribed side (embankment) slopes	30 (thirty) days
(iv)	Rain cuts/gullies in slope	7 (seven) days
(v)	Damage to or silting of culverts and side drains	7 (seven) days
(vi)	Desilting of drains in urban/semi-urban areas	24 (twenty four) hours
(vii)	Railing, parapets, crash barriers	7 (seven) days (Restore immediately if causing safety hazard)
<b>(c) Road side furniture including road sign and pavement marking</b>		
(i)	Damage to shape or position, poor visibility or loss of retro-reflectivity	48 (forty eight) hours
(ii)	Painting of km stone, railing, parapets, crash barriers	As and when required/ Once every year
(iii)	Damaged/missing signs road requiring replacement	7 (seven) days
(iv)	Damage to road mark ups	7 (seven) days
<b>(d) Road lighting</b>		
(i)	Any major failure of the system	24 (twenty four) hours
(ii)	Faults and minor failures	8 (eight) hours
<b>(e) Trees and plantation</b>		
(i)	Obstruction in a minimum head-room of 5 m above carriageway or obstruction in visibility of road signs	24 (twenty four) hours
(ii)	Removal of fallen trees from carriageway	4 (four) hours
(iii)	Deterioration in health of trees and bushes	Timely watering and treatment

Construction of 4-lane Expressway starting before KMP Expressway and ends at Ch. 42+000 near Khanpur Ghazi (Km 49.500 to Km 47+500) section of Delhi-Vododara Green field Alignment on EPC mode under National Pariyojana in the state of Haryana.

	Nature of Defect or deficiency	Time limit for repair/ rectification
(iv)	Trees and bushes requiring replacement	30 (thirty) days
(v)	Removal of vegetation affecting sight line and road structures	15 (fifteen) days
<b>(f) Rest area</b>		
(i)	Cleaning of toilets	Every 4 (four) hours
(ii)	Defects in electrical, water and sanitary installations	24 (twenty four) hours
<b>(g) Toll Plaza</b>		
(h)	<b>Other Project Facilities and Approach roads</b>	
(i)	Damage in approach roads, pedestrian facilities, truck lay-byes, bus-bays, bus-shelters, cattle crossings, Traffic Aid Posts, Medical Aid Posts and service roads	15 (fifteen) days
(ii)	Damaged vehicles or debris on the road	4 (four) hours
(iii)	Malfunctioning of the mobile crane	4 (four) hours
<b>Bridges</b>		
<b>(a) Superstructure</b>		
(i)	Any damage, cracks, spalling/ scaling Temporary measures Permanent measures	within 48 (forty eight) hours within 15 (fifteen) days or as specified by the Authority's Engineer
<b>(b) Foundations</b>		
(i)	Scouring and/or cavitation	15 (fifteen) days
<b>(c) Piers, abutments, return walls and wing walls</b>		

Construction of Light Land Expressway starting before KMP Expressway and ends at Ch. 47+600 near Khanpur Ghazi (km 187.500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-349 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

Nature of Defect or deficiency		Time limit for repair/ rectification
(c)	Cracks and damages including settlement and tilting, spalling, scaling	30 (thirty) days
<b>(d) Bearings (metallic) of bridges</b>		
(i)	Deformation, damages, tilting or shifting of bearings	15 (fifteen) days Greasing of metallic bearings once in a year
<b>(e) Joints</b>		
(i)	Malfunctioning of joints	15 (fifteen) days
<b>(f) Other items</b>		
(i)	Deforming of pads in elastomeric bearings	7 (seven) days
(ii)	Gathering of dirt in bearings and joints; or clogging of spouts, weep holes and vent-holes	3 (three) days
(iii)	Damage or deterioration in kerbs, parapets, handrails and crash barriers	3 (three) days (immediately within 24 hours if posing danger to safety)
(iv)	Rain-cuts or erosion of banks of the side slopes of approaches	7 (seven) days
(v)	Damage to wearing coat	15 (fifteen) days
(vi)	Damage or deterioration in approach slabs, pitching, apron, toes, floor or guide bunds	30 (thirty) days
(vii)	Growth of vegetation affecting the structure or obstructing the waterway	15 (fifteen) days
<b>(g) Hill Roads</b>		
(i)	Damage to retaining wall/breast wall	7 (seven) days
(ii)	Landslides requiring clearance	12 (twelve) hours
(iii)	Snow requiring clearance	24 (twenty four) hours

Note: Where necessary, the Authority may modify the time limit for repair/rectification, or add to the nature of Defect or deficiency before issuing the bidding document, with the approval of the competent authority.

Construction of Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khamur Ghat (Ch. 18+500 to Ch. 47+500) section of Delhi-Vadodra Green field Alignment (N.E. 100 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

## Schedule - F

(See Clause 4.3 (vi)(a))

### Applicable Permits

#### 1. Applicable Permits

- (i) The Contractor shall obtain, as required under the Applicable Laws, the following Applicable Permits:
- (a) Permission of the State Government for extraction of boulders from quarry;
  - (b) Permission of Village Panchayats and Pollution Control Board for installation of crushers;
  - (c) Licence for use of explosives;
  - (d) Permission of the State Government for drawing water from river/reservoir;
  - (e) Licence from inspector of factories or other competent Authority for setting up batching plant;
  - (f) Clearance of Pollution Control Board for setting up batching plant;
  - (g) Clearance of Village Panchayats and Pollution Control Board for setting up asphalt plant;
  - (h) Permission of Village Panchayats and State Government for borrow earth; and
  - (i) Any other permits or clearances required under Applicable Laws.
- (ii) Applicable Permits, as required, relating to environmental protection and conservation shall have been procured by the Authority in accordance with the provisions of this Agreement.



Construction of Eight Lane Expressway starting before KMP Expressway and ends at Chd. 47+000, esp. Khosar Ghazi (Chd. 38+500 to km 47+500) section of Delhi - Vardara Green field Alignment (NH-204 N) in EPC mode under Bharatnala Pariyojana in the state of Haryana.

## Schedule - G

(See Clauses 7.1 and 19.2)

### Annex-I

(See Clause 7.1)

#### Form of Bank Guarantee

##### Performance Security/Additional Performance Security

The Chairman,  
National Highways Authority of India  
New Delhi -110075

##### WHEREAS:

- (A) M/s APCO Infotech Private Limited, 9th Floor, Universal Trade Tower, Sohna Road, Sector-49, Gurugram-122101 (Haryana) (hereinafter called the "Contractor") and National Highways Authority of India, G-5 & 6, Sector 10, Dwarka, New Delhi - 110075, (hereinafter called the "Authority") have entered into an agreement (hereinafter called the "Agreement") for the construction of Construction of Eight Lane Expressway starting before RMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Km 18+500 to Km 47+000) section of Delhi - Vadodra Green field Alignment (NH-148N) under Bharatmala Pariyojana in the State of Haryana on Engineering, Procurement and Construction (the "EPC") basis, subject to and in accordance with the provisions of the Agreement.
- (B) The Agreement requires the Contractor to furnish a Performance Security for due and faithful performance of its obligations, under and in accordance with the Agreement, during the (Construction Period/ Defects Liability Period and Maintenance Period) (as defined in the Agreement) in a sum of Rs54.70 cr. (Rupees Fifty crore seventy lakh only) (the "Guarantee Amount").
- (C) We, ..... through our branch at ..... (the "Bank") have agreed to furnish this bank guarantee (hereinafter called the "Guarantee") by way of Performance Security.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

1. The Bank hereby unconditionally and irrevocably guarantees the due and faithful performance of the Contractor's obligations during the (Construction Period/ Defects Liability Period and Maintenance Period) under and in accordance with the Agreement, and agrees and undertakes to pay to the Authority, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an

Construction of Eight Lane Expressway starting before RMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Km 18+500 to Km 47+000) section of Delhi - Vadodra Green field Alignment (NH 148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana



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 General Manager in the National Highways Authority of India, that the Contractor has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Agreement and its decision that the Contractor is in default shall be final and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reason whatsoever.
3. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.
4. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.
5. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Agreement or to extend the time or period for the compliance with, fulfillment and/ or performance of all or any of the obligations of the Contractor contained in the Agreement or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.
6. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Agreement or for the fulfillment, compliance and/or performance of all or any of the obligations of the Contractor under the Agreement.

Construction of Delhi-Ludhiana Expressway starting before KMP Expressway and ends at Ch. 47+000 near to  
Khanpur Ghatt, (km 18+500 to km 47+500) section of Delhi- Vadodara Green field Alignment  
an EPC mode under the contract No. Pariyojana in the state of Haryana.



7. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.
8. The Guarantee shall cease to be in force and effect on <sup>\*\*\*\*</sup>. Unless a demand or claim under this Guarantee is made in writing before expiry of the Guarantee, the Bank shall be discharged from its liabilities hereunder.
9. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.
10. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorised to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.
11. This Guarantee shall come into force with immediate effect and shall remain in force and effect for up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Agreement.
12. This guarantee shall also be operable 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 NHAI. The details are as follows:

S. No.	Particulars	Details
1.	Name of Beneficiary	National Highways Authority of India
2.	Name of Bank	Canara Bank
3.	Account No.	8598201005819
4.	IFSC Code	CNRB0008598

\* Insert date being 2 (two) years from the date of issuance of this Guarantee (in accordance with Clause 7.2 of the Agreement).

Construction of ~~Phase 2~~ Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khongar Ghazi (Km. 47+500 to 48+500) section of Delhi-Vadodra Green field Alignment (NH-19) on EPC mode under the National Highway Pariyojana in the state of Haryana.





Signed and sealed this ..... day of ..... 20..... at .....

SIGNED, SEALED AND DELIVERED

For and on behalf of the Bank by:  
(Signature)

(Name)

(Designation)

(Code Number)

(Address)

NOTES:

- (i) The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.
- (ii) The address, telephone number and other details of the head office of the Bank as well as of issuing branch should be mentioned on the covering letter of issuing branch.



Construction of Bypass Expressway starting before KMP Expressway and ends at Ch. 47+000 near  
Khanpur Ghat (km 19+500 to km 47+500) section of Delhi-Vododara Green field Alignment (NH-190 N)  
on FPC made under Bharatmala Pariyojana in the state of Haryana.

**Annex - II**

(Schedule - G)

(See Clause 19.2)

**Form for Guarantee for Advance Payment**

The Chairman,  
National Highways Authority of India  
New Delhi - 110015

WHEREAS,

(A) M/s APCC Infotech Private Limited, 4th Floor, Universal Trade Tower, Sakaa Road, Sector-15, Gurugram-122101 (Haryana) (hereinafter called the "Contractor") has executed an agreement (hereinafter called the "Agreement") with the National Highways Authority of India, G-5&6, Sector 10, Dwarka, New Delhi - 110075, (hereinafter called the "Authority") for the construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Chati (Km: 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) under Bharatmala Pariyojana in the State of Haryana on Engineering, Procurement and Construction (the "EPC") basis, subject to and in accordance with the provisions of the Agreement.

(B) In accordance with Clause 19.2 of the Agreement, the Authority shall make to the Contractor an interest bearing @Bank Rate + 3% advance payment (herein after called "Advance Payment") equal to 10% (ten percent) of the Contract Price; and that the Advance Payment shall be made in two installments subject to the Contractor furnishing an irrevocable and unconditional guarantee by a scheduled bank for an amount equivalent to 110% (one hundred and ten percent) of such installment to remain effective till the complete and full repayment of the installment of the Advance Payment, as security for compliance with his obligations in accordance with the Agreement. The amount of (first/second) installment of the Advance Payment is Rs. ----- cr. (Rupees ----- crore) and the amount of this Guarantee is Rs. ----- cr. (Rupees ----- crore) (the "Guarantee Amount").

(C) We, ..... through our branch at ..... (the "Bank") have agreed to furnish this bank guarantee (hereinafter called the "Guarantee") for the Guarantee Amount.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

\* The Guarantee should be equivalent to 110% of the value of the applicable installment.

Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Chati (Km: 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana



1. The Bank hereby unconditionally and irrevocably guarantees the due and faithful repayment on time of the aforesaid instalment of the Advance Payment under and in accordance with the Agreement, and agrees and undertakes to pay to the Authority, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.

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 Contractor has committed default in the due and faithful performance of all or any of its obligations for the repayment of the instalment of the Advance Payment under and in accordance with the Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Agreement and its decision that the Contractor is in default shall be final and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reason whatsoever.

2. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.
3. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.
4. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Advance Payment or to extend the time or period of its repayment or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights

*Construction of EPC Line Expressway starting before KMP Expressway and ends at CK 47+000 near  
Khanpur Ghāt (Km 14+500 to Km 47+500) section of Delhi-Vardolra Green field Alignment (NH-74B N)  
an EPC mode under the National Pariyojana in the state of Haryana.*

under any such law

5. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Advance Payment.
6. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.
7. The Guarantee shall cease to be in force and effect on <sup>27/03/20</sup> Unless a demand or claim under this Guarantee is made in writing on or before the aforesaid date, the Bank shall be discharged from its liabilities hereunder.
8. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.
9. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorised to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.
10. This Guarantee shall come into force with immediate effect and shall remain in force and effect up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Agreement.
11. This guarantee shall also be operable 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.
12. 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 NHAI. The details are as follows:

<sup>5</sup> In case of a loss being 90 (ninety) days after the end of one year from the date of payment of the Advance payment to the Contractor (in accordance with Clause 19.2 of the Agreement).

Construction of 4 Lane Expressway starting before KMP Expressway and ends at Gt. 47+000, near Khanpur Ghat, (km 18+300 to km 47+500) section of Delhi-Vardara Green field Alignment (NH-14B-IV) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

S. No.	Particulars	Details
1.	Name of Beneficiary	National Highways Authority of India
2.	Name of Bank	Canara Bank
3.	Account No.	R598201005819
4.	IFSC Code	CNRB0008598

Signed and sealed this ... day of ..., 20... at ...  
**SIGNED, SEALED AND DELIVERED**

For and on behalf of the Bank by:  
 [Signature]

(Name)

(Designation)

(Code Number)

(Address)

NOTES:

- (i) The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.
- (ii) The address, telephone number and other details of the head office of the Bank as well as of issuing branch should be mentioned on the covering letter of issuing branch.



Construction of **Expressway** starting before RMI Expressway and ends at Ch. 47+000 near  
 Khanpur Ghazi (km 28+500 to km 47+500) section of Delhi-Vadankura Green field Alignment (NH 348-N) on HPC mode under Bharatmala Pariyojana in the state of Haryana.



**SCHEDULE-H**  
(See Clauses 10.1.4 and 19.3)

**CONTRACT PRICE WEIGHTAGES**

- 1.1 The Contract Price for this Agreement is Rs (1694,00,00,000/-)
- 1.2 Proportions of the Contract Price for different stages of Construction of the Project Highway shall be as specified below:

Item	Weightage in % of CP	Stage for Payment	Percentage weightage
1	2	3	4
Road Works including Culverts, widening and repair of culverts	51.82%	<b>A- Widening and strengthening of existing road</b>	
		(1) Earthwork up to top of the sub-grade	0.00%
		(2) Earthwork in Shoulders	0.00%
		(3) Sub base Course	0.00%
		(4) Non-bituminous Base course	0.00%
		(5) Bituminous Base course	0.00%
		(6) Wearing Coat	0.00%
		(7) Widening and repair of culverts	0.00%
		<b>B.1- Reconstruction/New 8-Lane Realignment / Bypass (Flexible Pavement)</b>	
		(1) Earthwork up to top of the sub-grade + Site Clearance	36.54%
		(2) Earthwork in Shoulders	0.75%
		(3) Sub-base Course	8.63%
		(4) Non-bituminous Base course	4.79%
		(5) Bituminous Base course	35.33%
		(6) Wearing Coat	8.63%
		<b>B.2- Reconstruction/New 8-Lane Realignment / Bypass (Rigid Pavement)</b>	
		(1) Earthwork up to top of the sub-grade	0.00%
(2) Earthwork in Shoulders	0.00%		



Construction of 12m wide divided carriageway starting before KMP Expressway and ends at Ch 47+000 near Eknapur chok (Ch 18+500 to Ch 47+000) section of Delhi - Varanasi Greenfield Alignment (NH-145N) on EPC Mode under Bharatnala Pariyojana in the State of Haryana



Item	Weightage in % of CP	Stage for Payment	Percentage weightage	
1	2	3	4	
Minor bridge/Underpasses/ Overpasses	17.39%	(3) Sub-base Course	0.00%	
		(4) Dry Lean Concrete (D.L.C.) Course	0.00%	
		(5) Pavement Quality Control (PQC) Course	0.00%	
		<b>C.1- Reconstruction/ New Service Road/ Slip Road (Flexible Pavement)</b>		
		(1) Earthwork up to top of the sub-grade	0.20%	
		(2) Earthwork in Shoulders	0.03%	
		(3) Sub-base Course	0.12%	
		(4) Non-bituminous Base course	0.17%	
		(5) Bituminous Base course	0.16%	
		(6) Wearing Coat	0.13%	
		<b>C.2- Reconstruction/ New Service road (Rigid Pavement)</b>		
		(1) Earthwork up to top of the sub-grade	0.00%	
		(2) Sub-base Course	0.00%	
		(3) Dry Lean Concrete (D.L.C.) Course	0.00%	
		(4) Pavement Quality Control (PQC) Course	0.00%	
		<b>D- Reconstruction &amp; New Culverts on existing road, realignments, bypasses</b>		
		Culverts (length < 6m)	2.08%	
		Additional Culverts	2.44%	
		<b>A.1- Widening and repairs of Minor Bridges (length &gt; 6m &amp; &lt; 60m)</b>		
		Minor Bridges	0.00%	
		<b>A.2- New Minor bridges (length &gt; 6 m and &lt; 60 m)</b>		
		(1) Foundation: On completion of the foundation work including foundations for wing and return walls, abutments, piers.	20.46%	



Construction of 2x3 Lane Single carriageway starting before KMP Expressway and ends at Ch. 47+000 near Khopur-Kachh (Ch. 18+500 to Ch. 47+000), section of Delhi - Vadodra Greenfield Alignment (NH-148N) on EPC Mode under Bharatmala Prayojana in the State of Haryana



Item	Weightage in % of C/P	Stage for Payment	Percentage weightage
1	2	3	4
		(2) Sub-structure: On completion of abutments, piers upto the abutment/ pier cap including wing/ return wall upto top	24.66%
		(3) Super-structure: On completion of the super-structure in all respects including Girder, Deck slab, bearings,	9.25%
		(4) Approaches: On completion of approaches including Retaining walls, slope pitching, protection works complete in all respect, tests on completion in all respect and fit for use.	0.43%
		(5) Guide Bunds and River Training Works: On completion of Guide Bunds and river training works complete in all respects	0.00%
		(6) Other Ancillary Works: On completion of wearing coat, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion in all respect.	1.66%
		<b>B.1- Widening and repairs of underpasses/overpasses</b>	
		Underpasses/ Overpasses	0.00%
		<b>B.2- New Underpasses/Overpasses</b>	
		(1) Foundation: On completion of the foundation work including foundations for wing and return walls, abutments, piers.	7.38%
		(2) Sub-structure: On completion of abutments, piers upto the abutment/ pier cap including wing/ return wall upto top.	23.61%
		(3) Super-structure: On completion of the super-structure in all respects including Girder, Deck slab, bearings	19.67%
		(4) On completion of Retaining/ Reinforced earth walls complete in all respect and fit for use	0.38%



Item	Weightage in % of CP	Stage for Payment	Percentage weightage
1	2	3	4
Major bridge (length > 60m) works and ROB/RUB/elevated sections/flyovers including viaducts, if any	11.53%	(5) Approaches and Other Ancillary Works: On completion of wearing coat, expansion joints, hand rails, crash barriers, stone pitching, protection works, road signs & markings, tests on completion in all respects.	1.50%
		Wearing Coat (a) in case of Overpass-wearing coat including expansion joints complete in all respects as specified and (b) in case of underpass-rigid pavement including drainage facility complete in all respects as specified	
		<b>A.1- Widening and repairs of Major Bridges</b>	
		(1) Foundation: On completion of the foundation work including foundations for return walls, abutments, piers.	0.00%
		(2) Sub-structure: On completion of abutments, piers upto the abutment/ pier cap upto top.	0.00%
		(3) Super-structure: On completion of the super-structure in all respects including Girder, Deck slab, bearings.	0.00%
		(4) Wearing Coat including expansion joints	0.00%
		(5) Miscellaneous items like hand rails, crash barrier, road markings etc.	0.00%
		(6) Wing walls/return walls upto top	0.00%
		(7) Guide bands, River Training works etc.	0.00%
		(8) Approaches (including Retaining walls, stone pitching and protection works)	0.00%
<b>A.2- New Major Bridges</b>			
(1) Foundation: On completion of the foundation work including foundations for return walls, abutments, piers.	3.85%		



Item	Weightage In % of CP	Stage for Payment	Percentage weightage
1	2	3	4
		(2) Sub-structure: On completion of abutments, piers upto the abutment/ pier cap	6.54%
		(3) Super-structure: On completion of the super-structure in all respects including Girder, Deck slab, bearings	37.95%
		(4) Wearing Coat including expansion joints	0.54%
		(5) Miscellaneous Items like hand rails, crash barrier, road markings etc.	0.24%
		(6) Wing walls/return walls upto top	0.58%
		(7) Guide bands, River Training works etc.	0.00%
		(8) Approaches (including Retaining walls, stone pitching and protection works)	0.84%
		<b>B.1- Widening and repairs of</b> <b>(a) ROB</b> <b>(b) RUB</b>	
		(1) Foundations	0.00%
		(2) Sub-Structure	0.00%
		(3) Super-Structure (Including bearings)	0.00%
		(4) Wearing Coat (a) in case of ROB- wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified	0.00%
		(5) Miscellaneous Items like hand rails, crash barrier, road markings etc.	0.00%
		(6) Wing walls/Return walls	0.00%
		(7) Retaining/ Reinforced earth walls	0.00%
		(8) Approaches and Other Ancillary Works (wearing coat, expansion joints, hand rails, crash barriers, road signs & markings, stone pitching, protection works, etc.)	0.00%



Construction of 2x2 Lane, 20m wide carriageway starting before KMF Expressway and ends at Ch. 47+000 near Kkappa. From Ch. 15+000 to Ch. 47+000) section of Delhi - Varanasi Greenfield Alignment (NH-143N) on EPC Mode under Bharatmala Pariyojana in the State of Uttarakhand



Item	Weightage in % of CP	Stage for Payment	Percentage weightage
1	2	3	4
		<b>B.2- New ROB/RUB</b>	
		(1) Foundations	0.00%
		(2) Sub-Structure	0.00%
		(3) Super-Structure (Including bearings)	0.00%
		(4) Wearing Coat (a) in case of ROB-wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB-rigid pavement under ROB including drainage facility complete in all respects as specified	0.00%
		(5) Miscellaneous Items like hand rails, crash barrier, road markings etc.	0.00%
		(6) Wing walls/Return walls	0.00%
		(7) Retaining/ Reinforced earth walls	0.00%
		(8) Approaches and Other Ancillary Works (wearing coat, expansion joints, hand rails, crash barriers, road signs & markings, stone pitching, protection works, etc.)	0.00%
		<b>C.1- Widening and repair of Elevated Section/Flyovers/Grade Separators</b>	
		(1) Foundations	0.00%
		(2) Sub-Structure	0.00%
		(3) Super-Structure (Including bearings)	0.00%
		(4) Wearing Coat including expansion joints	0.00%
		(5) Miscellaneous Items like hand rails, crash barrier, road markings etc.	0.00%
		(6) Wing walls/Return walls	0.00%
		(7) Retaining/ Reinforced earth walls	0.00%
		(8) Approaches and Other Ancillary Works (wearing coat, expansion joints, hand rails, crash barriers, road signs & markings, stone pitching, protection works, etc.)	0.00%



Construction of Eight Lane divided flyway starting before KMP Expressway and ends at Ch. 47+000 near Khajur (G.D. No. 78+560 in C.O. 47+000) section of Delhi - Kolarwa Greenfield Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana



Item	Weightage in % of CP	Stage for Payment	Percentage weightage
1	2	3	4
<b>Other Works</b>	<b>19.26%</b>	<b>C.2- New Elevated Section/Hyovers/Grade Separators</b>	
		(1) Foundation: On completion of the foundation work including foundations for wing and return walls, abutments, piers.	13.11%
		(2) Sub-structure: On completion of abutments, piers upto the abutment/ pier cap upto top.	6.92%
		(3) Super-structure: On completion of the super-structure in all respects including Girder, Deck slab, bearings, tests on completion in all respect	26.10%
		(4) Wearing Coat including expansion joints	1.03%
		(5) Miscellaneous Items like hand rails, crash barrier, road markings etc	0.48%
		(6) Wing walls/Return walls	0.73%
		(7) Retaining/ Reinforced earth walls	0.76%
		(8) Approaches and Other Ancillary Works (wearing coat, expansion joints, hand rails, crash barriers, road signs & markings, stone pitching, protection works, etc.)	0.33%
		(i) Toll Plaza	10.20%
		(ii) Road side drains	
		Lined Drain	4.79%
		Unlined Drain	0.19%
		(iii) Road signs, safety Devices, Road Furnitures etc.	3.59%
		(iv) Road markings & Studs	1.15%
(v) Crash Barrier	11.33%		
(vi) Project facilities			
a) Bus Bays	0.00%		



Construction of Eight Lane Elevated Carriageway starting before KMP Expressway and ends at Ch. 47+000 near Khurpur Ghat (Ch. 18+300 to Ch. 47+000) section of Delhi - Ferozpur Greenfield Alignment (NH 146B), on EPC Mode under Bharatmala Pariyojana in the State of Haryana



Item	Weightage in % of CP	Stage for Payment	Percentage weightage
1	2	3	4
		b) Wayside Amenities excluding Slip Roads & but including all internal roads (Service areas including Truck Lay-Bys)	4.23%
		c) Others	0.26%
		(vi) Rain Water Harvesting	0.57%
		(viii) Retaining Wall/ Breast Wall	1.97%
		(ix) RR Wall	25.93%
		(x) Street Lighting	5.21%
		(xi) Utility Ducts	0.93%
		(xii) ATMS	1.45%
		(xiii) Road side Plantation including Horticulture in Wayside Amenities	6.27%
		(xiv) Protection Works other than approaches to the bridges, elevated sections/ flyover/ grade separators and ROB/ RLBs	0.93%
		(xv) Boundary wall	16.65%
		(xvi) Safety & Traffic Management during const.	1.22%
		(xvii) Other miscellaneous works including Connecting road & Junction under Grade separator	3.13%

### 1.3 Procedure of estimating the value of work done.

#### 1.3.1 Road works

Procedure for estimating the value of road work done shall be as follows:

Table 1.3.1

Stage of Payment	Percentage weightage	Payment Procedure
<b>A- Widening &amp; Strengthening of road</b>		
(1) Pathwork up to top of the sub-grade	0.00%	Unit of measurement is linear length Payment of each stage shall be made on pro rata basis on completion of a

Construction of Right of Way divided carriageway starting before EOP completed, and ends at Ch 47+000 near Ehanpur Ghat (Ch. 47+000 to Ch. 47+060) section of Delhi - Vadodra Greenfield Alignment (NH-142B) on APC Road under Bharnavale Purviona in the State of Haryana

Stage of Payment	Percentage weightage	Payment Procedure
(2) Earthwork in Shoulders	0.00%	stage in a length of not less than 10 (ten) percent of the total length.  Cost of ten completed culverts shall be determined on pro rata basis with respect to the total number of culverts. Payment shall be made on the completion of at least five culverts.
(3) Sub-base Course	0.00%	
(4) Non-bituminous Base course	0.00%	
(5) Bituminous Base course	0.00%	
(6) Wearing Coat	0.00%	
(7) Widening and repair of culverts	0.00%	
<b>B.1- Reconstruction/New 8-Lane Realignment / Bypass (Flexible Pavement)</b>		
(1) Earthwork up to top of the sub-grade - Site Clearance	36.54%	
(2) Earthwork in Shoulders	0.75%	
(3) Sub-base Course (CTS/B)	8.63%	
(4) Non-bituminous Base course (WMM)	4.79%	
(5) Bituminous Base course	35.33%	
(6) Wearing Coat	8.63%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 5(five) km length, whichever is less.
<b>B.2- Reconstruction/New 8-Lane Realignment / Bypass (Rigid Pavement)</b>		
(1) Earthwork up to top of the sub-grade	0.00%	
(2) Earthwork in Shoulders	0.00%	
(3) Sub-base Course	0.00%	
(4) Dry Lean Concrete (D.L.C) Course	0.00%	
(5) Pavement Quality Control (PQC) Course	0.00%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 5(five) km length, whichever is less.
<b>C.1- Reconstruction/ New Service Road/ Slip Road (Flexible Pavement)</b>		
(1) Earthwork up to top of the sub-grade	0.20%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 5(five) km length, whichever is less.
(2) Earthwork in Shoulders	0.03%	

Construction of Eight Lane Divided Highway starting before KMP Expressway and ends at Ch. 47+600 near Khajur Road (CHN) 336 to Ch. 47+600) section of Delhi - Vaidhara Greenfield Alignment NH 148B on EPC Mode under Bharatmala Pariyojana in the State of Haryana



Stage of Payment	Percentage weightage	Payment Procedure
(3) Sub-base Course (GSB)	0.12%	
(4) Non-bituminous Base course (WBM)	0.17%	
(5) Bituminous Base course	0.16%	
(6) Wearing Coat	0.13%	
<b>C-2- Reconstruction/New Service road (Rigid Pavement)</b>		
(1) Earthwork up to top of the sub grade	0.00%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 5(five) km length, whichever is less.
(2) Sub-base Course	0.00%	
(3) Dry Lean Concrete (DLC) Course	0.00%	
(4) Pavement Quality Concrete (PQC) Course	0.00%	
<b>D- Reconstruction &amp; New Culverts on existing road, realignments, bypasses</b>		
Culverts (length <6m)	2.08%	Cost of each culverts shall be determined on pro rata basis with respect to the total number of culverts. Payment shall be made on the completion of at least five culverts
Additional Culverts	2.44%	

(g) For example, if the total length of bituminous work to be done is 100 km, the cost per km of bituminous work shall be determined as follows:

$$\text{Cost per km} = P \times \text{weightage for road work} \times \text{weightage for bituminous work} \times (1/L)$$

Where P = Contract Price

L = Total length in km

Similarly, the rates per km for other stages shall be worked out accordingly

**Note:** The length affected due to law and order problems or litigation during execution including the length not handed over to the Contractor under clause 8.3 of this Contract Agreement due to which the Contractor is unable to execute the work, may be deducted from the total project length for payment purposes. The total length calculated here is only for payment purposes and will not affect and referred in other clauses of the Contract Agreement

### 1.3.2 Minor Bridges and Underpasses/Overpasses

Procedure for estimating the value of Minor bridge and Underpasses/Overpasses shall be as stated in table

Table 1.3.2

Stage of Payment	Weightage	Payment Procedure
1	2	3
<b>A.1- Widening and repairs of Minor Bridges (length &gt;6m &amp; &lt;60m)</b>	0.00%	Cost of each minor bridge shall be determined on pro rata basis with respect to the total linear length of the minor bridges. Payment shall be made on the completion of widening & repair works of a minor bridge.
<b>A.2- New Minor Bridges (length &gt;6m &amp; &lt;60m)</b>		
(1) Foundation: On completion of the foundation work including foundations for wing and return walls, abutments, piers.	20.46%	<b>Foundation:</b> Cost of each minor bridge shall be determined on pro rata basis with respect to the total linear length (m) of the minor bridges. Payment against foundation shall be made on pro rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of each bridge.  In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-structure: On completion of abutments, piers upto the abutment/ pier cap including wing/ return upto top	24.66%	<b>Sub-structure:</b> Cost of each minor bridge shall be determined on pro rata basis with respect to the total linear length (m) of the minor bridges. Payment against sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of each bridge.
(3) Super-structure: On completion of the super-structure in all respects including Girder, Deck slab, bearings	9.25%	<b>Super-structure:</b> Payment shall be made on pro rata basis on completion of a stage i.e. completion of super structure of at least one span in all respects as specified in the column of "Stage of Payment" in this sub-clause. In case of structures where pre-cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above.
(4) Approaches: On completion of approaches including Retaining walls, stone pitching, protection works complete in all respect and fit for use	0.47%	<b>Approaches:</b> Payment shall be made on pro-rata basis on completion of a stage i.e. completion of approaches in all respect as specified in the column of "Stage of Payment" in this sub-clause.





Stage of Payment	Weightage	Payment Procedure
1	2	3
(5) Guide Bunds and River Training Works: On completion of Guide Bunds and river training works complete in all respects	0.08%	<b>Guide Bunds and River Training Works.</b> Payment shall be made on pro-rata basis on completion of a stage i.e. completion of Guide Bunds and River training Works in all respects as specified
(5) Other Ancillary Works: On completion of wearing coat, expansion joints, hand rails, cross barriers, road signs & markings, tests on completion in all respect	1.66%	<b>Other Ancillary Works:</b> Payment shall be made on pro-rata basis on completion of a stage in all respects as specified
<b>B.1- Widening and repairs of underpasses/overpasses</b>	0.00%	Cost of each underpass/overpass shall be determined on pro-rata basis with respect to the total linear length of the underpasses/overpasses. Payment shall be made on the completion of widening & repair works of a underpass/overpass.
<b>B.2- New Underpasses/Overpasses</b>		
(1) Foundation: On completion of the foundation work including foundations for wing and return walls, abutments, piers.	7.38%	<b>Foundation:</b> Cost of each Underpass/Overpass shall be determined on pro-rata basis with respect to the total linear length (m) of the Underpasses/Overpasses. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of each Underpasses/Overpasses. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-structure: On completion of abutments, piers upto the abutment/ pier cap including wing/ return/ wall upto top	23.61%	<b>Sub-structure:</b> Cost of each Underpass/Overpass shall be determined on pro-rata basis with respect to the total linear length (m) of the Underpasses/Overpasses. Payment against sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of each Underpasses/Overpasses.
(3) Super structure: On completion of the super-structure in all respects including Girder, Deck slab, bearings	10.67%	<b>Super-structure:</b> Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure of atleast one span in all respects as specified in the column of "Stage of Payment" in this sub-clause. In case of structures where pre-cast girders have

Stage of Payment	Weightage	Payment Procedure
1	2	3
(4) On completion of Retaining / Reinforced earth walls complete in all respect and fit for use	0.38%	been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above  Payments shall be made on pro rata basis on completion of 20% of the total area.
(5) Approaches and Other Ancillary Works: On completion of wearing coat, expansion joints, hand rails, crash barriers, road signs & markings, slope pitching, protection works, tests on completion in all respect.	1.50%	Payment shall be made on pro-rata basis on completion of a stage in all respects as specified

### 1.3.3 Major Bridge works, ROB/RUB and Structures

Procedure for estimating the value of Major Bridge works, ROB/RUB and Structures Work shall be as stated in table 1.3.3:

Table 1.3.3

Stage of Payment	Weightage	Payment Procedure
<b>A.1- Widening and repairs of Major Bridges</b>		
(1) Foundation: On completion of the foundation work including foundations for wing and return walls, abutments, piers.	0.00%	<b>Foundation</b> Cost of each Major Bridge shall be determined on pro rata basis with respect to the total linear length (m) of the Major Bridge. Payment against foundation shall be made on pro rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the major Bridge.  In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified
(2) Sub-structure: On completion of abutments, piers upto the abutment/ pier cap upto top of	0.00%	<b>Sub-structure:</b> Payment against sub-structure shall be made on pro rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of major bridge.

Stage of Payment	Weightage	Payment Procedure
(3) Super-structure: On completion of the super-structure in all respects including Girder, Deck slab, bearings, tests on completion in all respect	0.00%	<b>Super-structure:</b> Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure including bearings of atleast one span in all respects as specified. In case of structures where pre-cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4) Wearing Coat including expansion joints	0.00%	<b>Wearing Coat:</b> Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous Items like hand rails, crash barrier, road markings etc.	0.00%	<b>Miscellaneous:</b> Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/return walls	0.00%	<b>Wing walls/return walls:</b> Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7) Guide bunds, River Training works etc.	0.00%	<b>Guide Bunds, River Training works:</b> Payments shall be made on completion of all guide bunds/river training works etc. complete in all respects as specified.
(8) Approaches (including Retaining walls, stone pitching and protection works)	0.00%	<b>Approaches:</b> Payments shall be made on pro rata basis on completion of 10% of the scope of each stage.
<b>A.2- New Major Bridges</b>		
(1) Foundation: On completion of the foundation work including foundations for wing and return walls, abutments, piers.	3.85%	<b>Foundation:</b> Cost of each Major Bridge shall be determined on pro rata basis with respect to the total linear length (m) of the Major Bridge. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the major Bridge.  In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-structure: On completion of abutments, piers upto the abutment	6.54%	<b>Sub-structure:</b> Payment against sub-structure shall be made on pro rata basis on completion of a stage

Stage of Payment per cap upto top	Weightage	Payment Procedure
		i.e. not less than 25% of the scope of sub-structure of major bridge.
(3) Super-structure. On completion of the super-structure in all respects including Girder, Deck slab, bearings, tests on completion in all respect	37.95%	<b>Super-structure:</b> Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super structure including bearings of atleast one span in all respects as specified. In case of structures where pre-cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4) Wearing Coat including expansion joints	0.54%	<b>Wearing Coat:</b> Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous Items like hand rails, crash barrier, road markings etc.	0.24%	<b>Miscellaneous:</b> Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/return walls	0.58%	<b>Wing walls/return walls:</b> Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7) Guide bunds, River Training works etc.	0.30%	<b>Guide Bunds, River Training works:</b> Payments shall be made on completion of all guide bunds/river training works etc. complete in all respects as specified
(8) Approaches (including Retaining walls, stone pitching and protection works)	0.84%	<b>Approaches:</b> Payments shall be made on pro rata basis on completion of 10% of the scope of each stage.
<b>B.1- Widening and repairs of</b> (a) ROB (b) RUB		
(1) Foundation	0.00%	<b>Foundation:</b> Cost of each ROB/RUB shall be determined on pro rata basis with respect to the total linear length (m) of the ROB/RUB. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the ROB/RUB.  In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-structure	0.00%	<b>Sub-structure:</b> Payment against sub-structure shall be made on pro-rata basis on completion of a stage



Stage of Payment	Weightage	Payment Procedure
		i.e. not less than 25% of the scope of sub-structure of ROB/RUB.
(3) Super structure (including bearing)	0.00%	<b>Super-structure:</b> Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure including bearings of at least one span in all respects as specified. In case of structures where pre cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above.
(4) Wearing Coat including expansion joints in case of ROB. In case of RUB-rigid pavement under RUB including drainage facility as specified	0.00%	<b>Wearing Coat:</b> Payment shall be made on completion (a) in case of ROB-wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified.
(5) Miscellaneous Items like hand rails, crash barrier, road markings etc.	0.00%	<b>Miscellaneous:</b> Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/return walls	0.00%	<b>Wing walls/return walls:</b> Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7) On completion of Retaining/ Reinforced earth walls complete in all respect and fit for use.	0.00%	Payments shall be made on pro rata basis on completion of 20% of the total area.
(8) Approaches and Other Ancillary Works. On completion of wearing coat, expansion joints, hand rails, crash barriers, road signs & markings, stone pitching, protection works, tests on completion in all respect.	0.00%	Payment shall be made on pro-rata basis on completion of a stage in all respects as specified
<b>B.2- New ROB/ RUB</b>		
(1) Foundation	0.00%	<b>Foundation:</b> Cost of each ROB/RUB shall be determined on pro rata basis with respect to the total linear length (m) of the ROB/RUB. Payment against foundation shall be made on pro-rata basis on

Stage of Payment	Weightage	Payment Procedure
		completion of a stage i.e. not less than 25% of the scope of foundation of the ROB/RUB.  In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-structure	0.00%	Sub-structure: Payment against sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of ROB/RUB.
(3) Super-structure (including bearing)	0.00%	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure including bearings of at least one span in all respects as specified. In case of structures where pre-cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above.
(4) Wearing Coat including expansion joints in case of ROB. In case of RUB-rigid pavement under RUB including drainage facility as specified	0.00%	Wearing Coat: Payment shall be made on completion (a) in case of ROB-wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified.
(5) Miscellaneous Items like hand rails, crash barrier, road markings etc.	0.00%	Miscellaneous: Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/return walls	0.00%	Wing walls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7) On completion of Retaining/ Reinforced earth walls complete in all respect and fit for use.	0.00%	Payments shall be made on pro rata basis on completion of 20% of the total area.



Construction of Eight Lane ~~Double~~ Carriageway starting before KMP Expressway and ends at Ch. 47+100 near Khampur Ghat (Ch. 15+50 to Ch. 47+100) section of Delhi - Yamuna Greenfield Alignment (NH-148B) on CPC Mode under Bharatmala Pariyojana in the State of Haryana

Stage of Payment	Weightage	Payment Procedure
(8) Approaches and Other Ancillary Works: On completion of wearing coat, expansion joints, hand rails, crash barriers, road signs & markings, slope protection, protection works, tests on completion in all respect.	0.00%	Payment shall be made on pro-rata basis on completion of a stage in all respects as specified
<b>C.1- Widening and repairs of Elevated Section/ Flyovers/ Grade Separators</b>		
(1) Foundation	0.00%	<b>Foundation:</b> Cost of each structure shall be determined on pro-rata basis with respect to the total linear length (m) of the structure. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the structure  In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-structure	0.00%	<b>Sub-structure:</b> Payment against sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of structure.
(3) Super-structure: On completion of the super-structure in all respects including Girder, Deck slabs, bearings, tests on completion in all respect	0.00%	<b>Super-structure:</b> Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure including bearings of atleast one span in all respects as specified. In case of structures where precast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4) Wearing Coat including expansion joints	0.00%	<b>Wearing Coat:</b> Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified
(5) Miscellaneous Items like hand rails, crash barrier, road markings etc.	0.00%	<b>Miscellaneous:</b> Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/return walls	0.00%	<b>Wing walls/return walls:</b> Payments shall be made on completion of all wing walls/return walls complete in all respects as specified



Construction of Eight Lane 2x4 carriageway starting before KMP Expressway and ends at Ch 47+000 near Khaspur Ahluw (Ch 48+500 to Ch 47+000) section of Delhi - Vokulara Greenfield Alignment (NH-148B) on JPC, Meda under Bharatnagar Poriyokana in the State of Haryana

Stage of Payment	Weightage	Payment Procedure
(7) On completion of Retaining/ Reinforced earth walls complete in all respect and fit for use.	0.00%	Payments shall be made on pro rata basis on completion of 20% of the total area.
(8) Approaches and Other Ancillary Works. On completion of wearing coat, expansion joints, hand rails, crash barriers, road signs & markings, stone pitching, protection works, tests on completion in all respect.	0.00%	Payment shall be made on pro-rata basis on completion of a stage in all respects as specified
<b>C.2- New Elevated Sections/ Flyovers/ Grade Separators</b>		
(1) Foundation: On completion of the foundation work including foundations for wing and return walls, abutments, piers.	13.11%	<b>Foundation:</b> Cost of each structure shall be determined on pro rata basis with respect to the total linear length (m) of the structure. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the structure.  In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-structure: On completion of abutments, piers upto the abutment/ pier cap upto top.	6.92%	<b>Sub-structure:</b> Payment against sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub structure of structure.
(3) Super-structure: On completion of the super-structure in all respects including Girder, Deck slab, bearings, tests on completion in all respect	26.10%	<b>Super-structure:</b> Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure including bearings of atleast one span in all respects as specified. In case of structures where pre-cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4) Wearing Coat including expansion joints	1.03%	<b>Wearing Coat:</b> Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.



Construction of Ergit Lane divided carriageway starting before KMP Expressway and ends at Ch 47-004 near Khajpur Ghat (Ch. 18-500 to Ch. 47-000) section of Delhi - Panodara Greenfield Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana





Stage of Payment	Weightage	Payment Procedure
(5) Miscellaneous Items like hand rails, crash barrier, road markings etc.	0.48%	Miscellaneous. Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/return walls	0.75%	Wing walls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7) On completion of Retaining/ Reinforced earth walls complete in all respect and fit for use.	0.76%	Payments shall be made on pro rata basis on completion of 20% of the total area.
(8) Approaches and Other Ancillary Works. On completion of wearing coat, expansion joints, hand rails, crash barriers, road signs & markings, stone pitching, protection works, tests on completion in all respect.	0.33%	Payment shall be made on pro-rata basis on completion of a stage in all respects as specified.

### 1.3.4 Other Works.

Procedure for estimating the value of other works done shall be as stated in table 1.3.4:

Table 1.3.4

Stage of Payment	Weightage	Payment Procedure
(i) Toll Plaza	10.20%	Unit of measurement is each completed toll plaza. Payment of each toll plaza shall be made on pro rata basis with respect to the total of all toll plaza.
(ii) Road side drains		
Lined Drain	4.79%	
Unlined Drain	0.19%	Unit of measurement is linear length in km. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 10% (ten per cent) of the total length.
(iii) Road signs, safety Devices, Road Furnitures etc	3.59%	
(iv) Road markings & Studs	1.15%	
(v) Crash Barrier	11.33%	
(vi) Project facilities		
a) Bus Bays	0.00%	Payment shall be made on pro rata basis for completed facilities.

Stage of Payment	Weightage	Payment Procedure
b) Wayside Amenities excluding Slip Roads & but including all internal roads (Service areas including Truck Lay-Biest)	4.23%	Payments shall be made on pro rata basis on completion of 20% of the total area.  Unit of measurement is linear length. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 10% (ten per cent) of the total length.
c) Others	0.26%	
(vi) Rain Water Harvesting	0.57%	
(vii) Retaining Wall & Breast Wall	1.97%	
(ix) RE Wall	25.93%	
(x) Street Lighting	5.21%	
(xi) Utility Ducts	0.93%	
(xii) ATMS	1.45%	
(xiii) Road side Plantation including Horticulture in Wayside Amenities	6.27%	
(xiv) Protection Works other than approaches to the bridges, elevated sections/ flyover/ grade separators and ROHs/ RUBs	0.93%	
(xv) Boundary wall	16.65%	Unit of measurement is linear length. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 10% (ten per cent) of the total length.
(xvi) Safety & Traffic Management during const.	1.22%	Payment shall be made on prorata basis every six months.
(xvii) Other miscellaneous works including Connecting road & junction under Grade separator.	3.13%	Payment shall be made on pro rata basis on completion of each stage.

## 2. Procedure for payment for Maintenance

2.1 The cost for maintenance shall be as stated in Clause 14.1.1.

2.2 Payment for Maintenance shall be made in quarterly installments in accordance with the provisions of Clause 19.7.



**SCHEDULE - I**  
(See Clause 10.2.4)

**DRAWINGS**

**1 Drawings**

In compliance of the obligations set forth in Clause 10.2 of this Agreement, the Contractor shall furnish to the Authority's Engineer, free of cost, all Drawings listed in Annex-I of this Schedule-I.

**2 Additional Drawings**

If the Authority's Engineer determines that for discharging its duties and functions under this Agreement, it requires any drawings other than those listed in Annex-I, it may by notice require the Contractor to prepare and furnish such drawings forthwith. Upon receiving a requisition to this effect, the Contractor shall promptly prepare and furnish such drawings to the Authority's Engineer, as if such drawings formed part of Annex-I of this Schedule-I.



**Annex I**

*(Schedule-I)*

**List of Drawings**

A minimum list of drawings of the various components/elements of the Project Highway and Project Facilities required to be submitted by the contractor is given below;

- a) Drawing of horizontal alignment, vertical profile and cross sections
- b) Drawings of cross drainage works
- c) Drawings of Grade Separated Structures
- d) Drawings of interchanges, major intersections
- e) Drawing of Toll Plaza layout, toll collection systems and roadway near toll plaza
- f) Drawing of control centre
- g) Wayside Amenities/Service area/Parking area
- h) Drawing of a truck parking lay by with furniture and drainage system
- i) Drawings of road furniture items including traffic signage, marking, safety barriers, etc.
- j) Drawings of traffic diversions plans and traffic control measures
- k) Drawings of road drainage measures
- l) Drawings of typical details slope protection measures
- m) Drawings of landscaping and horticulture
- n) Drawings of street lighting
- o) General arrangement showing area of base camp and administrative block
- p) Any other drawings relevant to the project as desired by Authority Engineer.



## Schedule - J

(See Clause 10.3 (ii))

### Project Completion Schedule

#### 1. Project Completion Schedule

During Construction period, the Contractor shall comply with the requirements set forth in this Schedule-J for each of the Project Milestones and the **Scheduled Completion Date**. Within 15 (fifteen) days of the date of each Project Milestone, the Contractor shall notify the Authority of such compliance along with necessary particulars thereof.

#### 2. Project Milestone-I

- (i) Project Milestone-I shall occur on the date falling on the 255<sup>th</sup> (Two Hundred Fifty Fifth) day from the Appointed Date (the "Project Milestone- I").
- (ii) Prior to the occurrence of Project Milestone-I, the Contractor shall have commenced construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 10% (ten per cent) of the Contract Price.

#### 3. Project Milestone-II

- (i) Project Milestone-II shall occur on the date falling on the 440<sup>th</sup> (Four Hundred Fortieth) day from the Appointed Date (the "Project Milestone- II").
- (ii) Prior to the occurrence of Project Milestone-II, the Contractor shall have continued with construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 35% (thirty five per cent) of the Contract Price and should have started construction of all bridges.

#### 4. Project Milestone-III

- (i) Project Milestone-III shall occur on the date falling on the 620<sup>th</sup> ( Six Hundred Twentieth) day from the Appointed Date (the "Project Milestone- III").
- (ii) Prior to the occurrence of Project Milestone-III, the Contractor shall have continued with construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 70% (seventy per cent) of the Contract Price and should have started construction of all project facilities.

#### 5. Scheduled Completion Date

Construction of the Lane Expressway starting before KHP Expressway and ends at Ch. 47+000 near Kharapur Ghuti (Ch. 48+500 to Ch. 47+500) section of Delhi- Vadodra Green field Alignment on EPC mode under Bharatmala Pariyojana in the state of Haryana.

- (i) The Scheduled Completion Date shall occur on the 730<sup>th</sup> (Seven Hundred Thirtieth) day from the Appointed Date.
- (ii) On or before the Scheduled Completion Date, the Contractor shall have completed construction in accordance with this Agreement.

**6. Extension of time**

Upon extension of any or all of the aforesaid Project Milestones or the Scheduled Completion Date, as the case may be, under and in accordance with the provisions of this Agreement, the Project Completion Schedule shall be deemed to have been amended accordingly.



Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch Khapur Ghats (km 18+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-308A) on KPC mode under Bharatmala Pariyojana in the state of Haryana.

## Schedule - K

(See Clause 12.1 (ii))

### Tests on Completion

#### 1. Schedule for Tests

- (i) The Contractor shall, no later than 30 (thirty) days prior to the likely completion of construction, notify the Authority's Engineer and the Authority of its intent to subject the Project Highway to Tests, and no later than 10 (ten) days prior to the actual date of Tests, furnish to the Authority's Engineer and the Authority detailed inventory and particulars of all works and equipment forming part of Works.
- (ii) The Contractor shall notify the Authority's Engineer of its readiness to subject the Project Highway to Tests at any time after 10 (ten) days from the date of such notice, and upon receipt of such notice, the Authority's Engineer shall, in consultation with the Contractor, determine the date and time for each Test and notify the same to the Authority who may designate its representative to witness the Tests. The Authority's Engineer shall thereupon conduct the Tests itself or cause any of the Tests to be conducted in accordance with Article 12 and this Schedule-K.

#### 2. Tests

- (i) Visual and physical test: The Authority's Engineer shall conduct a visual and physical check of construction to determine that all works and equipment forming part thereof conform to the provisions of this Agreement. The physical tests shall be decided with Authority's Engineer at the time of physical tests as per relevant IRC code Manual
- (ii) Riding quality test: Riding quality of each lane of the carriageway shall be checked with the help of a Network Survey Vehicle (NSV) fitted with latest equipments and the maximum permissible roughness for purposes of this Test shall be 2,000 (two thousand) mm for each kilometre.
- (iii) Tests for bridges: All major and minor bridges shall be subjected to the rebound hammer and ultrasonic pulse velocity tests, to be conducted in accordance with the procedure described in Special Report No. 17: 1996 of the IRC Highway Research Board on Nondestructive Testing Techniques, at two spots in every span, to be chosen at random by the Authority's Engineer. Bridges with a span of 15 (fifteen) metres or more shall also be subjected to load testing.
- (iv) Other tests: The Authority's Engineer may require the Contractor to carry out or cause to be carried additional tests, in accordance with Good Industry Practice, for determining compliance of the Project Highway with Specifications and Standards except tests as specified in clause 5, but shall include measuring the

Construction of Eight Lane Expressway starting before KMP Expressway and ends at Chk 47+000 near Khanpur Ghat (km 18+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-150N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

reflectivity of road markings and road signs; and measuring the illumination level (lux) of lighting using requisite testing equipment.

- (v) Environmental audit: The Authority's Engineer shall carry out a check to determine conformity of the Project Highway with the environmental requirements set forth in Applicable Laws and Applicable Permits
- (vi) Safety Audit: The Authority's Engineer shall carry out, or cause to be carried out, a safety audit to determine conformity of the Project Highway with the safety requirements and Good Industry Practice.

### 3. Agency for conducting Tests

All Tests set forth in this Schedule-K shall be conducted by the Authority's Engineer or such other agency or person as it may specify in consultation with the Authority.

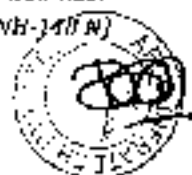
### 4. Completion Certificate

Upon successful completion of Tests, the Authority's Engineer shall issue the Completion Certificate in accordance with the provisions of Article 12.

- 5. The Authority Engineer will carry out tests with following equipment at his own cost in the presence of contractor's representative.

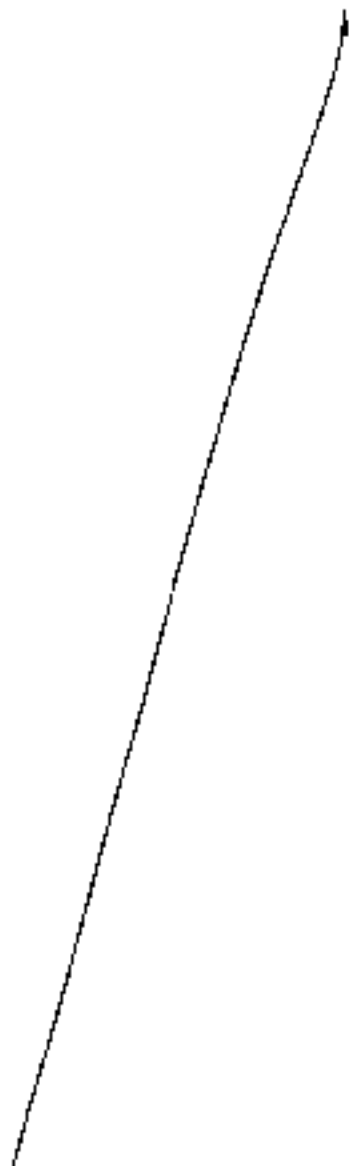
Sr. No.	Key metrics of Asset	Equipment to be used	Frequency of condition survey
1	Surface defects of pavement	Network Vehicle (NSV) Survey	At least twice a year (As per survey months defined for the state basis rainy season)
2	Roughness of pavement	Network Vehicle (NSV) Survey	At least twice a year (As per survey months defined for the state basis rainy season)
3	Strength of pavement	Falling Weight Deflectometer (FWD)	At least once a year
4	Bridges	Mobile Bridge Inspection Unit (MBU)	At least twice a year (As per survey months defined for the state basis rainy season)
5	Road signs	Retro-reflectometer	At least twice a year (As per survey months defined for the state basis rainy season)

Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khajpur Ghat (km 14+500 to km 47+500) section of Delhi-Varanasi Green field Alignment (NH-101B) on EPC mode under Bharatmala Pariyojana in the state of Haryana.





The first testing with the help of NSV shall be conducted at the time of issue of Completion Certificate.



Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Kankpur Ghat (km 18+500 to km 47+500) section of Delhi- Vadodra Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

**Schedule - I**

*(See Clause 12.2)*

**Completion Certificate**

1. I, ..... (Name of the Authority's Engineer), acting as the Authority's Engineer, under and in accordance with the Agreement dated ..... (the "Agreement"), for construction of eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) under Bharatmala Partyojana in the State of Haryana (the "Project Highway") on Engineering, Procurement and Construction (EPC) basis through ..... (Name of Contractor), hereby certify that the Tests in accordance with Article 12 of the Agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement, and I am satisfied that the Project Highway can be safely and reliably placed in service of the Users thereof
2. It is certified that, in terms of the aforesaid Agreement, all works forming part of Project Highway have been completed, and the Project Highway is hereby declared fit for entry into operation on this the ..... day of ..... 20...., Scheduled Completed Date for which was the ..... day of ..... 20....

SIGNED, SEALED AND DELIVERED

For and on behalf of the Authority's Engineer by:

[Signature]

[Name]

[Designation] [Address]



*Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch 47+000 near Khanpur Ghati (km 18+500 to km 47+500) section of Delhi- Vadodara Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.*

## Schedule - M

(See Clauses 14.6, 15.2 and 19.7)

### Payment Reduction for Non-Compliance

#### 1. Payment reduction for non-compliance with the Maintenance Requirements

- (i) Monthly lump sum payments for maintenance shall be reduced in the case of non-compliance with the Maintenance Requirements set forth in Schedule-L.
- (ii) Any deduction made on account of non-compliance with the Maintenance Requirements shall not be paid even after compliance subsequently. The deductions shall continue to be made every month until compliance is done.
- (iii) The Authority's Engineer shall calculate the amount of payment reduction on the basis of weightage in percentage assigned to non-conforming items as given in Paragraph 2.

#### 2. Percentage reductions in lump sum payments on monthly basis

- (i) The following percentages shall govern the payment reduction:

S. No.	Item/Defect/Deficiency	Percentage
(a)	<b>Carriageway/Pavement</b>	
(i)	Potholes, cracks, other surface defects	15%
(ii)	Repairs of Edges, Rutting	5%
(b)	<b>Road, Embankment, Cuttings, Shoulders</b>	
(i)	Edge drop, inadequate cross fall, undulations, settlement, potholes, ponding, obstructions	10%
(ii)	Deficient slopes, raintents, disturbed pitching, vegetation growth, pruning of trees	5%
(c)	<b>Bridges and Culverts</b>	
(i)	Desilting, cleaning, vegetation growth, damaged pitching, flooring, parapets, wearing course, footpaths, any damage to foundations	20%
(ii)	Any Defects in super-structures, bearings and sub-structures	10%

Construction of **Four Lane Expressway** starting before KMP Expressway and ends at Ch. 47+000 near Khonpur Ghats (km 18+500 to km 47+500) section of Delhi-Vadodra Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

S. No.	Item/Defect/Deficiency	Percentage
(iii)	Painting, repairs/replacement kerbs, railings, parapets, guideposts/crash barriers	5%
<b>(d)</b>	<b>Roadside Drains</b>	
(i)	Cleaning and repair of drains	5%
<b>(e)</b>	<b>Road Furniture</b>	
(i)	Cleaning, painting, replacement of road signs, delineators, road markings, 200 m./km/5 <sup>th</sup> km stones	5%
<b>(f)</b>	<b>Miscellaneous Items</b>	
(i)	Removal of dead animals, broken down/accidented vehicles, fallen trees, road blockades or malfunctioning of mobile crane	10%
(ii)	Any other Defects in accordance with paragraph 1.	5%
<b>(g)</b>	<b>Defects in Other Project Facilities</b>	5%

- (ii) The amount to be deducted from monthly lump-sum payment for non-compliance of particular item shall be calculated as under:

$$R = \frac{P}{100} \times (M1 \text{ or } M2) \times \frac{L1}{L}$$

Where,

P= Percentage of particular item/Defect/deficiency for deduction

M1= Monthly lump-sum payment in accordance para 1.2 above of this Schedule

M2= Monthly lump-sum payment in accordance para 1.2 above of this Schedule

L1= Non complying length L = Total length of the road,

R= Reduction (the amount to be deducted for non-compliance for a particular item/Defect/deficiency)

The total amount of reduction shall be arrived at by summation of reductions for such items/Defects/deficiency or non-compliance.

For any Defect in a part of one kilometre, the non-conforming length shall be taken as one kilometre.



Construction of Bypass Road/Expressway starting before IAP Expressway and ends at Ch. 47+000 near Khanpur Ghari (km 18+500 to km 47+500) section of Delhi-Vadodra Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

## Schedule - N

(See Clause 18.1 (i))

### Selection of Authority's Engineer

#### 1. Selection of Authority's Engineer

- (i) The provisions of the Model Request for Proposal for Selection of Technical Consultants, issued by the Ministry of Finance in May 2009, or any substitute thereof shall apply for selection of an experienced firm to discharge the functions and duties of an Authority's Engineer.
- (ii) In the event of termination of the Technical Consultants appointed in accordance with the provisions of Paragraph 1.1, the Authority shall appoint another firm of Technical Consultants forthwith and may engage a government-owned entity in accordance with the provisions of Paragraph 3 of this Schedule-N.

#### 2. Terms of Reference

The Terms of Reference for the Authority's Engineer (the "TOR") shall substantially conform with Annex 1 to this Schedule N.

#### 3. Appointment of Government entity as Authority's Engineer

Notwithstanding anything to the contrary contained in this Schedule, the Authority may in its discretion appoint a government-owned entity as the Authority's Engineer; provided that such entity shall be a body corporate having as one of its primary functions the provision of consulting, advisory and supervisory services for engineering projects; provided further that a government-owned entity which is owned or controlled by the Authority shall not be eligible for appointment as Authority's Engineer.



Construction of Four Lane Expressway starting before RMP Expressway and ends at Ch. 47+000 near  
Khanpur Ghat (km 18+500 to km 47+500) section of Delhi-Varanasi Green field Alignment (NH-14B N)  
on EPC mode under Bharatmala Pariyojana in the state of Haryana.

Annex 1

(Schedule M)

**Terms of Reference for Authority's Engineer**

**1. Scope**

- (i) These Terms of Reference (the "TOR") for the Authority's Engineer are being specified pursuant to the EPC Agreement dated ..... (the "Agreement"), which has been entered into between the National Highways Authority of India, G-5 & 6, Sector-10, Dwarka, New Delhi-110075 (the "Authority") and M/s APCD Infratech Private Limited, 4th Floor, Universal Trade Tower, Sohna Road, Sector-49, Gurugram-122101 (Haryana) (the "Contractor")<sup>#</sup> for eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) under Bharatmala Pariyojana in the State of Haryana on Engineering, Procurement, Construction (EPC) basis, and a copy of which is annexed hereto and marked as Annex-A to form part of this TOR.

# - In case the bid of Authority's Engineer is invited simultaneously with the bid of EPC project then the status of bidding of EPC project only to be indicated.

- (ii) The TOR shall apply to construction and maintenance of the Project Highway.

**2. Definitions and Interpretation**

- (i) The words and expressions beginning with or in capital letters and not defined herein but defined in the Agreement shall have, unless repugnant to the context, the meaning respectively assigned to them in the Agreement.
- (ii) References to Articles, Clauses and Schedules in this TOR shall, except where the context otherwise requires, be deemed to be references to the Articles, Clauses and Schedules of the Agreement, and references to Paragraphs shall be deemed to be references to Paragraphs of this TOR.
- (iii) The rules of interpretation stated in Article 1 of the Agreement shall apply, mutatis mutandis, to this TOR.

**3. General**

- (i) The Authority's Engineer shall discharge its duties in a fair, impartial and efficient manner, consistent with the highest standards of professional integrity and Good Industry Practice.



Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (km 18+500 to km 47+500) section of Delhi - Vadodara Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

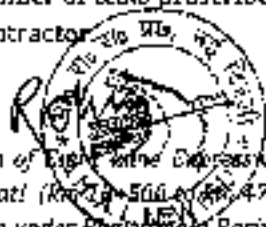
- (ii) The Authority's Engineer shall perform the duties and exercise the authority in accordance with the provisions of this Agreement, but subject to obtaining prior written approval of the Authority before determining:
- (a) any Time Extension;
  - (b) any additional cost to be paid by the Authority to the Contractor;
  - (c) the Termination Payment; or
  - (d) issuance of Completion Certificate or
  - (e) any other matter which is not specified in (a), (b), (c) or (d) above and which creates a financial liability on either Party.
- (iii) The Authority's Engineer shall submit regular periodic reports, at least once every month, to the Authority in respect of its duties and functions under this Agreement. Such reports shall be submitted by the Authority's Engineer within 10 (ten) days of the beginning of every month.
- (iv) The Authority's Engineer shall inform the Contractor of any delegation of its duties and responsibilities to its suitably qualified and experienced personnel; provided, however, that it shall not delegate the authority to refer any matter for the Authority's prior approval in accordance with the provisions of Clause 18.2.
- (v) The Authority's Engineer shall aid and advise the Authority on any proposal for Change of Scope under Article 13.
- (vi) In the event of any disagreement between the Parties regarding the meaning, scope and nature of Good Industry Practice, as set forth in any provision of the Agreement, the Authority's Engineer shall specify such meaning, scope and nature by issuing a reasoned written statement relying on good industry practice and authentic literature.

#### 4. Construction Period

- (i) During the Construction Period, the Authority's Engineer shall review and approve the Drawings furnished by the Contractor along with supporting data, including the geo-technical and hydrological investigations, characteristics of materials from borrow areas and quarry sites, topographical surveys, and the recommendations of the Safety Consultant in accordance with the provisions of Clause 10.1 (vi). The Authority's Engineer shall complete such review and approval and send its observations to the Authority and the Contractor within 15 (fifteen) days of receipt of such Drawings; provided, however that in case of a Major Bridge or Structure, the aforesaid period of 15 (fifteen) days may be extended upto 30 (thirty) days. In particular, such comments shall specify the conformity or otherwise of such Drawings with the Scope of the Project and Specifications and Standards.

Construction of Right Lane Expressway starting before KMP Expressway and ends at Ch. 42+000 Near Kharipur Choti (km 18+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

- (ii) The Authority's Engineer shall review and approve any revised Drawings sent to it by the Contractor and furnish its comments within 10 (ten) days of receiving such Drawings.
- (iii) The Authority's Engineer shall review and approve the Quality Assurance Plan submitted by the Contractor and shall convey its comments to the Contractor within a period of 21 (twenty one) days stating the modifications, if any, required thereto.
- (iv) The Authority's Engineer shall complete the review and approve of the methodology proposed to be adopted by the Contractor for executing the Works, and convey its comments to the Contractor within a period of 10 (ten) days from the date of receipt of the proposed methodology from the Contractor.
- (v) The Authority's Engineer shall grant written approval to the Contractor, where necessary, for interruption and diversion of the flow of traffic in the existing lane(s) of the Project Highway for purposes of maintenance during the Construction Period in accordance with the provisions of Clause 10.4.
- (vi) The Authority's Engineer shall review the monthly progress report furnished by the Contractor and send its comments thereon to the Authority and the Contractor within 7 (seven) days of receipt of such report.
- (vii) The Authority's Engineer shall inspect the Construction Works and the Project Highway and shall submit a monthly Inspection Report bringing out the results of inspections and the remedial action taken by the Contractor in respect of Defects or deficiencies. In particular, the Authority's Engineer shall include in its Inspection Report, the compliance of the recommendations made by the Safety Consultant.
- (viii) The Authority's Engineer shall conduct the pre-construction review of manufacturer's test reports and standard samples of manufactured Materials, and such other Materials as the Authority's Engineer may require.
- (ix) For determining that the Works conform to Specifications and Standards, the Authority's Engineer shall require the Contractor to carry out, or cause to be carried out, tests at such time and frequency and in such manner as specified in the Agreement and in accordance with Good Industry Practice for quality assurance. For purposes of this Paragraph 4 (ix), the tests specified in the IRC Special Publication-11 (Handbook of Quality Control for Construction of Roads and Runways) and the Specifications for Road and Bridge Works issued by MORTH (the "Quality Control Manuals") or any modification/substitution thereof shall be deemed to be tests conforming to Good Industry Practice for quality assurance.
- (x) The Authority's Engineer shall test check at least 50 (fifty) percent of the quantity or number of tests prescribed for each category or type of test for quality control by the Contractor.



*Construction of EPC of the Expressway starting before RMP Expressway and ends at Ch. 47+000 near Khaupur Ghat (Km 47+500 to 47+506) section of Delhi-Vadodra Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.*



- (xi) The timing of tests referred to in Paragraph 4 (ix), and the criteria for acceptance/rejection of their results shall be determined by the Authority's Engineer in accordance with the Quality Control Manuals. The tests shall be undertaken on a random sample basis and shall be in addition to, and independent of, the tests that may be carried out by the Contractor for its own quality assurance in accordance with Good Industry Practice.
- (xii) In the event that results of any tests conducted under Clause 11.10 establish any Defects or deficiencies in the Works, the Authority's Engineer shall require the Contractor to carry out remedial measures.
- (xiii) The Authority's Engineer may instruct the Contractor to execute any work which is urgently required for the safety of the Project Highway, whether because of an accident, unforeseeable event or otherwise; provided that in case of any work required on account of a Force Majeure Event, the provisions of Clause 21.6 shall apply.
- (xiv) In the event that the Contractor fails to achieve any of the Project Milestones, the Authority's Engineer shall undertake a review of the progress of construction and identify potential delays, if any. If the Authority's Engineer shall determine that completion of the Project Highway is not feasible within the time specified in the Agreement, it shall require the Contractor to indicate within 15 (fifteen) days the steps proposed to be taken to expedite progress, and the period within which the Project Completion Date shall be achieved. Upon receipt of a report from the Contractor, the Authority's Engineer shall review the same and send its comments to the Authority and the Contractor forthwith.
- (xv) The Authority's Engineer shall obtain from the Contractor a copy of all the Contractor's quality control records and documents before the Completion Certificate is issued pursuant to Clause 12.2.
- (xvi) Authority's Engineer may recommend to the Authority suspension of the whole or part of the Works if the work threatens the safety of the Users and pedestrians. After the Contractor has carried out remedial measure, the Authority's Engineer shall inspect such remedial measures forthwith and make a report to the Authority recommending whether or not the suspension hereunder may be revoked.
- (xvii) In the event that the Contractor carries out any remedial measures to secure the safety of suspended works and Users, and requires the Authority's Engineer to inspect such works, the Authority's Engineer shall inspect the suspended works within 3 (three) days of receiving such notice, and make a report to the Authority forthwith, recommending whether or not such suspension may be revoked by the Authority.
- (xviii) The Authority's Engineer shall carry out, or cause to be carried out, all the Tests specified in Schedule K and issue a Completion Certificate, as the case may be. For carrying out its functions under this Paragraph 4 (xviii) and all matters incidental

Construction of EPC mode under Bharatmala Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (km 47+000 to km 47+600) section of Delhi-Vadodara Green field Alignment (MS-346-N) on EPC mode under Bharatmala Expressway in the state of Haryana.

hereto, the Authority's Engineer shall act under and in accordance with the provisions of Article 12 and Schedule-K.

#### 5. Maintenance Period

- (i) The Authority's Engineer shall aid and advise the Contractor in the preparation of its monthly Maintenance Programme and for this purpose carry out a joint monthly inspection with the Contractor.
- (ii) The Authority's Engineer shall undertake regular inspections, at least once every month, to evaluate compliance with the Maintenance Requirements and submit a Maintenance Inspection Report to the Authority and the Contractor.
- (iii) The Authority's Engineer shall specify the tests, if any, that the Contractor shall carry out, or cause to be carried out, for the purpose of determining that the Project Highway is in conformity with the Maintenance Requirements. It shall monitor and review the results of such tests and the remedial measures, if any, taken by the Contractor in this behalf.
- (iv) In respect of any defect or deficiency referred to in Paragraph 3 of Schedule- E, the Authority's Engineer shall, in conformity with Good Industry Practice, specify the permissible limit of deviation or deterioration with reference to the Specifications and Standards and shall also specify the time limit for repair or rectification of any deviation or deterioration beyond the permissible limit.
- (v) The Authority's Engineer shall examine the request of the Contractor for closure of any lane(s) of the Project Highway for undertaking maintenance/repair thereof, and shall grant permission with such modifications, as it may deem necessary, within 5 (five) days of receiving a request from the Contractor. Upon expiry of the permitted period of closure, the Authority's Engineer shall monitor the reopening of such lane(s), and in case of delay, determine the Damages payable by the Contractor to the Authority under Clause 14.5.

#### 6. Determination of costs and time

- (i) The Authority's Engineer shall determine the costs, and/or their reasonableness, that are required to be determined by it under the Agreement.
- (ii) The Authority's Engineer shall determine the period of Time Extension that is required to be determined by it under the Agreement.
- (iii) The Authority's Engineer shall consult each Party in every case of determination in accordance with the provisions of Clause 18.5.

#### 7. Payments



Construction of Right-of-Way for Expressway starting before KMP Expressway and ends at Ch. 47+000 near  
Khanpur Ghati (km 47+500 to km 47+500) section of Delhi-Vadodara Green field Alignment. (NH-148 N)  
on EPC mode under Uharadhala Pariyojana in the state of Haryana.

- (i) The Authority's Engineer shall withhold payments for the affected works for which the Contractor fails to revise and resubmit the Drawings to the Authority's Engineer in accordance with the provisions of Clause 10.2 (iv) (d).
- (ii) Authority's Engineer shall -
- (a) within 10 (ten) days of receipt of the Stage Payment Statement from the Contractor pursuant to Clause 19.4, determine the amount due to the Contractor and recommend the release of 90 (ninety) percent of the amount so determined as part payment, pending issue of the Interim Payment Certificate; and
- (b) within 15 (fifteen) days of the receipt of the Stage Payment Statement referred to in Clause 19.4, deliver to the Authority and the Contractor an Interim Payment Certificate certifying the amount due and payable to the Contractor, after adjustments in accordance with the provisions of Clause 19.10
- (iii) The Authority's Engineer shall, within 15 (fifteen) days of receipt of the Monthly Maintenance Statement from the Contractor pursuant to Clause 19.6, verify the Contractor's monthly statement and certify the amount to be paid to the Contractor in accordance with the provisions of the Agreement.
- (iv) The Authority's Engineer shall certify final payment within 30 (thirty) days of the receipt of the final payment statement of Maintenance in accordance with the provisions of Clause 19.16

#### 8. Other duties and functions

The Authority's Engineer shall perform all other duties and functions as specified in the Agreement.

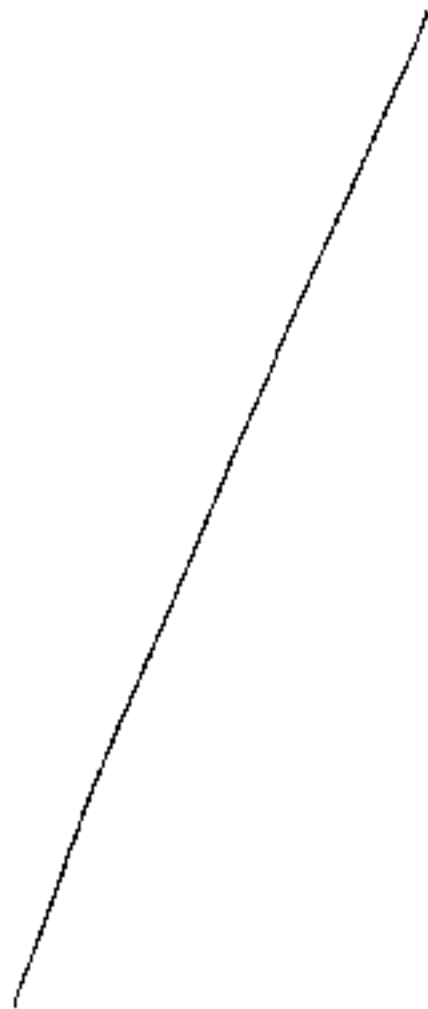
#### 9. Miscellaneous

- (i) A copy of all communications, comments, instructions, Drawings or Documents sent by the Authority's Engineer to the Contractor pursuant to this TOR, and a copy of all the test results with comments of the Authority's Engineer thereon, shall be furnished by the Authority's Engineer to the Authority forthwith.
- (ii) The Authority's Engineer shall retain at least one copy each of all Drawings and Documents received by it, including 'as-built' Drawings, and keep them in its safe custody.
- (iii) Within 90 (ninety) days of the Project Completion Date, the Authority's Engineer shall obtain a complete set of as-built Drawings, in 2 (two) hard copies and in micro film form or in such other medium as may be acceptable to the Authority, reflecting the Project Highway as actually designed, engineered and constructed, including an as-

Construction of 2000 Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Km 18+500 to Km 47+500) section of Delhi-Vadodara Green field Allignment (NH-1400) on EPC mode under Bharatnala Pariyojana in the state of Haryana.

built survey illustrating the layout of the Project Highway and setback lines, if any, of the buildings and structures forming part of Project Facilities; and shall hand them over to the Authority against receipt thereof.

- (iv) The Authority's Engineer, if called upon by the Authority or the Contractor or both, shall mediate and assist the Parties in arriving at an amicable settlement of any Dispute between the Parties.
- (v) The Authority's Engineer shall inform the Authority and the Contractor of any event of Contractor's Default; within one week of its occurrence.



*Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch 47+000 near Khropur Ghati (km 18+500 to km 47+500) section of Delhi-Vardohra Green field Alignment (NH-142 N) on FPC mode under Bharatmala Pariyojana in the state of Haryana.*

## Schedule - O

(See Clauses 19.4 (i), 19.6 (i), and 19.8 (i))

### Forms of Payment Statements

#### 1. Stage Payment Statement for Works

The Stage Payment Statement for Works shall state:

- (a) the estimated amount for the Works executed in accordance with Clause 19.3 (i) subsequent to the last claim;
- (b) amounts reflecting adjustments in price for the aforesaid claim;
- (c) the estimated amount of each Change of Scope Order executed subsequent to the last claim;
- (d) amounts reflecting adjustment in price, if any, for (c) above in accordance with the provisions of Clause 13.2 (ib) (a);
- (e) total of (a), (b), (c) and (d) above;
- (f) Deductions:
  - i. Any amount to be deducted in accordance with the provisions of the Agreement except taxes;
  - ii. Any amount towards deduction of taxes; and
  - iii. Total of (i) and (ii) above.
- (g) Net claim: (e) - (f) (iii);
- (h) The amounts received by the Contractor upto the last claim:
  - i. For the Works executed (excluding Change of Scope orders);
  - ii. For Change of Scope Orders, and
  - iii. Taxes deducted

#### 2. Monthly Maintenance Payment Statement

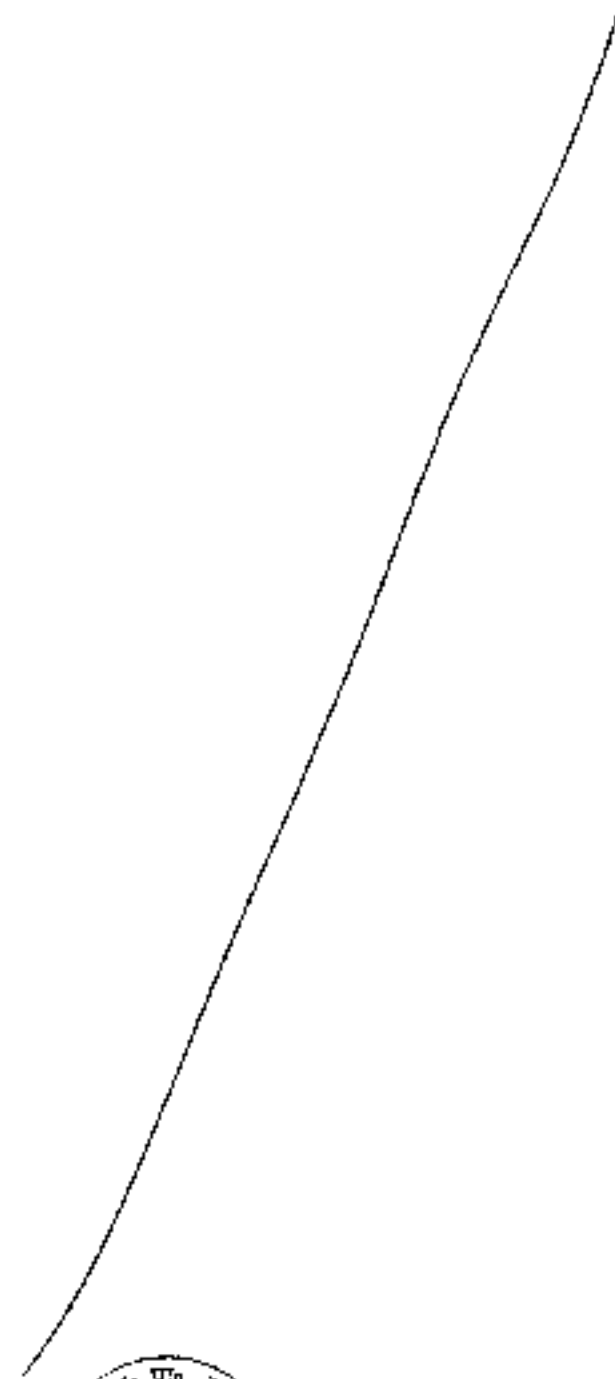
The monthly Statement for Maintenance Payment shall state:

- (a) the monthly payment admissible in accordance with the provisions of the Agreement;
- (b) the deductions for maintenance work not done;
- (c) net payment for maintenance due, (a) minus (b);
- (d) amounts reflecting adjustments in price under Clause 19.12; and
- (e) amount towards deduction of taxes

#### 3. Contractor's Claim for Damages

Contract for the construction of the **Right Lane Expressway** starting before **KMP Expressway** and ends at **Ch. 47+000** near **Khanpur Gatt (km 46+500 to km 47+500) section of Delhi-Vanderar Green field Alignment (NH-148 II)** on EPC mode under **Sharatmata Pariyojana** in the state of **Haryana**

**Note:** The Contractor shall submit its claims in a form acceptable to the Authority.



*Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (km 18+500 to km 47+500) section of Delhi-Vadodra Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.*

## Schedule - P

(See Clause 20.1)

### Insurance

#### 1. Insurance during Construction Period

- (i) The Contractor shall effect and maintain at its own cost, from the Appointed Date till the date of issue of the Completion Certificate, the following insurances for any loss or damage occurring on account of Non Political Event of Force Majeure, malicious act, accidental damage, explosion, fire and terrorism:
- (a) insurance of Works, Plant and Materials and an additional sum of 15 (fifteen) per cent of such replacement cost to cover any additional costs of and incidental to the rectification of loss or damage including professional fees and the cost of demolishing and removing any part of the Works and of removing debris of whatsoever nature; and
  - (b) insurance for the Contractor's equipment and Documents brought onto the Site by the Contractor, for a sum sufficient to provide for their replacement at the Site.
- (ii) The insurance under sub para (a) and (b) of paragraph 1(i) above shall cover the Authority and the Contractor against all loss or damage from any cause arising under paragraph 1.1 other than risks which are not insurable at commercial terms.

#### 2. Insurance for Contractor's Defects Liability

The Contractor shall effect and maintain insurance cover of not less than 25% of the Contract Price for the Works from the date of issue of the Completion Certificate until the end of the Defects Liability Period for any loss or damage for which the Contractor is liable and which arises from a cause occurring prior to the issue of the Completion Certificate. The Contractor shall also maintain other insurances for maximum sums as may be required under the Applicable Laws and in accordance with Good Industry Practice.

#### 3. Insurance against injury to persons and damage to property

- (i) The Contractor shall insure against its liability for any loss, damage, death or bodily injury, or damage to any property (except things insured under Paragraphs 1 and 2 of this Schedule or to any person (except persons insured under Clause 20.9), which may arise out of the Contractor's performance of this Agreement. This insurance shall be for a limit per occurrence of not less than the amount stated below with no limit on the number of occurrences.

This insurance cover shall be not less than Rs. 2,00,00,000/- (Rupees two crore only)

Construction of Delhi-Ludhiana Expressway starting before KMP Expressway and ends at Cl. 17+000 near Khanpur Ghos (from 18+500 to km 47+500) section of Delhi-Vadodra Green field Alignment (NH-150, N) as EPC mode under Bharatmala Pariyojana in the state of Haryana

- (ii) The insurance shall be extended to cover liability for all loss and damage to the Authority's property arising out of the Contractor's performance of this Agreement excluding:
- (a) the Authority's right to have the construction works executed on, over, under, in or through any land, and to occupy this land for the Works; and
  - (b) damage which is an unavoidable result of the Contractor's obligations to execute the Works.

**4. Insurance to be in joint names**

The insurance under paragraphs 1 to 3 above shall be in the joint names of the Contractor and the Authority



Construction of Eight Lane Expressway starting before KMI Expressway and ends at Ch 47+000 near  
Khanpur Ghat (km 16+500 to km 47+500) section of Delhi- Vadodara Green field Alignment (NH-148 N)  
on EPC mode under Bharatmala Pariyojana in the state of Gujarat



## Schedule-Q

(See Clause 14.10)

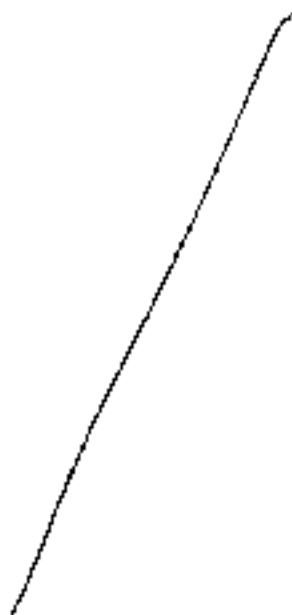
### Tests on Completion of Maintenance Period

**1. Riding Quality test:**

Riding quality test: Riding quality of each lane of the carriageway shall be checked with the help of a calibrated bump integrator and the maximum permissible roughness for purposes of this Test shall be 2,200 (two thousand and two hundred only) mm for each kilometre.

**2. Visual and physical test:**

*The Authority's Engineer shall conduct a visual and physical check of construction to determine that all works and equipment forming part thereof conform to the provisions of this Agreement. The physical tests shall include measurement of cracking, rutting, stripping and potholes and shall be as per the requirement of maintenance mentioned in Schedule-E.*



Construction of Eight Lane Expressway starting before KMI\* Expressway and ends at Ch. Khajpur Ghat (km 18+500 to km 47+500) section of Delhi-Vadodara Green field Alignment (NH-346) on EPC mode under Bharatmala Pariyojana in the state of Haryana

## Schedule-B

(See Clause 14.10)

### Taking Over Certificate

I, ..... (Name and designation of the Authority's Representative) under and in accordance with the Agreement dated ..... (the "Agreement"), for construction of eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) under Bharatmala Pariyojana in the State of Haryana (the "Project Highway") on Engineering, Procurement and Construction (EPC) basis through M/s APCO Infotech Private Limited, 4th Floor, Universal Trade Tower, Sohna Road, Sector-49, Gurugram-122101 (Haryana), hereby certify that the Tests on completion of Maintenance Period in accordance with Article 14 of the Agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement and I hereby certify that the Authority has taken over the Project Highway from the Contractor on this day.....

SIGNED, SEALED AND DELIVERED

(Signature)

(Name and designation of Authority's Representative)

(Address)



Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (km 18+500 to km 47+500) section of Delhi- Vadodara Green field Alignment (NH-148 N) on EPC mode under Bharatmala Pariyojana in the state of Haryana.

\*\*\*\*\* End of the Document \*\*\*\*\*



Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (km 18+500 to km 47+500) section of Delhi- Vadodara Green field Alignment (NIT-48 N) on EPC mode under Bharatmala Porayojana in the state of Haryana.

# ANNEXURES

**NATIONAL HIGHWAYS AUTHORITY OF INDIA**  
**G-5 & 6, SECTOR-10, DWARKA, NEW DELHI-110075**

**Notice Inviting Bid**

Bid/ Package no. NHAI/BM/ Delhi-Vadodara/2018/Pkg2

Dated: 23.08.2018

**RFP for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana**

The Ministry of Road Transport & Highways through National Highway Authority of India is engaged in the development of National Highways and as part of this endeavour, it has been decided to undertake **Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana** through an Engineering, Procurement and Construction (EPC) Contract.

National Highways Authority of India represented by its Chairman now invites bids from eligible contractors for the following project:

State	NH No.	ICB No.	Name of work	Estimated cost	Completion period	Maintenance period
Haryana	148N	NHAI/BM/Delhi-Vadodara/2018/Pkg2	Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana	Rs. 1017.68 Crore	2 years	4 Years

The complete BID document can be viewed / downloaded from official portal of NHAI <http://www.nhai.org> or e-procurement portal of NHAI <http://etenders.gov.in> from 24.08.2018 to 10.10.2018 (upto 1100 Hrs. IST). Bid must be submitted online only at <http://etenders.gov.in> on or before 10.10.2018 (upto 1100 hours IST). Bids received online shall be opened on 11.10.2018 (at 1130 hours IST).

Bid through any other mode shall not be entertained. However, Bid Security, document fee, Power of Attorney, Joint Bidding Agreement etc. shall be submitted physically by the Bidder on or before 11.10.2018 (upto 1100 hours IST). Please note that the National Highways Authority of India reserves the right to accept or reject all or any of the BIDs without assigning any reason whatsoever.

Officer in-charge

Mr. Rohin Kumar Gupta

General Manager (T)

National Highways Authority of India.

G-5 & 6, Sector-10, Dwarka, New Delhi-110075

Phone: +91-11-25074100/200 (Extn.: 1111)

E-mail: [rohin.gupta@nhai.org](mailto:rohin.gupta@nhai.org)



**PROCEDURE UNDER E-TENDERING**

**INSTRUCTIONS TO BIDDER FOR e-TENDERING**

(Note: RFP stands modified to the extent required as per these instructions)

- a. **Name of Work: Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana**

**Definitions:**

- b. **National Informatics Centre (NIC):** A service provider to develop and customize the software and facilitate the process of e-tendering on application service provider model.
- c. **<http://etenders.gov.in>:** An e-tendering portal of National Highways Authority of India ("NHAI") introduced for the process of e-tendering which can be accessed on <http://etenders.gov.in>.
- d. Words in capital and not defined in this document shall have the same meaning as in the Request for Proposal ("RFP").

**1. Accessing/ Purchasing of BID documents**

- (i) It is mandatory for all the bidders to have class-III Digital Signature Certificate (DSC) with Signature and encryption component (in the name of Authorized Signatory/ person granting POA) from any of the licensed Certifying Agency (Bidders can see the list of licensed CAs from the link [www.cca.gov.in](http://www.cca.gov.in)) to participate in e-tendering of National Highways Authority of India, New Delhi.

It should be in corporate capacity (that is in Bidder capacity / in case of JV in the Lead Member capacity, as applicable) Please ensure the submission of document certifying the class III DSC.

- (ii) The Authorized Signatory holding Power of Attorney (POA) or the person executing/delegating such POA shall only be the Digital Signatory. In other cases, the Bid shall be considered non-responsive.
- (iii) To participate in the bidding, it is mandatory for the bidders to get registered their firm / Joint Venture with e-tendering portal of NHAI <http://etenders.gov.in> to have user ID & password which has to be obtained free of cost.
- (iv) It is also mandatory for the Bidders to get their firms registered on BIMS portal at

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Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana



[www.bims.gov.in](http://www.bims.gov.in). The Bidders shall update their project and other details on a regular basis and apply to the tenders via the portal.

**Following may kindly be noted:**

- (a) Registration should be valid at least up to the date of submission of BID.
  - (b) BIDs can be submitted only during the validity of their registration with the <http://etenders.gov.in>.
  - (c) The amendments / clarifications to the BID document, if any, will be hosted on the NHAI website (<http://nhai.org>) / NHAI e-tendering portal <http://etenders.gov.in>.
  - (d) If the firm / Joint Venture is already registered with e-tendering portal of NHAI, Government of India and validity of registration is not expired the firm / Joint Venture is not required a fresh registration.
- (v) The complete BID document can be viewed / downloaded by the Bidder from e-procurement portal of NHAI <http://etenders.gov.in> or from the BIMS portal [www.bims.gov.in](http://www.bims.gov.in) or official portal of NHAI i.e. <http://www.nhai.org> or from 24.08.2018 to 10.10.2018 (upto 1100 Hrs. IST).
- (vi) To participate in bidding, bidders have to pay a sum of Rs. 1,10,000/- (Rs. One Lakh and Ten Thousand only) as a cost of the RFP process (non-refundable) in favour of "National Highways Authority of India", Payable at New Delhi in the form of Demand Draft.

**2. Preparation & Submission of BIDs:**

- (i) Detailed tender documents for RFP may be viewed / downloaded by the Bidder from e-procurement portal of NHAI <http://etenders.gov.in> or from the BIMS portal [www.bims.gov.in](http://www.bims.gov.in) or official portal of NHAI i.e. <http://www.nhai.org> from 24.08.2018 to 10.10.2018 (up to 1100 Hrs. IST) and tender may be submitted online following the instruction appearing on the screen. A buyer manual containing the detailed guidelines for e-procurement is also available on e-procurement portal of NHAI. Similarly, a bidder manual containing the detailed guidelines for registering, updating data and applying for bids, is available on the BIMS portal.

Bid must be submitted online only through e-procurement portal of NHAI <http://etenders.gov.in> using the digital signature of authorised representative of the Bidder and the Bidder must apply on the BIMS portal on or before 10.10.2018 (upto 1100 hours IST).

- (ii) The following documents shall be prepared and scanned in different files (in PDF or RAR format such that file size is not more than 30 MB) and uploaded during the online submission of BID.



**A. Only Electronic Form (to be uploaded on the <https://etenders.gov.in>)**  
**(Refer to Clause 2.11.1 of the RFP)**

**I. Technical Bid**

The Bidder shall first upload all the project details, net worth details, turnover details, bridge and tunnel details and all other details required on the BIMS portal for technical qualification. The Bidder shall ensure that all the details are updated as on the date of submission of this Bid.

The bidder shall then apply for the RFP on NHAI's e-tender portal <http://etenders.gov.in> and the BIMS portal [www.bims.gov.in](http://www.bims.gov.in) by submitting the documents mentioned below along with the supporting documents which shall comprise of the Technical BID on the BIMS portal:

- (a) Appendix-LA (Letter comprising the Technical Bid) including Annexure I, IV and V and supporting certificates / documents;
- (b) Power of Attorney for signing the BID as per the format at Appendix-III;
- (c) if applicable, Power of Attorney for Lead Member of Joint Venture as per the format at Appendix-IV;
- (d) if applicable, Joint Bidding Agreement for Joint Venture as per the format at Appendix-V;
- (e) Deleted;
- (f) BID Security of Rs 10.18 Crore (Rupees Ten Crore and Eighteen Lakh only) in the form of Bank Guarantee in the format at Appendix-II from a Scheduled Bank;
- (g) Copy of demand draft towards the cost of Bid document of Rs 1,10,000/- (Rupees One Lakh and Ten Thousand only) to National Highways Authority of India payable at New Delhi towards cost of Bid document.
- (h) Deleted;
- (i) Bidder shall comply with the provisions of Office Memorandum No. RW/NH-370104/2010/PIC-EAP(Printing) dated 22.02.2016 and its subsequent amendments if any, issued by MoRT&H (Appendix-VI) regarding Integrity Pact (IP) and the Integrity Pact (IP) duly signed by Authorised signatory shall be submitted by the Bidder with the RFP Bid & shall be part of the Contract Agreement;
- (j) An undertaking from the person having PoA referred to in Sub. Clause-(b) above that they agree and abide by the Bid documents uploaded by NHAI and

Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Km 18+500 to Km 47+000) section of Delhi - Vadodra Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the form of a





amendments uploaded, if any; and

Financial Bid

- (k) Appendix-IB (Letter comprising the Financial Bid) shall be submitted online through e-procurement portal <http://tenders.gov.in> on or before 1100 hrs IST on 10.10.2018

**R. The Bidder shall submit the following documents physically: (Refer to Clause 2.11.2 of the RFP)**

- (a) Original Power of Attorney for signing the BID as per format at Appendix-III.
- (b) if applicable, Original Power of Attorney for Lead Member of Joint Venture as per the format at Appendix-IV;
- (c) if applicable, Original Joint Bidding Agreement for Joint Venture as per the format at Appendix-V;
- (d) BID Security of Rs. 10.18 Crores (Rupees Nine Crore and Fifty Nine Lakh only) in the form of Original Bank Guarantee in the format at Appendix-II from a Scheduled Bank;
- (e) Copy of Demand Draft towards payment of cost of Bid document of Rs. 1,00,000/- (Rupees One Lakh only) in favour of National Highways Authority of India payable at New Delhi,;
- (f) Deleted,
- (g) Bidder shall comply with the provisions of Office Memorandum No. RW/NH-37010/4/2010/PIC-EAP(Printing) dated 22.02.2016 and its subsequent amendments if any issued by MoRT&H (Appendix-VI) regarding Integrity Pact (IP) and the Integrity Pact (IP) duly signed by Authorised signatory shall be submitted by the Bidder with the RFP Bid& shall be part of the Contract Agreement; and
- (h) An undertaking from the person having PoA referred to in Sub. Clause-(a) above that they agree and abide by the Bid documents uploaded by NHAI and amendments uploaded, if any
- (m) The Bidder shall submit the original documents specified above in point no. 2 (ii) (B) together with their respective enclosures and seal it in an envelope and mark the envelope as "Bids". The said envelope shall clearly bear the name of the Project and name and address of the Bidder. In addition, the Bid Due Date should be indicated on the right and corner of the envelope. The original documents should be submitted before 1100 hours Indian Standard Time on 11.10.2018 at the below mentioned address in the manner and

Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 45+000 near Khaspur Ghat (Km 18+500 to Km 45+000) section of Delhi - Vadodra Green field Alignment (NH 148N) on FPC Mode under Bharatmala Pariyojita in the state of Haryana



form as detailed in the RFP. A receipt thereof should be obtained from the below mentioned person.

ATTN. OF	:	Rohin Kumar Gupta
DESIGNATION	:	General Manager (T)
ADDRESS	:	National Highways Authority of India, G-5&6, Sector-10, Dwarka, New Delhi-110075
PHONE NO.	:	+91-11-25074100/200 (Extn. 1111)
E-MAILADDRESS	:	rohingupta@nhai.org

The Bidder shall upload scanned copies of the documents as specified in point no. 2(ii)(A)&(B) above on the <http://etenders.gov.in> before 1100 hours Indian Standard Time, on the Bid Due Date i.e. 10.10.2018. In the event of any discrepancy between the original and the copy (in electronic form), the original shall prevail.

- (iv) It may be noted that scan copies can be prepared in different file format i.e. PDF or RAR only. The Bidders can upload a single file of size of 50MB only but can upload multiple files.

**3. AMENDMENT OF RFP:**

Any Addendum to the RFP shall be uploaded only on the <http://etenders.gov.in>. (Refer Clause 2.9.2 of the RFP)

**4. MODIFICATION/SUBSTITUTION/WITHDRAWAL OF BIDS (Refer Clause 2.14.3 of the RFP):**

- The Bidder may modify, substitute or withdraw its e-BID after submission prior to the BID Due Date. No BID can be modified, substituted or withdrawn by the Bidder on or after the BID Due Date & Time.
- For modification of e-BID, Bidder has to detach its old BID from e-procurement portal and upload / resubmit digitally signed modified BID. For withdrawal of BID, bidder has to click on withdrawal icon at e-procurement portal and can withdraw its e-BID. Before withdrawal of a BID, it may specifically be noted that after withdrawal of a BID for any reason, Bidder cannot re-submit e-BID again. For modification of the application mode (sole/IV), Bidder has to switch the mode according to the guidelines provided in the aforementioned Bidder Manual available on the BIMS portal. For withdrawal of Bid, the bidder can click on 'Delete Participation' as mentioned in the guidelines in the Bidder Manual.

**5. OPENING AND EVALUATION OF BIDS (Refer to Clause 3.1 of the RFP):**

Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch 47+000 near Khropur Ghati (Km 18+500 to Km 47+000) on the National Highway of Delhi - Vadodra Green field Alignment (NH 148N) on EPC Mode under Bharatmala Pariyojana, The State of Haryana



- (i) The Authority shall open documents of the Bid received in electronic form as mentioned in point nos. 2(u)(A) & (B) at 1130 hours Indian Standard Time on 11.10.2018, online, in the presence of the Bidders who choose to attend. Technical BID of only those bidders shall be online opened whose documents listed at clause 2.11.2 of the RFP have been physically received and the details have been uploaded on BIMS along with application to the tender on BIMS. The Authority will subsequently examine and evaluate the Bids in accordance with the provisions set out in the RFP.

Further, any falsification of any data uploaded on BIMS shall attract penalties, including complete rejection of the bid by the Authority.

#### **DISCLAIMER**

The Bidder must read all the instructions in the RFP and submit the same accordingly.



# Request For Proposal

For

RFP -  
Corrigendum - II  
Dated - 28-11-2018

**Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana**

on

**Engineering, Procurement & Construction (EPC) Mode**

**National Highways Authority of India  
(NHAI)**

**November 2018**

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**NATIONAL HIGHWAYS AUTHORITY OF INDIA,  
G-5 & 6, SECTOR-10, DWARKA, NEW DELHI-110075  
Notice Inviting Bid**

Bid/ Package no.NHA/BM/Delhi-Vadodara/2018/Pkg2

Dated 23.08.2018

RFP for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana

The Ministry of Road Transport & Highways through National Highways Authority of India is engaged in the development of National Highways and as part of this endeavour, it has been decided to undertake Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) under Bharatmala Pariyojana in the State of Haryana through an Engineering, Procurement and Construction (EPC) Contract.

The National Highways Authority of India represented by its Chairman now invites bids from eligible contractors for the following project:

State	NH No.	ICB No.	Name of work	Estimated cost	Completion period	Maintenance period
Haryana	148-N	NHA/BM/Delhi-Vadodara/2018/Pkg2	Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana	Rs. 1017.68 Crore	2 Years	10 Years

The complete BID document can be viewed / downloaded from official portal of NHA <http://www.nhai.org> or e-procurement portal of NHAI [<http://etenders.gov.in>] from 24.08.2018 to 27.12.2018 (upto 11.00 Hrs IST). Bidder must submit its Financial bid at <http://etenders.gov.in> and Technical Bid at <https://coins.gov.in> on or before (upto 11.00 hours IST). Bids received online shall be opened on 28.12.2018 (at 11.30 hours IST).

Bid through any other mode shall not be entertained. However, Bid Security, document fee, Power of Attorney and Joint Bidding Agreement etc. shall be submitted physically by the Bidder on or before 28.12.2018 (at 1100 hours IST). Please note that the Authority reserves the right to accept or reject all or any of the BIDs without assigning any reason whatsoever.

Officer In-charge  
NHAI  
Mr. Rohin Kumar



General Manager (T) - Bharatmala  
National Highways Authority of India,  
G-5&6, Sector-10, Dwarka, New Delhi-110075  
Phone: +91-11-25074100/200 (Extn. 1111)  
e-mail: rohangupta@nhai.org





## DISCLAIMER

The information contained in this Request for Proposal document (the "RFP") or subsequently provided to Bidder(s), whether verbally or in documentary or any other form by or on behalf of the Authority or any of its employees or advisors, is provided to Bidder(s) on the terms and conditions set out in this RFP and such other terms and conditions subject to which such information is provided.

This RFP is not an Agreement and is neither an offer nor invitation by the Authority to the prospective Bidders or any other person. The purpose of this RFP is to provide interested parties with information that may be useful to them in making their financial offers (BIDs) pursuant to this RFP. This RFP includes statements, which reflect various assumptions and assessments arrived at by the Authority in relation to the Project. Such assumptions, assessments and statements do not purport to contain all the information that each Bidder may require. This RFP may not be appropriate for all persons, and it is not possible for the Authority, its employees or advisors to consider the investment objectives, financial situation and particular needs of each party who reads or uses this RFP. The assumptions, assessments, statements and information contained in the Bidding Documents, especially the Feasibility Report, may not be complete, accurate, adequate or correct. Each Bidder should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements and information contained in this RFP and obtain independent advice from appropriate sources.

Information provided in this RFP to the Bidder(s) is on a wide range of matters, some of which may depend upon interpretation of law. The information given is not intended to be an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. The Authority accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed herein.

The Authority, its employees and advisors make no representation or warranty and shall have no liability to any person, including any Applicant or Bidder under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this RFP or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the RFP and any assessment, assumption, statement or information contained therein or deemed to form part of this RFP or arising in any way for participation in this BID Stage.

The Authority also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Bidder upon the statements contained in this RFP. The Authority may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumptions contained in this RFP.

The issue of this RFP does not imply that the Authority is bound to select a Bidder or to appoint the Selected Bidder JV or Contractor, as the case may be, for the Project and the Authority reserves the right to reject all or any of the Bidders or BIDs without assigning any reason whatsoever.

The Bidder shall bear all its costs associated with or relating to the preparation and submission of its BID including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by the Authority or any other costs incurred in connection with or relating to its BID. All such costs and expenses will remain with the Bidder and the Authority shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder in preparation or submission of the BID, regardless of the conduct or outcome of the Bidding Process.



## GLOSSARY

<b>Agreement</b>	As defined in Clause 1.1.4
<b>Authority</b>	As defined in Clause 1.1.1
<b>Bank Guarantee</b>	As defined in Clause 2.20.1
<b>BID(s)</b>	As defined in Clause 1.2.2
<b>Bidders</b>	As defined in Clause 1.2.1
<b>Bidding Documents</b>	As defined in Clause 1.1.5
<b>BID Due Date</b>	As defined in Clause 1.1.5
<b>Bidding Process</b>	As defined in Clause 1.2.1
<b>BID Security</b>	As defined in Clause 1.2.4
<b>BID Price or BID</b>	As defined in Clause 1.2.6
<b>Contractor</b>	As defined in Clause 1.1.2
<b>Construction Period</b>	As defined in Clause 1.2.6
<b>Conflict of Interest</b>	As defined in Clause 2.2.1(e)
<b>Defect Liability Period</b>	As defined in Clause 1.2.6
<b>Eligible Experience</b>	As defined in Clause 2.2.2.5 (i)
<b>Eligible Projects</b>	As defined in Clause 2.2.2.5 (i)
<b>EPC</b>	As defined in Clause 1.1.1
<b>EPC Contract</b>	As defined in Clause 1.1.2
<b>Estimated Project Cost</b>	As defined in Clause 1.1.3
<b>Feasibility Report</b>	As defined in Clause 1.2.3
<b>Financial Capacity</b>	As defined in Clause 2.2.2.3 (i)
<b>Government</b>	Government of India
<b>Joint Venture</b>	As defined in Clause 2.2.1
<b>Jt. Bidding Agreement</b>	As defined in Clause 2.1.11(f)
<b>Lead Member</b>	As defined in Clause 2.1.11 (c)
<b>Lowest Bidder</b>	As defined in Clause 1.2.6
<b>LOA</b>	As defined in Clause 3.3.4
<b>Net Worth</b>	As defined in Clause 2.2.2.9 (ii)
<b>Performance Security</b>	As defined in Clause 2.21.1
<b>Additional Performance Security</b>	As defined in Clause 2.21.1
<b>Project</b>	As defined in Clause 1.1.1
<b>Re. or Rs. or INR</b>	Indian Rupee
<b>RFP or Request for Proposals</b>	As defined in the Disclaimer
<b>Selected Bidder</b>	As defined in Clause 3.3.1
<b>Technical Capacity</b>	As defined in Clause 2.2.2.2 (i)
<b>Tie BIDs</b>	As defined in Clause 3.3.2
<b>Threshold Technical Capacity</b>	As defined in Clause 2.2.2.2 (i)

The words and expressions beginning with capital letters and defined in this document shall, unless repugnant to the context, have the meaning ascribed thereto herein.



**NATIONAL  
HIGHWAYS AUTHORITY OF INDIA**

**SECTION I**

**INTRODUCTION**

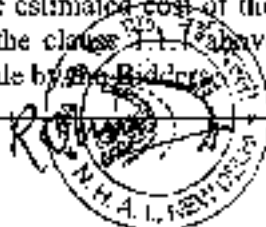
**1.1 Background**

- 1.1.1 The National Highways Authority of India represented by Chairman (the "Authority") is engaged in the development of National Highways and as part of this endeavour, the Authority has decided to undertake Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) under Bharatmala Pariyojana in the State of Haryana (the "Project") through an Engineering, Procurement and Construction (the "EPC") Contract, and has decided to carry out the bidding process for selection of a Bidder to whom the Project may be awarded. A brief description of the project may be seen in the Information Memorandum of the Project at the CPPP website [https:// www.etenders.gov.in](https://www.etenders.gov.in) & Authority's Website <https://nhai.gov.in>. Brief particulars of the Project are as follows:

Name of the National Highway	Length in Km	Estimated Project Cost (In Rs. cr.)	No of Years for completion of work <sup>2</sup>
Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana	28.500	1017.68	2 years

- 1.1.2 The selected Bidder (the "Contractor") shall be responsible for designing, engineering, procurement and construction of the Project under and in accordance with the provisions of an engineering, procurement and construction contract (the "EPC Contract") to be entered into between the Contractor and the Authority in the form provided by the Authority as part of the Bidding Documents pursuant hereto. The Contractor shall also be responsible for the maintenance of the project during the Defect Liability Period. The scope of work will broadly include Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana and maintenance of the Project during the Defect Liability Period, which shall be 10 years<sup>2</sup>.

- 1.1.3 The estimated cost of the Project (the "Estimated Project Cost") has been specified in the clause 1.1.2 above. The assessment of actual costs, however, will have to be made by the Bidder.



1.1.4 The Agreement sets forth the detailed terms and conditions for award of the project to the Contractor, including the scope of the Contractor's services and obligations.

1.1.5 The Authority shall receive BIDs pursuant to this RFP in accordance with the terms set forth in this RFP and other documents to be provided by the Authority pursuant to this RFP (collectively the "Bidding Documents"), and all BIDs shall be prepared and submitted in accordance with such terms on or before the BID due date specified in Clause 1.3 for submission of BIDs (the "BID Due Date").

1.2 **Brief description of Bidding Process**

1.2.1 The Authority has adopted a single stage two part system (referred to as the "Bidding Process") for selection of the Bidder for award of the Project. Under this process, the bid shall be invited under two parts. Eligibility and qualification of the Bidder will be first examined based on the details submitted under first part (Technical Bid) with respect to eligibility and qualifications criteria prescribed in this RFP (the "Bidder", which expression shall, unless repugnant to the context, include the members of the Joint Venture). The Financial Bid under the second part shall be opened of only those Bidders whose Technical Bids are responsive to eligibility and qualifications requirements as per this RFP.

GOI has issued guidelines (see Annexure VII of Appendix-A of RFP) for qualification of Bidders seeking to acquire stakes in any public sector enterprise through the process of disinvestment. These guidelines shall apply mutatis mutandis to this Bidding Process. The Authority shall be entitled to disqualify any Bidder in accordance with the aforesaid guidelines at any stage of the Bidding Process. Bidders must satisfy themselves that they are qualified to bid, and should give an undertaking to this effect in the form at Appendix-LA.

1.2.2 The Bid shall be valid for a period of 120 days from the date specified in Clause 1.3 for submission of BIDs.

<sup>1</sup> The categorization whether the project highway is constructed with flexible pavement or rigid pavement shall depend on the length of major length of the project highway to be covered with that type of pavement.

1.2.3 The complete Bidding Documents including the draft Agreement for the Project is enclosed for the Bidders. The Feasibility Report / Detailed Project Report prepared by the Authority/ consultants of the Authority (the "Feasibility Report/Detailed Project Report") is also enclosed. The Feasibility Report / Detailed Project Report of the Project is being provided only as a preliminary reference document by way of assistance to the Bidders who are expected to carry out their own surveys, investigations and other detailed examination of the Project before submitting their Bids. Nothing contained in the Feasibility Report/Detailed Project Report shall be binding on the Authority nor confer any right on the Bidders, and the Authority shall have no liability whatsoever in relation to or arising out of any or all contents of the Feasibility Report/Detailed Project Report. The aforesaid documents and any addenda issued subsequent to this RFP Document, will be deemed to form part of the Bidding Documents.

1.2.4 A Bidder is required to submit, along with its BID, a BID Security of Rs.10.18 crore (Rupees ten crore and eighteen lakh only) (the "BID Security"),



refundable not later than 150 (One hundred & fifty) days from the BID Due Date, except in the case of the Selected Bidder whose BID Security shall be retained till it has provided a Performance Security and Additional Performance Security (if any) as per the provision of this RFP and LOA. The Bidders shall also submit Demand Draft for Rs. 1,10,000/- (Rupees one lakh ten thousand only) issued from a scheduled Bank in India in favour of "Pay & Accounts Officer, National Highways Authority of India" payable at New Delhi.

- 1.2.5 Bidders are advised to examine the Project in greater detail, and to carry out, at their cost, such studies as may be required for submitting their respective BIDs for award of the contract including implementation of the Project.
- 1.2.6 BIDs will be evaluated for the Project on the basis of the lowest cost required by a Bidder for implementing the Project (the "**BID Price**"). The total time allowed for completion of construction under the Agreement (the "**Construction Period**") and the period during which the Contractor shall be liable for maintenance and rectification of any defect or deficiency in the Project after completion of the Construction Period (the "**Defect Liability Period**") shall be pre-determined, and are specified in the draft Agreement forming part of the Bidding Documents.

In this RFP, the term "**Lowest Bidder**" shall mean the Bidder who is quoting the lowest BID price.

- 1.2.7 Generally, the Lowest Bidder shall be the selected Bidder. In case such Lowest Bidder withdraws or is not selected for whatsoever reason except the reason mentioned in Clause 2.1.12 (b) (4), the Authority shall annul the Bidding Process and invite fresh BIDs.
- 1.2.8 Other details of the process to be followed under this bidding process and the terms thereof are spelt out in this RFP.
- 1.2.9 Any queries or request for additional information concerning this RFP shall be submitted by e-mail to the officer designated in Clause 2.11.4 below with identification/ title: "Queries / Request for Additional Information: RFP for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) under Bharatmala Pariyojana in the State of Haryana- Project".

### 1.3 Schedule of Bidding Process

The Authority shall endeavour to adhere to the following schedule:

Sl. No.	Event Description	Date
1.	Invitation of RFP (NIT)	23.08.2018
2.	Last date for receiving queries for 1 <sup>st</sup> pre bid meeting	18.09.2018 by 11.00 Hrs IST
3.	1 <sup>st</sup> pre bid meeting at venue 2.11.4 (c)	18.09.2018
4.	Authority response to 1 <sup>st</sup> pre bid meeting queries	02.11.2018



5.	Last date for receiving queries for 2 <sup>nd</sup> pre bid meeting	05.12.2018
6.	2 <sup>nd</sup> Pre-BID meeting at venue 2.11.4 (i)	05.12.2018 at 1200 Hours IST
7.	Authority response to queries latest by	12.12.2018
8.	Last date of Request for BID Document	27.12.2018 , up to 11.00 Hrs
9.	BID Due Date	27.12.2018 upto 11.00 Hrs
10.	Physical Submission of Bid Security/POA etc	28.12.2018 at 11.00 Hrs IST
11.	Opening of Technical BIDs at venue 2.11.4 (i)	28.12.2018 at 11.30 Hrs IST
12.	Declaration of eligible / qualified Bidders	To be notified
13.	Opening of Financial BID	To be notified
14.	Letter of Acceptance (LOA)	To be notified
15.	Return of signed duplicate copy of LOA	To be notified
16.	Validity of BID	120 days from BID Due Date
17.	Submission of Performance Security (PS) and Additional Performance Security (APS), if any	Within 30 days of receipt of LOA. (The bidder has the option to provide 50% of PS and APS, if any within 30 days of receipt of LOA and the remaining PS and APS, if any to be provided within 30 days of signing of agreement)
18.	Signing of Agreement	Within 10 days from the receipt of 50% of Performance Security and 50% of Additional Performance Security, if any



**SECTION-2**  
**INSTRUCTIONS TO BIDDERS**

**A. GENERAL**

**2.1. General terms of Bidding**

- 2.1.1 No Bidder shall submit more than one BID for the Project. A Bidder bidding individually or as a member of a Joint Venture shall not be entitled to submit another BID either individually or as a member of any Joint Venture, as the case may be.
- 2.1.2 An International Bidder bidding individually or as a member of a Joint Venture shall ensure that Power of Attorney is apostille by appropriate authority and requirement of Indian Stamp Act is duly fulfilled.
- 2.1.3 Notwithstanding anything to the contrary contained in this RFP, the detailed terms specified in the draft Agreement shall have overriding effect; provided, however, that any conditions or obligations imposed on the Bidder hereunder shall continue to have effect in addition to its obligations under the Agreement. Further, the statements and explanations contained in this RFP are intended to provide a better understanding to the Bidders about the subject matter of this RFP and should not be construed or interpreted as limiting in any way or manner the scope of services and obligations of the Contractor set forth in the Agreement or the Authority's rights to amend, alter, change, supplement or clarify the scope of work, the work to be awarded pursuant to this RFP or the terms thereof or herein contained. Consequently, any omissions, conflicts or contradictions in the Bidding Documents including this RFP are to be noted, interpreted and applied appropriately to give effect to this intent, and no claims on that account shall be entertained by the Authority.
- 2.1.4 The BID shall be furnished in the format exactly as per Appendix-I i.e. Technical Bid as per Appendix IA and Financial Bid as per Appendix IB. BID amount shall be indicated clearly in both figures and words, in Indian Rupees in prescribed format of Financial Bid and it will be signed by the Bidder's authorised signatory. In the event of any difference between figures and words, the amount indicated in words shall be taken into account.
- 2.1.5 The Bidder should submit a Power of Attorney as per the format at Appendix-III, authorising the signatory of the BID to commit the Bidder.
- 2.1.6 In case the Bidder is a Joint Venture, the Members thereof should furnish a Power of Attorney in favour of the Lead Member in the format at Appendix-IV and joint bidding agreement in the format at Appendix V.
- 2.1.7 Any condition or qualification or any other stipulation contained in the BID shall render the BID liable to rejection as a non-responsive BID.
- 2.1.8 The BID and all communications in relation to or concerning the Bidding Documents and the BID shall be in English language.
- 2.1.9 This RFP is non-transferable.



2.1.10 Any award of Project pursuant to this RFP shall be subject to the terms of Bidding Documents and also fulfilling the criterion as mentioned in clause 2.2.

2.1.11 In case the Bidder is a Joint Venture, it shall comply with the following additional requirements:

- (a) Number of members in a Joint Venture shall not exceed 3 (Three);
- (b) subject to the provisions of clause (a) above, the Bid should contain the information required for each Member of the Joint Venture;
- (c) Members of the Joint Venture shall nominate one member as the lead member (the "Lead Member"). Lead Member shall meet at least 60% requirement of Bid Capacity, Technical and Financial Capacity, required as per Clause 2.2.2.1, 2.2.2.2(i) & 2.2.2.3. The nomination(s) shall be supported by a Power of Attorney, as per the format at Appendix-III, signed by all the other Members of the Joint Venture. Other Member(s) shall meet at least 20% requirement of Bid Capacity, Technical and Financial Capacity required as per Clause 2.2.2.1, 2.2.2.2(i) & 2.2.2.3 and the JV as a whole shall cumulatively/collectively fulfill the 100% requirement;
- (d) the Bid should include a brief description of the roles and responsibilities of individual members, particularly with reference to financial, technical and defect liability obligations;
- (e) the Lead Member shall itself undertake and perform at least 51(fifty one) per cent of the total length of the Project Highway.
- (f) members of the Joint Venture shall have entered into a binding Joint Bidding Agreement, substantially in the form specified at Appendix V (the "Jt. Bidding Agreement"), for the purpose of making the Application and submitting a Bid in the event of being pre-qualified. The Jt. Bidding Agreement, to be submitted along with the Application, shall, *inter alia*:
  - (i) convey the commitment(s) of the Lead Member in accordance with this RFP, in case the contract to undertake the Project is awarded to the Joint Venture; and clearly outline the proposed roles & responsibilities, if any, of each member;
  - (ii) commit the approximate share of work to be undertaken by each member conforming to sub-clause 2.1.11 (e) mentioned above;
  - (iii) include a statement to the effect that all members of the Joint Venture shall be liable jointly and severally for all obligations of the Contractor in relation to the Project until the Defect Liability Period is achieved in accordance with the EPC Contract; and
- (g) except as provided under this RFP, there shall not be any amendment to the Jt Bidding Agreement.
- (h) No Joint Venture up to Estimate Project Cost of Rs. 100 crores (One Hundred





2.1.12 While bidding is open to persons from any country, the following provisions shall apply:

(a) Where, on the date of the Application, not less than 50% (fifty percent) of the aggregate issued, subscribed and paid up equity share capital in the L-1 Bidder or its Member is held by persons resident outside India or where a Bidder or its Member is controlled by persons resident outside India, then the eligibility and award of the project to such L-1 Bidder shall be subject to approval of the competent authority from national security and public interest perspective as per the instructions of the Government of India applicable at such time. The decision of the authority in this behalf shall be final and conclusive and binding on the Bidder.

(b) Further, where the LoA of a project has been issued to an agency, not covered under the category mentioned above, and it subsequently wishes to transfer its share capital in favour of another entity who is a resident outside India or where a Bidder or its Member is controlled by persons resident outside India and thereby the equity capital of the transferee entity exceeds 50% or above, any such transfer of equity capital shall be with the prior approval of the competent authority from national security and public interest perspective as per the instructions of the Government of India applicable at such point in time.

(2) The holding or acquisition of equity control, as above shall include direct or indirect holding, acquisition, including by transfer of the direct or indirect legal or beneficial ownership or control, by persons acting for themselves or in concert and in determining such holding or acquisition, the Authority shall be guided by the principles, precedents and definitions contained in the Securities and Exchange Board of India (Substantial Acquisition of Shares and Takeovers) Regulations, 2011, or any substitute thereof, as in force on the date of such acquisition.

(3) The Bidder shall promptly inform the authority of any change in the shareholding, as above, and failure to do so shall render the Bidder liable for disqualification from the Bidding process.

(4) In case the L-1 Applicant under (a) above is denied the security clearance, for whatsoever reasons, then the applicants emerging as L-2, L-3 eligible Bidders (in that order) may be given a counter-offer (one by one sequentially) to match the bid of L-1 applicant/preferred Bidder. In the event of acceptance of the counter-offer by another eligible Bidder, the project may be awarded to such Bidder. In case no applicant matches the bid of the L-1 applicant, the bid process shall be annulled and fresh bids invited.

2.1.13 Notwithstanding anything to the contrary contained herein, in the event that the Bid Due Date falls within three months of the closing of the latest financial year of a Bidder, it shall ignore such financial year for the purposes of its Bid and furnish all its information and certification with reference to the 5 (five) years or 1 (one) year, as the case may be, preceding its latest financial year. For the avoidance of doubt, financial year shall, for the purposes of a Bid hereunder, mean the accounting year followed by the Bidder in the course of its normal business.

2.1.14 The Bidder, including an individual or any of its Joint Venture member, should not be a non-performing party on the bid submission date. The Bidder, including any Joint Venture Member shall be deemed to be a non-performing party (not applicable to the



project whose contract is terminated by the Authority) if it attracts any or more of the following parameters:

- (i) Fails to complete or has missed more than two milestones in already awarded two or more projects, even after lapse of 6 months from the scheduled completion date, unless Extension of Time has been allowed on the recommendations of the Independent Engineer due to Authority's default;
- (ii) Fails to complete a project, as per revised schedule, for which One Time Fund Infusion (OTFI) has been sanctioned by the Authority;
- (iii) Physical progress on any project is not commensurate with the funds released (equity+debt-grant) from the escrow account and such variation is more than 25% in last one year as observed by the Independent Engineer in one or more projects;
- (iv) Punch List Items in respect of any project are pending due to Bidder's default in two or more Projects even after lapse of the prescribed time for completion of such items;
- (v) Fails to fulfil its obligations to maintain a highway in a satisfactory condition in spite of two rectification notices issued in this behalf;
- (vi) Fails to attend to Non Conformity Reports (NCRs) issued by the Independent/ Authority's Engineer on the designs/ works constructed by the Bidder pending for more than one year in two or more projects.
- (vii) Fails to make premium payments excluding the current instalment in one or more projects
- (viii) Damages/ Penalties recommended by the Independent/ Authority's Engineer on the Bidder during O&M period and the remedial works are not taken up in two or more projects.
- (ix) Fails to achieve financial closure in two or more projects within the given or extended period (which shall not be more than six months in any case).
- (x) Fails to submit the Performance Security within the permissible period in more than one project(s).
- (xi) Rated as an unsatisfactory performing entity/ non-performing entity by an independent third party agency and so notified on the website of the Authority.
- (xii) Has failed to perform for the works of Expressways, National Highways, ISC & EI works in the last 2(two) years, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitral award against the Bidder, including individual or any of its Joint Venture Member, as the case may be.
- (xiii) Has been expelled or the contract terminated by the Ministry of Road Transport & Highways or its implementing agencies for breach by such Bidder, including individual or any of its Joint Venture Member; Provided that such decision of expulsion or termination of contract leading to

debaring of the Bidder from further participation in bids for the prescribed period should have been ordered after affording an opportunity of hearing to such party.

The Bidder, including individual or each member of Joint Venture, shall give the list of the projects of Expressways, National Highways, JSC and EI works of Ministry of Road Transport & Highways or its implementing agencies (NHAI/ NHIDCL/State PWDs) and the status of above issues in each project as on the bid submission date and undertake that they do not attract any of the above categories (Ref. Sr. No.6, Annex-I of Appendix - IA).

The Bidder including individual or any of its Joint Venture Member may provide

- (i) details of all their on-going projects along with updated stage of litigation, if so, against the Authority / Governments;
- (ii) details of updated on-going process of blacklisting if so, under any contract with Authority / Government; and
- (iii) details of all their on-going projects in the format at Annexure-VIII of Appendix IA (Ref Clause 10.3 (iv) of Draft EPC Agreement).

The Authority reserves the right to reject an otherwise eligible Bidder on the basis of the information provided under this clause 2.1.14. The decision of the Authority in this case shall be final

## 2.2. Eligibility and qualification requirements of Bidder

2.2.1 For determining the eligibility of Bidder the following shall apply:

- (a) The Bidder may be a single entity or a group of entities (the "Joint Venture"), coming together to implement the Project. The term Bidder used herein would apply to both a single entity and a Joint Venture. However, in case the estimated cost of the project for which bid is invited is upto Rs. 100 Crore, then Joint Venture shall not be allowed.
- (b) Bidder may be a natural person, private entity, or any combination of them with a formal intent to enter into a Joint Venture agreement or under an existing agreement to form a Joint Venture. A Joint Venture shall be eligible for consideration subject to the conditions set out in Clause 2.1.11 above.
- (c) A Bidder shall not have a conflict of interest ("Conflict of Interest") that affects the Bidding Process. Any Bidder found to have a Conflict of Interest shall be disqualified and liable for forfeiture of the BID Security or Performance Security as the case may be. A Bidder shall be deemed to have a Conflict of Interest affecting the Bidding Process, if:
  - (i) the Bidder, its Joint Venture Member (or any constituent thereof) and any other Bidder, its Member or any Member of its Joint Venture thereof (or any constituent thereof) have common controlling shareholders or other ownership interest; provided that this disqualification shall not apply in cases where the direct or indirect shareholding of a Bidder, or its Joint Venture Member thereof or any shareholder thereof having a shareholding of more than 5% (five percent) of the paid up and subscribed share capital of such Bidder, or its Joint Venture Member, as the case may be), in the other Bidder, its Joint Venture



Member is less than 5% (five percent) of the subscribed and paid up equity share capital thereof, provided further that this disqualification shall not apply to any ownership by a bank, insurance company, pension fund or a public financial institution referred to in section 4A of the Companies Act 1956. For the purposes of this Clause 2.2 1(e), indirect shareholding held through one or more intermediate persons shall be computed as follows: (aa) where any intermediary is controlled by a person through management control or otherwise, the entire shareholding held by such controlled intermediary in any other person (the "Subject Person") shall be taken into account for computing the shareholding of such controlling person in the Subject Person; and (bb) subject always to sub-clause (aa) above, where a person does not exercise control over an intermediary, which has shareholding in the Subject Person, the computation of indirect shareholding of such person in the Subject Person shall be undertaken on a proportionate basis; provided, however, that no such shareholding shall be reckoned under this sub-clause (bb) if the shareholding of such person in the intermediary is less than 26% of the subscribed and paid up equity shareholding of such intermediary; or

- (ii) a constituent of such Bidder is also a constituent of another Bidder; or
- (iii) such Bidder, or any of its Joint Venture Member thereof receives or has received any direct or indirect subsidy, grant, concessional loan or subordinated debt from any other Bidder, or any of its Joint Venture Member thereof or has provided any such subsidy, grant, concessional loan or subordinated debt to any other Bidder, its Member or any of its Joint Venture Member thereof; or
- (iv) such Bidder has the same legal representative for purposes of this Application as any other Bidder; or
- (v) such Bidder, or any of its Joint Venture Member thereof has a relationship with another Bidder, or any of its Joint Venture Member thereof, directly or through common third party parties, that puts either or both of them in a position to have access to each others' information about, or to influence the Application of either or each other; or
- (vi) such Bidder, or any of its Joint Venture Member thereof has participated as a consultant to the Authority in the preparation of any documents, design or technical specifications of the Project.

## 2.2.2 Qualification requirements of Bidders:

### 2.2.2.1 BID Capacity

Bidders who *inter alia* meet the minimum qualification criteria will be qualified only if their available BID capacity is more than the total BID value (value as per Clause 1.1.1). The available BID capacity will be calculated as per following, based on information mentioned at Annexure-VI of Appendix-IA:

Assessed Available BID capacity -  $(A \times N \times 2.5 - B + C)$ , Where

N = Number of years prescribed for completion of work for which Bid is invited.

A = Maximum value of civil engineering works excluding the amount of bonus received, if any, in respect of EPC Projects executed in any one year during



the last five years (updated to the price level of the year indicated in table at Note-3 below) taking into account the completed as well as works in progress. The **EPC projects** include turnkey project/ Item rate contract/ Construction works.

- B – Value (updated to the price level of the year indicated in table at Note-3 below) of existing commitments, works for which Appointed Date/ Commencement Date has been declared or on-going works to be completed during the period of completion of the works for which BID is invited. For the sake of clarification, it is mentioned that works for which LOA has been issued but Appointed Date/ Commencement Date not declared as on Bid Due Date shall not be considered while calculating value of B.
- C – The amount of bonus received, if any, in EPC Projects during the last 5 years (updated to the price level of the year indicated in table at Note-3 below).

Note:

1. The Statement showing the value of all existing commitments, works for which Appointed Date/ Commencement Date has been declared and ongoing works as well as the stipulated period of completion remaining for each of the works listed should be countersigned by the Client or its Engineer-in-charge not below the rank of Executive Engineer or equivalent in respect of EPC Projects or Concessionaire / Authorized Signatory of SPV in respect of BOT Projects and verified by Statutory Auditor.

2. The amount of bonus received, if any, in EPC Projects should be countersigned by the Client or its Engineer-in-charge not below the rank of Executive Engineer or equivalent in respect of EPC Projects.

3. The factor for the year for updation to the price level is indicated as under:

Year	Year-1	Year-2	Year-3	Year-4	Year-5
Up-dation factor	1.00	1.05	1.10	1.15	1.20

#### 2.2.2.2 Technical Capacity

(i) For demonstrating technical capacity and experience (the “**Technical Capacity**”), the Bidder shall, over the past 5 (five) financial years preceding the Bid Due Date, have received payments for construction of Eligible Project(s), or has undertaken construction works by itself in a PPP project, such that the sum total thereof, as further adjusted in accordance with clause 2.2.2.5 (i) & (i), is more than Rs. 2035.36 crore (Rs. two thousand thirty five crore and thirty six lakh only) (the “**Threshold Technical Capacity**”).

(ii) For normal Highway projects (including Major Bridges/ROB/Flyovers/Tunnels):

provided that at least one similar work of 25% of Estimated Project Cost Rs. 42 crore (Rs. Two Hundred Fifty Four Crore and Forty Two Lakh only) shall have been completed from the Eligible Projects in Category 1 and/or Category 3 specified in Clause 2.2.2.5. For this purpose a project shall be



considered to be completed, if more than 90% of the value of work has been completed and such completed value of work is equal to or more than 25% of the estimated project cost. The sole Bidder or in case the Bidder being a Joint Venture, any member of Joint Venture shall necessarily demonstrate additional experience in construction of Major Bridge/ROBs/Flyovers in the last 5 (Five) financial years preceding the Bid Due Date i.e. shall have completed atleast one similar Major Bridge/ROB/Flyover having span equal to or greater than 50% of the longest span of the structure proposed in this project.

(iii) For Stand-alone specialized projects:

- (a) Deleted
- (b) Deleted

2.2.2.3 Financial Capacity.

(i) The Bidder shall have a minimum Net Worth<sup>1</sup> (the "Financial Capacity") of Rs. 50.88 crore (Rs. fifty crore and eighty eight lakh only) at the close of the preceding financial year.

(ii) The Bidder shall have a minimum Average Annual Turnover (updated to the price level of the year based on factors indicated in table below) of Rs. 203.54 crore (Rs. two hundred three crore and fifty four lakh only) for the last 5 (five) financial years.

Year	Year-1	Year-2	Year-3	Year-4	Year-5
Up-dation factor	1.00	1.05	1.10	1.15	1.20

2.2.2.4 In case of a Joint Venture:

(i) The Bid Capacity, Technical Capacity and Financial Capacity of all the Members of Joint Venture would be taken into account for satisfying the above conditions of eligibility. Further, Lead Member shall meet at least 60% requirement of Bid Capacity, Technical and Financial Capacity as per Clause 2.2.2.1, 2.2.2.2(i) and 2.2.2.3 and each of other JV members shall meet at least 20% requirement of Bid Capacity, Technical and Financial Capacity individually as per Clause 2.2.2.1, 2.2.2.2(i) and 2.2.2.3. For avoidance of doubt it is further clarified that the Joint Venture must collectively and individually satisfy the above qualification criteria i.e. JV shall cumulatively/collectively fulfill the 100% requirement.

(ii) For requirement of 2.2.2.2 (ii), one similar work of 25% of Estimated Project Cost should have been completed from the Eligible Projects in Category 1 and/or Category 3 specified in Clause 2.2.2.5 individually by any of the JV members as a single work.

2.2.2.5 Categories and factors for evaluation of Technical Capacity:

(i) Subject to the provisions of Clause 2.2.2 the following categories of experience would qualify as Technical Capacity and eligible experience (the "Eligible

<sup>1</sup> Net Worth has been adopted as the criteria for assessing financial capacity since it is a comprehensive indication of the financial strength of the Applicant.



**Experience**") in relation to eligible projects as stipulated in Clauses 2.2.2.6 (i) & (ii) (the "**Eligible Projects**"). In case the Bidder has experience across different categories, the experience for each category would be computed as per weight of following factors to arrive at its aggregated Eligible Experience:

Category	Project / Construction experience on Eligible Projects	Factors
1	Project in highways sector that qualify under Clause 2.2.2.6 (i)	1
2	Project in core sector that qualify under Clause 2.2.2.6 (i)	0.50
3	Construction in highways sector that qualify under Clause 2.2.2.6 (ii)	1
4	Construction in core sector that qualify under Clause 2.2.2.6 (ii)	0.50

- (ii) The Technical capacity in respect of an Eligible Project situated in a developed country which is a member of OECD shall be further multiplied by a factor of 0.5 (zero point five) and the product thereof shall be the Experience Score for such Eligible Project.
- (iii) For the purpose of this RFP
- (a) highways sector would be deemed to include highways, expressways, bridges, tunnels and airfields; and
  - (b) core sector would be deemed to include civil construction cost of ports, power sector, commercial setups (SEZs etc.), airports, railways, metro rail, industrial parks/ estates, logistic parks, pipelines, irrigation, water supply, sewerage and real estate development.
- (I) In case of projects executed by applicant under category 3 and 4 as a member of Joint Venture, the project cost should be restricted to the share of the applicant in the joint venture for determining eligibility as per provision under clause 2.2.2.2 (ii). In case Statutory Auditor certifies that, the work of other member(s) is also executed by the applicant, then the total share executed by applicant can be considered for determining eligibility as per provision under clause 2.2.2.2 (i).
- (II) Maintenance works are not considered as eligible project for evaluation as per Instruction No.6 to Annex-IV. As such works with nomenclature like PR, OR, FDR,SR, site/micro grading, surface renewal, resurfacing work, Tarring, B.U. surface work, temporary restoration, urgent works, periodic maintenance, repair & rehabilitation, one time maintenance, permanent protection work of bank, external pre stressing, repair of central hinge, short term OMT contract of NHAI, any type of work related to border fencing, work of earthwork alone, construction of buildings/ hostels/hospitals, etc, or not specified, shall not be considered.



The works such as Improvement in Riding Quality work (IRQP/IRQ), shall be considered for Technical Capacity 2.2.2.2 (i) but not for single completed works 2.2.2.2 (ii)



(IV) Project in Highway sector shall constitute the following for the purpose of consideration under category 1 or 3 as applicable, if:

- (i) Widening / reconstruction / up-gradation works on NH / SH or on any category of road taken up under CRF, ISC/ EI, SARDF, LWE
- (ii) Widening/ re-construction/up-gradation works on MDRs with loan assistance from multilateral agencies or on BOT basis,
- (iii) Widening/ reconstruction / up-gradation work of roads in Municipal corporation limits, construction of Bypasses,
- (iv) Construction of stand- alone bridges, ROB, tunnels w.r.t roads.
- (v) Long term OMT works of NH&M&RT&I.

(V) The projects with the title of RIDF, PMGSY road, link road, city roads, rural road, sector/ municipality road, Bridges for railway line, work of metro rails (bridges/ tunnel), real estate projects which demonstrate road development/construction bridges or culverts may be considered under category — 4.

(VI) In case both the estimated cost of project and revised cost of project are provided, the revised cost of project shall be considered for evaluation

#### 2.2.2.6 Eligible Experience on Eligible Projects in respect of each category:

- (i) For a project to qualify as an Eligible Project under Categories 1 and 2:
  - (a) It should have been undertaken as a PPP project on BOT, BOLT, BOO, BOOT or other similar basis for providing its output or services to a public sector entity or for providing non-discriminatory access to users in pursuance of its charter, concession or contract, as the case may be. For the avoidance of doubt, a project which constitutes a natural monopoly such as an airport or port should normally be included in this category even if it is not based on a long-term agreement with a public entity;
  - (b) the entity claiming experience should have held, in the company owning the Eligible Project, a minimum of 26% (twenty six per cent) equity during the entire year for which Eligible Experience is being claimed,
  - (c) the capital cost of the project should be more than 10% of the amount specified as the Estimated Project Cost; and
  - (d) the entity claiming experience shall, during the last 5 (five) financial years preceding the Bid Due Date, have itself undertaken the construction of the project for an amount equal to at least one half of the Project Cost of eligible projects, excluding any part of the project for which any contractor, sub-contractor or other agent was appointed for the purposes of construction.
- (ii) For a project to qualify as an Eligible Project under Categories 3 and 4, the Bidder should have received payments from its client(s) for construction works executed, fully or partially, or work executed and certified by the Engineer-in-charge/Independent Engineer/Authority's Engineer during the 5 (five) financial years immediately preceding the Bid Due Date, and only the





amounts (gross) actually received/ work executed, during such 5 (five) financial years shall qualify for purposes of computing the Experience Score. However, receipts of or work executed amount less than Rs. 101.77 crore (Rs. one hundred one crore and seventy seven lakh only) shall not be reckoned as receipts for Eligible Projects. For the avoidance of doubt, construction works shall not include supply of goods or equipment except when such goods or equipment form part of a turn-key construction contract / EPC contract for the project. Further, the cost of land and also cost towards pre-construction activities (like shifting of utilities etc.) shall not be included hereunder.

- (iii) The Bidder shall quote experience in respect of a particular Eligible Project under any one category only, even though the Bidder (either individually or along with a member of the Joint Venture) may have played multiple roles in the cited project. Double counting for a particular Eligible Project shall not be permitted in any form.
- (iv) Experience for any activity relating to an Eligible Project shall not be claimed by two or more Members of the Joint Venture. In other words, no double counting by a Joint Venture in respect of the same experience shall be permitted in any manner whatsoever.

#### 2.2.2.7 Submission in support of Technical Capacity

- (i) The Bidder shall update details of Experience (ongoing and completed projects) on the Bidder Information Management System (BIMS) [www.bims.gov.in](http://www.bims.gov.in) on a regular basis. The details of Eligible Experience for the last 5 financial years, necessary information relating to Technical Capacity and Project Specific Information shall be taken from the information uploaded on BIMS.

#### 2.2.2.8 Submission in support of Financial capacity

- (i) The Bidder shall upload financial details along with supporting financial documents (E.g., Audited Annual Reports) on BIMS on a regular basis.
- (ii) In case the annual accounts for the latest financial year are not audited and therefore the Bidder cannot make it available, the Bidder shall upload on BIMS an undertaking to this effect and the statutory auditor shall certify the same. In such a case, the Bidder shall provide the Audited Annual Reports for 5 (five) years preceding the year for which the Audited Annual Report is not being provided.
- (iii) The Bidder must establish the minimum Net Worth specified in Clause 2.2.2.3, and upload the relevant details on BIMS.

#### 2.2.2.9 The Bidder shall upload on BIMS as per the format at Appendix-IA, complete with the following:

Certificate(s) from its statutory auditor<sup>5</sup> or the concerned client(s) stating the payments received or in case of a PPP project, the construction carried out by

<sup>5</sup> In case duly certified audited annual financial statements containing explicitly the requisite details are provided, a separate certificate by statutory auditors would not be necessary in respect of Clause 2.2.2.9 (i). In jurisdictions that do not have statutory auditors, the firm of auditors which audits the annual accounts of the Applicant may provide the certificates required under this RFP.

itself, during the past 5 years, in respect of the Eligible Projects. In case a particular job/ contract has been jointly executed by the Bidder (as part of a Joint Venture), it should further support its claim for the payments received or construction carried out by itself in PPP Projects as applicable the share in work done for that particular job/ contract by producing a certificate from its statutory auditor or the client; and

- (iv) Certificate(s) from its statutory auditors specifying the net worth of the Bidder, as at the close of the preceding financial year, and also specifying that the methodology adopted for calculating such net worth conforms to the provisions of this Clause 2.2.2.9 (ii). For the purposes of this RFP, net worth (the "Net Worth") shall mean the aggregate value of the paid-up share capital and all reserves created out of the profits and securities premium account, after deducting the aggregate value of the accumulated losses, deferred expenditure and miscellaneous expenditure not written off, as per the audited balance sheet, but does not include reserves created out of revaluation of assets, write-back of depreciation and amalgamation.

2.2.2.10 Deleted.

### 2.3 Proprietary data

All documents and other information supplied by the Authority or submitted by a Bidder to the Authority shall remain or become the property of the Authority and are transmitted to the Bidders solely for the purpose of preparation and the submission of a BID in accordance herewith. Bidders are to treat all information as strictly confidential and shall not use it for any purpose other than for preparation and submission of their Bid. The provisions of this Clause 2.3 shall also apply *mutatis mutandis* to BIDs and all other documents submitted by the Bidders, and the Authority will not return to the Bidders any BID, document or any information provided along therewith.

### 2.4 Cost of Bidding

The Bidders shall be responsible for all of the costs associated with the preparation of their BIDs and their participation in the Bidding Process. The Authority will not be responsible or in any way liable for such costs, regardless of the conduct or outcome of the Bidding Process.

### 2.5 Site visit and verification of information

2.5.1 Bidders are encouraged to submit their respective BIDs after visiting the Project site and ascertaining for themselves the site conditions, traffic, location, surroundings, climate, availability of power, water & other utilities for construction, access to site, handling and storage of materials, weather data, applicable laws and regulations, and any other matter considered relevant by them. Bidders are advised to visit the site and familiarise themselves with the Project within the stipulated time of submission of the Bid. No extension of time is likely to be considered for submission of Bids.

2.5.2 It shall be deemed that by submitting a BID, the Bidder has:

(a) made a complete and careful examination of the Bidding Documents, Schedules annexed to EPC agreement Document;



- (h) received all relevant information requested from the Authority;
- (c) accepted the risk of inadequacy, error or mistake in the information provided in the Bidding Documents or furnished by or on behalf of the Authority relating to any of the matters referred to in Clause 2.5.1 above. No claim shall be admissible at any stage on this account.
- (d) satisfied itself about all matters, things and information including matters referred to in Clause 2.5.1 hereinabove necessary and required for submitting an informed BID, execution of the Project in accordance with the Bidding Documents and performance of all of its obligations thereunder;
- (e) acknowledged and agreed that inadequacy, lack of completeness or incorrectness of information provided in the Bidding Documents or ignorance of any of the matters referred to in Clause 2.5.1 hereinabove shall not be a basis for any claim for compensation, damages, extension of time for performance of its obligations, loss of profits etc, from the Authority, or a ground for termination of the Agreement by the Contractor;
- (f) acknowledged that it does not have a Conflict of Interest; and
- (g) agreed to be bound by the undertakings provided by it under and in terms hereof.

2.5.3 The Authority shall not be liable for any omission, mistake or error in respect of any of the above or on account of any matter or thing arising out of or concerning or relating to RFP, including any error or mistake therein or in any information or data given by the Authority.

## 2.6 Verification and Disqualification

2.6.1 The Authority reserves the right to verify all statements, information and documents submitted by the Bidder in response to the RFP and the Bidder shall, when so required by the Authority, make available all such information, evidence and documents as may be necessary for such verification. Any such verification, or lack of such verification, by the Authority shall not relieve the Bidder of its obligations or liabilities hereunder nor will it affect any rights of the Authority thereunder.

2.6.2 The Authority reserves the right to reject any BID and appropriate the BID Security if:

- (a) at any time, a material misrepresentation is made or uncovered, or
- (b) the Bidder does not provide, within the time specified by the Authority, the supplemental information sought by the Authority for evaluation of the BID.

Such misrepresentation/ improper response shall lead to the disqualification of the Bidder. If the Bidder is a Joint Venture, then the entire Joint Venture and each Member of the Joint Venture may be disqualified/ rejected. If such disqualification/rejection occurs after the BIDs have been opened and the lowest Bidder gets disqualified / rejected, then the Authority reserves the right to annul the Bidding Process and invites fresh BIDs.

2.6.3 In case it is found during the evaluation or at any time before signing of the Agreement or after its execution and during the period of defect liability subsistence thereof, that one or more of the eligibility and /or qualification requirements have not been met by the Bidder, or the Bidder has made material misrepresentation or has given any materially incorrect or false information, the Bidder shall be disqualified forthwith if not yet appointed as the contractor either by issue of the LOA or entering into the Agreement, and if the Selected Bidder has already been issued the LOA or



has entered into the Agreement, as the case may be, the same shall, notwithstanding anything to the contrary contained therein or in this RFP, be liable to be terminated, by a communication in writing by the Authority to the Selected Bidder or the Contractor, as the case may be, without the Authority being liable in any manner whatsoever to the Selected Bidder or the Contractor. In such an event, the Authority shall be entitled to forfeit and appropriate the BID Security or Performance Security, as the case may be, as Damages, without prejudice to any other right or remedy that may be available to the Authority under the Bidding Documents and / or the Agreement, or otherwise.

- 2.6.4. A Bidder shall be liable for disqualification and forfeiture of BID Security, if any legal, financial or technical adviser of the Authority in relation to the Project is engaged by the Bidder, its Member or any Associate thereof, as the case may be, in any manner for matters related to or incidental to such Project during the Bidding Process or subsequent to the (i) issue of the LOA or (ii) execution of the Agreement. In the event any such adviser is engaged by the selected Bidder or Contractor, as the case may be, after issue of the LOA or execution of the Agreement for matters related or incidental to the project, then notwithstanding anything to the contrary contained herein or in the LOA or the Agreement and without Prejudice to any other right or remedy of the Authority, including the forfeiture and appropriation of the BID Security or Performance Security, as the case may be, which the Authority may have there under or otherwise, the LOA or the Agreement, as the case may be, shall be liable to be terminated without the Authority being liable in any manner whatsoever to the Selected Bidder or Contractor for the same. For the avoidance of doubt, this disqualification shall not apply where such adviser was engaged by the Bidder, its Member or Associate in the past but its assignment expired or was terminated 6 (six) months prior to the date of issue of this RFP. Nor will this disqualification apply where such adviser is engaged after a period of 3 (three) years from the date of commercial operation of the Project.



**B. DOCUMENTS**

**2.7 Contents of the RFP**

- 2.7.1 This RFP comprises the Disclaimer set forth hereinabove, the contents as listed below, and will additionally include any Addenda issued in accordance with Clause 2.9.

**Part -I**

**Invitation for BIDs**

- Section 1. Introduction
- Section 2. Instructions to Bidders
- Section 3. Evaluation of BIDs
- Section 4. Fraud and Corrupt Practices
- Section 5. Pre-BID Conference
- Section 6. Miscellaneous

**Appendices**

- IA. Letter comprising the Technical BID including Annexure I to VII
- IB. Letter comprising the Financial BID
- II. Bank Guarantee for BID Security
- III. Power of Attorney for signing of BID
- IV. Power of Attorney for Lead Member of Joint Venture
- V. Joint Bidding Agreement for Joint Venture
- VI. Integrity Pact Format
- VII. Form of Bank Guarantee ( For Performance Security)
- VIII. Format of LOA

**Part -II**

Agreement Document with schedules

**Part - III**

Feasibility Report / Detailed Project Report provided by the authority

- 2.7.2 The draft Agreement and the Feasibility / Detailed Project Report provided by the Authority as part of the BID Documents shall be deemed to be part of this RFP

**2.8 Clarifications**

- 2.8.1 Bidders requiring any clarification on the RFP may notify the Authority in writing by e-mail in accordance with Clause 1.2.9. They should send in their queries on or before the date mentioned in the Schedule of Bidding Process specified in Clause 1.3. The Authority shall endeavour to respond to the queries within the period specified therein, but no later than 15 (fifteen) days prior to the BID Due Date. The responses will be sent by fax or e-mail. The Authority will forward all the queries and its responses thereto, to all Bidders without identifying the source of queries.

- 2.8.2 The Authority shall endeavour to respond to the questions raised or clarifications sought by the Bidders. However, the Authority reserves the right not to respond to any question or provide any clarification, in its sole discretion, and nothing in this clause shall be taken or read as compelling or requiring the Authority to respond



to any question or to provide any clarification.

- 2.8.3 The Authority may also on its own motion, if deemed necessary, issue interpretations & clarifications to all Bidders. All clarifications & interpretations issued by the Authority shall be deemed to be part of the Bidding Documents. Verbal clarifications and information given by Authority or its employees or representatives shall not in any way or manner be binding on the Authority.

## 2.9 Amendment of RFP

- 2.9.1 At any time prior to the BID Due Date, the Authority may, for any reason, whether at its own initiative or in response to clarifications requested by a Bidder, modify the RFP by the issuance of Addenda.
- 2.9.2 Any Addendum issued hereunder will be hosted on the NHAI's website ([www.nhai.gov.in](http://www.nhai.gov.in)), NHAI's e-Tendering Portal (<https://etenders.gov.in>) and BIMS website ([www.bims.gov.in](http://www.bims.gov.in)).
- 2.9.3 In order to afford the Bidders a reasonable time for taking an Addendum into account, or for any other reason, the Authority may, in its sole discretion, extend the BID Due Date.



## C. PREPARATION AND SUBMISSION OF BIDS

### 2.10 Format and Signing of BID

2.10.1 The Bidder shall provide all the information sought under this RFP. The Authority will evaluate only those BIDs that are received online in the required formats and have been applied to on BIMS and complete in all respects and Bid Security, Demand Draft towards payment of cost of Bid document, POA and Joint Bidding Agreement etc. are received in hard copies.

2.10.2 The BID shall be typed and signed in indelible blue ink by the authorised signatory of the Bidder. All the alterations, omissions, additions or any other amendments made to the BID shall be initialled by the person(s) signing the BID.

### 2.11 Documents comprising Technical and Financial BID

2.11.1 The Bidder shall first upload all the project details, net worth details, turnover details, bridge and tunnel details and all other details required on the BIMS portal for technical qualification. The Bidder shall ensure that all the details are updated as on the due date of submission of this bid.

The Bidder shall then apply for the RFP on the BIMS portal [www.bims.gov.in](http://www.bims.gov.in) by submitting the documents mentioned below along with the supporting documents which shall comprise of the Technical BID on the BIMS portal:

#### Technical Bid

- (a) Appendix-IA (Letter comprising the Technical Bid) including Annexure I, IV, V and VI and supporting certificates / documents.
- (b) Power of Attorney for signing the BID as per the format at Appendix-III;
- (c) if applicable, Power of Attorney for Lead Member of Joint Venture as per the format at Appendix-IV;
- (d) if applicable, Joint Bidding Agreement for Joint Venture as per the format at Appendix-V;
- (e) Deleted
- (f) BID Security of Rs. 10 18 crore (Rupees ten crore and eighteen lakh only) in the form of Bank Guarantee in the format at Appendix-II from a Scheduled Bank (to be submitted physically as well);
- (g) Copy of Demand Draft towards payment of cost of Bid document of Rs. 1,10,000/- (Rupees one lakh ten thousand only) to "National Highways Authority of India" payable at New Delhi ;
- (h) Deleted;
- (i) Bidder shall comply with the provisions of Office Memorandum No. RW/NH-37010/4/2010/PII-EAP(Printing) dated 22.02.2016 and its subsequent amendments if any, issued by MoRI&H (Appendix-VI) regarding Integrity Pact (IP) and the Integrity Pact (IP) duly signed by Authorised signatory shall be submitted by the Bidder with the RFP Bid & shall be part of the Contract Agreement;
- (j) An undertaking from the person having PoA referred to in Sub. Clause-(b) above that they agree and abide by the Bid documents uploaded by NHAJ and amendments uploaded, if any; and Annexure-VIII of Appendix - IA showing details of all ongoing project works Ref Clause 10.3 (iv) of Draft EPC Agreement).



- (l) Copy of Memorandum and Article of association of the bidder or of each member (in case of JV), if the bidder is body corporate, and if a partnership then a copy of its partnership deed;
- (m) Copies of duly audited complete annual accounts of the bidders or of each member (in case of Joint Venture) for preceding five years

**Financial Bid**

- (n) Appendix-IB (Letter comprising the Financial Bid) shall be submitted online through e-procurement portal <http://www.etenders.gov.in> on or before 11.00 am hrs IST on 27.12.2018.

2.11.2 The Bidder shall submit the following documents physically:

- (a) Original Power of Attorney for signing the BID as per format at Appendix-III;
- (b) if applicable, Original Power of Attorney for Lead Member of Joint Venture as per the format at Appendix-IV;
- (c) if applicable, Original Joint Bidding Agreement for Joint Venture as per the format at Appendix-V;
- (d) BID Security of Rs. 10.18 crore (Rupees ten crore and eighttceen lakh only) in the form of Original Bank Guarantee in the format at Appendix-II from a Scheduled Bank;
- (e) Demand Draft towards payment of cost of Bid document of Rs. 1,10,000/- (Rupees one lakh ten thousand only) in favour of " National Highways Authority of India" payable at New Delhi;
- (f) Deleted;
- (g) Bidder shall comply with the provisions of Office Memorandum No. RW/NH-37010/4/2010/PIC-EAP(Printing) dated 22.02.2016 and its subsequent amendments if any issued by MoR&H (Appendix-VI) regarding Integrity Pact (IP) and the Integrity Pact (IP) duly signed by Authorised signatory shall be submitted by the Bidder with the RFP Bid& shall be part of the Contract Agreement; and
- (h) An undertaking from the person having PoA referred to in Sub. Clause-(a) above that they agree and abide by the Bid documents uploaded by NHAI and amendments uploaded, if any.

2.11.3 The documents listed at clause 2.11.2 shall be placed in an envelope, which shall be sealed. The envelope shall clearly bear the identification "**BID for the Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana Project**" and shall clearly indicate the name and address of the Bidder. In addition, the BID Due Date should be indicated on the right hand top corner of the envelope.

2.11.4 The envelope shall be addressed to one of the following officer and shall be submitted at the respective address:

- (i) ATTN. OF: Mr. Rohan Kumar Gupta  
 DESIGNATION: General Manager (I) Bharatmala  
 ADDRESS: National Highways Authority of India, G-5&6, Sector-10, Dwarka  
 New Delhi 110075  
 NO: +91-11-25074100/200 (Extn.: 1111)  
 E-MAIL ADDRESS: rohangupta@nhai.org





2.11.5 If the envelope is not sealed and marked as instructed above, the Authority assumes no responsibility for the misplacement or premature opening of the contents of the BID submitted and consequent losses, if any, suffered by the Bidder.

2.11.6 BIDs submitted by fax, telco, telegram or e-mail shall not be entertained and shall be summarily rejected.

## 2.12 BID Due Date

Financial BID comprising of the documents listed at clause 2.11.1 of the RFP shall be submitted online through e-procurement portal <http://www.etenders.gov.in> / <https://nhai.gov.in> on or before 11.00 am hrs IST on 27.12.2018. This will also necessitate updating all details in the BIMS portal and generating a certificate with the unique ID before the submission of the Technical & Financial BID. Documents listed at clause 2.11.2 of the RFP shall be physically submitted on or before 11.00 am hours IST on 28.12.2018 at the address provided in Clause 2.11.4 in the manner and form as detailed in this RFP. A receipt thereof should be obtained from the person specified at Clause 2.11.4. The technical details will be captured from the BIMS portal once the Bidder has applied on it.

## 2.13 Late BIDs

E-procurement portal <http://www.etenders.gov.in> / <https://nhai.gov.in> and BIMS [www.bims.gov.in](http://www.bims.gov.in) shall not allow submission of any Bid after the prescribed date and time at clause 2.12. Physical receipt of documents listed at clause 2.11.2 of the RFP after the prescribed date and time at clause 2.12 shall not be considered and the bid shall be summarily rejected.

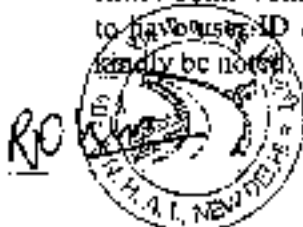
## 2.14 Procedure for e-tendering

### 2.14.1 Accessing/ Purchasing of BID documents

2.14.1.1 It is mandatory for all the Bidders to have class-III Digital Signature Certificate (DSC) in the name of Authorized Signatory / Firm or Organisation / Owner of the Firm or Organisation) from any of the licensed Certifying Agency (Bidders can see the list of licensed CAs from the link [www.cca.gov.in](http://www.cca.gov.in)) to participate in e-tendering of NHAI.

DSC should be in the name of the authorized signatory as authorized in Appendix III of this RFP or person executing/delegating such Appendix-III in favour of Authorized Signatory. It should be in corporate capacity (that is in Bidder capacity / in case of JV in the Lead Member capacity, as applicable). The Bidder shall submit document in support of the class III DSC. In other cases, the bid shall be considered non-responsive.

2.14.1.2 To participate in the bidding, it is mandatory for the Bidders to get registered their firm / Joint Venture with e-procurement portal of NHAI <http://www.etenders.gov.in> to have user ID & password which has to be obtained free of cost. Following may kindly be noted



(a) Registration with e-procurement portal of NHAI should be valid at least up to the date of submission of BID.

(b) BIDs can be submitted only during the validity of registration.

It is also mandatory for the Bidders to get their firms registered on BIMS portal at [www.bims.gov.in](http://www.bims.gov.in). The Bidders shall update their project and other details on the portal on a regular basis and apply to the tenders via the portal.

2.14.1.3 If the firm / Joint Venture is already registered with e-tendering service provider of NHAI, and validity of registration is not expired the firm / Joint Venture is not required a fresh registration.

2.14.1.4 The complete BID document can be viewed / downloaded by the Bidder from e-procurement portal of NHAI <http://www.etenders.gov.in> or from the BIMS portal or official portal of NHAI i.e. <http://www.nhai.gov.in> from 24.08.2018 to 27.12.2018 (upto 11.00 am Hrs. IST).

2.14.1.5 Deleted

2.14.2 Preparation & Submission of BIDs:

2.14.2.1 The Bidder may be submitted his Bid online following the instruction appearing on the screen. A buyer manual containing the detailed guidelines for e-procurement is also available on e-procurement portal of NHAI. Similarly, a Bidder manual containing the detailed guidelines for registering, updating data and applying for bids is available on the BIMS portal.

2.14.2.2 The documents listed at clause 2.11.1 shall be prepared and scanned in different files (in PDF or RAR format such that file size is not more than 30 MB) and uploaded during the on-line submission of BID.

2.14.2.3 Bid must be submitted online only through e-procurement portal of NHAI <http://www.etenders.gov.in> / <https://nhai.gov.in> using the digital signature of authorised representative of the Bidder and the Bidder must apply on the BIMS portal [www.bims.gov.in](http://www.bims.gov.in) on or before 27.12.2018 (upto 11.00 am hours IST).

2.14.3 Modifications/ Substitution/ withdrawal of BIDs

2.14.3.1 The Bidder may modify, substitute or withdraw its e- BID after submission prior to the BID Due Date. No BID can be modified, substituted or withdrawn by the Bidder on or after the BID Due Date & Time.

2.14.3.2 For modification of e-BID, Bidder has to detach its old BID from e-procurement portal and upload / resubmit digitally signed modified BID. For withdrawal of BID, Bidder has to click on withdrawal icon at e-procurement portal and can withdraw its e-BID. Before withdrawal of a BID, it may specifically be noted that after withdrawal of a BID for any reason, Bidder cannot re-submit e-BID again. For modification of the application mode (sole / JV), Bidder has to switch the mode according to the guidelines provided in the aforementioned Bidder Manual



available on the BIMS portal. For withdrawal of bid, the Bidder can click on 'Delete Participation' as mentioned in the guidelines in the Bidder Manual.

## 2.15 Online Opening of BIDs.

2.15.1 Opening of BIDs will be done through online process.

2.15.2 The NHA1 shall on-line open Technical BIDs on 28.12.2018 at 11:30 am hours IST, in the presence of the authorized representatives of the Bidders, who choose to attend. Technical BID of only those Bidders shall be online opened whose documents listed at clause 2.11.2 of the RFP have been physically received and the details have been uploaded on BIMS along with application to the tender on BIMS. The NHA1 will subsequently examine and evaluate the BIDs in accordance with the provisions of Section 3 of RFP.

Further, any falsification of any data uploaded on BIMS shall attract penalties including complete rejection of the bid by the Authority.

## 2.16 Rejection of BIDs

2.16.1 Notwithstanding anything contained in this RFP, the Authority reserves the right to reject any BID and to annul the Bidding Process and reject all BIDs at any time without any liability or any obligation for such acceptance, rejection or annulment, and without assigning any reasons thereof. In the event that the Authority rejects or annuls all the BIDs, it may, in its discretion, invite all eligible Bidders to submit fresh BIDs hereunder.

2.16.2 The Authority reserves the right not to proceed with the Bidding Process at any time, without notice or liability, and to reject any BID without assigning any reasons.

## 2.17 Validity of BIDs

The BIDs shall be valid for a period of not less than 120 (one hundred and twenty) days from the BID Due Date. The validity of BIDs may be extended by mutual consent of the respective Bidders and the Authority.

## 2.18 Confidentiality

Information relating to the examination, clarification, evaluation and recommendation for the Bidders shall not be disclosed to any person who is not officially concerned with the process or is not a retained professional advisor advising the Authority in relation to, or matters arising out of, or concerning the Bidding Process. The Authority will treat all information, submitted as part of the BID, in confidence and will require all those who have access to such material to treat the same in confidence. The Authority may not divulge any such information unless it is directed to do so by any statutory entity that has the power under law to require its disclosure or is to enforce or assert any right or privilege of the statutory entity and/or the Authority or as may be required by law or in connection with any legal process.

## 2.19 Correspondence with the Bidder



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Save and except as provided in this RFP, the Authority shall not entertain any correspondence with any Bidder in relation to acceptance or rejection of any BID. However, the Authority would display the result of technical evaluation on the web portal for 7 days including reasons for non-responsiveness, if any, and the financial bid will be opened thereafter.

#### D. BID SECURITY

##### 2.20 BID Security

2.20.1 The Bidder shall furnish as part of its BID, a BID Security referred to in Clause 1.2.4 hereinabove in the form of a bank guarantee issued by nationalised bank, or a Scheduled Bank in India having a net worth of at least Rs. 1,000 crore (Rs. one thousand crore), in favour of the Authority in the format at Appendix-II (the "Bank Guarantee") and having a validity period of not less than 180 (one hundred eighty) days from the BID Due Date, inclusive of a claim period of 60 (sixty) days, and may be extended as may be mutually agreed between the Authority and the Bidder from time to time. In case the Bank Guarantee is issued by a foreign bank outside India, confirmation of the same by any nationalised bank in India is required. This Guarantee shall be transmitted through SFMS Gateway to NHA's Bank. For the avoidance of doubt, Scheduled Bank shall mean a bank as defined under Section 2(e) of the Reserve Bank of India Act, 1934. A scanned copy of the Bank Guarantee shall be uploaded on BIMS while applying to the tender.

2.20.2 Any BID not accompanied by the BID Security shall be summarily rejected by the Authority as non-responsive.

2.20.3 The Selected Bidder's BID Security will be returned, without any interest, upon the Bidder signing the Contract Agreement and furnishing the Performance Security in accordance with the provisions thereof. The Authority may, at the Selected Bidder's option, adjust the amount of BID Security in the amount of Performance Security to be provided by him in accordance with the provisions of the Agreement.

2.20.4 The Authority shall be entitled to forfeit and appropriate the BID Security as Damages inter alia in any of the events specified in Clause 2.20.5 herein below. The Bidder, by submitting its BID pursuant to this RFP, shall be deemed to have acknowledged and confirmed that the Authority will suffer loss and damage on account of withdrawal of its BID or for any other default by the Bidder during the period of BID validity as specified in this RFP. No relaxation of any kind on BID Security shall be given to any Bidder.

2.20.5 The BID Security shall be forfeited and appropriated by the Authority as damages payable to the Authority for, inter-alia, time cost and effort of the Authority without prejudice to any other right or remedy that may be available to the Authority under the bidding documents and / or under the Agreement, or otherwise, under the following conditions

(a) Deleted

(b) If a Bidder engages in a corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice as specified in Section 4 of this RFP;

(c) If a Bidder withdraws its BID during the period of Bid validity as specified in this RFP and is extended by mutual consent of the respective Bidder(s) and the



- Authority;
- (d) In the case of Selected Bidder, if it fails within the specified/extended time limit by Authority -
- (i) to sign and return the duplicate copy of LOA;
  - (ii) to furnish the Performance Security /Additional Performance Security (if any) as per Clause 2.21; or
  - (iii) to sign the Agreement,

## 2.21 Performance Security

2.21.1 Within 30 (thirty) days of receipt of Letter of Acceptance, the selected Bidder shall furnish to the Authority an irrevocable and unconditional guarantee from a Bank in the form set forth in Appendix-VII (the "Performance Security") for an amount equal to 5% (five percent) of its Bid Price. In case of bids mentioned below, the Selected Bidder, along with the Performance Security, shall also furnish to the Authority an irrevocable and unconditional guarantee from a Bank in the same form given at Appendix-VII towards an Additional Performance Security (the "Additional Performance Security") for an amount calculated as under:

- (i) If the Bid Price offered by the Selected Bidder is lower than 10% but upto 20% of the estimated Project Cost, then the Additional Performance Security shall be calculated @20% of the difference in the (i) Estimated Project Cost (as mentioned in RFP)-10% of the Estimated Project Cost and (ii) the Bid Price offered by the selected Bidder.
- (ii) If the Bid Price offered by the Selected Bidder is lower than 20% of the Estimated Project Cost, then the Additional Performance Security shall be calculated @ 30% of the difference in the (i) Estimated Project Cost (as mentioned in RFP)-10% of the Estimated Project Cost and (ii) the Bid Price offered by the Selected Bidder.
- (iii) This Additional Performance Security shall be treated as part of the Performance Security.

2.21.2 The Performance Security shall be valid until 60(sixty) days after the Defects Liability Period. The Additional Performance Security shall be valid until 28 (twenty eight) days after Project Completion Date.

2.21.3 The Selected Bidder has the option to provide 50% of the Performance Security and 50% of the Additional Performance Security, if any, within 30 (thirty) days of receipt of Letter of Acceptance, in any case before signing of the Contract Agreement and the remaining Performance Security and Additional Performance Security, if any, shall be submitted within 30 days of signing of the agreement.

2.21.4 In the event the Selected Bidder fails to provide the remaining Performance Security and Additional Performance Security, if any, as prescribed herein, it may seek extension of time for a further period upto 60 days by paying the Damages upfront along with the request letter seeking the extension. The Damages shall be calculated at the rate of 0.01% (zero point zero one per cent) of the Bid Price offered by the Selected Bidder for each day until the Performance Security and Additional Performance Security, if any, is provided in full as prescribed



herein. The damages at full rate as given above shall be applicable even if a part of the Performance Security and the Additional Performance Security is provided.

- 2.21.5 For avoidance of any doubt, in case of failure of submission of Performance Security and Additional Performance Security, if any, within the additional 60 days' time period, the award shall be deemed to be cancelled/ withdrawn and the Bid Security shall be encashed and the proceeds thereof appropriated by the Authority. Thereupon all rights, privileges, claims and entitlements of the Contractor under or arising out of the Award shall be deemed to have been waived by, and to have ceased with the concurrence of the Contractor, and the Award shall be deemed to have been withdrawn by the Authority.
- 2.22 The agreement will be executed within 10 days of receipt of 50% Performance Security and 50% of Additional Performance Security, if any, as per sub-clause 2.21 above.



**SECTION-3**  
**EVALUATION OF TECHNICAL BIDS AND OPENING & EVALUATION OF FINANCIAL BIDS**

**3.1 Evaluation of Technical Bids**

- 3.1.1 The Authority shall open the BIDs received physically & online at 11.30 am hours IST on 28.12.2018, at the place specified in Clause 2.11.4 (i); and in the presence of the Bidders who choose to attend. Technical BID of only those Bidders shall be online opened whose documents listed at clause 2.11.2 of the RFP have been received physically and the details have been uploaded on BIMS along with application to the tender on BIMS. The Authority shall prepare minutes of the BID opening, including information disclosed to those present at the time of BID opening.
- 3.1.2 Technical Bids of those Bidders who have not submitted their Bid online, shall not be considered for opening and evaluation.
- 3.1.3 If any information furnished by the Bidder is found to be incomplete, or contained in formats other than those specified herein, the Authority may, in its sole discretion, exclude the relevant information for consideration of eligibility and qualification of the Bidder.
- 3.1.4 To facilitate evaluation of Technical BIDs, the Authority may, at its sole discretion, seek clarifications in writing from any Bidder regarding its Technical BID. Such clarification(s) shall be provided within the time specified by the Authority for this purpose. Any request for clarification(s) and all clarification(s) in response thereto shall be in writing. The bids will be examined and evaluated on the BIMS portal in accordance with the provisions set out in this Section 3. The Authority will subsequently flag issues, if any with the data updated by the Bidders.
- 3.1.5 If a Bidder does not provide clarifications sought under Clause 3.1.4 above within the prescribed time, its Bid may be liable to be rejected. In case the Bid is not rejected, the Authority may proceed to evaluate the Bid by construing the particulars requiring clarification to the best of its understanding, and the Bidder shall be barred from subsequently questioning such interpretation of the Authority.
- 3.1.6 Tests of responsiveness
- 3.1.6.1 As a first step towards evaluation of Technical BIDs, the Authority shall determine whether each Technical BID is responsive to the requirements of this RFP. A Technical BID shall be considered responsive only if:
- (a) Technical BID is received online as per the format at Appendix-IA including Annexure I, IV, V and VI;
  - (b) Documents listed at clause 2.11.2 are received physically or on BIMS or CPPP as mentioned;
  - (c) Technical Bid is accompanied by the BID Security as specified in Clause 1.2.4 and 2.20;
  - (d) The Power of Attorney is uploaded on BIMS as specified in Clauses 2.1.5;
  - (e) Technical Bid is accompanied by Power of Attorney for Lead Member of Joint Bidder and the Joint Bidding Agreement as specified in Clause 2.1.6, if so



- (f) Technical Bid contains all the information (complete in all respects);
- (g) Technical Bid does not contain any condition or qualification; and
- (h) Demand Draft towards payment of cost of Bid document of Rs. 1,10,000/- (Rupees one lakh ten thousand only) in favour of National Highways Authority of India' payable at New Delhi is received;

3.1.6.2 The Authority reserves the right to reject any Technical BID which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by the Authority in respect of such BID.

3.1.7 In the event that a Bidder claims credit for an Eligible Project, and such claim is determined by the Authority as incorrect or erroneous, the Authority may reject / correct such claim for the purpose of qualification requirements.

3.1.8 The Authority will get the HD security verified from the issuing authority and after due verification, the Authority will evaluate the Technical BIDs for their compliance to the eligibility and qualification requirements pursuant to clause 2.2.1 & 2.2.2 of this RFP.

3.1.9 The Bidders will be automatically evaluated on BIMS by the Authority. After evaluation of Technical Bids, the Authority will publish a list of Technically Responsive Bidders whose financial bids shall be opened. The Authority shall notify other Bidders that they have not been technically responsive. The Authority will not entertain any query or clarification from Applicants who fail to qualify

### 3.2 Opening and Evaluation of Financial Bids

The Authority shall inform the venue and time of online opening of the Financial Bids to the technically responsive Bidders through e-procurement portal and e-mail. The Authority shall open the online Financial Bids of the technically responsive Bidders only on scheduled date and time in the presence of the authorised representatives of the Bidders who may choose to attend. The Authority shall publicly announce the Bid Prices quoted by the technically responsive Bidder. Thereafter, the Authority shall prepare a record of opening of Financial Bids.

### 3.3 Selection of Bidder

3.3.1 Subject to the provisions of Clause 2.16.1, the Bidder whose BID is adjudged as responsive in terms of Clause 3.1.6 and who quotes lowest price shall be declared as the selected Bidder (the "Selected Bidder").

3.3.2 In the event that two or more Bidders quote the same BID Price (the "Tie BIDs"), the Authority shall identify the Selected Bidder by draw of lots, which shall be conducted, with prior notice, in the presence of the Tie Bidders who choose to attend.

3.3.3 In the event that the Lowest Bidder is not selected for any reason except the reason mentioned in Clause 2.1.12 (b) (4), the Authority shall annul the Bidding Process and invite fresh BIDs. In the event that the Authority rejects or annuls all the BIDs, it may, in its discretion, invite all eligible Bidders to submit fresh BIDs hereunder.

3.3.4 After selection, a Letter of Acceptance (the "LOA") shall be issued in the format set forth in Appendix-VIII, in duplicate, by the Authority to the Selected Bidder and the Selected Bidder shall, within 7(seven) days of the receipt of the LOA, sign and return the duplicate copy of the LOA in acknowledgement thereof. In the event the





duplicate copy of the LOA duly signed by the Selected Bidder is not received by the stipulated date, the Authority may, unless it consents to extension of time for submission thereof, appropriate the BID Security of such Bidder as Damages on account of failure of the Selected Bidder to acknowledge the LOA.

3.3.5 After acknowledgement of the LOA as aforesaid by the Selected Bidder, it shall cause the Bidder to submit Performance Security and Additional Performance Security (if any) within the period prescribed/extended by Authority and then execute the Agreement within the period prescribed in Clause 1.3. The Selected Bidder shall not be entitled to seek any deviation, modification or amendment in the Agreement

3.3.6 Authority shall return Bid Security of all bidders except L-1 and L-2 within 7 working days from opening of Financial Bid subject to clause 2.1.12 (4). The Bid Security of L-2 bidder shall be return within seven working days of issue of LOA. The Authority shall be responsible to return the Bid Security, as above, and the bidder shall not be required to ask for the same.

#### 3.4 **Contacts during BID Evaluation**

BIDs shall be deemed to be under consideration immediately after they are opened and until such time the Authority makes official intimation of award/ rejection to the Bidders. While the BIDs are under consideration, Bidders and/ or their representatives or other interested parties are advised to refrain, save and except as required under the Bidding Documents, from contacting by any means, the Authority and/ or their employees/ representatives on matters related to the BIDs under consideration.

#### 3.5 **Correspondence with Bidder**

Save and except as provided in this RFP, the Authority shall not entertain any correspondence with any Bidder in relation to the acceptance or rejection of any Bid.

3.6 Any information contained in the Bid shall not in any way be construed as binding on the Authority, its agents, successors or assigns, but shall be binding against the Bidder if the Project is subsequently awarded to it on the basis of such information.



## SECTION-4

### FRAUD AND CORRUPT PRACTICES

- 4.1 The Bidders and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Bidding Process and subsequent to the issue of the LOA and during the subsistence of the Agreement. Notwithstanding anything to the contrary contained herein, or in the LOA or the Agreement, the Authority may reject a BID, withdraw the LOA, or terminate the Agreement, as the case may be, without being liable in any manner whatsoever to the Bidder, if it determines that the Bidder, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice in the Bidding Process. In such an event, the Authority shall be entitled to forfeit and appropriate the BID Security or Performance Security, as the case may be, as Damages, without prejudice to any other right or remedy that may be available to the Authority under the Bidding Documents and/ or the Agreement, or otherwise.
- 4.2 Without prejudice to the rights of the Authority under Clause 4.1 hereinabove and the rights and remedies which the Authority may have under the LOA or the Agreement, or otherwise if a Bidder or Contractor, as the case may be, is found by the Authority to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Bidding Process, or after the issue of the LOA or the execution of the Agreement, such Bidder shall not be eligible to participate in any tender or RFP issued by the Authority during a period of 2 (two) years from the date such Bidder, or Contractor, as the case may be, is found by the Authority to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practices, as the case may be.
- 4.3 For the purposes of this Section 4, the following terms shall have the meaning hereinafter respectively assigned to them:
- (a) "corrupt practice": means the offering, giving, receiving or soliciting of anything of value, pressurizing to influence the action of a public official in the process of tendering and execution of the project;
  - (b) "fraudulent practice" means a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Bidding Process;
  - (c) "coercive practice" means impairing or harming, or threatening to impair or harm, directly or indirectly, any person or property to influence any person's participation or action in the Bidding Process;
  - (d) "undesirable practice" means (i) establishing contact with any person connected with or employed or engaged by the Authority with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Bidding Process; or (ii) having a Conflict of Interest; and
  - (e) "restrictive practice" means forming a cartel or arriving at any understanding or arrangement among Bidders with the objective of restricting or manipulating a fair and fair competition in the Bidding Process.



## SECTION-5

### PRE-BID CONFERENCE

- 5.1 Pre-BID conference of the Bidders shall be convened at the designated date, time and place. A maximum of two representatives of prospective Bidders shall be allowed to participate on production of authority letter from the Bidder.
- 5.2 During the course of Pre-Bid conference(s), the Bidders will be free to seek clarifications and make suggestions for consideration of the Authority. The Authority shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Bidding Process.



## SECTION-6

### MISCELLANEOUS

- 6.1 The Bidding Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/ or in connection with the Bidding Process.
- 6.2 The Authority, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to;
- (a) suspend and/ or cancel the Bidding Process and/ or amend and/ or supplement the Bidding Process or modify the dates or other terms and conditions relating thereto;
  - (b) consult with any Bidder in order to receive clarification or further information;
  - (c) retain any information and/ or evidence submitted to the Authority by, on behalf of, and/ or in relation to any Bidder; and/ or
  - (d) independently verify, disqualify, reject and/ or accept any and all submissions or other information and/ or evidence submitted by or on behalf of any Bidder.
- 6.3 It shall be deemed that by submitting the Bid, the Bidder agrees and releases the Authority, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/ or performance of any obligations hereunder, pursuant hereto and/ or in connection with the Bidding Process and waives, to the fullest extent permitted by applicable laws, any and all rights and/ or claims it may have in this respect, whether actual or contingent, whether present or in future.



**APPENDIX -IA**  
**LETTER COMPRISING THE TECHNICAL BID**  
*(Refer Clause 2.1.4, 2.11 and 3.1.6)*

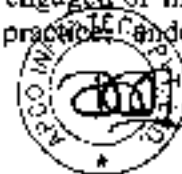
General Manager (T),  
National Highways Authority of India,  
G-5 & 6, Sector-10, Dwarka,  
New Delhi-110075

Sub: BID for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18-500 to Km 47+000) section of Delhi - Vudodara Green field Alignment (NH-148N) on EPC Modu under Bharatmala Pariyojana in the State of Haryana Project

Dear Sir,

With reference to your RFP document dated \*\*\* \*\*\*, I/we, having examined the Bidding Documents and understood their contents, hereby submit my/our BID for the aforesaid Project. The BID is unconditional and unqualified.

2. I We acknowledge that the Authority will be relying on the information provided in the BID and the documents accompanying the BID for selection of the Contractor for the aforesaid Project, and we certify that all information provided in the Bid and its the Annexure I to VI along with the supporting documents are true and correct; nothing has been omitted which renders such information misleading; and all documents accompanying the BID are true copies of their respective originals
3. This statement is made for the express purpose of our selection as BPC Contractor for the development, construction, rehabilitation and augmentation of the aforesaid Project and maintenance of the Project during the Defect Liability Period.
4. I We shall make available to the Authority any additional information it may find necessary or require to supplement or authenticate the BID.
5. I We acknowledge the right of the Authority to reject our BID without assigning any reason or otherwise and hereby waive, to the fullest extent permitted by applicable law, our right to challenge the same on any account whatsoever.
6. I We certify that in the last two years, we/ any of the JV partners have neither failed to perform for the works of Expressways, National Highways, ISC & EI works, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award against us, nor been expelled or terminated by Ministry of Road Transport & Highways or its implementing agencies for breach on our part.
7. I We declare that
  - (a) I We have examined and have no reservations to the Bidding Documents, including any Addendum issued by the Authority; and
  - (b) I/We do not have any conflict of interest in accordance with Clauses 2.2.1 (c) of the RFP document; andI We have not directly or indirectly or through an agent engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, or undesirable



practice or restrictive practice, as defined in Clause 4.3 of the RFP document, in respect of any tender or request for proposal issued by or any Agreement entered into with the Authority or any other public sector enterprise or any government, Central or State; and

- (d) I/ We hereby certify that we have taken steps to ensure that in conformity with the provisions of Section 4 of the RFP, no person acting for us or on our behalf has engaged or will engage in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice; and
- (e) the undertakings given by us along with the Application in response to the RFP for the Project and information mentioned for the evaluation of the BID Capacity in Annexure VI were true and correct as on the date of making the Application and are also true and correct as on the BID Due Date and I/we shall continue to abide by them.
8. I/ We understand that you may cancel the Bidding Process at any time and that you are neither bound to accept any BID that you may receive nor to invite the Bidders to BID for the Project, without incurring any liability to the Bidders, in accordance with Clause 2.16.2 of the RFP document.
9. I/We believe that we/our Joint Venture satisfy(s) the Threshold Technical Capacity, Net Worth criteria and meet(s) the requirements as specified in the RFP document
10. I/ We declare that we/ any Member of the Joint Venture or our/Joint Venture member, are not a Member of any other Joint Venture submitting a BID for the Project.
11. I/ We certify that in regard to matters other than security and integrity of the country, we/ any Member of the Joint Venture or any of our/their Joint venture member have not been convicted by a Court of Law or indicted or adverse orders passed by a regulatory authority which could cast a doubt on our ability to undertake the Project or which relates to a grave offence that outrages the moral sense of the community.
12. I/ We further certify that in regard to matters relating to security and integrity of the country, we/ any Member of the Joint Venture or any of our/their Joint venture member have not been charge-sheeted by any agency of the Government or convicted by a Court of Law.
13. I/ We further certify that no investigation by a regulatory authority is pending either against us/any member of Joint Venture or against our CEO or any of our directors/ managers/ employees.
14. I/ We further certify that we are not disqualified in terms of the additional criteria specified by the Department of Disinvestment in their OM No. 6/4/2001-DD-II dated 13.7.01, a copy of which forms part of the RFP at Annexure VII of Appendix-IA thereof.
15. I/ We undertake that in case due to any change in facts or circumstances during the Bidding Process, we are attracted by the provisions of disqualification in terms of the guidelines referred to above, we shall intimate the Authority of the same immediately.



16. I/We further acknowledge and agree that in the event such change in control occurs after signing of the Agreement upto its validity. It would, notwithstanding anything to the contrary contained in the Agreement, be deemed a breach thereof, and the Agreement shall be liable to be terminated without the Authority being liable to us in any manner whatsoever.
17. I/ We hereby irrevocably waive any right or remedy which we may have at any stage at law or howsoever otherwise arising to challenge or question any decision taken by the Authority in connection with the selection of the Bidder, or in connection with the Bidding Process itself, in respect of the above mentioned Project and the terms and implementation thereof.
18. In the event of my/ our being declared as the Selected Bidder. I/we agree to enter into a Agreement in accordance with the draft that has been provided to me/us prior to the BID Due Date. We agree not to seek any changes in the aforesaid draft and agree to abide by the same.
19. I/ We have studied all the Bidding Documents carefully and also surveyed the project highway and the traffic. We understand that except to the extent as expressly set for thin the Agreement, we shall have no claim, right or title arising out of any documents or information provided to us by the Authority or in respect of any matter arising out of or relating to the Bidding Process including the award of Agreement.
20. I/ We offer a BID Security of Rs. 10.18 crore (Rupees ten crore and eighteen lakh only) to the Authority in accordance with the RFP Document
21. The BID Security in the form of a Bank Guarantee is attached.
22. The documents accompanying the Technical BID, as specified in Clause 2.11.1 of the RFP, have been submitted in separate files.
23. I/ We agree and understand that the BID is subject to the provisions of the Bidding Documents. In no case, I/we shall have any claim or right of whatsoever nature if the Project / Contract is not awarded to me/us or our BID is not opened or rejected
24. The BID Price has been quoted by me/us after taking into consideration all the terms and conditions stated in the RFP, draft Agreement, our own estimates of costs and after a careful assessment of the site and all the conditions that may affect the project cost and implementation of the project.
25. I/ We agree and undertake to abide by all the terms and conditions of the RFP document.
26. {We, the Joint Venture agree and undertake to be jointly and severally liable for, all the obligations of the EPC Contractor under the Contract Agreement}
27. I/ We shall keep this offer valid for 120 (one hundred and twenty) days from the BID Due Date specified in the RFP.

28. I/ We hereby submit our BID and offer a BID Price as indicated in Financial Bid for undertaking the aforesaid Project in accordance with the Bidding Documents and the



In witness thereof, I/we submit this BID under and in accordance with the terms of the RFP document.

Yours faithfully,

Date:  
designated

(Signature, name and

Place:

of the Authorised signatory)

Name & seal of Bidder/Lead Member

Note: Paragraphs in curly parenthesis may be omitted by the Bidder, if not applicable to it, and 'Deleted' may be indicated there





**APPENDIX - 1B**  
**Letter comprising the Financial BID**  
(Refer Clauses 2.1.4, 2.11 and 3.1.6)

Dated:

General Manager (T),  
National Highways Authority of India,  
G-5 & 6, Sector-10, Dwarka,  
New Delhi-110075

Sub: **BID for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47-000) section of Delhi Vadodara Green field Alignment (NH-148N) on FPC Mode under Bhamamala Pariyojana in the State of Haryana Project**

Dear Sir,

With reference to your RFP document dated \*\*\* \*\*, I/we, having examined the Bidding Documents and understood their contents, hereby submit my/our BID for the aforesaid Project. The BID is unconditional and unqualified.

2. I/ We acknowledge that the Authority will be relying on the information provided in the BID and the documents accompanying the BID for selection of the Contractor for the aforesaid Project, and we certify that all information provided in the Bid are true and correct; nothing has been omitted which renders such information misleading; and all documents accompanying the BID are true copies of their respective originals.
3. The BID Price has been quoted by me/us after taking into consideration all the terms and conditions stated in the RFP, draft Agreement, our own estimates of costs and after a careful assessment of the site and all the conditions that may affect the project cost and implementation of the project.
4. I/ We acknowledge the right of the Authority to reject our BID without assigning any reason or otherwise and hereby waive, to the fullest extent permitted by applicable law, our right to challenge the same on any account whatsoever.
5. In the event of my/ our being declared as the Selected Bidder, I/we agree to enter into a Agreement in accordance with the draft that has been provided to me/us prior to the BID Due Date. We agree not to seek any changes in the aforesaid draft and agree to abide by the same.
6. I/ We shall keep this offer valid for 120 (one hundred and twenty) days from the BID Due Date specified in the RFP.
7. **I/ We hereby submit our BID and offer a BID Price online for undertaking the aforesaid Project in accordance with the Bidding Documents and the Agreement.**

Yours faithfully,

Date:  
Place:



(Signature, name and designation of the  
Authorised Signatory)

Name & seal of Bidder's BID Member:.....



Class III DSC ID of Authorised Signatory: .....



**ANNEX-I**  
**Details of Bidder**

1. (a) Name:  
(b) Country of incorporation:  
(c) Address of the corporate headquarters and its branch office(s), if any, in India:  
(d) Date of incorporation and/ or commencement of business:
2. Brief description of the Bidder including details of its main lines of business and proposed role and responsibilities in this Project:
3. Details of individual(s) who will serve as the point of contact/ communication for the Authority:
  - (a) Name:
  - (b) Designation:
  - (c) Company:
  - (d) Address:
  - (e) Telephone Number:
  - (f) E-Mail Address:
  - (g) Fax Number:
4. Particulars of the Authorised Signatory of the Bidder:
  - (a) Name:
  - (b) Designation:
  - (c) Address:
  - (d) Phone Number:
  - (e) Fax Number:
  - (f) Class III Digital Signature Certificate ID number
5. In case of a Joint Venture:
  - (a) The information above (1-4) should be provided for all the Members of the Joint Venture.
  - (b) A copy of the Joint Bidding Agreement, as envisaged in Clause 2.1.11(f) should be attached to the Application.
  - (c) Information regarding the role of each Member should be provided as per table below:

Sl.	Name of Member	Role* {Refer Clause 2.1.11(d)} <sup>5</sup>	Share of work in the Project {Refer Clauses 2.1.11(a), (f) & (g)}
1.			
2.			
3.			

\* The role of each Member, as may be determined by the Applicant, should be indicated in accordance with instruction 4 at Annex-IV.

.....contd

<sup>5</sup> All provisions contained in curly parenthesis shall be suitably modified by the Applicant to reflect the particulars relating to the Applicant.

(d) The following information shall also be provided w.r.t para 2.1.14 for each Member of the Joint Venture:

Name of Applicant/ member of Joint Venture:

Sl. No.	Criteria	Yes/No
1.	Has the Bidder/ constituent of the Joint Venture been barred by the Ministry of Road Transport & Highways or its implementing agencies for the works of Expressways, National Highways, ISC and EI works, from participating in bidding.	
2	If the answer to 1 is yes, does the bar subsist as on BID due date.	

6(a) I/ We certify that in the last two years, we/ any of the JV partners have neither failed to perform for the works of Expressways, National Highways, ISC & EI works, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitral award against us, nor been expelled or terminated by Ministry of Road Transport & Highways or its implementing agencies for breach on our part.

(b) I/ We certify that we/ any of the JV partners do not fall in any of the categories of being a Non-Performing entity given at Clause 2.1.14 (Section-2) of Instructions to Bidders in the projects of Expressways, National Highways, ISC and EI works of Ministry of Road Transport & Highways or its implementing agencies and furnished the complete details at Annex-1 (Sr. No. 6(h)).

7(a) I/ We further certify that no investigation by a regulatory authority is pending either against us/any member of Joint Venture or our sister concern or against our CEO or any of our directors/managers/employees.

(b) I/ We further certify that no investigation by any investigating agency in India or outside is pending either against us/ any member of Joint Venture or our sister concern or against our CEO or any of our directors/managers/employees.

A statement by the Bidder and each of the Members of its Joint Venture (where applicable) disclosing material non-performance or contractual non-compliance in current projects, as on bid due date is given below (attach extra sheets, if necessary) w.r.t. para 2.1.14.

Name of the Bidder /Member of JV: \_\_\_\_\_

Sr. No.	Categories of Non-Performer	Project 1	Project 2
(i)	Fails to complete or has missed more than two milestones in already awarded two or more projects, even after lapse of 6 months from the scheduled completion date, unless Extension of Time has been approved on the recommendations of the Independent		



	Engineer due to Authority's default;		
(ii)	Fails to complete a project, as per revised schedule, for which One Time Fund Infusion (OTFI) has been sanctioned by the Authority;		
(iii)	Physical progress on any project is not commensurate with the funds released (equity+ debt+grant) from the escrow account and such variation is more than 25% in last one year as observed by the Independent Engineer in one or more projects;		
(iv)	Punch List Items in respect of any project are pending due to Bidder's default in two or more Projects even after lapse of the prescribed time for completion of such items;		
(v)	Fails to fulfil its obligations to maintain a highway in a satisfactory condition inspite of two rectification notices issued in this behalf.		
(vi)	Fails to attend to Non Conformity Reports (NCRs) issued by the Independent/ Authority's Engineer on the designs/ works constructed by the Bidder pending for more than one year in two or more projects.		
(vii)	Fails to make premium payments excluding the current instalment in one or more projects.		
(viii)	Damages/Penalties recommended by the Independent/ Authority's Engineer on the Bidder during O&M period and the remedial works are not taken up in two or more projects.		
(ix)	Fails to achieve financial closure in two or more projects within the given or extended period (which shall not be more than six months in any case).		
(x)	Fails to submit the Performance Security within the permissible period in more than one project(s).		
(xi)	Rated as an unsatisfactory performing entity/ non-performing entity by an independent third party agency and so notified on the website of the Authority.		

I/ We certify that the list is complete and covers all the projects of Expressways, National Highways, ISC and E1 works of Ministry of Road Transport & Highways or its implementing agencies and that we/ any of the JV partners do not fall in any of the above categories of being a Non-Performing entity.



(Signature, name and designation of the authorised signatory)

For and on behalf of.....





Annex-III DELETED



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ANNEX-IV

Details of Eligible Projects

(Refer to Clauses 2.2.2, 2.2.2.5 and 2.2.2.7 of the RFP)

Project Code:

Entity: Self/Members:

1. Certificate from the Bidder's statutory auditor<sup>5</sup> or its respective clients must be furnished as per formats below for each Eligible Project. In jurisdictions that do not have statutory auditors, the auditors who audit the annual accounts of the Bidder may provide the requisite certification.
2. If the Bidder is claiming experience under Categories 1 & 2<sup>4</sup>, it should provide a certificate from its statutory auditor in the format below as per Clause 2.2.2.6 (i) (d):

**Certificate from the Statutory Auditor regarding PPP projects<sup>6</sup>**

Based on its books of accounts and other published information authenticated by it, this is to certify that ..... (name of the Bidder) is/ was an equity shareholder in ..... (title of the project company) and holds/hold Rs. .... cr. (Rupees ..... crore) of equity (which constitutes .....% of the total paid up and subscribed equity capital) of the project company from ..... (date) to ..... (date).<sup>7</sup> The project was/is commenced on ..... (date) and likely to be commissioned on ..... (date of commissioning of the project).

We further certify that the total estimated capital cost of the project is Rs. .... cr. (Rupees ..... crore), of which the applicant has itself undertaken the construction of project of Rs. .... (Rupees ..... Crores) excluding any part of the project for which any contractor, sub-contractor or other agent was appointed for the purpose of construction by the aforesaid Applicant itself, during the past five financial years as per year-wise details noted below:

.....  
.....

Name of the audit firm:

Seal of the audit firm:

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

(Signature, name and designation  
of the authorised signatory)

3. If the Bidder is claiming experience under Category 3 & 4<sup>4</sup>, as per Clauses 2.2.2.5 and 2.2.2.6(ii) of the RFP, it should provide a certificate from its Statutory Auditor/client/Engineer-in charge/ Independent Engineer/Authority's Engineer in the format below:

<sup>4</sup> In case duly certified audited annual financial statements containing the requisite details are provided, a separate certification by statutory auditors would not be necessary

<sup>5</sup> Refer Clause 2.2.2.5 of the RFP.

<sup>6</sup> Provide Certificate as per this format only. Attach Explanatory Notes to the Certificate, if necessary. Statutory auditor means the entity that audits and certifies the annual accounts of the company

<sup>7</sup> Refer instruction no. 10 in this Annex-IV.

<sup>8</sup> In case the project is owned by the Applicant company, this language may be suitably modified to read: "It is certified that ..... (name of Applicant) constructed and/ or owned the ..... (name of project) from ..... (date) to ..... (date)." Refer Clauses 2.2.2.5 and 2.2.2.6(ii) of the RFP.

\* Refer Clauses 2.2.2.5 and 2.2.2.6(ii) of the RFP.



**Certificate regarding construction works<sup>o</sup>**

Based on its books of accounts and other published information authenticated by it, This is to certify that ..... (name of the Bidder) was engaged by ..... (title of the project company) to execute ..... (name of project) for ..... (nature of project). The construction of the project commenced on ..... (date) and the project was/ is likely to be commissioned on ..... (date, if any). It is certified that Bidder received payments from its Clients for Construction Works executed by them or work executed and certified by the Engineer-in-charge/Independent Engineer/Authority's Engineer, in the aforesaid construction works.

We further certify that the total estimated capital cost of the project is Rs. .... cr. (Rupees ..... crore), which the Applicant received or has executed the work as certified by the Engineer-in-charge/Independent Engineer/Authority's Engineer Rs. .... cr. (Rupees ..... crore), during the past five financial years as per year-wise details noted below.

.....  
.....  
It is further certified that the receipts indicated above are restricted to the share of the Applicant who undertook these works as a partner or a member of joint venture. \*  
We further certify that applicant has a share of \_\_\_ % in the Joint Venture.

(Authorized Signatory)

Date:

4. It may be noted that in the absence of any detail in the above certificates, the information would be considered inadequate and could lead to exclusion of the relevant project in computation of Experience.

<sup>o</sup> Provide Certificate as per this format only. Attach Explanatory Notes to the Certificate, if necessary. Statutory auditor means the entity that audits and certifies the annual accounts of the company. However, in case the work of other member(s) is also executed by the applicant, then this fact should also be certified by the Statutory Auditor and accordingly the language may be suitably modified.

\* This certification should strike out in case of jobs/ contracts, which are executed a sole firm. The payments indicated in the certificate should be restricted to the share of Applicant in such partnership/ joint venture. This portion may be omitted if the contract did not involve a partnership/ joint venture. In case where work is not executed by partnership/ joint venture, this paragraph may be deleted.



ANNEX-V  
Statement of Legal Capacity

*(To be forwarded on the letterhead of the Applicant/ Lead Member of Joint Venture)*

Ref. Date:

To,  
General Manager (T),  
National Highways Authority of India,  
G-5 & 6, Sector-10, Dwarka,  
New Delhi-110075  
Dear Sir,

We hereby confirm that we/ our members in the Joint Venture (constitution of which has been described in the application) satisfy the terms and conditions laid out in the RFP document.

We have agreed that ..... (insert member's name) will act as the Lead Member of our Joint Venture.\*

We have agreed that ..... (insert individual's name) will act as our representative/ will act as the representative of the Joint Venture on its behalf\* and has been duly authorized to submit the RFP. Further, the authorised signatory is vested with requisite powers to furnish such letter and authenticate the same.

Thanking you,

Yours faithfully,

(Signature, name and designation of the authorised signatory)

For and on behalf of.....

\*Please strike out whichever is not applicable.



**Information required to evaluate the BID Capacity under clause 2.2.2.1:**

To calculate the value of "A" and "C"

1. A table containing value of Civil Engineering Works in respect of FPC Projects (Turnkey projects / Item rate contracts (Construction works) undertaken by the Bidder during the last 5 years is as follows (the amount of bonus received, if any, shall be indicated separately):

2.

Sl. No.	Year	Value of Civil Engg. Works undertaken including EPC Projects including bonus, if any (Rs. in Crores)	Amount of bonus (Rs. in Crores)	Net Value excluding bonus (Rs. in Crores)
1	2017-18/2017			
2	2016-17/2016			
3	2015-16/2015			
4	2014-15/2014			
5	2013-14/2013			

3. Maximum value of projects that have been undertaken during the F.Y. \_\_\_\_\_ out of the last 5 years and value excluding amount of bonus thereof is Rs. \_\_\_\_\_ Crores (Rupees \_\_\_\_\_). Further, value updated to the price level of the year indicated in Appendix is as follows:

Rs. \_\_\_\_\_ Crores x \_\_\_\_\_ (Updation Factor as per Appendix) = Rs. \_\_\_\_\_ Crores (Rupees \_\_\_\_\_)

4. Amount of bonus received, if any, in FPC Projects during the last 5 years (updated to the price level of the year indicated in Appendix):

Sl. No	F.Y. / Calendar Year	Amount of Bonus (Rs. in Crores)	Updation Factor	Updated Amount of Bonus (Rs. in Crores)
1	2017-18/2017		1.00	
2	2016-17/2016		1.05	
3	2015-16/2015		1.10	
4	2014-15/2014		1.15	
5	2013-14/2013		1.20	
			Total (C)-	

<p>..... ..... Name of the Statutory Auditor's firm: Seal of the audit firm; (Signature, name and designation and Membership No. of authorised signatory)</p>	<p>..... ..... Signature, name and designation of Authorised Signatory  For and on behalf of ..... (Name of</p>
---	---



Date:  
Place:



### To calculate the value of "B"

A table containing value of all the existing commitments and on-going works to be completed during the next 2 years is as follows:

Sl. No	Name of Project/ Work	Percentage of participation of Bidder in the project	Date of start / appointed date of project	Construction period as per Agreement/ LOA	Value of contract as per Agreement / LOA <sup>1</sup>	Value of work completed	Balance value of work to be completed	Anticipated date of completion	Balance value of work at 2017-18/2017 price level
					Rs. in Crore	Rs. in Crore	Rs. in Crore		Rs. in Crore
1	2	3	4	5	6	7	8=(6-7)	9	10(3x 8x #)

# Updation Factor as given below:

For Year	F.Y. / Calendar Year	Updation Factor
1	2017-18/2017	1.00
2	2016-17/2016	1.05
3	2015-16/2015	1.10
4	2014-15/2014	1.15
5	2013-14/2013	1.20

The Statement showing the value of all existing commitments, anticipated value of work to be completed in the period of construction of the project for which bid is invited and ongoing works as well as the stipulated period of completion remaining for each of the works mentioned above is verified from the certificate issued that has been countersigned by the Client or its Engineer-in-charge not below the rank of Executive Engineer or equivalent in respect of EPC Projects or Concessionaire / Authorised Signatory of SPV in respect of BOT Projects. No awarded / ongoing works has been left in the aforesaid statement which has been awarded to M/s ..... individually / and other member M/s ..... and M/s ..... as on bid due date of this RFP.

.....  
 Signature, name and designation of Authorised Signatory

For and on behalf of ..... (Name of the Bidder)

.....  
 Name of the Statutory Auditor's firm:  
 Seal of the audit firm (Signature, name and designation and Membership No. of authorised signatory)

Date:  
 Place:

<sup>1</sup> In case balance period of construction is less than the value of period of construction of the project for which bid is invited, then full value of contract as per Agreement/LOA to be mentioned, else, anticipated value of work to be completed in the period of construction of the project for which bid is invited is to be mentioned. In the absence of the anticipated value of work to be completed, the proportionate value shall be considered while evaluating the Assessed Available Bid Capacity.



**Guidelines of the Department of Disinvestment**  
(Refer Clause 2.1)

No. 6/4/2001-DD II  
Government of India  
Department of Disinvestment

Block 14, CGO Complex  
New Delhi.  
Dated 13<sup>th</sup> July, 2001.

OFFICE MEMORANDUM

Sub: Guidelines for qualification of Bidders seeking to acquire stakes in Public Sector Enterprises through the process of disinvestment

Government has examined the issue of framing comprehensive and transparent guidelines defining the criteria for Bidders interested in PSE-disinvestment so that the parties selected through competitive bidding could inspire public confidence. Earlier, criteria like net worth, experience etc. used to be prescribed. Based on experience and in consultation with concerned departments, Government has decided to prescribe the following additional criteria for the qualification/ disqualification of the parties seeking to acquire stakes in public sector enterprises through disinvestment:

- (a) In regard to matters other than the security and integrity of the country, any conviction by a Court of Law or indictment/ adverse order by a regulatory authority that casts a doubt on the ability of the Bidder to manage the public sector unit when it is disinvested, or which relates to a grave offence would constitute disqualification. Grave offence is defined to be of such a nature that it outrages the moral sense of the community. The decision in regard to the nature of the offence would be taken on case to case basis after considering the facts of the case and relevant legal principles, by the Government of India.
- (b) In regard to matters relating to the security and integrity of the country, any charge-sheet by an agency of the Government/ conviction by a Court of Law for an offence committed by the bidding party or by any sister concern of the bidding party would result in disqualification. The decision in regard to the relationship between the sister concerns would be taken, based on the relevant facts and after examining whether the two concerns are substantially controlled by the same person/ persons.
- (c) In both (a) and (b), disqualification shall continue for a period that Government deems appropriate.
- (d) Any entity, which is disqualified from participating in the disinvestment process, would not be allowed to remain associated with it or get associated merely because it has preferred an appeal against the order based on which it has been disqualified. The mere pendency of appeal will have no effect on the disqualification.



- (e) The disqualification criteria would come into effect immediately and would apply to all Bidders for various disinvestment transactions, which have not been completed as yet.
- (f) Before disqualifying a concern, a Show Cause Notice why it should not be disqualified would be issued to it and it would be given an opportunity to explain its position.
- (g) Henceforth, these criteria will be prescribed in the advertisements seeking Expression of Interest (EOI) from the interested parties. The interested parties would be required to provide the information on the above criteria, along with their Expressions of Interest (EOI). The Bidders shall be required to provide with their EOI an undertaking to the effect that no investigation by a regulatory authority is pending against them. In case any investigation is pending against the concern or its sister concern or against its CEO or any of its Directors/ Managers/ employees, full details of such investigation including the name of the investigating agency, the charge/ offence for which the investigation has been launched, name and designation of persons against whom the investigation has been launched and other relevant information should be disclosed, to the satisfaction of the Government. For other criteria also, a similar undertaking shall be obtained along with EOI.

sd/-

(A.K. Tewari)

Under Secretary to the Government of India





**Details of ongoing works (Ref Clause 10.3 (iv) of Draft EPC Agreement)**

S. No.	Name of the work	Contract Price (INR Cr)	Appointed Date	Original Scheduled Completion Date	Likely Date of Completion	Reason for Delay <sup>a</sup>
1						
2						
3						
...						

(In the event that the Bidder had failed to achieve the Completion of any project within a period of 90 (ninety) days from the Schedule Completion Date of the project, unless such failure had occurred due to Force Majeure or for reasons solely attributable to the Authority, the Bidder shall be deemed to be ineligible for bidding this project (under bidding), both as the sole party or as one of the parties of Joint Venture/ Consortium, if any, during the period from Scheduled Completion Date to issuance of Completion Certificate for that project. This restriction is applicable if the contract value of the delayed project was not less than Rs 300 Crore.)

<sup>a</sup>To be supported with valid certificate issued from Independent Engineer / Authority's Engineer / Supervision Consultant / Engineer-in-charge

I/ We certify that all the information furnished above is true in all respects.

..... Name of the Bidder

Signature of the authorized signatory: \_\_\_\_\_

Name of the Authorised Signatory: \_\_\_\_\_

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

Place: \_\_\_\_\_



APPENDIX - II  
Bank Guarantee for BID Security  
(Refer Clauses 2.20)

B.G No Dated:

1. In consideration of you, National Highways Authority of India, having its office at G-5 & 6, Sector 10, Dwarka, New Delhi - 110075, (hereinafter referred to as the "Authority", which expression shall unless it be repugnant to the subject or context thereof include its successors and assigns) having agreed to receive the BID of ..... and having its registered office at ..... (and acting on behalf of its JV) (hereinafter referred to as the "Bidder" which expression shall unless it be repugnant to the subject or context thereof include its/their executors, administrators, successors and assigns), for the Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana Project on EPC basis (hereinafter referred to as "the Project") pursuant to the RFP Document dated ..... issued in respect of the Project and other related documents including without limitation the draft contract Agreement (hereinafter collectively referred to as "Bidding Documents"), we (Name of the Bank) having our registered office at ..... and one of its branches at ..... (hereinafter referred to as the "Bank"), at the request of the Bidder, do hereby in terms of Clause 1.2.4 read with Clause 2.20 of the RFP Document, irrevocably, unconditionally and without reservation guarantee the due and faithful fulfilment and compliance of the terms and conditions of the Bidding Documents (including the RFP Document) by the said Bidder and unconditionally and irrevocably undertake to pay forthwith to the Authority an amount of Rs. 10.18 crore (Rupees ten crore and eighteen lakh only) (hereinafter referred to as the "Guarantee") as our primary obligation without any demur, reservation, recourse, contest or protest and without reference to the Bidder if the Bidder shall fail to fulfil or comply with all or any of the terms and conditions contained in the said Bidding Documents.
2. Any such written demand made by the Authority stating that the Bidder is in default of the due and faithful fulfilment and compliance with the terms and conditions contained in the Bidding Documents shall be final, conclusive and binding on the Bank.
3. We, the Bank, do hereby unconditionally undertake to pay the amounts due and payable under this Guarantee without any demur, reservation, recourse, contest or protest and without any reference to the Bidder or any other person and irrespective of whether the claim of the Authority is disputed by the Bidder or not, merely on the first demand from the Authority stating that the amount claimed is due to the Authority by reason of failure of the Bidder to fulfil and comply with the terms and conditions contained in the Bidding Documents including failure of the said Bidder to keep its BID open during the BID validity period as set forth in the said Bidding Documents for any reason whatsoever. Any such demand made on the Bank shall be conclusive as regards amount due and payable by the Bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs. 10.18 crore (Rupees ten crore and eighteen lakh only).



4. This Guarantee shall be irrevocable and remain in full force for a period of 180 (one hundred and eighty) days from the BID Due Date inclusive of a claim period of 60 (sixty) days or for such extended period as may be mutually agreed between the Authority and the Bidder, and agreed to by the Bank, and shall continue to be enforceable till all amounts under this Guarantee have been paid.
5. We, the Bank, further agree that the Authority shall be the sole judge to decide as to whether the Bidder is in default of due and faithful fulfilment and compliance with the terms and conditions contained in the Bidding Documents including, inter alia, the failure of the Bidder to keep its BID open during the BID validity period set forth in the said Bidding Documents, and the decision of the Authority that the Bidder is in default as aforesaid shall be final and binding on us, notwithstanding any differences between the Authority and the Bidder or any dispute pending before any Court, Tribunal, Arbitrator or any other Authority.
6. The Guarantee shall not be affected by any change in the constitution or winding up of the Bidder or the Bank or any absorption, merger or amalgamation of the Bidder or the Bank with any other person.
7. In order to give full effect to this Guarantee, the Authority shall be entitled to treat the Bank as the principal debtor. The Authority shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee from time to time to vary any of the terms and conditions contained in the said Bidding Documents or to extend time for submission of the BIDs or the BID validity period or the period for conveying acceptance of Letter of Award by the Bidder or the period for fulfilment and compliance with all or any of the terms and conditions contained in the said Bidding Documents by the said Bidder or to postpone for any time and from time to time any of the powers exercisable by it against the said Bidder and either to enforce or forbear from enforcing any of the terms and conditions contained in the said Bidding Documents or the securities available to the Authority, and the Bank shall not be released from its liability 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 said Bidder or any other forbearance, act or omission on the part of the Authority or any indulgence by the Authority to the said Bidder or by any change in the constitution of the Authority or its absorption, merger or amalgamation with any other person or any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of releasing the Bank from its such liability.
8. Any notice by way of request, demand or otherwise hereunder shall be sufficiently given or made if addressed to the Bank and sent by courier or by registered mail to the Bank at the address set forth herein.
9. We undertake to make the payment on receipt of your notice of claim on us addressed to [name of Bank along with branch address] and delivered at our above branch which shall be deemed to have been duly authorised to receive the said notice of claim.
10. It shall not be necessary for the Authority to proceed against the said Bidder before proceeding against the Bank and the guarantee herein contained shall be



enforceable against the Bank, notwithstanding any other security which the Authority may have obtained from the said Bidder or any other person and which shall, at the time when proceedings are taken against the Bank hereunder, be outstanding or unrealised.

11. We, the Bank, further undertake not to revoke this Guarantee during its currency except with the previous express consent of the Authority in writing.
12. The Bank declares that it has power to issue this Guarantee and discharge the obligations contemplated herein, the undersigned is duly authorised and has full power to execute this Guarantee for and on behalf of the Bank.
13. For the avoidance of doubt, the Bank's liability under this Guarantee shall be restricted to Rs. 10.18 crore (Rupees ten crore and eighteen lakh only). The Bank shall be liable to pay the said amount or any part thereof only if the Authority serves a written claim on the Bank in accordance with paragraph 9 hereof, on or before [\*\*\* (indicate date falling 180 days after the BID Due Date)].
14. 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.
15. 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 NHAI. The details are mentioned below:

S. No.	Particulars	Details
1.	Name of Beneficiary	National Highways Authority of India
2.	Name of Bank	Canara Bank
3.	Account No.	8598201005819
4.	IFSC Code	CNRH0008598

Signed and Delivered by ..... Bank

By the hand of Mr./Ms ..... its ..... and authorised official.

(Signature of the Authorised Signatory)  
(Official-Seal)



**APPENDIX-III**  
**Format for Power of Attorney for signing of BID**  
*(Refer Clause 2 1.5)*

Know all men by these presents, We..... (name of the firm and address of the registered office) do hereby irrevocably constitute, nominate, appoint and authorize Mr./ Ms (name), ..... son/daughter/wife of ..... and presently residing at ....., who is presently employed with us/ the Lead Member of our Joint Venture and holding the position of ....., as our true and lawful attorney (hereinafter referred to as the "Attorney") to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to submission of our BID for the Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana Project proposed or being developed by the National Highways Authority of India (the "Authority") including but not limited to signing and submission of all applications, BIDs and other documents and writings, participate in Pre-BID and other conferences and providing information/ responses to the Authority, representing us in all matters before the Authority, signing and execution of all contracts including the agreement and undertakings consequent to acceptance of our BID, and generally dealing with the Authority in all matters in connection with or relating to or arising out of our BID for the said Project and/ or upon award thereof to us and/or until the entering into of the EPC Contract with the Authority.

AND we hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

IN WITNESS WHEREOF WE, ....., THE ABOVE NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS ..... DAY OF ..... 2.....

For .....  
 (Signature, name, designation and address)  
 of person authorized by Board Resolution  
 (in case of Firm/ Company)/ partner in case of  
 Partnership firm)

Witnesses:  
 1.  
 2.  
 Accepted

.....  
 (Signature)  
 (Name, Title and Address of the Attorney)

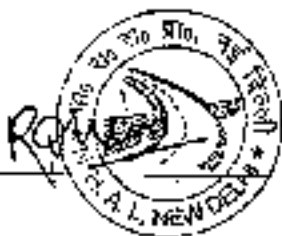
(Notarised)  
 Person identified by me/ personally appeared before me/  
 Attested/ Authenticated\*  
 (\*Notary to specify as applicable)  
 (Signature Name and Address of the Notary)



Seal of the Notary  
Registration No. of the Notary  
Date:.....

*Notes:*

- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.*
- *Wherever required, the Bidder should submit for verification the extract of the charter documents and documents such as a board or shareholders' resolution/ power of attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.*
- *For a Power of Attorney executed and issued overseas, the document will also have to be legalised by the Indian Embassy and notarised in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention 1961 are not required to be legalised by the Indian Embassy if it carries a conforming Apostille certificate.*



APPENDIX-IV

**Format for Power of Attorney for Lead Member of Joint Venture**

*(Refer Clause 2.1.6)*

Whereas the National Highways Authority of India ("the Authority") has invited BIDs for the Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khampur Ghari (Km 18+500 to Km 47+000) section of Delhi - Vadoxtara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana Project(the "Project").

Whereas, ..... and ..... (collectively the "Joint Venture") being Members of the Joint Venture are interested in bidding for the Project in accordance with the terms and conditions of the Request for Proposal (RFP) and other BID documents including agreement in respect of the Project, and

Whereas, it is necessary for the Members of the Joint Venture to designate one of them as the Lead Member with all necessary power and authority to do for and on behalf of the Joint Venture, all acts, deeds and things as may be necessary in connection with the Joint Venture's BID for the Project and its execution.

**NOW THEREFORE KNOW ALL MEN BY THESE PRESENTS**

We, ..... having our registered office at ....., M/s. .... having our registered office at .... M/s. .. having our registered office at ....., and ..... having our registered office at ....., (hereinafter collectively referred to as the "Principals") do hereby irrevocably designate, nominate, constitute, appoint and authorize M/S ..... having its registered office at ..... being one of the Members of the Joint Venture, as the Lead Member and true and lawful attorney of the Joint Venture (hereinafter referred to as the "Attorney"). We hereby irrevocably authorize the Attorney (with power to sub-delegate) to conduct all business for and on behalf of the Joint Venture and any one of us during the bidding process and, in the event the Joint Venture is awarded the contract, during the execution of the Project and in this regard, to do on our behalf and on behalf of the Joint Venture, all or any of such acts, deeds or things as are necessary or required or incidental to the pre-qualification of the Joint Venture and submission of its BID for the Project, including but not limited to signing and submission of all applications, BIDs and other documents and writings, participate in pre BID and other conferences, respond to queries, submit information/ documents, sign and execute contracts and undertakings consequent to acceptance of the BID of the Joint Venture and generally to represent the Joint Venture in all its dealings with the Authority, and/ or any other Government Agency or any person, in all matters in connection with or relating to or arising out of the Joint Venture's BID for the in all respect Project and/ or upon award thereof till the EPC Contract is entered into with the Authority & Compelled.

AND hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us/ Joint Venture.



IN WITNESS WHEREOF WE THE PRINCIPALS ABOVE NAMED HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS ..... DAY OF ..... 2.....

For ..... (Signature) ..... (Name & Title)	For ..... (Signature) ..... (Name & Title)	For ..... (Signature) ..... (Name & Title)
---	---	---

(Executants)

(To be executed by all the Members of the Joint Venture)

Witnesses:

- 1.
- 2.

*Notes:*

- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.*
- *Also, wherever required, the Bidder should submit for verification the extract of the charter documents and documents such as a board or shareholders' resolution/ power of attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.*
- *For a Power of Attorney executed and issued overseas, the document will also have to be legalised by the Indian Embassy and notarised in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention 1961 are not required to be legalised by the Indian Embassy if it carries a conforming Apostille certificate.*



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APPENDIX V

Format for Joint Bidding Agreement for Joint Venture

(Refer Clause 2.1.11)

(To be executed on Stamp paper of appropriate value)

THIS JOINT BIDDING AGREEMENT is entered into on this the ..... day of ..... 20...

AMONGST

1. {..... Limited, and having its registered office at ..... } (hereinafter referred to as the "First Part" which expression shall, unless repugnant to the context include its successors and permitted assigns)

AND

2. {..... Limited, having its registered office at ..... } and (hereinafter referred to as the "Second Part" which expression shall, unless repugnant to the context include its successors and permitted assigns)

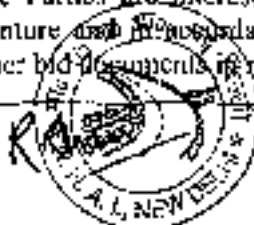
AND

3. {..... Limited, and having its registered office at ..... } (hereinafter referred to as the "Third Part" which expression shall, unless repugnant to the context include its successors and permitted assigns)

The above mentioned parties of the FIRST, {SECOND and THIRD} PART are collectively referred to as the "Parties" and each is individually referred to as a "Party"

WHEREAS,

- (A) NATIONAL HIGHWAYS AUTHORITY OF INDIA, established under the National Highways Authority of India Act 1988, represented by its Chairman and having its principal offices at G-5 & 6, Sector 10, Dwarka, New Delhi-110075 (hereinafter referred to as the "Authority" which expression shall, unless repugnant to the context or meaning thereof, include its administrators, successors and assigns) has invited bids (the "Bids") by its Request for Proposal No. .... dated ..... (the "RFP") for award of contract for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 471000 near Khanpur Ghati (Km 18+500 to Km 471000) section of Delhi - Vadodara Green field Alignment (NH 148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana Project (the "Project") through an EPC Contract.
- (B) The Parties are interested in jointly bidding for the Project as members of a Joint Venture and in accordance with the terms and conditions of the RFP document and other bid documents in respect of the Project, and



- (C) It is a necessary condition under the RFP document that the members of the Joint Venture shall enter into a Joint Bidding Agreement and furnish a copy thereof with the Application.

**NOW IT IS HEREBY AGREED** as follows:

**1. Definitions and Interpretations**

In this Agreement, the capitalised terms shall, unless the context otherwise requires, have the meaning ascribed thereto under the RFP.

**2. Joint Venture**

- 2.1 The Parties do hereby irrevocably constitute a Joint Venture (the "Joint Venture") for the purposes of jointly participating in the Bidding Process for the Project.
- 2.2 The Parties hereby undertake to participate in the Bidding Process only through this Joint Venture and not individually and/or through any other Joint Venture constituted for this Project, either directly or indirectly.

**3. Covenants**

The Parties hereby undertake that in the event the Joint Venture is declared the selected Bidder and awarded the Project, it shall enter into an EPC Contract with the Authority for performing all its obligations as the Contractor in terms of the EPC Contract for the Project.

**4. Role of the Parties**

The Parties hereby undertake to perform the roles and responsibilities as described below:

- (a) Party of the First Part shall be the Lead member of the Joint Venture and shall have the power of attorney from all Parties for conducting all business for and on behalf of the Joint Venture during the Bidding Process and for performing all its obligations as the Contractor in terms of the EPC Contract for the Project. ;
- (b) Party of the Second Part shall be {the Member of the Joint Venture; and}
- (c) Party of the Third Part shall be {the Member of the Joint Venture.}

**5. Joint and Several Liability**

The Parties do hereby undertake to be jointly and severally responsible for all obligations and liabilities relating to the Project and in accordance with the terms of the RFP and the EPC Contract, till such time as the completion of the Project is achieved under and in accordance with the EPC Contract.



**6. Share of work in the Project**

The Parties agree that the proportion of construction in the EPC Contract to be allocated among the members shall be as follows:

First Party:

Second Party:

{Third Party:}

Further, the Lead Member shall itself undertake and perform at least 51 (fifty one) per cent of the total length of the project highway if the Contract is allocated to the Joint Venture.

**7. Representation of the Parties**

Each Party represents to the other Parties as of the date of this Agreement that:

- (a) Such Party is duly organised, validly existing and in good standing under the laws of its incorporation and has all requisite power and authority to enter into this Agreement;
- (b) The execution, delivery and performance by such Party of this Agreement has been authorised by all necessary and appropriate corporate or governmental action, and a copy of the extract of the charter documents and board resolution/ power of attorney in favour of the person executing this Agreement for the delegation of power and authority to execute this Agreement on behalf of the Joint Venture Member is annexed to this Agreement, and will not, to the best of its knowledge:
  - (i) require any consent or approval not already obtained;
  - (ii) violate any Applicable Law presently in effect and having applicability to it;
  - (iii) violate the memorandum and articles of association, by-laws or other applicable organisational documents thereof;
  - (iv) violate any clearance, permit, concession, grant, license or other governmental authorisation, approval, judgement, order or decree or any mortgage agreement, indenture or any other instrument to which such Party is a party or by which such Party or any of its properties or assets are bound or that is otherwise applicable to such Party; or
  - (v) create or impose any liens, mortgages, pledges, claims, security interests, charges or Encumbrances or obligations to create a lien, charge, pledge, security interest, encumbrances or mortgage in or on the property of such Party, except for encumbrances that would not, individually or in the aggregate, have a material adverse effect on the financial condition or



prospects or business of such Party so as to prevent such Party from fulfilling its obligations under this Agreement;

- (c) this Agreement is the legal and binding obligation of such Party, enforceable in accordance with its terms against it; and
- (d) there is no litigation pending or, to the best of such Party's knowledge, threatened to which it or any of its Affiliates is a party that presently affects or which would have a material adverse effect on the financial condition or prospects or business of such Party in the fulfillment of its obligations under this Agreement.

**8. Termination**

This Agreement shall be effective from the date hereof and shall continue in full force and effect until Project completion (the "Defects Liability Period") is achieved under and in accordance with the EPC Contract, in case the Project is awarded to the Joint Venture. However, in case the Joint Venture is either not pre-qualified for the Project or does not get selected for award of the Project, the Agreement will stand terminated in case the Applicant is not pre-qualified or upon return of the Bid Security by the Authority to the Bidder, as the case may be.

**9. Miscellaneous**

- 9.1 This Joint Bidding Agreement shall be governed by laws of {India}.
- 9.2 The Parties acknowledge and accept that this Agreement shall not be amended by the Parties without the prior written consent of the Authority.

IN WITNESS WHEREOF THE PARTIES ABOVE NAMED HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN. SIGNED, SEALED AND DELIVERED

For and on behalf of

LEAD MEMBER by:

SECOND PART

THIRD PART

(Signature)

(Signature)

(Signature)

(Name)

(Name)

(Name)

(Designation)

(Designation)

(Designation)

(Address)

(Address)

(Address)

In the presence of:

Notes:



1. The mode of the execution of the Joint Bidding Agreement should be in accordance with the procedure, if any, laid down by the Applicable Law and the charter documents of the executant(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.
2. Each Joint Bidding Agreement should attach a copy of the extract of the charter documents and documents such as resolution / power of attorney in favour of the person executing this Agreement for the delegation of power and authority to execute this Agreement on behalf of the Joint Venture Member.
3. For a Joint Bidding Agreement executed and issued overseas, the document shall be legalised by the Indian Embassy and notatized in the jurisdiction where the Power of Attorney has been executed.



APPENDIX VI

INTEGRITY PACT FORMAT

*(To be executed on plain paper and submitted alongwith Technical Bid/Tender documents for tenders having a value of Rs. 5 cr or above for Consultancy projects and 100 cr or above for Construction projects. To be signed by the Bidder and same signatory competent/ authorized to sign the relevant contract on behalf of the NHAI)*

This integrity Pact is made at \_\_\_\_\_ on this \_\_\_\_\_ day of \_\_\_\_\_, 2018.

**BETWEEN**

**President of India through Ministry of Road Transport & Highways, Government of India** represented by its Chairman, National Highways Authority of India and having its principal offices at G-5 & 6, Sector 10, Dwarka, New Delhi-110075, (hereinafter referred to as the "**Principal/Owner**" which expression shall, unless repugnant to the context or meaning thereof, include its administrators, successors and assigns)

**AND**

(Name and address of the Firm/Company), (hereinafter referred to as "The Bidder(s)/Contractor(s)/Concessionaire(s)/Consultant(s)" and which expression shall unless repugnant to be meaning or context thereof include its successors and permitted assigns.)

**Preamble**

Whereas, the Principal has floated the Tender (NIT No .....dtd ...../...../.....) (hereinafter referred to as "Tender/Bid") and intends to award, under laid down organizational procedure, contracts for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km. 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana (hereinafter referred to as the "Contract").

And Whereas the Principal values full compliance with all relevant laws of the land, rules of land, regulations, economic use of resources and of fairness/ transparency in its relations with its Bidder(s) and/ or Contractor(s)/Concessionaire(s)/Consultant(s).

And whereas to meet the purpose aforesaid, both the parties have agreed to enter into this Integrity Pact (hereafter referred to as "Integrity Pact" or "Pact") the terms and conditions of which shall also be read as integral part and parcel of the Tender documents and contract between the parties.

Now, therefore, in consideration of mutual covenants contained in this pact, the parties hereby agree as follows and this pact witnesses as under:

**Article-1: Commitments of the Principal**

(1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-

- (a) No employee of the Principal, personally or through family members, will in connection with the Tender for, or the execution of a Contract, demand, take a promise for or accept, for self, or third person, any material or immaterial benefit which the person is not legally entitled to.



- (b) The Principal will, during the Tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/ additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
  - (c) The Principal will exclude all known prejudiced persons from the process, whose conduct in the past has been of biased nature.
- (2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act or any other Statutory Acts or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions as per its internal laid down Rules/Regulations.

**Article - 2: Commitments of the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s).**

The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.

- (a) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
- (b) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contract, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
- (c) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will not commit any offence under the relevant IPC/PC Act and other Statutory Acts; further the Bidder(s)/Contractor(s)/Concessionaire(s)/Consultant(s) will not use improperly, for purposes of completion or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- (d) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) of foreign origin shall disclose the name and address of the Agents/ Representatives in India, if any. Similarly, the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) of Indian Nationality shall furnish the name and address of the foreign principle, if any.
- (e) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will, when presenting his bid disclose any and all payments he has made, is committed to or intends to make to



agents, brokers or any other intermediaries in connection with the award of the contract. He shall also disclose the details of services agreed upon for such payments.

- (f) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- (g) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will not bring any outside influence through any Govt bodies/quarters directly or indirectly on the bidding process in furtherance of his bid.

**Article - 3 Disqualification from tender process and exclusion from future contracts.**

- (1) If the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s), before award or during execution has committed a transgression through a violation of any provision of Article-2, above or in any other form such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) from the tender process.
- (2) If the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) has committed a transgression through a violation of Article-2 such as to put his reliability or credibility into question, the Principal shall be entitled to exclude including blacklist and put on holiday the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) for any future tenders/ contract award process. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the Principal taking into consideration the full facts and circumstances of each case particularly taking into account the number of transgressions, the position of the transgressors within the company hierarchy of the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) and the amount of the damage. The exclusion will be imposed for a maximum of 3 years.
- (3) A transgression is considered to have occurred if the Principal after due consideration of the available evidence concludes that "On the basis of facts available there are no material doubts".
- (4) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) with its free consent and without any influence agrees and undertakes to respect and uphold the Principal's absolute rights to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.
- (5) The decision of the Principal to the effect that a breach of the provisions of this Integrity Pact has been committed by the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) shall be final and binding on the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s), however, the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) can approach IEM(s) appointed for the purpose of this Pact
- (6) On occurrence of any sanctions/ disqualification etc arising out from violation of integrity pact, the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) shall not be entitled for any compensation on this account.





- (7) Subject to full satisfaction of the Principal, the exclusion of the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) could be revoked by the Principal if the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) can prove that he has restored/ recouped the damage caused by him and has installed a suitable corruption prevention system in his organization.

**Article - 4: Compensation for Damages.**

- (1) If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Article-3, the Principal shall be entitled to forfeit the Earnest Money Deposit/ Bid Security or demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security apart from any other legal right that may have accrued to the Principal.
- (2) In addition to 1 above, the Principal shall be entitled to take recourse to the relevant provisions of the contract related to Termination of Contract due to Contractor/ Concessionaire/Consultant's Default. In such case, the Principal shall be entitled to forfeit the Performance Bank Guarantee of the Contractor/ Concessionaire/ Consultant and/ or demand and recover liquidated and all damages as per the provisions of the contract/concession agreement against Termination.

**Article - 5: Previous Transgressions**

- (1) The Bidder declares that no previous transgressions occurred in the last 3 years immediately before signing of this Integrity Pact with any other Company in any country conforming to the anti corruption/ Transparency International (TI) approach or with any other Public Sector Enterprise/ Undertaking in India or any Government Department in India that could justify his exclusion from the tender process.
- (2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or action for his exclusion can be taken as mentioned under Article-3 above for transgressions of Article-2 and shall be liable for compensation for damages as per Article-4 above.

**Article - 6: Equal treatment of all Bidders/ Contractors/ Concessionaires/ Consultants/ Subcontractors.**

- (1) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) undertake(s) to demand from all sub-contractors a commitment in conformity with this Integrity Pact, and to submit it to the Principal before contract signing.
- (2) The Principal will enter into agreements with identical conditions as this one with all Bidders/ Contractors/ Concessionaires/ Consultants and subcontractors.
- (3) The Principal will disqualify from the tender process all Bidders who do not sign this Pact or violate its provisions.

**Article - 7: Criminal charges against violating Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s)/ Sub-contractor(s).**

If the Principal obtains knowledge of conduct of a Bidder/ Contractor/ Concessionaire/ Consultant or subcontractor, or of an employee or a representative or an associate of a Bidder/ Contractor/ Concessionaire/ Consultant or Subcontractor, which constitutes



corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to the Chief Vigilance Officer.

**Article- 8: Independent External Monitor (IEM)**

- (1) The Principal has appointed Shri. R.S. Gujral as Independent External Monitor (herein after referred to as "Monitor") for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.
- (2) The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the Director General (Road Development) & Special Secretary.
- (3) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) accepts that the Monitor has the right to access without restriction to all project documentation of the Principal including that provided by the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s). The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/Contractor(s)/Subcontractor(s) with confidentiality.
- (4) The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
- (5) As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.
- (6) The Monitor will submit a written report to the Director General (Road Development) & Special Secretary within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.
- (7) If the Monitor has reported to the Director General (Road Development) & Special Secretary, a substantiated suspicion of an offence under relevant IPC/PC Act, and the Director General (Road Development) & Special Secretary has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.
- (8) The word 'Monitor' would include both singular and plural.

**Article - 9 Pact Duration**

This Pact begins when both parties have legally signed it (in case of EPC i.e. for projects funded by Principal and consultancy services). It expires for the Contractor/ Consultant 12 months after his Defect Liability Period is over or 12 months after his last payment under the



contract whichever is later and for all other unsuccessful Bidders 6 months after this Contract has been awarded. (In case of BOT Projects) It expires for the concessionaire 24 months after his concession period is over and for all other unsuccessful Bidders 6 months after this Contract has been awarded

If any claim is made/ lodged during his time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/ determined by Director General (Road Development) & Special Secretary.

**Article - 10 Other Provisions.**

- (1) This pact is subject to Indian Law. Place of performance and jurisdiction is the Registered Office of the Principal, i.e. New Delhi.
- (2) Changes and supplements as well as termination notices need to be made in writing
- (3) If the Bidder/Contractor/Concessionaire/Consultant is in a partnership or a ~~concessionaire~~ Joint Venture partner, this pact must be signed by all partners or ~~concessionaire~~ members.
- (4) Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- (5) Any disputes/ differences arising between the parties with regard to term of this pact, any action taken by the Principal in accordance with this Pact or interpretation thereof shall not be subject to any Arbitration.
- (6) The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provision of the extant law in force relating to any civil or criminal proceedings.

In witness whereof the parties have signed and executed this Pact at the place and date first done mentioned in the presence of following witness:-

(For & On behalf of the Principal)

(For & On behalf of the Bidder/ Contractor/  
Concessionaire/ Consultant )

(Office Seal )

Place \_\_\_\_\_

Date \_\_\_\_\_

Witness 1 : (Name & Address):

Witness 2 : (Name & Address):

*(COUNTERSIGNED and accepted by:*

*JV Partner)*



Appendix-VII  
(See Clauses 2.21)

**FORM OF BANK GUARANTEE**  
**Performance Security/Additional Performance Security**

To  
National Highways Authority of India,  
G-5 & 6, Sector-10, Dwarka,  
New Delhi-110075

WHEREAS \_\_\_\_\_ [name and address of Contractor]  
(hereafter called the "Contractor") has undertaken, in pursuance of Letter of Acceptance (LOA)  
No. \_\_\_\_\_ Dated \_\_\_\_\_ for construction of Construction of Eight Lane  
Expressway starting before KMP Expressway and ends at Ch. 471000 near Khanpur Ghati (Km  
18+500 to Km 471000) section of Delhi - Vadodara Green field Alignment (NH-148N) on  
EPC Mode under Bharatmala Pariyojana in the State of Haryana (hereinafter called the  
"Contract").

AND WHEREAS the Contract requires the Contractor to furnish an {Performance Security/  
Additional Performance Security} for due and faithful performance of its obligations, under and  
in accordance with the Contract, during the {Construction Period/ Defects Liability Period and  
Maintenance Period} in a sum of Rs. .... cr. (Rupees ..... crore) (the "Guarantee  
Amount").

AND WHEREAS we, ..... through our branch at ..... (the  
"Bank") have agreed to furnish this Bank Guarantee (hereinafter called the "Guarantee") by  
way of Performance Security.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and  
affirms as follows:

1. The Bank hereby unconditionally and irrevocably guarantees the due and faithful performance of the Contractor's obligations during the {Construction Period/ Defects Liability Period and Maintenance Period} under and in accordance with the Contract, and agrees and undertakes to pay to the Authority, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.
2. A letter from the Authority, under the hand of an officer not below the rank of General Manager of National Highways Authority of India, that the Contractor has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Contract shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Contract and its decision that the Contractor is in default shall be final and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators

<sup>2</sup> Guarantee Amount for Performance Security and Additional Performance Security shall be calculated as per Contract

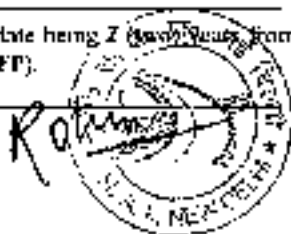


or any other authority or body, or by the discharge of the Contractor for any reason whatsoever.



3. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.
4. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.
5. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Contract or to extend the time or period for the compliance with, fulfillment and/or performance of all or any of the obligations of the Contractor contained in the Contract or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Contract and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.
6. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Contract or for the fulfillment, compliance and/or performance of all or any of the obligations of the Contractor under the Contract.
7. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.
8. The Guarantee shall cease to be in force and effect on \*\*\*\* Unless a demand or claim under this Guarantee is made in writing before expiry of the Guarantee, the Bank shall be discharged from its liabilities hereunder.
9. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.

<sup>3</sup>Insert date being Z (two) days from the date of issuance of this Guarantee (in accordance with Clause 2.20.6 of the RFP).



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 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 Guarantee shall come into force with immediate effect and shall remain in force and effect for up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Contract.
12. This Guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.
13. 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.
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 NHAI. The details are mentioned below:

S. No.	Particulars	Details
1.	Name of Beneficiary	National Highways Authority of India
2.	Name of Bank	Canara Bank
3.	Account No	8598201005819
4.	IFSC Code	CNRB0008598

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)



Appendix-VIII  
(See Clauses 3.3.4)

**Format of LOA**

No. \_\_\_\_\_  
Government of India

National Highways Authority of India  
( \_\_\_\_\_ Section)

G-5 & 6, Sector 10, Dwarka, New Delhi-110075

Dated,

To,

{Name of selected Bidder}

**Subject:** Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana- **Letter of Acceptance (LOA)-Reg.**

Reference: Your bid for the subject work dated \_\_\_\_\_

Sir,

This is to notify you that your Bid dated \_\_\_\_\_ for execution of the {project description}, at your quoted bid price amounting to Rs. \_\_\_\_\_- {amount in words} has been determined to be the lowest evaluated bid and is substantially responsive and has been accepted.

2. You are requested to return a duplicate of the LOA as an acknowledgement and sign the Contract Agreement within the period prescribed in Clause 1.3 of the RFP
3. You are also requested to furnish Performance Security for an amount of \_\_\_\_\_ {and Additional Performance Security for an amount of \_\_\_\_\_} as per Clause 2.21 of the RFP within 30 (thirty) days of receipt of this Letter of Acceptance (LOA). In case of delay in submission of Performance Security and Additional Performance Security, if any, you may seek extension of time for a period not exceeding 60 (Sixty) days on payment of Damages in accordance with Clause 2.21 of RFP.
4. In case of failure of submission of Performance Security, Additional Performance Security (if any) and Security against Damages (if any) within the additional 60 (Sixty) days time period, the award shall be deemed to be cancelled and Bid security shall be encashed by the Authority as per Clause 2.21 of the RFP.

Yours faithfully,


{authorized signature}





(NHAI Haryana Division)

Tender No. NHAI/BM/Delhi-Vaundga/2018/Pkg 2

This Integrity Pact is made at New Delhi on this day of July of 2019

Between

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

Chairman National Highways Authority of India (NHAI), a statutory body constituted under the National Highways Authority of India Act, 1988, which has been entrusted with the responsibility of development, maintenance and management of National Highways, having its office at G-5 & 6, Sector-10, Dwarka, New Delhi, hereinafter referred to as "The Principal," which expression shall unless repugnant to the meaning or context thereof include its successors and permitted assigns.

and

**APCO Infratech Private Limited**, the selected bidder having its registered office at 4<sup>th</sup> Floor, Universe Trade Tower, Sohna Road, Sector-49, Gurugram 122101 (Haryana), (hereinafter referred to as the "Contractor" and which expression shall unless repugnant to be meaning or context thereof include its successors and permitted assigns.

Preamble

Whereas, the Principal intends to award, under laid down organizational procedures, contract BID for "Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khajpur Ghat from km 18+500 to km 47+500 (approximately 28.500 km) on the section of National Highway No.148-N (hereinafter called the "NH -148-N") in the state of Haryana" Project. The Principal values full compliance with all relevant laws of the land, rules of land, regulations, economic use of resources and of fairness/ transparency in its relations with its Bidder (s) and/ or Contractor (s)/ Concessionaire (s)/ Consultant(s).

And whereas in order to achieve these goals, the Principal will appoint an Independent External Monitor (IEM), who will monitor the tender process and the execution of the contract for compliance with the Principles mentioned above.

And whereas to meet the purpose aforesaid, both the parties have agreed to enter into this Integrity Pact (hereafter referred to as Integrity Pact) the terms and conditions of which shall also be read as integral part and part of the Tender documents and contract between the parties. Now, therefore, in consideration of mutual covenants stipulated in this pact, the parties hereby agree as follows and this pact witnesseth as under -



#### Article-1-Commitments of the Principal

1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-

- (a) No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
  - (b) The Principal will, during the tender process treat a Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential or additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
  - (c) The Principal will exclude all known prejudiced persons from the process, whose conduct in the past has been of biased nature.
- 2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act or any other Statutory Acts or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary action as per its 'Internal laid down Rules' Regulations.

#### Article-2 Commitments of the Bidder(s)/ Contractor(s)/Concessionaire(s)/ Consultant(s)

The Bidder(s) / Contractor(s)/concessionaire(s) consultant(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution

- (a) The Bidder(s)/ Contractor(s)/ concessionaire(s)/consultant(s) will not directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain, in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
- (b) The Bidder(s)/ Contractor(s) concessionaire(s)/ consultant(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
- (c) The Bidder(s)/ Contractor(s) Concessionaire(s)/ Consultant(s) will not commit an offence under the relevant IPC/PC Act and other Statutory Acts, further the Bidder(s)



Contractor(s)/Concessionaire(s)/ Consultant(s) will not use (improperly, for purposes of completion or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

- (d) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) of foreign origin shall disclose the name and address of the Agents/representatives in India, if any. Similarly the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) of Indian Nationality shall furnish the name and address of the foreign principal, if any.
- (e) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents/brokers or any other intermediaries in connection with the award of the contract. He shall also disclose the details of services agreed upon for such payments.
- (f) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- (g) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will not bring any outside influence through any Govt. bodies/quarters directly or indirectly on the bidding process in "influence of" his bid.

### **Article-3 Disqualification from tender process and exclusion from future contracts**

- (1) If the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) before award or during execution has committed a transgression through a violation of any provision of Article-2 Above or in any other form such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) from the tender process.
- (2) If the Bidder/ Contractor/ Concessionaire/ Consultant has committed a transgression through a violation of Article-2 such as to put his reliability or credibility into question, the Principal shall be entitled to exclude including blacklist and put on holiday the Bidder/ Contractor/ Concessionaire/ Consultant for any future tenders/ contract award process. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the Principal taking into consideration the full facts and circumstances of each case particularly taking into account the number of transgressions, the position of the transgressors within the company hierarchy of the Bidder/ Contractor/ Concessionaire/ Consultant and the amount of the damage. The exclusion will be imposed for a minimum of 1 year.
- (3) A transgression is considered to have occurred if the Principal after due consideration of the available evidence concludes that "On the basis of facts available there are no material doubts".



- (4) The Bidder/Contractor/Concessionaire/Consultant with its free consent and without any influence agrees and undertakes to respect and uphold the Principal's absolute rights to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.
- (5) The decision of the Principal to the effect that a breach of the provisions of this Integrity Pact has been committed by the Bidder/Contractor/Concessionaire/Consultant shall be final and binding on the Bidder/Contractor/Concessionaire/Consultant, however, the Bidder/Contractor/Concessionaire/Consultant, can approach JEM (s) appointed for the purposes of this Pact.
- (6) On occurrence of any sanctions/ disqualification etc arising out from violation of Integrity Pact, Bidder/Contractor/Concessionaire/Consultant shall not be entitled for any compensation on this account.
- (7) Subject to full satisfaction of the principal, the exclusion of Bidder/Contractor/Concessionaire/Consultant could be revoked by the Principal if the Bidder/Contractor/Concessionaire/Consultant can prove that he has restored/recovered the damage caused by him and has installed a suitable corruption prevention system in his organization.

#### Article-4 Compensation for Damages

- (1) If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Article 3, the Principal shall be entitled to forfeit the Earnest Money Deposit/Bid Security or demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security apart from any other legal right that may have accrued to the Principal.
- (2) In addition to above the Principal shall be entitled to take recourse to the relevant provisions of the contract related to Termination of Contract due to Contractor/Concessionaire/Consultants Default. In Such case, the Principal shall be entitled to forfeit the Performance Bank Guarantee of the Contractor/Concessionaire/Consultants and/or demand and recover liquidated and all damages as per the provisions of the contract/Concession agreement against Termination.

#### ARTICLE 5-Previous Transgression

- (1) The Bidder declares that no previous transgression Occurred in the last 5 years immediately before signing of this Integrity Pact with any other Company in any country conforming to the anti corruption Transparency International (TI) approach or with any other Public Sector Enterprises Undertaking in India or any Government Department in the India that could justify his exclusion from the tender process



- (2) If the Bidder makes incorrect statement on this subject he can be disqualified from the tender process or action for his exclusion can be taken as mentioned under Article-3 above for transgression of Article -2 and shall be liable for compensation for damages as per Article-4 above.

**ARTICLE 6-Equal treatment of all Bidders/ Contractors / Concessionaires / Consultants/Subcontractors**

- (1) The Bidder(s)/ Contractor(s)/Concessionaire(s)/Consultant(s)/Undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact and to submit it to the Principal before contract signing.
- (2) The Principal will enter into agreements with identical condition as this one with all Bidders/ Contractors / Concessionaires-Consultants and Subcontractors.
- (3) The Principal will disqualify from the tender process all Bidders who do not sign this Pact or violate its provisions.

**Article 7-Criminal Charges against violating Bidder(s) / Contractor(s)/Concessionaire(s)/Consultant(s)/ Sub-contractor(s)**

If the Principal obtains Knowledge of conduct of a Bidder/ Contractor/Concessionaire, Consultant or subcontractor, or of an employee or a representative or an associate of a Bidder/ Contractor/Concessionaire/ Consultant or subcontractor, which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to Chief Vigilance Officer.

**Article 8- Independent External Monitor (IEM)**

- (1) The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply the obligation under this agreement.
- (2) The Monitor is not subject instruction by the representative of the parties and performs his functions neutrally and independently. He reports to the Chairman, NHAI.
- (3) The Bidder-Contractor-Concessionaire/ Consultant accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that Provided by the Bidder- Contractor/Concessionaire/ Consultant. The Bidder/ Contractor/Concessionaire/ Consultant will also grant the monitor, Upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project. The Monitor is under contractual obligation to treat the information and documents of the Bidder- Contractor/Concessionaire- Consultant or subcontractors with confidentiality.
- (4) The Principal will provide to the Monitor sufficient information about all meeting among the parties related to the Project provided such meeting could have an impact on the contractual relation between the Principal and the Bidder/ Contractor/Concessionaire/ Consultant. The parties offer to the Monitor the options to participate in such meeting.



- (5) As soon as the Monitor notices, or believes to notices any transgression as given in Article-2, he may request the Management of the Principal to take corrective action or to take relevant action. The Monitor can in this regard submit non-binding recommendation. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.
- (6) The Monitor will submit a written report to the Chairman, N HAI within 8-10 weeks from the date of reference or intimation to him by the Principal and should the occasion arise, submit proposals for correcting problems situations.
- (7) If the Monitor has reported to the Chairman NHAJ, a substantiated suspicion of under relevant IPC/ PC Act or any other Statutory Acts, and the Chairman NHAJ, has not, within the reasonable time taken visible action to proceed against such offence or reported it the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.

#### Article 9-Pact Duration

This Pact Begin when both parties have legally signed it [In case of EPC i.e. projects funded by Principal and consultancy services] It expires for the Contractor/Consultant 12 months after his Defects Liability Period is over or 12 months after his last payment under the contract whichever is later and for all other unsuccessful Bidders 6 Months after his Contract has been awarded.[In case of BOF projects] It expires for the concessionaire 24 months after his concession period is over and all other unsuccessful Bidders 6 months after this contract has been awarded.

If any claim is made/dodge during this time, the same shall be binding and continue to be valid despite the lapse the lapse of this pact as specified above, unless it is discharged/determined by Chairman of NHAJ.

#### Article 10-Other Provision

- (1) This pact is subject to Indian Law. Place of performance and jurisdiction is the Registered Office of the Principal i.e. New Delhi.
- (2) Change and supplements as well as termination notice need to be made in writing.
- (3) If the Bidder/Contractor/Concessionaire/Consultant is a partnership or a consortium, this pact must be signed by all partners or consortium members.
- (4) Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- (5) Any disputes/differences arising between the parties with regard to terms of this pact, any action taken by the Principal in accordance with this Pact or interpretation thereof shall not be subjects to any Arbitration.
- (6) The action stipulated in the Integrity pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal procedure.



In witness where of the parties have signed and executed this Pact at the place and date first done mentioned in the presence of following witnesses

(For & on behalf of the (principal))

For & on behalf of Contractor

(Officer Seal)

Place

Date

Witness 1:

(Name & Address)

Witness 2:

(Name & Address)





# भारतीय राष्ट्रीय राजमार्ग प्राधिकरण

(सड़क परिवहन और राजमार्ग मंत्रालय)

## National Highways Authority of India

(Ministry of Road Transport and Highways)

जी-5 एन 6, सेक्टर-10, द्वारका, नई दिल्ली-110075

G-5 & 6, Sector-10, Dwarka, New Delhi-110075

दूरभाष (Phone) 01-11-25071100/25071200

फैक्स (Fax) 011-25092297 + 25093314

NHAI/BM/ Delhi-Vadodara/2018/Pkg2

01.10.2018

To

All Bidders

**Sub: Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Chatli (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana - Extension of Bid due date - Reg.**

Bid due date for the subject project has been extended from 10.10.2018 to 12.11.2018 (up to 11:00 hrs) with following schedule:-

- |   |                         |
|---|-------------------------|
| (i). Deadline for downloading of bid            | - 12.11.2018 (1100 hrs) |
| (ii). Deadline for online submission of bids    | - 12.11.2018 (1100 hrs) |
| (iii). Deadline for physical submission of bids | - 13.11.2018 (1100 hrs) |
| (iv). Opening of bids                           | - 13.11.2018 (1130 hrs) |

All other terms and conditions will remain same.

*Rohin*  
01/10/18  
(Rohin Kumar Gupta)  
General Manager (I)  
Bharatmala







भारतीय राष्ट्रीय राजमार्ग प्राधिकरण  
(सड़क परिवहन और राजमार्ग मंत्रालय)  
**National Highways Authority of India**  
(Ministry of Road Transport and Highways)  
जी-5 एवं 6, सेक्टर-10, द्वारका, नई दिल्ली-110075  
G-5 & 6, Sector-10 Dwarka, New Delhi-110075

दस्तावेज संख्या: NHAI/2018/1002902/000  
दिनांक: 23/10/2018

NHA/BM/ Delhi-Vadodara/2018/Pkg2

23.10.2018

To

All Bidders

Sub: Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana- Extension of Bid due date - Reg.

Bid due date for the subject project has been extended from 12.11.2018 to 05.12.2018 (up to 11:00 hrs) with following schedule:-

- |   |                          |
|---|--------------------------|
| (i). Deadline for downloading of bid            | 05.12.2018 (11:00 hrs)   |
| (ii). Deadline for online submission of bids    | - 05.12.2018 (11:00 hrs) |
| (iii). Deadline for physical submission of bids | - 06.12.2018 (11:00 hrs) |
| (iv). Opening of bids                           | - 06.12.2018 (11:30 hrs) |

All other terms and conditions will remain same.

*Rohini*  
23/10/18  
(Rohin Kumar Gupta)  
General Manager (T)  
Bharatmala





# भारतीय राष्ट्रीय राजमार्ग प्राधिकरण

(सड़क परिवहन और राजमार्ग विभाग)

## National Highways Authority of India

(Ministry of Road Transport and Highways)

जी-5 एंड 6, सेक्टर-10, द्वारका, नई दिल्ली 110075

G-5 & 6 Sector-10, Dwarka, New Delhi-110075

दूरभाष : Phone : 91-11-26014100/23074201

फैक्स : Fax : 91-11-26016037 / 25260514

NHA/BM/Delhi/Vadodara/2018/Pkg 2

Dated: 02.11.2018

### Corrigendum-I

To

All applicants

**Sub: Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green field Alignment (NH-145N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana - Reg.**

The RFP, Technical Schedules and Plan and Profile from ch km 33 000 to 35 000 as uploaded for the subject project have been amended and the amendment for the same is enclosed at Annex-A, B & D respectively.

2. The reply of pre-bid queries for the subject project has been enclosed at Annex-C.
3. All other terms and conditions will remain same.

*Rohin*  
2/11/18  
(Rohin Kumar Gupta)  
General Manager (T)  
Bharatmala



**Annex-A**

**Amendments In RFP**

<b>Sr. No.</b>	<b>Clause Reference</b>	<b>Existing Clause</b>	<b>Amended Clause</b>
1	Clause 2.11.1 (a) of the RFP	Appendix-IA (Letter comprising the Technical Bid) including Annexure I, IV and V and supporting certificates / documents.	Appendix-IA (Letter comprising the Technical Bid) including Annexure I, IV, V and VI and supporting certificates / documents.
2	Clause 2.11.1 (j) (a) of RFP	_____	copy of Memorandum and Articles of Association, if the Applicant is a body corporate, and if a partnership then a copy of its partnership deed
3.	Clause 3.1.6.1 (a) of RFP	Technical BID is received online as per the format at Appendix-IA including Annexure I to IV and V	Technical BID is received online as per the format at Appendix-IA including Annexure I, IV, V and VI



**Amendments in Technical Schedules**

**Schedule A**

**Clause 1.4: stands amended and shall be read as under:**

The alignment plans of the Project Highway are specified in Annex-III. The proposed levels (FRL) as indicated in the alignment plan shall be treated as an approximate assessment. The contractor shall design the Road Profile of the project highway based on site/design requirement mentioned in Schedule D.

**Annex-III (Schedule-A): stands amended and shall be read as under:**

**Alignment Plans:**

1. The alignment of the Project Highway is enclosed in alignment plan. Finished road level indicated in the alignment plan shall be treated as an approximate assessment. The contractor shall design the Road profile of the project highway based on site/design requirement mentioned in Schedule D.
2. Traffic Signage plan of the Project Highway showing numbers & location of traffic signs is enclosed. The contractor shall, however, improve/upgrade upon the traffic signage plan as indicated in Annexure-III based on site/design requirement as per IRC: SP: 99-2013 & IRC: 67-2012.

**Schedule B**

**Clause 1: stands amended and shall be read as under:**

Development of the Project Highway shall include design and construction of the Project Highway as described in this Schedule-B and in Schedule-C. The alignment plans of the Project Highway are specified in Annex-III of Schedule A. The proposed profile of the project highway as indicated in the Annex-III of Schedule A shall be treated as an approximate assessment. Based on site/design requirement, the Contractor shall design the alignment plans and profiles of the project highway based on site/design requirement mentioned in Schedule D with approval from the Authority's Engineer within the available Right of Way.

**Annexure-I of Schedule B**

**Para 2 under Description of the Project: stands amended and shall be read as under:**

The Project Highway shall follow the horizontal alignment shown in the plan specified in Annex III of Schedule-A, unless otherwise specified by the Authority. Notwithstanding anything to the contrary contained in this Agreement or IRC:SP:99-2013, the proposed profile of the project highway as indicated in the Annexure-III of Schedule-A shall be



treated as an approximate assessment. Based on site/design requirement, the Contractor shall design the alignment plans and profiles of the project highway based on site/design requirement mentioned in Schedule D with approval from the Authority's Engineer within the available Right of Way. The same shall not constitute a change of scope, save and except any variations arising out of a change of scope expressly undertaken in accordance with the provision of Article 13.

**Clause 2.6:** stands amended and shall be read as under:

Service Roads / Slip Roads shall be constructed at the locations and for the lengths indicated below:

Sl. No.	Location of Service Roads/Slip Roads (Design Chainage in Km)		Right Hand Side (RHS)/Left Hand Side) or Both Sides	Length (m)	Remarks
	From Slip Road	To			
1	33+630	34+590	LHS	960	7 m wide for wayside amenities
2	33+385	34+345	RHS	960	
3	34+622	35+100	Both side	478	7 m wide for Entry & Exit from Nuh-Hodal road

**Clause 4:** stands amended and shall be read as under:

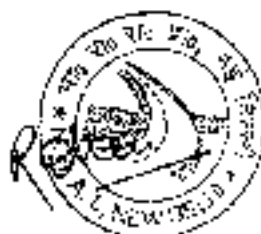
Construction of new road embankment/cuttings shall conform to the Specifications and Standards given in section 4 of the IRC:SP:99-2013 and the specified cross sectional details. Notwithstanding anything to the contrary contained in this Agreement or IRC:SP:99-2013, the proposed profile of the project highway as indicated in the Annex-III of Schedule shall be treated as an approximate assessment. Based on site/design requirement, the Contractor shall design the alignment plans and profiles of the project highway based on site/design requirement mentioned in Schedule D with approval from the Authority's Engineer within the available Right of Way

**Clause 5.3.2 Design Traffic:** stands amended and shall be read as under:

Notwithstanding anything to the contrary contained in this Agreement or the IRC:SP:99-2013, the Contractor shall design the pavement of main carriageway as long life perpetual flexible pavement while the pavement for connecting/service/slip road shall be designed for design traffic of 10 MSA

In order to meet the intended functional requirement of respective pavement layers as well as compaction of heavy bituminous layers on main carriageway, the minimum thickness of respective pavement layers for main carriageway and connecting/ service/slip road shall, however, in no case be less than as given below.

**Main carriageway**



Pavement Composition	Pavement Type	Minimum Crust Thickness (mm)
Stone Matrix Asphalt (SMA) as wearing course	Perpetual	50
Bituminous base course		250
Non-bituminous base course		150
Sub-base course		200

**Connecting/Service/Slip road**

Pavement Composition	Pavement Type	Minimum Crust Thickness (mm)
Bituminous Concrete (BC) as wearing course	Flexible	40
Bituminous base course		50
Non-bituminous base course		250
Sub-base course		200

**Clause 9. Roadside furniture: Shall be read as under:**

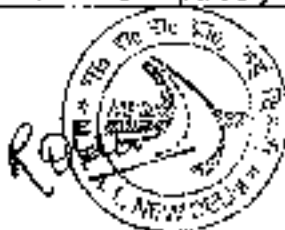
- 9.1 Roadside furniture like km/Hectometer Stones, Railings, Traffic Impact Attenuators, Delineators shall be provided in accordance with the provisions of Section 10 & Section 12 of IRC:SP:992013 and Traffic Signage plan as indicated in Annexure-II of Schedule-A & deemed to be part of this Schedule-B.

S. No.	Project Facility	Location	Design Requirements
1	Traffic Signs and Pavement Markings	Entire length of project road	As per Schedule D
2	Kilometer and 200m stones	Entire length of project road	As per Schedule D
3	Road side Delineators	Horizontal curves of project road	As per Schedule D

- 9.2 RCC boundary wall shall be provided along the entire length on either side (including transverse requirements at structure locations) as per typical layout drawing enclosed with the bid documents.

- 9.3 Traffic Signs (excluding overhead signs at Toll Plaza): Traffic sign boards as per details given below shall be provided in the project highway as per road signage plan indicated in Annexure-III of Schedule-A and deemed to be part of this Schedule-B

Sl. No.	Type of Sign
1	One Way Object Hazard Marker (OHM)
2	Two Way Object Hazard Marker (OHM)
3	Height restriction (Regulatory Sign)
4	Speed Limit Signs (Regulatory Sign)
5	Merging Traffic Ahead (Cautionary Sign)
6	Compulsory Keep Left Sign (Regulatory Sign)
7	Compulsory Ahead Sign (Regulatory Sign)



8	U-Turn Prohibited Sign (Regulatory Sign)
9	Give way sign (Regulatory Sign)
10	Chevron Marker (At Curves)
11	Triple Chevron Marker (At roundabout)
12	Reassurance Sign (Direction & Place Identification Sign)
13	Roundabout Sign (Cautionary Sign)
14	Left/ Right Hand Curve (Cautionary Sign)
15	Expressway Route Marker Sign
16	Entry/ Exit Expressway Sign (Information Sign)
17	End of Expressway Sign
18	Map type Advance Direction Sign
19	Flag type Advance Direction Sign
20	Advance Directional Sign (Overhead Cantilever/ Gantry)
21	Rest Area Information Sign (Overhead Cantilever/ Gantry)
22	Slogan Gantry

**Note:** The numbers and location of Traffic Signages shown in Traffic Signage plan as indicated in Annexure-III of Schedule-A are tentative and minimum specified. The actual numbers and location of Traffic Signages shall be determined by the Contractor in accordance with the IRC:SP:99-2013 requirements with approval from the Authority's Engineer. Any increase in the number and type of road sign boards specified in this Clause of Schedule-B shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.



Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHAI\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
1	Schedule A of (Annex II)	Dates for providing right of way	The proposed width to be acquired at the toll plaza in Plan and Profile as per Annex – III of schedule A is more than that indicated in Annex – II – Schedule A. It may be clarified whether the land for Toll plaza including the other buildings and structures to be accommodated at the toll plaza location shall be provided on Appointed date	90% of RoW including additional land for development of interchanges, wayside amenities and other project facilities will be provided on appointed date and remaining 10% will be handed over within the time period specified in the draft Contract Agreement.
	Schedule A of (Annex IV)	Environment clearances	In the Annex-IV it is mentioned as Environment clearances under process. Please let us know the status or expected period of obtaining the environmental clearance	TOR for environmental clearance has been approved by MOEF and preparation of EIA report is under progress. Environmental clearance is expected by Dec., 2018
3	Schedule B Clause 6	Road Side Drainage	Drainage system including surface and subsurface drains for the Project Highway shall be provided as per section 9 of the IRC:SP:99-2013. Unlined Drains (except at ROB location) shall be provided in the entire project length which gets terminated at all cross road locations. Please clarify if any change in the configuration of the drain type as per the IRC:SP:42 - 2014, during the construction stage be treated as COS	Drainage system including surface and subsurface drains for the project highway shall be provided as per IRC SP 99-2013 (Manual) and site requirements. Any change in configuration of drain type as per site/manual requirements shall not constitute a change of scope, save and except any variations arising out of a change of scope expressly undertaken in accordance with the provision of Article 13
4	Schedule B 7.7	List of Major Bridges and Structures, Flyovers	Fly over mentioned is 4 Nos, but in the 2.7 Clause of Schedule B (flyover) only one is shown please clarify	As per Cl. 2.7 1 of Schedule B
5	Schedule B 7.7	List of Major Bridges and Structures, Interchanges	Interchange mentioned is 1 Nos, but in the 2.7 Clause of Schedule B (interchange) only one is shown please clarify	As per Cl. 2.7 1 of Schedule B
6	Schedule B 2.7.1		The vertical clearance of LVUP is mentioned as 4.5m in schedule B. as per Clause IRC:SP:99-2013, 2 10.2 (vertical	As per Schedule B



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
7	TCS-1		clearance Table 2.11 vertical clearance is 3.5m Please clarify	
			Table 2.8 - Schedule - B - In TCS I - embankment height upto 2.5m is given in the description of TCS. However, as per IRC:SP:99 - 2013, clause 4.2.1 (ii), the bottom of subgrade shall be at least 1.0m above the high flood level/high water table/pond level. The basis of embankment height of 2.5m may Please be clarified.	The profile for the project highway has been designed based on site and design requirements mentioned in the manual with deviations as specified in Schedule D
8	Schedule D2 12.3		In schedule B of 2 12 3 of schedule D, the location & width of Connecting roads shall be as specified in schedule B. However the same is not mentioned in schedule B. Please clarify.	The location of the connecting road is as given in plan & profile indicated in Annexure -III of Schedule A and referred to in relevant clause of Schedule B. The width of the connecting road shall be equal to the width of the existing road/cart track subject to minimum specified in Cl. 2.12.3 of IRC: SP: 99-2013.
9	Schedule D of 4.2.2 - Item No 11		As per the TCS Type - I (Stage - I) given in the Schedule - B, the side slopes are indicated as 1V:1.5H which is deviation from the standards IRC: SP: 99 - 2013. However, in the Schedule D - Clause 2 item No 11, it is mentioned as 2H: 1V. Please clarify	Clause 2, Item no 11 in Schedule D shall be read as 1.5H:1V
10	General		As per IRC :Sp:99 - 2013, Clause 9.3, In case of Depressed Median, Longitudinal Drains (Lined or Unlined) shall be provided to drain off water. However, in the schedule B, median drains are not proposed. Any drain proposed in Median during execution shall be considered as COS. Please clarify	As already mentioned in Cl. 6 of Schedule B, drainage system including surface and sub-surface drain is to be provided for the project highway as per IRC:SP:99-2013 and site requirements. Longitudinal median drains for draining of water is, therefore, included in the scope of work.



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
11	General		As per IRC:SP:99 - 2013 - the dedicated utility corridor in the TCS is indicated as 2.0m wide and as per TCS in Appendix - B - 3, the utility corridor is indicated as 3.0m and the same is not given under deviation in schedule D. Please clarify if the Corridor width shall be 2.0 or 3.0m	The width of the utility corridor shall be 3m as indicated in TCS.
	General		As per Schedule B - Utility ducts in the form of 1200mm diameter NP-4 pipe across the project highway along with inspection box/chamber for crossings of underground utilities in Builtup area as per IRC: SP:99-2013. The manual is silent on the spacing of the utility ducts and the since this is a Green Field Alignment the concessionaire assumes that the Utility ducts in the form of Pipe Culverts with 1200mm dia at a spacing of 1km shall be placed across the project Highway The spacing of the Utility ducts may Please be clarified	Box culverts proposed in Schedule B shall be used for crossing of underground utilities, wherever required. However, in location where the distance between two adjacent box culverts is more than 1 km, utility ducts in the form of Pipe Culverts with 1200mm dia for crossings of underground utilities shall be provided across the project Highway as per IRC: SP-99-2013.
13	GAD		The foundation levels at abutments and Piers are missing and the same may be provided to assess the exact height as any increase in height may have cost implications	Ground level and FRL have been indicated in the GAD and the level (depth) of founding levels below the ground level at abutments and piers has also been indicated. The founding levels as specified in the GAD shall be treated as an approximate assessment. The actual founding levels and design of the structures and bridges shall be determined by the Contractor on the basis of detailed investigations in accordance with the Specifications and Standards.
14	GAD		The box culvert GAD as per Clause 7.2.4 are missing and the same may be provided	GAD of the box culvert has been annexed.



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
15	Drawings		Kindly share the AutoCAD drawings for the structures.	Available drawings have been uploaded.
16	Plan and Profile		The vertical Alignment is observed to be designed for Safe Stopping sight distance throughout which is less than the ISD required for 100kmph. However, as per IRC: SP: 99 - 2013, clause 2.9.3, the desirable minimum sight distance shall be adopted. Increasing the Sight distance to Desirable minimum would require the FRL to be changed and Minimum FRL as per Annexure - III of Schedule A will be affected. Please clarify.	The vertical alignment of the project highway shall be designed meeting the design requirements specified in the manual with corresponding amendments detailed in Schedule D. The proposed profile of the project highway as indicated in the Annex-III of Schedule A shall be treated as an approximate assessment. The Contractor shall design the plan and profile of the project highway as per site/design requirement mentioned in Schedule D.
17	Schedule C - Clause 2.2.8	Boundary Wall	As per Clause 4.5.7 of RW/NH-24036/27/2010-PPP - Dated: 25.04.2018 - Boundary wall along the ROW, except at ingress and egress points, shall be constructed as per enclosed Typical cross section which is 0.6m height above ground level which is less than the height of RCC Crash Barriers. Is the concessionaire free to propose wire fencing of height 1.2m or more for access control and consider accordingly in costing.	Typical modified drawing of the boundary wall to be adopted is enclosed with the reply to the pre-bid queries. However, the contractor, at his own expenses, can improve upon the same and provide wire fencing above the minimum specified height of the boundary wall.
18	Plan and Profile		The Centerline coordinates of the alignment at every 50m is provided in Schedule A. The concessionaire request the setting out details of the project Highway Alignment, setting out details of the interchange(loops and Ramps).	All available details and drawings have been uploaded along with the bid document.
19	Schedule C - Clause 2.8	Plantation	As per TCS - Schedule - B - the available space between the embankment toe and the Utility corridor is indicated as varies and the varies width is 6m on either side.	Plantation is to be done within the available RoW without disturbing the median width indicated in the TCS. In case, sufficient RoW is not available between embankment toe



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
			As per Schedule C - clause 2.8 - Land scaping and Tree plantation it is stated that "Minimum 60,000 nos of trees of desired type in two rows @ 3 m c/c near edge of ROW on both side and three rows @ 3 m c/c on central median (As per Schedule D) preferably local varieties like Mango, Neem, Sheesham, Babul, Peepal, Inti, etc. shall be planted". The unlined drain and the plantation of trees within 5m is not possible. This is only possible if the median width is reduced. Please clarify as these many trees cannot be accommodated in the available width. Also, as per IRC:SP.21 - 2009, clause 11.14.1, the minimum distance between the trees (two rows) shall be 3m.	and utility corridor, the additional trees may be planted utilizing the utility corridor / median
20	General		Use of Flyash - As per MoRTH Circular No: RW/NH - 33044/30/2001 - S&R (R) dated 4th December 2003 - use of Flyash to be utilised in the embankment construction is not mentioned in Schedule - B. kindly mention the percentage of flyash to be utilised in embankment	Fly-ash to be used as per MoRTH guidelines vide circular No. 24028/14/2018-H dated 27.08.2018 and latest MoEF guidelines vide principal notification issued on 14-9-1999, subsequently amended vide notifications dated 27-8-2003, 3-11-2009 and 25-1-2016
21	General	Length of Cross road	Kindly specify the minimum length of cross roads for development	As per plan & profile and junction drawing indicated in Annexure -III of Schedule A.
22	General	Development Interchange	Kindly clarify the status of ROW acquired for the development of interchange	As mentioned in Annexure-II, Schedule A, additional land for interchanges will be provided within 150 days of the appointed date
23	General TCS	TCS for Toll Plaza	Kindly share the TCS for toll plaza section	Typical layout of the toll plaza has been uploaded along with the bid documents.

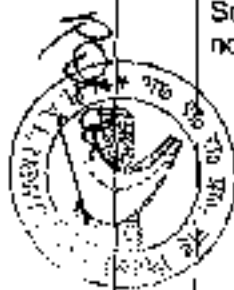


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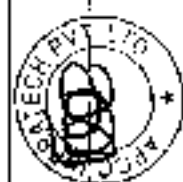


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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
24	Clause no. 9. a) of Schedule B and Clause no. 228 of Schedule C	Road Boundary Wall	It is mentioned in Schedule-B and Schedule that Road Boundary wall of 0.6m above ground level shall be constructed as specified in Ministry Circular No. RW/NH-24036/27/2010-PPP Dated. 25.04.2018. However, as per Clause 10.10 of Manual, Fencing of 2.5m height above ground level and shall comprise of mild steel sections and welded steel wire mesh. Further, in Structure Drawing Volume, the Drawing of Boundary Wall is provided with height of 4m above ground level. No mention of the same is there in Schedule-D. Please clarify which boundary wall section to adopted.	Typical modified drawing of the boundary wall to be adopted is enclosed with the reply to the pre-bid queries. However, the contractor, at his own expenses, can improve upon the same and provide wire fencing above the minimum specified height of the boundary wall.
25	Schedule B, Point no 14	Diversion of Irrigation Canal	Kindly provide the detailed drawing showing the section of the canal, for the canal which is to be diverted at km 24 & km 38.	Detailed drawing of the existing section of the canal is enclosed.
26	Plan & Profile Drawings	FRL in P&P	Proposed Road Level are mentioned in Plan & Profile drawings at median centre line. As per TCS the median is depressed median. Kindly confirm at which level of the median centre line the proposed road level is to be maintained.	The level of the median centre line has been proposed considering the end lane status of project highway as 12 lane with flush median. However, the contractor shall design the project highway as per the TCS and the final levels for the depressed median shown in the TCS may be worked out accordingly.
27	Drawings	Interchange Plan & Profile & TCS	Kindly Provide the plan & profile drawings & TCS for the interchange Loops & Ramps.	Detailed drawings have been uploaded along with the bid documents. However, the copy of the same is annexed.
28	Schedule B	MSA for Road design	Kindly confirm the MSA for Main carriageway for expressway to be adopted for design of road.	The contractor shall design the project highway for design traffic as indicated in the traffic report uploaded along with the bid



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response																											
29	General	Land Acquisition	During the site visit it was observed the land acquisition is pending for the entire alignment. Kindly confirm the status of the land acquisition.	document or actual traffic, whichever is higher. 3D notification for the land acquisition for the highway stretch has been published.																											
	General	Connecting Road / realignment at culvert locations beyond ROW	As per the plan and profile drawings, development of connecting roads / realignment at box culverts beyond PROW at various locations. The Length of these connecting roads / Realignment of culverts are not mentioned in schedule B. Kindly confirm the same. Also, please confirm about the additional land required beyond ROW for development of the same. The list of these connecting roads/ culverts is as follows	The length of the connecting road shall be as per actual site requirement subject to minimum indicated in the plan & profile. The additional RoW for these connecting roads shall be provided.																											
		Connecting Roads beyond ROW Locations as per P&P	<table border="1"> <thead> <tr> <th>Type</th> <th>Chainage</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td>SWLP</td> <td>18+594</td> <td>Connecting road length not shared</td> </tr> <tr> <td>SWLP</td> <td>22+205</td> <td>Connecting road length not shared</td> </tr> <tr> <td>Bridge</td> <td>27+417</td> <td>Connecting road length not shared</td> </tr> <tr> <td>SWUP</td> <td>33+102</td> <td>Connecting road length not shared</td> </tr> <tr> <td>SWLP</td> <td>32+207</td> <td>Connecting road length not shared</td> </tr> <tr> <td>SWUP</td> <td>37+880</td> <td>Connecting road length not shared</td> </tr> <tr> <td>SWLP</td> <td>42+114</td> <td>Connecting road length not shared</td> </tr> <tr> <td>SWLP</td> <td>45+660</td> <td>Connecting road length not shared</td> </tr> </tbody> </table>	Type	Chainage	Remarks	SWLP	18+594	Connecting road length not shared	SWLP	22+205	Connecting road length not shared	Bridge	27+417	Connecting road length not shared	SWUP	33+102	Connecting road length not shared	SWLP	32+207	Connecting road length not shared	SWUP	37+880	Connecting road length not shared	SWLP	42+114	Connecting road length not shared	SWLP	45+660	Connecting road length not shared	
Type	Chainage	Remarks																													
SWLP	18+594	Connecting road length not shared																													
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SWLP	42+114	Connecting road length not shared																													
SWLP	45+660	Connecting road length not shared																													
31	RFP Cl. 1.1.3 Section – 1: Introduction Background	The scope of work will broadly include Construction of Eight Lane Expressway	Defect Liability Period of 4 years is high. Bidder request to reduce Defect Liability Period to 2 years as in case of model EPC Agreement of MoRT&H. Please confirm.	As per RFP																											



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
	(Page No. – 9)	..... during the Defect Liability Period, which shall be 4 (four) years.		
32	RFP Cl. 2.5.2 Section – 2: Instructions to Bidders - Site visit and verification of information (Page No. – 24)	It shall be deemed that by submitting a BID, the Bidder has: (a) made a complete and careful examination of the Bidding Documents, Schedules annexed to EPC agreement Document; (b) received all relevant information requested from the Authority; (c) accepted the risk of inadequacy, error or mistake in the information provided in the Bidding Documents or furnished by or on behalf of the Authority relating to any of the matters referred to in Clause 2.5.1 above. No claim shall be admissible at any stage on this account.	As it is not possible for any prudent Bidder to verify such vast documents provided by the Authority and also the condition of the Site in such short period of time, Bidder requests to delete such unilateral provision wherever available under the RFP or under the EPC Agreement.	As per RFP
33	Cl. 1.2.1(e) Interpretation (Page No. 12)	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	Bidder understands that this particular clause is not applicable to Schedule B, C, D and any variation in this regard will be dealt in accordance with Article 13 [Change of Scope]. Please confirm.	As per RFP



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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi - Vadodra Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHA1\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
34	Cl. 1.2.1(s) Interpretation (Page No. 14)	<p>to" whether or not they are followed by such phrases.</p> <p>save and except as otherwise provided in this Agreement, any reference, at any time, to any agreement, deed, instrument, licence or document of any description shall be construed as reference to that agreement, deed, instrument, licence or other document as amended, varied, supplemented, modified or suspended at the time of such reference; provided that this Clause shall not operate so as to increase liabilities or obligations of the Authority hereunder or pursuant hereto in any manner whatsoever.</p>	<p>The Bidder requested to modify the Clause 1.2.1(s) as follows:</p> <p>"save and except as otherwise provided in this Agreement, any reference, at any time, to any agreement, deed, instrument, licence or document of any description shall be construed as reference to that agreement, deed, instrument, licence or other document as amended, varied, supplemented, modified or suspended at the time of such reference; provided that this Clause shall not operate so as to increase liabilities or obligations of the Authority and the Contractor hereunder or pursuant hereto in any manner whatsoever;"</p>	As per RFP
35	Cl. 2.1 - Scope of the Project (Page No. 18)	<p>(a) construction of the Project Highway on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of Project Facilities as specified in Schedule-C, and in conformity with the Specifications . . . and</p>	Bidder understand that design is in the Scope of the Contractor.	As per RFP



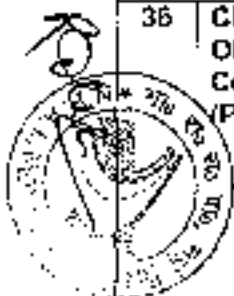
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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<i>Standards set forth in Schedule-D:</i>		
36	Cl. 3.1.4 – Obligations of the Contractor (Page No. 19)	<i>The Contractor shall remedy any and all loss or damage to the Project Highway from the Appointed Date until the end of the Construction Period at the Contractor's cost, save and except to the extent that any such loss or damage shall have arisen from any default or neglect of the Authority.</i>	Bidder request to modify clause as under:  The Contractor shall remedy any and all loss or damage to the Project Highway from the Appointed Date until the end of the Construction Period at the Contractor's cost, but only to the extent that such loss or damage shall have arisen from the reason solely attributable to the Contractor.	As per RFP
37	Cl. 3.1.6 – Obligations of the Contractor (Page No. 19)	<i>The Contractor shall remedy any and all loss or damage to the Project Highway during the Maintenance Period at the Contractor's cost, including those stated in Clause 14.1.2, save and except to the extent that any such loss or damage shall have arisen on account of any default or neglect of the Authority or on account of a Force Majeure Event.</i>	Bidder requests to modify the Clause 3.1.6 as follows:  "The Contractor shall remedy any and all loss or damage to the Project Highway during the Operation and Maintenance Period at the Contractor's cost, including those stated in Clause 14.1.2, if such loss or damage shall have arisen solely on account of any default or neglect of the Contractor".	As per RFP
38	Cl. 3.2.1 Obligations relating to sub-contracts and any other agreements (Page No. 20 & 21)	<i>The Contractor, whether Consortium/Joint Venture or sole, shall not sub-contract any Works in more than 49% (forty nine per cent) of the total length of</i>	Bidder requests to modify the clause as follows:  The Contractor, whether Consortium/Joint Venture or sole, shall not sub-contract any Works in more than 80% (eighty per cent)	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<p><i>the Project Highway and shall carry out Works directly under its own supervision and through its own personnel and equipment in at least 51% (fifty one per cent) of the total length of the Project Highway. Provided, however, that in respect of the Works carried out directly by the Contractor, it may enter into contracts for the supply and installation of Materials, Plant, equipment, road furniture, safety devices and labour, as the case may be, for such Works. For the avoidance of doubt, the Parties agree that the Contractor may sub-divide the aforesaid length of 51% (fifty one per cent) in no more than 5 (five) sections of the Project Highway. The Parties further agree that all obligations and liabilities under this Agreement for the entire project Highway shall at all times remain with the Contractor.*</i></p>	<p><i>of the total length of the Project Highway and shall carry out Works directly under its own supervision and through its own personnel and equipment in at least 20% (twenty per cent) of the total length of the Project Highway. Provided, however, that in respect of the Works carried out directly by the Contractor, it may enter into contracts for the supply and installation of Materials, Plant, equipment, road furniture, safety devices and labour, as the case may be, for such Works. The Parties further agree that all obligations and liabilities under this Agreement for the entire project Highway shall at all times remain with the Contractor.</i></p>	



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
39	Cl. 3.6 - Contractor's care of the Works (Page No. 22)	<p>* May be deleted if the Contractor is not a Consortium</p> <p>The Contractor shall bear full risk in and take full responsibility for the care of the Works, and of the Materials, goods and equipment for incorporation therein, from the Appointed Date until the date of Provisional Certificate (with respect to the Works completed prior to the issuance of the Provisional Certificate) and/or Completion Certificate (with respect to the Works referred to in the Punch List), save and except to the extent that any such loss or damage shall have arisen from any default or neglect of the Authority.</p>	<p>Bidder understands that Contractor shall not be responsible for any loss or damage arisen from any default or neglect of the Authority, its representative, old contractor, any other third party or on account of Force Majeure Event. Accordingly requests to modify the Clause 3.6 as follows:</p> <p>"The Contractor shall bear full risk in and take full responsibility for the care of the Works, and of the Materials, goods and equipment for incorporation therein, from the Appointed Date until the date of Provisional Certificate (with respect to the Works completed prior to the issuance of the Provisional Certificate) and/or Completion Certificate (with respect to the Works referred to in the Punch List), save and except to the extent that any such loss or damage shall have arisen from any default or neglect of the Authority, Authority's Representative, old contractor, any other third party or on account of Force Majeure Event".</p>	As per RFP
40	Cl. 3.8 - Unforeseeable difficulties (Page No. 22 & 23)	<p>Except as otherwise stated in the Agreement:</p> <p>(a) the Contractor accepts complete responsibility for having foreseen all difficulties and costs of</p>	<p>The Bidder requests the Authority to delete such unilateral provision as it is impossible for any bidder to ascertain unforeseen difficulties at the time of bidding. It is requested to make suitable provisions to cater such unforeseen difficulties duly</p>	As per RFP

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<p><i>successfully completing the Works;</i>  <i>(b) the Contract Price shall not be adjusted to take account of any unforeseen difficulties or costs; and</i>  <i>(c) the Scheduled Completion Date shall not be adjusted to take account of any unforeseen difficulties or costs.</i></p>	<p>considering the time and cost implications. Please confirm.</p>	
41	Cl. 4.1.5 - Obligations of the Authority (Page No. 24 & 25)	<p><i>Notwithstanding anything to the contrary contained in this Agreement, the Parties expressly agree that the aggregate Damages payable under Clauses 4.1.4, 8.3 and 9.2 shall not exceed 1% (one per cent) of the Contract Price.</i></p>	<p>The bidder submits that Damages to the tune of 1% of the Contract Price is very minimal in comparison to the actual losses suffered by the Contractor under Clauses 4.1.4, 8.3 and 9.2. Accordingly, the Employer is requested to modify the clause in such a way that damages will be paid to the Contractor as per actuals.</p>	As per RFP
42	Cl. 4.1.8 - Obligations of the Authority (Page No. 25)	<p><i>The Authority agrees to provide support to the Contractor and undertakes to observe, comply with and perform, subject to and in accordance with the provisions of this Agreement and the Applicable Laws. the following:</i></p>	<p>Bidder understands that the Authority shall allow Time Extension and adjustment to the Contract Price for additional costs incurred by the Contractor for delay in procurement of Applicable Permits and also for delay in obtaining access to all necessary infrastructure facilities and utilities, including water and electricity beyond 18 days of Contractor's request in this regard and if such delays are not attributable to the Contractor. Please confirm.</p>	As per RFP



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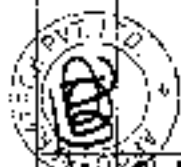


Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 16+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender Id: 2018\_NHAI\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
			Bidder also request Authority to provide copy of the Applicable Permits already obtained for the Project.	
43	Cl. 4.2 - Maintenance obligations prior to the Appointed Date (Page No. 25)	<i>The Authority shall, prior to the Appointed Date, maintain the Project Highway, at its own cost and expense, so that its traffic worthiness and safety are at no time materially inferior as compared to its condition 10 (ten) days prior to the last date for submission of the Bid, and in the event of any material deterioration or damage other than normal wear and tear, undertake repair thereof. For the avoidance of doubt, the Authority shall undertake only routine maintenance prior to the Appointed Date, and it shall undertake special repairs only in the event of excessive deterioration or damage caused due to unforeseen events such as floods or earthquake.</i>	Bidder request to modify Clause as under:  The Authority shall, prior to the Appointed Date, maintain the Project Highway, at its own cost and expense, so that its traffic worthiness and safety are at no time materially inferior as compared to its condition 10 (ten) days prior to the last date for submission of the Bid, and in the event of any material deterioration or damage other than normal wear and tear, undertake repair thereof. For the avoidance of doubt, the Authority shall undertake only routine maintenance prior to the Appointed Date, and it shall undertake repairs in the event of deterioration or damage are caused due to events including faulty design or substandard work executed by old contractor, floods, & earthquake.	As per RFP
	Cl. 5.2 - Representations and warranties of the Authority	<i>The Authority represents and warrants to the Contractor that.</i>	The Bidder requests to add the following provisions under the Sub Clause 5.2: (i) all information provided by it in the Tender Notice and invitation to bid in	As per RFP

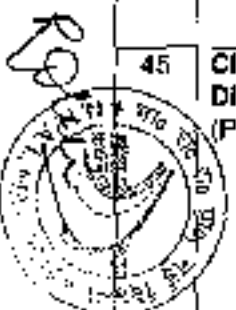


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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Km 18+500 to Km 47+000) section of Delhi - Vadodra Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender Id: 2018\_NHAJ\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
	(Page No. 28)		connection with the Project is, to the best of its knowledge and belief, true and accurate in all material respects;*	
45	Cl. 6.1.1 - Disclaimer (Page No. 30)	<p>The Contractor acknowledges that prior to the execution of this Agreement, the Contractor has,</p> <p>.....</p> <p>has determined to its satisfaction the accuracy or otherwise thereof and the nature and extent of difficulties, risks and hazards as are likely to arise or may be faced by it in the course of performance of its obligations hereunder. Save as provided in Clause 4.1.2 and Clause 5.2, the Authority makes no representation whatsoever, express, implicit or otherwise, regarding the accuracy, adequacy, correctness, reliability and/or completeness of any assessment, assumptions, statement or information provided by it and the Contractor confirms that it shall have no claim</p>	The bidder requests the Employer to delete such unilateral provision as it is impossible for any bidder to ascertain unforeseen difficulties at the time of bidding. It is requested to make suitable provisions to cater such unforeseen difficulties duly considering the time and cost implications. Please confirm.	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
46	Cl. 6.1.3 - Disclaimer (Page No. 30)	whatsoever against the Authority in this regard. The Contractor acknowledges and hereby accepts the risk of inadequacy, mistake or error in or relating to any of the matters set forth in Clause 6.1.1 above and hereby acknowledges and agrees that the Authority shall not be liable for the same in any manner whatsoever to the Contractor, or any person claiming through or under any of them, and shall not lead to any adjustment of Contract Price or Scheduled Completion Date.		As per RFP
47	Cl. 6.1.6 - Disclaimer (Page No. 30)	Except as otherwise provided in this Agreement, all risks relating to the Project shall be borne by the Contractor; and the Authority shall not be liable in any manner for such risks or the consequences thereof.		As per RFP
48	Cl. 7.1.1 - Performance Security (Page No. 32)	..... The Contractor shall along with the Performance Security provide to the Authority an	Bidder request to delete provision of Additional Performance Security.	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		irrevocable and unconditional guarantee from a Bank for a sum equivalent to Rs ..... crore (Rupees .... crore) in the form set forth in Schedule-G (the "Additional Performance Security"), to be modified, mutatis mutandis, for this purpose as security to the Authority if the Bid Price offered by the Contractor is lower by more than 10% with respect to the Estimated Project Cost.		
49	Cl. 7.1.3 - Performance Security (Page No. 33)	In the event the Contractor fails to provide the Performance Security within 10 (ten) days of this Agreement, it may seek extension of time for a period not exceeding 30 (Thirty) days on payment of Damages for such extended period in a sum calculated at the rate of 0.01% (zero point zero one per cent) of the Contract Price for each day until the Performance Security is provided. For the avoidance of doubt the	The Bid Security provided along the Bid shall remain in force and effect till the submission of Performance Security. Hence, the bidder requests the Authority to abolish delay damages provision for delay in providing the same. Please confirm.	As per RFP

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
50	Cl. 7.3.1 - Appropriation of Performance Security (Page No. 33)	agreement shall be deemed to be terminated on expiry of additional 30 days time period and Bid security shall be encashed by the Authority.  Upon occurrence of a Contractor's Default, the Authority shall, without prejudice to its other rights and remedies hereunder or in law, be entitled to encash and appropriate the relevant amounts from the Performance Security as Damages for such Contractor's Default.	Bidder requests the Authority to modify the Clause 7.3.1 as follows:  "Upon occurrence of a Contractor's Default, the Authority shall, without prejudice to its other rights and remedies hereunder or in law, be entitled to encash and appropriate the relevant amounts from the Performance Security as Damages for such Contractor's Default. The Authority shall notify the Contractor of its decision to encash the Performance Security in pursuance with the provisions of this Clause 7.3.1 provided that no encashment of Performance Security on account of any reason shall be effected by the Authority without notifying the Contractor of its decision to encash Performance Security, and taking into consideration the representation, if any, made by the Contractor within 20 (twenty) days of such notice."	As per RFP
51	Cl. 7.3.3 - Appropriation of Performance Security (Page No. 33)	The Additional Performance Security shall be encashed, in case the Contractor cannot achieve the <u>Milestones -INT/IV</u> ...	Since the Additional Performance Security is a security against unbalanced bids, hence bidder requests not to encash the Additional Performance Security, in case	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
52	Cl. 7.4.1 - Release of Performance Security (Page No. 34)	<p><i>within the prescribed period as per this Agreement due to the fault of the Contractor.</i></p> <p><i>The Authority shall return the Performance Security to the Contractor within 60 (sixty) days of the later of the expiry of the Maintenance Period or the Defects Liability Period under this Agreement. Notwithstanding the aforesaid, the Parties agree that the Authority shall not be obliged to release the Performance Security until all Defects identified during the Defects Liability Period have been rectified.</i></p>	<p>the Contractor cannot achieve the Milestones –VIII/IV.</p> <p>Bidder requests the Authority to modify the Clause 7.4.1 as follows.</p> <p>"The Authority shall return one half of the Performance Security to the Contractor upon issuance of the Provisional Certificate and balance shall be released within 7 (seven) days of the expiry of the Defects Liability Period under this Agreement. Notwithstanding the aforesaid, the Parties agree that the Authority shall not be obliged to release the Performance Security until all Defects identified during the Defects Liability Period have been rectified."</p>	As per RFP
53	Cl. 7.4.2 - Release of Performance Security (Page No. 34)	<p><i>The Authority shall return the Additional Performance Security to the Contractor within 28 (twenty eight) days from the date of issue of Completion Certificate under Article 12 of this Agreement.</i></p>	<p>Bidder requests the Authority to modify the Clause 7.4.2 as follows:</p> <p>"The Authority shall return one half of the Additional Performance Security to the Contractor upon issuance of the Provisional Certificate and balance shall be released within 7 (seven) days after issuance of Completion Certificate under Article 12 of this Agreement."</p>	As per RFP
54	Cl. 7.5.2 - Retention Money (Page No. 34)	<p><i>Upon occurrence of a Contractor's Default, the Authority shall, without prejudice to its other rights and remedies hereunder or</i></p>	<p>Bidder requests the Authority to modify the Clause 7.5.2 as follows:</p> <p>"Upon occurrence of a Contractor's Default, the Authority shall, without</p>	As per RFP

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<i>in law, be entitled to appropriate the relevant amounts from the Retention Money as Damages for such Contractor's Default.</i>	prejudice to its other rights and remedies hereunder or in law, be entitled to appropriate the relevant amounts from the Retention Money as Damages for such Contractor's Default. <b>The Authority shall notify the Contractor of its decision to appropriate the relevant amount in pursuance with the provisions of this Clause 7.5.2 provided that no deduction of amount on account of Contractor's Default shall be effected by the Authority without notifying the Contractor of its decision for such deductions, and taking into consideration the representation, if any, made by the Contractor within 20 (twenty) days of such notice."</b>	
55	Cl. 7.5.3 - Retention Money (Page No. 34)	<i>The Contractor may, upon furnishing an irrevocable and unconditional bank guarantee substantially in the form provided at Annex-II of Schedule-G, require the Authority to refund the Retention Money deducted by the Authority under the provisions of Clause 7.5.1 Provided that the refund hereunder shall be made in tranches of not less than 1% (one per cent) of the Contract Price</i>	The Bidder requests the Authority to refund the Retention Money to the Contractor in tranches of Rs. 1 Cr to maintain smooth cash flow. Please confirm.	As per RFP
56	Cl. 7.5.5 - Retention Money	<i>The Parties agree that in the event of Termination of</i>	The Bidder requests to modify the Clause 7.5.5 as follows:	As per RFP

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
	(Page No. 34)	<i>this Agreement, the Retention Money and the bank guarantees specified in this Clause 7.5 shall be treated as if they are Performance Security and shall be reckoned as such for the purposes of Termination Payment under Clause 23.6.</i>	"The Parties agree that in the event of Termination of this Agreement on account of the Contractor's Default, the Retention Money and the bank guarantees specified in this Clause 7.5 shall be treated as if they are Performance Security and shall be reckoned as such for the purposes of Termination Payment under Clause 23.6."	
	Cl. 8.2.1 - Procurement of the Site (Page No. 3b)	<i>The Authority Representative and the Contractor shall, within 30 (thirty) days of the date of this Agreement, inspect the Site and prepare a memorandum containing an inventory of the Site including the vacant and unencumbered land, buildings, structures, road works, trees and any other immovable property on or attached to the Site. Subject to the provisions of Clause 8.2.3, such memorandum shall have appended thereto an appendix (the "Appendix") specifying in reasonable detail those parts of the Site to which vacant access and Right of Way has not been given to the Contractor.</i>	The bidder requests to modify first para of the Clause 8.2.1 as follows. "The Authority Representative and the Contractor shall, within 30 (thirty) days of the date of this Agreement, inspect the Site and prepare a memorandum containing an inventory of the Site including the vacant and unencumbered land, free from encumbrances, encroachments comprising of buildings, structures, road works, trees and any other immovable property on or attached to Site and in a continuous length. Subject to the provisions of Clause 8.2.3, such memorandum shall have appended thereto an appendix (the "Appendix") specifying in reasonable detail those parts of the Site to which vacant access and Right of Way has not been given to the Contractor. Signing of the memorandum, in two counterparts (each of which shall constitute an original), by the authorized representatives of the Parties shall be deemed to constitute a valid evidence of	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<p><i>Signing of the memorandum, in two counterparts (each of which shall constitute an original), by the authorised representatives of the Parties shall be deemed to constitute a valid evidence of giving the Right of Way to the Contractor for discharging its obligations under and in accordance with the provisions of this Agreement and for no other purpose whatsoever.</i></p>	<p>giving the Right of Way to the Contractor for discharging its obligations under and in accordance with the provisions of this Agreement and for no other purpose whatsoever. <b>For the avoidance of doubt, the permits / clearances / NOCs / cost estimates required for dismantling / shifting of buildings, structures, road works, trees and any other immovable property on or attached to the Site, if such obstruction adversely affects the execution of Works or Maintenance of the Project, shall be provided by the Authority along with the memorandum.</b>"</p> <p>Bidder further understands that any delay in providing such permits/ clearances/ NOCs shall be considered for determining extension of time and related costs at actuals. Please confirm.</p>	
58	Cl. 8.2.1 - Procurement of the Site (Page No. 35)	<p><i>The Authority Representative and the Contractor shall, within 30 (thirty) days of the date of this Agreement, inspect the Site and prepare a memorandum containing an inventory of the Site</i></p>	<p>Bidder request that a separate memorandum shall be prepared and signed jointly by the Authority Representative and the Contractor, wherein the present condition of the works executed by the old contractor shall be recorded duly verifying the compliance of such works with the Specifications and Standards. The memorandum shall also record the details of the works that needs reconstruction / restoration.</p> <p>All works executed by old contractor which requires reconstruction / restoration, maintenance of works executed by old</p>	As per RFP



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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHAJ\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
			contractor during Construction Period, its Maintenance and its Defects Liability shall be dealt as per Article 13 [Change of Scope] of the Agreement.	
59	Cl. 8.3.1 - Damages for delay in handing over the Site (Page No. 36)	<p><i>"In the event the Right of Way to any part of the Site is not provided by the Authority on or before the date(s) specified in Clause 8.2 for any reason other than Force Majeure or breach of this Agreement by the Contractor, the Authority shall pay Damages to the Contractor in a sum calculated in accordance with the following formula for and in respect of those parts of the Site to which the Right of Way has not been provided:</i></p> <p><i>Amount of Damages in Rs. per day per meter =</i>  <math>0.05 \times C \times 1/L \times 1/N</math></p> <p><i>Where</i>  <i>C = the Contract Price; L = length of the Project Highway in meters; and N = Completion period in days (Appointed Date to</i></p>	<p>Bidder requests:</p> <p><b>Either Compensation should be as per actuals.</b></p> <p>or</p> <p>As per amended formula as below:</p> <p><b>Amount of Damages in Rs. per day per meter =</b>  <math>2.5 \times C \times 1/L \times 1/N</math></p> <p>The Contractor understands that the compensation under this formula shall be applicable for the stretches where full / part width ROW is not available. Please confirm.</p>	As per RFP



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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2015\_NHA1\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		Scheduled Completion Date)		
60	Cl. 8.4 - Site to be free from Encumbrances (Page No. 37)	"Subject to the provisions of Clause 8.2, the Site shall be made available by the Authority to the Contractor pursuant hereto free from all Encumbrances and occupations and without the Contractor being required to make any payment to the Authority on account of any costs, compensation, expenses and charges for the acquisition and use of such Site for the duration of the Project Completion Schedule. For the avoidance of doubt, it is agreed that the existing rights of way, easements, privileges, liberties and appurtenances to the Site shall not be deemed to be Encumbrances. It is further agreed that, unless otherwise specified in this Agreement, the Contractor accepts and undertakes to bear any and all risks arising out of the	Bidder requests to modify the clause as follows:  "Subject to the provisions of Clause 8.2, the Site shall be made available by the Authority to the Contractor pursuant hereto free from all Encumbrances and occupations and without the Contractor being required to make any payment to the Authority on account of any costs, compensation, expenses and charges for the acquisition and use of such Site for the duration of the Project Completion Schedule. For the avoidance of doubt, it is agreed that the existing rights of way, easements, privileges, liberties and appurtenances to the Site shall not be deemed to be Encumbrances as long as it does not adversely affect Construction and Maintenance of the Project Highway."	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
61	Cl. 8.5 - Special/Temporary Right of Way (Page No. 38)	<i>The Contractor shall bear all costs and charges for any special or temporary right of way required by it in connection with access to the Site. The Contractor shall obtain at its cost such facilities on or outside the Site as may be required by it for the purposes of the Project Highway and the performance of its obligations under this Agreement.</i>	Bidder understands that the Clause 8.6 shall be dealt under Clause 13 [Change of Scope], if the ROW is provided on piecemeal basis than that envisaged under the relevant terms of the Agreement. Please confirm.	Contractor to bear all costs and charges under this clause for any special or temporary right of way as defined in the RFP
62	Cl. 8.3 - Geological and archaeological finds (Page No. 38)	<i>.....The Contractor shall take all reasonable precautions to prevent its workmen or any other person from removing or damaging such interest or property and shall inform the Authority forthwith of the discovery thereof and comply with such instructions as the concerned Government Instrumentality may reasonably give for the removal of such property. For the avoidance of doubt, it is agreed that any reasonable expenses</i>	The bidder understands that in case of geological or archaeological findings at Site affecting the construction activities, the selected bidder shall be entitled to Time Extension and also adjustment to the Contract Price at actuals. Please confirm.	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<p><i>incurred by the Contractor hereunder shall be reimbursed by the Authority. It is also agreed that the Authority shall procure that the instructions hereunder are issued by the concerned Government Instrumentality within a reasonable period."</i></p>		
	<p><b>Cl. 9.2 - Shifting of obstructing utilities</b> (Page No. 40)</p>	<p><i>The Contractor shall, in accordance with Applicable laws and with assistance of the Authority, cause 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 Works or Maintenance of the Project Highway in accordance with this Agreement. The actual cost of such shifting, as approved and communicated by the entity owning the utility, shall be paid by the Contractor and reimbursed by the Authority to the Contractor. In the event of any delay in such</i></p>	<p>Bidder understands that the Authority shall cause shifting of all utilities as it shall be in a better position to get necessary approvals/shifting from the concerned authorities expeditiously.</p> <p>Or else</p> <p>Following para to be added at the end of the clause.</p> <p><b>"..... For the avoidance of doubt, the land required for construction of Project Highway hindered by such utility shall be included in Cl 8.2, (the Appendix) and dealt with accordingly"</b></p> <p>Bidder requests to provide the following details with regards to shifting of obstructing utilities</p> <p>a) details of utilities present within the RoW,</p>	<p>As per RFP</p>



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<p>shifting by the entity owning the utility beyond a period of 180 (one hundred and eighty) days from the date of notice by the Contractor to the entity owning the utility and to the Authority, the Contractor shall be entitled to Damages in a sum calculated in accordance with the formula specified in Clause 9.3.1 for the period of delay, and to Time Extension in accordance with Clause 10.5 for and in respect of the part(s) of the Works affected by such delay, provided that if the delays involve any time overlaps, the overlaps shall not be additive.</p>	<p>b) detailed estimate sanctioned by the utility owning agencies,  c) status of approval of estimate by the competent authority of the Authority,  d) details of supervision charges deposited.  e) details pertaining to shifting of obstructing utilities.  f) Mode of reimbursement of the amount that will be incurred by the Contractor for shifting of utilities.</p>	
64	Cl. 9.3.4 – New utilities (Page No. 41)	<p>In the event the construction of any Works is affected by a new utility or works undertaken in accordance with this Clause 9.3, the Contractor shall be entitled to a reasonable Time Extension as determined by the Authority's Engineer.</p>	<p>The Bidder requests to modify this Clause 9.3.4 as under:    <i>"In the event the construction of any Works is affected by a new utility or works undertaken in accordance with this Clause 9.3, the Contractor shall be entitled to a reasonable Time Extension and also adjustment to Contract Price due to additional costs incurred by the Contractor."</i></p>	As per RFP

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
65	Cl. 9.4 – Felling of Trees (Page No. 41)	<i>The Authority shall assist the Contractor in obtaining the Applicable Permits for felling of trees to be identified by the Authority for this purpose if and only if such trees cause a Material Adverse Effect on the construction or maintenance of the Project Highway. The cost of such felling shall be borne by the Authority and in the event of any delay in felling thereof for reasons beyond the control of the Contractor, it shall be excused for failure to perform any of its obligations hereunder if such failure is a direct consequence of delay in the felling of trees. The Parties hereto agree that the felled trees shall be deemed to be owned by the Authority and shall be disposed in such manner and subject to such conditions as the Authority may in its sole discretion deem appropriate. For the avoidance of doubt, the Parties agree that if any felling of trees hereunder is</i>	<p>1. Bidder requests the Authority to obtain the permits for felling of trees falling within the ROW and causing hindrance to the construction and maintenance of the Project before Appointed Date. Please Confirm.</p> <p>2. Bidder understands that any delay in procurement of approval for felling of trees shall be considered for the compensation in terms of time and cost at actuals. Please confirm.</p> <p>3. Bidder requests to modify the Clause 9.4 as follows:</p> <p><b>"The Authority shall obtain the Applicable Permits for felling of trees to be identified by the Authority for this purpose if and only if such trees cause a Material Adverse Effect on the Construction or Maintenance of the Project Works. The cost of such felling shall be borne by the Authority and in the event of any delay in felling thereof for reasons beyond the control of the Contractor, it shall be excused for failure to perform any of its obligations hereunder if such failure is a direct consequence of delay in the felling of trees. The land required for construction of Project Highway hindered by such trees shall be included in Clause 8.2, the Appendix and dealt with accordingly. The Parties hereto agree that the felled trees shall be deemed to be owned by the Authority and</b></p>	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<p>in a forest area, the Applicable Permit thereof shall be procured by the Authority within the time specified in the Agreement.</p>	<p>shall be disposed in such manner and subject to such conditions as the Authority may in its sole discretion deem appropriate. For the avoidance of doubt, the Parties agree that the Applicable Permit for felling of trees hereunder shall be procured by the Authority on or before the Appointed Date and any delay in getting such approval affecting the works shall be considered for adequate compensation for time and cost.</p> <p>Bidder request to provide the following details:-</p> <ol style="list-style-type: none"> <li>No. of trees presently existing in RoW.</li> <li>Status of latest permissions for felling of revenue trees/forest trees.</li> <li>Status of latest estimate for felling of trees and its approval from the competent authority</li> <li>Status of deposition of demand amount.</li> <li>Mode of reimbursement of the amount that will be incurred by the Contractor for felling trees.</li> </ol>	
66	<p>Cl. 10.1.1 – Obligations prior to commencement of Works (Page No. 42)</p>	<p>to of</p> <p>Within 20 (twenty) days of the Appointed Date, the Contractor shall:</p> <p>(a).....</p> <p>(b).....</p> <p>(c).....</p>	<p>As acquiring of mining permission &amp; borrow area approval is quite a time-consuming exercise and vital time is lost in the same, the Bidder requests the Authority (i.e. NHAI) to directly procure mining rights &amp; borrow area approval in advance at the bidding stage itself, which</p>	<p>As per RFP</p>

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		(d) make its own arrangements for quarrying of materials needed for the Project Highway under and in accordance with the Applicable Laws and Applicable Permits."	can be leased out to the Contractor for execution and completion of the Works.  Further, the Bidder requests information on the mining right presently available for the Project and also details pertaining to approved borrow areas.	
67	Cl. 10.1.2 – Obligations prior to commencement of Works (Page No. 42)	"The Authority shall, within 30 (thirty) days of the date of this Agreement, appoint an engineer (the "Authority's Engineer") to discharge the functions and duties specified in this Agreement, and shall notify to the Contractor the name, address and the date of appointment of the Authority's Engineer forthwith."	Bidder understands that, Appointment of the full time Authority's Engineer will be made before the Appointed Date and the Contractor shall be entitled for additional time & cost for delay in Appointment of full time Authority's Engineer.	As per RFP
68	Cl. 10.1.6 – Obligations prior to commencement of Works (Page No. 43)	The safety audit pursuant to Clause 10.1.5 shall be carried out by the Safety Consultant in respect of all such design details that have a bearing on safety of Users as well as pedestrians and animals involved in or associated with accidents. The recommendations of the Safety Consultant shall be incorporated in the design of the Project Highway and	Bidder understand that, the Contractor would be compensated in terms of time and cost at actual in addition to the Contract Price for complying with the recommendations of the Safety Consultant on the works executed by the old contractor.	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
70	Cl. 10.2.4(c) - Design and Drawings (Page No. 45)	<i>within 15 (fifteen) days of the receipt of the Drawings, the Authority's Engineer shall review the same and convey its observations to the Contractor with particular reference to their conformity or otherwise with the Scope of the Project and the Specifications and Standards. The Contractor shall not be obliged to await the observations of the Authority's Engineer on the Drawings submitted pursuant hereto beyond the said period of 15 (fifteen) days and may begin or continue Works at its own discretion and risk. Provided, however that in case of a Major Bridge or Structure, the aforesaid period of 15 (fifteen) days may be extended upto 30 (thirty) days.</i>	Bidder requests to modify the Clause 10.2.4(c) as follows:  "within 15 (fifteen) days of the receipt of the Drawings, the Authority's Engineer shall review the same and convey its observations to the Contractor with particular reference to their conformity or otherwise with the Scope of the Project and the Specifications and Standards. The Contractor shall not be obliged to await the observations of the Authority's Engineer on the Drawings submitted pursuant hereto beyond the said period of 15 (fifteen) days and if no such observation is conveyed within the said period the drawings are deemed acceptable to the Authority's Engineer and Contractor shall begin or continue Works. Provided, however that in case of a Major Bridge or Structure, the aforesaid period of 15 (fifteen) days may be extended up to 30 (thirty) days."	As per RFP
71	Cl. 10.2.5 - Design and Drawings (Page No. 46)	<i>Any cost or delay in construction arising from review by the Authority's Engineer shall be borne by the Contractor.</i>	The Bidder requests the Authority to delete such unilateral clause.	As per RFP
72	Cl. 10.3.1 -	<i>The Contractor shall construct the Project</i>	Bidder understand that reconstruction / restoration of the works executed by the	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
	Construction of the Project Highway (Page No. 46)	<p>Highway as specified in Schedule-B and Schedule-C, and in conformity with the Specifications and Standards set forth in Schedule-D. The Contractor shall be responsible for the correct positioning of all parts of the Works, and shall rectify any error in the positions, levels, dimensions or alignment of the Works. The 730th (seven hundred and thirtieth) day from the Appointed Date shall be the scheduled completion date (the "Scheduled Completion Date") and the Contractor agrees and undertakes that the construction shall be completed on or before the Scheduled Completion Date, including any extension thereof.</p>	<p>old contractor shall be executed as Change of Scope Hence, the Contractor shall be entitled for additional time for completion of such works over and above 730 days.</p>	
73	Cl. 10.3.2 – Construction of the Project Highway (Page No. 46)	<p>"The Contractor shall construct the Project Highway in accordance with the Project Completion Schedule set forth in Schedule-J. In the event that the Contractor fails to achieve any Project</p>	<p>1. Bidder requests the Authority to modify the clause restricting applicability of Damages only in case of non-achievement of the Scheduled Completion Date by the Contractor for reasons solely attributable to the Contractor. Please confirm. 2. Further, the Bidder request the Authority to modify the clause as follows:</p>	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<p><i>Milestone or the Scheduled Completion Date within a period of 30 (thirty) days from the date set forth in Schedule-J, unless such failure has occurred due to Force Majeure or for reasons solely attributable to the Authority, it shall pay Damages to the Authority of a sum calculated at the rate of 0.05% (zero point zero five percent) of the Contract Price for delay of each day reckoned from the date specified in Schedule -J and until such Project Milestone is achieved or the Works are completed; provided that if the period for any or all Project Milestones or the Scheduled Completion Date is extended in accordance with the provisions of this Agreement, the dates set forth in Schedule-J shall be deemed to be modified accordingly....."</i></p>	<p>"The Contractor shall construct the Project Highway in accordance with the Project Completion Schedule set forth in Schedule-J. In the event that the Contractor fails to achieve the Scheduled Completion Date within a period of 90 (ninety) days from the date set forth in Schedule-J, for the reasons solely attributable to the Contractor, it shall pay Damages to the Authority of a sum calculated at the rate of 0.02% (zero point zero two percent) of the Contract Price for delay of each day reckoned from the Scheduled Completion Date till actual completion of the Works is achieved or the Works are completed; provided that if the period for any or all Project Milestones or the Scheduled Completion Date is extended in accordance with the provisions of this Agreement, the date set forth in Schedule-J shall be deemed to be modified accordingly ....."</p>	
74	<p><b>Cl. 10.4.1 - Maintenance during Construction Period</b> (Page No. 47)</p>	<p><i>During the Construction Period, the Contractor shall maintain, at its cost, the existing lane(s) of the</i></p>	<p>Bidder request to modify Clause as under:  During the Construction Period, the Contractor shall maintain, at its cost, the</p>	<p>As per RFP</p>



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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHA\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<i>Project Highway so that the traffic worthiness and safety thereof are at no time materially inferior as compared to their condition 10 (ten) days prior to the date of this Agreement.</i>	existing lane(s) of the Project Highway so that the traffic worthiness and safety thereof are at no time materially inferior as compared to their condition 10 (ten) days prior to the date of this Agreement.	
	Cl. 10.5.1 - Extension of time for completion (Page No. 48)	<i>"Without prejudice to any other provision of this Agreement for and in respect of extension of time, the Contractor shall be entitled to extension of time in the Project Completion Schedule (the "Time Extension") to the extent that completion of any Project Milestone is or will be delayed by any of the following, namely: (a) ..... (b)..... (c)..... (d).....and (e)....."</i>	Bidder requests to add the following delay event to be considered for extension of time:  "If any delay, impediment or prevention caused by other authorities/ public or private entities, it's personnel or any other third parties for the reasons not at all attributable to the Contractor."	As per RFP
76	Cl. 10.5.5(b) - Extension of time for completion (Page No. 49)	<i>"(b) the Contractor shall, no later than 10 (ten) days after the close of each month, send further interim claims specifying the accumulated delay, the extension of time claimed, and such further particulars</i>	The Bidder request the Authority to modify the sub Clause 10.5.5(b) as follows. It shall help the prospective Contractor to submit a realistic Extension of Time application as well as to ascertain the delay with more details.  "(b) the Contractor shall, no later than 10	As per RFP



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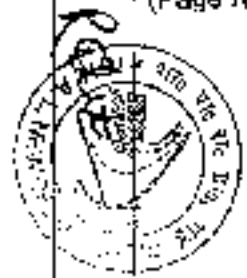
Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHA1\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		as the Authority's Engineer may reasonably require; and"	(ten) days after the close of each quarter, send further interim claims specifying the accumulated delay, the extension of time claimed, and such further particulars as the Authority's Engineer may reasonably require; and"	
	Cl. 11.10 – Tests (Page No. 52)	11.10.1 For determining that the Works conform to the Specifications and Standards, the Authority's Engineer shall require the Contractor to carry out or cause to be carried out tests, .....	Bidder understand that, any cost incurred by the Contractor for testing of the works executed by the old contractor and remedial measure in pursuance thereof shall be reimbursed to the Contractor at actuals in addition to the Time Extension.	As per RFP
		11.10.2 In the event that results of any tests conducted under this Clause 11.10 establish any Defects or deficiencies in the Works, the Contractor shall carry out remedial measures and furnish a report.....		
78	Cl. 11.12 – Rejections (Page No. 53)	If, as a result of an examination, inspection, measurement or testing, any Plant, Materials, design or workmanship is found to be defective or otherwise not in accordance with the provisions of this Agreement, .....	Bidder understand that provision of Sub-Clause 11.12 is not applicable to the works executed by the old contractor and any cost incurred by the Contractor for complying with the provision of Sub-Clause 11.12 with respect to works executed by the old contractor shall be reimbursed to the Contractor at actuals.	As per RFP

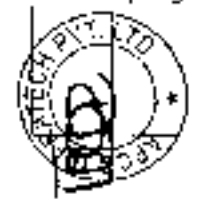
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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
79	Cl. 11.13 – Remedial Work (Page No 53 & 54)	<p>"11.13.1 Notwithstanding any previous test or certification, the Authority's Engineer may instruct the Contractor to:</p> <p>.....</p> <p>11.13.2 If the Contractor fails to comply with the instructions issued by the Authority's Engineer under Clause 11.13.1, .....</p>	<p>The Bidder requests to modify the Clause 11.13.1 as follows.</p> <p><i>"Notwithstanding any previous test or certification, the Authority's Engineer may instruct the Contractor in writing specifying the reasons to:</i></p> <p>(a) remove from the Site and replace any Plant or Materials which are not in accordance with the provisions of this Agreement;</p> <p>(b) remove and re-execute any work which is not in accordance with the provisions of this Agreement and the Specification and Standards, and</p> <p>(c) execute any work which is urgently required for the safety of the Project Highway, whether because of an accident, unforeseeable event or otherwise, provided that in case of any work required on account of a Force Majeure Event, the provisions of Clause 21.6 shall apply. "</p> <p>Bidder understand that the provision of Sub-Clause 11.3 shall not apply to the works executed by the old contractor.</p>	As per RFP
80	Cl. 11.17.4 – Suspension of unsafe Construction Works (Page No. 55)	<p>If suspension of Works is for reasons not attributable to the Contractor, the Authority's Engineer shall determine any Time Extension to which the Contractor is reasonably entitled.</p>	<p>The Bidder requests to modify the Clause 11.17.4 as follows:</p> <p><i>"If suspension of Works is for reasons not attributable to the Contractor, the Authority's Engineer shall determine as per good industry practice any Time Extension and also adjustment to the</i></p>	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
81	Cl. 12.1.2 – Tests on completion (Page No 56)	".....For the avoidance of doubt, it is expressly agreed that the Authority's Engineer may require the Contractor to carry out or cause to be carried out additional Tests, in accordance with Good Industry Practice, for determining the compliance of the Project Highway or Section thereof with the Specifications and Standards."	Contract Price to which the Contractor is reasonably entitled."  The Bidder understands that the Contract Price will be adjusted on account of additional costs incurred due to such additional tests. Further, the Bidder understands that the Contractor shall be entitled to Time Extension and also adjustment to Contract Price in case of delay arising out of such event. Please confirm.	As per RFP
82	Cl. 12.2.1 – Provisional Certificate (Page No. 56 & 57)	"Subject to the provisions of Clause 12.2.5, upon completion of all Works forming part of the Project Highway, save and except the Works for which Time Extension has been granted under Clause 10.5, the Authority's Engineer shall, at the request of the Contractor, issue a provisional certificate of completion substantially in the form set forth in Schedule-L (the "Provisional Certificate") if the Tests for and in respect of the completed	Bidder requests to modify the Clause 12.2.1 as follows:  "Subject to the provisions of Clause 12.2.5, upon completion of all Works forming part of the Project Highway, save and except the Works for which Time Extension has been granted under Clause 10.5, the Authority's Engineer shall, at the request of the Contractor, issue a provisional certificate of completion substantially in the form set forth in Schedule-L (the "Provisional Certificate") if the Tests for and in respect of the completed Works are successful. The Provisional Certificate shall have appended thereto a list of outstanding items of work (the "Punch List") that need	As per RFP



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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHA\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<p>Works are successful. The Provisional Certificate shall have appended thereto a list of outstanding items of work (the "Punch List") that need to be completed in accordance with the provisions of this Agreement. The Contractor undertakes to complete the minor outstanding items of works in respect of those Sections of the Project Highway for which the Provisional Certificate has been issued, within a period of 30 (thirty) days of the date of Provisional Certificate, and those parts of the Works in respect of which Time Extension has been granted, within the extended period thereof. ....The Parties further agree that Provisional Certificate shall not be issued if the completed Works cannot be safely and reliably placed in service of the Users thereof "</p>	<p>to be completed in accordance with the provisions of this Agreement. The Contractor undertakes to complete the minor outstanding items of works in respect of those Sections of the Project Highway for which the Provisional Certificate has been issued, within a period of 180 (one hundred and eighty) days of the date of Provisional Certificate, and those parts of the Works in respect of which Time Extension has been granted, within the extended period thereof. ....The Parties further agree that Provisional Certificate shall not be issued if the completed Works cannot be safely and reliably placed in service of the Users thereof. The Authority's Engineer shall issue the Provisional Certificate within 60 (sixty) days from the date of request by the Contractor for issuance of the same. If the Authority's Engineer fails to provide the Provisional Certificate, for the reasons not attributable to the Contractor, the Provisional Certificate shall be deemed to have been issued on 14th day of expiry of aforementioned 60 days period and any Dispute pertaining to the same shall be dealt as per Article 26 [Dispute Resolution]"</p>	
83	Cl. 12.2.1 - Provisional Certificate (Page No. 56 & 57)	".....The Contractor undertakes to complete the minor outstanding items of	Bidder understand that, the works for which Time Extension has been granted, the period of 180 days shall be reckoned	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		works in respect of those Sections of the Project Highway for which the Provisional Certificate has been issued, within a period of 30 (thirty) days of the date of Provisional Certificate, and those parts of the Works in respect of which Time Extension has been granted, within the extended period thereof....."	<p>from the actual date of completion of such works.</p> <p>Bidder requests that the Damages pursuant to Sub-Clause 10.3.2 of this Agreement shall be calculated as percentage of value of such remaining work and not the Contract Price. Please confirm.</p> <p>Bidder requests that, the Contractor liability to pay Damages for delay in completion of the remaining Works shall arise only if the reasons for delay are solely attributable to the Contractor.</p>	
84	Cl. 12.3 – Completion of remaining Works (Page No. 57 & 58)	"All items in the Punch List shall be completed by the Contractor in accordance with the provisions of this Agreement. For any delay in their completion other than for the reasons solely attributable to the Authority or due to Force Majeure, the Authority shall be entitled to recover Damages from the Contractor in accordance with the provisions of Clause 10.3.2 of this Agreement."		As per RFP
85	Cl. 12.2.5 – Provisional Certificate (Page No. 57)	"No Provisional Certificate shall be issued under the provisions of this Clause	Bidder understands that in the event the Authority could not hand over certain part/section of the ROW to the Contractor	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		12.2 until the Contractor has submitted valid claims for payment of at least 80% (eighty per cent) of the amount arrived at after reducing the lump sum price specified in Clause 19.1.1 by the amount attributable to works which have been withdrawn under the provisions of Clause 8.3.3....."	for any reason whatsoever, one year prior to the Scheduled Completion Date, the Authority shall delink the said part/ section of the Project for purpose of issuance of the Provisional Certificate under Clause 12.2. Please confirm	
86	Cl. 13.1.2 – Change of Scope (Page No. 59)	<p>"Change of Scope shall mean:</p> <p>(a) change in specifications of any item of Works;</p> <p>(b) omission of any work from the Scope of the Project except under Clause 8.3.3; provided that, subject to Clause 13.5, the Authority shall not omit any work under this Clause in order to get it executed by any other authority; and / or</p> <p>(c) any additional work, Plant, Materials or services which are not included in the Scope of the Project, including any associated Tests on completion of construction."</p>	<p>Bidder requests the Authority to add the following event under this categories of Clause 13.1.2;</p> <p>"d. reconstruction / restoration of the works already executed by the old contractor, maintenance of the works executed by the old contractor during Construction Period, its Maintenance and its Defects Liability.</p> <p>e. changes to the levels, positions and/or dimensions of any part of the Works.</p> <p>f. changes to the sequence or timing of the execution of the Works.</p> <p>g. execute additional work of any kind necessary for the completion of the Works; and/or</p> <p>h. any change in Authority's requirement including the provisions stated under applicable Schedules forming the Scope of Works."</p> <p>Bidder understands that, the Authority shall not require the contractor to undertake any changes after 50% financial</p>	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
			<p>progress w.r.t Contract Price have been achieved.</p> <p>If the situation warrants, the COS Order can be issued thereafter also subject to the condition that the works forming part of or affected by such Order shall not be reckoned for purposes of determining completion of the Works and issuing of the Provisional Certificate. A similar provision is also there in the concession agreement wherein the Authority shall not require the contractor to undertake changes if such changes are likely to delay the works. Secondly, the Authority must issue COS Order within 15 days of receipt of requisite information from the Contractor. Please confirm.</p>	
87	Cl. 13.2.1 - Procedure for Change of Scope (Page No. 59)	<i>In the event of the Authority determining that a Change of Scope is necessary, it may direct the Authority's Engineer to issue to the Contractor a notice specifying in reasonable detail the works and services contemplated thereunder (the "Change of Scope Notice").</i>	Bidder requests to issue Change of Scope Order within 15 days from the date of submission of cost estimate of the same. Further, Authority is requested to pay 25% of total value of such Change of Scope Order as an advance payment along with the Change of Scope Order to take up such works. Please confirm.	As per RFP
88	Cl. 13.2.3 - Procedure for Change of Scope (Page No. 60)	<i>"The Contractor's quotation of costs for the Change of Scope shall be determined on the following principles: ....."</i>	In case of any COS, the design and drawings have to be developed by the Contractor by incurring additional costs, which the Contractor could not get compensated by the cost arrived at by	As per RFP

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
89	Cl. 13.3 – Payment for Change of Scope (Page No. 61)	<i>Payment for Change of Scope shall be made in accordance with the payment schedule specified in the Change of Scope Order.</i>	<p>using the MORTH Standard Data Book. Further, the contract contemplates that the Contract Price includes all duties, taxes, royalty, and fee levied in accordance with the laws and regulations in force, however, there is no provision for payment of such duties, taxes, royalty, and fee under calculation as per MORTH Standard Data Book.</p> <p>Therefore, the Bidder request that, the procedure for deriving the cost of COS under Sub-Clause 13.2 of the EPC Agreement should be amended duly taking into account the design charges and also all duties, taxes, royalty, and fee levied in accordance with the laws and regulations in force at the time of COS. Please confirm.</p> <p>1 The payment of such Change of Scope works shall be released progressively and shall be settled completely within 30 days of completion of such works. Any delay in payment shall carry interest at the existing rate of Base Rate plus 2%. Please confirm</p> <p>2 The Bidder understands that the Change of Scope works shall be adjusted for price adjustment of various components as per Clause 19.10 and the Base Date for this purpose shall be the date of preparation of estimate for Change of Scope Order or any other suitable date</p>	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
			as fairly determined by the Authority's Engineer. Please confirm.	
90	Cl. 13.4 - Restrictions on Change of Scope (Page No. 61)	<p>13.4.1 No Change of Scope shall be executed unless the Authority has issued the Change of Scope Order save and except any Works necessary for meeting any Emergency.</p> <p>13.4.2 Unless the Parties mutually agree to the contrary, the total value of all Change of Scope Orders shall not exceed 10 (ten) per cent of the Contract Price.</p> <p>13.4.3 Notwithstanding anything to the contrary in this Article 13, no change made necessary because of any default of the Contractor in the performance of its obligations under this Agreement shall be deemed to be Change of Scope, and shall not result in any adjustment of the Contract Price or the Project Completion Schedule."</p>	<p>Bidder requests for addition of the following point in Clause 13.4:</p> <p>"13.4.4 No Change of Scope Order shall be issued after 50% financial progress w.r.t Contract Price have been achieved"</p>	As per RFP
91	Cl. 14.1.1 -	The Contractor shall maintain the Project	Bidder understand the Article 14 (Maintenance) shall apply to the Works	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
	Maintenance obligations of the Contractor (Page No. 63)	Highway for a period of 4 (four) years commencing from the date of the Provisional Certificate (the "Maintenance Period"). For the performance of its Maintenance obligations, the contractor shall be paid 0.5% of the Contract Price for the first year and 1%, 1.5%, 2% of the Contract Price for the second, third and fourth year respectively in case of road projects.	excluding works executed by the old contractor which shall be dealt Change of Scope under Article 13.	
82	Cl. 14.7 – Authority's right to take remedial measures (Page No. 63)	"In the event the Contractor does not maintain and/or repair the Project Highway or any part thereof in conformity with the Maintenance Requirements, the Maintenance Manual or the Maintenance Programme, as the case may be, and fails to commence remedial works within 15 (fifteen) days of receipt of the Maintenance Inspection Report under Clause 15.2 or a notice in this behalf from the Authority or the Authority's Engineer, as the case may be, the Authority	Bidder requests the Authority to modify the Clause 14.7 as follows:  "In the event the Contractor does not maintain and/or repair the Project or any part thereof in conformity with the Maintenance Requirements, the Maintenance Manual or the Maintenance Programme, as the case may be, and fails to commence remedial works or have established such reasons for not being able to commence remedial work within 15 (fifteen) days but not later than 30 (Thirty) days of receipt of the Maintenance Inspection Report under Clause 15.2 or a notice in this behalf from the Authority or the Authority's Engineer, as the case may be, the Authority shall, without prejudice to its rights under this	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<i>shall, without prejudice to its rights under this Agreement including Termination thereof, be entitled to undertake such remedial measures at the cost of the Contractor, and to recover its cost from the Contractor. In addition to recovery of the aforesaid cost, a sum equal to 20% (twenty per cent) of such cost shall be paid by the Contractor to the Authority as Damages."</i>	Agreement including Termination thereof, be entitled to undertake such remedial measures at the cost of the Contractor, and to recover its cost from the Contractor. In addition to recovery of the aforesaid cost, a sum equal to <b>10% (ten per cent)</b> of such cost shall be paid by the Contractor to the Authority as Damages." Please confirm.	
93	Cl. 15.2.4 – Inspection payments (Page No. 67)	and Any deduction made on account of non-compliance will not be paid subsequently even after establishing the compliance thereof. Such deductions will continue to be made every month until the compliance is procured.	The Bidder requests the Authority to modify the Sub-Clauses as follows:  "Any deduction made on account of non-compliance will not be paid subsequently provided the Contractor establish the compliance thereof within 30 days of such deduction with valid reasons for delay in compliance and agreed by the Authority's Engineer. Such deductions will continue to be made every month until the compliance is procured."	As per RFP
94	Cl. 17.4 – Contractor's failure to rectify Defects (Page No. 70)	"In the event that the Contractor fails to repair or rectify such Defect or deficiency within the period specified in Clause 17.2, the Authority shall be entitled to get the same	The Bidder requests the Authority to modify the Clause 17.4 as follows.  "In the event that the Contractor fails to repair or rectify Defect or deficiency aroused due to the reason solely attributable to the Contractor, within the	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<p>repaired, rectified or remedied at the Contractor's cost so as to make the Project Highway conform to the Specifications and Standards and the provisions of this Agreement. All costs consequent thereon shall, after due consultation with the Authority and the Contractor, be determined by the Authority's Engineer. The cost so determined and an amount equal to twenty percent of the cost as Damages shall be recoverable by the Authority from the Contractor and may be deducted by the Authority from any monies due to the Contractor"</p>	<p>period specified in Clause 17.2 or have established such reasons for not being able to commence defect rectification in 15 days but not later than 30 days which is agreed by the Authority's Engineer, the Authority shall be entitled to get the same repaired, rectified or remedied at the Contractor's cost so as to make the Project conform to the Specifications and Standards and the provisions of this Agreement. All costs consequent thereon shall, after due consultation with the Authority and the Contractor, be determined by the Authority's Engineer. The cost so determined and an amount equal to 10% (ten percent) of the cost as Damages shall be recoverable by the Authority from the Contractor and may be deducted by the Authority from any monies due to the Contractor."</p>	
95	Cl. 18.1.2 – Appointment of the Authority's Engineer (Page No. 72)	<p>The Authority's Engineer should be appointed within 30 days from the date of this Agreement or before declaration of Appointed Date. The Authority shall notify the appointment or replacement of the Authority's Engineer to the Contractor.</p>	<p>Bidder understands that, Appointment of the full time Authority's Engineer will not be delayed the Appointed Date and the Contractor shall be entitled for additional time &amp; cost for delay in Appointment of the full time Authority's Engineer.</p>	As per RFP



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Sl. No.	Cl. No / Section / Page No.	Description	Query	Response
96	Cl. 19.2 – Advance Payment (Page No. 76 & 77)	<i>"The Authority shall make an interest-bearing (@ Bank Rate<sup>5</sup>) advance payment (the 'Advance Payment'), equal in amount to 10 (ten) percent of the Contract Price, exclusive for mobilisation expenses. The Advance Payment for mobilisation expenses shall be made in two instalments each equal to 5% (five percent) of the Contract Price. The second 5% (five percent) mobilisation advance would be released after submission of utilization certificate by the Contractor for the first 5% advance already released earlier."</i>	1. Bidder requests to make an interest free Advance Payment to facilitate the Contractor and the amount of Bank Guarantee shall be equal to the amount of the advance being availed by the Contractor. 2. Bidder also requests the Authority to stay abide by the schedule of Advance Payment slated under Cl 19.2 to avoid cash flow crisis for mobilization works. In case of delay in release of Advance Payment for reasons not attributable to the Contractor, further delaying the works shall be considered for determining Time Extension and related costs, if any, at actuals. Please confirm.	As per RFP
97	Cl. 19.2.8 – Advance Payment (Page No. 78)	<i>If the Advance Payment has not been fully repaid prior to Termination under Clause 21.7 or Article 23, as the case may be, the whole of the balance then outstanding shall immediately become due and payable by the Contractor to the Authority. Without prejudice to the provisions of Clause</i>	Bidder request that interest shall be levied only on part of the Advance Payment balance to be re-paid at the time of Termination and that too if the reason for Termination is solely attributable to the Contractor. Please confirm.	As per RFP

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		19.2.7, in the event of Termination for Contractor Default, the Advance Payment shall be deemed to carry interest at the rate of 10% (ten per cent) per annum from the date of Advance Payment to the date of recovery by encashment of the Bank Guarantee for the Advance Payment. For the avoidance of doubt, the aforesaid interest shall be payable on each instalment of the Advance Payment, regardless of whether the instalment or any part thereof has been repaid to the Authority prior to Termination.		
98	Cl. 19.7.4 – Payment for the Maintenance of the Project Highway (Page No 80)	The Authority shall pay to the Contractor every quarter any amount due under any IPC under this Clause 19.7. The payment shall be made no later than 30 (thirty) days from the date of submission of the last IPC for the relevant quarter.	The bidder request release of maintenance payment on monthly basis in line with Clause 19.4 and 19.5 to maintain the steady cash flow for carrying out Maintenance Works.	As per RFP
99	Cl. 19.9.1 – Time of payment and interest	.....	Bidder understands that, period of 30 days mentioned under Clause 19.9.1 (a) for releasing payment is specifically with	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
	(Page No 81)	(a) <i>payment shall be made no later than 30 (thirty) days from the date of submission of the Stage Payment Statement by the Contractor to the Authority's Engineer for certification in accordance with the provisions of Clause 19.4 for an IPC; provided that, in the event the IPC is not issued by the Authority's Engineer within the aforesaid period of 30 (thirty) days, the Authority shall pay the amount shown in the Contractor's Stage Payment Statement and any discrepancy therein shall be added to, or deducted from, the next payment certificate issued to the Contractor, and</i>	respect to the payment of balance 10% of the Stage Payment Works under Clause 19.5.2.	
100	Cl. 19.10.4 (d) – Price adjustment for the Works (Page No 83)	(b) <i>.....</i> "At = The WPI for construction machinery for the month three months prior to the month to which the IPC relates."	As the base year of All-India Wholesale Price Index (WPI) has been revised from 2004-05 to 2011-12 by the Office of Economic Advisor (OEA), Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, construction machinery is no more the part of update WPI. Please clarify which item to be considered in substitution.	The WPI for "Manufacture of machinery for mining, quarrying and construction" shall be considered in substitution of construction machinery.

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
101	Cl. 19.10.4 (d) - Price adjustment for the Works (Page No. 83)	"CO = The WPI for grey cement for the month of the Base Date"	As the base year of All-India Wholesale Price Index (WPI) has been revised from 2004-05 to 2011-12 by the Office of Economic Advisor (OEA), Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, grey cement is no more the part of update WPI. Please clarify which item to be considered in substitution.	The WPI for "ordinary port land cement" shall be considered in substitution of grey cement.
102	Cl. 19.10.4 (d) - Price adjustment for the Works (Page No. 83)	"LO = The consumer price index for industrial workers for the circle Faridabad in the State of Haryana, published by Labour Bureau, Ministry of Labour, Government of India, (hereinafter called "CPI") for the month of the Base Date.  LI = The CPI for the month three months prior to the month to which the IPC relates."	Bidder requests to modify this clause as follows: "LO = Minimum rates of Wages published by the Chief Labour Commissioner, Ministry of Labour & Employment, Govt. of India or Labour Commissioner of State, whichever higher, for the month of the Base Date.  LI = Minimum rates of Wages published by the Chief Labour Commissioner, Ministry of Labour & Employment, Govt. of India or Labour Commissioner of State, whichever higher, for the month to which the IPC relates."	As per RFP
103	Cl. 19.10.4 (d) - Price adjustment for the Works (Page No. 83)	"SI = The WPI for steel (re-bars) for the month three months prior to the month to which the IPC relates."	As the base year of All-India Wholesale Price Index (WPI) has been revised from 2004-05 to 2011-12 by the Office of Economic Advisor (OEA), Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, steel (re-bars) is no more the part of update WPI. Please clarify which item to be considered in substitution.	The WPI for "mild steel - long products" shall be considered in substitution of steel (re-bars)

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
104	Cl. 19.17.3 - Change in Law (Page No. 87)	<i>The Authority's Engineer shall, within 15 (fifteen) days from the date of receipt of the notice from the Contractor or the Authority, determine any addition or reduction to the Contract Price, as the case may be, due to the Change in Law.</i>	The Bidder understands that selected bidder shall be compensated at actuals in terms of both time and related costs in case of such eventuality hampering the scheduled project completion date or any extension thereof. Please confirm.	As per RFP
105	Cl. 21.8.1 - Termination Payment for Force Majeure Event (Page No. 97)	<i>In the event of this Agreement being terminated on account of a Non-Political Event, the Termination Payment shall be an amount equal to the sum payable under Clause 23.5. Provided that in the event Termination occurs during the Maintenance Period, the Authority's Engineer shall only determine the value of Works associated with Maintenance.</i>	The Bidder requests to compensate the Contractor for losses due to idling/ retention of resources on the Site during such period of Force Majeure causing Termination as Termination shall occur only upon the occurrence of such event for a period of 60 days or more within a continuous period of 120 days causing idling/ retention of selected bidder's resources for such period. Please confirm the same.	As per RFP
106	Cl. 21.8.2 - Termination Payment for Force Majeure Event (Page No. 97 & 98)	<i>If Termination is on account of an Indirect Political Event, the Termination Payment shall include: (a) any sums due and payable under Clause 23.5; and (b) the reasonable cost, as determined by the</i>		As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
107	Cl. 21.8.3 – Termination Payment for Force Majeure Event (Page No 98)	Authority's Engineer, of the Plant and Materials procured by the Contractor and transferred to the Authority for use in Construction or Maintenance, only if such Plant and Materials are in conformity with the Specifications and Standards;  "If Termination is on account of a Political Event, the Authority shall make a Termination Payment to the Contractor in an amount that would be payable under Clause 23.6.2 as if it were an Authority Default."		As per RFP
108	Cl. 23.5.1 – Valuation of Unpaid Works (Page No 104 & 105)	"Within a period of 15 (forty-five) days after Termination under Clause 23.1, 23.2 or 23.3, as the case may be, has taken effect, the Authority's Engineer shall proceed in accordance with Clause 18.5 to determine as follows the valuation of unpaid Works (the "Valuation of Unpaid Works"): (a) value of the completed stage of the Works, less payments already made;		As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<p>(b) reasonable value of the partially completed stages of works as on the date of Termination, only if such works conform with the Specifications and Standards; and</p> <p>(c) value of Maintenance, if any, for completed months, less payments already made."</p>		
 <p>620</p> 	<p>23.1.1 – Termination Contractor Default (Page No. 101)</p> <p>for</p>	<p>".....</p> <p>(c) the Contractor does not achieve the latest outstanding Project Milestone due in accordance with the provisions of Schedule-J, subject to any Time Extension, and continues to be in default for 45 (forty five) days;</p> <p>(d).....</p> <p>(e) .....</p> <p>(f) the Project Completion Date does not occur within the period specified in Schedule-J for the Scheduled Completion Date, or any extension thereof;</p> <p>(g) failure to complete the Punch List items within the</p>	<p>Bidder requests to replace the following points of the said clause:</p> <p>"(c) the Contractor does not achieve the latest outstanding Project Milestone due in accordance with the provisions of Schedule-J, subject to any Time Extension, and continues to be in default for 45 (forty five) days for reasons solely attributable to the Contractor;</p> <p>(f) the Project Completion Date does not occur within the period specified in Schedule-J for the Scheduled Completion Date, or any extension thereof, for reasons solely attributable to the Contractor;</p> <p>(g) to be deleted"</p>	<p>As per RFP</p>

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		periods stipulated there for in Clause 12.2.1:		
110	Cl. 23.2.1 – Termination Authority Default (Page No. 103)	for "In the event that any of the defaults specified below shall have occurred, and the Authority fails to cure such default within a Cure Period of 90 (ninety) days or such longer period as has been expressly provided in this Agreement, the Authority shall be deemed to be in default of this Agreement (the "Authority Default") unless the default has occurred as a result of any breach of this Agreement by the Contractor or due to Force Majeure. The defaults referred to herein shall include:"	Bidder request the Authority to include the following provision:  "f) the Authority fails to provide, within a period of 365 (three hundred and sixty five days) from the Appointed Date, the Right of Way and other statutory clearances required for construction of the Project; "	As per RFP
111	Cl. 28.1 – Definitions (Page No. 121)	"Appointed Date" means that date which is later of the 30th day of the date of this Agreement, the date on which the Contractor has delivered the Performance Security in accordance with the provisions of Article 7 and the date on which the Authority has provided the	This provision of Appointed Date and the conditions set forth herein does not address the actual bottlenecks encountered by the contractors before the commencement of the Works. In addition to aforesaid provision, it is requested to include the following provisions as a condition precedent to be fulfilled by the Authority prior to declaration of the Appointed Date:	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<p>working front on no less than 90% (Ninety per cent) of the total length of Project Highway;</p>	<p>a. For the purposes of providing constructive possession of the Right of Way to the Contractor, ROW must be available in full width and having completed all the formalities as per provision of 3 H of NH Act, 1956.</p> <p>b. A full-time Authority's Engineer must have been appointed.</p> <p>c. Necessary permits and sanction of estimate of utility shifting (i.e. installation of new utilities and removal of existing utilities) is in place, payment have been deposited directly by the Authority with the entity owning the utility including the supervision charges.</p> <p>d. Necessary permits and approved cost estimate for felling of trees must be in place. All the formalities required for commencing felling of trees in forest area including the nationalized trees have been concluded by the forest department.</p> <p>e. Necessary permits and approved cost estimates for removal of structures have been completed by the Authority. All the formalities required for commencing dismantling of obstructing structures have been concluded by the Authority.</p> <p>Further, in case of any delay in declaring Appointed Date beyond 120 days from the last date of submission of Bid, the Bid price shall be revised for escalation in prices to be paid upfront for the period between</p>	



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
			<p>scheduled Appointed Date and actual Appointed Date along with the other compensation, if any, arising due to such delay. Notwithstanding the above, the Contractor shall be at liberty to terminate the Contract Agreement at any time beyond this period if Appointed Date is not declared so. In such case the selected bidder shall be compensated at actuals in case of any losses suffered by it during this period. Please confirm.</p> <p>Also, Appointed Date shall not be declared on the onset of or during the monsoon season. Please confirm.</p>	
112	Cl. 28.1 – Definitions (Page No 128)	<p><i>“Taxes” means any Indian taxes including excise duties, customs duties, value added tax, sales tax, local taxes, cess and any impost or surcharge of like nature (whether Central, State or local) on the goods, Materials, equipment and services incorporated in and forming part of the Project Highway charged, levied or imposed by any Government Instrumentality, but excluding any interest, penalties and other sums in relation thereto imposed on</i></p>	<p>Bidder requests to modify this Clause as follows:</p> <p><i>“Taxes” means any Indian taxes including GST, excise duties, customs duties, value added tax, sales tax, local taxes, cess and any impost or surcharge of like nature (whether Central, State or local) on the goods, Materials, equipment and services incorporated in and forming part of the Project Highway charged, levied or imposed by any Government Instrumentality, but excluding any interest, penalties and other sums in relation thereto imposed on any account whatsoever For the avoidance of doubt, Taxes shall not include taxes on corporate income;</i></p>	<p>The word <b>GST</b> stands inserted after the word 'including' and before the word 'excise duties' in the given definition.</p>



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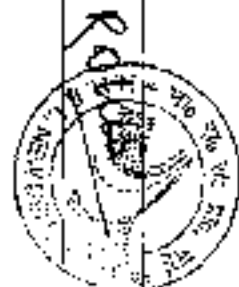
Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<i>any account whatsoever. For the avoidance of doubt, Taxes shall not include taxes on corporate income."</i>		
113	<b>Annex II (Schedule – A) – Dates for providing Right of Way</b>	<i>The dates on which the Authority shall provide Right of Way to the Contractor on different stretches of the Site are stated below.</i>	Bidder understand that Right of Way shall be handed over to the Contractor on full length and full width of the section as mentioned under this Clause.	90% of RoW including additional land for development of interchanges, wayside amenities and other project facilities will be provided on appointed date and remaining 10% will be handed over within the time period specified in the draft Contract Agreement.
114	<b>Cl. 2.5 (Schedule – B) – Width of Carriageway (Page no. B-2)</b>	<i>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 and the same shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.</i>	The Bidder understands that the scope defined in the schedules is accurate and forms the base for arriving at the bid price. Hence, requests the Authority to delete such arbitrary provision.	As per RFP
115	<b>Cl. 2.6 (Schedule – B) –</b>	<i>Service Roads/ Slip Roads shall be constructed at the locations and for the lengths indicated below.</i>	The Bidder understands that the scope defined in the schedules is accurate and forms the base for arriving at the bid price.	As per RFP

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
	Service Roads/Slip Roads/Connecting Roads (Page no. B-3)	<p><i>Note: 1. Above length of the service/ slip/ connecting roads is indicative and minimum specified. The actual length of the service/ slip/ connecting roads shall be determined by the Contractor in accordance with the IRC:SP-99-2013 requirements with approval from the Authority's Engineer. Any increase in the length specified in this Clause of Schedule-B shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.</i></p>	Hence, requests the Authority to delete such arbitrary provision.	
116	Cl. 2.7.1 (Schedule – B) – Grade separated structures (Page no. B-4)	<p><i>Grade separated structures shall be provided as per paragraph 2.13 of the IRC:SP:99 2013. Proposed levels at structure locations as shown in plan &amp; profile specified in Annex III of schedule A are only for guidance and any changes in levels shall not constitute</i></p>		As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<p>any change of scope. The requisite particulars are given below:</p> <p>.....</p> <p>Note: The length of loops and ramps are minimum and likely to get changed as per site requirement; Any change as per site requirement may not constitute change of scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.</p>		
117	Cl. 3 (b) (Schedule – B) – Intersections and grade separators (Page no. B-10 & 11)	<p>.....</p> <p>Note:</p> <p>(i) .....</p> <p>(ii) Any other junction not mentioned above but observed during the construction of the project shall be improved as per IRC:SP:99-2013 requirements. The same shall not</p>		As per RFP

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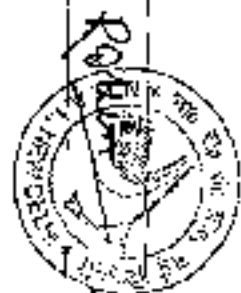
Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<p>constitute a Change of Scope, save and except any variations arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.</p> <p>(iii) The contractor shall take up 'Detailed Engineering study' to ascertain further details of all intersections and treatment of the intersections shall be designed in accordance with the latest guidelines mentioned out in section-3 of IRC.SP:99-2013. The same shall not constitute a Change of Scope, save and except any variations arising out of a Change of Scope expressly undertaken in accordance with the</p>		

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<p>provisions of Article 13.</p> <p>(iv) .....</p> <p>(v) Location and span arrangement of grade-separated structures are indicative. Exact location may be decided in consultation with Authority Engineer. Any Change in span arrangement shall not be treated as change of scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 16.</p>		
118	<p>Cl. 7.2.4 (Schedule - B) – Culverts (Page no. B-14 &amp; 15)</p>	<p>.....</p> <p>Note: 1. .....</p> <p>Any additional Barrel length required as per site conditions shall not constitute a Change of Scope, save and except</p>	<p>The Bidder understands that the scope defined in the schedules is accurate and forms the base for arriving at the bid price. Hence, requests the Authority to delete such arbitrary provision.</p>	<p>As per RFP</p>



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<p>any variations arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.2.</p> <p>.....</p> <p>Any variations in ventway/span arrangements specified in this Schedule-B shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.</p>		
119	Cl 7.2.7 (Schedule – B) – Culverts (Page no. B-15)	In case of culverts proposed for widening/repair as per details in Clause 7.2.3 above, the same shall be re-constructed if the design shows that these are unsafe for design loads. No change of scope shall be considered in such cases.		As per RFP
120	Cl. 10 (Schedule – B) –	Minimum 12,000 no. of trees are required to be planted by the contractor as compensatory afforestation	The Bidder understands that the scope defined in the schedules is accurate and forms the base for arriving at the bid price.	As per RFP

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
	<b>Compulsory Afforestation</b> (Page no. B-19)	<i>in accordance with IRC:SP:99-2013 keeping in view IRC:SP:21-2009. Any increase in no. of trees shall not be treated as change of scope, save and except any variations arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.</i>	Hence, requests the Authority to delete such arbitrary provision.	
	Cl. 12 <b>(Schedule – B) – Toe Wall and Retaining Walls</b> (Page no. B-19 & 20)	<i>Note: Above Length and height of Toe Wall/ Retaining wall is tentative and minimum specified. The actual length of Toe Wall/ Retaining wall shall be determined by the Contractor in accordance with the IRC.SP:99-2013 requirements with approval from the Authority's Engineer. Any increase in the length and height specified in this Clause of Schedule-B shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance</i>		As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
122	Cl. 14 (Schedule – B) – Diversion of Irrigation Canal (Page no. B-20)	with the provisions of Article 13. Contractor shall shift the existing irrigation canal at the locations detailed below for construction of project highway. The typical cross-section of the existing canal is enclosed at appendix B-4 for reference. The actual cross-section of canal to be shifted and length shall be as per the site requirement and approval of concerned irrigation authority and no change of scope shall be allowed on account of this, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.		As per RFP
123	Cl. 16 (Schedule – B) – Change of Scope (Page no. B-20)	The length of Structures and bridges specified hereinabove shall be treated as an approximate assessment. The proposed span arrangement of above structures may be changed based on innovative design of structure, latest construction techniques		As per RFP

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Sl. No.	Cl. No / Section / Page No.	Description	Query	Response
		<p><i>and aesthetics of structures and the actual lengths of Structures and bridges as required on the basis of detailed investigations shall be determined by the Contractor in accordance with the Specifications and Standards. Any variations in the lengths specified in this Schedule-B shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.</i></p>		
124	<p><b>Cl. 2.1 Annex - I (Schedule - C) – Toll Plazas (Page no. C-2)</b></p>	<p>No of toll lanes specified above are minimum indicative. The Contractor shall design and provide toll lane as per IRC: SP:99-2013 subject to minimum specified above. Any increase in no. of toll lane shall not be treated as change of scope, save and except any variations in the length arising out of a Change of Scope expressly</p>		As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
125	Cl. 1.2 (Schedule - E) - Maintenance Requirements (Page No. 132)	undertaken in accordance with the provisions of Article 13.  <i>Upon occurrence of any breach hereunder, the Authority shall be entitled to effect reduction in monthly lump sum payment as set forth in Clause 14.6 of this Agreement, without prejudice to the rights of the Authority under this Agreement, including Termination thereof.</i>	Bidder requests the Authority to add the following para at the end of Clause 1.2 (Schedule - E): The Authority shall notify the Contractor of its decision to appropriate the relevant amount in pursuance with the provisions of this Clause 1.2 provided that no deduction of amount on account of Contractor's Default shall be effected by the Authority without notifying the Contractor of its decision for such deductions, and taking into consideration the representation, if any, made by the Contractor within 20 (twenty) days of such notice."	As per RFP
126	Cl. 4 (Schedule - E) - Extension of time limit (Page No. 132 & 133)	<i>Notwithstanding anything to the contrary specified in this Schedule-E, if the nature and extent of any Defect or deficiency justifies more time for its repair or rectification than the time specified herein, the Contractor shall be entitled to additional time in conformity with Good Industry Practice. Such additional time shall be determined by the Authority's Engineer and conveyed to the Contractor</i>	Bidder requests the Authority to modify this Clause as under: Notwithstanding anything to the contrary specified in this Schedule-E, if the nature and extent of any Defect or deficiency justifies more time for its repair or rectification than the time specified herein, the Contractor shall be entitled to additional time & cost in conformity with Good Industry Practice. Such additional time & cost shall be determined by the Authority's Engineer and conveyed to the Contractor and the Authority with reasons thereof.	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
127	Cl. 1 (Schedule – F) – Applicable Permits (Page No. 138)	and the Authority with reasons thereof. The Contractor shall obtain, as required under the Applicable Laws, the following Applicable Permits:  (a).....  to  (i).....	i) Bidder understands that any delay and impediment on account of government instrumentalities/ authorities in procuring various permits and approvals shall entitle the Contractor for appropriate Time Extension and related costs. Please confirm ii) Bidder request to provide list of Applicable Permits already in place for the project. iii) Bidder also requests the Authority to provide clarification, whether forest clearance is required for the project. If yes, what is the status of the clearance?	As per RFP
128	Cl. 1.3 (Schedule – H) – Procedure of estimating the value of work done (Page No. H-6 to H-18)	1.3 Procedure of estimating the value of work done .....	Stringent payment procedure as per Schedule H would strangle the Contractor's cash flow. Hence, Bidder requests for release of payment as under.  <b>Road Works:</b> <b>Reconstruction/New 8-Lane</b> <b>Realignment/Bypass (Flexible</b> <b>Pavement):</b> Earthwork up to top of the sub-grade + Site Clearance – 1 km length Earthwork in Shoulders – 1 Km length Sub-base Course (CTSB) - 1 km length Non bituminous Base course (WMM) – 1 km length Bituminous Base course – 1 Km length Wearing Coat – 1 km length	Amended Schedule H for the project highway is enclosed



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
			<p><b>Reconstruction/New Service Road/Slip Road (Flexible Pavement):</b>                      Earthwork up to top of the sub-grade – 1 km length                      Earthwork in Shoulders – 1 Km length                      Sub-base Course (GSB) – 1 km length                      Non bituminous Base course (WMM) 1 km length                      Bituminous Base course – 1 Km length                      Wearing Coat – 1 km length</p> <p><b>Culverts/ Minor Bridges and Underpasses/Overpasses/ Major Bridge works, ROB/RUB and Structures:</b>                      On completion of foundation/ Sub-structure/ Super-structure / Protection Works/ RE Wall Works [see applicable].</p>	
129	Cl. 1.2 (Schedule – M) – Payment reduction for non-compliance with the Maintenance Requirements (Page No. 157)	<i>"Any deduction made on account of non-compliance with the Maintenance Requirements shall not be paid even after compliance subsequently. The deductions shall continue to be made every month until compliance is done."</i>	Bidder requests to modify the clause as follows: <i>"Any deduction made on account of non-compliance with the Maintenance Requirements shall not be paid subsequently provided the Contractor establish the compliance thereof within 30 days of such deduction with valid reasons for delay in compliance and agreed by the Authority's Engineer."</i>	As per RFP
130	Cl. 4.18 Annex - I (Schedule – N) – Construction Period (Page No. 163)	<i>The Authority's Engineer shall carry out, or cause to be carried out, all the Tests specified in Schedule-K and Issue a Completion Certificate or Provisional</i>	1. The Bidder understands that Authority's Engineer shall be the authorized person to issue Provisional Completion Certificate and shall issue the same as per the terms of this Agreement. Please confirm.	As per RFP

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
131	Cl. 6 Annex - I (Schedule - N) – Determination of costs and time (Page No. 164)	<p><i>Certificate, as the case may be. For carrying out its functions under this Paragraph 4.18 and all matters incidental thereto, the Authority's Engineer shall act under and in accordance with the provisions of Article 12 and Schedule-K.</i></p> <p>6.1 The Authority's Engineer shall determine the costs, and/or their reasonableness, that are required to be determined by it under the Agreement.</p> <p>6.2 The Authority's Engineer shall determine the period of Time Extension that is required to be determined by it under the Agreement.</p> <p>6.3 The Authority's Engineer shall consult each Party in every case of determination in accordance with the provisions of Clause 18.5.</p>	<p>2. Further, bidder understands that any determination of Time Extension and/ or additional costs shall be carried out within reasonable time and shall not be delayed beyond 60 days from the date of Contractor's notice in this regard. Please confirm.</p> <p>3. The Bidder understands that the Authority's Engineer shall forward all the correspondences exchanged between the Authority's Engineer &amp; Authority related to Project to the Contractor. Please confirm.</p>	As per RFP
	Cl. 4 (Schedule - P) – Insurance to be in joint names	*The insurance under paragraphs 1 to 3 above shall be in the joint names	The bidder requests to modify the Clause as follows: *The insurance under paragraphs 1 to 3 except the resources mobilized by the	As per RFP



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Sl. No.	Cl. No. / Section / Page No. (Page No. 189)	Description	Query	Response
		of the Contractor and the Authority."	Contractor shall be in the joint names of the Contractor and the Authority." Please confirm.	
133	General	Utility shifting	Please provide a detailed Utility Relocation plan and network drawings of underground telephone lines, OFC & Electric cable lines, pipe line and other utilities. We presume that Authority will obtain the necessary approvals/permissions regarding utility shifting plans and their cost estimates from respective departments. Please confirm the status.	Please refer Article 9 of the draft Contract Agreement.
	General	Mining and Quarry availability	Request to clarify the restriction on Mining, if any. We presume that Authority will obtain the necessary permissions/ approvals from respective department before awarding the project. Please confirm.	As per Article 3 of the draft Contract Agreement uploaded along with the bid document.
135	General	Number of trees to be cut	Please state the number of trees to be cut for the project stretch.	As per Cl. 9.4 of the draft Contract Agreement uploaded along with the bid document.
136	General	Plan & Profile provided with RFP	Contractor requests to provide the alignment plan and profile in CAD format.	All available data has been uploaded along with the bid document.
137	General	Geotechnical investigation report	Please provide detailed geotechnical report for all major structures and also for entire corridor including rock profile underneath.	All available data has been uploaded along with the bid document.
138	General	Hydraulic Report	Please provide the following hydraulic data of River/ Naha for all bridges structures. 1. Bed level 2. Velocity of water 3. Linear water way	All available data has been uploaded along with the bid document.
	General	Forest Department/ Wildlife Sanctuary /Reserved	Kindly clarify whether any part of the Project Highway or any Project Facilities	The project stretch passes through protected forest and the proposal for

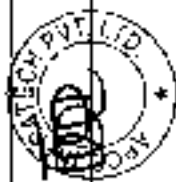
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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Parlyojana in the State of Haryana [Tender id: 2018\_NHA1\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		Forest / Protected Forest	comes under the Forest Department / Wildlife Sanctuary / Reserved Forest / Protected Forest; and status of the clearance for the same.	necessary clearances has been submitted to the concerned authorities.
140	Clause 14, Schedule A, Pg. No. A-1, Clause 1, Annex - III, Schedule A, Pg. No A-22, Clause 1, Schedule B, Pg. No. B-1	<p>Clause 14 of Schedule A states that "The alignment plans of the Project Highway are specified in Annex-III. The proposed levels (minimum FRL) as indicated in the alignment plan shall be followed by the contractor. The contractor, however, improve/upgrade the Road Profile as indicated in Annexure-III based on site/design requirement."</p> <p>Clause 1 (Annex - III) of Schedule A states "Finished road level indicated in the alignment plan shall be followed by the contractor as minimum FRL. In any case, the finished road level of the project highway shall not be less than those indicated in the alignment plan. The contractor shall, however, improve/upgrade the Road profile as indicated in</p>	<p>Responsibility of the contractor involves both design and construction. Schedule B, Clause 2 give the freedom to design the geometry of the expressway as per IRC.SP:99 – 2013. Though there are limitations in changing the horizontal alignment due to land constraints, vertical profile of the highway has to be designed afresh based on the original ground levels obtained from topographic surveys.</p> <p>Stipulating minimum FRL criteria is not prudent as there is no guarantee on the original ground levels considered in Schedule B drawings. The profile of the project road is governed by the top level of structures (VUP, PUP, FO etc.). Minimum vertical clearance of the structures is fixed. However, the depth of superstructure may vary depend on the structural design and hence the top level guiding the FRL. There may also be changes in invert levels of VUP &amp; PUPs during the detail design. Hence there will be both raising OR lowering of the profile during detailed design, which are technically justified. In anyways IRC: SP:99 – 2013 clearly specifies the minimum embankment height to be followed.</p>	<p>The proposed profile of the project highway as indicated in the Annex-III of Schedule A is an approximate assessment. The Contractor shall design the alignment plan and profile of the project highway based on site as well as design requirement mentioned in Schedule D within the available RoW. In this regard amendment to relevant clause of Schedule A and B uploaded along with the reply to pre-bid queries may be referred to</p>



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		<p>Annexure-III based on site/design requirement."</p> <p>Clause 1 of Schedule A states "The proposed profile of the project highway as indicated in the Annex-III of Schedule A shall be followed by the contractor (as minimum FRL) as given in the alignment plan. Based on site/design requirement, the Contractor may, however, improve/upgrade upon the alignment plans and profiles as indicated in Annexure - III of Schedule A and raise the finished roadway level (FRL) with approval from the Authority's Engineer within the available Right of Way."</p>	<p>Considering the above, the minimum FRL criteria shall be deleted and design freedom as per the essence of EPC contract shall be given to the contractor. Kindly confirm.</p>	
141	Clause 2.6, Annexure – I, Schedule B, Pg. No. B-3 Plan & Profile Drawing	<p>Clause 2.6 (Annexure – I) of Schedule B enlists the 'Stretches of Connecting Roads' and the respective lengths on LHS and RHS.</p> <p>However, from the Plan &amp; Profile, connecting roads have been observed at numerous locations other than those listed in Clause</p>	<p>Kindly confirm that scope of connecting roads shall be as shown in Plan &amp; Profile and kindly include all the locations in Clause 2.6 of Annexure I Schedule B.</p>	<p>The location of the connecting road is as given in plan &amp; profile indicated in Annexure -III of Schedule A and referred to in relevant clauses of Schedule B. The length of the connecting road shall be as per actual site requirement subject to minimum indicated in the plan &amp; profile indicated in Annexure -III of Schedule A. The width of the connecting road shall be equal to the width of the existing road/cart track subject to minimum specified in Cl. 2.12.3 of IRC: SP: 99-2013.</p>



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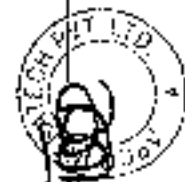




Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHAI\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
143	Clause 2.6 of Annexure-I of Schedule B.	<p>2.6 (Annexure - I) of Schedule B</p> <p>Ex: Connecting road km 21+800 to 21+960 at SVUP Ch 21+893 and km 22+150 to km 22+250 at SVUP 22+205 etc</p> <p>Service Road/Slip Road /Connecting Roads.</p> <p>Slip road length given for two locations. 33.478 to 34.500 = 1022m 34.822 to 35.100 = 478m</p>	<p>As per TCS drawings, Slip roads is there in TCS type-4, and the applicable chainage is 18.170 to 18.753.</p> <p>Request the Authority to clarify the discrepancy of Slip Road lengths and TCS Type.</p>	<p>Wayside amenities have been proposed on both sides at Ch. 33.478 to Ch. 34.500. The slip lanes are to be provided for access to the proposed wayside amenity as per Schedule B and typical layout of the wayside amenity uploaded along with bid documents. The layout of the highway section at these locations indicating the TCS to be followed is enclosed.</p>
143	Clause 2.7 of Annexure-I of Schedule B.	<p>It has been observed that the TCS for ramps and loops have not been provided for the interchange at km 18+994, 19+803A and 19+803B.</p>	<p>Kindly provide the TCS drawings for loops and ramps.</p>	<p>The layout of the proposed interchange indicating the TCS for ramps and loops at these locations is enclosed.</p>
144	Clause 2.8 of Annexure-I of Schedule B.	<p>From the typical cross section table given in the cited clause and the Plan &amp; Profile Drawing, it has been observed that there are TCS mismatch at numerous locations.</p>	<p>Kindly confirm that the TCS schedule given in Schedule B is tentative and actual schedule shall be as per detail design.</p>	<p>The TCS schedule as given in Schedule B is to be followed and shall be treated as an approximate assessment. Actual length of the TCS schedule shall be prepared by the contractor based on detailed investigations and site requirements. Any variation in length of respective TCS specified in Schedule B shall not constitute a change of scope, save and except any variations in the length arising out of a change of scope</p>

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
				expressly undertaken in accordance with the provisions of Article 13.
145	Clause 3 of Annexure-I of Schedule B.	Notes: In most of the notes it is specified that other junction not mentioned in schedules shall not constitute a change of Scope.  Even it is specified that the span arrangement of Grade separated structures is tentative.	Request the Authority to specify the exact number of junctions to avoid the ambiguity. Request the authority to specify the exact span and length of the grade separated structures. Any change in the structure length shall be treated as COS.	As per RFP
146	Clause 5.2 of Annexure I of Schedule B, pg 37	Perpetual Flexible Pavement	Since perpetual pavement is proposed for the project, the thickness shall be fixed as given Schedule B. The minimum clause for traffic and thickness shall be eliminated. Kindly confirm	As per RFP
147	Clause 5.1, Annex-I, Schedule B, Pg. No. B-11	The cited clause from Schedule B states " The pavement shall be perpetual type for entire length of project highway; except for connecting road/slip road/service road and wayside amenities where, flexible pavement shall be proposed".	Kindly confirm that, as per Schedule B, Pavement type for Toll Plaza is perpetual flexible pavement.  Also update the list of deviation in Schedule D accordingly.	The pavement type for toll plaza shall be rigid pavement as specified in Cl. 12.4.14 of IRC SP:99-2013.
148	Clause 7.2.4 of Annexure-I of Schedule B.	Details of Culverts: Apart from other culvert details, it is specified that, At km 28.264--- 1x3.0x2.5m Box Culvert	There is a discrepancy in the span details provided in clause 7 2 4 when compared with the details provided in P&P Drawings. As per P&P, At km 28.264---1x3.0x3.0m Box Culvert At km 28.264----1x3.0x3.0m Box Culvert	Shall be read as 1x3.0x3.0m Box Culvert

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		At km 28.264--- 1x3 0x2.5m Box Culvert At km 28.264---- 1x3 0x2 5m Box Culvert	At km 28.264---1x3.0x2.0m Box Culvert  Request the Authority to clarify the discrepancy and confirm the exact span arrangement of Box culverts at the above specified locations.	
149	Clause 7.2.4 of Annexure-I of Schedule B.	At the bottom of the culvert table, it is specified that, "In addition to above, additional 30 nos. box culverts of size 2m x 2m shall be provided as per site requirements for facilitating access of farmers to field channels on either side of the carriageway. The location of such culverts shall be decided in consultation with Authority Engineer	Request the Authority to specify the bifurcation of these additional culverts as per TCS wise.	These culverts are proposed for facilitating the irrigation and movement requirement of the farmers whose land holding is likely to be divided into two parts. Therefore, as mentioned in the Schedule B, the location of these additional culverts of size 2x2 m shall be determined and decided in consultation with the Authority Engineer at the time of execution.
150	Clause 7.3.2 of Annexure-I of Schedule B.	Details of Major and Minor Bridges	There is Discrepancy in length of the structure specified under this clause and the lengths specified in TCS Tables for structures type TCS. Major change is observed at km 36.447 and small variation in length at other minor bridge locations Request the Authority to clarify the discrepancy in structure length, request to specify the exact length of the structure.	The length as specified in the TCS schedule includes the approach length also. However, actual length for the applicable TCS shall be prepared by the contractor based on detailed investigations and site requirements. Any variation in length of respective TCS specified in Schedule B shall not constitute a change of scope, save and except any variations in the length arising out of a change of scope expressly undertaken in accordance with the provisions of Article 13.
151	Clause 7.7 of Annexure-I of Schedule B.	List of the Major bridges and Structures.	As per clause 2.7.1 under heading Flyovers, the details of flyovers specified	As per Cl. 2.7.1 of Schedule B

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		Under this clause it is specified that the number of flyovers are 4	for only one number. Request the Authority to clarify the discrepancy in number of flyovers.	
152	Clause 12 of Annexure-I Schedule B, pg 12	Toe wali and retaining walls: The cited clause mentions the stretches of retaining walls	Kindly confirm that the mentioned locations are tentative and the wall height shall be as per design	As per RFP
153	Clause 14 of Annexure-I of Schedule B.	<p>Diversion of Irrigation canal It is specified that, Contractor shall shift the existing irrigation canal at the locations detailed below for construction of project highway. The typical cross-section of the existing canal is enclosed at appendix B-4 for reference.</p> <p>1. 24+000 24+515 Right 515m                  2. 24+515 25+000 Left 485m                  3. 38+650 38+860 Right 210m                  4. 38+860 39+070 Left 210m</p>	Appendix B-4 is missing in the schedules, request the Authority to provide the same.	Appendix B-4 (typical cross section of the existing canal) is enclosed.
	Appendix B-3 of Annexure-I of Schedule B.	Typical cross section drawings	In TCS-1, width of median shown includes shyness 0.75m and 1.0m earthen portion towards median side but in remaining TCS it shown as excluding the above, please clarify the discrepancy	The width of the median in the remaining TCS also includes shyness of 0.75 m and 1.0 m earthen portion towards median side.
155	Clause-5 and Appendix B-3 of Annexure-I of Schedule B.	Typical cross section drawings, pavement thickness	The pavement layer type suggested in clause 5 and that shown in TCS drawings differs.	The minimum pavement layer and type shall be as per Cl 5 of Schedule B. To meet the intended functional requirement of the respective pavement layers as well as

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
			Request the Authority to clarify the pavement layer type from TCS drawings and minimum pavement thickness statement from clause 5.	proper compaction of heavy bituminous layers on main carriageway, the minimum thickness of respective pavement layers has been indicated in Clause 5.2 of Annexure I of Schedule B. In this regard, amendment to this clause 5.2 of Annexure I of Schedule B, uploaded alongwith reply to pre-bid queries may also be referred to.
156	Clause 10, Annexure - I, Schedule B, Pg. No. B-19 Clause 2.8, Annex - I, Schedule C Pg. No. C-11	Minimum 12,000 no. of trees are required to be planted by the contractor as compensatory afforestation in accordance with IRC: SP:99-2013 keeping in view IRC: SP:21-2009. Any increase in no. of trees shall not be treated as change of scope, save and except any variations arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13. Minimum 60,000 nos. of trees of desired type in two rows @5 m c/c near edge of ROW on both side and three rows @5 m c/c on central median(As per Schedule D) preferably local varieties like mango, Neem, Sheesham, Babul, Peepal etc. shall be planted	Kindly clarify the number of trees to be planted by the contractor as Schedule B & C has different requirements.	The total number of trees to be planted shall be sum of the number of trees mentioned under Clause 10, Annexure – I, Schedule B, and Clause 2.8, Annex – I, Schedule C,



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
157	Clause-2.2.7 of Annexure-I of Schedule C And Annexure-I of Schedule-D	<p>The cited clause in schedule C states "Three beam metal crash barriers shall be provided in entire length on both sides of each main carriageway (i.e. on earthen shoulder of both side carriageway), Loops and Ramps excluding stretches covered by bridges and RE wall structures, where concrete barriers to be provided."</p> <p>The cited clause of Schedule D states "Three beam metal crash barriers shall be provided in entire length on both sides of each main carriageway (i.e. on median and on earthen shoulder of both carriageway), Loops and Ramps excluding stretches covered by bridges and RE wall structures, where concrete barriers to be provided"</p> <p>However, the TCS drawings do not indicate Three beam metal crash barrier on the median side.</p>	Kindly clarify the requirement of providing the three beam along the median for both carriageways	Three beam metal crash barriers shall be provided as mentioned in Cl. B.1 of Annexure-I of Schedule B and Clause-2.2.7 of Annexure-I of Schedule C.
158	TCS Drawings Pg. No B23-B25 Sr. No 5, Clause	The cited clause of Schedule - D mentions "Drainage _____ where	Kindly confirm that continuous surface RCC drain shall be provided on earthen shoulders for all heights of embankment.	Adequate drainage shall be provided in embankments with height more than 6 m

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
	2. Annex - I, Schedule D, Pg. No. D-2	Embankment Height is more than 6 meters: Adequate Continuous Surface RCC drain (Except Structures having approach slabs) shall be provided on both side Earthen Shoulder including RCC Chutes at designed intervals with energy dissipation basin irrespective of any Height of Embankment. The drainage system shown in TCS shall be minimum. However, the provided TCS drawing do not show any such provision for high embankment sections.	Also kindly include the same in TCS drawings.	and approaches to structures as per Cl. 9.4 of the IRC SP 99:2013.
159	TCS Drawings Pg. No. B-23 to B-25	TCS type 2 and 5 shows Stone pitching in the depressed median for full height of the embankment.	It is understood that the stone pitching is proposed on slopes near the abutment of the structures and not for the entire length of the approach. Kindly confirm.	Stone pitching is to be provided as per TCS 2 & 5.
160	Clause 16, Annexure I of Schedule B, Pg B-20	Change of Scope	Since this is being a green field project and limited time of Bidding period it is impractical for bidders to carry out due diligence in assessing the total length of structures. We presume that the Bidders are free to rearrange the Span arrangement for the Major and Minor Bridges, keeping the length of the structure unchanged, as per Schedule B. Please confirm.	As per RFP



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
161	Clause 2.8 of Annex-I of Schedule C, pg C-11	Landscaping and Tree Plantation	Contractor requests to provide source of water for providing Drip Irrigation System.	As per Article 3 of the draft Contract Agreement uploaded along with the bid document.
162	Clause 2.8 of Annex-I of Schedule C, pg C-11	Landscaping and Tree Plantation	Contractor requests to provide details and specifications for the Drip Irrigation System to be provided.	As per Article 3 of the draft Contract Agreement uploaded along with the bid document.
163	Clause 2.6, Schedule C, pg C-10	Lighting	We understand that the lighting for the project facilities shall be as per IRC: SP: 99-2013 as mentioned in schedule D. Contractor understands that the requisite LT feeders at required locations shall be provided by the Authority.	Contractor shall provide the entire infrastructure for lighting of the project facilities including LT feeders at required locations.
	Clause 2.4.1 (A), Annex I of Schedule C, Page No	The cited clause states that "Wayside amenities each of minimum about 37 Hectares shall be developed at the following locations in accordance to Schedule D. The layout with minimum number of units per facility and the minimum area per facility to be developed is given in given in the drawings folder uploaded along with the bid documents. However, the provisions given in above referred drawings shall be minimum" However, drawings are not provided for Rest Area / Other amenities layout.	Kindly provide the layout drawing of Rest area and truck parking facility as mentioned in the cited clause.	Layout drawing of the wayside amenity has been uploaded along with the bid documents. Copy of the same is enclosed.



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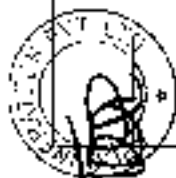




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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
165	Clause 2.4.1 of Annex-I of Schedule C, Page No. C-4	Way side Amenities / Service Areas	Bidder understands that the construction of following amenities shall be done by contractor i. Parking for bus, cars, mini buses, ii. Rest areas, Fast food center, iii. Toilets and bath facilities, space Please confirm.	The contractor shall carry out the construction of the facilities as per requirement mentioned in Schedule C and specifications detailed in Annexure-III of Schedule D.
166	Clause 2.4.1 of Annex-I of Schedule C, Page No. C-4	Way side Amenities / Service Areas	Bidder understands that only space shall be demarcated for the following amenities, i. Fuel station and garage for minor repairs ii. Hotel, trauma center iii. Travel information facility iv. Helipad, v. Play area and security personnel Please confirm.	The contractor shall carry out the construction of the facilities as per requirement mentioned in Schedule C and specifications detailed in Annexure-III of Schedule D.
167	Clause 1.8, Annexure II, Schedule D, Pg D-21	Meteorological Data System Location : The Meteorological Data System shall be located at an interval of average 100km.	Request to confirm the provisions as this package is only of 28.5 km, approx.	Meteorological data system shall be provided for the project highway at interchange-cum-wayside amenity location at km 19+500.
168	Clause 1.6, Annex – II of Schedule D, pg D-17	The Camera viewing distance of at least 1km in each direction.	By this clause contractor understands that the CCTV camera shall be installed at 2km interval Please confirm.	As per Annexure-II of Schedule D
169	Clause 1.2, Annex II of Schedule D	The ATMS shall among many things comprise following sub-systems: i. Communication backbone ii. Emergency Communication System iii. Mobile Communication System	Kindly specify the numbers and locations/changes of each of the sub-systems to be provided.	As per Annexure-II of Schedule D

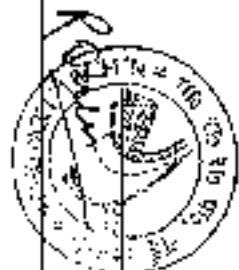
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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		iv. Variable Message Sign System v. Meteorological Data System vi. Automatic traffic counter-cum-classifier system vii. Video Surveillance System viii. Video Incident Detection System (VIDS) ix. Central Control Room (CCR) x. Power Supply System		
170	Schedule B Clause 9b for 'Overhead Cantilever Sign', pg 818	This clause specifies locations of overhead cantilever signs <b>Please confirm that the quantities and chainages specified in this clause are not binding and the Contractor shall design as per IRC:SP:99-2013</b>	<b>Please confirm that the quantities and chainages specified in this clause are not binding and the Contractor shall design as per IRC:SP:99-2013.</b>	<b>Please refer the amendment uploaded alongwith the reply to pro-bid queries</b>
171	Schedule B Clause 9b for 'Overhead Cantilever Sign', pg 818	This clause specifies overhead/cantilever signs "other than toll plaza locations". However, IRC:SP:99-2013 does not specify that overhead signs are required for toll plaza approaches. <b>Please specify quantity and chainages of overhead</b>	<b>Please specify quantity and chainages of overhead signs at approaches of toll plaza/booths</b>	

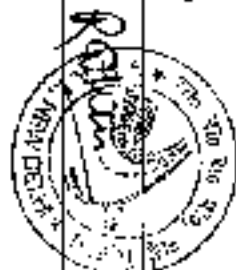
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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
172	Schedule B Clause 9b for 'Overhead Gantry Sign' ,pg B18	signs at approaches of toll plaza/booths This clause specifies locations of overhead gantry signs. However, the locations are on straight stretches of the MCW and not at the approaches of any specific interchange/ exit/structure, etc. Please confirm that the chainages specified in this clause are not binding and the Contractor is free to decide locations of overhead gantry signs as appropriate keeping the quantity same as per this Clause.	Please confirm that the chainages specified in this clause are not binding and the Contractor is free to decide locations of overhead gantry signs as appropriate keeping the quantity same as per this Clause	
173	Clause 7.3.2 of Schedule B. Page No B-16	Minor Bridges	Kindly confirm whether the proposed minor bridges are over the lined canal or stream. Drawings of Minor bridges shows trapezoidal canal at proposed minor bridge location. Kindly provide canal dimensions.	Refer plan & profile.
174	Drawing No. CPC/P-152/CH-32+207/S-100	General arrangement drawing SVUP size (1 x 10.0 x 3.5m)	<ul style="list-style-type: none"> <li>Bidder understand that shear key for all underpasses shall be provided based on structural stability requirement. Please confirm.</li> <li>Median opening in box type structures is mandatory. Please confirm.</li> </ul>	Shear key shall be provided as per design requirement.
175	Drawing No. CPC/P-152/CH-19+000/S-100. CH-19+784/S-100, Ramp portion / S-100	General arrangement drawing at CH. 19+000 General arrangement drawing at CH. 19+784	Kindly provide FRL, ground levels and FRL of existing road.	Layout plan of the Interchange indicating plan & profile of the ramps/loops is enclosed.

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		General arrangement drawing at Ramp portion		
176	Drawing No. CPC/P-152/CH-22+861/S-100	General arrangement drawing at CH 22+861	Kindly provide FRL, ground levels and FRL of existing road.	Ground level and FRL have been indicated in the GAD and the level (depth) of founding levels below the ground level at abutments and piers has also been indicated.
		GAD for Culverts	Kindly provide GAD for culverts with skew angles.	GAD of the box culvert has been annexed.
178	General	Exposure condition	Bidder understand that as per IRC: 112 exposure condition is moderate. Please confirm.	As per manual.
179	General	Type of Structure and span configuration	As an EPC contract, can bidder adopt innovative alternate structure or alter the span or structural configuration of structures by maintaining client requirements i.e. total span length & clearances? Please confirm.	As per Cl. 16 of Schedule B.
180	General	Type & grade of material	As an EPC contract, can bidder adopt alternate material of structures? Please confirm. As an EPC contract, can bidder have flexibility to change the grade materials? Please confirm.	As per manual.
181	General	Location of project	Whether stretch under consideration is nearer to heavy industries or mines? Please confirm.	Coordinates of the project highway and kmz file of the project alignment has already been uploaded for reference of the bidder.
182	General	Congestion Factor	Congestion factor is not required for this project. Please confirm	As the project highway is access controlled, congestion factor may not be considered in calculating the live load.
183	Schedule B	Wearing coat	Wearing coat thickness mentioned in the structural drawings are indicative & shall be provided as per latest MORTH Specifications. Please confirm.	As per manual and design requirement.

Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHAI\_14378\_1]

Sl. No.	CL No. / Section / Page No.	Description	Query	Response
184	General	Existing utilities	It is requested that the network drawings of information regarding the underground and overhead utilities should be made available along with the detailed relocation plan to all the bidders, if any.	Please refer Article 9 of draft Contract Agreement.
185	General	Drawings	Kindly provide the plan and profile drawings in CAD format.	Available data has been uploaded along with the bid documents.
186	General	Hydraulic data for minor bridge	Kindly provide the max. Discharge, maximum velocity, lowest water level, scour levels for all major bridges and minor bridges as specify in schedule B 7.3 at CH. 50+340.	Available data has been uploaded along with the bid documents.
187	Schedule B, Clause 7.2.6	Floor protection works shall be as specified in the relevant IRC codes and specifications.	Length of floor protection work shall be as specified in the relevant IRC codes and specifications.	As per manual and design requirements.
188	Schedule D	Specifications standards and	In case of conflicts in the IRC codes due to revision, latest provisions in MORTH or IRC codes shall be referred. Please confirm.	As per manual and design requirements.
189	Schedule B, 7.2	Culverts	In case of Earth cushion over box culverts, approach slab shall be provided as per IRC: SP 13, plate 16, 18 and 20. Please confirm.	As per manual and design requirements.
190	Schedule B, 7.3 Bridges	Bridges	Minimum vertical clearance at center of opening shall be maintained below soffit level of superstructure of bridges as per relevant IRC standards.	As per manual and design requirements.
191	General	Seismic zone	The proposed alignment is fall under Seismic zone III. Please confirm.	As per manual.
192	General	Designs	Bidder understand that the provisions given in IRC. SP – 13 are the guidelines for the designer. However as an EPC	As per manual and design requirements.

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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHA1\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response												
			contract, bidder have a freedom / flexibility in the design of culverts. Please confirm.													
193	General	Design and drawings	Bidder understand that Independent approval from esteemed academic institute i.e. IIT or equivalent is not mandatory Please confirm.	As per Article 10 of the draft Contract Agreement and relevant Instructions Issued by the Ministry of Road Transport & Highways.												
194	General	Median width	Median width shall be as per Cl 2.5.1 of IRC: SP 99. Please confirm.	As per TCS and clarification at sl. No 124 above.												
195	General	General	Bidder Understand that the side slopes for embankments and in cutting sections are completely based on slope stability analysis and there is no alternate criteria to be adhere	As per TCS subject to fulfilment of manual requirement.												
196	General	General	The grade of material indicated in the drawing are for reference only However as an EPC contract, bidder have freedom to select material grades	As per manual and design requirements												
197	General	General	The levelling course below foundation shall be as per latest IRC: 78 in all structures.	As per manual and design requirements.												
198	<p><b>1.3 Procedure of estimating the value of work done</b></p> <p>(a) <b>1.3.1 Road works</b></p> <p>Procedure for estimating the value of road work done shall be as follows:</p> <p><b>Table 1.3.1</b></p> <table border="1"> <thead> <tr> <th>A. Deleted.</th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>B.1- Reconstruction/New Lane Realignment / Bypass (Flexible Pavement)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(1) Earthwork up to top of the sub-grade + Site Clearance</td> <td>Unit of measurement is linear length. Payment of each stage shall be made</td> <td>Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in</td> <td>Amended Schedule H for the project highway is enclosed.</td> </tr> </tbody> </table>				A. Deleted.				B.1- Reconstruction/New Lane Realignment / Bypass (Flexible Pavement)				(1) Earthwork up to top of the sub-grade + Site Clearance	Unit of measurement is linear length. Payment of each stage shall be made	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in	Amended Schedule H for the project highway is enclosed.
A. Deleted.																
B.1- Reconstruction/New Lane Realignment / Bypass (Flexible Pavement)																
(1) Earthwork up to top of the sub-grade + Site Clearance	Unit of measurement is linear length. Payment of each stage shall be made	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in	Amended Schedule H for the project highway is enclosed.													

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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHAJ\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
	(2) Earthwork in Shoulders	on pro rata basis on completion of a stage in full length or 5(five) km length, whichever is less.	full length or 1(one) km length, whichever is less.	
	(3) Sub-base Course (CTSB)			
	(4) Non Bituminous Base course (WMM)			
	(5) Bituminous Base course			
	(6) Wearing Coat			
	<b>B.2- Reconstruction/New 8-Lane Realignment / Bypass (Rigid Pavement)</b>			
	(1) Earthwork up to top of the sub-grade	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 5(five) km length, whichever is less.	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 1(one) km length, whichever is less.	
	(2) Sub Base Course			
	(3) Dry Lean Concrete (DLC) Course			
	(4) Pavement Quality Control (PQC) Course			
	<b>C.1- Reconstruction/ New Service Road/ Slip Road (Flexible Pavement)</b>			
	(1) Earthwork up to top of the sub-grade	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 5(five) km length, whichever is less.	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 1(one) km length, whichever is less.	
	(2) Earthwork in Shoulders			
	(3) Sub-base Course (CTSB)			
	(4) Non bituminous Base course (WMM)			
	(5) Bituminous Base course			

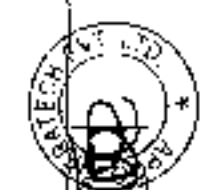
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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender Id: 2018\_NHA1\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
	(6) Wearing Coat			
	C.2- Reconstruction/New Service road (Rigid Pavement)			
	(1) Earthwork up to top of the sub-grade	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 5(five) km length, whichever is less.	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 1(one) km length, whichever is less.	
	(2) Sub Base Course			
	(3) Dry Lean Concrete (DLC) Course			
	(4) Pavement Quality Control (PQC) Course			
	D. Reconstruction & New Culverts on existing road, realignments, bypasses			Modified Schedule H for the project highway is enclosed.
	Culverts (length <6m)	Cost of each culverts shall be Determined on pro rata basis with respect to the total number of culverts. Payment shall be made on the completion of at least five culverts	For cast in Situ Culvert: Cost of each culvert shall be determined on pro rata basis with respect to the total number of culverts. Payment shall be made on the completion of each Culvert For Pre Cast Culvert: Cost of each culvert shall be determined on pro rata basis with respect to the total number of culverts. Payment shall be made on the completion of	
	Additional Culverts		a. Precast Box/ Hume Pipe - 70% b. Transportation - 10% c. Installation - 20 %	
(b)	1.3.2 Minor Bridge works and Underpasses/Overpasses. Procedure for estimating the value of Minor bridge and Underpasses/Overpasses shall be as stated in Table 1.3.2:			



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
	A.1- Deleted.			
	A.2- New Minor Bridges (length>6m & <60m)			
	(1) Foundation: On completion of the foundation work including foundations for wing and return walls, abutments, piers	Foundation: Cost of each minor bridge shall be determined on pro-rata basis with respect to the total linear length (m) of the minor bridges. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of each bridge subject to completion of atleast two foundations of each bridge. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.	Foundation: Cost of each minor bridge shall be determined on pro-rata basis with respect to the total linear length (m) of the minor bridges. Payment against foundation shall be made on pro-rata basis on completion of atleast two foundations of each bridge. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.	Modified Schedule H for the project highway is enclosed.
	(2) Sub-structure: On completion of abutments, piers upto the abutment/ pier cap including wing/ return/ retaining wall upto top	Sub-structure: Cost of each minor bridge shall be determined on pro-rata basis with respect to the total linear length (m) of the minor bridges. Payment against sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of each bridge subject to	Sub-structure: Cost of each minor bridge shall be determined on pro-rata basis with respect to the total linear length (m) of the minor bridges. Payment against sub-structure shall be made on pro-rata basis on completion of at least two sub structures upto abutment/pier cap level of each bridge.	Modified Schedule H for the project highway is enclosed.

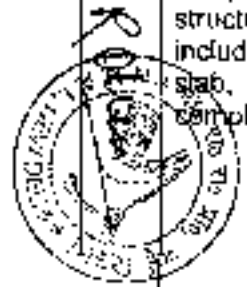


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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		completion of at least two sub structures upto abutment/pier cap level of each bridge		
	(3) Super-structure: On completion of the super-structure in all respects including Girder, Deck slab, bearings, tests on completion in all respect	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e completion of super structure of atleast one span in all respects as specified in the column of "Stage of Payment" in this sub-clause	(3) Super-structure: Payment shall be made on prorata basis on completion of a stage i.e. completion of	
			a. Slab – 80%	
			b. Wearing Coat, Expansion Joint, Hand Rail, Crash Barrier, road sign & markings, tests on completion etc complete in all respect – 20%	
	(4) Approaches: On completion of approaches including Retaining walls, stone pitching, protection works complete in all respect and fit for use		(4) Approaches: Payments shall be for each Minor Bridge made on prorata basis after completion of both approaches including stone pitching, protection works. etc. complete in all respects as specified.	Modified Schedule H for the project highway is enclosed.
	(5) Guide Bunds and River Training Works: On completion of Guide Bunds and river training works complete in all respects		(5) Guide Bonds and River Training Works: Payment shall be made on prorata basis on completion of a stage i.e. completion of Guide Bunds and River training Works in all respects as specified.	
	(6) Other Ancillary Works: On completion of wearing coat, expansion joints, hand rails, crash barriers.		(6) Other Ancillary Works: Payment shall be made on pro-rata basis on completion of a stage in all respects as specified	



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		road signs & markings, tests on completion in all respect.		
	<b>B.1-Deleted.</b>			
	<b>B.2- New Underpasses/Overpasses</b>			
	(1) Foundation: On completion of the foundation work including foundations for wing and return walls, abutments,	Foundation: Cost of each Underpass/Overpass shall be determined on pro-rata basis with respect to the total linear length (m) of the minor bridges. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of each bridge subject to completion of at least two foundations of each Underpass/Overpass In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.	Foundation: Cost of each Underpass/Overpass shall be determined on pro-rata basis with respect to the total linear length (m) of the minor bridges. Payment against foundation shall be made on pro-rata basis on completion of at least two foundations of each Underpass/Overpass In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.	Modified Schedule H for the project highway is enclosed.
	(2) Sub-structure: On completion of abutments, piers upto the abutment/ pier cap including wing/ return/ retaining wall upto	Sub-structure: Cost of each Underpass/Overpass shall be determined on pro-rata basis with respect to the total linear length (m) of the minor bridges. Payment against sub-structure shall be made on pro-rata basis	Sub-structure: Cost of each Underpass/Overpass shall be determined on pro-rata basis with respect to the total linear length (m) of the minor bridges. Payment against sub-structure shall be made on pro-rata basis on completion of at least two sub-structures upto abutment/pier cap level of each Underpass/Overpass.	

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		on completion of a stage i.e. not less than 25% of the scope of sub-structure of each bridge subject to completion of at least two sub structures upto abutment/pier cap level of each Underpass/Overpass.		
	(3) Super-structure. On completion of the super-structure in all respects including Girder, Deck slab, bearings, tests on completion in all respect	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure of atleast one span in all respects as specified in the column of "Stage of Payment" in this sub-clause	(3) Super-structure: Payment shall be made on prorata basis on completion of a stage i.e. completion of	
			a. Slab – 80%	
			b. Wearing Coat, Expansion Joint, Hand Rail, Crash Barrier, road sign & markings, tests on completion etc complete in all respect – 20%	
	(4) Approaches: On completion of approaches including Retaining walls, stone pitching, protection works complete in all respect and fit for use		(4) Approaches: Payments shall be for each Underpass/Overpass made on prorata basis after completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified.	
	(5) Other Ancillary Works: On completion of wearing coat, expansion joints, hand rails, crash barriers, road signs & markings,		(5) Other Ancillary Works: Payment shall be made on pro-rata basis on completion of a stage in all respects as specified	

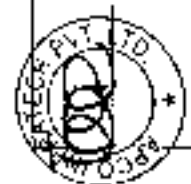
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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		tests on completion in all respect.		
(c)	<b>1.3.3 Major bridge works, ROB/RUB and Structures.</b>			
	<b>Procedure for estimating the value of Major bridge works, ROB/RUB and Structures shall be as stated in table 1.3.3:</b>			
	<b>A.1- Deleted.</b>			
	<b>A.2- New Major Bridges</b>			
	(i) Foundation	(i) Foundation: Cost of each Major Bridge shall be determined on pro rata basis with respect to the total linear length (m) of the Major Bridge. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the major Bridge subject to completion of atleast two foundations of the major Bridge. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.	(i) Foundation: Cost of each Major Bndge shall be determined on pro rata basis with respect to the total linear length (m) of the Major Bridge. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. on completion of atleast one foundations of the major Bridge. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.	Modified Schedule H for the project highway is enclosed.
	(ii) Sub-structure	(ii) Sub-Structure: Payment against Sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of	(ii) Sub-Structure: Payment against Sub-structure shall be made on pro-rata basis on completion of a stage i.e. on completion of atleast one sub-structures of abutments/piers up to abutment/plier cap level of the major bridge.	

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		the major bridge subject to completion of atleast two sub-structures of abutments/piers upto abutment/ pier cap level of the major bridge.		
	(iii) Super-structure (including bearings)	(iii) Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure including bearings of at least one span in all respects as specified	(ii) Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure including bearings of at least one span in all respects as specified. If Pre cast method is adopted Payment @ 80 % for each span of Girders & 20% shall be paid for erection and remaining works.	
	(iv) Wearing Coat including expansion joints	(iv) Wearing Coat. Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.	(iv) Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.	
	(v) Miscellaneous Items like hand rails, crash barriers, road markings etc.	(v) Miscellaneous: Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified.	(v) Miscellaneous: Payments shall be made on prorata basis i.e on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified.	
	(vi) Wing walls/return walls	(vi) Wing walls/return walls: Payments shall be made on completion of all wing	(vi) Wing walls/return walls: Payments shall be made on prorata basis i.e on completion of all wing walls/return walls complete in all respects as specified	



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		walls/return walls complete in all respects as specified		
	(vii) Guide Bunds, River Training works etc.	(vii) Guide Bunds, River Training works: Payments shall be made on completion of all guide bunds/river training works etc. complete in all respects as specified.	(vii) Guide Bunds, River Training works: Payments shall be made on prorata basis i.e on completion of all guide bunds/river training works etc. complete in all respects as specified.	
	Approaches (including Retaining walls, pitching and protection works)	(viii) Approaches: Payments shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified.	(viii) Approaches: Payments shall be made on prorata basis i.e.completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified.	
	<b>B.1 – Deleted.</b> <b>B.2 - (a) ROB</b> <b>(b) RUB</b> <b>(i) Foundation</b>	(i)Foundation: Cost of each ROB/RUB shall be determined on pro rata basis with respect to the total linear length (m) of the ROB/RUBs. Payment against foundation shall be made on prorata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the ROB/RUB subject to completion of atleast two	(i)Foundation: Cost of each ROB/RUB shall be determined on pro rata basis with respect to the total linear length (m) of the ROB/RUBs. Payment against foundation shall be made on pro- rata basis on completion of a stage i.e. on completion of atleast onefoundations of the ROB/RUB.  In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.	Modified Schedule H for the project highway is enclosed.

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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHAJ\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		foundations of the ROB/RUB. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.		
	Sub-structure	(ii) Sub-Structure: Payment against Sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of the ROB/RUB subject to completion of atleast two sub-structures of abutments/piers upto abutment/pier cap level of the ROB/RUB.	(ii) Sub-Structure: Payment against Sub-structure shall be made on pro-rata basis on completion of a stage i.e. on completion of atleast one sub-structures of abutments/piers upto abutment/pier cap level of the ROB/RUB.	
	(iii) Super-structure (including bearings)	(iii) Super-structure. Payment shall be made on pro-rate basis on completion of a stage be Completion of super-structure including bearings of atleast one span in all respects as specified.	(iii) Super-structure. Payment shall be made on pro-rate basis on completion of a stage be. Completion of super-structure including bearings of at least one span in all respects as specified. If Pre cast method is adopted Payment @ 80 % for each span of Girders & 20% shall be paid for erection and remaining works	
	(iv) Wearing Coat including expansion joints in case of ROB In case of	Wearing Coat: Payment shall be made on completion of (a) in case of	Wearing Coat: Payment shall be made on completion of (a) in case of ROB-wearing coat including expansion joints	Modified Schedule H for the project highway is enclosed.

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
	RUB, rigid pavement under RUB including drainage facility as specified.	ROB- wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB- rigid pavement under RUB including drainage facility complete in all respects as specified	complete in all respects as specified and (b) In case of RUB- rigid pavement under RUB including drainage facility complete in all respects as specified	
	Miscellaneous Items like hand rails, crash barriers, road markings etc.	(v) Miscellaneous: Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified	(v) Miscellaneous: Payments shall be made on pro rata basis i.e on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified	
	(vi) Wing walls/return walls	(vi) Wing walls/return walls: Payments shall be made on completion of all wing walls/ret <sup>n</sup> walls complete in all respects as specified.	(vi) Wing walls/return walls: Payments shall be made on prorata basis i.e. on completion of all wing walls/ret <sup>n</sup> walls complete in all respects as specified.	
	(vii) Approaches (including Retaining walls/ Reinforced Earth wall, stone pitching and protection works)	(vii) Approaches: Payments shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified.	(iii) Approaches: Payment shall be made on pro-rata basis on completion of a stage i.e. a. Casting of Panel 20% ( for each approach ) b. Backfilling / Erection of Panel – 60% ( To be paid on completion of 25% of scope for each Approach) c. Finishing in all respect – 20 % ( for each Approach)	Modified Schedule H for the project highway is enclosed.
	C.1- Deleted.			



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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHA\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
	<b>C2 – New Elevated Section / Flyovers/Grade Separators</b>			
	(1) Foundation	(i) Foundation. Cost of each Structure shall be determination pro rata basis with respect to the total Linear length (m) of the structures. Payment against foundation shall be made on prorata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the structure subject to completion of at least two foundations of the structure. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.	(1) Foundation; Cost of each Structure shall be determination pro rata basis with respect to the total Linear length (m) of the structures. Payment against foundation shall be made on pro- rata basis on completion of at least one foundations of the structure. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.	Modified Schedule H for the project highway is enclosed
	(2) Sub-structure	(ii) Sub-Structure: Payment against Sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of the structure subject to completion of at least two sub-structures of abutments/piers upto	(2) Sub-Structure: Payment against Sub-structure shall be made on pro-rata basis on completion of a stage i.e. on completion of at least onesub-structures of abutments/piers upto abutment/pier cap level of the structure	



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		abutment/pier cap level of the structure		
	(3) Super-structure (including bearings)	(iii) Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure including bearings of at least one span in all respects as specified	(3) Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure including bearings of at least one span in all respects as specified. If Pre cast method is adopted Payment @ 80 % for each span of Girders & 20% shall be paid for erection and remaining works	Modified Schedule H for the project highway is enclosed.
	(4) Wearing Coat including expansion joints	(iv) Wearing Coat: Payment shall be made on completion of wearing coat including expansion Joints complete in all respects as specified.	(4) Wearing Coat: Payment shall be made on completion of wearing coat including expansion Joints complete in all respects as specified.	
	(5) Miscellaneous Items like hand rails, crash barriers, road markings etc	(v) Miscellaneous: Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified.	(5) Miscellaneous. Payments shall be made on prorata basis i.e. completion of all miscellaneous works like hand rails, crash barriers, road markings etc complete in all respects as specified.	
	(6) Wing walls/return walls	(vi) Wing walls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.	(6) Wing walls/return walls: Payments shall be made on pro rate basis i.e. completion of all wing walls/return walls complete in all respects as specified	



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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
	(7)	Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	(vii) Approaches. Payments shall be made on completion of both approaches including stone pitching protection works, etc. complete in all respects as specified	(7) Approaches: Payments shall be made on completion of 10 (ten) percent of total area of approaches including stone pitching, protection works etc."
	<b>1.3.4 Other Works</b>			
	Procedure for estimating the value of other works done shall be as stated in table 1.3.4:			
	(1) Toll plaza	Unit of measurement is each completed toll plaza. Payment of each toll plaza shall be made on pro rata basis with respect to the total of all toll plazas	Unit of measurement is each completed toll plaza. Payment of each toll plaza shall be made on pro rata basis with respect to the total of all toll plazas	Modified Schedule H for the project highway is enclosed.
	(2) Road side drains Lined Drains / Unlined Drain	Unit of measurement is linear length in km Payment shall be made on pro rata basis on completion of a stage in a length of not less than 5 % (ten per cent) of the total length.	Unit of measurement is linear length in km. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 5 % (ten per cent) of the total length.	
	(3) Road signs, markings, Km stones, Safety devices etc	Payment shall be made on pro rata basis for completed facilities.	Payment shall be made on pro rata basis for completed facilities.	
	(4) Crash Barrier			
	(5) Project Facilities			
	a) Bus bays b) Wayside Amenities excluding Slip Roads & but including all internal roads (Service areas including Truck Lay-Byes)			
	(c) others			Modified Schedule H for the project highway is enclosed.
	(16) Rain Water Harvesting			

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
	(7) Retaining Wall (8) RE Wall (9) Street Lighting (10) Utility Ducts (11) ATMS (12) Road side Plantation including Horticulture in Road side Amenities (13) Repair of protection works other than approaches to the bridges, elevated sections/ flyovers/grade separators and ROB/RUBs. (14) Gabion Wall	Unit of measurement is linear length. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 10% (ten per cent) of the total length.	Unit of measurement is linear length. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 5% (five per cent) of the total length.	
	(14) safety and traffic management during construction	Payment shall be made on prorata basis every six months.	Payment shall be made on prorata basis every 3 months.	
	(15) Other miscellaneous works including Connecting road & Junction under Grade separator		Payment shall be made on prorata basis every 3 months.	
199	Schedule A, Alignment Plan and Profile		Request Authority to provide AutoCAD Drawings along with details of coordinates of the alignment of the stretch contains green field alignment/bypasses/ realignments.	Available data has been uploaded along with the bid document.
200	Schedule A, Clause 1.5, Annex IV Environmental Clearance Under Process		Request the Authority to provide the status and updates on Environmental Clearance	TOR for environmental clearance has been approved by MOEF and preparation of EIA report is under progress. Environmental clearance is expected by Dec., 2018

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
201	Schedule B, Clause 2.6 Connecting Roads / Service Roads/Slip Roads Width of Connecting Roads		Request the Authority to clarify the Width of Connecting Roads to be provided.	The width of the connecting road shall be equal to the width of the existing road/cart track subject to minimum specified in Cl. 2.12.3 of IRC SP : 99-2013.
202	Schedule B, Clause 2.6 Connecting Roads / Service Roads/Slip Roads Date: The above length of the service/slip/connecting roads is indicative and minimum specified. The actual length of the service/slip/connecting roads shall be determined by the Contractor in accordance with the IRC:SP:99-2013 requirements with approval from the Authority's Engineer. Any increase in the length specified in this Clause of Schedule-B shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13. 2 The realignment of		Note provided in Schedule B, Clause 2.6 widens scope of work which can not be quantified under such a short period of bidding period. As Authority has developed the project, it is in better position to define the scope of work. Request Authority to define the exact scope so that the base for assessment for bidding remains same for all the bidders.	As per Schedule B.

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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender Id: 2018\_NHAI\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		existing track to the SVUP outside the PROW and connecting roads between consecutive underpasses wherever required as per plan & profile uploaded with bid document and specified in Annex III of schedule A is to be constructed by the contractor as per site requirement In consultation with Authority Engineer and the same would not constitute any change of scope.		
		3. Length of service roads given in above table excludes length across the project Expressway for proper connectivity of cross roads on either side of project expressway which shall be deemed to be included in the scope of work.		
203	Schedule B, Clause 2.6	Connecting Roads / Service Roads/Slip Roads Plan & Profile	Request the Authority to Provide the Plan & Profile of Connecting Roads / Service Roads/Slip Roads.	Refer TCS.
204	Schedule B, Clause 2.7	Grade separated structures Detail of Loop & Ramp	Request the Authority to Provide the Plan & Profile of all loop & ramps to be developed at all interchange locations	The plan & profile of all loops and ramps at interchange locations is enclosed.

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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender Id: 2018\_NHAJ\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
205	Schedule B, Clause 2.7 Grade separated structures Detail of Loop & Ramp		Request the Authority to Provide the Typical Cross Section & width for all loops and ramps for all interchanges.	Layout of the interchange indicating the typical cross section for all loops and ramps is enclosed.
206	Schedule B, Clause 2.9 Advanced Traffic Management System (ATMS) Advanced Traffic Management System (ATMS) shall be provided as per Schedule D as given in Schedule - B. 2.11 Utilities		Schedule B, Clause 2.11 Utilities is not provided. Request the Authority to clarify.	As per Schedule C
207	Schedule B, Clause 7 Design of Structure		In GAD, it is written as design of structure is as per 3Lane LL loading but as per IRC-6-2017, carriageway of 20.250m shall be design for 6 Lane loading. Kindly confirm.	As per manual and design requirement.
208	Schedule B, Clause 7 Design of Structure		No raised Footpath or any other barrier shown in cross section of structures In GAD for distinguishing between MCW and FootPath. kindly confirm.	As per manual and design requirements.
209	Schedule B, Clause 7 Design of Structure		In Flyover, Interchange, VUP & LVUP, clear span(SO direction) is not mentioned only exp jt to exp jt span with skew angle is only mentioned. If skew angle will be different at site than clear span would be reduced or increased depending whether skew is more or less than what is specified in schedule B. Kindly clarify.	Please refer Cl. 16 of Schedule B.
210	Schedule B, Clause 7 Design of Structure		Span arrangement for bridges shown GAD are fixed or it may change depending upon hydraulic study Kindly confirm.	Please refer Cl. 16 of Schedule B.

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
211	Schedule B, Clause 7 Design of Structure		Type of superstructure mentioned in GAD & Schedule are fixed or can be altered. Kindly confirm.	Please refer Cl. 16 of Schedule B.
212	Schedule B, Clause 7.7 List of Major Bridges and Structures		In schedule B, cl. 7.7 it is mentioned that nos of flyover and interchange are 4 and 1 respectively. While as per cl. 2.7, flyover 1 nos and Interchange 3 nos mentioned in respective table. kindly confirm.	As per Cl. 2.7.1 of Schedule B
213	Schedule B, Clause 7. Culverts		In case of Earth cushion over box culverts, approach slab shall be provided as per IRC: SP 13. Please confirm.	As per manual and design requirement.
214	Schedule B, Clause 9 a) Road Boundary Wall shall be constructed as specified in Ministry Circular No.RW/NH-24036/27/2010-PPP dated 25.04.2018.		Request the Authority to provide the Road Boundary Wall Detail Drawing for better assessment.	Please refer S.No. 17 above
215	Schedule B, Clause 10 Compulsory Afforestation "Minimum 12,000 no. of trees are required to be planted by the contractor as compensatory afforestation in accordance with IRC:SP:99-2013 keeping in view IRC:SP:21-2009. Any increase in no. of trees shall not be treated as change of scope."		Deviation from the Schedule C 2.8 Land Scaping and Tree Plantation "Minimum 60,000 nos. of trees of desired type in two rows @ 3 m c/c near edge of ROW on both side and three rows @ 3 m c/c on central median (As per Schedule D) preferably local varieties like Mango, Neem, Sheesham, Babul, Peepal, Imil, etc. shall be planted". Hence for request to Authority kindly confirm.	The total number of trees to be planted shall be sum of the number of trees mentioned under Clause 10, Annexure – I, Schedule B, and Clause 2.8 , Annex – I, Schedule C,
216	Schedule B, Clause 14 Diversion of Irrigation Canal		Appendix B-1 is not provide in this document hence for Request to authority please furnish.	Typical cross section of the existing canal is enclosed.



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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHAJ\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
217	Schedule B, Clause 14 Diversion of Irrigation Canal	"The typical cross-section of the existing canal is enclosed at appendix B-4 for reference ..."	Request to authority please provide the approved cross-section of canal to be shifted or length shall be as per the site requirement from the concerned irrigation authority.	Typical cross section of the existing canal to be diverted is enclosed.
218	Schedule B, Clause 14 Diversion of Irrigation Canal		For the canal diversion request to authority please provide the Hydrology data i.e. Design discharge data, velocity, full supply etc. from the concern Irrigation departments	Typical cross section of the existing canal to be diverted is enclosed.
219	Schedule B, Clause 16 Change of Scope		It is mentioned that the length of Structures and Bridges specified shall be treated as an approximate assessment. As per site investigations there is vast variations in the length and span arrangement of structures proposed owing to site requirements. At few minor bridges locations there are gorges due to which length of structures will increase resulting into cost variations. Kindly delete this clause so that the	As per RFP.
220	Schedule B, Appendix B-3 Typical Cross Sections of the Project Highway		Kindly clarify whether the Typical Cross Section Drawings and Typical Cross Section Schedule are Indicative or binding on the Contractor.	The TCS schedule as given in Schedule B is to be followed and shall be treated as an approximate assessment. Actual length of the TCS schedule shall be prepared by the contractor based on detailed investigations and site requirements. Any variation in length of respective TCS specified in Schedule B shall not constitute a change of scope, save and except any variations in the length arising out of a change of scope

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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghatl (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender Id: 2018\_NHA1\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
				expressly undertaken in accordance with the provisions of Article 13.
221	Plan & Profile		In profile from Ch. 28513.825 to Ch.28640.642, gradient is 0.0%. As per Cl.2.9.4. of IRC SP 99-2013, minimum gradient shall be 0.3%. Kindly clarify.	The proposed profile of the Project Highway as indicated in Annex-III of Schedule A is an approximate assessment. The Contractor shall design the alignment plans and profiles of the project highway based on site as well as design requirement mentioned in Schedule D within the available Right of Way. In this regard amendment to relevant clauses of Schedule A and Schedule B uploaded alongwith the reply to pre-bid queries may be referred to.
222	Plan & Profile		In profile, from Ch. 44069.655 to Ch.44430.129, gradient is 0.1%. As per Cl.2.9.4. of IRC SP 99-2013, minimum gradient shall be 0.3%. Kindly clarify.	
223	Schedule C, Clause 2 (c) Street Lighting		Request the Authority to clarify whether the underside lighting to be provided only at span where road is crossing below viaduct span.	Underside lighting to be provided in all the viaduct spans.
224	Sch. C, Lighting		We understand that the lighting for the project facilities shall be as per IRC: SP: 99-2013 as mentioned in Sch. D Contractor understands that the requisite LT feeders at required locations shall be provided by the Authority.	Contractor shall provide the entire infrastructure for lighting of the project facilities including LT feeders at required locations.
225	Schedule D, Clause 1.15 Central Control Room (CCR) Location There shall be one CCR located in any toll plaza.		We presume that Central Control Room shall not be provided at locations where Ramp/ Loop Plazas are proposed i.e. similar to type of plaza(s) proposed for this Package 6.	One Central control room shall be provided at toll plaza location.
226	Proposed Area for Site Installations and Camp Set up		a.) Request Authority to kindly provide details of Proposed area for site installation, camp set up etc. We presume the same shall be provided by the Authority free from all encumbrances.B.)	As per Article 3 of the draft Contract Agreement uploaded along with the bid document.

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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-146N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender Id: 2015\_NHAI\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
			We understand that connectivity from the project corridor to area proposed for site installation shall be provided by Authority. Kindly confirm.	
228		Geological Maps	We request Authority to provide Geological maps for Project alignment and For Highway with Contour details	Available data has been uploaded along with the bid document.
229		Geo technical report	Authority is requested to provide geotechnical report.	Available data has been uploaded along with the bid document.
229		Topographic Survey	Kindly provide topographic survey data for project alignment as the entire road is green field alignment. Variations in Ground levels will have huge impacts in assessment of the bidders.	Available data has been uploaded along with the bid document.
230		Skew Angle for Bridges proposed for reconstruction, New bridges	Request Authority to kindly provide skew angles for Skew Angle for proposed Major/Minor Bridges, LVUP/VUP, Viaduct, Flyover, proposed on Project Road	Please refer plan & profile and GAD of structures.
231		Sources of Power Supply	Request Authority to clarify the sources of power supply for the packages as the entire stretch traverses through green field alignment. We understand power shall be arranged by the Authority and all costs for providing power shall be borne by the Authority. Please Clarify.	As per Article 3 of the draft Contract Agreement.
232	General Drawings	Arrangement	Request Authority to provide AutoCAD drawings of all GAD's for all existing and proposed Structures of the Project highway with Dimension Details	Available data has been uploaded along with the bid document.
233	General Drawings	Arrangement	No raised Footpath or any other barrier shown in cross section of structures in GAD for distinguishing between MCW and Footpath. Please Clarify	As per manual.

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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHA1\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
234	General Arrangement Drawings		Span arrangement for bridges shown GAD are fixed or it may change depend upon hydraulic study. Kindly confirm.	As per Cl. 16 of Schedule B.
235	Excise exemption for the Imported Machinery		Please clarify whether the excise exemption shall be granted to the Contractor or not.	No excise exemption is being granted by the Authority. In this regard, please refer Article 3 of the Draft Contract Agreement
236	Mining and Quarry availability		Request to clarify the restriction on Mining, if any, or Any special reduction on Royalty for this project. We presume that Authority will obtain the necessary permissions / approvals from respective department before awarding the project. Please confirm.	Please refer Article 3 of the draft Contract Agreement.
237	Type of structure and span configuration		As an EPC contract, can bidder adopt innovative alternate structure, its shape & sizes or its components after the span or structural configuration of structures by maintaining client requirements i.e. total span length & clearances? Kindly confirm.	As per Cl. 16 of Schedule B.
238	Hydraulic data for Structure Bridges		Kindly provide the max. Discharge, maximum velocity, Lowest water level, scour levels for all major bridges and minor bridges as specify in Sch. B 6.1.	Available data has been uploaded along with the bid document.
239	Median Width		Median width shall be as per Cl. 2.5.1 of IRC: SP 99. Please confirm	As per TCS and clarification at sl. No 154 above.
240	Fencing details		Kindly provide detailed drawing for fencing details.	Typical modified drawing of the boundary wall to be adopted is enclosed with the reply to the pre-bid queries. However, the contractor, at his own expenses, can improve upon the same and provide wire fencing above the minimum specified height of the boundary wall.

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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghatl (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHAI\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
241	General		The grade of material indicated in the drawing are for reference only. However as an EPC contract, bidder has freedom to select material grades.	As per manual.
242	General		The levelling course below foundation shall be as per latest IRC. 7B in all structures.	As per manual and design requirement.
243	Utility shifting		Please provide a detailed Utility Relocation plan and network drawings of underground telephone lines, OFC & Electric cable lines, pipe line and other utilities. We presume that, Authority will obtain the necessary approvals/permissions regarding utility shifting plans and their cost estimates from respective departments. Please confirm the status.	Please refer Article 9 of draft Contract Agreement uploaded along with bid documents
244	Number of trees to be cut		Kindly provide number of trees to be cut for the project stretch	Please refer Article 9 of draft Contract Agreement uploaded along with bid documents.
245	Annex 1 C 2 (f) Emergency Medical aid post		Kindly provide us the area to be allotted for Medical aid post.	As per manual requirement and typical cross section of the wayside amenity uploaded along with the bid document.
246	Sch. D, Annex I, Clause Specifications and standards		In case of conflicts in the IRC codes due to revision, latest provisions in MORTH or IRC codes shall be referred. Please confirm.	As per manual.
247	Extension in Bid Due Date		Considering very short time available for costing and estimation it is not permissible to conduct any Site investigation, We presume that to carry out the engineering studies, it will take minimum 3 months time period from this date, We request you	Please refer amendment uploaded on the portal

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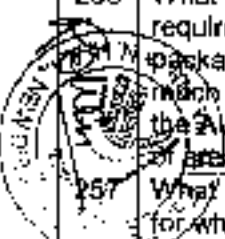
Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
			to kindly extend the bid due date by 3 months.	
248		Please provide copy of the Environmental Impact Assessment Report and Environmental Management Plan prepared for the project.	Please provide documents	TOR for environmental clearance has been approved by MOEF and preparation of EIA report is under progress. Environmental clearance is expected by Dec., 2018
249		Have the Public Hearings been completed in all the project districts. If not, when are the hearings likely to be scheduled?	Please provide minutes / scheduled dates of public hearing.	TOR for environmental clearance has been approved by MOEF and preparation of EIA report is under progress. Environmental clearance is expected by Dec., 2018
250		What is the quantum of Forest land required for this Package? What is the overall requirement in case a combined proposal has been submitted for two or more construction packages?	Please provide information.	The project highway passes through protected forest and requisite forest proposal has been submitted with the concerned authorities for necessary approval
251		How far has the forest proposal been recommended till now by Forest department?	Please provide current status of recommendation of Forest Clearance	
252		Does the Project pass through the any Protected Areas for wildlife or their eco-sensitive zones?	If yes, please provide the names of the protected areas and the length of alignment impacted along with chainages.	The project reach does not pass through any wildlife area.
253		How far has the Wildlife Clearance Proposal been recommended till now?	Please provide current status of recommendation of Wildlife Clearance.	

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Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
254		Does the proposed project lie in proximity to archaeological sites?	Please provide details.	No such proximity has been observed at the time of survey investigation
255		Is the proposed project site under litigation?	Please provide information.	No litigation at this stage of bidding.
256		What is the total land requirement of this package? Out of this, how much land is available with the Authority both in terms of area and percentage	Please provide detailed break-up of land availability for this package.	3D notification for the land acquisition for the highway stretch has been published.
257		What is the project length for which full width right of way is available as on date?	Please provide information.	
258		Which are the central /state government entities from whom any special clearance is required to be obtained for the project? (eg. Railways, irrigation, defence etc.)	Please provide information.	All project clearances from Govt. agencies will be ensured at the time of appointed date.
259	Technical Schedule B		You have mentioned in Cl. 14 Diversion of Irrigation Canal : The typical cross-section of the existing canal is enclosed at Appendix-4 for reference. But Appendix B-4 (typical cross-sections of the existing canal) is not enclosed in Technical Schedule B. Kindly provide the Appendix B-4 (typical cross-sections of the existing canal) for the above mentioned subject work.	Typical cross section of the existing canal to be diverted is enclosed.
260	Technical Schedule B, Cl. 14	Diversion of Irrigation Canal	Kindly provide Appendix B-4	Typical cross section of the existing canal to be diverted is enclosed. Additional land



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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHAI\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
261	Cl. 2.1.19.1 of RFP	The bidder including individual or any of its JV Member may provide details of all the iron-going projects along with updated stage of litigation, if so, against the Authority/Governments.	Kindly provide us land acquisition plan for canal shifting, only based on that we can plan canal realignment. At this bidding stage, we cannot assume where canal alignment would shift, hence difficult to assume canal length. Kindly provide appx. CS & length of canal to be shifted.	required for the shifting of irrigation canal as per plan & profile will be provided at the time of appointed date.
262	Cl. 2.1.19.2 of RFP	The bidder including individual or any of its JV Member may also provide details of updated ongoing process of blacklisting if so, under any contract with Authority/Government	As per RFP and the draft EPC Agreement in the tender – Authority means NHAI, Govt. means Govt. of India If bidder has any ongoing litigations with a client (which is a public client under the State Govt. in India but is not an agency of MORTH/NHAI), then in such case is the Bidder required to provide details of such litigations also OR the bidder is required to provide litigation details only if any, against the Authority (NHAI/MORTH or its implementing agencies) or directly against the Govt. of India.	The bidders to provide information of all ongoing litigations with agencies working on National Highways and other centrally sponsored projects of Ministry of Road Transport & Highways being implemented through NHAI, NHIDCL, State PWDs and other State Govt. agencies.
		The bidder including individual or any of its JV Member may also provide details of updated ongoing process of blacklisting if so, under any contract with Authority/Government	As per RFP and the draft EPC Agreement in the tender. Authority means NHAI and Govt. means Govt. of India. If a bidder has any ongoing blacklisting/ debarment with a client which is a public client under the State Govt. in India but is not a agency of MORTH/NHAI), then in such case is the bidder required to provide details of such blacklisting also OR the bidder is required to provide blacklisting/ debarment details only if any against the Authority (NHAI/MORTH or its implementing agencies) or directly against the Govt. of India.	



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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghafi (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender Id: 2018\_NHAI\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
263	Schedule B, Clause 10		As per Schedule B, Clause 10, Compulsory Afforestation Minimum no. of trees are 12,000 whereas as per Schedule C under section 2.8 Landscaping and Tree Plantation point No. 3 Minimum No. of trees are mentioned as 60,000. Please Clarify.	The total number of trees to be planted shall be sum of the number of trees mentioned under Clause 10, Annexure – I, Schedule B, and Clause 2.8, Annex – I, Schedule C.
264	Schedule B, Clause 2.8		In Schedule B, Under Typical Cross Section of Project Highway the Total Length does not match with the Chainages. Please clarify.	The TCS schedule as given in Schedule B is to be followed and shall be treated as an approximate assessment. Actual length of the TCS schedule shall be prepared by the contractor based on detailed investigations and site requirements. Any variation in length of respective TCS specified in Schedule B shall not constitute a change of scope, save and except any variations in the length arising out of a change of scope expressly undertaken in accordance with the provisions of Article 13.
265	General		What is the status of pre-construction activities, such as land acquisition, utility relocations, etc.?	3D notification for the land acquisition for the highway stretch has been published. As regards utility shifting, the joint inspection with concerned agencies is under progress and approval of utility shifting estimates will be ensured at the time of appointed date.
266	General		Does the project road passes through any forest land?	The project highway passes through protected forest and requisite forest proposal has been submitted with the concerned authorities for necessary approval.
267	General		Please provide us the Feasibility Report prepared for the project Road for reference purpose	Available data has been uploaded along with bid documents.

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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghali (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Parlyojana in the State of Haryana [Tender id: 2018\_NHAJ\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
268	Shifting of Utilities		<p>a.) We presume that there shall be utilities such as water pipelines, gas pipelines etc. running along or crossing over the Project road. Request Authority to kindly clarify the status of shifting of such utilities</p> <p>b.) We understand that the Authority shall be responsible for shifting of such utilities and all cost shall be borne by the Authority.</p>	<p>a) The joint inspection for utility shifting is under progress with concerned agencies and approval of utility shifting estimates will be ensured at the time of appointed date.</p> <p>b) Please refer Article 9 of the draft Contract Agreement uploaded along with the bid document.</p>
269	Detailed Feasibility Report		Request you to please upload the Feasibility / Detailed Project Report for reference.	Available data has been uploaded along with bid documents.
270	Forest Land & Clearance		Request the Authority to kindly provide details of Forest land to be diverted and status of Forest Clearance	The project highway passes through protected forest and requisite forest proposal has been submitted with the concerned authorities for necessary approval.
271	Wildlife Clearance		Request the Authority to kindly provide Applicability and status of wildlife clearance.	The project reach does not pass through any wildlife area
272	Details of Pending Litigations		Details of all pending litigation against the project?	No litigation at this stage of bidding
273	Status of Land Acquisition		<p>(i) Total land required for project (in Ha.)</p> <p>(ii) Land already in possession (EROW) (in Ha.)</p> <p>(iii) Total additional land to be acquired</p> <p>a) Private land (in Ha.)</p> <p>b) Govt land (in Ha.)</p> <p>c) Forest (in Ha.)</p> <p>(iv) Notification under Section 3(A) Completed for (in Ha.)</p> <p>(v) Notification under Section 3(D) Completed for (in Ha.)</p>	3D notification for the land acquisition for the highway stretch has been published and determination of the compensation award under section 3G is under progress

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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHAI\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
			Since the limit of the project is less months and there are heavy penalties on non-achievement of the milestone, any pending pre-construction activity shall delay the project and cause under financial loss to the contractor.	
277	Annex-II (Schedule A) Dates for Providing Right of Way.		What about the ECA and FCA status for the additional ROW which is under the process of additional land acquisition by NHAI.	Please refer above.
278	The Government of India (GOI) has introduced Goods and Service Tax (GST) in place of VAT, Central Sales Tax, Excise Duty etc. w.e.f. 01.07.2017. At present, the Road Infrastructure is proposed to be taxed @ 12% Goods and Services Tax (GST) as per revised notification dated 22nd August, 2017.		GST is applicable on the above mentioned components, the Estimated Project Cost of NHAI mentioned in RFP Documents may kindly be revised to that extent.	The bidder has to quote his cost for the project highway including GST.
279	Pavement thickness for Main Carriageway, Service Road, Truck Laybye, Bus-bay etc.		Can Contractor adopt alternate pavement technique as per IRC specification/manual? Please clarify.	The type of pavement shall be as defined in Cl. 5 of Schedule B subject to minimum pavement thickness indicated therein. In this regard amendment to relevant clause of the Schedule B uploaded alongwith the reply to pre-bid queries may be referred to.
280	28.1 - Definitions <b>Appointed Date</b> means that date which is later of the 30th day of the date of this Agreement. the date		1. In case of any delay in declaring Appointed Date beyond 120 days from the date of submission of Bid, the Bid price shall be revised for escalation in prices to be paid upfront for the period between	As per RFP.

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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHAJ\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
			please inform the status of acquisition of land required for diversion of irrigation canal.	
284	Schedule B Cl. 7 2.9	Utility ducts in form of NP-4 Hume Pipe dia 1.2m shall be provided across the Project Highway and along with inspection chamber for crossing of underground utilities in Built-up areas as per IRC:SP:99-2013 requirements. Location for such utility crossing shall be finalized in consultation with Authority Engineer.	As per schedule Built-up area is not in alignment, there is no need of providing utility crossings. Please confirm.	Box culverts proposed in Schedule B shall be used for crossing of underground utilities, wherever required. However, in location where the distance between two adjacent box culverts is more than 1 km, utility ducts in the form of Pipe Culverts with 1200mm dia for crossings of underground utilities shall be provided across the project Highway as per IRC. SP.99-2013.
285	Schedule C Cl. 2.2.8	<b>Boundary wall</b> As the Highway is completely access controlled facility, boundary wall is its integral part to help enforcing of the acquired access rights. Access control extends to the limits of the legal access control on the ramps i.e., along the ramps to the beginning of the taper on the local road. RCC boundary wall shall be provided along the entire length on either side (including transverse requirements at structure locations) in accordance	Can we provide the Barbed wire fencing or Chain link fencing instead of RCC boundary wall. Please confirm.	Typical modified drawing of the boundary wall to be adopted is enclosed with the reply to the pre-bid queries. However, the contractor, at his own expenses, can improve upon the same and provide wire fencing above the minimum specified height of the boundary wall.



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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghatf (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender Id: 2018\_NHAJ\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		with Schedule D and Guidelines vide circular No.RW/NH-24036/27/2010-PPP dated 25.04.2018.		
286	Schedule B, Schedule D Cl. 7.3.6, Cl. 2 Sl. No. 14	<b>Schedule B Cl. 7.3.6-</b> Structures in marine environment: Nil <b>Schedule D Cl.2 Sl. No. 14-</b> Additional protection measures shall be taken as per IRC: SP: 80 with all amendments considering all structures in Marine/ Aggressive Environment	Clauses mentioned are contradictory. So, please confirm that we have to consider the Marine/Aggressive environment or not?	As per manual and design requirements.
287	Schedule C, Schedule D Cl. 2.2.7, Cl. 2 Sl. No. 8	<b>Schedule C Cl. 2.2.7-</b> Crash Barriers <b>Three Beam Steel Barriers</b> Three beam metal crash barriers shall be provided in entire length on both sides of each main carriageway (i.e. on earthen shoulder of both side carriageway), Loops and Ramps excluding stretches covered by bridges and RE wall structures, where concrete barriers to be provided. Concrete crash barriers shall be provided on bridges/structures, RE Walls/ retaining walls as specified in Schedule	As per schedule B it is mentioned to provide Three beam crash barrier on earthen shoulder only, but as per schedule D it is mentioned to provide Three beam crash barrier on earthen shoulder and median also. So, please confirm which clause we have to consider.	Three beam metal crash barriers shall be provided as mentioned in Cl. 8.1 of Annexure-I of Schedule B and Clause-2.2.7 of Annexure-I of Schedule C

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Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghazi (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHAJ\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
		BSchedule D Cl.2 Sl. No. 8- Three beam metal crash barriers shall be provided in entire length on both sides of each main carriageway (i.e. on median and on earthen shoulder of both carriageway). Loops and Ramps excluding stretches covered by bridges and RE wall structures, where concrete barriers to be provided		
288	Schedule B CL 2.7	Details of Loop and Ramp	Please provide chainages and width of Loop and Ramp	Please refer plan & profile.
289	Schedule B CL 2.8	Typical Cross Section of Project Highway	Please provide TCS for Loop and Ramp.	Typical layout of the interchange indicating the plan & profile of the loop and ramps along with TCS to be followed is enclosed.
290	Schedule B CL 5.1	Type of Pavement	Please provide Type of Pavement for Toll Booths Area.	The type of pavement at toll plazas shall be rigid pavement as mentioned at Cl. 12.4.14 of IRC SP 99-2013.
291	Schedule B CL 10.0	Minimum 12,000 no. of trees are required to be planted by the contractor as compensatory afforestation in accordance with IRC:SP 99-2013 keeping in view IRC.SP:21-2009	As per Schedule C, cl 2.8 Land Scaping and Tree Plantation, minimum 60,000 of trees to be Plant. Please clarify the minimum no of trees to be planted.	The total number of trees to be planted shall be sum of the number of trees mentioned under Clause 10, Annexure – I, Schedule B. and Clause 2.8 , Annex – I, Schedule C.
292	General		Please mention the Specification of Painting for Substructure and Superstructure if any?	As per manual.

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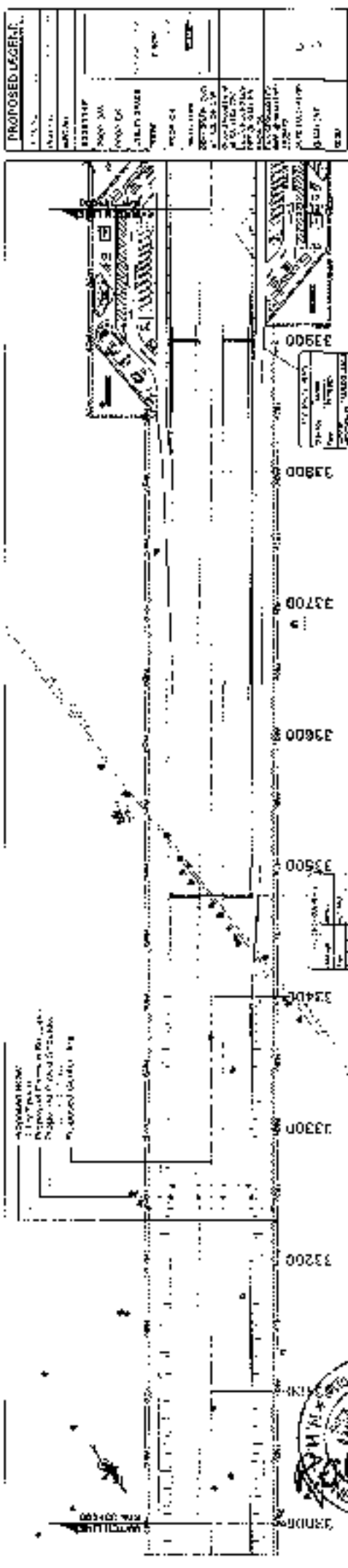
Reply to pre-bid queries for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghatl (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender Id: 2018\_NHAI\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Response
293	Schedule C CL 2.10		Please provide Type of Pavement for Toll Booths Area	The type of pavement at toll plazas shall be rigid pavement as mentioned at Cl 12.4.14 of IRC SP 99-2013.
294	Article 5	<p><b>5.2 Representations and warranties of the Authority</b></p> <p>h) It has procured Right of Way and environment clearances such that the Contractor can commence construction forthwith on 90% (ninety per cent) of the total length of the Project Highway.</p>	<p>Kindly confirm whether Authority has procured the Right of way for 90% of total length of project Highway.</p> <p>We request you to provide us the details of stretches, for which the Land Acquisition process has been completed. Please provide the status of payment of compensation &amp; physical availability of land on appointed date.</p>	3D notification for the land acquisition for the highway stretch has been published and determination of the compensation award under section 3G is under progress
295	General	Utility Shifting	Please provide the status of approval of concerned Authority for utility shifting.	The joint inspection for utility shifting is under progress with concerned agencies and approval of utility shifting estimates will be ensured at the time of appointed date.
296	General		We request you to kindly extend the Bid submission date by 3 weeks	Please refer the amendment



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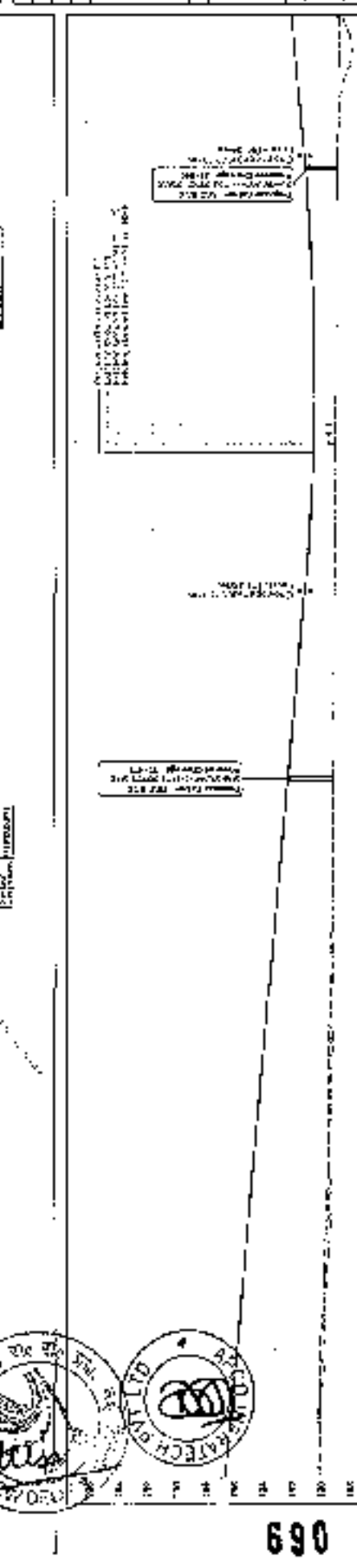




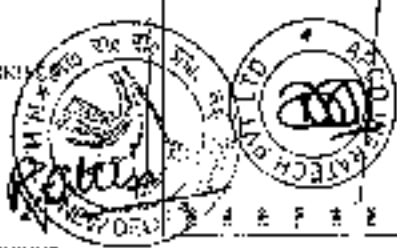
PROPOSED LAYOUT

EXISTING LEGEND

LEVEL	1
PROPOSED	2
ROAD	3
RAILROAD	4
WATER	5
POWER	6
TELEPHONE	7
SEWER	8
WATER SUPPLY	9
WATER MAIN	10
WATER TOWER	11
WATER PUMP	12
WATER RESERVOIR	13
WATER TREATMENT PLANT	14
WATER DISTRIBUTION SYSTEM	15
WATER CONDUIT	16
WATER MAIN	17
WATER TOWER	18
WATER PUMP	19
WATER RESERVOIR	20
WATER TREATMENT PLANT	21
WATER DISTRIBUTION SYSTEM	22
WATER CONDUIT	23
WATER MAIN	24
WATER TOWER	25
WATER PUMP	26
WATER RESERVOIR	27
WATER TREATMENT PLANT	28
WATER DISTRIBUTION SYSTEM	29
WATER CONDUIT	30
WATER MAIN	31
WATER TOWER	32
WATER PUMP	33
WATER RESERVOIR	34
WATER TREATMENT PLANT	35
WATER DISTRIBUTION SYSTEM	36
WATER CONDUIT	37
WATER MAIN	38
WATER TOWER	39
WATER PUMP	40
WATER RESERVOIR	41
WATER TREATMENT PLANT	42
WATER DISTRIBUTION SYSTEM	43
WATER CONDUIT	44
WATER MAIN	45
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WATER TREATMENT PLANT	56
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WATER MAIN	87
WATER TOWER	88
WATER PUMP	89
WATER RESERVOIR	90
WATER TREATMENT PLANT	91
WATER DISTRIBUTION SYSTEM	92
WATER CONDUIT	93
WATER MAIN	94
WATER TOWER	95
WATER PUMP	96
WATER RESERVOIR	97
WATER TREATMENT PLANT	98
WATER DISTRIBUTION SYSTEM	99
WATER CONDUIT	100



Station	Proposed Profile	Existing Profile	Grade	Height	Width	Area	Volume
0+00	100.00	100.00	0.00	0.00	0.00	0.00	0.00
0+10	100.00	100.00	0.00	0.00	0.00	0.00	0.00
0+20	100.00	100.00	0.00	0.00	0.00	0.00	0.00
0+30	100.00	100.00	0.00	0.00	0.00	0.00	0.00
0+40	100.00	100.00	0.00	0.00	0.00	0.00	0.00
0+50	100.00	100.00	0.00	0.00	0.00	0.00	0.00
0+60	100.00	100.00	0.00	0.00	0.00	0.00	0.00
0+70	100.00	100.00	0.00	0.00	0.00	0.00	0.00
0+80	100.00	100.00	0.00	0.00	0.00	0.00	0.00
0+90	100.00	100.00	0.00	0.00	0.00	0.00	0.00
1+00	100.00	100.00	0.00	0.00	0.00	0.00	0.00
1+10	100.00	100.00	0.00	0.00	0.00	0.00	0.00
1+20	100.00	100.00	0.00	0.00	0.00	0.00	0.00
1+30	100.00	100.00	0.00	0.00	0.00	0.00	0.00
1+40	100.00	100.00	0.00	0.00	0.00	0.00	0.00
1+50	100.00	100.00	0.00	0.00	0.00	0.00	0.00
1+60	100.00	100.00	0.00	0.00	0.00	0.00	0.00
1+70	100.00	100.00	0.00	0.00	0.00	0.00	0.00
1+80	100.00	100.00	0.00	0.00	0.00	0.00	0.00
1+90	100.00	100.00	0.00	0.00	0.00	0.00	0.00
2+00	100.00	100.00	0.00	0.00	0.00	0.00	0.00
2+10	100.00	100.00	0.00	0.00	0.00	0.00	0.00
2+20	100.00	100.00	0.00	0.00	0.00	0.00	0.00
2+30	100.00	100.00	0.00	0.00	0.00	0.00	0.00
2+40	100.00	100.00	0.00	0.00	0.00	0.00	0.00
2+50	100.00	100.00	0.00	0.00	0.00	0.00	0.00
2+60	100.00	100.00	0.00	0.00	0.00	0.00	0.00
2+70	100.00	100.00	0.00	0.00	0.00	0.00	0.00
2+80	100.00	100.00	0.00	0.00	0.00	0.00	0.00
2+90	100.00	100.00	0.00	0.00	0.00	0.00	0.00
3+00	100.00	100.00	0.00	0.00	0.00	0.00	0.00
3+10	100.00	100.00	0.00	0.00	0.00	0.00	0.00
3+20	100.00	100.00	0.00	0.00	0.00	0.00	0.00
3+30	100.00	100.00	0.00	0.00	0.00	0.00	0.00
3+40	100.00	100.00	0.00	0.00	0.00	0.00	0.00
3+50	100.00	100.00	0.00	0.00	0.00	0.00	0.00
3+60	100.00	100.00	0.00	0.00	0.00	0.00	0.00
3+70	100.00	100.00	0.00	0.00	0.00	0.00	0.00
3+80	100.00	100.00	0.00	0.00	0.00	0.00	0.00
3+90	100.00	100.00	0.00	0.00	0.00	0.00	0.00
4+00	100.00	100.00	0.00	0.00	0.00	0.00	0.00
4+10	100.00	100.00	0.00	0.00	0.00	0.00	0.00
4+20	100.00	100.00	0.00	0.00	0.00	0.00	0.00
4+30	100.00	100.00	0.00	0.00	0.00	0.00	0.00
4+40	100.00	100.00	0.00	0.00	0.00	0.00	0.00
4+50	100.00	100.00	0.00	0.00	0.00	0.00	0.00
4+60	100.00	100.00	0.00	0.00	0.00	0.00	0.00
4+70	100.00	100.00	0.00	0.00	0.00	0.00	0.00
4+80	100.00	100.00	0.00	0.00	0.00	0.00	0.00
4+90	100.00	100.00	0.00	0.00	0.00	0.00	0.00
5+00	100.00	100.00	0.00	0.00	0.00	0.00	0.00
5+10	100.00	100.00	0.00	0.00	0.00	0.00	0.00
5+20	100.00	100.00	0.00	0.00	0.00	0.00	0.00
5+30	100.00	100.00	0.00	0.00	0.00	0.00	0.00
5+40	100.00	100.00	0.00	0.00	0.00	0.00	0.00
5+50	100.00	100.00	0.00	0.00	0.00	0.00	0.00
5+60	100.00	100.00	0.00	0.00	0.00	0.00	0.00
5+70	100.00	100.00	0.00	0.00	0.00	0.00	0.00
5+80	100.00	100.00	0.00	0.00	0.00	0.00	0.00
5+90	100.00	100.00	0.00	0.00	0.00	0.00	0.00
6+00	100.00	100.00	0.00	0.00	0.00	0.00	0.00
6+10	100.00	100.00	0.00	0.00	0.00	0.00	0.00
6+20	100.00	100.00	0.00	0.00	0.00	0.00	0.00
6+30	100.00	100.00	0.00	0.00	0.00	0.00	0.00
6+40	100.00	100.00	0.00	0.00	0.00	0.00	0.00
6+50	100.00	100.00	0.00	0.00	0.00	0.00	0.00
6+60	100.00	100.00	0.00	0.00	0.00	0.00	0.00
6+70	100.00	100.00	0.00	0.00	0.00	0.00	0.00
6+80	100.00	100.00	0.00	0.00	0.00	0.00	0.00
6+90	100.00	100.00	0.00	0.00	0.00	0.00	0.00
7+00	100.00	100.00	0.00	0.00	0.00	0.00	0.00
7+10	100.00	100.00	0.00	0.00	0.00	0.00	0.00
7+20	100.00	100.00	0.00	0.00	0.00	0.00	0.00
7+30	100.00	100.00	0.00	0.00	0.00	0.00	0.00
7+40	100.00	100.00	0.00	0.00	0.00	0.00	0.00
7+50	100.00	100.00	0.00	0.00	0.00	0.00	0.00
7+60	100.00	100.00	0.00	0.00	0.00	0.00	0.00
7+70	100.00	100.00	0.00	0.00	0.00	0.00	0.00
7+80	100.00	100.00	0.00	0.00	0.00	0.00	0.00
7+90	100.00	100.00	0.00	0.00	0.00	0.00	0.00
8+00	100.00	100.00	0.00	0.00	0.00	0.00	0.00
8+10	100.00	100.00	0.00	0.00	0.00	0.00	0.00
8+20	100.00	100.00	0.00	0.00	0.00	0.00	0.00
8+30	100.00	100.00	0.00	0.00	0.00	0.00	0.00
8+40	100.00	100.00	0.00	0.00	0.00	0.00	0.00
8+50	100.00	100.00	0.00	0.00	0.00	0.00	0.00
8+60	100.00	100.00	0.00	0.00	0.00	0.00	0.00
8+70	100.00	100.00	0.00	0.00	0.00	0.00	0.00
8+80	100.00	100.00	0.00	0.00	0.00	0.00	0.00
8+90	100.00	100.00	0.00	0.00	0.00	0.00	0.00
9+00	100.00	100.00	0.00	0.00	0.00	0.00	0.00
9+10	100.00	100.00	0.00	0.00	0.00	0.00	0.00
9+20	100.00	100.00	0.00	0.00	0.00	0.00	0.00
9+30	100.00	100.00	0.00	0.00	0.00	0.00	0.00
9+40	100.00	100.00	0.00	0.00	0.00	0.00	0.00
9+50	100.00	100.00	0.00	0.00	0.00	0.00	0.00
9+60	100.00	100.00	0.00	0.00	0.00	0.00	0.00
9+70	100.00	100.00	0.00	0.00	0.00	0.00	0.00
9+80	100.00	100.00	0.00	0.00	0.00	0.00	0.00
9+90	100.00	100.00	0.00	0.00	0.00	0.00	0.00
10+00	100.00	100.00	0.00	0.00	0.00	0.00	0.00



CONSULTANT: **Chaitanya Projects, Consultancy Pvt. Ltd.**  
 G-33, 3rd Floor, 1st Cross, 1st St, 1st Block, 1st Stage, 1st Phase, 1st Section, 1st City, 1st District, 1st State, 1st Country.

CLIENT: **National Highways Authority of India**  
 Plot No. 1, Sector 1, Phase 1, Section 1, City 1, District 1, State 1, Country 1.

PROJECT: **Construction of National Highway 100**

DATE: 10/10/2023

SCALE: 1:1000

PROJECT NO: 100/2023

PROJECT NAME: National Highway 100

PROJECT LOCATION: National Highway 100

PROJECT STATUS: Under Construction

PROJECT PHASE: Construction

PROJECT BUDGET: 1000000000

PROJECT COST: 1000000000

PROJECT REVENUE: 1000000000

PROJECT PROFIT: 1000000000

PROJECT RISK: 1000000000

PROJECT SCHEDULE: 1000000000

PROJECT QUALITY: 1000000000

PROJECT SAFETY: 1000000000

PROJECT ENVIRONMENT: 1000000000

PROJECT SOCIAL: 1000000000

PROJECT ECONOMIC: 1000000000

PROJECT POLITICAL: 1000000000

PROJECT LEGAL: 1000000000

PROJECT TECHNICAL: 1000000000

PROJECT MANAGEMENT: 1000000000

PROJECT COMMUNICATION: 1000000000

PROJECT RELATIONSHIP: 1000000000

PROJECT REPUTATION: 1000000000

PROJECT BRAND: 1000000000

PROJECT IMAGE: 1000000000

PROJECT CREDIBILITY: 1000000000

PROJECT AUTHORITY: 1000000000

PROJECT INFLUENCE: 1000000000

PROJECT POWER: 1000000000

PROJECT WEALTH: 1000000000

PROJECT STATUS: 1000000000

PROJECT FUTURE: 1000000000

PROJECT PAST: 1000000000

PROJECT PRESENT: 1000000000

PROJECT HISTORY: 1000000000

PROJECT LEGACY: 1000000000

PROJECT HERITAGE: 1000000000

PROJECT CULTURE: 1000000000

PROJECT TRADITION: 1000000000

PROJECT IDENTITY: 1000000000

PROJECT CHARACTER: 1000000000

PROJECT PERSONALITY: 1000000000

PROJECT SPIRIT: 1000000000

PROJECT SOUL: 1000000000

PROJECT HEART: 1000000000

PROJECT MIND: 1000000000

PROJECT BODY: 1000000000

PROJECT SPIRIT: 1000000000

PROJECT SOUL: 1000000000

PROJECT HEART: 1000000000

PROJECT MIND: 1000000000

PROJECT BODY: 1000000000





# भारतीय राष्ट्रीय राजमार्ग प्राधिकरण

(सड़क परिवहन और राजमार्ग मंत्रालय)

## National Highways Authority of India

(Ministry of Road Transport and Highways)

ब्लॉक-5 एवम्-6, सेक्टर-10, इंदिरा नई दिल्ली-110075

G-5 & 6 Sector-10 Dwarka, New Delhi-110075

दूरभाष/फोन : 01-11-26074100/25077763

फैक्स : 01-11-26009897 • 26043514

NHA/BM/Delhi/Vadodara/2018/Pkg 2

Dated: 05.11.2018

### Corrigendum-II

To

All applicants

**Sub: Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana - Reg.**

The Schedules-C for the subject project have been amended and the amendment for the same is enclosed at Annex-A.

2. All other terms and conditions will remain same

*Rohin*  
05/11/2018

(Rohin Kumar Gupta)  
General Manager (T)  
Bharatmala



**Amendment to Schedule C**

**Clause 2.2.8: Boundary wall:** stands amended and shall be read as under:

**Boundary wall**

As the Highway is completely access controlled facility, boundary wall is its integral part to help enforcing of the acquired access rights

Access control extends to the limits of the legal access control on the ramps i.e., along the ramps to the beginning of the taper on the local road.

RCC boundary wall shall be provided along the entire length on either side (including transverse requirements at structure locations) in accordance with Schedule B and Schedule D.

**Clause 2.4.3 (g):** stands amended and shall be read as under:

**Fuelling Station:** The contractor shall provide, construct and maintain the basic infrastructure for the wayside amenities as per the typical layout and requirements specified in Schedule C and Schedule D.

Subsequent establishment and operation of the fuel stations shall be responsibility of the Authority





भारतीय राष्ट्रीय राजमार्ग प्राधिकरण  
(सड़क परिवहन और राजमार्ग मंत्रालय)  
**National Highways Authority of India**  
(Ministry of Road Transport and Highways)  
प्लॉ-5 एवं 6, सेक्टर-10, द्वारका, नई दिल्ली-110075  
G 5 & 6, Sector 10, Dwarka, New Delhi-110075

दूरभाष / Pk. no: 81-11-25074100/25074200  
फैक्स / Fax: 91-11-25033531 / 25033534

NHAI/BM/Delhi/Vadodara/2018/Pkg 2

Dated: 28.11.2018

Corrigendum-III

To

All applicants

Sub: Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghali (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana In the State of Haryana - Reg.

In view of the recent amendments to RFP and DCA for the EPC projects issued by Ministry of Road Transport & Highways (MoRT&H) dated 20.11.2018 following amendments are made in the NIT, RFP, DCA and Schedules:

NIT

1. Maintenance period specified as '4 years' stands amended and shall be read as '10 years'.
2. Bid due date for the subject project has been extended from 05.12.2018 to 27.12.2018 (upto 1100 Hrs) with following schedule:

(a) Deadline for downloading of bid documents	-	<u>27.12.2018</u> (upto 1100 hrs)
(b) Deadline for online submission of bids	-	<u>27.12.2018</u> (upto 1100 hrs)
(c) Deadline for physical submission of bids	-	<u>28.12.2018</u> (upto 1100 hrs)
(d) Opening of bids	-	<u>28.12.2018</u> (upto 1130 hrs)

Request for Proposal (RFP)

Uploaded RFP including its amendments for the subject project has been modified in line with the latest amendments issued by MoRT&H and amended RFP is enclosed at Annex-A. All bid conditions shall be as per the amended RFP.

Draft Contract Agreement (DCA)

Uploaded DCA including its amendments for the subject project has been modified in line with the latest amendments issued by MoRT&H and amended DCA is enclosed at Annex-B.



Rohini  
29/11/18



## Schedules

1. Schedules A, B, C, D and I uploaded along with bids documents including their amendments shall be applicable.
2. Amended Schedule H uploaded along with reply to pre-bid queries shall be applicable.
3. Schedules E, F, G, J to R has been modified in line with the latest amendments issued by MoRT&H and amended Schedules E, F, G, J to R are enclosed along with DCA at Annex B.

## Pre-bid queries

Replies to pre-bid queries at S No 31-112, 125-127, 129-132, 261-262, 276, 280, 281, related to RFP, DCA and Schedules E, F, G, J to P uploaded vide corrigendum dated 02.11.2018 stands deleted in view of the above amendments to RFP, DCA and Schedules E, F, G, J to P. Remaining clarifications related to Schedule A to D, H & I and general queries raised by the bidders shall be applicable as clarified.

## Notice for 2<sup>nd</sup> pre-bid meeting

In view of the above amendments to RFP, DCA and Schedules E, F, G, J to R, 2<sup>nd</sup> pre-bid meeting is scheduled on 05.12.2018 at 1200 Hrs. to clarify the queries of the bidders in regards to above amended documents. The bidders shall submit the queries in writing to the Authority latest by 05.12.2018 (1100 hrs).

*Rohin*  
21/11/18

(Rohin Kumar Gupta)  
General Manager (T)  
Bharatmala







# भारतीय राष्ट्रीय राजमार्ग प्राधिकरण

(सड़क परिवहन और राजमार्ग मंत्रालय)

## National Highways Authority of India

(Ministry of Road Transport and Highways)

जी-5 एतं 6, सेक्टर-10, द्वारका, नई दिल्ली-110075

G-5 & 6, Sector-10, Dwarka, New Delhi-110075

दूरभाष / Phone : 91-11-25074100/25074200

फैक्स / Fax : 91-11-25090507 / 25090514

NHAI/BM/Delhi/Vadodara/2018/Pkg 2

Dated: 13.12.2018

### Corrigendum

To

All applicants

Sub: Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati [Km 12+500 to Km 47+000] section of Delhi - Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana - Reg.

The reply of queries of the 2<sup>nd</sup> Prebid meeting held on 05.12.2018 for the subject project has been enclosed at Annex-A.

2 All other terms and conditions will remain same.

*Rohin*  
13/12/18  
(Rohin Kumar Gupta)  
General Manager (T)  
Bharatmala



**Annex-A**  
**to Corrigendum dated 13.12.2018**



Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender Id: 2018\_NHAJ\_14379\_1]

Sl. No.	Cl. No. / Section / Page No.	Description	Query	Authority's reply to the pre-bid query
1	MORTH Circular over change of RFP and DCA documents	<p>On 20th Nov 2018, Ministry of Road Transport and Highways, EAP Section has published a circular with new updated draft contract agreement for EPC projects (Circular no RW/NH-37010/4/2010-EAP(Printing) Vol IV, dated 20th Nov 2018".)</p> <p>It is also mentioned in the circular that <u>"This EPC document shall be used for all the National Highways and centrally sponsored road works proposed to be implemented on EPC Mode of Contract for which the bids will be invited in future and for which bids are yet to be received"</u></p>	<p>Please clarify that, is this circular and new draft contract agreement <u>will be applicable for this tender?</u> If Yes, to implement changes as per this new document, <u>we need at least 4 weeks extension</u> for preparation of our bids. Please clarify these.</p>	<p>Amended RFP and DCA are as per the Ministry's instructions and sufficient time of more than 4 weeks has been given to the bidders since upload of amended documents.</p>
2	Impact in tendering due to changes in IRC 112	<p>As per the latest amendment no. 5 of IRC 112, the relative humidity has been clearly defined for the various locations in India. This has been the one of the criteria for defining the exposure conditions as per Table 14.1 of IRC 112. Now, <u>this leads to large changes in severity conditions of various cities at proposed project region, and accordingly grade of concrete, reinforcement covers etc. needs re-designing.</u></p>	<p>To accommodate these changes as per new IRC, <u>we need extension of 4 weeks.</u> Please provide.</p>	<p>Bid due date has been extended to give sufficient time to the bidders</p>

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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHAJ\_14379\_1]

3	-	-	Extension of bid due date by 20 days	Bid due date has been extended to give sufficient time to the bidders.
4	1.2.(i)(e) Interpretation	- "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;"	Bidder understands that this particular clause is not applicable to Schedule B, C, D and any variation in this regard will be dealt in accordance with Article 13 [Change of Scope]. Please confirm.	Applicable to the Schedules also.
5	1.2.(i)(s) Interpretation	- "save and except as otherwise provided in this Agreement, any reference, at any time, to any agreement, deed, instrument, licence or document of any description shall be construed as reference to that agreement, deed, instrument, licence or other document as amended, varied, supplemented, modified or suspended at the time of such reference; provided that this Clause shall not operate so as to increase liabilities or obligations of the Authority hereunder or pursuant hereto in any manner whatsoever;"	The Bidder requested to modify the Clause 1.2.1(s) as follows. "save and except as otherwise provided in this Agreement, any reference, at any time, to any agreement, deed, instrument, licence or document of any description shall be construed as reference to that agreement, deed, instrument, licence or other document as amended, varied, supplemented, modified or suspended at the time of such reference; provided that this Clause shall not operate so as to increase liabilities or obligations of the Authority and the Contractor hereunder or pursuant hereto in any manner whatsoever."	As per RFP
6	2.1 - Scope of the Project	"(a) construction of the Project Highway on the Site set forth in Schedule-A and as specified in Schedule- B together with provision of Project Facilities as specified in Schedule-C, and in conformity with the Specifications and Standards set forth in Schedule-D."	Bidder requests to modify the Clause 2.1(a) as follows: "(a) <b>design</b> and 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.	Design of the project is included in the scope of the work as defined in obligation of the Contractor under article 4



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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghali (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender Id: 2018\_NHA1\_14379\_1]

7	3.1.(iii) (c) - Obligations of the Authority	"(c) all environmental clearances as required under Clause 3.3."	Please provide the status of environmental clearance.	EIA report has been submitted and public hearing is scheduled on 17 <sup>th</sup> December, 2018. EC for the project highway is expected by 31.01.2019.
8	3.1 (v) - Obligations of the Authority	<p>.....</p> <p><i>Both the parties agree that payment of such Damages shall be full and final settlement of all claims of the Contractor and such compensation shall be the sole remedy against delays of the Authority and both parties further agree that the payment of Damages shall be the final cure for the Contractor against delays of the Authority, without recourse to any other payments.</i></p> <p>".....</p>	<p>The bidder submits that Damages to the tune of 1% of the Contract Price is very minimal in comparison to the actual losses suffered by the Contractor under Clauses 4.1 (iv), 8.3 and 9.2. Accordingly, the Employer is requested to modify the clause so as to get the damages on above account to the Contractor as per actuals.</p>	As per RFP
	3.1 (vi) - Obligations of the Authority	<p>.....</p> <p>(a) upon written request from the Contractor, and subject to the Contractor complying with Applicable Laws, provide reasonable support to the Contractor in procuring Applicable Permits required from any Government Instrumentality for implementation of the Project;</p> <p>(b) upon written request from the Contractor, provide reasonable assistance to the Contractor in obtaining access to all necessary infrastructure facilities and utilities, including water and electricity at rates and on terms no less favorable than those generally available to commercial customers receiving substantially equivalent services;</p> <p>(c) procure that no barriers that would have a material adverse effect on the works are erected or placed on or about the Project Highway by any Government!</p>	<p>Bidder understands that the Authority shall allow Time Extension and adjustment to the Contract Price for additional costs incurred by the Contractor for delay in procurement of Applicable Permits and also for delay in obtaining access to all necessary infrastructure facilities and utilities, including water and electricity beyond 18 days of Contractor's request in this regard and if such delays are not attributable to the Contractor. Please confirm.</p>	As per RFP



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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender Id: 2018\_NHAJ\_14379\_1]

			Instrumentality or persons claiming through or under it, except for reasons of Emergency, national security, law and order or collection of inter-state taxes;		
10	3.1 (vi) - Obligations of the Authority		<p>*The Authority agrees to provide support to the Contractor and undertakes to observe, comply with and perform, subject to and in accordance with the provisions of this Agreement and the Applicable Laws, the following:</p> <p>(a).....</p> <p>(b).....</p> <p>(c).....</p> <p>(d).....</p> <p>(e)..... and</p> <p>(f)....."</p>	<p>The Bidder requests to add the following provision under Clause 3.1 (vi):</p> <p>"(g) bear the responsibility and costs relating to all Rehabilitation and Resettlement required for the construction of Project"</p> <p>Bidder also requests to add the following at the end of Clause 3.1 (vi):</p> <p>"Further, the Authority shall indemnify, defend, save and hold harmless the Contractor against any and all suits, proceedings, actions, demands and third party claims for any loss, damage, cost and expense of whatever kind and nature arising out of any matters pertaining to any obligation other than the Contractor's Obligations as per the Contract Agreement, and specifically indemnify the Contractor against any obligations pertaining to Environmental Conservation including tree cutting."</p>	As per RFP
11	3.4- Deemed Termination upon delay		<p>Without prejudice to the provisions of Clauses 8.3, and subject to the provisions of Clause 7.3, the Parties expressly agree that in the event the Appointed Date does not occur, for any reason whatsoever, within 90 days of signing of the Agreement and submission of the full Performance Security by the Contractor,</p>	<p>Bidder requests the following modification:</p> <p>Without prejudice to the provisions of Clauses 8.3, and subject to the provisions of Clause 7.3, the Parties expressly agree that in the event the Appointed Date does not occur, for any reason whatsoever, within 90 days of</p>	As per RFP

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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHAJ\_14379\_1]



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		<p><i>the Agreement shall be deemed to have been terminated. The Authority shall pay damages to the Contractor equivalent to 1% of the Contract Price (3% in case of standalone bridge projects). All other rights, privileges, claims and entitlements of the Contractor under or arising out of this Agreement shall be deemed to have been waived by, and to have ceased. The Contractor shall hand over all information in relation to the Highway, including but not limited to any data, designs, drawings, structures, information, plans, etc. prepared by them for the Highway, to the Authority.</i></p>	<p>signing of the Agreement and submission of the full Performance Security by the Contractor, the Agreement shall be deemed to have been terminated. The Authority shall pay damages to the Contractor equivalent to 1% of the Contract Price (3% in case of standalone bridge projects) <b>along with forthwith release of Performance security.</b></p>	
12	4.1 (vi) - Obligation of the Contractor	<p><i>"The Contractor shall remedy any and all loss or damage to the Project Highway during the Maintenance Period at the Contractor's cost, including those stated in Clause 14.1 (ii), save and except to the extent that any such loss or damage shall have arisen on account of any wilful default or neglect of the Authority or on account of a Force Majeure Event."</i></p>	<p>Bidder requests to modify the Clause as follows:  <i>"The Contractor shall remedy any and all loss or damage to the Project Highway during the Operation and Maintenance Period at the Contractor's cost, including those stated in Clause 14.1.(ii), if such loss or damage shall have arisen <b>solely on account of any default or neglect of the Contractor</b>".</i></p>	As per RFP
13	4.1 (vii) - Obligation of the Contractor	<p><i>"(f) support, cooperate with and facilitate the Authority in the implementation and operation of the Project in accordance with the provisions of this Agreement;"</i></p>	<p>Bidder requests to modify the clause as follows:  <i>"(f) <b>upon written request from the Authority, support, cooperate with and facilitate the Authority in the implementation and operation of the Project in accordance with the provisions of this Agreement;"</b></i></p>	As per RFP
14	4.1 (ix) - Obligation of the Contractor	<p><i>The Contractor shall obtain and maintain a project related bank account operational at site where all transactions related to the</i></p>	<p>Bidder requests to delete this provision</p>	As per RFP

Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2016\_NHAJ\_14379\_1]



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15 4.2 (l) - Obligations relating to sub contracts and any other agreements

payment of work will be done The Contractor shall submit a monthly account statement and a detailed report on utilization of funds transferred to this project related bank account to Authority's Engineer. Notwithstanding anything contrary to this agreement, the authority, in the interest and to ensure timely completion of the work, reserves the right to audit such bank accounts to ensure that there is no diversion of funds from this project specific account to any other project being implemented by the Contractor.

"The Contractor, whether Joint Venture or sole, shall not sub-contract any Works in more than 49% (forty nine per cent) of the Contract Price and shall carry out Works directly under its own supervision and through its own personnel and equipment in at least 51% (fifty one per cent) of the Contract Price Further, in case the Contractor is a Joint Venture, then the Lead Member shall carry out Works directly through its own resources (men, material and machines etc.) in at least 51% (fifty one per cent) of total length of the Project Highway"

Bidder requests to modify the clause as follows:



The Contractor, whether Consortium/ Joint Venture or sole, shall not subcontract any Works in more than 80% (eighty per cent) of the total length of the Project Highway and shall carry out Works directly under its own supervision and through its own personnel and equipment in at least 20% (twenty per cent) of the total length of the Project Highway. Provided, however, that in respect of the Works carried out directly by the Contractor, it may enter into contracts for the supply and installation of Materials, Plant, equipment, road furniture, safety devices and labour, as the case may be, for such Works. The Parties further agree that all obligations and liabilities under this Agreement for the entire project Highway shall at all times remain with the Contractor.

As per RFP





Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHA\_14379\_1]

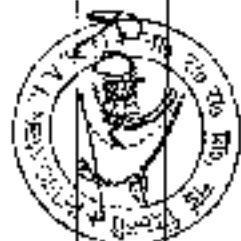
<p>16</p> 	<p>4.8 - Contractor's care of the Works</p>	<p>"The Contractor shall bear full risk in, and take full responsibility for, the care of the Works, and of the Materials, goods and equipment for incorporation therein, from the Appointed Date until the date of Completion Certificate, save and except to the extent that any such loss or damage shall have arisen from any wilful default or gross neglect of the Authority.."</p>	<p>Bidder understands that Contractor shall not be responsible for any loss or damage arisen from any default or neglect of the Authority or any other third party or on account of Force Majeure Event. Accordingly requests to modify the Clause 3.6 as follows:</p> <p><i>"The Contractor shall bear full risk in, and take full responsibility for, the care of the Works, and of the Materials, goods and equipment for incorporation therein, from the Appointed Date until the date of Completion Certificate, save and except to the extent that any such loss or damage shall have arisen from any wilful default or gross neglect of the Authority, Authority's Representative, any other third party or on account of Force Majeure Event".</i></p>	<p>As per RFP</p>
<p>17</p> <p>704</p> 	<p>4.8 - Unforeseeable difficulties</p>	<p>"Except as otherwise stated in the Agreement. (a) the Contractor accepts complete responsibility for having foreseen all difficulties and costs of successfully completing the Works; (b) the Contract Price shall not be adjusted to take account of any unforeseen difficulties or costs; and (c) the Scheduled Completion Date shall not be adjusted to take account of any unforeseen difficulties or costs."</p>	<p>The Bidder requests the Authority to delete such unilateral provision as it is impossible for any bidder to ascertain unforeseen difficulties at the time of bidding. It is requested to make suitable provisions to cater such unforeseen difficulties duly considering the time and cost implications. Please confirm</p>	<p>As per RFP</p>
<p>18</p>	<p>4.9 - Co-ordination of the Works</p>	<p>(i) The Contractor acknowledges that in addition to the Agreement, it is also aware of terms of the other Project contracts and other agreements the Authority has</p>	<p>Bidder request to delete such provision which is hypothetical in nature.</p>	<p>As per RFP</p>

negotiated and entered into for performance of its obligations under the Agreement (copies of other contracts and other agreements are made available to the Contractor from time to time) and that the Contractor is fully aware of the consequences to the Authority which would or are likely to result from a breach by the Contractor of its obligations under the Agreement. In the event the actions of the Contractor result in the breach by the Authority of any or all of the other Project contracts and such breach imposes any liability on the Authority, the Contractor shall:

(a) undertake all steps as may be possible to mitigate or neutralize the liability that has arisen, and (b) indemnify the Authority against any such liability and compensate the Authority to that extent.

(ii) The Contractor shall be responsible for the co-ordination and proper provision of the Works, including co-ordination of other Contractors or Sub-contractors for the Project. The Contractor shall co-operate with the Authority in the co-ordination of the Works with the works under the other Project contracts. The Contractor shall provide all reasonable support for carrying out their work to:

- (a) any other contractors employed by the Authority;
- (b) the workmen of the Authority;
- (c) the workmen of any Governmental Instrumentality who may be employed in

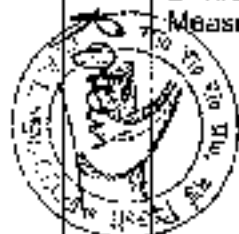


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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHA\_14379\_1]


			the execution of work on or near the Site; and (d) such other persons as is required in the opinion of the Authority for successful completion of the Project.		
19	4.10 Environmental Measures	(i)-	The Contractor agrees to conduct its activities in connection with the Agreement in such a manner so as to comply with the environmental requirements which includes, inter alia, all the conditions required to be satisfied under the environmental clearances and applicable law, and assumes full responsibility for measures which are required to be taken to ensure such compliance.	Bidder should be made available prior to submission of bids the environmental requirements/ conditions under the applicable law.	All available details have been uploaded alongwith the bid documents.
20	4.11 (j)- Site Data		The Contractor shall be deemed to have inspected and examined the Site and its surroundings and to have satisfied himself before entering into the Agreement in all material respects including but not limited to: (a) the form and nature of the Site (including, inter-alia, the surface and subsurface conditions and geo-technical factors); (b) the hydrological and climatic conditions; (c) the extent and nature of the works already completed and Materials necessary for the execution and completion of the Works and the remedying of any defects that includes already executed part also. (d) the suitability and the adequacy of the Site for the execution of the Works;	The Bidder requests the Authority to delete such unilateral provision as it is impossible for any bidder to ascertain unforeseen difficulties at the time of bidding. It is requested to make suitable provisions to cater such unforeseen difficulties duly considering the time and cost implications. Please confirm.	As per RFP



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		<p>(e) the means of access to the Site and the accommodation the Contractor may require;</p> <p>(f) arranging permits as required as per of the Agreement.</p> <p>(g) the requirements of operation and maintenance; and</p> <p>(h) all other factors and circumstances affecting the Contractor's rights and obligations under the Agreement, the Contract Price and Time for Completion.</p>		
<p>21</p>	<p>4.12- Sufficiency of Contract Price</p>	<p>The Contractor shall have satisfied itself as to the correctness and sufficiency of the Contract Price. The Contract Price shall cover all its obligations under the Agreement, in addition to all risks the Contractor has agreed to undertake under the Agreement, including those associated with the performance of its obligations under the Agreement and all things necessary for the provision of the Works in a manner satisfactory to the Authority and in accordance with this Agreement</p>	<p>The Bidder requests the Authority to delete such unilateral provision as it is impossible for any bidder to ascertain unforeseen difficulties at the time of bidding. It is requested to make suitable provisions to cater such unforeseen difficulties duly considering the time and cost implications. Please confirm.</p>	<p>As per RFP</p>
<p>22</p>	<p>5.1 Representations and warranties of the Authority</p>	<p>(iii)- <i>The Contractor is fully aware that the Agreement is inter linked with the other Project contracts and the non-performance or deficient performance or default by the Contractor and/or any of the Contractor's personnel or Subcontractors under one among the said contracts will have bearing on the other contracts and the evaluation of the Contractor's performance under the Agreement and the Project itself.</i></p>	<p>The Bidder requests the Authority to delete such unilateral provision as it is impossible for any bidder to ascertain unforeseen difficulties at the time of bidding. It is requested to make suitable provisions to cater such unforeseen difficulties duly considering the time and cost implications. Please confirm.</p>	<p>As per RFP</p>
<p>23</p>	<p>5.1 Representations and</p>	<p>(iv)- <i>If at any time during the Defects Liability Period any item of the Works or Project</i></p>	<p>Bidder requests to delete the following from the said Clause:</p>	<p>As per RFP</p>

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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-146N) on EPC Mode under Bharatmala Parlyojana in the State of Haryana [Tender Id: 2018\_NHAJ\_14379\_1]

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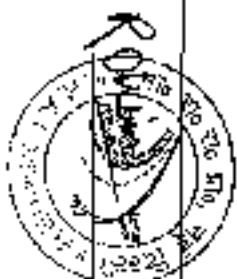


	warrantes of the Authority	Facilities or any part thereof, do not conform to the Authority requirements and Specifications and Standards. on being so notified by the Authority, the Contractor shall promptly rectify/remedy such nonconformity to the satisfaction of the Authority solely at the Contractor's expense; failing which the Authority may reject or revoke Taking-Over Certificate, and the Authority may proceed to correct the Contractor's nonconforming Work by the most expeditious means available, the costs of which shall be to the Contractor's account; or the Authority may retain the non-conforming Work and an equitable adjustment reducing the total Contract Price to reflect the diminished value of such non-conforming Work will be made by written amendment.	<del>".....failing which the Authority may reject or revoke Taking-Over Certificate, and the Authority may proceed to correct the Contractor's nonconforming Work by the most expeditious means available, the costs of which shall be to the Contractor's account; or the Authority may retain the non-conforming Work and an equitable adjustment reducing the total Contract Price to reflect the diminished value of such non-conforming Work will be made by written amendment."</del>	
24	5.2 - Representations and warranties of the Authority	"The Authority represents and warrants to the Contractor that: (a)..... (b)..... (c)..... (d)..... (e)..... (f)..... (g)..... and (h)....."	The Bidder requests to add the following provisions under the Sub Clause 5.2:  "(j) 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.	As per RFP



Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-149N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender Id: 2018\_NHA1\_14379\_1]

			(j) all information provided by it in the Tender Notice and invitation to bid in connection with the Project is, to the best of its knowledge and belief, true and accurate in all material respects;"	
25	6.1 (i) - Disclaimer	"....., the Authority makes no representation whatsoever, express, implicit or otherwise, regarding the accuracy, adequacy, correctness, reliability and/or completeness of any assessment, assumptions, statement or information provided by it and the Contractor confirms that it shall have no claim whatsoever against the Authority in this regard."	The Bidder and the Authority understands that it is impossible for any bidder to ascertain all the information provided by the Authority in the documents including RFP, Schedules, Annexures, Drawings, site condition reports at the time of bidding, therefore the bidder assumes all the above information's are true and hence forms the basis of the bid submitted by the bidder.	As per RFP
26	7.1 (iii) - Performance Security	In the event the Selected Bidder fails to provide the remaining Performance Security and Additional Performance Security, if any, as prescribed herein, it may seek <b>extension of time for a further period up to 60 days</b> by paying the Damages upfront along with the request letter seeking the extension. The Damages shall be the sum calculated at the rate of 0.01% (zero point zero one per cent) of the Bid Price offered by the Selected Bidder for each day until the Performance Security and Additional Performance Security, if any, is provided in full as prescribed herein. The damages at full rate as given above shall be applicable even if a part of the Performance Security and the Additional Performance Security is provided."	The Bid Security provided along the Bid shall remain in force and effect till the submission of Performance Security. Hence, the bidder requests the Authority to abolish delay damages provision for delay in providing the same. Please confirm.	As per RFP



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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHA\_14379\_1]

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27	7.3 (i) - Appropriation of Performance Security	<p><i>"Upon occurrence of a Contractor's Default, the Authority shall, without prejudice to its other rights and remedies hereunder or in law, be entitled to encash and appropriate the relevant amounts from the Performance Security as Damages for such Contractor's Default."</i></p>	<p>Bidder requests the Authority to modify the Clause 7.3 (i) as follows:</p> <p><i>"Upon occurrence of a Contractor's Default, the Authority shall, without prejudice to its other rights and remedies hereunder or in law, be entitled to encash and appropriate the relevant amounts from the Performance Security as Damages for such Contractor's Default. The Authority shall notify the Contractor of its decision to encash the Performance Security in pursuance with the provisions of this Clause 7.3 (i) provided that no encashment of Performance Security on account of any reason shall be effected by the Authority without notifying the Contractor of its decision to encash Performance Security, and taking into consideration the representation, if any, made by the Contractor within 20 (twenty) days of such notice."</i></p>	As per RFP
28	7.4 (i) - Release of Performance Security	<p><i>"The Authority shall return the Performance Security to the Contractor within 60 (sixty) days of the later of the expiry of the Maintenance Period or the Defects Liability Period under this Agreement. Notwithstanding the aforesaid, the Parties agree that the Authority shall not be obliged to release the Performance Security until all Defects identified during the Defects Liability Period have been rectified."</i></p>	<p>Bidder requests the Authority to modify the Clause 7.4.1 as follows:</p> <p><i>"The Authority shall return one half of the Performance Security to the Contractor upon issuance of the Provisional Certificate and balance shall be released within 7 (seven) days of the expiry of the Defects Liability Period under this Agreement. Notwithstanding the aforesaid, the Parties agree that the Authority shall not be obliged to release</i></p>	As per RFP

Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHA\_14379\_1]

29	7.4 (ii) - Release of Performance Security	<p>"The Authority shall return the Additional Performance Security to the Contractor within 28 (twenty eight) days from the date of Issue of Completion Certificate under Article 12 of this Agreement."</p>	<p>the Performance Security until all Defects Identified during the Defects Liability Period have been rectified."</p> <p>Bidder requests the Authority to modify the Clause 7.4.2 as follows:</p> <p>"The Authority shall return one half of the Additional Performance Security to the Contractor upon issuance of the Provisional Certificate and balance shall be released within 7 (seven) days after Issuance of Completion Certificate under Article 12 of this Agreement."</p>	As per RFP
30	7.5 (ii) - Retention Money	<p>"Upon occurrence of a Contractor's Default, the Authority shall, without prejudice to its other rights and remedies hereunder or in law, be entitled to appropriate the relevant amounts from the Retention Money as Damages for such Contractor's Default."</p>	<p>Bidder requests the Authority to modify the Clause 7.5 (ii) as follows:</p> <p>"Upon occurrence of a Contractor's Default, the Authority shall, without prejudice to its other rights and remedies hereunder or in law, be entitled to appropriate the relevant amounts from the Retention Money as Damages for such Contractor's Default. The Authority shall notify the Contractor of its decision to appropriate the relevant amount in pursuance with the provisions of this Clause 7.5 (ii) provided that no deduction of amount on account of Contractor's Default shall be effected by the Authority without notifying the Contractor of its decision for such deductions, and taking into consideration the representation, if any, made by the Contractor within 20 (twenty) days of such notice."</p>	As per RFP

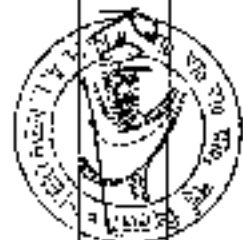


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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghafi (Km 15+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Parlyojana in the State of Haryana [Tender Id: 2018\_NHAJ\_14379\_1]

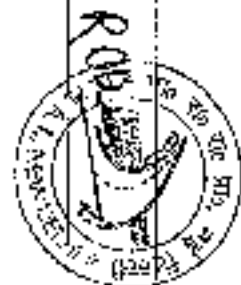


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31	7.5 (iii) - Retention Money	<p>Within 15 (fifteen) days of the date of issue of the Completion Certificate, the Authority shall refund the balance of Retention Money remaining with the Authority after adjusting the amounts appropriated under the provisions of Clause 7.5 (i).</p>	<p>The Bidder request to modify the clause as below                  "The Contractor may, upon furnishing an irrevocable and unconditional bank guarantee, require the Authority to refund the Retention Money deducted by the Authority under the provisions of Clause 7.5 (i).                  The Bidder requests the Authority to refund the Retention Money to the Contractor in tranches of Rs. 1 Cr to maintain smooth cash flow. Please confirm.</p>	As per RFP
32	7.5 (iv) - Retention Money	<p>"The Parties agree that in the event of Termination of this Agreement, the Retention Money and the bank guarantees specified in this Clause 7.5 shall be treated as if they are Performance Security and shall be reckoned as such for the purposes of Termination Payment under Clause 23.6"</p>	<p>The Bidder requests to modify the Clause 7.5 as follows:                  "The Parties agree that in the event of Termination of this Agreement on account of the Contractor's Default, the Retention Money and the bank guarantees specified in this Clause 7.5 shall be treated as if they are Performance Security and shall be reckoned as such for the purposes of Termination Payment under Clause 23.6."</p>	As per RFP
33	8.2 (i) - Procurement of the Site	<p>"The Authority Representative, the Contractor and Authority's Engineer shall, within 10 (ten) days of the date of this Agreement, inspect the Site and prepare a detailed memorandum containing an inventory of the Site including the vacant and unencumbered land, buildings, structures, road works, trees and any other immovable property on or attached to the Site</p>	<p>The bidder requests to modify first para of the Clause 8.2 (i) as follows:                  " The Authority Representative, the Contractor and Authority's Engineer shall, within 10 (ten) days of the date of this Agreement, inspect the Site and prepare a detailed memorandum containing an inventory of the Site including the vacant and unencumbered</p>	As per RFP



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(hereinafter referred to as the "Handover Memorandum"). Subject to the provisions of Clause 8.2 (ii), the Handover Memorandum shall have appended thereto an appendix (the "Appendix") specifying in reasonable detail those parts of the Site to which vacant access and Right of Way has not been given to the Contractor along with details of hindrances in the Construction Zone.

land, buildings, structures, road works, trees and any other immovable property on or attached to the Site (hereinafter referred to as the "Handover Memorandum"). Subject to the provisions of Clause 8.2 (iii), the Handover Memorandum shall have appended thereto an appendix (the "Appendix") specifying in reasonable detail those parts of the Site to which vacant access and Right of Way has not been given to the Contractor along with details of hindrances in the Construction Zone. For the avoidance of doubt, the permits / clearances / NOCs / cost estimates required for dismantling / shifting of buildings, structures, road works, trees and any other immovable property on or attached to the Site, if such obstruction adversely affects the execution of Works or Maintenance of the Project, shall be provided by the Authority along with the memorandum."

Bidder further understands that any delay in providing such permits/ clearances/ NOCs shall be considered for determining extension of time and related costs at actuals. Please confirm.

"In the event the Right of Way to any part of the Site is not provided by the Authority on or before the date(s) specified in Clause 8.2 for any reason other than Force Majeure or

Bidder requests:  
**Either Compensation should be as per actuals.**

As per RFP

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8.3 (i) - Damages for delay in handing over the Site

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breach of this Agreement by the Contractor, the Authority shall pay Damages to the Contractor in a sum calculated in accordance with the following formula for and in respect of those parts of the Site to which the Right of Way has not been provided:

Amount of Damages in Rs per day per meter =  
 $0.05 \times C \times 1/L \times 1/N$

Where

C = the Contract Price; L = length of the Project Highway in meters; and N = Completion period in days (Appointed Date to Scheduled Completion Date)

or  
 As per amended formula as below:

Amount of Damages in Rs. per day per meter =  
 $2.5 \times C \times 1/L \times 1/N$

The Contractor understands that the compensation under this formula shall be applicable for the stretches where full / part width ROW is not available Please confirm.

35 8.4 - Site to be free from Encumbrances

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

Bidder requests to modify the clause as follows:

"Subject to the provisions of Clause 8.2, the Site shall be made available by the Authority to the Contractor pursuant hereto free from all Encumbrances and occupations and without the Contractor being required to make any payment to the Authority on account of any costs, compensation, expenses and charges for the acquisition and use of such Site for the duration of the Project Completion Schedule. For the avoidance of doubt, it is agreed that the existing rights of way, easements, privileges, liberties and appurtenances to the Site shall not be deemed to be Encumbrances as long as

As per RFP

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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2016\_NHA\_14379\_1]



		out of the inadequacy or physical condition of the Site."	it does not adversely affect Construction and Maintenance of the Project Highway."	
36	8.6 Special/Temporary Right of Way	"The Contractor shall bear all costs and charges for any special or temporary right of way required by it in connection with access to the Site. The Contractor shall obtain at its cost such facilities on or outside the Site as may be required by it for the purposes of the Project Highway and the performance of its obligations under this Agreement."	Bidder understands that the Clause 8.6 shall be dealt under Clause 13 [Change of Scope], if the ROW is provided on piece-meal basis than that envisaged under the relevant terms of the Agreement. Please confirm	No
	8.8 - Geological and archaeological finds	".....The Contractor shall take all reasonable precautions to prevent its workmen or any other person from removing or damaging such interest or property and shall inform the Authority forthwith of the discovery thereof and comply with such instructions as the concerned Government Instrumentality may reasonably give for the removal of such property. For the avoidance of doubt, it is agreed that any reasonable expenses incurred by the Contractor hereunder shall be reimbursed by the Authority. It is also agreed that the Authority shall procure that the instructions hereunder are issued by the concerned Government Instrumentality within a reasonable period."	The bidder understands that in case of geological or archaeological findings at Site affecting the construction activities, the selected bidder shall be entitled to Time Extension and also adjustment to the Contract Price at actuals. Please confirm.	As per RFP
38	9.2 - Shifting of obstructing utilities	"The Contractor shall, in accordance with Applicable Laws and with assistance of the Authority, undertake the work of shifting of any utility (including electric lines, water pipes, gas pipelines and telephone cables) to an appropriate location or alignment, if such utility or obstruction adversely affects	Please provide copy of Schedule – B indicating the scope of work of such shifting of Utilities.	List as submitted by the DPR. Consultant of the utilities to be shifted is enclosed with the replies to the pre-bid queries for reference of the bidders. Joint verification of the same is under progress with the concerned utility owning



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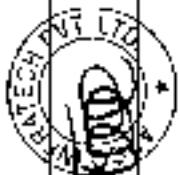
Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHA\_14379\_1]

		<p><i>the execution of Works or Maintenance of the Project Highway in accordance with this Agreement. The cost of such shifting, as per estimates prepared by the entity owning the utility and approved by the Authority, shall be reimbursed by the Authority to the Contractor. The scope of work of such shifting of Utilities shall be as indicated in Schedule-B. In the event of any delay of such shifting on the part of the contractor, no extension of time for completion of the project and no claims, in any manner, shall be admissible on this account against the Authority.</i></p> <p><i>The work of shifting of Utilities can be taken up by the Contractor any time after signing of the Agreement."</i></p>		<p>department) and complete list of the utilities to be shifted shall be provided to the Contractor at the time of signing of the Contract Agreement. The cost of shifting of such utilities as per estimates prepared by the entity owning the utility and approved by the Authority, shall be reimbursed by the Authority to the Contractor as per the provision of the Contract Agreement.</p>
<p>916</p>	<p>39 9.3 (iv) - New utilities</p>	<p><i>"In the event construction of any Works is affected by a new utility or works undertaken in accordance with this Clause 9.3, the Contractor shall be entitled to a reasonable Time Extension as determined by the Authority's Engineer."</i></p>	<p>The Bidder requests to modify this Clause 9.3.4 as under:  <i>"In the event the construction of any Works is affected by a new utility or works undertaken in accordance with this Clause 9.3, the Contractor shall be entitled to a reasonable Time Extension and also adjustment to Contract Price as per actual incurred by the Contractor."</i></p>	<p>As per RFP</p>
	<p>40 9.4 - Felling of trees</p>	<p><i>"The Authority shall assist the Contractor in obtaining the Applicable Permits for felling of trees in non-forest area to be identified by the Authority for this purpose if, and only if, such trees cause a Material Adverse Effect on the construction or maintenance of the Project Highway. The Contractor shall fell these trees as per the Permits obtained. The cost of such felling shall be</i></p>	<p>1. Bidder requests the Authority to obtain the permits for felling of trees falling within the ROW and causing hindrance to the construction and maintenance of the Project prior to signing of Agreement. Please Confirm,                  2. Bidder understands that any delay in procurement of approval for felling of trees shall be considered for the</p>	<p>1. As per RFP                  2. As per RFP</p>

**Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghatl (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHAJ\_14379\_1]**

		<p>borne by the Authority and in the event of any delay in felling thereof for reasons beyond the control of the Contractor, it shall be excused for failure to perform any of its obligations hereunder if such failure is a direct consequence of delay in the felling of trees. The Parties hereto agree that the felled trees shall be deemed to be owned by the Authority and shall be disposed in such manner and subject to such conditions as the Authority may in its sole discretion deem appropriate. For the avoidance of doubt, the Parties agree that if any felling of trees hereunder is in a forest area, the Applicable Permit thereof shall be procured by the Authority within the time specified in the Agreement.</p>	<p>compensation in terms of time and cost at actuals. Please confirm. Bidder request to provide the following details:</p> <ol style="list-style-type: none"> <li>No. of trees present in RoW.</li> <li>Status of permission for felling of revenue trees/forest trees.</li> <li>Status of estimate for felling of trees and its approval from the competent authority.</li> <li>Mode of reimbursement of the amount that will be incurred by the Contractor for felling trees.</li> </ol>	<ol style="list-style-type: none"> <li>As per report of DPR Consultant about 940 trees have been identified for felling, however actual number of trees to be felled will be as per the forest clearance.</li> <li>&amp; c) Please refer above</li> <li>Clause is clear in this regard</li> </ol>
41	10.1 (i) - Obligations prior to commencement of Works & Schedule F (Applicable Permits)	<p>"Within 20 (twenty) days of the Appointed Date, the Contractor shall:</p> <ol style="list-style-type: none"> <li>.....</li> <li>.....</li> <li>.....</li> <li>make its own arrangements for quarrying of materials needed for the Project Highway under and in accordance with the Applicable Laws and Applicable Permits." </li></ol>	<p>Though the Environment Clearance is provided by the Ministry of Environment for the highway projects, the actual mining at the project site can't commence unless the clearance from the respective State Governments is procured. This is quite a time-consuming exercise and vital time is lost in the same. Therefore, the Bidder requests the Authority (i.e. NHAJ) to directly procure mining rights in advance at the bidding stage itself, which can be leased out to the Contractor for execution and completion of the Works.</p>	Procurement of material for construction of the project highway is included in the obligations of the Contractor
42	10.1 (ii) - Obligations prior to commencement of Works	<p>"The Authority shall, appoint an engineer (the "Authority's Engineer") before the Appointed Date to discharge the functions and duties specified in this Agreement, and</p>	<p>Bidder requests to modify the clause as under: The Authority shall, appoint an engineer (the "Authority's Engineer") before the</p>	As per RFP

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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHA\_14379\_1]



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		shall notify to the Contractor the name, address and the date of appointment of the Authority's Engineer forthwith.	<p>signing of Agreement to discharge the functions and duties specified in this Agreement, and shall notify to the Contractor the name, address and the date of appointment of the Authority's Engineer forthwith.</p> <p>In the event of any delay in appointment of Authority's Engineer, the Contractor shall be entitled for additional time &amp; cost.</p>	
43	10.2 (i) - Design and Drawings	<i>"Design and Drawings shall be developed in conformity with the Specifications and Standards set forth in Schedule-D. In the event, the Contractor requires any relaxation in design standards due to restricted Right of Way in any section, the alternative design criteria for such section shall be provided for review of the Authority's Engineer."</i>	Bidder understands that such works pursuant to alternative design shall be valued as per Clause 13 [Change of Scope] Please confirm.	No
44	10.2 (iv) (c) - Design and Drawings	<i>"within 15 (fifteen) days of the receipt of the Drawings, the Authority's Engineer shall review the same and convey its approval/observations to the Contractor with particular reference to their conformity or otherwise with the Scope of the Project and the Specifications and Standards. Provided, however that in case of a major bridge or structure, the aforesaid period of 15 (fifteen) days may be extended up to 30 (thirty) days."</i>	<p>Bidder requests to modify the Clause 10.2.4(c) as follows:</p> <p><i>within 15 (fifteen) days of the receipt of the Drawings, the Authority's Engineer shall review the same and convey its approval/observations to the Contractor with particular reference to their conformity or otherwise with the Scope of the Project and the Specifications and Standards. Provided, however that in case of a major bridge or structure, the aforesaid period of 15 (fifteen) days may be extended up to 30 (thirty) days.</i></p> <p><b>The Contractor shall not be obliged to await the observations of the</b></p>	As per RFP



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(iv) (h)- Design and Drawings

"The Contractor shall ensure that all the designs and drawings shall be approved from the Authority's Engineer within 90 days (ninety) from the Appointed Date."

Authority's Engineer on the Drawings submitted pursuant hereto beyond the said period of 15 (fifteen) days and if no such observation is conveyed within the said period the drawings are deemed acceptable to the Authority's Engineer and Contractor shall begin or continue Works.

Bidder requests the Authority to add the following at the end of the clause.

As per RFP

In the event of any delay in approval of designs and drawings by the Authority's Engineer within 90 days (ninety) from the Appointed Date will entitle the Bidder additional time & cost.

46 10.2 (v) - Design and Drawings

"Any cost or delay in construction arising from review/ approval by the Authority's Engineer shall be borne by the Contractor."

The Bidder requests the Authority to delete such unilateral provision.

As per RFP

47 10.3 (i) - Construction of the Project Highway

"The Contractor shall construct the Project Highway as specified in Schedule- B and Schedule-C, and in conformity with the Specifications and Standards set forth in Schedule-D. The Contractor shall be responsible for the correct positioning of all parts of the Works, and shall rectify any error in the positions, levels, dimensions or alignment of the Works. The 730th (Seven Hundred and Thirtieth) day from the Appointed Date shall be the scheduled completion date (the "Scheduled Completion Date") and the Contractor agrees and undertakes that the construction shall be completed on or before the Scheduled Completion Date, including any extension thereof."

Time period of 730 days for construction of Project Highway is less. Bidder request to provide at least 910 days for completion of the Project and amend the Clause as under:

As per RFP


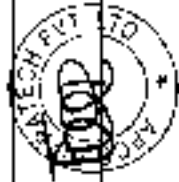
"The Contractor shall construct the Project Highway as specified in Schedule- B and Schedule-C, and in conformity with the Specifications and Standards set forth in Schedule-D. The Contractor shall be responsible for the correct positioning of all parts of the Works, and shall rectify any error in the positions, levels, dimensions or alignment of the Works. The 910th (Nine Hundred and Tenth) day from the

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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghali (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-149N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender Id: 2018\_NHA1\_14379\_1]

			<p>Appointed Date shall be the scheduled completion date (the "Scheduled Completion Date") and the Contractor agrees and undertakes that the construction shall be completed on or before the Scheduled Completion Date, including any extension thereof."</p>	
<p>48</p>  <p>720</p> 	<p>10.3 (ii) Construction of the Project Works</p>	<p>"The Contractor shall construct the Project Highway in accordance with the Project Completion Schedule set forth in Schedule-J. In the event that the Contractor fails to achieve any Project Milestone or the Scheduled Completion Date within a period of 30 (thirty) days from the date set forth in Schedule-J, unless such failure has occurred due to Force Majeure or for reasons solely attributable to the Authority, it shall pay Damages to the Authority of a sum calculated at the rate of 0.05% (zero point zero five percent) of the Contract Price for delay of each day reckoned from the date specified in Schedule -J and until such Project Milestone is achieved or the Works are completed; provided that if the period for any or all Project Milestones or the Scheduled Completion Date is extended in accordance with the provisions of this Agreement, the dates set forth in Schedule-J shall be deemed to be modified accordingly .....</p>	<p>1. Bidder requests the Authority to modify the clause restricting applicability of Damages only in case of non-achievement of the Scheduled Completion Date by the Contractor for reasons solely attributable to the Contractor. Please confirm. 2. Further, the Bidder request the Authority to modify the clause as follows:  "The Contractor shall construct the Project Highway in accordance with the Project Completion Schedule set forth in Schedule-J. In the event that the Contractor fails to achieve the Scheduled Completion Date within a period of 90 (ninety) days from the date set forth in Schedule-J, for the reasons solely attributable to the Contractor, it shall pay Damages to the Authority of a sum calculated at the rate of 0.02% (zero point zero two percent) of the Contract Price for delay of each day reckoned from the Scheduled Completion Date till actual completion of the Works is achieved or the Works are completed; provided that if the period for any or all Project Milestones or the Scheduled Completion Date is extended in</p>	<p>As per RFP</p>

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			accordance with the provisions of this Agreement, the date set forth in Schedule-J shall be deemed to be modified accordingly ....."	
49	10.3 (iv)- Construction of the Project Works	<i>In the event that the Contractor fails to achieve the Project Completion within a period of 90 (ninety) days from the Schedule Completion Date set forth in Schedule-J, unless such failure has occurred due to Force Majeure or for reasons solely attributable to the Authority, the contractor shall be deemed to be ineligible for bidding any future projects of the Authority, both as the sole party or as one of the parties of Joint Venture/ Consortium during the period from Scheduled Completion Date to issuance of Completion Certificate. This restriction is applicable if the contract value of the delayed project is not less than Rs. 300 Crore.</i>	Bidder requests to modify the Clause as under:  In the event that the Contractor fails to achieve the Project Completion within a period of 90 (ninety) days from the Schedule Completion Date set forth in Schedule-J, unless such failure <b>has occurred for reasons not attributable to the Contractor</b> , the contractor shall be deemed to be ineligible for bidding any future projects of the Authority, both as the sole party or as one of the parties of Joint Venture/ Consortium during the period from Scheduled Completion Date to issuance of Completion Certificate. This restriction is applicable if the contract value of the delayed project is not less than Rs. 300 Crore.	As per RFP
50	10.5(l) - Extension of time for completion	<i>"Without prejudice to any other provision of this Agreement for and in respect of extension of time, the Contractor shall be entitled to extension of time in the Project Completion Schedule (the "Time Extension") to the extent that completion of any Project Milestone is or will be delayed by any of the following, namely: (a)..... (b)..... (c)..... (d) ..... and (e)....."</i>	Bidder requests to add the following delay event to be considered for extension of time:  "if any delay, impediment or prevention caused by other authorities/ public or private entities, it's personnel or any other third parties for the reasons not at all attributable to the Contractor."	

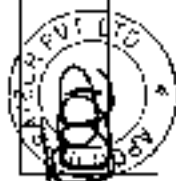
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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Parlyojana in the State of Haryana [Tender Id: 2018\_NHA\_14379\_1]

51	10.5 (v) (b) - Extension of time for completion	<p><i>"(b) the Contractor shall, no later than 10 (ten) days after the close of each month, send further interim claims specifying the accumulated delay, the extension of time claimed, and such further particulars as the Authority's Engineer may reasonably require; and"</i></p>	<p>The Bidder request the Authority to modify the sub Clause 10.5.5(b) as follows. It shall help the prospective Contractor to submit a realistic Extension of Time application as well as to ascertain the delay with more details.</p> <p><i>"(b) the Contractor shall, no later than 10 (ten) days after the close of each quarter, send further interim claims specifying the accumulated delay, the extension of time claimed, and such further particulars as the Authority's Engineer may reasonably require; and"</i></p>	As per RFP
52	11.13 (i) - Remedial work	<p><i>"Notwithstanding any previous test or certification, the Authority's Engineer may instruct the Contractor to:</i></p> <p><i>(a) remove from the Site and replace any Plant or Materials which are not in accordance with the provisions of this Agreement;</i></p> <p><i>(b) remove and re-execute any work which is not in accordance with the provisions of this Agreement and the Specification and Standards; and</i></p> <p><i>(c) execute any work which is urgently required for the safety of the Project Highway, whether because of an accident, unforeseeable event or otherwise; provided that in case of any work required on account of a Force Majeure Event, the provisions of Clause 21.6 shall apply."</i></p>	<p>The Bidder requests to modify the Clause 11.13.1 as follows:</p> <p><i>"Notwithstanding any previous test or certification, the Authority's Engineer may instruct the Contractor in writing specifying the reasons to:</i></p> <p><i>(a) remove from the Site and replace any Plant or Materials which are not in accordance with the provisions of this Agreement;</i></p> <p><i>(b) remove and re-execute any work which is not in accordance with the provisions of this Agreement and the Specification and Standards; and</i></p> <p><i>(c) execute any work which is urgently required for the safety of the Project, whether because of an accident, unforeseeable event or otherwise; provided that in case of any work required on account of a Force Majeure</i></p>	As per RFP



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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghafi (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHA1\_14379\_1]

53	11.17 (iv) Suspension of unsafe Construction Works	"If suspension of Works is for reasons not attributable to the Contractor, the Authority's Engineer shall determine any Time Extension to which the Contractor is reasonably entitled."	Event, the provisions of Clause 21.6 shall apply. The Bidder requests to modify the Clause 11.17.4 as follows:  "If suspension of Works is for reasons not attributable to the Contractor, the Authority's Engineer shall determine as per good industry practice any Time Extension and also adjustment to the Contract Price to which the Contractor is reasonably entitled."	As per RFP
54	12.1 (ii) - Tests on completion	".....For the avoidance of doubt, it is expressly agreed that the Authority's Engineer may require the Contractor to carry out or cause to be carried out additional Tests, in accordance with Good Industry Practice, for determining the compliance of the Project Highway or Section thereof with the Specifications and Standards."	The bidder understands that the Contract Price will be adjusted on account of additional costs incurred due to such additional tests. Further, the bidder understands that the Contractor shall be entitled to Time Extension and also adjustment to Contract Price in case of delay arising out of such event. Please confirm.	Cost for additional tests shall be borne by the Contractor and no Time Extension and also adjustment to Contract Price in case of delay arising out of such event shall be allowed.
55	12.2 (II) - Completion Certificate	"Upon receiving the Completion Certificate, the Contractor shall remove its equipment, materials, debris and temporary works from the Site within a period of 30 (thirty) days thereof, failing which the Authority may remove or cause to be removed, such equipment, materials, debris and temporary works and recover from the Contractor an amount equal to 120% (one hundred and twenty per cent) of the actual cost of removal incurred by the Authority."	Bidder requests the Authority to modify the Clause 12.4.2 as follows:  "Upon receiving the Completion Certificate, the Contractor shall remove its equipment, materials, debris and temporary works from the Site within a period of 30 (thirty) days thereof, failing which the Authority may remove or cause to be removed, such equipment, materials, debris and temporary works and recover from the Contractor the actual cost of removal incurred by the Authority."	As per RFP



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56	13.1 (iii) - Change of Scope	<p><i>"Change of Scope shall mean the following:</i></p> <p><i>(a) change in specifications of any item of Works;</i></p> <p><i>(b) omission of any work from the Scope of the Project except under Clause 8.3.3, provided that, subject to Clause 13.5, the Authority shall not omit any work under this Clause in order to get it executed by any other authority; and / or</i></p> <p><i>(c) any additional work, Plant, Materials or services which are not included in the Scope of the Project, including any associated Tests on completion of construction."</i></p>	<p>Bidder requests the Authority to add the following event under this categories of Clause 13.1.2:</p> <p><i>"d. changes to the levels, positions and/or dimensions of any part of the Works.</i></p> <p><i>e. changes to the sequence or timing of the execution of the Works.</i></p> <p><i>f. executes additional work of any kind necessary for the completion of the Works; and/or</i></p> <p><i>g any change in Authority's requirement including the provisions stated under applicable Schedules forming the Scope of Works."</i></p>	As per RFP
57			<p>Bidder understands that, the Authority shall not require the contractor to undertake any changes after 50% financial progress w.r.t Contract Price have been achieved.</p> <p>If the situation warrants, the COS Order can be issued thereafter also subject to the condition that the works forming part of or affected by such Order shall not be reckoned for purposes of determining completion of the Works and issuing of the Provisional Certificate. A similar provision is also there in the concession agreement wherein the Authority shall not require the contractor to undertake changes if such changes are likely to delay the works. Secondly, the Authority must issue COS Order within 15 days of</p>	



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58	13.2 (i) - Procedure for Change of Scope	<p><i>"In the event of the Authority determining that a Change of Scope is necessary, it may direct the Authority's Engineer to issue to the Contractor a notice specifying in reasonable detail the Works and services contemplated thereunder (the 'Change of Scope Notice'). .....</i></p>	<p>receipt of requisite information from the Contractor. Please confirm.</p> <p>Bidder requests to Issue Change of Scope Order within 15 days from the date of submission of cost estimate of the same. Further, Authority is requested to pay 25% of total value of such Change of Scope Order as an advance payment along with the Change of Scope Order to take up such works. Please confirm.</p>	<p>Issue Change of scope order and its payment shall be as per provisions of Clause 13.2</p>
725	13.2 (iv) (b) - Procedure for Change of Scope	<p><i>"For item of Works not included in Schedule of Rates as mentioned in sub-para (a) of Clause 13.2 (iv) above, the cost of same shall be derived on the basis of MORTH Standard Data Book and the Authority's Engineer shall determine the prevailing market rates and discount the same considering WPI to achieve the prevailing rate at the Base Data, and for any item in respect of which MORTH Standard Data Book does not provide the requisite details, the Authority's Engineer shall determine the rate in accordance with Good Industry Practice.</i></p> <p>.....</p>	<p>In case of any COS, the design and drawings have to be developed by the Contractor by incurring additional costs, which the Contractor could not get compensated by the cost arrived at by using the MORTH Standard Data Book. Further, the contract contemplates that the Contract Price includes all duties, taxes, royalty, and fee levied in accordance with the laws and regulations in force, however, there is no provision for payment of such duties, taxes, royalty, and fee under calculation as per MORTH Standard Data Book.</p> <p>Therefore, the Bidder request that, the procedure for deriving the cost of COS under Sub-Clause 13.2 of the EPC Agreement should be amended duly taking into account the design charges and also all duties, taxes, royalty, and fee levied in accordance with the laws and regulations in force at the time of COS. Please confirm.</p>	<p>As per RFP</p>
60	13.3 - Payment for Change of Scope	<p><i>"Payment for Change of Scope shall be made in accordance with the payment</i></p>	<p>1. The payment of such Change of Scope works shall be released</p>	<p>As per RFP</p>



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		<p><i>schedule specified in the Change of Scope Order."</i></p>	<p>progressively and shall be settled completely within 30 days of completion of such works. Any delay in payment shall carry interest at the rate Base Rate plus 2%. Please confirm.</p> <p>2. The bidder understands that the Change of Scope works shall be adjusted for price escalation of various components as per clause 19.10 and the Base date for this purpose shall be the date of preparation of estimate for Change of Scope Order or any other suitable date as fairly determined by the Authority's Engineer. Please confirm.</p>	
<p>61</p>	<p>13.4 - Restrictions on Change of Scope</p>	<p><i>(i) No Change of Scope shall be executed unless the Authority has issued the Change of Scope Order save and except any Works necessary for meeting any Emergency.</i></p> <p><i>(ii) The total value of all Change of Scope Orders shall not exceed 10% (ten per cent) of the Contract Price.</i></p> <p><i>(iii) Notwithstanding anything to the contrary in this Article 13, if any change is necessitated because of any default of the Contractor in the performance of its obligations under this Agreement, the same shall not be deemed to be Change of Scope, and shall not result in any adjustment of the Contract Price or the Project Completion Schedule.</i></p>	<p>Bidder requests for addition of the following point in Clause 13.4:  <b>"13.4 (iv) No Change of Scope Order shall be issued after 50% financial progress w.r.t Contract Price have been achieved"</b></p>	<p>As per RFP</p>
<p>B2</p>	<p>14.1 (i)- Maintenance Obligation of the Contractor</p>	<p><i>The Contractor shall maintain the Project Highway for a period of 10 (ten) years, corresponding to the Defects Liability Period, commencing from the date of the</i></p>	<p><i>Bidder request to reduce the Maintenance period to 2 Years from the date of the Completion Certificate.</i></p>	<p>As per RFP</p>

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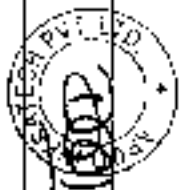


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63	14.5 (ii)- Lane Closure	<p><b>Completion Certificate (the "Maintenance Period")</b></p> <p>Upon receiving the permission pursuant to Clause 14.5 (i), the Contractor shall be entitled to close the designated lane for the period specified therein, and for all lane closures extending a continuous period of 48 (forty-eight) hours, the Contractor shall, in the event of any delay in re-opening such lane, for every stretch of 250 (two hundred and fifty) metres, or part thereof, pay Damages to the Authority calculated at the rate of 0.1% (zero point one per cent) of the monthly maintenance payment for each day of delay until the lane has been re-opened for traffic. In the event of any delay in re-opening such lanes or in the event of emergency decommissioning and closure to traffic of the whole or any part of the Project Highway due to failure of the Contractor, <b>the Contractor shall pay damages to the Authority at double the above rate, without prejudice the rights of the Authority under this Agreement including Termination thereof.</b></p>	<p>Bidder requests that the said provision of lane closure should not be made applicable in the event of any delay in re-opening of the lane for the reason beyond the responsibility &amp; control of the Bidder.</p>	As per RFP
64	14.7 - Authority's right to take remedial measures	<p>"In the event the Contractor does not maintain and/or repair the Project Highway or any part thereof in conformity with the Maintenance Requirements, the Maintenance Manual or the Maintenance Programme, as the case may be, and fails to commence remedial works within 15 (fifteen) days of receipt of the Maintenance Inspection Report under Clause 15.2 or a notice in this behalf from the Authority or the Authority's Engineer, as the case may</p>	<p>Bidder requests the Authority to modify the Clause 14.7 as follows:</p> <p>"In the event the Contractor does not maintain and/or repair the Project or any part thereof in conformity with the Maintenance Requirements, the Maintenance Manual or the Maintenance Programme, as the case may be, and fails to commence remedial works or <b>have established such reasons for not</b></p>	As per RFP




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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghatl (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHA\_14379\_1]

	<p>65 15.2 (iv) - Inspection and payments</p>	<p>be, the Authority shall, without prejudice to its rights under this Agreement including Termination thereof, be entitled to undertake such remedial measures at the cost of the Contractor, and to recover its cost from the Contractor. In addition to recovery of the aforesaid cost, a sum equal to 20% (twenty per cent) of such cost shall be paid by the Contractor to the Authority as Damages."</p> <p>"Any deduction made on account of non-compliance will not be paid subsequently even after establishing the compliance thereof. Such deductions will continue to be made every month until the compliance is procured."</p>	<p>being able to commence remedial work within 15 (fifteen) days but not later than 30 (Thirty) days of receipt of the Maintenance Inspection Report under Clause 15.2 or a notice in this behalf from the Authority or the Authority's Engineer, as the case may be, the Authority shall, without prejudice to its rights under this Agreement including Termination thereof, be entitled to undertake such remedial measures at the cost of the Contractor, and to recover its cost from the Contractor. In addition to recovery of the aforesaid cost, a sum equal to 10% (ten per cent) of such cost shall be paid by the Contractor to the Authority as Damages." Please confirm.</p> <p>The Bidder requests the Authority to modify the Sub-Clauses as follows:</p> <p>"Any deduction made on account of non-compliance will not be paid subsequently provided the Contractor establish the compliance thereof within 30 days of such deduction with valid reasons for delay in compliance and agreed by the Authority's Engineer. Such deductions will continue to be made every month until the compliance is procured."</p>	<p>As per RFP</p>
<p>66</p>	<p>17.1 (i)- Defects Liability Period</p>	<p>The Contractor shall be responsible for all the Defects and deficiencies, except usual wear and tear in the Project Highway or any Section thereof, till the expiry of a period of commencing from the date of Completion Certificate (the "Defects Liability Period") as specified below:</p>	<p>Bidder requests to reduce the Defects Liability Period to 2 years from the date of Completion period.</p>	<p>As per RFP</p>



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		<p>(a) 5 (five) years from the date of completion in case of a road being constructed with flexible pavement;</p> <p>(b) 10 (ten) years from the date of completion in case of road being constructed with rigid pavement;</p> <p>(c) 10 (ten) years from the date of completion in case of road being constructed with flexible pavement using perpetual design;</p> <p>(d) 10 (ten) years from the date of completion in case of all stand-alone structures, e.g. Major Bridges/ and Tunnels;</p> <p>(e) 10 (ten) years from the date of completion for the stretches where new technology/ material has been/ is proposed to be used.</p>		
67	17.4 - Contractor's failure to rectify Defects	<p>* If the Contractor fails to repair or rectify such Defect or deficiency within the period specified in Clause 17.2, the Authority shall be entitled to get the same repaired, rectified or remedied at the Contractor's cost to make the Project Highway conform to the Specifications and Standards and the provisions of this Agreement. All costs consequent thereon shall, after due consultation with the Authority and the Contractor, be determined by the Authority's Engineer. The cost so determined and an amount equal to 20% (twenty percent) of the cost as Damages shall be recoverable by the Authority from the Contractor and may be deducted by the</p>	<p>The Bidder requests the Authority to modify the Clause 17.4 as follows:</p> <p>"If the Contractor fails to repair or rectify such Defect or deficiency within the period specified in Clause 17.2, or have established such reasons for not being able to commence defect rectification in 15 days but not later than 30 days which is agreed by the Authority's Engineer, the Authority shall be entitled to get the same repaired, rectified or remedied at the Contractor's cost so as to make the Project conform to the Specifications and Standards and the provisions of this Agreement. All costs consequent thereon shall, after</p>	As per RFP



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 <p>68</p>	<p>18.1(ii) Appointment of the Authority's Engineer</p>	<p>Authority from any monies due to the Contractor."</p> <p>"The Authority's Engineer should be appointed within 10 days from the date of this Agreement or before declaration of Appointed Date, whichever is earlier. The Authority shall notify the appointment or replacement of the Authority's Engineer to the Contractor."</p>	<p>due consultation with the Authority and the Contractor, be determined by the Authority's Engineer. The cost so determined and an amount equal to 10% (ten percent) of the cost as Damages shall be recoverable by the Authority from the Contractor and may be deducted by the Authority from any monies due to the Contractor."</p> <p>Bidder understands that Appointment of the Authority's Engineer will be made before the Appointed Date and the Contractor shall be entitled for additional time &amp; cost for delay in Appointment of the Authority's Engineer.</p>	<p>As per RFP</p>
<p>69</p>	<p>19.2(i) - Advance Payment</p>	<p>The Authority shall make an interest-bearing advance payment (the "Advance Payment") @ "Bank Rate + 3%", equal to 10 % (ten percent) of the Contract Price, exclusively for mobilisation expenses. The Advance Payment for mobilization expenses shall be made in two instalments each equal to 5% (five percent) of the Contract Price. The second 5% (five percent) mobilization advance would be released after submission of utilization certificate by the Contractor for the first 5% (five per cent) advance already released earlier.</p>	<p>Bidder requests to make advance payment an interest free advance. Please confirm.</p>	<p>As per RFP</p>
<p>70</p>	<p>19.2 (iii)- Advance Payment</p>	<p>The Contractor may apply to the Authority for the first instalment of the Advance Payment at any time after the Appointed Date, along with an irrevocable and unconditional guarantee from a Bank for an amount equivalent to 110% (one hundred</p>	<p>If Authority will make interest bearing advance payment, Bidder requests to modify the Clause 19.2.2 as follows:</p> <p>"The Contractor may apply to the Authority for the first instalment of the</p>	<p>As per RFP</p>

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		<p>and ten per cent) of such instalment substantially in the form provided at Annex-III of Schedule-G, to remain effective till the complete and full repayment thereof.</p>	<p>Advance Payment at any time after the Appointed Date, along with an irrevocable and unconditional guarantee from a Bank for an amount equivalent to 100% (one hundred per cent) of such instalment, substantially in the form provided at Annex-III of Schedule-G, to remain effective till the complete and full repayment thereof.."</p> <p>The Bidder also requests to modify the Clause 19.2(iv) in line with the Clause 19.2(iii)</p>	
71	19.2(vii) - Advance Payment	<p>"If the Advance Payment has not been fully repaid prior to Termination under Clause 21.7 or Article 23, as the case may be, the whole of the balance then outstanding shall immediately become due and payable by the Contractor to the Authority Without prejudice to the provisions of Clause 19.2 (vi), in the event of Termination for Contractor Default, the Advance Payment shall be deemed to carry interest at @ <b>'Bank Rate +5%'</b> per annum from the date of Advance Payment to the date of recovery by encashment of the Bank Guarantee for the Advance Payment. For the avoidance of doubt, the aforesaid interest shall be payable on each instalment of the Advance Payment, regardless of whether the instalment or any part thereof has been repaid to the Authority prior to Termination."</p>	<p>Bidder request that interest shall be levied only on part of the Advance Payment balance to be re-paid at the time of Termination. Please confirm.</p>	As per RFP
72	19.7(iv) - Payment for Maintenance of the Project Works	<p>The Authority shall pay to the Contractor every quarter any amount due under any IPC under this Clause 19.7. The payment shall be made no later than 30 (thirty) days</p>	<p>Bidder requests release of maintenance payment on monthly basis in line with Clause 19.4 and 19.5 to maintain the</p>	As per RFP



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		from the date of submission of the last IPC for the relevant quarter.	steady cash flow for carrying out Maintenance Works.	
73	19.9(i) - Time of payment and interest	<p>.....</p> <p>(a) payment shall be made no later than 30 (thirty) days from the date of submission of the Stage Payment Statement by the Contractor to the Authority's Engineer for certification in accordance with the provisions of Clause 19.4 for an IPC, provided that, in the event the IPC is not issued by the Authority's Engineer within the aforesaid period of 30 (thirty) days, the Authority shall pay the amount shown in the Contractor's Stage Payment Statement and any discrepancy therein shall be added to, or deducted from, the next payment certificate issued to the Contractor; and</p> <p>(b) .....</p>	<p>Bidder understands that, period of 30 days mentioned under Clause 19.9(i) (a) for releasing payment is specifically with respect to the payment of balance 10% of the Stage Payment Works under Clause 19.5 (II).</p>	Yes
74	19.10 (iv) (d) - Price adjustment for the Works	"A <sub>1</sub> = The WPI for construction machinery for the month three months prior to the month to which the IPC relates."	As the base year of All-India Wholesale Price Index (WPI) has been revised from 2004-05 to 2011-12 by the Office of Economic Advisor (OEA), Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, construction machinery is no more the part of update WPI. Please clarify which item to be considered in substitution.	Shall be read as. "A <sub>1</sub> = The WPI for "Manufacture of machinery for mining, quarrying and construction" for the month three months prior to the month to which the IPC relates"
75	19.10(iv) (d) - Price adjustment for the Works	"LO = The consumer price index for industrial workers for the circle Gurugram in the State of Haryana, published by Labour Bureau, Ministry of Labour, Government of India, (hereinafter called "CPI") for the month of the Base Date.	<p>Bidder requests to modify this clause as follows:</p> <p>"LO = Minimum rates of Wages published by the Chief Labour Commissioner, Ministry of Labour &amp; Employment, Govt. of India or Labour Commissioner of State, whichever</p>	As per RFP



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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghafi (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Parityojana in the State of Haryana [Tender Id: 2018\_NHAJ\_14379\_1]

		<p><i>LI = The CPI for the month three months prior to the month to which the IPC relates."</i></p>	<p><i>higher, for the month of the Base Date.</i></p> <p><i>LI = Minimum rates of Wages published by the Chief Labour Commissioner, Ministry of Labour &amp; Employment, Govt. of India or Labour Commissioner of State, whichever higher, for the month to which the IPC relates."</i></p>	
	<p>77(iii) - Change in</p>	<p><i>"The Authority's Engineer shall, within 15 (fifteen) days from the date of receipt of the notice from the Contractor or the Authority, determine any addition or reduction to the Contract Price, as the case may be, due to the Change in Law."</i></p>	<p>The Bidder understands that selected bidder shall be compensated at actuals in terms of both time and related costs in case of such eventuality hampering the scheduled project completion date or any extension thereof. Please confirm.</p>	<p>As per RFP</p>
<p>77</p>	<p>21.2 - Non-Political Event</p>	<p><i>".....</i>  <i>(a).....</i>  <i>(b) strikes or boycotts (other than those involving the Contractor, Sub contractors or their respective employees/representatives, or attributable to any act or omission of any of them) interrupting supplies and services to the Project Highway for a continuous period of 24 (twenty-four) hours and an aggregate period exceeding 10 (ten) days in an Accounting Year, and not being an Indirect Political Event set forth in Clause 21.3;</i>  <i>(c) .....</i>  <i>(d) any judgment or order of any court of competent jurisdiction or statutory authority made against the Contractor in any proceedings for reasons other than (i) failure of the Contractor to comply with any Applicable Law or Applicable Permit, or (ii) on account of breach of any Applicable Law or Applicable Permit or of any contract, or</i></p>	<p>Bidder requests to remove Clauses 21.2 (b) &amp; (d) from the list of Non Political Events and instead make part of Indirect Political Events under Sub-Clause 21.3. Please confirm.</p>	<p>As per RFP</p>



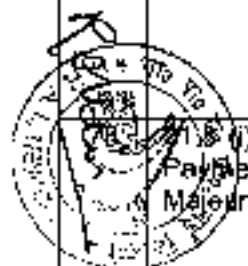
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		(iii) enforcement of this Agreement, or (iv) exercise of any of its rights under this Agreement by the Authority; (e)..... (f).....		
	78 (i) - Termination Payment for Force Majeure Event	"In the event of this Agreement being terminated on account of a Non-Political Event, the Termination Payment shall be an amount equal to the sum payable under Clause 23.5 ....."	Bidder requests to compensate the Contractor for losses due to idling/retention of resources on the Site during such period of Force Majeure causing Termination as Termination shall occur only upon the occurrence of such event for a period of 60 days or more within a continuous period of 120 days causing idling/retention of selected bidder's resources for such period. Please confirm the same.	As per RFP
79	21 8 (ii) - Termination Payment for Force Majeure Event	"If Termination is on account of an Indirect Political Event, the Termination Payment shall include: (a) any sums due and payable under Clause 23.5; and (b) the reasonable cost, as determined by the Authority's Engineer, of the Plant and Materials procured by the Contractor and transferred to the Authority for use in Construction or Maintenance, only if such Plant and Materials are in conformity with the Specifications and Standards;....."		
80	21 8 (iii) - Termination Payment for Force Majeure Event	"If Termination is on account of a Political Event, the Authority shall make a Termination Payment to the Contractor in an amount that would be payable under Clause 23.6.(ii) as if it were an Authority Default."		
81	23.5 (i) - Valuation of Unpaid Works	"Within a period of 45 (forty-five) days after Termination under Clause 23.1, 23.2 or 23.3, as the case may be, has taken effect, the Authority's Engineer shall proceed in accordance with Clause 18.5 to determine as follows the valuation of unpaid Works (the "Valuation of Unpaid Works");		

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		<p>(a) value of the completed stage of the Works, less payments already made;</p> <p>(b) reasonable value of the partially completed stages of works as on the date of Termination, only if such works conform with the Specifications and Standards; and</p> <p>(c) value of Maintenance, if any, for completed months, less payments already made, .....</p>		
<p>735</p>	<p>82 23.1 (i) - Termination for Contractor Default</p>	<p>.....</p> <p>(c) the Contractor does not achieve the latest outstanding Project Milestone due in accordance with the provisions of Schedule-J, subject to any Time Extension, and continues to be in default for 45 (forty five) days;</p> <p>(d).....</p> <p>(e).....</p> <p>(f) the Project Completion Date does not occur within the period specified in Schedule-J for the Scheduled Completion Date, or any extension thereof;</p> <p>.....</p>	<p>Bidder requests to modify this clause as follows:</p> <p>"(c) the Contractor does not achieve the latest outstanding Project Milestone due in accordance with the provisions of Schedule-J, subject to any Time Extension, and continues to be in default for 45 (forty five) days for reasons solely attributable to the Contractor;</p> <p>(f) the Project Completion Date does not occur within the period specified in Schedule-J for the Scheduled Completion Date, or any extension thereof, for reasons solely attributable to the Contractor.</p>	<p>As per RFP</p>
	<p>83 23.2 (i) - Termination for Authority Default</p>	<p>"In the event that any of the defaults specified below shall have occurred, and the Authority fails to cure such default within a Cure Period of 90 (ninety) days or such longer period as has been expressly provided in this Agreement, the Authority shall be deemed to be in default of this Agreement (the "Authority Default") unless the default has occurred as a result of any breach of this Agreement by the Contractor or due to Force Majeure. The defaults referred to herein shall include:</p>	<p>Bidder request the Authority to include the following provision:</p> <p>"(i) the Authority fails to provide, within a period of 365 (three hundred and sixty five days) from the Appointed Date, the Right of Way and other statutory clearances required for construction of the Project: "</p>	<p>As per RFP</p>



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<p>736</p> 	<p>84 26.2 Conciliation</p>	<p>..... but before resorting to such arbitration, the parties agree to explore conciliation by the Conciliation Committees of Independent Experts set up by the Authority in accordance with the procedure decided by the panel of such experts and notified by the Authority on its website including its subsequent amendments. In the event of the conciliation proceedings being successful, the parties to the dispute would sign the written settlement agreement and the conciliators would authenticate the same. Such settlement agreement would then be binding on the parties in terms of Section 73 of the Arbitration Act. In case of failure of the conciliation process even at the level of the Conciliation Committee, either party may refer the Dispute to arbitration in accordance with the provisions of Clause 26.3.</p>	<p>The said Clause does not provide a timeline for completion of conciliation before Independent Experts. Therefore, the Bidder requests to fix a timeline of 45 days for completion of conciliation before Independent Experts.</p> <p>Alternatively, the Bidder proposes to undertake the conciliation before Independent Experts in parallel to Arbitration Proceedings. In the event of such conciliation proceedings being successful, and signing of settlement agreement in terms of Section 73 of Arbitration Act, the parties would thereafter mutually close the Arbitration Proceedings. Please confirm.</p>	<p>As per RFP</p>
	<p>85 26.3 (ii) – Arbitration</p>	<p>The Parties expressly agree as under in case of arbitration of disputes:                  (a) .....                  (b) .....                  (c).....                  .....</p>	<p>Bidder requests the Employer to replace the following provisions of the said Clause:                  (a) Any dispute, irrespective of any claim value which has not been agreed upon/reached settlement by the parties as per the provisions of Conciliation will be referred to Arbitral Tribunal                  (b) Such Arbitral Tribunal will consist of 03 Arbitrators from the panel of SAROD.                  (c) The Dispute shall be settled in accordance with the rules of Arbitration</p>	<p>As per RFP</p>

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86	26.3 (ii) (f) – Arbitration	Neither Party shall be entitled for any pre-reference or pendent lite interest, i.e., interest from date of cause of action till date of Award by Arbitral Tribunal. The parties specifically agree that claim for any such interest shall not be considered and shall be void. The Arbitrator or Arbitral Tribunal shall have no power/ jurisdiction to award pre-reference or pendent lite interest in case of disputes.	of the Society for Affordable Redressal of Disputes (SAROD). Bidder requests to delete such unilateral clause.	As per RFP
87	Cl. 1 (iii). Schedule E Maintenance requirements	[Specify all the relevant documents]	Bidder requests to clarify as to which relevant documents the Authority wants to specify? Please confirm.	The words "[Specify all the relevant documents]" stands deleted
88	Schedule F - 1 - Applicable Permits	The Contractor shall obtain, as required under the Applicable Laws, the following Applicable Permits. (a) Permission of the State Government for extraction of boulders from quarry; (i) Permission of Village Panchayats and State Government for borrow earth;	Bidder requests the Authority to procure the environmental clearance required to be obtained before commencing extraction of minor minerals as it is in the better position to do so or else bidder shall be compensated in terms of both time and costs in case of delay in obtaining the same beyond reasonable time. Please confirm	Procurement of material for the construction of the project highway is the obligation and responsibility of the Contractor.
89	Schedule F - 1 - Applicable Permits	The Contractor shall obtain, as required under the Applicable Laws, the following Applicable Permits: (a)..... To (i).....	Bidder understands that any delay and impediment on account of government instrumentalities/ authorities in procuring various permits and approvals shall entitle the Contractor for appropriate Time Extension and related costs, if any. Please confirm.	Shall be dealt as per the relevant provisions of the Contractor related to delays in fulfilment of obligations of the Contractor
90	Annex- II, Schedule – G Point B	In accordance with Clause 19.2 of the Agreement, the Authority shall make to the Contractor an interest bearing @Bank Rate + 3% advance payment (herein after called "Advance Payment") equal to 10%	Bidder requests to make advance payment an interest free advance Please confirm.	As per RFP





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		<p>(ten per cent) of the Contract Price; and that the Advance Payment shall be made in two installments subject to the Contractor furnishing an irrevocable and unconditional guarantee by a scheduled bank for an amount equivalent to 110% (one hundred and ten percent) of such installment to remain effective till the complete and full repayment of the installment of the Advance Payment as security for compliance with its obligations in accordance with the Agreement.</p>		
<p>738</p>	<p>91 Schedule M 1.2 - Payment reduction for non-compliance with the Maintenance Requirements</p>	<p><i>"Any deduction made on account of non-compliance with the Maintenance Requirements shall not be paid even after compliance subsequently. The deductions shall continue to be made every month until compliance is done."</i></p>	<p>Bidder requests to modify the clause as follows: <i>"Any deduction made on account of non-compliance with the Maintenance Requirements shall not be paid subsequently provided the Contractor establish the compliance thereof within 30 days of such deduction with valid reasons for delay in compliance and agreed by the Authority's Engineer."</i></p>	<p>As per RFP</p>
	<p>92 Schedule N - 4 (xviii) - Terms of Reference for Authority's Engineer</p>	<p><i>"The Authority's Engineer shall carry out, or cause to be carried out, all the Tests specified in Schedule-K and issue a Completion Certificate or Provisional Certificate, as the case may be....."</i></p>	<p>1. The Bidder understands that Authority's Engineer shall be the authorized person to issue Provisional/ Completion Certificate and shall issue the same as per the terms of this Agreement. Please confirm.</p>	<p>As per RFP</p>
	<p>93 Schedule N - 6 - Terms of Reference for Authority's Engineer</p>	<p><i>6.1 The Authority's Engineer shall determine the costs, and/or their reasonableness, that are required to be determined by it under the Agreement. 6.2 The Authority's Engineer shall determine the period of Time Extension that is required to be determined by it under the Agreement."</i></p>	<p>2 Further, bidder understands that any determination of Time Extension and/ or additional costs shall be carried out within reasonable time and shall not be delayed beyond 60 days from the date of Contractor's notice in this regard. Please confirm.</p>	

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			<p>3. The Bidder understands that the Authority's Engineer shall forward all the correspondences exchanged between the Authority's Engineer &amp; Authority related to Project to the Contractor Please confirm.</p>	
	<p>Schedule - P</p>	<p>The insurance under paragraphs 1 to 3 above shall be in the joint names of the Contractor and the Authority.</p>	<p>The bidder requests to modify the Clause as follows: "The insurance under paragraphs 1 to 3 except the resources mobilized by the Contractor shall be in the joint names of the Contractor and the Authority." Please confirm.</p>	<p>As per RFP</p>
<p>95</p>	<p>General</p>	<p>Enquiry</p>	<p>Bidder requests the Authority to provide the current status of ROW possesses by the Authority and status of balance ROW (in 3D,3G,3H)</p>	<ul style="list-style-type: none"> <li>• 3A notification including interchanges, wayside amenities and toll plaza has been published.</li> <li>• 3D for the main carriageway of the project highway has been notified and determination of award under section 3G is under progress.</li> <li>• For the balance land required for missing survey numbers, interchanges, wayside amenities and toll plaza, publication of 3D notification is under progress expected to be published by 30.12.2018</li> </ul>
<p>96</p>	<p>Notice Inviting Bid Dated 17.09.2018</p>	<p>..... The National Highways Authority of India represented by its Chairman now invites bids from eligible contractors for the following project. .... Maintenance Period – 10 years</p>	<p>Maintenance Period of 10 years is extremely high; Bidder requests the Authority to reduce the Maintenance Period to 2 years. Please confirm.</p>	<p>As per RFP</p>
	<p>DISCLAIMER</p>	<p>..... ..... The assumptions, assessments, statements and information</p>	<p>As it is not possible for any prudent Bidder to check the accuracy, adequacy, correctness, reliability in such a short</p>	<p>As per RFP</p>

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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-149N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHAJ\_14379\_1]




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98	RFP Cl. 1.1.2 Section – 1; Introduction - Background	<p>contained in the Bidding Documents, especially the [Feasibility Report], may not be complete, accurate, adequate or correct. Each Bidder should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements and information contained in this RFP and obtain independent advice from appropriate sources.</p> <p>.....</p> <p><i>..... The scope of work will broadly include Construction of Eight Lane divided carriageway ..... during the Defect Liability Period, which shall be 10 years<sup>1</sup>.</i></p> <p><i>..... The categorization whether the project highway is constructed with flexible pavement shall depend on the basis of major length of the project highway to be covered with that type of pavement.</i></p>	<p>time period; Bidder requests the Authority to delete such unilateral provision wherever available under the RFP or under the EPC Agreement.</p>	
99	RFP Instructions to Bidders Cl. 2.1.3	<p><i>..... Further, the statements and explanations contained in this RFP are intended to provide a better understanding to the Bidders about the subject matter of this RFP and should not be construed or interpreted as limiting in any way or manner the scope of services and obligations of the Contractor set forth in the Agreement or the Authority's rights to amend, alter, change, supplement or clarify the scope of work, the work to be awarded pursuant to this RFP or the terms thereof or herein contained. Consequently, any omissions, conflicts or</i></p>	<p>Defect Liability Period of 10 years is extremely high; Bidder requests the Authority to reduce the Defect Liability Period to 2 years. Please confirm.</p>	As per RFP
		<p><i>..... Further, the statements and explanations contained in this RFP are intended to provide a better understanding to the Bidders about the subject matter of this RFP and should not be construed or interpreted as limiting in any way or manner the scope of services and obligations of the Contractor set forth in the Agreement or the Authority's rights to amend, alter, change, supplement or clarify the scope of work, the work to be awarded pursuant to this RFP or the terms thereof or herein contained. Consequently, any omissions, conflicts or</i></p>	<p>As it is not possible for any prudent Bidder to verify such vast documents provided by the Authority and also the condition of the Site in such short period of time, Bidder requests to delete such unilateral provision, wherever available under the RFP or under the EPC Agreement.</p>	As per RFP



Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender Id- 2018\_NHA\_14379\_1]

		<p>contradictions in the Bidding Documents including this RFP are to be noted, interpreted and applied appropriately to give effect to this intent, and no claims on that account shall be entertained by the Authority</p>		
<p>100</p>  <p>741</p>	<p>RFP Instructions to Bidders Cl. 2.1.14</p>	<p>..... The Bidder, including any Joint Venture Member, shall be deemed to be a non-performing party (not applicable to the project whose contract is terminated by the Authority) if it attracts any or more of the following parameters:</p> <p>(i) Fails to complete or has missed more than two milestones in already awarded two or more projects, even after lapse of 6 months from the scheduled completion date, unless Extension of Time has been allowed on the recommendations of the Independent Engineer due to Authority's default;</p> <p>(ii) Fails to complete a project, as per revised schedule, for which One Time Fund Infusion (OTFI) has been sanctioned by the Authority;</p> <p>(iii) .....</p> <p>(iv) Punch List Items in respect of any project are pending due to Bidder's default</p>	<p>Bidder requests to delete such unilateral provision, wherever available under the RFP or under the EPC Agreement. Notwithstanding the above, the Bidder requests the following modifications in the parameters of non-performing party:</p> <p>(i) Fails to complete or has missed more than two milestones in already awarded two or more projects, even after lapse of 6 months from the scheduled completion date, unless Extension of Time has been allowed on the recommendations of the Independent Engineer due to Authority's default; or the Bidder's/ contractor's Extension of Time applications are pending with the Authority's Engineer or the Authority or have been referred to the dispute resolution mechanism which has not yet reached finality.</p> <p>(i) Fails to complete a project, as per revised schedule, for which One Time Fund Infusion (OTFI) has been sanctioned by the Authority; unless such failure to complete a project is on account of the reason beyond the control &amp; responsibility of the Bidder.</p> <p>(v) Punch List Items in respect of any project are pending solely due to Bidder's default in two or more Projects</p>	<p>As per RFP</p>

Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Parlyojana in the State of Haryana [Tender id: 2018\_NHA1\_14379\_1]



in two or more Projects even after lapse of the prescribed time for completion of such items;

(v) Fails to fulfil its obligations to maintain a highway in a satisfactory condition inspite of two rectification notices issued in this behalf,

(vi) Fails to attend to Non Conformity Reports (NCRs) Issued by the Independent/Authority's Engineer on the designs/ works constructed by the Bidder pending for more than one year in two or more projects.

(vii).....

(viii) Damages/ Penalties recommended by the Independent/ Authority's Engineer on the Bidder during O&M period and the remedial works are not taken up in two or more projects.

(ix) Fails to achieve financial closure in two or more projects within the given or extended period (which shall not be more than six months in any case).

.....

in last Six months even after lapse of the prescribed time for completion of such items;

(v) Fails to fulfil its obligations to maintain a highway in a satisfactory condition in spite of two rectification notices issued in this behalf; **unless such failure to maintain a highway is on account of the reason beyond the control & responsibility of the Bidder.**

(vi) Fails to attend to Non Conformity Reports (NCRs) issued by the Independent/Authority's Engineer on the designs/ works constructed by the Bidder pending for more than one year in two or more projects. **Unless such failure to attend NCRs is on account of the reason beyond the control & responsibility of the Bidder.**



(viii) Damages/ Penalties levied by the Authority on the Bidder during O&M period solely on account of Bidder's default, **unless levying of such Damages/Penalties have been referred to dispute resolution mechanism which has not yet reached finality and the remedial works are not taken up for more than 6(six) months period in two or more projects.**

(ix) Fails to achieve financial closure in two or more projects **in last six months** within the given or extended period (which shall not be more than six months in any case); **unless such failure is on account of the reason beyond the control & responsibility of the Bidder.**

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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghatl (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHAJ\_14379\_1]

<p>101</p>  <p style="writing-mode: vertical-rl; transform: rotate(180deg);">743</p> 	<p>RFP Instructions to Bidders Cl 2.5.2</p>	<p><i>It shall be deemed that by submitting a BID, the Bidder has:</i></p> <p><i>(a) made a complete and careful examination of the Bidding Documents, Schedules annexed to EPC agreement Document;</i></p> <p><i>(b) received all relevant information requested from the Authority;</i></p> <p><i>(c) accepted the risk of inadequacy, error or mistake in the information provided in the Bidding Documents or furnished by or on behalf of the Authority relating to any of the matters referred to in Clause 2.5.1 above. No claim shall be admissible at any stage on this account.</i></p> <p><i>(d) satisfied itself about all matters, things and information including matters referred to in Clause 2.5.1 hereinabove necessary and required for submitting an informed BID, execution of the Project in accordance with the Bidding Documents and performance of all of its obligations thereunder;</i></p> <p><i>(e) acknowledged and agreed that inadequacy, lack of completeness or incorrectness of information provided in the Bidding Documents or ignorance of any of the matters referred to in Clause 2.5.1 hereinabove shall not be a basis for any claim for compensation, damages, extension of time for performance of its obligations, loss of profits etc. from the Authority, or a ground for termination of the Agreement by the Contractor;</i></p> <p><i>(f) acknowledged that it does not have a Conflict of Interest; and</i></p>	<p>As it is not possible for any prudent Bidder to verify such vast documents provided by the Authority and also the condition of the Site in such short period of time, Bidder requests to delete such unilateral provision wherever available under the RFP or under the EPC Agreement.</p>	<p>As per RFP</p>
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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHAJ\_14379\_1]

		(g) agreed to be bound by the undertakings provided by it under and in terms hereof.		
102	APPENDIX JA LETTER COMPRISING THE TECHNICAL BID	..... 19. If We have studied all the Bidding Documents carefully and also surveyed the [project highway and the traffic]. We understand that except to the extent as expressly set for thin the Agreement, we shall have no claim, right or title arising out of any documents or information provided to us by the Authority or in respect of any matter arising out of or relating to the Bidding Process including the award of Agreement.	As It is not possible for any prudent Bidder to verify such vast documents provided by the Authority and also the condition of the Site in such short period of time, Bidder requests to delete such unilateral provision wherever available under the RFP or under the EPC Agreement.	
103	All	RFP 1.1.2 Sub cl 14.1.(ii) of Article 14 Draft EPC Agreement The selected Bidder (the "Contractor") shall be responsible for designing, engineering, procurement and construction of the Project under and in accordance with the provisions of an engineering, procurement and construction contract (the "EPC Contract") to be entered into between the Contractor and the Authority in the form provided by the Authority as part of the Bidding Documents pursuant hereto. The Contractor shall also be responsible for the maintenance of the project during the Defect Liability Period.	Please clarify, what all comes under Scope of work of the contractor, does procuring electricity connection and paying bills for electricity during maintenance period will be borne by the Contractor or Authority will take the connection in their name at its own and pay the bills of the electricity during Maintenance Period directly to Electricity Department.	Please refer Article 2 in this regard. However, as already clarified in the 1 <sup>st</sup> pre-bid meeting, deposit with electricity department for procuring electricity connection and paying bills for electricity during maintenance period shall be borne by the Authority.
104	All	Cl.1.2.3 of RFP The complete Bidding Documents including the draft Agreement for the Project is enclosed for the Bidders. The Feasibility Report / Detailed Project Report prepared by the Authority/ consultants of the Authority (the "Feasibility Report/Detailed Project Report") is also	What shall be done when there is a variation between the Feasibility report provided / Survey Done at the time of Bidding and the actual site provided after Appointed date.	There is no variation in the coordinates of the project highway indicated in the Schedules and RoW acquired by the Authority. Development of the project highway shall be within the acquired RoW as per the requirement specified in



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**Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHA\_14379\_1]**

		<p>enclosed. The Feasibility Report / Detailed Project Report of the Project is being provided only as a preliminary reference document by way of assistance to the Bidders who are expected to carry out their own surveys, investigations and other detailed examination of the Project before submitting their Bids. Nothing contained in the Feasibility Report/Detailed Project Report shall be binding on the Authority nor confer any right on the Bidders, and the Authority shall have no liability whatsoever in relation to or arising out of any or all contents of the Feasibility Report/Detailed Project Report. The aforesaid documents and any addenda issued subsequent to this RFP Document, will be deemed to form part of the Bidding Documents.</p>		<p>Schedules to the Draft Contract Agreement,</p>
<p>105</p>	<p>AI</p>	<p>Cl 7.5 (i) Draft EPC Agreement 7.5 (i) From every payment for Works due to the Contractor in accordance with the provisions of Clause 19.5, the Authority shall deduct 6% (six per cent) thereof as guarantee money for performance of the obligations of the Contractor during the Construction Period (the "Retention Money") subject to the condition that the maximum amount of Retention Money shall not exceed 5% (five per cent) of the Contract Price.</p>	<p>It is requested that if the contractor furnishes an irrevocable and unconditional bank guarantee upfront in lieu of, then the deduction pursuant to this Clause 7.5.(i) shall be limited to cumulative amount not covered by the aforesaid bank guarantee(s) at the rate of 6% (six percent) from every payment for Works due to the contractor.</p>	<p>No bank guarantee against the retention money is allowed in the Contract Agreement</p>
<p>106</p>	<p>AI</p>	<p>Cl. 7.5.(i) and (ii) Draft EPC Agreement 7.5 (ii) Upon occurrence of a Contractor's Default, the Authority shall, without prejudice to its other rights and remedies hereunder or in law, be entitled to appropriate the relevant amounts from the</p>	<p>To maintain liquidity and cash flow the Contractor should be given option for (a) Submission of Retention Money Bank Guarantee upfront, so that no deduction is made</p>	<p>No bank guarantee against the retention money is allowed in the Contract Agreement</p>



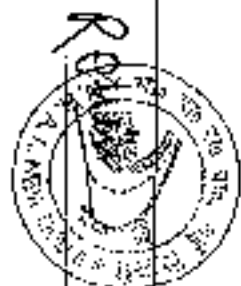
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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Parlyojana in the State of Haryana [Tender id: 2018\_NHA\_14379\_1]

	<p>Retention Money as Damages for such Contractor's Default. 7.5 (iii) Within 15 (fifteen) days of the date of Issue of the Completion Certificate, the Authority shall refund the balance of Retention Money remaining with the Authority after adjusting the amounts appropriated under the provisions of Clause 7.5 (ii).</p>	<p>(b) Retention money should be release against bank guarantee provided by the contractor at any time after deducted retention amount reaches to certain limit</p>	
	<p><b>Cl. 8.4 of Draft EPC Agreement Site to be free from Encumbrances</b> Subject to the provisions of Clause 8.2, the Site shall be Subject to the provisions of Clause 8.2, the Site shall be made available by the Authority to the Contractor pursuant hereto free from all Encumbrances and occupations and without the Contractor being required to make any payment to the Authority because of any costs, compensation, expenses and charges for the acquisition and use of such Site for the duration of the Project Completion Schedule. For the avoidance of doubt, it is agreed that the existing rights of way, easements, privileges, liberties and appurtenances to the Site shall not be deemed to be Encumbrances. It is further agreed that, unless otherwise specified in this Agreement, the Contractor accepts and undertakes to bear any and all risks arising out of the inadequacy or physical condition of the Site.</p>	<p>The site to be provided by the authority before the Appointed date should be free from all Encumbrances as well as free from all hindrances. In this clause only Encumbrance free site is mentioned where as to start the work the site should be free from all Hindrances as well. Accordingly the clause should be amended.</p>	<p>As per RFP</p>
	<p><b>Cl 9.2 Draft EPC Agreement, Shifting of obstructing utilities</b> The Contractor shall, in accordance with Applicable Laws and with assistance of the</p>	<p>it has been experienced that the shifting work not executed as per provision of Clause 9.2 i.e. "The cost of such shifting, as per estimates prepared by the entity</p>	<p>As per RFP</p>

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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghafi (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHAJ\_14379\_1]



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109 All



Authority, undertake the work of shifting of any utility (including electric lines, water pipes, gas pipelines and telephone cables) to an appropriate location or alignment, if such utility or obstruction adversely affects the execution of Works or Maintenance of the Project Highway in accordance with this Agreement. The cost of such shifting, as per estimates prepared by the entity owning the utility and approved by the Authority, shall be reimbursed by the Authority to the Contractor. The scope of work of such shifting of Utilities shall be as indicated in Schedule-B.

In the event of any delay of such shifting on the part of the contractor, no extension of time for completion of the project and no claims, in any manner, shall be admissible on this account against the Authority.

owning the utility and approved by the Authority, shall be reimbursed by the Authority to the Contractor".

On the Other hand estimates are sanctioned by the Authority that supervision charges are deposited with entity department then Contractor execute shifting work under supervision of entity department and whole process get delayed in sanctioning and depositing supervision charges with the entity department, therefore, it would be better if entity department execute shifting work and Authority may deposit the shifting charges with entity department directly. Accordingly the clause should be amended. Also the clause should be added for damage to be paid by the Authority and time extension for delay on account of the Authority / Entity owning the Utility

Cl.10.1 (iv) Draft EPC Agreement

The Contractor shall compute, on the basis of the Drawings prepared in accordance with Clause 10.2 (iv), and provide to the Authority's Engineer, the length, area and numbers, as the case may be, in respect of the various items of work specified in Schedule-H and comprising the Scope of the Project.

The Parties expressly agree that these details shall form the basis for estimating the interim payments for the Works in accordance with the provisions of Clause 19.3. For the avoidance of doubt, the sum

We presume that the Authority Engineer is Authorized to finalized the Schedule-H based on Actual scope of work & payment against others /Misc works payment should be made proportionally with the progress of work on prorata basis.

As per amended Schedule H uploaded alongwith replies to queries raised in the 1<sup>st</sup> pre-bid meeting

Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghali (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Parlyojana in the State of Haryana [Tender Id: 2018\_NHAJ\_14379\_1]

		of payments to be computed in respect of all the items of work shall not exceed the Contract Price, as may be adjusted in accordance with the provisions of this Agreement.	
110	All	<p>Cl. 10.2.(v) Draft EPC Agreement 10.2 (v) Any cost or delay in construction arising from review/approval by the Authority's Engineer shall be borne by the Contractor.</p> <p>Article 1 of Draft EPC Agreement 1.4-Definitions "Appointed Date" means the date declared by the Authority as the project commencement date with the consent of the contractor, as per the process prescribed in Article 3 and 8 of this Agreement;</p>	<p>Request to remove such condition as consequences for delay caused by actions of one party cannot be imposed on other party.</p> <p>Appointed Date shall not be declared on (A) Onset of or during the monsoon season. (B) Until 90% Project Length free from hindrances is not available.</p>
112	All	<p>Annexure B – Clause 5.3.2 Design Traffic Amendment in Technical Schedules vide corrigendum-I dated 12.11 2018 In order to meet the intended functional requirement of respective pavement layers as well as compaction of heavy bituminous layers on main carriageway, the minimum thickness of respective pavement layers for main carriageway and connecting/service/slip road shall, however, in no case be less than as given below: <b>Main carriageway and ramps/loops/ connecting/service road for interchanges</b> <b>Pavement Composition</b> (a) Stone Matrix Asphalt (SMA) as wearing course 50mm (b) Bituminous base course 250mm</p>	<p>Please specify type of binder bitumen to be used for Stone Matrix Asphalt (SMA).</p> <p>As per MoRT&amp;I specifications.</p>

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Reply to queries raised by the bidders in the 2<sup>nd</sup> pre-bid meeting for the Project for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana [Tender id: 2018\_NHA\_14379\_1]



- (c) Non-bituminous base course 150mm  
 (d) Sub-base course 200mm  
**Cross-roads/Connecting/Service/Slip road at SVUP/LVUP/VUP/Fly-overs**  
**Pavement Composition**  
 (a) Bituminous Concrete (BC) as wearing course 40 mm  
 (b) Bituminous base course 50mm  
 (c) Non-bituminous base course 250mm  
 (d) Sub-base course 200mm

113 All

Article 14 of Draft EPC Agreement  
 14.1 (i) (c) For flexible perpetual pavement with 10 years maintenance period including structures: 0.25% of the Contract Price each for the first, second and third year, 0.5% of the Contract Price each for the fourth, fifth and sixth year. The Contractor shall provide a renewal layer over the existing carriageway in the seventh year from issue of completion certificate. The requirement for this 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 determined based on the principles defined under clause 13.2(iii). After the laying of the renewal layer in the 7th year, the Contractor shall be paid @ 0.25% of the original Contract Price each for the seventh, eighth, ninth and tenth year.

The requirement for this 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 determined based on the principles defined under clause 13.2(ii)

Please clarify that the renewal

- (a) Please confirm that type of Renewal layer to be provided will be same as mentioned B i e Stone Matrix Asphalt (SMA)
- (b) Please confirm that if renewal layer is not required as per survey and investigation the maintenance payments for 8<sup>th</sup> 9<sup>th</sup> and 10<sup>th</sup> year of maintenance will unchanged.

The requirement and specification of the renewal layer shall be as per survey and investigation of the existing pavement. This may also include providing any alternative or new technology treatment for enhancing the life of the wearing coat and arresting any damage to the bituminous base layers. There will be no change in the payments for maintenance period as defined in Clause 14.1.

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## Status of Utility- Package -II [18+500 to 47+000]

### Transmission lines of Haryana Vidyut Prasaran Nigam Ltd.

S.No.	Chainage at Centre Line of Proposed Expressway	Wattage/Power of Line	Name of Line crossing by ROW	Remarks
1	23+026	66KV D/C Line	Mandkola-Nuh(Dld Line)	Payment of demand notice amounting to RS 1.48 LACKS have been paid to HVPN. Matter for framing estimate s being with SDO / XFN T/S
2	23+249	66KV D/C Line	Mandkola-Nuh(New Line)	
3	45+390	220KV D/C Line	Rangala Rajpur-Pafwal Line	

### Transmission lines of PGCIL

S.No.	Chainage	Wattage/Power of Line	Name of Line crossing by ROW	Remarks
1	21+098	765KV,PGCIL Line	RNP-JTK	Estimate will be prepared by AGM Bhiwadi.
2	24+939	500KV, PGCIL Line	BLA-BWD	
3	26+002	66KV D/C Line,PGCIL	BWD-ARB	
4	37+698	765KV,PGCIL Line	AGR-JTK	
5	42+677	400KV,PGCIL	AGR-BWD	

### Transmission lines of Rajasthan Vidyut Prasaran Nigam Ltd.

S.No.	Chainage	Wattage/Power of Line	Name of Line crossing by ROW	Remarks
1	24+226	220Kv. RVPNL	Badapur-Jaipur line	Estimate will be prepared by SDO T/S RVPNL Anwar

### DHBVN lines (06.12.2018)

S.No.	Chainage	Wattage/Power of Line	Name of Line crossing by ROW	Remarks
1	22+150	11 KV/ LT Line	11 kv Naurangabad feeder- Ch. 22+150	Estimate gnt approved by SE(OP) Pafwal & submitted to CE Delhi drawing office to his approval.
2	22+900	11 KV/ LT Line	11 KV Chapera feeder Ch 22+900	Estimate got approved by SE(OP) Pafwal & submitted to CE Delhi drawing office to his approval
3	22+960	11 KV/ LT Line	11 KV Public health feeder Ch 22+960	Estimate got approved by SE(OP) Pafwal & submitted to CE Delhi drawing office to his approval



4	25+400	11 KV/ LT Line	11 KV Aldora feeder Ch. 25+400	Estimate got approved by SE(OP) Palwal & submitted to CE Delhi drawing office to his approval.
5	27+600	11 KV/ LT Line	11 KV Abheypur feeder Ch. 27+600	Estimate got approved by SE(OP) Palwal & submitted to CE Delhi drawing office to his approval.
6	27+7000	11 KV/ LT Line	11 KV Chalsa feeder Ch. 27+7000	Estimate got approved by SE(OP) Palwal & submitted to CE Delhi drawing office to his approval.
7	29+700	11 KV/ LT Line	11 KV Apor feeder Ch. 29+700	Estimate got approved by SE(OP) Palwal & submitted to CE Delhi drawing office to his approval.
8	34+700	11 KV/ LT Line	11 KV Ujina feeder Ch. 34+700	Estimate got approved by SE(OP) Palwal & submitted to CE Delhi drawing office to his approval.
9	43+790	11 KV/ LT Line	11 KV Badarpur feeder Ch. 43+790	Estimate got approved by SE(OP) Palwal & submitted to CE Delhi drawing office to his approval.
10	44+125	11 KV/ LT Line	11 KV Banarsi Public Health feeder Ch. 44+125	Estimate got approved by SE(OP) Palwal & submitted to CE Delhi drawing office to his approval.







NHA/BM/Delhi/Vadodara/2018/Pkg 2

Dated: 19.12.2018

Corrigendum

To  
All applicants  
Sub: Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Parlyojana in the State of Haryana - Reg.

Following amendments have been made in the RFP uploaded at Annex-A of Corrigendum dated 28.11.2018 for the subject project -

1. Following sub-clause (iv) stands added to Clause 2.2.2.2 related to Technical capacity

2.2.2.2 (iv) The technical capacity as assessed under sub-clause 2.2.2.2 (i), clause 2.2.2.2 (ii) and clause 2.2.2.2 (iii) above shall be updated to the price level of the year based on factors for the year indicated in table below

Year	Year-1	Year-2	Year-3	Year-4	Year-5
Updation factor	1.00	1.05	1.10	1.15	1.20

2. Clause 2.2.2.6 (i) stands amended and shall be read as under:

Subject to the provisions of Clause 2.2.2 the following categories of experience would qualify as Technical Capacity and eligible experience (the "Eligible Experience") in relation to eligible projects as stipulated in Clauses 2.2.2.6 (i) & (ii) (the "Eligible Projects"). In case the Bidder has experience across different categories, the experience for each category would be computed as per weight of following factors to arrive at its aggregated Eligible Experience

Category	Project / Construction experience on Eligible Projects	Factors
1	Project in highways sector that qualify under Clause 2.2.2.6 (i)	1
2	Project in core sector that qualify under Clause 2.2.2.6 (i)	0.70



Rohini  
19/12/18



3	Construction in highways sector that qualify under Clause 2.2.2.6 (ii)	1
4	Construction in core sector that qualify under Clause 2.2.2.6 (ii)	<u>0.70</u>

3. Clause 2.2.2.5 (iii) (a) and 2.2.2.5 (iii) (b) stands amended and shall be read as under:

2.2.2.5 (iii) (a) highways sector would be deemed to include highways, expressways, bridges, tunnels, metro rail and airfields; and

2.2.2.5 (iii) (b) core sector would be deemed to include civil construction cost of ports (including construction/re-construction of Jetties, etc.), power sector, commercial setups (SEZs etc.), airports, railways (construction/re-construction of railway tracks, yards for keeping containers etc.), industrial parks/estates, logistic parks, pipelines, irrigation, water supply, sewerage and real estate development

4. It has been brought to notice of the Authority that bidders are facing difficulty in updating their technical bid on the BIMS portal. Till the issues related to technical errors on the BIMS portal are sorted out, it has been decided that the bidders shall also have the option of submitting the technical bids on BIMS portal as well CPPP website of Authority i.e., [<http://tenders.gov.in>]. Bids submitted on the BIMS as well as CPPP website shall be evaluated as per the evaluation criteria defined in the RFP to check their technical responsiveness. Therefore, for reference of the bidders Annex-II and Annex-III to Appendix-IA of the RFP are inserted and are enclosed.

2) All other terms and condition will remain same.

*Rohin*  
19/12/18  
(Rohin Kumar Gupta)  
General Manager (T)  
Bharatmala



ANNEX-II  
**Technical Capacity of the Bidder<sup>®</sup>**  
(Refer to Clauses 2.2.2.2, 2.2.2.5 and 2.2.2.7 of the RFP)

Applicant type	Project Code*	Category <sup>§</sup>	Experience <sup>**</sup> (Equivalent Rs. crore) <sup>§§</sup>		Technical Experience <sup>£</sup>
			Payments received for construction of Eligible Projects in Categories 3 & 4	Value of self-construction in Eligible Projects in Categories 1 and 2	
(1)	(2)	(3)	(4)	(5)	(6)
Single entity Bidder or Lead Member including other members of the Joint Venture	a				
	b				
	c				
	d				
	e				
	f				
<b>Aggregate Technical Experience =</b>					

<sup>®</sup> Provide details of only those projects that have been undertaken by the Applicant, or its Lead member including members in case of joint venture, under its own name separately and/ or by a project company eligible under Clause 2.2.2.6(i)(b). In case of Categories 1 and 2, include only those projects which have an estimated capital cost exceeding the amount specified in Clause 2.2.2.6(i)(c) and for Categories 3 and 4, include only those projects where the payments received exceed the amount specified in Clause 2.2.2.6(ii). In case the Bid Due Date falls within 3 (three) months of the close of the latest financial year, refer to Clause 2.1.13.

\* Refer Annex-IV of this Appendix-I. Add more rows if necessary.

<sup>§</sup> Refer Clause 2.2.2.5(i)

<sup>\*\*</sup> Construction shall not include supply of goods or equipment except when such goods or equipment form part of a turn-key construction contract/ EPC contract for the project. In no case shall the cost of maintenance and repair, operation of Highways and land be included while computing the Experience Score of an Eligible Project.

<sup>§§</sup> For conversion of US Dollars to Rupees, the rate of conversion shall be Rupees <sup>\*\*</sup> (\*\*) to a US Dollar.

<sup>£</sup> In the case of an Eligible Project situated in an OECD country, the Experience Score so arrived at shall be further multiplied by 0.5, in accordance with the provisions of Clause 2.2.2.5(ii) and the product thereof shall be the Experience Score for such Eligible Projects

NOTE: In case of a Joint Venture, information in Annex-II and Annex-IV of Appendix-I shall be provided separately for other Members so as to establish that each such Member has 20 percent or more of the Threshold Technical Capacity. Such information may be provided as Annex-IIA, Annex-IIB, Annex-IVA and Annex-IVB respectively. (Refer Clause 2.2.2.4).

<sup>†</sup>The conversion rate of USD into Rupees shall be the daily representative exchange rates published by the Reserve Bank of India for the relevant date. Where relevant date should be on or on the date 28 (twenty eight) days prior to the Application Due Date



Rohini  
19/12/18



ANNEX-III

**Financial Capacity of the Bidder**

(Refer to Clauses 2.2.2.3, 2.2.2.9(i), 2.2.2.8(iii) of the RFP)

(In Rs. crore<sup>3</sup>)

Bidder type	Net Cash Accruals					Net Worth <sup>E</sup> Year 1
	Year 1	Year 2	Year 3	Year 4	Year 5	
Single entity Bidder or Lead Member including other members of the Joint Venture						
TOTAL						

Bidder type	Annual Turnover										Average Annual Turnover (In Rs. crore <sup>3</sup> ) (2x2+4x5+6x7+8x9+10x11)/5
	Year 1		Year 2		Year 3		Year 4		Year 5		
	(Rs.)	Update n factor	(Rs.)	Update n factor	(Rs.)	Update n factor	(Rs.)	Update n factor	(Rs.)	Update n factor	
1	2	3	4	5	6	7	8	9	10	11	
Single entity Bidder or Lead Member including other members of the Joint Venture		1.00		1.05		1.10		1.15		1.20	

Name & address of Bidder's Bankers:

<sup>3</sup> For conversion of other currencies into rupees, see note below Annex-I<sup>1</sup> of Appendix-I

<sup>E</sup>The Bidder should provide details of its own Financial Capacity

**Instructions:**

- The Bidder shall attach copies of the balance sheets, financial statements and Annual Reports for 5 (five) years preceding the Bid Due Date. The financial statements shall:
  - reflect the financial situation of the Bidder;
  - be audited by a statutory auditor;
  - be complete, including all notes to the financial statements, and
  - correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).
- Net Cash Accruals shall mean Profit After Tax + Depreciation



*Robin*  
19/12/12



3. Net Worth (the "Net worth") shall mean the aggregate value of the paid-up share capital and all reserves created out of the profits and securities premium account, after deducting the aggregate value of the accumulated losses, deferred expenditure and miscellaneous expenditure not written off, as per the audited balance sheet, but does not include reserves created out of revaluation of assets, write-back of depreciation and amalgamation.
4. Year 1 will be the latest completed financial year, preceding the bidding. Year 2 shall be the year immediately preceding Year 1 and so on. In case the Bid Due Date falls within 3 (three) months of the close of the latest financial year, refer to Clause 2.1.13.
5. In the case of a Joint Venture, a copy of the JI Bidding Agreement shall be submitted in accordance with Clause 2.1.11 of the RFP document.
6. The Bidder shall also provide the name and address of the Bankers to the Bidder.
7. The Bidder shall provide an Auditor's Certificate specifying the net worth of the Bidder and also specifying the methodology adopted for calculating such net worth in accordance with Clause 2.2.2.9 (ii) of the RFP document.

*Rohini*  
*19/12/18*





भारतीय राष्ट्रीय राजमार्ग प्राधिकरण  
(सड़क परिवहन और राजमार्ग मंत्रालय)  
**National Highways Authority of India**  
(Ministry of Road Transport and Highways)  
प्लॉ-5 एवं 6, सेक्टर-10, द्वारका, नई दिल्ली-110075  
G-5 & 6, Sector-10, Dwarka, New Delhi 110075

दूरभाष / Phone : 011-26107412/261074200  
फैक्स / Fax : 91-11-26093507 / 26103514

NHA/BM/ Delhi-Vadodara/2018/Pky:2

27.12.2018

To

All Bidders

**Sub: Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NII-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana - Extension of Bid due date - Reg.**

Bid due date for the subject project has been extended from 27.12.2018 to 31.12.2018 (up to 1500 hrs) with following schedule:

- |   |                         |
|---|-------------------------|
| (i). Deadline for downloading of bid            | - 31.12.2018 (1500 hrs) |
| (ii). Deadline for online submission of bids    | - 31.12.2018 (1500 hrs) |
| (iii). Deadline for physical submission of bids | - 01.01.2019 (1500 hrs) |
| (iv). Opening of bids                           | - 01.01.2019 (1530 hrs) |

All other terms and conditions will remain same

*Rohin*  
27/12/18  
(Rohin Kumar Gupta)  
General Manager (T)  
Bharatmala



# Bank Guarantee for Bid Security



**APCO Infratech Pvt. Ltd**

APCO House, B-9, Vasant Khand, Genti Nagar, Lucknow-226010





B/G No.	034418 GBID0023
Issue Date	24.12.2018
Amount	Rs.10,18,00,000/-
Expiry Date	25.07.2019
Claims Expiry Date	25.07.2019

**Bank Guarantee for BID Security**

1. In consideration of you, National Highways Authority of India, having its office at G 5 & G, Sector 10, Dwarka, New Delhi - 110075, (hereinafter referred to as the "Authority", which expression shall unless it be repugnant to the subject or context thereof include its successors and assigns) having agreed to receive the B/D of APCO Infratech Private Limited, (a Company registered under Companies Act, 1956/2013) and having its registered office at APCO House, B-9, Vibhuti Khand, Gomti Nagar, Lucknow, Uttar Pradesh-226010 (hereinafter referred to as the "Bidder" which expression shall unless it be repugnant to the subject or context thereof include its/their executors, administrators, successors and assigns), for the Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148NI) on EPC Mode under Bharatmala Pariyojana in the State of Haryana Project on EPC basis (hereinafter referred to as "the Project", pursuant to the RFP Document dated 23.09.2018 issued in respect of the Project and other related documents including without limitation the draft contract Agreement (hereinafter collectively referred to as "Bidding Documents"), we Andhra Bank having our registered office at 5-9-11, Dr.Pittabhi Bhavan, Saifabad, Hyderabad 500004 and one of its branches at 16, Vichan Sabha Marg, Hajrat Ganj, Lucknow - 226001 (hereinafter referred to as the "Bank"), at the request of the Bidder, do hereby in terms of Clause 7.2.4 read with Clause 2.20 of the RFP Document, irrevocably, unconditionally and without reservation guarantee the due and faithful fulfilment and compliance of the terms and conditions of the Bidding Documents (including the RFP Document) by the said Bidder and unconditionally and irrevocably undertake to pay forthwith to the Authority an amount of Rs.10,18,00,000/- (Rupees ten crore and eighteen lakh only) (hereinafter referred to as the "Guarantee") as our primary obligation without any demur, reservation, recourse, contest or protest and without reference to the Bidder if the Bidder shall fail to fulfil or comply with all or any of the terms and conditions contained in the said Bidding Documents

2. Any such written demand made by the Authority stating that the Bidder is in default of the due and faithful fulfilment and compliance with the terms and conditions contained in the Bidding Documents shall be final, conclusive and binding on the Bank

3. We, the Bank, do hereby unconditionally undertake to pay the amounts due and payable under this Guarantee without any demur, reservation, recourse, contest or protest and without any reference to the Bidder or any other person and irrespective of whether the claims of the Authority is disputed by the Bidder or not, merely on the first demand from the Authority stating that the amount claimed is due to the Authority by reason of failure of the Bidder to fulfil and comply with the terms and conditions contained in the Bidding Documents including failure of the said Bidder to keep its BID open during the B/D valid by period as set forth in the said Bidding Documents for any reason whatsoever. Any such demand made on the Bank shall be conclusive as regards amount due and payable by the Bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs.10,18,00,000/- (Rupees ten crore and eighteen lakh only).



For Andhra Bank  
 Manager  
 Lucknow Branch



759

For ANDHRA BANK  
 Chief Manager  
 Lucknow Branch



B G No.	034418IGB D0073
Issue Date	24.12.2018
Amount	Rs.10,18,00,000/-
Expiry Date	25.07.2019
Claim Expiry Date	25.07.2019

4. This Guarantee shall be irrevocable and remain in full force for a period of 180 (one hundred and eighty) days from the BID Due Date inclusive of a claim period of 60 (sixty) days or for such extended period as may be mutually agreed between the Authority and the Bidder, and agreed to by the Bank, and shall continue to be enforceable till all amounts under this Guarantee have been paid.
5. We, the Bank, further agree that the Authority shall be the sole judge to decide as to whether the Bidder is in default of due and faithful fulfilment and compliance with the terms and conditions contained in the Bidding Documents including, inter alia, the failure of the Bidder to keep its BID open during the BID validity period set forth in the said Bidding Documents, and the decision of the Authority that the Bidder is in default as aforesaid shall be final and binding on us, notwithstanding any differences between the Authority and the Bidder or any dispute pending before any Court, Tribunal, Arbitrator or any other Authority.
6. The Guarantee shall not be affected by any change in the constitution or winding up of the Bidder or the Bank or any absorption, merger or amalgamation of the Bidder or the Bank with any other person.
7. In order to give full effect to this Guarantee, the Authority shall be entitled to treat the Bank as the principal debtor. The Authority shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee from time to time to vary any of the terms and conditions contained in the said Bidding Documents or to extend time for submission of the Bids or the BID validity period or the period for conveying acceptance of Letter of Award by the Bidder or the period for fulfilment and compliance with all or any of the terms and conditions contained in the said Bidding Documents by the said Bidder or to postpone for any time and from time to time any of the powers exercisable by it against the said Bidder and either to enforce or forbear from enforcing any of the terms and conditions contained in the said Bidding Documents or the securities available to the Authority, and the Bank shall not be released from its liability 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 said Bidder or any other forbearance, act or omission on the part of the Authority or any indulgence by the Authority to the said Bidder or by any change in the constitution of the Authority or its absorption, merger or amalgamation with any other person or any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of releasing the Bank from its such liability.
8. Any notice by way of request, demand or otherwise hereunder shall be sufficiently given or made if addressed to the Bank and sent by courier or by registered mail to the Bank at the address set forth herein.
9. We undertake to make the payment on receipt of your notice of claim on us addressed to Andhra Bank, 16, Vidhan Sabha Marg, Hajrat Ganj, Lucknow – 226001 and delivered at our above branch which shall be deemed to have been duly authorised to receive the said notice.

  
 For Andhra Bank  
 Branch Manager  
 Lucknow Branch

  
 760  
 For ANDHRA BANK  
 Branch Manager  
 Lucknow Branch

B/G No.	03441BIGBIDG023
Issue Date	24.12.2018
Amount	Rs.10,18,00,000/-
Expiry Date	25.07.2019
Claim Expiry Date	25.07.2019

10. It shall not be necessary for the Authority to proceed against the said Bidder before proceeding against the Bank and the guarantee herein contained shall be enforceable against the Bank, notwithstanding any other security which the Authority may have obtained from the said Bidder or any other person and which shall, at the time when proceedings are taken against the Bank hereunder, be outstanding or unrealised.
11. We, the Bank, further undertake not to revoke this Guarantee during its currency except with the previous express consent of the Authority in writing.
12. The Bank declares that it has power to issue this Guarantee and discharge the obligations contemplated herein, the undersigned is duly authorised and has full power to execute this Guarantee for and on behalf of the Bank.
13. For the avoidance of doubt, the Bank's liability under this Guarantee shall be restricted to Rs.10,18,00,000/- (Rupees ten crore and eighteen lakh only). The Bank shall be liable to pay the said amount or any part thereof only if the Authority serves a written claim on the Bank in accordance with paragraph 9 hereof, on or before 25<sup>th</sup> July 2019.
14. This guarantee shall also be operable at our Janakpuri 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 invoice on letter and make payment of amounts so demanded under the said invoice.
15. 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 NHAI. The details are mentioned below:

S.No.	Particulars	Details
1.	Name of Beneficiary	National Highways Authority of India
2.	Name of Bank	Canara Bank
3.	Account No.	8598201005819
4.	IFSC Code	CNRB0038598

Notwithstanding anything contained hereinabove:

- a) Our liability under this Bank Guarantee shall not exceed Rs.10,18,00,000/- (Rupees ten crore and eighteen lakh only).
- b) This Bank Guarantee shall be valid up to 25.07.2019.
- c) We are liable to pay the guarantee amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before 25.07.2019, along with the Original Bank Guarantee.
- d) Advances to be received against the said Bank Guarantee, if any, is to be routed through the Guarantor's account maintained with Andhra Bank.



For Andhra Bank  
 Manager  
 Lucknow Branch

For ANDHRA BANK  
 Chief Manager  
 Lucknow Branch



भारतीय गैर न्यायिक INDIA NON JUDICIAL

₹. 5000

Rs. 5000

पाँच हजार रुपये

FIVE THOUSAND RUPEES



उत्तर प्रदेश UTTAR PRADESH

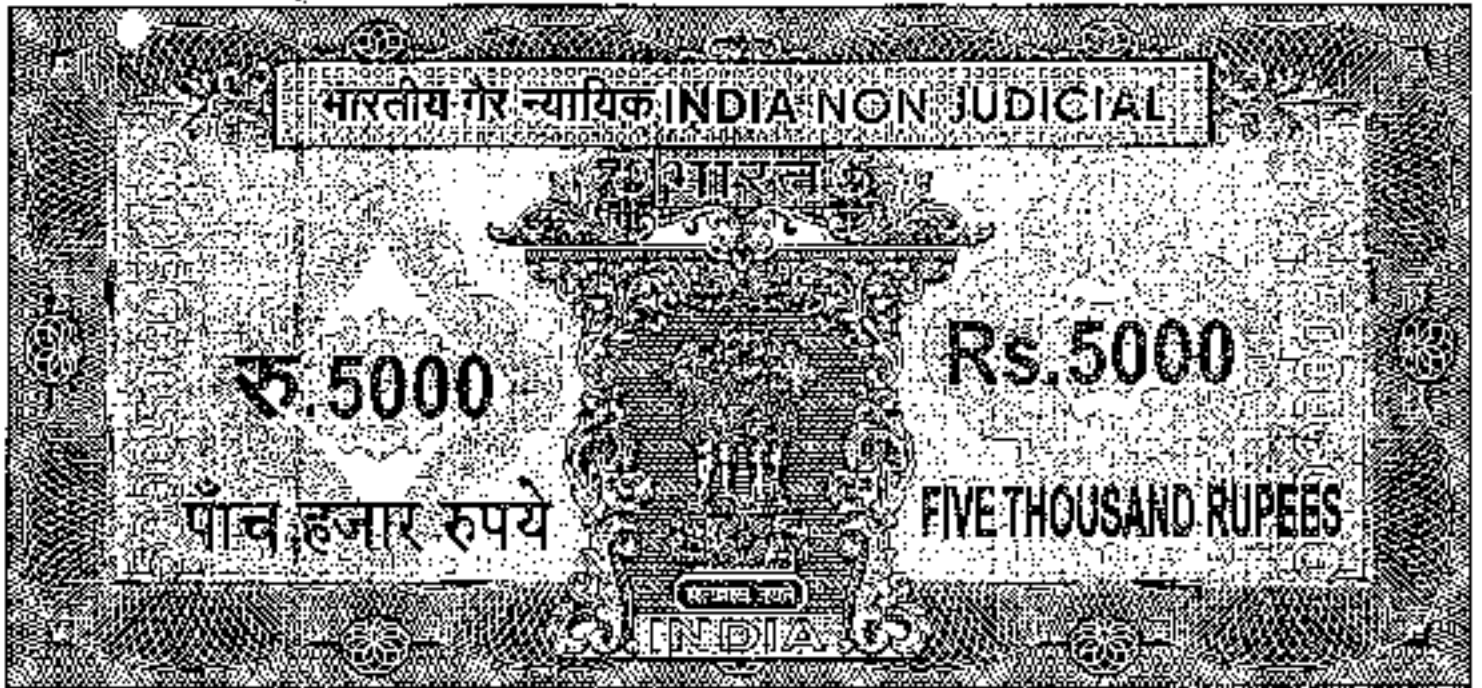
CN 655508

No. 0344, 18 FEBRUARY 2018  
Date of Issue 25/12/2018  
Date of Expiry 25/07/2019  
Date of Claim 25/12/2019  
Amount (₹.) 10,18,00,000/-  
Branch Andhra Bank, Lucknow (0344)

श्री अन्ध्र बैंक/For Andhra Bank  
प्रबन्धक/Manager  
लखनऊ शाखा/Lucknow Branch

श्री अन्ध्र बैंक/For ANDHRA BANK  
प्रबन्धक/Manager  
लखनऊ शाखा/Lucknow Branch





उत्तर प्रदेश UTTAR PRADESH

CN 655509  
 15 1 1987

B.G. No. 0344.18.10811.0013.....  
 Date of Issue 24/12/2018.....  
 Date of Expiry 25/12/2019.....  
 Date of Claim 25/12/2019.....  
 Amount (Rs.) 10,18,000/-.....  
 अन्धा बैंक, लखनऊ/Andhra Bank, Lucknow (0344)

मुझे अन्धा बैंक/For Andhra Bank  
 प्रबन्धक/Manager  
 लखनऊ शाखा/Lucknow Branch

मुझे अन्धा बैंक/For ANDHRA BANK  
 प्रबन्धक/Chief Manager  
 लखनऊ शाखा/Lucknow Branch





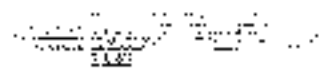


# Letter Comprising the Financial Bid



**APCO Infratech Pvt. Ltd**

APCO House, B 9, Vibhuti Khundi, Gonti Nagar, Lucknow-226010



**INFRA TECH PVT. LTD.**  
CIN: U51102JH1992PTC013649

**APPENDIX - IB**  
**Letter comprising the Financial BID**  
(Refer Clauses 2.1.4, 2.11 and 3.1.6)

Dated: 24/12/2018

General Manager (I),  
National Highways Authority of India,  
G-5 & 6, Sector-10, Dwarka,  
New Delhi-110075

**Subj: BID for Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18-500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana Project**

Dear Sir,

With reference to your RFP document dated 23.08.2018, I/we, having examined the Bidding Documents and understood their contents, hereby submit my/our BID for the aforesaid Project. The BID is unconditional and unqualified.

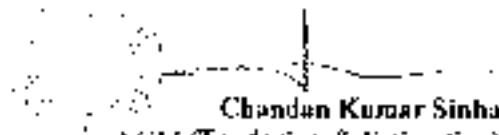
2. I/We acknowledge that the Authority will be relying on the information provided in the BID and the documents accompanying the BID for selection of the Contractor for the aforesaid Project, and we certify that all information provided in the Bid are true and correct, nothing has been omitted which renders such information misleading, and all documents accompanying the BID are true copies of their respective originals.
3. The BID Price has been quoted by me/us after taking into consideration all the terms and conditions stated in the RFP, draft Agreement, our own estimates of costs and after a careful assessment of the site and all the conditions that may affect the project cost and implementation of the project.
4. I/We acknowledge the right of the Authority to reject our BID without assigning any reason or otherwise and hereby waive, to the fullest extent permitted by applicable law, our right to challenge the same on any account whatsoever.
5. In the event of my/our being declared as the Selected Bidder, I/we agree to enter into a Agreement in accordance with the draft that has been provided to me/us prior to the BID Due Date. We agree not to seek any changes in the aforesaid draft and agree to abide by the same.
6. I/We shall keep this offer valid for 120 (one hundred and twenty) days from the BID Due Date specified in the RFP.

Corporate Office - Universal Trade Centre, 10th Floor, 100, Connaught Place, New Delhi - 110028, India. Contact: 011-2610417302, Fax: 011-2610417305  
www.infratech.com | Email: info@infratech.com | Phone: 011-2610417302, 011-2610417303, 011-2610417304, 011-2610417305, 011-2610417306, 011-2610417307, 011-2610417308, 011-2610417309, 011-2610417310, 011-2610417311, 011-2610417312, 011-2610417313, 011-2610417314, 011-2610417315, 011-2610417316, 011-2610417317, 011-2610417318, 011-2610417319, 011-2610417320, 011-2610417321, 011-2610417322, 011-2610417323, 011-2610417324, 011-2610417325, 011-2610417326, 011-2610417327, 011-2610417328, 011-2610417329, 011-2610417330, 011-2610417331, 011-2610417332, 011-2610417333, 011-2610417334, 011-2610417335, 011-2610417336, 011-2610417337, 011-2610417338, 011-2610417339, 011-2610417340, 011-2610417341, 011-2610417342, 011-2610417343, 011-2610417344, 011-2610417345, 011-2610417346, 011-2610417347, 011-2610417348, 011-2610417349, 011-2610417350, 011-2610417351, 011-2610417352, 011-2610417353, 011-2610417354, 011-2610417355, 011-2610417356, 011-2610417357, 011-2610417358, 011-2610417359, 011-2610417360, 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7. I/ We hereby submit our BID and offer a BID Price ONLINE for undertaking the aforesaid Project in accordance with the Bidding Documents and the Agreement.

Yours faithfully,

For and on behalf of APCO Infratech Pvt. Ltd.,

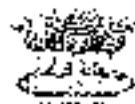


**Chandan Kumar Sinha**  
AGM (Tendering & Estimation)  
Class III DSC ID of Authorised Signatory : 04 b3 4c

Date: 24.12.2018  
Place: Gurgaon







Bid No.NHAI/SM/Delhi-Vadodara/2018/Pkg2

Name of Work	Construction of 8-Lane Expressway starting before KMP Expressway and ends at Ch. 47,000 near Khanpur Ghat (Km 18,500-4m 47,000) section of Delhi Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmata Parayojana in Hariana	
Name of the Firm	APCO Infrotech Pvt. Ltd.	
Total Quoted Value In Figures (In Rs.)		In Words (in Rs.)
1054000000.00		One Thousand and Ninety Four Crore Only

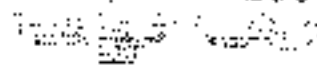


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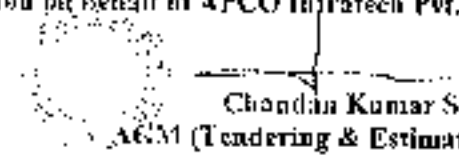


INFRA TECH PVT. LTD.  
CIN: U31100UP1992PT001666

**UNDERTAKING**

I, Chandan Kumar Sinha, AGM (Tendering & Estimation), Authorized Signatory, for and on behalf of APSCO Infratech Pvt. Ltd undertakes that, we agree and abide by the bid documents uploaded by the MHA and amendments uploaded if any for the BID for "Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 19+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana" Project.

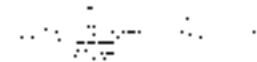
For and on behalf of APSCO Infratech Pvt. Ltd

  
Chandan Kumar Sinha  
AGM (Tendering & Estimation)

Date: 24<sup>th</sup> December, 2018  
Place: Gurgaon



Corporate Office - Gurgaon - Haryana - India. Plot No. 25, Sector 29, Phase 1, Gurgaon - 122 002 (Near) of Plot no. 102 274-417340, Fax - 91 124-4437149  
Head Office - Wazirpur Extension - 2nd Floor - Gurgaon, Haryana - India. Registered office - 126 010 Gurgaon  
Phone - 91 122 4419111, 4419112, 4419113, 4419114, 4419115, 4419116, 4419117, 4419118, 4419119, 4419120, 4419121, 4419122, 4419123, 4419124, 4419125, 4419126, 4419127, 4419128, 4419129, 4419130, 4419131, 4419132, 4419133, 4419134, 4419135, 4419136, 4419137, 4419138, 4419139, 4419140, 4419141, 4419142, 4419143, 4419144, 4419145, 4419146, 4419147, 4419148, 4419149, 4419150, 4419151, 4419152, 4419153, 4419154, 4419155, 4419156, 4419157, 4419158, 4419159, 4419160, 4419161, 4419162, 4419163, 4419164, 4419165, 4419166, 4419167, 4419168, 4419169, 4419170, 4419171, 4419172, 4419173, 4419174, 4419175, 4419176, 4419177, 4419178, 4419179, 4419180, 4419181, 4419182, 4419183, 4419184, 4419185, 4419186, 4419187, 4419188, 4419189, 4419190, 4419191, 4419192, 4419193, 4419194, 4419195, 4419196, 4419197, 4419198, 4419199, 4419200, 4419201, 4419202, 4419203, 4419204, 4419205, 4419206, 4419207, 4419208, 4419209, 4419210, 4419211, 4419212, 4419213, 4419214, 4419215, 4419216, 4419217, 4419218, 4419219, 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**INFRA TECH PVT. LTD.**  
CIN: U51647UP1992PTC011965

**CERTIFIED TRUE COPY OF THE RESOLUTION PASSED AT THE MEETING OF THE BOARD OF DIRECTORS OF APCQ INFRA TECH PRIVATE LIMITED DULY CONVENED AND HELD ON THURSDAY, 20<sup>th</sup> DECEMBER 2018 AT THE REGISTERED OFFICE OF THE COMPANY, B-5, W.BHUTI KHAND, GOMTI NAGAR LUCKNOW-226010 UTTAR PRADESH, INDIA.**

Resolution No.-2

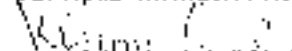
Authority for submission of BID for the "Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18-500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana Project proposed or being developed by the National Highways Authority of India (the "Authority")."

"RESOLVED THAT approval be and is hereby granted for submission of BID for the Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18-500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana Project proposed or being developed by the National Highways Authority of India (the "Authority")."

"RESOLVED FURTHER THAT Mr. Anil Kumar Singh, Managing Director of the Company be and is hereby authorized on behalf of the Board of Directors to issue a Power of Attorney in favour of Mr. Chandan Kumar Sinha, S/o. Sh. P.N.P. Ambastha, AGM (Tendering & Estimation), to sign the bid documents on behalf of Apco Infratech Pvt. Ltd. and to do all things necessary in connection with or relating to or arising out of our bid till the entering into Contract Agreement with the Authority."

//Certified true copy//

For Apco Infratech Private Limited

  
Kusum Gupta

[Company Secretary]

Membership No. F7719





Ministry of Road Transport and Highways  
 Government of India  
 Maharashtra Highway Development Authority of India  
 Ahmednagar Road Development Project  
 Maharashtra Highway Development Authority  
 Plot No. 10, Sector 10, Gandhinagar, Pune - 411 004

001

NHAI/RM/DPF/16/Maharashtra/2018-Reg-2/100002

dated 05.03.2019

To,

M/s APCO Infratech Private Limited  
 [Kind Attn: Sh. Chandan Kumar Sinha, AGM - Tendering & Estimation],  
 4<sup>th</sup> Floor, Universal Trade Tower  
 Gurgaon Road, Sector - 46, Gurgaon - 122 101 (Haryana)  
 Ph: 0124-4417333 Fax: 0124-4417349  
 email: adn@apcoinfra.com

**Subject:** Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana - Letter of Acceptance (LOA) - Reg

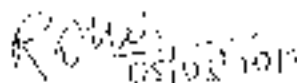
**Reference:** Your bid for the subject work dated 24.12.2018

It is to notify you that your Bid dated 24.12.2018 for execution of the work for "Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghat (Km 18+500 to Km 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana" at your quoted bid price amounting to Rs. 1094.00,00,000/- (Rupees One Thousand Ninety Four Crore only) has been determined to be the lowest evaluated bid and is substantially responsive and has been accepted.

2. You are requested to return the duplicate of the LOA as an acknowledgement within a period of 7 (seven) days of issue of this Letter of Acceptance (LOA) and sign the Contract Agreement within the period mentioned in Clause 1.3 of the RFP.

3. You are also requested to furnish Performance Security for an amount of Rs. 54,70,00,000/- (Rupees Fifty Four Crore Seventy Lakh only) as per Clause 2.21 of the RFP within 30 (thirty) days of receipt of this Letter of Acceptance (LOA). In case of delay in submission of Performance Security, if any, you may seek extension of time for a period not exceeding 30 (thirty) days on payment of Damages in accordance with Clause 2.21 of RFP.

4. In case of failure of submission of Performance Security and Security against Damages (if any) within the additional 30 (thirty) days time period, the award shall be deemed to be cancelled and bid security shall be encashed by the Authority as per Clause 2.21 of the RFP.

  
 (Rohin Kumar Gupta)  
 General Manager (Tech)

Copies

1. COM II - R.O. N/A, Dns.
2. Project Director - H.D. N/A, Dns.





Lr.No. APCO/CO DELHI -VAD -NHAI/5301

Dated:-07.03.2019

To,

**The General Manager (T),**  
National Highway Authority of India,  
G-5 & C-6, Sector - 10, Dwaraka,  
New Delhi.

Dear Sir,

**Kind Attn: Mr. Rohin Kumar Gupta**

Sub - Construction of Eight Lane Expressway starting before RMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km. 18+500 to Km. 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana - **Acknowledgement of Letter of Acceptance (LOA) - reg.**

Ref - NHAI Lr.No. NHAI/BM/DELHI-Vad./2018/Pkg - 2/131566 D: 05.03.2019

- 1.1 We acknowledge the receipt of Letter of Acceptance (LOA) for the Construction of Eight Lane Expressway starting before RMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km. 18+500 to Km. 47+000) section of Delhi - Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana vide Authority Letter No. NHAI/BM/DELHI Vadodara/2018/Pkg. - 2/131566 dated 05.03.2019
- 1.2 In accordance with compliance of LOA, we are enclosing a duly acknowledged Duplicate copy of LOA as a token acceptance of the same. We thank you for giving us the opportunity for implementation of the above mentioned project and convey our commitment for successful implementation of the same.

Thanking you,

**For Apco Infratech Private Limited**



*[Handwritten Signature]*  
Authorized Signatory.

Enc: Duly signed Duplicate copy of Letter of Acceptance dated 05.03.2019.



772

भारतीय राष्ट्रीय राजमार्ग प्राधिकरण  
(सड़क परिवहन और राजमार्ग विभाग)  
**National Highways Authority of India**

(Ministry of Road Transport and Highways)  
जी-5 एन 6, सेक्टर-10, द्वारका, नई दिल्ली-110075  
G-5 & 6, Sector-10, Dwarka, New Delhi-110075

दूरभाष: दिल्ली-011-230077/2307557 (23)  
फैक्स: दिल्ली-011-2300727/2300804

Duplicate Copy

NHA/BM/DELHI-Vadodara/2018/Pkg. 2/131566

dated 05.03.2019

To,

M/s APCO Infratech Private Limited  
[Kind Attn: Sh. Chandan Kumar Sinha, AGM – Tendering & Estimation],  
4<sup>th</sup> Floor, Universal Trade Tower,  
Sohna Road Sector – 49, Gurugram – 122 001 (Haryana)  
Ph: 0124 – 4417300, Fax: 0124 – 4417349  
email: [admin@apcoinfra.com](mailto:admin@apcoinfra.com)

**Subject:** Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana – **Letter of Acceptance (LOA) – Reg.**

**Reference:** Your bid for the subject work dated 24.12.2018

This is to notify you that your Bid dated 24.12.2018 for execution of the work for "Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km 18+500 to Km 47+000) section of Delhi – Vadodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana", at your quoted bid price amounting to Rs. 1094,00,00,000/- (Rupees One Thousand Ninety Four Crore only) has been determined to be the lowest evaluated bid and is substantially responsive and has been accepted

2. You are requested to return a duplicate of the LOA as an acknowledgement within a period of 7 (seven) days of issue of this Letter of Acceptance (LOA) and sign the Contract Agreement within the period prescribed in Clause 1.3 of the RFP.

3. You are also requested to furnish Performance Security for an amount of Rs. 54,70,00,000/- (Rupees Fifty Four Crore Seventy Lakh only) as per Clause 2.21 of the RFP within 30 (thirty) days of receipt of this Letter of Acceptance (LOA). In case of delay in submission of Performance Security, if any, you may seek extension of time for a period not exceeding 60 (Sixty) days on payment of Damages in accordance with Clause 2.21 of RFP.

4. In case of failure of submission of Performance Security and Security against Damages (if any) within the additional 60 (Sixty) days time period, the award shall be deemed to be cancelled and Bid security shall be encashed by the Authority as per Clause 2.21 of the RFP

*Rohin*  
05/03/2019  
(Rohin Kumar Gupta)  
General Manager (Tech.)

Copy to:

1. CGM (T) – R.O. NHA, Delhi
2. Project Director, PIC NHA, Sohna





112

Lr.No. APCO/CO DELHI -VAD -NHAI/5322

Dated:-13.03.2019

To,

The General Manager (T),  
National Highway Authority of India,  
G-5 & G-6, Sector - 10, Dwarka,  
New Delhi

Dear Sir,

**Kind Attn: Mr. Rohin Kumar Gupta**

Sub:- Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47+000 near Khanpur Ghati (Km. 18+500 to Km. 47+000) section of Delhi - Vazodara Green field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana - **Submission of Document & Signing of Contract agreement** . reg.

Ref: 1. NHAI Lr.No. NHAI/BM/DELHI-VAD./2018/Pkg. 2/131566/ D1.05.03.19.  
2. Our Letter No. APCO/CO/DELHI-VAD-NHAI/5301 dated 07.03.2019.

- 1.1 With reference to the above captioned subject matter in compliance with Draft Contract Agreement Recital D - (i), M/s APCO Infratech Private Limited (Contractor) has to provide its consent to enter into an Agreement with Authority for the above said project and the enforceability of the provisions thereof within 10 days of the date of issue of LOA. Accordingly the Contractor submitting herewith following documents for your kind consideration. (a). Company Board Resolution Dated 09<sup>th</sup> March, 2019. (b). Legal Opinion dated 11<sup>th</sup> March, 2019. (c). Power of Attorney dated 11<sup>th</sup> March, 2019.
- 1.2 Accordingly the Contractor conveys its consent to execute the Contract Agreement with Authority in accordance with provisions of Draft Contract Agreement and LOA dated 05<sup>th</sup> March, 2019.

Please acknowledge the enclosed documents

Thanking you,

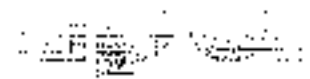
For Apco Infratech Private Limited



Authorized Signatory  
Encl: A A.



774



MINISTRY OF ROAD TRANSPORT AND HIGHWAYS  
NATIONAL HIGHWAY AUTHORITY OF INDIA

LA.No. 4910/KC/2019 dated 03/04/2019

Dated: 03.04.2019

**The General Manager (T),**  
National Highway Authority of India,  
G-5 & G-6, Sector - 10, Dwarka,  
New Delhi

Dear Sir,

**Kind Attn: Mr. Robin Kumar Gupta**

Subj. - Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch 47+000 near Kungpur Ghad (Km. 19+500 to Km. 47+000 section of Delhi - Vadocera Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana - **Submission of Performance Bank Guarantee - reg**

Ref - 1. ME/M/Lr No. NHAI/BM/DE/HD-Vad/2018/Pkg. 2/131565 Dt. 05.03.2019  
2. Order No. ANO/CO/DELHI VAD NHAI/5501 dated 07.03.2019

1.1 With reference to the above captioned subject matter, in accordance with provisions of Draft Contract Agreement Article 7 - Performance Security Sub Clause 7.1, the Contractor having the obligation to submit an acceptable and unconditional guarantee in the form set forth in Annex - 1 of Schedule G for an amount equal to 5% of its Bid Price.

1.2 It is further established in Clause 7.1 that  
**Quote:**

*"The Selected Bid for this Project is to provide 50% of the Performance Security and 50% of the Additional Performance Security, if any, within 30 days of signing of the Contract Agreement, in any case before the signing of the Contract Agreement and the remaining Performance Security and Additional Performance Security, if any shall be submitted within 30 days of signing of Agreement."*



RECEIVED



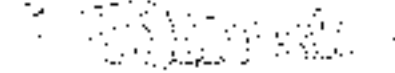
Respected Sir,

Accordingly in our letter with relevant provisions of the Draft Contract Agreement and 11th No. NRIAT 11 No. NRIAT/2018/151/1st Vol/2018/Pag.-2/131566 Dt. 26.02.2019, the Contractor, hereinafter, enclosing a Bank Guarantee No. 0099071900012000 dated 02.04.2019 valid up to 01.04.2021 for Rs. 2,00,00,000/- for the 100% of project performance Security for the Project, issued by the Bank of Baroda, is attaching. Hence, Acknow UP

Please acknowledge the same.

Thank you Sir,

For Apco Infratech Private Limited



Authorized Signatory

Copy to: Project Director, NRIAT 110/2018, Gurugram  
Bank Guarantee No. 0099071900012000 Dated 02.04.2019



Bank Guarantee No.	0050IGPER001219
Date of issue	02.04.2019
Valid upto	01.04.2021
BG Amount	Rs 27,35,00,000/-

### PERFORMANCE SECURITY

To  
National Highways Authority of India,  
G-5 & 5, Sector 10, Dwarka,  
New Delhi-110075

WHEREAS APCO Infratech Private Limited, having its Registered Office at Apco House, B-9, Vibhuti Khand, Conna Nagar, Lucknow - 226 010 (UP) (hereinafter called the "Contractor") has undertaken, in pursuance of Letter of Acceptance (L/A) NO. NHAI/OM/DELHI Vadodara/2018/Pka 2/LJ1566 Dated 05<sup>th</sup> March, 2019 for construction of Construction of Eight Lane Expressway starting below KMP Expressway and ends at Ch 47+000 near Khaspur Ghat (Km 18+500 to Km 47+000) within of Delhi - Vadodara Green field Alignment (NH 118N) on FPC Mode under Bharatmala Pariyojana in the State of Haryana (hereinafter called the "Contract")

AND WHEREAS the Contract requires the Contractor to furnish a Performance Security for due faithful performance of its obligations, under and in accordance with the Contract, during the Construction Period/ Defects Liability Period and Maintenance Period in a sum of Rs.27,35,00,000/- (Rupees Twenty Seven Crores Thirty Five Lakhs only).

AND WHEREAS we, Bank of Baroda through our branch at 3, Speed Motor Building, Shahnazaf Road, Hazratganj, Lucknow - 226 001, India (the "Bank") have agreed to furnish this Bank Guarantee (hereinafter called the "Guarantee") by way of Performance Security.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

- The Bank hereby unconditionally and irrevocably guarantees the due and faithful performance of the Contractor's obligations during the Construction Period/ Defects Liability Period and Maintenance Period under and in accordance with the Contract, and agrees and undertakes to pay to the Authority upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.
- A letter from the Authority, under the hand of an officer not below the rank of General Manager of National Highway Authority of India that the Contractor has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Contract shall be conclusive and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Contract and its decision if at the Contractor is in default shall be final and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any disputes 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.

For BANK OF BARODA



Bank Guarantee No.	0050IG1PER001219
Date of issue	02.04.2019
Valid upto	01.04.2021
BG Amount	Rs.27,35,00,000/-

3. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.
4. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.
5. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Contract or to extend the time or period for the compliance with, fulfilment and/or performance of all or any of the obligations of the Contractor contained in the Contract or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Contract and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to statutes and guarantees 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 Contract or for the fulfilment, compliance and/or performance of all or any of the obligations of the Contractor under the Contract.
7. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guaranteed Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be released from its liabilities hereunder.
8. The Guarantee shall cease to be in force and effect on **01.04.2021**. Unless a demand or claim under this Guarantee is made in writing before expiry of the Guarantee, the Bank shall be discharged from its liabilities hereunder.
9. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.

For K OF BARODA

Constituted  
S/S 260



Bank Guarantee No.	0050IGPERDD1219
Date of issue	07.04.2019
Valid upto	01.04.2023
BC Amount	Rs.27,35,00,000/-

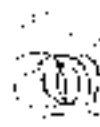
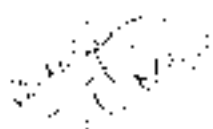
10. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank of us above referred branch which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been 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 put in and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.
11. This Guarantee shall come into force with immediate effect and shall remain in force and effect for up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Contract.
12. This Guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, IIC Publication No. 75E, except that the supporting statement under Article 15(a) is hereby excluded.
13. This guarantee shall also be operable at our Parliament Street 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 over any send an advice of this Bank Guarantee to the designated bank of N/A. The details are mentioned below.

S. No.	Particulars	Details
1.	Name of Beneficiary	National Highways Authority of India
2.	Name of Bank	Canara Bank
3.	Account No.	8598261005819
4.	IFSC Code	CNFB0008598

Notwithstanding anything contained hereinabove:

- a) Our liability under this Bank Guarantee shall not exceed Rs.27,35,00,000/- (Rupees Twenty Seven Crores Thirty Five Lakhs only).
- b) This Bank Guarantee shall be valid upto: 01.04.2023.
- c) We are liable to pay the guarantee amount or any part thereof under this Bank Guarantee only and only if you write to us a written claim or demand on or before 01.04.2023.

Signed and sealed this 27<sup>th</sup> day of April, 2019 at Lucknow.



For and on behalf of the Authority  
 Const. Secy. (A) / 100  
 27/04/2019



Attached to & forming an  
 part of Page No.  
1001 of 20 of  
1945 of 20  
1945 of 20

Recd.



For the R. G. B. C. S.  
 stated  
 320



Transaction Number: 728521  
 Instance Type and Transmission: Normal  
 Priority: Normal  
 Message Output Reference: XXXXXXXXXXXXXXXXXXXX  
 Correspondent Input Reference: XXXXXXXXXXXXXXXXXXXX  
 Received Date&Time: 02 Apr 2019 13:35

**Message Header**  
 Message Output: 780 Guarantee: Format Specifications

Sender: BARBOHAZARA  
 BANK OF BARODA, LUCKNOW MAIN BRANCH, P.O BOX  
 78,66,HAZRATGAN,LUCKNOW 226001]


Receiver: CMRBC002598  
 [CANARA BANK, EXTENSION COUNTER NATIONAL HIGHWAY AUTHORITY OF  
 INDIA (NHAI) G5&6 SECTOR-10 DWARKA NEW DELHI 110075]

Message Text		
27	Number of a message	1
	Total Number of Messages	2
20	Sender's Reference	0060IGPERD01219
23	Code 5	ISSUE
30	Requested Execution Date (YYMMDD)	20190402
40C	Applicable Rules	URDG

NEW BG  
 DATE OF ISSUE 02042019  
 VALID UPTO 01012021  
 BG AMOUNT RS273500000  
 PERFORMANCE SECURITY  
 TO  
 NATIONAL HIGHWAYS AUTHORITY OF INDIA  
 G 5 AND 6 SECTOR 10 DWARKA  
 NEW DELHI 110075  
 WHEREAS APCC INFRA TECH PRIVATE LIMITED HAVING ITS REGISTERED OFFICE AT APCC HOUSE 89 VIBHUTI KHANU GOMTI NAGAR LUCKNOW 226010 UP HEREAFTER CALLED THE CONTRACTOR HAS UNDERTAKEN IN PURSUANCE OF LETTER OF ACCEPTANCE LOA NO NHAI DM DELHI VADODARA 2018 PKG2 131588 DATED 05TH MARCH 2018 FOR CONSTRUCTION OF CONSTRUCTION OF EIGHT LANE EXPRESSWAY STARTING BEFORE KMP EXPRESSWAY AND ENDS AT CH47PLUS000 NEAR KIANPUR GHATI KM 18 PLUS 500 TO KM 47 PLUS 000 SECTION OF DELHI VADODARA GREEN FIELD ALIGNMENT NH 148N ON FPC MODE UNDER BHARATMALA PARIYOJANA IN THE STATE OF HARYANA HERINAFTER CALLED THE CONTRACT AND WHEREAS THE CONTRACT REQUIRES THE CONTRACTOR TO FURNISH AN PERFORMANCE SECURITY FOR DUE FAITHFUL PERFORMANCE OF ITS OBLIGATIONS UNDER AND IN ACCORDANCE WITH THE CONTRACT DURING THE CONSTRUCTION PERIOD DEFECTS LIABILITY PERIOD AND MAINTENANCE PERIOD IN A SUM OF RS273500000 RUPFES TWENTY SEVEN CRORES

*Signature of Bank  
 Guarantee confirmed  
 as per SFMS message,  
 For Canara Bank*

*Signature of Manager  
 S. A. I. NEW DELHI*



782



770 Details of Guarantee

THIRTY FIVE LAKHS ONLY  
 AND WHEREAS WE BANK OF BARODA THROUGH OUR BRANCH  
 AT 3 SPEED MOTOR BUILDING SHAHNAZAF ROAD HAZRATGANJ  
 LUCKNOW 226 001 INDIA THE BANK HAVE AGREED TO  
 FURNISH THIS BANK GUARANTEE HEREINAFTER CALLED THE  
 GUARANTEE BY WAY OF PERFORMANCE SECURITY  
 NOW THEREFORE THE BANK HEREBY UNCONDITIONALLY AND  
 IRREVOCABLY GUARANTEES AND AFFIRMS AS FOLLOWS  
 1 THE BANK HEREBY UNCONDITIONALLY AND IRREVOCABLY  
 GUARANTEES THE DUE AND FAITHFUL PERFORMANCE OF THE  
 CONTRACTORS OBLIGATIONS DURING THE CONSTRUCTION  
 PERIOD  
 DEFECTS LIABILITY PERIOD AND MAINTENANCE PERIOD UNDER  
 AND  
 IN ACCORDANCE WITH THE CONTRACT AND AGREES AND  
 UNDERTAKES  
 TO PAY TO THE AUTHORITY UPON ITS WRITTEN DEMAND  
 AND WITHOUT ANY DEMUR RESERVATION RECOURSE CONTEST  
 OR  
 PROTEST AND WITHOUT ANY REFERENCE TO THE CONTRACTOR  
 SUCH  
 SUM OR SUMS UP TO AN AGGREGATE SUM OF THE GUARANTEE  
 AMOUNT AS THE AUTHORITY SHALL CLAIM WITHOUT THE  
 AUTHORITY  
 BEING REQUIRED TO PROVE OR TO SHOW GROUNDS  
 OR REASONS FOR ITS  
 DEMAND AND/OR FOR THE SUM SPECIFIED THEREIN  
 2 A LETTER FROM THE AUTHORITY UNDER THE HAND OF AN  
 OFFICER NOT BELOW THE RANK OF GENERAL MANAGER OF  
 NATIONAL  
 HIGHWAYS AUTHORITY OF INDIA THAT THE CONTRACTOR HAS  
 COMMITTED DEFAULT IN THE DUE AND FAITHFUL  
 PERFORMANCE  
 OF ALL OR ANY OF ITS OBLIGATIONS UNDER AND  
 IN ACCORDANCE WITH  
 THE CONTRACT SHALL BE CONCLUSIVE FINAL AND  
 BINDING ON THE BANK  
 THE BANK FURTHER AGREES THAT THE AUTHORITY SHALL BE  
 THE SOLE  
 JUDGE AS TO WHETHER THE CONTRACTOR IS IN DEFAULT IN  
 DUE AND  
 FAITHFUL PERFORMANCE OF ITS OBLIGATIONS DURING AND  
 UNDER THE  
 CONTRACT AND ITS DECISION THAT THE CONTRACTOR IS IN  
 DEFAULT  
 SHALL BE FINAL AND BINDING ON THE BANK NOTWITHSTANDING  
 ANY  
 DIFFERENCES BETWEEN THE AUTHORITY AND THE  
 CONTRACTOR OR ANY  
 DISPUTE BETWEEN THEM PENDING BEFORE ANY COURT  
 TRIBUNAL  
 ARBITRATORS OR ANY OTHER AUTHORITY OR BODY  
 OR BY THE DISCHARGE  
 OF THE CONTRACTOR FOR ANY REASON WHATSOEVER  
 3 IN ORDER TO GIVE EFFECT TO THIS GUARANTEE THE  
 AUTHORITY  
 SHALL BE ENTITLED TO ACT AS IF THE BANK WERE THE  
 PRINCIPAL  
 DEBTOR AND ANY CHANGE IN THE CONSTITUTION OF THE

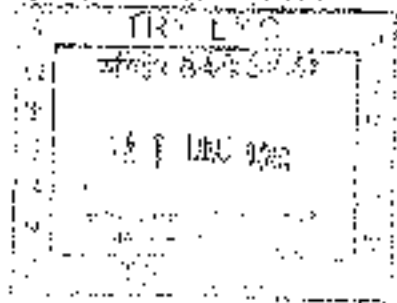




Transaction Number: 728520		Instance Type and Transmission
Priority		Normal
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Correspondent Input Reference		XXXXXXXXXXXXXXXXXX
Received Date&Time		02 Apr 2019 18:08
<b>Message Header</b>		
Message Output		720 Guarantee Format Specifications
Sender		
		BARBPHAZARA [BANK OF BARODA, LUCKNOW MAIN BRANCH P O BOX 78,68,HAZRATGAN,LUCKNOW,223001]
Receiver		
		CNR30003598 [CANARA BANK, EXTENS ON COUNTER NATIONAL HIGHWAY AUTHORITY OF INDIA (NHAI) C5&6 SECTOR-10 DWARKA NEW DELHI 110075]
<b>Message Text</b>		
27	Number of a message	2
	Total Number of Messages	2
20	Sender's Reference	0050IGPER001219
23	Code 3	ISSUE
30	Requested Execution Date (YYMMDD)	20190402
40C	Applicable Rules	URDG
		<p>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 CONTRACT OR FOR THE FULL FILMENT COMPLIANCE AND/OR PERFORMANCE OF ALL OR ANY OF THE OBLIGATIONS OF THE CONTRACTOR UNDER THE CONTRACT</p> <p>7 NOTWITHSTANDING ANYTHING CONTAINED HEREBEFORE 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 6 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</p> <p>8 THE GUARANTEE SHALL CEASE TO BE IN FORCE AND EFFECT ON 01/12/2021 UNLESS A DEMAND OR CLAIM UNDER THIS GUARANTEE IS MADE IN WRITING BEFORE EXPIRY OF THE GUARANTEE THE BANK SHALL BE DISCHARGED FROM ITS LIABILITIES HEREUNDER</p> <p>9 THE BANK UNDERTAKES NOT TO REVOKE THIS GUARANTEE</p>



PARODISE




**POWER OF ATTORNEY**

Know all men by these present, we Apco Infratech Private Limited (APCO) having its registered office at 4-9, Vishali Road, Gurgaon, Haryana 226010 (D.P.) do hereby in every way constitute, nominate, appoint and authorize Mr. D. Billy Baha, residing at Universal Trade Tower, 4<sup>th</sup> Floor, Sharda Road, Sector 13-19, Gurgaon 226010 (Haryana), India, as our 'sole attorney' (hereinafter referred to as the 'Attorney') to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 17+000 near Khaper Ghat (Km. 18+500 to Km. 47+000) section of Delhi - Vadodra Green field Alignment (NH-148N) on EPC Mode under Bharatnata Parayojan in the State of Haryana (hereinafter referred to as "Project"). The Attorney further appointed on behalf of the Company for representing us in all matters before the National Highway Authority of India (hereinafter called the "NHAI"/Authority) for signing and execution of Contract Agreements.

The Attorney is further authorized to appoint other person in connection to this work for representation and other incidental activities with the National Highway Authority of India (NHAI/Authority)

AND we hereby agree to ratify and confirm all acts, deeds and things lawfully done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall, and shall always be deemed to be done and done by us.

Chandrika P. Mishra  
 Chartered Accountant  
 110, Convent Road  
 New Delhi - 110054  
 India

*Rajiv*  
  
 788

*[Signature]*



IN WITNESS WHEREOF WE, APCO INFRATECH PRIVATE LIMITED, THE ABOVE NAMED PRINCIPLES HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS 11<sup>TH</sup> DAY OF MARCH 2024.

For APCO Infracore Private Limited



*[Handwritten Signature]*

Vijay Kumar Singh  
(It. Managing Director)  
Apco House, B-9, Vikas Khand,  
Gurgaon Nagar, Gurgaon-225010 (U.P.)

Witnesses.

1. *[Handwritten Name]*  
*[Handwritten Address]*

2. *[Handwritten Name]*  
*[Handwritten Address]*



*[Handwritten Signature]*

(As the said Signatory)



SIGNATURE & IS ATTESTED

*[Handwritten Signature]*  
Siddhanta K. Mishra  
Advocate & Notary  
10/10, Gurgaon  
Gurgaon, Haryana  
2024 Mar 21 (25) 05





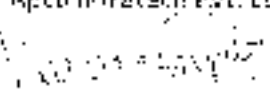
CERTIFIED TRUE COPY OF THE RESOLUTION PASSED AT THE MEETING OF THE BOARD OF DIRECTORS OF APCO INFRA TECH PRIVATE LIMITED DULY CONVENED AND HELD ON THURSDAY, 9<sup>th</sup> MARCH, 2015 AT THE REGISTERED OFFICE OF THE COMPANY, B-9, VIDHATI KHAND, GOMTI NAGAR LUCKNOW-226016 UTTAR PRADESH INDIA



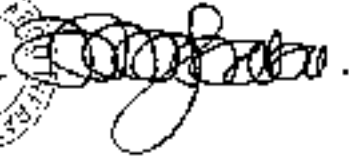

Resolution No.-2

Chairman informed the members present that the Company has been awarded a project titled "Construction of Eight Lane Bypassway starting before KMP Bypassway and ends at 11th Km to near Khatwa Chauri (Km. 16-500 to Km. 47+000) section of Delhi - Vardola Green New Alignment (NH-16N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana (hereinafter referred to as "Project"). For which the Company has to execute necessary documents with the Authority. And hence the Company has to authorize its Official / officials for signing & execution of the necessary document and also to represent the Company before Authority in the concerned matter. After a brief discussion the following Resolution was passed:

**RESOLVED THAT** the consent of the Board be and is hereby accorded to authorize Mr. D. Dilip Babu, residing at Universal Trade Tower, 4<sup>th</sup> Floor, Shree Road, Sector 43-25, Gurgaon-122011 (Haryana), India, currently employed with as JVP (Business Development & Consulting) is our lawyer/attorney, to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to the signing & execution of necessary deeds, agreements and other related documents and papers related with the said project, on the behalf of the Company. The Attorney/contractor appointed on behalf of the Company for representing the Company in all matters before the National Highway Authority of India (hereinafter called the "NHAI"/ Authority) for signing and execution of Contract Agreements.

**RESOLVED FURTHER THAT** Mr. Vinod Kumar Singh, a Managing Director of the Company be and is hereby authorized on behalf of the Board of Directors to issue a Power of Attorney in favour of Mr. D. Dilip Babu, to sign the bid documents on behalf of APCO Infratech Pvt. Ltd. and to do all things necessary in connection with or incidental to the said bid till the entering into Contract Agreement with the Authority."

Certified True Copy  
for APCO Infratech Pvt. Ltd.  
  
Karam Gupta  
[Company Secretary]  
Membership No.F7719

*Shri Manoj Singh*

ADVOCATE  
HIGH COURT ALLAHABAD  
LUCKNOW BENCH, LUCKNOW



OP. U.C.F - 241, Ganga Prasad  
Vihar Khand-1,  
Ganga Nagar, Lucknow-226011  
Res. E-2/247, Vihar, Khand-1  
Ganga Nagar, Lucknow-226011  
Phone: 0522-2395091  
Mobile: 9415022584

Date: 11/03/2019

The General Manager (T),  
National Highway Authority of India,  
C-7 & 8, Sector - 10, Dwarka,  
New Delhi

Dear Sir,

Kind Attn: Mr. Rohin Kumar Gupta

Subject: Construction of Right Lane Expressway starting before KMP Expressway and ends at Ch- 47+000 near Khandua Ghazi (Km. 18+500 to Km. 47+000 section of Delhi - Varanasi Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana - Legal Opinion req

Ref: NHA, Lt.No. NHA/PM/DELHI-VAD./2018/Pkg-1/131566 Dt. 05.03.2019

We have been invited by M/s. Apco InfraTech Private Limited (herein after called as "APCO") for providing a Legal Opinion with respect to APCO's authority to enter into Contract Agreement and the enforceability of the provisions thereof in terms of the Letter of Acceptance (LOA) No. NHA/PM/DELHI-VAD./2018/Pkg-1/131566 Dated 05.03.2019 issued by the National Highway Authority of India (herein after called as "NHA") Construction of Right Lane Expressway starting before KMP Expressway and ends at Ch- 47+000 near Khandua Ghazi (Km. 18+500 to Km. 47+000 section of Delhi - Varanasi Green Field Alignment (NH-148N) on EPC Mode under Bharatmala Pariyojana in the State of Haryana (hereinafter referred to as "Project").

While providing this legal opinion, we have perused the following documents:

- (a) The Letter of Acceptance (L.O. No. NHA/PM/DELHI-VAD./2018/Pkg-1/131566 Dt. 05.03.2019 for the project.
- (b) Request for Proposal for the above said project
- (c) The draft Contract Agreement to be signed between NHA and APCO for the project
- (d) The Memorandum and Articles of Association of APCO



*[Handwritten Signature]*  
781

**Dr. Mangal Singh**  
ADVOCATE  
HIGH COURT ALLAHABAD  
LUCKNOW BENCH, LUCKNOW



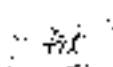
Office No. UG1, - 224 Dawa Plaza,  
Vishal Khand 1  
Gomti Nagar, Lucknow-226010  
Room No. E-2042, Varday Khand-2  
Gomti Nagar, Lucknow 226010  
Phone: 0522-2598091  
Mobile: 9415022664 -

5) The Board Resolution dated 09<sup>th</sup> March, 2019 of APCO authorizing Mr. D. Dily Babu, to sign the Contract agreement with National Highway Authority of India.

After perusal of these documents, I am of the following opinion:

- 1) APCO, as a company, is duly incorporated and registered under the Companies Act, 1956 and is also having the business of executing and operating infrastructure projects.
- 2) APCO has been issued Letter of Acceptance by the NHAI vide its Lt No. NHAI/BM/DELHI-VAD./2018/Plg.-1/131565 Dated 05.03.2019 after having duly participated and declared as the successful bidder in the tender for the project.
- 3) APCO has, vide its board resolution dated 9<sup>th</sup> March, 2019 authorized Mr. D. Dily Babu to sign the Contract Agreement for the project with National Highway Authority of India.
- 4) The said Board Resolution dated 9<sup>th</sup> March, 2019 has been duly passed by APCO in terms of the provisions of the Memorandum and Articles of Association and has the power to bind APCO in this respect.
- 5) Mr. D. Dily Babu having been authorized by the said board resolution has the power to represent APCO before the National Highway Authority of India for signing the Contract agreement of the Project and the Contract Agreement to be signed by Mr. D. Dily Babu shall be binding on APCO in all respect to the provisions of such contract Agreement.

Concluded accordingly

  
Dr. Mangal Singh  
ADVOCATE



Date: 11/03/2019  
Place: Lucknow







(NHA, Bharatmala Division)

Tender No. NHA/BBM/Delhi-Vadodara/2018/Pkg 2

This Integrity Pact is made at New Delhi on this day of July of 2019

Between

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

Chairman, National Highways Authority of India (NHAI), a statutory body constituted under the National Highways Authority of India Act, 1988, which has been entrusted with the responsibility of development, maintenance and management of National Highways, having its office at C-5 & 6, Sector-10, Dwarka, New Delhi, hereinafter referred to as "The Principal," which expression shall unless repugnant to the meaning or context thereof include its successors and permitted assigns

and

**APCO Infratech Private Limited**, the selected bidder having its registered office at 4<sup>th</sup> Floor, Universal Trade Tower, Sohna Road, Sector-49, Gurugram-122101 (Haryana), hereinafter referred to as the "Contractor" and which expression shall unless repugnant to the meaning or context thereof include its successors and permitted assigns

Preamble

Whereas, the Principal intends to award, under laid down organizational procedures, contracts BID for 'Construction of Eight Lane Expressway starting before KMP Expressway and ends at Ch. 47/1000 near Kherpur Ghazi' from km 18+500 to km 47+000 (approximately 28.500 km) on the sector of National Highway No.148-N (hereinafter called the "NH 148-N") in the state of Haryana' Project. The Principal values full compliance with all relevant laws of the land, rules of land, regulations, economic use of resources and of 'business' transparency in its relations with its Bidder(s) and / or Contractor(s)/ Concessionaire(s)/ Consultant(s)

And whereas in order to achieve these goals, the Principal will appoint an independent external Monitor (IEM), who will monitor the tender process and the execution of the contract for compliance with the Principles mentioned above

And whereas to meet the purpose aforesaid, both the parties have agreed to enter into this Integrity Pact (hereafter referred to as Integrity Pact); the terms and conditions of which shall also be read as integral part and parcel of the Tender documents and contract between the parties. Now, therefore, in consideration of mutual covenants stipulated in this pact, the parties hereby agree as follows and this pact witnesses it as under:-



#### **Article-1-Commitments of the Principal**

- (a) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles -
- (a) No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
- (b) The Principal will during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
- (c) The Principal will exclude all known prejudicial persons from the process, whose conduct in the past has been of biased nature.
- (d) If the Principal obtains information or the conduct of any of its employees which is a criminal offence under the IPC/PC Act or any other Statutory Acts or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary action as per its internal laid down Rules/Regulations.

#### **Article-2 Commitments of the Bidder(s)/ Contractor(s)/Concessionaire(s)/ Consultant(s)**

The Bidder(s)/ Contractor(s)/concessionaire(s)/ consultant(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.

- (a) The Bidder(s)/ Contractor(s)/ concessionaire(s)/ consultant(s) will not directly or through any other person or firm, offer, promise or give to any of the Principals employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
- (b) The Bidder(s)/ Contractor(s)/ concessionaire(s)/ consultant(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
- (c) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will not commit an offence under the relevant IPC/PC Act and other Statutory Acts, further the Bidder(s)





Contractor(s)/Concessionaire(s)/ Consultant(s) will not use improperly, for purposes of completion or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

- (c) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) of foreign origin shall disclose the name and address of the Agents, representatives in India, if any. Similarly the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) of Indian Nationality shall furnish the name and address of the foreign principal, if any.
- (d) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract. He shall also disclose the details of services agreed upon for such payments.
- (e) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- (f) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will not bring any outside influence through any Govt. bodies/parties directly or indirectly on the bidding process in furtherance of his bid.

### **Article-3 Disqualification from tender process and exclusion from future contracts**

1. If the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) before award or during execution has committed a transgression through a violation of any provision of Article-2 Above or in any other form such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) from the tender process.
2. If the Bidder/ Contractor/ Concessionaire/ Consultant has committed a transgression through a violation of Article-2 such as to put his reliability or credibility into question, the Principal shall be entitled to exclude including blacklist and put on holiday the Bidder/ Contractor/ Concessionaire/ Consultant for any future tenders/ contract award process. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the Principal, taking into consideration the full facts and circumstances of each case particularly taking into account the number of transgressions, the position of the transgressor within the company hierarchy of the Bidder/ Contractor/ Concessionaire/ Consultant and the amount of the damage. The exclusion will be imposed for a minimum of 1 year.
3. A transgression is considered to have occurred if the Principal after due consideration of the available evidence concludes that "On the basis of facts available there are no material doubts".



- (4) The Bidder/Contractor/Concessionaire/Consultant with its free consent and without any influence agrees and undertakes to respect and uphold the Principal's absolute rights to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.
- (5) The decision of the Principal to the effect that a breach of the provisions of this Integrity Pact has been committed by the Bidder/Contractor/Concessionaire/Consultant shall be final and binding on the Bidder/Contractor/Concessionaire/Consultant, however, the Bidder/Contractor/Concessionaire/Consultant, can approach IJM (s) appointed for the purposes of this Pact.
- (6) On occurrence of any sanctions/ disqualification etc arising out from violation of Integrity Pact, Bidder/Contractor/Concessionaire/Consultant shall not be entitled for any compensation on this account.
- (7) Subject to full satisfaction of the principal, the exclusion of Bidder/Contractor/Concessionaire/Consultant could be revoked by the Principal if the Bidder/Contractor/Concessionaire/Consultant can prove that he has restored/recouped the damage caused by him and has installed a suitable corruption prevention system in his organization.

**Article-4 Compensation for Damages**

- (1) If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Article 3, the Principal shall be entitled to forfeit the Earnest Money Deposit/Bid Security or demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security apart from any other legal right that may have accrued to the Principal.
- (2) In addition to above the Principal shall be entitled to take recourse to the relevant provisions of the contract related to termination of Contract due to Contractor/Concessionaire/Consultant's Default. In Such case, the Principal Shall be entitled to forfeit the Performance Bank Guarantee of the Contractor/Concessionaire/Consultants and/or demand and recover liquidated and all damages as per the provisions of the contract/Concession agreement against Termination.

**ARTICLE 5-Previous Transgression**

- (1) The Bidder declares that no previous transgression Occurred in the last 3 years immediately before signing of this Integrity Pact with any other Company in any country conforming to the anti-corruption/Transparency International (TI) approach or with any other Public Sector Enterprises/Jedertaking in India or any Government Department in the India that could justify his exclusion from the tender process.



- (2) If the Bidder makes incorrect statement on this subject he can be disqualified from the tender process or action for his exclusion can be taken as mentioned under Article-3 above for transgression of Article 2 and shall be liable for compensation for damages as per Article 4 above.

**ARTICLE 6-Equal treatment of all Bidders/ Contractors / Concessionaires / Consultants/Subcontractors**

- (1) The Bidder(s)/ Contractor(s)/Concessionaire(s)/ Consultant(s)/Undertake(s) to den and for all sub-contractors a commitment in conformity with this Integrity Pact and to submit it to the Principal before contract signing
- (2) The Principal will enter into agreements with identical condition as this one with all Bidders/ Contractors / Concessionaires/Consultants and Subcontractors.
- (3) The Principal will disqualify from the tender process all Bidders who do not sign this Pact or violate its provisions.

**Article 7-Criminal Charges against violating Bidder(s) / Contractor(s)/Concessionaire(s)/Consultant(s)/ Sub-contractor(s)**

If the Principal obtains Knowledge of conduct of a Bidder/ Contractor/Concessionaire/ Consultant or subcontractor, or of an employee or a representative or an associate of a Bidder/ Contractor/Concessionaire/ Consultant or subcontractor, which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to Chief Vigilance Officer.

**Article 8- Independent External Monitor (IEM)**

- (1) The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply the obligation under this agreement
- (2) The Monitor is not subject instruction by the representative of the parties and performs his functions neutrally and independently. He reports to the Chairman, NIIA.
- (3) The Bidder/ Contractor/Concessionaire/ Consultant accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that Provided by the Bidder/ Contractor/Concessionaire/ Consultant. The Bidder/ Contractor/Concessionaire/ Consultant will also grant the monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project. The Monitor is under contractual obligation to treat the information and documents of the Bidder/ Contractor/Concessionaire/ Consultant or subcontractors with confidentiality.
- (4) The Principal will provide to the Monitor sufficient information about all meeting among the parties relate to the Project provided such meeting could have an impact on the contractual relation between the Principal and the Bidder/ Contractor/Concessionaire/ Consultant. The parties offer to the Monitor the options to participate in such meeting



- 15) As soon as the Monitor notices or believes he notices any transgression as given in Article-2, he may request the Management of the Principal to take corrective action or to take relevant action. The Monitor can in this regard submit non-binding recommendation. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.
- 16) The Monitor will submit a written report to the Chairman, NHAJ within 8-10 weeks from the date of reference or intimation to him by the Principal and should the occasion arise, submit proposals for correcting problems/situations.
- 17) If the Monitor has reported to the Chairman, NHAJ a substantiated suspicion of under relevant IPC/PC Act or any other Statutory acts, and the Chairman, NHAJ, has not, within the reasonable time taken visible action to proceed against such offence or reported to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.

#### Article 9-Pact Duration

This Pact Begins when both parties have legally signed it [In case of EPC i.e. projects funded by Principal and consultancy services] It expires for the Contractor/Consultant 12 months after his Defects Liability Period is over or 12 months after his last payment under the contract whichever is later and for all other unsuccessful Bidders 6 Months after his Contract has been awarded [in case of BOT projects] It expires for the concessionaire 24 months after his concession period is over and for all other unsuccessful Bidders 6 months after this contract has been awarded.

If any claim is made/edged during this time, the same shall be binding and continue to be valid despite the lapse the lapse of this pact as specified above, unless it is discharged/determined by Chairman of NHAJ.

#### Article 10-Other Provision

- 1) This pact is subject to Indian law. Place of performance and jurisdiction is the Registered Office of the Principal i.e. New Delhi.
- 2) Change and supplements as well as termination notice need to be made in writing.
- 3) If the Bidder/Contractor/Concessionaire/Consultant is a partnership or a consortium, this pact must be signed by all partners or consortium members.
- 4) Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- 5) Any disputes/differences arising between the parties with regard to terms of this pact, any action taken by the Principal in accordance with this Pact or interpretation thereof shall not be subjects to any Arbitration.
- 6) The action stipulated in the Integrity pact are without pre-judice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal.



In witness where of the parties have signed and executed this Pact at the place and date first done mentioned in the presence of following witnesses

(For & on behalf of the Principal)

(For & on behalf of Contractor)

(Rohin Kumar Gupta)  
General Manager (Tech.)  
Bharatmala Division  
National Highways Authority of India

(D Dolly Babji)  
Joint Vice President (Business Development and  
Teaching)  
M/S. APCO Infratech Private Limited

G- 5&6, Sector-10, Dwarka,  
New Delhi-110075, India

4th Floor, Universal Trade Tower, Sohna Road,  
Sector-19, Gurgaon-122001 (Haryana)

In the presence of Witnesses

In the presence of Witnesses:

1. Signature:  
Name:  
Address:

1. Signature:  
Name:  
Address:

2. Signature:  
Name:  
Address:

2. Signature:  
Name:  
Address:

