National Highways Authority of India

(Ministry of Shipping, Road Transport & Highways)
Government of India

IMPROVEMENT, OPERATION AND MAINTENANCE INCLUDING STRENGTHENING AND WIDENING OF EXISTING 2-LANE ROAD TO 4-LANE DUAL CARRIAGEWAY FROM I) KM 5+735 – KM 39+960 OF NH-22 AND II) KM 0+000 – KM 0+871 OF NH-21 (AMBALA – CHANDIGARH SECTION) IN THE STATES OF HARYANA & PUNJAB ON BUILD, OPERATE AND TRANSFER (BOT) BASIS

CONCESSION AGREEMENT

between

National Highways Authority of India,
G – 5& 6, Sector-10, Dwarka, New Delhi – 110 075

and

M/s. GMR Ambala-Chandigarh Expressways Private Limited ,
SKIP HOUSE, 25/1, Museum Road, Bangalore- 560 025

November 2005

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Intersection Drawings

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CONCESSION AGREEMENT

This Agreement is entered into on this the ....16th..... day of .November, 2005 BETWEEN

1. **NATIONAL HIGHWAYS AUTHORITY OF INDIA,** a statutory body constituted under the provisions of the National Highways Authority of India Act, 1988, and having its principal office at G-5&6, Sector-10, Dwarka, New Delhi-110075 (hereinafter referred to as "NHAI" which expression shall unless repugnant to the context or meaning thereof includes its administrators, successors and assigns) of One Part,

AND

2. **GMR Ambala-Chandigarh Expressways Private Limited,** a company incorporated under the provisions of the Companies Act, 1956 having its Registered office at SKIP HOUSE, 25/1, Museum Road, Bangalore- 560 025 (hereinafter referred to as the "Concessionaire" or "Company" which expression shall unless repugnant to the context or meaning thereof include its successors and permitted substitutes) of the Other Part.

WHEREAS

A. NHAI is keen to implement a project envisaging improvement, operation and maintenance of Rehabilitation and Strengthening of existing 2-lane road and widening to 4-lane Dual Carriageway from i) Km 5+735 – Km 39+960 of NH-22

Contd. ... 2/-

And ii) Km 0+000 – Km 0+871 of NH-21 (Ambala – Chandigarh Section) on Build Operate and Transfer (BOT) basis (more particularly described in Schedule 'A', 'B' and 'C' and hereinafter referred to as "the Project") and has carried out feasibility study and detailed project report for the Project;

B. NHAI is responsible for development and maintenance of sections of National Highways in India, which are entrusted to it by Ministry of Shipping, Road Transport & Highways (MoSRT&H) earlier called Ministry of Road Transport & Highways (MoRT&H), including the project section described in Recital 'A' above;

C. MoRT&H had invited Proposals for empanelment of BOT Entrepreneurs for Four-laning of National Highways under National Highways Development Project called NHDP Phase III A(earlier called Non-NHDP) on BOT basis subject to and on the terms and conditions contained therein and empanelled the BOT Entrepreneurs.

D. NHAI had laid down and prescribed the technical and commercial terms and conditions and had invited Bids from the empanelled BOT Entrepreneurs vide Letter No. NHAI/BOT/NH-24035/42/2003 dated 9.06.2004 and letter No. NHAI/BOT/11019/17/2003 dated 22.05.2005 ("the Tender Notice") including, inter alia, the consortium comprising GMR Energy Limited(formerly known as M/s Tanvir Bavi Power Company Private Limited) and GMR Infrastructure Limited (Collectively the "Consortium") with GMR Energy Limited as its Lead Member, for undertaking the work referred to in Recital 'A' above on BOT basis.

E. After evaluation of the Bids so received, NHAI accepted the Bid of the Consortium and issued its Letter of Acceptance No. NHAI/BOT/11019/17/2003/237 dated 29.06.2005. ("LOA") to the Consortium requiring, inter alia, the execution of this Concession Agreement within 30 (thirty) days of the date of acceptance of LOA and furnishing of Performance Security before signing of the Concession Agreement. The Consortium accepted the LOA and the terms and conditions therein and issued its acceptance of LOA vide its letter No. SRH/AMCH/0712/2005 dated 12.07.2005.

F. Subsequently, the Consortium has promoted and incorporated the Concessionaire as a limited liability company to enter into this Concession Agreement pursuant to the LOA for undertaking, inter alia, the design, engineering, financing, procurement, construction, operation and maintenance of the Project Highway, as defined hereinafter on BOT basis as referred to in Recital 'A' and to fulfill other obligations of the Concessionaire pursuant to the LOA and has requested NHAI

vide letter No. 103/DB/2005-06/036 dated 19.09.2005 to accept the Concessionaire as the entity which shall undertake and fulfill and perform the obligations and exercise the rights of the Consortium under the LOA, including the obligation to enter into this Concession Agreement for the design, engineering, financing, procurement, construction, operation and maintenance of the Project Highway on BOT basis.

G. The Consortium vide letter No. 103/BD/2005-06/039 dated 24.09.2005 furnished a legal opinion from a legal counsel on its behalf representing that it is validly organized and duly authorized to enter into this Concession Agreement and fulfill all its obligations under this Concession Agreement

H. NHAI has agreed to the said request and representations of the Consortium referred to in recital "F" and "G" above and has accordingly agreed to enter into this Concession Agreement with the Concessionaire pursuant to the LOA for, inter alia, the design, engineering, financing, procurement, construction, operation and maintenance of the Project Highway on BOT basis.

I. The Concessionaire vide its letter No. SRH/AMCH/0824/2005 dated 24.08.2005 submitted the Performance Security of Rs.14,90,00,000/- (Rupees Fourteen Crores Ninety Lacs only) being 5% of the Total Project Cost.

J. It is deemed necessary and expedient to enter into this Agreement to record the terms of the said Agreement between the Parties.

NOW THEREFORE IN CONSIDERATION OF THE PREMISES AND THE MUTUAL COVENANTS HEREINAFTER CONTAINED, THE PARTIES HERETO HEREBY AGREE AND THIS AGREEMENT WITNESSETH AS FOLLOWS:

I DEFINITIONS AND INTERPRETATION

1.1 Definitions

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

"Accounting Year" means the financial year commencing from 1st April of any calendar year and ending on 31st March of the next calendar year.

"Additional Facilities" means the facilities which the Concessionaire may provide or procure for the benefit of the users of the Project Highway and which are (i) in addition to the Project Facilities, and (ii) not situated on the Site.

"Affected Party" shall have the meaning set out in Clause 29.1.

"Agreement" means the RFP, the Addendum Nos. 1,2 and 3 to the RFP, this Agreement, the Schedules 'A' through 'X', hereto and any amendments thereto made in accordance with the provisions contained in this Agreement.

"Applicable Laws" means all laws, promulgated or brought into force and effect by GOI, GOHR or GOPb including regulations and rules made thereunder, and judgements, decrees, injunctions, writs and orders of any court of record, as may be in force and effect during the subsistence of this Agreement.

"Applicable Permits" means all clearances, permits, authorisations, consents and approvals required to be obtained or maintained under Applicable Laws in connection with the design, engineering, financing, procurement, construction, operation and maintenance of the Project Highway during the subsistence of this Agreement.

"Appointed Date" means the date 180 days from signing of Concession Agreement and shall be deemed to be the date of commencement of the Concession Period.

"Arbitration Act" means the Arbitration and Conciliation Act, 1996 and shall include modifications to or any re-enactment thereof as in force from time to time.

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

"Bank" means a bank incorporated in India and having a minimum net worth of Rs.10,000 million (Rupees ten thousand million) and having a branch in the proximity of the Project or at any other place acceptable to NHAI.

"Bid" means the documents in their entirety comprised in the bid submitted by the Bidder in response to the Tender Notice in accordance with the provisions thereof.

"Bid Security" means the security provided by the Bidder to NHAI along with the Bid in accordance with the Tender Notice and which is to remain in force until substituted by the Performance Security.

"Bidder" means the Consortium referred to in Recital 'D' above.

"Capacity Augmentation" means addition of 2-lanes to transform the Project Highway from a 4-lane carriageway with paved shoulder to a 6-lane carriageway with paved shoulder to maintain the desired level of service to the users of Project facility.

"COD" means the commercial operations date of the Project Highway and shall be the date on which the Independent Consultant has issued the final Completion Certificate or the Provisional Certificate certifying Project Completion of the Project Highway in accordance with Article XVI of this Agreement.

"Change in Law" means the occurrence of any of the following directly related to the Highway Sector after the last day of the submission of tender:

i. the enactment of any new Indian law;

ii. the repeal, modification or re-enactment of any existing Indian law;

iii. the commencement of any Indian law which has not entered into effect until the last date of submission of tender;

iv. a change in the interpretation or application of any Indian law by a court of record as compared to such interpretation or application by a court of record prior to the last day of the submission of tender; or

v. any change in the rates of any of the Taxes.

"Change of Scope" shall have the meaning ascribed thereto in Clause 17.1.

"Company" means the Company acting as the Concessionaire under this Agreement.

"Completion Certificate" means the Certificate issued by the Independent Consultant pursuant to Clause 16.4.

"Concession" shall have the meaning ascribed thereto in Article III.

"Concession Fee" shall have the meaning ascribed thereto in Article VII.

"Concession Period" means the period beginning from the Appointed Date and ending on the Termination Date.

"Concessionaire" means GMR Ambala-Chandigarh Expressways Private Limited a company incorporated under the provisions of the Companies Act, 1956 having its Registered office at SKIP HOUSE, 25/1, Museum Road, Bangalore- 560 025 and its successors and substitutes expressly approved in writing by NHAI.

"Consortium" shall have the meaning set forth in Recital 'D' above.

"Consortium Members" means GMR Energy Limited (formerly known as M/s Tanvir Bavi Power Company Private Limited) having its Registered office at SKIP HOUSE, 25/1, Museum Road, Bangalore- 560 025 as the Lead Member and GMR Infrastructure Limited having its Registered office at SKIP HOUSE, 25/1, Museum Road, Bangalore- 560 025 (Collectively the "Consortium").

"Construction Period" means the period beginning from the Appointed Date and ending on the COD.

"Construction Works" means all works and things necessary to complete the Project Highway for use of the traffic and other users thereof in accordance with this Agreement.

"Contractor" means the contractor or contractors, if any, with whom the Concessionaire has entered into all or any of the Project Agreements.

"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 upon failing of which the Agreement may be terminated by the other Party.

"Damages" shall have the meaning ascribed thereto in Clause 1.2(p).

"Debt Due" means the aggregate of the following sums expressed in Indian Rupees or in the currency of debt, as the case may be, outstanding and payable to the Senior Lenders under the Financing Documents:

(i) the principal amount of the debt provided by the Senior Lenders under the Financing Documents for financing the Project (the "principal") which is outstanding as on the Termination Date but excluding any part of the principal that had fallen due for repayment one year prior to the Termination Date unless such repayment had been rescheduled with the prior consent of NHAI; and

(ii) all accrued interest, financing fees and charges payable on or in respect of the debt referred to in sub-clause (i) above upto the date preceding the Termination Date but excluding (a) any interest, fees or charges that had fallen due one year prior to the Termination Date, and (b) penal interest or charges, payable under the Financing Documents to any Senior Lender.

"Debt Service Payments" means the sum of all principal and interest payments due and payable in an Accounting Year to the Senior Lenders under the Financing Documents.

"Development Period" means the period from the date of this Agreement until the Appointed Date.

"Dispute" shall have the meaning set forth in Clause 39.1(a).

"Dispute Resolution Procedure" means the procedure for Dispute resolution set forth in Article XXXIX.

"Divestment Requirements" means the obligations of the Concessionaire and NHAI for and in respect of the Termination of this Agreement as set forth in Article XXXIII.

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

"Drawings" means all 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.

"EPC Contract" means contract or contracts entered into by the Concessionaire with one or more Contractors for the design, engineering, procurement of materials and equipment, construction, and completion of the Project Highway in accordance with the provisions of this Agreement.

"Emergency" means a condition or situation that is likely to endanger the 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 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 without limitation any designation of loss payees or beneficiaries or any similar arrangement under any insurance policy pertaining to the Project Highway.

"Equity" means the sum expressed in Indian Rupees representing the equity share capital of the Company and shall include the funds advanced by any Member of the Consortium or by any of its shareholders to the Concessionaire company for meeting the equity component of the Total Project Cost. Provided, however, that for purposes of computing Termination Payments under this Agreement, Equity shall be reckoned as an amount that is arrived at after excluding from the equity share capital of the Company the following viz. (a) Equity Support, if any, and (b) the sum by which the capital cost of the Project Highway as stated by the

Concessionaire for purposes of claiming Termination Payments exceeded the Total Project Cost.

"Equity Support" shall have the meaning ascribed thereto in Clause 23.3.

"Escrow Account" means an Account which the Concessionaire shall open and maintain with a Bank in which all inflows and outflows of cash on account of capital and revenue receipts and expenditures shall be credited and debited, as the case may be, in accordance with the provisions of this Agreement.

"Escrow Agreement" shall have the meaning ascribed thereto in Clause 25.2.

"Event of Default" shall have the meaning ascribed thereto in Clause 32.1.1. in respect of "Concessionaire Event of Default" and in Clause 32.4.1 in respect of the "NHAI Event of Default".

"Exempted Vehicles" means

(i) Vehicles –

(A) Having "VIP" symbols or officially belonging to:-
   a) President of India,
   b) Vice-President of India
   c) Governor of a State and Lt. Governor of a Union Territory
   d) A Foreign dignitary on State visit to India, and
   e) A Foreign Diplomat stationed in India using cars with "CD"/ "CC" number plates
   f) Chairman of Rajya Sabha or Speaker of Lok Sabha or Chairman of a State Legislative Council or Speaker of a State Legislative Assembly or a Minister for the Union or State or Leader of Opposition in Lok Sabha or Rajya Sabha or State Legislatures having the Status of Cabinet Minister if he is sitting in the vehicle; Or
   g) Members of Parliament in the entire country or a Member of Legislative Assembly of a State or a Member of Legislative Council of a State, in the respective State if he produces his Identity Card issued by the Parliament or concerned Legislature of a State as the case may be

(B) Belonging to winner of Gallantry awards such as Param Vir Chakra, Ashok Chakra, Maha Vir Chakra, Kirti Chakra, Vir Chakra and Shaurya Chakra, if such awardee produces his photo Identity Card duly authenticated by the Competent Authority for such award

(ii) Defence vehicles, Police vehicles, Fire fighting vehicles, Ambulances, Funeral vans, Post and Telegraph Department's vehicles, Central and State Government vehicles on duty.

"Fee" means the charge levied on and payable for a vehicle using the Project Highway in accordance with the Fee Notification and this Agreement.

"Fee Notification" means the Notification to be issued by GOI in exercise of the powers conferred by Section 8A of the National Highways Act, 1956 in respect of the levy and collection of the Fees in the form as set forth in Schedule "G" and includes any such subsequent notifications issued from time to time to give effect to the provisions of this Agreement.

"Financial Close" means the date on which the Financing Documents providing for funding by the Senior Lenders have become effective and the Concessionaire has immediate access to such funding under the Financing Documents.

"Financing Documents" means the documents executed by the Concessionaire in respect of financial assistance to be provided by the Senior Lenders by way of loans, guarantees, subscription to non-convertible debentures and other debt instruments including loan agreements, guarantees, notes, debentures, bonds and other debt instruments, security agreements, and other documents relating to the financing (including refinancing) of the Project and includes amendments or modifications made in accordance with Clause 9.1(iv).

"Financing Package" means the financing package of the Project furnished by the Concessionaire along with its Bid indicating the Total Project Cost and the means of financing thereof and shall be deemed to have been modified to the extent as submitted to the Senior Lenders and as approved by the Senior Lenders for the purposes of funding of the Project.

"Force Majeure" or "Force Majeure Event" shall mean an act, event, condition or occurrence specified in Article XXIX.

"GOI" means the Government of India.

"GOHR" means the Government of the State of Haryana.

"GOPb" means the Government of the State of Punjab.

"Good Industry Practice" means those practices, methods, techniques, standards, skills, diligence and prudence which are generally and reasonably expected of and accepted internationally from a reasonably skilled and experienced operator engaged in the same type of undertaking as envisaged under this Agreement and acting generally in accordance with the provisions of the NH Act, and would

mean good engineering practices in the design, engineering, construction and project management and which would be expected to result in the performance of its obligations by the Concessionaire and in the operation and maintenance of the Project Highway in accordance with this Agreement, Applicable Laws, Applicable Permits, reliability, safety, environment protection, economy and efficiency.

"Governmental Agency" means GOI, GOHR, GOPb or any ministry, department, commission, board, authority, instrumentality or agency, under the control of GOI, GOHR or GOPb 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 Concessionaire under or pursuant to this Agreement.

"Grant" shall have the meaning ascribed thereto in Clause 23.1.

"Indemnifying Party" means the Party obligated to indemnify the other Party pursuant to Article XXXVII.

"Independent Consultant" shall have the meaning ascribed thereto in Clause 20.1.

"Indirect Political Event" shall have the meaning ascribed thereto in Clause 29.3.

"Lenders' Representative" means the person(s) duly authorised by the Senior Lenders to deal with the Parties to the Agreement with regard to the issues arising out of and contained in this Agreement.

"Local Personal Traffic" means and includes a personal vehicle (car/passenger van/jeep) which is registered with GMR Ambala-Chandigarh Expressways Private Limited by any person who normally resides or works at a place that can normally be approached only by using a part of the section and such person is, therefore, required to use such vehicles for commuting on a part of the said section in the course of normal travel to and from his place of work or residence.

"Local Commercial Traffic" means any commercial vehicle including buses, trucks, light motor vehicles or taxis engaged in carrying goods and passengers registered with GMR Ambala-Chandigarh Expressways Private Limited as plying routinely on the said section ;

"Maintenance Manual" shall have the meaning ascribed to it in Clause 18.2.

"Maintenance Programme" shall have the meaning ascribed to it in Clause 18.3.

"Material Adverse Effect" means 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

"Material Breach" means a breach by either Party of any of its obligations in this Agreement which shall be deemed to have a Material Adverse Effect on the Project and which it shall have failed to cure within the Cure Period.

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

"Net Cash Flow" means in any Accounting Year revenue income less tax payments, O&M Expense, Concession Fee, Negative Grant and Debt Service Payments to Senior Lenders.

"Non Political Event" shall have the meaning ascribed thereto in Clause 29.2.

"O&M" means the operation and maintenance of the Project Highway during the Operations Period and includes but is not limited to functions of maintenance, collection and appropriation of Fees and performance of other services incidental thereto.

"O&M Contract" means the Operation and Maintenance Contract that may be entered into between the Concessionaire and the O&M Contractor for O&M of the Project Highway. .

"O&M Contractor" means the person or entity with whom the Concessionaire has entered into an O&M Contract for discharging O&M functions for and on behalf of the Concessionaire.

"O&M Expense" means expenses incurred by or on behalf of the Concessionaire duly certified by its Statutory Auditors or by NHAI, as the case may be, for all regularly scheduled and reasonably anticipated O&M during Operations Period, including, without limitation (a) all cost of salaries and other employee compensation and contract fee payable to the O&M Contractor, if any (b) cost of materials, supplies, utilities and other services (c) premia for insurance (d) all

franchise, excise, property and other similar taxes and all costs and fees incurred in order to obtain and maintain all Applicable Permits necessary for the O&M of the Project Highway at its full design capacity, (e) all repair, replacement and maintenance costs of the Project Highway, and (f) all other expenditures required to be incurred under Applicable Law or under Applicable Permits necessary for the operation and maintenance of the Project Highway according to the Specifications and Standards at its full design capacity.

"O&M Support" shall have the meaning ascribed thereto in Clause 23.4(c).

"O&M Works" means all works necessary to keep the Project Highway in operation during the Operations Period.

"Operations Period" means the period commencing from COD and ending on the Termination Date.

"PCU" shall have the meaning ascribed to the passenger car unit in the 'Indian Roads Congress', Publication No.IRC-64, 1990, a true copy of which is at Schedule 'W', and for the purposes of this Agreement refers only to such PCUs which pay Fees in accordance with the Fee Notification.

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

"Performance Security" shall have the meaning ascribed thereto in Clause 5.1

"Political Event" shall have the meaning ascribed thereto in Clause 29.4.

"Preliminary Notice" shall have the meaning attributed thereto in Clause 32.1.2.

"Project" means the development, design, financing, procurement, engineering and construction, operation and maintenance of the Project Highway in accordance with the provisions of this Agreement and shall include all works relating to or in respect of the Project Highway as described in Article II.

"Project Agreements" means this Agreement, the Financing Documents, the EPC Contract, if any, the O&M Contract, if any, the Tolling Contract, if any, and any other agreements or contracts entered into by the Concessionaire with NHAI or others relating to the Project during the subsistence of this Agreement.

"Project Assets" means all physical and other assets relating to and forming part of the Project Highway including but not limited to (i) rights over the Site in the form of license, right of way or otherwise, (ii) tangible assets such as civil works including the foundation, embankments, pavements, road surface, interchanges, bridges, approaches to bridges and flyovers, road overbridges, drainage works, lighting facilities, traffic signals, sign boards, milestones, toll plazas, equipment for the collection of tolls or relating to regulation of traffic, electrical works for lighting on the Project Highway, telephone and other communication systems and equipment for the Project, rest areas, administration and maintenance depots, relief centers, service facilities etc. (iii) Project Facilities situated on the Site (iv) the rights of the Concessionaire under the Project Agreements, (v) financial assets, such as security deposits for electricity supply, telephone etc. (vi) insurance proceeds and (vii) Applicable Permits and authorisations relating to or in respect of the Project Highway, but does not include Additional Facilities.

"Project Completion" shall have the meaning ascribed thereto in Clause 15.1.

"Project Completion Schedule" means the progressive Project milestone set forth in Schedule 'H' for the realization of the Project Highway complete in all respects by the Scheduled Project Completion Date.

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

"Project Highway" means the improvement, operation and maintenance of Rehabilitation and Strengthening of existing 2-lane road and widening to 4-lane Dual Carriageway of Ambala – Chandigarh Section from i) Km 5+735 – Km 39+960 of NH-22 And ii) Km 0+000 – Km 0+871 of NH-21 except 2.085 km portion of NH-22, Dera Bassi ROB from km 30.960 to km 33.045 till the validity of existing concession of M/s R. S. Builders & Engineers is over and shall include the Project Assets and the Project Facilities to be designed, engineered and built on Site and to be operated and maintained during the Concession Period in accordance with the provisions of this Agreement.

"Provisional Certificate" shall have the meaning ascribed to it in Clause 16.5.

"Punch List" shall have the meaning ascribed to it in Clause 16.5.

"RBI" means the Reserve Bank of India as constituted and existing under the Reserve Bank of India Act, 1946 including any statutory modification or replacement thereof, and its successors etc.

"RFP" means the Request for Proposal issued vide Letter No. NHAI/BOT/NH-24035/42/2003 dated 9.06.2004 and subsequent Addendums issued vide letter Nos.NHAI/BOT/11019/17/2003 dated 22.05.2005 (Addendum No.1), NHAI/BOT/11019/17/2003 dated 31.05.2005 (Addendum No.2) and NHAI/BOT/11019/17/2003 dated 8.06.2005 (Addendum No.3) for the development of the Project Highway.

"Realisable Fee" means all the Fees due and realisable under this Agreement but does not include Fees that the Concessionaire has not been able to realise after due diligence and best efforts.

"Revenue Shortfall Loan" shall have the meaning ascribed to it in Clause 24.1.

"Rs." Or "Rupees" means the lawful currency of the Republic of India.

"SBI PLR" means the prime lending rate per annum for loans with 1(one) year maturity as fixed from time to time by the State Bank of India, and in the absence of such rate, the average of the prime lending rates for loans with 1(one) year maturity fixed by the Bank of India and failing that any other arrangement that substitutes such prime lending rate as mutually agreed between the Parties.

"Scheduled Project Completion Date" shall have the meaning set forth in Clause 15.3.

"Senior Lenders" means the financial institutions, banks, funds and agents or trustees of debenture holders, Non-Banking Financial Companies approved by Reserve Bank of India including their successors and assignees, who have agreed to guarantee or provide finance to the Concessionaire under any of the Financing Documents for meeting costs of all or any part of the Project and who hold pari passu charge on the Concession granted by this Agreement.

"Site" means the real estate licensed by NHAI to the Concessionaire under and in accordance with this Agreement on which the Project Highway is situated.

"Specifications and Standards" means the specifications and standards relating to the quality, capacity and other requirements for the Project Highway as set forth in Schedule 'D' and any modifications thereof, or additions as included in the design and engineering for the Project Highway submitted by the Concessionaire to and expressly approved by NHAI.

"State Support Agreement" means the agreement to be entered into between the GOHR, GOPb, NHAI and the Concessionaire substantially in the form set forth in Schedule 'R' for provision of support, backup and services required from GOHR and GOPb for the performance of Concessionaire's obligations under this Agreement.

"Statutory Auditors" means an independent, recognized and reputable firm of Chartered Accountants duly licensed to practice in India acting as independent statutory auditors of the Concessionaire under the provisions of the Companies Act, 1956 including any statutory modification or re-enactment or replacement thereof, for the time being in force, and appointed in accordance with Clause 28.2.

"Subordinated Debt" means any borrowings by the Concessionaire subordinated to the financial assistance provided by the Senior Lenders for meeting the Total Project Cost but does not include any interest thereon.

"Subsistence Revenue Level" means the total amount of Fee revenue that is required by the Concessionaire in an Accounting Year to meet the sum of (a) the O&M Expense subject to an annual ceiling of 1.5% (one and a half percent) of the Total Project Cost in the first operations year, to be revised each year to reflect the variations in the WPI in each subsequent years and (b) Debt Service Payments due to the Senior Lenders in an Accounting Year.

"Substitution Agreement" means the agreement referred to in Article XXXV and to be entered into among the Concessionaire, NHAI and the Senior Lenders in the form set forth in Schedule 'U' providing, inter alia, for the substitution of the Concessionaire by any other person subject to and in accordance with the provisions of this Agreement and the Substitution Agreement.

"Taxes" means any Indian taxes on corporate income, Sales tax, excise duties, customs duties and local taxes and any impost of like nature (whether Central, State or local) charged, levied or imposed on the goods, materials, equipment and services incorporated in and forming part of the Project Highway, on the

construction, operation and maintenance thereof and on the Project Assets, but excluding any interest, penalties and other sums in relation thereto imposed on any account whatsoever.

"Termination" means the expiry or termination of this Agreement and the Concession hereunder.

"Termination Date" means the date on which this Agreement and the Concession hereunder expires pursuant to the provisions of this Agreement or is terminated by a Termination Notice.

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

"Termination Payment" means the amounts payable by NHAI to the Concessionaire under this Agreement upon the Termination of this Agreement and shall consist of payments relating to Debt Due, Subordinated Debt and Equity, as the case may be, and such other amounts as are expressly provided for under this Agreement. Provided, however, that for purposes of determining Termination Payments to be made by NHAI under this Agreement, the capital cost of the Project Highway shall at all times be reckoned as an amount not exceeding the Total Project Cost and the liability of NHAI to make such Termination Payments relating to Debt Due, Subordinated Debt and Equity shall be determined as if such capital cost was restricted to Total Project Cost.

"Tests" mean the tests to be carried out as set forth in and in accordance with Schedule 'J' to determine the Project Completion and its certification by the Independent Consultant for commencement of commercial operation of the Project Highway.

"Toll Plaza" means the structures and barriers erected on the Project Highway for the purpose of regulating the entry/exit of vehicles in accordance with the provisions of this Agreement.

"Tolling Contract" means the contract, if any, entered into by the Concessionaire with the Tolling Contractor for operation of the Toll Plazas including collection of Fees for and on behalf of the Concessionaire.

"Tolling Contractor" means the person, if any, with whom the Concessionaire has entered into a Tolling Contract for operation of Toll Plazas and collection of Fees for and on behalf of the Concessionaire.

"Total Project Cost" means the lowest of the following:

a. a sum of Rs. 2980 million (Rs. two thousand nine hundred and eighty million only);
b. actual capital cost of the Project upon completion of the Project Highway as certified by the Statutory Auditors; or
c. total project cost as set forth in Financing Documents.

Provided further that if part of the Total Project Cost is funded in foreign currency, in accordance with the Financing Package, then the rate of exchange shall be determined as on the date of Bid, and the Total Project Cost shall be computed as if such foreign currency were converted with reference to such exchange rate. In the event of Termination of this Agreement requiring NHAI to make Termination Payments, the liability of NHAI shall be determined on basis of the rate of exchange prevailing on the date of Termination Notice and the amounts payable by NHAI for Debt Due and Subordinated Debt , as the case may be, shall be computed accordingly.

"Vesting Certificate" shall have the meaning attributed to it in Clause 33.4.

"WPI" means the wholesale price index published by the Ministry of Industry, GOI and shall include any index, which substitutes the WPI.

1.2 Interpretation

In this Agreement, unless the context otherwise requires,

(a) any reference to a statutory provision shall include such provision as is from time to time modified or re-enacted or consolidated so far as such modification or re-enactment or consolidation applies or is capable of applying to any transactions entered into hereunder;

(b) references to Indian law shall include the laws, acts, ordinances, rules, regulations, or bye laws which have the force of law in any State or Union Territory forming part of the Union of India;

(c) the words importing singular shall include plural and vice versa, and words denoting natural persons shall include partnerships, firms, companies, corporations, joint ventures, trusts, associations, organizations or other entities (whether or not having a separate legal entity);

(d) the headings are for convenience of reference only and shall not be used in and shall not affect the construction or interpretation of this Agreement;

(e) terms and words beginning with capital letters and defined in this Agreement shall have the meaning ascribed thereto herein and the terms and words defined in the Schedules and used therein shall have the meaning ascribed thereto in the Schedules;

(f) the words "include" and "including" are to be construed without limitation;

(g) references to "construction" include, unless the context otherwise requires, investigation, design, engineering, procurement, delivery, transportation, installation, processing, fabrication, testing, commissioning and other activities incidental to the construction;

(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) any reference to month shall mean a reference to a calendar month;

(k) the Schedules 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;

(l) 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, license 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 NHAI hereunder or pursuant hereto in any manner

whatsoever;

(m) references to Recitals, Articles, Clauses, Sub-clauses, Paragraphs, or Schedules in this Agreement shall, except where the context otherwise requires, be deemed to be references to Recitals, Articles, Clauses, Sub-clauses, Paragraphs, and Schedules of or to this Agreement;

(n) any agreement, consent, approval, authorisation, notice, communication, information or report required under or pursuant to this Agreement from or by any Party or the Independent Consultant shall be valid and effectual only if it is in writing under the hands of duly authorised representative of such Party or the Independent Consultant, as the case may be, in this behalf and not otherwise;

(o) 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;

(p) the damages payable by either Party to the other of them as set forth in this Agreement, whether on per diem basis or otherwise, are mutually agreed genuine pre-estimated loss and damage likely to be suffered and incurred by the Party entitled to receive the same and are not by way of penalty or liquidated damages (the "Damages"); and

(q) unless otherwise expressly provided in this Agreement any Documentation required to be provided or furnished by the Concessionaire to NHAI and/or the Independent Consultant shall be provided free of cost and in three copies and if NHAI and/or the Independent Consultant are required to return any such Documentation with their comments and/or approval, they shall be entitled to retain two copies thereof.

1.3 Measurements and Arithmetic Conventions

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

1.4 Priority of contract documents and errors/discrepancies

1.4.1 The several documents forming this Agreement are to be taken as mutually explanatory to one another and, unless otherwise expressly provided elsewhere in this Agreement, the priority of the following documents shall in the event of any conflict between them be in the order they are set out:

(i) this Agreement

(ii) all other documents forming part of this Agreement

i.e. document at (i) above shall prevail over the documents at (ii) above.

1.4.2 In case of ambiguities or discrepancies within this Agreement the following shall apply:

(i) between two Clauses of this Agreement, the provisions of the specific clause relevant to the issue under consideration shall prevail over those in other Clauses;

(ii) Between the Clauses and the Schedules, the Clauses shall prevail save as otherwise expressly set forth in Clause 1.4.1;

(iii) Between the written description on the Drawings and the Specifications and Standards, the latter shall prevail;

(iv) Between the dimension scaled from the Drawing and its specific written dimension, the latter shall prevail;

(v) Between any value written in numerals and that in words, the latter shall prevail.

II SCOPE OF PROJECT

2.1 The Project shall be executed on the Site, which is described in Schedule 'A' of this Agreement. The scope of the Project shall include performance and execution by the Concessionaire of all design, engineering, financing, procurement, construction, completion, operation and maintenance of the Project Highway as described in Schedule 'B' and Schedule 'C' of this Agreement. It shall include improvement, operation and maintenance of Rehabilitation and Strengthening of existing 2-lane road and widening to 4-lane Dual Carriageway of Ambala – Chandigarh Section from i) Km 5+735 – Km 39+960 of NH-22 And ii) Km 0+000 – Km 0+871 of NH-21 except 2.085 km portion of NH-22, Dera Bassi ROB from km 30.960 to km 33.045 till the validity of existing concession of M/s R.S. Builders & Engineers is over in accordance with the Specifications and Standards set forth in Schedule 'D' and operation and maintenance thereof in accordance with Schedule 'L'. It shall also include the performance and fulfillment of other obligations by the Concessionaire under this Agreement.

The Concessionaire shall undertake its obligations at its own cost and risk.

CHAPTER – II
GRANT OF CONCESSION

III. GRANT OF CONCESSION

3.1 Subject to and in accordance with the terms and conditions set forth in this Agreement, NHAI hereby grants to the Concessionaire and the Concessionaire hereby accepts the Concession for a period of **20 (twenty) years** commencing from the Appointed Date, including the exclusive right, licence and authority during the subsistence of this Agreement to implement the Project and the Concession in respect of the Project Highway.

3.2 Subject to and in accordance with the terms and conditions set forth in this Agreement, the Concession hereby granted shall entitle the Concessionaire to enjoy, and oblige the Concessionaire to undertake the following in accordance with the provisions of this Agreement, the Applicable Laws and the Applicable Permits:

i to develop, design, engineer, finance, procure, construct, operate and maintain the Project Highway during the Concession Period;

ii upon completion of the Project Highway and during the Operations Period to manage, operate & maintain the Project Highway and regulate the use thereof by third parties;

iii levy, demand, collect and appropriate the Fees from vehicles and persons liable to payment of Fees for using the Project Highway or any part thereof and refuse entry of any vehicle to the Project Highway if the due Fee is not paid;

iv perform and fulfill all of the Concessionaire's obligations under this Agreement;

v bear and pay all expenses, costs and charges incurred in the fulfillment of all the Concessionaire's obligations under this Agreement ;and

vi not assign or create any lien or Encumbrance on the Concession hereby granted on the whole or any part of the Project Highway nor transfer, lease or part possession therewith save and except as expressly permitted by this Agreement or the Substitution Agreement.

3.3. The Concession Period shall commence on the Appointed Date and shall end on the Termination Date.

IV. CONDITIONS PRECEDENT

4.1 Conditions Precedent

Save and except as provided in Articles IV, V and XXII, the rights and obligations of the Concessionaire under this Agreement are subject to the satisfaction in full of the following conditions precedent to be fulfilled on or before Financial Close unless any such condition has been waived as provided in Clause 4.2:

(a) Concessionaire shall have obtained all such Applicable Permits as listed in Schedule 'E' unconditionally or if subject to conditions then all such conditions have been satisfied in full and such Applicable Permits are and shall be kept in full force and effect for the relevant period during the subsistence of this Agreement;

(b) the Concessionaire shall have been granted way leaves required in connection with the Project including:

(i) right of way of the existing alignment of the Project Highway free from all Encumbrances;
(ii) rights of way from public roads to the Site; and
(iii) permission/license to enter upon and utilise the Site for the construction pursuant to and in accordance with this Agreement.

(c) The Concessionaire shall have been granted all Central Government clearances and permits under the Applicable Laws relating to environmental protection and conservation from the Ministry of Environment and Forest.

(d) the Concessionaire shall have entered into the State Support Agreement with NHAI, GOHR and the GOPb;

(e) certified true copies of all Project Agreements, in particular, the Financing Documents, the EPC Contract, O&M Contract, if any and the Tolling Contract, if any, as well as the shareholders funding agreement have been

delivered by the Concessionaire to NHAI;

(f) the Performance Security in full has been provided by the Concessionaire to NHAI in accordance with Clause 5.1;

(g) all of the representations and warranties of the Concessionaire set forth in Article XI are true and correct as on date of this Agreement and as on the Appointed Date;

(h) NHAI shall have received from the Concessionaire copies (certified as true copies by an authorised officer of the Concessionaire) of the constitutional documents of the Concessionaire;

(i) NHAI shall have received copies (certified as true copies by a Director of the Concessionaire) of all resolutions adopted by the Board of Directors of the Concessionaire authorising the execution, delivery and performance by the Concessionaire of this Agreement and each of the Project Agreements;

(j) NHAI shall have received from the Indian legal counsel of the Concessionaire a legal opinion with respect to the authority of the Concessionaire to enter into this Agreement and the Project Agreements and the Financing Documents and the enforceability of the provisions thereof;

4.2 Any of the conditions precedent set forth in Clause 4.1, save and except condition of Sub-clause (b) and (c) thereof, may be waived fully or partially by NHAI at anytime in its sole discretion.

4.3 Obligation to Satisfy the Conditions Precedent.

The Concessionaire shall make all reasonable endeavors to procure the satisfaction in full of the Conditions Precedent set out in Clause 4.1 above and NHAI shall make all reasonable endeavor to procure fulfillment of the conditions set forth in Sub-clauses (b), (c) and (d) of Clause 4.1. Each Party shall bear its respective cost and expense of satisfying such Condition Precedent unless otherwise expressly provided.

4.4 If the Conditions Precedent set forth in Clause 4.1 have not been satisfied on or before the Financial Close and the NHAI has not waived, fully or partially, such

conditions under Clause 4.2, NHAI may, notwithstanding anything to the contrary contained in this Agreement, terminate this Agreement in accordance with provisions of Clause 32.2 without being liable in any manner whatsoever to the Concessionaire and forfeit the Bid Security and/or the Performance Security by way of Damages, provided that where NHAI does not fulfill its obligations under Clause 4.3 and terminates this Agreement under this Clause 4.4, it shall refund in full Bid Security or the Performance Security, as the case may be.



V. PERFORMANCE SECURITY

5.1 The Concessionaire has submitted for due and faithful performance of its obligations during the Construction Period to NHAI a Bank Guarantee issued by Bank of Baroda, Corporate Financial Service Branch, HJS Chambers, 1st Floor, No. 26, Richmond Road, Banglore-560 025 bearing No. 1137 dated 24.08.2005 and valid till 23.08.2008 (the "Performance Security") for a sum equivalent to Rs.14,90,00,000/- (Rupees Fourteen Crores Ninety Lacs only) being 5% of the Total Project Cost. The Concessionaire further agrees and undertakes to keep the Performance Security valid and enforceable till COD subject to Clause 5.2 below. The Concessionaire shall have an option to replace the Bank Guarantee submitted by it before execution of the Concession Agreement towards Performance Security by another Bank Guarantee amounting for Rs. 8.94 Crores (Rupees Eight Crores Ninety Four Lacs) on any date on or after Financial Close.

5.2 The Performance Security shall be released by NHAI to the Concessionaire upon contribution of the Equity (excluding Equity Support, if any) by the shareholders of the Concessionaire to the extent of 100% and upon the Concessionaire having expended on the Project and paid out an aggregate sum of not less than 20% (twenty percent) of the Total Project Cost as certified by the Statutory Auditors of the Concessionaire and provided the Concessionaire is not in breach of this Agreement. If the Concessionaire is in breach of this Agreement, the Performance Security shall be continued till the COD or until the breach is cured; whichever is earlier.

5.3 In the event of the Concessionaire being in default in the due and faithful performance of its obligations under this Agreement and failing to remedy such default within the Cure Period, the NHAI shall without prejudice to its other rights and remedies hereunder be entitled to encash and appropriate the Performance Security as Damages for such default. Upon such encashment and appropriation of the Performance Security, NHAI shall grant a period of 15 (fifteen) days to the Concessionaire to provide fresh Performance Security and the Concessionaire shall within the time so granted furnish to NHAI such Performance Security failing which NHAI shall be entitled to Terminate this Agreement under clause 32.2. The provision set forth in Clause 5.2 and this Clause 5.3 shall apply mutatis-mutandis to such fresh Performance Security.

5.4 Notwithstanding anything to the contrary contained in clause 5.3, upon furnishing of fresh Performance Security in accordance with clause 5.3, the Concessionaire shall be granted an additional period of 60 (Sixty) days as Cure Period for remedying the defaults and complying with his obligations under this Agreement. In the event of the Concessionaire continuing to be in breach of the provisions of this Agreement after such Cure Period, NHAI shall be entitled to terminate this Agreement under the provisions of Clause 32.2.

VI. FEES

6.1 The Concessionaire shall be entitled during the Operations Period to levy and collect the Fees from the users of the Project Highway pursuant to and in accordance with the Schedule of User Fee set forth in Schedule 'G' and this Agreement. Provided, however, that such Fee shall be rounded off to the nearest one rupee for ensuring ease of payment and collection. Within 90 days prior to the COD of the Project Highway, as certified by Independent Consultant, the Schedule of User Fees as per Schedule 'G', shall be notified by MoSRT&H as Fees Notification.

6.2 The Concessionaire acknowledges that the Fee Notification, inter alia, provides for annual revision in the Fees linked to the extent of variation in WPI as per the Fee Notification, and hereby confirms that save and except as provided in the Fee Notification, the Concessionaire is not entitled to and shall not seek any relief whatsoever from NHAI, GOI, GOHR or GOPb on account of increase or otherwise in WPI or on any other account except in accordance with the express provisions of this Agreement.

6.3 The Concessionaire shall not collect any Fees from Local Personal Traffic and Local Commercial Traffic in excess of the following discounted rates:

- Local Personal Traffic : 25% of the applicable fees for the specific category of vehicle.
- Local Commercial Traffic : 50% of the applicable fees for the specific category of vehicle.

It shall issue appropriate passes or make refunds in a manner that minimises the inconvenience to Local Traffic consistent with the Concessionaire's need to prevent any leakage of Fees. For carrying out provisions of this Clause, the Concessionaire shall formulate, publish and implement an appropriate scheme and carry out such modifications and improvements to such scheme as may reasonably be suggested by NHAI or required by local circumstances from time to time in conformity with

the objectives of this Agreement. Provided, however, that if a separate service lane is opened for free use by Local Traffic, the Concessionaire shall levy and collect Fees from such Local Traffic if they use the four-lane Highway.

6.4 The Concessionaire shall not collect any Fees in relation to Exempted Vehicles.

6.5 The Fees collected by the Concessionaire or NHAI or NHAI's nominee pursuant hereto shall be deposited in the Escrow Account and appropriated in accordance with the provisions of Article XXV.

6.6 The Concessionaire may delegate its right to collect Fees to the O&M Contractor or the Tolling Contractor or to any other person provided, however, that notwithstanding such delegation, the Concessionaire shall be and remain solely liable and responsible for the collection of Fees in accordance with this Agreement and its deposit into the Escrow Account.

VII CONCESSION FEE

7.1 In consideration of the grant of Concession under this Agreement, the Concession Fee payable by the Concessionaire to the NHAI shall be Re.1.00 (Rupee One) per year during the term of this Agreement.

7.2 The Concession Fee shall be paid in advance within 90 (ninety) days of the commencement of the year for which it is due and payable.

VIII ADDITIONAL TOLLWAY

8.1 Notwithstanding anything to the contrary contained in this Agreement, any of NHAI, GOI, GOHR or GOPb may construct and operate either itself or have the same, inter alia, built and operated on BOT basis or otherwise any Expressway or other toll road, not being a by-pass, between, inter alia, Ambala-Chandigarh Section from i) Km 5+735 – Km 39+960 of NH-22 And ii) Km 0+000 – Km 0+871 of NH-21 (the "Additional Tollway") provided that such Additional Tollway shall not be opened to traffic before expiry of 8 (eight) years from the Appointed Date.

8.2 In the event of NHAI, GOI, GOHR or GOPb, as the case may be, constructing or permitting construction of any Additional Tollway as set forth in this Clause 8.2, and the Additional Tollway is commissioned at any time after 8 (eight) years from the Appointed Date, then the Concession Period shall be increased by half the number of years by which such commissioning precedes the expiry of the Concession Period.

8.3 Upon commissioning of the Additional Tollway, the Concessionaire shall continue to levy and collect the Fee under this Agreement and shall not offer any discounts or reductions in such Fee except with the prior written consent of NHAI. Provided, however, that any such discounts or reductions that the Concessionaire had offered to any general or special class of users or vehicles for a continuous period of three years prior to the commissioning of the Additional Tollway may continue in the same form and manner after the commissioning of such Additional Tollway.

8.4 NHAI shall ensure that the per kilometer fee to be levied and collected from any vehicle or class of vehicles using the Additional Tollway shall at no time be less than an amount which is 133% of the per kilometer Fee levied and collected from similar vehicles or class of vehicles using the Project Highway.

VIIIA Capacity Augmentation

Notwithstanding anything contained any where in this Concession Agreement contrary to the provisions here below, the following are prescribed.

8A.1 The NHAI may, following a detailed traffic study conducted by it, at any time after 8 years following COD decide to augment/increase the capacity of the Project (capacity Augmentation) with a view to provide the desired level of service to the users of the Project Facility.

8A.2 The NHAI shall invite proposals from eligible Persons for Capacity Augmentation. The Concessionaire shall have option to submit its proposal for Capacity Augmentation.

8A.3 The bid document for Capacity Augmentation shall specify a Termination payment to be made to the Concessionaire in case the Concessionaire chooses not to submit its proposal or fails or declines to match the preferred offer as mentioned in Cl 8A.5 below.

8A.4 In case the Concessionaire after participating in the bidding procedure, fails to give the lowest offer, the Concessionaire shall be given the first right of refusal to match the preferred offer. If the Concessionaire matches the preferred offer, the Parties shall enter into a suitable agreement supplemental to this Agreement to give effect to the changes in scope of the Project, Concession Period and all other necessary and consequential changes. In such an event the Concessionaire shall pay to the bidder who had made the lowest offer sum of Rs. 10 lakhs (Ten Lakhs) towards bidding costs incurred by such bidder.

8A.5 In case the Concessionaire (i) chooses not to submit its proposal for Capacity Augmentation or (ii) is not the preferred bidder and also fails or declines to match the preferred offer, NHAI shall be entitled to terminate this Agreement upon payment to the Concessionaire of the Termination Payment.

8A.6 The Termination payment referred to in the preceding clauses 8A.3 & 8A.5 above shall be the amount equivalent to the amount of Termination Payment set out in Cl. 32.4.2



CHAPTER –III
OBLIGATIONS AND UNDERTAKINGS

IX. OBLIGATIONS OF THE CONCESSIONAIRE

9.1 The Concessionaire shall at its own cost and expense observe, undertake, comply with and perform, in addition to and not in derogation of its obligations elsewhere setout in this Agreement, the following:

(i) make, or cause to be made, necessary applications to the relevant Governmental Agencies with such particulars and details, as may be necessary for obtaining all Applicable Permits, and obtain such Applicable Permits in conformity with the Applicable Laws;

(ii) notify to NHAI forthwith the occurrence of Financial Close;

(iii) submit to NHAI certified true copies of each of the Project Agreements within 7 (seven) days of their execution;

(iv) not make any replacement, amendment or modifications to any of the Project Agreements without the prior written consent of NHAI, where such replacement, amendment or modification has or may have the effect of increasing or imposing any financial liability or obligation on NHAI in any manner, and where such amendment or modification is made without such consent, not to enforce such amendment or modification nor permit enforcement thereof against NHAI in any manner whatsoever;

(v) give NHAI not less than 30 (thirty) days written notice prior to entering into, amending or replacing any Project Agreement so as to enable NHAI to provide its consent or offer its comments, if any thereon which, if made, shall be duly considered and given effect to by the Concessionaire before entering into, amending or replacing such Project Agreement;

(vi) remove promptly from the Project Highway all surplus construction machinery and materials, waste materials (including, without limitation, hazardous materials and waste water), rubbish and other debris (including without limitation accident debris) and shall keep the Site in a neat and clean condition and in conformity with the Applicable Laws and Applicable Permits;

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

(viii) provide all assistance to the Independent Consultant as it may require for the performance of its duties and services;

(ix) provide to NHAI reports on regular basis during the Construction Period and the Operations Period in the form and manner set forth in this Agreement and Schedule 'X';

(x) obtain and maintain in force on and from the Appointed Date all insurance in accordance with the provisions of this Agreement and Good Industry Practice;

(xi) acquire such real estate, as the Concessionaire may deem appropriate for the Additional Facilities and to indemnify and save harmless and defend GOI, NHAI, GOHR and GOPb from and against all proceedings, claims, demands, costs, expenses, losses and damages arising out of or relating to the securing of rights to use such real estate by the Concessionaire or any person claiming through or under the Concessionaire;

(xii) undertake Debt Service Payments in accordance with the Financing Documents;

(xiii) levy and collect Fees from users of the Project Highway at the rates set forth in the Fee Notification and in accordance with this Agreement and regulate the traffic on the Project Highway in accordance with the Applicable Laws;

(xiv) ensure and procure that each Project Agreement contains provisions that entitle NHAI to step into such agreement in its discretion in place and substitution of the Concessionaire in the event of Termination of this Agreement on account of default or breach by the Concessionaire;

(xv) appoint, supervise, monitor and control the activities of Contractors under their respective Project Agreements as may be necessary;

(xvi) make reasonable efforts to maintain harmony and good industrial relations among the personnel employed in connection with the performance of the Concessionaire's obligations under this Agreement;

(xvii) comply with all Applicable Permits and Applicable Laws in the performance of the Concessionaire's obligations under this Agreement including those being performed by any of the Contractors;

(xviii) develop, implement and administer a surveillance and safety program for the Project Highway, the users thereof, and the Contractors personnel engaged in the provision of any services under any of the Project Agreements including correction of safety violations and deficiencies, and taking of all other actions necessary to provide a safe environment in accordance with Schedule 'S', Applicable Laws and Good Industry Practice;

(xix) take all reasonable precautions for the prevention of accidents on or about the Project Highway and provide all reasonable assistance and emergency medical aid to accident victims;

(xx) not to place or create and nor permit any Contractor or other person claiming through or under the Concessionaire to create or place any Encumbrance or security interest over all or any part of Site or the Project Assets, or on any rights of the Concessionaire therein or under this Agreement, save and except as expressly set forth in this Agreement;

(xxi) make its own arrangements for quarrying, and observe and fulfill the environmental and other requirements under the Applicable Laws and Applicable Permits at Concessionaire's own cost and expense;

(xxii) be responsible for safety, soundness and durability of the Project Highway including other structures forming part thereof and their compliance with the Specifications and Standards;

(xxiii) not claim or demand possession or control of any roads, structures or real estate which do not form part of the Project Highway;

(xxiv) after receiving possession of the site or part thereof, ensure that such site remains free from all encroachments and take all steps necessary to remove encroachments, if any

(xxv) make payment to Police department or any Government Agency, if required, for provision of such services as are not provided in the normal course or are available on payment;

(xxvi) indemnify the NHAI against all actions, suits, claims, demands and proceedings and any loss or damage or cost or expense that may be suffered by them on account of anything done or omitted to be done by the Concessionaire in connection with the performance of its obligations under this Agreement;

(xxvii) comply with the Divestment Requirements and hand over the Project Highway to NHAI upon Termination of the Agreement.

(xxviii) work in optimizing the use of existing Right of Way handed over to them. Identify and submit proposal for acquisition of additional land in accordance with the requirement of concerned State Government revenue department or the relevant LA Act, and pursue with the GOHR and GOPb for early accomplishment of Land Acquisition.

(xxix) make all necessary arrangements for accomplishing the tasks of physical removal of the encroachments at his own cost.

(xxx) cut the trees, carry out compensatory afforestation and assist NHAI in obtaining the Environmental Clearances and permits for the Project Highway and shall do all legwork required in this connection.

(xxxi) carry out shifting of utility services.

(xxxii) obtain all necessary clearances/permits from Railways in respect of construction of Road Over Bridge(ROB)/Road Under Bridge(RUB) and carry out all necessary tasks to accomplish construction of ROB/RUB.

(xxxiii) liase with GOHR and GOPb for implementation of the Rehabilitation and Resettlement plan: and

(xxxiv) provide for the minimum machinery and key personnel at the Site as mentioned in Clause 1.35 of the RFP and as modified vide Addendum No. 1.

9.2 Subject to the terms and conditions of this Agreement the Concessionaire shall at its cost and expense:

(i) undertake the design, engineering, procurement and construction and financing of the Project Highway in accordance with this Agreement;

(ii) operate and maintain the Project Highway at all times in conformity with this Agreement including but not limited to the Specifications and Standards set forth in Schedule 'D', Schedule 'L', the Maintenance Programme and Good Industry Practice.

9.3 The Concessionaire shall, before commencement of construction of the Project Highway:

(i) submit to NHAI with due regard to Project Completion Schedule as set forth in Schedule 'H' and Scheduled Project Completion Date, its design, engineering and construction time schedule and shall formulate and provide CPM/PERT charts for the completion of the said activities;

(ii) finalise the design and detailed engineering basis;

(iii) have requisite organisation and designate and appoint a Project manager and such other managers, officers and representatives as it may deem appropriate to supervise the Project and to deal with the NHAI Representative and be responsible for all necessary exchanges of information required pursuant to this Agreement; and

(iv) undertake, do and perform such acts, deeds and things as may be necessary or required for construction and Project completion under and in accordance with this Agreement.

9.4 In respect of the Concessionaire's obligations with respect to the Drawings of the Project Highway as set forth in Schedule 'I', the following shall apply:

(i) The Concessionaire shall prepare and submit with reasonable promptness and in such sequence as is consistent with the Project Completion Schedule, three copies each of all Drawings to NHAI and the Independent Consultant for review and comments.

(ii) By forwarding the Drawings for review and comment to NHAI, the Concessionaire represents that it has determined and verified that the design and engineering including field construction criteria related thereto is in conformity with the Specifications, Standards and quality set forth in this Agreement for and in respect of the Project Highway.

(iii) Within 30 (thirty) days of the receipt of the Drawings, NHAI shall review the same and convey its comments/observations to the Concessionaire with particular reference to the conformity or otherwise with the Specifications and Standards set forth in this Agreement. It is expressly agreed that notwithstanding any review and comment/observations of NHAI on any Drawings or failure of NHAI to provide comments/ observations thereon, NHAI shall not be liable for the same in any manner whatsoever and the Concessionaire shall remain solely responsible for and shall not be relieved or absolved in any manner whatsoever of its obligations, duties and liabilities as set forth in this Agreement. The Concessionaire shall not be obliged to await the comments/observations of NHAI on the Drawings submitted pursuant hereto beyond the period set forth hereinabove.

(iv) If the comments/observations of NHAI indicate that the Drawings are not in conformity with the Specifications and Standards set forth in this Agreement, such Drawings shall be revised by the Concessionaire to the extent necessary and resubmitted to NHAI for review, observations and comments. NHAI shall give its observations and comments, if any, within 15 (fifteen) days of the receipt of such revised Drawings provided, however, that any observations or comments of NHAI or failure of NHAI to give any observations or comments on such revised drawings shall not relieve or absolve the Concessionaire of its obligation to conform to such Specifications and Standards.

(v) The Concessionaire shall be responsible for delays in Project Completion Schedule caused by reasons of any Drawings not being in conformity with the Specifications and Standards, and the Concession Period shall not be extended in any manner whatsoever on account of submission or revision of any Drawings.

(vi) Within 90 (ninety) days of the COD, the Concessionaire shall furnish NHAI with "as built" Drawings reflecting the Project Highway as actually

designed, engineered and constructed, including without limitation on "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.

9.5 The Concessionaire shall submit to NHAI the drafts of the Project Agreements including in particular the EPC Contract, the Financing Documents, the O&M Contract and the Tolling Contract for its review. NHAI shall have the right but not the obligation to provide its comments and observations, if any, in respect of the Project Agreements within 30 (thirty) days of the receipt thereof by NHAI and the Concessionaire shall consider all such comments/observations. Any such comments/observations by NHAI on any Project Agreements or the failure to provide such comments shall not relieve or absolve in any manner whatsoever the Concessionaire of its obligations, duties and liabilities under this Agreement nor shall it make NHAI and/or Independent Consultant liable to the Concessionaire in any manner whatsoever and shall be without prejudice to the rights of NHAI hereunder.

9.6 During the Construction Period, the Concessionaire shall be responsible for maintaining the Site including the existing two lanes of the Project Highway at its own cost and expense. During this period, the Concessionaire shall modify, repair or otherwise make improvements to the existing two lanes before expiry of six months from the Appointed Date so that the existing two lanes comply with requirements provided in Schedule 'L' and at least 2 (two) lanes of the Project Highway are ordinarily open to traffic at all times. The Concessionaire shall promptly undertake all such repairs and maintenance works as may be necessary to keep the Project Highway traffic-worthy and safe during the Construction Period.

9.7 The Concessionaire shall, at all times, afford access to the Site to the authorised representatives of NHAI, Senior Lenders, and the Independent Consultant and to the persons duly authorised 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 Concessionaire 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.

X. OBLIGATIONS OF NHAI

10.1 NHAI agrees to observe, comply and perform the following:

(i) enable access to the Site to the Concessionaire, free from Encumbrances, in accordance with this Agreement;

(ii) permit peaceful use of the Site by the Concessionaire as licensee under and in accordance with the provisions of this Agreement without any let or hindrance from NHAI or persons claiming through or under it;

(iii) assist and provide all reasonable support to the Concessionaire in obtaining Applicable Permits;

(iv) upon written request from the Concessionaire, assist the Concessionaire in obtaining access to all necessary infrastructure facilities and utilities, including water, electricity and telecommunication facilities at rates and on terms no less favourable to the Concessionaire than those generally available to commercial customers receiving substantially equivalent services;

(v) procure that no barriers are erected or placed by GOHR, GOPb or any Governmental Agency on the Project Highway except on account of any law and order situation or upon national security considerations;

(vi) enter into the State Support Agreement with the Concessionaire, the GOHR and GOPb;

(vii) assist the Concessionaire in obtaining necessary assistance to regulate traffic on the Project Highway subject to and in accordance with the Applicable Laws;

(viii) assist the Concessionaire in obtaining Police assistance from GOHR and GOPb against payment of prescribed costs and charges, if any, for traffic regulation, patrolling and provision of security on the Project Highway;

(ix) operate and maintain the Project Highway during the Development Period, at its own cost and expense, in a manner that the level of service is at no

time inferior to the level prevailing on the date when bids were received for this Concession; and

(x) Observe and comply with its obligations set forth in this Agreement.

(xi) take all necessary steps towards accomplishment of acquisition of additional land. NHAI shall bear the cost of additional land.

(xii) coordinate with GOHR and GOPb authorities for completing the legal requirements and maintaining law and order during removal of encroachments by the Concessionaire.

(xiii) provide necessary support to the Concessionaire in obtaining necessary clearances/permissions/permits in respect of tree cutting, compensatory afforestation, shifting of all types of utility services, construction of ROB/RUB on Railway lines and rehabilitation and resettlement.

(xiv) bear all expenses as per demand note raised by the concerned government or other concerned agencies in respect of environmental clearances, tree cutting, compensatory afforestation, shifting of all types of utility services, construction of ROB/RUB on Railway lines and rehabilitation and resettlement.

(xv) NHAI will arrange to issue fee notification substantially in the form of Schedule 'G'.

(xvi) Obtain necessary clearances/permissions in respect of the environment clearances.

XI. REPRESENTATIONS AND WARRANTIES

11.1 Representations and Warranties of the Concessionaire

The Concessionaire represents and warrants to NHAI that:

(i) It is duly organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation;

(ii) It has full power and authority to execute, deliver and perform its obligations under this Agreement and to carry out the transactions contemplated hereby;

(iii) It has taken all necessary corporate and other action under Applicable Laws and its constitutional documents to authorize the execution, delivery and performance of this Agreement;

(iv) It has the financial standing and capacity to undertake the Project;

(v) This Agreement constitutes its legal, valid and binding obligation enforceable against it in accordance with the terms hereof;

(vi) It is subject to civil and commercial laws of India with respect to this Agreement and it hereby expressly and irrevocably waives any immunity in any jurisdiction in respect thereof;

(vii) All the information furnished in the Bid is, and shall be, true and correct as on the Appointed Date and COD and the Balance Sheet and Profit and Loss Account of the Concessionaire for each of its Accounting Years after the Appointed Date furnished to NHAI shall give true and fair view of the affairs of the Concessionaire;

(viii) It shall furnish a copy of the audited accounts of the Company within 120 (one hundred twenty) days of the close of its each Accounting Year after the Appointed Date and any material change subsequent to the date of such accounts shall be notified to NHAI by the Concessionaire within 30 (thirty) days of its occurrence and warrants that the accounts and the information furnished as aforesaid shall be true and correct;

(ix) The execution, delivery and performance of this Agreement will not conflict with, result in the breach of, constitute a default under or accelerate performance required by any of the terms of the Memorandum and Articles of Association of the Concessionaire or any Member of the Consortium or any Applicable Laws or any covenant, agreement, 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;

(x) There are no actions, suits, proceedings, or investigations pending or, to the Concessionaire's 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 or constitute a default of the Concessionaire under this Agreement or which individually

or in the aggregate may result in any Material Adverse Effect on its business, properties or assets or its condition, financial or otherwise, or in any impairment of its ability to perform its obligations and duties under this Agreement;

(xi) 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 Governmental Agency which may result in any Material Adverse Effect or impairment of the Concessionaire's ability to perform its obligations and duties under this Agreement;

(xii) It has complied with all Applicable Laws 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 Material Adverse Effect on its financial condition or its ability to perform its obligations and duties under this Agreement;

(xiii) The aggregate equity share holding of the Consortium Members and their Associates in the issued and paid up equity share capital of the Concessionaire shall not be less than (a) 51% (fifty one percent) during the Construction Period and for 3 (three) years following COD, and (b) 26% (twenty six per cent) during the balance remaining Operations Period;

(xiv) Each Consortium Member was and is duly organised and existing under the laws of the jurisdiction of its incorporation and has full power and authority to consent to and has validly consented to and requested NHAI to enter into this Agreement with the Concessionaire pursuant to the LOA and has agreed to and unconditionally accepted the terms and conditions set forth in this Agreement;

(xv) All rights and interests of the Concessionaire in and to the Project Highway shall pass to and vest in NHAI on the Termination Date free and clear of all liens, claims, and Encumbrances without any further act or deed on the part of the Concessionaire or NHAI and that none of Project Assets including materials, supplies or equipment forming part thereof shall be acquired by the Concessionaire subject to any agreement under which a security interest or other lien or Encumbrance is retained by any

person save and except as expressly provided in this Agreement;

(xvi) No representation or warranty by the Concessionaire contained herein or in any other document furnished by it to NHAI, or to any Governmental Agency in relation to Applicable Permits contains or will contain any untrue statement of material fact or omits or will omit to state a material fact necessary to make such representation or warranty not misleading; and

(xvii) It warrants that no sums, in cash or kind, have been paid or will be paid by or on behalf of the Concessionaire, to any person by way of fees, commission or otherwise for securing the Concession or entering into this Agreement or for influencing or attempting to influence any officer or employee of NHAI, GOI, GOHR or GOPb in connection therewith.

11.2 Representations and Warranties of NHAI.

NHAI represents and warrants to the Concessionaire that:

(i) NHAI is duly organised and validly existing under the laws of India;

(ii) NHAI has full power and authority to execute, deliver and perform its obligations under this Agreement and to carry out the transactions contemplated hereby;

(iii) NHAI has taken all necessary action to authorise the execution, delivery and performance of this Agreement;

(iv) This Agreement constitutes its legal, valid and binding obligation enforceable against it in accordance with the terms hereof; and

(v) NHAI is subject to civil and commercial laws of India with respect to this Agreement and it hereby expressly and irrevocably waives any sovereign immunity in any jurisdiction in regard to matters set forth in this Agreement.

XII. DISCLAIMER

12.1 The Concessionaire acknowledges that prior to the execution of this Agreement, the Concessionaire has after a complete and careful examination made an independent evaluation of the traffic volumes, Specifications and Standards, Site and all the information provided by NHAI and has determined to the Concessionaire's satisfaction the nature and extent of such difficulties, risks and hazards as are likely to arise or may be faced by the Concessionaire in the course of performance of its obligations hereunder.

12.2 The Concessionaire acknowledges and hereby accepts the risk of inadequacy, mistake or error in or relating to any of the matters set forth in Clause 12.1 above and hereby confirms that NHAI shall not be liable for the same in any manner whatsoever to the Concessionaire, the Consortium Members or their Associates.

CHAPTER – IV
PROJECT DEVELOPMENT AND OPERATIONS

XIII. USE AND DEVELOPMENT OF THE SITE

13.1 NHAI hereby grants to the Concessionaire for the Development Period access to the Site for carrying out such surveys, investigations and soil tests as the Concessionaire may deem necessary at the Concessionaire's cost, expense and risk without causing disruption in the traffic on the existing lanes of the Project Highway.

13.2 NHAI hereby grants to the Concessionaire for the Concession Period the right and licence to enter upon all real estate comprised in the Site as briefly described in Schedule 'A' and to survey design, engineer, procure, construct, operate and maintain the Project Highway including the Project Facilities in accordance with the provisions of this Agreement. Such right and licence of the Concessionaire to use the Site shall be subject to:

13.2.1 Any existing utilities on, under or above the Site are kept in continuous satisfactory use, if necessary by the use of suitable temporary or permanent diversions with the authority of the controlling body of that utility;

13.2.2 Any existing roads or right of ways are kept in continuous satisfactory use, if necessary, by the use of suitable temporary or permanent diversions with the authority of the controlling body of that road or right of way. For any diversion or construction, of temporary roads, NHAI will assist the Concessionaire in acquiring the right of way;

13.2.3 The rights of the road users to use the road in accordance with this Agreement;

13.2.4 A right of access by the NHAI itself and any of its agents to perform their obligations and rights under the Concession Agreement or any other functions that they have, and to conduct any study or trial for the purpose of research;

13.3 The license and the right to use the Site shall be granted for the purpose of carrying out the functions placed upon the Concessionaire under the Agreement and not for any other purposes;

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

13.5.1 Existing Right-of-way

Existing Right-of-way to the Site shall be made available to the Concessionaire pursuant hereto by NHAI free from all Encumbrances and without the Concessionaire being required to make any payment to NHAI on account of any costs, expenses and charges for the use of such sites for the duration of the Concession Period save and except as otherwise expressly provided in this Agreement. NHAI shall procure for the Concessionaire access to the Existing Right-of-way, free of Encumbrances, not later than 150 (one hundred and fifty) days from the date of this Agreement. Provided, however, that if NHAI does not enable such access to any part or parts of the Existing Right-of-way for any reason other than a Force Majeure Event or breach of this Agreement by the Concessionaire, NHAI shall pay to the Concessionaire Damages at the rate of Rs. 1,000 (Rupees one thousand) per month per 1,000 (one thousand) sq. meters or part thereof if such area is required by the Concessionaire for Construction Works. Such Damages shall be raised to Rs. 2,000 (Rupees two thousand) per month after COD if such area is essential for the smooth and efficient operation of the Project Highway. Provided further that the Completion Certificate or the Provisional Certificate, as the case may be, for the Project Highway shall not be affected or delayed as a consequence of such parts of the Existing Right-of-way remaining under construction after the Scheduled Project Completion Date.

13.5.2 **Additional Right-of-way**

Additional Right-of-way shall be made available to the Concessionaire as per the Handing over Schedule 'H' free from all encumbrance and without the Concessionaire being required to make any payment to NHAI on account of any costs, expenses and charges for the use of such Additional Right-of-way for the duration of the Concession Period provided Concessionaire has fulfilled his obligations pursuant to clause 9.1 (xxviii). On or after the Appointed Date, the Concessionaire shall commence, undertake and complete all Construction Works on the Project Highway in accordance with this Agreement.

13.6 Construction of the Project Highway shall be undertaken by the Concessionaire in conformity with the Project Completion Schedule 'H' and the Project milestones set forth in Schedule 'H' for completion of the Project Highway on or before the Scheduled Project Completion Date. If the Concessionaire fails to achieve any such Project milestone other than Project Completion, within a period of 90 (ninety) days from the date set forth in Schedule ''H' then it shall pay Damages to NHAI at the rate of Rs.1,000,000 (Rs. One million) per day until such milestone is achieved. NHAI may either recover such Damages from the Performance Security or demand payment thereof from the Concessionaire. The Concessionaire shall make such payment within 7 (seven) days of receiving such demand from NHAI and any delay in making such payment shall attract interest @ SBI PLR plus two per cent. However, if the Concessionaire achieves Project completion as per Scheduled project Completion Date as setforth in Schedule 'H', such damages paid by the Concessionaire shall be refunded within 90 (Ninety) days from the date of written request from the Concessionaire but without any interest thereon. If the Concessionaire fails to achieve Project completion as per the Scheduled Project Completion Date as set forth in Schedule 'H', then it shall pay damages to NHAI as per Article XV.

XIV. MONITORING AND SUPERVISION OF CONSTRUCTION

14.1 During the Construction Period, the Concessionaire shall furnish to NHAI and the Independent Consultant monthly progress reports of actual progress of the Construction Works comprised in the Project Highway and shall give all such other relevant information as may be required by NHAI and/or the Independent Consultant.

14.2 The Independent Consultant shall inspect the Construction Works and the Project Highway at least once a month during the Construction Period and make out an Inspection Report of such inspection (the "Inspection Report"). It shall send a copy of its Inspection Report to NHAI and the Concessionaire. The Concessionaire shall take necessary action to remedy the lapses, if any, stated in the Inspection Report for ensuring compliance with the provisions of this Agreement. Such inspection or submission of Inspection Report by the Independent Consultant shall not relieve or absolve the Concessionaire of its obligations and liabilities hereunder in any manner whatsoever.

14.3 For the purposes of determining that Construction Works are being undertaken in accordance with Specifications and Standards and Good Industry Practice, the

Independent Consultant shall require the Concessionaire to carry out such Tests at such time and frequency and in such manner as may be necessary in accordance with Good Industry Practice for quality assurance. The Concessionaire shall with due diligence carry out, or cause to be carried out, all such tests in accordance with the instructions of the Independent Consultant and furnish the results of such tests forthwith to the Independent Consultant. The Concessionaire shall promptly carry out such remedial measures as may be necessary to cure the defects or deficiencies, if any, indicated in such test results and furnish a report to the Independent Consultant in this behalf.

14.4 If the Independent Consultant or NHAI shall reasonably determine that the rate of progress of the Construction of the Project Highway is such that the Project Completion is not feasible on or before the Scheduled Project Completion Date by the Concessionaire, it shall so notify the Concessionaire about the same and the Concessionaire shall within 15 (fifteen) days thereof notify the NHAI and the Independent Consultant about the steps it proposes to take to expedite progress and the period within which it shall achieve COD.

14.5 (a) Upon recommendation of the Independent Consultant or suo-moto, NHAI may by written notice require the Concessionaire to suspend forthwith the whole or any part of the Construction Works if in the reasonable opinion of the NHAI such work is being carried on in a manner which threatens the safety of the works or of the users of the Project Highway.

(b) The Concessionaire, shall upon instructions of the NHAI pursuant to sub-clause (a) above suspend the Construction Works or any part thereof for such time and in such manner as may be specified by NHAI and subject to sub-clause (c) below, the costs incurred during such suspension to properly protect and secure the Construction Works or such part thereof as is necessary in the opinion of the Independent Consultant ("Preservation Costs"), shall be borne by the Concessionaire.

(c) If the suspension pursuant to Sub-clause (a) above, is caused by:

(i) any reason other than default or breach of this Agreement by the Concessionaire including breach of any of the obligations of the Concessionaire under this Agreement, the Preservation Costs shall be borne by NHAI;

(ii) reason of default or breach of this Agreement by NHAI the Preservation Costs shall be borne by NHAI; or

(iii) reason of any Force Majeure Event, the Preservation Costs shall be borne by the Concessionaire save and except to the extent otherwise expressly provided in Article XXIX.

(d) If suspension of Construction Works is for reasons not attributable to the Concessionaire, the Independent Consultant shall determine any extension to the Project Completion Schedule, the Scheduled Project Completion Date and the Concession Period, to which the Concessionaire is reasonably entitled and shall notify NHAI accordingly. NHAI shall extend the Project Completion Schedule, the Scheduled Project Completion Date and the Concession Period in accordance with the recommendations of the Independent Consultant.

XV. COMPLETION

15.1 The Project shall be deemed to be complete and open to traffic only when the Completion Certificate or the Provisional Certificate is issued in accordance with the provisions of Article XVI (the "Project Completion").

15.2 COD of the Project shall be the date on which the Independent Consultant has issued the Completion Certificate or the Provisional Certificate, as the case may be, under this Agreement and the Concessionaire shall not levy and collect any Fee until it has received such Completion Certificate or the Provisional Certificate.

15.3 The Concessionaire guarantees that the Project Completion shall be achieved in accordance with the provisions of this Agreement on a date not later than 30 (thirty) months from the Appointed Date ("Scheduled Project Completion Date").

15.4 If the Project Completion is not achieved by the Scheduled Project Completion Date for any reason other than conditions constituting Force Majeure or for reasons attributable to NHAI or any Governmental Agency, the Concessionaire shall pay to NHAI as weekly Damages for delay in the achievement of the COD, an amount calculated at the rate of 0.01% (point zero one per cent) of the Total Project Cost per week or part thereof.

15.5 If the COD does not occur within 12 (twelve) months from the Scheduled Project Completion Date, NHAI shall be entitled to Terminate this Agreement in accordance with the provisions of Clause 32.2.

XVI. TESTS

16.1 All Tests shall be conducted in accordance with Schedule 'J' and the Applicable Laws and Applicable Permits. NHAI shall designate a NHAI Representative to witness and observe the Tests. All Tests shall be held in accordance with the schedule notified by the Concessionaire to the Independent Consultant and the NHAI Representative who may either witness the Tests themselves or designate their representatives for this purpose, if they choose.

16.2 The Independent Consultant shall monitor the results of the Tests to determine the compliance of the Project Highway with the Specifications and Standards. The Concessionaire shall provide to the Independent Consultant and the NHAI with copies of all Test data including detailed Test results.

16.3 At least 30 (thirty) days prior to the likely completion of the Project Highway, the Concessionaire shall notify the Independent Consultant and NHAI of the same and shall give notice of its intent to conduct any final Tests. The Concessionaire shall give to NHAI and the Independent Consultant at least 10 (ten) days' prior notice of the actual date on which it intends to commence the Tests and at least 7 (seven) days' prior notice of the commencement date of any subsequent Tests. The Independent Consultant shall have the right to suspend or delay any Test if it is reasonably anticipated or determined during the course of the Test that the performance of the Project Highway or any part thereof does not meet the Specifications and Standards.

16.4 Upon the Independent Consultant determining the Tests to be successful in respect of the Project Highway and having been satisfied that the Project Highway can be legally, safely and reliably placed in commercial operations, the Independent Consultant shall forthwith issue to the Concessionaire and NHAI a Certificate substantially in the form set forth in Schedule 'K' (the "Completion Certificate") certifying the Project Completion.

16.5 Independent Consultant may at the request of the Concessionaire issue a provisional certificate of completion ("Provisional Certificate") if the Tests are successful in respect of the Project Highway and having been satisfied that the

Project Highway can be legally, safely and reliably placed in commercial operation though certain works or things forming part thereof are not yet complete. In such an event such Provisional Certificate shall have appended thereto a list of outstanding items signed jointly by the Independent Consultant and the Concessionaire ("Punch List"). All Punch List items shall be completed by the Concessionaire within 120 (one hundred twenty) days of the date of issue of such Provisional Certificate. Subject to payment of Damages equal to Rs.200,000 (Rs. Two hundred thousand) per week or part thereof on account of any delay beyond the aforesaid period of 120 (one hundred twenty) days, the Concessionaire shall be entitled to a further period of upto 180 (one hundred eighty) days for completion of Punch List items. Upon completion of all Punch List items to the satisfaction of the Independent Consultant, the Independent Consultant shall issue the Completion Certificate to the Concessionaire. Failure to complete the Punch List items in the manner set forth in this Clause 16.5 shall entitle NHAI to Terminate this Agreement in accordance with the provisions of Clause 32.2.

16.6 If the Independent Consultant certifies to NHAI and the Concessionaire that it is unable to issue the Completion Certificate or Provisional Certificate because of events or circumstances which excuse the performance of the Concessionaire's obligations in accordance with this Agreement and as a consequence thereof the Tests could not be held or had to be suspended, the Concessionaire shall re-schedule the Tests and hold the same as soon as reasonably practicable.

16.7 Upon receipt of a report from the Independent Consultant or after conducting its own review or inspection, if NHAI is not satisfied with the results of any Tests, it shall within 7 (seven) days thereof notify the Concessionaire of its reasons to conclude that the Completion Certificate should not be issued, in which case the Concessionaire shall promptly take such action as will achieve such satisfaction. Such procedure shall be repeated as necessary after rectification and remedy of reasons/ causes by the Concessionaire on account of which the Tests were unsuccessful, until the Completion Certificate or Provisional Certificate has been issued in accordance with this Agreement by the Independent Consultant.

16.8 The Concessionaire shall bear all the expenses relating to Tests under this Agreement. Provided, however, that if the NHAI Representative requires any Test to be conducted which is not specified in this Agreement and such Test is not necessary in the opinion of the Independent Consultant, then the expenses on such Test shall be reimbursed by NHAI to the Concessionaire.

XVII. CHANGE OF SCOPE

17.1 NHAI may, notwithstanding anything to the contrary contained in this Agreement, require provision of such addition /deletion to the works and services on or about the project Highway which are beyond the scope of the Project as contemplated by this Agreement ("Change of Scope"), provided such changes do not require expenditure exceeding 5%(five per cent) of the Total Project Cost and do not adversely affect the COD. All such changes shall be made by NHAI by an order (the "Change of Scope Order") issued in accordance with the procedure set forth in this Article XVII.

17.2 **Procedure for Change of Scope**

(a) NHAI shall whenever it desires provision of addition/deletion of works and services referred to in Clause 17.1, issue to the Concessionaire a notice of change of scope (the "Change of Scope Notice").

(b) Upon receipt of such Change of Scope Notice, the Concessionaire shall with in 15 days provide to NHAI and the Independent Consultant such information as is necessary and reasonable together with preliminary documentation in support of the following:

(i) the impact, if any, which the Change of Scope is likely to have on the Project Completion Schedule if the work is required to be carried out before COD, and

(ii) the cost implications to the Concessionaire of complying with such Change of Scope Notice (including, without limitation, material and labour cost information furnished in accordance with the current schedule of rates applicable to the similar works assigned by NHAI/PWD to its contractors, including the premium on such rates).

(iii) the options suggested for implementing the proposed Change of Scope and the effect, if any, each such option would have on the costs and time for the implementation thereof including a detailed breakdown by work classifications. Provided, however, that the cost of providing such information shall be reimbursed to the Concessionaire by NHAI to the extent such costs are certified to be reasonable by the Independent Consultant.

(c) If NHAI desires, after receipt of information set forth in sub-clause (b) to proceed with the Change of Scope, it shall convey the desired option (with or without modification) to the Concessionaire by issuing a Change of Scope Order with in 30(Thirty) days from the date of recommendation made by Independent Consultant and thereupon the Parties shall make good faith efforts to mutually agree upon the costs and time for implementing of the same. Upon reaching an agreement relating to such costs and time, NHAI shall issue a written confirmation of the Change of Scope and thereupon the Concessionaire shall proceed with performance of such order. In the event, the Parties are unable to agree, NHAI may, by issuing a confirmation in writing of such Change of Scope Order, require the Concessionaire to proceed with the performance of the Change in Scope Order pending resolution of such dispute.

17.3 A Change of Scope Order will be effective and binding upon issuance of a confirmation of such Change of Scope Order by NHAI. Notwithstanding a dispute regarding cost and time for implementation of such Change of Scope Order, the Concessionaire shall proceed with the performance of such Change of Scope Order promptly following NHAI's confirmation pursuant to Clause 17.2(c). Pending resolution of such dispute, NHAI shall either pay to the Concessionaire, if the Change of Scope Order involves increase in Bill of Quantities or recover from the Concessionaire if the said Change of Scope Order involves decrease in Bill of Quantities, an amount equal to the costs that are certified by the Independent Consultant to be reasonable plus/minus (as the case may be) one-half the difference between the amount certified by the Independent Consultant and the amount claimed by the Concessionaire with final adjustments to be made in accordance with the resolution of dispute under the Dispute Resolution Procedure. NHAI shall make payment to the Concessionaire within 60 (sixty) days from the date of receipt of duly verified claims. In case NHAI has to recover from the Concessionaire, the amount will be recovered directly from the Escrow Account and for that purpose the Concessionaire hereby expressly authroised NHAI and hereby gives irrevocable instructions to Escrow Bank to make payment from the Escrow Account in accordance with instructions of NHAI under this clause.

17.4 All claims by the Concessionaire pursuant to this Article XVII shall be supported by such documentation as is reasonably sufficient for NHAI/IC to determine the accuracy thereof, including invoices from Contractors and certification of such claims by the Statutory Auditors.

XVIII. OPERATION AND MAINTENANCE

18.1 The Concessionaire shall operate and maintain the Project Highway by itself, or through O&M Contractors and if required, modify, repair or otherwise make improvements to the Project Highway to comply with Specifications and Standards, and other requirements set forth in this Agreement, Good Industry Practice, Applicable laws and Applicable Permits and manufacturer's guidelines and instructions with respect to toll systems, and more specifically:

(i) permitting safe, smooth and uninterrupted flow of traffic during normal operating conditions;

(ii) charging, collecting and retaining the Fees in accordance with this Agreement;

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

(iv) undertaking routine maintenance including prompt repairs of potholes, cracks, concrete joints, drains, line marking, lighting and signage;

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

(vi) carrying out periodic preventive maintenance to Project Highway including tolling system;

(vii) preventing with the assistance of concerned law enforcement agencies unauthorised entry to and exit from the Project Highway;

(viii) preventing with the assistance of the concerned law enforcement agencies encroachments on the Project Highway including Site and preserve the right of way of the Project Highway;

(ix) maintaining a public relations unit to interface with and attend to suggestions from users of the Project Highway, the media, Government Agencies, and other external agencies; and

(x) adherence to the safety standards set out in Schedule 'S'.

18.2 The Concessionaire shall in consultation with the Independent Consultant prepare not later than 180 (one hundred and eighty) days before the Scheduled Project Completion Date, the repair and maintenance manual (the "Maintenance Manual") for the regular and periodic maintenance, and shall ensure and procure that at all times during the Operations Period, the Project Highway is maintained in a manner that it complies with the Specifications and Standards and the minimum maintenance requirements set forth in Schedule L. The Concessionaire shall supply, at least two months before the COD, 10 (ten) copies of the Maintenance Manual to NHAI and 3 (three) copies each to GOHR, GOPb and the Independent Consultant. Copies of the Maintenance Manual shall also be made available by the Concessionaire for public inspection during office hours at a conspicuous place adjacent to each Toll Plaza on the Project Highway.

18.3 Not later than forty five (45) days before the beginning of each Accounting Year, the Concessionaire, shall in consultation with the Independent Consultant prepare and provide to NHAI, its proposed programme of preventive and other scheduled maintenance of the Project Highway subject to the minimum maintenance requirements set forth in Maintenance Manual and in Schedule 'L' necessary to maintain the Project Highway at all times in conformity with the Specifications and Standards (the "Maintenance Programme"). Such Maintenance Programme shall include but not be limited to the following:

(i) intervals and procedures for the carrying out of inspection of all elements of the Project Highway;
(ii) criteria to be adopted for deciding maintenance needs;
(iii) preventive maintenance schedule;
(iv) intervals at which the Concessionaire shall carry out periodic maintenance;
(v) intervals for major maintenance and the scope thereof; and
(vi) lane closures schedule for each type of maintenance (length and time).

18.4 Maintenance shall include replacement of equipment/consumables, horticultural maintenance and upkeep of all Project Assets in good order and working

condition. Maintenance shall not include the extension of any existing pavements, bridges, structures and other civil works unless part of the Project.

18.5 The Concessionaire shall keep the carriageways, rest areas and other Project Facilities and Toll Plazas in a clean, tidy and orderly condition free of litter and debris.

18.6 During the Operations Period, the Concessionaire shall not carry out any material modifications to the Project Highway save and except where such (i) modification is required by Good Industry Practice; or (ii) modification is necessary for the Project Highway to operate in conformity with the Specifications and Standards prescribed under this Agreement. Provided that the Concessionaire shall notify NHAI of the proposed modifications along with details thereof at least fifteen days before commencing work on such modifications and shall reasonably consider such suggestions as NHAI may make within 15 (fifteen) days of receipt of such details by NHAI.

18.7 The Concessionaire shall be responsible for the maintenance of the approach roads to and underpasses and overpasses upto 100 mtrs from the Project Highway in accordance with Good Industry Practice.

18.8 Safety, Vehicle Breakdown and Accident

18.8.1 In the case of unsafe conditions, vehicle breakdowns and accidents, the Concessionaire shall follow the relevant operating procedures, which shall include the setting up of temporary traffic cones and lights as well as the removal of obstruction and debris expeditiously. Such procedures shall be in accordance with Applicable Laws, Applicable Permits and provisions of this Agreement.

18.8.2 The Concessionaire shall ensure that any diversion or interruption of traffic is remedied without delay. The Concessionaire's responsibility for rescue operations on the Project Highway shall be limited to the removal of vehicles or debris or any other obstruction, which may endanger or interrupt the smooth traffic flow on the Project Highway.

18.8.3 The Concessionaire shall ensure that safety standards specified in Schedule 'S' are strictly complied with in the event of any lane closure or diversion of traffic. Compliance with Schedule 'S' will be monitored by the Independent Consultant and a breach by the Concessionaire of its obligations in respect of this Schedule

identified by the Independent Consultant shall be notified immediately and is required to be cured within 24 hours of its notification notwithstanding inspection, reporting procedures outlined elsewhere in this Agreement. In addition, each notified breach shall lead to the award of a penalty point to the Concessionaire. A total of five penalty points in any continuous period of 365 days shall constitute a Material Breach of this Agreement.

18.9 Emergency De-commissioning

18.9.1 If, in the reasonable opinion of the Concessionaire there exists an emergency which warrants decommissioning and closure to traffic of whole or any part of the Project Highway, the Concessionaire shall be entitled to de-commission and close the whole or the relevant part of the Project Highway to traffic for so long as such emergency and the consequences thereof warrant, provided however that such emergency decommissioning will be notified to NHAI promptly. NHAI may issue directions to the Concessionaire for dealing with such situations and the Concessionaire shall abide by such directions.

18.9.2 The Concessionaire shall re-commission the Project Highway or the affected part thereof as quickly as practicable after the circumstances leading to its de-commissioning and closure have ceased to exist.

18.10 The Concessionaire shall not close any lane of the Project Highway for undertaking maintenance or repair works except with the prior written approval of the NHAI which may delegate its authority to the Independent Consultant. Such approval shall be sought by the Concessionaire through a written request to be made at least 7 (seven) days before the proposed closure of lane and shall be accompanied by particulars indicating the nature and extent of repair works, the length and section required to be closed and the period of closure. The Concessionaire shall also furnish particulars indicating the minimum time required for completing such repair works. Within 5 (five) days of receiving such request, NHAI or the Independent Consultant, as the case may be, shall grant permission with such modifications as it may deem necessary. Upon receiving such permission, the Concessionaire shall be entitled to close the lane in accordance with such permission and re-open it within the period stipulated in such permission. For any delay in re-opening such lane during the first Operations Year, the Concessionaire shall pay Damages to NHAI calculated at the rate of Rs.10,000 (Rs. Ten thousand), per day or part thereof for every stretch of 100 (one hundred) meters or part thereof in each lane until such time the stretch has

been re-opened for traffic. These damages of Rs.10,000 (Rupees ten thousand) shall be applicable in the first Operations year and shall be revised by WPI in each subsequent Operations year. Provided, however, that these provisions shall not apply to Emergency decommissioning under Clause 18.9.

18.11 Save and except as otherwise be expressly provided in this Agreement, if the Project Highway including Construction Works or any part thereof shall suffer any loss or damage during the Concession Period, from any cause whatsoever, the Concessionaire shall, at its cost and expense rectify and remedy such loss or damage forthwith in a manner so as to make the Project Highway conform in every respect to the Specifications and Standards, quality and performance as prescribed by this Agreement.

18.12 In the event the Concessionaire does not maintain and/ or repair the Project Highway or a part thereof upto and in accordance with the Specifications and Standards and/or in accordance with the Maintenance Programme or the Maintenance Manual, and shall have failed to commence remedial works within 30 (thirty) days of receipt of notice in this behalf from NHAI or the Independent Consultant, or the O&M Inspection Report, as the case may be, NHAI shall, without prejudice to its rights under this Agreement, including Termination thereof, be entitled to undertake the repair and maintenance of the Project Highway at the risk and cost of the Concessionaire and to recover the same from the Concessionaire. In addition to recovery of the aforesaid cost of repair and maintenance by NHAI, a sum equal to 25% (twenty five per cent) of such cost shall also be recovered by NHAI from the Concessionaire as Damages. NHAI shall have the right and the Concessionaire hereby expressly grants to NHAI the right to recover the same directly from the Escrow Account and for that purpose the Concessionaire hereby expressly authorises NHAI and hereby gives irrevocable instructions to the Escrow Bank to make payment from the Escrow Account in accordance with the instructions of NHAI under this Clause.

18.13 In the event NHAI does not exercise its option to undertake the required repair and maintenance after expiry of the 30 (thirty) days period stipulated in Clause 18.12 it shall recover Damages from the Concessionaire for default in operating and maintaining the Project Highway in conformity with this Agreement. Such Damages shall be payable after the aforesaid period of 30 (thirty) days and until the default is cured. The amount of Damages shall be calculated for each day of default at the higher of the following, namely (a) Rs.10,000 (Rs. Ten thousand), and (b) 0.1% (zero point one per cent) of the cost of such repair as estimated by the Independent Consultant. Recovery of such Damages shall be without

prejudice to the rights of NHAI under this Agreement, including Termination thereof.

18.14 If the Concessionaire commences any works for curing any defects or deficiencies in the Project Highway, it shall complete such works expeditiously in accordance with Good Industry Practice. If such works are carried out in a manner that results in a delay of more than 30 (thirty) days as compared to the time required in accordance with Good Industry Practice, NHAI shall recover Damages from the Concessionaire as if a default had occurred under Clause 18.13.

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

(i) an event of Force Majeure;

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

(iii) compliance with a request from NHAI or the directions of any Governmental Agency the effect of which is to close all or any part of the Project Highway.

Notwithstanding the above, the Concessionaire shall keep all unaffected parts of the Project Highway open to traffic and use provided they can be safely operated and kept open to traffic.

XIX MONITORING AND SUPERVISION DURING OPERATION

19.1 The Concessionaire shall undertake periodic (at least once every calendar month but once every week during monsoons) inspection of the Project Highway to determine the condition of the Project Highway including its compliance or otherwise with the Maintenance Manual, the Maintenance Programme, Specifications and Standards and the maintenance required and shall submit reports of such inspection ("Maintenance Reports") to NHAI and the Independent Consultant.

19.2 The Independent Consultant shall review the Maintenance Reports and inspect the Project Highway at least once a month during the Operations Period and make out an Inspection Report of such inspection (the "O&M Inspection Report"). The Independent Consultant shall send a copy of its O&M Inspection Report to NHAI and the Concessionaire. The Concessionaire shall within 30 (thirty) days of the receipt of the O&M Inspection Report remedy the defects and deficiencies, if any, set forth in such O&M Inspection Report and submit its report in respect thereof to the Independent Consultant and NHAI within the said 30 (thirty) days period. Where the remedying of such defects or deficiencies is likely to take more than 30 (thirty) days in accordance with Good Industry Practice, the Concessionaire shall undertake the works in accordance with such practice and submit progress reports of such works every fortnight. The O&M Inspection Report may also require the Concessionaire to undertake such tests as may be specified by the Independent Consultant for the purpose of determining that the Project Highway is at all times in conformity with the Specifications and Standards. The Concessionaire shall undertake such Tests without any delay and furnish a copy of the results thereof to the Independent Consultant and NHAI along with a written statement specifying in reasonable detail the measures, if any, that it proposes to undertake for curing the defaults or deficiencies indicated in such results. Such inspection or submission of O&M Inspection Report by the Independent Consultant or submission of O&M Inspection Compliance Report by the Concessionaire shall not relieve or absolve the Concessionaire of its obligations and liabilities hereunder in any manner whatsoever.

19.3 NHAI may inspect the Project Highway at any time for a review of the compliance by the Concessionaire with its maintenance obligations under this Agreement.

19.4 The Concessionaire shall furnish to NHAI within 7 (seven) days of completion of each calendar month during the Operations Period, a statement of Fees in the form set forth in Schedule 'M' (the "Monthly Fee Statement").

XX. INDEPENDENT CONSULTANT

20.1 NHAI shall appoint a consulting engineering firm or body corporate out of the 3 (three) names proposed by the Concessionaire from the panel of 5 (five) consultants selected by NHAI in accordance with the selection process set forth in Schedule 'N' to be the Independent Consultant to undertake and perform the

duties, work, services and activities set forth in Schedule 'O'.

20.2 The appointment of the Independent Consultant pursuant to Clause 20.1 shall initially be for a period of four years from the date of its appointment. The date of such appointment shall be no later than 120 (one hundred twenty) days from the date of this Agreement. After the expiry of the aforesaid appointment, NHAI shall appoint for a term of 3 (three) years as Independent Consultant such person as it may deem appropriate from the list drawn in accordance with Schedule 'N' as amended from time to time by mutual consent of NHAI and the Concessionaire and who may or may not be the same person, who was Independent Consultant during the initial term. NHAI may in its discretion thereafter renew such appointment or appoint another person out of the list determined pursuant to Schedule 'N', as NHAI may deem appropriate to be the Independent Consultant for a term of three years at a time.

20.3 The Independent Consultant shall report to NHAI about their work, services, and activities pursuant hereto through regular periodic reports (at least once every month) as the situation may warrant. Such report of Independent Consultant shall include but not be limited to the matters and things set forth in said Schedule 'O'.

20.4 The remuneration, cost and expenses of the Independent Consultant shall be paid by NHAI. One-half of such remuneration, cost and expenses shall be reimbursed by the Concessionaire to NHAI within 15 (fifteen) days of receiving a statement of expenditure from NHAI.

20.5 NHAI may terminate the appointment of the Independent Consultant at any time subject to appointment of their replacement by another Independent Consultant in accordance with this Article XX.

20.6 If the Concessionaire has reason to believe that the Independent Consultant is not discharging its duties in a fair, efficient and diligent manner, it may make a written representation to NHAI, stating its reasons in detail, seeking termination of the appointment of the Independent Consultant. Upon receipt of such representation, NHAI shall hold a tripartite meeting with the Concessionaire and Independent Consultant for amicable resolution of the dispute. If the dispute remains unresolved, it shall be resolved in accordance with the Dispute Resolution Procedure. In case the appointment of Independent Consultant is terminated under this Clause, it shall be replaced by another Independent Consultant in accordance with this Article XX.

20.7 If either party disputes any advice, instruction or award of the Independent Consultant, the dispute shall be resolved in accordance with the Dispute Resolution Procedure.

XXI. TRAFFIC SAMPLING

21.1 For the purpose of determination and/or verification of the actual traffic on the Project Highway, NHAI shall, in addition to inspection of Concessionaire's records, be entitled to undertake traffic sampling at such frequency and in such manner as NHAI may deem appropriate including in the manner as set forth in Schedule 'P' hereto. The Concessionaire shall provide all facilities and assistance as NHAI may reasonably require for undertaking such traffic sampling.

21.2 If the data collected from traffic sampling undertaken pursuant to Clause 21.1 demonstrates that actual traffic is more than the traffic according to the records of the Concessionaire, the actual traffic for the purposes of this Agreement shall be deemed to be the traffic as determined by such NHAI traffic sampling pursuant to this Article XXI.

21.3 The Concessionaire may, in consultation with NHAI, commission an independent agency to conduct traffic sampling under this Article. The report of such agency shall be furnished to NHAI for such use as it may deem fit.

21.4 In the event of any dispute arising as to the actual traffic on the Project Highway the same shall be resolved in accordance with the Dispute Resolution Procedure under this Agreement.

CHAPTER - V
FINANCING ARRANGEMENTS

XXII. FINANCIAL CLOSE

22.1 The Concessionaire shall provide to NHAI, a copy of the Financing Package furnished by it to the prospective Senior Lenders. As and when such Financing Package is approved by the Senior Lenders, with or without modifications, a copy of the same shall be furnished by the Concessionaire to NHAI forthwith.

22.2 Notwithstanding anything to the contrary contained in this Agreement, the Concessionaire covenants with NHAI that it shall achieve Financial Close within 180 (one hundred eighty) days from the date of this Agreement. If the Concessionaire shall fail to achieve Financial Close within the said 180 (one hundred eighty) days period, the Concessionaire shall be entitled to a further period of 180 (one hundred eighty) days subject to an advance weekly payment by the Concessionaire to NHAI of a sum of Rs.100,000 (Rupees one hundred thousand) per week or part thereof for any delay beyond the said 180 (one hundred eighty) day period, as Damages on account of such delay in achieving Financial Close within the said 180 (one hundred eighty) day period by the Concessionaire.

22.3 Notwithstanding anything to the contrary contained in this Agreement, NHAI shall be entitled to terminate this Agreement forthwith, without being liable in any manner whatsoever to the Concessionaire, by a communication in writing to the Concessionaire pursuant to Clause 32.2 if the Concessionaire shall have failed to pay in advance the Damages to NHAI under and in accordance with Clause 22.2 above.

22.4 Notwithstanding anything to the contrary contained in this Agreement, if the Financial Close shall not occur within 360 (three hundred sixty) days as set forth in Clause 22.2 above, all rights, privileges, claims and entitlements, if any, of the Concessionaire under or arising out of this Agreement shall be deemed to have been waived by and to have ceased with the concurrence of the Concessionaire, and the Concession Agreement shall be deemed to have been terminated by mutual agreement of the Parties.

22.5 Upon Termination of this Agreement under Clauses 22.3 and 22.4, NHAI shall be entitled to encash the Bid Security or the Performance Security, as the case may be, and appropriate the proceeds thereof as Damages.

XXIII. NEGATIVE GRANT/ GRANT

23.1 NHAI agrees to provide to the Concessionaire cash support by way of an outright Grant (the "Grant") equal to the sum, if any, set forth in the Bid of the Bidder and accepted by NHAI namely, **Rs.0.00 million** (Rupees Nil) in accordance with the provisions of this Article XXIII.

23.2 The Concessionaire agrees to provide to NHAI cash payment (the 'Negative Grant') equal to the sum, if any, set forth in the Bid of the Bidder and accepted by NHAI amounting to **Rs. 174.752 Crore** ((Rupees One Hundred Seventy Four Crores Seventy Five Lacs Twenty Thousand Only)) as per details tabulated below:

Rs. in Crores

Year	Construction Period			Operations Period						
	1	2	3	4	5	6	7	8	9	10
Yearly Grant (+)/ Negative Grant (-)	(-) 29.708	(-) 26.213	0.000	0.000	(-) 17.475	(-) 17.475	(-) 17.475	(-) 17.475	(-) 17.475	(-) 26.213

Year	Operations Period			TOTAL
	11	12	13	
Yearly Grant (+)/ Negative Grant (-)	(-) 5.243	0.000	0.000	(-)174.752

Negative Grant shall be paid in advance within 90 (ninety) days of the commencement of the year for which it is due and payable.

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23.3 Subject to provisions of the Clause 23.4, the Grant shall be applied by the Concessionaire for meeting the capital cost of the Project and expenditure during Operations period and shall be treated as part of the shareholders' funds (the "Equity Support").

23.4 The Equity Support shall:

(a) be as proposed by the Concessionaire in his bid and as agreed by NHAI;

(b) during construction period in no case be greater than the total equity capital actually subscribed and paid in cash by the shareholders for meeting the Total Project Cost as set forth in the Financing Package provided further that in case the Grant quoted is less than the total equity capital, then the entire Grant quoted by the bidder shall be paid during the construction period; and

(c) balance amount of quoted Grant which remains unpaid at the time of COD, shall be paid in quarterly instalments by credit to the Escrow Account equal to 1% of the Total Project Cost subject to Final Settlement of Grant in the last quarter of the 2 (two) years period from COD provided the Concessionaire is not in breach of the provisions of the Concession Agreement (O&M Support). The first such instalment shall be released within 30 (thirty) days of the COD.

23.5 Deleted

23.6 The whole or any part of the Grant shall be disbursed by NHAI to the Concessionaire if and only if

23.6.1 the Concessionaire is not in Material Breach of this Agreement at the time of such disbursement; and

23.6.1 the Concessionaire has contributed and spent on the Project at least 80% (Eighty percent) of the total Equity (excluding Equity Support) required to be provided as part of the Total Project Cost.

23.7 The disbursement of the Equity Support pursuant to this Article XXIII shall be made by NHAI to the Concessionaire proportionately along with the balance loan funds to be disbursed by the Senior Lenders under the Financing Documents for meeting the Total Project Cost. NHAI shall disburse each tranche of the Equity Support as aforesaid by credit to the Escrow Account within 15 (fifteen) days of

the release of each loan installment by the Senior Lenders to the Concessionaire provided the Concessionaire has submitted to NHAI along with each disbursement request a certificate from its Statutory Auditors certifying the above particulars and has given at least 7 (seven) days to NHAI for processing such request.

23.8 Deleted.

23.9 If NHAI shall fail to disburse any tranche of the O&M Support within the periods set forth for the payment thereof to the Concessionaire, NHAI shall pay interest on such delayed tranche @ SBI PLR plus two per cent.

23.10 If Concessionaire fails to pay any tranche of the Negative Grant within the periods set forth for the payment thereof to NHAI, the Concessionaire shall pay interest on such delayed tranche @ SBI PLR plus two per cent.

XXIV. REVENUE SHORTFALL LOAN

24.1 If the Realisable Fees in any Accounting Year during the Concession Period shall fall below the Subsistence Revenue Level as a result of an Indirect Political Event, or a Political Event as set forth in Article XXIX, NHAI agrees to provide to the Concessionaire such shortfall support, by way of a loan ("Revenue Shortfall Loan") with interest thereon @ SBI PLR per annum. Provided, however, that any reserves of the Concessionaire and any sums received or likely to be received by the Concessionaire through insurance claims (except insurance payments for physical loss used to carry out requisite repairs) or payments by NHAI under Article XXIX shall first be deducted and only the balance remaining shall be disbursed as the Revenue Shortfall Loan.

24.2 For the purposes of claiming disbursements on account of Revenue Shortfall loan pursuant to Clause 24.1 above in any Accounting Year, the Concessionaire shall:

(a) Submit a detailed account of the Indirect Political Event or the Political Event, as the case may be, and its impact on total revenues of the Concessionaire as soon as feasible and submit weekly reports thereafter;

(b) Provide to NHAI, the Schedule of Debt Service Payments under the Financing Documents for the Accounting year for which Revenue Shortfall Loan are claimed;

(c) Provide to NHAI the details of O&M Expense budget for such Accounting Year and the expenditure incurred in that year out of such budget;

(d) Within 15 (fifteen) days of the close of each Accounting Year in which the shortfall in the referred to in Clause 24.1 shall occur, provide a certificate from the Statutory Auditors of the Concessionaire certifying the Subsistence Revenue Level, the Realisable Fees and the Revenue Shortfall Loan requirement after deducting reserves of the Concessionaire, if any; and

(e) Submit a written request to NHAI under the hands of a Director of the Concessionaire requesting for disbursement of the Revenue Shortfall Loan to the Concessionaire by payment thereof into the Escrow Account.

24.3 Upon the receipt of the request and documents as set forth in Clause 24.2 above and provided the same is not found by NHAI to be wrong or incorrect, NHAI shall disburse the Revenue Shortfall Loan within 30 days (thirty) thereof.

24.4 In the event Realisable Fees during the first six months of an Accounting Year shall fall as a result of an Indirect Political Event or a Political Event and the amount of such Realisable Fees is less than the Debt Service Payments due for the first six months of such Accounting Year, NHAI shall upon request provide an advance to the Concessionaire for meeting the shortfall in such Debt Service Payments. For claiming such advance, the Concessionaire shall make a demand to NHAI accompanied by a certificate from the Statutory Auditors setting forth the Realisable Fees during the first six months of the Accounting Year, the reserves of the Concessionaire and the outstanding amount on account of Debt Service Payments due in the first six months of such year. The Statutory Auditors shall also certify the amount of advance required by the Concessionaire from NHAI for meeting such Debt Service Payments after deducting such Realisable Fees and the reserves of the Concessionaire. Within 15 (fifteen) days of receiving such demand, NHAI shall disburse the advance due to the Concessionaire at an interest rate equal to SBI PLR. Not later than 15 (fifteen) days after completion of such Accounting Year, the Concessionaire shall either refund such advance with interest to NHAI or adjust it against such Revenue Shortfall Loan as may be due to the Concessionaire under this Article.

24.5 The Revenue Shortfall Loan disbursed by NHAI pursuant hereto and the interest thereon shall be repaid by the Concessionaire in a sum equal to 50% (fifty per cent) of the Net Cash flow of the Concessionaire as and when made and such repayments shall be made in one or more years as necessary.

24.6 Notwithstanding anything to the contrary contained in Clause 24.5, the Concessionaire shall repay the entire Revenue Shortfall Loan and interest thereon at least two years before the expiry of the Concession Period. If any sum remains due or outstanding from the Concessionaire under this Article XXIV at any time during a period of two years preceding the Termination Date, it shall constitute a Concessionaire Event of Default under Article XXXII and NHAI shall be entitled to Terminate this Agreement under Clause 32.2.

XXV. ESCROW ACCOUNT

25.1 The Concessionaire shall prior to Appointed Date open and establish the Escrow Account with a Bank (the "Escrow Bank") and all funds constituting the Financing Package for meeting the Total Project Cost shall be credited to such Escrow Account. During Operations Period all Fees collected by the Concessionaire from the users of the Project Highway shall be exclusively deposited therein. In addition, all Fees collected by NHAI in exercise of its rights under this Agreement during the Concession Period and all disbursements or payments by NHAI pursuant hereto shall also, subject to the rights of deductions and appropriations therefrom of NHAI under this Agreement, be deposited by NHAI in the Escrow Account.

25.2 Disbursements from Escrow Account

25.2.1 The Concessionaire shall give, at the time of the opening of the Escrow Account, irrevocable instructions by way of an Escrow Agreement substantially in form set forth in Schedule 'Q' (the "Escrow Agreement") to the Escrow Bank instructing, inter alia, that the deposits into the Escrow Account shall subject to Clause 25.2.3, be appropriated in the following order every month and if not due in a month then appropriated proportionately in such month and retained in the Escrow Account and paid out therefrom in the month when due unless otherwise expressly provided in the instruction letter:

(a) All taxes due and payable by the Concessionaire;

(b) All expenses in connection with and relevant to the Construction of Project Highway by way of payment to the EPC Contractor and such other persons as may be specified in the Financing Documents;

(c) O&M Expenses including Fees collection expenses incurred by the Concessionaire directly or through O&M Contractor and/or Tolling Contractor, if any, subject to the items and ceiling in respect thereof as set forth in the Financing Documents but not exceeding 1/12 (one twelth) of the annual liability on this account;

(d) The whole or part of the expense on repair work or O&M Expenses including Fees collection expenses incurred by NHAI, and 1.25 times of the O&M expenses incurred by the NHAI, if any, in the event of repair and maintenance work being carried out by NHAI (pursuant to the failure

on the part of the Concessionaire in doing so) to maintain and/or repair the Project Highway or a part thereof up to and in accordance with the Specifications and Standards and/or failure on the part of the Concessionaire to commence remedial works within 30 (thirty) days of receipt of notice in this regard from NHAI or the Independent Consultant, if any, including those on account of exercise of any of its rights under this Agreement provided NHAI certifies to the Escrow Bank that NHAI had incurred such expenses in accordance with the provisions of this Agreement;

(e) All Concession Fees and any Negative Grant due to NHAI from the Concessionaire under this Agreement;

(f) Monthly proportionate provision of Debt Service Payments due in an Accounting Year and payment of Debt Service Payments in the month when due;

(g) Reimbursements of expenditure incurred by NHAI, if any, for payment of insurance premia, etc., which are otherwise concessionaire's responsibility, on account of failure on part of the Concessionaire to keep such insurance(s) effective and in force.

(h) Any payments and Damages due and payable by the Concessionaire to NHAI pursuant to this Agreement including Recovery due to reduction in the Scope of Work and repayment of Revenue Shortfall Loans,; and

(i) Balance in accordance with the instructions of the Concessionaire.

25.2.2 The Concessionaire shall not in any manner modify the order of payment specified in this clause 25.2 except with the prior written approval of NHAI.

25.2.3 In the event the Grant, if any, to the Concessionaire shall exceed 10% of the Total Project Cost, all disbursements on account of Total Project Cost other than those to the EPC Contractor in accordance with the EPC Agreement, shall be made in accordance with the express provisions contained in that behalf in the Financing Documents. Provided, however, that if the total of such disbursements exceed 10% of the Total Project Cost, prior written consent of NHAI shall be required in respect of the disbursement arrangements for such excess amounts, and such consent shall not be unreasonably withheld by NHAI.

25.3 Notwithstanding anything to the contrary contained in the Escrow Agreement and subject to the provisions contained in Clauses 33.5 and Article XXXIV, upon Termination of this Agreement, all amounts standing to the credit of the Project Escrow Account shall be appropriated and dealt with in the following order:

(a) all Taxes due and payable by the Concessionaire;

(b) all Concession Fees (including Negative Grant) due and payable to NHAI under this Agreement;

(c) all accrued Debt Service Payment;

(d) any payments and Damages due and payable by the Concessionaire to NHAI pursuant to this Agreement, including Termination claims, Recovery due to reduction in Scope of Work and repayment of Revenue Shortfall Loans;

(e) all accrued O&M Expenses;

(f) any other payments required to be made under this Agreement; and

(g) balance, if any, on the instructions of the Concessionaire.

25.4 The instructions contained in the Escrow Agreement shall remain in full force and effect until the obligations set forth in Clause 25.3 have been discharged.

XXVI. STATE SUPPORT AGREEMENT

26.1 The Concessionaire acknowledges that for the performance of its obligations under this Agreement, it requires support and certain services from GOHR and GOPb. The nature and scope of such support and services required by the Concessionaire from GOHR and GOPb are fully described in the draft State Support Agreement set forth at Schedule 'R'.

26.2 The Concessionaire acknowledges its obligation to enter into the State Support Agreement and accordingly the Concessionaire agrees and undertakes to enter into at its cost and expense the State Support Agreement with NHAI, GOHR and GOPb substantially in the form and content as set forth in Schedule 'R'.

XXVII. INSURANCE

27.1 Insurance during the Construction Period: The Concessionaire shall effect and maintain, or cause to be effected and maintained, at no cost to NHAI during the Construction Period such insurances upto such maximum sums as may be required under and in accordance with the Financing Documents, Applicable Laws and such insurance as the Concessionaire may reasonably consider necessary or desirable in accordance with Good Industry Practice. The Concessionaire shall also effect and maintain such insurance as may be necessary for mitigating the risks that may devolve on NHAI as a consequence of any act of omission by the Concessionaire during the Construction Period.

27.2 Insurance during the Operations Period: Not later than 4 months prior to the anticipated Completion of the Project Highway, the Concessionaire shall obtain and maintain at no cost to NHAI during the Operations Period in respect of the Project Highway and its operations such insurance as may be required under any of the Financing Documents, Applicable Laws and such insurance as the Concessionaire may reasonably consider necessary or desirable in accordance with Good Industry Practice. Provided, however, the level of insurance to be maintained after satisfaction of Senior Lenders' dues in full, shall be determined on the same principles as applicable for determining the level of Insurance prior to such date. This level shall be agreed with NHAI within 120 days of date of this Agreement.

For the sake of brevity, the aggregate of the maximum sums insured under the insurance taken out by the Concessionaire pursuant to this Article XXVII are herein referred to as the "Insurance Cover".

27.3 Evidence of Insurance Cover: All insurance obtained by the Concessionaire in accordance with this Article XXVII shall be maintained with insurer or reinsurers, and on terms consistent with Good Industry Practice. Within thirty days of obtaining any insurance cover, the Concessionaire shall furnish to NHAI, copies of certificates of insurance, copies of the insurance policies signed by an authorised representative of the insurer and copies of all premia payment receipts in respect of such insurance received from each insurance carrier, and such insurance will not be cancelled, changed or not renewed until the expiration of at least 45 (forty five) days after written notice of such cancellation, change of non-renewal has been received by NHAI.

27.4 Remedy on Failure to Insure: If the Concessionaire shall fail to effect and keep in force the insurance for which it is responsible pursuant hereto, NHAI shall have the option to keep in force any such insurance, and pay such premia and recover the costs thereof from the Concessionaire, or for the purposes of computation of payments to the Concessionaire pursuant to Article XXIX treat the insurance cover i.e. the maximum sums which such insurance was providing for had it been in force and effect as being deemed to have been received by the Concessionaire.

27.5 Waiver of Subrogation: All insurance policies supplied by the Concessionaire shall include a waiver of any right of subrogation of the insurers thereunder against, inter alia, NHAI, and its assigns, subsidiaries, affiliates, employees, insurers and underwriters and of any right of the insurers of 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.

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

27.7 Application of Insurance Proceeds: The proceeds from all insurance claims, except life and injury, shall be paid to the Concessionaire by credit to the Escrow Account (unless otherwise required by the Financing Documents) and the Concessionaire shall, subject to its obligations under the Financing Documents, and notwithstanding anything contained in Article XXV, apply such proceeds for any necessary repair, reconstruction, reinstatement, replacement, improvement, delivery or installation of the Project Highway.

XXVIII. ACCOUNTS AND AUDIT

28.1 The Concessionaire shall maintain full accounts of all Fees including Realisable Fees and other revenues derived/collected by it from and on account of use of the Project Highway and of O&M Expenses and other costs paid out of the Project Escrow Account and shall provide copies of the said accounts duly audited and certified by the Concessionaire's Statutory Auditors within 120 (one hundred twenty) days of the close of each Accounting Year to which they pertain, during the subsistence of this Agreement. Such audited accounts shall form the basis of

various payments by either Party under this Agreement. The Concessionaire shall also furnish, within one week of its publication, a certified copy of the audited accounts and annual report published by the Company under the Applicable Laws.

28.2 The Concessionaire shall appoint and have during the subsistence of this Agreement as its Statutory Auditors a firm of Chartered Accountants duly licensed to practice in India out of the mutually agreed list of 10 (ten) independent and reputable firms of Chartered Accountants in India (the "List of Chartered Accountants"). The criteria for preparing the List of Chartered Accountants are set forth in Schedule 'T'. Subject to a 30 days notice to NHAI and the replacement Statutory Auditors being appointed from the List of Chartered Accountants, the Concessionaire may terminate the appointment of any Statutory Auditor appointed in accordance with this Article. The fees and expenses of the Statutory Auditors shall be borne by the Concessionaire.

28.3 On or before the fifteenth day of May each Year, the Concessionaire shall provide for the preceding Accounting Year a statement duly audited by its Statutory Auditors giving summarised vehicle/user wise information on (i) the traffic count for each category of vehicles using the Project Highway and liable for payment of Fees therefore, and (ii) Fees charged and the amount of Fees received, Realizable Fees and other revenues derived from the Project Highway and such other information as NHAI may reasonably require.

28.4 Notwithstanding anything to the contrary contained in this Agreement, NHAI shall have the right but not the obligation to appoint at its cost another firm of chartered accountants from the List of Chartered Accountants (the "Additional Auditor") to audit and verify all those matters, expense, costs, realisations and things which the Statutory Auditors of the Concessionaire, are required to do, undertake or certify pursuant to this Agreement.

28.5 Where a Grant has been provided, NHAI shall have the right to appoint for the duration of the Construction Period as Concurrent Auditor a firm of Chartered Accountants from the List of Chartered Accountants (the "Concurrent Auditor") who shall undertake concurrent audit of the Concessionaire during the Construction Period. The charges and expenses of such Concurrent Auditor shall be borne by the NHAI. After such Construction Period, NHAI may at its option have concurrent audit done at such time and for such period as NHAI may deem appropriate at its cost and expenses.

28.6 In the event of there being any difference between the finding of the Additional Auditor or the Concurrent Auditor, as the case may be, and the certification provided by the Statutory Auditors of the Concessionaire, such Auditors shall meet to resolve such differences and if they are unable to resolve the same such disputed certification shall be resolved by recourse to the Dispute Resolution Procedure.



CHAPTER – VI
FORCE MAJEURE

XXIX. FORCE MAJEURE

29.1 Force Majeure Event: As used in this Agreement, a Force Majeure Event shall mean occurrence in India of any or all of Non Political Event, Indirect Political Event and/or Political Event as defined in Clauses 29.2, 29.3, and 29.4 respectively hereinafter which prevent the Party claiming Force Majeure (the "Affected Party") from performing its obligations under this Agreement and which act or event is (i) beyond the reasonable control and not arising out of the fault of the Affected Party, (ii) the Affected Party has been unable to overcome such act or event by the exercise of due diligence and reasonable efforts, skill and care, including through expenditure of reasonable sums of money and (iii) has a Material Adverse Effect on the Project.

29.2 Non Political Force Majeure Events: For purposes of Clause 29.1 Non-Political Events shall mean one or more of the following acts or events:

(i) acts of God or events beyond the reasonable control of the Affected Party which could not reasonably have been expected to occur, exceptionally adverse weather conditions, lightning, earthquake, cyclone, flood, volcanic eruption or fire (to the extent originating from a source external to the Site or beyond design specifications for the Construction Works) or landslide;

(ii) radioactive contamination or ionizing radiation;

(iii) strikes or boycotts (other than those involving the Concessionaire, Contractors or their respective employees/ representatives or attributable to any act or omission of any of them) interrupting supplies and services to the Project Highway for a period exceeding a continuous period of 7 (seven) days in an Accounting Year, and not being an Indirect Indian Political Event set forth in Clause 29.3 hereof;

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

(v) Any judgement or order of any court of competent jurisdiction or statutory authority in India made against the Concessionaire in any proceedings for reasons other than failure of the Concessionaire to comply with any Applicable Law or Applicable Permits or on account of breach thereof, or of any contract, or enforcement of this Agreement or exercise of any of its rights under this Agreement by NHAI; or

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

29.3 Indirect Political Force Majeure Events: For purposes of Clause 29.1, Indirect Political Event shall mean one or more of the following acts or events:

(i) 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 which prevents collection of Fees by the Concessionaire for a period exceeding a continuous period of 7 (seven) days in an Accounting Year;

(ii) industry wide or state wide or India wide strikes or industrial action which prevent collection of Fees by the Concessionaire for a period exceeding a continuous period of 7 (seven) days in an Accounting Year; or

(iii) any public agitation which prevents collection of Fees by the Concessionaire for a period exceeding a continuous period of 7 (seven) days in an Accounting Year.

29.4 Political Force Majeure Events: For purposes of Clause 29.1, Political Event shall mean one or more of the following acts or events by or on account GOI, NHAI, GOHR, GOPb or any other Governmental Agency:

(i) Change in Law, only when provisions of Article XXXVI cannot be applied;

(ii) expropriation or compulsory acquisition by any Governmental Agency of any Project Assets or rights of the Concessionaire or of the Contractors; or

(iii) unlawful or unauthorised or without jurisdiction revocation of, or refusal to renew or grant without valid cause any consent or approval required by

the Concessionaire or any of the Contractors to perform their respective obligations under the Project Agreements (other than a consent the obtaining of which is Condition Precedent) provided that such delay, modification, denial, refusal or revocation did not result from the Concessionaire's or any Contractor's inability or failure to comply with any condition relating to grant, maintenance or renewal of such consents or permits.

29.5 Effect of Force Majeure Event before Financial Close: Upon the occurrence of any Force Majeure Event prior to Financial Close as set forth in Article XXII, the following shall apply:

(a) There shall be no Termination except as provided in Clause 29.8;

(b) The date for achieving Financial Close shall be extended by the period for which such Force Majeure event shall subsist; and

(c) The Parties shall bear their respective costs and no Party shall be required to pay to the other Party any costs arising out of such Force Majeure Event.

29.6 Effect of Force Majeure Event after Financial Close: Upon occurrence of any Force Majeure Event after Financial Close, the following shall apply:

(a) There shall be no Termination of this Agreement except as provided in Clause 29.8;

(b) Where the Force Majeure Event occurs before COD, the dates set forth in the Project Completion Schedule, and the Concession Period shall be extended by the period for which such Force Majeure Event shall subsist;

(c) Where a Force Majeure Event occurs after COD, the Concessionaire shall continue to make all reasonable efforts to collect Fees, but if he is unable to collect Fees during the subsistence of such Force Majeure Event, the Concession Period shall be extended by the period for which collection of Fees remains suspended on account thereof; and

(d) Costs arising out of or concerning such Force Majeure Event shall be borne in accordance with the provisions of Clause 29.7.

29.7 Allocation of costs during subsistence of Force Majeure: Subject to the provisions of clause 29.6, upon occurrence of a Force Majeure Event after Financial Close, the costs arising out of such event shall be allocated as follows:

(a) When the Force Majeure Event is a Non Political Event, the Parties shall bear their respective costs and neither Party shall be required to pay to the other Party any costs arising out of any such Force Majeure Event;

(b) Where the Force Majeure Event is an Indirect Political Event, the costs attributable to such Force Majeure Event and directly relating to the Project (the "Force Majeure Costs") shall be borne by the Concessionaire to the extent of the Insurance Claims, and to the extent such Force Majeure Costs exceed the Insurance Claims, one half of the same to the extent actually incurred and duly certified by the statutory Auditors of Concessionaire shall be reimbursed by NHAI to the Concessionaire in one lump sum or paid in three equal annual installments with interest @ SBI PLR plus two percent; and

(c) Where the Force Majeure Event is a Political Event, the Force Majeure Costs to the extent actually incurred and certified by the Statutory Auditors of Concessionaire shall be reimbursed by NHAI to the Concessionaire in one lump sum or paid in three equal annual installments with interest @ SBI PLR plus two percent, provided that no Force Majeure Costs shall be payable by NHAI if the Concession Period is extended under Clause 29.6.

For avoidance of doubt, Force Majeure Costs shall not include loss of Fee revenues or any debt repayment obligations but shall include interest payments on such debt, O&M Expenses and all other costs directly attributable to the Force Majeure Event.

29.8 Termination Notice: If a Force Majeure Event subsists for a period of 180 (one hundred eighty) days or more within a continuous period of 365 (three hundred sixty five) days, either Party may in its sole discretion terminate this Agreement by giving 30 (thirty) days Termination Notice in writing to the other Party without being liable in any manner whatsoever, save as provided in Clause 29.9.

29.9 Termination Payment for Force Majeure Events: Upon Termination of this Agreement pursuant to Clause 29.8, Termination Payment to the Concessionaire shall be made in accordance with the following:

(a) If the Termination is on account of a Non Political Event, the Concessionaire shall be entitled to receive from NHAI by way of Termination Payment an amount equal to 90% of the Debt Due and the entire Subordinated Debt less due insurance claims, if any. Provided that in the event some insurance claims are not admitted, then 90% of such claims shall qualify for being included in the computation of Debt Due.

(b) If the Termination is on account of an Indirect Political Event, the Concessionaire shall be entitled to receive from NHAI by way of Termination Payment an amount equal to:

(j) the total Debt Due, less due insurance claims, if any. Provided, however, that if all or any of the insurance claims are not admitted and paid, then 80% (eighty per cent) of such unpaid claims shall qualify for being included in the computation of Debt Due, plus

(iii) the outstanding Subordinated Debt, plus

(iii) 110% (one hundred ten per cent) of the Equity (subscribed in cash and actually spent on the Project but excluding the amount of Equity Support referred to in Article XXIII) if such Termination occurs at any time during three years commencing from the Appointed Date and for each successive years thereafter, such amount shall be adjusted every year to fully reflect the changes in WPI during such year, and the adjusted amount so arrived at shall be reduced every year by 7.5% (seven and half per cent) per annum.

(c) If the Termination of this Agreement is on account of a Political Event, the Concessionaire shall be entitled to receive from NHAI by way of Termination Payment an amount equal to:

(i) the total Debt Due, plus

(ii) 120% (one hundred twenty per cent) of the Subordinated Debt plus

(iii) 150% (one hundred fifty per cent) of the Equity (subscribed in cash and actually spent on the project but excluding the amount of Equity Support referred to in Article XXIII) if such Termination occurs at any time during three years commencing from the Appointed Date and for each successive year thereafter, such amount shall be adjusted every year to fully reflect the changes in WPI during such year, and the adjusted amount so arrived at shall be reduced every year by 7.5% (seven and half per cent) per annum.

29.10 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 however 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.

29.11 Liability for other losses, damages etc: Save and except as expressly provided in this Article XXIX, neither Party hereto 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 to this Article XXIX.

29.12 Duty to Report: The Affected Party shall discharge the following obligations in relation to reporting the occurrence of a Force Majeure Event to the other Party:

(a) The Affected Party shall not claim any relief for or in respect of a Force Majeure Event unless it shall have notified the other Party in writing of the occurrence of the Force Majeure Event as soon as reasonably practicable, and in any event within 7 (seven) days after the Affected Party knew, or ought reasonably to have known, of its occurrence and the probable material effect that the Force Majeure Event is likely to have on the performance of its obligations under this Agreement.

(b) Any notice pursuant to this Clause 29.12 shall include full particulars of:

(i) the nature and extent of each Force Majeure Event which is the subject of any claim for relief under this Article XXIX with evidence in support thereof;

(ii) 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;

(iii) the measures which the Affected Party is taking or proposes to take, to alleviate the impact of such Force Majeure Event; and

(iv) any other information relevant to the Affected Party's claim.

(c) For so long as the Affected Party continues to claim to be affected by such Force Majeure Event, it shall provide the other Party with regular (and not less than weekly) written reports containing information as required by this Clause 29.12, and such other information as the other Party may reasonably request the Affected Party to provide.

29.13 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 written notice to that effect and shall promptly resume performance of its obligations hereunder.



CHAPTER – VII

SUSPENSION AND TERMINATION

XXX. MATERIAL BREACH AND SUSPENSION

30.1 If the Concessionaire shall be in Material Breach of this Agreement NHAI, shall be entitled in its sole discretion and without prejudice to its other rights and remedies under this Agreement including its right of Termination hereunder, to (i) suspend all or any of the rights of the Concessionaire under this Agreement including the Concessionaire's right to collect and appropriate all Fees and other revenues from the Project Highway, and (ii) exercise the rights of the Concessionaire under this Agreement itself or authorise any other person to exercise the same during such suspension. Such suspension by NHAI shall be by a communication in writing to the Concessionaire and shall be effective forthwith upon the issue thereof to the Concessionaire. Any Fees or revenues collected by or on behalf of NHAI during such suspension shall be deposited in the Escrow Account to the exclusion of the Concessionaire. Provided, however, that the period of such suspension under this Article XXX shall not exceed 120 (one hundred twenty) days.

30.2 Subject to clause 30.1, NHAI shall have the right to utilise the proceeds of Fees and other revenues for meeting the costs incurred by NHAI to remedy and rectify the cause of such suspension and for defraying the O&M Expenses during such suspension period. Provided, however, that if the Concessionaire is making diligent efforts to remedy and rectify such cause, then NHAI shall allow the Concessionaire reasonable time and opportunity for such remedy or rectification.

30.3 The suspension of the rights of the Concessionaire by NHAI pursuant to Clause 30.1 above shall be revoked by NHAI forthwith upon the Concessionaire having remedied the Material Breach during such suspension period to the satisfaction of NHAI unless in the meantime this Agreement has been terminated by NHAI in accordance with Article XXXII.

30.4 At any time during the period of suspension under this Article XXX, the Concessionaire may in writing notify to NHAI that it does not intend to cure the breach or default that had caused such suspension. Within 7 (seven) days of receipt of such notice, NHAI shall terminate this Agreement as if a Material

Breach of this Agreement had occurred on account of a Concessionaire Event of Default.

XXXI. COMPENSATION FOR BREACH OF AGREEMENT

31.1 In the event of Concessionaire being in material default of this Agreement and such default is cured before Termination, the Concessionaire shall pay to NHAI as compensation, all direct additional costs suffered or incurred by NHAI arising out of such material default by the Concessionaire, in one lumpsum within 30 (thirty) days of receiving the demand or at the Concessionaire's option in 3 (three) equal semi-annual installments with interest @ SBI PLR plus 2% (two per cent).

31.2 In the event of NHAI being in material default of this Agreement and such default is cured before Termination, NHAI shall pay to the Concessionaire as compensation, all direct additional costs suffered or incurred by the Concessionaire arising out of such material default by NHAI, in one lumpsum within 30 (thirty) days of receiving the demand or at NHAI's option in 3 (three) equal semi-annual installments with interest @ SBI PLR plus 2% (two per cent).

XXXII. TERMINATION

32.1 Termination for the Concessionaire Event of Default.

32.1.1 Concessionaire Event of Default

The following events shall constitute an event of default by the Concessionaire (a "Concessionaire Event of Default") unless such Concessionaire Event of Default has occurred as a result of NHAI Event of Default or a Force Majeure Event;

(1) The Concessionaire fails to achieve Financial Close in accordance with the provisions of Article XXII;

(2) The Concessionaire fails to achieve any Project milestone other than Scheduled Project Completion Date within the period set forth in Schedule 'H' and fails to cure such default within a period of 180 (one hundred and eighty) days from the date of its occurrence.

(3) The Concessionaire is in Material Breach of this Agreement;

(4) The Concessionaire commits default in complying with any of the terms and conditions of this Agreement, save and except those defaults in respect of which Cure Period has been expressly provided in this Agreement and fails to remedy or rectify the same within the period provided in a notice in this behalf from NHAI which shall:

(i) require the Concessionaire to remedy the breach or breaches referred to in such notice within 1 (one) month (or such longer period as may be agreed by the NHAI at its absolute discretion); or

(ii) permit the Concessionaire to put forward within 15 days of such notice a reasonable programme for the remedying of the breach or breaches, such programme to specify in reasonable detail the manner in which such breach or breaches is or are proposed to be remedied and the latest date by which it is proposed that such breach or all such breaches shall be remedied.

(5) The Concessionaire creates any Encumbrance, charges or lien in favour of any person save and except as otherwise expressly permitted under Clause 35.2;

(6) The shareholding of the Consortium Members falls below the minimum prescribed under Clause 11.1 (xiii) and the Concessionaire does not suo moto cure such default within 90 (ninety) days of its occurrence;

(7) The transfer, pursuant to law of either (a) the rights and/or obligations of the Concessionaire under any of the Project Agreements, or (b) all or material part of the assets or undertaking of the Concessionaire except where such transfer in the reasonable opinion of NHAI does not affect the ability of the Concessionaire to perform, and the Concessionaire has the financial and technical capability to perform, its material obligations under the Project Agreements;

(8) A resolution is passed by the shareholders of the Concessionaire for the voluntary winding up of the Concessionaire;

(9) The Concessionaire is adjudged bankrupt or insolvent or if a trustee or receiver is appointed for the Concessionaire or for any of its property that has a material bearing on the Project;

(10) Any petition for winding up of the Concessionaire is admitted by a court of competent jurisdiction or the Concessionaire 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 property, assets and undertaking of the Concessionaire are transferred to the amalgamated or reconstructed entity and that the amalgamated or reconstructed entity has unconditionally assumed the obligations of the Concessionaire under this Agreement and the Project Agreements, and provided that:

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

(ii) the amalgamated or reconstructed entity has the financial standing to perform its obligations under this Agreement and the Project

Agreements and has a credit worthiness at least as good as that of the Concessionaire as at the Financial Close; and

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

(11) The Concessionaire is in Material Breach of any of the Project Agreements;

(12) An event of default of the Concessionaire under any of the Financing Documents has occurred or any of the Senior Lenders has recalled its loan under any of the Financing Documents;

(13) The Concessionaire abandons the operations of the Project Highway for more than 15 (fifteen) consecutive days without the prior consent of NHAI, provided that the Concessionaire shall be deemed not to have abandoned such operation if such abandonment was (i) as a result of Force Majeure Event and is only for the period such Force Majeure is continuing, or (ii) is on account of a breach of its obligations by NHAI.

(14) The Concessionaire repudiates this Agreement or otherwise evidences an intention not to be bound by this Agreement;

(15) The Concessionaire suffers an execution being levied on any of its assets/ equipment causing a Material Adverse Effect on the Project and allows it to be continued for a period of 15 (fifteen) days;

(16) The Concessionaire has delayed any payment that has fallen due under this Agreement if such delay exceeds 90 (ninety) days; or

(17) The Concessionaire is in breach of its obligation to repay the Revenue Shortfall Loans in accordance with this Agreement.

32.1.2 Save and except as otherwise provided in Clause 32.2, and without prejudice to any other right or remedy which NHAI may have in respect thereof under this Agreement, upon the occurrence of any breach or default by the Concessionaire under this Agreement including any Concessionaire Event of Default, NHAI shall be entitled to terminate this Agreement by a communication in writing (the "Termination Notice") to the Concessionaire if the Concessionaire has failed to cure such breach or default within the period provided for the same in this

Agreement provided that before issuing the Termination Notice, NHAI shall by a notice in writing inform the Concessionaire of its intention to issue the Termination Notice (the "Preliminary Notice") and grant 15 (fifteen) days time to the Concessionaire to make its representation, if any, against such intended Termination Notice and shall after the expiry of said 15 (fifteen) day period whether or not it is in receipt of such representation, in its sole discretion issue the Termination Notice.

32.1.3 Subject to Clause 32.2, the following shall apply in respect of cure of any of the defaults and/or breaches of this Agreement.

(i) The Cure Period shall commence from the date on which a notice in writing is delivered by NHAI to the Concessionaire asking the latter to cure the breach or default specified in such notice.

(ii) The Cure Period provided in this Agreement shall not relieve the Concessionaire from liability for Damages caused by its breach or default;

(iii) The Cure Period shall not in any way be extended by any period of suspension under this Agreement;

(iv) If the cure of any breach by the Concessionaire requires any reasonable action by Concessionaire that must be approved by NHAI or the Independent Consultant hereunder the applicable Cure Period (and any liability of the Concessionaire for damages incurred) shall be extended by the period taken by NHAI or the Independent Consultant to accord their required approval.

32.2 Notwithstanding anything to the contrary contained in this Agreement, in the event of the Concessionaire being in default under any of the provisions hereof expressly providing for Termination under or in accordance with this Clause 32.2, NHAI shall be entitled to terminate this Agreement forthwith by issuing a Termination Notice to the Concessionaire and upon issue of such Termination Notice by NHAI this Agreement shall stand terminated forthwith. Provided, however, that prior to such Termination, NHAI shall by notice grant to the Concessionaire a Cure Period of one month for curing the relevant breach or default of the provisions of this Agreement.

32.3 Upon Termination by NHAI on account of occurrence of Concessionaire Event of Default during the Operations Period, the NHAI shall pay to the Concessionaire by way of Termination Payment an amount equal to 90% (ninety per cent) of the Debt Due less insurance claims, if any, provided, however, that if all or any of the insurance claims are not admitted and paid, then 80% (eighty per cent) of such unpaid claims shall qualify for being included in the computation of Debt Due.

32.4Termination for NHAI Event of Default.

32.4.1 The Concessionaire may after giving 90 (ninety) days notice in writing to NHAI terminate this Agreement upon the occurrence and continuation of any of the following events (each a "NHAI Event of Default"), unless any such NHAI Event of Default has occurred as a result of Concessionaire Event of Default or due to a Force Majeure Event.

(1) NHAI is in breach of this Agreement and such breach has a Material Adverse Effect on the Concessionaire and NHAI has failed to cure such breach or take effective steps for curing such breach within 90 (ninety) days of receipt of notice in this behalf from the Concessionaire;

(2) NHAI repudiates this Agreement or otherwise evidences an irrevocable intention not to be bound by this Agreement;

(3) GoI, GOHR, GOPb or any Governmental Agency have by an act of commission or omission created circumstances that have a Material Adverse Effect on the performance of its obligations by the Concessionaire and have failed to cure the same within 90 (ninety) days of receipt of notice by NHAI in this behalf from the Concessionaire;

(4) NHAI has delayed any payment that has fallen due under this Agreement if such delay exceeds 90 (ninety) days.

32.4.2 Upon Termination by the Concessionaire on account of an NHAI Event of Default, the Concessionaire shall be entitled to receive from NHAI by way of Termination Payment a sum equal to:

(i) the total Debt Due, plus

(ii) 120% (one hundred twenty percent) the total Subordinated Debt, plus

(iii) 150% (one hundred fifty per cent) of the Equity (subscribed in cash and actually spent on the Project but excluding the amount of Equity Support referred to in Article XXIII) if such Termination occurs at any time during three years commencing from the Appointed Date and for each successive year thereafter, such amount shall be adjusted every year to fully reflect the changes in WPI during such year and the adjusted amount so arrived at shall be reduced every year by 7.5% (seven and a half per cent) per annum.

32.5 Upon Termination of this Agreement for any reason whatsoever, NHAI shall:

(i) take possession and control of Project Highway forthwith;

(iii) take possession and control forthwith of any materials, construction plant, implements, stores etc. on or about the Site;

(iv) restrain the Concessionaire and any person claiming through or under the Concessionaire from entering upon the Site or any part of the Project Highway; and/or

(v) succeed upon election by NHAI without the necessity of any further action by the Concessionaire, to the interests of the Concessionaire under such of the Project Agreement as NHAI may in its discretion deem appropriate and shall upon such election be required to compensate such contractors only for compensation accruing and becoming due and payable to them under the terms of their respective Project Agreements from and after the date NHAI elects to succeed to the interests of the Concessionaire as aforesaid. All sums claimed by such Contractors as being due and owing for work and services performed or accruing on account of any act, omission or event prior to such date shall constitute debt between the Concessionaire and such Contractors and NHAI shall in no way or manner be liable or responsible for such sums.

32.6 Termination Payments: The Termination Payment pursuant to this Agreement shall become due and payable to the Concessionaire by NHAI within thirty days of a demand being made by the Concessionaire with the necessary particulars duly certified by the Statutory Auditors. If NHAI fails to disburse the full Termination Payment within 30 (thirty) days, the amount remaining unpaid shall

be disbursed along with interest @ SBI PLR plus two per cent for the period of delay on such amount.

32.7 Mode of Payment: Payment of compensation of costs by NHAI pursuant to this Article XXXII shall be made by way of credit to the Escrow Account and such payment shall constitute valid discharge of NHAI's obligations for Termination Payment hereunder.

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

XXXIII. DIVESTMENT OF RIGHTS AND INTERESTS

33.1 Upon Termination of this Agreement, the Concessionaire shall comply with the following:

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

(b) deliver forthwith actual or constructive possession of the Project Highway free and clear of all Encumbrances and execute such deeds, writings and documents as may be required by the NHAI for fully and effectively divesting the Concessionaire of all of the rights, title and interest of the Concessionaire in the Project Highway and conveying the Project Highway free of any charge or cost to NHAI; and

(c) comply with the Divestment Requirements set out in Clause 33.2.

33.2 Upon Termination of this Agreement, the Concessionaire shall comply and conform to the following Divestment Requirements in respect of the Project Highway:

(i) all Project Assets including the road, pavement, structure and equipment shall have been renewed and cured of all defects and deficiencies as

necessary so that the Project Highway is compliant with the Specifications and Standards set forth in this Agreement;

(ii) all sections of each traffic lane (the "Carriageway") of the Project Highway shall have a roughness index of not more than 2500 mm per km and shall be free from defects in accordance with O&M requirements;

(iii) all lamps shall be in working condition;

(iv) the Concessionaire delivers relevant records and reports pertaining to the Project Highway and its design, engineering, construction, operation, and maintenance including all operation and maintenance records and programmes and manuals pertaining thereto and complete as built Drawings on the Divestment Date;

(v) the Concessionaire executes such deeds of conveyance, documents and other writings as the NHAI may reasonably require to convey, divest and assign all the rights, title and interest of the Concessionaire in the Project Highway free from all Encumbrances absolutely and free of any charge or tax unto the NHAI or its Nominee; and

(vi) the Concessionaire complies with all other requirements as may be prescribed under Applicable Laws to complete the divestment and assignment of all the rights, title and interest of the Concessionaire in the Project Highway free from all Encumbrances absolutely and free of any charge or tax to NHAI or its nominee.

33.3 Not earlier than 3 (three) months before the expiry of the Concession Period but not later than 30 (thirty) days before such expiry, or in the event of earlier Termination of this Agreement, immediately upon but not later than 15 (fifteen) days from the date of issue of Termination Notice, the Independent Consultant shall verify, in the presence of a representative of the Concessionaire, compliance by the Concessionaire with the Divestment Requirements set forth in Clause 33.2 in relation to the Project Highway and, if required, cause appropriate tests to be carried out at the Concessionaire's cost for determining the compliance therewith. If any shortcomings in the Divestment Requirements are found by either Party, it shall notify the other of the same and the Concessionaire shall rectify the same at its cost. The provisions of Article XXXIV shall apply mutatis mutandis in relation to repair or curing of defects under this Article XXXIII.

33.4 Upon the Concessionaire conforming to all Divestment Requirements and handing over actual or constructive possession of the Project Highway to NHAI or a person nominated by NHAI in this regard, NHAI shall issue a certificate substantially in the form set forth in Schedule 'V' (the "Vesting Certificate") which will have the effect of constituting evidence of divestment of all rights, title and lien in the Project Highway by the Concessionaire and their vesting in NHAI pursuant hereto. Issue of the Vesting Certificate shall not be unreasonably withheld by NHAI. The divestment of all rights, title and lien in the Project Highway shall be deemed to be complete on the date when all the Divestment Requirements have been fulfilled or the Vesting Certificate has been issued, whichever is earlier, it being expressly agreed that any defect or deficiency in any Divestment Requirement shall not in any manner be construed or interpreted as restricting the exercise of any rights by NHAI or its nominee on or in respect of the Project Highway on the footing as if all Divestment Requirements have been complied with by the Concessionaire.

33.5 Notwithstanding anything to the contrary contained in this Agreement, any Termination Payments made by NHAI into the Escrow Account shall not be withdrawn therefrom for any purpose whatsoever until the Vesting Certificate has been issued by NHAI under this Article. Provided, however, that the aforesaid restriction shall not apply to withdrawals from the Escrow Account in favour of the Senior Lenders to the extent of Debt Due.

CHAPTER – VIII
MISCELLANEOUS

XXXIV. DEFECTS LIABILITY

34.1 Not less than 30 months nor more than 36 months prior to the expiry of the Concession Period, the Concessionaire and the Independent Consultant shall conduct a joint inspection (the "Initial Inspection") of the Project Highway and all Project Facilities.

34.2 Within 90 days after the completion of the Initial Inspection, the Concessionaire shall provide to the Independent Consultant a report on the condition of the Project Highway and the Project Facilities and a notice setting out the

Concessionaire's proposals as to the renewal works required to comply with the Divestment Requirements.

34.3 The Independent Consultant may, within 90 days after receipt of the notice from the Concessionaire in accordance with Clause 34.2, by notice to the Concessionaire object to the proposals giving details of the grounds for such objection and shall give the Independent Consultant's proposals in respect of the renewal works.

34.4 If no agreement is reached between the Concessionaire and the Independent Consultant within 30 days of receipt of such notice, then either the Concessionaire or the Independent Consultant may refer the matter to the Disputes Resolution Procedure.

34.5 Upon agreement or determination in accordance with the Disputes Resolution Procedure, the Concessionaire shall carry out the renewal works at its own cost.

34.6 Not less than 9 months nor more than 12 months prior to the expiry of the Concession Period, the Concessionaire and the Independent Consultant shall conduct a joint inspection (the "Second Inspection") of all elements of the Project Highway and Project Facilities (whether or not the Renewal Works have been carried out).

34.7 Within 30 days after the completion of the Second Inspection, the Concessionaire shall provide to the Independent Consultant a report on the condition of the Project Highway and Project Facilities and a notice setting out any revisions or additions to the renewal works required in order to ensure compliance with the Divestment Requirements.

34.8 The Independent Consultant may, within 30 days after receipt of the notice from the Concessionaire in accordance with Clause 34.7, by notice to the Concessionaire object to the proposed revisions giving details of the grounds for such objection and shall give the Independent Consultant proposals in respect of such matters.

34.9 If no agreement is reached between the Concessionaire and the Independent Consultant within 30 days of receipt of such notice, then either the Concessionaire or the Independent Consultant may refer the matter to the Dispute Resolution Procedure.

34.10 Upon agreement or determination in accordance with the Disputes Resolution Procedure, the Concessionaire shall carry out the renewal works (as so revised) at its own cost.

34.11 From the date which is 2 years prior to the expiry of the Concession Period a sum equal to the Fees realisable during the last two years of the Concession Period for a traffic volume calculated at the rate of 10,000 (ten thousand) PCUs per day per year or a higher sum estimated by the Independent Consultant for Renewal Works, shall notwithstanding anything to the contrary contained in this Agreement, be retained in the Escrow Account provided that if a Bank Guarantee of an equivalent sum in the form and content acceptable to NHAI has been furnished by the Concessionaire to NHAI, no such retention shall be made.

34.12 If following the Second Inspection, it is agreed or determined that no renewal works are required, then within 14 days of such agreement, 50% of the sums retained in accordance with Clause 34.11 shall be released from the Escrow Account to the Concessionaire.

34.13 Within 14 days after the issue of the Vesting Certificate issued in accordance with Article XXXIII the sums retained in accordance with Clause 34.11shall be released from the Escrow Account to the Concessionaire.

XXXV. ASSIGNMENTS AND CHARGES

35.1Subject to Clauses 35.3 and 35.4, this Agreement shall not be assigned by the Concessionaire save and except with prior consent in writing of NHAI, which consent NHAI shall be entitled to decline without assigning any reason whatsoever.

35.2 Subject to Clause 35.3, the Concessionaire shall neither create nor permit to subsist any encumbrance over or otherwise transfer or dispose of all or any of its rights and benefits under this Agreement or any Project Agreements to which Concessionaire is a party except with prior consent in writing of NHAI, which consent NHAI shall be entitled to decline without assigning any reason whatsoever.

35.3Restraint set forth in Clauses 35.1 and 35.2 shall not apply to:

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

(ii) mortgages/pledges/hypothecation of goods/assets other than Project Assets, and those covered by the Substitution Agreement and their related documents of title arising or created in the ordinary course of business of the Project Highway and as security only for indebtedness to the Senior Lenders under the Financing Documents and/or for working capital arrangements for the Project Highway;

(iii) assignment of rights, title and interest to or in favour of the Lenders pursuant to and in accordance with the Substitution Agreement in respect of financing by the Senior Lenders under the Financing Documents for the Project; and

(iv) liens or encumbrances required by any Applicable Law.

35.4 Senior Lenders may exercise the rights of step-in or substitution as provided in the Substitution Agreement to be entered into among the Concessionaire, NHAI and Senior Lenders in the form set forth in Schedule 'U' provided that the person substituting the Concessionaire shall be deemed to be the Concessionaire under this Agreement and shall enjoy all rights and be responsible for all obligations under this Agreement as if it were the Concessionaire. Provided, however, that in the event of such step-in or substitution, an additional Cure Period of 90 (ninety) days shall be provided by NHAI to enable the Concessionaire to cure any breach or default subsisting on the day of such step-in or substitution. Provided further that if the Senior Lenders step in to operate and manage the Concession for a period not exceeding 90 (ninety) days, their liabilities shall be restricted to the obligations relating to and arising during such 90 (ninety) days period.

35.5 Notwithstanding anything to the contrary contained in this Agreement NHAI may assign any of its rights and benefits and/or obligations under this Agreement pursuant to any direction of GOI or by operation of law or in the course of its own business.

XXXVI. CHANGE IN LAW

36.1 If as a result of Change in Law, the Concessionaire suffers an increase in costs or reduction in net after tax return or other financial burden, the aggregate financial

effect of which exceeds Rs.10 million (Rupees ten million) in any Accounting Year, the Concessionaire may notify NHAI and propose amendments to this Agreement so as to put the Concessionaire in the same financial position as it would have occupied had there been no such Change in Law resulting in such cost increase, reduction in return or other financial burden as aforesaid. Upon notification by the Concessionaire as aforesaid, the Parties shall meet as soon as reasonably practicable but no later than 30 (thirty) days and either agree on amendments to this Agreement or on alternative arrangements to implement the foregoing.

Provided that if no agreement is reached as aforesaid by the Parties within 90 (ninety) days of the meeting pursuant to this Clause 36.1, the Concessionaire may by notice in writing require NHAI to pay an amount that would put the Concessionaire in the same financial position it would have occupied had there been no such Change in Law resulting in such cost increase, reduction in return or other financial burden as aforesaid. Such notice shall be accompanied by necessary particulars duly certified by the Statutory Auditors of the Concessionaire. NHAI shall make payment of such compensation within 15 (fifteen) days of receiving such notice or with interest @ SBI PLR if the payment thereof is delayed beyond such 15 (fifteen) days. If NHAI shall dispute the quantum of such compensation claim of the Concessionaire, the same shall be finally settled in accordance with the Dispute Resolution Procedure.

36.2 If as a result of Change in Law, the Concessionaire enjoys a reduction in costs or increase in net after tax return or other financial benefit, the aggregate financial effect of which exceeds Rs.10 million (Rupees ten million) in any Accounting Year, NHAI may so notify the Concessionaire and propose amendments to this Agreement so as to put the Concessionaire in the same financial position as it would have occupied had there been no such Change in Law resulting in such decreased cost, increase in return or other financial benefit as aforesaid. Upon notification by the NHAI as aforesaid, the Parties shall meet as soon as reasonably practicable but no later than 30 (thirty) days and either agree on such amendments to this Agreement or on alternative arrangements to implement the foregoing.

Provided that if no agreement is reached as aforesaid by the Parties within 90 (ninety) days of the meeting pursuant to this Clause 36.2, NHAI may by notice in writing require the Concessionaire to pay an amount that would put the Concessionaire in the same financial position it would have occupied had there been no such Change in Law resulting in such decreased cost, increase in return

or other financial benefit as aforesaid. Such notice shall be accompanied by necessary particulars duly certified by the NHAI Representative. The Concessionaire shall make such payment within 15 (fifteen) days of receiving such notice or with interest @ SBI PLR if the payment is delayed beyond such 15 (fifteen) days. If the Concessionaire shall dispute such claim of NHAI, the same shall be finally settled in accordance with the Dispute Resolution Procedure.

36.3 Notwithstanding anything to the contrary contained in this Agreement, NHAI shall not be liable to reimburse to the Concessionaire any sums on account of any Change in Taxes if the same are recoverable from the users of the Project Highway or if the aggregate financial effect of such changes in any Accounting Year is less than or equal to Rs.10 million (Rupees ten million).

XXXVII. LIABILITY AND INDEMNITY

37.1 General Indemnity

(i) The Concessionaire will indemnify, defend and hold NHAI harmless against any and all proceedings, actions and, third party claims (other than a claim by NHAI or GOI for loss, damage and expense of whatever kind and nature arising out of the design, engineering, construction, procurement, Operation and Maintenance of the Project Highway or arising out of a breach by Concessionaire of any of its obligations under this Agreement except to the extent that any such claim has arisen due to NHAI Event of Default).

(ii) NHAI will, indemnify, defend and hold harmless the Concessionaire against any and all proceedings, actions, third party claims for loss, damage and expense of whatever kind and nature arising out of defect in title and/or the rights of NHAI in the land comprised in the Site adversely affecting the performance of the Concessionaire's obligations under this Agreement and/or arising out of acts done in discharge of their lawful functions by NHAI, its Officers, servants, agents, subsidiaries and contractors ("NHAI Indemnified Persons") including NHAI Events of Default except to the extent that any such claim has arisen due to a negligent act or omission, breach of contract or breach of statutory duty on the part of the Concessionaire, its Subsidiaries, affiliates, contractors, servants or agents including due to Concessionaire Event of Default.

37.2 Without limiting the generality of Clause 37.1 the Concessionaire shall fully indemnify, save harmless and defend NHAI including its officers, servants, agents and subsidiaries from and against any and all loss and damages arising out of or with respect to (a) failure of the Concessionaire to comply with Applicable Laws and Applicable Permits, (b) non payments of taxes relating to the Concessionaire contractors, suppliers and representatives, income or other taxes required to be paid by the Concessionaire without reimbursement hereunder, or (c) non-payment of amounts due as a result of materials or services furnished to the Concessionaire or any of its Contractors which are payable by the Concessionaire or any of its contractors.

37.3 Without limiting the generality of the provisions of this Article XXXVII, the Concessionaire shall fully indemnify, save harmless and defend the NHAI indemnified Person from and against any and all damages which the NHAI Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information , design or process used by the Concessionaire or by the Concessionaire's Contractors in performing the Concessionaire's obligations or in any way incorporated in or related to the Project. If in any such suit, claim or proceedings, a temporary restraint order or preliminary injunction is granted, the Concessionaire shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the suspension of the injunction or restraint order. If, in any such suit claim or proceedings, the Project, or any part, thereof or comprised therein is held to constitute an infringement and its use is permanently enjoined, the Concessionaire shall promptly make every reasonable effort to secure for NHAI a licence, at no cost to NHAI, authoring continued use of the infringing work. If the Concessionaire is unable to secure such licence within a reasonable time, the Concessionaire shall, at its own expense and without impairing the specifications and standards either replace the affected work, or part, or process thereof with non-infringing work or parts or process, or modify the same so that it becomes non-infringing.

37.4 In the event that either Party receives a claim from a third party in respect of which it is entitled to the benefit of an indemnity under this Article XXXVII (the 'Indemnified Party') it shall notify the other Party ("Indemnifying Party") within 14 (fourteen) days of receipt of the claim and shall not settle or pay the claim without the prior approval of the Indemnifying Party, such approval not to be

unreasonably withheld or delayed. In the event that the Indemnifying Party wishes to contest or dispute the claim it may conduct the proceedings in the name of the Indemnified Party subject the Indemnified Party being secured against any costs involved to its reasonable satisfaction.

37.5Defence of Claims

37.5.1 The Indemnified Party shall have the right, but not the obligation, to contest, defend and litigate any claim, action, suit or proceeding by any third party alleged or asserted against such party in respect of, resulting from, related to or arising out of any matter for which it is entitled to be indemnified hereunder and their reasonable costs and expenses shall be indemnified by the Indemnifying Party. If the Indemnifying Party acknowledges in writing its obligation to indemnify the person indemnified in respect of loss to the full extent provided by this Article XXXVII, 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 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, 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.

37.5.2 If the Indemnifying Party has exercised its rights under Clause 37.4, the Indemnified Party shall not be entitled to settle or compromise any claim, action, suit or proceeding without the prior written consent of the Indemnifying Party (which consent shall not be unreasonably withheld or delayed).

37.5.3 If the Indemnifying Party exercises its rights under Clause 37.4 then 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 such Indemnified Party, when and as incurred, unless:

(i) the employment of counsel by such party has been authorised in writing by the Indemnifying Party; or

(ii) 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

(iii) 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

(iv) the Indemnified Party shall have reasonably concluded and specifically notified the Indemnifying Party either:

(a) that there may be specific defences available to it which are different from or additional to those available to the Indemnifying Party; or

(b) 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 clauses (ii), (iii) or (iv) shall be applicable, counsel for the Indemnified Party shall have the right to direct the defence of such claim, 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.

XXXVIII. RIGHTS AND TITLE OVER THE SITE

38.1 The Concessionaire shall have exclusive rights to the use of the Site in accordance with the provisions of this Agreement and for this purpose it may regulate the entry and use of the Project Highway by third parties.

38.2 The Concessionaire shall allow access to, and use of the Site for telegraph lines, electric lines or such other public purposes as NHAI may specify. Where such access or use causes any damage to the Project Highway and consequent financial loss to the Concessionaire, it may seek compensation or damages from such user of the Site as per Applicable Laws.

38.3 The Concessionaire shall not be liable to pay any property taxes for the Site.

38.4 For the purposes of claiming tax depreciation, the property representing the capital investment made by the Concessionaire shall be deemed to be acquired and owned by the Concessionaire.

38.5 The Concessionaire shall not sublet the whole or any part of the Site save and except as may be expressly set forth in this Agreement provided however that nothing contained herein shall be construed or interpreted as restricting the right of the Concessionaire to appoint contractors for the performance of its obligations hereunder including for operation and maintenance of all or any part of the Project Highway including Project Facilities.

XXXIX. DISPUTE RESOLUTION

39.1 Amicable Resolution

(a) Save where expressly stated to the contrary in this Agreement, any dispute, difference or controversy of whatever nature howsoever arising under, out of or in relation to this Agreement including incompletion of the Project Highway between the Parties and so notified in writing by either Party to the other (the "Dispute") in the first instance shall be attempted to be resolved amicably in accordance with the conciliation procedure set forth in Sub-clause (b) below.

(b) In the event of any Dispute between the Parties, either Party may call upon the Independent Consultant to mediate and assist the Parties in arriving at an amicable settlement thereof. Failing mediation by the Independent Consultant or without the intervention of the Independent Consultant, either Party may require such Dispute to be referred to the Chairman, NHAI and the Chairman of the Board or Directors of the Concessionaire, for the time being for amicable settlement. Upon such reference, the said two Authorities shall meet not later than 7 (seven) days of the date of such request to discuss and attempt to amicably resolve the Dispute. If such meeting does not take place within the said period or the Dispute is not amicably settled within 15 (fifteen) days of such meeting between the said two Authorities, either Party may refer the dispute to arbitration in accordance with the provisions of Clause 39.2.

(c) If the Dispute is not resolved as evidenced by the signing of the written terms of settlement within 30 (thirty) working days of the aforesaid notice in writing or such longer period as may be mutually agreed by the Parties then the provisions of Clause 39.2 shall apply.

39.2 Arbitration

39.2.1 Any Dispute, which is not resolved amicably as provided in Clause 39.1 shall be finally decided by reference to arbitration by a Board of Arbitrators, appointed pursuant to Clause 39.2.2 below. Such arbitration shall be held in accordance with the Rules of Arbitration of the Indian Council of Arbitration and shall be subject to the provisions of the Arbitration Act.

39.2.2 There shall be a Board of three arbitrators of whom each party shall select one and the third arbitrator shall be appointed in accordance with the Rules of Arbitration of the Indian Council of Arbitration.

39.2.3 The arbitrators shall issue a reasoned Award.

39.2.4 The venue of such arbitration shall be New Delhi, India.

39.3 Arbitration Awards to be Binding

39.3.1 The Concessionaire and NHAI undertake to carry out any decision or award of the arbitrators (the "Award") without delay. Awards relating to any Dispute shall be final and binding on the Parties as from the date they are made.

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

39.3.3 This Agreement and rights and obligations of the Parties shall remain in full force and effect pending the Award in any arbitration proceeding hereunder.

XL. DISCLOSURE

40.1 The Concessionaire shall make available for inspection by members of public free of charge during normal business hours on all working days copies of this Concession Agreement, the O&M Contract, the Tolling Contract and the State Support Agreement (hereinafter collectively referred to as "Public Documents") at the Concessionaire's Site office during the subsistence of this Agreement. The Concessionaire shall prominently display at the Toll Plazas public notices about the availability of the Public Documents for inspection and shall make available upon request and payment in advance of copying charges on no profit no loss basis to members of public copies of the said Public Documents.

XLI. REDRESSAL OF PUBLIC GRIEVANCES

41.1 The Concessionaire shall maintain a public relations office adjacent to each Toll Plaza and keep it open to public access at all times. At each such office, the Concessionaire shall open and maintain a register (the "Complaints Register") for recording of complaints by any person (the Complainant") at any time of the day. The availability of and access to such office and the Complaints Register shall be prominently displayed by the concessionaire at each Toll Plaza so as to bring it to the attention of all persons who are entering and exiting the Project Highway.

41.2 The Complaints Register shall be securely bound and kept in proper custody at the public relations office. Each page of the Register shall be duly numbered and each complaint recorded therein shall also be duly numbered. Soon after a complaint is registered the Complainant shall be given a receipt by such office stating the date and complaint number, which the Complainant may refer to in any subsequent correspondence or claim. The Complaints Register shall have appropriate columns including but not limited to the complaint number and date, name and address of the Complainant, the complaint and the action taken by the Concessionaire thereon.

41.3 The Concessionaire shall inspect the Complaints Register at reasonable intervals and take prompt steps for redressal of the grievances stated in each complaint. The action so taken by the Concessionaire shall be briefly noted in the 'Action taken' column of the Complaints Register and a suitable reply shall also be sent to the Complainant by post under a certificate of posting.

41.4 Within one week following the close of each calendar month, the Concessionaire shall send to NHAI a true photocopy of such pages of the Complaints Register on which any entries have been recorded of any Complaint on the Concessionaire during the course of such month. NHAI may in its discretion direct the concessionaire to take such further reasonable action as NHAI may deem appropriate for a fair and just redressal of any grievance. Where NHAI is of the opinion that the Complainant is entitled to any further redressal or compensation beyond what the Concessionaire is willing to provide, NHAI may refer the matter to the Consumer Redressal Forum having jurisdiction for its disposal in accordance with the provisions of the Consumer Protection Act, 1986.

XLII. ADVERTISING ON THE SITE

42.1 The Concessionaire shall not undertake or permit any form of Commercial advertising, display or hoarding at any place on the Site if such advertising, display or hoarding shall be visible to a user of the Project Highway while driving on such Highway.

XLIII. GOVERNING LAW AND JURISDICTION

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

XLIV. MISCELANEOUS

44.1 Video Recording

During the Construction Period, the Concessionaire shall provide a video recording to NHAI every calendar quarter which will be compiled into a 3 (three) hour cassette, covering the construction of the Project Highway in that quarter. Such video recording shall be provided no later than fifteen days after the close of each quarter.

44.2 Waiver

(a) Waiver by either Party of any default by other Party in the observance and performance of any provision of or obligations of or under this Agreement.

(i) 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;

(ii) shall not be effective unless it is in writing and executed by a duly authorised representative of the Party; and

(iii) shall not affect the validity or enforceability of this Agreement in any manner.

(b) 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.

44.3 Survival

Termination of this Agreement (a) shall not relieve the Concessionaire or NHAI of any obligations hereunder which expressly or by implication survives

Termination hereof, and (b) except as otherwise provided in any provision of this Agreement expressly limiting the liability of either Party, shall not relieve either Party of any obligations or liabilities for loss or damage to the other Party arising out of or caused by acts or omissions of such Party prior to the effectiveness of such Termination or arising out of such termination.

All obligations surviving the cancellation, expiration or Termination of this Agreement shall only survive for a period of 5 (five) years following the date of such Termination or expiry of this Agreement.

44.4 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 expressly previously approved in writing by NHAI and executed by the person expressly authorised by a resolution of NHAI in this behalf.

44.5 Notices

Any notice or other communication to be given by 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 Concessionaire, be given by letter delivered by hand to the address given and marked for the attention of the person set out opposite the corresponding signature below or to such other address marked for such other attention as the Concessionaire may from time to time designate by notice to NHAI, provided that notices or other communications to be given to an address outside New Delhi may (if they are subsequently confirmed by sending a copy thereof by first class registered airmail or by courier) be sent by facsimile to the number as the Concessionaire may from time to time designate by notice to NHAI; and

(b) in the case of NHAI, be given by letter delivered by hand and be addressed to the Chairman, NHAI

Copies of all notices shall also be sent by facsimile and by registered acknowledgement due pre-paid post or courier.

Copies of all notices shall also be sent to the NHAI Representative.

44.6 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 one or more provisions which may be substituted for such invalid, unenforceable or illegal provisions, as nearly as is practicable to such invalid, illegal or unenforceable provision. Failure to agree upon any such provisions shall not be subject to dispute resolution under this Agreement or otherwise.

44.7 No Partnership

Nothing contained in this Agreement shall be construed or interpreted as constituting a partnership between the Parties. Neither Party shall have any authority to bind the other in any manner whatsoever.

44.8 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.

44.9 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.

44.10 Counterparts

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

45.1 IN WITNESS WHEREOF THE, PARTIES HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN.

SIGNED SEALED AND DELIVERED

For and on behalf of
NATIONAL HIGHWAYS AUTHORITY OF INDIA
By

(S.K. Nirmal)
General Manager (BOT) NHAI
National Highways Authority of India
G-5&6, Sector-10, Dwarka
New Delhi-110075
as duly authorised by the aforesaid Act

एस. के. निर्मल / S. K. NIRMAL
महाप्रबंधक (तकनीकी) / General Manager (Tech.)
राष्ट्रीय राजमार्ग प्राधिकरण / National Highways Authority of India
(भारत सरकार, पोत परिवहन और राजमार्ग मंत्रालय)
(Ministry of Shipping, Road Transport & Highways)
जी– 5 एवं 6, सेक्टर–10, द्वारका, नई दिल्ली – 75
G-5 & 6, Sector-10, Dwarka, New Delhi - 75

SIGNED, SEALED AND DELIVERED

For and on behalf of
M/S GMR AMBALA -CHANDIGARH EXPRESSWAYS PRIVATE LIMITED
CONCESSIONAIRE by:

(O. Bangaru Raju)
Director
M/s GMR Ambala -Chandigarh Expressways Private Limited
SKIP HOUSE, 25/1, Museum Road,
Bangalore- 560 025
pursuant to the resolutions of the Board of Directors of the Concessionaire Passed in that behalf on the 20th day of August, 2005.

In the presence of:

1. 16.XI.05
2. 16/11/05 (D. SARANGI)
3. 16/11/05 (SUDHIR HOSHING)
4. (AMBAPRASAD G)

Virgin
4p

Mrbala
Chandigarh

Volume — II

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Schedule – A

SITE OF THE PROJECT

1 General

1.1 The Site

National Highway No. 22 originates from NH-1 at Ambala in Haryana and ends at China border in Himachal Pradesh. This is one of the most important roads connecting Shimla (Capital of Himachal Pradesh) with Chandigarh (Capital of Haryana and Punjab) and New Delhi (Capital of India).

The Project Road (Ambala – Zirakpur Chowk Section) traverses through districts of Ambala in Haryana and Patiala in Punjab. The Project Road starts at from (i)km 5+735 (just after the ROB) and ends at km 39+960.730 (just after the Yadvendra Bridge) on NH-22 and (ii) km 0+000 – 0+871 of NH-21 towards Chandigarh city.

Enroute it passes through urban areas like Lalru, Dappar, Dera Bassi, etc. The Ambala – Dera Bassi Section of NH-22 is presently operating at the Level of Service (LOS) 'E' achieved in the year 2004, and Dera Bassi – Zirakpur Section of NH-22 had already achieved the LOS 'E' in the year 2001. The condition of the existing road pavement is good. Generally, the existing road is a 2-lane with paved shouiders except few locations where the road passes through market places, the road is 4-laned.

Thus, in order to provide better level of service to the vehicular traffic, it has been decided to augment the capacity of the Ambala (km 5+735) – Zirakpur (km 39+960.730) Section of NH-22 and Km 0+871.222 section of NH –21 by widening the existing 2-lane road to 4-lane dual carriageway facility with Flyover/Interchange , wayside amenities etc. on Build, Operate and Transfer (BOT) basis.

The Index Plan of the Project Highway is shown in **Fig. A-1.**

1.2 Disclaimer

The data presented in this schedule is for an initial understanding and guidance of the Concessionaire. NHAI will not be responsible for any inaccuracy in the information provided and shall not be liable for or be bound by the data used by the Concessionaire in evaluating the project viability. The Concessionaire will carry out his own Independent surveys for assessing actual position of the project corridor.

The Concessionaire acknowledges that prior to the execution of this Agreement, the Concessionaire has satisfied himself (based on his own Independent assessment) of the survey data, specifications and standards, site and all information provided by the NHAI. The concessionaire acknowledges and accepts the difficulties, risks and hazards likely to arise during the course of performance of his obligations hereunder.

2. Description of Project Highway

An index map and location plan of the project highway is given as **Fig. A-1.** The Base Plans for the project road showing the existing alignment, buildings, utilities, etc. may be seen from the Detailed Project Reports.

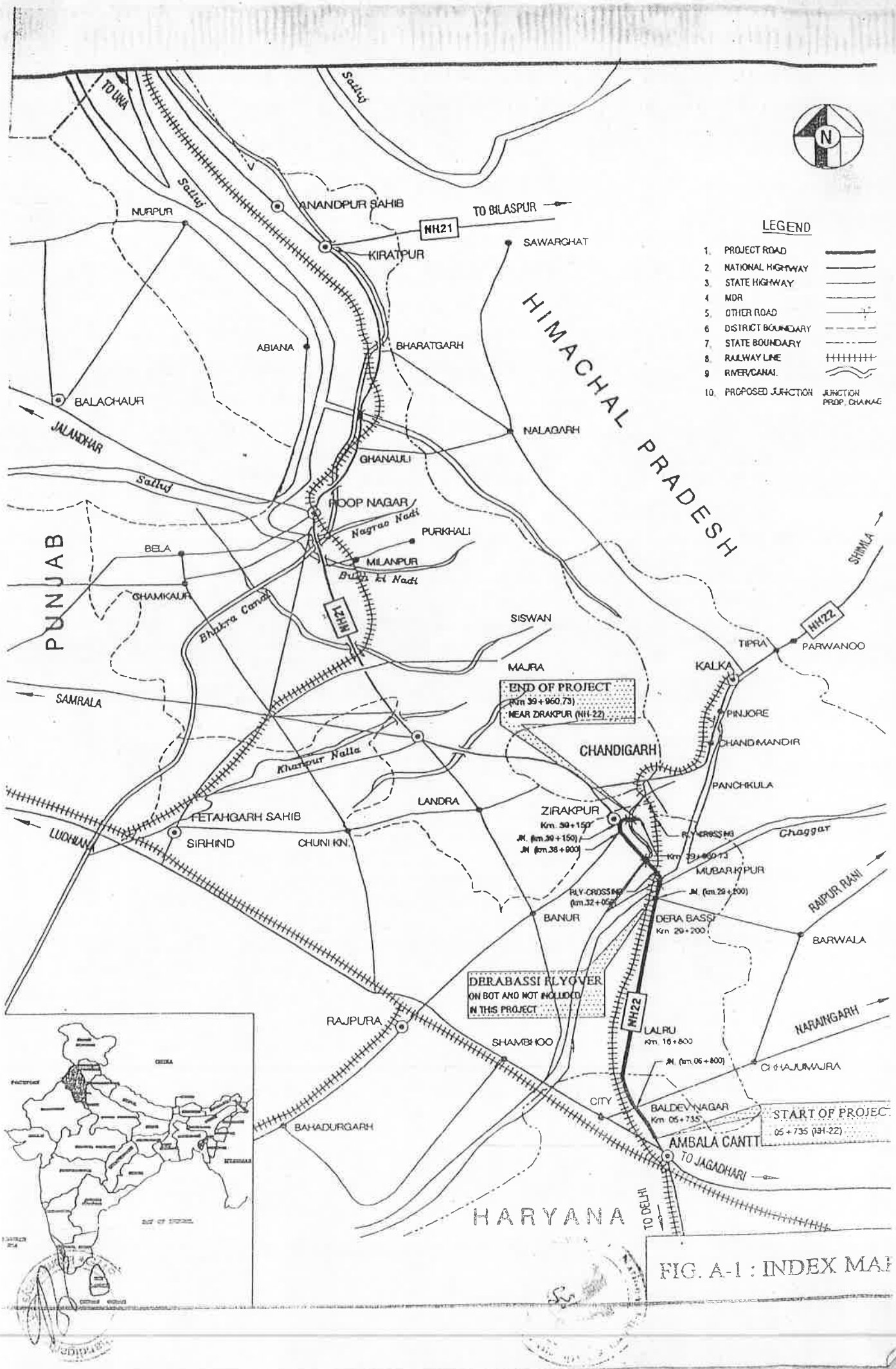


FIG. A-1 : INDEX MAP

2.1 a) **Referencing System**

Along the existing road NH -22, Kilometre stones are fixed in entire length (Except Km 30, 31, 34&39) of the project highway. During topography survey with Total Station, observations made are referred to as "Design/Proposed Chainage". The Schedule of km stones with respect to the design chainage is given in **Table A-1**.

Table A-1: Schedule Of Kilometre Stones and Design Chainages

Existing Kilometre Stone	Design Chainage (km)	Remarks
	5+735.000 (Ambala Side)	Start of Project Road along NH-22
Km 6	6+000.000	Match point of Existing and Proposed Chainage
Km 7	6+999.123	-
Km 8	8+005.529	-
Km 9	9+022.650	-
Km 10	10+025.622	-
Km 11	10+921.365	-
Km 12	11+904.489	-
Km 13	12+950.424	-
Km 14	13+949.577	-
Km 15	14+942.925	-
Km 16	15+946.831	-
Km 17	16+946.070	-
Km 18	17+912.679	-
Km 19	18+962.198	-
Km 20	19+959.769	-
Km 21	20+902.934	-
Km 22	21+910.488	-
Km 23	22+935.982	-
Km 24	23+916.179	-
Km 25	24+937.117	-
Km 26	25+929.984	-
Km 27	26+931.020	-
Km 28	27+954.265	-
Km 29	28+939.233	-
Km 30	-	Km Stone was Missing at the Time of Survey
Km 31	-	Km Stone was Missing at the Time of Survey
Km 32	31+970.042	-
Km 33	32+949.409	-
Km 34	-	Km Stone was Missing at the Time of Survey
Km 35	35+068.578	-
Km 36	36+023.495	-
Km 37	37+017.456	-
Km 38	38+058.983	-
Km 39	-	Km Stone was Missing at the Time of Survey
	39+960.730 (Zirakpur side)	End of Project Road along NH –22

Existing Kilometre Stone	Design Chainage (km)	Remarks
	0+000	Start of project on NH-21
	0+871.222	End of Project Road along NH - 21

The details of Bench Mark pillars along the Project Road are given in **Annexure A-1**.

2.1 b) 'START' And 'END' Of The Project Highway

The Project Road starts from km 5+735 (after ROB at Ambala) of NH-22 and ends at km 39+960.730 of NH-22 towards Kalka side and along NH-21, starting point of the project is the junction of NH-21(km0+000) with NH-22(Design Ch.39+150) and ends at km 0+871 towards Chandigarh side.

2.2 Latitudes & Longitudes

The project road generally lies between latitude N 30° 25′ to 30° 38′ and longitude E 76°48′ to 76° 52′.

2.3 Terrain

The road traverses through mainly plain terrain.

2.4. Traffic

Traffic count details as per the survey conducted by design consultants in 2 locations on the project road is given in the **Table A-2** below:

Table A-2: Details Of Annual Average Daily Traffic

Section	Period of Survey	Two Wheelers (Nos.)	Auto Rickshaw (Nos.)	Car/Jeep (Nos.)	Buses (Nos.)	Trucks (Nos.)	Agricul. Tractors (Nos.)	Non-Motorised (Nos.)	Total Vehicles (Nos.)	Total PCUs
Ambala - Dera Bassi	18 -20 March 2004	8792	200	11056	2693	6653	376	2461	32231	43469
Dera Bassi – Zirakpur	17 – 19March 2004	9236	25	11774	2772	6548	469	2806	33860	45343

Peak Hour Turning Movement Traffic Count for two junctions (km 38+800 & km 39+150 at Patiala and Kalka Chowk respectively) at Zirakpur is given in **Annexure A-2.**

2.5 Abutting Land Use

Abutting land use on both sides is predominantly agricultural (48%) and the balance constitutes residential, commercial and industrial. Most of the land is agricultural. Predominant land use in various reaches is depicted at Annexure **A-3.**

There are 29 number of villages/towns existing on the project road, which are given in **Annexure A-4.**

2.6 Right of way

The existing right-of-way (ROW) of the project road varies widely between 32 m to 54 m. **Annexure A-5** shows the currently available right-of-way (ROW) at various locations along the project road.

2.7 Road Crossings/Junctions

There are 5 major and 40 minor junctions. The details of Major Junctions are given in **Table A-3.**

Table A-3: List of Major Intersections

Sl No	Chainage (km) Along NH - 22	Type of Junction	Side	Connecting Road	Destination
1	6+800	T (Signalised)	Left	NH – 72	Ludhiana
2	7+150	T (Signalised)	Right	NH – 72	Narayan Garh
3	30+500	T	Right	--------	Barwala
4	38+800	T (Signalised)	Left	NH – 64	Patiala
5	39+150	T (Signalised)	Right	NH - 21	Chandigarh

2.8 Railway Crossing

The Project Road crosses the Ambala – Kalka Northern Railway lines at Dera Bassi (Design Ch. 32+050(of NH-22) where a ROB has already been constructed under a separate BOT contract and is in operation. The existing facility is a four lane ROB constructed by M/s R. S. Builders & Engineers Ltd. on BOT Basis in a length of 2.085kms between Design Ch. 30+960 to 33+045 and is in operation for more than last two years levying Toll as user's fee for the ROB (See Section 2.13 on existing Derabassi ROB – Schedule A). Existing 4-Lane facility is also provided with service roads of 5.5 m width for local traffic.

2.9 Geometrics

It is observed that the Project Highway predominantly has a straight alignment and traverses through plain terrain. The horizontal curves in general conform to acceptable geometric standards in terms of radius and sight distance. But in general superelevation/camber need to be improved. Due to site constraints or in order to have minimum land acquisition, substandard horizontal curves have been provided at km 30+310, km 30+518 and km 31+565 on NH-22 respectively. The details of deficient curves are given in **Table A-4.**

Table A-4: Details Of Deficient Curve

Location of Curve (Chainage 'km') along NH –22	Radius (m)	Deficiency	Remarks
30+310	260	Substandard Curve	Built up Area
30+548	150	Substandard Curve	Built up Area
31+565	300	Substandard Curve	Derrabasi ROB
34+820	295.5	Substandard Curve	-

2.10 Road Condition Survey and Pavement Composition

As per the pavement condition data gathered in June,2000 from test pit investigations, the average total thickness of existing pavement varies from 350 mm to 700 mm. The pavement mainly comprises of a WBM base course over subgrade, overlaid by mainly thin layers of bituminous macadam and mix seal surfacing/semi dense bituminous carpet or bituminous concrete over the years. The bituminous course layer's thickness varies between 200 mm to 350 mm, while that of WBM between 100 mm to 250 mm and GSB between 100 mm to 250 mm. Bituminous overlay have been provided to improve the riding quality and also to increase the structural strength of the pavement to meet the requirements of increasing traffic load either fully or partly. Later on 4 laning facility was provided between Km 30+960 to Km 33+045 at Derabassi.

The condition of pavement is generally good to fair and the riding quality was improved with 50 mm BM + 25 mm SDBC in most of the stretches in the year 2000. **Annexure A-6** shows the condition survey of existing road.

2.11 Cross Drainage Structures

The project road is predominantly aligned through rural areas with cultivated fields or barren lands on both sides. The surface flow during precipitation is generally drained to the adjoining areas on either side. The roadside drainage along the project road needs some improvements, predominantly in urban stretches. The road is crossed by a number of rivers, streams, nallahs, etc. The project road has 25 culverts and 14 bridges.

Annexure A-7, A-8 & A-9 show the inventory and condition survey of bridges and Culverts respectively.

2.12 Facilities

2.12.1 Service Roads

There are service roads along the Derabassi ROB portion on both sides. The details are given in **Table A- 5.**

Table A-5: List Of Existing Service Road Location

Sl. No.	Location Chainage along NH – 22 (km)		Side	Length (m)	Width (m)	Area
	From	To				
1.	30+960	33+045	Left & Right	2085	5.5	Derabassi ROB Portion

2.12.2 Petrol Pumps

There are 17 petrol pumps in the section. List of petrol pumps are given in Table A-6.

Table A-6: List Of Existing Petrol Pumps

Sl No	Chainage (km)	Side	Description
Along NH - 22			
1	7+000	Left	Near Shanhzadpur Jn.
2	7+040	Left	Near Shanhzadpur Jn.
3	7+250	Right	Near Shanhzadpur Jn.
3	7+310	Right	Near Shanhzadpur Jn.
4	7+585	Left	Near B.J.Industries
5	7+680	Right	Near Haryana Vidyut Prasaran Nigam Ltd.
6	9+550	Right	Near Taj Ceramics and Potteries (p) Ltd.
7	13+300	Right	Near Sarsini Village
8	15+360	Left	Near Jaycee Coach Builders Ltd.
9	16+910	Left	Near Dahar Jn.
10	17+000	Right	Near Balar Jn.
11	25+500	Left	Near Hindustan Electronics Jn.
12	27+650	Right	Near Debi Nagar Jn.
13	30+890	Left	Near Toll Plaza
14	36+500	Right	Near Dhaba
15	37+280	Right	Near Styal Nivas Jn.
16	38+000	Left	Near Patiala Jn.
17	38+680	Right	At Patiala Jn.
Along NH - 21			
-	-	-	-

2.13 Existing BOT concession for 4 – lane ROB at Derabassi (Km 30+960 – km 33+045 of NH -22)

As mentioned in Section 2.8 above, the existing 4-lane Derabassi ROB is a Toll Based facility under an existing concession awarded to M/s R.S. Builders & Engineers Ltd. SCO-19, 5th Floor, Feroze Gandhi Market, Ludhiana, Punjab. Following are the salient features of this concession:

Date of Signing of agreement : 08-09-1999
Concession Period : 9 Years 5 months and 25 days
Length of the Toll Stretch : 2.085kms (included Derabassi ROB)

This stretch of the road shall become part of the instant Concession only after the Tolled stretch of 2.085 km length is handed back to the Client (MoRTH/NHAI) after the expiry of the existing Concession of M/s. R S Builders & Engineers Ltd. NHAI shall therefore would handover this 2.085 km long stretch on "as is where is basis" earliest by 30th June 2009. Till such time, this stretch shall not form part of the Concession under this Contract. On being handed over this stretch, the Concessionaire will be allowed to levy Toll for this stretch also at the prescribed Toll rates mentioned in PART-I of the Bid Document. In case of default, the selected bidder shall be compensated @ Rupees three lakh per month in the first year for the period beyond 30th June 2009. In subsequent years, the compensation shall be @ Rupees three lakh per month adjusted with WPI.

NHAI shall have no objection in case the existing Concession of M/s. R S Builders & Engineers Ltd. is bought by the selected bidder. In that case the selected bidder shall be allowed to levy toll on the existing terms and conditions of the concession awarded to M/s. R S Builders & Engineers Ltd. till schedule expiry date mentioned therein.

2.14 The project highway would require Land Acquisition at certain places involving shifting of utilities. The details are given in the Detailed Project Reports.

2.15 The existing road is already 4-laned at few places in short stretches. Location of these are given in **Table A-7**.

Table A-4: Existing 4-laned stretches

Sl No.	Existing km	Location	Approx. length (m)	Remarks
1	17 & 18 of NH-22	Lalru town	1.5 kms	These sections would need to be improved in accordance with the envisaged final drawings.
2	30 & 31 of NH-22	Dera Bassi	1.5 kms	
3	32 & 33 of NH-22	Dera Bassi ROB	2.085 kms	
4	39 & 40 of NH-22 & 1 of NH-21	Zirakpur	2 kms	

GMR Ambala-Chandigarh Expressways (P) Ltd.

Annexure A-1: Details Of Bench Mark Pillars

Sl. No.	Bench Mark No.	Northing (m)	Easting (m)	Elevation (RL) (m)	Location of Bench Mark			Remarks
					Design Chainage (km)	Side with respect to Existing Road Centreline	Offset from Existing Road Centreline (m)	
Along NH – 22								
1	BM149	9158.456	33188.517	272.034	5+936.140	LHS	6.952	
2	BM146	9771.357	33063.618	272.270	6+618.346	LHS	7.127	
3	BM144	10145.653	32987.023	272.660	7+000.344	LHS	7.242	
4	BM142	10464.667	32919.573	272.626	7+326.397	LHS	7.495	
5	BM140	11008.779	32822.688	273.271	7+878.917	RHS	7.775	
6	BM138	11427.869	32719.141	272.146	8+310.298	LHS	7.820	
7	BM135	12013.884	32610.036	271.856	8+906.230	RHS	6.222	
8	BM133	12404.824	32517.393	271.539	9+308.121	LHS	6.820	
9	BM131	13096.208	32389.448	271.622	10+010.985	RHS	6.413	
10	BM129	13533.712	32288.749	271.761	10+459.846	RHS	6.725	
11	BM127	13977.417	32182.511	271.673	10+916.135	RHS	7.305	
12	BM125	14441.299	32059.958	272.756	11+395.700	LHS	7.282	
13	BM123	14926.518	32119.328	273.251	11+892.500	RHS	6.479	
14	BM121	15462.262	32260.479	273.086	12+446.443	RHS	5.209	
15	BM119	15956.047	32372.745	273.040	12+952.570	LHS	6.315	
16	BM117	16504.465	32575.563	274.250	13+540.808	RHS	6.379	
17	BM115	16947.163	32779.713	273.871	14+028.258	RHS	6.462	
18	BM113	17393.659	32969.850	273.887	14+513.343	LHS	6.964	
19	BM111	17778.058	33146.128	275.154	14+936.135	LHS	6.784	
20	BM109	18209.119	33341.853	276.019	15+409.647	LHS	7.104	
21	BM107	18669.904	33551.761	276.621	15+916.180	LHS	7.157	
22	BM105	19111.928	33754.031	276.764	16+402.128	LHS	9.655	
23	BM102	19582.708	33992.276	277.938	16+929.734	RHS	9.253	
24	BM100	19958.917	34145.184	279.492	17+335.212	LHS	8.849	
25	BM97	20559.180	34420.194	279.445	17+994.800	LHS	9.538	
26	BM94	21003.364	34578.460	278.351	18+468.448	LHS	6.306	
27	BM92	21428.621	34828.626	278.545	18+961.700	LHS	6.336	
28	BM91	21690.768	35000.870	279.365	19+274.802	RHS	10.476	
29	BM88	22328.385	35094.260	280.123	19+919.325	LHS	7.622	
30	BM86	22876.055	35165.180	281.318	20+471.740	RHS	5.814	
31	BM84	23267.960	35297.092	283.490	20+890.120	LHS	8.412	
32	BM82	23780.644	35556.626	283.029	21+464.599	RHS	6.250	
33	BM80	24180.806	35748.142	283.263	21+908.222	RHS	7.030	
34	BM78	24529.277	35900.125	285.143	22+288.168	LHS	7.114	
35	BM76	25015.376	36134.408	288.356	22+827.782	LHS	8.074	
36	BM74	25630.456	36448.331	290.132	23+518.244	RHS	8.325	
37	BM72	25983.393	36620.199	289.521	23+910.904	RHS	7.765	
38	BM70	26358.623	36803.678	291.856	24+328.499	RHS	6.857	
39	BM68	26905.552	37055.964	292.239	24+930.757	LHS	6.331	
40	BM66	27324.509	37260.588	294.910	25+396.912	LHS	6.433	

Annexure A-1: Details Of Bench Mark Pillars (Contd.)

Sl. No.	Bench Mark No.	Northing (m)	Easting (m)	Elevation (RL) (m)	Location of Bench Mark			Remarks
					Design Chainage (km)	Side with respect to Existing Road Centreline	Offset from Existing Road Centreline (m)	
41	BM64	27806.008	37493.917	295.439	25+932.206	LHS	8.148	
42	BM62	28189.246	37698.593	296.174	26+366.212	RHS	6.858	
43	BM60	28697.016	37944.158	297.794	26+930.362	RHS	5.442	
44	BM58	29150.337	38189.242	299.056	27+447.041	LHS	7.333	
45	BM56	29563.167	38505.181	299.661	27+966.798	LHS	6.334	
46	BM54	29868.465	38753.256	300.329	28+360.067	RHS	5.777	
47	BM52	30320.843	39096.035	300.369	28+927.317	RHS	6.419	
48	BM50	30591.846	39277.895	301.981	29+253.526	RHS	6.773	
49	BM48	31015.733	39534.462	303.174	29+748.460	LHS	8.778	
50	BM45	31473.320	39841.320	304.535	30+299.500	LHS	0.100	Offset from Existing Median Centerline
51	BM43	31933.231	40033.209	299.425	30+840.484	RHS	10.152	
52	BM41	32371.417	40045.709	298.241	31+280.177	RHS	5.482	
53	BM39	32991.389	39836.158	299.209	31+961.287	RHS	5.743	
54	BM37	33413.505	39522.171	296.485	32+487.365	LHS	6.443	
55	BM34	33984.210	39133.300	296.163	33+177.712	RHS	5.154	
56	BM32	34404.302	38820.973	297.191	33+701.240	LHS	6.017	
57	BM30	34861.317	38509.482	294.894	34+254.899	RHS	4.947	
58	BM29	35041.795	38369.083	294.757	34+482.792	LHS	5.969	
59	BM27	35454.351	38139.516	294.910	34+958.993	LHS	7.406	
60	BM25	35954.489	38151.156	295.096	35+459.601	RHS	5.625	
61	BM23	36491.828	38137.205	296.805	35+996.954	LHS	7.483	
62	BM21	37046.086	38137.623	298.350	36+551.206	LHS	5.213	
63	BM19	37504.933	38146.961	300.329	37+009.994	RHS	5.734	
64	BM17	38042.972	38132.389	301.455	37+548.126	LHS	6.623	
65	BM15	38546.995	38142.362	302.968	38+051.985	RHS	7.329	
66	BM12	39282.497	38120.521	306.111	38+787.764	RHS	0.123	Offset from Existing Median Centerline
67	BM10	39645.354	38125.197	307.491	39+147.912	LHS	10.090	Offset from Existing Median Centerline
68	BM08	39735.780	38503.409	308.737	39+540.708	RHS	6.362	
69	BM06	39811.955	38942.798	306.909	39+986.678	RHS	7.634	
Along NH – 21								
70	ST 19	39924.568	37987.567	308.564	2+357.529	RHS	0.92	On the Median Edge
71	ST 21	40075.200	37929.636	308.930	2+516.785	RHS	14.80	-

Annexure A-1: Details Of Bench Mark Pillars (Contd.)

Sl. No.	Bench Mark No.	Northing (m)	Easting (m)	Elevation (RL) (m)	Location of Bench Mark			Remarks
					Design Chainage (km)	Side with respect to Existing Road Centreline	Offset from Existing Road Centreline (m)	
72	ST 22	40218.487	37846.309	309.735	2+682.058	RHS	1.75	On the Median Edge
73	ST 30	40258.332	37823.229	310.016	2+727.958	LHS	1.87	On the Median Edge
74	ST 31	40069.905	37913.931	309.371	2+518.842	LHS	1.65	On the Median Edge

Annexure A-2
SUMMARY OF PEAK HOUR TURNING MOVEMENT TRAFFIC AT ZIRAKPUR

Direction	Motorised Vehicles											Non Motorised Vehicles			Vehicles			PCUS		
				Bus		Truck														
	Two Wheel-ers	Auto Rick-shaw	Car/Jeep Van/Taxi	Mini Bus	Stand. Bus	LCV	2-Axle	3-Axle Rigid	Multi Axle	Agricul. Tractor	Agricul. Tractor & Trailer	Animal & Hand Drawn	Cycle	Cycle 'Rick-shaw	Motor-ised	Non-Motor-ised	Total	Motor-ised	Non-Motorised	Total
Location : Patiala Chowk (Zirakpur) at Ch. 38+800																				
Ambala to Patiala	325	98	235	5	46	45	76	5	0	60	1	0	151	7	896	158	**1054**	1198	86	1284
Chandigarh to Patiala	2600	100	251	8	49	52	42	12	0	3	15	1	85	12	792	78	**870**	927	67	994
Ambala to Chandigarh	316	38	310	9	97	41	59	14	1	4	21	0	80	1	910	81	**991**	1187	42	1229
Chandigarh to Ambala	295	125	369	15	44	35	42	17	0	2	10	0	120	8	924	128	**1052**	1043	72	1115
Patiala to Ambala	113	10	72	1	3	6	10	1	0	0	8	0	15	0	224	15	**239**	225	8	233
Patiala to Chandigarh	215	80	320	6	65	65	59	9	0	5	13	0	85	0	814	85	**899**	1025	43	1068
Location : Kalka Chowk (Zirakpur) at Ch.39+150																				
Ambala to Chandigarh	589	60	395	10	120	59	75	25	2	4	40	2	95	5	1379	102	**1481**	1693	67	1760
Kalka to Ambala	252	45	267	1	21	7	34	6	0	5	10	0	120	11	648	131	**779**	675	77	752
Kalka to Chandigarh	288	12	187	3	3	6	5	2	0	7	0	0	47	1	513	48	**561**	397	24	421
Chandigarh to Kalka	113	24	60	2	1	12	22	9	0	12	0	1	95	13	255	109	**364**	276	74	350
Ambala to Kalka	309	25	239	9	55	18	31	11	0	2	25	0	95	4	724	99	**823**	866	56	922
Chandigarh to Ambala	355	85	365	21	121	46	15	25	1	4	51	0	147	6	1089	153	**1242**	1430	83	1513

Annexure A-3: Details Of Land Use Pattern

Sl. No.	Chainage (km)		Length (m)	Type of Land Use	
	From	To		LHS	RHS
Along NH – 22					
1	5+735	5+980	245	Residential	Commercial
2	5+980	6+000	20	Residential	Residential
3	6+000	7+000	1,000	Residential	Commercial
4	7+000	7+730	730	Industrial	Commercial
5	7+730	7+840	110	Industrial	Commercial
6	7+840	8+000	160	Commercial	Commercial
7	8+000	8+480	480	Commercial	Residential
8	8+480	9+000	520	Residential	Commercial
9	9+000	9+385	385	Commercial	Commercial
10	9+385	9+425	40	Commercial	Commercial
11	9+425	9+480	55	Commercial	Commercial
12	9+480	9+630	150	Commercial	Commercial
13	9+630	10+000	370	Agricultural	Agricultural
14	10+000	11+000	1,000	Agricultural	Barren
15	11+000	11+200	200	Agricultural	Commercial
16	11+200	11+560	360	Commercial	Industrial
17	11+560	11+880	320	Agricultural	Industrial
18	11+880	12+000	120	Agricultural	Agricultural
19	12+000	12+880	880	Barren	Agricultural
20	12+880	13+000	120	Agricultural	Barren
21	13+000	13+200	200	Agricultural	Barren
22	13+200	13+560	360	Agricultural	Agricultural
23	13+560	14+000	440	Agricultural	Agricultural
24	14+000	14+400	400	Agricultural	Agricultural
25	14+400	15+000	600	Industrial	Industrial
26	15+000	16+000	1,000	Industrial	Industrial
27	16+000	16+600	600	Industrial	Industrial
28	16+600	17+000	400	Commercial	Agricultural
29	17+000	17+250	250	Commercial	Commercial
30	17+250	17+660	410	Commercial	Commercial
31	17+660	18+000	340	Commercial	Commercial
32	18+000	19+000	1,000	Commercial	Commercial
33	19+000	19+510	510	Agricultural	Residential
34	19+510	20+000	490	Agricultural	Commercial
35	20+000	20+360	360	Agricultural	Industrial
36	20+360	21+000	640	Barren	Barren
37	21+000	21+680	680	Agricultural	Agricultural
38	21+680	22+000	320	Agricultural	Agricultural

Annexure A-3: Details Of Land Use Pattern(Contd.)

Sl. No.	Chainage (km)		Length (m)	Type of Land Use	
	From	To		LHS	RHS
39	22+000	22+350	350	Agricultural	Agricultural
40	22+350	23+000	650	Agricultural	Residential
41	23+000	23+700	700	Agricultural	Agricultural
42	23+700	24+000	300	Barren	Industrial
43	24+000	24+220	220	Agricultural	Industrial
44	24+220	25+000	780	Agricultural	Industrial
45	25+000	25+500	500	Industrial	Industrial
46	25+500	26+000	500	Agricultural	Barren
47	26+000	26+500	500	Agricultural	Industrial
48	26+500	27+000	500	Agricultural	Industrial
49	27+000	27+750	750	Agricultural	Agricultural
50	27+750	28+000	250	Agricultural	Agricultural
51	28+000	28+540	540	Agricultural	Agricultural
52	28+540	29+000	460	Agricultural	Agricultural
53	29+000	30+000	1,000	Commercial	Commercial
54	30+000	30+120	120	Commercial	Commercial
55	30+120	30+530	410	Commercial	Commercial
56	30+530	30+680	150	Commercial	Commercial
57	30+680	31+000	320	Commercial	Commercial
58	31+000	31+150	150	Commercial	Agricultural
59	31+150	31+400	250	Commercial	Commercial
60	31+400	32+000	600	Agricultural	Commercial
61	32+000	32+350	350	Barren	Agricultural
62	32+350	33+000	650	Residential	Commercial
63	33+000	33+300	300	Residential	Agricultural
64	33+300	34+000	700	Agricultural	Agricultural
65	34+000	35+000	1,000	Agricultural	Agricultural
66	35+000	36+000	1,000	Agricultural	Agricultural
67	36+000	37+000	1,000	Agricultural	Agricultural
68	37+000	37+680	680	Industrial	Commercial
69	37+680	38+000	320	Residential	Agricultural
70	38+000	38+620	620	Commercial	Commercial
71	38+620	39+000	380	Commercial	Commercial
72	39+000	39+400	400	Commercial	Commercial
73	39+400	39+950	550	Commercial	Residential
74	39+950	40+000	50	Commercial	Residential
Total			34,265		
Along NH – 21					
75	0+000	0+400	400	Commercial	Commercial
76	0+400	0+871.222	505	Commercial	Commercial

Annexure A-4: Details Of Village / Tehsil / District

Sl. No	Chainage (km)		District	Tehsil	Name of the Village
	From	To			
Along NH – 22					
1	5+735	7+025	Ambala	Ambala	DHULKOT
2	7+025	8+101			AKBARPUR
3	8+101	8+472			SULTANPUR
4	8+864	9+465			KAKRU
5	9+465	10+590			SADOPUR
6	10+688	11+880	Patiala	Derabassi	JHARMARI
7	11+880	12+810			DANGDIHRI
8	12+810	15+255			SARSINI
9	15+255	15+950			ALAMGIR
10	15+950	16+785			DAHAR
11	16+785	20+185	Patiala	Derabassi	LALRU
12	20+185	20+475			SAMLEHRI
13	20+475	21+500			LEHRI
14	21+755	23+900			DAPPAR
15	23+900	24+000			BERMAZRA
16	24+000	25+500			GOLUMAZRA
17	25+500	26+925			JANETPUR
18	26+925	28+000			DEVINAGAR
19	28+000	29+000			HARIPUR PURA
20	29+100	30+050			SAKHPUR
21	30+050	31+160			MADHOPUR
22	31+160	32+250			RONI
23	32+250	34+880			BHANKARPUR
24	34+880	36+390	Patiala	Derabassi	SINGHPURA
25	36+390	36+900			BISHANGARH
26	36+900	37+275			BISHANPURA
27	37+275	38+950			LOHGARH
28	38+950	39+310			ZIRAKPUR
29	39+500	40+000			BARTANA
Along NH –21					
30.	0+000	0+871.222	Patiala	Derabassi	ZIRAKPUR

Annexure A-5
DETAILS OF ROW

Station (km)	Existing ROW (m)			Proposed ROW (m)		
	Offset from Existing Road Centreline to Existing ROW		Total	Offset from Existing Road CL to Proposed ROW		Total
	LEFT	RIGHT		LEFT	RIGHT	
5+735	23.5	20.9	44.4	23.5	20.9	44.4
5+800	23.6	21.9	45.5	23.6	21.9	45.5
6+000	23.4	24.6	48.0	23.4	24.6	48.0
6+200	23.6	25.4	48.9	23.6	25.4	48.9
6+400	23.3	24.7	48.0	23.3	28.8	52.1
6+600	23.2	24.8	48.0	23.2	26.1	49.3
6+800	24.4	23.4	47.7	24.4	27.5	51.9
7+000	23.1	25.0	48.2	23.1	28.4	51.5
7+200	23.1	25.5	48.6	23.1	28.4	51.5
7+400	23.1	25.4	48.5	23.1	28.2	51.2
7+600	23.4	25.1	48.5	23.4	27.4	50.8
7+800	23.8	24.9	48.6	23.8	24.9	48.6
8+000	23.3	25.7	49.0	23.3	25.7	49.0
8+200	22.5	26.5	49.0	22.5	26.5	49.0
8+400	23.7	25.8	49.5	23.7	25.8	49.5
8+600	23.6	22.4	46.0	23.6	22.4	46.0
8+800	23.6	23.0	46.5	30.2	23.0	53.2
9+000	23.6	23.9	47.5	30.4	23.9	54.3
9+200	23.5	24.0	47.5	25.6	24.0	49.6
9+400	25.2	21.5	46.7	25.2	21.5	46.7
9+600	23.5	28.1	51.6	23.5	28.1	51.6
9+800	23.7	27.3	51.0	23.7	27.3	51.0
10+000	23.7	24.9	48.6	24.7	24.9	49.6
10+200	23.5	24.9	48.4	24.4	24.9	49.3
10+400	23.5	23.0	46.5	23.6	23.0	46.7
10+600	23.5	23.2	46.7	23.8	23.2	46.9
10+800	23.5	23.5	47.0	23.5	23.5	47.0
11+000	23.8	23.8	47.6	23.8	23.8	47.6
11+200	23.8	23.8	47.6	24.0	23.8	47.8
11+400	22.4	22.4	44.8	23.5	22.4	45.9
11+600	25.3	25.3	50.6	27.8	25.3	53.1
11+800	25.3	25.3	50.6	32.1	25.3	57.4
12+000	22.5	22.5	44.9	31.5	22.5	54.0
12+200	22.5	22.5	44.9	31.7	22.5	54.2
12+400	22.5	22.5	44.9	28.2	22.5	50.6
12+600	22.5	22.5	44.9	26.0	23.0	49.0
12+800	22.5	22.5	44.9	24.9	22.5	47.4
13+000	25.3	25.3	50.6	25.3	25.3	50.6
13+200	25.3	25.3	50.6	25.5	25.3	50.8
13+400	19.5	19.5	39.0	31.2	19.5	50.7
13+600	22.4	22.4	44.8	33.6	22.4	56.0
13+800	22.4	22.4	44.8	29.0	22.4	51.4
14+000	22.4	22.4	44.8	24.2	22.5	46.7
14+200	22.4	22.4	44.8	23.9	22.4	46.3
14+400	22.4	22.4	44.8	23.6	22.4	46.0
14+600	22.4	22.4	44.8	23.8	22.4	46.2
14+800	22.4	22.4	44.8	26.4	22.4	48.8
15+000	22.4	22.4	44.8	25.1	22.4	47.5

Annexure A-5 (Contd.)
DETAILS OF ROW

Station (km)	Existing ROW (m)			Proposed ROW (m)		
	Offset from Existing Road Centreline to Existing ROW		Total	Offset from Existing Road CL to Proposed ROW		Total
	LEFT	RIGHT		LEFT	RIGHT	
15+200	22.4	22.4	44.8	24.0	22.4	46.4
15+400	22.4	22.3	44.8	24.1	22.3	46.4
15+600	22.5	22.4	44.9	23.8	22.4	46.2
15+800	22.4	22.4	44.8	24.0	22.4	46.4
16+000	22.4	22.4	44.8	24.2	22.4	46.6
16+200	22.4	22.4	44.8	23.3	22.4	45.7
16+400	22.4	22.4	44.8	27.2	22.4	49.6
16+600	22.4	22.5	44.9	29.0	22.5	51.5
16+800	22.6	22.4	45.0	22.6	22.4	45.0
17+000	22.4	22.4	44.8	22.4	22.4	44.8
17+200	22.4	22.4	44.8	22.4	22.4	44.8
17+400	24.6	24.6	49.2	24.6	24.6	49.2
17+600	24.6	24.6	49.2	24.6	24.6	49.2
17+800	25.3	25.3	50.5	25.3	25.3	50.5
18+000	24.7	25.3	50.0	24.7	25.3	50.0
18+200	20.9	20.9	41.8	20.9	20.9	41.8
18+400	20.9	20.9	41.8	20.9	20.9	41.8
18+600	20.9	20.9	41.8	20.9	20.9	41.8
18+800	22.4	22.4	44.8	22.4	22.4	44.8
19+000	22.4	22.4	44.8	22.4	22.4	44.8
19+200	22.4	22.4	44.8	22.4	22.4	44.8
19+400	22.4	22.3	44.8	22.4	22.3	44.8
19+600	20.3	20.3	40.5	20.3	20.3	40.5
19+800	20.3	20.3	40.5	20.3	20.3	40.5
20+000	20.3	20.3	40.5	31.3	20.3	51.6
20+200	23.1	23.2	46.3	29.0	23.2	52.2
20+400	22.4	22.4	44.8	30.6	22.4	53.0
20+600	24.1	20.7	44.8	26.5	20.7	47.2
20+800	22.4	22.4	44.8	23.4	22.4	45.8
21+000	22.4	22.4	44.7	23.1	22.4	45.5
21+200	22.5	22.4	44.8	23.1	22.4	45.5
21+400	22.4	22.4	44.9	24.6	22.4	47.0
21+600	22.3	22.5	44.8	24.5	22.5	47.0
21+800	27.1	27.1	54.3	27.1	27.1	54.3
22+000	27.1	27.1	54.2	27.1	27.1	54.2
22+200	27.2	27.1	54.3	27.2	27.1	54.3
22+400	21.6	21.6	43.3	21.6	21.6	43.3
22+600	21.7	21.5	43.3	21.7	21.5	43.3
22+800	21.6	21.6	43.3	21.6	21.6	43.3
23+000	21.6	21.6	43.3	21.6	21.6	43.3
23+200	21.6	21.6	43.3	23.7	21.6	45.3
23+400	21.6	21.8	43.4	23.2	22.2	45.4
23+600	21.7	21.6	43.3	23.5	21.8	45.4
23+800	23.4	22.9	46.4	23.4	22.9	46.4
24+000	24.9	25.0	49.9	24.9	25.0	49.9
24+200	25.0	25.0	50.1	25.0	25.0	50.1
24+400	23.2	23.2	46.3	23.4	23.2	46.5
24+600	23.2	23.1	46.3	23.2	23.1	46.3

Annexure A-5 (Contd.)
DETAILS OF ROW

Station (km)	Existing ROW (m)			Proposed ROW (m)		
	Offset from Existing Road Centreline to Existing ROW		Total	Offset from Existing Road CL to Proposed ROW		Total
	LEFT	RIGHT		LEFT	RIGHT	
24+800	23.2	23.2	46.3	23.2	23.2	46.3
25+000	23.2	23.1	46.3	23.5	23.1	46.6
25+200	23.2	23.1	46.3	23.7	23.1	46.9
25+400	23.2	23.1	46.3	23.5	23.1	46.6
25+600	23.2	23.2	46.4	23.9	23.2	47.1
25+800	23.2	23.2	46.3	23.3	23.2	46.5
26+000	23.2	23.2	46.3	23.6	23.2	46.8
26+200	23.2	23.2	46.3	23.8	23.2	47.0
26+400	23.2	23.2	46.3	23.2	23.2	46.3
26+600	23.2	23.2	46.3	23.4	23.2	46.6
26+800	23.2	23.2	46.3	23.5	23.2	46.6
27+000	23.2	23.2	46.3	23.3	24.0	47.3
27+200	23.2	23.2	46.3	23.2	23.2	46.3
27+400	23.2	23.2	46.3	23.5	23.2	46.6
27+600	23.2	23.2	46.3	23.2	23.2	46.3
27+800	21.7	21.7	43.4	22.9	28.0	50.9
28+000	21.7	21.7	43.4	23.8	24.6	48.3
28+200	21.7	21.7	43.4	23.4	21.9	45.3
28+400	21.7	21.7	43.4	24.0	21.7	45.7
28+600	23.2	23.2	46.3	23.2	23.2	46.3
28+800	23.2	23.2	46.3	23.7	23.2	46.9
29+000	21.6	21.8	43.4	29.2	21.9	51.0
29+200	26.5	26.5	53.0	26.5	26.5	53.0
29+400	26.5	26.5	53.0	26.5	26.5	53.0
29+600	26.5	26.5	53.0	26.5	26.5	53.0
29+800	27.1	25.9	53.0	27.1	25.9	53.0
30+000	26.2	26.7	53.0	26.2	26.7	53.0
30+200	21.6	21.6	43.3	21.6	21.6	43.3
30+400	21.6	21.6	43.3	21.6	21.6	43.3
30+600	26.7	26.7	53.4	26.7	26.7	53.4
30+800	21.7	21.7	43.4	21.7	21.7	43.4
31+000	21.7	21.7	43.4	21.7	21.7	43.4
31+200	23.2	23.2	46.3	23.2	23.2	46.3
31+400	18.1	18.1	36.2	18.1	18.1	36.2
31+600	18.1	18.1	36.2	18.1	18.1	36.2
31+800	18.1	18.1	36.2	18.1	18.1	36.2
32+000	18.1	18.1	36.2	18.1	18.1	36.2
32+200	18.1	18.1	36.2	18.1	18.1	36.2
32+400	16.8	16.8	33.5	16.8	16.8	33.5
32+600	16.8	16.8	33.5	16.8	16.8	33.5
32+800	16.8	16.8	33.5	16.8	16.8	33.5
33+000	16.8	16.8	33.5	16.8	16.8	33.5
33+200	16.8	16.8	33.5	16.8	16.8	33.5
33+400	16.8	16.8	33.5	16.8	16.8	33.5
33+600	16.8	16.8	33.5	34.3	19.6	53.9
33+800	16.8	16.8	33.5	16.8	16.8	33.5
34+000	16.8	16.8	33.5	16.8	16.8	33.5
34+200	16.8	16.8	33.5	30.9	18.3	49.2

Annexure A-5(Contd.)
DETAILS OF ROW

Station (km)	Existing ROW (m)			Proposed ROW (m)		
	Offset from Existing Road Centreline to Existing ROW		Total	Offset from Existing Road CL to Proposed ROW		Total
	LEFT	RIGHT		LEFT	RIGHT	
34+400	16.8	16.8	33.5	24.8	21.5	46.3
34+600	16.8	16.8	33.5	23.5	21.6	45.2
34+800	16.8	16.8	33.5	23.7	24.0	47.7
35+000	16.8	16.8	33.5	23.1	21.4	44.5
35+200	16.8	16.8	33.5	23.0	21.4	44.4
35+400	16.8	16.8	33.5	22.9	22.0	44.8
35+600	16.8	16.8	33.5	23.0	21.2	44.2
35+800	16.8	16.8	33.5	23.2	21.4	44.6
36+000	16.8	16.8	33.5	23.7	21.3	45.0
36+200	16.8	16.8	33.5	22.8	21.1	43.9
36+400	16.8	16.8	33.5	23.5	21.3	44.9
36+600	16.8	16.8	33.5	23.2	21.2	44.4
36+800	16.8	16.8	33.5	22.8	21.6	44.4
37+000	18.0	18.0	36.0	23.1	22.0	45.1
37+200	18.0	18.0	36.0	20.4	19.6	40.0
37+400	18.0	18.0	36.0	21.4	20.6	42.0
37+600	18.0	18.0	36.0	20.7	21.3	41.9
37+800	16.8	16.8	33.5	19.8	20.3	40.1
38+000	16.8	16.8	33.5	16.8	16.8	33.5
38+200	16.8	16.8	33.5	16.8	16.8	33.5
38+400	16.8	16.8	33.5	16.8	16.8	33.5
38+600	16.8	16.8	33.5	16.8	16.8	33.5
38+800	19.0	18.7	37.8	19.0	18.8	37.8
39+000	18.9	18.9	37.7	18.8	18.9	37.7
39+200	18.9	18.8	37.7	167.8	19.5	187.3
39+400	18.9	18.9	37.7	26.2	24.9	51.1
39+600	16.5	16.5	32.9	17.1	22.6	39.7
39+800	23.0	23.0	46.0	23.0	23.0	46.0
40+000	16.3	16.3	32.6	16.3	16.3	32.6

Annexure A-6
DETAILS OF ROAD CONDITION SURVEY

Chainage (km)		Carriageway	Crack Type	Cracking				Indexed Cracking	Rating Value	Rave-lling	Rating Value	Pothole		Patching		Rating Value	Edge Failure		Rating Value	Rut Depth	Rating Value	Shoulder				Weighted Sum of Rating Value	Pavement Condition According to Rating (Weighted Approach)
				All crack		Wide > 3mm																Left		Right			
From	To	(m)		(sqm)	(%)	(sqm)	(%)	(%)	N	(%)	N	(sqm)	(%)	(sqm)	(%)	N	m	(%)	N	(Class)	N	Type	Cond-ition	Type	Condi-tion		
Along NH -22																											
5.00	5.50	7.20	A/L/T	836.64	23.24	460.80	12.80	19.40	4.00	3.84	3.00	0.00	0.00	267.84	7.44	4.00	208.00	41.60	3.00	I/II	1.00	UP/P	F/B	UP/P	F/B	21.60	VERY POOR
6.00	6.50	7.00	A/L/T	735.26	21.01	376.60	10.76	17.22	4.00	3.63	3.00	25.00	0.71	204.40	6.55	3.00	320.00	64.00	3.00	I/II	1.00	UP	F/B	UP	F/B	20.10	VERY POOR
6.50	7.00	6.80	A/L/T	790.16	23.24	435.20	12.80	19.40	4.00	1.83	2.00	18.75	0.55	307.36	9.59	4.00	205.00	41.00	3.00	I/II	1.00	UP	F/B	UP	F/B	20.40	VERY POOR
7.00	7.50	7.00	A/L	515.20	14.72	351.23	10.04	13.04	4.00	3.63	3.00	62.30	1.78	127.40	5.42	3.00	90.00	18.00	2.00	I/II	1.00	UP	F/B	UP	F/B	19.10	POOR
7.50	8.00	7.00	A/L	614.20	17.55	361.25	10.32	14.91	4.00	2.41	2.00	52.40	1.50	304.20	10.19	5.00	178.00	35.60	3.00	I/II	1.00	UP	F/B	UP	F/B	21.90	VERY POOR
8.00	8.50	7.00	A/L	298.70	8.53	145.20	4.15	6.91	2.00	1.50	2.00	0.00	0.00	125.20	3.58	3.00	45.00	9.00	1.00	I	1.00	UP	G/F/B	UP	G/F/B	12.90	FAIR
8.50	9.00	7.00	A/L	590.80	16.88	305.20	8.72	13.87	4.00	3.00	2.00	54.20	1.55	122.50	5.05	3.00	256.00	51.20	3.00	I/II	1.00	UP	F/B	UP	F/B	18.90	POOR
9.00	9.50	7.10	A/L/T	599.24	16.88	454.40	12.80	15.46	4.00	2.84	2.00	0.00	0.00	124.50	3.51	3.00	231.00	46.20	3.00	I/II	1.00	UP	F/B	UP	F/B	18.90	POOR
9.50	10.00	7.20	A/L/T	442.08	12.28	277.92	7.72	10.62	3.00	2.88	2.00	0.00	0.00	221.20	6.14	3.00	154.00	30.80	3.00	I	1.00	UP	F/B	UP	F/B	16.90	POOR
10.00	10.50	7.20	A/L/T	607.68	16.88	260.30	7.23	13.29	4.00	3.59	3.00	31.25	0.87	154.20	5.15	3.00	214.00	42.80	3.00	I	1.00	UP	G/F/B	UP	G/F/B	20.10	VERY POOR
10.50	11.00	7.20	L	451.20	12.53	114.20	3.17	9.01	3.00	2.88	2.00	0.00	0.00	220.00	6.11	3.00	125.00	25.00	2.00	I	1.00	UP	F/B	UP	F/B	15.90	POOR
11.00	11.50	7.20	L/T	226.12	6.28	85.20	2.37	4.82	2.00	2.47	2.00	0.00	0.00	154.00	4.28	3.00	120.00	24.00	2.00	I	1.00	UP	F/B	UP	F/B	13.90	FAIR
11.50	12.00	7.00	L/T	145.20	4.15	89.20	2.55	3.57	2.00	2.49	2.00	23.68	0.68	226.00	7.13	4.00	115.00	23.00	2.00	I	1.00	UP	F/B	UP	F/B	15.40	POOR
12.00	12.50	7.00	L/T	223.60	6.39	118.23	3.38	5.28	2.00	2.23	2.00	12.56	0.36	223.00	6.73	3.00	118.00	23.60	2.00	I	1.00	UP	G/F/B	UP	G/F/B	13.90	FAIR
12.50	13.00	7.00	L/T	149.35	4.27	75.20	2.15	3.48	2.00	2.69	2.00	52.23	1.49	258.00	8.86	4.00	215.00	43.00	3.00	I	1.00	UP	F/B	UP	F/B	16.40	POOR
13.00	13.50	7.00	L	229.40	6.55	74.10	2.12	4.89	2.00	3.39	3.00	41.20	1.18	214.00	7.29	4.00	108.00	21.60	2.00	I	1.00	UP	F/B	UP	F/B	16.60	POOR
13.50	14.00	7.10	L	114.50	3.23	68.20	1.92	2.75	2.00	3.49	3.00	14.50	0.41	189.00	5.73	3.00	112.00	22.40	2.00	I	1.00	UP	F/B	UP	F/B	15.10	POOR
14.00	14.50	7.00	L/T	221.00	6.31	148.00	4.23	5.56	2.00	0.85	1.00	0.00	0.00	0.00	0.00	1.00	208.00	41.60	3.00	I	1.00	UP	G/F/B	UP	G/F/B	10.70	FAIR
14.50	15.00	7.00	L/T	289.14	8.26	108.20	3.09	6.33	2.00	1.54	2.00	0.00	0.00	0.00	0.00	1.00	235.00	47.00	3.00	I	1.00	UP	G/F/B	UP	G/F/B	11.90	FAIR
15.00	15.50	7.00	L/T	235.89	6.74	135.60	3.87	5.69	2.00	1.87	2.00	0.00	0.00	0.00	0.00	1.00	320.00	64.00	3.00	I	1.00	UP	G/F/B	UP	G/F/B	11.90	FAIR
15.50	16.00	6.80	A/L/T	685.40	20.16	435.20	12.80	17.49	4.00	1.65	2.00	89.23	2.62	224.56	9.23	4.00	205.00	41.00	3.00	I/II	1.00	UP	F/B	UP	F/B	20.40	VERY POOR
16.00	16.50	7.00	A/L	414.20	11.83	351.23	10.04	11.25	3.00	0.85	1.00	45.21	1.29	85.86	3.74	3.00	90.00	18.00	2.00	I/II	1.00	UP	G/F/B	UP	G/F/B	14.70	POOR

Annexure A-6 (Contd.)

DETAILS OF ROAD CONDITION SURVEY

Chainage (km)		Carriageway	Crack Type	Cracking				Indexed Cracking	Rating Value	Raveling	Rating Value	Pothole		Patching		Rating Value	Edge Failure		Rating Value	Rut Depth	Rating Value	Shoulder				Weighted Sum of Rating Value	Pavement Condition According to Rating (Weighted Approach)
				All crack		Wide > 3mm																Left		Right			
From	To	(m)		(sqm)	(%)	(sqm)	(%)	(%)	N	(%)	N	(sqm)	(%)	(sqm)	(%)	N	m	(%)	N	(Class)	N	Type	Condition	Type	Condition		
16.50	17.00	7.00	A/L	285.60	8.16	154.20	4.41	6.78	2.00	1.05	2.00	32.10	0.92	112.10	4.12	3.00	178.00	35.60	3.00	I	1.00	UP	G/F/B	UP	G/F/B	14.90	POOR
17.00	17.50	7.00	A/L	335.60	9.59	178.60	5.10	7.94	2.00	0.87	1.00	0.00	0.00	0.00	0.00	1.00	45.00	9.00	1.00	I	1.00	UP	G/F	UP	G/F	8.70	GOOD
17.50	18.00	7.00	A/L	457.10	13.06	305.20	8.72	11.50	3.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	256.00	51.20	3.00	I	1.00	UP	G/F/B	UP	G/F/B	12.70	FAIR
18.00	18.50	7.10	A/L/T	354.25	9.98	256.10	7.21	9.00	3.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	231.00	46.20	3.00	I	1.00	UP	G/F/B	UP	G/F/B	12.70	FAIR
18.50	19.00	6.90	L/T	369.10	10.70	266.34	7.72	9.64	3.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	154.00	30.80	3.00	I	1.00	UP	G/F/B	UP	G/F/B	12.70	FAIR
19.00	19.50	6.80	L/T	412.50	12.13	260.30	7.66	10.51	3.00	0.65	1.00	0.00	0.00	0.00	0.00	1.00	214.00	42.80	3.00	I	1.00	UP	G/F/B	UP	G/F/B	12.70	FAIR
19.50	20.00	7.00	L	225.10	6.43	114.20	3.26	5.26	2.00	0.89	1.00	0.00	0.00	0.00	0.00	1.00	125.00	25.00	2.00	I	1.00	UP	G/F	UP	G/F	9.70	GOOD
20.00	20.50	6.80	L/T	213.56	6.28	74.20	2.18	4.75	2.00	1.45	2.00	0.00	0.00	0.00	0.00	1.00	120.00	24.00	2.00	I	1.00	UP	G/F	UP	G/F	10.90	FAIR
20.50	21.00	7.00	L/T	125.80	3.59	87.20	2.49	3.20	2.00	1.21	2.00	0.00	0.00	0.00	0.00	1.00	115.00	23.00	2.00	I	1.00	UP	G/F	UP	G/F	10.90	FAIR
21.00	21.50	7.00	A/L/T	451.20	12.89	225.60	6.45	10.51	3.00	1.40	2.00	0.00	0.00	0.00	0.00	1.00	118.00	23.60	2.00	I	1.00	UP	G/F/B	UP	G/F/B	12.90	FAIR
21.50	22.00	7.10	A/L/T	147.80	4.16	75.20	2.12	3.41	2.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	215.00	43.00	3.00	I	1.00	UP	G/F/B	UP	G/F/B	10.70	FAIR
22.00	22.50	6.70	A/L/T	754.10	22.51	225.60	6.73	16.58	4.00	0.00	1.00	48.10	1.44	75.41	3.69	3.00	410.00	82.00	3.00	I	1.00	UP	G/F/B	UP	G/F/B	17.70	POOR
22.50	23.00	7.00	L	226.30	6.47	98.50	2.81	5.11	2.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	112.00	22.40	2.00	I	1.00	UP	G/F/B	UP	G/F/B	9.70	GOOD
23.00	23.50	7.40	L	229.00	6.19	178.00	4.81	5.71	2.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	148.00	29.60	2.00	I	1.00	UP	G/F	UP	G/F	9.70	GOOD
23.50	24.00	7.40	L	275.45	7.44	258.94	7.00	7.35	2.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	45.00	9.00	1.00	I	1.00	UP/P	G/F	UP/P	G/F	8.70	GOOD
24.00	24.50	7.20	L	235.89	6.55	135.60	3.77	5.53	2.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	124.00	24.80	2.00	I	1.00	UP	G/F	UP	G/F	9.70	GOOD
24.50	25.00	7.50	L/T	185.40	4.94	129.00	3.44	4.41	2.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	86.00	17.20	2.00	I	1.00	UP/P	G/F	UP/P	G/F	9.70	GOOD
25.00	25.50	7.50	A/L/B	485.12	12.94	376.29	10.03	11.93	3.00	1.15	2.00	25.14	0.67	58.47	2.23	2.00	90.00	18.00	2.00	I	1.00	UP	F/B	UP	F/B	14.40	POOR
25.50	26.00	6.80	A/L	687.12	20.21	414.25	12.18	17.28	4.00	2.15	2.00	51.23	1.51	82.56	3.94	3.00	286.00	57.20	3.00	I/II	1.00	UP	F/B	UP	F/B	18.90	POOR
26.00	26.50	7.10	A/L/T	785.23	22.12	278.60	7.85	16.77	4.00	2.65	2.00	48.72	1.37	62.52	3.13	3.00	152.00	30.40	3.00	I/II	2.00	UP	F/B	UP	F/B	19.90	POOR
26.50	27.00	6.80	A/L	441.23	12.98	396.52	11.66	12.59	4.00	1.85	2.00	71.25	2.10	51.42	3.61	3.00	244.00	48.80	3.00	I/II	2.00	UP	F/B	UP	F/B	19.90	POOR
27.00	27.50	7.40	A/L	354.25	9.57	256.10	6.92	8.64	3.00	0.00	1.00	32.26	0.87	21.45	1.45	2.00	58.00	11.60	2.00	I/II	1.00	UP	G/F/B	UP	G/F/B	13.20	FAIR
27.50	28.00	7.00	L/T	314.23	8.98	158.62	4.53	7.33	2.00	0.00	1.00	0.00	0.00	15.89	0.45	1.00	85.00	17.00	2.00	I	1.00	UP	G/F/B	UP	G/F/B	9.70	GOOD
28.00	28.50	7.10	L	226.93	6.39	146.23	4.12	5.57	2.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	78.00	15.60	2.00	I	1.00	UP	G/F/B	UP	G/F/B	9.70	GOOD

Annexure A-6 (Contd.)

DETAILS OF ROAD CONDITION SURVEY

Chainage (km)		Carriageway	Crack Type	Cracking				Indexed Cracking	Rating Value	Raveling	Rating Value	Pothole		Patching		Rating Value	Edge Failure		Rating Value	Rut Depth	Rating Value	Shoulder				Weighted Sum of Rating Value	Pavement Condition According to Rating (Weighted Approach)
				All crack		Wide > 3mm																Left		Right			
From	To	(m)		(sqm)	(%)	(sqm)	(%)	(%)	N	(%)	N	(sqm)	(%)	(sqm)	(%)	N	m	(%)	N	(Class)	N	Type	Condition	Type	Condition		
28.50	29.00	7.10	L	225.10	6.34	159.23	4.49	5.68	2.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	154.00	30.80	3.00	I	1.00	UP	G/F/B	UP	G/F/B	10.70	FAIR
29.00	29.50	7.00	L/T	315.86	9.02	216.45	6.18	8.01	3.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	75.00	15.00	2.00	I	1.00	UP/P	F/B	UP/P	F/B	11.70	FAIR
29.50	30.00	7.10	L/T	423.15	11.92	215.86	6.08	9.76	3.00	0.87	1.00	0.00	0.00	0.00	0.00	1.00	95.00	19.00	2.00	I	1.00	UP	F/B	UP	F/B	11.70	FAIR
30.00	30.50	7.00	A/L/B	586.12	16.75	326.45	9.33	14.02	4.00	1.40	2.00	26.89	0.77	49.26	2.18	2.00	112.00	22.40	2.00	I/II	2.00	UP	F/B	UP	F/B	17.40	POOR
30.50	31.00	6.80	A/L/T	489.23	14.39	326.75	9.61	12.67	4.00	0.75	1.00	15.26	0.45	25.69	1.20	2.00	256.00	51.20	3.00	I/II	2.00	UP	F/B	UP	F/B	17.20	POOR
31.00	31.50	7.20	L/T	359.45	9.98	225.60	6.27	8.63	3.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	105.00	21.00	2.00	I	1.00	UP	G/F/B	UP	G/F/B	11.70	FAIR
31.50	32.00	7.40	L	229.65	6.21	105.63	2.85	4.96	2.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	55.00	11.00	2.00	I	1.00	UP	G/F/B	UP	G/F/B	9.70	GOOD
32.00	32.50	7.40	L	475.23	12.84	156.23	4.22	9.61	3.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	189.00	37.80	3.00	I	1.00	UP	G/F/B	UP	G/F/B	12.70	FAIR
32.50	33.00	7.40	L/A/T	506.16	13.68	473.60	12.80	13.47	4.00	4.05	3.00	0.00	0.00	275.28	7.44	3.00	208.00	41.60	4.00	I	1.00	UP	G/F/B	UP	G/F/B	21.10	VERY POOR
33.00	33.50	7.40	L/A/T	377.40	10.20	365.56	9.88	10.18	3.00	0.31	1.00	0.00	0.00	45.88	1.24	2.00	132.00	26.40	3.00	I	1.00	UP	G/F/B	UP	F/B	14.20	POOR
33.50	34.00	7.40	L/A/T	318.20	8.60	310.80	8.40	8.61	3.00	0.02	1.00	0.00	0.00	28.12	0.76	1.00	0.00	0.00	0.00	I	1.00	UP	G/F/B	UP	F/B	9.70	GOOD
34.00	34.50	7.40	L/A/T	464.72	12.56	452.88	12.24	12.56	4.00	0.22	1.00	1.48	0.04	34.04	0.92	1.00	74.00	14.80	1.00	I	1.00	UP	G/F/B	UP	F/B	12.70	FAIR
34.50	35.00	7.40	L/A/T/B	778.48	21.04	732.60	19.80	20.77	5.00	1.49	2.00	0.00	0.00	198.32	5.36	3.00	88.00	17.60	2.00	I	1.00	UP	G/F/B	UP	G/F/B	19.90	POOR
35.00	35.50	8.90	L/A	904.24	20.32	747.60	16.80	19.15	4.00	0.00	0.00	0.00	0.00	35.60	0.80	1.00	276.00	55.20	4.00	I	1.00	UP	G/F/B	UP	F/B	14.50	POOR
35.50	36.00	8.80	L/A/T/B	371.36	8.44	239.36	5.44	7.35	2.00	0.31	1.00	5.28	0.12	28.16	0.64	1.00	260.00	52.00	4.00	I	1.00	UP	G/F/B	UP	F/B	11.70	FAIR
36.00	36.50	7.50	L/A/T	403.50	10.76	315.00	8.40	9.95	3.00	0.00	0.00	3.00	0.08	0.00	0.00	1.00	270.00	54.00	4.00	I	1.00	UP	G/F/B	UP	F/B	12.50	FAIR
36.50	37.00	6.20	L/A	110.36	3.56	66.96	2.16	3.05	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	195.00	39.00	3.00	I	1.00	UP/P	G/F/B	UP/P	G/F/B	8.00	GOOD
37.00	37.50	6.20	L/A	100.44	3.24	73.16	2.36	2.93	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	251.00	50.20	4.00	I	1.00	UP/P	G/F/B	UP/P	G/F/B	9.00	GOOD
37.50	38.00	6.20	L/A/T	183.52	5.92	177.32	5.72	5.90	2.00	0.00	0.00	1.24	0.04	2.48	0.08	1.00	275.00	55.00	4.00	I	1.00	UP	G/F/B	UP	F/B	10.50	FAIR
38.00	38.50	6.20	L/A/T	269.08	8.68	249.24	8.04	8.52	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.00	5.00	0.00	I	1.00	UP/P	G/F	UP/P	G/F	7.00	EXCELLENT
38.50	39.00	6.20	L/T	13.64	0.44	0.00	0.00	0.27	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	I	1.00	P	G	P	G	3.00	EXCELLENT
39.00	39.50	11.00	L/T	57.20	1.04	28.60	0.52	0.85	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	I	1.00	P	G	P	G	3.00	EXCELLENT
39.50	40.00	9.20	No crack	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	I	1.00	P	G	P	G	3.00	EXCELLENT

Annexure A-6 (Contd.)

DETAILS OF ROAD CONDITION SURVEY

Chainage (km)		Carriageway	Crack Type	Cracking				Indexed Cracking	Rating Value	Raveling	Rating Value	Pothole		Patching		Rating Value	Edge Failure		Rating Value	Rut Depth	Rating Value	Shoulder				Weighted Sum of Rating Value	Pavement Condition According to Rating (Weighted Approach)
				All crack		Wide > 3mm																Left		Right			
From	To	(m)		(sqm)	(%)	(sqm)	(%)	(%)	N	(%)	N	(sqm)	(%)	(sqm)	(%)	N	m	(%)	N	(Class)	N	Type	Condition	Type	Condition		
40.00	40.50	9.40	No crack	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.00	8.00	1.00	I	1.00	UP/N.A	G/F	UP/N.A	G/F	2.00	EXCELLENT
40.50	41.00	9.40	No crack	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.00	5.60	1.00	I	1.00	UP	F	UP	F	2.00	EXCELLENT
41.00	41.50	9.40	No crack	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	I	1.00	UP	F	UP	F	1.00	EXCELLENT
41.50	42.00	9.40	No crack	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	I	2.00	UP	F	UP	F	3.00	EXCELLENT
42.00	42.50	9.50	L/A/T/B	665.00	14.00	589.00	12.40	13.52	4.00	1.30	2.00	3.80	0.08	0.00	0.00	0.00	0.00	0.00	0.00	I	1.00	UP/P	G/F	UP/P	G/F	11.40	FAIR
42.50	43.00	9.60	L/A/T	249.60	5.20	92.16	1.92	3.97	2.00	0.63	0.00	5.76	0.12	0.00	0.00	1.00	0.00	0.00	0.00	I	1.00	UP/P	G/F	UP/P	G/F	6.50	EXCELLENT
43.00	43.50	9.60	L/A/T	19.20	0.40	15.36	0.32	0.37	1.00	0.00	0.00	1.92	0.04	3.84	0.08	1.00	16.00	3.20	1.00	I	1.00	UP	G/F	UP	G/F/B	5.50	EXCELLENT
43.50	44.00	9.40	L/A/T	118.44	2.52	63.92	1.36	2.09	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00	2.60	1.00	I	1.00	UP	G/F	UP	G/F	4.00	EXCELLENT
44.00	44.50	9.60	L/A/T	330.24	6.88	188.16	3.92	5.79	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	108.00	21.60	2.00	I	1.00	UP	G/F/N.A	UP	G/F/N.A	7.00	EXCELLENT
44.50	45.00	8.90	L	44.50	1.00	12.46	0.28	0.73	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.00	9.80	1.00	I	1.00	UP	G/F	UP	G/F	4.00	EXCELLENT
45.00	45.50	9.60	L/A/T	364.80	7.60	199.68	4.16	6.33	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.00	4.20	1.00	I	1.00	UP	G/F	UP	G/F	6.00	EXCELLENT
45.50	46.00	9.60	L/A/T	332.16	6.92	289.92	6.04	6.65	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	103.00	20.60	2.00	I	1.00	UP	G/F	UP	G/F	7.00	EXCELLENT
46.00	46.50	10.10	L/A	145.44	2.88	117.16	2.32	2.69	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	I/II	1.00	UP	G/F	UP	F/B	5.00	EXCELLENT
46.50	47.00	10.60	L/A/T	256.52	4.84	180.20	3.40	4.33	2.00	0.54	1.00	10.60	0.20	0.00	0.00	1.00	9.00	1.80	1.00	I	1.00	UP	G/F/N.A	UP	G/F/N.A	8.70	GOOD
47.00	47.20	10.60	L/T	91.16	4.30	76.32	3.60	4.07	2.00	1.57	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	I	1.00	UP	G/F	UP	G/F/B	6.20	EXCELLENT
47.20	54.00	New overlay ,No crack was found																								0.00	EXCELLENT
54.00	54.50	6.20	L/A	128.96	4.16	95.48	3.08	3.78	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.00	0.98	1.00	I	1.00	UP/P	G/F/N.A	UP/P	G/F/N.A	6.00	EXCELLENT
54.50	55.00	6.20	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	86.00	17.20	2.00	I	1.00	UP	G/F	UP	G/F	4.50	EXCELLENT
55.00	55.50	9.20	L/A/T	283.36	6.16	252.08	5.48	5.96	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.00	12.40	2.00	I	2.00	UP	G/F	UP	G/F	8.00	GOOD
55.50	56.00	9.20	L/A	345.92	7.52	132.48	2.88	5.79	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	110.00	22.00	3.00	I	3.00	UP	G/F	UP	G/F	10.00	GOOD
56.00	56.50	9.20	L/A	191.36	4.16	80.96	1.76	3.27	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	220.00	44.00	4.00	I	4.00	UP	G/F	UP	G/F	12.00	FAIR

Annexure A-6 (Contd.)

DETAILS OF ROAD CONDITION SURVEY

Chainage (km)		Carriageway	Crack Type	Cracking				Indexed Cracking	Rating Value	Rave-lling	Rating Value	Pothole		Patching		Rating Value	Edge Failure		Rating Value	Rut Depth	Rating Value	Shoulder				Weighted Sum of Rating Value	Pavement Condition According to Rating (Weighted Approach)
From	To	(m)		All crack		Wide > 3mm		(%)	N	(%)	N	(sqm)	(%)	(sqm)	(%)	N	m	(%)	N	(Class)	N	Left		Right			
				(sqm)	(%)	(sqm)	(%)															Type	Cond-ition	Type	Condi-tion		
Along NH -21																											
No condition survey carried out because the pavement is in good condition																											

Legends:

A/L/T - Alligator/Longitudinal/Transverse
UP/P - Unpaved/Paved
G/F/B - Good/Fiar/Bad

Annexure A-7
INVENTORY OF EXISTING BRIDGES

SL NO.	BRIDGE NO. / CHAINAGE (Km) / NAME OF BRIDGE / YEAR OF CONSTRUCTION	SPAN ARRANGEMENT (c/c of Expn. Joints) (m)	MATERIAL & TYPE						WIDTH OF CARRIAGE-WAY (m)	WIDTH OF FOOTPATH (m)	OVERALL WIDTH (m)	ANGLE OF SKEW	TOTAL WATERWAY PROVIDED (approx.) (m)	FLOW DIRECTION	REMARKS
			ABUTMENT	PIER	RETURN WALL / WING WALL / RETAINING WALL	BEARING	SUPER STRUCTURE	FINSHING ITEMS: b) Wearing coat / c) Expansion Joint							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Along NH - 22															
1	7/1 6.400 Baldevnagar Bridge (1) —	3X3.80	BRICK WALL	BRICK WALL	BRICK WALL — —	No Bearing	R.C.C SLAB	a) Steel Railing b) Bituminous c) Filler board type	7.6	—	8.1	—	9.00	RIGHT TO LEFT	
2	7/2 6.950 Baldevnagar Bridge (2) —	3X8.90	BRICK WALL	BRICK WALL	BRICK WALL — —	No bearing	R.C.C SLAB	a) R.C.C. Railing b) Bituminous c) Filler board type	11.1	0.2	11.9	—	24.00	RIGHT TO LEFT	
3	8/1 7.450 Baldevnagar Bridge (3) —	1X3.65 + 3X3.70 + 1X3.8	BRICK WALL	BRICK WALL	BRICK WALL — —	No Bearing	R.C.C SLAB	a) Steel Railing b) Bituminous c) Filler board type	7.5	—	8	—	15.55	RIGHT TO LEFT	

Annexure A-7 (Contd.)
INVENTORY OF EXISTING BRIDGES

SL NO.	BRIDGE NO. CHAINAGE (Km) NAME OF BRIDGE YEAR OF CONSTRUCTION	SPAN ARRANGEMENT (c/c of Expn. Joints) (m)	MATERIAL & TYPE						WIDTH OF CARRIAGE-WAY (m)	WIDTH OF FOOTPATH (m)	OVERALL WIDTH (m)	ANGLE OF SKEW	TOTAL WATERWAY PROVIDED (approx.) (m)	FLOW DIRECTION	REMARKS
			ABUTMENT	PIER	RETURN WALL WING WALL RETAINING WALL	BEARING	SUPER STRUCTURE	FINSHING ITEMS b) Wearing coat c) Expansion Joint							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
4	9/1 8.400 Kakru Bridge —	4X4.7	BRICK WALL	BRICK WALL	BRICK WALL — —	No Bearing	R.C.C SLAB	a) R.C.C. Railing b) Bituminous c) Filler board type	7.5	—	8.35	—	17.30	LEFT TO RIGHT	One factory at U/S, Building at D/S
5	13/1 12.100 Jharmari —	17X4.3	BRICK WALL	BRICK WALL	BRICK WALL — —	No Bearing	R.C.C SLAB	a) R.C.C. Railing b) Bituminous c) Filler board type	7.35	—	7.95	—	56.10	LEFT TO RIGHT	
6	NM 13.800 — —	4X7.1	BRICK WALL	BRICK WALL	BRICK WALL — —	No Bearing	R.C.C SLAB	a) R.C.C. Railing b) Bituminous c) Filler board type	7.2	—	8.3	—	23.40	-	

Annexure A-7 (Contd.)
INVENTORY EXISTING OF BRIDGES

SL NO.	BRIDGE NO. CHAINAGE (Km) NAME OF BRIDGE YEAR OF CONSTRUCTION	SPAN ARRANGEMENT (c/c of Expn. Joints) (m)	MATERIAL & TYPE						WIDTH OF CARRIAGE-WAY (m)	WIDTH OF FOOTPATH (m)	OVERALL WIDTH (m)	ANGLE OF SKEW	TOTAL WATERWAY PROVIDED (approx.) (m)	FLOW DIRECTION	REMARKS
			ABUTMENT	PIER	RETURN WALL WING WALL RETAINING WALL	BEARING	SUPER STRUCTURE	FINSHING ITEMS b) Wearing coat c) Expansion Joint							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
7	NM 17.ab — —	2x3.6	STONE WALL	STONE WALL	STONE WALL — —	No Bearing	R.C.C SLAB	a) Brick Wall type railing b) Bituminous c) Filler board type	10.1	—	10.85	—	6.00	RIGHT TO LEFT	Pier & abutments are extended on the left hand side for widening
8	19/3 18.9 — —	2X3.70	BRICK WALL	BRICK WALL	BRICK WALL — —	No Bearing	R.C.C SLAB	a) Brick Wall type railing b) Bituminous c) Filler board type	11.5	—	12.4	—	6.20	LEFT TO RIGHT	Building at U/S &D/S, OFC at U/S, Pipeline at D/S
9	21/1 20.05 — —	16X4.70	BRICK WALL	BRICK WALL	BRICK WALL — —	Paper Bearing	R.C.C SLAB	a) R.C.C. Railing b) Bituminous c) Filler board type	7.5	—	8.4	38.625° RIGHT FORWARD	45.47	RIGHT TO LEFT	

Annexure A-7 (Contd.)
INVENTORY OF EXISTING BRIDGES

SL NO.	BRIDGE NO. CHAINAGE (Km) NAME OF BRIDGE YEAR OF CONSTRUCTION	SPAN ARRANGEMENT (c/c of Expn. Joints) (m)	MATERIAL & TYPE						WIDTH OF CARRIAGE-WAY (m)	WIDTH OF FOOTPATH (m)	OVERALL WIDTH (m)	ANGLE OF SKEW	TOTAL WATERWAY PROVIDED (approx.) (m)	FLOW DIRECTION	REMARKS
			ABUTMENT	PIER	RETURN WALL WING WALL RETAINING WALL	BEARING	SUPER STRUCTURE	FINSHING ITEMS b) Wearing coat c) Expansion Joint							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
10	30/1 29.05 — —	2X3.50	BRICK WALL	BRICK WALL	BRICK WALL — —	No Bearing	R.C.C SLAB	a) Brick Wall type railing b) Bituminous c) Filler board type	10.5	—	11.7	—	6.25	RIGHT TO LEFT	
11*	32/1 31.ab Dera Bassi Bridge	3X15.1	BRICK WALL	RCC WALL	BRICK WALL — BRICK WALL	Rubber Plate Sandwitched between Steel Plates.	R.C.C T-GIRDER	a) R.C.C. Railing b) Bituminous c) Strip seal type	7.5	1.4	10.97	—	41.55	RIGHT TO LEFT	LOW LEVEL STEEL BRIDGE(OLD) ON L/H SIDE
12*	NM 32.200 Dhabi Bridge —	1X7.1+ 1X6.9+ 1X7.0+ 1X7.05	BRICK WALL	BRICK WALL	BRICK WALL — BRICK WALL	Not visible	R.C.C T-GIRDER	a) R.C.C. Railing b) Bituminous c) Filler board type	7.3	—	8.4	—	24.05	RIGHT TO LEFT	
13	34/3 33.7 Ghaggar Bridge —	12X26.6	RCC WALL	RCC WALL	BRICK WALL — —	Rocker Roller	R.C.C T-GIRDER Precast, Pretensioned - 7 Girders with end diaphragms & interconncting beams at bottom bulbs	a) Steel railing b) Bituminous c) Angle-Iron Type	7.4	—	7.9	—	301.20	RIGHT TO LEFT	HT lines and huts are at D/S Rehabilitation of bridge required.

Annexure A-7 (Contd.)
INVENTORYOF EXISTING BRIDGES

SL NO.	BRIDGE NO. CHAINAGE (Km) NAME OF BRIDGE YEAR OF CONSTRUCTION	SPAN ARRANGEMENT (c/c of Expn. Joints) (m)	MATERIAL & TYPE						WIDTH OF CARRIAGE-WAY (m)	WIDTH OF FOOTPATH (m)	OVERALL WIDTH (m)	ANGLE OF SKEW	TOTAL WATERWAY PROVIDED (approx.) (m)	FLOW DIRECTION	REMARKS
			ABUTMENT	PIER	RETURN WALL WING WALL RETAINING WALL	BEARING	SUPER STRUCTURE	FINSHING ITEMS b) Wearing coat c) Expansion Joint							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
14	NM 38.4 Yadvindra Bridge over Sukhna nadi 1948	6X10.1	R.C.C. WALL	R.C.C WALL	MASONRY WALL — —	Paper Bearing	R.C.C T-GIRDER	a) Steel Railing b) Bituminous c) Filler board type	6.1	—	6.5	—	54.60	LEFT TO RIGHT	
Along NH - 21															
No Bridge is present along NH -21															

Note: * This Bridge/ROB has already been constructed under a separate BOT project.

LEGENDS:

Abbreviations used

Alskw	Along the skew	N.G.	Natural ground	hc	Honeycomb
ARC	Arch Culvert	NM	No Marking	HPC	Hume pipe culvert
CH	Chainage	No.	Number	LEV.	Level
cor	Corrosion	N.T.	Not tolerable	L.F.	Left forward
deg	Degree	ppt b d	Both parapets damaged	L.I.C.	Lined Irrigation Canal
dia	Diameter	ppt l d	Left parapet damaged	L.C.	Lined Canal/Drain
d/s	Down stream	ppt r d	Right parapet damaged	L T R	Left to right
er	Exposed reinforcement	R.C.C.	Reinforced cement concrete	MJBR	Major Bridge
GR.	Ground	RD.	Road	MNBR	Minor Bridge

Abbreviations used

R.F.	Right forward		
RT.	Right angle to road c/l		
R T L	Right to Left		
SLC	Slab culvert		
splng	Spalling		
ST.	Straight along the road c/l		
TOLE	Tolerable		
U.C.	Unlined canal		
u/s	Upstream		

Annexure A-8

CONDITION OF BRIDGES AS DETERMINED BY VISUAL OBSERVATION IN FEBRUARY - 2000

Sl. NO.	PWD NO./ CHAINAGE(KM)/ Bridge Name/ Year of Construction/ Total Length/ NO. OF SPANS	FOUNDATION	SUBSTRUCTURE	SUPERSTRUCTURE & BEARING	FINISHES a) Railings b) Wearing coat c) Expansion joint	REMARKS / OBSERVATION
1	2	3	4	5	6	7
Along NH - 22						
1	7/1 6.400 Baldevnagar Bridge (1) - 11.4 m 3	Not Visible	Few small vertical cracks at abutments. Piers are aged.	Spalling, exposed reinforcement, corroded reinforcement, cracking present in R.C.C. superstructure.	a) R/H side damaged, some portion missing. b) Good condition c) Not seen. Covered by W.C. at top.	Bridge is in service condition. Minor repair work & Routine maitenance required.
2	7/2 6.950 Baldevnagar Bridge (2) - 26.7 m 3	Not Visible	Piers are in good condition. A few horizontal cracks at abutment.	R.C.C. solid slab in very good condition. A few spots of leaching & some haircracks are present.	a) R.C.C. railing in good condition. b) Cracked at joints. c) Not seen. Covered by W.C. at top.	Bridge is in good condition.

Annexure A-8 (Contd.)
CONDITION OF BRIDGES AS DETERMINED BY VISUAL OBSERVATION IN FEBRUARY - 2000

Sl. NO.	PWD NO./ CHAINAGE(KM)/ Bridge Name/ Year of Construction/ Total Length/ NO. OF SPANS	FOUNDATION	SUBSTRUCTURE	SUPERSTRUCTURE & BEARING	FINISHES a) Railings b) Wearing coat c) Expansion joint	REMARKS / OBSERVATION
1	2	3	4	5	6	7
3	8/1 7.450 Baldevnagar Bridge (3) - 18.55 m 5	Visible at P1-P3. Brick Open foundation in good condition.	Masonary Piers in good condition. Masonary wall abutmants in good condition.	Some spans are having exposed reinforcement, corroded reinforcement, spalling of concete, & honey combing. Otherwise in good condition.	a) Steel railing, some parts missing. b) Good condition, cracks at joints. c) Not seen. Covered by W.C. at top.	Routine maitenance required. A part of the stream bed is being used as village roads. No defined channel.
4	9/1 8.4 Kakru Bridge - 18.8 m 4	Not Visible	Piers & Abutments are in modarete condition. Some vertical haircracks present	In some places spalling, exposed reinforcement, corrosion of reinforcement, has taken place.	a) R.C.C. railing. HC, er, cr, taken place in many places. b) In good condition. c) Not seen. Covered by W.C. at top.	Railing must be rapaired immidiately. Bridge needs routine maintenance.

Annexure A-8 (Contd.)

CONDITION OF BRIDGES AS DETERMINED BY VISUAL OBSERVATION IN FEBRUARY - 2000

Sl. NO.	PWD NO./ CHAINAGE(KM)/ Bridge Name/ Year of Construction/ Total Length/ NO. OF SPANS	FOUNDATION	SUBSTRUCTURE	SUPERSTRUCTURE & BEARING	FINISHES a) Railings b) Wearing coat c) Expansion joint	REMARKS / OBSERVATION
1	2	3	4	5	6	7
5	13/1 12.100 Jharmari Bridge - 73.1 17	Not Visible	Masonry piers & abutments in modarate condition with few diagonal cracks	Spalling, cracking, er, cr, has taken place in many portions.	a) damaged & broken at places. b) Some potholes present. c) Not seen. Covered by W.C. at top.	Bridge needs routine maintenance. Widening of the existing bridge possible on L/H side,with new bridge on R/H side.
6	NM 13.800 - - 28.4 m 4	Not Visible	Masonry piers & abutments in good condition. Dirt wall partly broken.	A few signs of leaching present	a)Missing at many places,damages althrough. Some portion replaced by branches of trees temporarily b) Potholes present c) Not seen. Covered by W.C. at top	Railing must be reconstructed immediately. Rest of the bridge is in good condition.

Annexure A-8 (Contd.)

CONDITION OF BRIDGES AS DETERMINED BY VISUAL OBSERVATION IN FEBRUARY - 2000

Sl. NO.	PWD NO./ CHAINAGE(KM)/ Bridge Name/ Year of Construction/ Total Length/ NO. OF SPANS	FOUNDATION	SUBSTRUCTURE	SUPERSTRUCTURE & BEARING	FINISHES a) Railings b) Wearing coat c) Expansion joint	REMARKS / OBSERVATION
1	2	3	4	5	6	7
7	NM 17.00 - - 7.2 m 2	Not visible	Masonry piers & abutments in good condition.	Some cracks, HC, er, present.	a) Masonry railing damaged at both R/H & L/H side. b) Good condition. c) Not seen. Covered by W.C. at top	The bridge is under widening at L/H side . Existing one needs routine maintenance.
8	19/3 18.9 - - 7.4 m 2	Not Visible	Masonry piers & abutments are aged, but in good condition,	Cracked, spalling, HC, er, cr, has taken place at the edges.	a) R/H side damaged due to collision. b) Cracked at joints. c) Not seen. Covered by W.C. at top & by dirt at sides.	Bridge needs routine maintenance.

Annexure A-8 (Contd.)
CONDITION OF BRIDGES AS DETERMINED BY VISUAL OBSERVATION IN FEBRUARY - 2000

SI. NO.	PWD NO./ CHAINAGE(KM)/ Bridge Name/ Year of Construction/ Total Length/ NO. OF SPANS	FOUNDATION	SUBSTRUCTURE	SUPERSTRUCTURE & BEARING	FINISHES a) Railings b) Wearing coat c) Expansion joint	REMARKS / OBSERVATION
1	2	3	4	5	6	7
9	21/1 20.05 - - 75.2 m 16	R.C.C. open foundation in good condition	Piers are in good condition. Abutments are having vertical cracks.	Cracks, er, HC, cr, spalling present in almostall spans.	a) Broken at many places. Er, cr, cracked & spalling all through. b) Good condition. c) Not seen. Covered by W.C. at top	Routine maintenance required. Railing must be reconstructed immediately
10	30/1 29.05 - - 7.0 m 2	Not visible	Piers are in good condition. Abutments are having vertical cracks.	Good condition	a) Damaged at R/H side. b) Good. c) Not seen. Covered by W.C. at top.	The bridge was an arch bridge which was widened in both sides by solid slab bridge. The brige is in good condition.

Annexure A-8 (Contd.)
CONDITION OF BRIDGES AS DETERMINED BY VISUAL OBSERVATION IN FEBRUARY - 2000

Sl. NO.	PWD NO./ CHAINAGE(KM)/ Bridge Name/ Year of Construction/ Total Length/ NO. OF SPANS	FOUNDATION	SUBSTRUCTURE	SUPERSTRUCTURE & BEARING	FINISHES a) Railings b) Wearing coat c) Expansion joint	REMARKS / OBSERVATION
1	2	3	4	5	6	7
11*	32/1 31.10 Dera Bassi Bridge. 1989 45.3 m 3	Not visible	R.C.C. piers and abutments in very good condition.	R.C.C. superstructure in very good condition.	a) R/H side of span 1 damaged. b) Cracked at joints. c) Not seen. Covered by W.C. at top.	This is a new bridge. Low level old steel bridge abundoned at L/H side.
12*	NM 32.200 - - 21.05 m 4	Not visible	Good condition.	Modarate with HC, spalling, cr, er, cracks	a) L/H side of span 4 damaged. b) Cracked at joints. c) Not seen. Covered by W.C. at top.	Routine maintenance required.

Annexure A-8 (Contd.)
CONDITION OF BRIDGES AS DETERMINED BY VISUAL OBSERVATION IN FEBRUARY - 2000

Sl. NO.	PWD NO./ CHAINAGE(KM)/ Bridge Name/ Year of Construction/ Total Length/ NO. OF SPANS	FOUNDATION	SUBSTRUCTURE	SUPERSTRUCTURE & BEARING	FINISHES a) Railings b) Wearing coat c) Expansion joint	REMARKS / OBSERVATION
1	2	3	4	5	6	7
13	34/3 33.700 Ghaggar Bridge. - 319.20 m 12	R.C.C. circular well. 2 nos. wells/pier. Exposed at P7-P11, good condition.	Good condition	Constuction joints are not good. Otherwise in good condition.	a) Broken & missing at many places. b) Good condition. c) Angle iron type, newly installed, but rattling in some places, reinforcement exposed in one place.	Many bearings (rollers) missing. All are corroded. Must be replaced immediately. Railing must be repaired immediately. Routine maintenance of the bridge required.
14	NM 38.400 Jadavendra Bridge over Sukhna Nadi 1948 60.60 m 6	Not Visible.	Good condition	Good condition	a) Railing in good condition. b) W.C. in good condition. c) Not seen. Covered by W.C. at top.	Bridge is in good condition.

Annexure A-8 (Contd.)

CONDITION OF BRIDGES AS DETERMINED BY VISUAL OBSERVATION IN FEBRUARY - 2000

Sl. NO.	PWD NO./ CHAINAGE(KM)/ Bridge Name/ Year of Construction/ Total Length/ NO. OF SPANS	FOUNDATION	SUBSTRUCTURE	SUPERSTRUCTURE & BEARING	FINISHES a) Railings b) Wearing coat c) Expansion joint	REMARKS / OBSERVATION
1	2	3	4	5	6	7
Along NH -21						
No Bridge is present along NH - 21						

Note: * This Bridge/ROB has already been constructed under a separate BOT project.

Annexure A-9
INVENTORY AND CONDITION SURVEY OF EXISTING CULVERTS

Sl. No.	PWD NO.	LOCATION (CH) (KM)	TYPE	NO. OF SPAN /PIPE	SPAN/ DIA (m)	APPROX. RD LEV.- GR. LEV(m)	TOTAL OUTER WIDTH (m)	SKEW ANGLE	WING. WALL	MATERIAL OF CONSTRUCTION		STRUCTURAL CONDITION		HYDRAULIC CONDITION		REMARKS
										SUPER STRUCTURE	SUB STRUCTURES	SUPER STRUCTURE	SUB STRUCTURE	INLET	OUTLET	
1	2	3	4	5	6	7	8	9	10	11	12	14	15	16	17	18
Along NH - 22																
1	10/1	9.500	HPC	2	1.00	2.35	19.8	8.28° L.F	ST	-	BRICK	-	GOOD	TOLE	TOLE	LIC
2	10/2	9.900	SLC	1	5.3	2.2	12.6	-	45°	R.C.C	BRICK	GOOD	GOOD	TOLE	TOLE	NG
3	11/1	10.100	HPC	2	1.00	1.26	15.2	-	ST	-	BRICK	-	MODERATE	TOLE	TOLE	NG
4	14/1	13.200	ARC	1	3.0	2.95	10.6	8.151° R.F	ST	BRICK	BRICK	GOOD	GOOD	TOLE	TOLE	NG
5	19/1	18.200	SLC	1	4.25	2.05	12.25	-	45°	R.C.C	BRICK	CRACK	GOOD	TOLE	TOLE	NG
6	19/2	18.500	SLC	1	2.2	1.1	12.3	-	ST	R.C.C	BRICK	POOR (ppt r.d)	MODERATE	TOLE	TOLE	NG
7	20/1	19.800	ARC	1	1.0	1.45	14.8	-	st	BRICK	BRICK	MODERATE (ppt l.d)	GOOD	NT	NT	(NG/Sed. Dep)

Annexure A-9 (Contd.)
INVENTORY AND CONDITION SURVEY OF EXISTING CULVERTS

Sl. No.	PWD NO.	LOCATION (CH) (KM)	TYPE	NO. OF SPAN /PIPE	SPAN/ DIA (m)	APPROX. RD LEV.- GR. LEV(m)	TOTAL OUTER WIDTH (m)	SKEW ANGLE	WING. WALL	MATERIAL OF CONSTRUCTION		STRUCTURAL CONDITION		HYDRAULIC CONDITION		REMARKS
										SUPER STRUCTURE	SUB STRUCTURES	SUPER STRUCTURE	SUB STRUCTURE	INLET	OUTLET	
1	2	3	4	5	6	7	8	9	10	11	12	14	15	16	17	18
8	22/1	21.100	SLC	1	1.8	1.25	14.75	-	ST	R.C.C	BRICK	POOR	MODERATE	TOLE	TOLE	NG
9	22/2	21.200	SLC	1	1.8	1.2	14.8	-	ST	R.C.C	BRICK	POOR	MODERATE	TOLE	TOLE	NG
10	22/3	21.500	SLC	1	2.1	1.45	11.3	-	ST	R.C.C	BRICK	POOR	MODERATE	TOLE	TOLE	NG
11	25/1	24.050	SLC	1	1.5	2.05	11.95	-	45°	R.C.C	BRICK	POOR	GOOD	TOLE	TOLE	NG
12	25/2	24.900	ARC	1	1.75	1.60	13.0	-	ST	BRICK	BRICK	GOOD	GOOD	TOLE	TOLE	NG
13	31/1	30.100	SLC	1	3.3	1.4	21.24	-	ST	R.C.C	BRICK	GOOD	GOOD	TOLE	TOLE	NG
14	33/2	33.000	SLC	1	1.5	1.0	21.0	-	ST	R.C.C	BRICK	POOR(ppt l.d)	GOOD	TOLE	TOLE	NG
15	35/1	35.000	SLC	1	3.5	2.7	12.35	-	ST	R.C.C	BRICK	POOR(ppt b.d)	MODERATE	TOLE	TOLE	NG

Annexure A-9 (Contd.)
INVENTORY AND CONDITION SURVEY OF EXISTING CULVERTS

Sl. No.	PWD NO.	LOCATION (CH) (KM)	TYPE	NO. OF SPAN /PIPE	SPAN/ DIA (m)	APPROX. RD LEV.- GR. LEV(m)	TOTAL OUTER WIDTH (m)	SKEW ANGLE	WING. WALL	MATERIAL OF CONSTRUCTION		STRUCTURAL CONDITION		HYDRAULIC CONDITION		REMARKS
										SUPER STRUCTURE	SUB STRUCTURES	SUPER STRUCTURE	SUB STRUCTURE	INLET	OUTLET	
1	2	3	4	5	6	7	8	9	10	11	12	14	15	16	17	18
16	36/1	35.200	SLC	1	2.0	1.2	12.4	-	ST	R.C.C	BRICK	POOR(ppt l.d)	GOOD	TOLE	TOLE	NG
17	36/2	35.300	SLC	1	2.4	1.125	12.35	-	ST	R.C.C	BRICK	POOR(ppt l.d)	GOOD	TOLE	TOLE	NG
18	36/3	35.400	SLC	1	2.0	1.20	12.35	-	ST	R.C.C	BRICK	POOR(ppt b.d)	MODERATE	TOLE	TOLE	NG
19	36/4	35.500	SLC	1	2.5	1.4	12.4	-	ST	R.C.C	BRICK	POOR(ppt r.d)	GOOD	TOLE	TOLE	NG
20	NM	35.570	SLC	1	2.05	1.2	12.3	-	ST	R.C.C	BRICK	POOR	GOOD	TOLE	TOLE	NG
21	37/1	36.025	SLC	1	1.4	1.45	12.2	-	ST	R.C.C	BRICK	POOR(ppt l.d)	GOOD	TOLE	TOLE	NG
22	37/2	36.400	SLC	2	0.9,1.2	4.425	12.85	5.19° L.F	ST	R.C.C	BRICK	POOR(ppt l.d)	MODERATE	NT	NT	NG/Sed. Dep

Annexure A-9 (Contd.)
INVENTORY AND CONDITION SURVEY OF EXISTING CULVERTS

Sl. No.	PWD NO.	LOCATION (CH) (KM)	TYPE	NO. OF SPAN /PIPE	SPAN/ DIA (m)	APPROX. RD LEV.- GR. LEV(m)	TOTAL OUTER WIDTH (m)	SKEW ANGLE	WING. WALL	MATERIAL OF CONSTRUCTION		STRUCTURAL CONDITION		HYDRAULIC CONDITION		REMARKS
										SUPER STRUCTURE	SUB STRUCTURES	SUPER STRUC , TURE	SUB STRUC TURE	INLET	OUTLET	
1	2	3	4	5	6	7	8	9	0	11	12	13	15	16	17	18
23	37/3	36.700	SLC	1	1.4	1.525	12.36	-	ST	R.C.C	BRICK	POOR(ppt r.d)	MODERATE	TOLE	TOLE	NG
24	NM	38.850	SLC	1	2.0	0.5	12.3	-	ST	R.C.C	BRICK	POOR(ppt r.d)	BAD	NT	NT	NG/Sed . Dep/Undergrowth
25	NM	38.950	SLC	1	2.3	1.20	12.4	-	ST	R.C.C	BRICK	GOOD	MODERATE	NT	NT	NG/Sed . Dep
Along NH - 21																
No Culvert /Bridgers are present along NH - 21																

Alskw	Along the skew
ARC	Arch Culvert
CH	Chainage
cor	Corrosion
deg	Degree
dia	Diameter
d/s	Down stream
er	Exposed reinforcement
GR.	Ground

hc	Honeycomb
HPC	Hume pipe culvert
LEV.	Level
L.F.	Left forward
L.I.C.	Lined Irrigation Canal
L.C.	Lined Canal/Drain
L T R	Left to right
MJBR	Major Bridge
MNBR	Minor Bridge

N.G.	Natural ground
NM	No Marking
No.	Number
N.T.	Not tolerable
ppt b d	Both parapets damaged
ppt l d	Left parapet damaged
ppt r d	Right parapet damaged
R.C.C.	Reinforced cement concrete
RD.	Road

R.F.	Right forward
RT.	Right angle to road c/l
R T L	Right to Left
SLC	Slab culvert
spling	Spalling
ST.	Straight along the road c/l
TOLE	Tolerable
U.C.	Unlined canal
u/s	Upstream

Schedule-B

SCOPE OF THE PROJECT

1 GENERAL

Following section of this schedule briefly highlights part of the scope of the work of the 'Project' relevant to the mainline. The description of the requirements for the various elements of the Project Highway given herein under are the bare minimum requirements for the 'Project'. The 'Project' has the same meaning as defined in para 1.1 of concession agreement.

In the planning, design and execution of the works and other works in connection with the repair, maintenance or improvement of the Project Highway and functions associated with the construction of the Project Highway and roadside facilities, the Concessionaire shall take all such actions and do all such things (including, but not limiting to, organizing itself, adopting measure and standards, executing procedures including inspection procedures and highway patrols and engaging and managing contractors agents and employees) as will:

i) enable NHAI to provide an acceptably safe highway in respect of its condition (structural safety) and use (road safety) and,
ii) enable NHAI to fulfill its statutory and common law obligations and,
iii) enable NHAI to provide a congestion free uninterrupted flow of traffic on the Project Highway and,
iv) enable NHAI to provide a level of service to the public not inferior to that provided on the trunk road during construction or improvements works and
v) enable the Police, local authorities, and others in performing statutory duties or functions in relation to the Project Highway or adjoining roads to fulfill those duties and functions and,
vi) minimize the risk of damage, destruction or disturbance to third party property and,
vii) ensure that members of the public are treated with all due courtesy and consideration and,
viii) provide a safe clear and informative system of road signs and,
ix) comply with any specified program requirements, including for the completion of the new road and,
x) enable standards of fitness for the purpose appropriate to a highway to the character of the Project Highway to be achieved throughout the Contract Period and,
xi) ensure adequate off-street parking facilities for both passenger and goods vehicles and,
xii) provide adequate bus bays for stopping of buses and bus shelters for commuters to wait under protection and,
xiii) achieve a high standard in the appearance and aesthetic quality of the Project surrounding landscape through both sensitive design and sensitive management of all visible elements including those on the existing road and,
xiv) undertake proper safety audit through an appropriate consultant (i.e. apart from the Independent Consultant) before C.O.D. and
xv) carry out accident recording and reporting (to IC/NHAI) by classification on regular basis and,
xvi) ensure adequate safety of the Project Workers on the work site.

2 Project Highway

Notwithstanding the base alignment plans enclosed with this document, the Concessionaire shall himself carryout and be responsible for engineering surveys,

investigations and detailed engineering designs and prepare the working drawings for all the components relevant for the improvement and up-gradation of the Project Highway to fulfill the scope of the project as envisaged herein under. These shall comply with design specifications and standards given in Schedule D. The designs for different project facilities shall follow the locations and indicative designs given in Schedule C and shall comply with design specifications and standards outlined in Schedule D. The maintenance of the different elements of Project Highway and facilities thereon shall follow the minimum maintenance requirements as described in Schedule L. All the designs and drawings shall be reviewed by the Independent Consultant prior to execution.

2.1 (A) Cross Sections

The Project Highway (length = 35.096km) shall generally be widened to have a minimum 4-lane dual carriageway with 1.5m wide paved shoulder facility. The typical cross sections of four lane divided highway (wide median) is applicable for all the rural sections, the typical cross section with narrow median and service road is applicable for the urban areas, which shall be followed along with the minimum design criterion, indicated in **Schedule - D** for the development of the Project Highway. These typical cross sections to be considered are given in **Figs. B-1** to **B-16**. **Table B-1** shows the proposed schedule of these Typical Cross Sections along the Project Road.

The alternative cross section of the Project Highway at the cross drainage structures shall follow the typical cross sections in consultation with the Independent Consultant at the time of construction. The utility services, including optical fibre cables, shall be provided in the utility corridor earmarked for this purpose on the side where it is convenient to the Concessionaire or the concerned Authority with the approval of Independent Consultant and NHAI. The existing optical fibre cable shall be relocated by the respective owner at a safe place as indicated by I/C / NHAI in such a way that it causes least hindrances to the execution of project. In urban sections the utility services shall be provided through underground ducts provided for this purpose. For cross connection, the utility services shall be carried through the nearest cross drainage structure/cattle crossing below its deck slab and above HFL. In absence of such a structure in the vicinity of the proposed location, it shall pass through separate underground ducts. Location and design of the cross utility ducts shall be finalized at the detailed design stage in consultation with the Independent Consultant and NHAI.

Table B-1 (Revised): Type of Road Cross Sections

Chainage (km)		Length (m)	Type of Cross Section	Remarks
From	To			
Along NH - 22				
5+735	5+800	65	I	Fig. B-1
5+800	5+880	80	II	Fig. B-2
5+880	6+080	200	III	Fig. B-3
6+080	6+339	259	IV	Fig. B-4
6+339	7+604	1265	Flyover	***Fig B-15, B-16, B-16A & B-17(Revised)***
7+604	7+700	94	V	Fig. B-5
7+700	7+925	225	IV	Fig. B-4
7+925	8+636	711	III	Fig. B-3
8+636	8+685	49	II	Fig. B-2
8+685	16+875	8,190	VI	Fig. B-6
16+875	19+200	2,325	III	Fig. B-3
19+200	22+225	3,025	VI	Fig. B-6

22+225	23+025	800	III	Fig. B-3
23+025	29+175	6,150	VI	Fig. B-6
29+175	30+228	1,053	III	Fig. B-3
30+228	30+745	517	VIII	Fig. B-8
30+745	32+910	2,165	IX	Fig. B-9
32+910	33+100	190	III	Fig. B-3
33+100	37+200	4,100	VI	Fig. B-6
37+200	39+960	2,760	Interchange portion*	Fig B-10(Revised), B-11(Revised), B-11A , B-12(Revised) and B-13(Revised)
Along NH – 21				
0+000	0+871	871	Flyover portion*	Fig B-10(Revised) & B-12(Revised)

*Refer **Annexure B-3**

Two new Typical Cross Sections referred above viz. Fig. B-11A and Fig B-16A are enclosed.

2.1 (B) Longitudinal Section

As a minimum, the Concessionaire shall achieve the finished road level (FRL) as given in the DPR.

2.2 Service Road

The service road shall be provided on both sides as per details given in **Table B-2**.

Table B-2: Details Of Proposed Service Road Locations

Sl. No.	Location Chainage (km) From	To	Side	Length (m)	Width (m)	Area
Along NH - 22						
1	5+800	8+650	Left & Right	2x2850	5.5/7.5	Near Dhulkot to Sultanpur
2	16+850	19+200	Left & Right	2x 2350	5.5	Lalru
3	22+225	23+025	Left & Right	2x 800	5.5	Dappar
4	29+175	30+350	Left & Right	2x 1175	5.5	Sakhpur
5	30+350	30+960	Right	1x 610	5.5	Madhopur
6	37+200	37+800	Left & Right	2x 600	7.5	Zirakpur
7	37+800	39+070	Left & Right	2x 1270	7.5	Zirakpur
8	39+070	39+555	Right	1x 485	7.5	Towards Kalka Side
Along NH – 21						
9	0+000	0+860	Left & Right	2x 860	7.5	Towards Chandigarh side

2.3 Intersections / Junctions (At Grade)

Following aspects shall be considered for design of *at-grade* junctions:

(i) Adequately designed junctions with channelisations, all right turn and left turn (acceleration and deceleration) lanes (auxiliary) at all intersections for safe and smooth movement of traffic.

(ii) Auxiliary acceleration and deceleration lanes for left turning traffic at entrances to major roadside facilities such as Wayside Amenities, Service Area, truck Lay-byes and traffic merging/diverging locations.

(iii) Typical intersection treatments to be applied as specified in Project Report.

(iv) Improvement to existing intersections/junctions and provision of new intersections/junctions shall be as per **Table B-3**.

Table B-3: List of Intersections / Junctions for improvement

Sl No	Chainage (km)	Type of Junction	Side	Connecting Road
1	6+800	T	Left	Ludhiana
2	7+150	T	Right	Narayan Garh
3	30+500	T	Right	Barwala
4	38+800	T	Left	Patiala
5	39+150	T	Right	Chandigarh

2.4 Structures

2.4.1 Cross-Drainage (Bridges & Culverts)

The details of existing culverts and bridges are given in **Annexure A-7, A-8 & A-9** of *Schedule A*. All the new cross-drainage structures given in **Annexure B-1 & B-2** and others required shall be designed in accordance with the design standards set in Schedule- D. Following guidelines shall be followed:

i) All the cross drainage structures for the new carriageway shall be designed in such way so that the inner edge of footpath matches with the outer edge of paved shoulder.

ii) The existing structure shall be widened i.e. extended to match the new road cross sections. The widening shall be done so that inner edge of footpath matches with the outer edge of paved shoulder.

iii) For major bridges in urban or rural areas open median shall be provided with minimum 4.5 m clear gap between two parapet walls of the bridges. However, for minor bridges covered median of the same width as of highway shall be provided.

iv) The adequacy of the vent size for all culverts/bridges shall be ascertained through detailed hydrological surveys and finalized in consultation with the IC/NHAI. The Highest Flood Level / Maximum Supply Level shall be properly assessed after collecting flood histories from local authorities / interviews with locals / Irrigation authorities.

v) Canal bridges shall be designed as per hydraulic requirements of irrigation authorities. The construction plans shall be prepared as per closure schedule of canals. Approval of GAD from irrigation department may be required. It may be preferred to plan single span canal bridges with foundations not disturbing the canal bunds.

vi) The new bridge shall be so planned to not affect the foundations of existing bridge.

vii) For drainage purpose the new / reconstruction pipe culverts of minimum 1.2m diameter shall be provided. The existing 1m-pipe culvert shall be extended to new carriageway with same diameter pipe.

viii) The culverts for irrigation channels may be of smaller (not less than 300 mm) diameter with sump well and screen on both side to prevent entrapment of leaves, etc. inside.

Culverts

There are 25 existing culverts of which 22 shall be suitably extended (i.e. lengthened) to accommodate the adjoining prescribed road cross sections. The remaining 3 culverts shall be reconstructed (slab culverts) as per details given in **Annexure B-1**.

Further, the cross drainage plan of the highway shall be finalized in consultation with IC/NHAI and if required additional culverts shall be provided as part of the Concessionaire's obligation under this Contract package.

Bridges

Annexure B-2 gives the details of new 4/6 lane bridges that form part of the scope of 'Project'. At the location of major/minor river bridges, the necessary river training works also form part of the scope of the project. At the location of Sukhna nadi bridge (km 39+495 of NH22) there exists a 'Fall' on downstream side which has damaged bed protection. Proper hydraulic energy dissipating devices (e.g. stilling basin and/or concrete blocks with new bed protection) shall be provided by the Concessionaire as part of his contractual obligation in consultation with the Independent Consultant/NHAI.

Where existing 2-lane bridges are to be replaced , new 3-lane bridges with footpaths shall be provided for each carriageway. For the new carriageway (while dualling), all the new bridges shall also be 3-lane bridges with footpaths except over Sukhna nadi River (km 39+495 of NH-22) where new three bridges shall be constructed with footpaths as per GAD (Drawing No. 2004037/BS/39-01) (Refer enclosed CD for DPR).

The existing bridges which are proposed to be retained, rehabilitation of substructure/superstructure of any kind including replacement of bearings, expansion joints, pitching piers and pier cap protection, provision of barrier and railings shall be done by the Concessionaire under the Contract.

The schematic diagram of improvement of bridges in given in **Fig B-14**.

2.4.2 Grade Separators

1.265 km
2.8.21

Two 4-lane dual carriageway Flyovers are to be provided by the Concessionaire. The first one at Baldevnagar starts at km 6+339 and ends at km7+604(NH-22) in order to cover two major junctions at km 6+790 & km 7+150. This shall be constructed as shown in **Fig. B-17**. The second flyover at Zirakpur starts from Km 37.200 of NH-22 and ends at km 0+871 of NH-21, in order to cover two major intersections at km 38+800 and 39+150 of NH-22 respectively. This shall be provided as per drawings given in **Annexure B-3** enclosed herewith. The connection to this grade separator with NH-22 for the Ambala bound traffic coming from Kalka side shall be provided through a RAMP(refer **Annexure B-3**).

A soft copy of the conceptual drawings of these two flyovers are enclosed with the Bid Documents.

The drawing no. "2004037/BS/FLY-01 (Sheet 2 of 2)" in the CD (as a soft copy), stands replaced with the drawing no. "2004037/BS/FLY-01 (Sheet 2 of 2) R1" enclosed herewith.

The table containing the "CROSS SECTION SCHEDULE" shown on the drawing No. **2004037/RH/CSS-01** stands replaced with the following:

CROSS SECTION NO.	APPLICABLE CHAINAGE		REMARKS
	FROM (Km.)	TO (Km.)	
TCS – 01	Km. 0+000 Km 2+550	Km.0+446 Km 2+828	Main Flyover portion
TCS – 02	Km.0+446 Km 2+025	Km.1+870 Km 2+550	

TCS – 03	Km 1+870	Km.2+025	
TCS – 04	Km 0+000	Km. 0+462	Ramp portion

The Concessionaire can make minor modifications to cross sections furnished from Fig. B-10 to B-13, Standard arrangements and GAD etc. based on the detailed design carried out by the concessionaire without altering the plan and profile given in **Annexure: B – 3**.

Underpasses (2 Nos.)

For safe cross movement of the pedestrians and cattle, at least 2 nos. underpasses using box culverts of size 7mx3.50m shall be provided at the location to be finalised with the Independent Consultant/NHAI. These would require suitable raising of vertical profile and such works are included as part of the scope of the 'project'.

2.4.3 ROB

No new ROB is required on this project. One 4-lane ROB at Dera Bassi (km 32+050 of NH 22) already exists which has been recently constructed under a separate BOT project and is operational at present. On handing over this ROB by present Concessionaire, M/s R.S. Builders & Engineers Ltd., the same shall form part of the scope of this project and handed over to the selected Concessionaire on "as is where is basis".

3 Geometric Improvement

i) The flat gradients shall be corrected in such a way so as to attain an appropriate longitudinal gradient in order to achieve longitudinal drainage. Also vertical curves shall be improvement / introduced so that the vertical curves meet IRC: 73 standards.
ii) The horizontal alignment of the Project Highway shall be improved as per the standards set out in Schedule-D
iii) The Improvement shall be done in consultation with the Independent Consultant ensuring that the proposed improvements are accommodated within the land width available.
iv) There are 4 nos. of deficient curves which need to be improved to the possible extent.

4 Slope Protection and Drainage

The improvements in the drainage and the slope erosion shall be made as per the following norms:

4.1 Drainage Measures

Following measures shall be adopted:

i) Side ditches of required cross Section for area Drainage on Both Sides of carriageway in rural section.
ii) Covered pucca drains underneath the sidewalk in the urban section
iii) Open pucca drains underneath the median between main carriageway and service road with proper connection to the outfall location in the urban section
iv) Chute drains along with shoulder drains in high embankment (3m and above)
v) Median drains at super elevated sections with proper outfall connections, and
vi) Covered pucca drains underneath the sidewalk of proposed facility (bus bays, truck laybys, etc.) in rural sections

4.2 Slope Protection Measure:

Following measures shall be adopted:

i) Side Slope of embankments 3m high or more shall be protected by pitching or geo-meshes or geo-nets or geo-grids in consultation with the Independent Consultant.

5 Traffic Signs and Pavement Markings

Traffic signs and pavement markings shall include roadside signs, overhead signs, curb mounted signs and road marking along the Project Highway. The design and marking for the Project Highway shall be as per the design standard indicated in Schedule-D and the location for various treatment shall be finalized in consultation with the Independent Consultant.

The overhead sign shall be the reflectorised type with high intensity retro reflective sheeting conforming to ASTM D 4956-01, Type VIII and/or Type IX of micro prismatic type. The retro-reflective sheet of Engineering Grade shall NOT be used. The height, lateral clearance, location and instillation shall be as per relevant clauses of MOST specifications. Overhead sign shall be installed ahead of major intersections, toll plazas and urban areas as per detailed design requirements.

The Concessionaire shall provide Aluminium Die Cast Matte Finish (Sand Blasted) conforming to IS 617:1994 Designation 4250 Sparkle Solar road studs powered by energy from the Sun, manufactured by 'TATA BP' Solar India or Equivalent having high intensity reflectivity on the curves, road junctions, zebra crossings, ramps etc. to provide the visibility. At least one thousand solar studs shall be provided on this project at the locations finalized in consultation with IC/NHAI.

6 Road Land Boundary

Road land (ROW) boundary shall be demarcated by putting RCC boundary pillars size 60 cm x 15 cm x 15 cm embedded in concrete (as per IRC) along the Project Highway at 50 m interval on both sides. All the components used in delineating road land boundary shall be aesthetically pleasing, sturdy and vandal proof. The road land boundary shall be demarcated in consultation with IC/NHAI. For future developments, additional land may be acquired so as to have 60m ROW all along.

7 Guard Rail and Traffic Safety Devices

i) For the safety of pedestrian at the intersection / Junction, the guard rails shall be provided to enhance the safety in Urban/Semi-Urban locations.

ii) Barriers shall be provided at locations of bridge approaches and high embankments (3m and more) and at curves having radius less than 1000 m at both sides.

iii) Delineators bollards and other safety devices shall be provided on curves and other locations as directed by IC / NHAI.

iv) At least the following provisions shall be made by the Concessionaire on this 'project' in respect of the metallic beam Guard Rails:

Metal beam Guard Rails including installation (crash barriers)	--	Of Steel, single runner, heavy duty (w-shape) in 10 (Ten) kilometer length.

8 Pre-Construction Activities

8.1 Land Acquisition (LA)

The additional land acquisition in few isolated stretches is foreseen on this project. The cost of L.A as intimated by the concerned agencies shall be borne by NHAI. However, the

Concessionaire shall be involved pro-actively in this regard submitting relevant L.A. proposals as per NH Act-1956 and pursuing the matter with the concerned State Govt. Revenue Departments and the concerned private people whose land is to be acquired. NHAI shall provide all necessary administrative support in this regard.

8.2 **Utility Shifting and Removal of trees**

The 'project' involves shifting of utilities of certain types. The Concessionaire shall be actively involved to accomplish this task. He shall submit the proposals in this regard. The cost towards utility shifting as per the demand note of the concerned Govt./Semi-Govt. agencies shall be borne by NHAI.

8.3 **Clearances to be obtained**

The Concessionaire shall obtain all necessary clearances from the concerned authorities required for implementing the project. NHAI shall provide support letters in this regard.

8.4 **Encroachment Removal**

Encroachments shall be removed by the Concessionaire at his own cost. NHAI/ State Government will provide administrative support to maintain law and order.

8.5 Compensatory afforestation and rehabilitation & resettlement

NHAI shall bear cost in this regard. However, Concessionaire shall proactively be involved for all related activities.

9. LANDSCAPING

The finished road facility shall exhibit adequate landscaping of aesthetically pleasing view. All the borrow areas shall be properly dressed maintaining drainability outward from the road facility. The side slopes shall be turfed.

10. ENVIRONMENT

In view of the statutory requirement of environmental clearance for Highway Project, the NHAI decided to carry out environmental impact assessment of the proposed widening and strengthening of the Project Highway.

The environmental impact assessment study has accordingly been carried out and is presented in the DPR.

The said report brings out the baseline environmental conditions, envisaged impacts of the project, mitigation measures proposed and suitable management plan for monitoring and implementation of measures.

The Project Highway during design, construction, operation and maintenance shall conform to the environmental rules and regulations in force. The Concessionaire shall be responsible for the same. As such the Detailed Project Report enclosed herewith for his guidance should be referred to. However this does not absolve him from performance according to the laws on environment.

Annexure B-1 (Revised)

DETAILS OF CULVERTS REQUIRING WIDENING/REPLACEMENT

Sl. No.	Culvert No. As per PWD	Culvert No. As per Design Chainage	Existing Chainage (Appros.) (km)	Design Chainage along Left Median Edge (km)	Type of Structure	Existing Size	Proposed Size	Remarks/ Recommendations
Along NH - 22								
1	10/1	10/1	9.50	9.43	PC	2 x 1.0	2 x 1.0	To be widened
2	10/2	10/2	9.90	9.83	SLC	1 x 4.2 x 1.2	1 x 4.2 x 1.2	To be widened
3	11/1	11/1	10.ab	10.45	PC	2 x 1.0	2 x 1.0	To be widened
4	NM	14/1	13.20	13.17	ARC	1 x 3.0	1 x 3.0	To be widened
5	19/1	19/1	18.20	18.25	SLC	1 x 4.25	1 x 4.25	To be widened
6	19/2	19/2	18.50	18.48	SLC	1 x 2.2	1 x 2.2	Super Structure is to be replaced
7*	20/1	20/1	19.80	19.72	ARC	1 x 1	1 x 2	Hyd. Inadequate, replaced by SLC
8	22/1	22/1	21.10	21.12	SLC	1 x 1.8	1 x 1.8	Super Structure is to be replaced
9	22/2	22/2	21.20	21.30	SLC	1 x 1.8	1 x 1.8	Super Structure is to be replaced
10	22/3	22/3	21.50	21.53	SLC	1 x 2.1	1 x 2.1	Super Structure is to be replaced
11	25/1	25/1	24.05	24.00	SLC	1 x 1.5	1 x 1.5	Super Structure is to be replaced
12	25/2	25/2	24.90	24.77	ARC	1 x 1.75	1 x 1.75	To be widened
13	NM	31/1	30.ab	30.08	SLC	1 x 3.3	1 x 3.3	To be widened
14	NM	34/1	33.00	33.17	SLC	1 x 1.5	1 x 1.5	To be widened
15	NM	35/1	35.00	34.81	SLC	1 x 3.5	1 x 3.5	To be widened
16	36/1	36/1	35.20	35.10	SLC	1 x 2	1 x 2	To be widened
17	39/2	36/2	35.30	35.19	SLC	1 x 2.4	1 x 2.4	To be widened
18	36/3	36/3	35.40	35.36	SLC	1 x 2.0	1 x 2.0	To be widened
19	36/4	36/4	35.50	35.46	SLC	1 x 1.25	1 x 1.25	To be widened
20	NM	36/5	35.57	35.56	SLC	1 x 2.05	1 x 2.05	To be widened
21	37/1	37/1	36.03	36.03	SLC	1 x 1.4	1 x 1.4	To be widened
22*	37/2	37/2	36.40	36.34	SLC	1 x 0.9+1 x 1.2	1 x 3	Hyd. Inadequate, replaced by SLC
23	37/3	37/3	36.70	36.63	SLC	1 x 1.4	1 x 1.4	To be widened
24*	NM	40/2	38.85	39.01	SLC	1 x 2.0	1 x 3	Hyd. Inadequate, replaced by SLC
25	NM	40/3	38.95	39.96	SLC	1 x 1.8 x 0.45	1 x 1.8 x 0.45	To be widened
Along NH - 21								
No proposed Culvert along NH - 21								

Note: (1) * - indicates culverts to be replaced due to hydraulic inadequacy
(2) Sizes of the Culverts are given in metres

Legend:
PC – Pipe Culverts
SLC – Slab Culverts
ARC – Arch Culverts

Annexure B-2

DETAILS OF REQUIRED NEW MAJOR AND MINOR BRIDGES (3Lane with Footpaths)

Sl. No.	Bridge No.		Design Chainage (km)	List of new Bridges to be provided by the Concessionaire								Remarks
	As per PWD	As per Design Chainage		Proposed Scheme	Span arrangement (m)	Skew	Superstructure Type	Substructure		Foundation		
								Abutments	Pier	Abutments	Pier	
Along NH - 22												
1	7/1	7/1	6.418	NE*	1x11.40	—	PSC I-GIRDER	Wall Type	—	Open Foundation	—	Service Roads on New Bridge
2	7/2	7/2	6.907	NE*	3x8.90	—	Solid Slab	Wall Type	Wall Type	Open Foundation	Open Foundation	Service Roads on New Bridge
3	8/1	8/1	7.476	NE*	1x18.50	—	PSC I-GIRDER	Wall Type	Wall Type	Pile Foundation	Pile Foundation	Service Roads on New Bridge
4	9/1	9/1	8.894	NE / W	1x18.80	—	PSC I-GIRDER	Wall Type	Wall Type	Open Foundation	Open Foundation	Service Roads on New Bridge
5	13/1	12/1	11.952	NE	3x17.20 +1x21.50	—	PSC I-GIRDER	Wall Type	Wall Type	Pile Foundation	Pile Foundation	
6	NM	14/1	13.632	NE	2x14.20	—	PSC I-GIRDER	Wall Type	Wall Type	Pile Foundation	Pile Foundation	
7	NM	17/1	16.586	NE	1x7.20	—	Solid Slab	Wall Type	—	Open Foundation	—	
8	19/3	19/3	18.759	W	1x7.40	—	Solid Slab	Wall Type	—	Open Foundation	—	
9	21/1	21/1	20.051	NE	4x18.80	38.625° RF	PSC I-GIRDER	Wall Type	Wall Type	Well Foundation	Well Foundation	
10	30/1	30/1	29.022	NE	1x7.00	—	Solid Slab	Wall Type	—	Open Foundation	—	
11	34/3	34/2	33.663	NE	12x26.60	—	PSC I Girder	Wall Type	Wall Type	Well Foundation	Well Foundation	

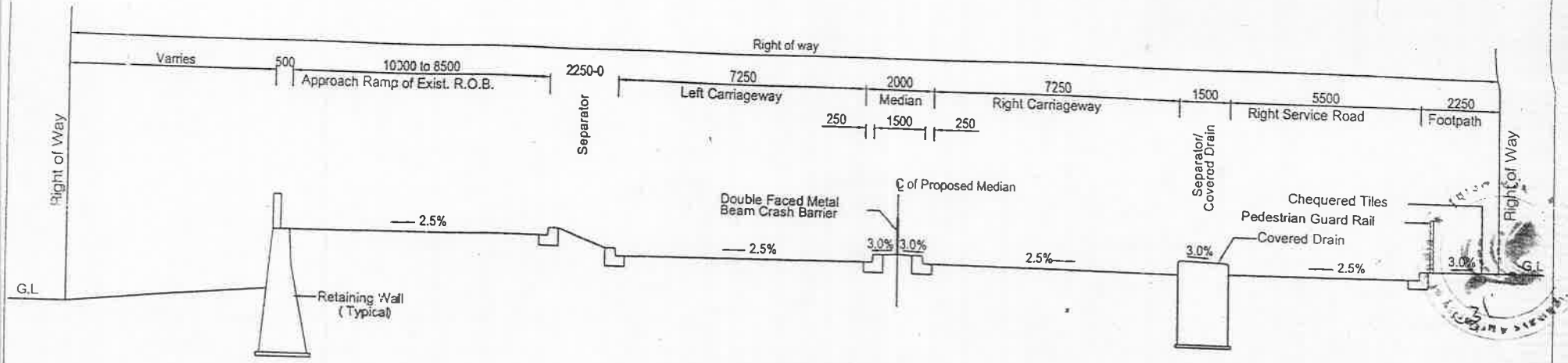
Annexure B-2 (Contd.)

DETAILS OF REQUIRED NEW MAJOR AND MINOR BRIDGES(3Lane with Footpaths)

Sl. No.	Bridge No.		Design Chainage (km)	List of new Bridges to be provided by the Concessionaire								Remarks
				Proposed Scheme	Span arrangement (m)	Skew	Superstructure Type	Substructure		Foundation		
	As per PWD	As per Design Chainage						Abutments	Pier	Abutments	Pier	
12	NM	40/1	39.495	NE	3x20.20	—	PSC I-GIRDER	Wall Type	Wall Type	Well Foundation	Well Foundation	3 Nos. new bridges as shown in drawing enclosed with DPR
Along NH -21												
No proposed Bridge along NH -21												

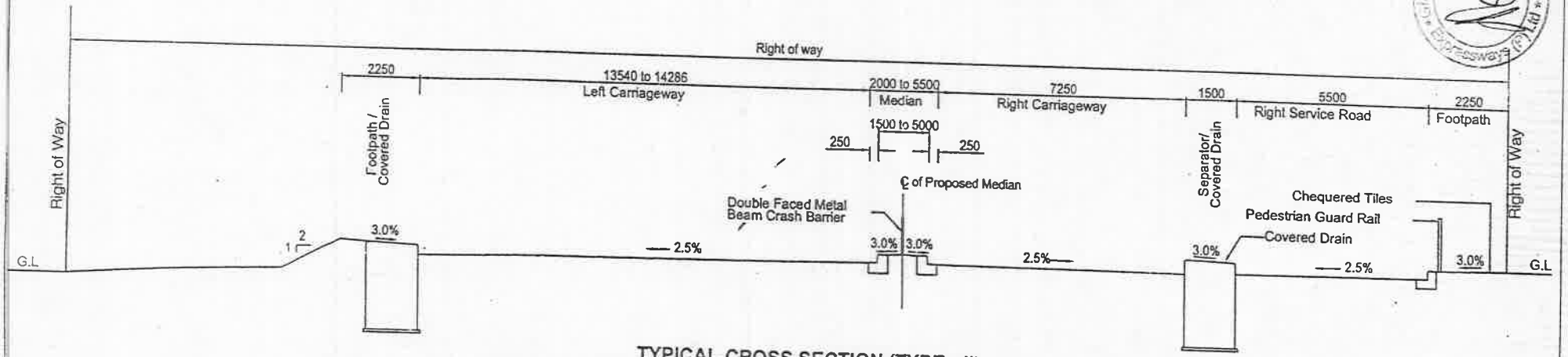
NE* - New Bridge with Service Roads

NE - New



TYPICAL CROSS SECTION (TYPE - I)

FIG. B-1 : 4 LANE DUAL CARRIAGEWAY WITH SERVICE ROAD ON ONE SIDE



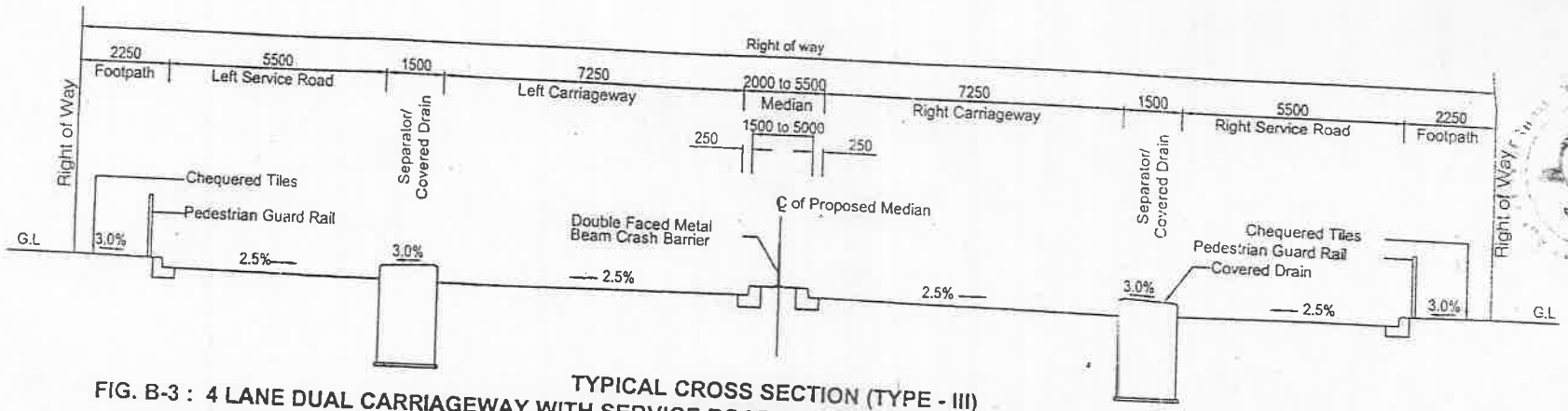
TYPICAL CROSS SECTION (TYPE - II)

FIG. B-2 : 4 LANE DUAL CARRIAGEWAY WITH SERVICE ROAD ON ONE SIDE

Note:-

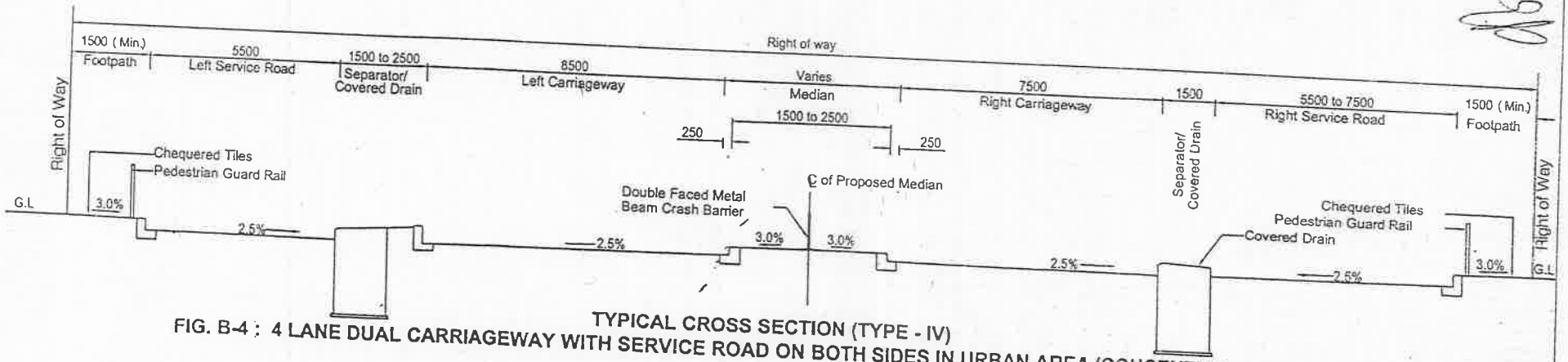
1) All Dimensions Are in Millimetres.
2) Metal Beam Crash Barrier in Median Shall be Applicable where the median width is less than or equal to 2m.

FIG. NO.	APPLICABLE CHAINAGE	
	From (km.)	To (km.)
FIG. B-1	km. 5+735	Km. 5+800
FIG. B-2	km. 5+800 km. 8+636	Km. 5+880 Km. 8+685



TYPICAL CROSS SECTION (TYPE - III)

FIG. B-3 : 4 LANE DUAL CARRIAGEWAY WITH SERVICE ROAD ON BOTH SIDES IN URBAN AREA (CONCENTRIC TO EXISTING ROW)



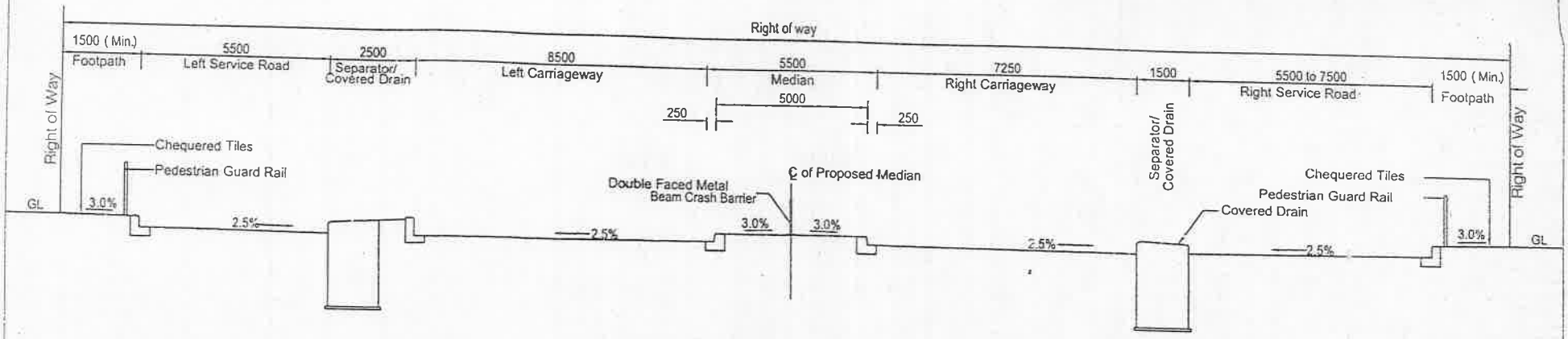
TYPICAL CROSS SECTION (TYPE - IV)

FIG. B-4 : 4 LANE DUAL CARRIAGEWAY WITH SERVICE ROAD ON BOTH SIDES IN URBAN AREA (CONCENTRIC TO EXISTING ROW)

FIG. NO.	APPLICABLE CHAINAGE	
	From (km.)	To (km.)
FIG. B-3	km. 5+880 km. 7+925 km. 16+875 km. 22+225 km. 29+175 km. 32+910	Km. 6+080 Km. 8+636 Km. 19+200 Km. 23+025 Km. 30+350 Km. 33+100
FIG. B-4	km. 6+080 km. 7+700	Km. 6+339 Km. 7+925

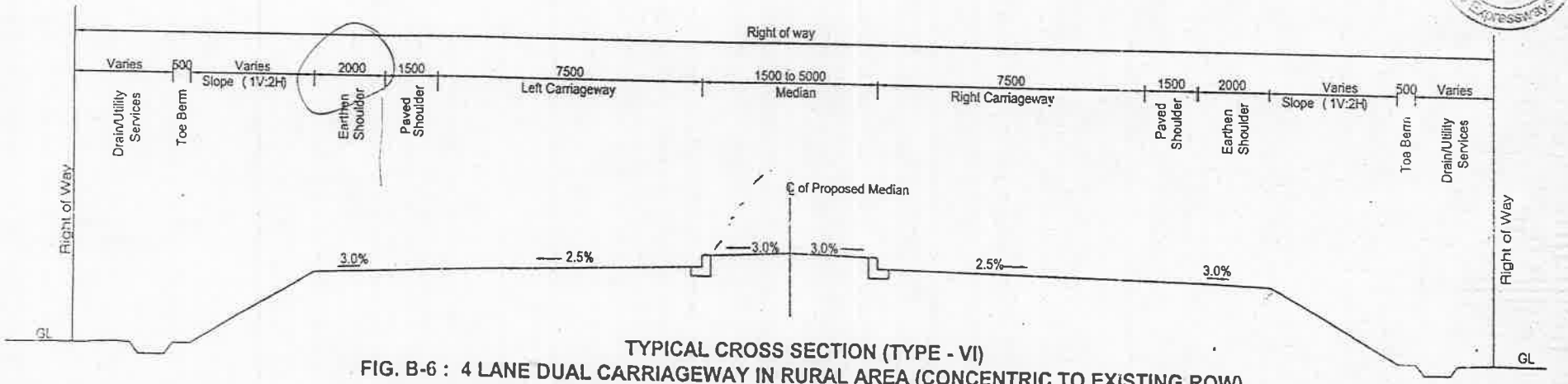
Note:-

1) All Dimensions Are in Millimetres.
2) Metal Beam Crash Barrier in Median Shall be Applicable where the median width is less than or equal to 2m.



TYPICAL CROSS SECTION (TYPE - V)

FIG. B-5 : 4 LANE DUAL CARRIAGEWAY WITH SERVICE ROAD ON BOTH SIDES IN URBAN AREA (CONCENTERIC TO EXISTING ROW)



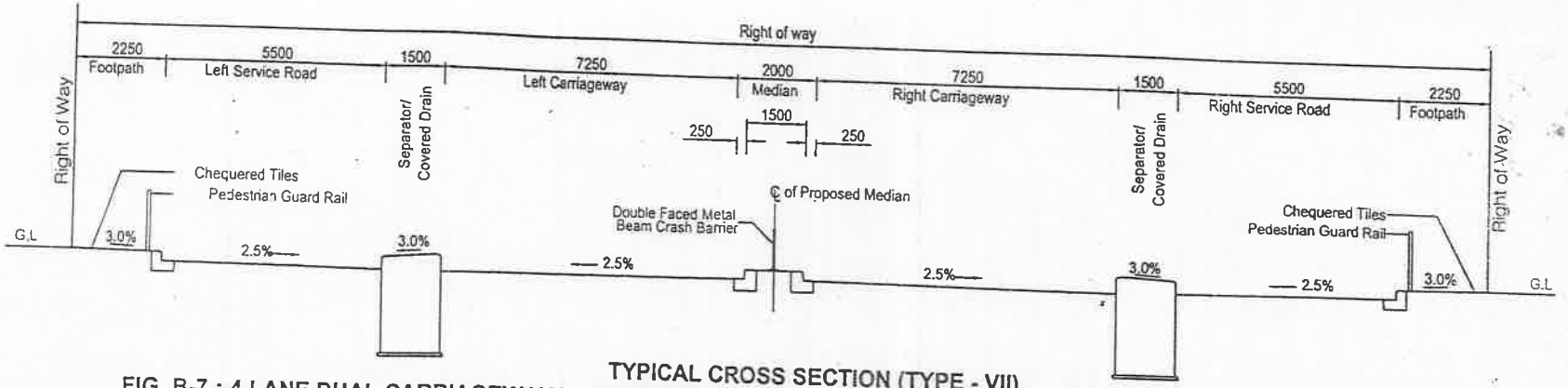
TYPICAL CROSS SECTION (TYPE - VI)

FIG. B-6 : 4 LANE DUAL CARRIAGEWAY IN RURAL AREA (CONCENTRIC TO EXISTING ROW)

FIG. NO.	APPLICABLE CHAINAGE	
	From (km.)	To (km.)
FIG. B-5	km. 7+604	Km. 7+700
FIG. B-6	km. 8+685 km. 19+200 km. 23+025 km. 33+100	Km. 16+875 Km. 22+225 Km. 29+175 Km. 37+200

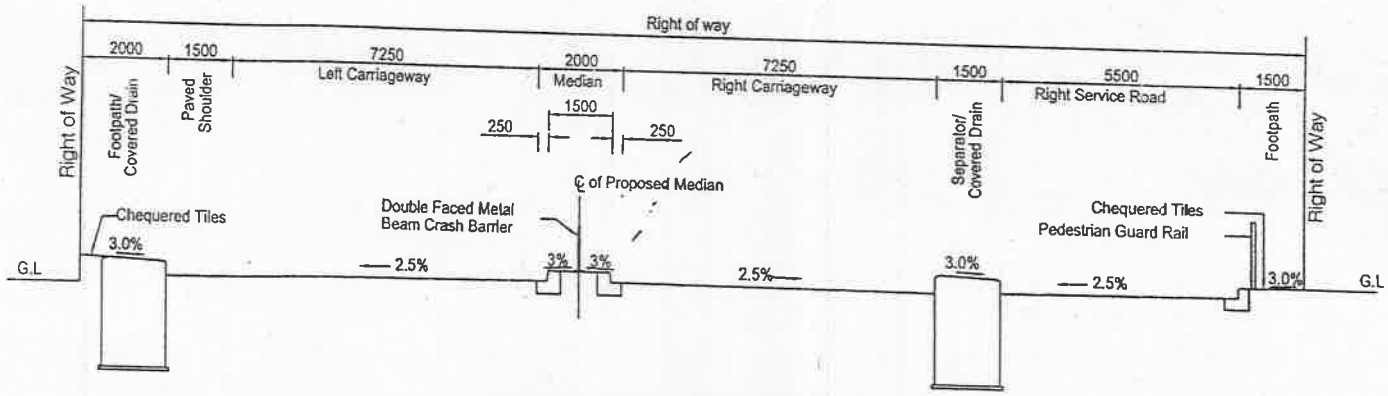
Note:-

1) All Dimensions Are in Millimetres.
2) Metal Beam Crash Barrier in Median Shall be Applicable where the median width is less than or equal to 2m.



TYPICAL CROSS SECTION (TYPE - VII)

FIG. B-7 : 4 LANE DUAL CARRIAGEWAY WITH SERVICE ROAD ON BOTH SIDES IN URBAN AREA (CONCENTRIC TO EXISTING ROW)



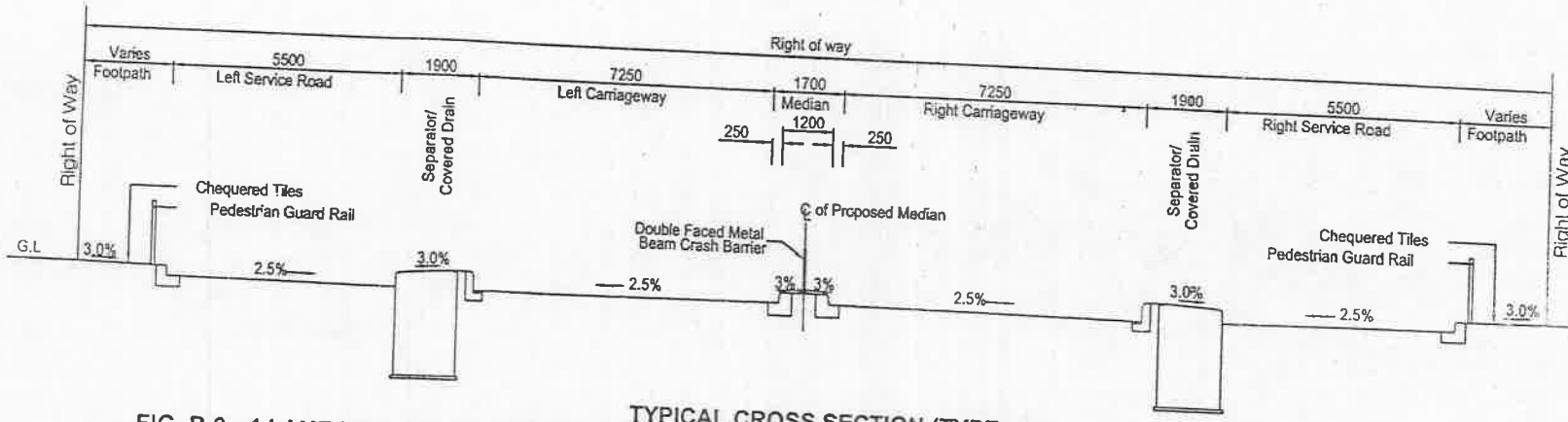
TYPICAL CROSS SECTION (TYPE - VIII)

FIG. B-8 : 4 LANE DUAL CARRIAGEWAY WITH SERVICE ROAD ON ONE SIDE IN URBAN AREA (CONCENTRIC TO EXISTING ROW)

Note:-

1) All Dimensions Are in Millimetres.
2) Metal Beam Crash Barrier in Median Shall be Applicable where the median width is less than or equal to 2m.

FIG. NO.	APPLICABLE CHAINAGE	
	From (km.)	To (km.)
FIG. B-8	km. 30+350	Km. 30+745



TYPICAL CROSS SECTION (TYPE - IX)

FIG. B-9 : 4 LANE DUAL CARRIAGEWAY WITH SERVICE ROAD ON BOTH SIDES IN URBAN AREA (CONCENTRIC TO EXISTING ROW)

Note:-

1) All Dimensions Are in Millimetres.
2) Metal Beam Crash Barrier in Median Shall be Applicable where the median width is less than or equal to 2m.

FIG. NO.	APPLICABLE CHAINAGE	
	From (km.)	To (km.)
FIG. B-9	km. 30+745	Km. 32+910

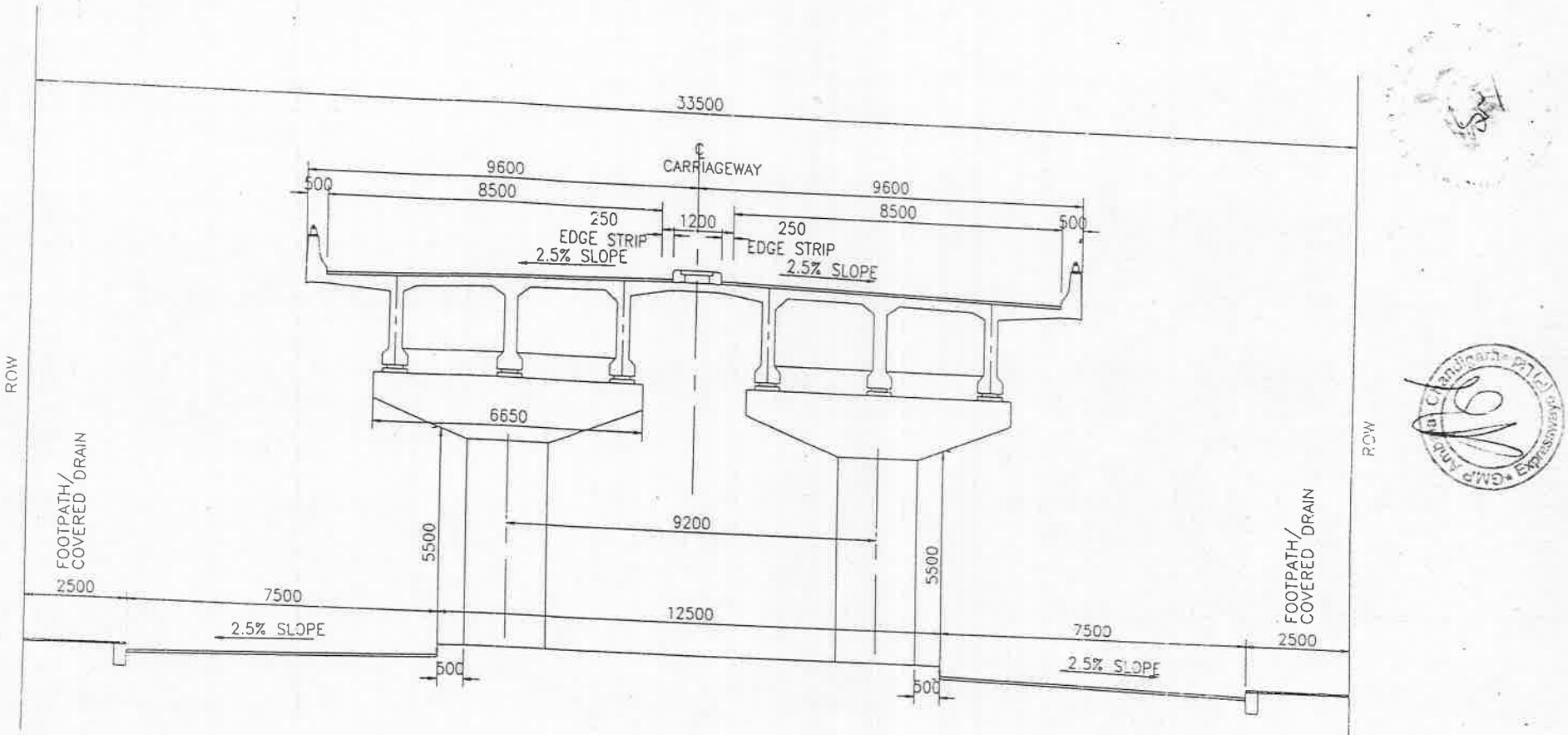


FIG. B-10(Revised):-TYPICAL CROSS-SECTION FOR 4-LANE FLYOVER AT ZIRAKPUR

Km 0+446 - Km 1+870 (NH-22)
Km 2+025 - Km 2+550 (NH-21)

Note:-

1) All Dimensions are in Millimetres.

2) Matching Chainage (km. 0+000) of Flyover at Zirakpur is km. 37+080.

Not to Scale

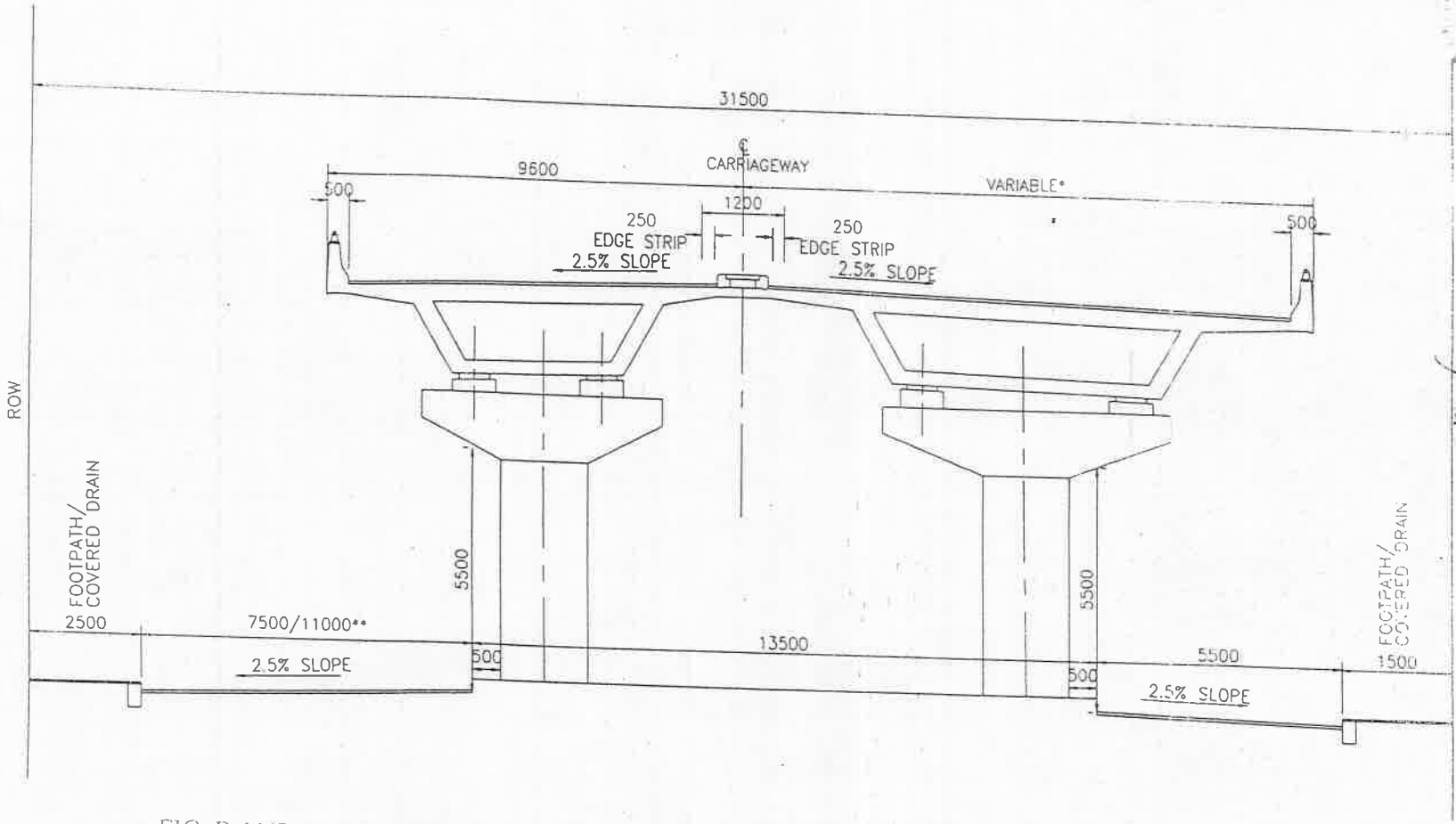


FIG. B-11(Revised):-TYPICAL CROSS-SECTION FOR FLYOVER AT THE MERGING OF RAMP AT ZIRAKPUR
Km 1+870 - Km 2+025 (NH-22)

Note

1) All Dimensions are in Millimetres
2) Matching Chainage (km. 0+000) of Flyover at Zirakpur is km. 37+080.
* Width varies from 9600 to 13100 followed by curved portion as shown in the plan (Refer Annexure: B- 3)
** Width varies from 7500 to 11000 followed as shown in the plan (Refer Annexure: B- 3)

Not to Scale

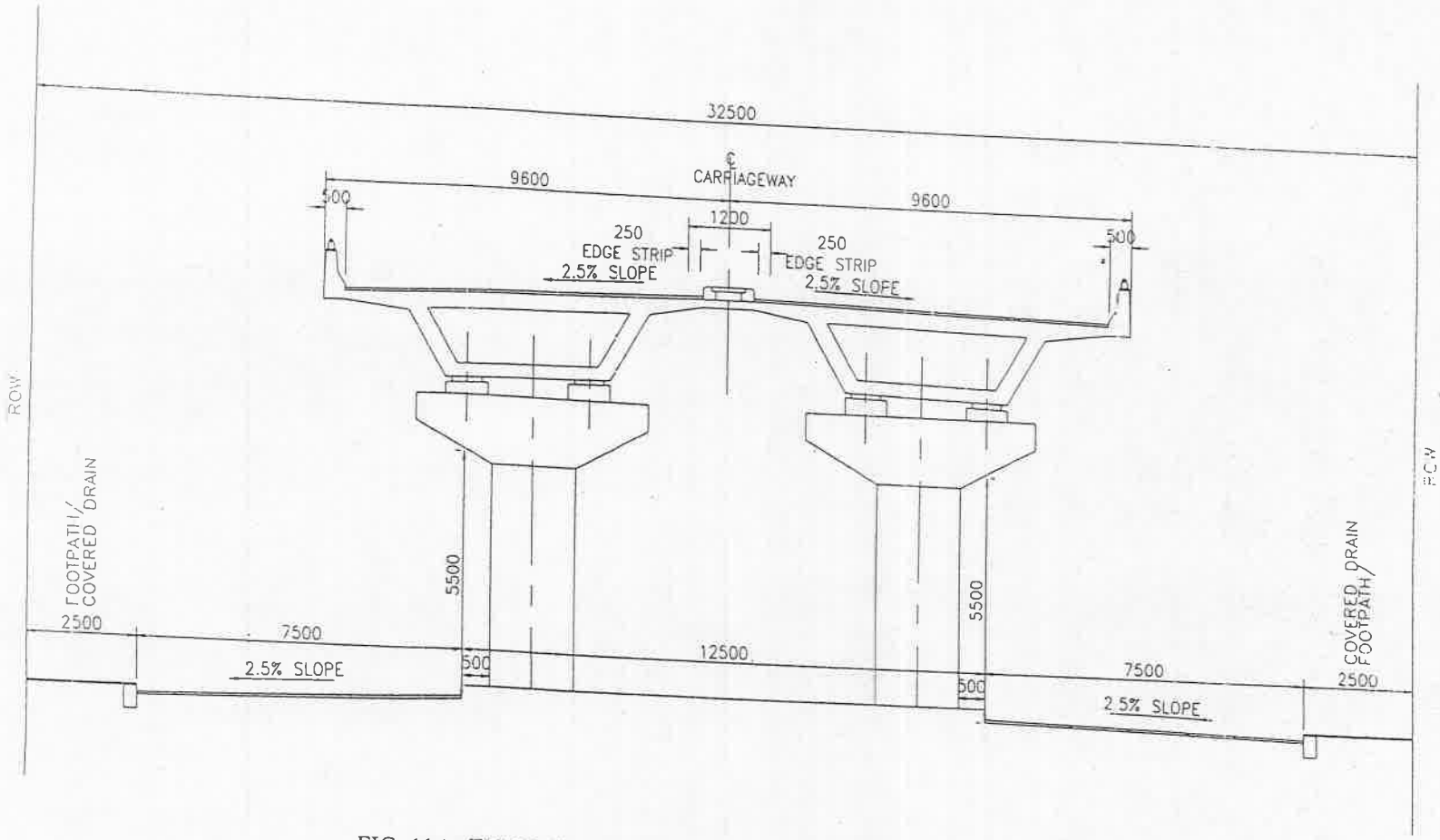


FIG. 11A:-TYPICAL CROSS-SECTION FOR FLYOVER AT ZIRAKPUR

(JUNCTIONS AT km 0+687 AND Km 1+675)

Note:-

1. All dimensions are in millimetres
2. Matching Chainage (km 0+000) of Flyover is km 37+080.

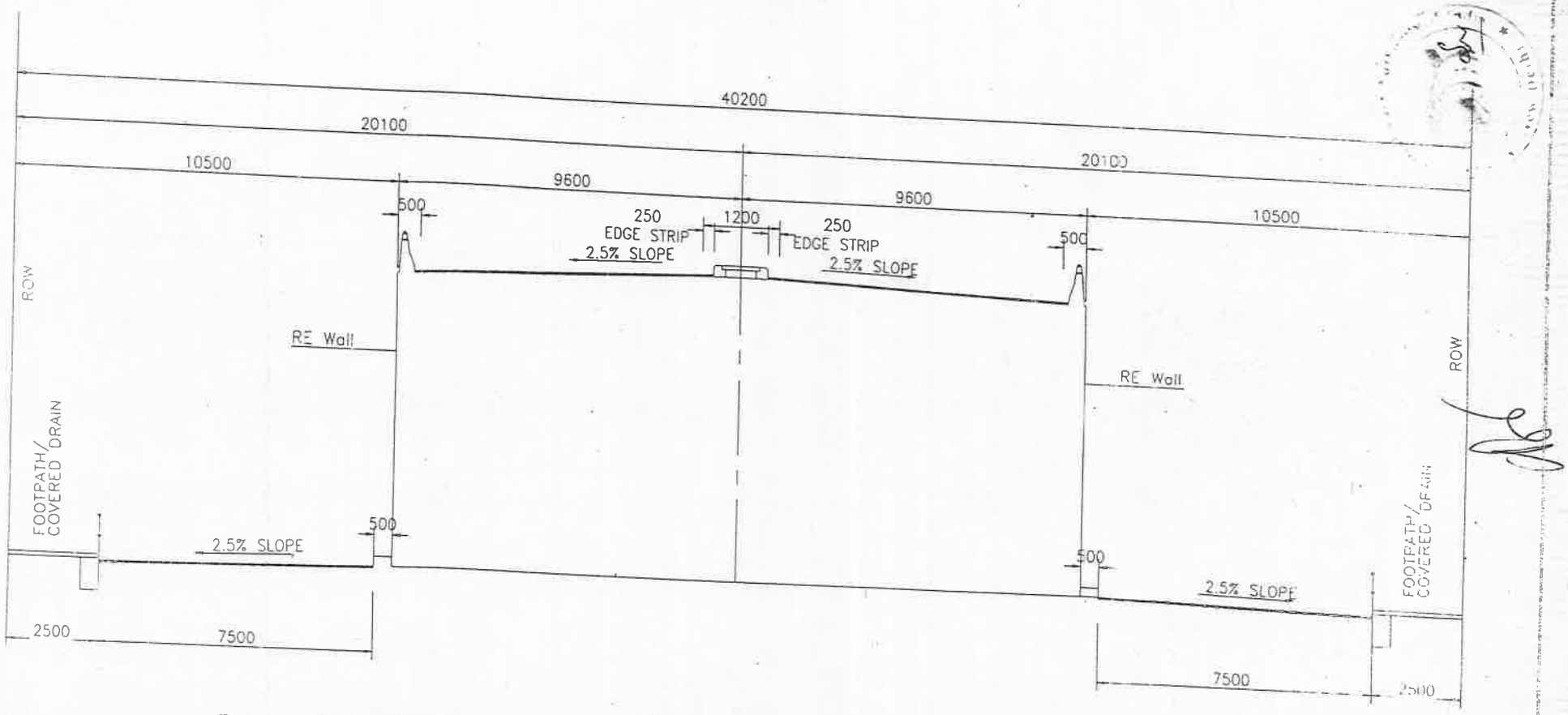


FIG. B-12(Revised):-TYPICAL CROSS-SECTION IN EARTH FILL APPROACH 4-LANE FLYOVER AT ZIRAKPUR

4- LANE FLYOVER

Km 0+000 - Km 0+446 (NH-22)
Km 2+550 - Km 2+828 (NH-21)

Note:-

1) All Dimensio is are in Millimetres.
2) Matching Chainage (km. 0+000) of Flyover at Zirakpur is km. 37+080.

Not to Scale

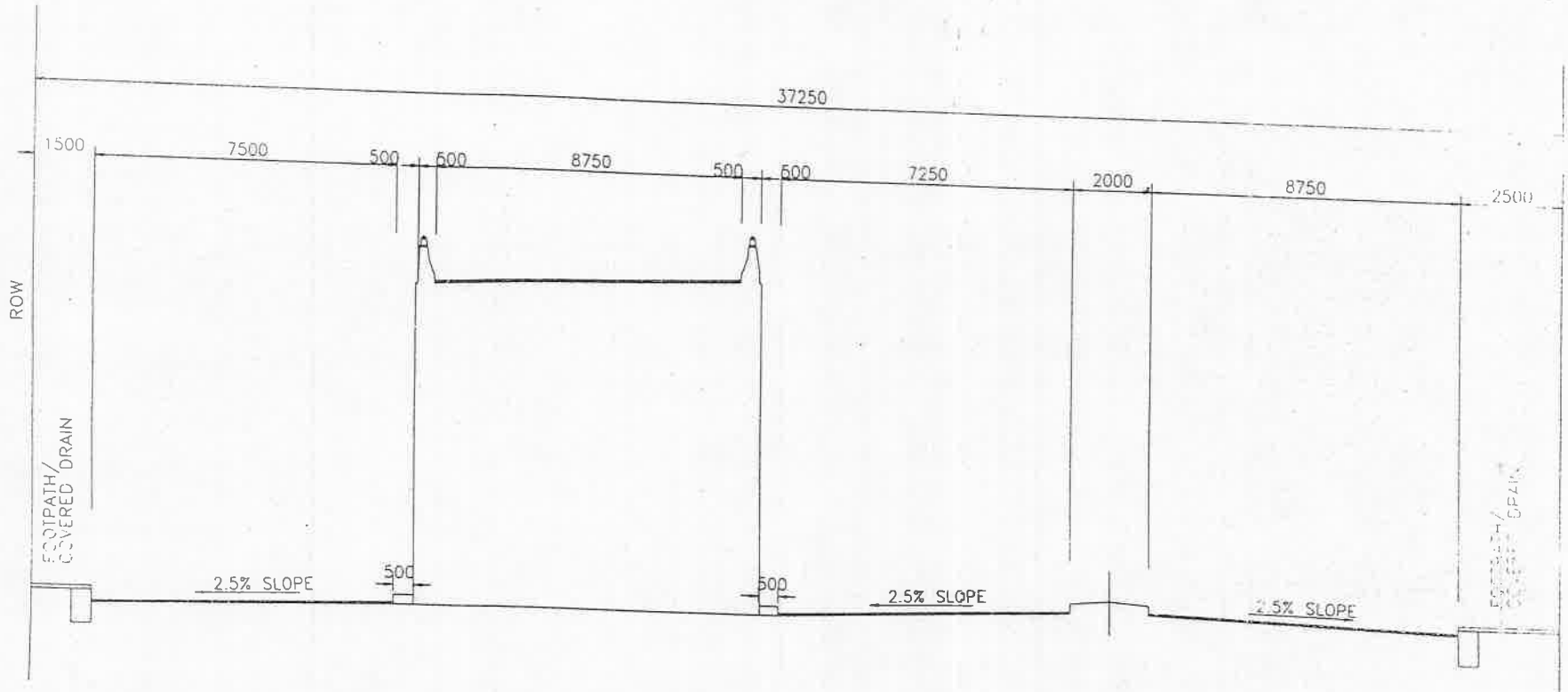


FIG. B-13(Revised):-TYPICAL CROSS-SECTION IN RAMP-A APPROACH AT ZIRAKPUR

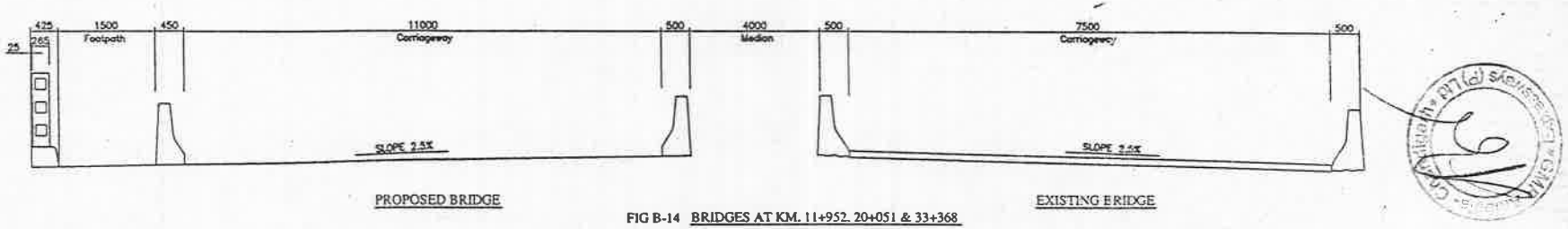
[Km 0+000 – Km 0+462 – VIADUCTS TO BE FOLLOWED BY EARTH FILL SECTION AS ABOVE SO AS TO FOLLOW THE PLAN & PROFILE AS PER ANNEXURE: B– 3 AND DRAWING NO 2004037/BS/FLY–01(Sheet 2 of 2) R1]

Note:-

1) All Dimensions are in Millimetres.
2) Matching Chainage (km. 0+000) of Flyover at Zirakpur is km. 37+080.

Not to Scale

Page B-91



PROPOSED BRIDGE

EXISTING BRIDGE

FIG B-14 BRIDGES AT KM. 11+952, 20+051 & 33+368

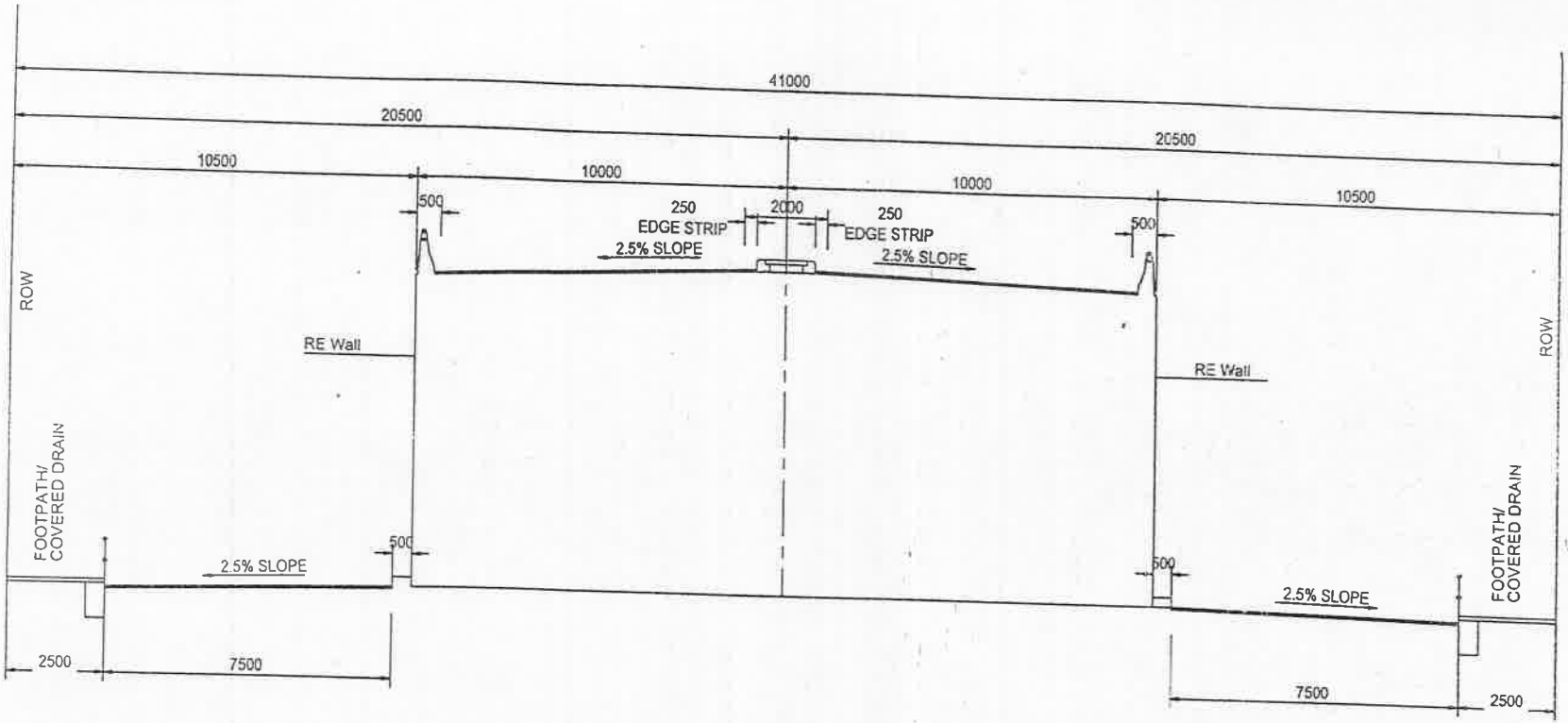


FIG. B-15:-TYPICAL CROSS-SECTION IN EARTH FILL APPROACH 4-LANE FLYOVER AT BALDEVNAGAR

Km 6+339 - Km 6+500 (NH-22)
Km 7+496 - Km 7+604 (NH-22)

Note:
1) All Dimensions are in millimetres

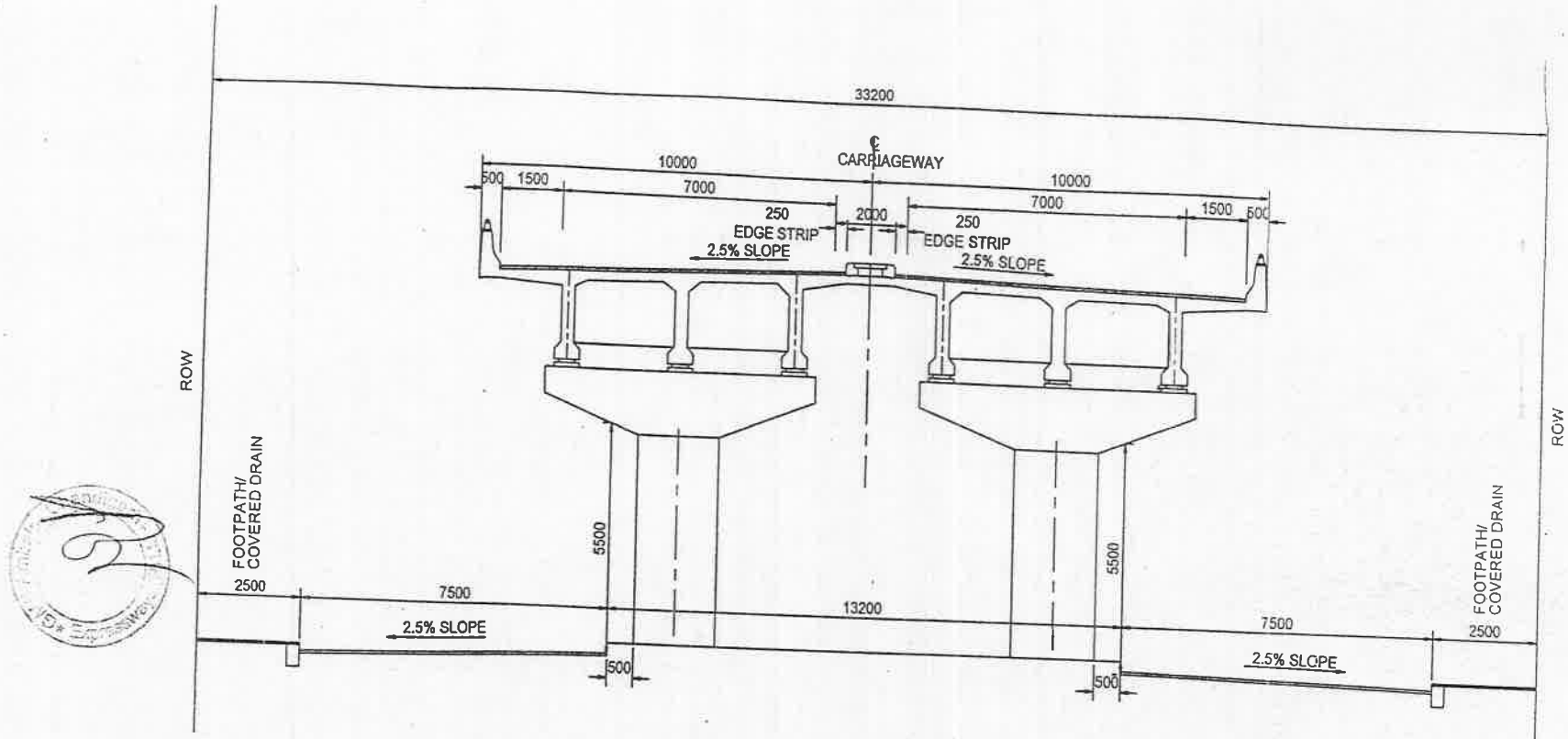


FIG. B-16:-TYPICAL CROSS-SECTION FOR 4-LANE FLYOVER BALDEV NAGAR
Km 6+500 - Km 7+490 (NH-22)

Note:
1) All Dimensions are in millimetres

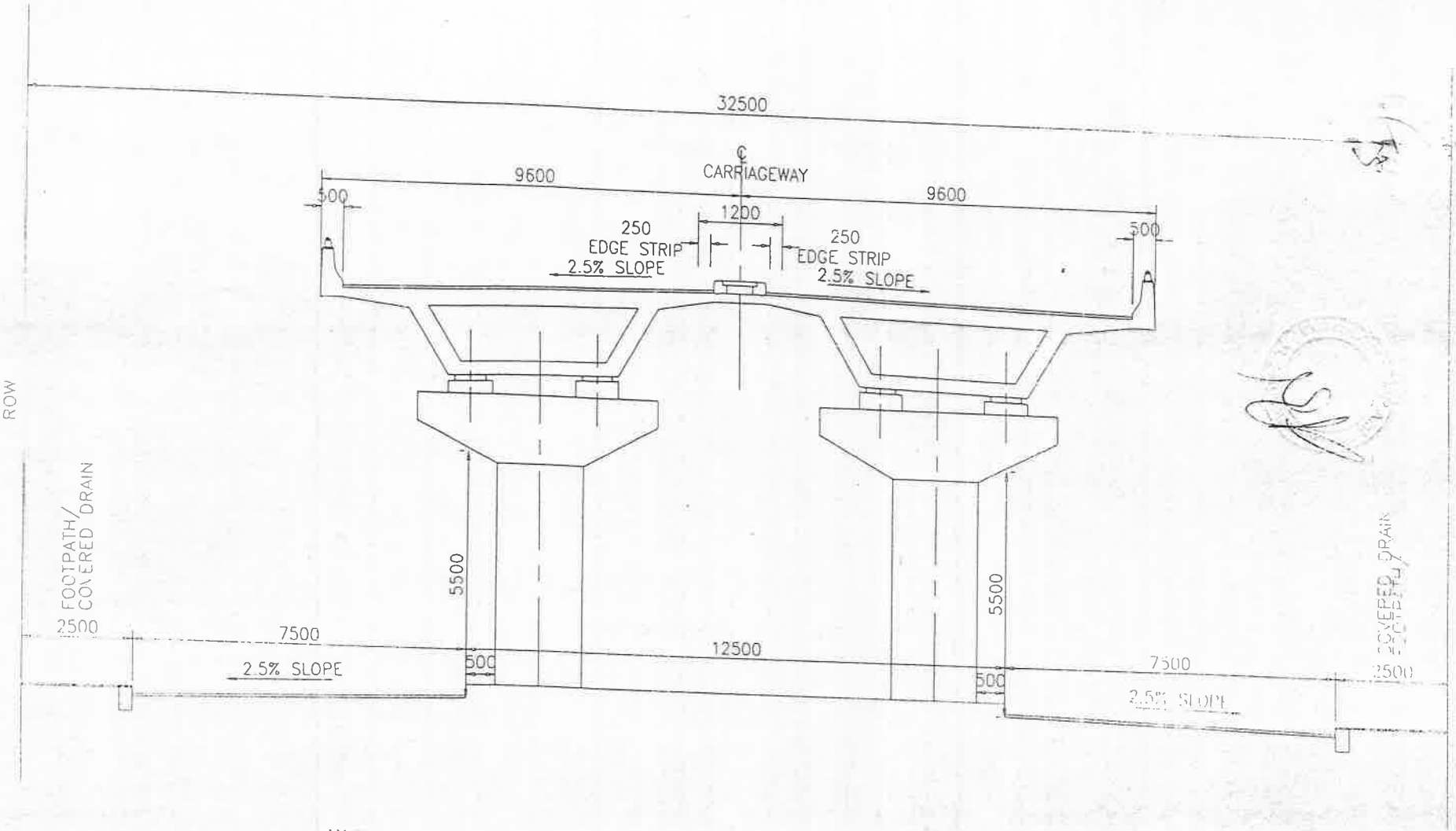


FIG. 16A:-TYPICAL CROSS-SECTION FOR FLYOVER AT BALDEV NAGAR

(APPLICABLE FOR JUNCTION AT KM 6+800 AND 7+160)

Schedule - C

PROJECT FACILITIES

1. GENERAL

The following sections of this schedule indicate the details of amenities and facilities as situated on site; and minimum facilities to be provided on the Project Highway as part of the scope of work under this contract with an aim to cater to the envisaged demand till the end of the concession period.

2. EXISTING FACILITIES

2.1. REST AREAS

Along the project highway, sufficient number of facilities such as eating places with rest facility, fuel stations, repair shops etc. are available to cater the requirements of truck drivers and passengers on the highway.

2.2. PETROL PUMPS

The List of Petrol Pumps along the Project Highways is given in Table A-6

2.3. EXISTING ROB AT DERABASSI UNDER SEPARATE CONCESSION

The Project Road crosses the Ambala – Kalka Northern Railway lines at Dera Bassi (km 32+050 of NH-22) where a ROB has already been constructed under a separate BOT contract and is in operation. A 6-Lane toll plaza constructed under BOT Project for 4-Lane ROB at Derabassi exists.

3. PROPOSED FACILITIES

3.1. TOLL PLAZA

In all not more than 2 (two) toll plazas shall be allowed for collecting users fee. This includes existing Toll plaza at Derabassi ROB location, which will seize to exist after expiry of the existing concession for ROB awarded to M/s R.S. Builders & Engineers Ltd. After the stretch under existing concession is handed over to the Concessionaire there shall be only one Toll plaza. The location and layout of the toll plazas shall be finalized in consultation with the NHAI. Probable location of the Toll plaza shall be near Lalru town however, the same shall be finalised by NHAI in consultation with the Independent Engineer/Concessionaire.

'Open System' of toll collection shall be provided on the Project Highway with collection of user fee from vehicles only at the toll plaza. There shall be a total of minimum 8 (Eight) lanes having a semi-automatic/ETC system of toll collection comprising necessary equipments for the purpose and also for registering of vehicle classification, ticket issuing, data processing and power supply. One toll lane in each direction shall be provided for traffic not required to pay user's fee. Appropriate technology for Toll collection including Electronic Toll Collection (ETC) shall be used so that not more than 6 vehicles/Lane

queue up in the peak hours during the entire concession period. At least one toll lane in each direction shall be provided with Electronic Toll collection (ETC).

The design for toll plaza shall conform to the standards set out in Schedule D of the Concession Agreement.

3.2. TRUCK PARKING /LAYBYES

At least 2 nos. laybyes for Truck Parking shall be provided by the Concessionaire under this contract. The provision of truck lay-bays shall be governed by site requirements. One of these shall be located at Sadopur border i.e. Haryana/Punjab State boundary. This shall be provided as per drawing shown in **Fig C-1**. The second Lay byes of adequate lengths as per drawings shall be constructed along the Project Highway. Parking shall be designed in the form of rectangle / trapezoidal area parallel to and separated from the carriageway by a physical barrier.

The parking lots shall be suitably landscaped. Basic facilities such as drinking water and toilets, with proper disposal system, shall be provided at each lay bye. Use shall be made of existing toilets and new toilets will be provided where none are available.

The location of the two mandatory Truck lay byes are given in the **Table C- 1**

Table C-1 : Truck Lay Bay Locations along Project Highway

Sr. NO.	Location	Chainage km	Side	Remarks
1.	At the State border of Haryana & Punjab (Sadopur)	10+688	Left & Right	Along NH -22 as per Fig C-1
3.	Bishangarh Village	36/450	Left	Along NH -22

3.3. BUS BAYS

There are 16 Bus bay locations along the Project Highway, which are covered under the scope of this contract. Bus bays shall be constructed as per the standard specification and layout shown in **Fig C-2** conforming to IRC:80. .Adequate drainage arrangements shall be provided at bus bays. List of bus bays given in **Table C-2**.

Table C-2 : Bus Bay Locations along Project Highway

Sr. NO.	Location	Chainage km	Side
Along NH -22			
1	Jharmari village	11/050	Left
2	Jharmari village	11/260	Right
3	Sarsini Village	14/035	Left
4	Sarsini Village	14/170	Right
5	Lalru village	17/700	Left
6	Lalru village	17/850	Right
7	Lalru village	18/950	Left & Right

Sr. NO.	Location	Chainage km	Side
8	Dapppar village	22/650	Left & Right
9	Golumazra village	24/525	Left
10	Golumazra village	24/650	Right
11	Devinagar village	27/220	Left
12	Devinagar village	27/125	Right
13	Sakhpur village	29/425	Left
14	Sakhpur village	29/500	Right
15	Bhankarpur village	33/525	Left
16	Bhankarpur village	33/465	Right

3.4. HIGHWAY LIGHTING

Highway lighting shall be provided in urban and semi urban areas of the project road indicated in **Table C-3**. Lighting shall be provided at the locations of Truck laybyes, in rest areas, toll plazas and at intersections/interchanges. IS : 1944 (Part I and II) shall be followed in regard to lighting installations. At the major Junctions, location of ROB/Flyover, Mast lighting system shall be provided

Table C-3- Highway Lighting locations

Sl. No.	Location / km / chainage	Village / Town / City
Along NH -22		
1.	Km 6+339 to 7+604	Baldevnagar
2.	Km 16+800 to 19+250	Lalru
3.	Km 29+500 to 31+000	Sakhpur/ Madhopur
4.	Km 37+800 to 39+700	Lohgarh / Zirakpur

3.5. ARBORICULTURE & LANDSCAPING

Trees shall be planted in ROWS and on either side of the road with staggered pitch as per IRC:SP-21 . Indicate arrangements for plantation of trees shall be in accordance with the MORT&H technical Circle No. NH-41 (34) /69. A spacing of 10-15 m c/c is recommended for spacing of trees parallel to the roads. Set back distance of trees needed in different situations shall be as per the IRC:SP-21 and IRC:66 . Shrubs in medians shall not normally exceed 1-1.5 m heights and shall be as per IRC: SP-21. The Landscaping shall be carried out as per the extant policy of NHAI as is being done on NHAI's public funded projects

3.6. ADMINISTRATIVE, OPERATION AND MAINTENANCE BASE CAMP

A minimum of 300 sqm of covered area for functional base camp shall be provided. The base camp shall be located near the toll plaza location. The proposed facilities available at base camp are described hereunder.

a. The main administrative, operation and maintenance base camp shall be provided to cater to the requirements of the following services:

i). Fee Collection/Security Office

ii). Highway Maintenance including functional laboratory

iii). Facilities for storage and repair of maintenance equipments, vehicles and materials

iv). Any other requirement

b. The base camp shall be housed in suitable area. The layout of the different buildings and facilities shall be finalized in consultation with the Independent Consultant.

c. The Administrative building shall primarily house the Main Control Centre, the Security Headquarters, the Central Store, the Toll audit and data processing units in addition to other secondary facilities such as computer room, office space, stores, sanitary facilities, canteen etc. The main base camp shall have adequate parking space for staff and visitors.

d. The maintenance area shall have a centrally located building to overlook the maintenance workshop etc. A separate storage area shall be earmarked for inflammable materials. The maintenance block shall have enough spaces to park the equipments and machinery deployed for maintenance activities. Adequate parking space shall be earmarked for the staff vehicles and visitors' vehicles. In addition, there shall be adequate and well-illuminated covered parking space for all the maintenance vehicles.

e. In addition the base camps shall have a power sub-station and supplies room to cater to the power requirements of the camp. The sub-station shall house a standby generator to provide the required power in case of failure of normal power.

f. The camps shall have adequate lighting during dark periods and night.

g. There shall be (preferably) underground fuel storage area with delivery facilities (Petrol / Diesel Filling Station) at the Main Base Camp site to adequately cater to the demands of maintenance and patrolling activities.

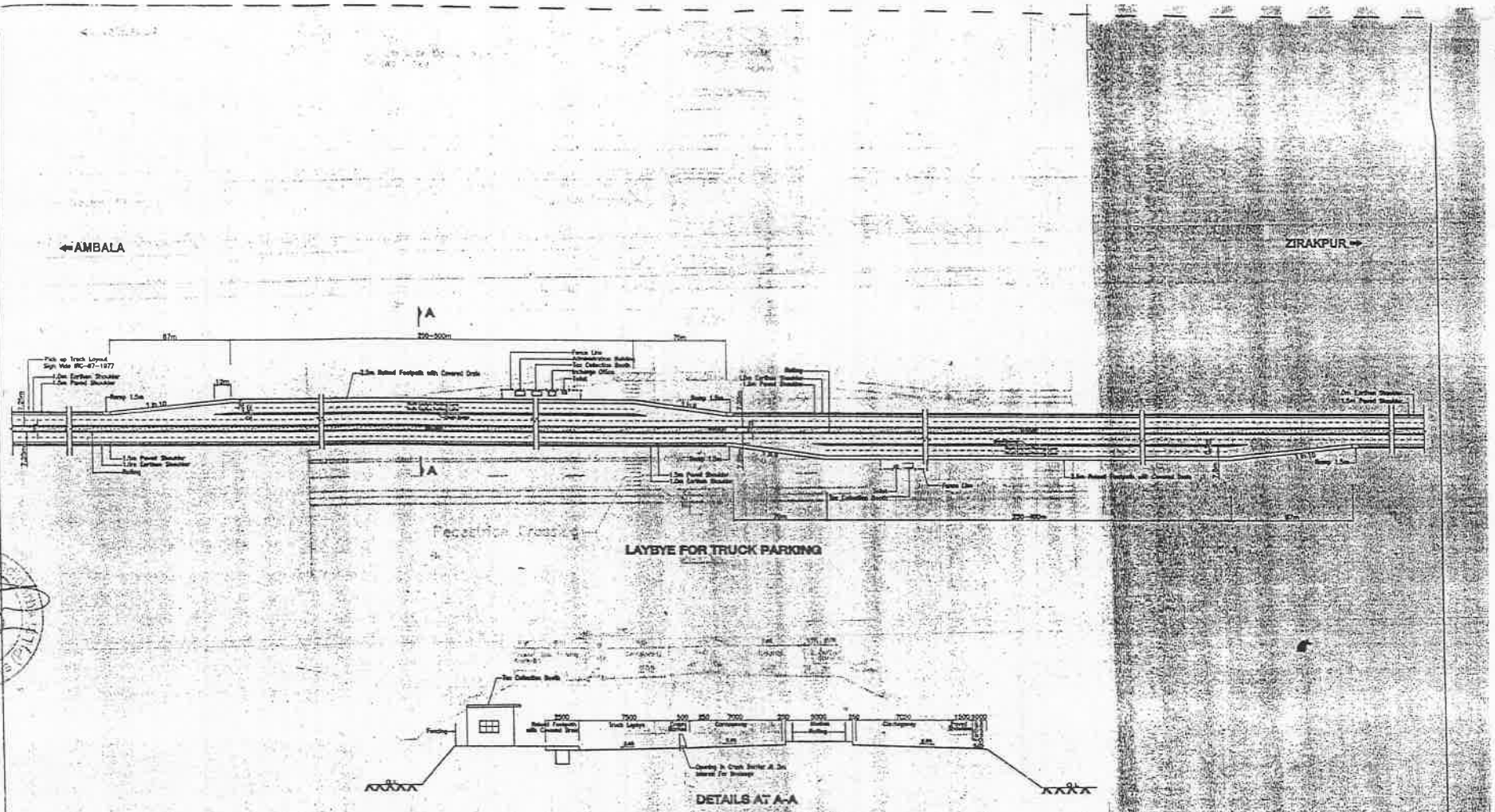
h. The base camps shall not have more than one entry and one exit point. Both of these shall be manned by security personnel at all times besides installing effective electronic security system.

i. The camps shall be landscaped so as to protect the area from dust and noise from the Project Highway.

j. The laboratory facility to be established for testing of various materials related to road construction and maintenance shall be located at the main base camp.

3.7. PROJECT VEHICLE

Two brand new vehicles (Make Toyota Qualis/Tata Indigo/Tata Indica) shall be provided to the Employer with in 30 days of beginning of the concession agreement. The cost of running, maintenance driver's salary, fuel etc, complete shall be borne by the concessionaire. The vehicle shall be required at NHAI(HQ) at Delhi and /Or at site of Project Highway for the use of Project Implementation Unit. The vehicle will run about 4000 km/month including Sundays/Holidays. The vehicles shall be replaced by brand new vehicles after these have run 150000kms or 3 years whichever is earlier.

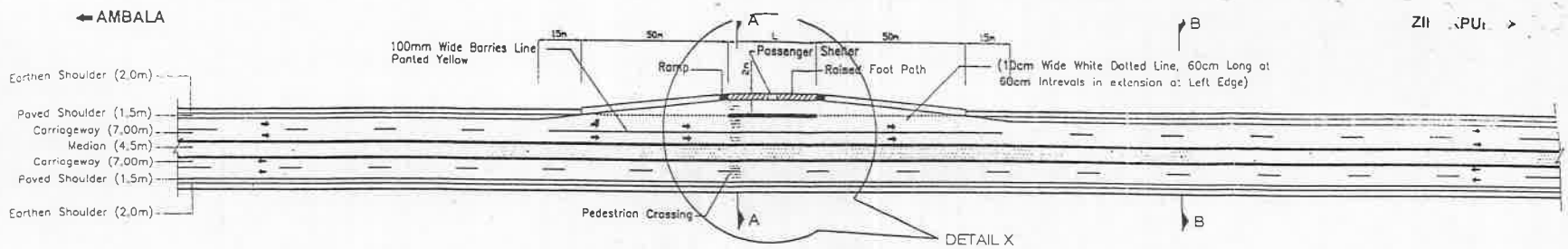


Typical Details of Truck Laybye at Sadopur (i.e. at Haryana/Punjab State Border)

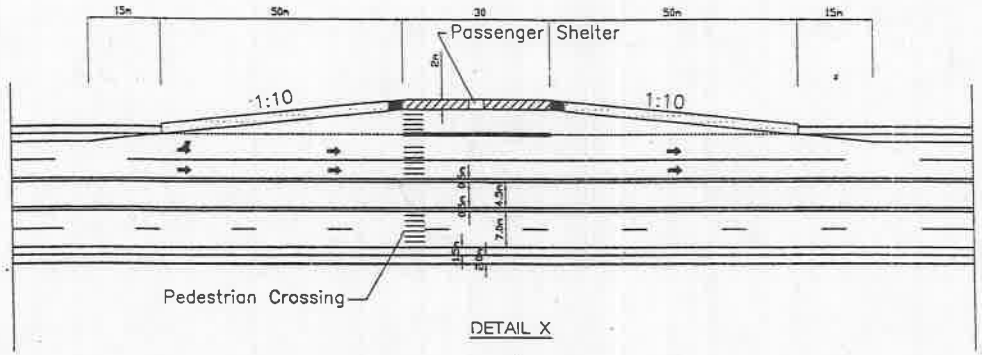
NOTE :-

1. All dimensions are in millimeters, unless otherwise specified

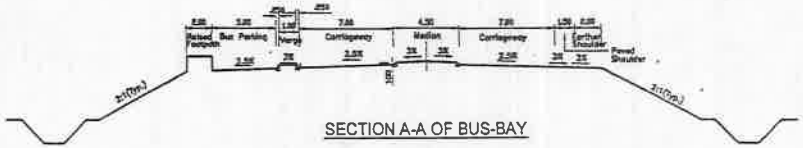
FIG. C-1



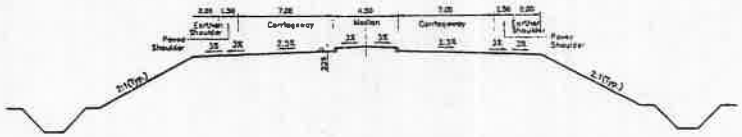
TYPICAL LAYOUT FOR PICK-UP BUS BAY



DETAIL X



SECTION A-A OF BUS-BAY



SECTION B-B OF BUS-BAY

NOTE :-

1. All dimensions are in millimeters, unless otherwise specified

FIG. C-2

SCALE : N.T.S.

Schedule D

SPECIFICATIONS & STANDARDS

1. General

The Project/Project Facilities under this contract shall conform to the minimum design requirements set out in this Schedule. National Highway Authority of India (NHAI) has appointed Consultants for carrying out Survey Investigation and preparing the Detailed Project Report. Copy of the project Report (PR) prepared by the consultants made available to the Concessionaire may be taken for reference. The concessionaire shall carryout its own investigation and design to verify the same

1.1. Alternate acceptable cross section types given in the Schedule-B if any, shall also be accepted. The finished top level of the road (Formation level) shall not be reduced/lowered than that provided in Project Report, unless there are some apparent errors in the PR and the Concessionaire is able to demonstrate sound and durable design by lowering the formation levels

1.2. Alternative design for structures i.e. bridges, culverts, underpasses, overpasses and retaining walls can be adopted by the Concessionaire in accordance with Design Requirements subject to review of the same by IC/MORTH.

At least 2 weeks prior to commencement of the design work, the Concessionaire shall finalise a quality assurance plan for the design work and for preparation of working drawings

2. Codes and Standards

2.1. The codes and standards applicable for the design of the Project and Project Facilities are :

i) Indian Road Congress (IRC) Codes and Standards; and

ii) Ministry of Road Transport and Highways (MORTH) Specifications

Both as applicable to National Highways and shall include policy circulars, guidelines and special publications, issued in respect thereof by IRC or MORTH, as the case may be, from time to time and shall incorporate all amendments and/or modifications to such codes and standards which are available to public 30 days before the Proposal Due Date unless otherwise specified in this Schedule.

The terms 'Ministry of Surface Transport', 'Ministry of Road Transport and Highways' and 'Ministry of Shipping, Road Transport and Highways' shall be considered as synonymous to each other.

A list of IRC/MORTH codes is provided in Appendix D-1

2.2. Where the aforesaid codes, standards and specifications are silent on any aspect, the following standards in order of preference shall be adopted in consultation with the IC, unless otherwise specified in this Schedule :

a). Bureau of Indian Standards (BIS)

b). American Association of State Highway and Transport officials (AASHTO)

c). Geometric Design Standards for Ontario Highways

d). American Society of Testing Materials (ASTM)

e). British Standards (BS)

f). Suitable specification/standard devised by the IC

g). Any other standard proposed by the Concessionaire

2.3. All items of building works shall conform to Central Public Works Department (CPWD) specifications for Class 1 building works and standards given in the National Building Code (NBC). To the extent specific provisions for building works are provided in IRC/MORTH specifications, the same shall prevail over the CPWD/NBC provisions. For this purpose, building works shall be deemed to include road furniture, roadside facilities, landscape elements and/or any other works incidental to the building works.

2.4. The Geometric Design Standards for the Project/Project Facilities shall be as per IRC: 73 code as applicable to the National Highways; the important geometric design requirements are appended as Appendix D-2. Where IRC Standards are silent Geometric Design Standards for Ontario Highways shall be adopted. These should be adhered to and the geometric design standards are the minimum requirements to be maintained for the Project Highway..

2.5. The designed parameters for horizontal and vertical alignments shown in the PR are the minimum requirements to be maintained for the Project Highway The concessionaire may adopt better standards enhancing the requirements of safety and mobility .

3. Materials and Specification

3.1. All materials and specifications shall be consistent with IRC/MORTH specifications. Where these are silent, the standards in the same order of preference as in Clause 2.2 shall be used.

3.2. For items other than road and bridge works, where tailor made specifications are not available in the PR, the same shall be finalised in consultation with the Independent Consultant.

3.3. Preparation of schemes for highway development, restriction on building lines, control lines, control of access, prevention of unauthorised occupation of land and removal of encroachment shall be as per IRC: SP: 15.

3.4. Modified Bitumen conforming to IRC:SP:53-2002 shall be used for surfacing bituminous layers on main carriageway including shoulders and service road.

3.5. Flyash may be used as fill material in embankment, if available within the radius of 100 km from the project road, in accordance with IRC:SP:58 – 2001.

4. Embankment Design

4.1. Cut and fill slopes shall be appropriate to the nature of the material and the height of embankment or depth of cut. The slopes shall be safe against failure.

4.2. Material used in the fill and its compaction requirements shall conform to IRC-36. Where these specifications are in variance with the MoRT&H specifications the latter shall govern and be followed.

5. Pavement Design

5.1. Pavement Design shall be based on the following parameters :

a) Traffic Forecast : As per Project Report or as assured by the Concessionaire (Maximum shall be 145 MSA)

b) Design Life : I) Flexible Pavement 15 years

II)Rigid Pavement 30 years

c). Flexible Pavement

i) New Carriageway

The flexible pavement for new carriageway (main as well as service roads) shall be designed as per the IRC method or the AASHTO method or any other international method. The composition and thickness of various layers of pavement shall not be less than those required as per IRC:37 for minimum design traffic of 145 MSA for main carriageway and 25 MSA for service roads. For the main carriageway, the concessionaire should however satisfy himself in this regard and should consider higher traffic (than minimum specified 145 MSA) for design purposes incase required as per projected traffic considering 15 year design life.

To ensure internal drainage of the pavement structure, the granular sub-base layer/filter layer functioning as drainage layer (GSB/WMM) shall extend to full width across the shoulders on the embankment to the side drain. The finished pavement profile for the total project length shall be designed so that the bottom level of the subgrade always remains above the Highest Flood Level (HFL) and in any case shall not be lower than as defined in the PR. Modified bituminous binder conforming to IRC:SP:53-2002 should be used in the surfacing layers.

ii. Strengthening of the existing carriageway :

Strengthening of the existing flexible pavement shall be done with a bituminous overlay designed in accordance with IRC:81 or procedures specified by the Asphalt Institute, USA or any other international method. Requirement of strengthening of existing pavement as assessed by the design consultants are given in project report. The concessionaire may adopt alternate methods of strengthening the pavement. However, the following minimum requirements of profile, both longitudinal and cross shall have to be achieved and provided.

Cross profile :	Camber of 2.5% minimum super elevation as per geometric design.
Longitudinal profile :	Vertical curves as per geometric design Straight length between two curves - minimum 30 m

Over the profile corrective course as per requirement, a minimum of 50 mm dense bituminous macadam and 50 mm thick bituminous concrete layer shall be provided.

iii. Paved shoulders:

The composition of Pavement Layers of the paved shoulders shall not be lower than the adjacent flexible pavement of the mainline project highway.

d). Rigid Pavement

i). Rigid pavement may be designed as per IRC, AASHTO or any other international code/ specification considering 30 year design life.

ii). To ensure internal drainage of the pavement structure, the granular sub-base layer/filter layer functioning as drainage layer (GSB/WMM) shall extend to full width across the shoulders on the embankment to the side drain. The finished pavement profile for the total project length shall be designed so that the bottom level of the sub grade always remains above the Highest Flood Level (HFL) and in any case shall not be lower than as defined in the PR.

iii). Paved shoulders :

The paved shoulders adjoining the rigid pavement may be either rigid or flexible. In case of shoulders of rigid pavement, composition of the paved shoulders shall not be lower than the adjacent main pavement. In case of shoulders of flexible pavement, the composition shall not be lower than those required for main carriageway.

6. Drainage System

6.1. An effective surface and sub-surface drainage system of pavement structure shall be designed as stipulated in IRC SP : 42.

6.2. An effective drainage system shall also be planned and designed for the drainage of medians, interchanges, intersections/junctions, underpasses, service roads, toll plazas, Wayside Amenities – Service Area, Truck Lay-bye areas, Bus Bays and other highway features including the area between main carriageway and service road ensuring that there shall be no pooling of water at any time on the project highway.

6.3. Storm water should be directed away from the bridge deck by providing kerb and gutter on the approaches for a minimum distance of 50 m beyond the bridge and carried by a chute to the roadside channel in order to avoid embankment erosion.

6.4. In rural stretches of the Project Highway, roadside channels (flat bottomed) shall intercept and remove surface run-off from the highway ROW and the adjacent areas and will be drained to the nearest available natural watercourse. These shall have adequate capacity for the design run-off and be located and shaped to avoid creating traffic hazard and erosion of soil.

6.5. Concrete lined / masonry drains under footpath in urban stretches where service roads have been provided, shall be located on both side of the Project Highway. The capacity of these drains shall be sufficient to carry surface run-off of drainage area of highway ROW.

6.6. Drainage channels and pipe shall be installed at crossings with service pipes and utilities ensuring that conflicts do not occur.

6.7. Drainage of highway pavements on a highway embankment and steep grade will require designed outlet by means of kerb and gutter and concrete chutes / spilways along the side slope of the embankment in order to prevent its erosion.

7. Structures : Culverts, Bridges, Underpasses,ROB's and retaining walls

The design standards and loading to be considered for culverts, bridges underpasses, overpasses and retaining walls shall be those laid down in the relevant IRC codes. Railways specifications shall be followed for ROB's if desired by Railways. Where the said codes are found wanting or silent, other codes in the same order of preference as in Clause 2.2 shall be used.

7.1. All new major structures shall be 6-lane. Any existing bridge including the ROB or culvert found to be structurally unsafe and/or deficient to carry the IRC design load (based on non-destructive testing including full scale load testing) shall be replaced or rehabilitated.

7.2. Special Design Requirements

a). NP4 type pipes shall be used for all pipe culverts that are required for reconstruction. Incase of existing culverts of dia. 90-100 cm and which are in sound condition functioning satisfactorily, be extended using NP4 class pipes of existing diameter. For all pipe culverts having pipe dia. less than 90 cm, these shall be replaced by pipes of 1.20 m dia. (NP4 class) under both the carriageways and/or extension of pipe culverts. Where minimum depth of pipe cover is not available, profile of the highway may be raised or the culverts embedded in concrete in consultation with and approved by the Independent Consultant. Minimum diameter of pipes for new/ reconstruction cross drainage structures shall be 1.2m.

b). Where an existing structure or culvert is twinned, the profiles of the new and existing structures and their approaches shall be same. Also suitable protection of the embankment between the structures in the median portion shall be provided either by extending the abutment wall or constructing a retaining wall extending up to the bridge parapet wall.

c). Bridge superstructure may be of Reinforced concrete, prestressed concrete or steel-concrete composite construction. Similarly, the substructure and foundations may also be concrete, steel or steel-concrete composite construction.

d). Bearings of all bridges shall be easily accessible for inspection and maintenance.

e). Existing expansion joints should be working at all times and shall be timely replaced without causing additional stresses for the structure.

f). The box girder superstructure's minimum clear depth inside the box shall be 1.75 m with suitable opening in the end cross girder for inspection within the box in the entire length. Structures with less number of joints shall be preferred.

g). Reinforced Earth / R.C.C. Retaining Wall type shall be library provided through urban areas for high fill/embankment with aesthetically pleasing appearance. Design life of reinforcing elements for earth retaining structures shall be 100 years minimum. Structure with viaduct shall be provided in urban sections for ensuring unhindered local cross movement of people and slow moving vehicular traffic besides providing easy access for them to come on project highway.

8. At-Grade Intersections

8.1. At-Grade Intersections shall be designed according to the IRC Special Publication 41 'Guidelines for the Design of At-Grade Intersections in Rural and Urban Areas'

and the MoRT&H Type Designs for Intersections on National Highways, with modifications where required.

8.2. For the design of elements not covered in the said publications the AASHTO publication `A Policy on the Geometric Design of Highway and Streets' shall be followed.

9. Interchanges

9.1. Geometric design standards for elements of interchanges are given in **Appendix D-2**

9.2. For interchange elements where Geometric design standards are not covered in the said Appendix D-2, design Guidelines IRC-92 supplemented by relevant MoRT&H and the AASHTO publication `A Policy on the Geometric Design of Highway and Streets' shall be used.

10. Illumination

10.1. The average level of illumination at the location of major intersection/ junctions, toll plazas, wayside amenities-service areas, Truck Lay-bys shall be 20 lux with suitable high mast poles approved by Independent Consultant/NHAI.

10.2. The layout of the lighting system together with type of luminaries for different locations shall be determined in consultation with the Independent Consultant.

10.3. Arrangement of lighting installations shall be staggered except on curves.

10.4. The layout of lighting poles, their height and spacing shall be finalized in consultation with the Independent Consultant so that the minimum illumination level prescribed in the aforesaid clauses above can be achieved;

10.5. Overhead electrical power and telecommunication lines erected within the ROW by the Concessionaire shall be provided with adequate clearance so that safe use of the highway is not affected.

10.6 Vertical and horizontal clearances shall conform to IRC: 32(1969).

11. Highway Signs

11.1. All road signs shall be with retro-reflective sheet of high intensity grade conforming to ASTM D-4957-01/ (type VIII and type IX) and as per clause 801 of MoRT&H specifications. The retro reflective sheet with engineering grade shall NOT be used and instead micro-prismatic shall be used.

11.2. The road signs erected on the Project Highway shall conform to IRC : 67, Code of Practice for Road Sings.

11.3. For overhead signs the standards prescribed by MoRT&H shall be followed. Where these are silent, standards prescribed in the same order of preference as in Clause 2.2 shall be used.

11.4. The overhead signs shall be placed on a structurally sound gantry or cantilever structure made of tubular structure or steel structure as shown in the DPR. The final location shall be finalized in consultation with the Independent Consultant. These signs shall be of high intensity retro reflective sheeting conforming to ASTM D-4957-2001/ (type VIII and type IX). The height, lateral clearance and installation of the sign structures shall be as per the MoRT&H / IRC specifications;

11.5. On kerbed road sections the edges of the road signs shall be at least 600 mm away from the edge of the kerb, whereas on un-kerbed road sections the edge of the signs shall be at a distance of 2.5 m from the edge of the carriageway;

11.6. Design and location of route marker signs for National Highways shall be as per the IRC:2(1968). The design and placement of highway kilometre stones, the dimensions of stones, size, colour, arrangement of letter shall be as per IRC : 26(1967) and IRC : 8(180). The design, location and materials to be used for road delineators shall be as per IRC : 79(1981), the colour, configuration, size and location of size of traffic signs shall be as per IRC : 67(2001);

11.7. Road Delineators shall conform to the recommended practice as per IRC 79(1981)

12. Road Markings

12.1. Road markings shall be as per IRC:35. These markings shall be applied to road centre lines, edge lines, continuity line, stop lines, give-way lines, diagonal / chevron markings, zebra crossing and at parking areas by means of an approved self-propelled machine which has a satisfactory cut-off value capable of applying broken lines automatically;

12.2. Road markings shall be of hot applied thermoplastic materials with glass reflectorising beads as per relevant clauses of section 803 of MoRT&H specifications;

12.3. Synthetic enamel paints shall be used to display details of structure number, span arrangement etc on all culverts and bridges with required description as per MoRT&H guidelines.

13. Traffic Safety Measures

13.1. Pedestrian Guard Rail shall be designed to control and guide pedestrian road crossing movement safely at designated location.

13.2. Concrete Crash Barriers and/or Steel Beam Guardrails shall be installed mainly at major hazard locations. Concrete / steel Crash Barrier shall be constructed at the outer edge of both the shoulders of the road. It will also generally be installed on sections of the road (a) where embankment height is more than 3 m, (b) bridge approaches, and (c) where the Project Road passes through large ponds. Concrete Crash Barriers shall be installed along the edge of the outside shoulder with an offset of 2.5m from the edge of the driving pavement.

13.3. Both Concrete Crash Barriers and/or Steel Beam Guardrails (W-shaped) installation shall have short transition flared section at the approach ends.

13.4. Metallic crash barriers shall be provided along the full length of the ramps (both sides) of Interchanges and at important At-Grade Intersections.

14. Landscaping

14.1. Planting along the highway shall follow a variety of schemes depending upon location requirement as per the IRC: SP21. The choice of trees to be planted shall also be made as per IRC: SP21 : ``Manual of Landscaping''. Eucalyptus (all species) is not recommended for planting. Local, indigenous species that grow in that area shall be planted.

14.2. On medians and island, planting of dust and gaseous substance-absorbing shrubs are recommended. To ensure survival from herbivorous animals, shrubs / plants containing latex shall only be planted.

14.3. The treatment of the highway embankment slopes shall be as per the recommendations of IRC:56, depending upon the soil type involved. Pitching works on the slopes shall be as per the MoRT&H Specifications.

14.4. No advertisement / hoarding shall be allowed within the ROW limits of the Project Highway.

14.5. Visibility of any signs, signals or any other devices erected for traffic control, traffic guidance and / or information shall not be obstructed by plantation.

15. Ancillary Facilities

15.1. Wayside Amenities – Service Area

a). Wayside Amenity – Service Area design details shall be as per project report.

b). All building works shall be designed to meet their functional requirements and shall be compatible with the regional architecture and microclimate. Locally available materials shall be given preference but not at the cost of construction quality. All brick and stone masonry works shall be of first class type and as per good practice. All steel works shall conform to section 6., Part VI of the NBC and section 1900 of MoRT&H specifications.

c). All the open spaces around the building(s) shall be landscaped. Boundary walls, fencing with barbed wires, controlled entry points and cattle-catches at all entry and exist points to the buildings shall be provided to protect them from intruders and animals.

d). The design of water storage (including overhead reservoir) and distribution systems, laying of mains and pipes, cleaning and disinfecting of water supply system shall be as per relevant clauses of section 1 Part IX of the NBC.

e). The design, layout and construction of sanitary sewer and sewage disposal system with all ancillary works such as connections, manholes and inspection chambers and septic tanks shall be as per relevant clauses of Section 2, Part IX of the NBC. Each septic tank shall have a soak pit of adequate size. The location of the septic tanks and subsurface absorption system shall be as per clause 12.15.1 of part III of NBC.

f). The design and location of all electrical installations, distribution system, wiring, fittings, accessories and lighting protection of buildings shall conform to the relevant clauses of Section 2, Part VIII of the NBC;

g). The internal road system have the same material specifications as that of the mainline road and width shall conform to Clause 4 of part III of NBC;

h). For Internal parking facility, shall be constructed as per set out in the DPR.

15.2. Truck Lay-by

a). The layout and facilities thereon will be designed considering site requirement so as to cater to the estimated parking demand. Layout or design shall be reviewed and accepted by the Independent Consultant. Parking shall be parallel to the road any the lay-bys shall be setback from the edge of the carriageway. The Lay-bys shall be landscaped with low-density plantation to provide shade.

b). The parking spaces shall have the similar specification as that of the main carriageway or be so paved by pre cast Cement Concrete Block M-40 grade concrete to withstand vehicle loads and forces due to frequent acceleration and deceleration of vehicles. Parking bay/lots shall have proper cross slope and drainage. They shall be marked with paints as per IRC : 35 to demarcate

parking and circulation spaces. Illumination shall be provided as per IS : 1944, Park I and II).

c). The parking lay-bys shall have basic facilities, such as, drinking water kiosk, and toilet, proper waste disposal system, electricity, water etc as described elsewhere in this Schedule.

15.3. Bus Bays

Bus Bays shall be provided at location as shown in Schedule B. The typical design shall be followed for all locations. Generally, the bus bays shall provide safe entry and exit of buses from Project Highway and safe boarding and alighting of passengers. The shelter structure shall be structurally safe and functional so as to protect the waiting passengers adequately from sun, rain and wind. The Bus Bay area shall be provided with an effective drainage system.

15.4. Road Furniture

Road furniture such as traffic signs, kilometre posts, hectometre stones, ROW pillar etc on the Project Highway provided as per IRC Codes shall meet requirements of MoRT&H specifications, other codes in the same order of preference as in Clause 2.2 shall be used.

15.5. Roadside Facilities

15.5.1. Litter Bin

Litter Bin shall be located conveniently in Wayside Amenities – Service Area, and Truck Lay-bys, it shall be simple in shape and its colour and finish shall be conspicuous. Litterbin shall be post mounted and/or swivel type. The mounting and fixing components shall be robust. The bin shall have drainage holes for periodic flushing. It shall also be theft, vandal and fireproof. It shall be resistant to wear and tear and the material and design shall be such as to require minimal maintenance. The capacity shall be minimum 30 litres.

15.5.2. Public Toilets

Separate Public Toilets for men and ladies shall be located in Wayside Amenities – Service Area, Truck Lay-bys shown in the DPR. The capacity of toilets shall be for minimum 25 users. Toilets shall be provided with septic tank and soak pit. ``Sulabh Souchalaya'' type toilet is also acceptable. Generally, the Public Toilets shall be simple in design and the area around the toilet block shall be paved with cement concrete tiles or any other suitable material and have cross slope so as to ensure speedy disposal of water.

15.5.3. Drinking Water Kiosk

Piped water supply shall be provided to the Wayside Amenity – Service Area. Tube wells shall be provided in Truck Lay-bys. The design of the water kiosk shall be such as to require minimal maintenance. Area around the kiosk shall be paved with cement concrete tiles or any other suitable material and sloped away so as to ensure speed disposal of water. The water supplied shall conform to IS: 1050 for quality of potable water. The location of Drinking Water Kiosk shall be finalized in consultation with the Independent Consultant.

15.6. TOLL PLAZAS

'Open System' of toll collection shall be provided on the Project Highway with collection of user fee from vehicles only at the toll plaza. There shall be a total of minimum 8 (Eight) lanes having a semi-automatic system of toll collection comprising equipments for registering of vehicle classification, ticket issuing, data processing and power supply. One toll lane in each direction shall be provided for traffic not required to pay fees. Appropriate technology shall be used in this regard so that not more than 6 vehicles/Lane queue up during the peak hours. Traffic volume on NH-22 being very high justify Electronic Toll Collection (ETC) system installed on at least one lane in each direction.

The conceptual design for Toll plaza is shown herewith as **Fig. D-1** after which needs to be suitable modified for the required member of lanes to be provided so that during peak traffic hours, not more than 6 vehicles per lane should queue up at any time during the concession period. The pavement type to be provided at the location of each Toll Plaza must be of 'RIGID' type including the flares on either side up to the distance where joint with bituminous pavement having normal cross-section is formed.

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List of IRC Codes / Standards / Acts for Road/Bridge Works

IRC: 2 -1968	Route Marker Signs for National Highways (First Revision)
IRC: 3 -1983	Dimensions and weight of Road Design vehicles. (First Revision)
IRC: 5 -1998	Standard Specification & Code of Practice for Road Bridges, Section I – General Features of Design (7th Revision)
IRC: 6 -2000	Standard Specifications & Code of Practice for Road Bridges, Section II – Loads and Stresses (Fourth Revision)
IRC: 7 -1971	Recommended Practice for Numbering Bridges and Culverts (First Revision)
IRC: 8 -1980	Type Designs for Highway Kilometre Stones (Second Revision)
IRC: 9 -1972	Traffic Census on non urban roads (First Revision)
IRC: 10 -1961	Recommended Practice for Borrowpits for Road Embankments Constructed by Manual Operation
IRC: 11 -1962	Recommended practice for the design and layout of cycle tracks
IRC: 12 -1983	Recommended Practice for Location and Layout of Roadside Motor-Fuel Filling and Layout of Roadside Motor-Fuel Filling and Motor-Fuel Filling-cum-Service Stations (Second Revision)
IRC: 14 -1977	Recommended Practice for 2cm Thick Bitumen and Tar Carpets (Second Revision)
IRC: 15 -2002	Standard Specifications & Code of Practice for Construction of Concrete Roads (Third Revision)
IRC: 16 -1989	Specification for Priming of Base Course with Bituminous Primers (First Revision)
IRC: 17 -1965	Tentative Specification for Single Coat Bituminous Surface Dressing
IRC: 18 -2000	Design Criteria for Prestressed Concrete Road Bridges (Post-Tensioned Concrete) (Third Revision)
IRC: 19 -1977	Standard Specification and Code of Practice for Water Bound Macadam(Second Revision)
IRC: 20 -1966	Recommended Practice for Bituminous Penetration Macadam (Full Grout)
IRC: 21 -2000	Standard Specifications and Code of Practice for Road Bridges. Section-III Cement Concrete (Plain and reinforced) (Third revision)
IRC: 22 -1986	Standard Specifications and Code of Practice for Road Bridges. Section-VI Composite Construction (First Revision).
IRC: 23 -1966	Tentative Specification for Two Coat Bituminous Surface Dressing
IRC: 24 -2001	Standard Specifications and Code of Practice for Road Bridges. Section-V Steel Road Bridges (First Revision)

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List of IRC Codes / Standards / Acts for Road/Bridge Works

IRC:	25 -1967	Type Designs for Boundary Stones
IRC:	26 -1967	Type Design for 200-Metre Stones
IRC:	27 -1967	Tentative Specifications for Bituminous Macadam (Base & Binder Course)
IRC:	28 -1967	Tentative specification for the construction of stabilised soil roads with soft aggregates uin areas of moderate and high rainfall.
IRC:	29 -1988	Specification for Bituminous Concrete (Asphaltic Concrete) for Road Pavement (First Revision)
IRC:	30 -1968	Standard Letters and Numerals of Different Heights for Use on Highway Signs
IRC:	31 -1969	Route Marker Signs for State routes.
IRC:	32 -1969	Standard for Vertical and Horizontal Clearances of Overhead Electric Power and Telecommunication Lines as Related to Roads
IRC:	33 -1969	Standard procedure for evaluation and condition surveys of stabilised soil roads.
IRC:	34 -1970	Recommendations for road construction in waterlogged area.
IRC:	35 -1997	Code of Practice for Road Markings (with Paints) (First Revision)
IRC:	36 -1970	Recommended Practice for Construction of Earth Embankments for Road Works
IRC:	37 -2001	Guidelines for the Design of Flexible Pavements (Second Revision)
IRC:	38 -1988	Guidelines for Design of Horizontal Curves for Highways and Design Tables (First Revision)
IRC:	39 -1986	Standards for Road - Rail level crossings (First Revision)
IRC:	40 -2002	Standard Specifications and Code of Practice for Road Bridges, Section IV - Brick, Stone and Block Masonry (Second Revision)
IRC:	41 -1997	Type designs for check barriers (First Revision)
IRC:	42 -1972	Proforma for record of test values of locally available pavement construction materials.
IRC:	43 -1972	Recommended practice for tools equipment and appliances for concrete pavement construction.
IRC:	44 -1976	Tentative guidelines for cement concrete mix design for pavements (for non air entrained and continuously graded concrete) First Revision.
IRC:	45 -1972	Recommendations for Estimating the Resistance of Soil Below the Maximum Scour Level in the Design of Well Foundations of Bridges
IRC:	46 -1972	A policy on road side advertisements (First Revision)
IRC:	47 -1972	Tentative specifications for built up spray grout.

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List of IRC Codes / Standards / Acts for Road/Bridge Works

IRC:	48 -1972	Tentative Specification for Bituminous Surface Dressing Using Pre-coated Aggregates
IRC:	49 -1973	Recommended Practice for the Pulverization of Black Cotton Soils for Lime Stabilisation
IRC:	50 -1973	Recommended Design Criteria for the Use of Cement-Modified Soil in Road Construction
IRC:	51 -1992	Guidelines for the use of soil lime mixes in road construction (First Revision)
IRC:	52 -2001	Recommendation about the alignment survey and geometric design of hill roads. (Second Revision)
IRC:	53 -1982	Road accident forms A-1 (First Revision)
IRC:	54 -1974	Vertical Clearances at Underpasses for Vehicular Traffic.
IRC:	55 -1974	Recommended practice for sand bitumen base courses.
IRC:	56 -1974	Recommended Practice for Treatment of Embankment Slopes for Erosion Control
IRC:	57 -1974	Recommended Practice for Sealing of Joints in Concrete Pavements
IRC:	58 -2002	Guidelines for the design of plain jointed Rigid pavements for highways (Second Revision)
IRC:	59 -1976	Tentative Guidelines for the design of gap graded cement concrete mixes for road pavements.
IRC:	60 -1976	Tentative guidelines for the use of lime fly ash concrete as pavement base or sub base.
IRC:	61 -1976	Tentative Guidelines for the construction of Cement Concrete Pavements in Hot Weather
IRC:	62 -1976	Guidelines for control of Access on Highways
IRC:	63 -1976	Tentative Guidelines for the Use of Low Grade Aggregates and Soil Aggregate Mixtures in Road Pavement Construction
IRC:	64 -1990	Guidelines for Capacity of Roads in Rural Areas (First Revision)
IRC:	65 -1976	Recommended practice for traffic rotaries.
IRC:	66 -1976	Recommended Practice for Sight Distance on Rural Highways
IRC:	67 -2001	Code of Practice for Road Signs (First Revision)
IRC:	68 -1976	Tentative Guidelines on cement fly ash concrete for rigid pavement construction.
IRC:	69 -1977	Space Standards for Roads in Urban Areas
IRC:	70 -1977	Guidelines on regulations and control of mixed traffic in urban areas.

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IRC:	71 -1977	Recommended practice for preparation of notations.
IRC:	72 -1978	Recommended Practice for Use and Upkeep of Equipment, Tools and Appliances for Bituminous Pavement Construction
IRC:	73 -1980	Geometric Design Standards for Rural (Non-Urban) Highways
IRC:	74 -1979	Tentative Guidelines for lean cement concrete and lean cement flyash concrete as a pavement base or sub base.
IRC:	75 -1979	Guidelines for the Design of High Embankments
IRC:	76 -1979	Tentative Guidelines for strucural strength evaluation of Rigid airfield pavements.
IRC:	77 -1979	Tentative Guidelines for repair of concrete pavements using synthetic resins.
IRC:	78 -2000	Standard Specifications and Code of Practice for Road Bridges. Section-VII Foundations & Sub-structure (Second Revision).
IRC:	79 -1981	Recommended Practice for Road Delineators
IRC:	80 -1981	Type Designs for Pick-up Bus Stops on Rural (i.e., Non-Urban) Highways
IRC:	81 -1997	Tentative Guidelines for Strengthening of Flexible Road Pavement Using Benkelman Beam Deflection Technique (First Revision)
IRC:	82 -1982	Code Practice for Maintenance of Bituminous Surface of Highways
IRC:	83 -1999	Standard Specifications and Code of Practice for Road Bridges. Section-IX Bearings, Part-I: Metallic Bearings.
IRC:	83 -1987	Standard Specifications and Code of Practice for Road Bridges, (Part-II) Section-IX Bearings, Part-II : Electrometric Bearings
IRC:	83 -2002	Standard Specifications and Code of Practice for Road Bridges, (Part-II) Section-IX Bearings, Part-III :POT POT-CUM-PTFE, PIN AND METALLIC GUIDE BEARINGS
IRC:	84 -1983	Code of Practice for Curing of Cement Concrete Pavement
IRC:	85 -1983	Recommended practice for accelerated strength testing and evaluation of concrete for Road and Airfield Constructions.
IRC:	86 -1983	Geometric Design Standards for Urban Roads in Plains
IRC:	87 -1984	Guidelines for the design and erection of falsework for road bridges.
IRC:	88 -1984	Recommended practice for lime flyash stabilised soil base/ sub base in pavement construction.
IRC:	89 -1997	Guidelines for Design & Construction of River Training & Control Works for Road Bridges (First Revision)
IRC:	90 -1985	Guidelines of Selection, Operation and Maintenance of Bituminous Hot Mix Plant

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List of IRC Codes / Standards / Acts for Road/Bridge Works

IRC:	91 -1985	Tentative guidelines for construction of cement concrete pavement in cold weather.
IRC:	92 -1985	Guidelines for the Design of Interchanges in Urban Areas
IRC:	93 -1985	Guidelines on Design and Installation of Road Traffic Signals
IRC:	94 -1986	Specification for Dense Bituminous Macadam
IRC:	95 -1987	Specifications for Semi dense Bituminous concrete
IRC:	96 -1987	Tentative Specifications for two coat surface dressing using cationic bitumen emulsion.
IRC:	97 -1987	Tentative Specifications for 20 mm thick pre-mix carpet using cationic bitumen emulsion.
IRC:	98 -1997	Guidelines on Accommodation of Underground Utility Services Along and Across Roads in Urban Area (First Revision)
IRC:	99 -1988	Tentative guidelines on the provisions of sped breakers for control of vehicular speeds on minor roads.
IRC:	100 -1988	Tentative Specifications for single coat surface dressing using cationic bitumen emulsion.
IRC:	101 -1988	Guidelines for design of continuously reinforced concrete pavement with elastic joints.
IRC:	102 -1988	Traffic studies for planning bypasses around towns.
IRC:	103 -1988	Guidelines for Pedestrian Facilities
IRC:	104 -1988	Guidelines for Environmental impact assessment of Highway projects.
IRC:	105 -1988	Tentative Specifications for Bituminous concrete (Asphaltic concrete) for airfield pavements.
IRC:	106 -1990	Guidelines for Capacity of Urban Roads in Plain Areas
IRC:	107 -1992	Tentative Specifications for Bitumen Mastic Wearing Courses
IRC:	108 -1996	Guidelines for Traffic Prediction on Rural Highways
IRC:	109 -1997	Guidelines for Wet Mix Macadam

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List of IRC Codes / Standards / Acts for Road/Bridge Works

IRC:SP:	4 -1966	Bridge Loading Round the World
IRC:SP:	11 -1988	Handbook of Quality Control for Construction of Roads and Runways (Second Revision)
IRC:SP:	13 -2004	Guidelines for the Design of Small Bridges and Culverts.
IRC:SP:	14 -1973	A Manual for the Application of the Critical Path Method to Highway Project in India
IRC:SP:	15 -1996	Ribbon Development Along Highways and its Prevention
IRC:SP:	17 -1977	Recommendations About Overlays on Cement Concrete Pavements
IRC:SP:	18 -1978	Manual for Highway Bridge Maintenance Inspection.
IRC:SP:	19 -2001	Manual for Survey, Investigation and Preparation of Road Projects (First Revision)
IRC:SP:	20 -2002	Rural Roads Mannual
IRC:SP:	21 -1979	Landscaping of Road
IRC:SP:	22 -1980	Recommendations for the Sizes for each Type of Road Making Machinery to Cater to the General Demand of Road Works
IRC:SP:	23 -1983	Vertical Curves for Highways
IRC:SP:	24 -1984	Guidelines on the Choice and Planning of Appropriate Technology in Road Construction
IRC:SP:	25 -1984	Gopi and his Road Roller-Guidelines on Maintenance of Road Roller
IRC:SP:	26 -1984	Report Containing Recommendations of IRC Regional Workshops on Rural Road Development (with Supplementary Notes)
IRC:SP:	27 -1984	Report Containing Recommendations of IRC Regional Workshops on Highway Safety
IRC:SP:	28 -1995	Road Transport and Energy (First Revision)
IRC:SP:	29 -1994	Directory of Indgenous Manufacturers of Road/Bridge Construction Machiney & Important Bridge Components (First Revision)
IRC:SP:	30 -1993	Manual on Economic Evaluation of Highway Project in India (First Revision)
IRC:SP:	31 -1992	New Traffic Signs
IRC:SP:	32 -1988	Road Safety for Children (5-12 Years Old)
IRC:SP:	33 -1989	Guidelines on Supplemental Measures for Design, Detailing & Durability of Important Bridge Structures.
IRC:SP:	34 -1989	General Guidelines About the Equipmentfor
IRC:SP:	35 -1990	Inspection and Maintenance of Bridge.
IRC:SP:	36 -1991	Guidelines on Format for IRC Standards
IRC:SP:	37 -1991	Guidelines for Evaluation of Load Carrying Capacity of Bridges
IRC:SP:	38 -1992	Manual for Road Investment Decision Model (with Floppy Disk)
IRC:SP:	39 -1992	Guidelines on Bulk Bitumen Transportation & Storage Equipment
IRC:SP:	40 -1993	Guidelines on techniques for strengthening and rehabilitation of bridges.
IRC:SP:	41 -1994	Guidelines on Design of At-Grade Intersections in Rural & Urban Areas
IRC:SP:	42 -1994	Guidelines on Road Drainage
IRC:SP:	44 -1994	Highway Safety Code
IRC:SP:	45 -1996	Time Series Data on Road Transport Passenger and Freight Movement (1951-1991)
IRC:SP:	46 -1997	Steel Fibre Reinforced Concrete For Pavements

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IRC:SP: 47 -1998 Guidelines on Quality System for Road Bridges (Plain, Reinforced, Prestressed and Composite Concrete).
IRC:SP: 48 -1998 Hill Road Manual
IRC:SP: 49 -1988 Guidelines for the Use of Dry Lean Concrete as Sub-base for Rigid Pavement
IRC:SP: 50 -1999 Guidelines on Urban Drainage
IRC:SP: 51 -1999 Guidelines for Load Testing of Bridges
IRC:SP: 52 -1999 Bridge Inspector's Reference Manual
IRC:SP: 53 -2002 Guidelines on Use of Polymer and rubber Modified Bitumen in Road Construction (First Revision)
IRC:SP: 54 -1999 Project Preparation Manual for Bridges
IRC:SP: 55 -2001 Guidelines for Safety in Construction Zones
IRC:SP: 56 -2000 Guidelines for Steel Pedestrian Bridges
IRC:SP: 57 -2001 Guidelines for Quality Systems for Raod Construction
IRC:SP: 58 -2001 Guidelines for Use of Flyash in Road Embankments
IRC:SP: 59 -2002 Guidelines for Use of Geotextiles in Road Pavements and Associated Works
IRC:SP: 60 -2002 An Approach Document for Assessment of Remaining Life of Concrete Bridges
IRC: Special Report II, 1992

III Ministry of Surface Transport Publications

Most Manual for Maintenance of Roads, 1983

MORT&H Pocketbook for Bridge Engineers, 2000 (First Revision)

MORT&H Pocketbook for Highway Engineers, 2002 (Second Revision)

MOST Handbook on Road Construction Machinery, 1985

MORT&H Specifications for Road and Bridge Works, 2001 (Fourth Revision)

MOST Standard Plans for 3.0 m Span Reinforced Cement Concrete Solid Slab Superstructure with and without Footpaths for Highways, 1991

MOST Standard Plans for Highways Bridges R.C.C. T-Beam & Slab Superstructure - Span from 10 m to 24 m with 12 m width, 1991

MOST Standard Plans for Highway Bridges PSC Girder and RC Slab Composite Superstructure for 30 m Span with and without Footpaths, 35 m Span with Footpaths and 40 m Span without Footpaths, 1991
MOST Standard Drawings for Road Bridges - R.C.C. Solid Slab Superstructure (15* & 30* SKEW Span 4.0 m to 10.0 m (with and without Foothpaths), 1992

MOST Type Designs for Intersections on National Highways, 1992

MOST Standard Bidding Document Procurement of Civil Works, PartI: Complete Bidding Document, Part II: Forms

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List of IRC Codes / Standards / Acts for Road/Bridge Works

MOST Computer Aided Design System for High Embankment Problems, 1993

MORT&H Standard Data Book for Analysis of Rates, 2003 (First Revision)

MOST Addendum to Ministry's Technical Circulars and Directives on National Highways and Centrally Sposored Road & Bridge Projects (Aug. 88 to Dec. 92), 1993

MOST Standard Drawing for Road Bridges R.C.C. Solid Slab Superstructure (22.5* SKEW) R.E.Span 4M to 10M (with and without Footpath), 1996

MOST Addendum to Ministry's Technical Circulars and Directives on National Highways and Centrally Sposored Road & Bridge Projects (Jan. 93 to Dec. 94), 1996

Standard Plan for Highway Bridges - Prestressed Concrete Beam & RCC Slab Type Superstructure - Volume -II

MOST Addendum to Technical Circulars & Directives on National Highways & Centrally Sponsored Road & Bridge Works Projects (Jan. 1995 to Dec. 1997)

Model Concession Agreement for Small Road Projects

MOST Standard Plans for Single, Double and Triple Cell Box Culverts with and without Earth Cushion

Manual for Safety in Road Design

MORT&H Report of the Committee on Norms for Maintenance of Roads in India, 2001

MORT&H Road Development Plan - Vision : 2021

MORT&H Manual for Construction and Supervision of Bituminous Works, 2001

BIS PUBLICATIONS

IS: 7537-1974	Road Traffic Signals
IS 10500-1991	Drinking Water
IS: 1944 (Part-I & II) 1970	Code of Practice for lighting of Public thoroughfare : Parts Land 2 For Main and secondary roads (Group-A and B) (First revision) (Amendments No. 1 and 2) Parts – I and 2 in one volume) (Amendments-2).
IS: 1944 (Part-V) 1981	Code of Practice for Lighting of Public Thoroughfares : Parts 5 Lighting for Grade separated junctions, Bridges and Elevated roads (Group – D).
IS: 1944 (Part-VI) 1981	Code of Practice for lighting of Public thoroughfare : Part-6 Lighting for Towns and city centres and areas civic Importance (Group-E).
IS: 10748 – 1995	Hot rolled steel for welded tubes and pipes (First Revision)
NBC	National Building Code
Part-III, NBC:	Development Control rules and general building requirements.

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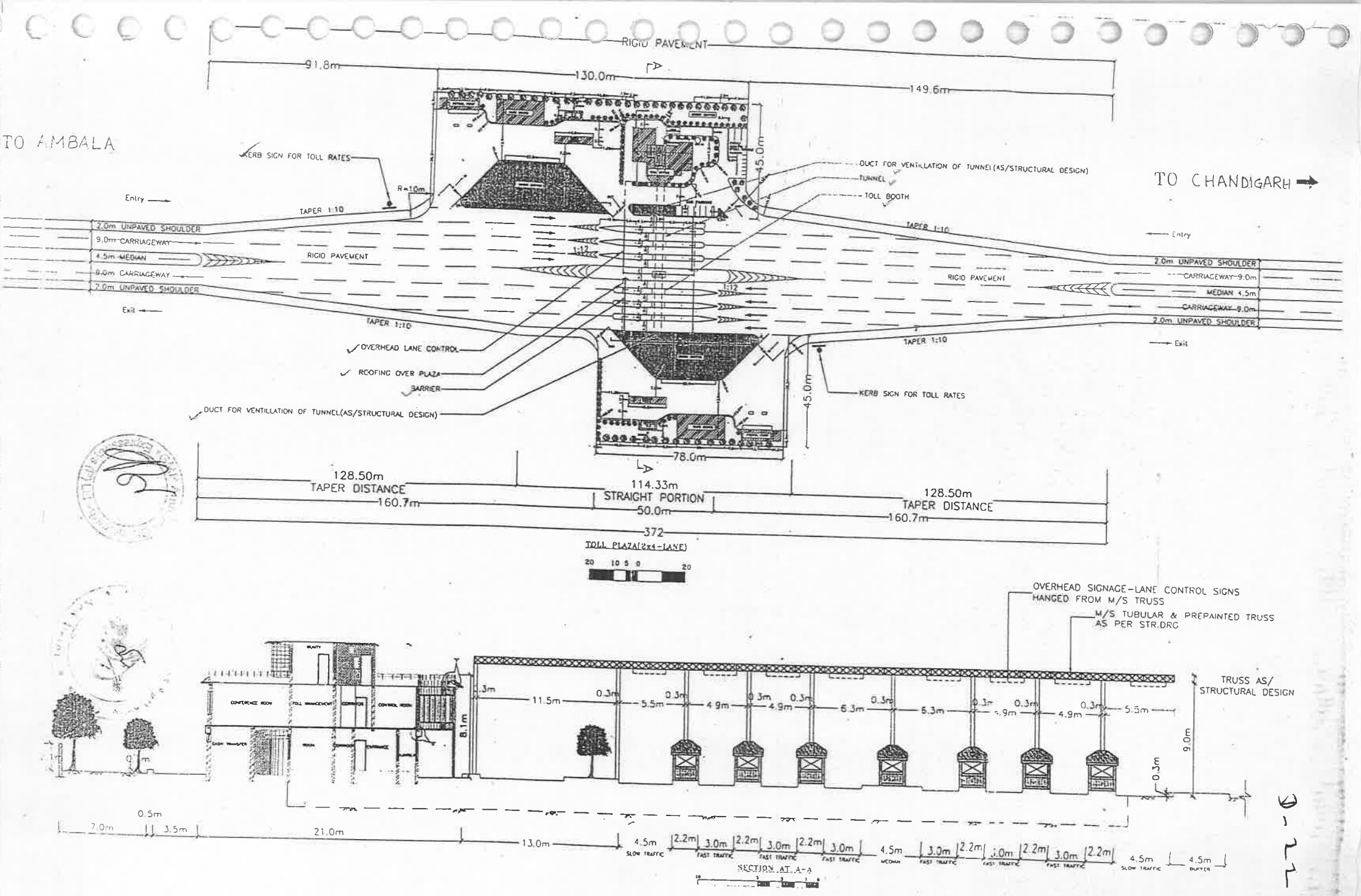
List of IRC Codes / Standards / Acts for Road/Bridge Works

Part-IV, NBC:	Fire Protection
Part-VI, NBC:	Structural Design
Part-VIII, NBC:	Building Services
Part-IX, NBC:	Plumbing Services
	Generic Requirements Permanently lubricated HDPE Telecom Ducts
No. G/CDS-08/01. DEC'99 TEC-DoT	For use as underground optical fibre cable conduits.

GEOMETRIC PARAMETERS AND STANDARDS

Sl. No.	Particulars	Ref code	Unit	Value	Remarks
1	Design Speed	IRC:73-1980	Km/hr	100/80	Ruling/Minimum
2	Cross sectional element	IRC:73:1980			
	(a) Carriageway		m	7.00	Each direction
	(b) Shoulder				,,
	(i) Paved		m	1.50	,,
	(ii) Unpaved		m	Min 1.00 (if not specified)	Near median
	(c) Marginal Strip		m	0.25	Each direction
	(d) Median(raised)				
	(i) Urban area		m	1.50	Each direction
	(ii) Rural area		m	5.00	Each direction
	(e) Service road carriageway		m	5.5/7.5	Each direction
	(f) Separator(Urban areas)		m	0.25	Each direction
	(g) Footpath cum drain (Urban areas)		m	2.00	Each direction
	(h) Utility line strip		m	1.25	Each direction
3.	**Embankment slope**		**Ratio**	**2H:1V < 3m ht.** 3H:1V for ht. between 3 to 6m	**For more than 6m height the slope is to be designed**
4.	**Cross fall**				
	(i) Carriageway		%	2.5	
	(ii) Paved shoulder		%	2.5	
	(iii) unpaved		%	3.0	
5.	**Maximum Super elevation**				
	(i) Plain		%	5	
	(ii) Rolling		%	6	
	(iii) Hilly		%	7	
6	**Coefficient of Lateral Friction**			0.15 (Maximum)	**AASHTO practice will be adopted for detailing**
7	**Minimum Horizontal curve radius**		m	360/230	Ruling/absolute minimum
8	**Stopping sight distance**		m m	180 120	For 100 kmph for 80 kmph

Sl. No.	Particulars	Ref code	Unit	Value	Remarks
9	**Minimum length of vertical curve**		m m	60 50	100kmph 80kmph
	Interchanges				
10.	**Interchange Ramp**				
	a) Design Speed		Km/hr	65	
	b) Carriageway width				
	i) Single Lane		m	5.5	
	ii) Double Lane		m	/	
	c) Shoulder Paved				
	i) Inner (Single Lane)		m	1.5	
	ii) Outer		m	2.5	
	d) Minimum Radius		m	120	
	e) Maximum Super elevation		%	5	
	f) Longitudinal Gradient		m	1 in 30 (max)	
11.	**Interchange Loop Ramp**				
	a) Design Speed		Km/hr	40	
	b) Carriageway width i) Double Lane		m	7.0	
	c) Shoulder Paved i) Inner ii) Outer		m m	1.5 2.5	
	d) Minimum Radius		m	100	
	e) Longitudinal Gradient		m	1 in 30 (max)	



DRG:D-1:TYPICAL LAYOUT OF TOLL PLAZA

SCHEDULE – E

APPLICABLE PERMITS

SCHEDULE E

APPLICABLE PERMITS

(to be obtained before/ on financial close)

1. **Ministry of Finance / RBI**

   i) Approval for foreign Investment and foreign loans, if required
   ii) Approval for import of equipment and machinery for construction and operation, if required
   iii) Exemption of Excise duty on construction material, if required.

2. **Department of Telecommunication**

   i) Permission / clearance for setting up of wireless system, if required
   ii) Clearance / permission for the use of optical fibre cables of DOT, if required

3. **State Government Permits**

Quarrying Permits:

- Permits for extraction of boulder from quarry from ADM Mines
- Permit for installation of crusher from village panchayat and Pollution Control Board
- License for explosives from Explosive controller
- Explosive license for storing Diesel

Electricity:

- Permission required from SEB for installation of DG
- Permission for electrical connection, if power source is available

Water:

- If water has to be taken from river/ reservoir, permission to be obtained from State Irrigation Department

Batching Plant:

- License from inspection of factories
- NOC consent from pollution department

Asphalt Plant:

- Clearance required from village panchayats & Pollution Control Board

Borrow Earth:

- Permission from irrigation department if land taken from irrigation land
- Permission required from village panchayat and ADM mines for Government & private land
- Permission from Local Municipalities and Development Authorities.

Cutting of trees:

- Permission from Forest Department.

Sewage Lines and Water Mains:

- Permission from Local Municipalities and Development Authorities.



SCHEDULE – F

BANK GUARANTEE FOR PERFORMANCE SECURITY



Schedule - I

Government of Karnataka
Registration & Stamps Department

Issued By: CC/4285868
State Bank of Mysore

Certified that a sum of Rs.50/- (Rupees Fifty only) has been paid towards Karnataka Stamp duty by

Sri/Smt: Bank of Baroda

residing at:

s/d/w/o

Sampangiramanagar Branch
Code : 4376 Bangalore 560 027

Br. Name

Date 16 JUL 2005

BANGALORE

Authorised Agent to collect duty on behalf of Government of Karnataka 4376 Code

BANK GUARANTEE FOR PERFORMANCE SECURITY

Gue No. 137
24.08.
Date

From:
Bank of Baroda
Corporate Financial Service Branch,
HJS Chambers, 1st Floor,
No.-26, Richmond Road
Bangalore – 560 025

To: Chairman,
National Highway Authority of India
G – 5 & G – 6, Sector - 10
Dwarka, New Delhi – 110 075

A. M/s GMR Energy Limited and GMR Infrastructure Limited Consortium (the **Consortium**") has confirmed their acceptance vide letter No. SRH/AMCH/0712/2005 dated 12/07/2005 in response to NHAI LOA issued vide letter No. NHAI/BOT/11019/17/2003/237 dated 29/06/2005 for improvement , operation and maintenance of Rehabilitation and Strengthening of existing 2-lane road and widening to 4-lane divided highway from km 5.735 to km 39.960 of NH – 22 and from km 0.000 to km 0.871 of NH – 21 (Ambala – Chandigarh Section) in the State of Haryana & Punjab on Build, Operate and Transfer (BOT) Basis (the "**Project**"). The said Consortium has Promoted and incorporated a Special Purpose Vehicle in the form of a limited liability company M/s GMR Ambala Chandigarh Expressways Pvt Ltd (**Concessionaire**) to enter into the Concession Agreement for undertaking, inter alia, the Project and to perform and discharge all its obligations thereunder.

B. The Concessionaire is required to give ("**NHAI**") a guarantee by a recognized bank or financial institution based in India in the sum of Rs.14,90,00,000/- (Indian Rupees Fourteen Crores Ninty Lacs Only) till Financial Close and Rs. 8,94,00,000/- (Indian Rupees Eight Crores Ninety Four Lacs Only) thereafter as security for compliance with its obligations under the Concession Agreement during the Construction Period.

C. The Guarantor has agreed to give NHAI the abovementioned guarantee on the terms set out herein.

कृते बैंक ऑफ़ बड़ौदा / For BANK OF BARODA
कार्पोरेट वित्तीय सेवा शाखा / C F S Branch
बेंगलोर / BANGALORE - 560 025

मुख्य प्रबंधक / Chief Manager

कृते बैंक ऑफ़ बड़ौदा / For BANK OF BARODA
कार्पोरेट वित्तीय सेवा शाखा / C F S Branch
बेंगलोर / BANGALORE - 560 025

5/25/12

Page - F1

344

50

Government of Karnataka
Registration & Stamps Department

Issued by CC/A 285864
State Bank of Mysore

Certified that a sum of Rs. 50/- (Rupees Fifty only) has been paid towards Karnataka Stamp duty by

Sri/Smti Bank of Baroda

s/d/w/o _____ residing at BANGALORE

Br. Name: Sadashivanagar Branch
Code 4376 Bangalore-560 027

Date: 16 JUL 2005

Authorised Agent to collect stamp duty on behalf of Government of Karnataka

50

S. No 3001

GUARANTEE NO: 1137
DATE : 24.08.2005

GUARANTEE

1. We, Bank of Baroda (the" Guarantor") with its registered office at Baroda House, Mandvi, Baroda – 390 006 and having its Corporate Financial Service Branch at HJS Chambers, 1st Floor, No.26, Richmond Road, Bangalore - 560 025, unconditionally guarantee to pay NHAI upon first written demand and without any deduction any sum claimed by NHAI upto a maximum of Rupees 14,90,00,000/- (Indian Rupees Fourteen Crores Ninety Lacs only) (the "Guaranteed Sum") subject to the conditions set out below.

2. The Guarantor unconditionally and irrevocably promises to pay on demand the Guaranteed Sum, without protest or demur whatsoever upon the receipt of a written demand from NHAI, which shall be final and conclusive as against the Guarantor requiring the Guarantor to make the payment to NHAI.

3. The Guarantor waives any requirement that NHAI demand any debt or payment from the Concessionaire before presenting it with a demand under this Guarantee.

4. NHAI shall notify the Guarantor of its demand for payment of the Guaranteed Sum without any deduction of whatsoever nature and without reference to any claim or counter claim or set off, in accordance with the Concession Agreement .

Such notification by NHAI , shall be conclusive and binding on the Guarantor.

कृते बैंक ऑफ़ बड़ौदा/For BANK OF BARODA
कार्पोरेट वित्तीय सेवा शाखा/C F S Branch
बेंगलोर/ BANGALORE - 560 025
मुख्य प्रबंधक/ Chief Manager

कृते बैंक ऑफ़ बड़ौदा/For BANK OF BARODA
कार्पोरेट वित्तीय सेवा शाखा/C F S Branch
बेंगलोर/ BANGALORE - 560 025
वरिष्ठ प्रबंधक/ Senior Manager

Gua No. 1137
Date 24-08-05

5. Upon encashment and appropriation of the whole or any portion of the Guaranteed Sum by NHAI in accordance with the Concession Agreement, the Guarantor shall be obliged to replenish the existing Guarantee or provide fresh guarantee of the Guaranteed Sum and the Concessionaire is deemed to have made the request for such fresh guarantee upon the execution and furnishing of this Guarantee in the first instance.

6. No underlying dispute as between NHAI and the Concessionaire nor any pending application for interim relief or arbitration proceedings or other legal proceedings shall constitute any ground for prevention, delay or obstruction for making payment to NHAI by the Guarantor and the existence of any disputes or differences or claims in arbitration or otherwise shall not constitute any ground for non-payment on this Guarantee.

7. This guarantee is valid and effective from its date. This guarantee and the Guarantor's obligations under it will terminate on the Commercial Operations Date of the Project as advised to the Guarantor in writing by NHAI. However the Guarantee shall be released earlier by NHAI to the Concessionaire, upon contribution of the Equity (excluding) Equity Support, if any by the Shareholders of the Concessionaire to the extent of 100% and upon the Concessionaire having expended on the Project and paid out an aggregate sum of not less than 20% of the Total Project cost as certified by the Statutory Auditors of the Concessionaire but provided the Concessionaire is not in breach of this Agreement or the Concession Agreement.

8. The Guarantor agrees that its obligation to pay any demand made by NHAI before the termination of this Guarantee will continue until the amount demanded has been paid in full.

9. This Guarantee shall be valid and effective upto September 23, 2008 (Date of validity of the Bank Guarantee for Performance Security) for enabling NHAI to lodge a claim for payment under the Guarantee till the date of expiry of the term of the Guarantee. The Guarantor shall be obligated to make payment upon the Guarantee forthwith on demand, if the claim is lodged within the claim validity period and the obligation to pay is subject to normal limitation for payment of claims upon a guarantee. Time is of essence for payment and in the event of failure to make payment, Guarantor shall be obligated to pay compound interest at 2% above the prime lending rate of the Guarantor institution, compounding quarterly in the event of the Guarantor's failure to make payment upon the Guarantee for any reason whatsoever. Payment of interest as provided is no excuse for delayed payment or non-payment of the Guaranteed Sum.

कृते बैंक ऑफ बड़ौदा / For BANK OF BARODA
कार्पोरेट वित्तीय सेवा शाखा / C F S Branch
बेंगलोर / BANGALORE - 560 025
5/25/12
Senior Manager

कृते बैंक ऑफ बड़ौदा / For BANK OF BARODA
कार्पोरेट वित्तीय सेवा शाखा / C F S Branch
बेंगलोर / BANGALORE - 560 025
मुख्य प्रबंधक / Chief Manager

GUARANTEE : 1137
DATE : 24-08-2005

10. No change in the constitution of the Concessionaire or of the Guarantor shall be a ground for release of the Guarantee and no variation in the concession agreement made post selection of the bidder, or post making of the bid, shall constitute a variation, which would, subject to the terms and conditions of this agreement, discharge the Guarantor. The Guarantor shall notwithstanding such change, be bound to make payment upon the Guarantee on demand.

11. The Guarantor agrees that no change, addition to or other modifications to the terms of the Concession Agreement or to any documents which have or may be made between NHAI and the Concessionaire will in any way release it from any liability under this Guarantee and that it waives any requirement for notice of any such change, addition or modification.

12. The Guarantor agrees that it will not assign its obligations under this Guarantee without the prior written consent of NHAI. NHAI will not unreasonably withhold its consent if the proposed assignee is of at least equal financial standing to the Guarantor and the assignee assumes in writing the obligations of the Guarantor under this Guarantee at the same time or before the assignment.

13. This Guarantee binds the Guarantor, its successors and permitted assigns.

Seal of Bank of Baroda

Bank of Baroda

कृते बैंक ऑफ़ बड़ौदा/For BANK OF BARODA
कार्पोरेट वित्तीय सेवा शाखा/C F S Branch
बेंगलोर/BANGALORE - 560 025

SIGNATURE

मुख्य प्रबंधक/Chief Manager

कृते बैंक ऑफ़ बड़ौदा/For BANK OF BARODA
कार्पोरेट वित्तीय सेवा शाखा/C F S Branch
बेंगलोर/BANGALORE - 560 025
5/2512
वरिष्ठ प्रबंधक/Senior Manager

NAME : A P Trivedi
TITLE : Chief Manager

CODE NO. : 31336

P N Suresh
Senior Manager

49192

DATE : 24TH. AUGUST 2005

PHONE NO : 22270567

FAX NO : 22271569

SCHEDULE – G

SCHEDULE OF USER FEE

SCHEDULE G

SCHEDULE OF USER FEE

TO BE PUBLISHED IN THE GAZETTE OF INDIA EXTRAORDINARY PART – II – SECTION 3 SUB SECTION (ii) PUBLISHED BY AUTHORITY, MINISTRY OF ROAD TRANSPORT & HIGHWAYS NEW DELHI.

Whereas, by the notification of the Government of India in the Ministry of Road Transport & Highways, numbers ..... dated ..... and .....dated ..... issued under Section 11 of the National Highways Authority of India Act, 1988 (68 of 1988), the Central Government has entrusted the section from i) Km 5+735 – Km 39+960 of NH-22 and ii) Km 0+000 – Km 0+871 of NH-21 (Ambala – Chandigarh Section) and section from km 30.960 to km 33.045 of NH-22 in the States of Haryana and Punjab to the National Highways Authority of India (herein after referred to as the "Authority")';

AND, WHEREAS, the Authority has entered into an agreement with GMR Ambala-Chandigarh Expressways Private Limited having its Registered office at SKIP HOUSE, 25/1, Museum Road, Bangalore- 560 025(herein after referred to as the "Concessionaire") for the development of the said section of the said National Highways;

AND, WHEREAS, the Central Government has entered into an agreement with the Authority for the development of the said sections of the said National Highways and to issue a Fee Notification to levy and collect the fees from the said National Highways in terms of the aforesaid agreement entered into between the Authority and the said Concessionaire;

NOW, THEREFORE, in exercise of powers conferred by section 8A of the National Highways Act, 1956 (48 of 1956), read with rule 3 of the National Highways (Collection of Fees by any person for the use of section of National Highways/permanent bridge/temporary bridge on National Highway) Rules, 1997, the Central Government, having regard to the expenditure involved in building, maintenance, management and operation of the said sections of the said National Highways, interest on the capital invested, reasonable return, the volume of traffic and the period of such agreement entered into between the Authority and the Concessionaire, hereby notifies that there shall be levied and collected fees on mechanical vehicles for the use of the said section starting from i)Km 5+735 – Km 39+960 of NH-22 and ii) Km 0+000 – Km 0+871 of NH-21 (Ambala – Chandigarh Section) in the States of Haryana and Punjab except 2.085 km portion of NH-22, Dera Bassi ROB from km 30.960 to km 33.045 till the validity of existing concession of M/s R S Builders & Engineers at the rate specified in the Schedule below, and authorizes the said Concessionaire to collect and retain the said fees on and from the date of commercial operation till the termination date.

Definitions, - In the notification, unless the context otherwise requires, -

(i) "actual fees" means the fees actually charged on the road users based on the following:-

a. Length of the project highway.

b. Base fee given in the Schedule to this notification.

(ii) "date of commercial operation" means the date on which the commercial operation of the section from i) Km 5+735 – Km 39+960 of NH-22 and ii) Km 0+000 – Km 0+871 of NH-21 in the States of Haryana and Punjab have started which shall be the date on which the Independent Consultant issues the Completion Certification or the Provisional Certificate, as the case may be, upon completion of four laning of the said section of the said national Highway in accordance with the provisions of the agreement entered into between the Authority and the Concessionaire;

(iii) "termination date" means the date on which the said agreement entered into between the Authority and the Concessionaire expires pursuant to the provisions of the said agreement or is terminated by termination notice;

(iv) "Local Personal Traffic" means and includes a personal vehicle (car/passenger van/jeep) which is registered with GMR Ambala-Chandigarh Expressways Private Limited by any person who normally resides or works at a place that can normally be approached only by using a part of the section and such person is, therefore, required to use such vehicles for commuting on a part of the said sections.

(v) "Local Commercial Traffic" means any commercial vehicle including buses, trucks, light motor vehicles or taxis engaged in carrying goods and passengers registered with GMR Ambala-Chandigarh Expreesways Private Limited as plying routinely on the said section;

(vi) Words and expressions used in this notification but not defined but defined in the agreement entered into between the Authority and the Concessionaire in respect of section of Ambala-Chandigarh from i) Km 5+735 – Km 39+960 of NH-22 and ii) Km 0+000 – Km 0+871 of NH-21 in the States of Haryana and Punjab shall have the same meaning as assigned to them respectively in the said agreement.

SCHEDULE

Rates of base fees to be recovered from the users of the Section of the National Highways from i)km 5+735 – Km 39+960 of NH-22 and ii) Km 0+000 – Km 0+871 of NH-21 in the States of Haryana and Punjab except 2.085 km portion of NH-22, Dera Bassi ROB from km 30.960 to km 33.045 till the validity of existing concession of M/s R S Builders & Engineers.

The fee shall be collected at one plaza (to be decided in consultation with IC) applicable as on 1st July, 1997.

S. No.	Category of Vehicle	Capping rate per vehicle per one way trip at June 1997 prices (In Rupees per km)	Current rate per vehicle per one way trip (In Rupees per km) based on Annual Yearly Average WPI for the year 2003-04
(1)	(2)	(3)	(4)
1.	A car, passenger van an or jeep	0.40	0.535
2.	Light Commercial Vehicle (LCV) including Mini Bus	0.70	0.937
3.	Truck/Bus	1.40	1.874
4.	Multi Axle Vehicle (>2 axle)	2.25	3.012
5.	Earth-moving equipments and heavy construction machinery	3.00	4.016

NOTE :

1. Rate of fees will be revised every year based on annual yearly average WPI published by office of Economic Advisor, Ministry of Commerce and Industry, Government of India for the Financial Year ending 31st March, preceding the date of fee revision. The date of fee revision will be 1st September. The revised fee shall be computed ("Computed Fee") as follows:-

$$\text{Base Fee} \times \frac{\text{WPI-B}}{\text{WPI-A}}$$

Where

WPI-A = is the Wholesale Price Index of June 1997 (131.4)
WPI-B = is the Average Wholesale Price Index for the year ending March 31 preceding the fee revision date.

2. The actual fees to be charged from the vehicles shall be rounded off to nearest one rupee.

3. Concessionaire shall not collect fees from Local Personal Traffic and Local Commercial Traffic in excess of the following discounted rates, namely;
   a) Local Personal Traffic: Twenty five per cent of the applicable fees for the specific category of vehicle.
   b) Local Commercial Traffic: Fifty per cent of the applicable fees for the specific category of vehicle.

4. The Concessionaire shall charge 1.5 (one and a half) times the full applicable Fee for one way trip for users who intend to complete a round trip on the Project Highway within 24 hours. For Local Traffic the provision mentioned at 3 above shall not be applicable in this case.

5. The Concessionaire shall issue monthly pass to users intend to use the Project Highway on regular basis. The rate of issuing such monthly passes to such users including Local Traffic shall be 30 (thirty) times the full applicable fee for one way trip. For Local Traffic the provision mentioned at (iii) above shall not be applicable in this case."

7. No fee shall be payable or collected in respect of the following vehicles, namely: -
   (i) Vehicles –
   (A) Having "VIP" symbols or officially belonging to:-
      a) President of India,
      b) Vice-President of India
      c) Governor of a State and Lt. Governor of a Union Territory
      d) A Foreign dignitary on State visit to India, and
      e) A Foreign Diplomat stationed in India using cars with "CD"/ "CC" number plates
      f) Chairman of Rajya Sabha or Speaker of Lok Sabha or Chairman of a State Legislative Council or Speaker of a State Legislative Assembly or a Minister for the Union or State or Leader of Opposition in Lok Sabha or Rajya Sabha or State Legislatures having the Status of Cabinet Minister if he is sitting in the vehicle; Or
      g) Members of Parliament in the entire country or a Member of Legislative Assembly of a State or a Member of Legislative Council of a State, in the respective State if he produces his Identity Card issued by the Parliament or concerned Legislature of a State as the case may be

   (B) Belonging to winner of Gallantry awards such as Param Vir Chakra, Ashok Chakra, Maha Vir Chakra, Kirti Chakra, Vir Chakra and Shaurya Chakra, if such awardee produces his photo Identity Card duly authenticated by the Competent Authority for such award

(ii) Defence vehicles, Police vehicles, Fire fighting vehicles, Ambulances, Funeral vans, Post and Telegraph Department's vehicles, Central and State Government vehicles on duty.

8. The rates of fees, the Categories of vehicles exempted from payment of fee and the name, address and telephone number of Concessionaire to whom complaints, if any, should be addressed, shall be conspicuously and prominently displayed 500 meters ahead of the toll booths, 100 meters ahead of the toll booths and at the toll booths also, the height of the display boards and size of letters being such that it is easy for drivers to read the display boards.

9. The concessionaire shall publish substance of this notification in two local newspapers (one of which shall be in vernacular language), which shall also state the date of commercial operation as per the provision of this notification, at least ten days prior to the date of commercial operation. Such substance shall also be repeated, ten days prior to giving effect to revised fees as per this notification.

10. The actual fees to be charged to users shall be computed by the Concessionaire and sent to Authority for validation as soon as possible after 31st March in every year, but at least forty-five days before the rate increase is to be effective. Authority shall provide any comments or request clarifications as soon as possible upon receipt of the fee revision proposal but not later than fifteen days of receipt of the fee revision proposal. If the Authority does not offer comments or seek clarification during this period the revised fee, as proposed by the Concessionaire, shall be deemed to have been confirmed by the Authority.



Schedule H

I. PROJECT COMPLETION SCHEDULE

S.No.	Activities	Completion Period (from the Appointed Date)
1.	Completion of project road from Km 5+735 to Km 39.961 on NH-22 and from km 0+000 to 0+871 of NH – 21.	**30 months**

II. SITE HANDING OVER SCHEDULE

The site shall be handed over as below from the date of signing the Concession Agreement or as per date indicated:-

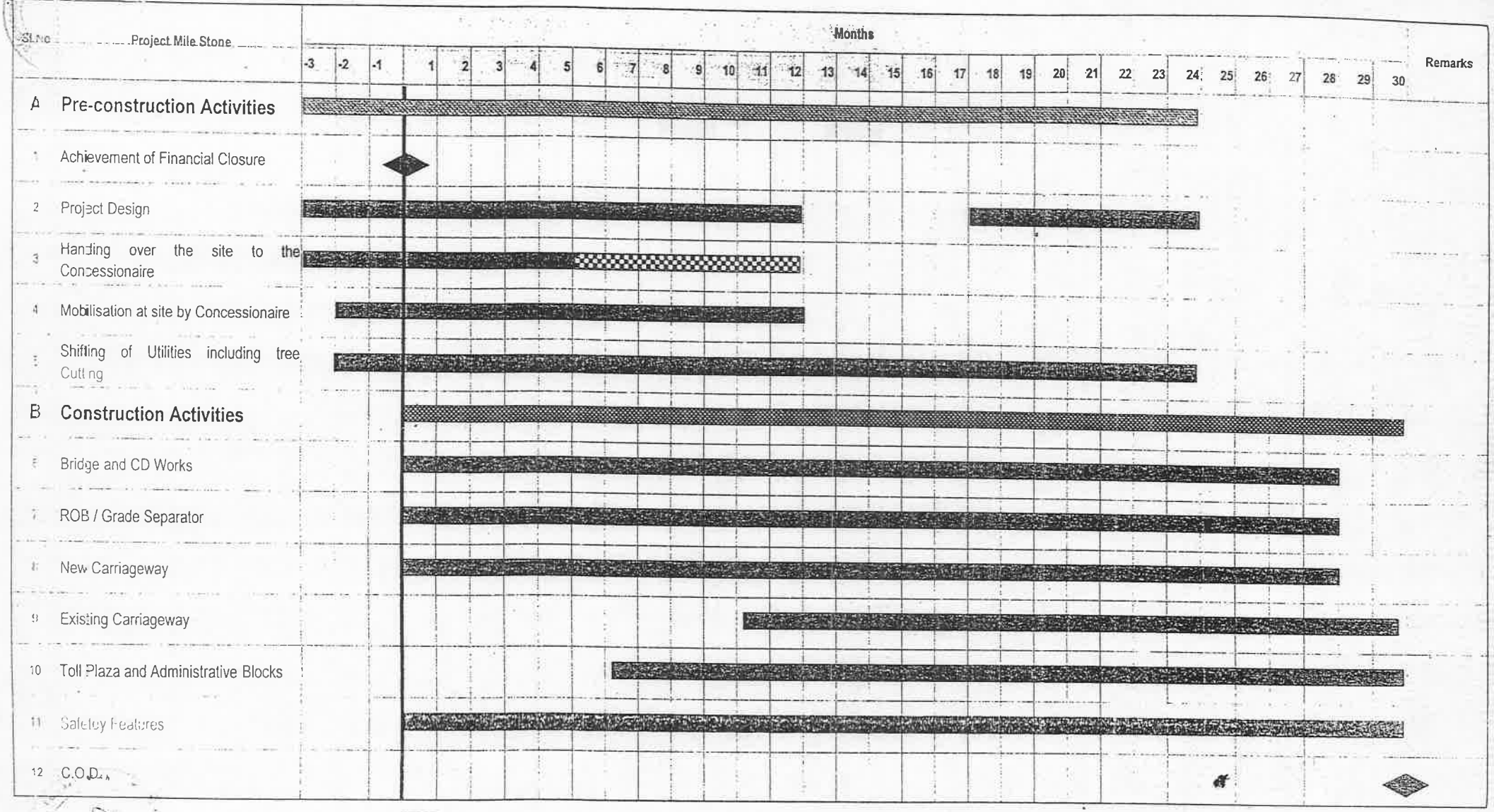
Stretch	Length	Remarks
(Refer Design Chainage) Existing ROW from Chainage 5+735 to 39.961 of NH – 22 except for existing BOT project reach (2.085kms between km 30+960 to km 33+045).	32.141 Km	Within 150 days.
Portion of NH – 21 (Km 0.+000 to 0+871)	0.871 kms	Within150 days
Between km 30+960 to km 33+045 (The existing BOT Concession)	2.085 kms	30th June 2009
Additional Land wherever required for the Project Highway including Land for Base Camp	-	Within 12 months

Note: The above Handing over Schedule is subject to accomplishment of all obligations of the Concessionaire as mentioned in the Concession Agreement.

GMR AMBALA CHANDIGARH EXPRESSWAY PVT LTD.,

SCHEDULE - H

III. PROJECT MILESTONES



LEGEND

Additional Land wherever required for the Project Highway including Land for Base Camp

Page: H-2.

24-09-05

SCHEDULE I

DRAWINGS

1. The project highway drawings, as defined in clause 1.1, Definitions, Article 1, Definition and Interpretation, Chapter I-Preliminary, of the Concession Agreement shall consist:

   A. Working drawings of all the components/elements of the project as determined by Independent Consultant/NHAI, and

   B. As-built drawings for the project highway components/elements as determined by Independent Consultant/NHAI. As-built drawings shall be duly certified by Independent Consultant

2. A broad list of the drawings of the various components/elements of the project highway and project facilities required to be submitted by the Concessionaire is given below:

   a) Drawings of horizontal alignment, vertical profile and cross sections
   b) Drawings of cross drainage works
   c) Drawings of interchanges, major intersections and grade separators
   d) Drawings of toll plaza layout, toll collection systems and roadway near toll plaza
   e) Drawings of Control Centre
   f) Drawings of bus-bay and bus shelters with furniture and drainage system
   g) Drawing of a truck parking lay by with furniture and drainage system
   h) Drawings of road furniture items including traffic signage, markings, safety barriers, etc.
   i) Drawings of traffic diversion plans and traffic control measures
   j) Drawings of road drainage measures
   k) Drawings of typical details slope protection measures
   l) Drawings of landscaping and horticulture
   m) Drawings of pedestrian crossings
   n) Drawings of street lighting
   o) Layout/Configuration of HTMS
   p) General arrangement of Base camp and Administrative Block

Schedule J

TESTS TO BE CONDUCTED

1. All materials to be used, all methods adopted and all works performed shall be strictly in accordance with MORTH's Specifications for Road and Bridge works. For this purpose the responsibility of contractor as mentioned in Section 900 shall be taken up by the Concessionaire and the responsibility of Engineer shall be taken up by Independent Consultant/NHAI.
2. The concessionaire shall carry out quality control tests on the materials and work at the frequency stipulated in Section 900 of MORTH's Specifications for Road and Bridge works. In the absence of clear indications about the methods and/or frequency of tests for any item, the instructions of the independent consultant/NHAI shall be followed.
3. The concessionaire shall carry out all necessary tests on material and work independently and keep their record for reference. The concessionaire shall prepare a quality audit manual in consultation with independent consultant to ensure better quality of work. Following circulars of MORTH and IRC codes may also be referred:
    a. IRC:SP-11 " Handbook of Quality Control for construction of Roads and Runways"
    b. IRC:SP-47 " Guidelines on Quality systems for Road Bridges (Plain, Reinforced, Pre stressed and composite concrete)
    c. IRC:SP-51 " Guidelines for Load Testing of Bridges "
    d. IRC:SP-57 "Guidelines for Quality Systems for Road Construction "
    e. MORTH Circular No. RW/NH-34059/1/96-S&R dated 30.11.2000 "Revised Interim Specifications for Expansion Joints"
4. Above stipulated requirements for tests and quality control are minimum. The Concessionaire shall conduct all possible tests to ensure quality construction.
5. Independent Consultant, at his discretion and consistent with sound engineering practice, shall carryout any non-destructive tests on pavement, structure and any other component to ascertain the soundness of work.

SCHEDULE – K

COMPLETION CERTIFICATE



SCHEDULE - K

COMPLETION CERTIFICATE

I/We, **(Name of Independent Consultant)** acting as Independent Consultant on the project "4-laning of i) Km 5+735 – Km 39+960 of NH-22 And ii) Km 0+000 – Km 0+871 of NH-21 (Ambala – Chandigarh Section) in the States of Haryana and Punjab, India on BOT basis" through the Concessionaire, **GMR Ambala-Chandigarh Expressways Private Limited** hereby issue this completion certificate in-terms of sub-clause 16.4 of Concession Agreement since the said project has been completed and successfully tested as per Schedule-J as stipulated in the said Concession Agreement and is ready for commissioning traffic commercially as provided in the Concession Agreement dated **(Date of Agreement)** between the said Concessionaire and the NHAI. The date of issue of this Completion Certificate shall be the COD, as defined in the said Concession Agreement.

Dated _____

(Date of Issue)

Independent Consultant



SCHEDULE – K_1

PROVISIONAL COMPLETION CERTIFICATE



SCHEDULE – K_1

PROVISIONAL COMPLETION CERTIFICATE

I/We **(Name of Independent Consultant)** acting as Independent Consultant on the project, "4-laning of i) Km 5+735 – Km 39+960 of NH-22 And ii) Km 0+000 – Km 0+871 of NH-21 (Ambala – Chandigarh Section in the State of Haryana and Punjab India on BOT basis" through the concessionaire, **GMR Ambala-Chandigarh Expressways Private Limited** hereby issue this provisional certificate of completion in-terms of sub-clause 16.5 of Concession Agreement dated **(Date of Agreement),** between the said Concessionaire and the NHAI, on the request of the said Concessionaire subject to the appended Punch List containing a list of outstanding items since the tests stipulated in schedule J have been successfully carried-out and all parts of Project Highway can be legally, safely and reliably placed in commercial operations though certain works and things forming part thereof are not yet complete as indicated in the said Punch List. All the items of the said Punch List shall be completed by the said Concessionaire with in 180 (one hundred and eighty) days of the date of issue of this Provisional Certificate of Completion.

Dated _____

(Date of issue)

Independent Consultant

Schedule-L

OPERATION & MAINTENANCE (O&M)

1 General

a. The Concessionaire shall comply with the O&M Requirements set out in this Schedule. In doing so, the Concessionaire shall ensure that the Project Highway and Facilities are maintained to the standards and specifications and shall also meet the other requirements, if any, set out in the Agreement.

b. During the Implementation Period, the Concessionaire shall take appropriate measures to operate and maintain the existing highway and ensure that minimum 2 lanes remain open for uninterrupted, smooth and safe traffic flow at all times.

c. The Concession Agreement stipulates that the project highway shall be constructed operated and maintained during the Concession Period by Concessionaire and thereafter transferred to NHAI. This schedule elaborates the operation and maintenance requirements of the concession and is to be read together with the Concession Agreement for this purpose. For clarification of doubt, the period during which the Concessionaire shall comply with O&M requirements covers the entire Concession Period including the Construction period. Particularly, during the construction period, the Concessionaire is required to operate and maintain the existing two lanes as provided in the Concession Agreement and this Schedule.

2 O & M Requirements

2.1 In the design, planning and implementation of all works and functions associated with the operation and maintenance of the Project facilities, the Concessionaire shall take all such actions and do all such things (including without limitation, organizing itself, adopting measures and standards, executing procedures including inspection procedures, highway patrols, and engaging contractors, if any, agents and employees) in such manner, as will:

(i) Ensure the safety of personnel deployed on and users of the Project Facilities or part thereof:

(ii) Keep the Project Facilities from undue deterioration and wear;

(iii) Permit unimpaired performance of statutory duties and functions of any party in relation to the Project;

2.2 During the concession period, the concessionaire shall ensure that

(i) The Project Facilities are kept free from undue deterioration and undue wear;

(ii) applicable and adequate safety measures are taken;

(iii) minimum delay is caused to users of the Project Facilities

(iv) adverse effects on the environment and to the owners and occupiers of property and/or land in the vicinity of the Project Facilities, due to any of its actions, is minimized;

(v) Any situation which has arisen or likely to arise on account of any accident or other emergency is responded to as quickly as possible and its adverse effects controlled/minimized;

(vi) disturbance or damage or destruction to property of third party by operations of the Project Facilities is controlled/minimized;

(vii) Elected members of the public are treated with due courtesy and consideration by its employees/agents;

(viii) Users are provided with adequate information and forewarned of any event or any other matter affecting the Project Facilities to enable them to control/ minimize any adverse consequences by such event or matter;

(ix) Registers to be maintained to record grievances or appreciations of members of public in relation to the operation and maintenance of project/project facilities.

(x) Traffic data and data relating to the operation and maintenance of the Project Highway and its Facilities and events on the Project Highway are collected and disseminated such that the MORT&H and other persons or bodies with statutory duties or functions in relation to the Project Highway or adjoining roads are able to perform those duties and functions efficiently;

(xi) All materials used in the maintenance, repair and replacement of any of the Project Facilities shall meet the Design Requirements/standards.

(xii) The personnel assigned by the Concessionaire have the requisite qualifications and experience and are given the training necessary to enable the Concessionaire meet the O&M Requirements.

3 Operation and Maintenance Manual and O&M Plans

3.1 This will be made for three stages as described in sub paras below:

a) Prior to the commencement of any construction activity, the Concessionaire, in consultation with the Independent Consultant, shall finalize the O&M Plan for Implementation Period.

b) Prior to making application for the Completion certificate for the Project the Concessionaire shall finalize in consultation with the Independent Consultant:

(i) the O&M Manual

(ii) the O&M Plan for the first year of operations.

c) Six weeks prior to the anniversary of Commercial Operation Date of Project (COD) each year, the Concessionaire shall submit an annual O&M Plan for the next year of operations.

d) The O&M Manual prepared by the Concessionaire shall set out the operations and maintenance standards and details of the operations and maintenance activities to be undertaken during the Concession Period, so that the Project Facilities shall at all times conform to the Design Requirements/ specifications.

e) The Manual shall include without limitation the following aspects:

(i) Organization structure with responsibilities of key personnel;

(ii) Traffic Management Plan including the Corridor Control Plan;

(iii) Safety Management Programme including the Emergency Response Protocol;

(iv) Inspection Procedures;

(v) Maintenance Intervention Levels;

(vi) Asset Management Project Deliverables and Tolerance Criteria;

(vii) Environment Management Plan;

(viii) Maintenance Programme;

(ix) Management information system;

(x) Report Formats.

f) The said Operation and Maintenance Manual shall have two separate sections namely.

6) Section I Operations; and

6) Section II, Maintenance

3.2 Operations Part of O&M Manual

It shall prescribe procedures and systems for activities including but not be limited to the following for the regular and emergency operations of the Project Highway and facilities thereon.

- Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
- Functioning of the Toll System including charging and collecting the fees from the road user in accordance with the Concession Agreement.
- Functioning of the Patrolling System
- Functioning of rescue and medical and aid services
  - Ambulance

- Fire Brigade
- Tow away trucks and cranes

- Functioning of the Project Facilities
  - Administrative, Operation and Maintenance camp
  - Pickup bus stops
  - Parking Laybys & Rest Areas
  - Electrical Services at Laybys, bus stops and rest area
  - Potable water supply system including supply of drinking water at truck parking laybyes, rest areas etc.
  - Public toilets and other sanitary facilities
  - Solid wastes disposal system including those from litterbins

3.3 Maintenance Part of O& M Manual

3.3.1 This section of the operation and maintenance manual, shall include the activities described here-in-under amongst other activities required for the regular and preventive maintenance of the equipment during the operations period, so that the project Highway is maintained in a manner that at all times it complies with the specifications and standards and at the time of divestment of Right and Interests by the Concessionaire in terms of Article XXXIII of the Concession Agreement it is sound, durable and in functional condition.

3.3.2 The concessionaire shall maintain the Project Highway in traffic-worthy condition and the Project's Ancillary Facilities in usable condition throughout the Concession Period or any extension thereof in terms of the Concession Agreement through regular maintenance and preventive maintenance of the various items and elements of the Project Highway.

3.3.3 The concessionaire shall maintain the existing 2 lanes of the Project Highway during construction of new lanes in such a manner that the unevenness index of the pavement does not exceed 3,000 mm per km, or the present roughness value of the existing pavement, whichever is lesser.

3.3.4 The following publications can be referred for preparation of the said section II of "Maintenance Manual"

- MOST manual for maintenance of roads
- IRC:SP-35, guidelines for Inspection and Maintenance of Bridges
- The manufacturer's Maintenance Manual(s) of the equipment including that of the Toll Collection system to be used in the Project Highway Operations shall form part of the said O&M Manual
- Any other appropriate documents

3.3.5 Routine Maintenance

In order to ensure smooth and uninterrupted flow of traffic during normal operating conditions for all 24 hours of a day, routine maintenance of the Project Facilities shall include but not be limited to:

(i) prompt repairs of Toll Plaza, concrete joints, drains, lane marking, signage; patching, raised berms, drain cleaning, repairing of signs, road marking, carrying out repairs to pavement crack by sealing; barricades, railing etc.

(ii) replacement of equipment/consumables, horticultural maintenance and repairs to equipment, pavements, elevated highway, overpasses, bridges, structures and other civil works which are part of the Project/Project Facilities;

(iii) maintenance of the approach roads to overpasses and drainages within the Project Site in accordance with Good Industry Practice;

(iv) Keeping the Project Site/Project Facilities in a clean, tidy and orderly condition free of litter and debris and taking all practical measures to prevent damage to the Project Facilities or any other property on or near the Project Site. Removing and disposing of in accordance with all Applicable Laws and Applicable Permits, all rubbish, debris, etc. including any and all equipments, supplies, materials and wastes brought or produced by the Concessionaire/Contractor on the Project Site;

(v) undertaking maintenance works in accordance with the O & M Plan and O&M Manual;

(vi) preventing, with the assistance of concerned law enforcement agencies where necessary, any unauthorized entry to and exit from including any encroachments on the ROW / Project Site;

(vii) taking all reasonable measures for the safety of all the workmen, material, supplies and equipment brought to the Project Site. Explosives, if any, shall be stored, transported and disposed of by the Concessionaire in accordance with Applicable Laws/Applicable Permits.

(viii) maintenance of road furniture like KM post, Hectometer stones, ROW pillar etc. and attending to repairs to various parts of the road furniture and connected services as and when necessary, and replacement of irreparable items of work in responsible period. At the end of the Concession Period, all road furniture shall be handed over to Independent Engineer in neat, tidy and in usable and working order.

(ix) for routine maintenance works, the Concessionaire shall generally follow the operational and performance criteria specified in the respective IRC/MORT&H standards and specifications for each of the performance indictors covered under pavement condition survey, roughness and BBD deflections. Where such criteria are not specified in the standards, the Concessionaire, for the purpose of routine maintenance shall set forth such criteria as to conform to good international standards and Good Industry Practice for sound pavement

maintenance practices in consultation with the Independent Consultant.

(x) all traffic signs and markings shall always be kept clear visible and in correct alignment and position.

(xi) repairs will be attended to elements of landscape as and when necessary and irreparable items replaced.

3.3.6 Preventive Maintenance

(i) The Concessionaire shall regularly carry out the necessary preventive maintenance activities for the Project Facilities to ensure adherence to the Design Requirements and specifications throughout the Concession Period.

(ii) Preventive Maintenance shall include the activities related to each element and the system as a whole of the Project Highway to ensure that during the Concession Period and at its end is in sound, durable and functional condition

3.3.7 Periodic Maintenance

(i) Carriageway

a) This activity shall be carried out as required and at least once every 5th year (from COD) and in the last year of concession period. Road marking as specified and other road side features shall be restored to meet the relevant standards to the satisfaction of the Independent Consultant.

b) The periodic maintenance activities shall also include profile corrective course of overlaid with the periodic renewal of the wearing course of the road pavement. The same shall be undertaken on all roads and pavements in the Project facilities including on the truck lay-bays bus-bays and way side Amenities – Service Area. The concessionaire may adopt cost effective treatment like Asphalt concrete, recycling, stone mastic, micro seal etc.

c) The paved shoulders shall also be treated in similar manner as applicable to the Mainline traffic lanes.

d) The periodic renewal shall result in improvement of the riding quality, meeting road roughness value at least as at the time of COD.

e) The separator islands shall be restored to the design cross section.

f) Road marking as specified and other roadside features wherever required shall be restored to meet the relevant standard specified.

g) Any other repairs needed to the project will be attended to

(ii) Crash Barriers & Pedestrian Guard Details

a) The crash barriers should require minimum maintenance except in case of damage due to impact.

b) Concrete Posts and Steel Beam crash barriers will require repairs or replacement from low to medium impact damage caused by vehicles. Periodic painting will also

be required.

(iii) **Maintenance of Buildings**

a) The Concessionaire shall carry out regular and periodic inspection/ maintenance of all buildings related to the 'Project'. This shall include cleaning, repairs and maintenance of various parts of the building, services and facilities in a wholesome and hygienic condition at all time. This will involve replacement of irreparable items of work, cleaning & disinfecting of the water supply systems, inspection and maintenance of drainage/sanitation systems and illumination and electrical installations, landscaping, painting and shall be as per relevant clauses of NBC. Maintenance of pavement of parking lot with Road Marking shall be carried out.

b) Maintenance of all furniture, furnishing items and equipment shall include periodic servicing, checking, replacement attending to all necessary repairs, replenishment of the consumables and other incidentals. Laboratory shall be maintained and operated efficiently to carry out requisite Tests till end of the concession period.

3.3.8 Special Repairs

Damages occurring due to natural calamities like heavy floods, sand storms, hurricanes, cyclones, earthquakes to any element or system of the Project Highway shall be rectified and the system restored to function as per programme prepared in consultation with Independent Consultant. All such activities shall fall under the Maintenance and shall form a part of the said Maintenance Manual

3.3.9 Minimum Maintenance Requirements

3.3.9.1 Major Breaches in the Roadway

Major breaches in the roadway of any type endanger safety of traffic and cause obstruction in movement of vehicles. These breaches shall be repaired urgently. Steps as mentioned in O&M manual shall be followed by the Concessionaire for repairing the breaches.

The concessionaire shall ensure speedy restoration of traffic and take immediate action to repair the damages as permanent measures for the Project Highway. The restoration of traffic shall be made within 24 hours of its occurrence. The permanent measures shall be completed within a period one week.

3.3.9.2 Minor cuts, ruts or blockage

Minor cuts, ruts and damages on Project Highway which do not completely obstruct the traffic but endanger the safety of traffic, shall be attended to on an urgent basis. For this purpose any cut which is in width more than 1 m shall be repaired within 24 hrs. Any minor blockage, which partially obstructs the traffic and endangers safety, shall be removed by the concessionaire immediately.

3.4 Maintenance Standards

3.4.1 During Implementation Period

During Implementation Period, the Concessionaire shall maintain the existing 2 lane highway in traffic worthy condition as per the Intervention levels 1 and 2 provided in Table L-1;

Table L-1
Intervention Levels
(Existing 4-Lane Highway during implementation Period)

Sl. No.	Service Factor	Level 1 (Desirable)	Level 2 (Acceptable)
1.	Roughness by Bump Integrator (max. permissibility)	2500mm/Km (Allowable Tolerance: +5%)	3000mm/Km
2.	Potholes /km (max)		
	i) upto 75mm deep	Nil	5 Nos. of size < 5 sq.m
	ii) more than 75mm deep	Nil	Nil
3.	Percent Cracking	Nil	No Unsealed cracks > 6mm wide on 95% Project Highway.
4.	Rut Depth not exceeding 10mm	Length not more than 10% of the Project Highway	Length upto 20% of Project Highway
5.	User Information	All road signs, Km post and road marking in good condition.	All road signs, Km post and road marking in good condition
6.	Percentage Defective bridge Deck area and bump at approach	Nil	Nil
7.	Drainage (including shoulders)	No visible water pool within the ROW	No visible water pool within the ROW.
8.	Pavement Marking	Full reflectivity in wet conditions	The adequate wet reflectivity should exist.

3.4.2 During Operation Period

3.4.2.1 During Operations Period, all the road works and pavements contained in the Project Facilities (including those in the ancillary facilities) shall be maintained in traffic-worthy condition as per the intervention levels 1 & 2 as provided in the Table L– 2 through the various maintenance activities.

Table L-2 (Intervention Levels-Operations Period)

Sl.No.	Service Factor	Level 1 (Desirable)	Level 2 (Acceptable)
1.	Roughness by Bump Integrator (max. permissibility)	2000mm/Km (Allowable Tolerance: +5%)	3000mm/Km
2.	Potholes /km (max) i) less than 75mm deep	Nil	2 Nos. of size < 5 sq.m
	ii) more than 75mm deep	Nil	Nil
3.	Percent Cracking	Nil	No Unsealed cracks > 6mm wide on 95% Project Highway.
4.	Rut Depth not exceeding 10mm	Length not more than 5% of the Project Highway	Upto 10% of length of Project Highway
5.	User Information	All road signs, Km post and road marking in good condition in 3 language formula.	All road signs, Km post and road marking in good condition in 3 language formula
6.	Percentage Defective bridge Deck area and bump at approach	Nil	Nil
7.	Camber i) Mainline	(+ or -) 0.05% variation from the Camber as per Design Requirements	(+ or -) 0.15% variation from the Camber as per Design Requirements
8.	Drainage (including shoulders)	No visible water pool within the Project Highway	No visible water pool within the charge of concessionaire
9.	Characteristic Deflection as per IRC: 81-1997	Upto 0.50mm	Upto 0.80mm
10.	Pavement Marking	Full reflectivity in wet conditions	Adequate wet reflectivity.

3.4.2.2 The road roughness value shall be measured at least twice in a year by a properly calibrated Bump Integrator device before the monsoon and soon after the monsoon preferably in the months of April and October of every year. The Concessionaire shall ensure that at no point during the Operations Period the roughness in the road surface shall fall below than the prescribed acceptable roughness values given in Table L -2.

3.4.2.3 The structural condition of the flexible pavement of the Project Highway shall be assessed every year by taking Benkelman Beam Deflections and working out characteristic deflections of homogeneous sections of the Project Highway as per IRC-81. In the case of cement concrete pavement, joints shall be thoroughly inspected every year and the loss of sealing compounds made good.

3.4.2.4 Bridges and Other Structures: The Concessionaire shall maintain and carry out required repairs of the various elements of the structures in accordance with IRC-SP-35: 1990 "Guidelines for the inspection and Maintenance of Bridges in consultation with Independent Consultant.

3.4.2.5 Pavement

Pavement Distress

Maintenance procedure for correcting distress in bituminous pavement shall include patching, crack sealing, surface treatment and pot hole filling.

Cracking

Cracking of bituminous pavements shall include all types of cracks such as hairline, alligator, longitudinal, transverse, shrinkage, reflective and edge cracking, linear and slippage etc. The minimum requirement and criteria for crack sealing shall be as under.

i) If the width of the cracks is less than 3 mm and resulting into settlement of pavement upto 10 mm in depth and exceeding in are more than 1 sqm at a place, such cracking shall be sealed by fog sealing in accordance with the MORT&H Specification 2004-3.

ii) If the width of cracks is more than 3 mm and causing settlement of the pavement upto 10 mm and the area of cracked surface exceeds 0.5 sq.m at a place, such cracked surface shall be repaired by slurry sealing in accordance with MORT&H Specification 516.

iii) If the cracked portion has settled more than 10 mm and its area exceeds 0.5 sqm, such areas shall be repaired by patching as per MOST Specification 3004. In case of alligator cracks, the permanent repair by full depth patching, shall be carried out. The slippage cracks shall be repaired by removing the affected bituminous layer and replacing it with surface patch. In edge cracking, if shoulders are not providing adequate lateral support. the shoulder shall be reconstructed with good quality material.

Rutting

If the depth of rut exceeds 10 mm with a length of 10 m at a place in the wheel track of pavement surface, the same shall be repaired by full depth patching.

Corrugations and Shoving

If corrugations and shoving in the pavement area exceeds 1 sq.m at a place and depth/height of corrugation/shoving exceed 10 mm, the same shall be treated by full

depth patching.

Settlement of Grade Depressions

If the settlements and grade depressions exceed 1 sqm in area and their depth is within 10 mm, such defects shall be treated by skin/full depth patching .

Upheaval or swell

If upheaval or swell exceeds 0.5 sq.m in area and its height is more than 10 mm such defects shall be treated.

Raveling

If the raveling of bituminous pavement exceeds 1 sq.m in area, slurry seal treatment shall be applied in accordance with the MOST Specification.

Pot holes

If the bowl shaped pot hole in the pavement exceeds 0.5 sqm in area and 10 mm in depth irrespective of the numbers existing on the pavement shall be repaired by patching/pothole filling in accordance with MOST Specification 3004-1.

Skid Hazards

Skid hazards irrespective of size, shall be corrected by improving the surface drainage and skid resistance including cleaning the surface of contamination, surface treatments or milling or resurfacing.

Bleeding or Flushing

Bleeding or flushing of the pavement irrespective of the area shall be repaired by application of hot sand.

Longitudinal/ Transverse streaking

If the longitudinal and transverse streaking appears on the pavement surface in area exceeding 5 sqm, the same shall be treated by application of new surface treatment or by a second treatment over the streak surface.

If any defects other than those mentioned above occur on the pavement of the project highway, the same shall be rectified/corrected by the concessionaire as per directions laid out in IRC:82-1982 or based on sound engineering practice.

Periodic Maintenance of Pavement

The concessionaire shall set forth in the Operations and maintenance Manual the detailed procedures to be followed under each of these activities, and also choose the operational and performance criteria from the IRC/MOST standards and specifications for each of the perfomance indicators covered under pavement condition survey, roughness and BBD deflection. Where such criteria is not specified in the standards, the concessionaire, for the purpose of routine maintenance shall set forth such criteria so as to conform to international standards or sound pavement maintenance practices in consultation with the independent consultant for using them as criteria.

Pavement Riding Quality

The riding quality of the pavement shall be ensured by satisfying the minimum requirements given herein under:

i) Surface roughness of the project highway on completion of construction shall not exceed 2000 mm/km as measured by the 5th wheel Bump Integrator .

ii) Surface roughness shall not exceed 3000 mm/km and 1000 mm in any 200 m length during the service life of the pavement at any time. A renewal coat of 25 mm of bituminous concrete shall be laid after initial construction whenever the roughness value reaches 3000 mm/km to bring it to less than 2000 mm/km.

Structural condition of the Pavement

i. The structural condition of the flexible pavement of the Project Highway shall be assessed every year by taking Benkelman Beam Deflections and working out characteristic deflections of homogenous sections of the project Highway as per IRC-81-1997. Wherever the characteristic deflection exceeds 0.8 mm a bituminous overlay shall be provided appropriately designed according to IRC:81-1997 or its latest versions or amendments to it. The characteristic deflection at the end of concession period shall not exceed 0.5 mm.

ii. In case of cement concrete pavement, joints shall be thoroughly inspected every year and the loss of sealing compounds made good.

3.4.2.6 Shoulders

If the shoulders are deformed or scoured and are lower than 25 mm from the adjacent carriageway, these shall be corrected by excavation, filling, dressing and compacting a material matching the existing material and it shall conform to the relevant MORT&H Specification requirement.

For maintenance it shall be ensured that no earth is borrowed from roadside land. All borrowing operation shall be as per I RC: 1 0-1961.

3.4.2.7 Damaged Culverts/Bridges

The treatment for the damaged culverts/bridges shall be assessed at site after ascertaining the damaged portion as per site exigencies. The repair shall be carried out expeditiously.

3.4.2.8 Drainage/Side Drains

Routine maintenance under this category shall cover pipe drainage system, slot drains, porous drains, gullies, catch-pits, open grills, ditches, side drains and median drainage etc.

If the side drains/median drains where provided, and other drainage structures have been silted up in such a manner that it is causing obstruction in flow of water, the same shall be cleared of regularly in order to keep the drains free from obstructions

all the time.

If the drainage system of project Highway is covered and damaged, it obstructs the flow of water causing damage to the road pavement. Such damaged structures shall be reconstructed to required shape, size and proper slope.

3.4.2.9 Cross Drainage Works

Where the bed of a culvert gets silted up and causes obstruction in flow of water, the de-silting operation shall be done regularly. The scouring of piers and abutment of bridges and culverts shall be observed carefully particularly before and after rainy season and suitable remedial measures as deemed fit looking to site conditions shall be taken.

If any settlement cracks are appearing in substructure and superstructure of the CD works beyond permissible limits, the same shall be carefully observed and suitable remedial measures as per sound engineering practice taken.

3.4.2.10 Landscaping

Trees shall be maintained as per the guidelines in IRC : SP : 21 -1979 and no indiscriminate felling of trees shall be resorted. The felling of trees shall be undertaken in consultation with the Independent Consultant and after obtaining due permission as applicable.

Maintenance operations include numbering and maintaining a register of all road side trees within the Right of way (ROW).
The routine maintenance such as trimming and shaping shall cover hedges and trees within the control of concessionaire, which affect the performance of the Project Highway.

- Cutting or clearance to safeguard visibility at road bends, accesses and signs shall be carried out in such a way as to avoid permanent damage to hedges and trees. Trees overhanging carriageways shall be trimmed to provide a minimum headroom of 5.5 meters at all times; Headges shall be kept timed not to overhang carriageways.
- Turfing hall be mown as to achieve a visual pattern in harmony with adjacent areas. Mowing shall be done regularly not to allow the height of turfing grass reach 150 mm.
- The O&M Manual shall include a maintenance and management plan for trees, shrubs, turfing and hedges to sustain their development in a manner pleasing in appearance.

3.4.2.11 Maintenance of Traffic Signals

The traffic signals shall be maintained at all times as per clause 18 of IRC:93-1985 and shall be periodically inspected, maintained and repaired so as to be in satisfactory working condition all the time.

3.4.2.12 Lighting of Facilities

(i) Maintenance of all lighting installations and related appurtenances shall be as per relevant clauses of IS:1944 (Part I-V) .

(ii) Lighting wherever provided shall be maintained by the Concessionaire in a condition nearly similar to original condition.

(iii) The faults shall be repaired instantly and lighting restored and missing and damaged items shall be replaced instantly.

(iv) Cleaning shall be done at regular intervals to be mentioned in the Maintenance Manual to ensure that lighting is not below the specified standard.

(v) All installations shall be safeguarded against weathering and ageing effect by repainting and other preventive measures.

(vi) The servicing of stand-by power generation units shall be carried out in accordance with the manufacturer's instructions.

3.4.2.13 Highway Signs and Road Markings

(i) Traffic signs shall be kept clean to maintain their visibility and reflectivity unempirical due to dust etc. Any damage to traffic signs which reduces or threatens to reduce full and clear visibility shall be rectified within twenty four (24) hours of its occurrence. If they are used as base for posters, the posters shall be removed and the signs shall be cleaned within 24 hours. Signs shall be washed using detergent solution followed by clean water.

(ii) Any part of traffic signs damaged due to weathering, corrosion, vandalism or any other cause shall be replaced by the Concessionaire as early as possible and in any case within seven days.

(iii) Any mandatory sign including those for traffic safety, damaged beyond repair shall be replaced within 2 days and all other signs replaced within 3 days.

(iv) Appropriate devices for measuring the luminosity and reflectivity shall be used to check visibility and reflectivity of signs, delineators and markings. These shall be replaced by similar material if the reduction in the level of these two requirements falls below 50% of the original level.

(v) LIne marking with thermo-plastic paint on toll road shall be carried out soon after any overlay/renewal coat is provided and in situation when adequate reflectivity is lost under poor weather condition adequate wet reflectivity should be ensured.

(vi) Raised Pavement marker 3M-Series 290 or equivalent using micro prismatic Lens technology (confirming to ASTMD 4280 Type H) shall be provided on the centre line of each carriageway enhancing road safety.

3.4.2.14 Maintenance of Control Centre

(i) There shall be periodic inspection and maintenance of the Control Centres. This shall include attending to repairs and maintenance (both regular and

periodic) to various parts of the building and connected services and facilities as and when necessary, and replacement of irreparable items of work. Clearing & disinfecting of the water supply system, inspection and maintenance of drainage/sanitation system and electrical installations shall be as per relevant clauses of NBC.

(ii) Maintenance of Emergency Telephone system including its equipment shall include periodic servicing, checking of the system; replacement of components, attending to all necessary repairs and other incidentals to keep the system in working condition.

(iii) All the vehicles shall be maintained in smooth running condition at all times. In the event of any vehicle being of the road for maintenance or on account of breakdown, substitute vehicle shall be provided immediately.

(iv) At the end of the Concession period or the extended period thereof, Control Centre together with all equipment in working order shall be handed over to NHAI.

3.4.2.15 Maintenance of Buildings

(i) Maintenance of buildings shall include routine maintenance and attending to repairs to various parts of the building and connected services as and when necessary, and replacement of irreparable items of the work, cleaning & disinfections of the water supply systems, inspection and maintenance of drainage/sanitation systems and electrical installations shall be as per relevant clauses of NBC.

(ii) All the end of the concession period or the extended period thereof, all buildings shall be in usable condition and handed over to NHAI.

3.4.2.16 Maintenance of Facilities for Road Users

The concessionaire shall ensure that all the facilities provided for Road Users of all categories are kept in a neat, hygienic and tidy condition. Special attention shall be given in preparation of food items so that they are cooked with unadulterated ingredients in a hygienic manner.

4. Traffic Management and Lane Closure

4.1 Traffic Management

4.1.1 General

Traffic Management shall be undertaken during scheduled and unscheduled construction work and maintenance activities and also during any Emergency. Traffic Management during Emergency shall be undertaken in consultation with the Independent Engineer. The extent of the traffic management shall be assessed as per the site conditions.

4.1.2 Traffic management during construction, operation and maintenance of the project highway is important activity the Concessionaire has to attend to ensure safety of the road users as well as the construction workers simultaneously throughout the concession period. It is an usual activity to carryout various types of construction works at different stages ant at different periods as per site requirement. Also, it is a vital activity during unforeseen and/or emergency situations arising on account of natural causes or accidents or administrative reasons.

4.1.3 Traffic Management is required during planned scheduled construction and maintenance activities. However, traffic management will also be called for during unscheduled activities such as:

i) Emergency situation arising on account of
   a) Force Majeure;
   b) Accident/Incident on the Project Highway

ii) Special repairs required on account of failure of an element of the Project Highway and

iii) Default of the concessionaire with respect to an operational activity on the project highway

4.1.4 The basic principles to be followed for traffic management and lane closure in this project highway shall be as follows:

(i) Work programme schedule shall be prepared such that diversion roads for the main traffic are minimized, and the existing two lane carriageway is utilized to the maximum extent possible.

(ii) Measures shall be taken that the traffic is guided from closed lane into the operating lane without its conflict with the traffic from the opposite direction.

(iii) The activity of renewal of pavement surface and/or strengthening of the pavement structure shall not be taken up in a continuous length of more than 2 kilometers at a time to avoid long detour of the traffic.

(iv) The traffic diversion and road where provided shall be appropriately designed for the traffic plying on the highway. It shall also be properly maintained during its operation period.

(v) During traffic detour involving traffic diversion adequate safety measures as per safety standards shall be followed.

(vi) Proper and adequate information about the maintenance activity shall be notified to the Road Users in advance and displayed at the work site during the Operation Period.

(vii) Traffic Management plan and programme for planned scheduled construction and/or maintenance activity shall be prepared in advance of that activity keeping mentioned above and got approved by the independent Consultant/NHAI as the case may be.

(viii) In case of un-scheduled activities mentioned above, an emergency traffic management for the affected reach of the highway shall be prepared and implemented in consultation with the independent Consultant Immediately. This emergency traffic management plan shall take into account the various requirements spelt out in the Concession Agreement as well as in this schedule.

4.2 The Concessionaire shall provide, erect, maintain, cover, uncover and remove traffic signs as required in respect of works on the Project Site. Adequate safety during night time shall be ensured by providing mobile emergency lighting units with illuminated warning signs at important locations finalized in consultation with the Independent Consultant.

4.3 Traffic Management Plan

4.3.1 Before the commencement of construction activity, an overall traffic management plan and programme for a planned scheduled construction and/or operations and maintenance activity of the existing highway shall be prepared in consultation with the Independent Consultant. The plan shall be based on the following operational parameters:

(i) The existing 2 lane carriageway shall be utilized to the maximum extent possible;

(ii) At major intersections all traffic turning movements will be allowed at most of the times

(iii) Lane closure adopted for diverting the main traffic during Construction Works shall be governed by the approved programme of construction.

(iv) Existing traffic may be bifurcated to a one carriageway for going and another for coming;

(v) Construction of service roads including construction of culverts etc. could be taken up early to help traffic movement during construction of facility.

(vi) Traffic speed through the construction zone shall be reduced by providing well designed speed breakers and warning signs.

(vii) For the safety of construction workers as well as the traffic, a physical separation of 1.5 m between work area and the highway traffic shall be maintained.

(viii) All construction traffic shall enter and exit the construction site at designated and manually controlled entrances;

(ix) All short and long term temporary road detours (diversions) shall be proposed for approval Independent Consultant;

(x) Adequate advance warning and information signs shall be incorporated in the traffic management plan in accordance with IRC/MORT&H standards and specifications.

4.3.2 Traffic management and lane closure requirements during various situations arising on the project highway needing traffic management details below:

4.3.2.1 Rural Sections

i) The widening of the existing 2 lane carriageway shall be as far as possible eccentric to develop four lane divided carriageway facility. A new 2 lane carriageway separated from the existing carriageway with a 5.0 m central median will be constructed in the first instance before taking up works on existing 2 lane carriageway.

Ii) The construction sequence in this case will be as under

a) 2 new lanes will be constructed initially. There will be no conflict area for the main traffic using the existing two lanes during this construction phase. It shall be ensured that the construction traffic does not conflict with the main traffic in this phase.

b) On completion of the 2 new lanes in sufficiently long sections, the total traffic will be diverted on it and the works on existing 2 lanes will be taken up

4.3.2.2 Central widening –urban/built up sections

i) In built up areas widening of the existing 2 lane carriageway shall be concentric to make it a 4 lane divided carriageway facility. The divider will be generally 3 m wide median. In addition 5.5 m wide service road will be provided on either side on the 4 lane carriageway.

ii) The construction in such cases shall be taken up in about 2 km stretch and the sequence in this case will be as under:

a) Service roads and side drains, side berms will be constructed initially. Also required widening including paved shoulders upto granular base layer on the side other than service road will be taken up and 1st surface dressing provided over the WMM top layers.

b) On completion of the service roads on both sides and the widening portions upto surface dressing stage the main traffic will be diverted on them direction wise with light traffic on service road and main heavy traffic on widened portion of existing road after diversion of traffic from existing work on medina will be taken up. Once median work is completed the existing widened carriageway with paved shoulders shall be provided with DBM &BC on one side and in the mean time traffic maintained on available width.

4.3.2.3 Operation and Maintenance Stage

This stage is obtaining during the entire period of operation on the Project Highway in the concession period. Various important activities to be carried out during this stage

are:

i) Localized repairs in short lengths less than 500 m on account of pot holes, cracks subsidence in isolated sports or in scattered areas.

ii) Renewal/strengthening course to be provided on as required basis (once 5 year).

iii) Wearing course required on account of the IRI values higher than the prescribed criteria obtained during regular testing as per Concession Agreement requirement

iv) Strengthening course required on account of the BBD values in excess of the prescribed criteria obtained during regular testing as per the Concession Agreement requirement;

v) Regular periodic maintenance of shoulders, median, separator islands, embankment slopes, plantations, road furniture etc.

4.3.3 Lane Closure

(i) Lane closure is a vital activity during construction and/or maintenance in the Concession Period that the Concessionaire shall carryout in an organized, planned and disciplined manner.

(ii) Lane closure involves traffic management in the affected reach of the highway and is always a time bound activity and the Operation and Maintenance Manual has to incorporates it accordingly. In case where the concessionaire for the delay in reopening the closed lane to the traffic in terms of the Concession Agreement.

(iii) The basic principles to be followed in preparation of a planned lane closure shall be as follows:

a) The activity of renewal of pavement surface and/or strengthening of the pavement structure shall be taken up in a manner so that 2 lane are always available to the traffic.

b) The activity of renewal or strengthening shall not be carried out in a continuous length of more than 2 km in rural section and 1 km in Urban section so that the closure of a lane is not more than 2 days and 1 day in Rural and Urban section respectively.

c) Lane closure adopted for diverting the main traffic on account of the traffic management during construction works of the Project Highway shall be governed by the approved programme of Construction.

d) Lane closure in short length less than or equal to 500 m from carrying out a routine maintenance activity defined in item 2 of this schedule shall not be more than for continuous period of 1 day.

5.0 Corridor Control Plans

a. Regular 24 hours patrol/surveillance of the ROW in respect of the

Project/Project Facilities shall be required to monitor, report and take actions against activities, such as, encroachments, unauthorized construction of road or entrance connections, structures, interference with drainage system etc, within 150 m of the highway corridor.

b. Surveillance shall also include traffic operation and management of accidents/ other incidents

c. The Corridor Control Plan shall be developed in consultation with local administrative authorities and the Independent Consultant and shall form a part of the O&M Manual.

6.0 Inspections & Frequency

The Concessionaire shall plan inspection programme for the Project Facilities for its smooth operations as follows:

6.1 Visual Inspection

Visual Inspections are broad general inspections carried out frequently by highway/ bridge maintenance engineers having adequate knowledge of road structures. The purpose of visual inspection is to report the obstacles to traffic and fairly obvious deficiencies, which could lead to accidents or maintenance problems. Such inspections should be frequent. The visual inspection may be carried out by visual assessment with careful observation of the specific object/item of the Project Facilities for identification and for quantification of the deficiencies or damages of the Project Facilities.

6.2 Close Inspection

Close inspections may be visual and/or by standard instrumental aids for assessment of defects / deficiencies of Project Highway with careful observation of specific element(s). The close inspection is more intensive and would require detailed examination of element of the Project Highway. It should cover all the aspects of the specific element of Project Highway against a checklist. The frequency of close inspections would depend upon the type of defect or damage to Project Highway. This inspection is to be carried out by the Highway/Bridge Engineer having good knowledge of road structures with theoretical background to analyze the nature, and extent of defects/deficiencies, suggest suitable remedial measures to rectify/remedy them and quantify repair work.

6.3 Thorough Inspection

A thorough inspection is comprehensive and detailed for assessment of defects/deficiencies of the Project Highway by visual inspection or with aid of standard equipment and non-destructive testing where necessary. Such an inspection is to be carried out on the basis of comprehensive checklist of items related to the materials, condition and situation of the structure etc. The checklist is to be prepared meticulously well in advance of this kind of inspection. The thorough inspection should be undertaken during the critical weather condition, which is generally rainy season in India. During rainy season the Road /bridge structures are under severe condition thereby the damage and deficiencies of the Project Highway are more pronounced. The inspection carried out during the said period offer to the Client critical evaluation of the performance of the structure. The thorough inspections would be of critical importance for bridges, culverts and drainage structures, as well as road pavements during adverse weather condition of monsoon period:

6.3 Frequency of Inspections

The type of inspection and related frequency of various items of Project Highway and its facilities have been indicated in the Table 1- 3 below. The -frequency of inspection can be suitably revised in consultation with the Independent Consultant if the situation so warrants. The objective and minimum frequency of inspections under normal circumstances shall be as under. If the exigencies arise, the interval of inspection shall be reduced.

7. Reporting Requirements

The reporting and information that generally need to be provided by the Concessionaire are given below. The requirements given below are indicative of the type of information to be provided. The format of such reports, recording requirements, software standards and number of copies required would be finalized in consultation with the Independent Consultant. All reports and records shall be in the English language.

7.1 Inspection Reports and Remedial Measures

The periodicity of inspections for maintenance activities by the Concessionaire shall be set out in the O&M Manual and regular reports on the same shall be, sent to the Independent Consultant. Where required, the Concessionaire shall carry out any maintenance, repair or rehabilitation works found necessary as a result of such inspections

Table L-3
Objective and Frequency of Inspection

Object	Item	Daily	Monthly	Quarterly	Before and after rainy season
Riding Surface	Pavement	♦	#		•
	Expansion joints	♦	#		•
Median	Kerb	♦	#		•
Side Slopes	Shape	♦		#	•
	Turfing		♦		•
	Pitching Masonry		♦		•
	Retaining Wall		#		•
Drainage	Side drain	♣	#		
	Gullies and catch pits	♣	#		
Bridges	a) Superstructure			#	•
	b) Substructure			#	•
	c) Head wing walls and aprons			#	•
	d) Painting				•
	e) Hand rail		#	•	
Culverts					•
Safety Barrier		♣		#	•
Traffic operation facilities	Signs		•		•
	Marking	♣	#	#	•
	Delineator	♣	#	#	•
	Lighting	♣		#	•
Other facilities	Vegetation / landscaping/toll plaza/wayside amenities	♣	#	•	
Traffic Conditions		♣	•	#	
Encroachments		♣	•		

♦ Visual inspection
\# Close inspection
• Thorough inspection
♣ Visual inspection during rainy season only

7.2 Monthly O&M Report

During the Concession Period, within 5 days of the end of each calendar month or part thereof, the Concessionaire shall provide to the Client a monthly report (Monthly O&M Report) which shall contain the following minimum information:

a) Inspections undertaken by the Concessionaire during the month and action taken proposed thereafter;

b) Details *of* all reports submitted to the Independent Consultant during the month

c) O&M inspection compliance report

d) Maintenance activities undertaken during the month ended,

e) Details *of* any Emergency and action taken

The *format of* the O&M Report would be finalized in consultation with the Independent Consultant.

8.0 Inventory

(i) The Concessionaire shall maintain an inventory of all items comprised in the Project Facilities (the "inventory"), in a format to be developed in consultation with the Independent Consultant.

(ii) Throughout the Concession Period the Concessionaire shall keep the Inventory updated to take account of works carried out on and other changes made to the Project Facilities.

(iii) A Copy of the Inventory shall be submitted by the Concessionaire to the Independent Consultant within thirty (30) days of receipt of a request for the same.

9.0 Abnormal Load Routing

(i) The Concessionaire shall take all reasonable steps to facilitate the transit of Abnormal Indivisible Loads along the Project Facilities.

(ii) The Concessionaire shall develop a procedure for handling Abnormal Indivisible Loads in consultation with local authorities and the Independent Engineer.

10.0 Equipment Belonging to Third Parties

The concessionaire shall be responsible for the installation, operation, maintenance and removal of any equipment belonging to third parties.

11.0 Limit of Maintenance

The concessionaire shall maintain the Project Highway, Project area, Project Assets. Ancillary Facilities on the Project Highway in working and orderly condition at all times during the Concession Period or any extension thereof.

12.0 Divestment

The Concessionaire shall take action(s), in terms of Article XXXIV. Defects Liability Chapter-VIII, Miscellaneous, of the Concession Agreement prior to proceeding with Transfer of the Project Highway, Facilities and Assets thereon to NHAI.

The concessionaire shall obtain transfer certificate, appended to this schedule, from the independent consultant, who shall issue it after satisfying itself that the project highway and facilities and assets thereon have been constructed, operated and maintained in terms of the Concession Agreement during the Concession Period and meet the divestment requirements as per Concession Agreement for the issue of Vesting Certificate (Schedule) by NHAI.

Transfer Certificate

I/we _____ (name of the independent consultant) issue this certificate, designated Transfer Certificate for _____(Name of the Project) in _____(Name of the State), India on Build Operate and Transfer (BOT) basis by the Concessionaire _____ (Name of the Concessionaire) on Build, Operate and Transfer (BOT) basis as per the Concession Agreement between the National Highways Authority of India (NHAI) and the said Concessionaire, being satisfied that the Project Highway has been constructed, operated and maintained during the Concession Period is in sound, durable and operational condition on completion of the said concession period, and is in a fit condition for transfer by the said Concessionaire to NHAI or its nominee. The transfer of the said project highway together with facilities thereon shall be effected on the strength of this certificate.

Place of Issue _____

Date of Issue _____

(Independent Consultant)

Equivalent Rating Conditions

Category	Status	Rating
Very Good Construction	On completion as per specification and Standards	9
Good Condition	No repairs needed	8
Generally good condition	Potential exists for minor maintenance	7
Fair condition	Potential exists for major rehabilitation	6
Generally fair condition	Potential exists for minor rehabilitation	5
Marginal condition	Potential exists for major rehabilitation	4
Poor Condition	Repair or rehabilitation required immediately	3
Critical condition	Need for repair or rehabilitation is urgent. Facility should be closed until the indicated repair is complete	2
Very critical condition	Facility is closed. Study should determine the feasibility for repair.	1
Unserviceable	Facility is closed and is beyond repair	0

Sufficiency Rating System

1. Load Performance
2. Safety Performance
3. Remaining Life

SCHEDULE – M

MONTHLY FEE COLLECTION STATEMENT



SCHEDULE M

MONTHLY FEE COLLECTION STATEMENT

1. Name of Work:
2. Date of commencement of fee collection: ..... (D/M/Y)
3. Report for month ending.....
4. Fee rates (in Rs.)

Vehicle Type	Fee rates on commencement	Rates during year before last year w.e.f. ..... (Date)	Rates during previous year applied w.e.f. ..... (Date)	Present rates applied w.e.f. ..... (Date)
Car, passenger van or jeep				
Light Commercial Vehicle (LCV) including Mini Bus				
Truck/ Bus				
Multi Axle Vehicle (>2 axle)				
Earth-moving equipments and heavy construction machinery				

5. Collection during month under report (Amount in Rs. Lacs)

Vehicle Type	Previous Month		Corresponding Month during Previous Year		Current Month	
	Nos.	Amount	Nos.	Amount	Nos.	Amount
A car, passenger van or jeep						
Light Commercial Vehicle (LCV) including Mini Bus						
Truck/Bus						
Multi Axle Vehicle (>2 axle)						
Earth-moving equipment and heavy construction machinery						
Gross Total						

Note: Information at '4' and '5' to be provided separately for Through Tolled Traffic, Local Tolled Traffic and Total Tolled Traffic on the Project Highway.

SCHEDULE – N

SELECTION CRITERIA FOR INDEPENDENT CONSULTANT



SCHEDULE N

SELECTION CRITERIA FOR INDEPENDENT CONSULTANT

Selection of the Independent Consultant shall consist of the following steps :

1. Shortlisting of Consultants by the concessionaire and NHAI out of the list of consultant empanelled by NHAI.
2. Issue of Letter of Invitation (LoI) alongwith Terms of Reference (Schedule O) to shortlisted Consultants.
3. Evaluation of Technical Proposal and selection of five (5) Consultants.
4. Forwarding list of five (5) Consultants to Concessionaire to select three (3) Consultants for consideration.
5. Evaluation of Financial Proposal of the 3 selected Consultants by the Concessionaire.
6. Negotiation and selection of Independent Consultant.

SELECTION COMMITTEE

A selection committee shall do the selection; NHAI shall nominate the members of this committee.

1. Short listing of consultants by NHAI

NHAI will provide the list of empanelled consultants to the concessionaire. The concessionaire will prepare a short list of 10-12 consultants and forward it to NHAI who will approve the short list as sent by the concessionaire as modified with the mutual consent of the concessionaire and NHAI.

2. Request for Proposal

The request for proposal shall be sent NHAI to the short listed firms. This shall include a LoI and the ToR besides information (Data Sheet) to the firms and the proposed form of contract. It shall contain the guidelines for the preparation of technical and financial proposals by the firms and submission.

The LoI shall state the intention of the NHAI to enter into a contract for the provision of consulting services and the date, time and address for submission of technical and financial proposals. ToR shall include the following details :

1. Project background
2. Objectives
3. Scope of services
4. Interaction with NHAI
5. Reporting requirement
6. Performance clause
7. Consultant's Proposal
8. Period of Services

3. Evaluation of Technical Proposal

The technical proposals received from short listed firms shall be evaluated for selection of five firms based on the following :

Evaluation Criteria for Technical Proposal

S.No.	Description	Marks
1	Specific experience of the firm related to the assignment	15
2	Adequacy of the proposed work plan and methodology in response to the ToR	15
3	Qualifications and competence of the key staff for the assignment	70
	Total	**100**

Sub criteria for qualification of key staff

General qualifications	30
Adequacy for the project	70
Total	**100**

4. Evaluation of Financial Proposal

Financial proposals of the three firms selected by the Concessionaire shall be opened and evaluated as under :

The financial score of the lowest bidder shall be 100 marks. The financial score for the remaining bidders shall be calculated in proportionate to the lowest bidder by the following formula :

Financial Score of `X' = {100 X Bid price of lowest bidder} / {Bid price of `X'}

The weightage given to the technical proposal	:	80%
The weightage given to financial proposal	:	20%

Combined score of bidder `X' = 0.20{Financial score of bidder `X'} + 0.80{Technical score of bidder `X'}

5. Negotiation and Selection of Independent Consultants

The combined score of technical and financial proposals shall be calculated and the firm scoring maximum marks shall be called for negotiations. After satisfactory agreement of all matters by both the parties, NHAI will appoint the said firm as Independent Consultant for the initial term of 48 months. In case of failure of negotiations, the firm with second highest score shall be called for negotiations. In case of failure of negotiations with the said second firm, the firm with the least score shall be called for negotiations.



SCHEDULE – O

INDEPENDENT CONSULTANT'S SERVICES

SCHEDULE O

INDEPENDENT CONSULTANT'S SERVICES

LETTER OF INVITATION

Re : 4-laning of Ambala-Chandigarh Section in the States of Haryana and Punjab **on BOT basis.**

M/s. :

1 INTRODUCTION

1.1 You are invited to submit a technical and financial proposal for consulting services required for the assignment named in the attached data sheet (referred to in sequential sub clause numbering herein under). Your proposal could form the basis for future negotiations and ultimately a contract between your firm and the NHAI.

1.2 A brief description of the assignment and its objectives are given in the data sheet.

1.3 The assignment shall be implemented in various stages such as Design, Construction supervision, and Operation and Maintenance and Divestment, if any.

1.4 To obtain first hand information on the assignment and on the local conditions, you are encouraged to pay a visit to the NHAI before submitting a proposal and attend a pre proposal conference as specified in the data sheet. You must inform yourself of local conditions and take them into account in preparing your proposal.

1.5 Please note that (i) the costs of preparing the proposal and negotiating for the contract, including a visit to site, are not reimbursable as a direct cost of assignment and (ii) NHAI is not bound to accept any of the proposals received by it.

1.6 An invitation to submit a proposal has been sent to the firms stated in the data sheet.

1.7 We wish to remind you that in order to avoid conflict of interest situations any firm associated with the Concessionaire of the Project Highway and its Design

and/or Supervision Consultant and/or the Contractor(s) as Design Consultant and/or Construction Supervision Consultant is not eligible to participate in the bidding.

2 DOCUMENTS

2.1 To enable you to prepare a proposal, please use the attached documents listed in the data sheet.

2.2 Firms requiring a clarification of the documents must notify the NHAI, in writing, not later than thirty days before the proposal submission date. Any request for clarification in writing, by cable, telex or must be sent to the NHAI address indicated in the data sheet. NHAI will respond by cable or fax to such requests and copies of the response shall be sent to all the other invited firms.

2.3 At any time before the submission of the proposals, the NHAI, may for any reason, whether at its own initiative or in response to a clarification sought by an invited firm, modify the documents by amendment. The amendment shall be notified in writing or by cable, fax to all the invited firms and shall be binding on them. NHAI may at its discretion extend the deadline for the submission of the proposals.

3 PREPARATION OF PROPOSAL

3.1 You are requested to submit a technical and a financial proposal. Your proposal shall be written in the language specified in the data sheet.

Technical Proposal

3.2 You are expected to examine all terms and conditions included in the documents. Failure to provide all requested information will be at your own risk and may result in rejection of your proposal.

3.3 During preparation of the technical proposal you may give particular attention to the following :

i. If you consider that your firm does not have all the expertise for the assignment, you may form a joint venture with other firms but no the firms invited for this assignment, subject to restriction specified in the data sheet, to enable a full range of expertise to be presented.

ii. Sub contracting part of the assignment is considered desirable; a sub consultant may participate with more than one short listed firms subject to the limitation mentioned in the data sheet.

iii. The estimated manmonths for the assignment is stated in the data sheet for your information.

iv. The majority of the key professional staff proposed must be permanent staff of the firm, unless otherwise indicated in the data sheet.

v. No alternative to key professional staff may be proposed and only one Curriculum Vitae (CV) may be submitted for each position and

vi. A good working knowledge of the language specified in the data sheet is essential for key professional staff on this assignment. Reports must be in the language (s) specified in the data sheet.

3.4 Your technical proposal must provide the following information, using but not limited to the formats attached in the Appendix I.

i. A brief description of the firm's organisation and an outline of recent experience on assignments of a similar nature. The information which you shall provide on each assignment should indicate, *inter-alia*, the profiles of the staff provided, duration, contract amount and firm's involvement.

ii. Any comments or suggestions on the ToR and a description of the methodology (work plan) which the firm proposes to execute the services, illustrated with bar charts of activities.

iii. The composition of the proposed staff team, the tasks which shall be assigned to each and their timing;

iv. CVs recently signed by the proposed key professional staff or an authorised manager in the home office. Key information should include years with the firm and degree of responsibility held in various assignments during the last ten years;

v. Estimates of the total time effort (person x months) to be provided for the services, supported by bar chart diagrams showing the time proposed (person x months) for each professional staff and

vi. Comments, if any, on the services and facilities to be provided by the client and indicated in the ToR.

3.5 The technical proposal must not include any financial information.

Financial Proposal

3.6 The financial proposal should list the cost associated with the assignment. These normally cover; remuneration for staff (in the field and at headquarters), accommodation (per diem or housing), transportation (for mobilisation and demobilisation) and equipment (vehicles, office equipment, furniture and supplies), printing of documents, etc. Your financial proposal should be prepared using, but not limited to, the formats attached in Appendix II.

3.7 The financial proposal must take into account the tax liability including service tax and cost of insurance specified in the data sheet.

4 SUBMISSION OF PROPOSAL

4.1 You must submit one original proposal and the number of copies indicated in the data sheet. Each copy of the Technical and Financial proposal shall be separately sealed and put in an outer envelope which shall bear the address and information indicated in the data sheet. The envelope must be clearly marked.

"DO NOT OPEN, EXCEPT IN PRESENCE OF THE EVALUATION COMMITTEE"

4.2 This outer envelope shall include two separate envelopes, one clearly marked "Technical Proposal" and one clearly marked "Financial Proposal" (both envelopes indicating original or copy as appropriate).

4.3 In the event of any discrepancy between the copies of the proposals, the original shall govern. The original and each copy of the technical and financial proposal must be prepared in and signed by the authorised representative of the firm in indelible ink. The letter of authorisation must be confirmed by a written power of attorney accompanying the proposals.

4.4 The proposals must contain no interlineation or over writing except as necessary to correct errors made by the firm themselves, such corrections must be written fresh and initialled by the person or persons signing the proposal.

4.5 Your completed technical and financial proposal must be delivered on or before the time and date stated in the data sheet.

4.6 Your proposal shall be valid for the number of days stated in the data sheet from the date of its submission prescribed in the data sheet during which you must maintain available the professional staff proposed within this period for the assignment. NHAI will make its best effort to complete negotiations at the location stated in the data sheet.

5 PROPOSAL EVALUATION

5.1 A two-stage procedure shall be adopted in evaluating the proposals : (i) a technical evaluation, which shall be carried out prior to opening any financial proposal ; (ii) a financial evaluation. Firms shall be ranked using a combined technical and financial scores, as indicated below.

Technical Proposal

5.2 The Evaluation Committee appointed by the NHAI shall carry out its evaluation applying the evaluation criteria and point system specified in the data sheet. Each responsive proposal shall be attributed a technical score (St.)

Financial Proposal

5.3 The Evaluation Committee shall determine if the financial proposal is complete and without computational errors. The lowest financial proposal (Fm) shall be given a financial score (Sf) of 100 points. The financial score of the proposals shall be computed as follows : Sf = 100 x Fm//F (F-amount of financial proposal).

5.4 Proposals shall finally be ranked according to Total Score (ST) which will be combined technical (St) and financial (Sf) scores using the weights indicated in the data sheet.

$$ST = Wt*St+Wf-SF$$

5.5 Any effort by the firm to influence the NHAI in its evaluation of proposal or award of contract may result in the rejection of the firm's proposal.

6 NEGOTIATIONS

6.1 Prior to the expiration period of validity of proposal, the NHAI shall notify the successful firm who submitted the highest scoring proposal in writing by registered letter, cable facsimile and invite it to negotiate the contract.

6.2 Negotiations normally take two to five days. The aim is to reach agreement on all points, and initial a draft contract by the conclusion of negotiations

6.3 Negotiations shall commence with a discussion of your technical proposal, the proposed methodology (work plan), staffing and any suggestions you may have made to improve the ToR. Agreement must then be reached on the final ToR, the staffing and bar charts, which shall indicate activities, staff, periods in the field and in the home office, staff months, logistics and reporting. Special attention shall be paid to optimise the required outputs from the firm within the available budget and to define clearly the inputs required from the NHAI to ensure satisfactory implementation of the assignment.

6.4 Changes agreed upon shall then be reflected in the financial proposal, using proposed unit rates (no negotiation of the unit rates, including the man months rates).

6.5 Having selected a firm, among other things, on the basis of an evaluation of proposed key professional staff, the NHAI expects to negotiate, a contract on the basis of the staff named in the proposal and, prior to contract negotiations, will require assurance that this staff shall be actually available. NHAI shall not consider substitutions during contract negotiations except in cases of unexpected delays in the starting date or incapacity of key professional staff for reasons of health.

6.6 The negotiations shall be concluded with a review of the draft form of Contract. NHAI and the firm will finalise the contract to conclude negotiations. If negotiations fail, the NHAI will invite the firm having obtained the second highest score to contract negotiations. In case of failure of negotiations with the second highest scoring firm, the firm with the least score shall be called for negotiations.

7 AWARD OF CONTRACT

7.1 The contract shall be awarded after successful negotiations with the successful firm. Upon successful completion, NHAI shall promptly inform the other firms that their proposals have not been retained.

7.2 The successful firm with whom the contract is signed is expected to commence the assignment on the date and at the location specified in the data sheet.

8 CONFIRMATION OF RECEIPT

8.1 We shall appreciate your informing us by telex/facsimile :

- Receipt of the LoI and
- Whether or not you will submit a proposal.

[Name]*
[Designation]*
[Department]*

DATA SHEET
(As Mentioned in LoI)

Sub clause No. in LoI

1.1 **The name of the Assignment is: Design review and Construction Supervision of** 4-laning of Ambala-Chandigarh Section **on BOT basis.**

1.2 **The description and the objectives of the Assignment are** : The Government of India (GoI) in the National Highways Authority of India (NHAI) has decided to undertake 4-laning of Ambala-Chandigarh Section **on BOT basis** including its operation and maintenance NHAI after due consultation with the Concessionaire intends to appoint an Independent Consultant (IC) to oversee the activities of the Concessionaire during Design, Construction, Operation and Maintenance of the Project Highway.

The objectives of the consultancy service are to :

i) Act principally on behalf of NHAI and lenders to review all activities associated with Design, Construction and O&M to ensure compliance of requirements of Concession Agreement with the Concessionare in order to have a sound project.

ii) Report on the financial and technical aspects of the project, after visiting the site at least once a month.

iii) Assist the parties to the Concession Agreement in arriving at an amicable settlement in case of a dispute

1.4 Pre-Proposal Conference shall be held at _____ hr on _____ 2004 at _____.

1.6 **The invited firms are :**

i)

ii)

iii)

2.1 **The Documents are** : (ToR, Contract, Appendices etc.)

i) ToR
ii) Form of Contract Agreement alongwith Appendices
iii) Appendix I - Formats for Technical Proposal

iv) Appendix II - Formats for Financial Proposal

2.2 **The address is :**

_____

_____

_____

_____

3.1 The Language of documents and correspondence will be English

3.3 (i) Limitations to joint ventures or sub-contracts are : Joint Venture between firms on the short list is not permitted.

(iii) It is estimated that about 105 **man** months of services of key personnel and 222 man months for supporting staff will be required. However, you should feel free to submit your proposal on the basis of the man-months which you consider to be necessary to undertake the assignment.

(iv) Majority of proposed key staff should be permanent employees of the firm:

(vi) All the personnel shall have working knowledge of English and all the reports shall be written in English.

3.7 Tax Liability, insurance :
As per clause _____ and _____ of Special Conditions of Contract.

4.1 **The number of copies of the proposals required :** 4 Nos.
The address and information are:

4.5 **The date and time of proposal submission are:**

4.6 **Validity period :** 90 days

Negotiations shall be held at New Delhi

5.2 **The points assigned to evaluation criteria are:**

	POINTS
(i) Relevant experience for the assignment	15
(ii) The quality of methodology and work plan proposed	15
(iii) The qualifications of the key staff proposed	70
TOTAL :	**100**

The points assigned to the evaluation sub-criteria for qualifications and competence of key staff are:

	POINTS
General Qualifications	30
Adequacy for the Project	70
TOTAL :	**100**

The technical proposal should score at least 75 points out of 100 to be considered responsive for financial evaluation.

5.4 The weight (Wt%) given to the Technical Proposal is 80 percent

The weight (Wt%) given to the Financial Proposal is 20 percent

7.2 Commencement of Assignment : The firm shall begin carrying out the services within one month of the date of effectiveness of the contract at locations as required for the project highway stated in ToR

Sincerely,

[Name]*

[Designation]*

Attachments :

i) ToR
ii) Form of Contract Agreement alongwith Appendices
iii) Appendix I - Formats for Technical Proposal
iv) Appendix II - Formats for Financial Proposal

INDEPENDENT CONSULTANTS' SERVICES
TERMS OF REFERENCE

1. PROJECT BACKGROUND

The Government of India, National Highways Authority of India (NHAI) has taken up 4-laning of Ambala-Chandigarh Section in the States of Haryana and Punjab, India and its Operation and Maintenance on BOT basis.

2. OBJECTIVES

The objectives of consultancy service are to :

i) Act independently and on behalf of the NHAI to review all activities associated with Design, Construction and O&M to ensure compliance of requirements of Concession Agreement in order to have a sound project.

ii) Report to NHAI on the financial and technical aspects of the project, after visiting the site at least once a month.

iii) Assist the parties to the Concession Agreement in arriving at an amicable settlement of dispute.

iv) Act, if required on behalf of the lenders and fulfil various reporting requirements of the lenders.

3.0 SCOPE OF SERVICES

The Project Highway provides for 4-laning of Ambala-Chandigarh Section in the States of Haryana and Punjab, India and its Operation and Maintenance on BOT basis. The work also includes the widening of existing bridges and culverts and construction of new bridges and culverts for new carriageway, **including bypass**. The Project Highway shall include but not be limited to the following:

- Road works
- Fee Collection system including buildings and related structures, hardware and software
- Communication systems
- Administration and Maintenance Depots
- Rest Area and Fuel and Service facilities
- Rest areas
- Lighting system

- Interchanges
- Bridges
- Service Roads
- Lay byes, Bus bays
- Traffic safety, Landscaping, arboriculture and other Project facilities.

The Concession Agreement envisage the appointment of an Independent Consultant (IC) by the NHAI. The IC shall be, in principle, responsible for review of Designs, Drawings, Construction, Progress Monitoring, affirmation of all certifications done by the Concessionaire, etc. The IC shall not be involved in day-to-day implementation of the project.

The responsibility of the IC in respect of Design, Construction and Operation and Maintenance shall be as follows but not be limited to :

3.1 Design Responsibilities

Independent Consultant shall review the overall project design as well as design of various components of the project to ensure that designs submitted by the concessionaire conform to the provisions of the Concession Agreement. His duties shall include **but not be** limited to **the following**:

i) Review the adequacy of the geotechnical and sub-soil investigations for road, bridge and other structures and building works, hydrological investigation and the topographical survey.

ii) Review the Design and working drawings prepared for the construction of various components of the highway, bridges / structures, analysis of rates, estimates, reports and other deliverables.

iii) Review the impact of widening proposal on the Archaeological structures, if any.

iv) Review the project report prepared by the Concessionaire, with respect to the traffic, toll management, traffic management, etc.

v) Review the implementation schedule of Engineering, Design, Procurement and Construction of the project submitted by the Concessionaire.

vi) Review the Planning and Design of way-side amenities, toll plazas, toll collection system, communication facilities, emergency relief arrangements, traffic operation and safety arrangements.

vii) Review all project contracts including Detailed Engineering and Design Consultancy Contract, Construction Supervision Consultancy contract , any other EPC contract, O & M Contract and Tolling contract, made by the Concessionaire.

viii) Review the environmental management plan for the Project Highway during Construction and Operation and Maintenance phases.

ix) Review quality assurance and quality control provisions during the design, construction and maintenance stages.

x) Audit the safety of the Project Highway both during Construction and Operation and Maintenance stages.

xi) To assist in resolving disputes between NHAI and Concessionaire.

xii) Provide Management Information System to NHAI.

3.2 Construction Phase Responsibilities

3.2.1 The duties of the IC are to supervise the works on sample basis and to approve the materials and workmanship of the works. As stated in the Concession Agreement, he/she shall have no authority to relieve the Concessionaire of any of their duties or to impose additional obligations. The IC shall administer the works contracts and ensure that the Contractual Clauses, whether related to quality or quantities of works, are respected.

3.2.2 Review and approve works programme.

3.2.3 Review the material testing results and Mix Designs and to order special tests of materials and/or completed works, and/or order removal and substitution of substandard materials and/or works as required.

3.2.4 Review quality assurance and quality control during Construction period.

3.2.5 Ensure that the Construction work is accomplished in accordance with the technical specifications.

3.2.6 Identify Construction delays and recommend to the NHAI the remedial measures to expedite the progress.

3.2.7 Review and certify the `As Built' drawings for each component of the works prepared by the Concessionaire.

3.2.8 Review the safety measures provided for the traffic and Project workers.

3.2.9 Determine any extension of the Project Completion Schedule and the Concession period, to which the Concessionaire is entitled and shall notify the NHAI accordingly.

3.2.10 To assist in resolving disputes between NHAI and Concessionaire during Construction stage.

3.2.11 Assist the NHAI in arriving at any cost variation and its impact on Concession Agreement.

3.2.12 Evolve MIS and provide it to the NHAI

3.2.13 Issue Provisional Certificate duly appended with a list of outstanding items (Punch List) signed jointly by the IC and the Concessionaire, if the Concessionaire if situation so demands.

3.2.14 Issue Completion Certificate after checking the results of prescribed tests.

3.3 Operation and Maintenance Phase Responsibilities

During operation and maintenance share the Independent Consultant shall inspect, review and report to ensure that O&M is carried out in accordance with this provision of the Concession Agreement. His duties shall include, but not limited to:

3.3.1 Review work plan and schedules of various operation and maintenance activities.

3.3.2 Review Operation and Maintenance manual prepared by the Concessionaire.

3.3.3 Review the performance of Operation and Maintenance (O & M) activities including equipment, service, traffic operation and safety, toll plazas and fees collection system, landscaping, environmental issues and way side amenities.

3.3.4 To mediate and assist in resolving disputes between NHAI and Concessionaire during O&M stage.

3.3.5 Initiate necessary action to undertake maintenance obligations of the Concessionaire at risk and cost of the Concessionaire in the event of his failure to carry out O&M.

3.3.6 Undertake audit of the traffic using the Project Highway at least once a month.

3.3.7 Review and inspect the Project Highway at least once a month during the O&M period and issue an Inspection Report of such inspections.

3.3.8 Review the accident record on the Project Highway and suggest remedial measures.

3.4 Transfer/Termination

3.4.1 Satisfy himself that all the divestment requirement have been met by the Concessionaire.

3.4.2 Issue Transfer Certificate to the Concessionaire

3.5 All other activities as per provisions of the Concessionaire Agreement

4. INTERACTION WITH NHAI

The Independent Consultants shall interact with the NHAI on a regular basis. NHAI shall generally hold meetings every month to review the progress etc. during the phase of Design and Construction, and every second month during the Operation and maintenance stage. Within 30 days of the receipt of the Drawings, the Independent Consultant shall review the same and convey its comments/observations to the Concessionaire with particular reference to the conformity or otherwise with the specifications and standards setforth in the Agreement.

5. REPORTING REQUIREMENT

The Independent Consultants shall prepare and submit to the NHAI three copies and Concessionaire two copies each of the following reports.

(a) Design Phase

- Monthly Progress Report.

(b) Construction Phase

- Monthly and Quaterly Inspection Report covering all aspects such as Progress Monitoring, Quality Assurance (QA)/Quality Control (QC) etc.

(c) Operation and Maintenance Phase

- Monthly and Quaterly report on existing condition of facility including advise on all aspects of Operation And Maintenance, Toll Booths, Bridges or other Structures, Traffic Management & Safety, Telephone, Ambulance, etc.

- Monthly report on audit of the traffic using the Project Highway at least once a month.

(d) Various other reports as provided in the Concession Agreement such as Completion Report.

6. PERFORMANCE CLAUSE

Independent Consultants shall be expected to fully comply with all the provisions of the 'Terms of Reference', and shall be fully responsible for supervising that Designs, Construction and maintenance and operation of the facility takes place in accordance with the provisions of the Concession Agreement and other schedules. Any failure of the Independent Consultant in notifying to NHAI and the Concessionaire on non-compliance of the provisions of the Concession Agreement and other schedules by the Concessionaire, non-adherence to the provision of ToR and non-adherence to the time schedule prescribed under ToR shall amount to non-performance.

7. CONSULTANT'S PROPOSAL

7.1 List of key personnel to be fielded by the Consultants shall be as below :

i) Team Leader-cum-Senior Highway Engineer
ii) Senior Bridge/Structural Engineer
iii) Traffic & Transportation Expert
iv) Senior Pavement Specialist
v) Senior Quality/Material Expert
vi) Financial Expert
vii) Legal Expert

7.2 Broad job-description and minimum qualification for key personnel mentioned above is enclosed as Appendix A. However, higher marks shall be accorded to the Candidate with higher relevant qualification and experience. It is estimated that about 105 man-months of services of key personnel are required as detailed in Appendix B. However, the Consultant should feel free to submit their proposal on the basis of the man-months which they consider to be necessary to undertake the assignment. All the key personnel mentioned in para 7.1 above shall be evaluated at the time of evaluation of technical proposal. Consultants are advised in their own interest to frame the technical proposal in an objective manner as far as possible so

that these could be properly assessed in respect of points to be given as part of evaluation criteria. The bio-data of the key personnel should be signed on every sheet by the personnel concerned and the last sheet of each bio-data should also be signed by the authorised signatory for the Consultant. The key personnel shall also certify at the end of their bio-data proforma that they have not accepted any other offer at the time of signing of the bio-data and as such shall be available to work with the Independent Consultant, if the project is awarded.

8. PERIOD OF SERVICES

8.1 The services of an Independent Consultant will be in phases as per Article XX of the Concession Agreement.

8.2 The appointment of the Independent Consultant shall initially be for a period of 48 months. Estimated Design and Construction schedule for completion of the project for commercial operation is 30 months. The proposed manpower deployment for this period shall be matching the activities to be performed during the said period. The time frame for services during Operation and Maintenance shall be for about 18 months from the date of commissioning of the facility.

Appendix A

MINIMUM QUALIFICATION OF KEY PERSONNEL

TEAM LEADER CUM SENIOR HIGHWAY ENGINEER

This is the senior most position, the nominated expert as the team leader shall be responsible for reviewing the entire project preparation and implementation activities of the Concessionaire. He shall check all the Designs prepared by the Concessionaire, ensure execution of works on site as per specification and standards, and continuously interact with the NHAI and the Concessionaire. He shall undertake project site visits and shall guide, supervise, coordinate and monitor the work of other experts in his team as well as those of the Concessionaire. The candidate should have a proven record of supervising, organising and managing of project preparation and construction of highway projects of large magnitudes, as defined below, financed by international lending agencies and others. Knowledge of project management shall be an added advantage.

This position requires a Senior Highway Engineer who shall be a graduate in Civil Engineering with higher qualifications and specialisation in highway engineering. He should have a minimum 20 years of experience of highway engineering including 10 years of experience in developing countries. He should have handled as Team Leader or similar capacity in at least one Project Preparation and Construction supervision work of major highway project of four laning/six-laning/expressway costing more than Rs. 1500 million (1997 cost) or of at least 50 km length. Alternatively, he should have handled as Deputy Team Leader or in similar capacity Project Preparation and Construction supervision of at least two projects of four laning/six laning/ expressway costing more than Rs. 900 million (1997 cost) each or of at least 30 km length.

SENIOR BRIDGE /STRUCTURAL ENGINEER

The Senior Bridge Engineer shall be responsible for checking the designs of bridges, ROBs, interchanges and any other structure to be constructed as part of the Project Highway. He shall also inspect the construction of structures and monitor bridge rehabilitation and repair works to be undertaken by the Concessionaire.

The position requires a graduate in Civil Engineering, with a Masters degree or equivalent in Structural/Bridge Engineering with minimum 15 years experience out of

which at least 10 years on Design and Construction of bridges/interchanges/any other structures including rehabilitation. He should have handled in the last 5 years one detailed engineering work for rehabilitation and/or upgrading of major highway or expressway. The candidate should have a thorough understanding and experience with international 'best practices', and of modern bridge construction technology. He should have designed independently, at least two major bridges (150 m or more in length).

TRAFFIC AND TRANSPORTATION EXPERT

Shall review and check the traffic analysis, projection, and assignment exercises to be carried out by the Concessionaire. He shall also review type and locations of traffic control (e.g. signal) and safety measures, design of intersections and interchanges, toll plaza layout, toll collection method and use facilities, scheme for traffic management during construction period. He shall also study and comment on safety audit report prepared by the Concessionaire.

The position requires a graduate in Civil Engineering with higher qualification in traffic engineering. The minimum period of professional experience is 15 years including at least 5 years on projects of similar nature, of which at least one should involve works of four laning/six-laning/expressway or similar project. The candidate should have enough knowledge on road safety aspects.

SENIOR PAVEMENT SPECIALIST

The expert shall be continuously interacting with the Concessionaire, to ensure life cycle cost effectiveness and viable design of pavement including appropriate rehabilitation / strengthening of the existing two lane pavement which is significantly distressed. He shall also be responsible for ensuring complete adherence to maintenance standards during Construction and Operation period. Thus, the position requires a pavement specialist with thorough knowledge and understanding of international 'best practices' in the field of Design, Construction and maintenance of flexible/rigid type of pavements including latest codal stipulations and specifications.

The candidate should be a graduate in Civil Engineering with higher qualification and specialisation in Pavement Design. He should have a minimum of 15 years of professional experience of pavement Design, Construction and its maintenance. The minimum experience of 15 years should include assignments of at least 3 years in

developed countries or at least 3 years on major highway projects funded by international funding agencies in developing countries in Senior Expert capacity.

SENIOR QUALITY/MATERIAL EXPERT

The Quality/Material Expert shall review the test results of quarry and borrow area material to find out their strength characteristics and suitability for using them in pavement construction. He shall inspect the Concessionaire's field laboratories to ensure that they are adequately equipped and capable of performing all the specified testing requirements of the contract. He shall look into the quality assurance aspect of the construction works and supervise the setting-up of the various Concessionaire's rock crushers and bituminous mixing plants to ensure that the specified requirements for such equipments are fully met.

The position requires a graduate in Civil Engineering with a minimum of 15 years of professional engineering experience including 6 years in quality assurance programs in highway projects using modern technology.

FINANCIAL EXPERT

Over 8 to 10 years as a Financial Advisor particularly in the field of project financing. Advisory experience in the field of transportation project would be desirable.

LEGAL EXPERT

Lawyer with over 8 years experience in contracts and financial documentation related to project financing. Advisory experience in transportation would be desirable.

Appendix B

MANMONTH INPUT FOR KEY PERSONNELAND SUPPORTING STAFF

Sl. No.	Key Personnel	Suggested Manmonths		
		Construction stage	O&M Stage	
1	Team Leader cum Senior highway Engineer	36	12	
2	Senior Bridge Engineer	12	1	
3	Traffic & Transportation Expert	6	3	
4	Senior Pavement Specialist	12	2	
5	Senior Quality/Material Expert	12	1	
6	Financial Expert	2	2	
7	Legal Expert	2	2	**TOTAL**
	Total	**82**	**23**	**105**





SCHEDULE O

APPENDIX I : FORMATS FOR TECHNICAL PROPOSAL

(as mentioned at para 2.1 of the data sheet)

Appendix I-1	Firm's references
Appendix I-2	Firm's comments and suggestions on the Terms of Reference and on data, services, and facilities to be provided by the NHAI.
Appendix I-3	Approach paper on methodology and work plan for performing the assignment.
Appendix I-4	Composition of the team and task(s) of each team member
Appendix I-5	Curriculum vitae of proposed professional staff.
Appendix I-6	Time schedule for deployment of professional personnel
Appendix I-7	Activity (works) schedule.

APPENDIX I-1 : FIRM'S REFERENCES

Relevant Services Carried Out in the Last Five Years
That Best Illustrate Qualifications

Using the format below, provide information on each reference assignment for which your firm/entity, either individually as a corporate entity or as one of the major companies within an association, was legally contracted.

<table>
<tr><td colspan="2">Assignment Name :</td><td>Country :</td></tr>
<tr><td colspan="2">Location within Country :</td><td>Professional Staff Provided by Your Firm:</td></tr>
<tr><td colspan="2">Name of Client :</td><td>No. of Staff :</td></tr>
<tr><td rowspan="2">Start Date (Month/Year)</td><td rowspan="2">Completion Date (Month/Year)</td><td>No. of Staff-Months :</td></tr>
<tr><td>Approx. Value of Services (in Current INR)</td></tr>
<tr><td colspan="2">Name of Associated Consultants, if any:</td><td>No. of Months of Professional Staff. Provided by Associated Consultants :</td></tr>
<tr><td colspan="3">Name of Senior Staff involved :</td></tr>
<tr><td colspan="3">Narrative Description of Project :</td></tr>
<tr><td colspan="3">Description of Actual Services Provided by Your Staff :</td></tr>
</table>

Firm's Name : _____

APPENDIX I-2 : COMMENTS AND SUGGESTIONS OF CONSULTANTS ON THE TERMS OF REFERENCE AND ON SERVICES AND FACILITIES TO BE PROVIDED BY THE NHAI

On the Terms of Reference :

1.

2.

3.

4.

....

On the services and facilities to be provided by the NHAI

1.

2.

3.

4.

....

APPENDIX I-3 : APPROACH PAPER ON METHODOLOGY AND WORK PLAN FOR PERFORMING THE ASSIGNMENT

APPENDIX I-4 : COMPOSITION OF THE TEAM PERSONNEL, AND TASK(S) OF EACH TEAM MEMBER

1. Technical/Managerial Staff

Sl. No.	Name	Position	Task
1			
2			
3			
4			
..			
..			

2. Support Staff

Sl. No.	Name	Position	Task
1			
2			
3			
4			
..			
..			

APPENDIX I-5 : FORMAT OF CURRICULUM VITAE (CV) FOR PROPOSED PROFESSIONAL STAFF

Proposed Position : .....

Name of Firm : .....

Name of Staff : .....

Profession : .....

Date of Birth : .....

Years with Firm/Entity : ..... Nationality : .....

Membership of Professional Societies : .....

Detailed Task Assigned : .....

Key Qualifications :

[Give an outline of staff member's experience and training most pertinent to tasks on assignment. Describe degree of responsibility held by staff member on relevant previous assignments and give dates and locations. Use about half a page.]

Education :

[Summarise college/university and other specialised education of staff member, giving their names, dates attended, and degrees obtained. Use about one quarter of a page.]





Employment Record :

[Starting with present position, list in reverse order every employment held. List all positions held by staff member since graduation, giving dates, name of employing organisations, titles of positions held, and locations of assignments. For experience in last ten years, also give types of activities performed and client references, where appropriate. Use about three-quarters of a page.]

Languages :

[For English language indicate proficiency : excellent, good, fair, or poor; in speaking, reading, and writing]

Certification

1. **I have not accepted any other offer at the time of signing this CV and as such I shall be available to work with (Name of the firm).**

2. I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe qualifications and experience.

.....Date :.....

[Signature of staff member ***and*** *authorised representative of the Firm] Day/Month/Year.*

Note / Instruction: -

1. **The CVs should be signed on every sheet by the concerned key personnel.**

2. **Last sheet of CV should also be signed by the authorized signatory for the Independent Consultant.**

3. **All the Original Signatures shall be in Blue Ink.**

APPENDIX I-6 : TIME SCHEDULE FOR PROFESSIONAL PERSONNEL

A. Activity Schedule

Sl. No.	Name	Position	Monthwise Program (in form of Bar Chart) *[1st, 2nd, etc. are months from the start of assignment]*												
			1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th and subsequent months	Number of Months
1															Subtotal (1)
2															Subtotal (2)
3															Subtotal (3)
4															Subtotal (4)
-															-
-															-

APPENDIX I-7 : ACTIVITY (WORKS) SCHEDULE

A. Activity Schedule

		Monthwise Program (in form of Bar Chart) *[1st, 2nd, etc. are months from the start of assignment]*											
Sl. No.	Item of Activity (Works)	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th
1	.....												
2	.....												
3	.....												
4	.....												
-	.....												
-	.....												

B. Completion and Submission of Reports

S.No	Reports :	Programme : (Date)
1	Monthly reports (Design and Construction)	
2	Quarterly Reports	
3	Various others reports as provided in the Concession Agreement such as Completion Report	

SCHEDULE O

APPENDIX II : FORMATS FOR FINANCIAL PROPOSAL

(as mentioned in para 2.1 of Data Sheet)

Appendix II-1 Financial proposal submission form

Appendix II-2 Summary of costs

Appendix II-3 Breakdown of costs

APPENDIX II-1 : FINANCIAL PROPOSAL SUBMISSION FORM

FROM : (Name of Firm)

India
Subject :

TO :
National Highways Authority of
New Delhi (India)

We, the undersigned, offer to provide the consulting services for the above in accordance with your Request for Proposal dated [Date], and our proposal (technical and financial proposals). Our attached financial proposal is for the sum of [Amount in words and figures]. This amount is exclusive of the local taxes which we have estimated at (Amount in Words and Figures).

Our financial proposal shall be binding upon us subject to the modifications resulting from contract negotiations, up to the expiration of the validity period of the proposal, i.e., [Date].

We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely "Prevention of Corruption Act 1988".

Commission and gratuities, if any, paid or to be paid by us to agents relating to this proposal and contract execution, if we are awarded the contract, are listed below :

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity
.....	.....	.....
.....	.....	.....

We understand you are not bound to accept any proposal you receive.

We remain,
Yours sincerely,

Authorised Signature :
Name and title of Signatory :

APPENDIX II-2 : SUMMARY OF COSTS

No.	Description	Amount
I	Remuneration for Professional Staff	
II	Supporting Staff	
III	Transportation	
IV	Duty Travel to Site	
V	Office Rent	
VI	Office Supplies, Utilities and Communication	
VII	Office Furniture and Equipment	
VIII	Reports and Document Printing	
	Subtotal :	
	Total Cost Net of Tax	
Taxes and Duties		
	TOTAL COSTS (Including Tax)	

APPENDIX II-3 : BREAKDOWN OF COSTS

REMUNERATION FOR STAFF

No.	Position	Name	Year 1			Year 2			Year 3			Year 4		
			Rate	SM	Amount	Rate	SM	Amount	Rate	SM	Amount	Rate	SM	Amount
	Professional Staff													
1.														
2.														
3.														
4.														
5.														
6.														
7.														
8.														
9.														
10.														
	Sub - Total													
	Technical Support Staff													
1.		TBN												
2.		TBN												
3.		TBN												
4.		TBN												

No.	Position	Name	Year 1			Year 2			Year 3			Year 4		
			Rate	SM	Amount	Rate	SM	Amount	Rate	SM	Amount	Rate	SM	Amount
5.		TBN												
6.		TBN												
7.		TBN												
8.		TBN												
9.		TBN												
10.		TBN												
	Sub-Total													
	TOTAL													

SM = Staff Month

TBN = To be Named

II. Support Staff

No.	Position	Name	Staff Months	Billing Rate ( )	Amount ( )
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
				Total :	

III Transportation (Reimbursable)

I. The vehicles provided by the firm shall include the cost for rental drivers, operation, maintenance, repairs, insurance, etc.

Purchases _____

Operation, maintenance, repairs _____

Total _____

IV Duty Travel to Site (Reimbursable)

Professional Staff

___ x _____ trips x ____ days @ _____

Transport __ x ____ trips @ _____

Total _____

V Office Rent (Reimbursable)

The rent cost include maintenance, cleaning, repairs, etc.

____ months x 200 sqm. x _____

Total _____

VI Office Supplies, Utilities and Communication (Reimbursable)

No.	Item	Months	Monthly Rate	Amount in
1.	Office Supplies			
2.	Drafting Supplies			
3.	Computer Running Costs			
4.	Communication			

Total _____



VII. Office Furniture and Equipment (Reimbursable)

No.	Description ( )	Unit	Quantity	Rate ( )	Amount ( )
	Office Furniture (Purchase)				
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
	Office Equipment (Purchase)				
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
				Total	

VII. Reports and Document Printing

No.	Description	No. of Volumes	No. of Copies per Volume	Rate per Copy ( )	Amount
1	Monthly reports (Design and Construction)				
2	Quarterly Reports				
3	Various others reports as provided in the Concession Agreement such as Completion Report				
				Total	



SCHEDULE – P

TRAFFIC SAMPLING





SCHEDULE P

TRAFFIC SAMPLING

NHAI through independent Consultant shall have the right to undertake traffic sampling for the purpose of determination and/ or verification of the actual traffic on the project highway. This shall be done through Automatic Traffic Count -cum-classifier.

For the purpose of traffic sampling, the Concessionaire shall procure a portable type automatic traffic count-cum-classifier and provide it to the Independent Consultant. The traffic count -cum-classifier shall be light weight and portable with weather resistant casing. The system shall be capable of detecting and recording all types of vehicles plying on the Project Highway and of classifying any other vehicle category as per user needs. The vehicle classification shall be user selectable based on length of vehicle and number of axles. It would have the following main components :-

Sensor - combination of piezo electric sensor and inductive loops. The sensor shall be portable as well as permanent so that either of these could be used as per the needs.

Electronic - the logic unit shall be micro processor based and programmable through a key board. It shall have legible electronic display with requisite number of entry ports and exit to communication system. The vehicle counting/classification interval shall be programmable from one minute to 1440 min. (24 hours). The system shall count and classify vehicle by each lane.

Data Collection - The system shall be capable of recording for later analysis on an individual vehicle basis time, date, speed, direction, lane, number of axles, axles spacing and site identification. The system should be able to record and store vehicle data for a period of at least two weeks.

Data Retrieval - The system shall have the capability of data retrieval through removable floppy diskette, data catridge, direct data transfer through a serial link to a portable computer and telemetory transmission via telephone link by modem.

Software - The system shall have software and manuals to analyse the data from output of vehicle count, classification speed and head-way. It should have capability of graphic/tabular representation of analysis data.

Before the use of portable automatic traffic counter cum classifier, it shall be validated and calibrated through sample counts to establish the reliability and acceptability of automatic Traffic Counter-cum-Classificater both by Concessionaire and the Independent Consultant.

The sampling shall be done at intervals of 15 days by continuous 24 hrs counting for three days. If no abnormal trends are observed in three days counting at the frequency of 15 days, the frequency would be increased to 1 month after a period of one year. The sensor/loops shall be permanently installed to capture the traffic on all the approaching lanes, in accordance with the instructions of the supplier. They shall be located about 5 kms away from the toll plaza transitions taking care that no diversion of traffic is possible in between. The portable logic unit shall be plugged to these sensors whenever counting is to be done. Portable sensor can be utilised for traffic counting at any other location as per the need.

Apart from these periodical counts, the Independent Consultant shall have the right for traffic counting at a request from the NHAI. The traffic count as obtained from the samples shall be taken as actual traffic on the Project Highway at the locations of the counting.

SCHEDULE – Q

DRAFT ESCROW ACCOUNT AGREEMENT

SCHEDULE Q

DRAFT
ESCROW ACCOUNT AGREEMENT

Among

..... (THE COMPANY)

And

.....

As Lenders Representative

And

.....

As Escrow Agent

And

NHAI

(Subject to terms of the facility Agreement(s) between the Concessionaire and Senior Lenders. However, NHAI position in the cash flows shall not be changed)

THIS AGREEMENT (the "Agreement") is made on the ..... day of ..... 200... by and among:

..... a company incorporated in India whose registered office is at ....., India (the "Company");

and

..... and having its registered office at ....., as Senior Lenders Representative (the "Lenders Representative");

and

....., and having its registered office at ..... (the "Escrow Agent").

And

National Highways Authority of India (NHAI), Government of India, having its principal office at G-5&6, Sector-10, Dwarka, New Delhi-110075 (the "NHAI".

WHEREAS:

- The Company is undertaking a project for "4-laning of Ambala-Chandigarh Section in **the States of Haryana and Punjab** , India on BOT basis"

- The Company has entered into a Concession Agreement dated as of ..... 200... with NHAI (the "Concession Agreement") wherein NHAI has granted Concession to Company for the work referred to above, on BOT basis.

- The Company has entered into Financing Documents with Senior Lenders wherein Senior Lenders (the "Lenders") have agreed to lend and advance to the Company Rupee amounts aggregating ..... Lacs and foreign currency amounts aggregating US Dollars ..... in terms thereof;

- One of the terms of the Concession Agreement and the Financing Documents is that the Company is required to establish an Escrow Account, inter alia, on terms and conditions satisfactory to Senior Lenders.

NOW IN CONSIDERATION FOR THE PREMISES IT IS AGREED BY THE PARTIES AS FOLLOWS:-

1. Definitions and Construction

1.1 Definitions: Each capitalised term used herein and not otherwise defined shall have the definition assigned to such term in the Concession Agreement or the Substitution Agreement as the case may be

- "Account" means the Escrow Account to be opened by the Company in accordance with this Agreement;

- "Authorised Investment" means any authorised investments which Lenders Representative may, from time to time permit the Company to make in accordance with this Agreement;

- "Business Day" means any day on which banks are open for business in ..... Or in relation to any notice or communication to be made under this Agreement, a day on which banks are open for business in the place of receipt of such notice or communication;

- "Company Account" shall mean any bank account of the Company, other than the Escrow Account.

- "Enforcement Notice" means any enforcement procedure commenced by the Lenders Representative under any of the Security Documents;

- "Escrow Account" means an Escrow Account established in terms of and under this Agreement;

- "Event of Default" means an event of default as defined and detailed in the Financing Documents;

- "INR" means the lawful currency of India;

- "Payment Date" means in relation to any Permitted Payment, the date(s) specified for such payment;

- "Permitted Payment" means the Payments Agreed to in this Agreement excluding payment to the Company Accounts as more particularly given in clause3.3.1;

- "Required Balance" means on any Date in relation to the Sub-Account of the Escrow Account, an amount in INR/Dollars which if proportionately built over the months, would be sufficient to meet Permitted Payment on the Payment Date(s).

- "Security Documents" means all or any of the Documents executed, delivered or furnished to secure the Financial Assistance under the Financing Documents including but not limited to the Deed of Hypothecation, Mortgage Deed, Equitable

Mortgage, Deed of Guarantee, Pledge Agreement, Undertakings, Negative Lien and other incidental or supplemental documents related thereto.

- "Sub-Accounts" means the Sub-Accounts of the Escrow Account, into which the monies due in relation to Permitted Payment would be credited every month and paid out if due and if not due in a month then appropriated proportionately in such month and retained in the Sub Account and paid out therefrom on the Payment date.

- "Year" means each twelve month period ending on March 31.

1.2 Construction

In this Agreement:

- Unless the context otherwise requires, the singular includes the plural and vice versa;

- Headings and the use of bold typeface shall be ignored in its construction;

- A reference to a Clause, or Schedule is, unless indicated to the contrary, a reference to a clause or schedule to this Agreement;

- References to this Agreement shall be construed as references also to any separate or independent stipulation or agreement contained in it;

- The words "other", "or otherwise" and "whatsoever" shall not be construed to be as any limitation upon the generality of any preceding words or matters specifically referred to;

- References to the word "includes" or "including" are to be construed without limitation;

- References to a person shall include such person's successors and permitted assignees or transferees;

- All references to agreements, documents or other instruments include (subject to all relevant approvals) a reference to that agreement, document or instrument as amended, supplemented, substituted, novated or assigned from time to time.

- The words "herein", "hereto" and "hereunder" refer to this Agreement as a whole and not to the particular Clause in which such word may be used;

- Words importing a particular gender include all genders;

- "person" includes any individual, partnership, firm, trust, body corporate, government, governmental body, authority, agency, unincorporated body of persons or association;

- any reference to a public organisation shall be deemed to include a reference to any successor to such public organisation or any organisation or entity which has taken over the functions or responsibilities of such public organisation;

- references to "Party" means a party to this Agreement and references to "Parties" shall be construed accordingly; and

- references to any law shall include references to such law as it may, after the date of this Agreement, from time to time be amended, supplemented or re-enacted.

2. THE ACCOUNTS

2.1 Acceptance of Appointment of Escrow Agent

(a) The Escrow Agent hereby agrees to act as such and to accept all payments and other amounts to be delivered to or held by the Escrow Agent pursuant to the terms of this Escrow Agreement. Escrow Agent shall hold and safeguard the Escrow Account during the term of this Escrow Agreement and shall treat the amount in the Escrow Account as monies deposited by Company / NHAI with the Escrow

Agent, as agent for the benefit of the Lenders Representative, or its nominee, successors or assigns, in trust in accordance with the provisions of this Escrow Agreement. In performing its functions and duties under this Escrow Agreement, the Escrow Agent shall act as agent for the Lenders Representative.

The Company also hereby declares that all right, title and interest in and to the Escrow Account, the Authorised Investments and Permitted Payments made from the Escrow Accounts shall be vested in the Escrow Agent and held in trust for the Senior Lenders acting through Lender's Representative, NHAI and the Company in accordance with the terms of this Agreement and as their respective interests are provided for herein. Amounts deposited in the Escrow Account from time to time shall be held by the Escrow Agent in trust and received and applied as provided in and in accordance with the Agreement. No person other than the Lenders Representative, NHAI and the Company shall have any rights hereunder as the beneficiaries of or as third party beneficiaries under this Agreement.

(b) The rights of Company/NHAI in the monies held in Escrow Account are set forth in their entirety in this Escrow Agreement and Company/NHAI shall have no other rights against or to the monies in the Escrow Account.

2.2 Establishment of Escrow Account

At least thirty (30) days prior to seeking any disbursement (including issue of guarantees or all forms of Financial Assistance), the Company shall establish the Escrow Account with the Escrow Agent.

2.3 Maintenance of the Account

The Escrow Agent shall maintain the Escrow Account in accordance with the terms of this Agreement and its usual practices and applicable regulations and pay the maximum rate of interest payable to its customers on the balance in the said account from time to time.

2.4 Operating Procedures

The Escrow Agent and the Company shall agree (after consultation with the Lenders Representative) on the detailed mandates, terms and conditions and operating procedures for the Escrow Account but in the event of any inconsistency between this Agreement and such mandates, terms and conditions or procedures, this Agreement shall prevail.

3. Currency

3.1 The Escrow Account shall be established with the ..... Branch of the Escrow Agent. The Escrow Account shall be denominated in INR.

3.2 Deposits

3.2.1 The Company

(A) agrees, confirms and undertakes that it shall deposit and/or credit the Escrow Account with:

(i) all its receivables;

(ii) all proceeds received pursuant to any insurance claims; and

(iii) all monies received from any other sources in relation to and in respect of the Project.

(B) may make other deposits of the Company's other funds into the Escrow Accounts at any time. Provided however that the terms of this Agreement shall apply to such other funds deposited in the Escrow Account by the Company.

The NHAI agrees, confirms and undertakes that it shall deposit and/or credit the Escrow Account with:

(i) all Fees collected by NHAI in exercise of its rights under Concession Agreement;

(ii) **Revenue Shortfall Loan;**

(iii) Grant, termination payments and other monies paid or disbursed in accordance with the provisions of the Concession Agreement and/or the Substitution Agreement.

3.2.2 The Escrow Agent shall ensure that all interest, if any, on the balances of the Escrow Accounts and interest on Authorised Investments made from the Escrow Accounts shall be credited to or deposited in the Escrow Account.

3.3 Withdrawals

3.3.1 The Escrow Agent shall withdraw amounts from the Escrow Accounts and appropriate in the following order every month as more particularly given in the Bank Proforma in Schedule 1 and deposit in the relevant Sub-Account for payments and if not due in a month then appropriate proportionately in such month and retain in the Sub-Account and pay out therefrom on the Payment Date(s):

(a) All taxes due and payable by the Company;

(b) All expenses in connection with and relevant to the Construction of Project Highway by way of payment to the EPC Contractor and such other persons as may be specified in the Financing Documents.

(c) O&M Expenses including Fees collection expenses incurred by the Company directly or through O&M Contractor and/or Tolling Contractor, if any, subject to the items and ceiling in respect thereof as set forth in the Financing Documents but not exceeding one twelfth (1/12) of the annual liability on this account;

(d) The whole or part of the expense on repair work or O&M Expenses including Fees collection expenses incurred by NHAI, and 1.25 times of the

O&M expenses incurred by the NHAI, if any, in the event of repair and maintenance work being carried out by NHAI (pursuant to the failure on part of the Company in doing so) to maintain and / or repair the Project Highway or a part thereof up to and in accordance with the Specifications and Standards and / or failure on part of the Company to commence remedial works within 30 (thirty) days of receipt of notice in this regard from NHAI or the Independent Consultant, if any, including those on account of exercise of any of its rights under this Agreement provided NHAI certifies to the Escrow Agent that NHAI had incurred such expenses in accordance with the provisions of this Agreement;

(e) All Concession Fees and Negative Grants payments due to NHAI from the Company under this Agreement.

(f) Monthly proportionate provision of Debt Service Payments due in an Accounting Year and payment of Debt Service Payments in the month when due;

(g) Reimbursements of expenditure incurred by NHAI, if any, for payment of insurance premia, etc., which are otherwise company's responsibility, on account of failure on part of the Company to keep such insurance(s) effective and in force.

(h) Any payments and Damages due and payable by the Company to NHAI pursuant to this Agreement including Recovery due to reduction in Scope of Work and repayment of Revenue Shortfall Loans; and

(i) Balance in accordance with the instructions of the Company.

The amounts specified in Clause 3.3.1 (a) to (i) constitute the Permitted Payments.

For each year, Bank Proforma would be separately provided by the Company to

the Escrow Agent, with the permission of Lenders Representative, not later than 60 days prior to the first day of each year.

3.3.2 Notwithstanding anything to the contrary contained in this Agreement upon the earlier of (i) issue of Termination Notice (ii) termination of Concession Agreement, or (iii) the expiry of Concession Period, all amounts standing to the credit of the Escrow Account shall be appropriated and dealt with in the following order:-

(a) all taxes due and payable by the Company;

(b) all Concession Fees (including Negative Grant) due and payable to NHAI under this Agreement;

(c) all accrued Debt Service Payments;

(d) any payments and Damages due and payable by the Company to NHAI pursuant to this Agreement, including Recovery due to reduction in Scope of Work, Termination claims and repayment of Revenue Shortfall Loans;

(e) all accrued O&M Expenses;

(f) any other payments required to be made under this Agreement; and

(g) balance, if any, on the instructions of the Company.

3.3.3 Not withstanding anything to the contrary contained in this agreement, any termination payments made by NHAI into the Escrow account shall not be appropriated therefrom for any purpose whatsoever, until the Vesting Certificate has been issued by NHAI. Provided, however, that this restriction shall not apply to appropriation in favour of the Senior Lenders to the extent of debt due.

3.3.4 From the date, which is two years prior to the expiry of the Concession period, a sum equal to the fees realizable during the last two years of the Concession period for a traffic volume calculated at the rate of 10,000 (ten thousand) PCUs per day per year, or, a higher sum estimated by the Independent Consultant for renewal works, shall not withstanding anything to the contrary contained in this agreement, be retained in the Escrow Account provided that if a Bank Guarantee of an equivalent sum in the form and content acceptable to NHAI has been furnished by

the Company to NHAI, no such retention shall be made. If following the second Inspection, it is agreed or determined that no renewal works are required, then within 14 days of such agreement, 50 % of the sums thus retained shall be released from the Escrow account to the company. Within 14 days after the issue of Vesting Certificate issued (in accordance with Article XXXIII of the Concession agreement) the sums thus retained shall be released from the Escrow account to the Company.

3.4 Application of Insufficient Funds

As provided in Clause 3.3, the application of funds in the Escrow Account shall be in the serial order of priority set forth therein. If the funds available for payment to the Sub-Accounts are sufficient to pay a portion, but not all, of the amount required to be paid to any Sub-Account, the Escrow Agent shall apply such funds in the serial order of priority set forth in Clause 3.3, until exhaustion thereof.

4. Authorised Investments

4.1 Power to Invest

The Escrow Agent shall invest the amounts standing to the credit of any of the Sub-Accounts in Authorised Investments on the instructions of the Company as approved by the Lenders Representative, from time to time, in accordance with the provisions of the Agreement. The Escrow Agent shall not be bound to and shall not make investments under the Indian Trusts Act, 1882 without prior approval of the Lenders Representative.

4.2 Procedure for Investments

4.2.1 All Authorised Investments shall be made and/or realised by the Escrow Agent on the instructions of the Company as approved by the Lenders Representative from time to time, in accordance with the provisions of this Agreement.

4.2.2 All documents of title or other documentary evidence of ownership with respect to Authorised Investments made out of any Escrow Account will be held in the custody of the Escrow Agent.

4.3 Realisations

Upon the realisation of any investment made under this Clause, the proceeds of realisation shall immediately be credited to the relevant Sub-Account by the Escrow Agent or immediately invested in another Authorised Investment in accordance with the Company's instructions as approved by the Lenders Representative.

4.4 Mandatory Realisations

In the event that the Company becomes aware that any Authorised Investment has ceased to be an Authorised Investment, the Company shall immediately instruct the Escrow Agent on a best efforts basis to realise such Authorised Investment on its maturity date or earlier if possible under intimation to the Lenders Representative or NHAI.

4.5 Accounts include Investments

Any reference in this Agreement to the balance standing to the credit of the Escrow Account shall be deemed to include a reference to the amount of the Authorised Investments in which all, or part of, such balance is for the time being invested.

4.6 Interest on Investments

Any interest or other income received on account of Authorised Investments shall be to the credit of the Escrow Account.

4.7 Enforcement Notice

On receipt of an Enforcement Notice from the Lenders Representative, the Escrow Agent shall realise the Authorised Investments, whether such investments have matured or not on a best effort basis, and apply the proceeds as directed by the Lenders Representative.

5. Withdrawals following Event of Default

5.1 If the Lenders Representative notifies the Escrow Agent that an Event of Default is likely to occur or has occurred, and is continuing, then, until such time as the Lenders Representative has notified the Escrow Agent that the Event of Default has been cured or waived under the Financing Documents, the Escrow Agent shall only make withdrawals from the Escrow Accounts which constitute Permitted Payment and shall not make any payments from the Escrow Account to the Company Accounts.

6. Escrow Agent Provisions

6.1 The Escrow Agent and the Lenders

The Company hereby appoints the Escrow Agent to act as trustee for the Lenders Representative in connection herewith and authorises the Escrow Agent to exercise such rights, powers, authorities and discretion as are specifically delegated to the Escrow Agent by the terms hereof together with all such rights, powers, authorities and discretion as are reasonably incidental hereto, and the Escrow Agent accepts such appointment pursuant to the terms hereof.

6.2 Particular Duties of the Escrow Agent

The Escrow Agent:

(A) may, in the absence of bad faith or gross negligence on its part, rely as to any matters of fact which might reasonably be expected to be within the knowledge of the Company upon a certificate signed by or on behalf of the Company;

(B) may, in the absence of bad faith or gross negligence on its part, rely upon the authenticity of any communication or documents believed by it to be authentic;

(C) shall, within five (5) Business Days after receipt, deliver a copy to the Lenders Representative of any notice or document received by the Escrow Agent

in its capacity as the Escrow Agent from the Company or any other person hereunder or in connection herewith: and

(D) shall, within five (5) Business Days after receipt, deliver a copy to the Company of any notice or document received by the Escrow Agent from the Lenders Representative in connection herewith.

6.3 Segregation of Funds

Monies and other property received by the Escrow Agent under this Agreement shall, until used or applied in accordance with this Agreement, be held by the Escrow Agent in trust for the purposes for which they were received, and shall be segregated from other funds and property of the Escrow Agent.

6.4 Termination

6.4.1 This Agreement shall remain in full force and effect so long as amounts remain outstanding from the Company in respect of the Financial Assistance received by it from the Senior Lenders or its obligations to NHAI, unless terminated earlier by the mutual consent of the parties or otherwise in accordance with the provisions of this Clause.

6.4.2 The Company may, by not less than 45 days prior notice to the Escrow Agent, NHAI and the Lenders Representative, terminate this Agreement and appoint a new Escrow Agent, provided that the new Escrow Agent is acceptable to the Lenders Representative and arrangements are made satisfactory to the Lenders Representative for transfer of amounts deposited in the Escrow Account to a new Escrow Account established with the successor Escrow Agent.

6.5 Fees

The Company shall pay the Escrow Agent fees in an amount and at such times as may be agreed between the Escrow Agent and the Company.

7. Escrow Agreement Defaults

7.1 If the Company is in breach of any of its obligations under this Agreement and, following a notice of default from the Lenders' Representative, fails to remedy the same:

(A) in the case of a failure to deposit funds received by the Company in the Escrow Account, by depositing the same in the Escrow Account within five Business Days of receipt of such notice;

(B) in the case of a breach consisting of causing the Escrow Agent to transfer funds to any Company Account in breach of the terms of this Agreement, by depositing the relevant funds in the Escrow Account or any Sub-Account in which such transfer should have been made within five Business Days of receipt of such notice.

(C) in the case of a breach of the Company's obligations under Clause 4, by instructing the Escrow Agent to realise any investment made in breach of Clause 4 within five (5) Business Days of receipt of such notice; or

(D) in the case of any other breach, by remedying the same within five (5) Business Days to the satisfaction of the Lenders Representative.

7.2 The Company and the Escrow Agent agree and confirm that any default by either the Company or the Escrow Agent in the performance of their respective obligations under this Agreement resulting, in the opinion of the Lenders Representative, in a breach of this Agreement, shall qualify as an Event of Default under the Financing Documents/Security Documents.

8. Miscellaneous

8.1 Closure of Accounts

The Escrow Agent shall, at the request of the Company made on or after the payment by the Company of all outstanding amounts under the Financing Documents / Concession Agreement and upon confirmation of receipt, close the

Escrow Accounts and pay any amount standing to the credit thereof to the Company.

Notwithstanding anything to the contrary contained in this Agreement, this Agreement shall remain in full force and effect till the Transfer Date provided however if NHAI shall certify to the Escrow Agent that Concession Agreement and/or the Concession has been terminated on account of default of the Concessionaire under this Agreement, then notwithstanding anything to the contrary contained herein, all the amounts standing to the credit of the Escrow Account shall be dealt with in accordance with provisions of Clause 3.3.2.

8.2 Successors and Assignors

This Agreement shall be binding on and shall enure to the benefit of the Parties and their respective successors and permitted assigns.

8.3 No Set Off

The Escrow Agent agrees not to claim or exercise any right of set off, banker's lien or other right or remedy with respect to amounts standing to the credit of the Escrow Accounts. For the avoidance of doubt, it is declared by the Escrow Agent that the monies and properties held by the Escrow Agent shall not be considered as part of the assets of the Escrow Agent and being trust property, shall in the case of bankruptcy or liquidation of the Escrow Agent be wholly excluded from the assets of the Escrow Agent in such bankruptcy or liquidation.

8.4 Notices

8.4.1 All notices or other communications to be given or made under this Agreement shall be in writing, shall either be delivered personally or sent by courier, registered or certified mail or facsimile. The address for service of each Party and its facsimile number is set out under its name on the signing pages hereto. All notices shall be effective upon actual receipt save that where a notice is received after 5.30 p.m. on a Business Day or on a day that is not a Business Day, such notice shall be deemed to be received on the first Business Day following the date

of actual receipt. Without prejudice to the foregoing a Party giving or making a notice or communication by facsimile shall promptly deliver a copy of such notice or communication personally, by courier or mail to the addressee of such notice or communication.

8.4.2 Any party may by notice change the addresses and/or addresses to which such notices and communications to it are to be delivered or mailed. Such change shall be effective when all the Parties have notice of it.

8.5 Waiver

Failure by any Party at any time to enforce any provision of this Agreement or to require performance by other Parties of any provision of this Agreement shall not be construed as a waiver of such provision and shall not affect the validity of this Agreement or any part of it or the right of the relevant Party to enforce any provision in accordance with its terms.

8.6 Severability

If any condition, Clause or provision of this Agreement not being of a fundamental nature, is held to be illegal or unenforceable, the validity or enforceability of the remainder of this Agreement shall not be affected thereby.

8.7 Amendments

No amendment to this Agreement shall be binding unless in writing and signed by the duly authorised representatives of the Parties.

8.8 Governing Law

This Agreement shall be governed by and construed in accordance with Indian law.

8.9 Regulatory Approvals

The Escrow Agent shall use its best efforts to procure and shall thereafter maintain and comply with all regulatory approvals required for it to establish and operate the Escrow Accounts. The Escrow Agent represents and warrants that it is not aware

of any reason why such regulatory approvals will not be ordinarily granted to the Escrow Agent.

8.10 Notification of Balances

Seven Business Days prior to each Payment Date (and for this purpose the Escrow Agent shall be entitled to rely on an affirmation by the Company and/or the Lenders Representative as to the relevant Payment Dates), the Escrow Agent shall notify the Lenders Representative of the balance of the Escrow Account as at the close of business on the immediately preceding Business Day.

IN WITNESS whereof the Company has caused its Common Seal to be affixed hereto and to a triplicate hereof on the date first above written and the Escrow Agent, NHAI and the Lenders Representative have caused the said triplicate to be executed by the hand of an authorised official.

SIGNED AND DELIVERED BY)
..... within named Escrow Agent)
by the hand of)

an authorised official of the Account)
Trustee)
Address:

Fax Number:

Attention:.....

SIGNED AND DELIVERED by THE)
..... within named Lenders)
Representative by the hand of)
)
an authorised official of the Lenders)

Representative

Address:

Fax Number:

Attention: .....

SIGNED AND DELIVERED by)
NHAI within named by the hand of)
)
an authorised official of the NHAI)

Address:

Fax Number:
Attention:.....

THE COMMON SEAL OF .....)
has pursuant to the Resolution)
of its Board of Directors passed in)
that behalf on the ..... day of .....200)
hereunto been affixed in the presence of)
Shri ..... and Shri .....)
Directors who have signed these)
Presents in token thereof and)
Secretary/authorised)
Person who has countersigned the)
Same in token thereof.)
Address:

Fax Number:

Attention:.....

SCHEDULE – R

STATE SUPPORT AGREEMENT

SCHEDULE R

STATE SUPPORT AGREEMENT

THIS SUPPORT AGREEMENT is made on this _____day of _____ 200_ AMONG

1 THE GOVERNOR OF **THE STATE OF HARYANA** through the Secretary, Ministry of _____, **Government of Haryana** , (hereinafter referred to as "**GOHR**" which expression shall unless repugnant to the context or meaning thereof include its successors and assigns),

2 THE GOVERNOR OF **THE STATE OF PUNJAB** through the Secretary, Ministry of _____, **Government of PUNJAB** , (hereinafter referred to as "**GOPb**" which expression shall unless repugnant to the context or meaning thereof include its successors and assigns),

3 **National Highways Authority of India, Government of India** , (hereinafter referred to as "NHAI" which expression shall unless repugnant to the context or meaning thereof include its administrators, successors and assigns),

AND

4 [LIMITED], a company incorporated under the provisions of the Companies Act, 1956 and having its registered office at _____(hereinafter referred to as the "Concessionaire", which expression shall unless repugnant to the context or meaning thereof include its successors and substitutes).

WHEREAS

A. **The NHAI intends to take up the improvement,** operation and maintenance of Rehabilitation and Strengthening of existing 2-lane road and widening to 4-lane Dual Carriageway from i) Km 5+735 – Km 39+960 of NH-22 And ii) Km 0+000 – Km 0+871 of NH-21 (Ambala – Chandigarh Section) in the States of Haryana and Punjab , India on BOT basis.

B. MoRT&H had invited Proposals for empanelment of BOT Entrepreneurs for Four-laning of National Highways under National Highways Development Project called NHDP Phase III A(earlier called Non-NHDP) on BOT basis subject to and on the terms and conditions contained therein and empanelled the BOT Entrepreneurs.

C. NHAI had laid down and prescribed the technical and commercial terms and conditions and had invited Bids from the empanelled BOT Entrepreneurs vide

Letter No. NHAI/BOT/NH-24035/42/2003 dated 9.06.2004 and letter No. NHAI/BOT/11019/17/2003 dated 22.05.2005 ("the Tender Notice") including, inter alia, the consortium comprising GMR Energy Limited (formerly known as M/s Tanvir Bavi Power Company Private Limited) and GMR Infrastructure Limited (Collectively the "Consortium") with GMR Energy Limited as its Lead Member, for undertaking the work referred to in Recital 'A' above on BOT basis.

D. After evaluation of the Bids so received, NHAI accepted the Bid of the Consortium and issued its Letter of Acceptance No. NHAI/BOT/11019/17/2003/237 dated 29.06.2005. ("LOA") to the Consortium requiring, inter alia, the execution of this Concession Agreement within 30 (thirty) days of the date of acceptance of LOA and furnishing of Performance Security before signing of the Concession Agreement. The Consortium accepted the LOA and the terms and conditions therein and issued its acceptance of LOA vide its letter No. SRH/AMCH/0712/2005 dated 12.07.2005.

E. Subsequently, the Consortium has promoted and incorporated the Concessionaire as a limited liability company to enter into this Concession Agreement pursuant to the LOA for undertaking, inter alia, the design, engineering, financing, procurement, construction, operation and maintenance of the Project Highway, as defined hereinafter on BOT basis as referred to in Recital 'A' and to fulfill other obligations of the Concessionaire pursuant to the LOA and has requested NHAI vide letter No. 103/DB/2005-06/036 dated 19.09.2005 to accept the Concessionaire as the entity which shall undertake and fulfill and perform the obligations and exercise the rights of the Consortium under the LOA, including the obligation to enter into this Concession Agreement for the design, engineering, financing, procurement, construction, operation and maintenance of the Project Highway on BOT basis.

F. NHAI has agreed to the said request of the Consortium and has accordingly agreed to enter into the Concession Agreement with the Concessionaire pursuant to the LOA for, inter alia, the design, engineering, financing, procurement, Utility Shifting , Tree cutting, construction, operation and maintenance of the said Project Highway on BOT basis.

G. **GOHR, GOPb, NHAI** and the Concessionaire agree that the implementation of the Concession including performance of its obligations by the Concessionaire under and in accordance with the Concession Agreement requires extensive continued support and grant of certain rights and authorities as hereinafter set forth by **GOHR and GOPb** and is an essential pre-condition for mobilization of resources therefore by the Concessionaire.

NOW THEREFORE THE PARTIES HERETO HEREBY AGREE AND THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. DEFINITIONS AND INTERPRETATIONS

1.1 For the purposes of this Agreement the following terms shall have the meaning hereinafter respectively assigned to them.

1.1.1 "Agreement" means this Support Agreement and all annexures hereto and amendments if any thereto made in accordance with the provisions contained herein in this behalf.

1.1.2 "Concession Agreement" means the Concession Agreement dated _____ entered into between NHAI and the Concessionaire, and shall include all of its annexures and appendices and any amendments made thereto in accordance with the provisions contained in this behalf therein.

1.1.3. "Substitution Agreement" means the Substitution Agreement dated _____ entered into between the Senior Lenders, NHAI and the Concessionaire providing for substitution of the Concessionaire by the Selectee selected by the Senior Lenders in the manner and subject to and on the terms and conditions set forth therein. A copy of the said Substitution Agreement is annexed hereto and marked as "Annexure 'B'."

1.1.4. "**GOHR, GOPb** Support" means the obligations assumed and the facilities agreed to be provided by **GOHR/GOPb** to the Concessionaire hereunder or pursuant hereto.

1.2. The words and expressions beginning with or in capital letters used in this Agreement and not defined herein but defined in the Concession Agreement shall have, unless repugnant to the context, the meaning respectively assigned to them in the Concession Agreement. Words and expressions used in this Agreement and neither defined herein nor in the Concession Agreement but defined in the Substitution Agreement shall have the meaning respectively assigned to them in the Substitution Agreement.

1.3. In this Agreement unless the context otherwise requires-

(a) any reference to a statutory provision shall include such provision as is from time to time modified and re-enacted or consolidated so far as such modification or re-enactment or consolidation applies or is capable of applying to any transactions entered into hereunder;

(b) the words importing singular shall include plural and vice versa, and words denoting natural persons shall include partnerships, firms, companies, corporations, joint ventures, trusts, associations, organizations or other entities (whether or not having a separate legal entity);

(c) the headings are for convenience of reference only and shall not be used in and shall not affect the construction or interpretation of this Agreement;

(d) terms beginning with capital letters and defined in this Agreement shall have the meaning ascribed thereto herein;

(e) the words "include" and "including" are to be construed without limitation.

(f) any reference to a "day" shall mean reference to a calendar day;

(g) any reference to "month" shall mean reference to a calendar month;

(h) the Annexures and appendices 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;

(i) any reference at any time to any agreement, deed, instrument, license or document of any description shall be construed as reference to that agreement, deed, instrument, license or other document as amended, varied, supplemented, modified or suspended at the time of such reference provided that this clause shall not operate so as to increase liabilities or obligations of **GOHR/GOPb** hereunder or pursuant hereto in any manner whatsoever.

(j) References to Recitals, Clauses, Sub-clauses, Paragraphs, Annexures or Appendices in this Agreement shall, except where the context otherwise requires, be deemed to be references to Recitals, Clauses, Sub-clauses, Paragraphs, Annexures and Appendices of this Agreement.

(k) Any agreement, consent, approval, authorization, proposal, notice, communication, information or report required under or pursuant to this Agreement from or by any Party or Senior Lender(s) shall be valid and effectual only if it is in writing under the hands of duty authorized representative of such Party or the Senior Lender(s), as the case may be, in this behalf and not otherwise; and

(l) Any reference to any period commencing "from" a specified day or date and "till" or "until" a specified day or date shall include both days or dates.

(m) "Concessionaire" shall include Selectee under the Substitution Agreement.

2. TERM

2.1. This Agreement shall come into force the date hereof and shall continue to be in full force and effect for the period the Concession Agreement is in force and effect including any extension thereof.

3. SUPPORT OF **GOHR/GOPb**

3.1. Upon and with effect from the date hereof, **GOHR/GOPb** agrees:

(i) so long as the Concessionaire is not in breach of its obligations under this Agreement, **GOHR/GOPb** agrees to enable access to the Site to the Concessionaire for peaceful use of and operations at the Site by the Concessionaire under and in accordance with the provisions of the Concession Agreement without any let or hindrance from **GOHR/GOPb** or persons claiming through or under it;

(ii) subject to the Concessionaire complying with Applicable Laws, provide to the Concessionaire Applicable Permits to the extent **GOHR/GOPb** or any Governmental Agency of **GOHR/GOPb** is entitled to issue;

(iii) upon written request from the Concessionaire, assist the Concessionaire in obtaining access to all necessary infrastructure facilities and utilities, including water, electricity and telecommunication facilities at rates and on terms no less favorable to the Concessionaire than those generally available to commercial customers receiving substantially equivalent services;

(iv) ensure that no barriers are erected or placed by **GOHR/GOPb** or any Governmental Agency of **GOHR/GOPb** that interrupts free flow of traffic on the Project Highway except on account of any law and order situation or upon national security considerations;

(v) provide the Concessionaire with assistance through a dedicated team against payment of prescribed fee and charges, if any, for regulation of traffic on the Project Highway;

(vi) provide the Concessionaire with police assistance in the form of dedicated highway patrol parties against payment of prescribed costs and charges, if any, for patrolling and provision of security on the Project Highway;

(vii) observe and comply with its obligations set forth in this Agreement;

(viii) support, cooperate with and facilitate NHAI and the Concessionaire in the implementation of the Project;

(ix) subject to and in accordance with the Applicable Laws, assist the Concessionaire in the procurement of all Applicable Permits required from any municipal and other local authorities and bodies including Panchayats in the State of Haryana and Punjab for the implementation of the Project;

(x) ensure, subject to and in accordance with the Applicable Laws, that all relevant municipal and other local authorities and bodies including Panchayats in the States of Haryana and Punjab do not put any barriers or other obstructions that interrupt free flow of traffic on the Project Highway; and

(xi) not do or omit to do any act, deed or thing which may in any manner be violative of or cause the Concessionaire to violate any of the provisions of the Concession Agreement.

3.2. Notwithstanding anything to the contrary contained in the Agreement, **GOHR/GOPb** may construct and operate either itself or have the same, inter alia, built and operated on BOT basis or otherwise any Expressway or other toll road, not being a bye-pass, between inter alia, Ambala – Chandigarh Section from i) Km 5+735 – Km 39+960 of NH-22 And ii) Km 0+000 – Km 0+871 of NH-21 (the "Additional Tollway"), provided that such Additional Tollway shall not be opened to traffic before expiry of 8 (eight) years from the Appointed Date.

3.3. **GOHR/GOPb** agrees and undertakes that it shall not levy any additional toll, fee, charge or tax on the use of whole or any part of the Project Highway. **GOHR/GOPb** acknowledges the rights of Senior Lenders and NHAI under the Substitution Agreement and hereby covenants that upon substitution of the Concessionaire by the Selectee pursuant to the Substitution Agreement, it shall be deemed for the purposes of this Agreement that as if Selectee is a Party hereto and the Selectee shall accordingly be deemed to have succeeded to the rights and obligations of the Concessionaire under this Agreement on and with effect from the date of substitution of the Concessionaire by the Selectee.

4. CONCESSIONAIRE'S OBLIGATIONS

4.1. Concessionaire agrees and undertakes to perform, observe and comply with the following :

(i) All Applicable Laws and Applicable Permits;

(ii) The provisions of the Concession Agreement, the Substitution Agreement, and the Project Agreements; and

(iii) Observe, comply and perform its obligations under this Agreement.

5. REPRESENTATIONS AND WARRANTIES

5.1. The Concessionaire represents and warrants to **GOHR/GOPb** that :

(i) It is duly organized, validly existing and in good standing under the laws of India.

(ii) It has power and authority to execute, deliver and perform its obligations under this Agreement and to carry out the transactions contemplated hereby;

(iii) It has taken all necessary corporate and other action under Applicable Laws and its constitutional documents to authorize the execution, delivery and performance of this Agreement;

(iv) This Agreement constitutes its legal, valid and binding obligation enforceable against it in accordance with the terms hereof;

(v) It is subject to civil and commercial laws of India with respect to this Agreement and it hereby expressly and irrevocably waives any immunity in any jurisdiction in respect thereof;

(vi) All the information furnished to the **GOHR/GOPb** pertaining to the Concessionaire including its constitution and existing and proposed shareholding structure is now and shall be true and correct as on the Appointed Date and COD and the Balance Sheet and Profit and Loss Account of the Concessionaire for each of its Accounting Year after the Appointed Date furnished to **GOHR/GOPb** shall give true and fair view of the affairs of the Concessionaire.

(vii) The Concessionaire shall furnish a copy of its audited Balance Sheet within 120 (one hundred twenty) days of the close of its each Accounting Year after the Appointed Date and any material change subsequent to the date of such Balance Sheet shall be notified to **GOHR/GOPb** by the Concessionaire within 30 (thirty) days of its occurrence and warrants that the Balance Sheet and the information furnished as aforesaid shall be true and correct;

(viii) The execution, delivery and performance of this Agreement will not conflict with, result in the breach of, constitute a default under or accelerate performance required by any of the terms of the Concessionaire's Memorandum and Articles of Association or any member of the Consortium or any Applicable Laws or Applicable Permits or any covenant, agreement, 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;

(ix) There are no actions, suits, proceedings or investigations pending or, to the Concessionaire's knowledge, threatened against it at law or in equity before any court or before any judicial, quasi judicial or other authority, the outcome of which may result in the breach of or constitute a default of the Concessionaire under this Agreement or which individually or in the aggregate may result in any material adverse effect on its business, properties or assets or its condition, financial or otherwise, or in any impairment of its ability to perform its obligations and duties under this Agreement;

(x) The Concessionaire 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 Governmental Agency which may result in any material adverse effect or impairment of the Concessionaire's ability to perform its obligations and duties under this Agreement;

(xi) The Concessionaire has complied with all Applicable Laws and Applicable Permits, 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 material adverse effect on its financial condition or its ability to perform its obligations and duties under this Agreement;

(xii) Each Consortium Member was and is duly organized and existing under the laws of the jurisdiction of its incorporation and has full power and authority to consent to and has validly consented to the Concessionaire entering into this Agreement with the **GOHR/GOPb.**

(xiii) No representation or warranty by the Concessionaire contained herein or in any other document furnished by it to **GOHR/GOPb**, or to any Governmental Agency in relation to Applicable Permits contains or will contain any untrue statement of material fact or omits or will omit to state a material fact necessary to make such representation or warranty not misleading;

(xiv) The Concessionaire warrants that no sums have been paid or will be paid, by or on behalf of the Concessionaire, to any Person by way of fees, commission or otherwise for entering into this Agreement or for influencing or attempting to influence any officer or employee of NHAI, GOI or **GOHR/GOPb** in connection therewith; and

(xv) The Concessionaire is subject to civil and commercial laws of India with respect to this Agreement.

5.2. **GOHR/GOPb** represents and warrants to the Concessionaire that :

(i) It has full power and authority to execute, deliver and perform this Agreement.

(ii) It has taken all necessary governmental action to authorize the execution, delivery and performance of this Agreement; and

(iii) This Agreement constitutes the legal, valid and binding obligation of **GOHR/GOPb** enforceable against it in accordance with its terms.

6. SOVEREIGN IMMUNITY

6.1. **GOHR/GOPb** hereto unconditionally and irrevocably:

(i) Agrees that the execution, delivery and performance by it of this Agreement do not constitute sovereign acts;

(ii) Agrees that should any proceedings be brought against it or its assets in relation to this Agreement or any transaction contemplated by this Agreement, no sovereign immunity from such proceedings, execution, attachment or other legal process shall be claimed by or on behalf of itself or with respect to any of its assets, to the extent permitted by law; and

(iii) to the extent permitted by law, waives any right of sovereign immunity, which it or its assets now has or may acquire in the future.

6.2. Notwithstanding anything to the contrary herein contained such waiver of right of immunity shall not apply to

a) Property and assets of any consular or diplomatic mission or consulate or

b) Property belonging to the Defence services and such assets of the Union of India.

7. BREACH AND COMPENSATION

7.1. In case **GOHR/GOPb** is in breach of any of its obligations under this Agreement, which breach is not cured within 30 days of receipt of a notice in writing from the Concessionaire to **GOHR/GOPb** and NHAI and which has not occurred as a result of Concessionaire's breach of its obligations under this Agreement or the Concession Agreement, **GOHR/GOPb** shall pay to the Concessionaire, all direct additional costs suffered or incurred by the Concessionaire, determined by NHAI as arising out of such material default by **GOHR/GOPb.**

7.2. In case of any dispute by **GOHR/GOPb** on admissibility of the claim or extent of compensation determined by NHAI, the claim shall be settled as per provisions of the Dispute Settlement mechanism provided in Article IX of this Agreement.

7.3. Any such compensation payable shall be paid to the Concessionaire, in one lumpsum within 90 (ninety) days of receiving NHAI's determination of compensation.

8. INDEMNITY

8.1. The Concessionaire will indemnify, defend and hold **GOHR/GOPb** harmless against any and all proceedings, actions and claims for any loss, damage, cost and expense of whatever kind and nature arising out of design, engineering, construction, operation and maintenance of the Project Highway or arising out of any breach by the Concessionaire of any of its obligations under this Agreement or on account of failure of the Concessionaire to comply with, and observe Applicable Laws and Applicable Permits;

8.2. **GOHR/GOPb** will, indemnify, defend and hold harmless the Concessionaire against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of failure of **GOHR/GOPb** to fulfill any of its obligations under this Agreement adversely affecting the performance of the Concessionaire's obligations under the Concession Agreement other than any loss, damage, cost and expense, arising out of acts done in discharge of their lawful functions by **GOHR/GOPb**, its officers, servants and agents;

8.3. Without limiting the generality of Clause 8.2, the **GOHR/GOPb** shall indemnify the Concessionaire and shall save it harmless from and against any payments required to be made by the Concessionaire with respect to levy of any Local Taxes provided nothing contained herein shall be construed or interpreted as restricting in any way or manner the right of **GOHR/GOPb** or any municipal, panchayat or other local authorities to levy any taxes which they or any of them are lawfully entitled to levy, impose or collect (the "Expected Taxes"). The Concessionaire shall not be entitled to and **GOHR/GOPb** shall be under no obligation to reimburse Expected Taxes to the Concessionaire or any person claiming through or under the Concessionaire;

8.4. In the event that either party hereto receives a claim from a third party in respect of which it is entitled to the benefit of an indemnity under Clause 8 or in respect of which it is entitled to reimbursement (the "Indemnified Party") within 14 (fourteen) days of receipt of the claim or payment, as the case may be, shall not settle or pay the claim without the prior approval of the Indemnifying Party. In the event that the Indemnifying Party wishes to contest or dispute the claim, it may conduct the proceedings in the name of the Indemnified Party and shall bear all costs involved in contesting the same. The Indemnified Party shall provide all cooperation and assistance in contesting any claim and shall sign all such writings, and documents as the Indemnified Party may reasonably require.

9. GOVERNING LAW AND DISPUTE SETTLEMENT

9.1. This Agreement shall be governed by and construed and interpreted in accordance with the laws of India. The provisions contained in Clause 8 shall survive the termination of this Agreement.

9.2. Any dispute, difference or claim arising out of or in connection with or in relation to this Agreement which is not resolved amicably shall be decided finally by reference to arbitration to a Board or Arbitrators comprising of one nominee of each party to the dispute. Such arbitration shall be held in accordance with the Rules of Arbitration of the Indian Counsel of Arbitration and shall be subject to the provisions of the Arbitration and Conciliation Act, 1996. The Arbitrators shall issue a reasoned award. The venue of such arbitration shall be New Delhi, India. The Award shall be final and binding on the Parties.

10. MISCELLANEOUS

10.1. Alteration of Terms

All additions, amendments, modifications and variations to this agreement shall be effectual and binding only if in writing and signed by the duly authorized representatives of **GOHR/GOPb** and the Concessionaire.

10.2. Time or Indulgence Allowed

An indulgence by one Party to the other in respect of any obligation or matter hereunder including time for performance to the other party hereunder or to

remedy any breach hereof shall not be construed as a waiver of any of its rights hereunder Party may be on such terms and subject to such conditions as the Party giving it may specify and shall be without prejudice to that Party's then accrued rights under this Agreement except to the extent expressly varied in writing when giving such time or other indulgence.

10.3. Severance of Terms

If any provisions of this Agreement are declared to be invalid, unenforceable or illegal by any competent arbitration tribunal or court, such invalidity, unenforceability or illegality shall not prejudice or affect the remaining provisions of this Agreement, which shall continue in full force and effect.

10.4. Language

All notices, certificates, correspondence or other communications under or in connection with the Agreement shall be in English

10.5. Notices

Any notice or communication hereunder shall be in writing and shall either be delivered personally or sent by registered post, with copy by facsimile transmission or other means of telecommunication in permanent written form. A copy of all the notices and communications will also be forwarded to the Lenders Representative. The service of notice shall unless otherwise notified by a notice hereunder to the parties at their following address:

IF to GOHR:
Attn :
Fax no :
Tel no.

IF to GOPb :
Attn :
Fax no :
Tel no.

IF to the NHAI
Attn:
Fax no.
Tel no.

IF to the Concessionaire :
Attn :
Fax no.
Tel no.

The notice pursuant hereto will be deemed to have been received on the date when such notice is in fact received by the addressee.

10.6. Authorised Representatives

Each of the Parties shall by notice in writing designate their respective authorised representatives through whom only all communications shall be made. A Party hereto shall be entitled to remove and/or substitute or make fresh appointment of its such authorised representative by similar notice.

10.7. Original Document

This Agreement is made in two counterparts, each of which shall be deemed to be an original.

IN WITNESS WHEREOF THE PARTIES HERETO HAVE PUT THEIR HANDS HEREUNTO ON THE DAY, MONTH AND YEAR FIRST ABOVE WRITTEN.

FOR **CONCESSIONAIRE**	FOR **GOVT. OF HARYANA**
BY : _____	BY : _____
Name : _____	Name: _____
Title: _____	Title: _____
FOR **NHAI**	FOR **GOVT. OF PUNJAB**
BY : _____	BY: _____
Name: _____	Name: _____
Title: _____	Title: _____

In the presence of :

1. 2.

Schedule-S

SAFETY REQUIREMENTS

1. OBJECTIVE

1.1 Safety of road users and Project workers is a vital requirement which the Concessionaire has to attend during the Concession Period under the Concession Agreement.

2. SAFETY STANDARDS

2.1 Objective

2.1.1 The objective of safety standards is to provide safe travel to the drivers of vehicles plying on the Project Highway at all times of the day, throughout the year and provide protection to the Project workers when they are on the work. This Schedule delineates the safety standards in terms of construction zones, signs and safety measures in work zones and during normal operations.

2.1.2 The guiding principles for safety measures shall include

(i) warning to the drivers unambiguously and sufficiently in advance of the situation on the highway;

(ii) providing clear demarcation for movement of vehicles;

(iii) providing devices to guide the drivers and their movements through construction zones/lane closures/traffic diversions etc.

(iv) protection to Project workers on work site.

2.2 Construction zone

In order to plan and provide appropriate traffic management and safety measures, it is necessary to appreciate the concept of a construction zone. A construction zone can be defined as an area of the highway which involves the conflict of the right of use between the road users and authority responsible for the maintenance /improvement of the highway. From traffic safety point of view, a construction zone comprises four sub-zones (shown in Figure-1) as described hereinunder:

2.2.1 Advance Warning Sub-Zone

The advance warning sub-zone is meant to prepare the driver for an alert behaviour and is an essential part of any traffic control system. The warning system shall

prepare the driver well in advance by providing information regarding distance, extent and type of hazard ahead so that he can gradually reduce the speed of his vehicle. The information in this sub-zone is conveyed mostly through a series of traffic signs along its length.

2.2.2 Transition Sub-Zone

The transition sub-zone is the area in which the traffic is steered and guided into and out of the diverted path around the work sub-zone. This is the most crucial sub-zone from safety point of view since most of the movements are turning movements. The traffic in this sub-zone is mostly taken across with the help of barricades and channelizers.

2.2.3 Work Sub-Zone

This is the actual area where construction or maintenance activity is taking place and the main concern, therefore, is the safety of the workers at the site from the plying traffic. The path of the traffic must, therefore, be very clearly delineated to avoid intrusion of vehicles moving into the work area. The work sub-zones shall not be close to each other and the distance between the two work sub-zones shall be such that the flow of traffic can return to normal stream by permitting fast moving traffic to overtake slow moving vehicles. These distances shall preferably be 2 km on urban sections and 5 to 10 km on rural sections of the highway. The length of work sub-zones will vary. The length of warning and transition sub-zones shall be basically governed by the speed of approaching vehicles and shall be regulated as shown in table S-1 below:

Table S-1: Recommended Length of Construction Zones

Average Speed (kph)	Length of Advance Warning Sub-Zone (m)	Length of Transition Sub-Zone (m)	Length of Work Sub-zone (m)
50	100	50	
51-80	100-300	50-100	Varies
81-100	300-500	100-200	
Over 100	1000	200-300	

The traffic across these sub-zones is guided and taken with the help of various traffic control devices erected at the site.

2.2.4 Termination Sub-Zone

An information sign board shall be erected to inform road users of the end of Construction Zone.

2.3 Traffic Control Devices

Traffic control devices in the construction zones perform the crucial task of warning, informing and alerting the driver apart from guiding the vehicle movements so that the driver of the vehicle as well as the workers on site are protected and safe passage to the traffic is possible.

The primary traffic control devices used in work sub-zones are signs, delineators, barricades, cones, pylons, pavement markings, flashing lights etc. They shall be such that they are easily understood without any confusion, are clearly visible during day and night, conform to the prevailing speeds in immediate vicinity, stable against sudden adverse weather conditions and are easy in installation, removal and maintenance.

2.3.1 Signs

The construction and maintenance signs fall into the same three major categories viz. regulatory signs, warning signs and guide signs as other traffic signs do. The IRC: 67-2001 (Code of Practice for Road Signs) gives a comprehensive list of traffic signs to which the size, colour and placement of signs shall conform. These signs shall be placed on the left hand side of the road. Fig 2 shows typical positioning of signs. Some of the common type of signs which shall be provided in construction zones are discussed in the following para and shown in Fig 3.

2.3.1.1 Regulatory signs

Regulatory signs mean legal restrictions on the traffic. They shall be used only in consultation with the local police and /or authorities. The most common types for use in construction zones are "Do not Enter", "Road Closed", Give Way to Pedestrians", "Speed limit" etc.

2.3.1.2 Warning Signs

The most common type of warning signs to alert the drivers of the possible dangers ahead in construction zones are "Lane Closed", "Diversion to other Carriageway", "Divided Carriageway Starts", "Divided Carriageway Ends" and "Two Way Traffic" etc. Sometimes it might be advisable to explain these signs with the help of a rectangular definition plate of size appropriate to the size of warning triangle and placed 0.15 m below, from the bottom of the triangle.

2.3.1.3 Guide Signs

Guide signs in construction zones shall have different background colour than the normal informatory signs of IRC: 67-2001. These signs shall have black messages and arrows on yellow (Traffic Yellow of IS: 5-1978) background. The commonly used guide signs are : "Diversion", "Road Ahead Closed" and "Sharp Deviation of route" etc.

2.3.2 Delineators

These channelising devices such as cones, traffic cylinders, tapes, drums are placed in or adjacent to the roadway to guide the drivers along a safe path and to control the flow of traffic. These shall normally be retro-reflectorised for night visibility. IRC: 79-1981 (Recommended Practice for Road Delineators) gives details of some of the delineators. The other delineators are discussed in following paras.

2.3.2.1 Traffic Cones and Cylinders

Traffic cones shall normally be 0.5m to 0.75m high and 0.3m to 0.4m in diameter or in square shape at the base. These are mostly made of plastic or rubber with retro reflectorised red and white band and have suitable anchoring so that they are not easily blown over or displaced, it might be preferable to use double cones, one over the other. The cones shall be placed close enough together to give an impression of the continuity. The spacing shall be 3m (close) to 9m (normal). Larger size cones can be used for high speeds or where more conspicuous guidance is required.

2.3.2.2 Drums

Empty bitumen drums (made of metal) cut to the required height can be used as canalizing devices since they are highly visible , give the appearance of being formidable objects, thereby commanding the respect of the drivers. These drums can also be of plastic which are lighter, easy to transport and store. As delineators, these drums shall be about 0.80 to 1m high and 0.30m in diameter. They shall be painted in circumferential strips 0.10 m to 0.15 m wide, alternatively in black and white colours.

2.3.3 Barricades

Whenever the traffic has to be restricted from entering the work areas, such as excavations or material storage sites so that protection to workers is provided or there is a need for separating the two way traffic, barricades can be used. The barricades can be portable or permanent type and can be made of wooden planks, metal or other suitable material. The horizontal component facing the traffic is made of 0.30 m wide wooden planks joined together and painted in alternate yellow and white strips of 0.15 m width and sloping down at an angle of 45 degree in the direction of the traffic. Fig. 4 shows three types of barricades. Types I and II are portable type useful for small works and Type III is permanent type, suitable for major work areas. Suitable support or ballasting shall be provided so that they do not over turn or are not blown away in strong winds. In case of a permanent type barricade, a gate or movable section shall be separately provided to allow the movement of construction/supervision vehicles.

2.3.4 Flagmen

In large construction sites, flagmen with flags and sign paddles shall be effectively used to guide the safe movements. The flags for signalling shall be 0.60 m x 0.60 m size, made of a good red cloth and securely fastened to a staff of approximately 1m in length. The sign paddles shall conform to IRC: 67-2001 and provided with a rigid handle.

2.4 Safety & Management Practices

Measures for providing safe movement of traffic in some of the most commonly occurring work zones on highways shall be as follows:

2.4.1 Detour on Temporary Diversion

In the cases of major repairs or reconstruction of cross drainage structures on a highway section, damaged due to flood etc., the traffic may have to pass on a diversion, moving parallel to the highway.

2.4.1.1 A temporary diversion road shall basically satisfy the following requirements :

i) it shall have smooth horizontal and vertical profile with smooth vertical and horizontal curves;

ii) it shall not get overtopped by flood or drainage discharge under any conditions;

iii) it shall have adequate capacity to cater for the diverted traffic;

iv) it shall be dust free and shall ensure clear visibility at all times of day and night;

v) It shall be provided with the required safety standards ; and

vi) It shall be provided with suitable barricades to prevent intrusion affecting the movement of the traffic.

2.4.1.2 The warning for the construction ahead shall be provided by the sign "Men at Work" about 1 km earlier to the work zone. In addition, a supplementary plate indicating "Diversion 1 km ahead" and a sign "Road Closed Ahead" shall be placed. It shall be followed by "Compulsory Turn Right/Left Sign". The "Detour" and "Sharp Deviation" sign shall be used to guide the traffic onto the diversion. Hazard markers shall be placed just where the railings for the cross drainage structures on the diversion starts. Figure 5 illustrates a typical arrangement according to the above plan.

2.4.2 Partial Closure of existing two lane Carriageway

2.4.2.1 Such an eventuality will arise only in a special situation where the existing two lanes in use for the main traffic need emergency repairs and the new lanes under construction are not available for diversion of the traffic. It will become necessary to carryout special repairs through partial closure of the existing two lane facility.

2.4.2.2 In the said situation care shall be taken that the traffic is guided from the closed lane onto the operating lane without conflicting with the traffic from opposite direction.

2.4.2.3 The warning sign for "Men at Work" shall be the first sign to be seen by the drivers of the approaching vehicles. This sign shall have supplementary plate also showing the distance of work zone. The next warning sign shall be for the "Road Narrowing" (depending upon the lane closure). Compulsory "Keep Right" or "Keep Left" sign depending upon the situation shall be provided at the beginning of the transition zone and taper. The point from where the traffic is to deviate from its normal path, the channel for traffic shall be clearly marked with the aid of painted drums or traffic cones. The spacing of these cones and/or drums shall be about 9 m or closer as per site requirement.

"The traffic lane or carriageway closed" sign shall also be provided at barricades along with "Keep Right/Left" sign. A typical layout of signs for a two lane carriageway having one lane closure is shown in Figure 6.

2.4.3 Closure for Work on one side Carriageway of a 4 lane divided carriageway

The first sign shall be for the "Men at Work" alongwith distance plate for construction zone. Thereafter the sign for "Road Narrowing" shall be provided, followed by the signs for lane closure one after another. This shall be followed by sign for compulsory "Keep right/Left (depending upon site situation).The sign for the "Closure of carriageway" along with that for "keep Left/Right" shall be provided at the point from where the vehicle is expected to change the lane for the diversion. The sign for the "Diversion to the other carriageway" shall be provided between the "Carriageway Closure" sign and the median gap. The sign for "Sharp Diversion of Route" along with compulsory "Turn right/Left" shall be provided at the location where the gap in median opening starts and traffic is expected to get diverted to the other carriageway. The warning signs for "Two way traffic" alongwith the plate indicating the distance upto which the two way traffic is allowed, shall be placed at the median which shall be to the left of the moving traffic. Cones or painted drums shall be placed for delineation, starting from the sign location for "Carriageway Closed". A Typical arrangement is shown in Figure 7.

2.4.4 Carriageway Repairs

When the work is of small magnitude, to be done in the middle of the carriageway, such as minor repairs of potholes, cracks and patches, then the

traffic control measures shall mainly consist of providing cautionary signs of "Men at Work", about 500m before the work zone for the approaching vehicle and other cautionary sign of "Road Narrows", shall be placed at 100m ahead of work area. Regulatory sign of "Keep Left/Right" shall be placed at the commencement point of the work zone and next to the barriers for the approaching vehicles. Movable type of barriers shall also be placed on both sides of the work area. Cones or drums shall be placed at suitable interval to demarcate the work area. The "Work Zone Ends" sign shall be installed 120m beyond the work area. If the operation is to continue during night time, necessary lighting arrangements with flashing lights shall be provided. A Typical arrangement is shown in Figure 8.

2.4.5 Construction of New Carriageway

2.4.5.1 Urban Section of the Project Highway

a) The service roads on either side together with side drains shall be constructed initially.

During this period the main traffic shall use the existing two lane carriageway. The construction traffic in the work zone shall be safely brought out from the main stream traffic by erecting appropriate signs at the beginning of the work site. Also on return it will be amalgamated with the mainstream traffic by erecting appropriate signs at the end of the work site. It shall be ensured that there shall be identified entry and exist points duly designed so that haphazard entry or exit of construction traffic is avoided. Conflicting turning movements shall be avoided. Fig. 9 illustrates the safety measures taken during construction stage-I in urban sections.

b) On completion of the Stage-I, the main traffic shall be diverted on their respective directions on to the newly constructed service roads and the additional four lanes shall be constructed (2 lanes on each side) of the existing carriageway duly including the 1.5m wide central median. During this stage, position of different signs/ delineators/barricades to ensure safety of workers and road uses shall be as illustrated in fig. 10.

c) On completion of the divided 4 lane carriageway of the project highway, the main traffic from the service roads shall be restored on them and informatory signs shall be installed as illustrated in fig.11.

2.4.5.2 Rural Section of the Project Highway

In rural section the new 2 lane carriageway and the central median shall be constructed eccentric to the Centre line of the existing carriageway. During this construction phase, the existing two lane carriageway shall be used for the main traffic. The construction traffic using the existing highway shall be guided on to the work zone and allowed to return to the main traffic stream safely. For this purpose identified exist and entry points duly designed shall be provided. It shall ensure against haphazard entry or exist of the Construction Traffic to/from the existing highway. Conflicting turning movements of the Construction traffic shall be avoided. During this phase, sign/barricading shall be as shown in Fig.9 on the construction side of the road.

On completion of the new 2 lane carriageway and the median throughout, the traffic on the existing highway shall be diverted on it and the strengthening of the existing 2 lanes and adding paved shoulder to it shall be taken up. Layout of signs and safety measures for this construction phase shall be as illustrated in fig.7.

2.5 Safety Measures During Normal Operation

2.5.1 Introduction

Parking of vehicles on the carriageways leads to accidents many a times, further, the fortuitous vehicle and/or debris on the carriageway are the cause of further accidents besides obstructing the smooth flow of the traffic. For smooth and normal flow of the traffic on the project highway, the actions stated hereinunder in 2.5.2 would be taken for the normal operation of the Project Highway.

2.5.2 Highway Patrol

Highway Patrolling shall be done to ensure safe, uninterrupted and smooth traffic flow so that :

(i) no parking of a vehicle on any of the divided carriageway takes place at anytime;

(ii) Immediate assistance is provided to accident victims and their rescue as per clause 18.8.2 of the Concession Agreement.

(iii) Minor debris and stalled vehicles are removed from carriageway within an hour's time;

(iv) In the incident of traffic congestion, adequate measures shall be taken to mitigate the same in maximum one hour's time and the approaching traffic is duly cautioned about it.

2.5.3 Safety, Vehicle Breakdown and Accident

2.5.3.1 In case of unsafe condition, vehicle breakdowns and accidents, the Concessionaire shall follow the relevant operating procedures, which shall include the setting up of temporary traffic cones and lights as well as the removal of obstruction and debris expeditiously as per clause 18.8.1 of the Concession Agreement.

2.5.3.2 The Concessionaire shall ensure that any diversion or interruption of traffic is remedied without delay as per clause 18.8.1 of the Concession Agreement.

2.6 Safety Measures During Concession Period

2.6.1 During the Concession Period or extension thereof as per the Concession Agreement many activities are involved at different stages and at various periods in respect of construction, operation and maintenance of the Project Highway. Safety of the road users and the Project workmen at site is of paramount importance and obligatory for the Concessionaire throughout the said period.

2.6.2 In Emergency arising on account of Force Majeure due to nature or administrative reasons especial safety measures may be called for the traffic and/or the workmen at site to be taken by the Concessionaire.

2.6.3 The following principles shall be kept in view in Emergency situations from safety considerations:

2.6.3.1 Where part width of the existing 2 lane carriageway is envisaged to be used for passage of two way traffic, paved shoulders shall be used on the side on which work is not proposed. A maximum of one lane (3.5 m wide) closure shall be allowed for a short duration depending on the extent on Emergency.

2.6.3.2 At the points where traffic is to deviate from its normal path, the channel for traffic shall be clearly marked with the aid of pavement markings or other similar device as directed by the Independent Consultant. At night the passage shall be delineated with lamps or lanterns or any suitable light source.

2.6.3.3 On the approach of any type of closure suitable regulatory/warning signs as approved by the Independent Consultant shall be installed for guidance of road users. At least two signs shall be put up one lose to the carriageway where transition of carriageway begins and the other 120 m ahead. The signs shall be of approved design and of reflectory type as directed by Independent Consultant.

2.6.4 The Concessionaire shall ensure that safety standards specified in this schedule are strictly complied with in the event of any lane closure or diversion of traffic.

2.7 Safety of Project workmen at Site

2.7.1 Safety of the Project Workers at site during duty hours is the responsibility of the Concessionaire. It shall be ensured by him that safety measures appropriate for the job a workman performs shall be provided.

2.7.2 Also, safety measures against accidents of the Workers by the traffic using the highway and/or diversions shall be taken. The Concessionaire shall provide helmets and protective chest vests to its workmen at site and make it compulsory for them to wear the same.

2.7.3 The Concessionaire shall insure all the Project Workers against accident.

2.7.4 Labour Laws in force shall be followed.

2.8 Safety Requirements

2.8.1 Safety of Road users and workers on the Project Highway during its Construction, Operation and Maintenance is obligatory and the Concessionaire shall be fully responsible to discharge it in terms of the Concession Agreement including its Schedules.

2.8.2 In case of emergency situations the Concessionaire shall take action(s) for the safety of the road users and the workers as required by the site conditions immediately without waiting for consultation with the Independent Consultant and/or NHAI because any delay in it will not absolve the Concessionaire of its responsibilities under the Concession Agreement including its Schedules.

2.8.3 A breach by the Concessionaire of its obligations in respect of the safety standards shall be dealt with in terms of clause 18.8.3 of the Concession Agreement.

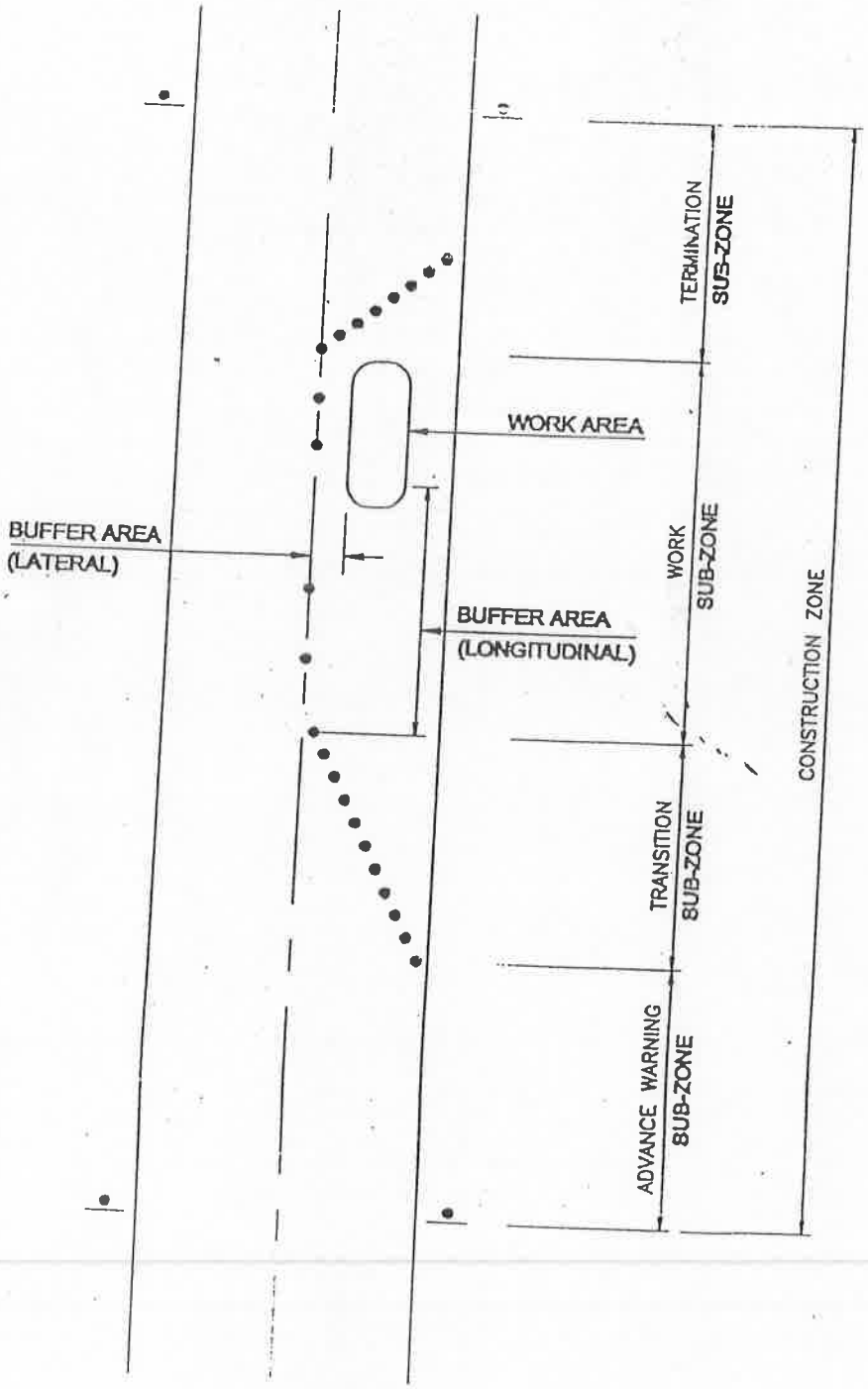
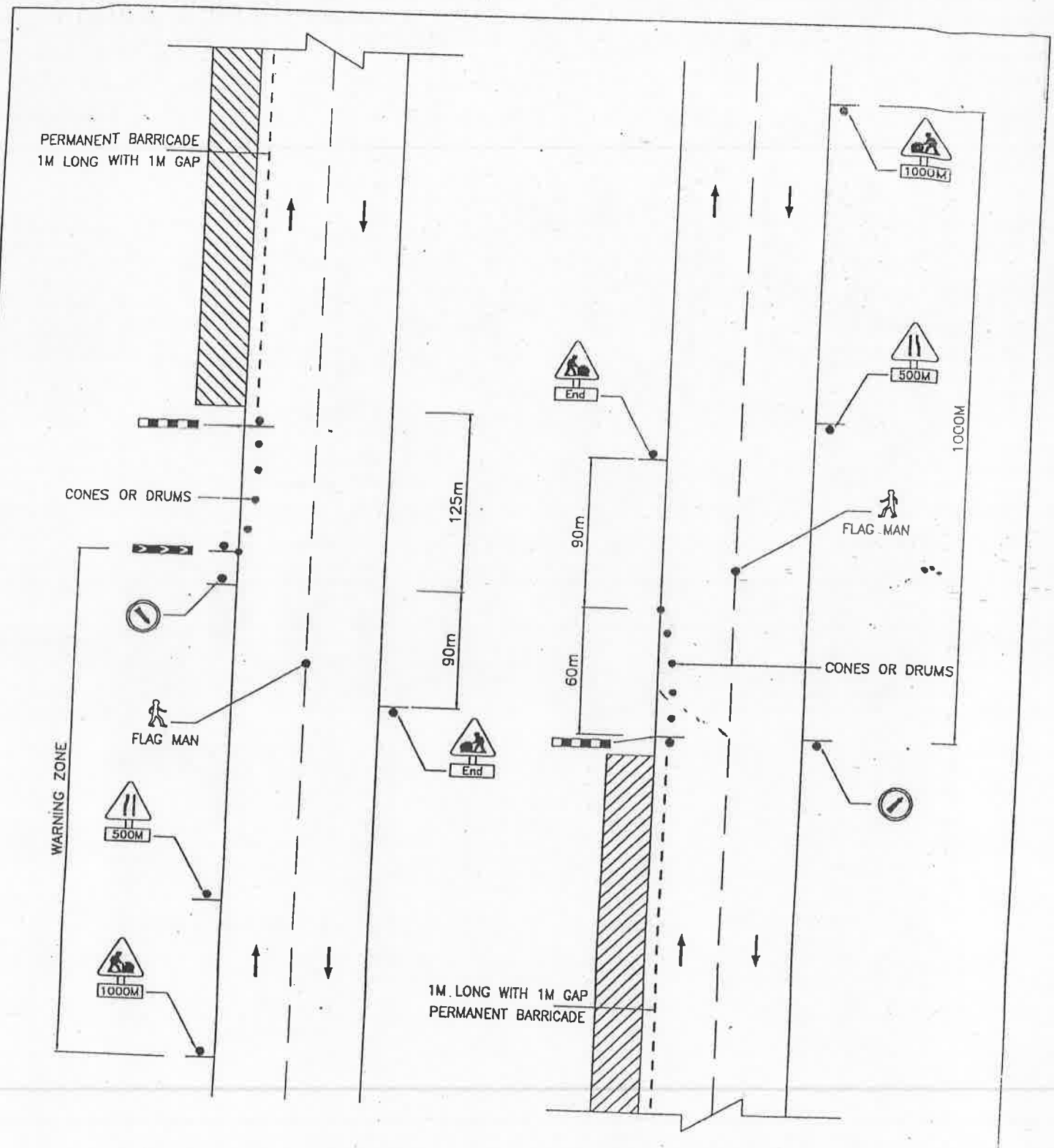


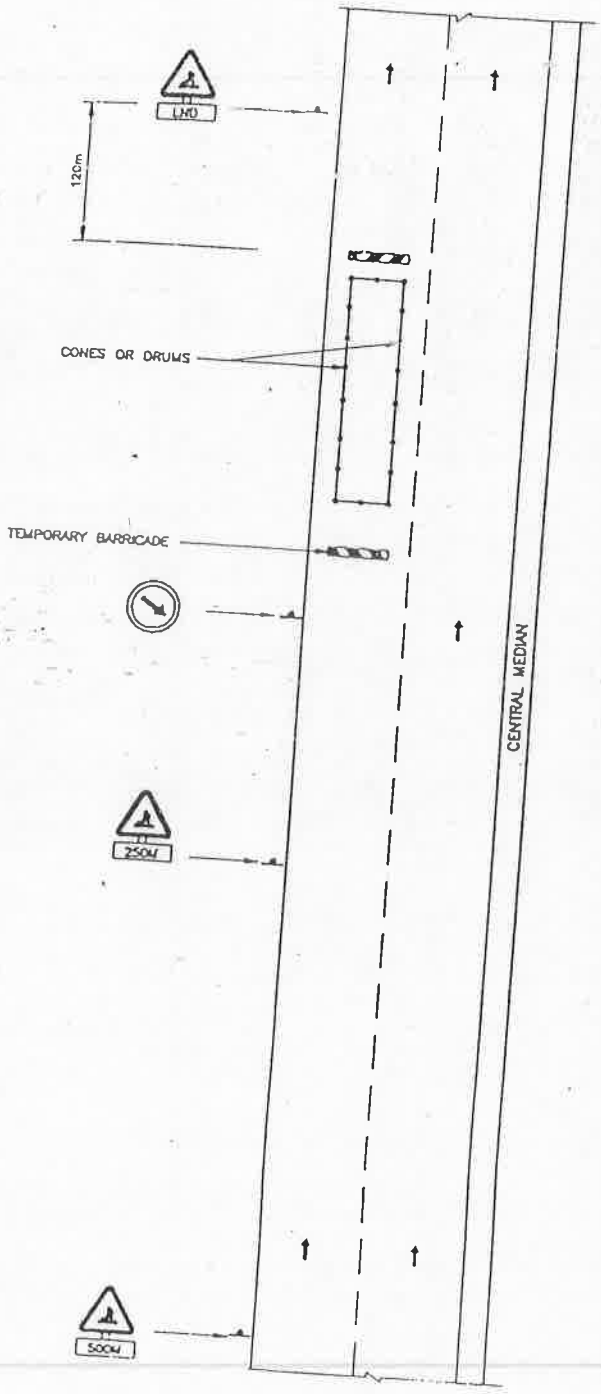
Fig. 1 Components of Construction Zone



NOTE:

1. Flashing beacon to be used during night.
2. One way or two way traffic to be permitted by flagman depending upon the length of work–sub zone, traffic worthy width available and traffic volumes.

Fig. 2 Typical Layout of Construction Zone
On The Existing Two Lane Carriageway



NOTE: Flashing beacon to be used during night

Fig. 3 Layout of Signs For Work Zone in One Lane of 4 Lane Dual Carriageway

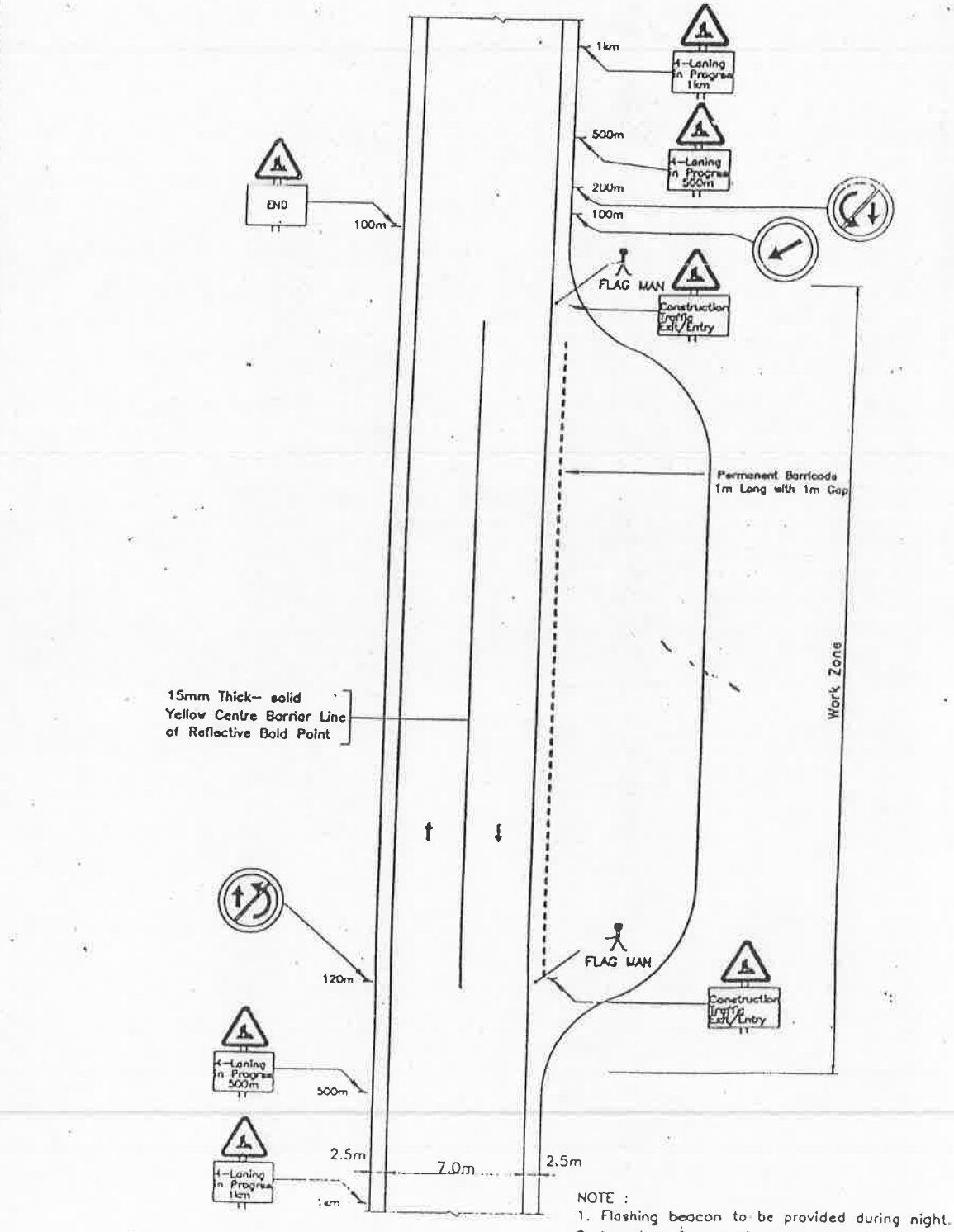


Fig. 4 : Layout of Traffic Control devices for 4-Laning

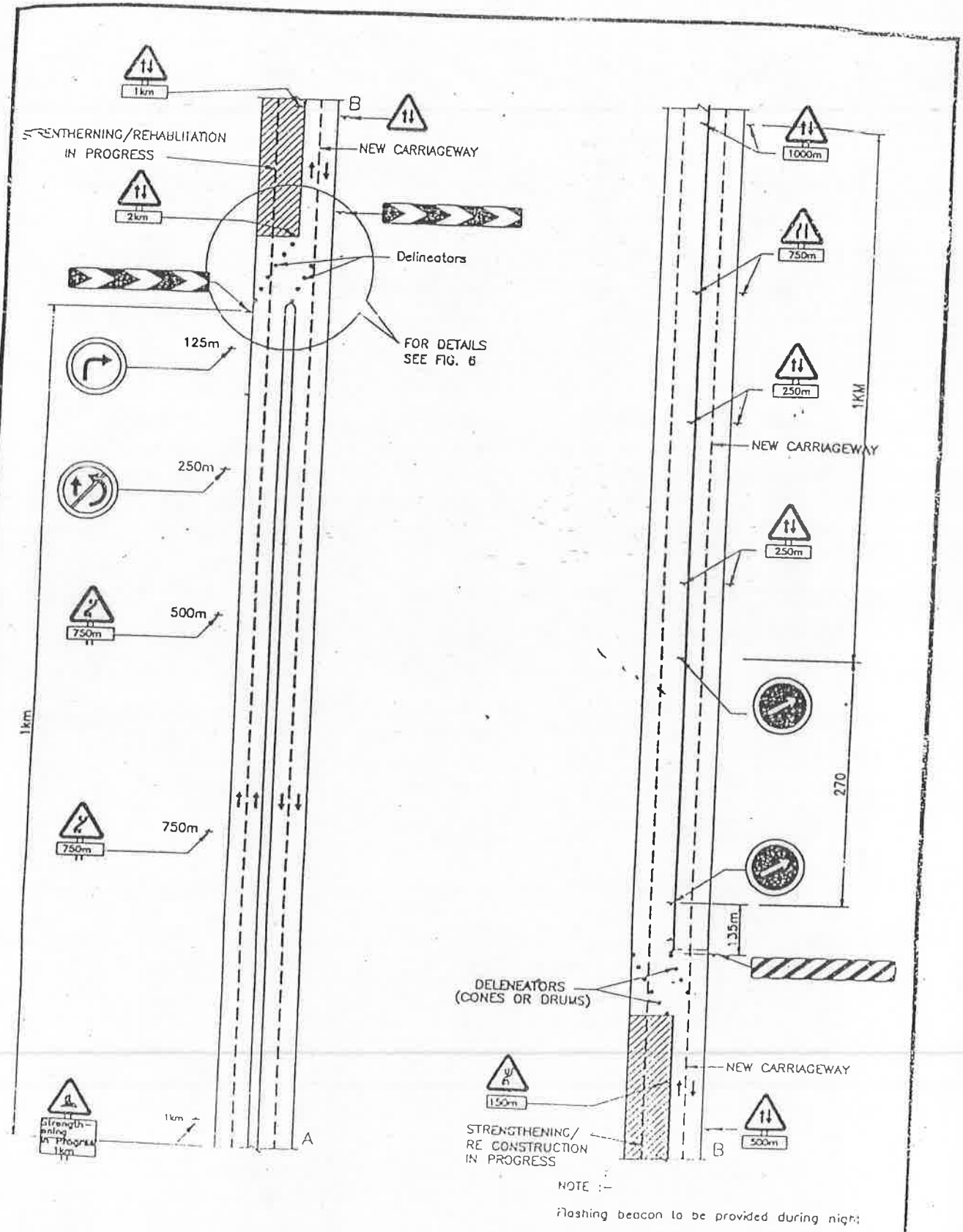


Fig. 5 Layout of signs for Traffic Diversion From Existing Carriagewat to New Carriageway for Strenthening/ Reconstruction From One Median to other Median

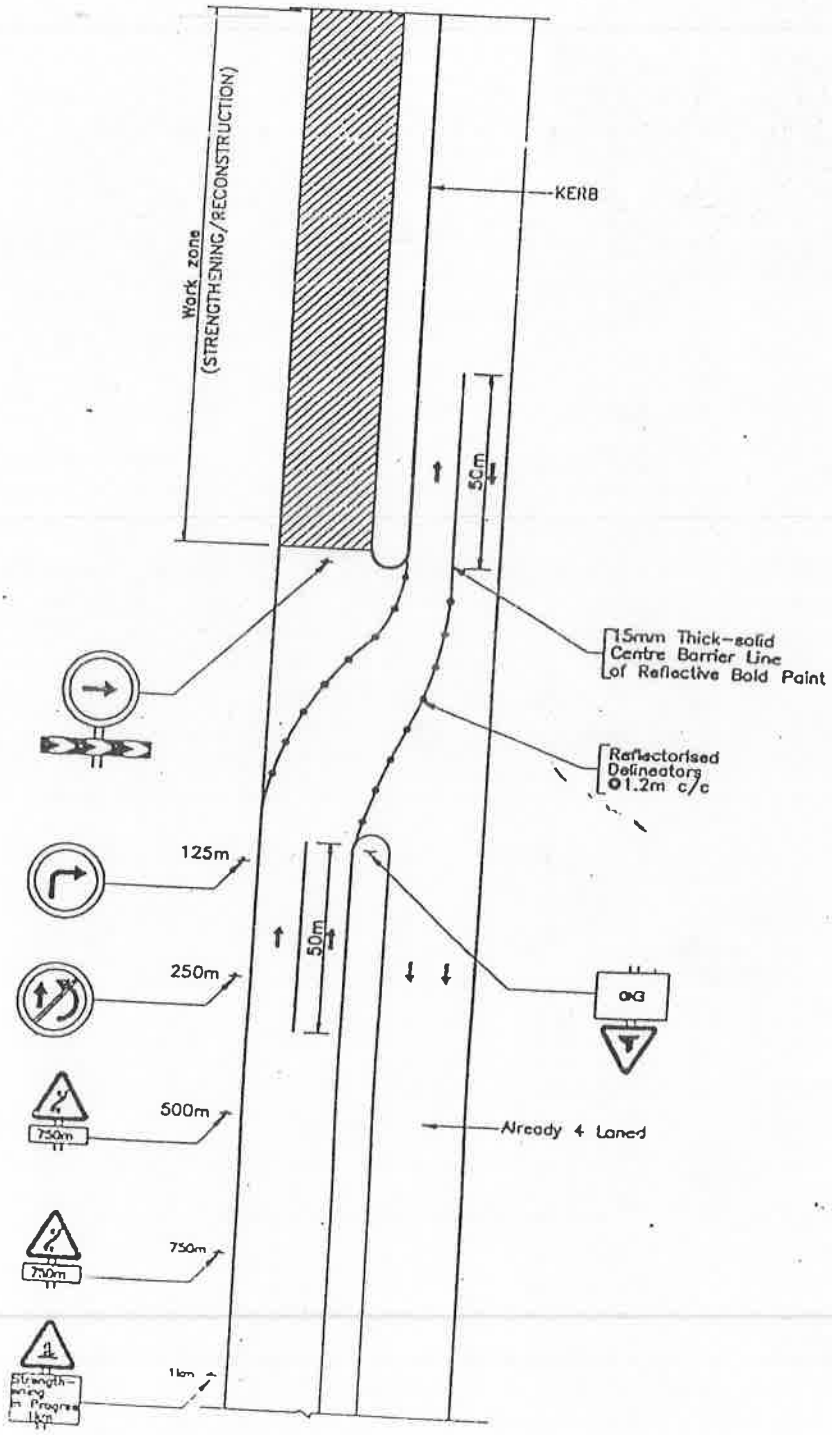


Fig. 6 : Layout of Traffic Control devices for Change to New Carriageway for Strenthening/ Reconstruction Existing Carriageway

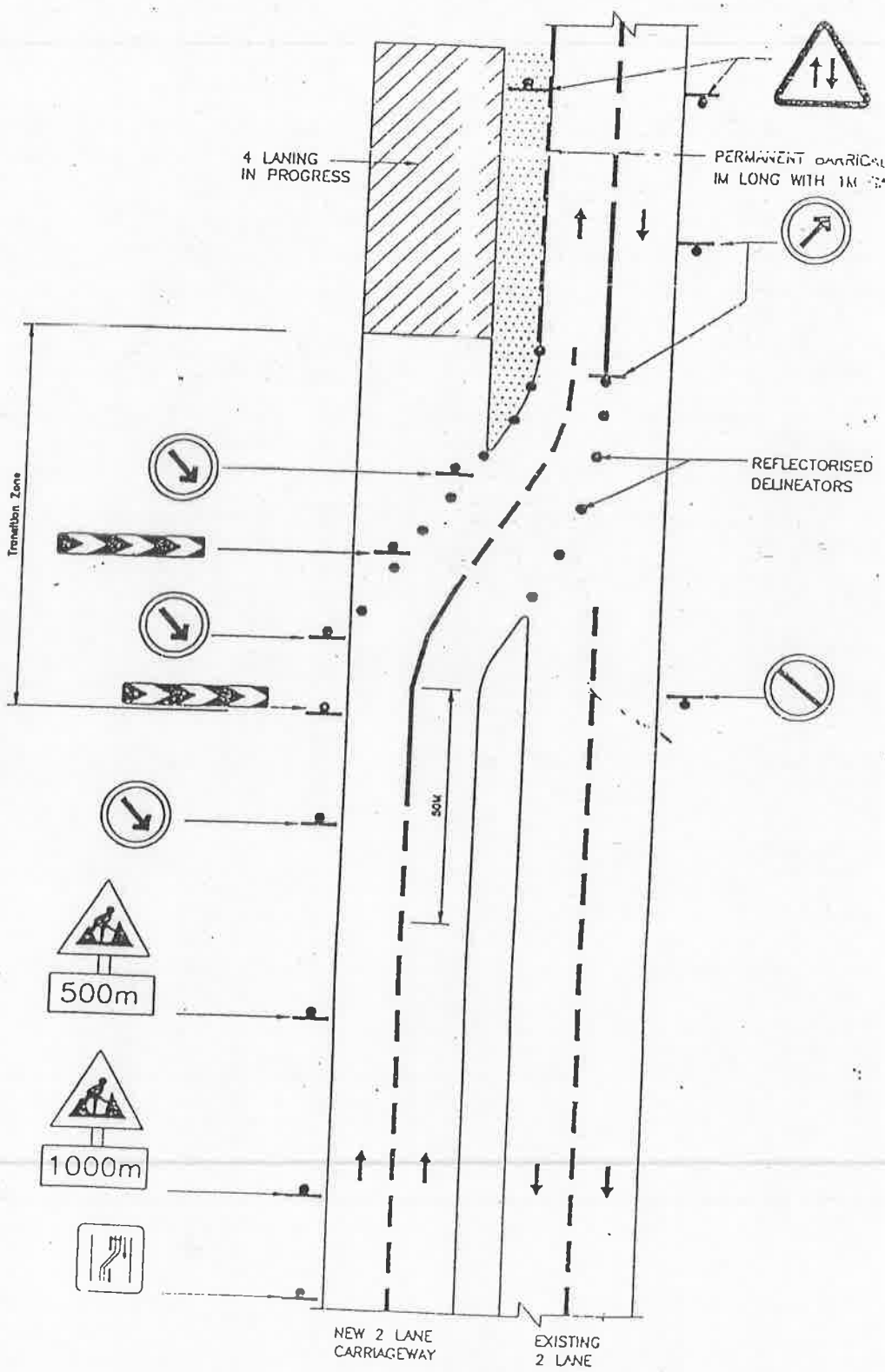


Fig. 7 Typical 4 Laning Construction and Crossover to Existing Road Detail in Rural Area

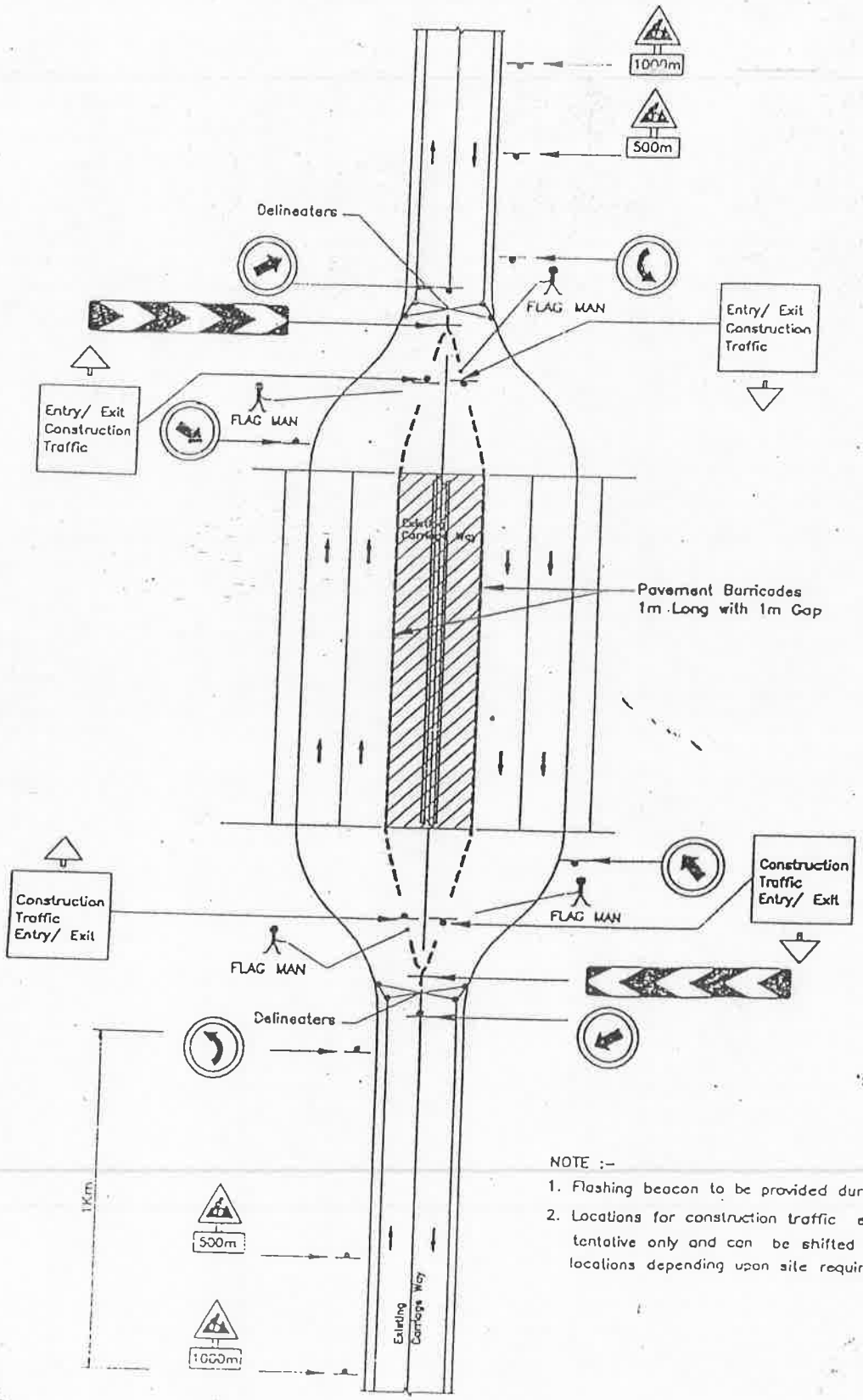


Fig. 8 Layout of Traffic Control Devices for Urban Section
(Stage - II) Construction of 4 Lane Divided Carriageway

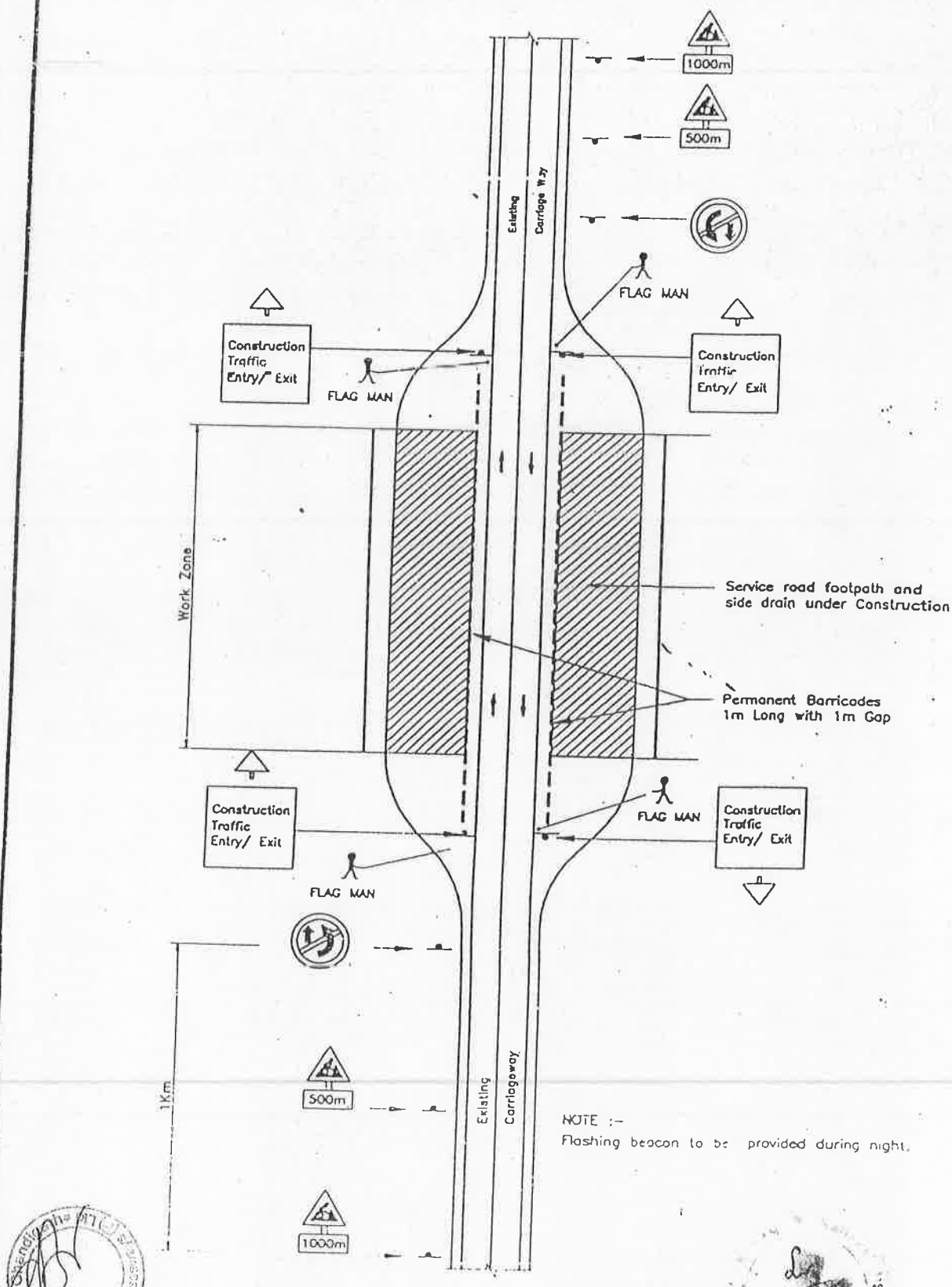


Fig. 9 Layout of Traffic Control Devices for Urban Section (Stage - I)
Construction of service road, footpath and side drain

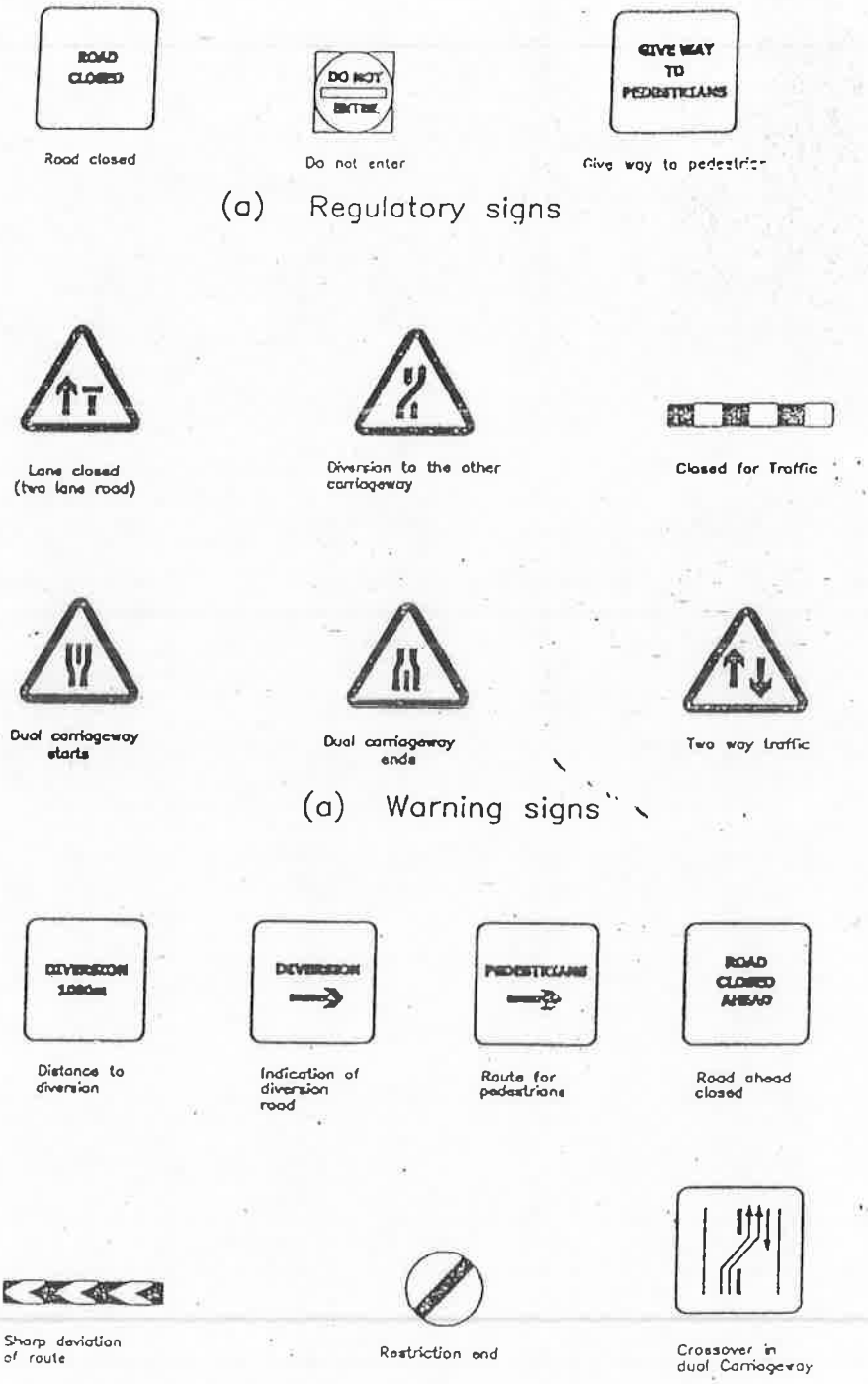


Fig. 10 Regulatory Warning And Guide Signs For a Construction Zone

SCHEDULE – T

CRITERIA FOR LIST OF CHARTERED ACCOUNTANTS

SCHEDULE T

CRITERIA FOR LIST OF CHARTERED ACCOUNTANTS

Selection of the Chartered Accountants for a mutually agreed list shall consist of the following steps :

1. Shortlisting of Chartered Accountants by the NHAI
2. Issue of Letter of Invitation (LoI) along with Terms of Reference to shorlisted Chartered Accountants.
3. Evaluation of Technical Proposal and selection of maximum of 15 (fifteen) Chartered Accountants.
4. Forwarding list of 15 (fifteen) Chartered Accountants to Concessionaire to select a maximum of 10 (ten).

SELECTION COMMITTEE FOR SHORTLISTING

A Selection Committee shall do the selection; the members of this committee shall be nominated by the NHAI.

1. Shortlisting by NHAI

For shortlisting, NHAI shall advertise for Expression of Interest (EoI) to serve as Statutory Auditors/ Chartered Accountants for the ongoing National Highway improvement project. The EoI will ask for summary information on

- Number of Partners and Professional Staff
- Experience of the firm on roads project
- Presence in India and in the region
- Experience of the firm on other similar work in other sectors.

2. Request for Technical Proposal

The request for technical proposals shall be sent to the shortlisted firms. This shall include a ToR besides information (Data Sheet) to the firms. It shall contain the guidelines for the preparation of technical proposals by the firms and submission.

The ToR shall include the following details :

1. Project background
2. Objectives
3. Scope of services

4. Interaction with NHAI
5. Reporting requirement
6. Performance clause
7. Consultant's Proposal
8. Period of Services

3. **Evaluation of Technical Proposal**

The technical proposals received from shortlisted firms shall be evaluated based on the following :

- Specific experience of the firm related to the assignment
- Adequacy of the proposed work plan and methodology in response to the ToR
- Qualifications and competence of the key staff for the assignment.



SCHEDULE – U

SUBSTITUTION AGREEMENT

SCHEDULE U

SUBSTITUTION AGREEMENT

THIS SUBSTITUTION AGREEMENT is made at New Delhi on this the _____ day of _____ 200_.

BETWEEN

1. THE **National Highways Authority of India** (hereinafter referred to as "NHAI" which expression shall unless repugnant to the context or meaning thereof include its successors and assigns),

2. .....LIMITED, a company incorporated under the provisions of the Companies Act, 1956 and having its Registered Office at .....(hereinafter referred to as the "Concessionaire" which expression shall unless repugnant to the context or meaning thereof include it successors and assigns),

AND

3. _____, _____and having its registered office at _____acting for itself and for and on behalf of the Senior Lenders listed in Schedule 1 hereto (hereinafter referred to as the "Senior Lenders").

(NHAI, the Concessionaire and the Senior Lenders are hereinafter collectively referred to as the "Parties" and individually are hereinafter referred to as "Party").

WHEREAS

A. By the Concession Agreement dated ..... entered into between the NHAI and the Concessionaire, NHAI has granted to the Concessionaire the Concession for 4-laning of Dual of Ambala – Chandigarh Section from i) Km 5+735 – Km 39+960 of NH-22 And ii) Km 0+000 – Km 0+871 of NH-21 except 2.085 km portion of NH-22, Dera Bassi ROB from km 30.960 to km 33.045 till the validity of existing concession of M/s R S Builders & Engineers is over **in the States of Haryana and Punjab**, India on Build, Operate and Transfer (BOT) basis subject to and on the terms, conditions and covenants setforth in the said Concession Agreement or forming part thereof.

B. With a view to help facilitate obtaining of financing for the said Project by the Concessionaire so as to enable the Concessionaire to build, operate and maintain the same pursuant to and in accordance with the Concession Agreement, the Parties have agreed subject to the terms and conditions of the Concession Agreement and the Financing Documents, that the Senior Lenders shall have the right to substitute the Concessionaire by a Selectee for the residual period of the Concession on the terms, conditions and covenants mentioned hereinbelow.

C. As a condition to making any disbursement pursuant to the Financing Documents, the Senior Lenders have required and it is deemed necessary and expedient to record the terms, conditions and covenants of the above agreement between the Parties.

D. The Senior Lenders have appointed and nominated the Lenders Agent to act for and on their behalf, inter alia for the purpose of executing this agreement.

NOW THEREFORE THE PARTIES HITHERTO HEREBY AGREE AND THIS AGREEMENT WITNESSES AS FOLLOWS:

ARTICLE 1

DEFINITIONS

1.1 For the purpose of this Agreement, the following terms shall have the meaning hereinafter respectively assigned to them :

1.1.1 "Concession" means the bundle of rights, obligations and covenants of the Concessionaire under and as setforth in the Concession Agreement.

1.1.2 "Concession Agreement" means the Concession Agreement dated ..... entered into between NHAI and the Concessionaire granting the Concession to the Concessionaire in respect of the Project Highway and includes without limitation any amendments thereto made in accordance with the provisions contained in this behalf therein.

1.1.3 "Event of Default" means occurrence of any of the following events :

(i) A Material Breach by the Concessionaire of the Concession Agreement, or the occurrence of a Concessionaire Event of Default as defined in the Concession Agreement.

(ii) A material default in payment by the Concessionaire to all or any of the Senior Lenders under the Financing Documents of any two instalments, either of principal or interest or both, due and payable by it on account of Lenders Dues.

(iii) Any event of default under or breach of any of the terms of any of the Financing Documents or Project Agreements concerning the Project which in the sole opinion of the Lenders Agent is material or major and which may seriously affect the ability of the Concessionaire to meet its payment obligations to the Senior Lenders under the Financing Documents or to design engineer, construct, complete, operate and maintain the Project Highway pursuant to and in accordance with the Concession Agreement.

1.1.4 "Financial Assistance" means the loans, advances and other funding assistance including any syndicated/ participation facility provided by the Senior Lenders as setforth in Schedule II hereto for financing the whole or any part of the Project Cost,

1.1.5 "Financing Documents" means the documents executed/ to be executed by the Concessionaire or entered/to be entered into by the Concessionaire with the Senior Lenders and/or the Lenders Agent in respect of the Financial Assistance and include loan agreements, guarantees, notes, debenture, bonds and other security agreements and other documents relating to the Financial Assistance and brief particulars whereof are setforth in Schedule II hereto in relation to each Senior Lender.

1.1.6 "Lenders Agent" means ....., a statutory corporation established under the provisions of the ..... and having its principal office ..... and any replacement thereof appointed by all the Senior Lenders, inter alia, on the condition that as security for the Financial Assistance they shall have the right to seek transfer and assignment of the Concession Agreement including the Concession in accordance with the provisions of this Agreement.

1.1.7 "Lenders Certificate" shall have the meaning ascribed thereto in Clause 2.2(b).

1.1.8 "Lenders Dues" means the aggregate of all monies owned by the Concessionaire to the Senior Lenders under the Financing Documents on account of principal thereunder for funding the Project Cost, and all accrued interest, additional interest, liquidated damages, commitment fees, commission, prepayment premium, costs, charges and other monies including financing charges and fees owned by the Concessionaire to the Senior Lenders under the Financing Documents for the Project upto the Transfer Date payable under the Financing Documents.

1.1.9 "Notice of Default" shall have the meaning ascribed thereto in Clause 2.2(a).

1.1.10 "Proposal" shall have the meaning ascribed thereto in Clause 3.1(iii).

1.1.11 "Project Agreements" means this Agreement, the Concession Agreement and certain other agreements and contracts entered into by the Concessionaire with NHAI and others relating to the Project and brief particulars whereof are setforth in Schedule III hereto.

1.1.12 "Project Cost" means the total capital cost of the Project upto the COD as approved by the Senior Lenders.

1.1.13 "Senior Lenders" means the financial institutions, trusts, funds, banks, Non-Banking Financial Companies approved by Reserve Bank of India and such other persons who have provided or agreed to provide the finance to the Concessionaire under any of the Financing Documents for meeting all or any part of the Total Project Cost and who hold pari passu charge on the Project Assets.

1.1.14 "Selectee" means a new Concessionaire proposed by the Senior Lenders pursuant to this Agreement and approved by NHAI for substituting the Concessionaire for the residual period of the original Concession by amendment of the Concession Agreement or by execution of a fresh Concession Agreement.

1.1.15 "Substitution Notice" means the notice given by the Lenders Agent pursuant to Clause 2.2 (c) of this Agreement.

1.2 The words and expressions beginning with or in capital letters used in this Agreement not defined in the Concession Agreement, shall have, unless repugnant to the context, the meaning respectively assigned to them in the Concession Agreement.

1.3 In this agreement unless the context otherwise requires :

a) any reference to a statutory provision shall include such provision as is from time to time modified or re-enacted or consolidated so far as such modification or re-enactment or consolidation applies or is capable of applying to any transactions entered into hereunder;

b) the words importing singular shall include plural and vice versa, and words denoting natural persons shall include partnerships, firms, companies, corporations, joint ventures, trusts, associations, organisations or other entities (whether or not having a separate legal entity);

c) the headings are for convenience of reference only and shall not be used in and shall not affect the construction or interpretation of this Agreement;

d) terms beginning with capital letters and defined in this Agreement shall have the meaning ascribed thereto herein;

e) the words "include" and "including" are to be construed without limitation;

f) any reference to a "day" shall mean reference to a calendar day;

g) any reference to "month" shall mean reference to a calendar month;

h) the Schedules 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;

i) any reference at any time to any agreement, deed, instrument, license or document of any description shall be construed as reference to that agreement, deed, instrument, license or other document as amended, varied, supplemented, modified or suspended at the time of such reference provided that this clause shall not operate so as to increase liabilities or obligations of NHAI hereunder or pursuant hereto in any manner whatsoever;

j) references to Recitals, clauses, sub-clauses, paragraphs, or schedules in this Agreement shall, except where the context otherwise requires, be deemed to be references to Recitals, Articles, clauses, sub-clauses, paragraphs, Annexures, appendices of this Agreement.

k) any agreement, consent, approval, authorisation, proposal, notice, communication, information or report required under or pursuant to this Agreement from or by any Party or Senior Lender(s) shall be valid and effectual only if it is in writing under the hands of duly authorised representative of such Party or the Senior Lender(s), as the case may be, in this behalf and not otherwise; and

l) any reference to any period commencing "from" a specified day or date and "till" or "until" a specified day or date shall include both days or dates.

ARTICLE 2

SUBSTITUTION OF THE CONCESSIONAIRE BY A SELECTEE

2.1 NHAI hereby irrevocably agrees to substitute the Concessionaire by a Selectee (selected by the Senior Lenders in accordance with the provisions of this Agreement and approved by NHAI) by amendment of the Concession Agreement or by execution of a fresh Concession Agreement in favour of the Selectee for the purpose of securing the payments of the Lenders Dues, provided that nothing contained herein shall entitle the Senior Lenders to operate the Concession themselves as a Concessionaire under and in accordance with Concessionaire Agreement either individually or collectively.

2.2 (a) The Lenders Agent shall notify by a notice in writing to the Concessionaire, with a copy thereof simultaneously to NHAI, about the occurrence of an Event of Default and requiring the Concessionaire to remedy and cure such default within 30 (thirty) days from the date of delivery of such notice of the Concessionaire (the "Notice of Default"). The Notice of Default shall be accompanied by the Lenders Certificate.

(b) A certificate under the hands of an authorised officer of the Lenders Agent annexed to the Notice of Default certifying –

(i) the occurrence of an Event of Default, and

(ii) the Lenders Dues.

(the "Lenders Certificate") shall be conclusive evidence of occurrence of such Event of Default and of such Lenders Dues. Such Lenders Certificate shall be final, conclusive and binding upon the Concessionaire for the purposes of this Agreement and the Financing Documents.

(c) NHAI and the Concessionaire hereby irrevocably agree that the Lenders Agent may within 30 (thirty) days of the date of delivery of the Notice of Default of the Concessionaire and without prejudice to any other right or remedy available to the Senior Lenders under the Financing Document, notify NHAI and the Concessionaire on behalf of all the Senior Lenders about the Senior Lenders decision to invite, negotiate and procure offers, either through private negotiations or public auction or process of tendering for the residual period of the Concession and the rights and obligations of the Concessionaire under the Concession Agreement, by a Selectee, subject to the approval of such Selectee by NHAI (the "Substitution Notice").

(d) Upon assumption by the Selectee of the liability and obligations of the Concessionaire under the Financing Documents and the Concession Agreement including obligation to pay any sums then due and payable to NHAI under the Concession Agreement, NHAI shall grant the Concession to the Selectee on the same terms and conditions for the residual period of the original Concession, by amendment of Concession Agreement or, if required by the Lenders Agent by a separate agreement with the Selectee.

2. 3 The Lenders Agent shall apply in the selection of the following criteria :

(i) the Selectee shall be capable of properly discharging the duties, obligations and liabilities of the Concessionaire under the Concession Agreement;

(ii) the Selectee shall provide security to the satisfaction of Senior Lenders for repayment of the Lenders Dues;

(iii) the Selectee shall have the capability and shall unconditionally consent to assume the liability for the payment and discharge of dues of the Concessionaire to NHAI under and in accordance with the Concession Agreement and of Lender's Dues upon terms and conditions as agreed to with the Senior Lenders ;

(iv) the Selectee shall have the networth, experience and technical equity parameters as setforth in the Concession Agreement or prescribed by NHAI thereunder in respect of the Concessionaire or as relaxed subsequently by NHAI;

(v) the Selectee shall have not been in breach of any agreement between the Selectee and NHAI ; and

(vi) any other appropriate circumstance, whereby continuity in the performance of the Concessionaire's obligations under the Concession Agreement is maintained and the security in favour of Senior Lenders under the Financing Documents is preserved.

2.4 At any time prior to the acceptance of the Selectee by NHAI pursuant to this Agreement, the NHAI may require the Lenders Agent to satisfy NHAI as to the eligibility of the Selectee and the decision of the NHAI in this behalf (which shall be reasonable), shall be final, conclusive and binding on the Senior Lenders and the Selectee.

ARTICLE 3

MODALITY FOR SUBSTITUTION

3.1 The following modalities shall be applicable to any substitution of the Concessionaire by the Selectee pursuant to this Agreement :

(i) The Lenders Agent may invite, negotiate or procure offers either through private negotiations or public auction or process of tender or otherwise for the substitution of the Concessionaire by the Selectee;

(ii) The Lenders Agent shall on behalf of the Senior Lenders propose to NHAI pursuant to sub-clause (iii) below, the name of the Selectee for acceptance and shall apply as necessary to NHAI for :

a) grant to the Selectee (as substitute for the Concessionaire) the right to build, construct, complete, maintain, and operate the Project Highway under and in accordance with and subject to and on the terms and conditions setforth in the Concession Agreement,

b) amendment of the Concession Agreement so as to grant to the Selectee on the same terms and conditions, the residual period of the Concession under original Concession Agreement,

c) the execution of a new Substitution Agreement with the proposed Selectee for the residual period of Concession on the same terms and conditions, and

(iii) The Lenders Agent on behalf of the Senior Lenders shall be entitled, within a period of 120 (one hundred twenty) days from the date of delivery to NHAI of the Substitution Notice pursuant to Clause 2(c) above, to select and propose to NHAI for its approval a Selectee (the "Proposal"). The Proposal of the Lenders Agent pursuant to this sub-clause (iii) shall contain the particulars and information in respect of the Selectee, the Lenders Dues and other data and information, all as prescribed in Schedule IV hereto. Without prejudice to the foregoing the Lenders Agent agrees and undertakes to provide to NHAI such further and other information and such clarifications in respect of any data, particulars or information furnished pursuant hereto by the Lenders Agent as NHAI may reasonably require. NHAI shall convey its approval or otherwise of such Proposal, including of Selectee, in its sole discretion within 60 (sixty) days of (a) the date of receipt of the Proposal by NHAI, or (b) the date when last of further and other information and such clarifications in respect of any data, particulars or information comprised in the Proposal, as have been provided in the Lenders Agent to NHAI, whichever is later. It is expressly agreed that the Proposal shall be accompanied by an unconditional undertaking of the Selectee that it shall upon approval by NHAI of the Proposal including the Selectee, observe, comply, perform and fulfill the terms, conditions and covenants of the Concession Agreement which according to its terms are required to be observed, complied with, performed and fulfilled by Concessionaire thereunder on the footing as if such Selectee were the concessionaire under the Concession Agreement and shall be liable for and shall assume, discharge and pay the Lenders Dues to the Senior Lenders under and in accordance with the Financing Documents. Upon approval of

the Proposal including of the Selectee by NHAI. such Selectee shall become the Selectee hereunder.

(iv) NHAI shall, upon its satisfaction of the eligibility of the Selectee and in accordance with the provisions of this Agreement and subject to the provisions of Sub-clause (v) below proceed to substitute the Concessionaire or the Selectee by amendment of the Concession Agreement or by execution of fresh agreement or such other writing as NHAI may reasonably require on the same terms and conditions for the residual period of the Concession in favour of the Selectee.

(v) The substitution as aforesaid shall be subject to the Selectee, obtaining requisite Indian Government approvals, clearances and permission necessary for operating the Concession under and in accordance with the Concession Agreement.

(vi) The objection if any of NHAI to the substitution as aforesaid shall be reasoned and be made after hearing the Lenders Agent, provided however, that in the event of a refusal as stated above, the Lenders Agent may propose another Selectee. In the event that no objection is raised with respect to the Selectee by NHAI within the period setforth in sub-clause (iii) above, the Selectee shall be deemed to have been accepted by NHAI. NHAI shall, subject to the provisions of Sub-clause (v) above, grant the Concession for the residual period within 15 days of its acceptance/deemed acceptance of the Selectee.

(vii) The substitution as aforesaid, pursuant to the security interest hereby created in favour of the Senior Lenders, shall be deemed to be complete only upon the Selectee as Concessionaire accepting and complying with the terms and conditions stipulated in the Concession Agreement.

(viii) The decision of the Senior Lenders and NHAI in the selection of the Selectee shall be final and binding on the Concessionaire and shall be deemed to have been made with the concurrence of the Concessionaire and the Concessionaire hereby expressly waives all rights to objects to or challenge such selection of the Selectee on any ground whatsoever. No

third party shall have the right to question the decision of the Senior Lenders/Lenders Agent and NHAI.

(ix) All actions of the Lenders Agent hereunder shall be deemed to be on behalf of the Senior Lenders, and be binding upon them. The Lenders Agent is authorised to receive payment of compensation, payment to cure default and any other payments, consideration for transfer in accordance with the Substitution Notice and the Financing Documents and give valid discharge on behalf of all Senior Lenders.

3.2 The terms and conditions for substitution of the Concessionaire by the Selectee shall be proposed by the Senior Lenders through the Lenders Agent to the NHAI, on the occurrence of an Event of Default and continuance thereof for six months but atleast 2 months prior to the anticipated date of substitution as aforesaid for the residual period of the Concession.

3.3 The Concessionaire hereby irrevocably agrees and waives any right to challenge the Senior Lender's decision to apply to NHAI for substitution as aforesaid and neither the Concessionaire nor NHAI shall be entitled to prevent the Lenders Agent from proceeding to seek such a substitution of the Concessionaire by Selectee as hereinbefore provided. The Concessionaire agrees and confirms that the Concessionaire shall not have any right to seek re-valuation of the Concessionaire's assets and the Concession Agreement including the Concession, otherwise than as contracted in the Financing Documents while the NHAI permits substitution as hereinbefore provided, pursuant to the Lenders Agent's request. The Parties acknowledge that the rights of the Senior Lenders hereunder are irrevocable and shall not be contested in any proceedings before any court of authority and the Concessionaire shall have no right or remedy to prevent, obstruct, injunct or restrain NHAI and/or the Senior Lenders from effecting or causing the substitution as aforesaid.

3.4 Where no suitable Selectee can be found by the Lenders Agent, or NHAI shall decide to take over the concession then NHAI shall advise the Lenders Agent of all steps it proposes to take under the Concession Agreement for determination of Termination Payments thereof.

3.5 (i) If NHAI decides to substitute the Concessionaire by any other person (NHAI Nominee), it

shall take into account the Senior Lender's Dues while considering offers from such persons and shall include a suitable condition as agreed to by the Lenders Agent on behalf of the Senior Lenders for payment or take over of such dues by such NHAI nominee to the extent agreed by the Lenders Agent while substituting the Concessionaire by the NHAI nominee. The NHAI nominee shall similarly be bound to execute a supplementary/fresh substitution agreement on the same terms and conditions as provided herein.

(ii) Notwithstanding anything contained in Clause 3.4 and this Clause 3.5, NHAI shall not be required to take over, upon Termination of the Concession Agreement including the Concession, the liabilities representing the Lender's Dues save and except to the extent of Termination Payments due and payable upon such Termination under the Concession Agreement. In such an event NHAI's obligation shall be limited to assumption of such liabilities and payments of dues as NHAI has agreed to bear under the Concession Agreement.

3.5.1 Nothing contained in these presents shall mean or be interpreted as provision of any guarantee

or surety by NHAI and it is expressly agreed that NHAI has not provided any surety, guarantee or counter guarantee whether directly or indirectly for the recovery of amount of Financial Assistance advanced by the Senior Lenders to the Concessionaire.

ARTICLE 4

INTERIM PROTECTION OF SERVICE AND PRESERVATION OF SECURITY

4.1 In the event of the Senior Lenders notify NHAI and the Concessionaire of the Event of Default (and the Concessionaire has not cured the default for a period of 30 days) or in special circumstances affecting the security of the Senior Lenders, the Senior Lenders shall be entitled to institute protective legal proceedings for a receivership (the "Receiver") to maintain, preserve and protect the assets (other

than the Concession Agreement including the Concession) held as security by the Senior Lenders provided always that such receiver shall be NHAI if such assets are in the opinion of NHAI necessary and required for the operation and maintenance of the Project Highway and the Parties hereby consent and agree to the same. The Lenders Agent shall in such an event notify NHAI to assume receivership of the assets held as security and NHAI shall operate and maintain the same pending the substitution of the Concessionaire by the Selectee. In the event NHAI does not assume receivership and declines the request of the Lenders Agent, the Lenders Agent shall for itself and each of the Senior Lenders, be entitled to seek the appointment of a Court Receiver for the Concessionaire's assets held as security and NHAI shall operate and maintain the same pending substitution as aforesaid and/or the takeover of the Concession Agreement including the Concession and the Project Highway in accordance with the Concession Agreement or this Agreement by the NHAI. All the receivables shall be deposited by the Receiver in the Escrow Account and shall be dealt with in accordance with the Concession Agreement. The Receiver shall be responsible for protecting the assets in receivership and shall render a true and proper account of the receivership to the Senior Lenders in accordance with the terms of its appointment. The Receiver shall make best efforts to operate and maintain the Project Highway, in accordance with the obligations of the Concessionaire under the Concession Agreement. Any person other than NHAI may be appointed as Receiver only with the prior consent of NHAI. In a declaratory suit for appointment of a Receiver, notwithstanding that no recovery or mortgage suit or any suit or proceeding for enforcement of the Senior Lenders' security under the Financing Documents is instituted by the Lenders Agent for itself or the Senior Lenders, any action for appointment of NHAI as Receiver or appointment of an Independent Court Receiver shall be without prejudice for the other rights and remedies of NHAI, and of the Senior Lenders under the Financing Documents.

ARTICLE 5

TERMINATION OF THE CONCESSION BY THE NHAI

5.1 If under the Concession Agreement an event occurs which shall entitle NHAI to Terminate the Concession Agreement, NHAI shall intimate the Senior Lenders

prior to exercising of its decision to Terminate the Concession and advise the Senior Lenders to ensure the cure of the event which otherwise can result in termination of the Concession and the Concession Agreement. Such a notice shall entitle the Senior Lenders to cure any financial or other default of the Concessionaire within a period of two months from the date of the notice received from the NHAI failing which NHAI without any further notice to either the Concessionaire or the Lenders Agent/Senior Lenders, shall be entitled to Terminate the Concession Agreement.

5.2 Upon receipt of the Notice as referred to in Clause 5.1, intimating occurrence of an event which can entail Termination of the Concession Agreement including the Concession, the Senior Lenders shall be entitled to consider such notice as an Event of Default and may initiate steps to invite, negotiate and procure offers for the substitution of the Concessionaire by a Selectee in accordance with the procedure set forth in this Agreement.

ARTICLE 6

SENIOR LENDERS RIGHT TO RECEIVE TERMINATION PAYMENTS

6.1 NHAI and Concessionaire hereby agree, and confirm that without prejudice to any other right or remedy, NHAI shall be entitled to deposit the Termination Payments into the Escrow Account and the Senior Lenders shall be entitled to receive the same without any further reference to or consent of the Concessionaire under and in accordance with the Concession Agreement towards the satisfaction of the Senior Lenders Dues out of and limited to the sum of Termination Payments worked out under and in accordance with the Concession Agreement. The Senior Lenders shall be entitled to appropriate any consideration received for the substitution as hereinabove provided from the Selectee towards the payment of their and NHAI's respective dues to the exclusion of the Concessionaire.

6.2 The Concessionaire hereby nominates, constitutes and appoints the Lenders Agent as its constituted attorney for doing all acts, deeds and things as may be required to be done for the substitution of the Concessionaire by the Selectee pursuant hereto and for receiving consideration for discharge of the Lenders' Dues pursuant to Clause 6.1.

6.3 The Concessionaire hereby expressly authorises payment of sums by NHAI on account of Termination Payments into Escrow Account and the Lenders Agent to draw the same therefrom for and on behalf of the account of the Senior Lenders notwithstanding the pendency of any dispute or objection or claim that the Concessionaire may have against the Senior Lenders and/or NHAI. The deposit by NHAI into the Escrow Account and payment to the Senior Lenders directly or through the Lenders Agent in accordance with this Agreement, made or caused to be made by NHAI shall constitute a valid discharge of its obligation of the payment thereof to the Concessionaire. All such payments shall stand charged to the Senior Lenders under the Financing Documents and shall be receivable by the Lenders Agent from the Escrow Account on behalf of the Senior Lenders to the exclusion of any receiver or liquidator appointed.

ARTICLE 7

GENERAL

7.1 The Parties hereto expressly represent and warrant that they are duly empowered to sign and execute this Agreement and the Lenders Agent is duly and fully authorised by each of the Senior Lenders to enter into this Agreement on their behalf.

7.2 Notices under this Agreement shall be sent to the Addresses first hereinabove mentioned. Any change in the address of any Party shall be duly notified by a Registered post acknowledgement due and delivered to the other Parties.

7.3 The expressions "NHAI", the "Concessionaire", the "Senior Lenders" and the "Lenders Agent" herein used shall unless there be anything repugnant to the subject or context include their respective successors, legal representatives, administrators and permitted assigns.

7.4 This Agreement shall not be affected by reorganisation of any Senior Lender, Lenders Agent or NHAI and the successor – in interest of such Senior Lender, Lenders Agent or NHAI shall have the benefit of this Agreement.

7.5 No amendment, variation or modification to this Agreement shall be valid and effectual unless made in writing and executed by the duly authorised representatives of all the Parties hereto.

7.6 All stamp duties or other imposts and charges as are applicable on this Agreement or on amendment of the Concession Agreement or execution of fresh Concession Agreement for the purpose of substitution as aforesaid shall be borne by and be to the account of the Concessionaire. In the event of the Senior Lenders making such payment for the time being, it shall be deemed to be a part of the Lenders Dues.

7.7 The Parties hereby expressly agree that for the purpose of giving full and proper effect to this Agreement, the Concession Agreement and this Agreement shall be read together and construed harmoniously. The terms of this Agreement shall prevail in the event of any inconsistency with the Concession Agreement.

7.8 The consultation, recommendation or approval of the Lenders Agent under this Agreement shall always be taken as consultation, recommendation or approval of every concerned Senior Lender and each such Senior Lender shall be bound by the same and hereby waives its right to question or dispute the same.

7.9 This Agreement shall be in addition to and shall not be in derogation of the terms of the Financing Documents.

7.10 It shall not be necessary for the Senior Lenders or the Lenders Agent to enforce or exhaust any other remedy available to them before invoking the provisions of this Agreement.

7.11 Any dispute, difference or claim arising out of or in connection with or in relation to this Agreement which is not resolved amicably shall be decided finally by reference to arbitration to a Board of Arbitrators comprising of one nominee of each party to the dispute. Such arbitration shall be held in accordance with the Rules of Arbitration of the Indian Council of Arbitration and shall be subject to the provisions of the Arbitration and Conciliation Act, 1996. The arbitrators shall issue a reasoned award. The venue of such arbitration shall be New Delhi, India. The Award shall be final and binding on the Parties. The Parties agree and undertake to carry out the award of the arbitrators (the "Award") without delay.

This Agreement and rights and obligations of the Parties shall remain in full force and effect pending the Award in any arbitration proceeding hereunder. The Courts in New Delhi alone shall have jurisdiction over all matters arising out of or relating to the arbitration agreement contained herein or proceedings arising out of or relating to the arbitration proceedings thereunder.

IN WITNESS WHEREOF THE PARTIES HITHERTO HAVE SET THEIR HANDS HEREUNTO ON THE DAY, MONTH AND YEAR HEREIN ABOVE MENTIONED.

SIGNED AND DELIVERED ON BEHALF OF

_____LIMITED

BY :_____

Name :

Title :

SIGNED AND DELIVERED ON BEHALF OF

THE NATIONAL HIGHWAYS AUTHORITY OF INDIA

BY :_____

Name :

Title :

SIGNED AND DELIVERED ON BEHALF OF

SENIOR LENDERS

BY:_____

Name :

Title :

Schedule V

VESTING CERTIFI CATE

National Highways Authority of India ("NHAI") hereby acknowledges:

1. Compliance and fulfillment by the Concessionaire of the Divestment Requirements set forth in Clause 33.2 of the Concession Agreement in respect of the Project Highway;
2. Receipt of actual possession of the Project Highway from the Concessionaire; and
3. Receipt from the Concessionaire of a certificate confirming that there are no liens or encumbrances whatsoever on the Project Highway including Project Assets;

on the basis that upon the issue of this Vesting Certificate, NHAI shall be deemed to have acquired, and all title and interest of the Concessionaire in or about the Project Highway shall be deemed to have vested, unto NHAI free from all encumbrances, charges and liens whatsoever.

Notwithstanding anything to the contrary contained hereinabove, it shall be a condition of this Vesting Certificate that in the event of any defect or deficiency in any of the Divestment Requirements set forth in Clause 33.2 of the Concession Agreement being found or discovered at any time hereafter, nothing contained in this Vesting Certificate shall be construed or interpreted as waiving the obligation of the Concessionaire to rectify and remedy the same and/or relieving the Concessionaire in any manner of the same.

Agreed and accepted
For the Concessionaire
By:.....

Name:
Title:
Dated:

For NHAI
By:.....

Name:
Title:
Dated:

SCHEDULE – W

PASSENGER CAR UNIT FACTORS





SCHEDULE W

PASSENGER CAR UNIT FACTORS

The equivalency factor for the conversion of different types of vehicles into equivalent Passenger Car Units (PCUs) based on their relative interference value shall be as per the following table:

Sl. No.	Vehicle Type	Equivalency factor**
Fast Vehicles		
1.	Motor Cycle or Scooter	0.50
2.	Passenger Car, Pick-up Van or Auto-rickshaw	1.00
3.	Agricultural Tractor, Light Motor Vehicle	1.50
4.	Truck or Bus	3.00
5.	Truck-trailer, Agricultural Tractor-trailer	4.50
Slow Vehicles ***		
6.	Cycle	0.50
7.	Cycle-rickshaw	2.00
8.	Hand Cart	3.00
9.	Horse-drawn vehicle	4.00
10.	Bullock Cart*	8.00

* *For smaller bullock-carts, a value of 6 shall be appropriate.*

** *Recommended PCU factors for various types of vehicles in accordance with IRC:64-1990 on "Guidelines for Capacity of Road in Rural Areas"*

*** *While computing the Design service volumes and the capacity of highway, slow vehicles (of the table) shall not be considered* ***for the sections where Service Roads are provided.***

SCHEDULE – X

REPORTING AND RECORD REQUIREMENTS



SCHEDULE X

REPORTING AND RECORD REQUIREMENTS

1.0 INTROUDUCTION

The reporting and records requirements spelt out hereinunder have been provided in terms of the indicative type of information required. The Independent Consultant shall determine the following:

- Format of such reports and record requirements
- Software standards
- Number of Copies required
- The Language of the reports and records shall be English

2.0 Part I
Reporting Requirements

From the date of the Concession Agreement until the end of the Concession Period, the Concessionaire shall prepare and submit to the NHAI and Independent Consultant 1 copy each of the following reports/ Documents/ Drawings else otherwise stated in the Concession Agreement.

A. Design & Construction Stage

1 A detailed work plan supported with CPM/PERT charts for completion of all project activities related to the Project Highway, at the beginning of the Design Works.

2 **Monthly Progress Report**: Within 5 Days of end of each month or a part thereof, which falls within the Construction Period, the Concessionaire shall provide to the NHAI and the Independent Consultant the monthly report, which shall at least identify the following:

- Working drawings submitted/ resubmitted to NHAI/ Independent Consultant during the month ended
- NHAI/ Independent Consultant's comments there on, if any.
- Concessionaire's compliance with NHAI/ Independent Consultant's comments on the drawings submitted to NHAI/ Independent Consultant, during the month ended.

- "As built" drawings submitted to NHAI/ Independent Consultant during the month ended.
- Progress of pre-construction activities such as utility relocation and other obstructions.
- Concessionaire' compliance with the Inspection Report during the month ended, if any.
- Construction Constraints.
- Progress data with 'S' curves, if applicable; Project Data with contract detail and sectional completion details.
- Tests carried out during the month ended, if any; results of these Tests furnished to the NHAI/ Independent Consultant during the month ended, if any.
- Remedial measures taken by the Concessionaire on the basis of these Tests, if any.
- Traffic management steps undertaken by the Concessionaire during the month (particularly on the existing two lanes of the Project highway).
- Achievement of a Project milestone (Schedule H) during the month, if any. The Concessionaire shall also provide information on delay in achievement of such milestone, if any.
- Any suspension of the Construction Works by NHAI as per provisions of the Concession Agreement, if any. The Concessionaire shall also provide information on reason of such suspension, duration of such suspension and the steps undertaken by it to revoke such suspension.
- Any Change of Scope Notice issued by NHAI and status thereof.
- All actual or potential departures from the Project Completion Schedule (Schedule H).
- All grounds for a substantial Dispute which have occurred or which may reasonably be foreseen as likely to occur.
- All substantial disagreements among the Concessionaire, and the NHAI and/or Independent Consultant to the design/ construction of the Project Highway.
- The proposed measures to be taken by the Concessionaire to overcome such departures or to resolve such grounds for a Dispute.
- The date on which the Concessionaire expects the Project Highway to be completed.
- The Concessionaire is required to maintain the existing two lanes during the Construction Period. This monthly construction report shall also contain information in respect of maintenance activity, if any, carried out by the

Concessionaire during the month ended in respect of these existing two lanes. The Concessionaire and the Independent Consultants shall agree on the information requirements in respect of these two existing lanes during the Construction Period.

- Monthly Weather Report giving daily temperature maximum and minimum value; rain fall and any other significant event.

3 Detailed Engineering Design Report including working drawings, and Environmental Management Plan.

4 Video Recording as per clause 44.1 of the Concession Agreement.

5 Monthly Escrow Account Report: With in 5 Days of end of each month which falls within the Operations Period, the Concessionaire shall provide to the NHAI and the Independent Consultant a copy of the report containing the summary of the receipts in and payments from the Escrow Account for the month ended.

6 The Concessionaire shall supply to the NHAI free of charge the following documents prior to requesting the issue of the Completion Certificate:

6.1 Detailed, accurately scaled, and sequentially numbered plans of the Project Highway "As Built" covering all relevant engineering features, which in relation to structures shall also include cross sections in each plane; and

6.2 Copies of all geo-technical and borehole reports obtained by the Concessionaire in preparation for and during the construction of the Project Highway.

7 All other reports in accordance with the provisions of the Concession Agreement.

8 Such other reports as may be reasonably required by NHAI/ Independent Consultant.

9 Additional Reports: The Concessionaire shall supply to the NHAI free of charge copies of all information, records and test results (including any interpretation of such test results) resulting from any ground, physical or geophysical investigation or archaeological or ecological survey of the Site or Adjacent Areas.

B. Operation Phase

1 Monthly Traffic Report: With in 5 Days of end of each month which falls within the Operations Period, the Concessionaire shall provide to the NHAI and the Independent Consultant a copy of the report containing the following information:

- Total traffic count by mode for each day of the month; and

- Tollable traffic count by mode for each day of the month.

2 Monthly Escrow Account Report: With in 5 Days of end of each month which falls within the Operations Period, the Concessionaire shall provide to the NHAI and the Independent Consultant a copy of the report containing the summary of the receipts in and payments from the Escrow Account for the month ended.

3 Monthly Operations Report: With in 5 Days of end of each month or a part thereof, which falls within the Operations Period, the Concessionaire shall provide to the NHAI and the Independent Consultant a copy of the report, which shall identify the following, at the minimum:

- Inspections undertaken by the Concessionaire during the month ended, if any.
- Maintenance Reports submitted to the Independent Consultant during the month ended, if any.
- O&M Inspection Compliance Report submitted to NHAI/ Independent Consultant during the month ended, if any.
- Preventive/ Periodic maintenance undertaken during the month ended, if any.
- Any material modifications made to the Project Highway during the month ended, if any.
- All the accidents or incidents on the Project Road during the month under report (including all accidents on which a report has previously been made to the Concession Agreement).
- Tests performed during operation and maintenance stage along with the defects identified on the Project Highway, if any.
- Number and type of the complaints received from Users and others in respect of the Project Highway and the conduct of Operations.
- Incidents of emergency de-commissioning of the Project Highway during the month ended, if any.
- Incidents of lane-closure on the Project Highway during the month ended, if any. The Concessionaire shall provide information on reason, time of such lane-closures.
- all actual or potential departures from the O&M Requirements as specified in 'Schedule L'.
- all grounds for substantial Dispute which have occurred or may reasonably be foreseen as likely to occur.
- the proposed measures to be taken by the Concessionaire to overcome such departures or to resolve such grounds for a Dispute.

4. An annual report on the working of the toll collection system. This report will provide information on method of toll collection (semi-automatic, automatic, etc.), usage of pass system (manual, electronic, etc.), average time taken in toll-collection, Concessionaire's suggestions on improvements in the toll-collection system, which would be considered by NHAI appropriately.

5. Accident Reports: As soon as practicable and in any event no later than 7 days following the occurrence of any accident on the Project Highway involving a fatality or serious personal injury or substantial property damage, the Concessionaire shall investigate the circumstances of such accident and submit to the NHAI and Independent Consultant a report setting out details of such accident and, to the extent they are known, the causes of such an accident, and the Concessionaire shall thereafter promptly report to the NHAI and/or Independent Consultant any additional details of such accident or its causes which become known to it.

6. Concessionaire shall submit a copy of the audited accounts within 120 days of the close of each Accounting Year after the Appointed Date.

7. All other reports in accordance with the provisions of the Concession Agreement.

8. Such other reports as may be reasonably required by NHAI/ Independent Consultant.

9. Additional Reports: The Concessionaire shall supply to the NHAI/Independent Consultant free of charge copies of all information, records and test results (including any interpretation of such test results) resulting from any ground, physical or geophysical investigation or archaeological or ecological survey of the Site or Adjacent Areas.

3.0 Part II

Record Requirements

The Concessionaire shall take the following action(s) in respect of preparation of the record, its submission to NHAI and retention by the Concessionaire itself.

1.	**Design**	**Retention Period of the Concessionaire**
1.1	Design standards containing all relevant design assumptions, codes of practice, design loadings, design parameters and product data sheets for all components of Project Highway.	Till handover to NHAI at Termination of the Concession
1.2	Full set of final design calculations for all parts of the Project Highway including details of the influence on design of actual construction methods, and any changes or any remedial works during construction.	Till handover to NHAI at Termination of the Concession
1.3	Full set of working drawings	Until 2 years after issue of the Completion Certificate
1.4	Full specification for construction and all revisions made thereto.	Until 2 years after issue of the Completion Certificate
1.5	Change of Scope Order(s)	Till handover to NHAI at Termination of the Concession
2.	**Construction**	
2.1	Video recording submitted to NHAI	Until 2 years after the issue of Completion Certificate
2.2	Full set of construction site records relating to progress, testing of materials, monitoring of standards of workmanship, meteorological conditions, instructions issued and other site correspondence.	Till handover to NHAI at Termination of the Concession
2.3	Full set of "As-Built" drawings and schedules incorporating all changes to the design and all remedial measures applied to the Project Highway during construction, and all final As-built details and dimensions of the Project Highway. These drawings shall include permanent modifications made to suit the construction method.	Till handover to NHAI at Termination of the Concession
2.4	Full set of Tests results	Till handover to NHAI at Termination of the Concession
2.5	The appropriate proprietary rights, licenses, agreements and permissions for materials, methods, processes and systems used or incorporated into the Project Highway.	Till handover to NHAI at Termination of the Concession

2.6	Monthly Progress Reports	Till handover to NHAI at Termination of the Concession.
3.	**Operations and Maintenance**	
3.1	Full records of all incidents which affect the operation and/or maintenance of the Project Highway including traffic accidents.	Till handover to NHAI at Termination of the Concession
3.2	Full records of inspections and surveys and results of such inspections and surveys (including photographs where applicable).	Till handover to NHAI at Termination of the Concession
3.3	Details of all repairs to the Project Highway and/or replacement, including photographs. As-built drawings and other documentary records.	Till handover to NHAI at Termination of the Concession
3.4	Full sets of all Monthly Reports	Till handover to NHAI at Termination of the Concession
3.5	Adequate records of adverse meteorological conditions.	Till handover to NHAI at Termination of the Concession
3.6	Records of landscape planting.	Till handover to NHAI at Termination of the Concession
3.7	Schedule and strip plan of grassed areas with details of the Routine Maintenance required in the normal course.	Till handover to NHAI at Termination of the Concession
3.8	Record of all permanent traffic signs on the Project Highway.	Till handover to NHAI at Termination of the Concession
3.9	All traffic (both total and tollable) count for each day of the Operations Period	Till handover to NHAI at Termination of the Concession
3.10	Record of daily toll collection at each toll plaza	Till handover to NHAI at Termination of the Concession
3.11	All financial and accounting records to be maintained as per Applicable Laws	Till handover to NHAI at Termination of the Concession
3.12	Encroachment particulars and details	Till handover to NHAI at Termination of the Concession

4. All other records in accordance with the provisions of the Concession Agreement.

5. Additional Requirements

5.1 When there is a conflict between the Reporting and Record Requirement of Schedule 'X' and a requirement in respect of these stated elsewhere in this Agreement, the latter shall take precedence.

5.2 The requirements set out in Reporting and Record Requirements of this Schedule 'X' indicate the minimum requirements to be complied with but are not limited to else only.

5.3 Availability of Records shall be as follows:

5.3.1 All records of operational aspects of the record keeping system shall be retained.

5.3.2 Operations' Records shall be systematically and periodically up-dated and filed so as to be readily retrievable.

5.3.3 All records which have been superseded but are still of historical, contractual or legal importance shall be retained and filed systematically so as to be available anytime.

5.3.4 Texts of all documents shall be prepared and recorded using agreed software systems and retained in hard form and on diskette, with full back-up diskettes available in case of diskette corruption.

PD Chandigarh
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STATE SUPPORT AGREEMENT

BETWEEN

NATIONAL HIGHWAYS AUTHORITY OF INDIA

AND

PUNJAB STATE GOVERNMENT

AND

M/S GMR AMBALA–CHANDIGARH EXPRESSWAYS PRIVATE LTD



PUNJAB

B 373553

STATE SUPPORT AGREEMENT

THIS SUPPORT AGREEMENT is made on this 21st day of Feb, 2006 AMONG

1 THE GOVERNOR OF THE STATE OF PUNJAB through the Secretary to Government of PUNJAB, Public Works (B&R) Department (hereinafter referred to as "GOPb" which expression shall unless repugnant to the context or meaning thereof include its successors and assigns),

2 National Highways Authority of India, Government of India . (hereinafter referred to as "NHAI" which expression shall unless repugnant to the context or meaning thereof include its administrators, successors and assigns),

AND

3 M/S GMR Ambala Chandigarh Expressways Private Limited, a company incorporated under the provisions of the Companies Act, 1956 and having its registered office at SKIP HOUSE, 25/1 Museum Road, Bangalore-560025 (hereinafter referred to as the "Concessionaire", which expression shall unless repugnant to the context or meaning thereof include its successors and substitutes).

GMR AMBALA-CHANDIGARH EXPRESSWAY PVT. LTD.

Chief Engineer (N.H.)
Pb. P.W.D. B&R Branch
PATIALA



पंजाब PUNJAB

B 373554

WHEREAS

A. The NHAI intends to take up the improvement, operation and maintenance of Rehabilitation and Strengthening of existing 2-lane road and widening to 4-lane Dual Carriageway from i) Km 5+735 – Km 39+960 of NH-22 And ii) Km 0+000 – Km 0+871 of NH-21 (Ambala – Chandigarh Section) in the States of Haryana and Punjab , India on BOT basis.

B. MoRT&H had invited Proposals for empanelment of BOT Entrepreneurs for Four-laning of National Highways under National Highways Development Project called NHDP Phase III A (earlier called Non-NHDP) on BOT basis subject to and on the terms and conditions contained therein and empanelled the BOT Entrepreneurs.

C. NHAI had laid down and prescribed the technical and commercial terms and conditions and had invited Bids from the empanelled BOT Entrepreneurs vide Letter No. NHAI/BOT/NH-24035/42/2003 dated 9.06.2004 and letter No. NHAI/BOT/11019/17/2003 dated 22.05.2005 ("the Tender Notice") including, inter alia, the consortium comprising GMR Energy Limited (formerly known as M/s Tanvir Bavi Power Company Private Limited) and GMR Infrastructure Limited (Collectively the "Consortium") with GMR Energy Limited as its Lead Member, for undertaking the work referred to in Recital 'A' above on BOT basis.

GMR AMBALA-CHANDIGARH PVT. LTD.

Chief Engineer (N.H.)
Pb. P.W.D. B&R Branch
PATIALA

D. After evaluation of the Bids so received, NHAI accepted the Bid of the Consortium and issued its Letter of Acceptance No. NHAI/BOT/11019/17/2003/237 dated 29.06.2005. ("LOA") to the Consortium requiring, inter alia, the execution of this Concession Agreement within 30 (thirty) days of the date of acceptance of LOA and furnishing of Performance Security before signing of the Concession Agreement. The Consortium accepted the LOA and the terms and conditions therein and issued its acceptance of LOA vide its letter No. RH/AMCH/0712/2005 dated 12.07.2005.

E. Subsequently, the Consortium has promoted and incorporated the Concessionaire as a limited liability company to enter into this Concession Agreement pursuant to the LOA for undertaking, inter alia, the design, engineering, financing, procurement, construction, operation and maintenance of the Project Highway, as defined hereinafter on BOT basis as referred to in Recital 'A' and to fulfill other obligations of the Concessionaire pursuant to the LOA and has requested NHAI vide letter No. 103/DB/2005-06/036 dated 19.09.2005 to accept the Concessionaire as the entity which shall undertake and fulfill and perform the obligations and exercise the rights of the Consortium under the LOA, including the obligation to enter into this Concession Agreement for the design, engineering, financing, procurement, construction, operation and maintenance of the Project Highway on BOT basis.

F. NHAI has agreed to the said request of the Consortium and has accordingly agreed to enter into the Concession Agreement with the Concessionaire pursuant to the LOA for, inter alia, the design, engineering, financing, procurement, Utility Shifting . Tree cutting, construction, operation and maintenance of the said Project Highway on BOT basis.

G. **GOPb, NHAI** and the Concessionaire agree that the implementation of the Concession including performance of its obligations by the Concessionaire under and in accordance with the Concession Agreement requires extensive continued support and grant of certain rights and authorities as hereinafter set forth by **GOPb** and is an essential pre-condition for mobilization of resources therefore by the Concessionaire.

NOW THEREFORE THE PARTIES HERETO HEREBY AGREE AND THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. DEFINITIONS AND INTERPRETATIONS

1.1 For the purposes of this Agreement the following terms shall have the meaning hereinafter respectively assigned to them.

1.1.1 "Agreement" means this Support Agreement and all annexures hereto and amendments if any thereto made in accordance with the provisions contained herein in this behalf.

GMR AMBA

Engineer (N H.)
Land Branch

1.1.2 "Concession Agreement" means the Concession Agreement dated 16 November 05 entered into between NHAI and the Concessionaire, and shall include all of its annexures and appendices and any amendments made thereto in accordance with the provisions contained in this behalf therein.

1.1.3. "Substitution Agreement" means the Substitution Agreement ~~dated~~ to be entered into between the Senior Lenders, NHAI and the Concessionaire providing for substitution of the Concessionaire by the Selectee selected by the Senior Lenders in the manner and subject to and on the terms and conditions set forth therein. A copy of the said Substitution Agreement is annexed hereto and marked as "Annexure 'B'."

1.1.4. **"GOPb Support"** means the obligations assumed and the facilities agreed to be provided by **GOPb** to the Concessionaire hereunder or pursuant hereto.

1.2. The words and expressions beginning with or in capital letters used in this Agreement and not defined herein but defined in the Concession Agreement shall have, unless repugnant to the context, the meaning respectively assigned to them in the Concession Agreement. Words and expressions used in this Agreement and neither defined herein nor in the Concession Agreement but defined in the Substitution Agreement shall have the meaning respectively assigned to them in the Substitution Agreement.

1.3. In this Agreement unless the context otherwise requires-

(a) any reference to a statutory provision shall include such provision as is from time to time modified and re-enacted or consolidated so far as such modification or re-enactment or consolidation applies or is capable of applying to any transactions entered into hereunder;

(b) the words importing singular shall include plural and vice versa, and words denoting natural persons shall include partnerships, firms, companies, corporations, joint ventures, trusts, associations, organizations or other entities (whether or not having a separate legal entity);

(c) the headings are for convenience of reference only and shall not be used in and shall not affect the construction or interpretation of this Agreement;

(d) terms beginning with capital letters and defined in this Agreement shall have the meaning ascribed thereto herein;

(e) the words "include" and "including" are to be construed without limitation.

(f) any reference to a "day" shall mean reference to a calendar day;

(g) any reference to "month" shall mean reference to a calendar month;

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Chief Engineer (N.H.)

(h) the Annexures and appendices 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;

(i) any reference at any time to any agreement, deed, instrument, license or document of any description shall be construed as reference to that agreement, deed, instrument, license or other document as amended, varied, supplemented, modified or suspended at the time of such reference provided that this clause shall not operate so as to increase liabilities or obligations of **GOPb** hereunder or pursuant hereto in any manner whatsoever.

(j) References to Recitals, Clauses, Sub-clauses, Paragraphs, Annexures or Appendices in this Agreement shall, except where the context otherwise requires, be deemed to be references to Recitals, Clauses, Sub-clauses, Paragraphs, Annexures and Appendices of this Agreement.

(k) Any agreement, consent, approval, authorization, proposal, notice, communication, information or report required under or pursuant to this Agreement from or by any Party or Senior Lender(s) shall be valid and effectual only if it is in writing under the hands of duty authorized representative of such Party or the Senior Lender(s), as the case may be, in this behalf and not otherwise; and

(l) Any reference to any period commencing "from" a specified day or date and "till" or "until" a specified day or date shall include both days or dates.

(m) "Concessionaire" shall include Selectee under the Substitution Agreement.

2. TERM

2.1. This Agreement shall come into force the date hereof and shall continue to be in full force and effect for the period the Concession Agreement is in force and effect including any extension thereof.

3. SUPPORT OF GOPb

3.1. Upon and with effect from the date hereof, **GOPb** agrees:

(i) so long as the Concessionaire is not in breach of its obligations under this Agreement, **GOPb** agrees to enable access to the Site to the Concessionaire for peaceful use of and operations at the Site by the Concessionaire under and in accordance with the provisions of the Concession Agreement without any let or hindrance from **GOPb** or persons claiming through or under it;

(ii) subject to the Concessionaire complying with Applicable Laws, provide to the Concessionaire Applicable Permits to the extent **GOPb** or any Governmental Agency of **GOPb** is entitled to issue;

LTD. * GMR AMBALA CHA

Chief Engineer (N H:)

(iii) upon written request from the Concessionaire, assist the Concessionaire in obtaining access to all necessary infrastructure facilities and utilities, including water, electricity and telecommunication facilities at rates and on terms no less favorable to the Concessionaire than those generally available to commercial customers receiving substantially equivalent services;

(iv) ensure that no barriers are erected or placed by **GOPb** or any Governmental Agency of **GOPb** that interrupts free flow of traffic on the Project Highway except on account of any law and order situation or upon national security considerations;

(v) provide the Concessionaire with assistance through a dedicated team against payment of prescribed fee and charges, if any, for regulation of traffic on the Project Highway;

(vi) provide the Concessionaire with police assistance in the form of dedicated highway patrol parties against payment of prescribed costs and charges, if any, for patrolling and provision of security on the Project Highway;

(vii) observe and comply with its obligations set forth in this Agreement;

(viii) support, cooperate with and facilitate NHAI and the Concessionaire in the implementation of the Project;

(ix) subject to and in accordance with the Applicable Laws, assist the Concessionaire in the procurement of all Applicable Permits required from any municipal and other local authorities and bodies including Panchayats in the State of [redacted] Punjab for the implementation of the Project;

(x) ensure, subject to and in accordance with the Applicable Laws, that all relevant municipal and other local authorities and bodies including Panchayats in the State of [redacted] Punjab do not put any barriers or other obstructions that interrupt free flow of traffic on the Project Highway; and

(xi) not do or omit to do any act, deed or thing which may in any manner be violative of or cause the Concessionaire to violate any of the provisions of the Concession Agreement.

3.2. Notwithstanding anything to the contrary contained in the Agreement, **GOPb** may construct and operate either itself or have the same, inter alia, built and operated on BOT basis or otherwise any Expressway or other toll road, not being a bye-pass, between inter alia, Ambala – Chandigarh Section from i) Km 5+735 – Km 39+960 of NH-22 And ii) Km 0+000 – Km 0+871 of NH-21 (the "Additional Tollway"), provided that such Additional Tollway shall not be opened to traffic before expiry of 8 (eight) years from the Appointed Date.

GMR AMBALA CHANDIGARH EXPRESSWAY PVT. LTD.

GMR AMBALA CHANDIGARH EXPRESSWAY PVT. LTD.

Chief Engineer (NH)
P.W.D. B&R Hisar

3.3. **GOPb** agrees and undertakes that it shall not levy any additional toll, fee, charge or tax on the use of whole or any part of the Project Highway. **GOPb** acknowledges the rights of Senior Lenders and NHAI under the Substitution Agreement and hereby covenants that upon substitution of the Concessionaire by the Selectee pursuant to the Substitution Agreement, it shall be deemed for the purposes of this Agreement that as if Selectee is a Party hereto and the Selectee shall accordingly be deemed to have succeeded to the rights and obligations of the Concessionaire under this Agreement on and with effect from the date of substitution of the Concessionaire by the Selectee.

4. CONCESSIONAIRE'S OBLIGATIONS

4.1. Concessionaire agrees and undertakes to perform, observe and comply with the following :

(i) All Applicable Laws and Applicable Permits;

(ii) The provisions of the Concession Agreement, the Substitution Agreement, and the Project Agreements; and

(iii) Observe, comply and perform its obligations under this Agreement.

5. REPRESENTATIONS AND WARRANTIES

5.1. The Concessionaire represents and warrants to **GOPb** that :

(i) It is duly organized, validly existing and in good standing under the laws of India.

(ii) It has power and authority to execute, deliver and perform its obligations under this Agreement and to carry out the transactions contemplated hereby;

(iii) It has taken all necessary corporate and other action under Applicable Laws and its constitutional documents to authorize the execution, delivery and performance of this Agreement;

(iv) This Agreement constitutes its legal, valid and binding obligation enforceable against it in accordance with the terms hereof;

(v) It is subject to civil and commercial laws of India with respect to this Agreement and it hereby expressly and irrevocably waives any immunity in any jurisdiction in respect thereof;

(vi) All the information furnished to the **GOPb** pertaining to the Concessionaire including its constitution and existing and proposed shareholding structure is now and shall be true and correct as on the Appointed Date and COD and the Balance Sheet and Profit and Loss Account of the Concessionaire for each of its Accounting Year after the Appointed Date furnished to GOPb shall give true and fair view of the affairs of the Concessionaire.

LTD. GMR AMBALA CHEE

Chief Engineer (N.H.)

(vii) The Concessionaire shall furnish a copy of its audited Balance Sheet within 120 (one hundred twenty) days of the close of its each Accounting Year after the Appointed Date and any material change subsequent to the date of such Balance Sheet shall be notified to GOPb by the Concessionaire within 30 (thirty) days of its occurrence and warrants that the Balance Sheet and the information furnished as aforesaid shall be true and correct;

(viii) The execution, delivery and performance of this Agreement will not conflict with, result in the breach of, constitute a default under or accelerate performance required by any of the terms of the Concessionaire's Memorandum and Articles of Association or any member of the Consortium or any Applicable Laws or Applicable Permits or any covenant, agreement, 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;

(ix) There are no actions, suits, proceedings or investigations pending or, to the Concessionaire's knowledge, threatened against it at law or in equity before any court or before any judicial, quasi judicial or other authority, the outcome of which may result in the breach of or constitute a default of the Concessionaire under this Agreement or which individually or in the aggregate may result in any material adverse effect on its business, properties or assets or its condition, financial or otherwise, or in any impairment of its ability to perform its obligations and duties under this Agreement;

(x) The Concessionaire 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 Governmental Agency which may result in any material adverse effect or impairment of the Concessionaire's ability to perform its obligations and duties under this Agreement;

(xi) The Concessionaire has complied with all Applicable Laws and Applicable Permits, 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 material adverse effect on its financial condition or its ability to perform its obligations and duties under this Agreement;

(xii) Each Consortium Member was and is duly organized and existing under the laws of the jurisdiction of its incorporation and has full power and authority to consent to and has validly consented to the Concessionaire entering into this Agreement with the GOPb.

GMR AMBALA-CHA LTD.

Chief Engineer (N

(xiii) No representation or warranty by the Concessionaire contained herein or in any other document furnished by it to **GOPb**, or to any Governmental Agency in relation to Applicable Permits contains or will contain any untrue statement of material fact or omits or will omit to state a material fact necessary to make such representation or warranty not misleading;

(xiv) The Concessionaire warrants that no sums have been paid or will be paid, by or on behalf of the Concessionaire, to any Person by way of fees, commission or otherwise for entering into this Agreement or for influencing or attempting to influence any officer or employee of NHAI, GOI or **GOPb** in connection therewith; and

(xv) The Concessionaire is subject to civil and commercial laws of India with respect to this Agreement.

5.2. **GOPb** represents and warrants to the Concessionaire that :

(i) It has full power and authority to execute, deliver and perform this Agreement.

(ii) It has taken all necessary governmental action to authorize the execution, delivery and performance of this Agreement; and

(iii) This Agreement constitutes the legal, valid and binding obligation of **GOPb** enforceable against it in accordance with its terms.

6. SOVEREIGN IMMUNITY

6.1. **GOPb** hereto unconditionally and irrevocably:

(i) Agrees that the execution, delivery and performance by it of this Agreement do not constitute sovereign acts;

(ii) Agrees that should any proceedings be brought against it or its assets in relation to this Agreement or any transaction contemplated by this Agreement, no sovereign immunity from such proceedings, execution, attachment or other legal process shall be claimed by or on behalf of itself or with respect to any of its assets, to the extent permitted by law; and

(iii) to the extent permitted by law, waives any right of sovereign immunity, which it or its assets now has or may acquire in the future.

LTD. * GMR AMBALA-CHANDI

Chief Engineer (N.H.)

6.2. Notwithstanding anything to the contrary herein contained such waiver of right of immunity shall not apply to

a) Property and assets of any consular or diplomatic mission or consulate or

b) Property belonging to the Defence services and such assets of the Union of India.

7. BREACH AND COMPENSATION

7.1. In case **GOPb** is in breach of any of its obligations under this Agreement, which breach is not cured within 30 days of receipt of a notice in writing from the Concessionaire to **GOPb** and NHAI and which has not occurred as a result of Concessionaire's breach of its obligations under this Agreement or the Concession Agreement, **GOPb** shall pay to the Concessionaire, all direct additional costs suffered or incurred by the Concessionaire, determined by NHAI as arising out of such material default by **GOPb.**

7.2. In case of any dispute by **GOPb** on admissibility of the claim or extent of compensation determined by NHAI, the claim shall be settled as per provisions of the Dispute Settlement mechanism provided in Article IX of this Agreement.

7.3. Any such compensation payable shall be paid to the Concessionaire, in one lumpsum within 90 (ninety) days of receiving NHAI's determination of compensation.

8. INDEMNITY

8.1. The Concessionaire will indemnify, defend and hold **GOPb** harmless against any and all proceedings, actions and claims for any loss, damage, cost and expense of whatever kind and nature arising out of design, engineering, construction, operation and maintenance of the Project Highway or arising out of any breach by the Concessionaire of any of its obligations under this Agreement or on account of failure of the Concessionaire to comply with, and observe Applicable Laws and Applicable Permits;

8.2. **GOPb** will, indemnify, defend and hold harmless the Concessionaire against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of failure of **GOPb** to fulfill any of its obligations under this Agreement adversely affecting the performance of the Concessionaire's obligations under the Concession Agreement other than any loss, damage, cost and expense, arising out of acts done in discharge of their lawful functions by **GOPb**, its officers, servants and agents;

LTD. GMR AMBALA-CHANDIGARH

Chief Engineer (N.H.)
R&B Branch

8.3. Without limiting the generality of Clause 8.2, the **GOPb** shall indemnify the Concessionaire and shall save it harmless from and against any payments required to be made by the Concessionaire with respect to levy of any Local Taxes provided nothing contained herein shall be construed or interpreted as restricting in any way or manner the right of **GOPb** or any municipal, panchayat or other local authorities to levy any taxes which they or any of them are lawfully entitled to levy, impose or collect (the "Expected Taxes"). The Concessionaire shall not be entitled to and **GOPb** shall be under no obligation to reimburse Expected Taxes to the Concessionaire or any person claiming through or under the Concessionaire;

8.4. In the event that either party hereto receives a claim from a third party in respect of which it is entitled to the benefit of an indemnity under Clause 8 or in respect of which it is entitled to reimbursement (the "Indemnified Party") within 14 (fourteen) days of receipt of the claim or payment, as the case may be, shall not settle or pay the claim without the prior approval of the Indemnifying Party. In the event that the Indemnifying Party wishes to contest or dispute the claim, it may conduct the proceedings in the name of the Indemnified Party and shall bear all costs involved in contesting the same. The Indemnified Party shall provide all cooperation and assistance in contesting any claim and shall sign all such writings, and documents as the Indemnified Party may reasonably require.

9. GOVERNING LAW AND DISPUTE SETTLEMENT

9.1. This Agreement shall be governed by and construed and interpreted in accordance with the laws of India. The provisions contained in Clause 8 shall survive the termination of this Agreement.

9.2. Any dispute, difference or claim arising out of or in connection with or in relation to this Agreement which is not resolved amicably shall be decided finally by reference to arbitration to a Board or Arbitrators comprising of one nominee of each party to the dispute. Such arbitration shall be held in accordance with the Rules of Arbitration of the Indian Counsel of Arbitration and shall be subject to the provisions of the Arbitration and Conciliation Act, 1996. The Arbitrators shall issue a reasoned award. The venue of such arbitration shall be New Delhi, India. The Award shall be final and binding on the Parties.

10. MISCELLANEOUS

10.1. Alteration of Terms

All additions, amendments, modifications and variations to this agreement shall be effectual and binding only if in writing and signed by the duly authorized representatives of **GOPb** and the Concessionaire.

LTD. * GMR AMBALA-CHANDI

Chief Engineer (N.H.)

10.2. Time or Indulgence Allowed

An indulgence by one Party to the other in respect of any obligation or matter hereunder including time for performance to the other party hereunder or to remedy any breach hereof shall not be construed as a waiver of any of its rights hereunder Party may be on such terms and subject to such conditions as the Party giving it may specify and shall be without prejudice to that Party's then accrued rights under this Agreement except to the extent expressly varied in writing when giving such time or other indulgence.

10.3. Severance of Terms

If any provisions of this Agreement are declared to be invalid, unenforceable or illegal by any competent arbitration tribunal or court, such invalidity, unenforceability or illegality shall not prejudice or affect the remaining provisions of this Agreement, which shall continue in full force and effect.

10.4. Language

All notices, certificates, correspondence or other communications under or in connection with the Agreement shall be in English

10.5. Notices

Any notice or communication hereunder shall be in writing and shall either be delivered personally or sent by registered post, with copy by facsimile transmission or other means of telecommunication in permanent written form. A copy of all the notices and communications will also be forwarded to the Lenders Representative. The service of notice shall unless otherwise notified by a notice hereunder to the parties at their following address:

IF to the GOPb :
Attn : Ashok Sood, Chief Engineer (NH) Punjab PWD, BBR Branch, Patiala
Fax no :
Tel no.

IF to the NHAI
Attn: S. K. Nirmal, General Manager (BOT) IIA
Fax no. 011/25093638
Tel no. 011-25074100/25074200 Extn 1408

IF to the Concessionaire :
Attn : Mr Rajan Krishnan
Fax no.08022075044
Tel no.08022070100

The notice pursuant hereto will be deemed to have been received on the date when such notice is in fact received by the addressee.

Chief Engineer (NH)

10.6. Authorised Representatives

Each of the Parties shall by notice in writing designate their respective authorised representatives through whom only all communications shall be made. A Party hereto shall be entitled to remove and/or substitute or make fresh appointment of its such authorised representative by similar notice.

10.7. Original Document

This Agreement is made in two counterparts, each of which shall be deemed to be an original.

IN WITNESS WHEREOF THE PARTIES HERETO HAVE PUT THEIR HANDS HEREUNTO ON THE DAY, MONTH AND YEAR FIRST ABOVE WRITTEN.

FOR CONCESSIONAIRE

BY :

Name :Mr Rajan Krishnan

Title:_EVP

GMR AMBALA CHANDIGARH EXPRESSWAY PVT. LTD.

FOR GOVT. OF PUNJAB

BY :

Name: Ashok Sood
Chief Engineer (N.H.)
Pb. P.W.D. B&R Branch

Title: PATIALA

FOR NHAI

BY :

महेश कुमार / MAHESH KUMAR
मुख्य महाप्रबंधक (बी.ओ.टी.) / Chief General Manager (BOT)
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण
National Highways Authority of India
(पोत परिवहन, सड़क परिवहन और राजमार्ग मंत्रालय)
(Ministry of Shipping, Road Transport & Highways)
जी– 5 एवं 6,सैक्टर–10, द्वारका, नई दिल्ली–75
G - 5 & 6, Sector 10, Dwarka, New Delhi - 75

Name:

Title:

In the presence of :

1. J. K. Nirmal
GM(BOT)IIA

2. (Shrawan Kr Singh)
manager BOT IIA

GMR AMBALA CHANDIGARH EXPRESSWAY PVT. LTD.

Chief Engineer (N.H.)
Pb. P.W.D. B&R Branch