

National Highways & Infrastructure Development Corporation Limited

Consultancy Services for Preparation of Detailed Project Report and providing Pre-Construction activities for the Construction of a Road Tunnel and its approaches Enabling All Weather Connectivity along the Mughal Road in the State of Jammu and Kashmir.

Amendment No.-4

S. No.	Clause	Existing	Modified (To be read as)
1	S. no of Clause 2.1 to 2.10 on page 5 to 7 of LOI of RFP	S. no. 2.1 to 2.10 may please be read as 1.1 to 1.10	
2	Bid Security, Clause 1.10.1 page no 7 of LOI of RFP	1.10.1 The applicant shall furnish as part of its Proposal, a Bid Security of Rs 2, 00,000 (Rupees two Lakhs only) in the form of a Bank Guarantee issued by one of the Nationalized/Scheduled Banks in India in favour of the “National Highways and Infrastructure Development Corporation Ltd. payable at New Delhi (the “Bid Security”) valid for a minimum period of 150 days (i.e.30 days beyond the validity of the bid) from the last date of submission of proposals. This Bid Security is returnable not later than 30 (thirty) days from the date of Opening of the Financial proposals except in case of the two highest ranked Applicants. Bid Security of the Selected Applicant and the Second ranked Team shall be returned, upon the Selected Applicant signing the Agreement.	1.10.1 The applicant shall furnish as part of its Proposal, a Bid Security of Rs 2, 00,000 (Rupees two Lakhs only) in the form of a Bank Guarantee issued by one of the Nationalized/Scheduled Banks in India in favour of the “National Highways and Infrastructure Development Corporation Ltd. payable at New Delhi (the “Bid Security”) valid for a minimum period of 150 days (i.e.30 days beyond the validity of the bid) from the last date of submission of proposals. The Bid security may also be furnished in the form of a Demand Draft issued by one of the Nationalized/Scheduled Banks in India in favour of the “National Highways and Infrastructure Development Corporation Ltd. payable at New Delhi (the “Bid Security”)”. This Bid Security is returnable not later than 30 (thirty) days from the date of Opening of the Financial proposals except in case of the two highest ranked Applicants. Bid Security of the Selected Applicant and the Second ranked Team shall be returned, upon the Selected Applicant signing the Agreement.
3	New Clause 2.8.5 of LOI of	Following New Clause 2.8.5 is added: In case, if any firm, which is a 100% owned subsidiary company in India of a foreign company, claims the experience of the parent foreign company, an undertaking from the parent company is to be submitted with the bid confirming thereby about	

G. Anil Kumar
12.05.2017

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	RFP page no 7	perpetual and unconditional excess to expertise, personnel and facilities of the parent company to the firm, sharing of risks and profits of the firm by the Parent Company and that the parent company has majority representation in the management of the firm to control activities of the firm.	
4	3.1.1 (v) Page no 9 of LOI of RFP	Bid Security: Bank Guarantee in support of bid security for an amount specified in Data Sheet and having validity for a minimum period of 150 days (i.e.30 days beyond the validity of the bid), from the last date of submission of proposals in the Form E4.	Bid Security: Bank Guarantee in support of bid security for an amount specified in Data Sheet and having validity for a minimum period of 150 days (i.e.30 days beyond the validity of the bid), from the last date of submission of proposals in the Form E4 or Demand Draft in support of bid security for an amount specified in Data Sheet.
5	12.1, Table no .1 Minimum Eligibility Requirement page 24 of RFP	<p>A. A Firm applying should have Experience of preparation of Detailed Project Report for Road/Rail/Metro tunnels of aggregate length equal to the indicative (Indicative Length= 8.50 km) length of the package. (Indicative length = 8.50 km). Firm should have also prepared DPR for atleast one project of Road/ Rail/Metro tunnel of minimum 40% of the indicative length of the package (i.e. 3.40 km) or feasibility study of Road/Rail tunnels of minimum 60% of the indicative length of the package (i.e. 5.10 Km)</p> <p>B. A firm should also have experience in preparation of DPR of 2/4/6 laning of highway projects for atleast one project of length equal to 20 km.</p>	<p>A. A Firm applying should have Experience of preparation of Detailed Project Report for Road/Rail/Metro tunnels of aggregate length equal to the indicative (Indicative Length= 8.50 km) length of the package. (Indicative length = 8.50 km). Firm should have also prepared DPR for atleast one project of Road/ Rail/Metro tunnel of minimum 40% of the indicative length of the package (i.e. 3.40 km) or feasibility study of Road/Rail/Metro tunnels of minimum 60% of the indicative length of the package (i.e. 5.10 Km)</p> <p>B. A firm should also have experience in preparation of DPR of 2/4/6 laning of highway projects of hill road for atleast one project of length equal to 20 km.</p>
6	Data Sheet Clause 12 of page no25 of RFP	12.3 Second Stage technical evaluation	12.2 Second Stage technical evaluation



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7	Data Sheet Clause 12 , A. Firm's Relevant experience in last 10 years, S. no 4 page 26 of RFP	<table border="1"> <tr> <td>4</td> <td>Aggregate length of DPR/ Feasibility Study for 2/4/6 laning projects</td> <td>5</td> <td></td> </tr> <tr> <td>4.1</td> <td>Upto 20 Km</td> <td></td> <td>2</td> </tr> <tr> <td>4.2</td> <td>20 Km to 40 Km</td> <td></td> <td>3</td> </tr> <tr> <td>4.3</td> <td>40 Km to 60 Km</td> <td></td> <td>4</td> </tr> <tr> <td>4.4</td> <td>More than 60 Km</td> <td></td> <td>5</td> </tr> </table>	4	Aggregate length of DPR/ Feasibility Study for 2/4/6 laning projects	5		4.1	Upto 20 Km		2	4.2	20 Km to 40 Km		3	4.3	40 Km to 60 Km		4	4.4	More than 60 Km		5	<table border="1"> <tr> <td>4</td> <td>Aggregate length of DPR/ Feasibility Study for 2/4/6 laning projects of hill Road</td> <td>5</td> <td></td> </tr> <tr> <td>4.1</td> <td>Upto 20 Km</td> <td></td> <td>2</td> </tr> <tr> <td>4.2</td> <td>20 Km to 40 Km</td> <td></td> <td>3</td> </tr> <tr> <td>4.3</td> <td>40 Km to 60 Km</td> <td></td> <td>4</td> </tr> <tr> <td>4.4</td> <td>More than 60 Km</td> <td></td> <td>5</td> </tr> </table>	4	Aggregate length of DPR/ Feasibility Study for 2/4/6 laning projects of hill Road	5		4.1	Upto 20 Km		2	4.2	20 Km to 40 Km		3	4.3	40 Km to 60 Km		4	4.4	More than 60 Km		5
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8	Terms of Reference, Clause 3.1 page no 33 of RFP	Scope of service 3.1 For the realigned portion i.e. approach roads leading to the tunnel portals, the Consultant shall furnish land acquisition details as per revenue records/maps for further processing of land acquisition. Consultant shall also submit 3a, 3A and 3D draft notification for acquisition of land.	Scope of service 3.1 For the tunnel portion alongwith approach roads, the Consultant shall furnish land acquisition details as per revenue records/maps for further processing of land acquisition. Consultant shall also submit 3a, 3A and 3D draft notification for acquisition of land.																																								
9	Terms of Reference, Clause 3.4 page no 33 of RFP	3.4 All ready to implement 'good for construction' drawings shall be prepared.	3.4 All ready to implement ' General Arrangement Drawing and Tender drawings shall be prepared.																																								
10	Terms of Reference, new Clause 3.12 & 3.13 page no 34 of RFP	Following new Clause 3.12 & 3.13 are added: 3.12 Consultant shall be responsible for sharing the findings from the preparation stages during the bid process. During the bid process for a project, the consultant shall support the authority in responding to all technical queries, and shall ensure participation of senior team members of the consultant during all interaction with potential bidders including pre-bid conference, meetings, site visits etc. In addition, the consultant shall also support preparation of detailed responses to the written queries raised by the bidders. 3.13 Consultant shall assess and identify the permanent land requirement for the project and also temporary land requirement																																									

(Signature)

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during Construction stage for Contractor camp, Workshops, Batching plant etc.		
11	Terms of Reference, Clause 3A.2 page no 34 of RFP	<p>3A.2 The Scope of Service involves:</p> <p>Local Snow & Avalanche Study Establishment (SASE) will be consulted for the determination of the avalanche potential in the route corridor which is required for finalization of tunnel alignment and length of tunnel and associated cost estimation.</p>
		<p>3A.2 The Scope of Service involves:</p> <p>Snow & Avalanche Study Establishment (SASE) will be consulted for the determination of the avalanche potential in the route corridor which is required for finalization of tunnel alignment and length of tunnel and associated cost estimation.</p>
12	Terms of reference PART-1, Clause1, (d) of page no 35	<p>Photo-geological and remote sensing studies, geomorphological studies, geo-physical studies, of the site (for approx 282 sq km area for the tunnels, obtaining/acquiring high resolution three dimensional stereo paired satellite imagery with minimum required GSD (Ground sample Distance) 50 cm)</p>
		<p>Photo-geological and remote sensing studies, geomorphological studies, geo-physical studies, of the site (for requisite area for the tunnels as per relevant standards and practices, obtaining/acquiring high resolution three dimensional stereo-paired satellite imagery with minimum required GSD (Ground sample Distance) 50 cm)</p>
13	Terms of Reference page no 38	<p>3A.3 To carry out the feasibility study.....will be carried out.</p>
		<p>(v) To carry out the feasibility study.....will be carried out.</p>
14	3A.2 (Phase -I) Part -2 (10) page 39 of RFP	<p>Drilling four (04) vertical holes (core drilling) one at each portal sites & at approximately one third and two third distances between portal measured along the proposed tunnel alignment from any portal end down to the tunnel grade (preferably at or near the junction of different lithological strata) which may involved diamond drilling using NX-Bits to the extent of 400 metres for an individual hole. Additional holes if required in this area shall be undertaken by BX- Bits, if unavoidable, will be resorted to only with prior approval of the department.</p>
		<p>Drilling four (04) vertical holes (core drilling) one at each portal sites & at approximately one third and two third distances between portal measured along the proposed tunnel alignment from any portal end down to the tunnel grade (preferably at or near the junction of different lithological strata) which may involve diamond drilling using NX-Bits to the extent as per IRC:SP:91-2010 Clause 3.3.3.2 for an individual hole. Additional holes if required in this area shall be undertaken by BX- Bits, if unavoidable, will be resorted to only with prior approval of the department.</p>



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15	3A.2 (Phase -I) Part -2 (11)) page 39 of RFP	Drilling four(4) Inclined holes (core drilling)at an angle of 30 degrees (Approx) with vertical , one at 50 mtr distance& another at 100 mtr distance from each portal sites measured along the proposed Tunnel alignment down to the tunnel grade which may involved diamond drilling using NX-Bits to the extent of 400 meters for an individual hole. The inclined drill holes must intersect the proposed tunnels cross section at tunnel grade level .Additional holes if required in this area shall be under taken . BX- Bits, if unavoidable, will be resorted to only with prior approval of the department.	Drilling four(4) Inclined holes (core drilling)at an angle of 30 degrees (Approx) with vertical , one at 50 mtr distance& another at 100 mtr distance from each portal sites measured along the proposed Tunnel alignment down to the tunnel grade which may involve diamond drilling using NX-Bits to the extent as per IRC:SP:91-2010 Clause 3.3.3.2 for an individual hole. The inclined drill holes must intersect the proposed tunnels cross section at tunnel grade level .Additional holes if required in this area shall be under taken . BX- Bits, if unavoidable, will be resorted to only with prior approval of the department.
16	Part-2 Clause 12 of page no 39	12. Submission of reports under Part-1 & Part-2 of Phase-I covering all above information under Phase-I including preliminary indication of cost for the Project and recommendation for further detailed studies.	12. Submission of reports under Part-1 & Part-2 Phase-I covering all above information under Phase-I including preliminary indication of cost for the Project and recommendation for further detailed studies.
17	Part -2, Notes Clause 12 Notes 2(b) page no 40	2(b) The phase I report is to bring out clearly the technical and other problems that may be encountered during the construction and maintenance of the tunnel and also clear recommendations regarding the feasibility of the tunnel in the prevailing conditions. Final portal locations, tunnel sections and geometrics to be defined in this report.	2(b) The phase-I report is to bring out clearly the technical and other problems that may be encountered during the construction and maintenance of the tunnel and also clear recommendations regarding the feasibility of the tunnel in the prevailing conditions. Final portal locations, tunnel sections and geometrics to be defined in this report.
18	Part-2, Clause 12 Notes 2(c) page no 40	2 (c) Preliminary indications of cost of the tunnel project and the time involved for the construction to be indicated. In short, phase I report should be self explanatory to enable the department to take a decision regarding feasibility of the tunnel, expertise available within the country for construction and preliminary costs	2 (c) Preliminary indications of cost of the tunnel project and the time involved for the construction to be indicated. In short, phase-I report should be self explanatory to enable the department to take a decision regarding feasibility of the tunnel, expertise available within the country for construction and preliminary costs for purposes of getting Administrative Approval for the works. This



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		for purposes of getting Administrative Approval for the works. This report should also bring out other detailed studies involved at pre-construction stage, construction stage and post construction stage. Note – Phasing of this work has been done based on past experience of feasibility studies.	report should also bring out other detailed studies involved at pre-construction stage, construction stage and post construction stage. Note — Phasing of this work has been done based on past experience of feasibility studies.
19	Terms of Reference, Clause 13 (f) page no 40	Framing and submission of report covering all the following aspects (a) Preparation of preliminary design and schedule of quantities (e) Listing of various codes of practice both Indian and Foreign applicable (f) Preparation and submission of phase II report covering all the aspects of studies and recommendations listed and specified at Sr No (a) to (j) of schedule-'A' PHASE-II above	13. Framing and submission of report covering all the following aspects (a) Preparation of preliminary design and schedule of quantities (e) Listing of various codes of practice both Indian and Foreign applicable (f) Preparation and submission of report covering all the aspects and studies and recommendations listed and specified above.
20	Clause 4.9.1 page 46 of RFP	1 The type of traffic surveys and the minimum number of survey stations shall normally be as under, unless otherwise specifically mentioned.	1 The type of traffic surveys and the minimum number of survey stations for each tunnel shall normally be as under, unless otherwise specifically mentioned.
21	Clause 7.1 Page no. 76	Time period envisaged for the study of the project is indicated in Annex-I to LOI . The final reports, drawings and documentation shall be completed within this time schedule.	Time period envisaged for the study of the project is indicated at S No 3 of Data Sheet and Schedule for submission of Reports and Documents is given in Enclosure-III to TOR . The final reports, drawings and documentation shall be completed within this time schedule.



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22	STAGE-1 Clause 10.2 page no 79 of RFP	Inception Report 1. The report shall cover (x) Draft design standards; and 2. The requirements, if..... approval by NHIDCL.	Inception Report 1. The report shall cover..... (x) Draft design standards; and 2. The requirements, if..... approval by NHIDCL. 3. <i>The Consultant shall submit Draft report initially and final report by incorporating compliance of the comments of NHIDCL.</i>
23	Clause 10.4 page no 81 of RFP	10.4 Strip plan Clearance 1.The Consultants shall submit the following documents: <i>i</i> (a) Ground Marking of alignment and report on tentative tunnel alignment, section,..... 5.Kilometer-wise Strip Plans for section (Package) shall be prepared separately for each concerned agency and suggested by NHIDCL STAGE 3:	STAGE-3 10.4 Strip plan Clearance 1. The Consultants shall submit the following documents: <i>i</i> (a) Ground Marking of alignment and report on tentative tunnel alignment, section,..... 5. Kilometer-wise Strip Plans for section (Package) shall be prepared separately for each concerned agency and suggested by NHIDCL
24	STAGE 4 Clause 10.7 page no 82 of RFP	STAGE: 4 <u>Draft Detailed Project Report (Including the studies for both Tunnel and Highways separately)</u> <i>Volume-I, Main Report</i>	STAGE 4 10.7 Draft Detailed Project Report (DPR) <i>1. The draft DPR Submission shall consist of construction package-wise Main Report, Design Report, Materials Report, Engineering Report, Drainage Design Report, Economic and Financial Analysis Report, Environmental Assessment Report including Resettlement Action Plan (RAP), Package-wise bid Documents and Drawings.</i> <i>2. The Report volumes shall be submitted as tabulated in para 10 above.</i> <i>3. The Documents and Drawings shall be submitted for the</i>



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25	<p>STAGE 4 Clause 10.7 page no 84 of RFP</p>	<p><i>Volume - IX, Drawing Volume: All drawings forming part of this volume shall be 'good for construction' drawings.</i></p>	<p><i>Volume - IX, Drawing Volume: All drawings forming part of this volume shall be 'good for construction' drawings for Highways.</i></p> <p>All ready to implement 'General Arrangement Drawing and Tender drawings shall be prepared for Tunnel.</p>																																																																																																													
26	<p>Enclosure-I page no 101 of RFP</p>	<p>MANNING SCHEDULE</p> <table border="1"> <thead> <tr> <th rowspan="2">SI. No</th> <th rowspan="2">Key Personnel</th> <th colspan="3">Total Project Assignment(8 months)</th> </tr> <tr> <th>At site(mm)</th> <th>At design office</th> <th>Total Time Period (mm)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Team Leader Cum Senior Tunnel Engineer</td> <td>3.5</td> <td>3.5</td> <td>7</td> </tr> <tr> <td>2</td> <td>Tunnel Design Expert</td> <td>3</td> <td>3</td> <td>6</td> </tr> <tr> <td>3</td> <td>Senior Geologist</td> <td>3</td> <td>1</td> <td>4</td> </tr> <tr> <td>4</td> <td>Senior E& M Expert</td> <td>-</td> <td>2</td> <td>2</td> </tr> <tr> <td>5</td> <td>Senior Surveyor Engineer</td> <td>3.5</td> <td>2</td> <td>5.5</td> </tr> <tr> <td>6</td> <td>Environmental Expert</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>7</td> <td>Material cum Geotechnical Engineer</td> <td>1</td> <td>1.5</td> <td>2.5</td> </tr> <tr> <td>8</td> <td>Highway cum Pavement Engineer</td> <td>1</td> <td>1.5</td> <td>2.5</td> </tr> <tr> <td>9</td> <td>Quantity</td> <td>1</td> <td>3.5</td> <td>4.5</td> </tr> </tbody> </table>	SI. No	Key Personnel	Total Project Assignment(8 months)			At site(mm)	At design office	Total Time Period (mm)	1	Team Leader Cum Senior Tunnel Engineer	3.5	3.5	7	2	Tunnel Design Expert	3	3	6	3	Senior Geologist	3	1	4	4	Senior E& M Expert	-	2	2	5	Senior Surveyor Engineer	3.5	2	5.5	6	Environmental Expert	1	2	3	7	Material cum Geotechnical Engineer	1	1.5	2.5	8	Highway cum Pavement Engineer	1	1.5	2.5	9	Quantity	1	3.5	4.5	<p>MANNING SCHEDULE</p> <table border="1"> <thead> <tr> <th rowspan="2">SI. No</th> <th rowspan="2">Key Personnel</th> <th colspan="3">Total Project Assignment(8 months)</th> </tr> <tr> <th>At site(mm)</th> <th>At design office</th> <th>Total Time Period (mm)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Team Leader Cum Senior Tunnel Engineer</td> <td>3.5</td> <td>3.5</td> <td>7</td> </tr> <tr> <td>2</td> <td>Tunnel Design Expert</td> <td>1</td> <td>3</td> <td>4</td> </tr> <tr> <td>3</td> <td>Senior Geologist</td> <td>3</td> <td>1</td> <td>4</td> </tr> <tr> <td>4</td> <td>Senior E& M Expert</td> <td>-</td> <td>2</td> <td>2</td> </tr> <tr> <td>5</td> <td>Senior Surveyor Engineer</td> <td>3.5</td> <td>2</td> <td>5.5</td> </tr> <tr> <td>6</td> <td>Environmental Expert</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>7</td> <td>Material cum Geotechnical Engineer</td> <td>1</td> <td>1.5</td> <td>2.5</td> </tr> <tr> <td>8</td> <td>Highway cum Pavement Engineer</td> <td>1</td> <td>1.5</td> <td>2.5</td> </tr> <tr> <td>9</td> <td>Quantity</td> <td>1</td> <td>3.5</td> <td>4.5</td> </tr> </tbody> </table>				SI. No	Key Personnel	Total Project Assignment(8 months)			At site(mm)	At design office	Total Time Period (mm)	1	Team Leader Cum Senior Tunnel Engineer	3.5	3.5	7	2	Tunnel Design Expert	1	3	4	3	Senior Geologist	3	1	4	4	Senior E& M Expert	-	2	2	5	Senior Surveyor Engineer	3.5	2	5.5	6	Environmental Expert	1	2	3	7	Material cum Geotechnical Engineer	1	1.5	2.5	8	Highway cum Pavement Engineer	1	1.5	2.5	9	Quantity	1	3.5	4.5
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		Surveyor/Documentation Expert			Surveyor/Documentation Expert				
		Total	17	21	37	Total	15	21	35
27	Enclosure-II page no 102 to 110 of RFP	Existing Enclosure-II			Replaced with enclosed Annexure-C (Enclosure-II)				
28	Enclosure-III, Page 111 of RFP	Stage no 2 Inception Report (ii) Inception Report including QAP document Stage no 3			Stage no 2 Inception Report (ii) Final Inception Report including QAP document Stage no 3				
29	Appendix II, Proof of Eligibility, Form-E1 Para 13 at page 118 of RFP	The Bid Security of Rs. ***** (Rupees *****) in the form of a Bank Guarantee or Demand Draft is attached, in accordance with the RFP document.			The Bid Security of Rs. ***** (Rupees *****) in the form of a Bank Guarantee or a Demand Draft is attached, in accordance with the RFP document.				
30	Form -T7 page no 128 of RFP	<u>APPROACH PAPER ON METHODOLOGY PROPOSED FOR PERFORMING THE ASSIGNMENT.</u> The approach and methodology will be detailed precisely under the following topics.			<u>APPROACH PAPER ON METHODOLOGY PROPOSED FOR PERFORMING THE ASSIGNMENT.</u> The approach and methodology will be detailed precisely under the following topics.				
		1)	Composition of the team	[not more than 1 page]	1)	Composition of the team	[not more than 2 page]	2)	Methodology for services, surveying, data collection and analysis
		2)	Methodology for services, surveying, data collection and analysis	[not more than 2 pages]	3)	Quality Assurance	[not more than 5 page]		

3/10/20

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		3)	Quality Assurance system for consultancy assignment [not more than 1 page])	system for consultancy assignment
31	Form V Page 143				<i>Form V (deleted)</i>
32	Appendix V, 1.1 (a) & (b) page no 144-161 of RFP		Existing Appendix V.		Replaced with enclosed Annexure-A (Appendix V)
33	Clause 6.3(b) Page no. 183		Payment Schedule The Consultant will be paid stage-wise as a percentage of the contract value as per the schedule given below: Table		Payment Schedule The Consultant will be paid stage-wise as a percentage of the contract value as per the schedule given below: Table (As per enclosed Annexure-B)
34	GCC Clause 6.3 (d) page no. 184		(d) The Client shall cause the payment of the Consultants in Para 6.4 (b) above as given in schedule of payment within thirty (30) days after the receipt by the Client of bills. Interests at the rate specified in the SC shall become payable as from the above due date on any amount due by, but not paid on, such due date.		(d) The Client shall cause the payment of the Consultants in Para 6.3 (b) above as given in schedule of payment within thirty (30) days after the receipt by the Client of bills. Interests at the rate specified in the SC shall become payable as from the above due date on any amount due by, but not paid on, such due date.
35	Special Conditions of Contract 9.2.4 page no 193 of RFP		Qualifications of Arbitrators The sole arbitrator or the third arbitrator appointed pursuant to paragraphs (a) through (c) of Clause 8.2.1 hereof shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute.		Qualifications of Arbitrators The sole arbitrator or the third arbitrator appointed pursuant to paragraphs (a) through (c) of Clause 9.2.1 hereof shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute.



National Highways & Infrastructure Development Corporation Limited

Consultancy Services for Preparation of Detailed Project Report and providing Pre-Construction activities for the Construction of a Road Tunnel and its approaches Enabling All Weather Connectivity along the Mughal Road in the State of Jammu and Kashmir.

Amendment No.-4

36	Notice Inviting Tender, Clause 6	Bid Submission start Date	09.05.2017 (1000 hrs)	Bid Submission start Date	09.05.2017 (1000 hrs)
		Bid submission End Date (online & physical Copy)	16.05.2017 (1700 hrs)	Bid submission End Date (online & physical Copy)	23.05.2017 (1700 hrs)
		Opening Date of Technical Bid	17.05.2017 (1730 hrs)	Opening Date of Technical Bid	24.05.2017 (1730 hrs)
		Date of uploading of list of Technically Qualified Applicants	31.05.2017 (1500 hrs)	Date of uploading of list of Technically Qualified Applicants	07.06.2017 (1500 hrs)
		Date of Opening of Financial Bids of Qualified Applicants	To be intimated with the result of technical evaluation	Date of Opening of Financial Bids of Qualified Applicants	To be intimated with the result of technical evaluation

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DETAILED EVALUATION CRITERIA

1. First Stage Evaluation -Proof of Eligibility (Para 12.1 of Data Sheet)

1.1 Eligibility criteria for sole applicant firm.

The sole applicant firm shall satisfy the following 3 (Three) Nos. of criteria.

(a) & (b) A Firm applying should have Experience of preparation of Detailed Project Report of two/four lane Road/Rail/Metro tunnels of aggregate length equal to the 8.50 Km (indicative length) length of the package. Firm should have also prepared DPR for atleast one project of Road/Rail/Metro tunnel of minimum length of 3.40 Km or feasibility study of Road/Rail/Metro tunnels of minimum length of 5.10 Km. A firm should also have experience in preparation of DPR / feasibility study of 2/4/6 laning of highway projects for atleast one project of length equal to 10 km (i.e. from 2007-08 onwards)

S. No.	Package No.	Tentative Length	Minimum Aggregate Length required	Minimum length of a Eligible Project (4/6 lane)		DPR/ Feasibility Study of 2/4/6 laning
			DPR/ Feasibility = Tentative Length	DPR = 0.4 x Tentative Length	Feasibility = 0.6 x Tentative Length	
1	2	3	4	5	6	7
A						B
		8.50 Km	=8.50 Km	3.40 Km	5.10 Km	10Km

(c) Annual Average Turn Over for the last 3 years {In cases where, Audited/Certified copy of Balance Sheet for the FY 2016-17 is available, last three years shall be counted from 2014-15 to 2016-17. However, where audited/certified copy of the Balance Sheet for the FY 2016-17 is not available (as certified by the Statutory auditor) then in such cases last three years shall be considered from 2013-14 to 2015-16} of the firm from Consultancy services should be equal to more than Rs 20 crore.

1.2 Eligibility criteria for Lead Partner/Other Partner in case of JV.

In case of JV, the Lead Partner should fulfill at least 75% of all eligibility requirements and the other partner shall fulfill at least 50% of all eligibility requirements as given at 1.1 above in respect of A. Both partners should collectively fulfill the criteria mentioned under A and B. Any of the JV partners should satisfy the eligibility requirement under B. Thus a Firm applying as

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Lead Partner/Other Partner in case of JV/Associate should satisfy the following

(a) & (b) Firm should have experience of preparation of DPR/Feasibility of tunnel (Road/ Rail/ Metro) of aggregate length as given below. The firm should have also prepared DPR/Feasibility of at least one project of 2/4/6 laning of minimum length as indicated below in the last 10 years (i.e. from 2007-08 onwards).

S. No.	Package No.	Minimum Aggregate Length required of DPR/ Feasibility km)		Minimum length of a Eligible Project				DPR/ Feasibility Study of 2/4/6 laning Any of JV Partner
		Lead in	Other	DPR		Feasibility		
		JV	Partner in JV	JV	Partner in JV	JV	Partner in JV	
		7.5 km	5.0 km	3.0 km	2.0 km	4.5 km	3.0 km	20km

For the avoidance of doubt, it is clarified that in case of JV, any of the JV partners should also fulfil the requirement of preparation of DPR of at least one project of Road/ Rail/ Metro tunnel of minimum 40% of the indicative length of the package (i.e. 4.00 km) or feasibility study of Road/Rail tunnels of minimum 60% of the indicative length of the package (i.e. 6.00 km).

c) Minimum Annual Average Turn Over for the last 5 years {In cases where, Audited/Certified copy of Balance Sheet for the FY 2016-17 is available, last five years shall be counted from 2012-13 to 2016-17. However, where audited/certified copy of the Balance Sheet for the FY 2016-17 is not available (as certified by the Statutory auditor) then in such cases last five years shall be considered from 2011-12 to 2015-16} of a firm applying as Lead Partner/Other Partner in case of JV from Consultancy services should be as given below:

No.	Mode of Submission by a firm	Annual Average Turn Over for the last 5 years
1	Lead Partner in a JV	Rs 15.00 crore
2	Other Lead partner in a JV	Rs 10.00 crore

Note: (i) Weightage to be given when experience by a Firm as Sole Firm/Lead Partner in a JV/Other Partner in a JV/As Associate

No.	Status of the firm in carrying out DPR/ Feasibility Study	Weightage for experience
1	Sole firm	100%
2	Lead partner in a JV	75%
3	Other partner in a JV	50 %
4	As Associate	25%

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(ii) The experience of a firm in preparation of DPR for a private Concessionaire/contractor shall not be considered

2. Second Stage Evaluation -Technical Evaluation (Para 12.2 of Data Sheet)

2.1 Firm's Relevant Experience (Same as per RFP)

2.2. Adequacy of the proposed work plan and methodology in responding to the TOR (Same as per RFP)

2.3 Material testing, Survey and investigation equipment and software proposed to be used (Same as per RFP)

2.4. Qualification and Competence of the Key Staff for adequacy of the Assignment. (Para 12.2 of Data Sheet and Enclosure II of TOR)

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2.4.1 TEAM LEADER cum SENIOR TUNNEL ENGINEER

S. No.	Description	Max. Points
I	General Qualification	25
i)	Degree in Civil Engineering/Tunnel Engineering / Mining Engineer/ Related field	20
ii)	Post Graduation in Civil Engineering /Tunnel Engineering/Mining Engineering/	5
II	Relevant Experience & Adequacy for the Project	65
a)	Total Professional Experience	14
	<20 years	0
	20-25 years	11
	>25-28 years	13
	>28 years	14
(b)	Experience in Tunnel Projects	23
	(i)Experience in Planning, preparation and design of Tunnel projects (Road/Rail/Metro)	15
	<15 years	0
	15-20 years	11
	>20 -25 years	14
	>25 years	15
	(ii) Experience in DPR preparation of minimum 2.5 km Tunnel length	5
	< 3 projects	0
	3 or more projects	5
	(iii)Experience in Tunnel Projects in developed countries	3
	1 project	2
	>1 project	3
c)	Experience in Similar Capacity	28
	(i) In Feasibility or DPR/IC/Construction Supervision of Tunnel of 2.5 km or more (Road/Rail/Metro) projects in Similar Capacity	9
	=2 projects	7
	= 3 to 5 projects	8
	> 5 or more	9
	(ii) Length of single Tunnel Projects	19
	< 2.5 Km	0
	2.5 to 5	14
	5 to 7.5	17
	>7.5	19
III	Employment with Firm	10
	Less than 1 Year	0
	1-2 years	5
	more than 2 years	10
	Total	100

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2.4.2 Tunnel Design Expert

Sr. No.	Description	Max. Points
	General Qualification	25
i)	Degree in Civil/ Structural Engineering	20
ii)	Post Graduation in Tunnel/Mining Engineering or equivalent	5
II	Relevant Experience & Adequacy for the Project	65
a)	Total Professional Experience	14
	<15 years	0
	15-20 years	11
	>20 -25years	13
	>25years	14
b)	Experience in Tunnel Projects	23
(i)	Experience in Planning, preparation and design of Tunnel projects (Road/Rail/Metro)	15
	<10 years	0
	10-15 years	11
	>15 -20years	13
	>20years	15
(ii)	Experience in DPR preparation and design of Tunnels of minimum 5 km length	5
	< 4 projects	0
	4 or more projects	5
(iii)	Experience in Tunnel Projects in developed countries	3
	<5 years	0
	5 to 7 years	2
	More than 7 years	3
	Experience in Similar Capacity	28
i)	In Feasibility of DPR/IC/Construction Supervision of major Tunnel (Road/Rail/Metro) projects in Similar Capacity	19
	< 7 years	0
	7to 10 years	14
	10 to 13 years	16.5
	> 13 Years	19.00
(iii)	Experience in Design of Major Tunnel Projects	9
	< 4 projects	0
	4 to 6 projects	7
	More than 6 projects	9
III	Employment with Firm	10

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	Less than 1 Year	0	
	1-2 years	5	
	more than 2 years	10	
	Total		100

- Major Tunnel Project = having length more than 1.5 km.

Grants

2.4.3_Senior Geologist

S. No.	Description	Max. Points
I	General Qualification	25
	Essential Educational Qualification : Post Graduate Degree in Geology/ Geotechnical Engineering/Related field	20
	ii) Phd in Geology/ Related fields	5
II	Relevant Experience & Adequacy for the Project	65
	a) Total Professional Experience	14
	<15 years	0
	15-20 years	11
	>20 years	14
	b) Experience in Design , Project preparation and Design of Tunnel projects	23
	i) Experience in Planning / Design/ Investigation of Tunnel Projects	18
	<10 years	0
	10-15 years	14
	>15-20 years	16
	>20 years	18
	ii) No of major Tunnel projects handled in Himalayan Regions	5
	< 2 Projects	0
	=2 Projects	3
	2 to 5 projects	4
	>5 projects	5
	c) Experience in Similar Capacity	28
	i) Experience as Senior Geologist or in Similar Capacity on Tunnel Projects (Road/Rail/Metro)	19
	<5 years	0
	5 to 10 years	14
	>10 years	19
	ii) cost of the Tunnel projects	9
	<Rs 2500 million	0
	2500 to 5000 million	7
	5000 to 7500 million	8
	>7500 million	9
III	Employment with the firm	10
	Less than 1 Year	0
	1-2 years	5
	more than 2 years	10
	Total	100

- Major Tunnel Project = having length more than 1.5 km.

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2.4.4 Senior E&M Expert

S. No.	Description	Max. Points
I	General Qualification	25
	Degree in Electrical/Mech Engineering	20
	ii) Post graduation in Degree in Electrical/Mech Engineering	5
II	Relevant Experience & Adequacy for the Project	65
a)	Total Professional Experience	14
	<15 years	0
	15-20 years	11
	>20 years	14
b)	Experience in Tunnel Projects –	23
i)	Experience on Similar Projects (Road/Rail/Metro Tunnel Projects)	19
	< 10 years	0
	10 – 12 years	14
	>12-15 years	16.5
	>15 years	19
ii)	Experience in Tunnel Design/Tunnel Construction Project in developed countries	4
	< 5 years	0
	5 to 7 years	3
	>7 years	4
c)	Experience as E&M Expert or in Similar	28
	Capacity in Major Tunnel Projects	
	(No. of projects)	
	2 – 4 projects	21
	4- 6 projects	24.5
	> 6 projects	28
III	Employment with Firm	10
	Less than 1 Year	0
	1-2 years	5
	more than 2 years	10
	Total	100

- Major Tunnel Project = having length more than 1.5 km.

3/2/15

2.4.5 Senior Survey Engineer

S. No.	Description	Max. Points
I	General Qualification	25
	Degree or equivalent in Civil Engineering / Diploma in Civil Engineering / Diploma in Surveying	20
	Post Graduation in Survey Engineering / Surveying / Remote Sensing	5
II	Relevant Experience & Adequacy for the Project	65
	a) Total Professional Experience	14
	>15 years	0
	15-20 years	11
	>20-25 years	13
	>25 years	14
	b) Experience in Highway Projects	23
	i) Experience in Similar Projects (2/4/6 laning of NH/SH/Expressways) in project preparation/ Construction / Construction Supervision	18
	<5years	0
	5 -7 years	13
	>7-10 years	16
	>10 years	18
	ii) Knowledge and understanding of Modern Computer based method of Surveying	5
	Yes	5
	No	0
	c) Experience as Survey Engineer or in Similar Capacity for project preparation of highway project (2/4/6 laning of NH/SH/Expressways) (Minimum Aggregate Length of to 80km)	28
	>80km	0
	80km-150km	22
	>150km-250km	25
	>250km	28
III	Employment with Firm	10
	Less than 1 Year	0
	1-2 years	5
	more than 2 years	10
	Total	100

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2.4.6 Material cum Geotechnical Engineer

S. No.	Description			Max. Points
I	General Qualification			25
i)	Degree in Civil Engineering / M.Sc. in Geology			20
ii)	Post graduation in Foundation Engineering/Soil Mechanics/ Geo Tech Engineering phd in Geology			5
II	Relevant Experience & Adequacy for the Project			65
a)	Total Professional Experience			14
	<15 years		0	
	15-20 years		11	
	>20-25 years		13	
	>25 years		14	
b)	Experience in Highway project- In Similar Project (2/4/6 laning of NH/SH/Expressways) in design and or construction/ construction supervision			23
	<8 years		0	
	8-10 years		17	
	>10 -12 years		21	
	>12years		23	
c)	Experience as Material cum Geo-technical Engineer or in Similar capacity on Highway Projects (2/4/6 laning of NH/SH/Expressways) (Minimum aggregate length 80 km)			28
	<80km		0	
	80km-150km		22	
	>150km – 250km		25	
	>250km		28	
III	Employment with Firm			10
	Less than 1 Year		0	
	1-2 years		5	
	more than 2 years		10	
	Total			100

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2.4.7 ENVIRONMENTAL EXPERT

S. No.	Description	Max. Points
I	General Qualification	25
	i) Degree in Civil Engineering / Environmental Engineering or Post Graduate in Environmental Sciences	20
	ii) Post Graduation in Environmental Engineering	5
II	Relevant Experience & Adequacy for the Project	65
	a) Total Professional Experience	14
	<10 years	0
	10-15 years	11
	>15-20 years	13
	>20 years	14
	b) Experience in Highway Projects- Experience in Environment impact assessment of Highway Projects (2/4/6 laning of NH/SH/Expressways)	23
	<5 years	0
	5 -7 years	17
	>7-10 years	21
	>10 years	23
	c) Experience as Environmental Specialist or in Similar Capacity in Highway Projects(2/4/6 laning of NH/SH/Expressways)	28
	<2 projects	0
	2- 4 projects	22
	5-7 projects	25
	>7 projects	28
III	Employment with Firm	10
	Less than 1 Year	0
	1-2 years	5
	more than 2 years	10
	Total	100

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2.4.8 HIGHWAY cum PAVEMENT ENGINEER

S. No.	Description	Max. Points
I	General Qualification	25
i)	Degree in Civil Engineering or equivalent	20
ii)	Post graduation in Highway Engg/ Transportation Engineering	5
II	Relevant Experience & Adequacy for the Project	65
a)	Total Professional Experience	14
	<15 years	0
	15-20 years	11
	>20 -25years	13
	>25 years	14
(b)	Experience in Highway Projects - Experience in Design/ Pavement Design of Highway Projects (2/4/6 laning of NH/SH/Expressways)	23
	<10 years	0
	10-15 years	17
	>15-20 years	21
	>20years	23
c)	Experience in Similar Capacity	28
(i)	In Design/ Pavement Design of Highway Projects (2/4/6 laning of NH/SH/Expressways) in Similar Capacity (Minimum aggregate length 80 km)	19
	<80km	0
	80km-150km	14
	>150km-250km	17
	>250km	19
(ii)	In Design/ Pavement Design of Highway Projects (2/4/6 laning of NH/SH/ Expressways) in Similar Capacity – Number of Projects	9
	2 projects	7
	3- 5 projects	8
	More than 5 projects	9
III	Employment with Firm	10
	Less than 1 Year	0
	1-2 years	5
	more than 2 years	10
	Total	100

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2.4.9 QUANTITY SURVEYOR/DOCUMENTATION EXPERT

S. No.	Description	Max. Points
I	General Qualification	25
i)	Graduation or equivalent in Civil Engineering / Certificate course from 'Institution of Quantity Surveying'	20
ii)	Graduation or equivalent in Civil Engineering	5
II	Relevant Experience & Adequacy for the Project	65
a)	Total Professional Experience	14
	<15 years	0
	15-20 years	11
	>20-25 years	13
	>25 years	14
b)	Experience in Highway Projects- Experience in preparation of Bill of Quantities, Contract documents and documentation for major highway projects (2/4/6 laning of NH/SH/Expressways)	23
	>5 years	0
	5 -7 years	17
	>7-10 years	21
	>10 years	23
c)	Experience as Quantity Surveyor / Documentation Expert or in Similar Capacity in Highway Projects (2/4/6 laning of NH/SH/Expressways) (Minimum Aggregate length of 80km)	28
	>80km	0
	80km-150km	22
	>150km – 250km	25
	>250km	28
III	Employment with Firm	10
	Less than 1 Year	0
	1-2 years	5
	more than 2 years	10
	Total	100

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Assumptions to be made regarding Similar Capacity for various positions

1. Team Leader cum Senior Tunnel Expert	
i) On behalf of the Consultant/Contractor:	Team Leader/Senior Highway Engineer.
ii) In Government Organizations:	Superintending Engineer (or equivalent) and above
2. Tunnel Design Engineer	
i) On behalf of the Consultant/Contractor:	Tunnel Design Engineer
ii) In Government Organizations:	-----
3. Senior E&M Expert	
i) On behalf of the Consultant/Contractor:	Senior E&M Expert (Tunnels)
ii) In Government Organizations:	-----
4. Senior Geologist:	
i) On behalf of the Consultant/Contractor:	Geologist
ii) In Government Organizations:	Geologist
5. Material cum Geotechnical Expert	
i) On behalf of the Consultant/Contractor:	Material Engineer/ Material Expert/ Geo-Technical Engineer
ii) In Government Organizations:	Executive Engineer (or equivalent) and above
6. Senior Survey Engineer	
i) On behalf of the Consultant/Contractor:	Senior Survey Engineer/Survey Engineer/Senior Surveyor
ii) In Government Organizations:	Surveyor/ Engineer (or equivalent)

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7. Traffic and Safety Expert	
i) On behalf of the Consultant/Contractor:	Traffic Engineer/ Transportation Engineer/ Road Expert
ii) In Government Organizations:	Executive Engineer (or equivalent) and above
8. Environment Expert	
i) On behalf of the Consultant/Contractor:	Environment Expert
ii) In Government Organizations:	Officers who have dealt /forest matter
9. Highway cum Pavement Engineer	
i) On behalf of the Consultant/Contractor:	Highway Engineer/Highway Design Engineer/ Pavement Engineer
ii) In Government Organizations:	Executive Engineer (or equivalent) and above
10. Quantity Surveyor/ Documentation Expert	
i) On behalf of the Consultant/Contractor:	Quantity Surveyor
ii) In Government Organizations:	Assistant Engineer (or equivalent)

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Name of the Work: Consultancy Services for Preparation of Detailed Project Report and providing Pre-Construction activities for the Construction of a Road Tunnel and its approaches Enabling All Weather Connectivity along the Mughal Road in the State of Jammu and Kashmir

Annexure-B for Amendment no. 4

S. No.	Item	Total (%)
1	Final Inception Report	5
2	Re-verification and submission of (i) Final Geotechnical Factual Report (ii) Final Geotechnical Interpretive Report (iii) High Resolution Satellite Imagery and final alignment report	10 10 5
3	Submission of final land acquisition Report	10
4	Submission of clearance proposals	5
5	Submission of Draft DPR	10
6	Approval of Final DPR	15
7	Approval of Technical Schedule	5
8	3 (D) Publication	5
9	Clearance Stage I approval	5
10	Clearance Stage II/ Final approval	5
11	Retention to be released after 3 years	10
12	Total	100
13	Bonus on submission of Draft 3A within 1 month of alignment finalization	2.50%
14	Bonus on submission of Draft clearances within 1 month of alignment finalization	2.50%

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**Qualification and Experience Requirement of Key Personnel
Team Leader cum Senior Tunnel Expert**

i)	Educational Qualification	
	Essential	Graduate in Civil Engineering/tunnel engineering/Mining Engineering
	Desirable	Post Graduate in Civil Engineering/tunnel engineering/Mining Engineering
ii)	Essential Experience	
	a) Total Professional Experience	Min. 20 years
	b) Experience in Tunnel projects	15 (Fifteen) years in planning, project preparation and design of Tunnel (Road/Rail/Metro) projects. He should have led the DPR preparation teams for atleast three projects of atleast 2.5 km or more Tunnel length of which one eligible project should be in developed country
	c) Experience in similar capacity (Either as Team Leader or in Similar capacity)	He should have handled as Team Leader or in similar capacity atleast two Tunnel projects of (Road/Rail/Metro) for DPR preparation /IC/ Construction Supervision/Feasibility cum Detailed Project Report of atleast 2.5 km Tunnel length.
iii)	Age Limit	70 years on the date of submission of proposal

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QUALIFICATION AND EXPERIENCE REQUIREMENT OF KEY PERSONNEL*Tunnel Design Expert*

i)	Educational Qualification	
	Essential	Degree in Civil Engineering
	Desirable	Post Graduation in Tunnel/ structural Engineering or equivalent
ii)	Experience	
	a) Total Professional Experience	Min. 15 years
	b) Experience in Tunnel projects	10 (Ten) years in Tunnel (Road/Rail/ Metro) Projects. He should have handled atleast four Tunnel Projects of more than 5 km length. He should also have minimum of five years experience in Tunnel Design assignment in developed countries.
	c) Experience in similar capacity	He should have minimum 7 years experience for major Tunnels. He should have designed atleast four major Tunnels.
iii)	Age Limit	70 years on the date of submission of Proposal

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QUALIFICATION AND EXPERIENCE REQUIREMENT OF KEY PERSONNEL

<i>Senior Geologist</i>		
i)	Educational Qualification	
	Essential	Post Graduate in Geology/Related field
	Desirable	Phd in Geology/Related field
ii)	Essential Experience	
	a) Total Professional Experience	Min. 15 years
	b) Experience in Tunnel projects	He should have a minimum 10 years of professional experience and should have involved in project preparation/ DPR/ Tunnel Design for atleast two major Tunnel projects in Himalayan Region.
	c) Experience in similar capacity	He should have experience in similar capacity per five years on Design/ Construction/ Supervision of Tunnel Projects. The minimum cost of the project handled in the similar capacity should be 2500 Millions
iii)	Age Limit	70 years on the date of submission of Proposal

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QUALIFICATION AND EXPERIENCE REQUIREMENT OF KEY PERSONNEL

<i>Senior E&M Expert</i>		
i)	Educational Qualification	
	Essential	Graduate in Elect/Mech Engg
	Desirable	Post Graduation in Elect/Mech Engg.
ii)	Essential Experience	
	a) Total Professional Experience	Min. 15 years
	b) Experience in Tunnel projects	15 years in Tunnel Projects and should have worked for atleast five years as an E&M Expert for Tunnel Design/ Construction projects in developed countries.
	c) Experience in similar capacity	He should have handled atleast two tunneling projects in similar capacity.
iii)	Age Limit	70 years on the date of submission of Proposal

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QUALIFICATION AND EXPERIENCE REQUIREMENT OF KEY PERSONNEL

Senior Surveyor

i)	Educational Qualification	
	Essential	Degree or equivalent in civil Engineering /Diploma in Civil Engineering
	Desirable	Post Graduation in survey Engineering/Surveying /Remote Sensing
ii)	Essential Experience	
	a) Total Professional Experience	Min. 15 years
	b) Experience in Tunnel Projects	Min. 5 years on similar projects in project preparation and construction & thorough understanding of modern computer based methods of surveying
	c) Experience in similar capacity	Survey Engineer for projects preparation of highway project (NH/SH/Expressways) involving 2/4/6 laning of minimum aggregate length of 80 km.
iii)	Age Limit	65years on the date of submission of Proposal



QUALIFICATION AND EXPERIENCE REQUIREMENT OF KEY PERSONNEL

<i>Environmental Expert</i>		
i)	Educational Qualification	
	Essential	Graduate in Civil Engineering/Environment Engineering/ Masters in Environment Science
	Desirable	Post Graduate in Environmental Engineering
ii)	Essential Experience	
	a) Total Professional Experience	Min. 10 years
	b) Experience in Tunnel projects	Minimum. 5 years in environment impact assessment of highway projects (2/4/6 laning)
	c) Experience in similar capacity	Environmental Specialist in at least two highway projects(2/4/6 laning).
iii)	Age Limit	70 years on the date of submission of Proposal



QUALIFICATION AND EXPERIENCE REQUIREMENT OF KEY PERSONNEL

<i>Highway cum Pavement Engineer</i>		
i)	Educational Qualification	
	Essential	Degree in Civil Engineering
	Desirable	Masters in highway engineering/ Transportation Engineering
ii)	Essential Experience	
	a) Total Professional Experience	Min. 15 years
	b) Experience in Tunnel projects	Minimum 10 years experience in pavement design and maintenance of highways
	c) Experience in similar capacity	Pavement design for major highway projects (2/4/6 lane NH/SH/ Expressways) of minimum aggregate length of 80 km
iii)	Age Limit	70years on the date of submission of Proposal

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QUALIFICATION AND EXPERIENCE REQUIREMENT OF KEY PERSONNEL

<i>Material cum Geotechnical Engineer</i>		
i)	Educational Qualification	
	Essential	Graduate in Civil Engineering.
	Desirable	Masters in foundation Engineering /Soil Mechanics/ Geo Tech Engineering
ii)	Essential Experience	
	a) Total Professional Experience	Min. 15 years
	b) Experience in Tunnel Projects	Minimum 8 years on Tunnel projects in design and /or construction. Experience on Tunnel projects shall be preferred.
	c) Experience in similar capacity	Material cum Geotechnical Engineer on highway projects (2/4/6 lane NH/SH/Expressway) of minimum aggregate length of 80 km.
iii)	Age Limit	70 years on the date of submission of proposal

3/2/10

QUALIFICATION AND EXPERIENCE REQUIREMENT OF KEY PERSONNEL

<i>Quantity Surveyor/Documentation Expert</i>		
i)	Educational Qualification	
	Essential	Graduate or equivalent in Civil Engineering / Certificate course from 'Institution of Quantity Surveying'
	Desirable	
ii)	Essential Experience	
	a) Total Professional Experience	Min. 15 years
	b) Experience in Highway Projects	Min. 5 years in Preparation of Bill of Quantities, Contract documents and documentation for major highway projects involving two/ four laning. Experience in Tunnel projects shall be preferred.
	c) Experience in similar capacity	Quantity Surveyor / Documentation Expert in Tunnel projects
iii)	Age Limit	70 years on the date of submission of proposal

G. S. Srinivasan
12.05.2017