

Request for Quotation (RFQ)

**Design and Cost Estimation for Strengthening and
other repair work of 36-meter steel girder bridge
at Bheembali over Mandakini River under Shri
Kedarnath assembly constituency of district
Rudraprayag**

Issued on 24/08/2025

Issued by

Office of Executive Engineer

Construction Division

PWD Guptkashi

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Letter of Invitation (LoI)

Letter of Invitation

Date:	18.08.2025
Ref No:	EE CD PWD Guptkashi Letter NO. 1559/06AC/Expression of Interest
Location:	Office of The Executive Engineer Construction Division Public Works Department Guptkashi (District- Rudraprayag)

Dear Mr./Ms.:

The Executive Engineer Construction Division, Public Works Department Guptkashi *here in after called the Client*, intends to get prepared Design and Cost Estimation **for Strengthening and other repair work of 36-meter steel girder bridge at Bheembali over Mandakini River under Shri Kedarnath assembly constituency of district Rudraprayag**. The Client intends to select a consultant from the list of empanelled consultants with the Uttarakhand Public works Department and enter into a contract with the consultant for this consulting assignment. This Request for Quotation is being issued for the purpose of obtaining proposals from empaneled Bridge Design Consultants interested in this assignment.

1. The Client now invites proposals to provide the following consulting services (hereinafter called "Services"): *जनपद रुद्रप्रयाग के विधानसभा क्षेत्र केदारनाथ में श्री केदारनाथ धाम यात्रा मार्ग पर भीमबली में 36 मी० स्पान स्टील गर्डर सेतु का सुदृढीकरण एवं अन्य आवश्यक मरम्मत (RFO एवं TOR के अनुसार)*. More details on the Services are provided in the Terms of Reference (Appendix A).
2. This Request for Quotation (RFQ) has been addressed to the following empanelled consultants:
The consultant Empanelled by office of engineer in chief, Yamuna Colony, PWD Dehradun from time to time for bridge work
3. It is not permitted to transfer this invitation to any other firm, such as Consultant's parent companies, subsidiaries and affiliates.
4. The RFQ includes the following documents:
 - Section 1 - Letter of Invitation
 - Section 2 - Instructions to Consultants
 - Section 3 - Financial Proposal - Standard Forms
 - Section 4 - Contract Conditions
 - Appendix A: Terms of Reference
 - Appendix B: Experts and CVs
 - Appendix C: Contract Price and Payment Schedule
5. Details on the proposal's submission date, time and address are provided in Clauses 15 and 16 of the instructions to consultants (ITC).

Yours sincerely,
Executive Engineer
Construction Division, PWD
Guptkashi

Instructions to Consultant (ITC)

Instructions to Consultant (ITC)

1. The Government of Uttarakhand has decided to get **strengthening and other repair work of a bridge at Bheembali Mandakini River in district Rudraprayag of approximate 36.00 meter using the funds at its disposal under the state sector**. The government order for the assignment of carrying out the design and preparation of cost estimate of the bridge has been issued by the Government of Uttarakhand vide **Reference No E File No: 58562/07 dated 04.08.2025**
2. **The Executive Engineer, Construction Division, Public Works Department Guptkashi** (hereinafter the client) on behalf of the Governor of Uttarakhand requests proposals from the Bridge Design Consultants empaneled with the Uttarakhand Public Works Department (hereinafter the tenderer) for the preparation of design and cost estimate for the abovementioned bridge. The assignment shall be funded by the Government of Uttarakhand through the regular financing provided to the client.
3. The objective of this RFQ process is to select a specialized firm already empaneled with the Uttarakhand Public Works Department, for the design and cost estimation of the aforementioned bridge project. The consultant is expected to make use of the latest material and technology in the design and cost estimation of the bridge considering the topography, availability of construction material and constructability of the bridge at the identified location.
4. The details of the activities to be performed by the selected consultant along with the list of deliverables and their submission schedule are provided in the Appendix A: Terms of Reference (ToR) enclosed with this document.
5. The interested consultant shall be required to submit their Proposal with a quotation for carrying out the Task defined in the Appendix A: Terms of Reference (ToR)
6. The interested consultant may seek clarification on this issued RFQ document from the client at least 01 day before the opening of the proposal i.e. latest by **05.09.2025**. The clarification may be sought by email at the email id cdpwdguptkashi@gmail.com. The consultants shall be sent a response to request for clarification through email or through an addendum to the RFQ document as the case may be. The proposal submitted by the consultants must acknowledge the receipt of the addenda issued by the client.
7. The consultant shall submit its proposal in the Proposal Submission Forms Q-1, Q-2, Q-3 and Q-4 as in Section-3 as a response to this Request for Proposal (RFQ). The completed quotation for carrying out the services proposed in the ToR must be submitted in the formats provided in Section-3. Incomplete submissions i.e. proposals without the complete details or with any form missing shall be rejected being non-responsive.

8. The cost for providing local transportation, accommodation and incidental expenses to the experts deployed by the selected consultant shall be borne by the consultant and shall be deemed to be included in the quoted price.
9. The consultant is required to quote only the basic rates excluding GST. GST shall be paid extra as per the prevailing rates.
10. All prices shall be quoted by the consultant in Indian Rupees (INR)
11. The proposal shall remain valid for Ninety (90) days following the date of closing of tender. A proposal valid for a shorter period will be rejected on the grounds that it is non-responsive.
12. Proposals submitted are offers only and the decision to accept or reject shall be based on the evaluation of lowest price to the client. The evaluation model that will be used is lowest price conforming. This means that all Quotes that are received within the time allowed for submission of the proposal shall be opened. The Quote that is the lowest price will be selected as the Successful Respondent.
13. This Request for Proposal does not commit the client to award a contract or to reimburse the consultant for costs incurred in submitting this proposal. The client reserves the right to reject any or all proposals received as a result of this request.
14. The proposal should be submitted in a sealed envelope marked as 'Proposal- Consultancy for Design and Cost Estimation of Bridge strengthening at **Bheembali** over **Mandakini River**'.
15. The proposal should be submitted until 03.00 pm on **06.09.2025**. Proposals received after the time specified above shall not be considered.
16. The proposal should be submitted to the following address:
Office of Executive Engineer, Construction division , PWD Guptkashi District-Rudraprayag 246439, Email Id : cdpwdguptkashi@gmail.com , Contact No: 9997525623.
17. The proposals received on or before the time indicated in para 15 above shall be opened on the same date at 3.30 pm in the presence of the consultant's representatives who choose to attend the opening of the proposals.
18. The lowest evaluated consultant shall be awarded the contract through a written communication by the client. The consultant shall commence the services within 15 days of signing the contract.

Proposal Submission Forms

Form Q-1
Proposal Submission Form (on letter head of the consultancy firm)

To,
Executive Engineer
Construction Division, PWD
Guptkashi.

Dear Sir,

Having examined the RFQ document, the receipt of which is hereby duly acknowledged, we the undersigned, offer to provide services for Design and Cost Estimation of the [*enter name of the bridge as in the RFQ document*] in accordance with your Request for Quotation dated [*enter date of issue of the RFQ*]. We are hereby submitting our proposal in a sealed envelope which includes details of our consultancy firm in the form Q-2, financial proposal in the form Q-3 and team composition and CVs of Key Experts positions indicated in the ToR in the form Q-4 provided for in the issued RFQ document.

If our proposal is accepted, we undertake to deliver the services in accordance with the task requirements and the delivery schedule specified in the Terms of Reference.

We agree to abide by this proposal for a period of ninety (90) days from the RFQ closing date and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

We understand that you are not bound to accept any proposal you may receive.

Yours Sincerely,

[Signature of Authorized Signatory]

I am duly authorized to sign the proposal on behalf of:

Company/ Firm Name:

Authorized Person:

Title:

Contact Number:

Email:

Date:

Form Q-2

Details of the Consultancy Firm (on letter head of the consultancy firm)

S.No.	Description	Details
1	Name of Firm	
2	Registered address of consultancy firm	
3	Telephone Number	
4	Email id of the consultancy firm	
5	Name of Authorized Person	
6	Mobile number of authorized person	
7	Legal Status of the consultancy firm	
8	Date of incorporation of the consultancy firm	
9	Email id of authorized person	
10	List of documents enclosed showing legal status of organization	
11	Power of Attorney of Authorized Person (if applicable)	
12	Enclose self-attested copy of order of empanelment in Uttarakhand PWD	
	GST Registration Details (enclose self-attested copy of the GST registration)	
	PAN Details (Enclose self-attested copy of PAN Card)	

Signature:

Name of Authorized Person:

Name of Consultancy Firm:

Designation:

Address:

Place:

Date:

Seal of the Consultancy Firm:

Form Q-3

Financial Proposal (on letter head of the consultancy firm)

क्लास बी श्रेणी के स्टील इस सेतुओं की health monitoring & structural audit करने के उपरान्त उन्हें क्लास ए श्रेणी में परिवर्तित करने के लिये DPR गठन की कुल लागत का विभिन्न मदों में विभाजन

Parameter		Activity (to be performed as per IRC: SP : 74-2007 and IRC: SP:40-2019)	% of the cost of DPR preparation
A	Condition Survey		20%
I	Visual Inspection of a) Superstructure b) Substructure c) Bearings d) Protection Works	Carry out a condition survey of the superstructure, substructure, bearings, and protection work through a detailed visual inspection of all bridge components. Visual inspection is to be documented in worksheets, photographic records, and drawings.	
II	Non-Destructive Testing of concrete and steel	Carry out non-destructive testing on the various components of the bridge to ascertain their quality and strength and suitability for use in the retrofitted superstructure and substructure.	
III	Condition Assessment Report	1. Present the findings of visual inspection and non-destructive testing with photographic evidence of the signs of damage/distress and interpretation of results in the form of a report mentioning the status of the various members and connections of the superstructure, bearings, and components of the substructure Indicating the location of the test. 2. Carry out analysis for IRC Class A live load and present rating of the structural components for this load, 3. Prepare the structural drawings with complete details, and section sizes and connections showing the present condition of the components.	
B	Structural Analysis & Assessment of Requirements of Strengthening and design and vetting from a reputed technical Institute or agency finalized by the Client		75%
I	Structural Analysis of Existing Superstructure and Substructure	1. Analyze the superstructure and the substructure in its existing structural arrangement and condition for the revised live load condition i.e., IRC Class A single lane loading with all possible load combinations as per IRC-6: 2017. 2. Prepare a comparative analysis of the developed stresses consequent to the application of revised loads & load combinations with the evaluated carrying capacity based on the condition assessment report. 3. Prepare a detailed report on the member/ component to be replaced/strengthened/ repaired or additional member/component to be used. 4. Analyze the proposed retrofitting/strengthening of the superstructure and substructure for the revised loads & load combinations to confirm the suitability of the proposed remedial measures. A check for reversal of stresses In the members of the superstructure must be performed in the process of strengthening/retrofitting. 5. Carry out stability analysis for the retrofitted substructure, assess any additional protection work requirement, and prepare design and drawings as per requirement. 6. Prepare methodology of strengthening along with structural and working drawings of the complete bridge structure Including connections etc. 7. Design data for bearings i.e., Information on loads, and angular and linear movement as per the structural analysis performed on the superstructure to be provided in the drawings.	
C	Cost Estimates		5%
I	Detail of measurement and bill of quantities	1. Prepare a detailed report on the assessment of the quantities of various Items of work to be performed Including the bill of quantities based on the latest Schedule of Rates of the Uttarakhand PWD.	

Parameter		Activity (to be performed as per IRC: SP: 74-2007 and IRC: SP:40-2019)	Quantity	Unit	RATE	
					In Figure	In Words
A	Condition Survey		1.00	Job.		
I	Visual Inspection of a) Superstructure b) Substructure c) Bearings d) Protection Works	Carry out a condition survey of the superstructure, substructure, bearings, and protection work through a detailed visual inspection of all bridge components. Visual inspection is to be documented in worksheets, photographic records, and drawings.				
II	Non-Destructive Testing of concrete and steel	Carry out non-destructive testing on the various components of the bridge to ascertain their quality and strength and suitability for use in the retrofitted superstructure and substructure.				
III	Condition Assessment Report	1. Present the findings of visual inspection and non-destructive testing with photographic evidence of the signs of damage/distress and interpretation of results in the form of a report mentioning the status of the various members and connections of the superstructure, bearings, and components of the substructure Indicating the location of the test. 2. Carry out analysis for IRC Class A live load and present rating of the structural components for this load, 3. Prepare the structural drawings with complete details, and section sizes and connections showing the present condition of the components.				
B	Structural Analysis & Assessment of Requirements of Strengthening and design and vetting from a reputed technical Institute or agency finalized by the Client		1.00	Job.		
I	Structural Analysis of Existing Superstructure and Substructure	1. Analyze the superstructure and the substructure in its existing structural arrangement and condition for the revised live load condition i.e., IRC Class A single lane loading with all possible load combinations as per IRC-6: 2017. 2. Prepare a comparative analysis of the developed stresses consequent to the application of revised loads & load combinations with the evaluated carrying capacity based on the condition assessment report. 3. Prepare a detailed report on the member/ component to be replaced/strengthened/ repaired or additional member/component to be used. 4. Analyze the proposed retrofitting/strengthening of the superstructure and substructure for the revised loads & load combinations to confirm the suitability of the proposed remedial measures. A check for reversal of stresses In the members of the superstructure must be performed in the process of strengthening/retrofitting.				

		<p>5. Carry out stability analysis for the retrofitted substructure, assess any additional protection work requirement, and prepare design and drawings as per requirement.</p> <p>6. Prepare methodology of strengthening along with structural and working drawings of the complete bridge structure Including connections etc.</p> <p>7. Design data for bearings i.e., Information on loads, and angular and linear movement as per the structural analysis performed on the superstructure to be provided in the drawings.</p>				
C	Cost Estimates					
I	Detail of measurement and bill of quantities	1. Prepare a detailed report on the assessment of the quantities of various Items of work to be performed Including the bill of quantities based on the latest Schedule of Rates of the Uttarakhand PWD.	1.00	Job.		
<p>Note: 1. Consultant shall enter the quotation for the consultancy assignment against the major tasks indicated and cost for any items not mentioned hereinabove shall be deemed to be included in the quote for these items.</p> <p>2. Consultant shall quote the price exclusive of GST. GST shall be paid extra as per prevailing rates.</p> <p>3. The total of the quote entered for each of the items above shall be the contract price for the assignment.</p> <p>4. This form for quotation is valid for this assignment only.</p> <p>5. This quotation by the consultant shall be valid for a period of 90 days from the date of proposal closing.</p>						

Signature:

Name of Authorized Person:

Name of Consultancy Firm:

Designation:

Address:

Place:

Date:

Seal of the Consultancy Firm:

Form Q-4

Team Composition and CVs of the Key Expert Positions indicated in the ToR

TEAM COMPOSITION

Key Expert Inputs:

S.No.	Expert Position	Name of Proposed Expert
1	Team Leader cum Sr. Structural Engineer	
2	Bridge Design Engineer	
3	Geotechnical Engineer	
4	Hydrologist	
5	CAD Engineer	
6	Quantity Surveyor cum Total Station Engineer	

Non-Key Expert Inputs:

S.No.	Expert Position	Name of Proposed Expert
1	CAD Draughtsman	
2	Documentation Support Staff	

Attach the CVs (updated and signed by the respective Key Experts) demonstrating the qualifications of Key Experts in following standard form:

CURRICULUM VITAE (CV)

Position Title and No.	{e.g. TEAM LEADER}
Name of Firm	<i>Insert name of firm proposing the expert</i>
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Citizenship	
Personal contact details of the Expert (mailing address and email address)	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, *type of employment (full time, part time, contractual)*, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact information for references	Country	Summary of activities performed relevant to the Assignment
[e.g., May 2005-present]	[e.g., Ministry of, advisor/consultant to... For references: Tel...../e-mail.....; Mr. xxx, Chief Engineer]		

Membership in Professional Associations and Publications: _____

Language Skills (indicate only languages in which you can work): _____

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks
{List all deliverables/tasks in which the Expert will be involved}	

Expert's contact information: (e-mail....., phone.....)

Certification:

I, the undersigned, certify to the best of my knowledge and belief that

- (i) *This CV correctly describes my qualifications and experience.*
- (ii) *I am not employed by the Executing or the Implementing Agency.*
- (iii) *In the absence of medical incapacity, I will undertake this assignment for the duration and in terms of the inputs specified for me provided team mobilization takes place within the validity of this proposal.*
- (vi) *I confirm that I will be available to carry out the assignment for which my CV has been submitted.*

I understand that any willful misstatement described herein may lead to my disqualification or dismissal, if engaged.

_____ Date: _____

[Signature of expert] Day/Month/Year

Contract Conditions

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Form of Contract

General Conditions of Contract

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CONTRACT FOR CONSULTANCY SERVICES

A Design and Cost Estimation for Strengthening and other repair work of 36-meter steel girder bridge at Bheembali over Mandakini River under Shri Kedarnath assembly constituency of district Rudraprayag

Contract No. _____

Between

Executive Engineer

Construction Division

PWD Guptkashi

and

[Name of the Client]

and

[Name of the Consultant]

Dated: _____

Form of Contract

This CONTRACT (the “Contract”) is made the *[number]* day of the month of *[month]*, *[year]*, between, on the one hand, *[name of Client]* and, on the other hand, *[name of Consultant]* for the provision of *[include title of the consulting assignment/services]* (the “Services”) described in the Terms of Reference in the Appendix A.

WHEREAS, the Client has accepted the Consultant’s proposal for the performance of the Services, and the Consultant is capable and willing to perform said Services.

THE CLIENT AND THE CONSULTANT (the “Parties”) AGREE AS FOLLOWS:

1. This Contract, its meaning, interpretation and the relation between the Parties shall be governed by the applicable law of India.
2. The Contract is signed and executed in English language, and all communications, notices and modifications related to this Contract shall be made in writing and in the same language.
3. The total Contract price is *[insert amount and the currency]* and is exclusive of Goods and Services Tax (GST). The Contract price and payment schedule is provided in Appendix C.
4. The expected date for the commencement of the Services is *[insert date, month and year]*. The time period shall be *[insert time period, e.g.: six months]*.
5. The Client designates *[insert the name and title]* as Client’s Coordinator and the Consultant designates *[insert the name and title]* as their respective representatives for the purpose of coordination of activities under this Contract. *Nothing contained in this Contract shall be construed as establishing or creating between the Client and the Consultant a relationship of master and servant or principal and agent. The Consultant has complete control of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf.*
6. Any dispute, controversy or claim that cannot be amicably settled between the parties and arising out of, or relating to this Contract or the breach, termination or invalidity thereof, shall be finally settled by arbitration in accordance with the national rules governing arbitration as in force and effect on the date of this Contract.
7. The following documents form an integral part of this Contract:
 - (a) Letter of Award
 - (b) The General Conditions of Contract

(b) Appendices:

Appendix A: Terms of Reference and Reporting Requirements

Appendix B: Key Experts (including CVs)

Appendix C: Contract Price and Payment Schedule

SIGNED:

For and on behalf of *[Name of Client]*

[Authorized Representative of the Client – name, title and signature]

For and on behalf of *[Name of Consultant]*

[Authorized Representative of the Consultant – name and signature]

General Conditions of Contract

1. Definitions

- 1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:
- a) “Experts” means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant assigned by the Consultant to perform the Services or any part thereof under the Contract.
 - b) Key Expert(s)” means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant’s proposal.
 - c) “Non-Key Expert(s)” means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract.
 - d) “Sub-consultants” means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract.

2. Eligibility

- 1.1 It is the Consultant’s responsibility to ensure that its Experts, Sub-consultants, agents (declared or not), sub-contractors, service providers, suppliers and/or their employees have not been debarred or blacklisted by any undertaking of the Government of Uttarakhand or the Government of India.

3. Corrupt and Fraudulent Practices

- 3.1 The client requires compliance with the country policy in regard to corrupt and fraudulent practices.

4. Force Majeure

a. Definition

- 4.1 For the purposes of this Contract, “Force Majeure” means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and makes a Party’s performance of its obligations hereunder impossible or so impractical as reasonably to be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies.

4.2 Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

b. Breach of Contract 4.3 The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

c. Measures to be Taken 4.4 A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

4.5 A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.

4.6 Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

4.7 During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

(a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and necessarily incurred, and, if required by the Client, in reactivating the Services; or

(c) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.

5. Suspension of Payments 5.1 The Client may, by written notice of suspension to the Consultant, suspend part or all payments to the Consultant hereunder if the Consultant fails to perform any of its

obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding seven (7) calendar days after receipt by the Consultant of such notice of suspension.

6. Termination

6.1 This Contract may be terminated by either Party as per provisions set out below.

a. By the Client

6.2 The Client may terminate this Contract with at least fourteen (14) calendar days prior written notice to the Consultant after the occurrence of any of the events specified in paragraphs (a) through (e) of this Clause:

(a) If the Consultant does not remedy a failure in the performance of its obligations under the Contract after being notified by the Client in writing by specifying the nature of the failure and requesting to remedy it within at least ten (10) calendar days after the receipt of the Client's notice;

(b) If the Consultant becomes insolvent or bankrupt;

(d) If the Consultant, in the judgment of the Client, has engaged in integrity violations or if in the judgment of the Client, continuing the Contract will be detrimental to the interests or reputation of the Client, or the project;

(e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract.

b. By the Consultant

6.3 The Consultant shall promptly notify the Client in writing of any situation or any event beyond the reasonable control of the Consultant, which makes it impossible for the Consultant to carry out its obligations under the Contract.

6.4 Upon written confirmation by the Client or upon failure of the Client to respond to such notice within 14 (fourteen) calendar days of receipt thereof, the Consultant shall be relieved from all liability and may thereupon terminate the Contract by giving no less than fourteen (14) calendar days, a written termination notice.

7. Obligations of the Consultant

a. Standard of Performance

7.1 The Consultant shall carry out the Services with due diligence and efficiency, and shall exercise such reasonable skill and

care in the performance of the Services as is consistent with sound professional practices.

- 7.2 The Consultant shall act at all times so as to protect the interests of the Client and shall take all reasonable steps to keep all expenses to a minimum, consistent with sound professional practices.

b. Compliance

- 7.3 The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law.

c. Conflict of Interests

- 7.4. The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

- 7.5 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project.

- 7.6 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.

- 7.7 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.

8. Confidentiality

- 8.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant, including Experts, make public the recommendations formulated in the course of, or as a result

of, the Services. This confidentiality does not limit the Consultant, including Experts and Sub-consultants, from disclosing any integrity violations or producing any such documents, records, evidence, or testimony as required by law.

9. Insurance to be taken out by the Consultant

- 9.1 The Consultant shall take out and maintain at its own cost adequate professional liability insurance as well as adequate insurance against third party liability. The Consultant shall ensure that such insurance is in place prior to commencing the Services.
- 9.2 The Client undertakes no responsibility in respect of any life, health, accident, travel or other insurance which may be necessary or desirable for the Consultant, Expert(s), Sub-consultants, or specialists associated with the Consultant for purpose of the Services, nor for any dependent of any such person.
- 9.3 The Client reserves the right to require original evidence that the Consultant has taken out the necessary insurance.

10. Reporting Obligations

- 10.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in said Appendix.

11. Proprietary Rights of the Client in Reports and Records

- 11.1 All reports and relevant data and information such as maps, diagrams, designs, drawings, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client unless otherwise agreed by the Client in writing. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client.

(a) The consultant shall indemnify the Client from and against any and all claims, liabilities, obligations, losses, damages, penalties, actions, judgments, suits, proceedings, demands, costs, expenses and disbursements of whatsoever nature that may be imposed on, incurred by or asserted against, the Client during or in connection with the Services by reason of i) infringement or alleged infringement by the Consultant

of any patent or other protected right, or ii) plagiarism or alleged plagiarism by the Consultant.

(b) The Consultant shall ensure that all goods and services (including without limitation all computer hardware, software and systems) procured by the Consultant from the Client funds or used by the Consultant in the carrying out of the Services do not violate or infringe any industrial property or intellectual property right or claim of any third party.

12. Description of Key Experts

12.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in **Appendix A**. The composition of Key Experts with their CVs is described in the **Appendix B**.

13. Replacement of Key Experts

13.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts.

13.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience.

14. Removal of Experts or Sub-consultants

14.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal act, or if the Client determine that a Consultant's Expert or Sub-consultant has engaged in corrupt, fraudulent, collusive, coercive *[or obstructive]* practice while performing the Services, the Consultant shall, at the Client's written request, provide a replacement.

14.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement or vary the contract to remove costs associated with removed experts or sub-consultants.

14.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

14.4 The Consultant shall bear all costs arising out of or incidental

to any removal and/or replacement of such Experts.

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|--|-------|--|
| 15. Client's Payment Obligation | 15.1 | In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the services specified in Appendix A and in such manner as described in Appendix C . |
| 16. Mode of Billing and Payment | 16.1 | The payments under this Contract shall be made in accordance with the payments provisions in Appendix C . The payments under this contract shall be subject to deductions in accordance with any provisions with respect to deficiency in service stated in Appendix A and notified to the consultant. |
| | 16.2 | Payments do not constitute acceptance of the whole Services nor relieve the Consultant of its obligations. |
| | 16.3 | Upon termination of this contract pursuant to clause 6 hereof, the payment to the consultant shall be governed by the payment provisions in Appendix C , and shall be limited to the deliverables submitted by the consultant and approved by the client till the date of termination of the contract. |
| 17. Amicable Settlement of disputes | 17.1 | The Parties shall seek to resolve any dispute amicably by mutual consultation. |
| | 17.2 | If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within seven (7) calendar days after receipt. If that Party fails to respond within seven (7) calendar days, or the dispute cannot be amicably settled within seven (7) calendar days following the response of that Party, Clause "Dispute Resolution" below shall apply. |
| 18. Dispute Resolution | 18.1. | Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the applicable adjudication/ arbitration. |

Appendix A: TERMS OF REFERENCE

Appendix A: TERMS OF REFERENCE

Preparation of Design and Cost Estimate for Bridge

Job Title: Consultancy for Design and Cost Estimation

Location: Executive Engineer Construction Division, PWD Guptkashi.

Contract term: 06 Months

Start date: Within 15 days of contract signing.

Responsible to: Executive Engineer Construction Division, PWD Guptkashi.

Responsible for: Design and Cost Estimation

1. INTRODUCTION

The Government of Uttarakhand has through **government order No. E File NO : 58562/07 Dated: 04-08-2025** approved the preparation of Design and Cost Estimate for the bridge **strengthening Bheembali over Mandakini in district Rudraprayag** of Uttarakhand. This bridge for which the Design and Cost Estimate is to be prepared under this terms of reference shall be constructed on **Sh. Kedarnath Trek** and shall facilitate the movement of **approximately 10-15 Lac people/pilgrims visiting at Sh. Kedarnath Dham Temple in per year and local people residing in Sh. Kedarnath area will also benefitted from this.**

This TOR is to procure services of specialized firm for the design and cost estimation of the afore mentioned bridge under **State Sector**. The construction of proposed bridge shall involve use of latest construction material, modern technology and construction practices that is conducive to the terrain.

The Executive Engineer Construction Division, PWD Guptkashi will be the client for this assignment. Uttarakhand Public Works Department (PWD) will be the Executing Agency (EA) for this bridge project through **Construction Division, PWD Guptkashi** headed by the Executive Engineer.

2. DESIGN SERVICES REQUIRED FOR DESIGN AND COST ESTIMATION OF BRIDGE

The proposed Design consultant's Services are:

- i. Collection & review of field data as available and carrying out survey (i.e. Topographical survey, Geotechnical Investigation, Hydrological Survey, Traffic Survey etc.), for finalizing the span length, lane configuration and preparing the design and working drawings of the bridges.
- ii. Review and Finalization of appropriate alignment, lane configuration and span arrangement for the new bridge.
- iii. Prepare the design for the alignment, type of bridge and span arrangement finalized by the client.
- iv. Participate in meetings related to design of bridges.
- v. Submit for approval of the client the GAD and the other submission requirements as mentioned in this TOR.

- vi. Assist in the launching of the superstructure of the bridge during construction if requested by the client and revise any design and drawing of the foundation and substructure if required at the time of execution.

To ensure that the above mentioned tasks are completed, following measures are to be ensured by the design consultant:

- i. The Design Consultant shall designate one senior officer of the firm/company (who has served the firm/company, full time for at least two years) to act as Project Manager for the bridge design Contract. The Project Manager should be available for discussion on progress of design and estimation at all times. The Project Manager shall contact the Assistant Engineer in the field for collection of available data and submission and verification of the field investigation report.
- ii. The design consultant shall assist the client during construction with respect to launching of the superstructure and shall revise any design and drawing of the foundation and substructure when required upon confirmatory geotechnical investigation.

3. DURATION

The total duration allowed for the design and preparation of cost estimate of this bridge is **6 months (six months)**.

4. OTHER RELEVANT INFORMATION

The Design consultant shall perform the services in accordance with the laws and any other instruments having the force of Law in India, as they may be issued from time to time.

5. SCOPE OF CONSULTING SERVICES

The primary role of the consulting firm will be to do the field investigation, topographical survey, detailed design and analysis works including preparation of working drawings for the new proposed bridge and to prepare detailed cost estimate. The firm will be collecting all the technical and other related information required with the help of other project team members.

The scope of the consultancy service will include:

- i) To conduct topographical survey, hydrological survey and geotechnical investigation of proposed bridge site and to furnish survey reports to the Client along with recommendations. For geotechnical investigation the consultant would deploy an agency after prior approval by the Client. The lab tests for geotechnical investigation will be conducted at NABL accredited lab/Government recognized lab by the deployed agency. The ownership and responsibility for correctness of geotechnical investigations will solely lie on the Design consultant. The Consultant will provide location (longitude and latitude) of the site selected for the geotechnical investigations and tests.
- ii) To recommend a suitable site for the construction of bridge to the client based on field tests, calculation of linear waterway from the hydrological survey and calculations.
- iii) To prepare design and cost estimate for the proposed bridge.

- iv) Client will provide already available data of existing bridges to the consultant.
- v) To prepare GAD, designs & working drawings of bridges. The consultant shall submit structurally optimized solution after catering to site specific needs and economize the overall project cost.
- vi) To prepare the design of erection / launching scheme along with submission of all relevant design calculations and working details. (The design of bridge should be in accordance with the standard codes of practices and specifications)
- vii) Providing working drawings including fabrication drawings (with soft copies in AutoCAD format)/detailed calculations/specifications/launching scheme for each standard span and for each type of bridge.
- viii) To provide design criteria/detailed design calculations in support of each designs.
- ix) To provide safety standards and procedures to be adopted during execution of the project along with a list of do's and don'ts for the field engineers.
- x) To provide the list and schedule of quality control and quality assurance program/ tests applicable at the time of construction.
- xi) To compile and print all the above details in a booklet form for each type of bridge and providing hard copies (fixed nos.) of booklet and also soft copy.
- xii) To prepare detail of measurements, bill of quantities and estimate on current central SOR of PWD.
- xiii) To prepare complete detailed cost estimate for the bridge.
- xiv) To supply complete detailed cost estimate for the bridge to the concerning division.
- xv) The analysis/design of the bridges should be done using latest technology/ methodology/latest software tools and the provisions given in national/international codes of practices should be thoroughly followed in designing the bridges and no compromise should be made w.r.t the safety of the bridges to be constructed.
- xvi) The departmental officials will accompany the Design consultant's team to identify the bridge locations and for helping access to both sides of the bridge.
- xvii) To prepare Quality Assurance Manual and maintenance manual for the bridges.
- xviii) The Consultant should establish permanent benchmark at site and will specify latitudes and longitudes of that benchmark physically and mention this in the Cost Estimate as well.
- xix) To get proof checked the final analysis and design of the bridge from any state run institute of engineering and technology for single span motor bridges with length up to 30 m, all pedestrian bridges and from any one of the institutes for motor bridges with length more than 30 m: IIT Powai (Mumbai), IIT Delhi, IIT Kanpur or BHU IT Varanasi.
- xx) To provide inputs on the request of the client during the construction stage with respect to execution of the launching scheme and resolution of design queries with respect to foundation and substructure subsequent to confirmatory geotechnical investigation.

6. SPECIAL CONDITIONS FOR DESIGN WORK

- i. The Design consultant shall give all references of the codes followed in the design along with the reference of the clauses and page numbers of the relevant codes used as part of Cost Estimate.
- ii. The design consultant shall carryout survey for the availability of construction material before deciding the type of bridge and type of construction material for components of the bridge. For the case of Steel Bridges, the consultant shall confirm the availability of structural steel parts to be used in a member before finalizing the design and drawings.
- iii. The designer shall compulsorily mention the design philosophy used in the process of design (like Elastic Design/Ultimate load theory/Limit State Design).
- iv. While developing the design, Design consultant shall engage in discussions with field staff and Superintending Engineer/Zonal Chief Engineer as appropriate, so as to incorporate their suggestions, and resolve field problems.
- v. Scale of plan, L-section, & X-section shall be as per relevant IRC code.
- vi. Design consultant shall prepare the details of measurement and Bill of Quantity as per PWD practice and shall use the items of relevant SOR of Uttarakhand available on website. The rate analysis of the items used in SOR shall be downloaded from website (website- <http://pwwsor.pwduk.in> , login id- PWDSOR, password- SOR1234) and shall form the part of DPR. However, those items which are not available in SOR shall be picked up from the market (from at least three sources) quotations and all these will form part of DPR.
- vii. The Design consultant shall use advance software tools which are generally used in practice for such type of design. The Design consultant should have a valid license to use such software and shall submit a proof mentioning it.
- viii. The design consultant shall submit to the client the input and output files of the structural analysis of the analysis software used by the consultant for record after clearly demonstrating the performance of the analysis model with the input files and confirming the outputs obtained with the design report.
- ix. The consultant shall design the details of superstructure in excel sheets elaborating step by step design procedure. All excel sheets so evolved for design of constituent elements should be user friendly as well as they should be amenable to hand calculations. The excel sheets should satisfy the proof checking authority and client.
- x. The computer program, excel sheets and all technical literatures so developed under the scope of work shall become property of client.
- xi. The structural design shall be based on latest version of IRC codes along with amendments. In case details are not available in the IRC Code, reference shall be made to other codes such as BIS, AASHTO, EURO etc. with prior approval of client. SI system of units shall be followed.
- xii. The consultant shall prepare and submit relevant technical specifications for materials, construction and maintenance, schedule of reinforcement, general notes, schedule of construction activities and precautionary measures.
- xiii. The consultant shall also submit maintenance manual for ensuring durability of bridge superstructure for design life of 100 years along with list of quality control tests required at field level along with acceptance criteria for finished product.

- xiv. The grade of structural steel, reinforcement steel and grade of concrete shall be decided in consultation with the client based on the superstructure system type and exposure conditions.
- xv. Drawings and plans shall have clear depiction of bearings, expansion joints, seismic devices, crash barriers and bridge railings.

7. APPROVAL OF DRAWINGS

- a) The CLIENT reserves the right to approve the drawing in full or in part depending upon the information available. In case the client does not approve the drawing due to change in type of bridge, span arrangement or technical fault with the drawings, the consultant will have to revise and re-submit the drawings as per actual site conditions.
- b) On completion of review, the CLIENT will return the submitted drawings with one of the following comments:
 - “Approved”** to allow work to proceed.
 - “Approved (withheld)”** to allow work to proceed subject to amendments and Conditions.
 - “Not approved”** resubmission required incorporating comments given.
- c) The CLIENT may withdraw or modify his approval of approved drawings as a result of subsequent submissions, in case they contradict the provisions based on which the approval is given. The Consultant shall review such designs/drawings without any extra cost.
- d) In case of total change in site design/drawing/DPR preparation work pertaining to new site will be treated as additional scope under the consultancy. The payment against which will be made as per the payment conditions.
- e) Approval of drawings by the CLIENT shall mean checking in principle only and not verifying every dimension in a detailed manner.
- f) To enable the Client to appreciate/ understand the observations/ comments of Consultant, the Consultant shall submit all the required documents such as drawings, Design calculations, explanatory note containing adopted design criteria, and loads etc., brief description of methodology used as well as the results etc.

8. DESIGN CALCULATIONS

The Consultant shall furnish following information along with his submittals for review. The information shall be furnished at the appropriate place in each calculation, as applicable:

- a) Content list, Input data and source of information.
- b) Scope (Description of the contents and purpose of the submission)
- c) Design criteria to satisfy statutory requirements.
- d) Formulae used and references for the same
- e) Design assumptions made. Assumptions based on experience shall be clearly mentioned.
- f) All Design prepared by the consultant would be required to satisfy Indian Codes & standards and guidelines/rules issued by Government of India. The Codes and Standards shall be referred with year of publication, revision number and amendment/addenda.
- g) Reference Drawings and Documents along with their revision numbers.
- h) Qualitative description and comments on final results.

- i) Any other relevant information.
- j) Conclusions / recommendation.
- k) Appendix.

9. COMPUTERIZED ANALYSIS AND DESIGN

- a) Following shall be compiled by the consultant in his submittals for review:
 - i) Consultant shall use accredited / validated software and the same shall be indicated.
 - ii) Details of figures of Modelling, wherever applicable.
 - iii) All information as called for in clause of design calculations.
 - iv) Consultant shall submit printout and softcopies of all pages as appeared in output of the computer Program without disturbing the output as generated by the program.
- b) Comments of the Client shall be delivered to the consultant's representative by hand or by email.
- c) The consultant will submit the compliance in duplicate hard copies and soft copy to the Engineer-in-Charge and will also be required to give a presentation on the same as & when required. Monthly progress report shall be discussed with the Engineer-in-Charge for further improvement in the future activity schedule.
- d) All drawings to be prepared by the consultant would be on AutoCAD or latest software. Design criteria, structural & geotechnical analysis and detail design calculation should be in MS word and PDF. Minimum 5 (five) sets of all documents/design and drawings would be submitted by consultant in hard and its soft copy should be submitted in CD (software File).
- e) In order to perform the above activities efficiently, the consultant is required to establish a well-equipped office at his own cost having sufficient number of professional experts at Dehradun (Uttarakhand) for carrying out various design/design review activities and assist the Client in approval of different reports/ design documents and drawings during contract period and conduct regular meeting with Client. Consultant is also required to place suitably various key professional/ Professional and support staff to carry out required activities during contract period.

10. PROGRESS REVIEW

An interactive approach shall be adopted by the design consultant and proof checking authority in order to finalize the design. For effective co-ordination and expeditious inflow and outflow of the drawings, representatives of Client (Executive Engineer, Assistant Engineer, or other nominated representative) and the Consultant shall meet once in a month. Besides regular meetings at Dehradun (Uttarakhand), the meetings may be held at Division Office, as per requirement. Discussion shall not be limited to the design and drawings but also cover the engineering of the project viz. provisions of work items and quality of the works.

11. EXPECTED INPUTS FOR DESIGN AND ESTIMATION WORKS OF BRIDGES

The composition and duration for Design Services expected for the Design Consultant is as in Table1. This table is given only for guidance and the Design Consultant shall make his own assessment of the extent of involvement of various professionals to the best and most economical use of available human resources.

Table No. 1

S.No.	KEY PROFESSIONAL / EXPERT	Scope
1	Team Leader cum Sr. Structural Engineer	Overall management of the team and detailed review of the analysis and design of various elements of the bridge.
2	Bridge Design Engineer	Carrying out analysis and design of sub structure and superstructure in accordance with the requirements of the ToR and prescribed standards.
3	Geotechnical Engineer	Carrying out geotechnical investigation and its analysis along with design of foundation based on findings of the geotechnical investigation.
4	Hydrologist	Carrying out hydrological studies to finalize the HFL and linear waterway and finalize the span/length of the bridge. Propose protection works as required in consultation with the Geotechnical Engineer and Team Leader.
5	CAD Engineer	Preparation of all types of drawings in the project.
6	Quantity Surveyor cum Total Station Engineer	Carrying out detailed topographic survey and preparation of detailed cost estimate under the guidance of the Team Leader.

12. DELIVERABLE FOR DESIGN OF BRIDGES

The Design consultant shall prepare the following reports and submit to the client on the format prepared by the design consultant and approved by the client.

- 1) **Inception Report**: This shall include a report on initial survey of the project for which the design and cost estimate is to be prepared. The location of the project, the environmental conditions, and feasibility of the project, traffic disposition and selection of site are to be done by the consultant at this stage in accordance with the prescribed Indian Road Congress (IRC) guidelines [IRC 5, IRC 78 and IRC SP 54] and any other established procedures. Any alternative sites with observations on sufficiency of length of the bridge must be brought out by the consultant at this stage itself. It is expected that the consultant will finalize the site and span length on the basis of linear waterway calculated after hydrological investigation. The submission shall include the coordinates of the location of proposed abutments along with good quality photographs taken during the survey work.
- 2) **Preliminary Project Report**: This shall include a detailed account of the incorporation of any feedback by the client on the inception report and a proposal for span arrangement, type of bridge, type of foundation and sub structure and general arrangement drawings (GAD) based on topographical survey along with surveys on the resource availability, and a reasoned recommendation for adopting the proposed span arrangement and type of bridge considering the requirement of least cost to the client or specific requirement of the client. This report must include the particulars of geotechnical investigations conducted along with the soil surveys and soil classification reports and findings of the investigations. The report must include the design approach with the design guidelines to be followed by the consultant based on the selected bridge type and span arrangement. The consultant is expected to refer to the relevant IRC guidelines [IRC 5, IRC 78 and IRC SP 54 along with IS 1892, IS 2720, IS 1498] along with other relevant BIS codes.

- 3) **Draft Detailed Project Report:** This report is to be submitted after the incorporation of observations/comments on the Preliminary Project Report (PPR). The report must include submission of detailed structural analysis of superstructure along with all software input and output files, structural design of various elements/members and joints/connections in the superstructure, analysis and detailed design of the foundation, substructure, bearings, superstructure, protection works and other structural elements along with detailed structural and working drawings of the same. The report must include the analysis and design of launching scheme along with the details of quantities of various items of construction and the draft cost estimate of the project. The consultant shall submit for proof checking the updated analysis and design of the bridge at this stage itself after incorporating the comments from the client. The consultant is expected to refer to the relevant IRC guidelines and BIS Codes [IRC 5, IRC 6, IRC 22, IRC 24, IRC 112, IRC 18, IRC 78, IRC 83, IRC 87, IRC SP 54, IS 1343, IS 3764, IS 800]
- 4) **Final Detailed Project Report:** This report is to be submitted after the observations on the Draft DPR are submitted to the consultant by the client and the proof checking authority are incorporated and addressed in the design and cost estimate. This report shall incorporate all observations of the client and proof checking authority and must be prepared after detailed discussions on all design aspects and provisions in the details of items of construction and quantities thereof. The final DPR must include all modifications to the analysis, design, drawings and items of construction and the launching scheme as finalized during discussion at the Draft DPR stage. The submission must include input and output files from the software used for structural analysis, final GAD, detailed structural and working drawings of the foundation, substructure, bearings, superstructure, protection works and other structural elements along with the Quality Assurance (QA) Manual and Maintenance Manual.

The Design consultant will prepare and submit the aforementioned reports to the Client on the format prepared by the Design consultant and approved by the Client as per the schedule in Table-2.

Table No. 2

S. No.	Report	Frequency	Due Date	No. of Hard Copies	No. of Soft Copies in CDs
1.	Inception Report	One Time	Within 30 days	5	1
2.	Preliminary Project Report	One Time	Within 60 days	5	1
3.	Draft Design Report with Cost Estimate	One Time	Within 120 days	5	1
4.	Final Design Report with Cost Estimate	One Time	Within 180 days	5	1

13. PAYMENT SCHEDULE

Payment shall be processed to the design consultant in accordance with the following payment schedule. The consultant shall submit to the client the invoice for payment upon approval of the submission by the client or any authority designated for approval by the client. The consultant shall upon submission of the deliverable assist the client in its review and present the output in subsequent discussions and meetings.

Table No. 3

S.No.	Payment Condition	Percentage payable
1.	Submission and approval of Inception Report	10% of total amount of the Consultancy Agreement.
2.	Submission and approval of Preliminary Project Report	20% of total amount of the Consultancy Agreement.
3.	Submission and approval of Draft Design Report with Cost Estimate	30% of total amount of the Consultancy Agreement
4.	Submission and approval of Final Design Report with Cost Estimate	40% of total amount of the Consultancy Agreement

ion money of 10% of each payment shall be retained by the client.

14. VARIATION IN SERVICES

The number of bridges in the scope of works in this consulting assignment may be increased with consent between the parties in accordance with the contract rates given by the Consultant for similar span and type of bridge to be designed for any other location within the jurisdiction of the client. The payment for the part work will be as per the payment schedule Table 3. The variation in such a case shall be limited to only one additional bridge over the number of bridges in the initial contract.

15. DEFICIENCY IN SERVICE

Deficiencies in the services on part of Design consultant shall be notified to the consultant in writing and corrections to the deficiency shall be submitted by consultant in the time specified in the notice. If the consultant fails to correct the notified deficiency, the payment due to the consultant may attract penal provisions in the form of fines, up to a maximum amount of 10% of contract price and/or debarment by the Employer for a period of at least 5 years.

Sample deficiencies may include:

1. Inexcusable delay in submission of deliverables as mentioned in the point No. 12 of TOR. In case of delay in completion of services, a penalty equal to 0.05% of the contract price per day subject to a maximum 5% of the contract value will be imposed and shall be recovered from payments due. However in case of delay due to reasons beyond the control of the consultant, suitable extension of time will be granted.
2. Failure to give proper and timely advice to Employer/Contactor regarding launching of the superstructure and revisions to the designs and drawings of the foundation and sub structure, if required during construction.
3. Refusing to give reasons/justification for decisions/provisions in the deliverables when asked by the Employer.
4. Not being fully conversant with manuals, specifications, standards, MORTH guidelines and requirement of the project to be followed.
5. Failure to provide reviewed design to address comments of proof checking authority.
6. If variation in any of the main quantities of work total concrete quantities and reinforcing steel in bridge works or overall project cost found during execution is more than +/- 15%, the penalty equivalent to 5% of the contract value shall be imposed. For this purpose retention money equivalent to 5% of the contract value shall be forfeited. This shall exclude any additional/deleted items/works ordered during construction.
7. For inaccuracies in design work the penalties shall be imposed as per details given in Table below:

S.No.	Item	Penalty (%age of contract value)
1	Inaccuracy in Structural Modeling	0.5 to 1.0
2	Inaccuracy in Calculation of Forces, Moments and Stresses	0.5 to 1.0
3	Incomplete or erroneous drawings with dimensioning and reinforcement detailing	0.5 to 1.0
4	Inaccuracy in Bill of Quantities	0.5 to 1.0
5	Structural design found to be unsafe or grossly over safe	1.0 to 2.0

16. SUGGESTED QUALIFICATION AND EXPERIENCE REQUIREMENT OF KEY PERSONNEL

Team Leader cum Senior Bridge Engineer

i)	Educational Qualification	
	Essential	Graduate in Civil Engineering with 15 years professional experience or Post Graduate in Structural Engineering with 12 years professional experience.
ii)	Essential Experience	
	a) Total Professional Experience	15 years/12 years
	b) Experience in bridge design and engineering	Minimum 7 years in design of bridges (As Bridge Design Engineer for steel and RCC bridges) including analysis and design of superstructures and substructures and min 3 years in construction of bridges.
	c) Experience in similar capacity	Independently handled the design work of at least 5 bridges minimum span of 30m in similar topographic conditions (Himalayan Hills).

Bridge Design Engineer

i)	Educational Qualification	
	Essential	Post Graduate in Structural/bridge Engineering
ii)	Essential Experience	
	a) Total Professional Experience	8 years
	b) Experience in bridge design and engineering	Minimum 5 years in modeling and design of bridges using structural analysis and designing software like STAAD PRO etc.
	c) Experience in similar capacity	Involved in the analysis and design work of at least 5 bridge in similar topographic conditions (Himalayan Hills)

CADD Engineer

i)	Educational Qualification	
	Essential	Graduate in Civil Engineering with Diploma in Computer Aided Design and Drafting
ii)	Essential Experience	
	a) Total Professional Experience	5 years
	b) Experience in Preparation of DPRs in bridge projects	3 years working experience as a CADD engineer.

Quantity Surveyor cum Total Station Engineer

i)	Educational Qualification	
	Essential	Diploma in Civil Engineering.
ii)	Essential Experience	
	a) Total Professional Experience	8 years
	b) Experience in bridge sector	Min. 03 years as Topographic Surveyor for bridge projects, with sufficient experience in survey of bridges in hilly areas.
	c) Experience in similar capacity	Supervision of bridge sector projects in similar topographic conditions (Himalayan Hills)

Geotechnical Engineer

i)	Educational Qualification	
	Essential	Post Graduate in Geotechnical Engineering
ii)	Essential Experience	
	a) Total Professional Experience	10 years
	b) Experience in similar capacity	Should have at least 05 years' experience in Geotechnical analysis/ Foundation design of civil engineering works.

Hydrologist

i)	Educational Qualification	
	Essential	Graduate in Civil Engineering or Post Graduate in Hydrology Studies
ii)	Essential Experience	
	a) Total Professional Experience	8 years
	b) Experience in similar capacity	Should have at least 04 years' experience in study of catchment areas of river basin, watershed and storm water for design of cross drainage structures.

Appendix B – Experts and CVs

Appendix B – Experts and CVs

TEAM COMPOSITION AND INPUTS

Key Expert Inputs:

S.No.	Expert Position	Name of Proposed Expert
1	Team Leader cum Sr. Structural Engineer	
2	Bridge Design Engineer	
3	Geotechnical Engineer	
4	Hydrologist	
5	CAD Engineer	
6	Quantity Surveyor cum Total Station Engineer	

Non-Key Expert Inputs:

S.No.	Expert Position	Name of Proposed Expert
1	CAD Draughtsman	
2	Documentation Support Staff	

Attach the CVs (updated and signed by the respective Key Experts) demonstrating the qualifications of Key Experts in following standard form:

CURRICULUM VITAE (CV)

Position Title and No.	{e.g. TEAM LEADER}
Name of Firm	<i>Insert name of firm proposing the expert</i>
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Citizenship	
Personal contact details of the Expert (mailing address and email address)	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, *type of employment (full time, part time, contractual)*, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact information for references	Country	Summary of activities performed relevant to the Assignment
[e.g., May 2005-present]	[e.g., Ministry of, advisor/consultant to... For references: Tel...../e-mail.....; Mr. Bbbbbb, deputy minister]		

Membership in Professional Associations and Publications: _____

Language Skills (indicate only languages in which you can work): _____

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks
{List all deliverables/tasks in which the Expert will be involved}	

Expert's contact information: (e-mail....., phone.....)

Certification:

I, the undersigned, certify to the best of my knowledge and belief that

- (i) This CV correctly describes my qualifications and experience.*
- (ii) I am not employed by the Executing or the Implementing Agency.*
- (iii) In the absence of medical incapacity, I will undertake this assignment for the duration and in terms of the inputs specified for me provided team mobilization takes place within the validity of this proposal.*
- (vi) I confirm that I will be available to carry out the assignment for which my CV has been submitted.*

I understand that any willful misstatement described herein may lead to my disqualification or dismissal, if engaged.

_____ Date: _____

[Signature of expert] Day/Month/Year

Appendix C –Contract Price and Payment Schedule

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A. Contract Price-Breakdown

Parameter		Activity (to be performed as per IRC: SP : 74-2007 and IRC: SP:40-2019)	Quote in rupees
A	Condition Survey		
I	Visual Inspection of a) Superstructure b) Substructure c) Bearings d) Protection Works	Carry out a condition survey of the superstructure, substructure, bearings, and protection work through a detailed visual inspection of all bridge components. Visual inspection is to be documented in worksheets, photographic records, and drawings.	
II	Non-Destructive Testing of concrete and steel	Carry out non-destructive testing on the various components of the bridge to ascertain their quality and strength and suitability for use in the retrofitted superstructure and substructure.	
III	Condition Assessment Report	<p>1. Present the findings of visual inspection and non-destructive testing with photographic evidence of the signs of damage/distress and interpretation of results in the form of a report mentioning the status of the various members and connections of the superstructure, bearings, and components of the substructure indicating the location of the test.</p> <p>2. Carry out analysis for IRC Class A live load and present rating of the structural components for this load,</p> <p>3. Prepare the structural drawings with complete details, and section sizes and connections showing the present condition of the components.</p>	
B	Structural Analysis & Assessment of Requirements of Strengthening and design and vetting from a reputed technical Institute or agency finalized by the Client		
I	Structural Analysis of Existing Superstructure and Substructure	<p>1. Analyze the superstructure and the substructure in its existing structural arrangement and condition for the revised live load condition i.e., IRC Class A single lane loading with all possible load combinations as per IRC-6: 2017.</p> <p>2. Prepare a comparative analysis of the developed stresses consequent to the application of revised loads & load combinations with the evaluated carrying capacity based on the condition assessment report.</p> <p>3. Prepare a detailed report on the member/ component to be replaced/strengthened/ repaired or additional member/component to be used.</p> <p>4. Analyze the proposed retrofitting/strengthening of the superstructure and substructure for the revised loads & load combinations to confirm the suitability of the proposed remedial measures. A check for reversal of stresses in the members of the superstructure must be performed in the process of strengthening/retrofitting.</p> <p>5. Carry out stability analysis for the retrofitted substructure, assess any additional protection work requirement, and prepare design and drawings as per requirement.</p> <p>6. Prepare methodology of strengthening along with structural and working drawings of the complete bridge structure including connections etc.</p> <p>7. Design data for bearings i.e., Information on loads, and angular and linear movement as per the structural analysis performed on the superstructure to be provided in the drawings.</p>	
C	Cost Estimates		
I	Detail of measurement and bill of quantities	1. Prepare a detailed report on the assessment of the quantities of various items of work to be performed including the bill of quantities based on the latest Schedule of Rates of the Uttarakhand PWD.	
TOTAL			
TOTAL (IN WORDS)			

B. Payment Schedule

Schedule of Payments for Deliverables:		Currency	Amount
A. Payment for submission and approval of deliverable			
1.	<i>1st Payment for [Deliverable 1: Inception Report] (10%)</i>	Indian Rupees	
2.	<i>2nd Payment for [Deliverable 2: Preliminary Project Report] (20%)</i>	Indian Rupees	
3.	<i>3rd Payment for [Deliverable 3: Draft Design Report with Cost Estimate] (30%)</i>	Indian Rupees	
4.	<i>4th Payment for [Deliverable 4: Final Design Report with Cost Estimate] (40%)</i>	Indian Rupees	
B.	<i>Goods and Services Tax paid by "Client" @18% of the amount raised in invoice for payment [the percentage of GST shall be as per the prevalent rate]</i>	Indian Rupees	
	Total	Indian Rupees	

Payment Conditions:

1. Payments to the consultant shall be subject to satisfactory conduct of services. Penal deductions to the payments shall be done in accordance with the provisions stated in the paragraph 15 [Deficiency in Service] of the Appendix A 'Terms of Reference'.
2. If this contract is terminated pursuant to clause 6 of the conditions of contract, the payment to the consultant shall be governed by the payment provisions contained herein, and shall be limited to payment for the number of deliverables submitted by the consultant and approved by the client till the date of termination of the contract
3. Retention money of 10% shall be retained from each payment to the consultant. The retention money shall be released to the consultant after the completion of construction of the bridge provided the construction of the bridge is started by the client within 2 years of approval of the Final Design Report & Cost Estimate.
4. In case the construction of the bridge is not started within 2 years of approval of the Final Design Report & Cost Estimate, the client shall release the retention money at the end of the 2-year period. The consultant may replace the retention money with a bank guarantee of the same amount valid up to the end of a 2-year period starting on the date of approval of Final Design Report & Cost Estimate. If the construction of the bridge is started within the 2-year period, the consultant shall extend the validity of the bank guarantee up to the end of the construction period.