



"Clean, Prosperous, Cultured Ilam"

ILAM MUNICIPALITY

Office of the Municipal Executive

Ilam, Province no. 1, Nepal



Request for Proposals

imo/ilam/ncb/service/02/2075-076

**Preparation
of
Detailed Project Report
of
Sano Puwa Khola Bridge at Milgolai Binapani Road**

Ilam Municipality - 03, Puwamajhuwa.

Financing Agency:

Ilam Municipality, Office of the Municipal Executive.
Magh, 2075

Section 1. Letter of Invitation

[insert: Location and Date]

Dear [insert: Name of Consultant]:

1. Ilam Municipality has allocated fund from itself toward the cost of **Preparation of Detailed Project Report of Sano Puwa Khola Bridge at Milgolai Binapani Road**, and intends to apply a portion of this Grant to eligible payments under this Contract.
2. The Ilam Municipality, Office of the Municipal Executive, Ilam now invites proposals to provide the following consulting services: **Preparation of Feasibility Study, Detailed Engineering Survey, Soil Investigation, Hydrological Study, Detailed Design of Bridge, Preparation of Masterplan, Preparation of Detailed Drawings with Preparation of Estimate of Sano Puwa Khola Bridge at Milgolai Binapani Road. Ilam Municipality - 03, Puwamajhuwa** More details on the services are provided in the attached Terms of Reference.
3. The Request for Proposal (RFP) has been addressed to **the following consultants stated at letter for Request:**
4. A consultant will be selected under QCBS and procedures described in this RFP.
5. The RFP includes the following documents:
 - Section 1 - Letter of Invitation
 - Section 2 - Information to Consultants
 - Section 3 - Technical Proposal - Standard Forms
 - Section 4 - Financial Proposal - Standard Forms
 - Section 5 - Terms of Reference
 - Section 6 - Standard Forms of Contract.
6. Please inform us, upon receipt:
 - (a) that you received the letter of invitation; and
 - (b) whether you will submit a proposal alone or in association.

Yours sincerely,

.....
Sahadev Rayamajhi
Chief Administrative Officer

Section 2. Information to Consultants¹

- 1. Introduction**
- 1.1 The Client named in the Data Sheet will select a consultant among all interested consultants, in accordance with the method of selection specified in the Data Sheet.
 - 1.2 The consultants are invited to submit a Technical Proposal and a Financial Proposal, for services as specified in the Data Sheet. The proposal will be the basis for contract negotiations and ultimately for a signed contract with the selected consultant.
 - 1.3 The consultants must familiarize themselves with local conditions and take them into account in preparing their proposals. To obtain first hand information on the assignment and on the local conditions, consultants are encouraged to visit the Client before submitting a proposal and are advised to attend a pre-proposal conference if one is specified in the Data Sheet.
 - 1.4 The Client will provide the inputs specified in the Data Sheet, assist the consultant in obtaining licences and permits needed to carry out the services, and make available relevant project data and reports.
 - 1.5 Please note that (i) the costs of preparing the proposal and of negotiating the contract, including a visit to the Client, are not reimbursable as a direct cost of the assignment; and (ii) the Client is not bound to accept any of the proposals submitted.
 - 1.6 GoN (or Donor Agency) policy requires that consultants provide professional, objective, and impartial advice and at all times hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflicts with other assignments or their own corporate interests. Consultants shall not be hired for any assignment that would be in conflict with their prior or current obligations to other clients, or that may place them in a position of not being able to carry out the assignment in the best interest of the Client.
 - 1.7.1 Without limitation on the generality of this rule, consultants shall not be hired under the circumstances set forth below:
 - a. A consultant, which has been engaged by the Client to provide goods or works for a project, and any of their affiliates, shall be disqualified from providing consulting services for the same project. Conversely, consultants hired to provide consulting services for the preparation or implementation of a project, and any of their affiliates, shall be disqualified from subsequently providing goods or works or services related to the initial assignment (other than a continuation of the consultant's earlier consulting services) for the same project.
 - b. Consultants or any of their affiliates shall not be hired for any assignment which, by its nature, may be in conflict with another assignment of the consultants.

¹ *This Information to Consultants section shall not be modified. Any necessary changes, acceptable to client (GoN) or the Donor, to address specific country and project issues, shall be introduced only through the Data Sheet (e.g., by adding new clauses). Likewise, modifications to the standard Form of Contract should be made only by including clauses outlining the special conditions and not by introducing changes in the wording of the general conditions*

- 1.7.2 Any previous or ongoing participation in relation to the assignment by the consultant, its professional staff or affiliates or associates under a contract with the GoN may result in rejection of the proposal. Consultants should clarify their situation in that respect with the Client before preparing the proposal.
- 1.8 It is the GoN's policy to require its implementing agencies, as well as consultants under GoN (or Donor Agency) financed contracts, to observe the highest standard of ethics during the selection and execution of such contracts. In pursuance of this policy, the GoN:
- a. defines, for the purposes of this provision, the terms set forth below as follows:
 - i. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the selection process or in contract execution; and
 - ii. "fraudulent practice" means a misrepresentation of facts in order to influence a selection process or the execution of a contract to the detriment of the Client, and includes collusive practices among consultants (prior to or after submission of proposals) designed to establish prices at artificial, non-competitive levels and to deprive the borrower of the benefits of free and open competition.
 - b. will reject a proposal for award if it determines that the consultant recommended for award has engaged in corrupt or fraudulent activities in competing for the contract in question;
 - c. will cancel the consultant's contract if it at any time determines that corrupt or fraudulent practices were engaged in by representatives of the consultant or the Client during the selection process or the execution of that contract;
 - d. will debar a consultant for a stated period of time, to be awarded a contract if it at any time determines that the consultant has engaged in corrupt or fraudulent practices in competing for, or in executing, a contract; and
 - e. will have the right to require that, a provision be included requiring consultants to permit the Client inspect their accounts and records relating to the performance of the contract and to have them audited by auditors appointed by the Client.
- 1.9 Consultants shall not be under a debarment for corrupt and fraudulent practices issued by GoN accordance with the above sub para. 1.8 (d).
- 1.10 Consultants shall be aware of the provisions on fraud and corruption stated in the Standard Contract under the clauses indicated in the Data Sheet.

2. Clarification and Amendment of RFP Documents

- 2.1 Consultants may request a clarification of any of the RFP documents up to the number of days indicated in the Data Sheet before the proposal submission date. Any request for clarification must be sent in writing by paper mail, cable, telex, facsimile, or electronic mail to the Client's address indicated in the Data Sheet. The Client will respond by cable, telex, facsimile, or electronic mail to such requests and will send written copies of the response (including an explanation of the query but without identifying the source of inquiry) to all invited consultants who intend to submit proposals.

2.2 At any time before the submission of proposals, the Client may, for any reason, whether at its own initiative or in response to a clarification requested by an invited consultant, amend the RFP. Any amendment shall be issued in writing through addenda. Addenda shall be sent by mail, cable, telex, facsimile, or electronic mail to all invited consultants and will be binding on them. The Client may at its discretion extend the deadline for the submission of proposals.

3. Preparation of Proposal

3.1 Consultants are requested to submit a proposal Sub - Clause 1.2 written in the language(s) specified in the Data Sheet.

Technical Proposal

3.2 In preparing the Technical Proposal (TP), consultants are expected to examine the documents constituting this RFP in detail. Material deficiencies in providing the information requested may result in rejection of a proposal.

3.3 While preparing the Technical Proposal, consultants must give particular attention to the following:

- i. If a consultant considers that it does not have all the expertise for the assignment, it may obtain a full range of expertise by associating with individual consultant(s) and/or other consultants or entities in a joint venture or sub-consultancy, as appropriate. Consultants may associate with the other consultants invited for this assignment only with approval of the Client as indicated in the Data Sheet. Consultants must obtain the approval of the Client to enter into a joint venture with consultants not invited for this assignment.
- ii. For assignments on a staff-time basis, the estimated number of professional staff-months is given in the Data Sheet. The proposal shall, however, be based on the number of professional staff-months estimated by the consultant. For fixed-budget-based assignments, the available budget is given in the Data Sheet, and the Financial Proposal shall not exceed this budget.
- iii. It is desirable that the majority of the key professional staff proposed be permanent employees of the consultant or have an extended and stable working relationship with it.
- iv. Proposed professional staff must, at a minimum, have the experience indicated in the Data Sheet, preferably working under conditions similar to those prevailing in Nepal.
- v. Alternative professional staff shall not be proposed, and only one curriculum vitae (CV) may be submitted for each position.
- vi. Reports to be issued by the consultants as part of this assignment must be in the language(s) as specified in the Data Sheet.

3.4 The Technical Proposal shall provide the following information using the attached Standard Forms (Section 3):

- i. A brief description of the consultant's organization and an outline of recent experience on assignments (Section 3B) of a similar nature. For each assignment, the outline should indicate, *inter alia*, the client, location and duration of the assignment, contract amount, and consultant's involvement.
- ii. Any comments or suggestions on the Terms of Reference and

on the data, a list of services, and facilities to be provided by the Client (Section 3C).

- iii. A description of the methodology and work plan for performing the assignment (Section 3D).
- iv. The list of the proposed staff team by specialty, the tasks that would be assigned to each staff team member, and their timing (Section 3E).
- v. CVs recently signed by the proposed professional staff and the authorised representative submitting the proposal (Section 3F). Key information should include number of years working for the consultant/entity and degree of responsibility held in various assignments during the last ten (10) years.
- vi. Estimates of the total staff input (professional and support staff; staff time) needed to carry out the assignment, supported by bar chart diagrams showing the time proposed for each professional staff team member (Sections 3E and 3G).
- vii. A detailed description of the proposed methodology, staffing, and monitoring of training, if the Data Sheet specifies training as a major component of the assignment.
- viii. Any additional information requested in the Data Sheet.

3.5 The Technical Proposal shall not include any financial information.

Financial Proposal

3.6 In preparing the Financial Proposal (FP), consultants are expected to take into account the requirements and conditions outlined in the RFP documents. The Financial Proposal should follow Standard Forms (Section 4). It lists all costs associated with the assignment, including (a) remuneration for staff (, in the field and at headquarters), and (b) reimbursable expenses such as subsistence (per diem, housing), transportation (mobilization and demobilization), services and equipment (vehicles, office equipment, furniture, and supplies), office rent, insurance, printing of documents, communication (Telephone, Fax etc.) surveys, and training, if it is a major component of the assignment. If appropriate, these costs should be broken down by activity.

3.7 The Financial Proposal should include all duties, taxes and other levies, and other charges imposed under the applicable law payable by the Consultant under the Contract or for any other cause.

3.8 Consultants shall express the price of their services in Nepalese Rupees.

3.9 The Data Sheet indicates the required validity period of the proposals. During this period, the consultant is expected to keep available the professional staff proposed for the assignment. The Client will make its best effort to complete negotiations within this period. If the Client wishes to extend the validity period of the proposals, the consultants who do not agree have the right not to extend the validity of their proposals.

4. Submission, Receipt, and Opening of Proposals

4.1 The original proposal (TP and FP) shall be prepared in indelible ink. It shall contain no interlineations or overwriting, except as necessary to correct errors made by the consultant itself. Any such corrections must be initialled by the persons or person who sign(s) the proposals.

- 4.2 An authorized representative of the Consultants shall initial all pages of the original Technical and Financial Proposals. The authorization shall be in the form of a written power of attorney accompanying the Proposal.
- 4.3 For each proposal, the consultants shall prepare the number of copies indicated in the Data Sheet. Each Technical Proposal and Financial Proposal shall be marked "**ORIGINAL**" or "**COPY**" as appropriate. If there are any discrepancies between the original and the copies of the proposal, the original governs.
- 4.4 The original and all copies of the Technical Proposal shall be placed in a sealed envelope clearly marked "**Technical Proposal,**" and the original and all copies of the Financial Proposal in a sealed envelope clearly marked "**FINANCIAL PROPOSAL**" and warning: "**DO NOT OPEN WITH THE TECHNICAL PROPOSAL.**" Both envelopes shall be placed into an outer envelope and sealed. This outer envelope shall bear the submission address and other information indicated in the Data Sheet and be clearly marked, "**DO NOT OPEN, EXCEPT IN PRESENCE OF THE EVALUATION COMMITTEE.**"
- 4.5 The completed Technical and Financial Proposals must be delivered at the submission address on or before the time and date stated in the Data Sheet. Any proposal received after the closing time for submission of proposals shall be returned unopened.
- 4.6 After the deadline for submission of proposals, the Technical Proposal shall be opened immediately by the evaluation committee. The Financial Proposal shall remain sealed and deposited with the Client's Procurement Unit until all submitted proposals are opened publicly.

5. Proposal Evaluation

General

- 5.1 From the time the bids are opened to the time the contract is awarded, if any consultant wishes to contact the Client on any matter related to its proposal, it should do so in writing at the address indicated in the Data Sheet. Any effort by the consultant to influence the Client in the Client's proposal evaluation, proposal comparison or contract award decisions may result in the rejection of the consultant's proposal.
- 5.2 Evaluators of Technical Proposals shall have no access to the Financial Proposals until the technical evaluation, is concluded.

Evaluation of Technical Proposals (QCBS, QBS, FBS, LCBS))

- 5.3 The evaluation committee, appointed by the Client as a whole, and each of its members individually, evaluates the proposals on the basis of their responsiveness to the Terms of Reference, applying the evaluation criteria and point system specified in the Data Sheet. The evaluation committee shall compute the score obtained by each proposal by taking the average of the scores given by each member to the particular proposal. Each responsive proposal will be given a technical score (St). A proposal shall be rejected at this stage if it does not respond to important aspects of the Terms of Reference or if it fails to achieve the minimum technical score indicated in the Data Sheet.
- 5.4 In the case of Quality-Based Selection, the highest ranked consultant is invited to negotiate its proposal and the contract on the basis of the Technical Proposal and the Financial Proposal submitted in accordance with the instructions given in para. 1.2 and the Data Sheet.

Public Opening and Evaluation of Financial Proposals (CBS Only)

5.5. The Financial Proposals shall be opened publicly in the presence of the consultants' representatives who choose to attend. The name of the consultant and the proposed prices shall be read aloud and recorded. The Client shall prepare minutes of the public opening.

Public Opening and Evaluation of Financial Proposals (QCBS , FBS, LCBS)

5.6 After the evaluation of quality is completed, the Client shall notify those consultants whose proposals did not meet the minimum qualifying mark or were considered non-responsive to the RFP and Terms of Reference, indicating that their Financial Proposals will be returned unopened after completing the selection process. The Client shall simultaneously notify the consultants that have secured the minimum qualifying mark, indicating the date and time set for opening the Financial Proposals. The opening date shall be 7 after the notification date. The notification may be sent by registered letter, cable, telex, facsimile, or electronic mail.

5.7 The Financial Proposals shall be opened publicly in the presence of the consultants' representatives who choose to attend. The name of the consultant, the technical scores, and the proposed prices shall be read aloud and recorded when the Financial Proposals are opened. The Client shall prepare minutes of the public opening.

5.8 The evaluation committee will determine whether the Financial Proposals are complete (i.e., whether they have costed all items of the corresponding Technical Proposals; if not, the Client will cost them and add their cost to the initial price), correct any computational errors.

5.9 In case of Fixed Budget Selection (FBS), the consultant's Financial Proposals with cost more than the specified fixed budget ceiling by the Client in Data Sheet shall be rejected.

5.10 In case of Least Cost Based Selection (LCBS), the consultant's proposal which has scored the minimum pass mark in the Technical proposal and is of the least cost in the financial proposal shall be invited for negotiation.

5.11 In case of QCBS and FBS with financial proposal within specified fixed budget ceiling, the lowest Financial Proposal (Fm) will be given a financial score (Sf) of 100 points. The financial scores (Sf) of the other Financial Proposals will be computed as indicated in the Data Sheet. Proposals will be ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the weight given to the Financial Proposal; T + P = 1) indicated in the Data Sheet: $S = St \times T\% + Sf \times P\%$. The consultant achieving the highest combined technical and financial score will be invited for negotiations.

6. Negotiations

6.1 Negotiations will be held at the address indicated in the Data Sheet. The aim is to reach agreement on all points and sign a contract.

6.2 Negotiations will include a discussion of the Technical Proposal, the proposed methodology (work plan), staffing and any suggestions made by the consultant to improve the Terms of Reference. The Client and consultant will then work out final Terms of Reference, staffing, and bar charts indicating activities, staff, periods in the field and in the home office, staff-months, logistics, and reporting. The agreed work plan and final Terms of Reference will then be incorporated in the "Description of Services" and form part of the contract. Special attention will be paid to getting the most the consultant can offer within the available budget and to clearly defining

the inputs required from the Client to ensure satisfactory implementation of the assignment.

- 6.3 Unless there are exceptional reasons, the financial negotiations will involve neither the remuneration rates for staff (no breakdown of fees) nor other proposed unit rates in the cases of QCBS methods. For QBS, the consultant should provide the information on remuneration rates described in the Appendix to this information.
- 6.4 Having selected the consultant on the basis of, among other things, an evaluation of proposed key professional staff, the Client expects to negotiate a contract on the basis of the experts named in the proposal. Before contract negotiations, the Client will require assurances that the experts will be actually available. The Client will not consider substitutions during contract negotiations unless both parties agree that undue delay in the selection process makes such substitution unavoidable or that such changes are critical to meet the objectives of the assignment. If substitution is considered then the proposed alternative candidate shall be evaluated as per the original criteria. The qualification and experience of the substitute candidate shall equal to or higher than the originally proposed candidate. If this is not the case and if it is established that key staff were offered in the proposal without confirming their availability, the consultant may be disqualified.
- 6.5 The negotiations will conclude with a review of the draft form of the contract. . If negotiations fail, the Client will invite the consultant whose proposal received the second highest score to negotiate a Contract.

7. Award of Contract

- 7.1 Pursuant to Sub-Clause 6.5, the consultant, with whom agreement is reached following negotiation, shall be selected for approval of his proposal and the Client shall notify it's intention to accept the proposal to the selected consultant and other short-listed consultants within 7 days of selection of the winning proposal.
- 7.2 Any consultant, who has submitted a proposal and is not satisfied with the procurement process or Client's decision provided as per Sub - Clause 7.1 and believes that the Client has committed an error or breach of duty which has or will result in loss to him then the consultant may give an application for review of the decision to the Client with reference to the error or breach of duty committed by the Client. The review application should be given within 7 days of receipt of information regarding the issue of letter by the Client notifying it's intention to accept the winning proposal pursuant to Sub Clause 7.1.
- 7.3 If the review application is not received by the Client pursuant to Sub-Clause 7.2 then the proposal of the Consultant, selected as per Sub-Clause 7.1 shall be accepted and the successful consultant shall be notified to come for signing the Agreement within 15 days.
- 7.4 If the Consultant fails to sign an agreement pursuant to Sub-Clause 7.3 then the Client will invite the consultant whose proposal received the next highest score to negotiate a contract.
- 7.5 If a review application is received by the Client pursuant to Clause 7.1 then the Client will clarify and respond within 5 days of receiving such application
- 7.6 If the applicant is not satisfied with the decision given by the procuring

entity and/ or the decision is not given by the Procuring Entity Chief within 5 days then the applicant can file a complaint to the Review committee within 7 days.

7.7 The Client shall return the unopened Financial Proposals of those consultants who did not pass the technical evaluation.

7.8 The consultant is expected to commence the assignment on the date and at the location specified in the Data Sheet.

8. Confidentiality

8.1 Information relating to evaluation of proposals and recommendations concerning awards shall not be disclosed to the consultants who submitted the proposals or to other persons not officially concerned with the process, until the letter of intention to accept the proposal is not issued to the selected consultant pursuant to Sub- Clause 7.1.

9. Conduct of Consultants

9.1 The Consultant shall be responsible to fulfill his obligations as per the requirement of the Contract Agreement, RFP documents and GoN's Public Procurement Act and Regulations.

9.2 The consultant shall not carry out or cause to carryout the following acts with an intention to influence the implementation of the procurement process or the procurement agreement :

- a. give or propose improper inducement directly or indirectly,
- b. distortion or misrepresentation of facts
- c. engaging or being involved in corrupt or fraudulent practice
- d. interference in participation of other prospective bidders.
- e. coercion or threatening directly or indirectly to impair or harm, any party or the property of the party involved in the procurement proceedings,
- f. collusive practice among consultants before or after submission of proposals for distribution of works among consultants or fixing artificial/uncompetitive proposal price with an intention to deprive the Client the benefit of open competitive proposal price.
- g. contacting the Client with an intention to influence the Client with regards to the proposals or interference of any kind in examination and evaluation of the proposals during the period after opening of proposals up to the notification of award of contract

10. Blacklisting Consultant

10.1 Without prejudice to any other rights of the Employer under this Contract , the Public Procurement Monitoring Office may blacklist a Consultant for his conduct up to three years on the following grounds and seriousness of the act committed by the consultant:

- a) if it is proved that the bidder committed acts pursuant to the Information to Consultants clause 9.2,
- b) if the bidder fails to sign an agreement pursuant to Information to Consultants clause 7.3,
- c) if it is proved later that the bidder/contractor has committed substantial defect in implementation of the contract or has not substantially fulfilled his obligations under the contract or the completed work is not of the specified quality as per the contract
- d) if convicted by a court of law in a criminal offence which

- disqualifies the consultant from participating in the contract.
- e) if it is proved that the contract agreement signed by the consultant was based on false or misrepresentation of consultant's qualification information,
 - f) other acts mentioned in the Data Sheet or SCC
- 10.2 A Consultant declared blacklisted and ineligible by the Non-Public procurement Office and or concerned Donor Agency in case of donor funded project shall be ineligible to bid for a contract during the period of time determined by the GoN and or the concerned donor agency.

Information to Consultants

DATA SHEET

Clause Reference

| | |
|------|---|
| 1.1 | The name of the Client is: Ilam Municipality, Office of the Municipal Executive, Ilam, Province no. 1, Nepal. The method of selection is: QCBS |
| 1.2 | The name, objectives, and description of the assignment are: Name : Preparation of Detailed Project Report of Sano Puwa Khola Bridge at Milgolai Binapani Road. Ilam Municipality - 03, Puwamajhuwa. Objectives: Feasibility Study, Detailed Engineering Survey, Soil Investigation, Hydrological Study, Detailed Design of Bridge, Preparation of Masterplan, Preparation of Detailed Drawings with Preparation of Estimate according to ToR Description: According to ToR |
| 1.3 | A pre-proposal conference will be held: No The name(s), address(es), and telephone numbers of the Client's official(s) are: Name: Sahadev Rayamajhi Address: Ilam Municipality, Office of the Municipal Executive, Ilam, Province no. 1, Nepal. Telephone No. : 027-520065, 027-520031 |
| 1.4 | The Client will provide the following inputs: According to ToR |
| 1.10 | The clauses on fraud and corruption in the Contract are: As per PPMO Contract Document, LSGA, PPA, PPR, Municipality Decision and prevailing procurement laws, GCC 10.1 & 10.2. |
| 2.1 | Clarifications may be requested 7 Days before the submission date The address for requesting clarifications is: Ilam Municipality, Office of the Municipal Executive, Ilam, Province no. 1, Nepal. Facsimile: 027-520065, 027-520031 Email: info@ilammun.gov.np; mun.ilam@gmail.com |
| 3.1 | Proposals should be submitted in the following language(s): English or Nepali |
| 3.3 | (i) Short listed consultants/entity may associate with other short listed consultants: [insert Yes ___ No ___] NA (ii) The estimated number of professional staff-months required for the assignment is: According to ToR The minimum required experience of proposed professional staff is: According to ToR (vi) Reports that are part of the assignment must be written in the |

| | following language(s): English or Nepali (Executive Summary should be submitted in English as well as Nepali) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|------------------------------------|---------------------------------------|------------------------------------|-----------------------------|--|-----------|-----------|------|--|-------------|-------------|-----|-------------|---------------------------------------|------------------------------------|-----------------------------|--|--------------|-----------|---|-----------------|--|--|--|--------------------------------|--|--|--|--|--|--|--|
| 3.4 | (vii) Training is a specific component of this assignment: No (viii) Additional information in the Technical Proposal includes: Innovativeness and Technology Transfer & According to ToR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.9 | Proposals must remain valid 90 days after the submission date. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.3 | Consultants must submit an original and One additional copies of each proposal: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.4 | The proposal submission address: Ilam Municipality, Office of the Municipal Executive, Ilam, Province no. 1, Nepal. Information on the outer envelope should also include : Preparation of Detailed Project Report of Sano Puwa Khola Bridge at Milgolai Binapani Road. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.5 | Proposals must be submitted no later than: According to Notice (30 days from date of Invitation) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.1 | The address to send information to the Client is: Ilam Municipality, Office of the Municipal Executive, Ilam, Province no. 1, Nepal. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.3 | The number of points to be given under each of the evaluation criteria are: <p style="text-align: right;"><u>Points</u></p> <p>(i) Specific experience of the consultants related to the assignment: Maximum 20</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Type of job</th> <th style="width: 15%;">For experience as a single consultant</th> <th style="width: 15%;">For experience as a member of a JV</th> <th style="width: 10%;">Maximum score not to exceed</th> </tr> </thead> <tbody> <tr> <td>Completion of work of "Feasibility Study, Detailed Engineering Survey, Soil Investigation, Hydrological study and Detailed Design" or "DPR" of a Bridge.</td> <td style="text-align: center;">4 per job</td> <td style="text-align: center;">3 per job</td> <td style="text-align: center;">10.0</td> </tr> <tr> <td>Completion of Detailed Engineering Survey/ Construction Survey and Design of similar type of Civil Engineering related Service within 5 years (Service Cost more than NRs. 0.1 Million excluding VAT for each project)</td> <td style="text-align: center;">2.5 per job</td> <td style="text-align: center;">1.5 per job</td> <td style="text-align: center;">7.0</td> </tr> </tbody> </table> <p>(ii) Adequacy of the proposed work plan and methodology of work in responding to the Terms of Reference: Maximum 30</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Particulars</th> <th style="width: 15%;">For experience as a single consultant</th> <th style="width: 15%;">For experience as a member of a JV</th> <th style="width: 10%;">Maximum score not to exceed</th> </tr> </thead> <tbody> <tr> <td>1.0 Understanding to the TOR, Comments or Suggestions on ToR, and Services</td> <td style="text-align: center;">1.25 per job</td> <td style="text-align: center;">1 per job</td> <td style="text-align: center;">5</td> </tr> <tr> <td style="text-align: center;">Not Significant</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">General Comments or Suggestion</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Slightly Specific Comments or Suggestion</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> | Type of job | For experience as a single consultant | For experience as a member of a JV | Maximum score not to exceed | Completion of work of "Feasibility Study, Detailed Engineering Survey, Soil Investigation, Hydrological study and Detailed Design" or "DPR" of a Bridge. | 4 per job | 3 per job | 10.0 | Completion of Detailed Engineering Survey/ Construction Survey and Design of similar type of Civil Engineering related Service within 5 years (Service Cost more than NRs. 0.1 Million excluding VAT for each project) | 2.5 per job | 1.5 per job | 7.0 | Particulars | For experience as a single consultant | For experience as a member of a JV | Maximum score not to exceed | 1.0 Understanding to the TOR, Comments or Suggestions on ToR, and Services | 1.25 per job | 1 per job | 5 | Not Significant | | | | General Comments or Suggestion | | | | Slightly Specific Comments or Suggestion | | | |
| Type of job | For experience as a single consultant | For experience as a member of a JV | Maximum score not to exceed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Completion of work of "Feasibility Study, Detailed Engineering Survey, Soil Investigation, Hydrological study and Detailed Design" or "DPR" of a Bridge. | 4 per job | 3 per job | 10.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Completion of Detailed Engineering Survey/ Construction Survey and Design of similar type of Civil Engineering related Service within 5 years (Service Cost more than NRs. 0.1 Million excluding VAT for each project) | 2.5 per job | 1.5 per job | 7.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Particulars | For experience as a single consultant | For experience as a member of a JV | Maximum score not to exceed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.0 Understanding to the TOR, Comments or Suggestions on ToR, and Services | 1.25 per job | 1 per job | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Not Significant | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| General Comments or Suggestion | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Slightly Specific Comments or Suggestion | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | |
|--|--|--------------|-------------|-----------|
| | Significantly Specific Comments or Suggestion | | | |
| | 2.0 Methodology and Innovativeness to Perform Feasibility Study, Detailed Engineering Survey, Hydrological Study, Soil Investigation, Bridge Design etc. | 2.5 per job | 1.5 per job | 10.0 |
| | Not Significant | | | |
| | General Methodology | | | |
| | Clear Methodology without Flow Charts | | | |
| | Clear Methodology with Flow Charts | | | |
| | 3.0 Relevant Task Schedule with Description and Preferably Bar chart | | | |
| | Not Significant | | | |
| | Fairly Justify the Proposed Methodology | | | |
| | Moderately Justify the Proposed Methodology | | | |
| | Relevant to Proposed Methodology | | | |
| | 4.0 Manning Schedule, Task Assignment of Adequacy of Technical Resources (Manpower and equipment) | 1.25 per job | 1.0 per job | 5.00 |
| | Not Significant | | | |
| | Fairly Justify the Proposed work schedule | | | |
| | Moderately Justify the Proposed work schedule | | | |
| | Relevant to Proposed work schedule | | | |
| | Total not to exceed | | | 30 |

(iii) Qualifications and competence of the key personals for the proposed Assignment **Maximum 45**

A. General Experience Maximun 10

| Personnel | Maximum Marks for Year of Experience | Minimum experience after Bachelor Degree | Education Required | General Experience (Marks for Each Year) |
|---|--------------------------------------|--|---|--|
| Team Leader/ Bridge Engineer / Str. Engineer including office and field work. | 4 | 10 | Master's in Bridge/Structural Engineering | 1 marks each year |
| Geo-tech Engineer/ Geologist | 3 | 5 | Master's in Geotechnical/ Engineering Geology | 1 marks each year |
| Hydrologist | 2 | 5 | Master's Degree in Hydrology/ | 1 marks each year |

| | | | | |
|----------------|---|---|-------------------------------|---------------------|
| | | | Water Resources | |
| Civil Engineer | 1 | 3 | Master's in Civil Engineering | 0.5 marks each year |

B. Specific Experience Maximun 35

| Personnel | Maximum Marks for Year of Experience | Minimum experience after Bachelor Degree | Education Required | General Experience (Marks for Each Year) |
|---|--------------------------------------|--|---|--|
| Team Leader/ Bridge Engineer / Str. Engineer including office and field work. | 15 | 10 | Master's in Bridge/Structural Engineering | 3 marks each job |
| Geo-tech Engineer/ Geologist | 8 | 5 | Master's in Geotechnical/ Engineering Geology | 2 marks each job |
| Hydrologist | 6 | 5 | Master's Degree in Hydrology/ Water Resources | 2 marks each job |
| Civil Engineer | 6 | 3 | Master's in Civil Engineering | 2 marks each job |

Note 1: The firm and/or JV shall have to submit Notary Public Attested Experience Certificates. No marks shall be given for the experience of the firm if the certificate of completion is not attached. If the firm has completed more than one job in a single package each job shall be considered.

Note 2: The services for Govt of Nepal (GoN) organizations (Fully or Semi/Partially Owned) shall only be evaluated as firm/JV experiences for the Proposal. The Specific experiences as JV partners shall be provided full marks and any experience by firm as "In association with" shall not get any marks.

Note 3: Any sublated Service for Govt of Nepal (GoN) organizations (Fully or Semi/Partially Owned) by a firm or JV from another private firm/JV shall not be evaluated as firm/JV experience for the Proposal.

Note 5: CV of each professional/ key professionals shall be submitted with signature of professional and authorized representative of the firm/JV.

Note 7: CV of personals shall clearly mention him/her e-mail address and mobile no.

Note 8: The firm/JV shall have to submit the NEC registration certificate for engineer professionals.

Note 9: The firm/JV shall also have to submit the any certificate as evidence of his/her education (degree, including bachelor and master) as required above with Notarized Academic certificate of man power resources.

Note 10: Anything not mentioned in the above paragraphs shall be as per the Public Procurement Act-2063 and Public Procurement Regulation-2064.

| | Note 11: If the CV of proposed personnel found in 'work in hand' of any firm and schedule of work of such personnel overlaps, the CV shall be rejected. | | | | | | | | | | | | | | |
|---|---|-------------|--------|---|-----|-----------------|--|---------------------|--|--|--|-------------------------------------|--|--|--|
| | <p>(iv) Technology Transfer, Training Maximum 5</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 70%;">Particulars</th> <th style="width: 30%;">Points</th> </tr> </thead> <tbody> <tr> <td>The idea of sharing know-how of the works highlights on dissemination of knowledge and training proposed by the consultant.</td> <td style="text-align: center;">5.0</td> </tr> <tr> <td style="text-align: center;">Not Significant</td> <td></td> </tr> <tr> <td style="text-align: center;">General description</td> <td></td> </tr> <tr> <td style="text-align: center;">Moderate with standard method of description</td> <td></td> </tr> <tr> <td style="text-align: center;">Significant description with charts</td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table> <p style="text-align: right;">Total Points: 100</p> <p style="text-align: right;">Maximum points to be awarded = 100</p> <p style="text-align: right;">The minimum technical score required to pass/ qualify: 60</p> | Particulars | Points | The idea of sharing know-how of the works highlights on dissemination of knowledge and training proposed by the consultant. | 5.0 | Not Significant | | General description | | Moderate with standard method of description | | Significant description with charts | | | |
| Particulars | Points | | | | | | | | | | | | | | |
| The idea of sharing know-how of the works highlights on dissemination of knowledge and training proposed by the consultant. | 5.0 | | | | | | | | | | | | | | |
| Not Significant | | | | | | | | | | | | | | | |
| General description | | | | | | | | | | | | | | | |
| Moderate with standard method of description | | | | | | | | | | | | | | | |
| Significant description with charts | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 5.10 | <p>The formula for determining the financial scores is the following: $S_f = 100 \times F_m/F$, <i>in which, S_f is the financial score, F_m is the lowest price and F the price of the proposal under consideration.</i> The weights given to the technical and Financial Proposals are: T (Technical Proposal) = 0.8, and P (Financial Proposal) = 0.2.</p> | | | | | | | | | | | | | | |
| 6.1 | The address for negotiations is: Ilam Municipality, Office of the Municipal Executive, Ilam, Province no. 1, Nepal. | | | | | | | | | | | | | | |
| 7.6 | The assignment is expected to commence on According to Notice | | | | | | | | | | | | | | |

Section 3. Technical Proposal - Standard Forms

- 3A. Technical Proposal submission form.
- 3B. Consultant's references.
- 3C. Comments and suggestions of consultants on the Terms of Reference and on data, services, and facilities to be provided by the Client.
- 3D. Description of the methodology and work plan for performing the assignment.
- 3E. Team composition and task assignments.
- 3F. Format of curriculum vitae (CV) for proposed professional staff.
- 3G. Time schedule for professional personnel.
- 3H. Activity (work) schedule.

3A. TECHNICAL PROPOSAL SUBMISSION FORM

[Location, Date]

To: [Name and address of Client]

Ladies/Gentlemen:

We, the undersigned, offer to provide the consulting services for [Title of consulting services] in accordance with your Request for Proposal dated [Date] and our Proposal. We are hereby submitting our Proposal, which includes this Technical Proposal, and a Financial Proposal sealed under a separate envelope.

If negotiations are held during the period of validity of the Proposal, i.e., before [Date] we undertake to negotiate on the basis of the proposed staff. Our Proposal is binding upon us and subject to the modifications resulting from Contract negotiations.

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature:

Name and Title of Signatory:

Name of Consultant:

Address:

3B. CONSULTANT'S REFERENCES

Relevant Services Carried Out in the Last Five Years That Best Illustrate Qualifications

Using the format below, provide information on each assignment for which your Consultant/entity, either individually as a corporate entity or as one of the major companies within an association, was legally contracted.

| | | |
|--|-------------------------------|--|
| Assignment Name: | | Country: |
| Location within Country: | | Professional Staff Provided by Your Consultant/Entity(profiles): |
| Name of Client: | | No.of Staff: |
| Address: | | No.of Staff-Months; Duration of Assignment: |
| Start Date (Month/Year): | Completion Date (Month/Year): | Approx. Value of Services NRs |
| Name of Associated Consultants, If Any: | | No.of Months of Professional Staff Provided by Associated Consultants: |
| Name of Senior Staff, Designation (Project Director/Coordinator, Team Leader etc.) Involved and Functions Performed: | | |
| Narrative Description of Project: :(Actual assignment, nature of activities performed and location) | | |
| Description of Actual Services Provided by Your Staff: | | |

Consultant's Name: _____

3C. COMMENTS AND SUGGESTIONS OF CONSULTANTS ON THE TERMS OF REFERENCE AND ON DATA, SERVICES, AND FACILITIES TO BE PROVIDED BY THE CLIENT

On the Terms of Reference:

- 1.
- 2.
- 3.
- 4.
- 5.

On the data, services, and facilities to be provided by the Client:

- 1.
- 2.
- 3.
- 4.
- 5.

3D. DESCRIPTION OF THE METHODOLOGY AND WORK PLAN FOR PERFORMING THE ASSIGNMENT

3E. TEAM COMPOSITION AND TASK ASSIGNMENTS

| 1. Technical/Managerial Staff | | |
|-------------------------------|----------|------|
| Name | Position | Task |
| | | |
| | | |
| | | |
| | | |
| | | |

| 2. Support Staff | | |
|------------------|----------|------|
| Name | Position | Task |
| | | |
| | | |
| | | |
| | | |

3F. FORMAT OF CURRICULUM VITAE (CV) FOR PROPOSED PROFESSIONAL STAFF

Proposed Position: _____

Name of Consultant: _____

Name of Staff: _____

Profession: _____

Date of Birth: _____

Years with Consultant/Entity: _____ Nationality: _____

Membership in Professional Societies: _____

Detailed Tasks Assigned: _____

Key Qualifications:

[Give an outline of staff member's experience and training most pertinent to tasks on assignment. Describe degree of responsibility held by staff member on relevant previous assignments and give dates and locations. Use about half a page.]

Education:

[Summarize college/university and other specialized education of staff member, giving names of schools, dates attended, and degrees obtained. Use about one quarter of a page.]

Employment Record:

[Starting with present position, list in reverse order every employment held. List all positions held by staff member since graduation, giving dates, names of employing organizations, titles of positions held, and locations of assignments. For experience in last ten years, also give types of activities performed and client references, where appropriate. Use about two pages.]

Languages:

[For each language indicate proficiency: excellent, good, fair, or poor in speaking, reading, and writing.]

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications, and my experience.

[Signature of staff member and authorized representative of the consultant] Date: _____
Day/Month/Year

Full name of staff member: _____

Full name of authorized representative: _____

3G. TIME SCHEDULE FOR PROFESSIONAL PERSONNEL

| Name | Position | Reports Due/Activities | Months (in the Form of a Bar Chart) | | | | | | | | | | | | Number of Months | |
|------|----------|------------------------|-------------------------------------|---|---|---|---|---|---|---|---|----|----|----|------------------|--------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | |
| | | | | | | | | | | | | | | | | Subtotal (1) |
| | | | | | | | | | | | | | | | | Subtotal (2) |
| | | | | | | | | | | | | | | | | Subtotal (3) |
| | | | | | | | | | | | | | | | | Subtotal (4) |

Full-time: _____
 Reports Due: _____
 Activities Duration: _____

Part-time: _____

Signature: _____
 (Authorized representative)

Full Name: _____

Title: _____

Address: _____

3H. ACTIVITY (WORK) SCHEDULE

A. Field Investigation and Study Items

| | <i>[1st, 2nd, etc. are months from the start of assignment.]</i> | | | | | | | | | | | |
|-----------------|--|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| | 1st | 2nd | 3rd | 4th | 5th | 6th | 7th | 8th | 9th | 10th | 11th | 12th |
| Activity (Work) | | | | | | | | | | | | |
| _____ | | | | | | | | | | | | |
| _____ | | | | | | | | | | | | |
| _____ | | | | | | | | | | | | |
| _____ | | | | | | | | | | | | |

B. Completion and Submission of Reports

| Reports | Date |
|---------------------|------|
| 1. Inception Report | |
| 2. Mid Term Report | |
| 3. Draft Report | |
| 4. Final Report | |

Section 4. Financial Proposal - Standard Forms

- 4A. Financial Proposal submission form.
- 4B. Summary of costs.
- 4C. Breakdown of price per activity.
- 4D. Breakdown of remuneration per activity.
- 4E. Reimbursables per activity.
- 4F. Miscellaneous expenses.

4A. FINANCIAL PROPOSAL SUBMISSION FORM

[Location, Date]

To: [Name and address of Client]

Ladies/Gentlemen:

We, the undersigned, offer to provide the consulting services for [Title of consulting services] in accordance with your Request for Proposal dated [Date] and our Proposal (Technical and Financial Proposals). Our attached Financial Proposal is for the sum of [Amount in words and figures]. This amount is inclusive of the local taxes except Value Added Tax(VAT), which we have estimated at [Amount(s) in words and figures].

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e., [Date].

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature:

Name and Title of Signatory:

Name of Consultant:

Address:

4B. SUMMARY OF COSTS

| Costs | Amount(s) |
|------------------------------------|-----------|
| Subtotal | |
| Total without VAT | |
| Value Added Tax | |
| Total Amount of Financial Proposal | |

4C. BREAKDOWN OF PRICE PER ACTIVITY²

| | |
|------------------------|--------------------|
| Activity No.: _____ | Description: _____ |
| Price Component | Amount(s) |
| Remuneration | |
| Reimbursables | |
| Miscellaneous Expenses | |
| Subtotal | _____ |

² The client may choose to request Forms 4C, 4D, 4E and 4F for the entire assignment, as opposed to each Activity No. as shown. Forms should only be requested for each Activity No. if such detail is essential to the evaluation, bearing in mind it will introduce a substantial level of detail for the client to analyse.

4D. BREAKDOWN OF REMUNERATION PER ACTIVITY

| Activity No. _____ | | Name: _____ | | |
|--------------------|----------|-------------|-------------------------|--------|
| Names | Position | Input | Remuneration Rate (Rs.) | Amount |
| Regular staff | | | | |
| Local staff | | | | |
| Consultants | | | | |
| Grand Total | | | | _____ |

4E. REIMBURSABLE PER ACTIVITY

Activity No: _____

Name: _____

| No. | Description | Unit | Quantity | Unit Price In Rs. | Total Amount In Rs. |
|-----|---|------|----------|-------------------|---------------------|
| 1. | Air flights _____ | Trip | | | |
| 2. | Miscellaneous travel expenses | Trip | | | |
| 3. | Subsistence allowance | Day | | | |
| 4. | Local transportation costs ³ | | | | |
| 5. | Office rent/accommodation/ clerical assistance | | | | |
| | Grand Total | | | | _____ |
| | | | | | - |

³ Local transportation costs are not included if local transportation is being made available by the Client. Similarly, in the project site, office rent/accommodations/clerical assistance costs are not to be included if being made available by the Client.

4F. MISCELLANEOUS EXPENSES

Activity No. _____

Activity Name: _____

| No. | Description | Unit | Quantity | Unit Rate | Total Amount |
|-----|---|------|----------|-----------|--------------|
| 1 | Communication cost between _____ and _____ (telephone, telegram, telex, email) | | | | |
| 2 | Drafting, reproduction of reports | | | | |
| 3 | Equipment: vehicles, computers, etc. | | | | |
| 4 | Software | | | | |
| | Grand Total | | | | |

Section 5. Terms of Reference

For Preparation of Detailed Project Report of Sano Puwa Khola Bridge at Milgolai Binapani Road.

Terms of Reference normally contain the following sections:

- 1 Background*
- 2 Objective*
- 3 Scope of Services*
- 4 Basic Data and previous work related study, if available*
- 5 Knowledge or technology transfer*
- 6 Training and number of staff to be trained (when appropriate),*
- 7 Qualification, Experience and estimated inputs of Key Personnel*
- 8 Duration of Services, Time Schedule*
- 9 Reporting Requirement and Performance Requirement*
- 10 Local Services, Personnel, Equipment and Physical Facilities etc. to be provided by the Client*

Ilam Municipality
Office of the Municipal Executive
Ilam, Province no. 1, Nepal

CONSULTING SERVICES FOR
Feasibility Study, Detailed Engineering Survey, Soil Investigation, Hydrological Study and Detailed
Design of **Sano Puwa Khola Bridge at Milgolai Binapani Road**

TERMS OF REFERENCES (ToR)

1. INTRODUCTION

The Ilam Municipality, Office of the Municipal Executive, Ilam (herein after referred as "the IMO"), intends to utilize services of engineering consulting firms well experienced in the fields of soil investigation, hydrological studies, bridge engineering, river training works, environment aspects etc. for providing engineering consulting services for detail design work of proposed Bridge(s) including river training works, and approach roads.

2. OBJECTIVE

Objective of this job is to design a **safe, reliable** and **cost effective** bridge using the appropriate technology. The bridge is to be designed considering the availability of skilled manpower, construction material, condition of accessibility and other prevailing working conditions.

3. SCOPE OF WORK

The scope of work to be carried out by the consultant shall include but may not be limited to the following:

3.1. Desk study:

A desk study should be carried out, collecting all data, maps and information relevant to bridge design and reviewing for planning of further field survey and investigation works as well as detailed design.

3.2. Feasibility Study:

Feasibility Study shall include the following:

3.2.1. Technical Feasibility study:

It should include reviewing the available data, collecting, reviewing and analysis of field data to be used in the study and conducting analysis to decide upon the technical feasibility of the bridge site(s). A cost comparison of different types of bridge shall be made and discussed with the DOR before proceeding to bridge site for soil investigation.

In this study, the following points related to the river, its catchment area and all the considered bridge sites should be studied in detail.

- (i) Topography
- (ii) Nature and structure of the surface soil
- (iii) Nature and structure of local as well as regional geology
- (iv) Other information as needed.

3.2.2. Bridge Site Selection

Alternative bridge sites shall be studied based on 3.2.1 and the most suitable site for the bridge based on the above criteria of the site as well as the catchment area shall be selected. The selected site should be clearly indicated in the map and all the characteristic features of the chosen bridge site shall be given, in order to facilitate easy reference while designing the bridge.

3.2.3. Topographical Survey

The topographical survey of the area should cover a minimum distance of **500 m** upstream, **200 m** downstream and **200 m** from the river banks on either side of the river at the proposed bridge site. The Topographic map should show the following:

- (i) Contours at 1(one) m. intervals in hilly area and at 0.25 m in plain area.
- (ii) Flood lines on either side of the river in the entire area surveyed.
- (iii) Lines with spot levels along which the bed slope of the river is taken
- (iv) Both banks of the river
- (v) Lines along which cross section of the river is taken
- (vi) Govt. and/or public establishments
- (vii) Traverse lines, benchmarks reference lines and/or points with respect to which the present topographic map is prepared.
- (viii) The angle and direction of skew, if the bridge is proposed to be aligned skew.
- (ix) The Names of the nearest identifiable villages/towns etc. in either ends of the bridge.
- (x) Other information relevant to design, construction and/or maintenance of the bridge.
- (xi) Bridge axis cross section should be taken by level machine and R. L. computation should be checked with conventional Rise/Fall or Height of Instrument method.

3.2.4. Hydrological Study

For determination of all design data the consultant shall carry out a detailed hydrometrical survey and hydrological study of the river and bridge site, which shall include the following:

- (i) Catchment area of the river up to bridge site
- (ii) Length of the river from origin up to bridge site
- (iii) Possibility of change of catchment
- (iv) Nature, size and quantities of debris carried by the river
- (v) Intensity, duration and distribution of rain in the catchment
- (vi) Vegetation, cultivation etc. of the catchment.
- (vii) Existence of reservoir's, Lakes etc. in the catchment.
- (viii) Existing bridge or other hydraulic structures across the river in the vicinity of the proposed bridge site with their details as much as possible.
- (ix) General slope of the river from the critical point (origin) of the river up to bridge site and general slope of the catchment in both sides of the river.
 - (x) Cross sections covering 200m.beyond flood lines of the river at proposed bridge site, at about 500m. u/s and about 200m d/s. wherein HFL, LWL, LBL, area of the cross section, wetted perimeter and geological profile with silt factor of each strata (atproposed bridge site only) shall be indicated. (Horizontal and vertical scale of the cross section shall be the same)
- (xi) Bed slope of the river which must start from 100m. up of the U/S cross section and end at 100 m. down of the D/S cross section.

- (xii) Maximum discharge calculated by established formulas with different return periods and the peak discharge observed over a period of 100 years.
- (xiii) Velocity and depth of flow at the time of survey.
- (xiv) Shifting of the river in the past at proposed bridge site and in its vicinity.
- (xv) Other information required for river control, design, construction and maintenance of the bridge.

3.2.5. Seismological Study:

The consultants shall collect and refer to the available data regarding the seismic records of the area. Seismic Forces: According to the Indian Standard Criteria for Earthquake Resistant Design of Structures, IRC: 6 may be followed.

3.2.6. Environmental Study

The consultant shall predict damages to the Environment and attempt to mitigate or minimize the damages by choosing appropriate site, cross-section, type of structures etc. and suggest appropriate measures in the design for protection of surrounding Environment. The Environmental Protection Act, Environmental Protections Rules and the Department of Road's environmental policies including Environmental and Social Management Framework (ESMF), modified by GESU/DOR for bridges should be followed.

3.3. Preliminary Design of Bridge

After the selection of the proposed bridge site with alternatives and preparation of topographic maps, the Consultant shall prepare a Preliminary Design Report including feasibility report and discuss with concerned Project In-charge of the IMO on the overall feasibility of the site, boring numbers and locations, concept design and other aspects as listed below for the detailed survey and design of the bridge:

- a) Design discharge
- b) Scour depth, Maximum Scour depth
- c) Linear waterway needed to be provided
- d) Anticipated soil condition for foundation
- e) The most feasible proposed bridge site
- f) River- training & approach roads.
- g) Type of proposed foundation, substructure and superstructure.

The discussion will be done on the basis of the topographic maps, preliminary findings of the parameters (i to

vii) above, location of the bridge with respect to the complete road network of the district. After discussion and finalizing of the bridge site/axis the consultant shall carry out subsurface exploration which shall include the followings:

3.3.1. Test pits and auguring

Test pits and auger-holes in the riverbed to a depth as mentioned in the BOQ for determining the mean particle size of riverbed materials in each layer.

3.3.2. Bore-holes, Field tests and Laboratory tests

The properties of the underlying soil are determined by field and laboratory tests of the soil samples obtained from the bore holes drilled to a depth as mentioned in the next section and/or the Bill of Quantities. As far as possible, the locations of the boreholes shall be under each abutment and piers. Generally, the following tests are conducted for determination of soil properties:

| S.N. | Type of test | Frequency |
|------|-----------------------------|--|
| 1 | Undisturbed Soil Sampling | at least 2 at each borehole |
| 2 | Standard Penetration Test | as required but the interval not less than 1.5 m and every change of soil strata |
| 3 | Grain size analysis | at least 2 at each borehole |
| 4 | Hydrometer analysis | at least 2 at each borehole |
| 5 | Moisture content | at least 2 at each borehole |
| 6 | Bulk and dry density | at least 2 at each borehole |
| 7 | Unconfined compression test | at least 2 at each borehole |
| 8 | Consolidation test | at least 2 at each borehole |
| 9 | Direct shear test | at least 2 at each borehole |

If required by the field condition, the Consultant shall conduct other types of tests. Similarly, the frequency of the above tests can be increased if required. The cost of all the field and laboratory tests shall be incorporated in the cost of soil investigation works. No separate payment shall be made for the tests.

3.3.3. Depth of soil exploration`

The depth of soil exploration from ground level shall be as follows:

| SN | Type of soil | Governing depth |
|----|---------------------------------|---|
| 1 | Silty, Sandy, Clayey soil | 3 times the design scour depth, or 1.5 times the least dimension of the foundation footing, or 20 m, whichever is maximum |
| 2 | Granular soil Gravels, Boulders | 2 times the design scour depth, or 1.5 times the least dimension of the foundation footing, or 16 m, whichever is maximum |
| 3 | Rocks (soft or hard) | Not exceeding 8 m. |

The above-mentioned depths are indicative. The Consultant shall decide the actual required depth of soil investigation according to the field condition and design parameters. But in any case, the Consultant shall be paid only up to the depth mentioned in the Bill of Quantities. If rock is found at the beginning or at mid-depth then the drilling works shall not exceed the depth as mentioned in the table above. In such case the payment shall be made only for the actual depth.

For example, if rock is found at a depth of 12 m. and if the maximum required depth is 16 m, then drilling shall continue only for further 4 m., and the payment shall be done for 16 m. If rock is exposed on the surface then drilling shall be done up to a depth of 8 m., and the payment shall be done for 8 m. But if the thickness of rock at the surface is 6 m then the drilling shall continue further to the required maximum depth.

3.3.4. Changes in soil strata

N/A

3.3.5. Soil exploration works to be certified

The IMO, if required, may ask the Consultant to submit the soil/rock samples obtained from the drilling works in core boxes and/or a bore-log certified by the concerned Division/Project Office and/or visual certification by using Bridge Site Monitoring (BSM) System software.

3.3.6. Other information

Availability of construction materials like, sand gravel, boulders, timber, etc. with their engineering properties, quantities and lead up to the bridge site, quarry site of materials with their available quantities should be shown on a sketch plan with reference to Bridge site.

3.4. Analysis of Data, Conclusion and Recommendation of Design Parameters.

Based upon the above-mentioned studies and investigations the consultants shall make the best use of their technical know-how and professional skill to arrive at and recommend the most cost effective design parameters. The consultant shall discuss in detail at least three different options and shall recommend the most appropriate option.

The consultants are required to design the bridges keeping in view of the introduction of modern construction materials and technology into bridge construction industry. It is highly recommended to use pre-stressed concrete in their design if all the conditions are favourable. Ordinary RCC or Steel superstructures shall only be accepted if there is sufficient ground in favour of them as compared with the pre-stressed concrete.

3.5. Miscellaneous

If not covered by aforesaid, the Consultants shall perform other studies, explorations, tests surveys, calculations, etc. required to produce full and complete set of working drawings, specifications, bills of quantities, requirement of materials and complete cost estimates for the bridge/s including related works based upon which construction activities can be started to complete without further study and/or reference to them.

3.6. Detailed Design and Quantity/Cost Estimates

Based on the collected information and results of the discussions mentioned above the consultants shall design the bridge following the standard codes of practice, norms and guidelines. The relevant **codes of IRC for the design of bridges and Nepal Bridge Standards-2067** shall be followed. The list of all reference literature and materials shall be provided on the report.

The consultants shall produce detailed quantity estimate of the bridge and its accessories. They shall collect information on sources of materials and their lead distances and prepare rate schedules and cost estimates based on the standard norms and prevailing district rates.

3.7. Use of Standard Design(s)

Depending upon the site condition and other factors the Consultants can use the Standard Design of the part(s) of the bridge, which shall available at the Department of Road (DOR). This matter will be discussed and finalized during the presentation of the Preliminary Design or at a later stage convenient to both parties. If such Standard Design is used the Consultants shall adjust the design of other parts of the bridge to incorporate the parameters of the Standard Design.

If it is decided to use any Standard Design, the Payments shall be adjusted according to the Conditions of Contract and/or as mentioned in the BOQ.

3.8. The Checklist

The detailed requirements of the design report are given in the checklist at the end of this TOR. Before submitting the report the consultants should verify whether it complies with the checklist.

4. SUBMISSION OF REPORTS AND PRESENTATION OF THE WORKS

In accordance with DOR's standard and procedures the consultant shall submit his reports as under:

4.1. Inception Report

This report shall contain bridge location with alternatives, **Cross-section of bridge axis of each alternatives showing Hydrological and Geological elements**, Bank Conditions, General Geology, General Hydrology, Location Plan, Social Acceptability, Tentative Bridge type with length, Span arrangement etc. This shall contain Index map as well as Location map of the bridge with respect to main road network. Inception report shall be submitted to IMO in one copy and shall be presented in Office of Office of the Municipal Executive.

4.2. Field Report & Preliminary Design Report

This report will contain bridge site plan showing alignment of bridge foundations and locations of bore holes, logs with description of samples taken at every change of strata. Preliminary field report shall be submitted to IMO in two copies and should be discussed with IMO.

This report shall contain the preliminary design concepts and short descriptions relating to the proposed structure and its major components, e.g. Superstructure, Pier, Foundations, River training/bank protection structures, Approach Road etc. It shall include location of proposed foundations and arrangement of the bridge components along with comparison between the possible alternative types. **(Please also see Clause 3.7, Use of Standard Designs)**. This report shall be submitted in **three** copies and the content shall be discussed with IMO **before proceeding to the detailed design of the bridge. The IMO may also ask to present the Preliminary Design Report to the IMO audience.** The cost of such presentation shall be borne by the Consultants.

4.3. Draft Report

This report shall in all respect be complete, containing all the required components of the design and be presented in clear and easy to refer formats as per the general design guidance attached. The complete set of the report shall consist of:

- a) Volume I – Main Report
- b) Volume II – Drawings
- c) Volume III – Design Calculations
- d) Volume IV – BOQ and Special Provisions to Standard Specifications, if any
- e) Appendices

Please refer to the checklist provided with this TOR for number of copies and detailed requirements of the reports. The Report shall also include the drawings, quantity and cost estimate of any Standard Design that is used in the Design.

4.4. Presentation of the Draft Report

The Consultants shall present the design report in specified format and defend it to the IMO audience prior to the submission of the final report. They shall review the issues raised during the presentation while finalizing the report and make necessary amendments/corrections if needed. The date and venue of the presentation shall be determined by mutual agreement between the District Technical Office (IMO) and the consultants. The cost of such presentation shall be borne by the consultants.

4.5. Final Report

Apart from the presentation, the IMO/IMO will verify the content of the report against the Terms of Reference and the checklist. The IMO may also discuss upon the technical content of the report and

may suggest some changes if thought necessary. While preparing the Final Report the consultants shall consider the comments/suggestions and make corrections or amendments if required. It does not, however, relieve the consultants of their responsibility over the technical content of the design. The final report shall be submitted in stipulated number of copies as indicated in the checklist.

4.6. Soft Copy (Electronic Copy) of the Design Report

Apart from the bound report the consultants shall submit soft copies (electronic copies) of the final report in suitable tool as specified in the checklist.

5. TIME SCHEDULE

If not indicated otherwise in the contract documents the consultant shall complete the assigned works as per the following schedule:

- (i) **Inception Report within 10 (Ten) days** started from the date of signing of the Agreement.
- (ii) **Field Report & Preliminary Design Report within 30 (Thirty) days** started from the date of signing of the Agreement.
- (iii) **Draft Report within 40 (Fourty) days** started from the date of signing of the Agreement.
- (iv) **Final Report within 15 (Fifteen) days** after receiving IMO's Comments and suggestions on the draft report.

6. WORKING TEAM

The working team for field and office works should necessarily consist of the following Key Personnel together with adequate supporting manpower.

| SN | Personal | Preferred Academic Qualification | Minimum Years of General Experience |
|----|--|--|-------------------------------------|
| 1 | Team Leader (Bridge/Structural Engineer) | Master's in Bridge/Structural Engineering | 10 years |
| 2 | Geotechnical Engineer | Master's in Bridge/Structural Engineering | 5 years |
| 3 | Engineer / Geologist | Master's in Engineering Geology | 5 years |
| 4 | Hydrologist | Master's degree in Hydrology/ Water Resource | 5 years |
| 5 | Civil Engineer | BE in Civil Engineering | 5 years |

DEFECT LIABILITY

6.1. Responsibility for survey and design

Submission of the final reports does not relieve the consultant from their responsibility to the design. They shall bear full responsibility for:

- (i) Authenticity of all the field data including socio-economic, environmental, topographic, hydrological and geological information;
- (ii) Correctness of the design and all the calculations (except for the Standard Design, if used);
- (iii) Correctness of the drawings;
- (iv) Correctness of any other details related to construction

6.2. Assistance during construction phase

During construction the consultants, upon written request from the IMO, shall visit the bridge site and provide necessary technical assistance. The consultants shall be paid for such visits (travel cost and daily allowances) as per the approved norms. But if any changes in the design are required **as per ToR, the consultants shall furnish it free of cost as per the Condition of Contract.**

6.3. Acceptance of responsibility

The Consultants may be asked to submit signed Statement of Acceptance of Responsibility as mentioned above in sections 8.1 and 8.2 attached together with the final report.

Checklist for Detailed Survey and Design of Bridges

This paper serves as a guideline for checking the detailed engineering survey and design of bridges, received from the consultants.

General procedure for checking the design report:

Checklist for content of the package:

| Particulars | Required Information / Number / Range / Value(s) |
|---|---|
| Volume I - Main report | Draft – 2 copies; Final – 3 copies |
| Volume II – Drawings | Draft – 2 copies; Final – 3 copies |
| Volume III – Design calculations | Draft – 2 copies; Final – 3 copies |
| Volume IV – BOQ and Special Provisions to Standard Specifications (if required) | Draft – 2 copies; Final – 3 copies |
| Soft (electronic) copies of the report | 1 copies in USB Drive with hard plastic case |

1. Content of Main Report (Volume I)

1.1 Statement of acceptance of responsibility

A signed acceptance of responsibility to the authenticity of field data and correctness of design shall be attached to each copy of the main report.

1.2 Salient features:

| Particulars | Required Information / Number / Range / Value(s) |
|------------------------------------|--|
| Name of the Project: | Job description as mentioned in the work-order |
| Location: | |
| Development Region | Name of the development region |
| Zone | Name of the zone |
| District | Name of the district |
| Village/town | Name of the surrounding RM/town/municipality or any pertinent landmark in the vicinity of the bridge. |
| Name of the Road: | Popular / formal name of the road (e.g. Mechi Rajmarg) and road reference number from the LRN data (if applicable) |
| Origin and Destination of the Road | Origin and destination (e.g. Naubise – Pokhara) |
| Chainage of the Bridge Site | Chainage from the origin of the road |
| Geographical Location: | |
| Easting | East coordinate |
| Northing | North coordinate |
| | |
| Classification of the Road | NH / FRN / FRO / DR / UR / Other |
| | |
| Type of the road surface | BT / GR / ER / Track only |
| | |
| Terrain / Geology | General terrain (Hill, mountain or plain) and general geology |
| | |
| Information on structure: | |

| | |
|---|--|
| Total length of the bridge | Total length between edges of the end decks |
| Span arrangement | Number x Effective lengths of spans |
| Total width of the bridge: | Total width between edges of the deck |
| Width of: | |
| Carriageway: | Clear width available to vehicles |
| Footpath(s): | Clear width available to pedestrians |
| Kerbs | Width at the bottom of the kerb |
| | |
| Type of superstructure: | Overall system (e.g. Three girder RCC T-beam & deck / <Type> Steel truss & RCC deck / Four Steel plate I-girders & RCC Deck, Arch, Prestressed etc. etc.) |
| Type of bearings: | Type of bearings with their dimensions |
| Type of abutments: | Shape and material in the abutment (e.g. Rectangular RCC with cantilever return wall, or RCC isolated columns with stone pitched slope and wing walls, etc.) |
| Type of pier(s): | Shape and material (e.g. Rectangular solid / hollow RCC wall, or RCC Hammer-head with solid circular body, etc.) |
| Type and depth of foundations: | Type and depth from the maximum scour level. Separately for each, if type and depth of foundations for different units are varying |
| Sketches: | Sketches of the general arrangement of the bridge with gross dimensions (plan, elevation and cross section) in a reduced scale from the main drawings to be attached in A4 or A3 size sheet. |
| | |
| Design data: | |
| Live load: | Load classes considered (Class AA, Class A or Class B) |
| Net bearing capacity of soil | Net bearing capacity applied in design |
| Design discharge | |
| Linear waterway | |
| | |
| Summary of quantities of materials: | |
| Grade and quantity of concrete: | |
| In superstructure: | Grade and total quantity including girders, deck, parapet, kerb, footpath, railings and approach slab |
| In substructure: | Grade and total quantity including pier/abutment cap, stoppers, abutment return-walls, ballast wall, pier/abutment stem above pile/well cap and in case of open foundation above base-plate. |
| In foundation: | Grade and total quantities of pile/well cap, well steining and curb, piles, foundation base-plate and other accessories. |
| Grade and quantity of structural steel: | |
| In superstructure: | Steel grade and quantities of truss members, gusset plates and nut-bolts, plate girders including accessories, |

| | |
|--|--|
| In substructure: | Grade and quantity (if any) in abutment/piers |
| In foundation: | Grade and quantity in foundation (e.g. well-shoe, pile tips etc.) |
| Grade and quantity of reinforcing steel: | |
| In superstructure: | Grade and total quantity as in quantity of concrete |
| In substructure: | Grade and total quantity as in quantity of concrete |
| In foundation: | Grade and total quantity as in quantity of concrete |
| Quantities of other materials: | |
| Stone masonry: | Total quantity (e.g. in wing walls, foundation base, river protection works etc.) |
| Gabion works: | Total quantity (e.g. in wing walls, river training and riverbed protection works etc.) |
| Formworks: | Quantities in superstructure, substructure, foundation and others if any. |
| Timber: | Total quantity excluding formwork and staging. |
| Other: | |
| Summary of cost: | |
| Superstructure: | |
| Substructure: | |
| Foundation: | |
| Approach road: | |
| River training works: | |
| Total net cost of the bridge: | |
| 4% (Contingency & Marmat Kosh) Total net cost of the bridge: | |
| Total gross cost of the bridge: | |
| | |

1.3 Field works:

The following should be complied with at the proposed bridge site.

| | |
|-----------------------------------|---|
| Centreline of the proposed bridge | Three R.C.C. posts (1:2:4) of 15cm x 15cm in section and 1m length each should be installed minimum 30m apart and projecting 15cm above the ground in the centre line of the bridge. Iron rods of not less than 15cm in length and 8mm in diameter fixed in centre and flushing top surface of each post shall form the centreline of the bridge. All posts shall be installed beyond the zone of inundation and there should be at least one post on each bank of the river. |
| Bench Marks | Similar posts (at least one post in each bank) should be fixed in the right of way and beyond the zone of inundation's as Bench Marks, whereon B.M. No. and elevation must be written in fast colour paint on two opposite faces of the post. If permanent structures are available, they can be used for B.M. in lieu of the posts. All central line and Bench Mark posts should be connected with sufficient permanent reference points. |
| Bore/Drill logs | Bore/Drill logs should be certified by the engineer of the Project. |

1.4 Detailed Engineering Study and Survey:

| | |
|------------------------|--|
| Geology and topography | General description of geologic and topographic parameters as per section 3.2.2 and 3.2.4. of the TOR. Specific geo-technical and topographic parameters shall appear in the design calculations and drawings, respectively. |
| Hydrology | <p>General description of hydrological aspects as per section 3.2.5 of the TOR. Detailed hydrological parameters shall appear in the design calculations and drawings.</p> <p>The main report should have information on:</p> <ul style="list-style-type: none"> • Catchment area characteristics • Summary of rainfall data • Stream / channel characteristics including: <ul style="list-style-type: none"> ▪ Type of river ▪ Flood characteristics □ HFL, LWL and afflux ▪ Depth of scour • Summary of discharge calculation by various methods and determination of design discharge • Determination of effective linear waterway, bridge span |

| | |
|---|--|
| | <p>arrangements and freeboard.</p> <ul style="list-style-type: none"> • Summary of required river training works with their justification |
| Feasibility/ Selection of the bridge site | <p>The report should review existing studies (if available) and field data to decide upon the technical feasibility of the bridge site.</p> <p>The bridge site should be selected among at least three locations. Selection criteria shall incorporate geo-physical, topographic, hydrological, social, environmental and economic parameters.</p> <p>The bridge site is discussed with the Office of IMO/IMO's representatives. The report should present a gist of the discussion and conclusion.</p> |
| Selection of bridge type, length and span arrangement | <p>The type of bridge, its length and span arrangement is determined after desk study and field works except detailed subsoil exploration on the basis of the following parameters:</p> <ul style="list-style-type: none"> • Design discharge • General and maximum scour depth • Linear waterway to be provided • Anticipated soil condition • Selected bridge site • River training and approach road • Construction/maintenance cost • Availability of material and labour <p>The report should present a comparative evaluation of different types of bridges on the basis of the above parameters. The type of bridge is discussed with the DOR before proceeding to soil investigation and detailed design. The report should include the gist of discussion and conclusion.</p> |

| | |
|-------------------------|--|
| Environmental study | The report should review the project as per the Environmental Protection Act, Environment Protection Rules and DOR environmental policies including Environmental and Social Management Framework (ESMF), modified by GESU/DOR for bridges. |
| Seismological study | The report should review the information and past seismic records of the project area as per section 3.2.6 of the TOR. |
| Sub-surface exploration | The subsurface exploration shall proceed after final selection of the bridge type and axis conforming to the requirement as per section 3.3 of the TOR. The main report should include the following: <ul style="list-style-type: none"> • General description of the subsoil strata • Bore logs • Sectional elevation of the subsoil strata showing locations of bore-holes and proposed foundations • Net bearing capacity, selection of foundation and its depth on the basis of the above parameters. <p>Detailed analysis of subsoil strata and test results shall appear in Design Calculations and Appendix-1</p> |

1.5 Design of Bridge

| | |
|--------------------------------|--|
| Design parameters and concepts | The detailed design of the different parts shall appear in Design Calculations. The main report should include the following: <ul style="list-style-type: none"> • Design parameters: Discharge, HFL, LBL, free board, scour depth, waterway, loads considered. • Design concepts of superstructure, sub structure and foundation. • Determination of design standards; methods adopted and codes followed. • Requirement of river training and bed protection works concepts of design of such structures. |
| Summary of design | <ul style="list-style-type: none"> • Summary of design should include the followings: <ul style="list-style-type: none"> ▪ Type and length of spans, ▪ Effective cross section, design forces and reinforcement of slab, main girders, cross girder; ▪ Type, sections and reinforcement of elements of substructures; ▪ Type and details of bearings; ▪ Type, depth, sections, reinforcement of foundation body and footings, ▪ Dimension and reinforcement of approach slab. • Design parameters of approach road: width, surface type, maximum and average gradient, minimum radius of curves |

1.6 Cost estimates

| | |
|----------------------|---|
| Summary of cost | <ul style="list-style-type: none"> * Total cost including cost of bridge, approach roads, river training works, other accessories * Net cost per running meter of bridge only * Total cost per running meter * Abstract of quantity and cost |
| Rate analysis | <p>The rate analysis should be done following the current norms on the basis of comparative cost of materials such as boulders, stone aggregates, sand, river / quarry gravel collected at sources and direct market price and as per the prevailing district rate. The report should include:</p> <ul style="list-style-type: none"> * A short description of material sources * Lead distances from sources and market * Comparison of cost of material collected at sources and purchased at market. * Labour rate * Summary of unit rates <p>Detailed rate analysis and a copy of certified district rates should be submitted in Appendix – 2 and 3 respectively.</p> |

2. Content of Drawings (Volume II)

| | |
|----------------------|--|
| General | <p>Size:</p> <ul style="list-style-type: none"> • All the working drawings are presented in size A2 sheets, bound properly. However, if convenient the drawings in Draft Report can be submitted in A3 size sheets. |
| Format of cover page | <p>The cover page should show the following:</p> <ul style="list-style-type: none"> * Name and address of client, * Contract number, work description, volume * Consultant's name and address * Month and year of completion |

| | |
|-----------------------|--|
| Format of other pages | <p>All other pages should show the followings at the bottom of the sheet:</p> <ul style="list-style-type: none"> * Name of the client; Work ▪ description ▪ Drawing title ▪ Designation & signature columns for consultant: designed by, checked by, Approved by ▪ Designation & signature columns for the client: checked by, recommended by, Accepted by * Consultant's name and address |
|-----------------------|--|

• Scale of the drawing

▪ Drawing no./sheet no.

The size of letters anywhere in all sheets shall not be less than 2 mm.

| | | |
|--|--------------------------------------|---|
| Content of the drawings (Volume II) | 1.1 | Contents |
| | 1.2 | General notes |
| | | a. list of concrete grades used with respect to the components/locations |
| | | b. concrete covers with respect to the components/locations |
| | | c. reinforcement design properties d. bar mark designation system |
| 1.3 | Index map | |
| | | Map of country (length 8 to 10 inches) with location highlighted, location plan showing road network, river system and names of places. |
| 1.4 | Topographical map | |
| | | Plan of bridge site (scale not exceeding 1:1000) covering a minimum distance of 500 m u/s, 200 m d/s, 200 m from the river banks on either side of the river at proposed bridge site showing: |
| | | a. contour intervals of 1m & 0.25 m for plain and hilly area respectively |
| | | b. Flood lines on either sides of the river in the entire area surveyed. |
| | | c. Lines with spot levels along which the bed slope of the river is taken |
| | | d. Both banks of the river |
| | | e. Locations of bore-holes and bench marks |
| | | f. Plan of the bridge |
| | | g. Bridge axis reference index |
| | | h. Govt/public establishments. |
| | | i. Traverse lines, benchmarks reference lines and/or points with respect to which the present topomap is prepared |
| | | j. The angle and direction of skew, if the bridge is proposed to be aligned skew |
| | | k. The names of the nearest identifiable-village/towns etc in either ends of the bridge |
| | | l. Other information pertinent to design, construction and/or maintenance of the bridge. |
| 1.5 | Catchment area map in suitable scale | |
| | | a. Catchment area of the river up to bridge site |
| | | b. Length of the river from origin up to bridge site |
| | | c. Slope of the river from the critical point (origin) of the river up to bridge site and general slope of the catchment in both sides of the river. |
| | | d. Maximum discharge calculated by established formulas with different return periods |
| | | e. Maximum discharge during highest flood, at each cross section. (By x section area & slope |

- method). The peak discharges as observed over a period of 100 years (for important bridges) or 50 yrs (ordinary bridges) as the use may be an average of peaks is taken
- f. Velocity and depth of flow at the time of survey at the bridge location
 - g. Shifting of the river in the past at proposed bridge site and in vicinity of it.
 - h. Other information required for river control, design, construction and/or maintenance of the bridge.
- 1.6 L-section of river & C/S of river
 - 1.7 General arrangement
 - a. Plan, Elevation and Side elevation
 - b. Bore logs presented on Elevation
 2. Structural Drawings with bar bending schedules included in the respective sheets
 - 2.1 Main girder(s) details
 - 2.2 Cross girders detail
 - 2.3 Deck slab details
 - 2.4 Abutment and approach slab details
 - 2.5 Pier details
 - 2.6 Foundation details
 - 2.7 Details on bearings, railings, drainage systems, expansion joints etc.
 3. Plan, profile and cross sections of the approach roads on both sides of the bridge
 4. Details of river training works
 5. Miscellaneous

3. Content of Design Calculations (Volume III)

Detailed analysis and design calculation of following elements should be provided.

The design calculations should mention the governing design code or guideline wherever they are applied.

| | |
|-------------------|--|
| Hydrology | |
| Hydrological data | <p style="text-align: center;">Catchment area characteristics:</p> <ul style="list-style-type: none"> • The catchment area size, shape (classified as fan, pear, long or narrow), slopes (Longitudinal and Cross-sectional). - Surface characteristics (whether sandy, clayey etc. including percolation and interception characteristics. Whether land is under afforestation, deforestation or is dotted with urban areas, cultivated areas or storage areas, e.g. lakes, swamps, tanks, reservoirs etc. shall be determined. • Rainfall Data: <ul style="list-style-type: none"> - Maximum in 24 hours. - Maximum in any one hours. - Rainfall distribution in the catchment area. - Duration and frequency of the rain. Rain gauge data of the storms along with the corresponding stream gaus data (data for unit hydrograph). - Average annual rainfall characteristics (from relevant meteorological records). Probability plotting (a graph plotted between the flood magnitude against its return period). • Stream / channel characteristics <ol style="list-style-type: none"> 1. Type of river <ul style="list-style-type: none"> - Seasonal or Perennial. - Meandering or Straight. - Other classification, e.g. boulder, flashy, well defined, tidy etc. - Length, slope, cross-sections of the river. 2. Water Level <ul style="list-style-type: none"> - Highest flood in living memory and other major floods before start of investigation. Highest flood level and year of its occurrence, showing the areas flooded. |

| | | |
|---|---|--|
| | <ul style="list-style-type: none"> -Records of flood gauging stations. -Lowest Water Level (LWL). -Afflux, if observed. -Observed maximum depth of scour and scour level, indicating what obstruction if any, and other special causes, which can be responsible for the scour at site. -Sediment Data, indicating bed material particle size, aggradation (degradation of bed, bank erosion (reference to flood stage) etc. -Erodibility of riverbanks and river bed. -Scour Data (as observed, particularly downstream of any obstructions to the flood flow). | |
| <p>Analysis of hydrological data and determination of associated elements</p> | <p>Discharge calculation by various methods including WECS method,</p> <ul style="list-style-type: none"> ▪ comparison of discharges, determination of design discharge expected to pass under the bridge and justification for adapting the design discharge, natural stream velocity and flood velocity. ▪ Maximum mean or maximum velocity of flood flow. Effective linear waterway required under the bridge (after allowing for average thickness of each pier and its foundation, between High Flood Level and Normal Scour Level, ignoring the earth fills in front of the abutment). ▪ High Flood Level, Afflux and Water Level. Freeboard required between the affluxes High Flood Level and soffit of deck from the considerations of unobstructed flow of floating debris with the flood discharge. ▪ Normal and Design (maximum) scour levels at piers and abutments (Consider higher watermarks in the area and at and near the site). Minimum founding levels at piers and abutments from consideration of maximum scour etc. | |
| <p>Sub-soil investigation Investigation data</p> | <p>Bore-log of each bore-hole showing: Depth gauge, soil description</p> <ul style="list-style-type: none"> ▪ of encountered layers with depth marks, sample collection points, depth and types of tests performed, Ground water table, number of blows for SPT/CPT, N-values ▪ Certificate of sub-soil investigation from respective Division / project office indicating depth of each bore-hole and confirming that soil-samples of each strata in each borehole are deposited in core boxes for the record. ▪ Laboratory test result of the samples as specified in section 3.3 of the TOR. | |

| | |
|---------------------------|--|
| | <ul style="list-style-type: none"> ▪ |
| Analysis of sub-soil data | <ul style="list-style-type: none"> ▪ Determination of bearing capacity and other parameters at different depths required for different types of foundations, determination of design bearing capacity. ▪ Comparison and determination of type(s) of foundation for abutments and piers. ▪ Summary of subsoil characteristics and types of foundations. |
| Design of bridge elements | <p>On the basis of the topographic survey, hydrological, sub-soil and seismological analysis the report should present detailed design of the following parts of the bridge:</p> <ul style="list-style-type: none"> ▪ Design of superstructure and its parts: deck, main and cross girders, bearings, railing posts, bracings, stiffeners, joints etc. as applicable. ▪ Design of substructure: pier/abutment cap, substructure body ▪ Design of foundation and its part: foundation base, well/pile cap, well steining, pile grouping, individual pile body, pile head, cutting edge, top/bottom plug as applicable. ▪ Design of river training works ▪ Design of approach roads |

5. Soft (electronic) copies of the part of the report

Two copies of the report in electronic files should be submitted in suitable tool, which shall include the following:

- Text of main report (in MS Word format)
- Rate analysis and cost estimates (in MS Excel format)
- All the drawings in format compatible to AutoCAD.

6. Appendices

The following should be submitted as appendices to the main report:

1. Laboratory test results of subsoil strata as specified in section 3.3 of the TOR
2. Detailed rate analysis
3. Certified district rate

7. PAYMENT SCHEDULE

The payment of the consultant shall be as per following modality:

| | | | |
|---|-----------------------------|--|------------------------------|
| 1 | 1 st Installment | After submission of Field and Draft Report | @ 20% of total remuneration |
| 2 | 2 nd Installment | After Submission of Draft Design Report | @ 50 % of total remuneration |
| 3 | Final Instalment | After Submission of Final Detailed Engineering Design Report | @ 30 % of total remuneration |

Section 6. Standard Form of Contract

Contract for Consultant Services

For

**Preparation
of
Detailed Project Report
of
Sano Puwa Khola Bridge at Milgolai Binapani Road**

Ilam Municipality - 03, Puwamajhuwa.

Between

**Ilam Municipality,
Office of the Municipal Executive, Ilam.**
[Client]

And

[Name of the Consultants]

Dated: _____

Form of Contract

This CONTRACT (hereinafter called the "Contract") is made the [day] day of the month of [month], [year], between, on the one hand, [name of client] (hereinafter called the "Client") and, on the other hand, [name of consultants] (hereinafter called the "Consultants").

[Note: *If the Consultants consist of more than one entity, the above should be partially amended to read as follows: "...(hereinafter called the "Client") and, on the other hand, a joint venture consisting of the following entities, each of which will be jointly and severally liable to the Client for all the Consultants' obligations under this Contract, namely, [name of consultants] and [name of consultants] (hereinafter called the "Consultants").]*⁴

WHEREAS

- (a) the Client has requested the Consultants to provide certain consulting services as defined Request for Proposal and ToR attached to this Contract (hereinafter called the "Services");
- (b) the Consultants, having represented to the Client that they have the required professional skills, and personnel and technical resources, have agreed to provide the Services on the terms and conditions set forth in this Contract;
- (c) the Client has received [or has applied for] a loan [or credit or grant] from the Donor Agency (hereinafter called the "Donor") towards the cost of the Services and intends to apply a portion of the proceeds of this loan [credit or grant] to eligible payments under this Contract, it being understood (i) that payments by the Donor will be made only at the request of the Client and upon approval by the Donor, (ii) that such payments will be subject, in all respects, to the terms and conditions of the agreement providing for the loan [or credit or grant], and (iii) that no party other than the Client shall derive any rights from the agreement providing for the loan [or credit or grant] or have any claim to the loan [or credit or grant] proceeds;

[Note: Include clause (c) only in donor-funded projects. Otherwise omit.]

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:
 - (a) The Request for Proposal (RFP);
 - (b) The Term of Reference (ToR);
 - (c) The following Appendices: **[Note:** *If any of these Appendices are not used, the words "Not Used" should be inserted below next to the title of the Appendix and on the sheet attached hereto carrying the title of that Appendix.]*
 - Appendix A: Description of the Services
 - Appendix B: Reporting Requirement
 - Appendix C: Key Personnel and Sub consultants
 - Appendix D: Duties of the Client
 - Appendix E: Cost Estimates in Local Currency
 - Appendix F: Form of Guarantee for Advance Payments
 - Appendix G: Minutes of Negotiations Meetings
2. The mutual rights and obligations of the Client and the Consultants shall be as set forth in the Contract, in particular:

⁴ *Text in brackets is optional; all notes should be deleted in final text.*

- (a) the Consultants shall carry out the Services in accordance with the RFP, ToR and provisions of the Contract; and
- (b) the Client shall make payments to the Consultants in accordance with the RFP, ToR and provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of *[name of client]*

[Authorized Representative]

For and on behalf of *[name of consultants]*

[Authorized Representative]

[Note: *If the Consultants consist of more than one entity, all these entities should appear as signatories, e.g., in the following manner:]*

For and on behalf of each of the Members of the Consultants

[name of member]

[Authorized Representative]

[name of member]

[Authorized Representative]