

Government of Sikkim  
Project Implementation Unit (ADB Projects)  
Roads and Bridges Department.

EOI No: SE/72/41/Projects

Date: 25th August 2010

Notice Inviting Expression of Interest for Appointment of Construction Supervision Consultants.

Title of the Proposed Project: NORTH EASTERN STATE ROADS INVESTMENT PROGRAM (NESRIP) TRANCHE-1 ROADS.

Name of Work :- Widening / Improvement of road sections of Melli to Nayabazar (01) and Nayabazar (Akkar Bridge) to Namchi (02) Tranche 1 under NESRIP.

The Government of India has applied for a loan from the Asian Development Bank (ADB) and intends to utilize part of this loan towards the cost of the contract for consulting services related to construction supervision of civil works to be taken up under the Project. Road and Bridges Department, Sikkim is the implementing agency for rehabilitation and upgradation of road sections Melli to Nayabazar (01) and Nayabazar to Namchi (02), Tranche-1 roads in the State of Sikkim selected under this project. The work is proposed to be taken up under one civil work package, the details of which are as follows:-

Civil Work package	Name of Road	Length in Km
CW 1	(i) 01: From Melli to Nayabazar	26.60 kms
	(ii) 02: Nayabazar (Akkar Bridge) to Namchi	19.70 kms
	<b>TOTAL</b>	<b>46.30 kms</b>

Consultancy Services:

The supervision consultancy services shall include, apart from construction supervision of the aforementioned civil works, monitoring and evaluation of the Project with focus on social impact monitoring and environmental management in accordance with ADB's Safeguard Policies.

The consulting services will be implemented over 21 months of construction period followed by 12 months of defects notification period. The Consultant's input requirement consists of about 25 international person - months and 165 national person - months. The services are expected to commence in DEC - 2010.

Roads and Bridges Department, Sikkim invites Expression of Interest (EOI) from eligible consultants for the said assignment. The consultants from the member countries, registered with ADB are only eligible for submitting EOIs.

On the basis of the submissions, the consultants shall be shortlisted and invited to submit their proposals, in accordance with ADB's Guidelines on the Use of Consultants (the ADB Guidelines). The request for proposal to the short-listed consultants is expected to be issued in SEPT --2010. Selection of the consultant shall be done under QCBS (quality and cost-based selection) with a quality-cost ratio of 80:20 in accordance with the ADB Guidelines.


Interested consultants are requested to submit their Expressions of Interests (EOIs) online through ADB's website ([www.adb.org](http://www.adb.org)). Consultants may still submit the hardcopy of the EOIs submitted online to the address indicated below. In case of any discrepancies between the EOI received online and in hardcopy, the EOI submitted online will be evaluated for shortlisting purposes.

For online submission: (1) register with ADB's CMS (Consultant Management System) at <http://www.adb.org/Consulting/cms.asp>, (2) go to <http://csm.adb.org>, (3) click on "INDIA", (4) find the captioned project name and click on "view", (5) click on "submit EOI", and (6) follow the instructions. All requested information must be filled in completely.

Notice Inviting Expression of Interest, project details and the terms of reference can also be downloaded from [www.sikkim.gov.in](http://www.sikkim.gov.in)

EOIs (either online or hardcopy) must be received on or before 1<sup>st</sup> October 2010.

Name: P. K. Bhujel  
Project Director -- ADB Projects  
Roads & Bridges Department,  
Govt. of Sikkim,  
Gangtok, Sikkim



Project Director,  
Project Implementation Unit (PIU)

Email: [pkbhujel@yahoo.com](mailto:pkbhujel@yahoo.com)  
Tel: 94341-03370 Fax: 03592-203460

## Section 5. Terms of Reference (TOR)

### 1. BACKGROUND

#### 1.1 Introduction

The Government of India has applied for financial assistance from the Asian Development Bank (ADB) towards the cost of the proposed North Eastern State Roads Investment Program (NESRIP). NESRIP aims to (i) improve about 522 km of priority road sections under Tranche-1 & Tranche-2 in six states in the North Eastern Region (NER) of India, and (ii) provide capacity building support to the executing agency of NESRIP: the Ministry of Development of North Eastern Region (MDONER); and to the implementing agencies (IAs): the State Public Works Department (PWD) or its equivalent in each state.

#### 1.2 Overall Project Implementation Arrangements

MDONER will be responsible for the overall management and coordination of subprojects and components under NESRIP. MDONER will establish a Project Management Unit (PMU) headed by a senior MDONER official, who will be the Project Director for the overall Investment Program. The PMU will have adequate staffing covering the areas of expertise including administrative, finance, technical, project management and monitoring. The PMU will be assisted a firm of Project Management Consultant.

The state PWDs will be responsible to manage individual subprojects. Each state PWD has established a Project Implementation Unit (PIU). A PIU is headed by a senior state PWD official, who is the State Project Director, and is staffed with officials in the field of contract management, procurement, environmental management, resettlement and rehabilitation, and accounting.

### 2. OBJECTIVE

These terms of reference are for the supervision of the works under following subproject:

Contract No. : SK-CW1

Road Code :	SK01	SK02
Name :	Melli to Nayabazar	Nayabazar to Namchi

District :	South District of Sikkim
State :	Sikkim

The objective of the proposed consultancy services is to assist the PWD to implement the subproject works in its State by:

- (i) Proper management of civil works contracts as "the Engineer" in terms of civil works contract;
- (ii) comprehensive supervision of project implementation activities carried out by the contractors to ensure compliance with the drawings, technical specifications and various stipulations contained in the Contract Documents, with high standards of quality assurance in supervision and in the execution of work;
- (iii) completing the work within the stipulated time for completion; and
- (iv) Training to PIU in managing the contracts.

### 3. CONTRACT MANAGEMENT FRAMEWORK

The civil construction contract will be based on the FIDIC MDB March 2006 version (hereafter referred to as FIDIC) with appropriate amendments to incorporate local requirements.

The PWD will act as "the Employer" for the civil construction contract.

Within PWD, the head of PIU (State Project Director) will be delegated the powers and authorities of the Employer' for each civil construction contract.

The construction supervision consultant (CSC) will act as "the Engineer" under FIDIC for the contract and have full responsibility for administering the construction contracts except for issues for which the civil construction contract requires the Engineer to obtain the Employer's prior approval, such as:

- Sub-Clause 4.12: Agreeing or determining an extension of time and/or additional cost.
- Sub-Clause 13.1: Instructing a Variation, except;
  - (i) in an emergency situation as determined by the Engineer, or
  - (ii) if such a Variation would increase the Accepted Contract Amount by less than the percentage specified in the Contract Data (as listed below).
- Sub-Clause 13.3: Approving a proposal for Variation submitted by the Contractor in accordance with Sub-Clause 13.1 or 13.2.
- Sanction of additional/extra items including fixation of their rates.
- Approval of subletting of any part of works.
- Issuing the order for stopping, suspending and/or terminating the contract for works
- Sub-Clause 13.4: Specifying the amount payable in each of the applicable currencies.
- Each Variation resulting in an increase in excess of 25% of any single BOQ item or 1 % of the Accepted Contract Amount for the Permanent Works shall require approval of the Employer
- The Employer's approval shall also be required for any variation after the sum total of all variations issued earlier has reached 10% or more of the Accepted Contract Amount of the Permanent Works.
- All variations of Civil work/permanent work shall be governed by Civil contract of particular package

The CSC shall make all engineering decisions required during the implementation of the Contract. However, the CSC shall seek prior approval of the Employer, where these TOR or the civil construction contract conditions require to do so.

The CSC will be a firm of consultants. The firm's full time Director will be "the Engineer." The CSC designates its Team Leader as the Engineer's Representative, who shall act on all matters pertaining to the Engineer's Representative. However, the Consultant's firm shall be responsible for all actions taken by its Team Leader, and his team.

#### 4. SCOPE OF CONSULTING SERVICES

4.1 The scope of consulting services will include, but not necessarily be limited to the following:

1. Act as the 'Engineer' in terms of civil works contracts to the extent of the delegation given;
2. Assist the Employer in contract administration and management of the project and the civil works contracts;
3. Interpretation of the Technical Specifications and Contract Documents;
4. Review designs, drawings, BOQ provisions and specification with respect to actual site conditions and suggest modifications, if required or deemed appropriate. Any realignment, redesign/modification, any additional design of bridge desired for completion of the project will be done by CSC and related approvals from concerned authorities will be obtained by the CSC without any extra cost including remuneration of personnel, equipment, software and office supplies;
5. Conduct road safety audit during construction and pre –opening of road for traffic
6. Review and ensure conformity of contractor's securities in approved formats;
7. Ensure requisite insurances have been received and they comply with the requirements of the contract;
8. Review compliance with the documentation and advance actions for handing over of site, and advise on issuing the notice to set the Commencement Date;
9. Ensure the contractor effects and implements a system for the quality assurance of the works. The system of control of quality of materials and completed works shall also include sampling methods and criteria and acceptance criteria. The sampling methods and the acceptance criteria shall be based on statistical methods and the recommendations of the relevant IRC and MoSRTTH / MoRD publications (as applicable) and international practices;
10. Scrutinize the contractor's detailed work program, suggest modifications, if any, to the program after a careful study and ensure the contractor complies with the program;
11. Scrutinize and/or review contractor's superintendence, personnel and suggest modifications, if any;
12. Scrutinize the contractor's mobilization of the Contractor's Equipment to ensure the nominated plant and equipment is delivered to the site in accordance with the contractor's program;
13. Scrutinize the construction methods proposed by the contractor for carrying out the works to ensure that these are satisfactory with particular reference to the technical requirements, project implementation schedule and environmental aspects as well as safety of works, personnel and the general public;
14. Review the horizontal and vertical alignment for the roads based on review of tender drawings and the topographic survey carried out by the contractor. This work will include if required, amending the DPR alignment plan and profile drawings based on the updated topographic surveys;

15. Issue of finalized or revised 'Good for Construction' drawings and prepare and provide additional detailed drawings, if and as necessary, including drainage (inclusive of drainage scheme through the built-up areas), junctions, road signs and markings, safety measures, km stones, protection works etc. based on the contractor's survey and setting out;
16. Ensure all bridge details are complete and modify the design and drawings wherever required due to founding level as a result of the change in the founding strata or any other reason at the time of execution;
17. Scrutinize and approve the Contractor's working drawings based on survey setting out details, and drawings for temporary works, as required under the contract;
18. Carry out detailed checking and verification of the setting-out data for the work including lines, levels and layout to ensure conformity with the working drawings;
19. Carry out supervision of all works as per approved method statements of various items of work and ensure proper supervision as per requirement;
20. Examine Contractor's preparation and the completed portion of work as per 'requests for inspection' and promptly advise the contractor;
21. Monitor closely and regularly the progress of work and advise the contractor about corrective measures;
22. Carry out regular inspection of the contractor's equipment, plant, machinery, installations, housing and medical facilities etc. and ensure they are adequate and are in accordance with the terms and conditions of the contract;
23. Direct the contractor to carry out all such works or to do all such things as may be necessary to avoid or to reduce the risk in case of any emergency affecting the safety of life or of the works or of the adjoining property and advise the Employer thereof as soon thereafter as is reasonably practicable;
24. Supervise the Contractor in all matters concerning safety and care of the work including environmental aspects and labour welfare;
25. Witness sampling and testing being carried out by staff of the Contractor and undertake additional audit tests as necessary to ensure the quality of works and promptly inform the contractor of the results;
26. Review the test results/certificates of all construction materials and/or sources of materials and undertake additional tests as necessary to assess the quality of works;
27. Review all mix designs proposed by the contractors and approve/suggest modifications in the mix design, laying methods, sampling and testing procedure, and quality control measures, to ensure required standard and consistency in quality at the commencement of items;
28. Maintain a permanent record of all tests carried out for monitoring the quality of works;
29. Prepare updated and additional drawings as required during the contract period and supply to the contractor in time;
30. Measure quantities of work, record measurements, and verify BOQ items/works quantities executed in the contractor's monthly statements;
31. Examine the requests for advances and monthly statements of contractors and issue interim payment certificates;

32. Support the PWD in matters relating to land acquisition and resettlement including updating the Resettlement Plan prepared by the DPMC, monitoring the implementation of the resettlement plan and providing expert advice in all matters relating to acquisition and resettlement;
33. Assist PWD in arranging the relocation of services including providing plans of the location of all services if not shown in sufficient detail on the plans prepared by the DPMC, preparing correspondence for the PWDs, arranging meetings and generally ensuring that the PWDs are meeting the deadlines necessary to avoid delay claims from the Contractor;
34. Maintain a permanent record of all measurements for the work quantities to be paid for and of all payments made;
35. Prepare monthly reports fully describing the progress of work and the services rendered by the Consultant during the month under review, indicating also the problem areas and action required to overcome them;
36. Prepare Financial Statements;
37. Maintain a day-to-day diary recording all events relevant to the works;
38. Review and approve 'as-built' drawings prepared by the contractor and maintain records of all test data and results;
39. Inspect the works on completion of each milestone before accepting the work and indicate to PIU any outstanding work to be carried out by the contractor before issuing a milestone certificate;
40. Inspect the works on completion of the milestone for the whole of the Permanent Works before accepting the work and indicate to PIU any outstanding work to be carried out by the contractor before issuing the milestone certificate or during the Defects Notification Period for the Permanent Works;
41. Inspect the works at appropriate intervals during the Defect Notification Period for the Permanent Works (to the extent of the duration of the services) and advise the PIU on remedial works, if any;
42. Ensure the contractor implements and maintains the environmental monitoring complies with the Environmental Management Plans;
43. Monitor the status of the contractor's compliance with HIV/AIDS provisions in the Civil Works Contracts;
44. Operate a quantitative and qualitative project performance monitoring system (PPMS) in consultation with ADB and EA to monitor and evaluate the performance of the project in relation to its goals, purposes and outputs. The PPMS was developed by the Design and Project Management Consultant (DPMC). Baseline values were established by the DPMC for (a) traffic volumes and journey times, (b) freight tariffs and bus fares, (c) environment and social impact indicators, (d) socio – economic indicators and (e) social and poverty reduction impact indicators. Implementation and evaluation monitoring indicators would be measured at necessary agreed frequency during the project. Measurements of these indicators, together with relevant comments would be included in the Quarterly Progress reports and the Final Completion report; and
45. Assist the PWD staff to carry out all the duties as defined above as they apply to the Maintenance Works Contracts until the completion of the services while simultaneously training the PIU staff to undertake all of these duties.

## 5. OTHER RELEVANT INFORMATION

- 5.1 The detailed engineering for the work has been presented in the Detailed Project Reports (DPRs) for each contract package, prepared generally in accordance with the Indian Roads Congress standards, by the consultants engaged under an ADB TA.
- 5.2 The DPRs contain drawings which are deemed 'Good for Construction' except where modification is required to adapt to on site conditions.
- 5.3 The Specifications are based on the latest edition of the Ministry of Shipping, Road Transport and Highways (MoSRTTH) Specifications for Roads and Bridge Works.

## 6. MEASUREMENT OF QUANTITIES AND CERTIFICATION TO CONTRACTOR

The CSC will process interim and final payments certificates for the contractor's work in accordance with contract of the civil works contractor. Interim monthly payments shall be based on interim payment certificates processed by the CSC on the basis of statements filed by the Contractor. In processing contractual certificates, the Team Leader of the CSC will certify that he or his delegated representative for the construction package has checked at least 15% of the measurements and quality control tests. The Team Leader shall intimate the details of these check tests to the PIU before undertaking them, so that the PIU officers could associate, if they wish to do so. The Consultant or any of his concerned experts shall do the repeat tests or measurements, if directed by the PIU In-Charge of the construction package, in the presence of the PIU or any of his delegated representatives. In case of any conflict the Consultant may do the test check in the presence of the PIU In-Charge limited to 5% of total measurement/quality control tests.

## 7. EXPECTED INPUTS

The implementation of the Project is organized under one construction package. The suggested composition and duration for the Supervision Team for the Construction Supervision Consultancy Services is given in **Table 2**.

**Table 2: Staffing Requirements for Sikkim**

Sl. No.	Particulars	Estimated Man-Month
<b>A. Key Professionals (international):</b>		
1	Team Leader – cum Senior Highway Engineer *	23
2	Senior Contracts Specialist	2
<b>Total MM ( International)</b>		<b>25</b>
<b>B. Key Professionals (National):</b>		
1	Assistant Resident Engineer (1)**	23
2	Materials Engineer (1)	18
3	Bridge Engineer (1)	4
4	Senior Road Design Engineer (1)	1
5	Senior Bridge Design Engineer(1)	1
6	Senior Geotechnical Engineer (1)	1
7	Environmental Specialist (1)	2
8	Socio-Economic impact Monitoring Specialist(1)	3
9	Rehabilitation and Resettlement Specialist(1)	1
10	Quantity Surveyor (1)**	21 (this position shall be

		<i>required throughout the project duration and 2 month input during DLP)</i>
11	Survey Engineer (1)	18
12	Site Engineer (Roads) (2)** ( only one site Engineer require during defect liability period )	21
13	Site Engineer (Structures) (1)	15
14	Lab Technicians (1)	18
15	CAD Technician (1)	18
	<b>Total MM( National)</b>	<b>165</b>

\* Includes three months after completion of construction of last Permanent Works.

\*\* Includes two months after completion of construction of last Permanent Works.

In addition to the above suggested input, the Engineer (a full time Director of the Consultant's firm) will be required to undertake regular visits to the subproject site.

#### 8. ADDITIONAL SERVICES

The Supervision Consultant shall, if so required by the Client, provide any additional service at rates or on man-month rates as per the contract, or as mutually agreed upon, as a variation order.

#### 9. REPORTS

The Supervision Consultant will prepare and submit the reports as listed in **Table-3** to the Client on the format prepared by the Consultant and as approved by the Client / EA (except for inception report)

**Table3: Reports to be Submitted**

Sl. No.	Report	Frequency	Due Date	No. of Copies	No. of CDs
1.	Inception Report	One Time	Within 30 days after commencement of services.	5	1
2.	Progress Report (Monthly & Quarterly)	Every month/three months	10 <sup>th</sup> of month following the reporting month/quarter	5	1
3.	Design Review Report	One Time	Two months before start of construction of a section	5	1
4.	Final Report	One Time	Within 90 days of completion of services	10	5
5.	Construction Supervision Manual	One Time	30 days after commencement of services	5	1
6.	Quality Assurance (QA) Document	One Time	30 days after commencement of service	5	1

7.	Maintenance Supervision Manual	One Time	30 days before the expected commencement of the first maintenance works	5	1
----	--------------------------------	----------	-------------------------------------------------------------------------	---	---

## (i) Inception Report

The Inception Report shall contain the details of all meetings held with the Client and any initial meetings held with the Contractor and decisions taken therein, the resources mobilized by the Supervision Consultant as well as the Contractor and the Consultant's perception in the management and supervision of the project. The report shall also include the Master Work Programme and Resources Mobilization for the Project.

## (ii) Progress Reports

The Monthly Progress Report shall contain details of all meetings, decisions taken therein, mobilization of resources (Consultant and the contractors), physical and financial progress and the projected progress for the forthcoming periods. The Report shall clearly bring out the delays, if any, reasons for such delay(s) and the recommendations for corrective measures. The Report shall also contain the performance data for contractor's plant and equipment.

The Quarterly Progress Report shall include similar details to the monthly reports for the last month of the quarter, and summarise the overall progress for the quarter and highlight the main issues and the action being proposed to address those issues.

The monthly and quarterly reports should be prepared on a State wise basis and include all contracts being executed in the state at any one time.

## (iii) Design Review Report

The supervision consultant shall undertake a detailed engineering review of the design as included in the civil works contract drawings for the purpose of identifying any defects/omissions, which compromise the completeness or consistency of the design. This review shall be carried out immediately after the services commence and a detailed 'Design Review Report' shall be submitted to the Employer within 2 months. This report will set out all findings and recommendations for making good any defects/omissions identified in civil works designs. Notwithstanding the above, the supervision consultant shall also inform the Employer of any defect/omission which may have a substantial impact on the Project at the time the defect/omission is uncovered. Where defects in design are noted or designs are inadequate, the CSC shall prepare revised detail designs suitable for construction in adequate time so as not to delay the Contractor.

## (iv) Final Report:

The Consultant will prepare a comprehensive final completion report of the construction contract packages in each State after completion of the Permanent Works in that State. The reports shall incorporate summaries of the methods of construction, the construction supervision performed, reference to as-built drawings of the construction, problems encountered and solutions undertaken thereon and recommendations for future projects of similar nature to be undertaken by the PWD.

The Consultant shall submit the self appraisal report within the prescribed time summarizing the following details:

1. Details of Consultant's personnel including substitution made during the assignment.
2. Details of variation orders issued.
3. Details of extension of time granted to the Contractor.
4. Details of Quality Assurance System
5. Quality observed at site by the Consultant.
6. Details of claims.
7. Special preventive measures for maintenance suggested by the Consultant.

The report will also summarise the maintenance works carried out to the time of the report on any of the construction contracts where maintenance has commenced.

(v) Construction Supervision Manual

The primary objective of the Construction Supervision Manual will be to evolve guidelines for administration, supervision and management of the project and the construction contracts to be implemented. Such a manual is not intended to be a contractual document nor is it to take precedence over the contract specifications. The Manual will merely act as a guide and reference to the various staff in the management and supervision of the project in discharging their duties in a smooth and systematic manner.

(vi) Quality Assurance Document

The Quality Assurance (QA) Documents shall be evolved on the basis of the relevant manual for quality system for bridges and highways published by the Indian Road Congress (IRC).

(vii) Maintenance Supervision Manual

The primary objective of the Maintenance Supervision Manual will be to evolve guidelines for administration, supervision and management of the maintenance components of the contracts and to assist the PWD and PIU in running this part of the works in their own right. Such a manual is not intended to be a contractual document nor is it to take precedence over the contract specifications. The Manual will merely act as a guide and reference to the various staff in the management and supervision of the maintenance works for the project in discharging their duties in a smooth and systematic manner.

## 10. STAFFING SCHEDULE

- 10.1 The total implementation period for the Construction Supervision Consultant will consist of (i) individual construction periods of 21 month civil works contract and (ii) a defects notification period during which the Consultant will only require part time input over the first 12 months each contract, as per the arrangement proposed.
- 10.2 The Supervision Consultant's site team would be mobilized progressively on the date of actual commencement of works by the contractors in Tranche 1, or as decided by the Client. During the first 12 months of defects notification period, the Consultant's Team Leader along with other staff as in Table 2 will be required to continue on a periodic basis, as and when required, which will be dealt with separately at the appropriate stage towards the completion of the construction works.
- 10.3 After award of the contract for Consultancy Services, the Client expects all the proposed key personnel to be available during implementation of the Contract as per the agreed staffing schedule. The Client will not consider substitutions during contract implementation except under exceptional circumstances. In case of such replacements, the Consultant will ensure that there is a reasonable overlap between the staff to be replaced and the replacement wherever feasible/possible.

## 11. DOCUMENTS TO BE PROVIDED

The EA has prepared detailed project reports for this each contract package on this project. As such, all detailed project reports for engineering designs, drawings and relevant data necessary for the proper and timely supervision of the construction works are available. A copy of Detailed Project Reports and the Contracts for the civil works packages will be provided to the Consultant.

## 12. FACILITIES

(a) The Consultant will detail in his technical proposal the required provisions for all facilities, equipment, transport, supplies and supporting staff which he considers necessary to successfully carry out the services for implementation of the Project and will also include the price of those items in his financial proposal. In particular, the Consultant should note that the following items must be included in its financial proposal as these will not be provided for the use of the Consultant:

- (i) Main Project office in a central location, accessories and its maintenance;
- (ii) Residential accommodation and its maintenance for the staff ;
- (iii) Vehicles with drivers, maintained and operated for the personnel; and
- (iv) Office equipment, computers, printers, plain paper copies and all ancillary devices, and all things necessary for the operation of an efficient Project and site office.

(b) Each civil construction contract shall have provision for the contractor to provide the following facilities for the duration of the contract for the Consultant's personnel assigned to the particular contract, at no cost to the Consultant:

- (i) Site office in the vicinity of the contractor's site office, fully furnished and with all accessories, and full operation and maintenance including all utilities with automatic emergency backup power supply;

- (ii) Survey equipment and its maintenance, together with survey technicians and assistants;
- (iii) Full use of Contractor's laboratories and equipment together with their laboratory technicians and provision of office space therein.

**13. STAFFING**

This section is under preparation.