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Consultancy services for preparation of DPR and Pre-Construction services from (i) Silchar ISBT (Start point of Silchar Bypass) to junction of NH-37 & NH-6 at Dhaleshwari, (ii) End of proposed Badarpur bypass to Churaibari (Assam-Tripura border), (iii) Spur from NH-8 near Karimganj to Sutarkandi (Package-V)

INTRODUCTION

1. INTRODUCTION

1.1 GENERAL

National Highways and Infrastructure Development Corporation (NHIDCL) is a fully owned organization of the Ministry of Road Transport & Highways, Government of India. The organization promotes, surveys, establishes, designs, builds, operates, maintains, and upgrades National Highways and Strategic Roads including interconnecting roads in parts of the country which share international boundaries with neighboring countries. The regional connectivity so enhanced would promote cross border trade and commerce and help safeguard India's international borders. An approximate aggregate length of 10,000 km has been identified to begin with for development through this organization. The organization envisages creating customized and specialized skills in terms of addressing issues like complexities of geographical terrains and addressing extensive coordination requirements with security agencies.

As part of endeavor, NHIDCL has appointed M/s Aarvee Associates Architects Engineers & Consultants Pvt. Ltd. for the work of consultancy services for preparation of DPR and Pre-Construction services from– (i) Silchar ISBT (Start point of Silchar Bypass) to junction of NH-37 & NH-6 at Dhaleshwari, (ii) End of proposed Badarpur bypass to Churaibari (Assam-Tripura border), (iii) Spur from NH-8 near Karimganj to Sutarkandi.

To achieve the above task, NHIDCL has appointed M/s. Aarvee Associates Architects Engineers and Consultants Pvt. Ltd. The Letter of Acceptance was communicated vide letter No. NHIDCL / Assam / DPR / SilcharChuraibari / 222542 / 2581 and the agreement was signed on 1st September, 2023. The Agreement for consultancy services was concluded with NHIDCL on 01/09/2023. Reconnaissance/preliminary surveys commenced with immediate effect. The Inception report is prepared based on reconnaissance survey conducted on 22nd & 23rd August 2023 and in accordance with the Contract Agreement for preparation of Detailed Project Report and submitted on 13/09/2023. For preparing the Feasibility and Detail Report of the project corridor and designs of proposals, it is essential to have full knowledge of the physical conditions and existing scenario under consideration. The current Draft Feasibility Report has been prepared based on analysis of data derived from the surveys, observations made during site visits and in accordance with contractual stipulations.

1.2 PROJECT LOCATION

The Project Road is a part of (i) Silchar ISBT (Start point of Silchar Bypass) to junction of NH-37 & NH-6 at Dhaleshwari, (ii) End of proposed Badarpur bypass to Churaibari (Assam-Tripura border), (iii) Spur from NH-8 near Karimganj to Sutarkandi. The consultant had conducted a reconnaissance survey to be acquainted with actual site conditions. The observations are made and discussed in subsequent sections. Section -II is divided into 3 packages and packaging details are given hereunder:


	Consultancy services for preparation of DPR and Pre-Construction services from (i) Silchar ISBT (Start point of Silchar Bypass) to junction of NH-37 & NH-6 at Dhaleshwari, (ii) End of proposed Badarpur bypass to Churaibari (Assam-Tripura border), (iii) Spur from NH-8 near Karimganj to Sutarkandi (Package-V)	INTRODUCTION
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Table 1-1: List of Project Stretches

S No.	NH No.	Section	Section No	District	State
1	NH-37 & NH-8	End of proposed Badarpur bypass to Churaibari (Assam-Tripura Border)	Section-II	Karimganj	Assam

The co-ordinates of the project stretches are mentioned in following table:

Table 1-2: Coordinates of Start and End of the Package-V

S. No	Section No.	Package	From (Km.)	To (Km.)	Length (km0)	Geographic Coordinates	
						Start	End
1	II	V	62.8	87.7	24.9	2739114.410N, 436489.714E	2716463.658N, 430088.067E

1.3 SCOPE OF SERVICES

1.3.1 Primary Tasks

1. Review of all available reports and published information about the project road and the project influence area.
2. Environmental and social impact assessment, including such as related to cultural properties, natural habitats, involuntary resettlement etc.
Public consultation, including consultation with Communities located along the road, NGOs working in the area, other stakeholders, and relevant Government departments at all the different stages of assignment (such as inception stage, feasibility stage, preliminary design stage and once final designs are concretized).
3. Detailed Reconnaissance
4. Identification of possible improvements in the existing alignment and bypassing congested locations with alternatives, evaluation of different alternatives comparison on techno-economic and other considerations and recommendations regarding most appropriate option.
5. Traffic studies include traffic surveys and Axle load surveys and demand forecasting for the next thirty years.
6. Inventory and condition surveys for road.
7. Inventory and condition surveys for bridges, cross-drainage structures, other Structures, riverbank training/Protection works and drainage provisions.
8. Detailed topographic surveys using LiDAR equipped with minimum engineering grade system or any other better technology having output accuracy not less than specified in

IRC SP 19 Total Station (c) GPS/ DGPS. The use of conventional high precision instruments i.e., Total Station or equivalent can be used at locations such as major bypasses, water bodies etc. where it may not be possible to survey using LiDAR. Use of mobile / Aerial LiDAR survey is preferable.

9. Pavement investigations.
10. Sub-grade characteristics and strength: investigation of required sub-grade and sub-soil characteristics and strength for road and embankment design and sub soil investigation.
11. Identification of sources of construction materials.
12. Detailed design of road, its x-sections, horizontal and vertical alignment and design of embankment of height more than 6m and also in poor soil conditions and where density consideration require, even lesser height embankment. Detailed design of structures preparation of GAD and construction drawings and cross-drainage structures and underpasses etc.
13. Identification of the type and the design of intersections.
14. Design of complete drainage system and disposal point for storm water.
15. Value analysis / value engineering and project costing.
16. Economic and financial analyses.
17. Contract packaging and implementation schedule.
18. Strip plan indicating the scheme for carriageway widening, location of all existing utility services (both over- and underground) and the scheme for their relocation, trees to be felled, transplanted, and planted and land acquisition requirements including schedule for LA: reports documents and drawings arrangement of estimates for cutting/ transplanting of trees and shifting of utilities from the concerned department.
19. Develop 3D engineered models of terrain and elevation, as-is project highway, proposed and project highway along with all features, current and proposed structures, current and proposed utilities, and land acquisition plans.
20. To find out the financial viability of project for implementation and suggest the preferred mode on which the project is to be taken up.
21. Preparation of detailed project report, cost estimate, approved for construction Drawings, rate analysis, detailed bill of quantities, bid documents for execution of civil works through budgeting resources.
22. Design of toll plaza and identification of their numbers and location and office cum residential complex including working drawings
23. Design of weighing stations, parking areas and rest areas.
24. Any other user-oriented facility en-route toll facility.
25. Tie-in of on-going/sanctioned works of MORT&H/ National Highways Authority of India/ other agencies.

26. Preparation of social plans for the project affected people as per policy of the lending agencies/ Govt. of India R&R Policy.

- ✓ While carrying out the field studies, investigations and design, the development plans being implemented or proposed for future implementation by the local bodies, should be considered. Such an aspect should be clearly discussed in the reports and drawings.
- ✓ The consultant shall study the possible locations and design of toll plaza, wayside amenities required and arboriculture along the highway shall also be planned.
- ✓ The local and slow traffic may need segregation from the main traffic and provision of service roads and physical barrier including fencing may be considered, wherever necessary to improve efficiency and safety.

1.4 OBJECTIVE

The main objective of the consultancy services is to establish the technical, economic, and financial viability of the project.

To accomplish above objective, a detailed project report is planned for the purpose of firming up the Authority's requirements in respect of development and construction of the Project Highway and Project Facilities and enabling the prospective bidders to assess the Authority's requirements in a clear and predictable manner.

The viability of the project will be established considering the requirements based with regard to rehabilitation, upgrading and improvement based on highway design, pavement design, type of Interchanges and intersections, construction of new bridges and structures, road safety features, quantities of various items of works and cost estimates and economic analysis.

The Detailed Project Report (DPR) would include highway design, design of pavement, and overlay with options for flexible or rigid pavements, design of bridges and cross drainage structures and grade separated structures, quantities of various items, detailed working drawings, detailed cost estimates, economic and financial viability analysis, environmental and social feasibility, social and environmental action plans as appropriate and documents required for tendering the project.

The Detailed project report (DPR) would also include aspects of value engineering, quality audit and safety audit requirements in design and implementation.

1.5 APPROACH

The consultant's approach towards the project is in accordance to the ToR in lines with the project objectives. The prescribed engineering surveys and investigations will be carried out on project stretch conforming to MORTH/IRC/BIS specifications/Codes as per TOR to generate adequate database for preparing the most appropriate proposal for rehabilitation and upgrading of the existing highway.

1.6 SCHEDULE OF DELIVERABLES

As per Terms of Reference of Contract Agreement, the following documents have to be prepared and submitted to the NHIDCL.

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|------------|--|
| Stage I: | Draft Inception Report including QAP document.
Final Inception Report including QAP document |
| Stage II: | Draft Feasibility Report including option study report including draft 3(a) report.
Final Feasibility Report |
| Stage III | Draft LA & Clearances report including draft 3(A) report.
Final LA & Clearance, I Report including compliance of comments of client |
| Stage IV: | Draft Detailed Project Report
Final Detailed Project Report |
| Stage V: | Draft Technical Schedules
Final Technical Schedules |
| Stage VI | LA and Clearances II Report. |
| Stage VII | Land Acquisition III & Award Determination |
| Stage VIII | Land possession |

1.7 STRUCTURE OF THE REPORT

The Feasibility Report has been presented in volumes to cover all the details on road design, social and environmental aspects etc. These are as follows:

- **EXECUTIVE SUMMARY**
- **VOLUME I: MAIN REPORT**
 - **Chapter-1: Introduction:** Briefly discusses the scope, project report organization.
 - **Chapter-2: Overview of NHIDCL:** Provides overview of NHIDCL and its activities as well as project financing and cost recovery mechanisms.
 - **Chapter-3: Project Background:** Briefly describes the project corridor and salient features of the alignment.
 - **Chapter-4: Methodology:** Briefly describes the methodology adopted for various surveys, investigations and their analysis.
 - **Chapter-5: Socio Impact Assessment**
 - **Chapter-6: Design Standards:** Discusses draft design standards, methodologies and specifications to be adopted.
 - **Chapter-7: Traffic Demand Assessment:** Discusses on the traffic surveys conducted, travel pattern, traffic projections etc.
 - **Chapter-8: Pavement Design:** Discuss on design of various pavement options.



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- **Chapter-9: Project Proposals:** Project proposals for highway and cross drainage structures, cross section schedules etc.
 - **Chapter-10: Environmental Impact Assessment**
 - **Chapter-11: Socio-Economic Profile of the project Area**
 - **Chapter-12: Project Cost Estimate:** Presents the rate analysis, detailed analysis for BOQ assessment, cost estimations etc.
 - **Chapter-13: EIRR and FIRR:** Presents the economic viability of the project using economic indicators and provides the financial rate of returns using cash flow analysis.
 - **Chapter-14: Conclusions and Recommendations:** Concludes the feasibility of the project.
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- **ANNEXURES (Traffic, Pavement, MI, OGL, SG, Structure Inventory)**
 - **VOLUME II: RATE ANALYSIS**
 - **VOLUME II: COST ESTIMATES**
 - **VOLUME IV: BOQ**