

Terms of Reference (ToR)
For
Detail Survey and Design of Mohanchok Faksib Budhimorang Danabari kabeli Road
Sangurigadhi Rural Municipality
Bhedetar, Dhankuta



September 2018



INTRODUCTION

The Sangurigadhi Rural municipality (herein after referred as "Client"), intends to utilize services of engineering consulting firms well experienced in the fields of Survey and design (herein after referred as "Consultant"), services for detail survey and design of specified roads.

1. Objectives:

The main objectives of the project is to detail survey and design various roads within Sangurigadhi Rural municipality Dhankuta district, Nepal

- To study, review and analyze the proposed road alignment.
- To conduct the Engineering Survey.
- To design the road to meet the present requirements.
- To prepare detailed working drawings comprising of architectural and engineering designs, cost estimate and specification.
- To prepare complete set of bill of quantity.

The name and length of road for the preparation of DPR are mentioned below:

1. Mohanchowk – phaksive - Budhimorang -Danabari kabeli Road- 00+00 to 16+300 (16.3km)

2. Outputs:

The expected outputs are as follows:

2.1 Engineering Survey and Survey Drawings:

The consultant , should carry out engineering survey of the site. The consultant shall prepare topographic map of the site by using Total Station, Theodolite or Tape Measurement. The contour interval shall be of 0.2m or 0.5m as per the site condition. The topographic map shall be consistent with cadastral map accompanied with all details in the site. Profile and cross section could be generated using contour map.

2.2 Design Works:

The consultant should design the road as per the present requirement and based on the rural road standards. Proper consideration should be given for the curve setting and gradient.

Activities covered by the norms for roads and trails :

- Calculate and plot the reduced ground levels of longitudinal section;
- Calculate and plot the reduced ground levels of cross sections;
- Design the most economical road profile by balancing the volumes of cut and fill to the nearest possible (indicate the design gradients of various stretches of road);
- Design the horizontal and vertical curves;

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- As per the engineering design, prepare the drawings of road's plan (indicating the co-ordinates of IPs) and profile (longitudinal);
- Prepare the road's typical cross sections with the pavement details;
- Design and prepare drawings for the retaining walls, breast walls, side drains and other road side structures;
- Design and prepare drawings for the cross-drainage structures;
- Calculate and plot the reduced ground levels of grid survey;
- Draw the contours;
- Design the most economical structure which serves the purpose;
- As per the engineering design, prepare the construction drawings by indicating all dimensions and details;
- Prepare the reinforcement drawings and bar bending schedules
- Prepare the locality map (site plan);
- Prepare the land acquisition plans;
- Prepare the Bill of Quantities;
- Analyse the rates;
- Prepare the cost estimate;
- Prepare the Abstract of Cost, Material and Labour Schedules, etc.;
- Prepare the project report : **Section I** by including the documents (designs, drawings, BoQs, cost estimates and others) prepared for road.

Activities covered by the norms for cross-drainage structures :

- Calculate and plot the reduced ground levels of grid survey;
- Draw the contours;
- Design the most economical structure which serves the purpose;
- As per the engineering design, prepare the construction drawings by indicating all dimensions and details;
- Prepare the reinforcement drawings and bar bending schedules;
- Prepare the locality map (site plan) - *applicable only for bridges*;
- Prepare the Bill of Quantities;
- Analyse the rates;
- Prepare the cost estimate;
- Prepare the Abstract of Cost, Material and Labour Schedules, etc.;
- Prepare the project report : **Section II** by including the documents (designs, drawings, BoQs, cost estimates and others) prepared for structures.

2.6 Cost Estimate

The consultant is required to prepare a detailed cost estimate of road construction For Gravel Road. The cost estimate should be based on government norms, rate analysis and approved rate for construction materials of the district.

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3. Scope of Work:

The consultant, under these terms of reference, shall carry out the following works: Preparation of design and working drawing of road, estimate and BOQ. All design works should strictly be in compliance with Nepal Rural Road Standards.

4. Personnel Requirements:

The consultant should provide and manage a work team comprising of the following professionals to accomplish the proposed assignment.

Expert Personnel
1. Team Leader/Highway Engineer or Civil Engineer with minimum 3 years of experience in related field.
2. Civil Engineer or Survey Engineer
3. Surveyor or Civil Sub-Engineer
4. Draft Person
5. Computer operator

The team should also consist of supporting technical and non-technical staffs.

5. Work Schedule:

The work shall be completed within 7 weeks from the date of agreement. The consultant is thus instructed to prepare their work schedule accordingly

6. Reporting Requirements:

The Consultant shall prepare and submit the reports as specified below. Auto Cad Software should be used to prepare all drawings. Design software like Sw All reporting shall be in English and in the metric system except as otherwise mentioned. Inception, draft and final reports should be submitted to **Sangurigadhi Rural municipality office dhankuta District**. as specified below. Reports and drawings should be submitted in A4 and minimum A3 sized of papers respectively. The final report must also be submitted in digital format.

6.1 Inception/ Field Report:

The consultant should inform to the **Sangurigadhi Rural municipality office dhankuta District** district for the mobilization of the survey team within 2 weeks from the date of Work Order.

6.2 Draft Final Report:

Draft final report shall contain all the working drawings and relevant details including. The consultant should submit 1 set of the report within five (5) weeks information of site mobilization. This report is to be presented in **Sangurigadhi Rural municipality office dhankuta**

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District, in presence of professional and concerned officials comprising experts for discussion, comments and suggestions.

6.3 Final Report:

The final report should incorporate comments and suggestions on the draft final report. The consultant should also submit three sets of final report including aforementioned drawings. The final report should be submitted in 3 copies (one set original and two sets in duplicate) within 1 week after the acceptance of draft final report. The consultant should also produce other relevant reports as and when necessary.

7. Payment Schedule:

Payments should be made by Sangurigadhi Rural municipality office dhankuta District upon the submission of Consultant's invoices according to the following schedule:

Mode of Payment	Percentage
1. First installment after the mobilization of survey team	30
2. Second installment after the submission of Draft Final Report	50
3. Final installment of the payment after the submission and acceptance of final report completion of all duties and responsibilities assigned to the consultants as provisioned in this TOR.	20

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