

ITECO Engineering Ltd. 8910 Affoltern a.A., Switzerland**Employment Contract****Terms of Reference**

Position: Bridge Engineer	
Current holder of the position:	
Reports to: BDE	Duty Station: District

Background

Swiss Agency for Development and Cooperation (SDC) in Nepal is providing Technical Assistance (TA) for the Government of Nepal (Department of Local Infrastructure and Agricultural Roads within Ministry of Local Development) in implementation of Local Roads Bridge Programme – Phase I in different districts of Nepal. More than 100 motorable bridges in local roads shall be built in this phase focusing on following four components: i) Construction and piloting of new bridges and approaches; ii) Generation of knowledge and technology transfers; iii) Formulation of appropriate policy, strategies, business plans, norms and standards for local road bridges; iv) Capacity building of GoN, local communities and private sector.

ITECO Engineering Ltd., Switzerland, on behalf of the Swiss Agency for Development and Cooperation (SDC) has set up a – TA team to support the GoN in providing services for carrying out tasks under above four components to improve accessibility on District Roads Network through the Local Roads Bridge Programme.

Qualification and Experience

An engineer, with a graduate degree or equivalent in civil engineering, with minimum 4 years experience. The candidate must have capability to supervise, manage and execute the construction of bridges as per the provided designs and drawings. S/he should have experience of supervising independently construction of at least two motorable bridges of different types such as RCC, suspension, arch, truss, compact, pre-fabricated bridges etc.. Experience in designing and implementing bridge rehabilitation; planning & monitoring; geo-technical and hydrological investigations for the bridges and interpreting the findings there-of, other rural transport infrastructure and labour based technologies will be an added advantage. S/he shall have very good written and spoken English.

Terms of Reference

Under the overall guidance and supervision of the Bridge Design Engineers, S/He will be responsible for construction, supervision, quality control, reporting of the bridges in the districts. S/he will coach/supervise and manage a group of Assistant Engineers and to undertake additional tasks related to bridge as required.

- Support Bridge Design Engineer to conduct preliminary and detailed survey including reconnaissance, preliminary survey, pegging and trace cutting, final survey etc. as per IRC:52 and IRC:SP:48 or **any other appropriate standards**;
- Support Bridge Design Engineer to collect inventory data and to conduct condition survey of bridges, culverts etc as per IRC SP: 19-2001 and compile the information in the pro-forma given in appendix of IRC SP:19-2001 and in an acceptable computerized data base format;
- Support Bridge Design Engineer to prepare strip plan showing the existing road land width, utility services (both above and below ground level), trees, electric poles, telephone poles, water pipeline, sewer line, bridges, culverts, junctions, adjoining land use, encroachment etc. and digitise these for computer storage;
- Support Bridge Design Engineer for digging test pits at least 1m below the underside of the lowest pavement layer or up to rock level, whichever is less wherever pavement condition changes or at 2 km intervals whichever is less;
- Collect information about hydrology e.g. catchments characteristics, rainfall, stream/channel characteristics, design discharge, linear waterway, scour depth etc. for all cross drainage works and bridges;
- Align the design and comply with the IRC special publication No.54 “Project Preparation Manual for Bridges”;
- Do drainage studies indicating general drainage pattern, HFL, water level, seepage flow, etc and prepare drainage design as per IRC guidelines;
- Do investigation for naturally occurring materials and identify suitable quarries for these materials; to the extent possible promote locally available construction materials.
- Conduct tests for the physical strength characteristics of materials as per relevant national or international standard; visit materials factory for inspection and quality control if required;
- Carry out geo-technical investigation and sub-surface exploration at all the proposed location of bridge (generally one boring may be done at each location of abutment and also at pier as per (IRC:78);
- Carry out studies for environmental clearance requirement as per the guidelines of Ministry of Environment and Forestry and IRC SP-19-2001, and assist the department by providing the data required like environmental clearance required, forest clearance required with numbers of trees to be cut etc.;
- Support Bridge Design Engineer to prepare detailed working drawings good for construction, prepared in international standard using AutoCAD (or other popular software), containing all details required for execution of the project;
- Check Bill of Quantities and estimate prepared by consultants; Ensure quality of works and certify it after completion.

- Coordinate with short term experts for conducting environmental and economic analysis, cost benefits and sensitivities test for the individual bridge project as required.
- Monitor, supervise and coach assistant engineers at district levels as required.
- Closely liaise with the consultants in the construction and provide feedback on the designs.

Social/behavioral Competence for both the positions:

- Reasoning skills
- Good Interpersonal skills
- Courtesy and Customer orientation
- Able to work and contribute positively in a team
- Sensitive to gender and social inclusion
- Ability to work in a multi-cultural team
- Willingness to frequently travel to field
- Able to drive having valid licence

Security

The Staff make regular visits to the districts and are directly responsible for several staff working in the district centres and the field. As well as looking after their own safety, the DTL should take responsibility for their staff in the districts. In this respect the following points should be adhered to as part of this Terms of Reference.

- Personal safety is of paramount importance at all times. The staff should not knowingly put themselves at risk in the field or in the office, or travelling to and from site/duty station.
- SDC uses a cluster approach to working in the district, whereby all security issues are dealt with in clusters, with close liaison and cooperation between SDC programmes working in the same cluster. The staff should recognise this approach and take the initiative to coordinate with other SDC programmes at the central level, as well as encouraging their staff to coordinate at district level.
- All districts have a liaison officer, who is employed by SDC. The liaison officer is there to liaise with the conflicting parties, but **not** independently of the programme. The liaison officer will only intervene in serious situations and with the full knowledge of the Team Leader and Security Officer of LRBP. The Advisors should become familiar with the Liaison Officer in each district and ensure that the relevant information flow is established between the focal persons and the SDC liaison officer.
- The staff should use the Basic Operating Guidelines (BOG) as a guideline to operating in the districts. If an opportunity arises to disseminate this information, and it can be done without risk, then the staff should do that, or encourage their staff to do the same.
- The staff is aware that human rights abuses could take place in the districts or road corridors. The staff should make it clear to their staff that if anyone witnesses a human rights abuse they should report it to the PSU security officer, in the first instance. The PSU shall decide how to deal with the matter from then on.
- The staff shall ensure that their staff always let someone in authority know where they are going on a field trip, how long they expect to be away and any problems they may expect to encounter. The staff themselves should also do the same by filling in travel forms at head office.