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| Technical Note |  |  |
| **JSC Nenskra Hydro** |
| **Nenskra HPP Construction** |
| Access to pasture lands |
| Terms of reference for design |
| 5414 / 2XXX | Tbilisi, 10 August 2018 |
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Appendix A – Maps of the pasture areas

Appendix B – Restricted areas for road design

Appendix C – Avalaible topography (DWG files)

# Introduction

In the framework of Nenskra HPP Project, the Employer has requested the Employer’s Representative (ER) to prepare the terms of reference for the design of an access road to the foreseen location of two new pasture areas. These areas have been identified by the Employer’s environmental and social advisors (SLR) to compensate the locals affected by the project on this matter. The below terms of reference include the scope of services, the design criteria, available data from the Employer, foreseen deliverables and requirements in terms of design schedule and consultant fees.

# Terms of reference

## Scope of services

The consultant shall design the safe and long-term access to the two areas named “Schkvandiri” and “Zeda memuli” identified in the map in blue (see Appendix A). The access road shall commence from the existing road RE-6 & RE-7, near the foreseen dam technical installations areas, as shown also in Appendix A. The consultant shall clearly identify in its design the most suitable road starting point as well as the two final access points to each of the areas. The pasture areas location shown in the appendix A are only indicative and the final location and access shall be confirmed based on agreement with the local population.

It shall be noted that there is an existing mountain track to access these areas, although its current state and alignment shall be verified and studied by the Consultant. Upon agreement with the local population, the Consultant shall consider the rehabilitation and improvement of the existing alignment in the extent of possible in order to reduce the social & environmental impact as well as to optimize the construction cost and schedule.

The consultant shall be aware of the existence of some restricted zones for the present access design. The implementation of the access shall not affect any of these zones (see hatched areas in Appendix B, corresponding to the dam camp and technical installations).

## Design criteria

The road shall comply with the following initial design criteria:

* Road width 4m
* Maximum longitudinal slope 12%
* Minimum cross-slope 2%
* Minimum radius for turnings 14m

The road shall be fit for purpose i.e. the standard vehicles used in the valley. The consultant shall understand the transportation needs in terms of dimensions and truck weights from the local population.

The road shall include the design for all necessary appurtenant structures such as bridges, culverts, pipes and retaining walls as well as the conceptual road drainage system.

The road shall allow for road crossings regularly. Such road crossings must be at least 6m wide, to allow the crossing of two vehicles. The crossing width as well as the average distance between crossing shall be agreed with the local population.

The road shall be adapted in the extent of possible to simple technical solutions such as gabion walls or wooden bridges in order to facilitate the use of local manpower. The proposed solutions shall be agreed with the local population.

The above design criteria shall be confirmed and can be amended after discussion and agreement with the local population foreseen to use the access road.

## Available data from the Employer

The consultant shall use the available LIDAR topography provided in Appendix C. Where outside of this area, the consultant shall use the available maps of the area as well as whatever other resources he may see suitable in order to complete the scope in the best possible way.

## Deliverables

The consultant shall submit a full design package containing the following items:

* Set of drawings depicting plan view, profile and cross-sections every 200m (and in relevant & critical locations).
* Typical cross-sections for embankments, cuts and soil retaining & stabilization structures.
* Conceptual drawings for bridges & culverts.
* Technical report including the agreed design criteria with the local population as well as basic calculations for the assumed design solutions.
* Bill of quantities for road constrcution cost estimation.
* Construction schedule for the proposed solution.

The deliverables shall be submitted in both the English and Georgian language. The drawings shall be submitted in both PDF and DWG format.

## Requirement for design schedule and consultant’s fees.

The Consultant shall submit a first package containing all deliverables within three (3) weeks after contract signature. After the Employer reviews and provides its comments, the designer will have one (1) week to revise the documentation and submit the final version.

The Consultant’s fees for the above-mentioned services shall be provided as a Lump Sum price. The Lump Sum price shall include meetings with the Employer, the local population and site visits, if required.

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