# Brief scope of work

**Project Name:** Design, Construction of Reinforced Concrete Tank, and all associated Mechanical & ICA works (EPC)

**SUMMARY OF SCOPE FOR WORK:**

**The Scope of the Contractor's work is divided into three stages (Design, Construction and Commissioning):**

- **Design and Construction stags shall include:**

A) Data Collection.
B) Site topographic survey works.
C) Structural and design calculations.
D) Preparation of all Plans and layouts.
E) Preparation and submission of Structural drawings.
F) Design and construct of a new RCC (or GRP) TE ground Transmission Tank with capacity of 1000 $m^3$, with approximate size of L 20mx W 10m x H 5m.
G) Design and implementation of necessary modification for the inlet pipe work at the existing pumping station (booster pumps).
H) Design and construct of the pipes and fittings connection between the existing pumping station (booster pump) and the proposed TE tank.
I) Carryout all necessary structural and hydraulic design calculation, level control analysis, and simulation by adopted models.
J) Carryout the necessary geotechnical investigation.
K) Obtaining the required NOC's and permits.
L) Carryout related Civil Works such as excavation, backfilling, compaction, bedding …etc.

- **Commissioning stage**

A) The Contractor shall carry out commissioning works and tasks as per OWWSC guidelines and procedures.
B) Preparation of ICA Drawings related to level control between the tank and pump operation
M) Design and installation of the mechanical drawings (pipes, valves, fittings and supports).
N) Preparation and submission of Mechanical and civil Drawings.
O) Design and installation of SCADA control and requirements of motorized valves, etc.
P) Preparation and submission of final As-built drawings and GIS surveyed data.

- **SCADA Control Scope**

A) The minimum inlet pressure at pump suction shall be adjusted at PLC unit (from 1 bar to 0.2bar). Inlet pressure switch shall respond to this new adjusted value.
B) A new low water level LWL signal shall be transmitted to the pump PLC to switch OFF the pump when water level is at 2m or below. (pump protection)
C) The booster pumps shall be activated to operate between 0.2bar suction and 15bar discharge with the aid of VFD drives. VFD settings shall be adjusted accordingly.
D) When the water level reaches the maximum high level in the tank (5.5m), a level switch shall trigger the inlet motorized valve to close automatically.
E) The outlet isolating valve from the tank to the pumps shall be normally open unless it is intended to close for the original inline boosting mode.
F) The isolating valve splitting the flow from new tank and Al Ilam city shall be normally closed unless it is actually intended to open for inline boosting mode.

G) The float valve shall close the filling line automatically to avoid tank overflowing or flooding in case the inlet motorized valve fails to respond to the high water level signal by the level switch.
H) Adding a new page to the existing HMI display unit to show the new storage tank with actual water levels in addition to the status of the motorized valves and pumps.
I) Testing and commissioning of the whole modified pumping scheme after installation of new tank.
J) Spares, Toolkits, As-built drawings, modified operation control philosophy and Training

**Time for Completion of the Works**

The whole Contract period for completion the works is 180 calendar Days from the letter of acceptance inclusive the mobilization period (30) calendar days