

CONTRACT NO.**GUJARAT WATER SUPPLY & SEWERAGE BOARD
GANDHINAGAR****(GOVERNMENT OF GUJARAT UNDERTAKING)**

Bid Documents for Providing Supplying ,Lowering laying & Jointing of D.I. Pipe Line at Nagviri Village Site. Lakhpat Regional Water Supply Scheme for General Budget Demand -67 (WSS-6 General)

Estimated Cost :- Rs. 66,08,826.73

VOLUME- II A**VOLUME – IIA, Extent of Work****VOLUME – IIB, Technical Specifications – Civil Works****VOLUME – IIB-1, Technical Specifications – WTP****VOLUME – IIC, Technical Specifications – Electro-mechanical works****VOLUME – IID, Technical Data Sheets Civil & Electro-mechanical**

**Executive Engineer
Public Health Works Division,
Gujarat Water Supply & Sewerage Board
Nakhatrana - Kachchh**

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VOLUME- II A**EXTENT OF WORK**

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Content

- Extent of Work
- Details of Proposed Scheme
- Special Attention

EXTENT OF WORKS

1.0 GENERAL:

This is a single point responsibility contract comprising **Providing Supplying ,Lowering laying & Jointing of D.I. Pipe Line at Nagviri Village Site. Lakhpat Regional Water Supply Scheme for General Budget Demand -67 (WSS-6 General)**

~~The scope of work also includes post implementation operation and maintenance of the constructed facilities under the package for a period of 2 (TWO) years.~~

The Scope of Work under this Contract includes the Design, Engineering, Manufacture, Supply, Inspection and testing at works, Packing and forwarding, Delivery to site, Unloading, Handling, Safe Storage, Insurance, Erection, Installation, Testing, Trial Run, Commissioning and Demonstration of Performance Guarantee Parameters, Handing over, Training of Owner's personnel, preparing "Operation & Maintenance Manual " and "As Built drawings" of as specified in different sections of this specification. The scope broadly comprises the work specified in different sections of this Tender Specifications.

Any item of work, for erection of material / equipment which have not been specifically mentioned in the specification but are necessary for safe and trouble-free operation and guaranteed performance of the entire system, plant and equipment offered shall be deemed to be included within scope of this specifications and shall be provided by the bidder without any extra price and time implication to the employer.

The successful bidder shall have to undertake site surveys, route surveys for ascertaining the terrain for planning and designing of the schemes in consultation with Engineer-in-charge, as Structure as to conduct geotechnical investigations for designing of foundation system of various structures. The bidders shall submit actual path of laying of transmission network based on actual site condition and shall submit hydraulic design of transmission network to Employer/Consultant for review/approval and thereafter as per approved hydraulic design pipelines should be laid.

~~Civil, Mechanical, electrical & Instrumentation works shall include design, manufacture, performance testing at manufacturer's works, painting, supply, delivery at site, storage at site, installation / erection, testing and commissioning at site, final painting and handing over followed by Operation and maintenance for 2 years.~~

The scope of work shall also include obtaining necessary statutory approvals for the components as required. The statutory approvals shall include but not limited to Load Sanction from GEB/Load Release from GEB/ No Objection Certificates from Gujarat Electricity Board (GEB)/ Electrical Inspector / relevant government agencies / any other statutory authority as applicable. The same shall be in the scope of contractor.

GWSSB will be responsible to get all other statutory permissions and clearances from the concerned central / state or local statutory authorities. However, the contractor shall have to manage the day-to-day co-ordination and follow up activities based on these clearances on site.

In the work of construction of structures, if the following condition like ground situation, SBC reports, type of strata encountered in foundation, natural rainfall drain patterns, Ground water table of locations, etc. occurs and the engineer in charge feels the necessity of consideration of ground water table, the structural design shall be incorporate necessary water uplift pressure. The decision of engineer-in-charge shall be binding to the bidder. Bidders are advised to quote the rate keeping in

view this point as no extra payment shall be given for this. In case of any ambiguity, the decision of Superintending Engineer shall be final and binding to the bidder.

Before starting the actual work, the contractor has to provide and fix necessary DISPLAY BOARDS at all works site as per design, details, including writing with paints necessary details as directed by Engineer-in-charge at Contractor's own cost. No extra payment shall be made for this work. These shall be property of GWSSB / Client after completion of works.

2.0 DETAILS OF PROPOSED SCHEME

2.1 SCOPE :-

The scope of this package starts from:

The proposed scheme includes following components:

“Providing Supplying ,Lowering laying & Jointing of D.I. Pipe Line at Nagviri Village Site. Lakhpat Regional Water Supply Scheme for General Budget Demand -67 (WSS-6 General) ”

CIVIL WORKS

GENERAL

The general arrangements given in the specification is indicative, the contractor to develop detailed drawings to suit process level requirements, capacity specified in specification and available plot area.

- Valve Chambers
- Anchorage/Thrust Blocks/Culvert/Nalla/Drain/River Crossing

Valve chambers:

Contractor shall carry out the construction of valves chambers in consultation with the engineer in charge.

Anchor/Thrust Block

Anchor/thrust blocks shall be provided wherever necessary in consultation with engineer in charge. Contractor shall carry out the design and submit the same for review and approval before execution.

Civil Works for Transmission Piping:

The schematic diagram for pipeline is as shown in the bid drawings. This is only for reference and the selected bidder have to prepare the route map after carrying out necessary survey and fix the alignment in consultation with the Engineer in Charge.

The scope of works comprises the following:

- Hydraulic design shall be prepared and submitted to GWSSB for approval.
- Route Survey.
- Geotechnical survey along the pipe route.
- Excavation of pipe trenches. Constructing pedestals/column support/saddles/ steel bridge, Raising the pipe
- Supplying and Laying of DI & PVC pipe of design diameters with all specials along the route as per the route map (to be surveyed and prepared by the selected bidder).
- Transportation of pipes and materials to fabrication/erections including loading and unloading.
- Contractor shall plan and accordingly phase the supply of items according to his requirement to best utilize the available storage space at site.
- Providing coating/ lining/painting as specified in this tender specification.

- Providing and fixing sluice valves, Scour valves and Air Valves on pipeline, as specified in relevant data sheets, detailed technical specifications, particular technical specifications
- Providing tapings as required.
- Providing pipe bedding as per the requirements.
- Backfilling of pipe trench with selected soil immediately after erection of pipe excluding pipe joints.
- Encasing of pipelines as per specifications.
- Hydro testing of pipeline in segments.
- Back filling of pipe trench at pipe joints.
- Providing and fixing electro-magnetic flow meter on Existing and New pipelines at specified locations.
- Construction of RCC Sluice / ZVV / Butterfly/ Flow meter Valve Chambers as per design and drawing.
- Supplying, fixing construction of riser pipe for air valves as per design and drawings.
- Connection of newly laid pipes with existing pipes.
- Construction of RCC Thrust blocks, Saddles, Anchor blocks & cross drainage works etc. A typical drawing is enclosed for reference.
- Demolishing old structures in the route of pipeline, if required.
- Construction of culverts/ saddles for pipe laying in Nallah Portion if required.
- Flushing of entire pipeline with clean water at least for 24hours.
- Testing and commissioning all network including existing pipeline to be used.
- Preparation of as-built drawings.
- The scope of jointing existing pipeline with newly laid pipeline is under agency's scope.

Summary of transmission pipelines, along-with the pipe materials, diameter and lengths are mentioned below.

Summary of pipeline:

As per BOQ

~~DESIGN AND CONTRUCTION OF CIVIL STRUCTURES :-~~

- ~~—— Soil Investigation and Designing of Structures for their stability for all Civil Structures.~~
- ~~—— Submission and Approval of All drawings in minimum 6 copies original for all civil Structures.~~
- ~~—— Detailed sub-soil investigations to assess the safe bearing capacity.~~
- ~~—— Developing designs, structural design (including reinforcement) and detailed Construction drawings and obtaining approval for the same from the proof consultant and the client.~~
- ~~—— The general arrangements given in the specification is indicative, the contractor to develop detailed drawings to suit process level requirements, capacity specified in specification and available plot area.~~

~~Water Treatment Plant : (Not Applicable)~~

- ~~—— Designing of process diagram of Water treatment plant according to specifications and Data-Sheets and Minimum requirement.~~
- ~~—— Soil Investigation and Designing of Water treatment plant components GAD.~~
- ~~—— Preparation and Submission of detailed drawings.~~
- ~~—— Construction of WTP as per sheet of minimum item to be executed, data sheet and item-wise specification.~~
- ~~—— Pumping mains from Main pipeline to WTP~~

Pump Houses, Chlorination Rooms, Staff Quarter, Inspection Bungalow :-

- The Scope includes detailed design, civil general arrangement drawings, structural drawings (including reinforcement) / construction drawing so fall civil works for Pumping Stations, building services, water supply, storm water drainage, sewerage, and waste water system and detailed design and drawings of all mechanical, electrical and instrumentation system and equipment on the basis of the approved design, layout and general arrangement.
- The pump house shall be design so that pumps be easily install and maintenance can be done easily.

RCC SUMP

Water will be conveyed to the RCC SUMP through a pipeline. RCC sump to be provided as indicated. The Sump reservoir will have two compartments (for 20 LL or above capacity as per mentioned in BOQ) of equal capacity so that any of these compartments can be taken out for repair/ maintenance purpose. The treated water inlet to the tank shall be able to feed these two compartments separately. As and where required, for smooth running and operation of the sump, necessary provision for common suction pit for these compartments will be in the scope of contract for which no extra payment will be made and this will be a part and parcel of the job. The tank shall be provided with arrangement for access and dewatering facilities.

The scope of work shall include but not limited to:

- Detailed sub-soil investigations to assess the safe bearing capacity and other design parameters.
- Developing designs, structural design (including reinforcement) and detailed construction drawings and obtaining approval for the same from the proof consultant and the client.
- The general arrangements given in the specification is indicative, the contractor to develop detailed drawings to suit process level requirements, capacity specified in specification and available plot area.
- Construction of sump as per approved design and specifications.
- Preparation of as-built drawings.
- The work also includes the construction of valve chamber and valves for inlet and Outlet pipe outside sump.

Sr. No.	Description	Quantity
1	Construction of Water Treatment Plant at Main H/W	
2	Construction of Pump House at H/W	— As per BOQ
3	Construction of Sump Main H/W	— As per BOQ
4	Construction of Village level Sump	— As per BOQ
5	Construction of Para level Sump	— As per BOQ
6	Construction of Compound Wall	— As per BOQ
7	Pipeline network	— As per BOQ
8	Electromechanical work	— As per BOQ

MECHANICAL WORKS:

~~The scope includes design, engineering, supply, installation, testing and commissioning of Suitable Pumping machinery as specified in the price bid with required electrical & mechanical accessories, including comprehensive operation & maintenance at various pumping stations of clear water included in the scope of the tender.~~

- ~~a) — SITC of Suitable Pumping Machinery as specified in price bid for four head works for Clear Water transmission.~~
- ~~b) — The contractor must complete & furnish pump/ model study, Sump/ Intake Structure model study and CFD Analysis before submission of drawings & documents.~~
- ~~c) — Design & supply associated piping, Valves, instrumentation & accessories as specified in price bid.~~
- ~~d) — Installation, testing & commissioning of the above equipment & accessories.~~
- ~~e) — Submission of data sheets, QAP, GA drawing, cross section drawing, layout drawings of all equipment and to get approval of same.~~
- ~~f) — Operating Units For effective running of pumping machinery, operating staff is required to stay at HW site; hence provision is made for operating units at~~

ELECTRICAL AND INSTRUMENTATION WORKS:

Scope of Work includes the Design, detailed engineering, preparation of construction drawings, manufacture, acceptance testing and inspection at places of manufacturer, painting, supply, packing, forwarding, delivery to site including transit insurance, storage at site, installation/erection, final painting, testing and commissioning of the electrical & instrumentation equipment's adhering to the standards, regulatory requirements & best engineering practices.

Special Attention

The Contractor has to manage following register and Record in each project site.
All Register will be maintain properly by contractor with signature of engineer in charge.

Sr. No.	Name of Register
1	Concrete Pour Card
2	Cube Testing Register
3	Steel Testing Register
4	Cement Consumption Register
5	Daily Progress Register
6	Site Visit Register
7	Pipeline Laying Register
8	Drawing Register
9	Steel Purchase Register
10	Steel Consumption Register
11	Daily log Register
12	Level Register
13	Hydraulic Testing Pipeline, Sump, ESR
14	Work Order Register