

Statement of Qualifications Water and Sanitation Engineering



SECON Private Limited

<http://www.secon.in>

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|--|-------------------------------------|
| 1. Profile | 2 |
| a) SECON Private Limited..... | 2 |
| 2. Experience | 3 |
| 3. Scope offered by the Consortium | 3 |
| a) Preparation of Basemap (for US Markets and International Markets)..... | 3 |
| b) Survey and Investigation (for Asian, Middle East and African Markets)..... | 3 |
| c) Feasibility, Planning, Design (for US Markets and International Markets) | 4 |
| d) Rate Analysis, Detailed Quantity Calculation, Bill of Quantities & Cost Estimates (for US Markets and International Markets) | 4 |
| e) Preparation of Tender Documentation and Vendor Evaluation (for US Markets and International Markets) | 5 |
| f) Project Implementation Supervision and Generation of As Built Drawings(for Asian, Middle East and African Markets) | 5 |
| g) GIS Based Asset Management (for US Markets and International Markets) | 5 |
| 4. Security at SECON's ISO 9001:2000 certified Operations Center | 5 |
| Security - Physical Controls | 5 |
| Security - Technical Controls | 6 |
| Project Management | 6 |
| Communications Protocols | 6 |
| 5. Offices and Contact Information | 6 |
| 6. Appendix 'A' Past Experience | 7 |
| Name of Senior Personnel and their Designation | Error! Bookmark not defined. |

1. Profile

a) SECON Private Limited

SECON is an ISO 9001:2000 certified GIS Driven Multidiscipline Engineering company with over 850 personnel. SECON is a financially sound, stable, zero-debt company that was established in 1981. SECON is one of the leading multidiscipline engineering consulting firms and the largest and oldest surveying and mapping firm in India with over 27 years of experience. Most of SECON's clients are repeat and long-term clients.

SECON provides world-class GIS services and software solutions at cost-effective rates by using the global delivery model. SECON is an ESRI Business Partner and a member of the Autodesk Developer Network (ADN).

SECON has long-term partnerships with international engineering firms and can operate in most areas of Asia, the Middle East, and North Africa. SECON prefers the partnering model for its US and European areas of operations.

The key differentiator for SECON is that the company is not just an offshore services firm, but a well-established (established in 1981) Multidiscipline Engineering firm. The SECON QA/QC staff working on the surveying and mapping projects have firsthand experience in dealing with SECON's Engineering Consulting staff that provide input while working on SECON's engineering consulting projects.

SECON personnel have access to SECON's engineering talent and domain expertise in:

- Oil and Gas Pipeline Transportation Routing
- Water and Sanitation Engineering
- Highway and Transportation Engineering
- Civil and Structural Design
- Irrigation and Flood Control Engineering
- Electrical Engineering
- Environmental Engineering
- Geotechnical Engineering
- Cadastral and Parcel Mapping
- Land Surveying and Mapping
- Photogrammetry, LIDAR and Image Processing
- GIS Driven Software Development
- GIS Data Conversion and Maintenance

SECON has the following standing in India:

- The largest private (non-government) surveying and mapping firm in India
- The dominant pipeline corridor mapping firm in India
- The largest private (non-government) mapping and design firm for irrigation and water management projects
- One of the largest private (non-government) highway mapping and design firms in India

SECON has executed over:

- 52,000 km of large-scale Pipeline Corridor Mapping – this includes Route Engineering, Topographical and Cadastral Mapping and Rights-of-Way Acquisition assistance and management. This is the largest amount of Pipeline Corridor mapping done by any corporation in India.
- 10000 km of mapping, design, and construction supervision of highways
- 1,000,000 Hectares (3,861 sq miles) of large-scale mapping (topographical and cadastral) for Irrigation projects
- 600,000 Hectares (1,550 sq miles) of Irrigation and Water Management design projects
- 600 infrastructure development projects (includes subdivision/township mapping, design and planning)
- 600,000 meters of geotechnical investigation and drilling in various soil strata.
- SECON has also extracted the Detailed Project Report data for 7,300 km of National Highways in India and collated this data for entry into the NHAI Road Information System.
- SECON is currently short-listed for the pioneering National Highway Asset Inventory project in India. This project is to perform the asset inventory of 5,700 km of National Highways in India.
- SECON is successfully completed a major multimillion dollar mapping and consulting project for the planning and design of the Water and Sanitation system for 13 municipalities (101 townships) in Libya.
- SECON was the only firm selected in India by OPUS, New Zealand (<http://www.opus.co.nz>) to be their offshore design center.

2. Experience

The experience of SECON spans in varied climatic and working conditions. The members have executed projects aided by multi-lateral funding agencies including World Bank, etc.

Project data sheets elaborating the experiences are enclosed as Appendix 'A'

3. Scope offered by the Consortium

a) Preparation of Basemap (for US Markets and International Markets)

- Topographic/Planimetric/Urban mapping
- Digital Terrain models
- Preparation by data collection and processing from:
 - Satellite Images
 - Photogrammetry and Lidar

b) Survey and Investigation (for Asian, Middle East and African Markets)

- Field Survey to generate Plan/Profile/Cross Sections, Manhole invert elevations, transport main Profile, Longitudinal sections, developing of Hydraulic mean gradient levels & intersection levels of distribution networks.
- Underground Utility Location using GPR (Georadar)
- Above ground Utility mapping
- GPS mapping and inventory for GIS asset management
- Geotechnical Investigations
- Geological Investigations
- Hydraulic Investigations
- Hydrological Investigations

c) Feasibility, Planning, Design (for US Markets and International Markets)

Water Supply, Sewerage and Storm Water Drainage System

- Feasibility study of the proposed system with respect to the Topographical features, source, demand, environment, supply and other factors by considering and analyzing the existing system
- Assessment of Water resources (Ground water and surface source) & water supply, preparation of preliminary design and estimate for Urban / Rural water Supplieschemes
- Water quality analysis using various methods, Proposing suitable technology for the treatment of Non Potable water according to the water quality Parameters affected, preparation of Engineering study report involving population projection, economic analysis Water Hammer analysis of rising main & distribution system using BRANCH, LOOP-5 program, EPANET, WATER CAD etc.and Pumping Machinery design.
- Diagnostic studies including flow gauging and computer-based hydraulic modeling of sewerage systems using SEWER CAD
- Sewerage development ,treatment of sewage, and disposal of sewage
- Design of storm water drainage network using STORM CAD
- Purification and recovery of waste water for irrigation, and recharging of ground water aquifers
- Development and management of water resources
- Design of potable drinking water supply and distribution network
- Potable water supply and public sanitation facility development for low-income dwelling complexes, if required
- Irrigation, drainage and flood mitigation works
- Aesthetic water bodies development for recreation designed sewer networks, trunk sewers, pumping stations, oxidation ponds and outfall
- Design of water supply network, sewerage and storm water network.
- Preparation of detailed working drawings for the network, appurtenances and structures
- Design of Water Treatment Plant with a schematic diagram
- Design of the Sewage treatment plant

Trenchless Engineering

- Technical feasibility and design for project implementation of trenchless construction and rehabilitation
- Procedure for the use of Trenchless methods for laying the water supply and sewerage system.
- Quality control and specifications for the implementation of the project

d) Rate Analysis, Detailed Quantity Calculation, Bill of Quantities & Cost Estimates (for US Markets and International Markets)

- Preparation of rate analysis for the major items as per the specifications
- The rate analysis will also take into account the expected leads for earth work and other materials.
- The rates of the items shall be based on the prevailing market rates/ government rates for material and labour.
- Calculation and presentation of detailed quantities for the various items
- Preparation of the Bill of Quantities of the items after classifying the same under various heads.
- Calculation of the Cost Estimates for the project based on the above

e) Preparation of Tender Documentation and Vendor Evaluation (for US Markets and International Markets)

- Finalisation of the technical specifications for the various components of the project
- Preparation of Bid – documents as per the Clients standard procedures followed such as World Bank Procurement policy, FIDIC etc.,
- Preparation of detailed specifications for the items
- Preparing Pre-qualification Documents for the Contractors
- Preparation of Tender Documents for the Contractors
- Assisting the client in evaluation of the Tenders

f) Project Implementation Supervision and Generation of As Built Drawings(for Asian, Middle East and African Markets)

- Supervision and quality control of the day-today construction
- Checking and Certification of quantities executed as per the specifications laid down in the tender document
- Contract Management of the project
- Verification of bills
- Assisting Client in clearing arbitration and Disputes
- Identification of approved variations from the Tender drawings
- Preparation of as built drawings incorporating the changes, if any for effective management.

g) GIS Based Asset Management (for US Markets and International Markets)

- Field Survey and Data collection
- GIS Data Development (converting hardcopy/CAD plans/asbuilt drawings into GIS database for Water/Sewer/Stormwater networks)
- Development of Enterprise GIS applications for Asset management and Environmental monitoring
- Generation of Network Mapbooks (generation of network system maps in hard copy and digital format viewable on web based systems)

4. Security at SECON's ISO 9001:2000 certified Operations Center

SECON has a state of the art 105000 sqft ISO 9001:2000 certified operations center that is fully owned by the company.

This operations center is a secure facility and has robust security controls.

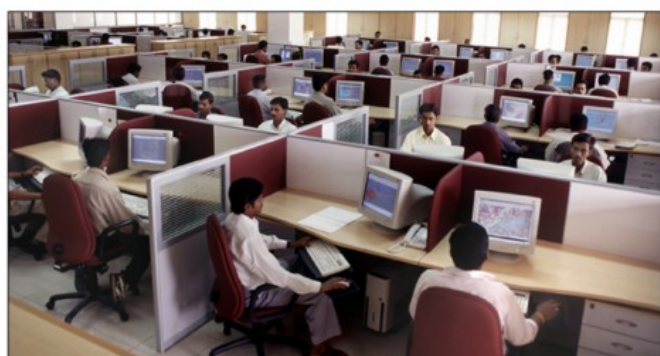
The controls include:

Security - Physical Controls

- 24X7 security guards
- Access Control Devices to restrict access to the different areas of the Operations Center.



Aesthetically designed 105,000 sqft. Company owned office space



Security - Technical Controls

- Network Monitoring Tools
- Web content filtering tools to restrict websites and ftp sites.
- Anti-Virus Tools
- Firewalls
- Secure Servers
- Encryption
- Restricted and controlled access to floppy drives, zipped drives and CD/DVD writers-these are disabled on all machines. Disabled USB drive data transfer on all machines. Only the network administrator can do data transfer to external devices and closely controls this external data transfer.
- Restricted access and monitoring of Secon FTP site.
- Regular backup of data on daily and weekly intervals
- Power Backup with UPS and Generators
- Leased Line Backup for Internet Connectivity

Project Management

Weekly progress reports will be sent by email from SECON to the client project manager. The SECON Project Lead will interact on a frequent basis (more than 2-3 times a week) with the technical lead from the client during the project.

SECON will extensively use webconferencing tools such as Webex and Citrix Online to interact with the client on an as-required basis. Project documentation will be exchanged by Microsoft Word, Excel, Visio, and MS Project.

Communications Protocols

Email will be the preferred method of communication. In addition teleconferencing and webconferencing will be used. File transfer will be done through FTP.

5. Offices and Contact Information

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| India 147, 7B Road, EPIP, Whitefield Bangalore 560066 Phone:91-80-41197778 Fax:91-80-41194277 Email: feedback@SECON.in | USA 10460 Roosevelt Blvd N, Ste 387 St Petersburg, FL 33716 Phone: 727-493-2214 Fax: 727-499-6945 Email: dhyan.appachu@secon.in |
| LIBYA SECON Private Limited PO Box 13456, Tripoli, Libya Phone: (218)914624857 Rupesh Jang Shah Email: Rupesh.shah@SECON.in | |

6. Appendix 'A' Past Experience

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| Assignment Name: General Plan for Water Supply, Sewerage and Storm Water Drainage System and accompanying works in Libya for Great Socialist People's Libyan Arab Jamahiriya – Preliminary Design, final design and preparation of Tender Documents | | Country: Libya |
| Location within Country: Tripoli | | Professional Staff Provided by the Firm: |
| Name of Client: ----- | | No. of Staff : 60 |
| Address: ----- | | No. of Staff Months : 2135 |
| Start Date (Month/Year) December 2005 | Completion Date (Month/Year) June 2007 | Approximate Value of Services (in current USD) : ---- |
| Name of Association Firm(s) if any: STC,TTI,PEC | | No. of Months of Professional Staff provided by Associated Firm(s): SECON : 775 STC : 570 TTI : 561 PEC : 229 |
| Brief Description of Project | | |
| <p>The project is planned to provide the inhabitants of 13 Shabiyas / Municipality in the Tripoli Region with potable water of appropriate quality and quantity; with collection, treatment, disposal and re-use of sewage and storm water based on environmentally sound practices. The main objective of consultancy services is for the fact-finding, planning and design of the water supply, sewerage and storm water drainage network for 13 Shabiyas consisting of 119 settlements (35000HA). In addition, network of roads of 1500Km is also planned as a part of the Master Plan.</p> | | |
| Details of Services | | |
| <ul style="list-style-type: none"> • Review of preliminary reports • Establishing Control Grid Network by DGPS observations • Rectification of Quickbird satellite images of 0.6m resolution and preparation of Base Map • Planning the envisaged network of Water Supply, Sewerage, Storm Water and Roads. • Data Capture along the finalised corridor including Invert levels, water devices, areas for location of treatment plants, pumping stations. • Soil Resistivity Survey and analysis • Design of Water Supply, Sewerage, Storm Water, Accompanying Works and Roads. • Preparation of alignment and execution drawings. • Preparation of BOQ, Cost Estimates and Tender Documents. | | |