



**OWNER:** COCHIN PORT AUTHORITY  
**PROJECT:** CONSULTANCY SERVICES FOR THE WORK OF  
UPGRADATION OF FIREFIGHTING FACILITIES OF TANKER  
TERMINALS COT, Q-4, AND OTB (NTB-STB) AT COCHIN PORT.  
**JOB NO:** C044  
**DISCIPLINE:** GENERAL CIVIL

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## 1.0 SCOPE OF WORK

The scope of Work & Supply for the upgradation of firefighting facilities of NTB shall include supply of all materials, consumables, tools, tackles, machinery, equipment, arranging of manpower, construction/ installation, fabrication, erection, painting, supervision, testing and commissioning (wherever applicable) for general civil works at North Tanker Berth (NTB), Cochin Port, as per Scope of work mentioned below, Schedule of Rates, approved Drawings, Documents, Specifications, relevant Codes, Standards and direction of Engineer-in-Charge.

Any other work not specifically listed below but required for satisfactory & successful completion of the entire work shall also deemed to be included in Contractor's scope of work.

**Contractor shall visit the site for familiarization before quoting rates. No extra claim at a later date shall be entertained due to the non-familiarization of site.**

### 1.1 BRIEF SCOPE OF WORK

The Scope of work shall include the following works, in NTB area & enumerated below:

- a) Dismantling/removal of existing firefighting equipment (Hydrants, monitors etc.) including isolation valve, transporting the equipment, valves, flanges from removal point to Owner's storage point.
- b) Supplying and installation of firefighting extinguishers, Landing valves, Fire hydrants/monitors, hose box 4 nos. 5-inch Storz connection, one no. International Shore Fire Connection (ISFC).

### 1.2 DETAILED SCOPE OF WORK

The detailed scope of work for above mentioned works shall be, in general, but not limited to the following:

- a) Supplying, fabrication and erection of Fire water CS piping as per PMS, (to be laid above ground and underground), Isolation/ Drain/ Vent valves (Carbon Steel as per EIL VMS), bends, elbows, flanges, gaskets, nut and bolts etc. as required, providing anti-corrosive tape coating for underground fire water piping and painting on aboveground pipes etc., including supply of all consumables, tools, machinery required all complete as per drawings, standards, specifications and direction of Engineer-in-Charge. The detailed scope of work shall be as follows:
  - i. Supply and installation of piping materials (as described in Cl. ii below) and all other necessary piping materials including its transportation from Contractor's storage point/workshop/warehouse to work site for complete Firewater piping (C.S. Piping) including supply of all other material for providing supports, including providing machinery, tool, tackles, labours, consumables, non-consumables as required to complete the job.
  - ii. Piping materials include the following but is not limited to the same:
    - a. Pipes (All sizes and schedules – as per PMS)
    - b. Flanges (All sizes, types and Pressure ratings)
    - c. Fittings (All sizes, types and schedules)
    - d. Valves (All sizes, types and ratings)
    - e. Gaskets (All sizes, types and ratings)

- f. Studs, Nuts or M/c Bolts (all types)
- iii. Fit up, Shop & field fabrication, transportation and erection of piping in accordance with documents listed under Cl. 1.3 i.e. 'BASIS OF WORK' including erection/ installation/ laying of all piping materials enumerated above.
- Fabrication and erection of pipe supports like shoe, saddle, guide, stops anchors, clips, cradles, supporting fixtures, brackets, cantilevers, struts, tee-posts, etc.
- Fabrication of piping specials like special radius bends, reducers, mitres, etc.
- a. Fabrication of plain and threaded nipples from pipes as required during erection.
- b. Fabrication of swage nipple as and when required.
- c. Fabrication of odd angle elbows like 60°, 30°, or any other angle by trimming from 90°/ 45° elbows as and when required.
- d. Fabrication of flange, blind flange, spectacle blinds as and when required.
- e. Fabrication of stub in connection with or without reinforcement.
- f. Grinding of edges of pipes, fittings, flanges, etc. to match mating edges of uneven/different thickness wherever required as per specifications.
- iv. Modifications like providing additional cleats, extension of valve stem, chain & sprocket for making valve chain operated, locking arrangement of valves, etc. as and when required.
- v. Modification in existing firewater piping system, removing and shifting of firefighting equipment (i.e. Hydrant/ Monitor) to proposed new location, all complete as per direction of Engineer-in-Charge.
- vi. Supply and installation of hydrants, water cum foam monitors (variable flow type), tower mounted remote operated high velocity water cum foam monitor (variable flow type), jumbo water curtain nozzles, hose boxes, hose reels, international shore connection and Storz connection for tug boat etc.
- vii. Radiography, stress relieving, dye penetration, magnetic particle test, etc., as per relevant EIL specification.
- viii. Painting of complete above ground piping system and supports including supply of all materials, consumables etc.
- ix. Flushing and hydrostatic testing of all piping systems as per standard specification for inspection, flushing and testing of piping systems (Specification No. 6-44-0013). Drying by compressed air, cardboard blasting, flushing with water/ air, and draining as required.
- x. Welding of additional break-up flanges as and when required.
- xi. Providing operating platform for Hydrants and monitor all complete including supply of all materials.
- b) Supply and installation of first aid firefighting equipment/extinguishers as per OISD including supply of related brackets, nuts, bolts, rain shed (for outdoor installation) transportation to site including supply of all related material etc. all complete as per standards, specifications, drawings, codes and direction of Engineer-in-Charge.
- c) Refer approved vendor list attached with tender for procurement of various items.

***Any other Civil Works, not specifically mentioned herein, but required for the satisfactory and successful completion of the project as per directions of the Engineer-in-Charge shall also be in the scope of the Contractor.***

### 1.3 Basis of Work

The complete piping work shall be carried out in accordance with the following:

- a. Approved for construction' drawings, hook-ups and sketches issued by EIL to the Contractor- Plans and/or Isometrics.
- b. Drawings, sketches and documents prepared by Contractor duly approved by Engineer-in-Charge. In case of new piping is fouling with existing piping/ structure/ platform, the Contractor to develop Drawings / Sketches suit to site condition which is to be duly approved by Engineer-in-Charge. (Such as isometrics of small-bore pipes in Contractor's scope and lines required to be field routed etc.).
- c. EIL specifications/Documents as below:
  - i. Process and Instrumentation Diagram.
  - ii. Piping Material Specification.
  - iii. Piping Support Indices (Only in offsite), if supports are not shown in piping plan.
  - iv. Standard Specification of Non-Destructive Requirement of Piping
  - v. Welding Specification Chart for Piping Classes
  - vi. Standard Specification for pressure testing of erected piping system
  - vii. Welding Specification for fabrication of Piping Any other EIL or other specification attached with Piping Material Specification or special conditions of contract (such as standard for dimensional tolerances etc.)
  - viii. Procedure for storage, preservation and positive identification of materials at Contractor's works/ stores.
  - ix. Hook-up drawings.
  - x. Specific requirements of Owner/Engineer-in-Charge.
- d. Following Codes, Standards and Regulations:
  - i. ASME B 31.3            Process Piping
  - ii. ASME Sec.VIII        Code for Unfired Pressure Vessel.
  - iii. IS: 823                Code for Procedure for Manual Metal Arc Welding of Mild Steel (for structural steel).
  - iv. ASME Sec. V

All the codes referred above shall be latest edition, at the time of award of contract.

## 2.0 SCOPE OF SUPPLY

### 2.1 OWNER'S SCOPE OF SUPPLY

Nil.

### 2.2 CONTRACTOR'S SCOPE OF SUPPLY

- a) Pipes (PMS AA93Y)
- b) Valves with matching flanges, nut bolts and gasket. (PMS AA93Y)
- c) Fittings including elbows, reducers, equal tee, etc. (PMS AA93Y)

- d) Procurement and supply of all materials (consumables / non-consumables), including all tools, tackles and labors required for the completion of the works shall be in the scope of the Contractor.

### 3.0 SPECIFIC REQUIREMENTS TO BE FULFILLED BY THE CONTRACTOR

**Note: In case of any contradiction between these Specific Requirements and Requirements/ Specification specified elsewhere in the tender document, the Specific Requirements given below shall have precedence.**

- 3.1 Materials shall be supplied through approved vendor list. For other material, Contractor shall provide proven and tested material wherever applicable.
- 3.2 All works shall be done to the entire satisfaction of the Engineer-in-Charge. Any work not carried out in accordance with the instructions shall be dismantled and made good without any extra cost and time implication to the owner.

### 4.0 LIST OF ATTACHMENTS

#### 4.1 STANDARDS

S. No.	Standard No.	Title of Document
1.	7-65-0001	Abbreviations, legends and equipment symbols.
2.	7-65-0420	Installation details of fire water hydrant.
3.	7-65-0421	Installation details of water or water cum foam monitor, long range foam / water monitor.

#### 4.2 SPECIFICATIONS

S. No.	Specification No.	Title of Document
1.	6-66-0004	Standard specification for portable fire extinguisher
2.	6-66-0012	Standard Spec. for stand post type fire hydrant (with or without pumper connection).
3.	6-66-0018	Standard specification for first aid hose reel.
4.	6-66-0027	Standard specification for water cum foam monitor single barrel type.
5.	6-66-0039	Standard specification for jumbo curtain nozzle.
6.	6-66-0047	Standard specification for hose cabinet.
7.	6-66-0061	Standard specification for 50 kg. & 75 kg. Capacity dry chemical powder extinguisher.
8.	6-77-0001	Welding Specification for fabrication of piping
9.	6-77-0005	Welding Specification charts for piping classes
10.	6-78-0001	Specification for quality management system requirements from bidders.
11.	6-78-0002	Specification for documentation requirements from Contractors.
12.	6-78-0003	Specification for documentation requirements from suppliers.

S. No.	Specification No.	Title of Document
13.	6-79-0011	Standard spec. for corrosion protection tape coating for underground steel piping
14.	6-82-3200	Inspection & test plan (ITP) for mechanical works (item rate contracts – with categorization)
15.	6-82-6100	Standard Quality Assurance Plan - Construction Division (Item Rate Contracts)

#### 4.3 VENDOR LIST

S.No	Specification No.	Title of Document	Rev
1.	C044-000-81-45-LL-9501	Approved Vendor List (General Civil)	A

#### 4.4 DATASHEETS

S.No.	Drawing No.	Description
1.	C044-000-81-45-DS-4801	Data Sheet for Stand Post Type Fire Hydrant (Without Pumper Connection) (For Sea Water Service)
2.	C044-000-81-45-DS-4802	Data Sheet for Landing Valve (For Sea Water Service)
3.	C044-000-81-45-DS-4803	Data Sheet for Hose Cabinet
4.	C044-000-81-45-DS-4804	Data Sheet for Remote Operated Long-Range Water Cum Foam Monitor (Variable Flow 750-1000GPM)
5.	C044-000-81-45-DS-4805	Data Sheet for Jumbo Curtain Nozzle
6.	C044-000-81-45-DS-4806	Data Sheet for Water Cum Foam Monitor (750 GPM To 1000 GPM) (Variable Flow)
7.	C044-000-81-45-DS-4807	Data Sheet for First Aid Hose Reel (Type-A)
8.	C044-000-81-45-DS-4808	Data Sheet for Spray Nozzles (Medium Velocity)

#### 5.0 PREAMBLE TO SCHEDULE OF QUANTITIES

5.1 Item description provided in Schedule of Rates (Short Description) is in brief, while quoting and filling the rate in these Schedule of Rates (Short Description), Bidder shall take into consideration complete scope of work/item description as mentioned in Schedule of Rates (Detailed Description) for the relevant item. The rate quoted in Schedule of Rates (Short Description) shall be deemed to include all activities of work mentioned in item description of Schedule of Rates (Detailed), scope of work, specifications, standards etc. & stringent of all shall govern.

5.2 Wherever “plant boundary” is mentioned in the SOR or specifications, the same shall be read as “Plant property limit”.

#### 6.0 SCHEDULE OF RATES

Refer Document No. C044-000-81-45-PK-SOR-9501