**VOLUME III**

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#### Volume III

#### SECTION -9

 **Price Proposal**

**9.1 Pricing Preamble**

**9.2 Price Schedule**

**9.3 Schedule of Rate for Staff and Day Work**

# **9.1 Pricing Preamble**

# **GENERAL**

Contractor shall go through the Section 8.0 Employer’s Requirements of his contract & all cost shall be included for the item described in Section 9.2 of price schedule.

All the prices include Labour, Material, providing of necessary Tools and Machinery, Insurance, Overhead and Profits, due Taxes, Road authority supervision cost, cost of Bank guarantee to be submitted to Road authority as a guarantee for proper compaction and reinstatement and all the components not specially mentioned in the following description but necessary to achieve the works as specified in the contract.

Note :-

1. Cost of provision of power supply as per Ceylon Electricity Board requirements to wherever necessary should be included into the cost of the respective item of work.
2. Temporary Road Reinstatement to be done by the Contractor as per the Specifications and cost to be deemed to include to the price schedule
3. Permanent road reinstatement to be done by the Contractor as per the specification given in Section 8.4 of the Volume II.
4. Cost of all testing such as soil, water quality, concrete, structures after completion, pipe lines pumps & equipment etc., cleaning & disinfection should be included under the relevant item of the price schedule.
5. The Contractor shall include all costs of permanent reinstatement of road ways in the lump sum price for pipe laying in his contract price. Contractor should maintain roads where pipe laying were done up to the motorable conditions at contractors cost until permanent reinstatements are done.
6. The Contractor shall obtain clearance from Planning & Design Section handing over of the Final Design Report and As Built Drawings to the Planning & Design Section for the release of payment on completion of 03 months successful operation after commissioning.

# **CONTENTS OF THE PRICES AND PAYMENTS**

## Engineering and Supervision

 This title includes :

* The delivery of the construction drawings, including reinforcement drawings and steel lists.
* The delivery of the electrical wiring drawings.

Revised on 04-07-2020

* The delivery of the accurate lay out of the pipe, conduct, cable routes and roads.

All these documents shall be delivered 21 days before the commencement of the relative construction works.

* The Supervision of the works by the Contractor's foremen and engineers.
* The performance of the laboratory tests and analysis.
* The attendance at the site meetings and submission of the minutes and progress report.
* For the Treatment Plant, in addition to the above listed works the relevant prices will include the delivery of the Basic Design documents.

The Basic design of the treatment plant will concern the delivery of the following documents :

* Report on the process and description of the principal structures and equipment.
* Drawings : Civil Works, equipment, piping, General P&ID, individual P&ID, Architectural drawings, front views of the buildings - Way leaves.
* Technical specifications of the Equipment including suppliers documentation.

*Payment* :: These items will be paid monthly by applying the progress rate of the relative construction works to 80% of the corresponding lump sums.

## Civil Works

 This title concerns :

1. Earthworks, trenches, access, road and drains,
2. piping,
3. structural steel works,
4. foundation of structures,
5. building trade,
6. concrete works,
7. painting and protective coating,
8. electrical works for building,
9. sanitary works,
10. landscaping, external lighting, fencing, sheaths, etc.....
11. Any other works which not included above but required to complete the work.

The Contractor shall submit for approval, two months after the coming into force of the Contract, a breakdown of the lump sum of each structure.

*Payment :* 80% of the lump sums against monthly progress statement.

## Cost and Insurance

In US$, means the cost of the transportation of the goods by a **sea** carrier or air freight from the manufacturer’s factory via port of shipment to the site including insurance.

In Sri Lankan Rupees, means the cost of the clearing and the transportation of goods between the port of Colombo and the site including insurance.

*Payment :* 100% of the invoice value against acceptance by the Engineer at site.

## Erection/Commissioning

 This title includes:

* The erection of the following equipment : Hydraulical, Mechanical, Electrical, Chemical, Electronically.
* Painting and protection for equipment.
* Testing and commissioning, including the supply of consumable water and power for those operations.

*Payment* :

60% of the corresponding lump sums against monthly progress statement.

20% of the same at commissioning acceptance certificate.

## 9.2 Price Schedule

|  |  |
| --- | --- |
| **Description** | COMPONENT |
| **Local****SL Rs.** | **Foreign****US $** |
| For the design, build and commissioning of treatment plant and associated works on design built basis which comprise of following major components. Cost of all other work and services which are not listed below shall be deemed to be included in the rates and prices of the items of the price schedule.  |  |  |
| 1. Provision for
2. Insurance as per **Clause 18 of General Conditions of Contract**
3. The facilities for employers staff as specified in the contract as per **Section 8.4 of Volume II.**
4. Mandatory Spare parts, Tools & Laboratory equipment as listed in **Section 5.**
5. Submission of detailed design and approval of Engineer.
6. Provision for Pre-shipment inspection by the employer.
 | …………..………….………….………….………….Revised on 12-06-2018 | …………..…………..…………..…………..…………… |

|  |  |
| --- | --- |
| **Description** | COMPONENT |
| **Local****SL Rs.** | **Foreign****US $** |
| 1. Construction of Intake.
 | ………… | …………. |
| 1. Construction of Water Treatment Plant.
 | ………… | …………. |
| 1. Construction of Ground Reservoirs/Towers.
 | ………… | ………….. |
| 1. Construction of DI Transmission main/s.
 | ………… | ………….. |
| 1. Construction of HDPE 100, PE Transmission main/s (PN16 or higher).
 | ………… | ………….. |
| 1. Construction of Distribution System consisting of DI pipe lines as given below

..........mm dia.– ...............km, ..........mm dia – ...............km, ..........mm dia.– ...............km,..........mm dia.– ...............km. |  |  |
| 1. Construction of Distribution System consisting of HDPE 100, SOR 17 PE pipe lines as given below

..........mm dia.– ...............km, ..........mm dia – ...............km, ..........mm dia.– ...............km,..........mm dia.– ...............km. |  |  |
| 1. 03 months operation and maintenance of the works after commissioning and on the job training of NWS&DB staff for operation and maintenance.
 |  |  |
| 1. Overseas Training of NWSDB Engineers (Provisional Sum)
 |  |  |
| 1. Allow for Power Supply (Provisional Sum)
 |  |  |
|   **Total**  |  |  |

*Note: Engineer to include other items other than above based on the scope of the project when bidding document is prepared.*

Revised on 12-06-2018

## 9.3 Schedule of Rate for Staff and Day Work

**DAY WORKS SCHEDULES**

**General**

 Reference should be made to Clause 13.6 of the Conditions of Contract. Work shall not be executed on daywork basis except by written order of the Engineer. The rates specifies shall apply to any quantities of daywork ordered by the Engineer. Daywork rates are exclusive of VAT.

 The daywork rates for labour, material and Contractor’s Equipment do not include percentages to cover contractor’s overhead and profit. Contractor may add maximum percentage over and above the daywork rate to cover overhead and profit as specified in each section below.

**Labour for daywork**

 Only the time of different classes of labour directly doing work ordered by the Engineer and for which they are competent to perform will be measured. The time of gangers (charge hands) actually doing the work with the gangs will also be measured but not the time of foreman or other supervisory personnel.

 The daywork rates for labour shall cover all direct costs to the contractor, including the amounts of wages paid to such labour, transporting time, subsistence allowances and any sums paid to or in on behalf of such labour for social benefits in accordance with Sri Lankan Law.

 The overhead and profit component, maximum of 15% of daywork rates to cover the contractor’s profit, overhead, superintendence, liabilities and insurance and allowances to labour, time keeping, clerical and office work, the use of consumable stores, utilities, the cost of using, repairing and maintaining the tools necessary to each class of workman.

**Material for daywork**

 The basic rates for material is based on the invoice price, freight, insurance, handling expenses, damages, losses, wastages etc. and shall provide and delivery to site as directed by the Engineer. The contractor shall be entitled to payment in respect of materials used for daywork at the maximum of 6% of daywork to cover the overhead and profit.

**Contractor’s Equipment for daywork**

 The contractor shall be entitled to payment in respect of Contractor’s Equipment employed on daywork. The rates include due and complete allowance for depreciation, interest, indemnity and insurance, repairs, maintenance, supplies, fuel, lubricants and other consumables. Contractor may add a maximum of 10% overhead and profit component to the daywork rates to cover his profit, overhead, superintendence, administrative costs related to use such equipment, liabilities, time keeping and any other allied works.

In calculating the payment due to the Contractor for Contractor’s Equipment employed on daywork, only the actual number of working hours will be eligible for payment, except that where applicable and agreed with the Engineer, the travelling time from the part of the site where the Contractor’s Equipment was located when ordered by the Engineer to be employed on daywork and the time of return journey there to shall be considered for payment.

.

**Table 1 : Contractor’s staff**

|  |  |  |
| --- | --- | --- |
| **Contractor's staff** | **Rate** |  |
| Expatriate |  |  |
| --- | US$ | /month |
| --- | US$ | /month |
| --- | US$ | /month |
| Local |  | /month |
| --- | SLR | /month |
| --- | SLR | /month |
| Labour charges | SLR | /month |
|  |  |  |

**Table 2 : Day Work Rates for Labour**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **ITEM NO** | **DESCRIPTION** | **UNIT** | **RATE Rs.** |
| 1 | Unskilled Labour |   | day | 1350.00 |
| 2 | Helper |   | day | 1400.00 |
| 3 | Pipe Layer |   | day | 1850.00 |
| 4 | Mason |   | day | 1700.00 |
| 5 | Carpenter and Joiner |   | day | 1800.00 |
| 6 | Steel Work Erector |   | day | 1800.00 |
| 7 | Tool Operator |   | day | 1500.00 |
| 8 | Fitter |   | day | 1850.00 |
| 9 | Tiller |   | day | 1850.00 |
| 10 | Plumber |   | day | 1800.00 |
| 11 | Welder |   | day | 1750.00 |
| 12 | Painter |   | day | 1800.00 |
| 13 | Electrician |   | day | 1850.00 |
| 14 | Mechanic |   | day | 1850.00 |
| 15 | Bar Bender |   | day | 1800.00 |
| 16 | Operator (Heavy Machine) |   | day | 1900.00 |
|   |   |   |   |   |
|   |   |   |   |   |
|   |   |   |   |   |
|  |  |  |  |  |
|  |  |  |  |  |
| **Note :** | VAT not included |  |  |  |
|  | Contractor's O/H & P not included. |  |  |  |
| **Source:** | Market prices May 2019 |  |  |  |
|  |  |  |  |  |

Revised on 20-11-2019

**Table 3 : Day Work Rates for Materials**

‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑-------------------------------------‑‑‑‑‑‑‑----------‑------

Item Description Unit Basic

No. Rate

‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑--------------------‑------------------------------------(Rs)-

 1. Cement, ordinary Portland or

 equivalent in bags kg 22.00

 2. Tor Steel reinforcing bar kg 164.00

 3. Mild steel kg 164.00

 4. Fine aggregate as specified in clause 1.6.1

 of the ICTAD specification (SCA/4/1)

 for Building Works – Volume 1

 Fine Sand cu 18,975.00

Coarse Sand cu 18,975.00

 Sea sand (wash) cu 10,563.00

 Quarry Dust cu 9,660.00

 5. Coarse aggregate for concrete as specified in

 Clause 302 of the General Specification for

 Civil Engineering construction of size ½” (Chips) cu 7,475.00

 ¾” cu 7,820.00

 1” cu 7,705.00

 1½” cu 7,705.00

 2” cu 752.00

6. Timber for Planks ( ¾”) 1”x 9” (Jack) m 752.00

7. Shuttering planks ( ¾”) m2 753.00

8. Timber for Members

 **Jack**

 Timber 4”x3” – 6 ½ ft m 2,076.00

 Timber planks 1 1/8” m2  7,531.00

 **Hora/ Liyan**

 Timber 2”x1” m 48.00 Timber 2”x2” m 139.00

 Timber 4”x2” m 535.00

 Timber 4”x3” m 927.00

 Timber 5”x3” m 1,148.00 Timber 6”x2” m 927.00

 Timber 4”x4” m 1,783.00

 Timber 4”x6” m 2,178.00

 Timber planks 1” x 9” m792.00

 Valance Board 9”x ¾” (Ginisapu) m 653.00

 Lunumidella Ceiling Planks ¾” m2 1,168.00

Revised on 20-11-2019

‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑-------------------------------------‑‑‑‑‑‑‑-----------‑-----

Item Description Unit Basic

No. Rate

‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑--------------------‑------------------------------------(Rs)-

 Kempas

 Class 1 Timber 2”x1” m 132.00

 Class 1 Timber 2”x2” m 265.00

 Class 1 Timber 2”x4” m 849.00

 Class 1 Timber 3”x4” m 1,320.00

 Class 1 Timber 2”x5” m 1,208.00

 Class 1 Timber 3”x5” m 1,351.00

 Class 1 Timber 2”x6” m 1,320.00

 Class 1 Timber 3”x6” m 2,546.00

 Class 1 Timber 4”x6” m 3,507.50

 Class 1 Timber 1”x9” m 1,320.00

9. Bricks Standard size nr. 15.00

10. Rubble

 6” x 9” cu 5,520.00

 6” x 4” cu 5,520.00

**Note :** 1. Contractor’s overhead not included

 2. VAT not included

**Source :-**

1. Market prices June 2019.

Revised on 20-11-2019

**Table 4: Day Work Rates for Constructional Equipment**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ITEM NO** | **DESCRIPTION** | **CAPACITY** | **UNIT** | **RATE (Rs.)** |
|   | **Air Hanling Equipment** |  |  |  |
| 1 | Air Compressor (including tools breakers etc:)\* | 1000 CFM | hr | 3,500.00 |
| 2 | Air Compressor (including tools breakers etc:)\* | 500 CFM | hr | 3,500.00 |
| 3 | Air Compressor (including tools breakers etc:)\* | 300 CFM | hr | 1,500.00 |
| 4 | Air Compressor (including tools breakers etc:)\* | 200 CFM | hr | 1,400.00 |
| 5 | Air Compressor \* | 10 l | day | 163.00 |
| 6 | Blower |  | day | 500.00 |
| 7 | Vacum Cleaner |  | day | 1,390.00 |
|   |   |  |  |  |
|   | **Breaking / Cutting Equipment** |  |  |  |
| 8 | Angle Grinder (06'',04") - Electrical (with operator) |  | day | 225.00 |
| 9 | Angle Grinder (7") - Electrical (with operator) |  | day | 560.00 |
| 10 | Asphalt cutter \* |  | hr | 1,200.00 |
| 11 | Breaker Machine (70kg) - Electric (with operator) |  | day | 5,000.00 |
| 12 | Grinder (large) - Electrical  |  | day | 500.00 |
| 13 | Grinder (medium) - Electrical  |  | day | 285.00 |
| 14 | Tile cutter (2'-0'' length) |  | day | 560.00 |
| 15 | Tile cutter (up to 2'-0'' length) |  | day | 385.00 |
|  |  |  |  |  |
|   | **Compacting Equipment** |  |  |  |
| 16 | Hand Rammers \* | 60kg | day | 4,220.00 |
| 17 | Plate Compactor Mechanical \* | 90kg | day | 3,890.00 |
| 18 | Pneumatic Roller \* | 8 - 10 t | hr | 4,000.00 |
| 19 | Pneumatic Roller \* | 10 - 12 t | hr | 4,720.00 |
| 20 | Soil compactor -Vibrating Roller \*(Min.4hrs/day) | 01 t | hr | 1,390.00 |
| 21 | Soil compactor -Vibrating Roller \*(Min.4hrs/day) | 05 t | hr | 2,330.00 |
| 22 | Soil compactor -Vibrating Roller \*(Min.4hrs/day) | 07 t | hr | 3,000.00 |
| 23 | Soil compactor -Vibrating Roller \*(Min.4hrs/day) | 10 t | hr | 3,245.00 |
| 24 | Soil compactor -Vibrating Roller \*(Min.4hrs/day) | 20 t | hr | 4,300.00 |
| 25 | Soil compactor -Vibrating Roller \*(Min.4hrs/day) | 26 t | hr | 4,800.00 |
|  |  |  |  |  |
|  | **Concrete Work Related** |  |  |  |
| 26 | Concrete mixer complete with scales etc. \* | 0.25m3 | hr | 525.00 |
| 27 | Concrete mixer complete with scales etc. \* | 0.5m3 | hr | 735.00 |
| 28 | Porker vibrator (Hand) |  | day | 1,610.00 |
| 29 | Porker vibrator (Electric) |  | day | 4,300.00 |
| 30 | Porker vibrator (with engine)\* | 38mm dia. | day | 3,760.00 |

Revised on 20-11-2019

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ITEM NO** | **DESCRIPTION** | **CAPACITY** | **UNIT** | **RATE (Rs.)** |
|   | **For Supply of Ready Mix Concrete (Colombo Area)** |  |  |  |
| 31 | Pump Cars -( Minimum 30 m3) - 21m length of pump car \* |  | m3 | 805.00 |
| 32 | Pump Cars -( Minimum 40 m3) - 32 m length of pump car\* |  | m3 | 905.00 |
| 33 | Pump Cars -( Minimum 50 m3) - 37 m length of pump car\* |  | m3 | 1,005.00 |
|  |   |  |  |  |
|  | **Earth Work Related Equipment** |  |  |  |
| 34 | Backhoe loader \* | 0.10m3 | hr | 1,880.00 |
| 35 | Backhoe loader \* | 0.25m3 | hr | 2,370.00 |
| 36 | Bob Cat \* (Min.4hrs/day) |  | hr | 2,445.00 |
| 37 | Bulldozer (Crawler Tractor) \* (Min.4hrs/day) | 85 hp | hr | 3,730.00 |
| 38 | Bulldozer (Crawler Tractor) \* (Min.4hrs/day)  | 120 hp | hr | 4,580.00 |
| 39 | Excavator (Long Arm)\* | 0.4m3 | hr | 3,710.00 |
| 40 | Excavator (Long Arm)\* | 0.5m3 | hr | 4,760.00 |
| 41 | Excavator (Long Arm)\* | 0.9m3 | hr | 7,930.00 |
| 42 | Excavator \* | 0.18m3 | hr | 2,240.00 |
| 43 | Excavator \* | 0.35m3 | hr | 2,350.00 |
| 44 | Excavator \* | 0.45m3 | hr | 2,550.00 |
| 45 | Excavator \* | 0.7m3 | hr | 3,300.00 |
| 46 | Excavator \* | 0.9m3 | hr | 3,700.00 |
| 47 | Excavator with backhoe \* | 130hp | hr | 4,540.00 |
| 48 | Motar Grader \* | 3.1 m | hr | 3,720.00 |
| 49 | Motar Grader \* | 4.2 m | hr | 5,520.00 |
| 50 | Wheel Loader \* | 0.1m3 | hr | 1,820.00 |
| 51 | Wheel Loader \* | 1.4m3 | hr | 2,130.00 |
| 52 | Wheel Loader \* | 2.0m3 | hr | 2,660.00 |
|  |  |  |  |  |
|   | **Hoisting Equipment** |   |   |  |
| 53 | Chain Block 5T |  | day | 560.00 |
| 54 | Hoist Machine (300/500kg)\* |  | day | 8,340.00 |
| 55 | Crane Truck (80 km/day) \* crane charge Rs.2500/hrs | 5t | km | 215.00 |
| 56 | Crane Truck (80 km/day) \* crane charge Rs.2500/hrs | 17t | km | 260.00 |
| 57 | Crane Truck (80 km/day) \* crane charge Rs.2500/hrs | 20t | km | 315.00 |
| 58 | Crawler Crane \* | 35 t | hr | 4,670.00 |
| 59 | Crawler Crane \* | 50 t | hr | 6,225.00 |
| 60 | Fork lift \* (Min.4hrs/day)  | 3 t | hr | 1,580.00 |
| 61 | Fork lift \* (Min.4hrs/day)  | 5 t | hr | 2,100.00 |
| 62 | Hydraulic Crane \* | 20 t | hr | 7,890.00 |
| 63 | Hydraulic Crane \* | 15t | hr | 6,100.00 |
| 64 | Tower crane \* (without mobilization & demobilization) | 10 t | hr | 3,700.00 |
| 65 | Tower crane \*(without mobilization & demobilization) | 12 t | hr | 5,200.00 |
|  |  |  |  |  |

Revised on 20-11-2019

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ITEM NO** | **DESCRIPTION** | **CAPACITY** | **UNIT** | **RATE (Rs.)** |
|   | **Miscellaneous Equipment** |  |  |  |
|   |   |  |  |  |
| 66 | Welding Generator | 16KVA | day | 700.00 |
| 67 | Welding Plant | 3-Phase 400A | day | 560.00 |
| 68 | Floor Polisher |   | day | 1,340.00 |
| 69 | Jig Saw |   | day | 385.00 |
|  |  |  |  |  |
|   | **Power Generating Equipment** |  |  |  |
|   |   |  |  |  |
| 70 | Generating set (with fuel ) | 25kVA | hr | 2,225.00 |
| 71 | Generating set (with fuel ) | 50kVA | hr | 2,780.00 |
| 72 | Generating set (with fuel ) | 45kVA | hr | 3,060.00 |
| 73 | Generating set (with fuel ) | 125kVA | hr | 5,100.00 |
|  |  |  |  |  |
|   | **Pumping Equipment** |  |  |  |
| 74 | Pressure Pump (Electric domestic type-with operator) |  | day | 1,200.00 |
| 75 | Sludge pump 4'' dia. (with fuel & without operator) |  | hr | 1,100.00 |
| 76 | Water Pump 2" dia.(Electrical - without operator) |  | day | 1,100.00 |
| 77 | Water Pump 2" dia.(with fuel & without operator) |  | hr | 450.00 |
| 78 | Water Pump 4" dia. (with fuel & without operator) |  | hr | 1,160.00 |
|  |  |  |  |  |
|   | **Special Equipment** |  |  |  |
| 79 | Butt fusion Machine (Semi/Auto) with all necessary equipment - Electrical \* |  | month | 26,000.00 |
|  |  |  |  |  |
|   | **Transportation / Moving** |  |  |  |
|   |   |  |  |  |
| 80 | Baby Dumper \* |   | day | 5,040.00 |
| 81 | Container-Transport Trucks - 20 ft (From Colombo Port up to 32km) |   | below 20t | 18,000.00 |
| 82 | Container-Transport Trucks - 20 ft (From Colombo Port up to 32km) |   | above 20t | 21,000.00 |
| 83 | Container-Transport Trucks - 40 ft (From Colombo Port up to 32km) |   |   |   |
| 84 | Crew cab (with driver & fuel) \* |   | km | 75.00 |
| 85 | Double cab (with driver & fuel) \* |   | km | 65.00 |
| 86 | Lorry \* (80 km/day) | 12t | km | 260.00 |
| 87 | Low loader truck \* | 30 - 40 km | km | 330.00 |
| 88 | Ordinary truck (100 km/day) \* | 6 t | day | 8,700.00 |
|  |  |  |  |  |
|  |   |  |  |  |

Revised on 20-11-2019

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ITEM NO** | **DESCRIPTION** | **CAPACITY** | **UNIT** | **RATE (Rs.)** |
| 89 | Ordinary truck (100 km/day) \* | 12 t | day | 11,500.00 |
| 90 | Tractor | 0.75cu | day | 6,150.00 |
| 91 | Truck with Boom \* | 3 t | day | 12,800.00 |
| 92 | Truck with Boom \* | 3.5 t | day | 13,900.00 |
| 93 | Truck with Boom \* | 4 t | day | 17,300.00 |
| 94 | Truck with tipper \* | 10t/5cu | km | 210.00 |
| 95 | Van (15 Sheet) or similar utility Vehicle \* |   | km | 65.00 |
| 96 | Water Bowser (80 km/day) \* | 7000lts. | km | 200.00 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

|  |  |
| --- | --- |
| **Note :** | 1. VAT not included |
|  | 2. \* Cost of Operator / Driver and fuel are included in rates |
|  | 3. Contractors O/H & P not included. |
| **Source:** |  Market prices June 2019 |

Revised on 20-11-2019

#### Volume III

#### SECTION -10

**Schedule of Payments**

## SCHEDULE OF PAYMENTS

###### Payment Terms

# Advance Payment : 20% of the total contract sum on submission of

# Bank Guarantee acceptable to the Employer.

Recovery of advance will be starting from 1st payment and to be completed when contract payment become 90% of the total contract price from the date of award of contract in equal installments.

**Progressive Payments**

Progressive payments for Investigation

and designs - up to 5%

 (Based on agreed work

 programme)

Progressive payments for Investigation, detailed

designs and drawings and construction works

including supply & installation of plant and

equipments etc. and completion of work

(Based on the agreed work plan) - up to 80%

Testing & Commissioning - up to 90%

03 months of successful operation after

commissioning (clearance from Planning & Design

Section for the handing over of Final Design Report

and as Built Drawings to Planning & Design

Section is mandatory to release this payment) - up to 95%

Completion of defects liability

period of 24 months after

commissioning - up to 100%

#### Contractors Payment Schedule

As per the above payment terms bidder has to submit his payment schedule based on his work programme.

Revised on 02-04-2019

#### Volume III

#### SECTION -11

**Technical Information**

 **11.1 Technical Information**

 **11.2 Operation Balance Sheet**

 **11.3 Power Consumption**

 **11.4 Spare Parts**

 **11.5 Sludge Production**

 **11.6 Schedule of Particulars**

 **11.7 Optional Cost**

 **11.8 Estimated Cost for Preventive & Corrective**

 **Maintenance for Works 3rd, 4th & 5th Years**

 **11.9 Questionnaire for Lightning Protection System**

 **and Accessories**

# **11.1 Technical Information**

The Bidder is to provide complete set of technical information and details to indicate the type and quality of equipments, and the performance guarantees to provide and which he has included/ proposed in his offer not limited to the minimum as follows;

1. General Information for equipments

Manufacture, country of Manufacture, Type/ ISO 9001:2015 Quality Management System, Model number etc.

1. Specification of water treatment process

i/ Flocculation time

ii/ Clarification (type, number of clarifiers, surface loading rate at maximum design flow, Maximum sludge draw off)

iii/ Filters ( number of filters, filter bed area, filtration rate for the design outflow, filtration rate with one filter washing, filter media size, uniformity coefficient, effective size, depth of filter media, depth of support media, Maximum permissible head loss, Air scour rate, Back wash rate, maximum volume of water per wash; details of air blower, maximum volume of air per wash) etc.

iv/ guaranteed maximum water losses inside the plant (from inlet point of Raw Water to Treated Water at Sump)

v/ Sludge treatment process – option (thickener loading rate, solid loading rate, filter pressure, etc.)

1. Specification for Pumps and motors including power consumption, efficiency and material properties, life time of pumps and motors, Local Agent, Spare Parts availability, surge arresting methods, etc.)
2. Electric cables and other details
3. Pipes, fittings, accessories, valves, materials, manufacturer, country of manufacture, ISO 9001:2015 Quality Management System, product conformity, manufacturing plant capacity, etc.

**The Bidder shall submit all relevant catalogue, drawings and test / guarantee certificates for the new equipments.**

Revised on 12-06-2018

# **11.2 Operation balance sheet**

|  |  |
| --- | --- |
|  | **For a treated water flow of ……….. m3/day** |
|  | **Consumptions** | **Consumptions** | **Cost** | **Annual costs(Rupees)** |
| **Power consumption** | Refer to following page ………. |  | kWh/year |  R/kWh |  |
| **Reagents** |  |  |  |  |  |  |
| Aluminium sulphate | ……….. | g/m3 | ……….. | t/year | ..…… Rs/ton |  |
| Activated Carbon | ……….. | g/m3 | ……….. | t/year | ..…… Rs/ton |  |
| Lime | ……….. | g/m3 | ……….. | t/year | ..…… Rs/ton |  |
| Potassium permanganate | ……….. | g/m3 | ……….. | t/year | ..…… Rs/ton |  |
| Polyelectrolyte | ……….. | g/m3 | ……….. | t/year | ..…… Rs/ton |  |
| Other reagents :... | ……….. | g/m3 | ……….. | t/year | ..…… Rs/ton |  |
| **Laboratory analysis** | - | - | - | - | - |  |
| **TOTAL ANNUAL COSTS** | - | - | - | - | - |  |

# **11.3 Power consumption**

(All power consume equipment in the project has to be included here)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Equipments** | **Rated power** | **Input power** | **Simultaneous operation** | **hours per day** | **Input power per day** | **Days/year** | **Input power per year** |
|  | **kW** | **kW** | **-** | **h/d** | **kWh** | **days** | **kWh/year** |
|  |  |  |  |  |  |  |  |
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# **11.4 Spare parts**

The Contractor will provide spare parts for each equipment for 5 years of operation and maintenance. These spare parts will also include the emergency spare parts.

The Contractor will describe hereunder the spare parts:

| **Equipment** | **Spare parts** |
| --- | --- |
| **Description** | **Quantity** |
|  |  |  |
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(Separate pages has to use for spare parts of each equipment)

# **11.5 Sludge production**

The Contractor will estimate the sludge production of the treatment plant with reasonable assumptions:

|  |  |  |  |
| --- | --- | --- | --- |
| **Sludge production** |  | **Mean turbidity** | **Maximal turbidity** |
| **Clarifiers** |  |  |  |
| Sludge quantity | ……...Kg SS/day |  |  |
| Sludge volume | ………m3/day |  |  |
| **Filters** |  |  |  |
| Sludge quantity | ……...Kg SS/day |  |  |
| Sludge volume | ………m3/day |  |  |

**11.6 Schedule of Particulars**

**EQUIPMENT SCHEDULES**

The following formats shall be completed by the Bidder and shall form part of the Technical Evaluation.

For each piece of equipment (with the exception of pumps) listed below, the Bidder shall propose a first choice of supplier or design, and at least one alternative supplier or design, which may be chosen by the Employer.

The Employer encourages the Bidder to propose the most economic plant and equipment, but does not wish to see substandard or untried equipment proposed. If any item could be in doubt, the Bidder shall indicate the use of that item in lands other than its country of manufacture, and in situations similar to those intended in the Project. It would be advisable if any item from manufacturers, which are not internationally known, are supported with this type of information.

Should the Employer decide that the Bidder’s first choice is unacceptable, the Employer will select the alternative choice. This equipment shall be supplied to the Employer at the same cost (or with a discount) as Bidder’s first choice.

The Bidder shall augment the information provided for each of the listed items in accordance with the Employers Requirements and Technical Schedules by providing supporting technical literature, catalogues, tables, charts etc. in order to submit comprehensive information to the Technical Evaluation Committee (TEC).

These Schedules shall be part of the Contractor’s obligations to the Employer and as agreed in the Letter of Tender.

If any information given in the questionnaires is found to differ at any stage during the Contract, the provision of equipment shall be agreed to be equal to that proposed, or the cost of upgrading the specification to meet the indicated specifications, shall be recovered from any payment due to the Contractor.

**11.6.1 Raw Water Pumps**

|  |
| --- |
| **Raw Water Pumps** |
|  | **Pump** |  |
| 1. | Make and Country of Manufacture |  |
| 2. | Type /Model No |  |
| 3. | Number of Stages |  |
| 4. | Nominal Operation Speed (RPM) |  |
| 5. | Capacity at specified head L/s |  |
| 6. | Capacity at 10% less head L/s |  |
| 7. | Capacity at 10% more head L/s |  |
| 8. | Pump efficiency at specified head % |  |
| 9. | NPSH required at duty point |  |
| 10. | Shut off head of pump unit |  |
| 11. | Type of lubricant |  |
| 12. | Shaft Material |  |
| 13. | Impeller Material |  |
| 14. | Shaft Sleeve Material |  |
| 15. | Paint |  |
| 16. | Casing Material |  |
| 17. | Nos. of Starts per hour of the pump |  |
| 18. | Is the pump shaft driven or is the motor direct mounted |  |
|  |  |  |
|  | **Motor** |  |
| 1. | Make and Country of Manufacture |  |
| 2. | Type / Model No |  |
| 3. | Class of Insulation |  |
| 4. | Temperature rise after 6 hours operation |  |
| 5. | Nominal operating voltage |  |
| 6. | Nominal operating frequency (Hz) |  |

|  |  |  |
| --- | --- | --- |
| 7. | Full load speed (RPM) |  |
| 8. | Number of Phases |  |
| 9. | Allowable Supply Voltage Fluctuation +% |  |
| 10. | Rated output KW |  |
| 11. | Power Factor (full load) |  |
| 12. | Power Factor (3/4 load) |  |
| 13. | Power Factor (1/2 load) |  |
| 14. | Current (Full load) A |  |
| 15. | Current (No load) |  |
| 16. | Degree of Protection of enclosure |  |
| 17. | Starting Current  |  |
| 18. | Motor efficiency at duty point |  |
| 19. | If applicable, is the motor fully able to operate in submerged conditions |  |
|  |  |  |
|  | **General** |  |
| 1. | Local Agent |  |
| 2. | Detail of similar use in installations, comparable to those intended, over the past ten years |  |
| 3. | After sales services available |  |
| 4. | Details of similar equipment installed in Sri Lanka |  |
| 5. | Details of registered workshop and facilities available |  |
| 6. | Factory Test Reports as per requirements of the Tender |  |
| 7. | Availability of ISO 9001: 2015 Certificates for Quality Management System for the Manufacturing Factory |  |
|  |  |  |
| Bid No:  |  |
| Bidder’s Signature |  |
| Date |  |

**11.6.2 Process Pump - Treated Water Pump - Backwash Pump - Sump Pump**

|  |  |  |
| --- | --- | --- |
|  | **LOCATION** |  |
|  |  |  |
|  | **Pump** |  |
| 1. | Make and Country of Manufacture |  |
| 2. | Type /Model No |  |
| 3. | Number of Stages |  |
| 4. | Nominal Operation Speed (RPM) |  |
| 5. | Capacity at specified head L/s |  |
| 6. | Capacity at 10% less head L/s |  |
| 7. | Capacity at 10% more head L/s |  |
| 8. | Pump efficiency at specified head % |  |
| 9. | NPSH required at duty point |  |
| 10. | Shut off head of pump unit |  |
| 11. | Type of lubricant |  |
| 12. | Shaft Material |  |
| 13. | Impeller Material |  |
| 14. | Shaft Sleeve Material |  |
| 15. | Paint |  |
| 16. | Casing Material |  |
| 17. | Nos. of Starts per hour of the pump |  |
| 18. | Is the pump shaft driven |  |
|  |  |  |
|  | **Motor** |  |
| 1. | Make and Country of Manufacture |  |
| 2. | Type / Model No |  |
| 3. | Class of Insulation |  |
| 4. | Temperature rise after 6 hours operation |  |
| 5. | Nominal operating voltage |  |
| 6. | Nominal operating frequency (Hz) |  |
| 7. | Full load speed (RPM |  |
| 8. | Number of Phases |  |
| 9. | Allowable Supply Voltage Fluctuation +% |  |
| 10. | Rated output KW |  |
| 11. | Power Factor (full load) |  |
| 12. | Power Factor (3/4 load) |  |
| 13. | Power Factor (1/2 load) |  |
| 14. | Current (Full load) A |  |
| 15. | Current (No load) |  |
| 16. | Degree of Protection of enclosure |  |
| 17. | Starting Current  |  |
| 18. | Motor efficiency at duty point |  |
| 19. | Is the motor fully able to operate in submerged conditions |  |
|  |  |  |
|  | **General** |  |
| 1. | Local Agent |  |
| 2. | Detail of similar use in installations, comparable to those intended, over the past ten years |  |
| 3. | After sales services available |  |
| 4. | Details of similar equipment installed in Sri Lanka |  |
| 5. | Details of registered workshop and facilities available |  |
| 6. | Factory Test Reports as per requirements of the Tender |  |
| 7. | Availability of ISO 9001:2015 Certificates for Quality Management System for Manufacturing Factory. |  |
|  |  |  |
| Bid No:  |  |
| Bidder’s Signature |  |
| Date |  |

*NB: At least one alternative supplier / technical alternative shall be proposed for each item listed below.*

Revised on 12-06-2018

**11.6.3 Screens and Accessories**

|  |
| --- |
| **Screens and Accessories** |
|  |
| 1. | Make and Country of Manufacture |  |
| 2. | Type |  |
| 3. | Numbers Offered |  |
| 4. | Screen Width |  |
| 5. | Bar or Mesh Spacing |  |
| 6. | Channel Width |  |
| 7. | Pit Depth |  |
| 8. | Overall Height |  |
|  9. | Design Capacity |  |
| 10. | Dimensions of Hopper |  |
| 11. | Dimensions of Screen Conveyor |  |
| 12. | Maximum and minimum allowable head through screen |  |
| 13. | Maximum and minimum allowable velocity of flow through screen |  |
|  |  |  |
|  | **Materials** |  |
| 1. | Bar or Mesh Screen |  |
| 2. | Rake |  |
| 3. | Frame |  |
| 4. | Fasteners |  |
| 5. | Hopper  |  |
| 6. | Screw Conveyor (if applicable) |  |
| 7. | Chute |  |
|  |  |  |
|  |  |  |
|  |

|  |  |  |
| --- | --- | --- |
|  | **Drive** |  |
| 1. | System  |  |
| 2. | Type |  |
| 3. | Motor Speed |  |
| 4. | Secondary Speed (Random) |  |
| 5. | Power (kW) |  |
| 6. | Voltage |  |
| 7. | Rated Current |  |
| 8. | Method of Starting |  |
| 9. | Insulation Class |  |
| 10. | Protection Class |  |
| 11. | Type of Lubricators |  |
| 12. | Dimension of Panel Board |  |
| 13. | Type of Automation System |  |
|  |  |  |
| . | **General**  |  |
| 1. | Local Agent |  |
| 2. | Detail of similar use in installations, comparable to those intended, over the past ten years  |  |
| 3. | After sales services available |  |
| 4. | Details of similar equipment installed in Sri Lanka |  |
| 5. | Details of registered workshop and facilities available |  |
| 6. | Factory Test Reports as per Volume IB |  |
| 7. | Availability of ISO 9001:2015 Certificates for Quality Management System for Manufacturing Factory. |  |
|  |  |  |
|  | Bid No:  |  |
|  | Bidder’s Signature |  |
|  | Date |  |

**11.6.4 Overhead Gantry/Traveling Crane**

|  |
| --- |
| **Overhead Gantry/Traveling Crane** |
| A separate schedule is to be provided for each crane being supplied.. |
|  | **Location** |  |
| 1. | Make and Country of Manufacture |  |
| 2. | Type |  |
| 3. | Carrying Capacity |  |
| 4. | Lift height |  |
| 5. | Crane beam length |  |
| 6. | Gantry beam length |  |
| 7. | Crane beam material |  |
| 8. | Gantry beam material |  |
| 9. | Hoist chain material |  |
|  |  |  |
|  | **Traversing and Hoisting** |  |
| 1. | Traversing Speed |  |
| 2. | Power  |  |
| 3. | Hoisting Speed  |  |
|  |  |  |
|  | **Design**  |  |
| 1. | Voltage/ Frequency V/Hz |  |
| 2. | Protection Class |  |
| 3. | Insulation |  |
| 4. | Design Calculation report for crane beam  |  |
| 5. | Design Calculation Gantry Beam |  |
|  |  |  |
|  | **General** |  |
| 1. | Local Agent |  |
| 2. | Detail of similar use in installations, comparable to those intended, over the past ten years |  |
| 3. | After sales services available |  |
| 4. | Details of similar equipment installed in Sri Lanka |  |
| 5. | Details of registered workshop and facilities available |  |
| 6. | Factory Test Reports as per Volume IB |  |
| 7. | Availability of ISO 9001 /BS EN ISO 9001 Certificates for Quality Management System for Manufacturing Factory. |  |
|  |  |  |
|  | Bid No:  |  |
|  | Bidder’s Signature |  |
|  | Date |  |

11.6.5 Ventilators

|  |
| --- |
| **Ventilators** |
| A separate schedule is to be provided for each ventilator |  |
|  | **Location** |  |
| 1. | Make and Country of Manufacture |  |
| 2. | Type /Model No |  |
| 3. | Number |  |
| 4. | Type of Installation |  |
| 5. | Design Capacity m3/h |  |
| 6. | Dynamic Head Losses Pa |  |
|  | **Fan** |  |
| 1. | Fan Type |  |
| 2. | Power Consumption in working range |  |
| 3. | Bearings |  |
| 4. | Wall Opening Dimensions (if applicable) |  |
|  | **Materials** |  |
| 1. | Fan Housing and Cover |  |
| 2. | Shaft |  |
| 3. | Air Filter |  |
|  | **Drive**  |  |
| 1. | System  |  |
| 2. | Manufacture |  |
| 3. | Type |  |
| 4. | Speed Regulation |  |
| 5. | Speed rpm |  |
| 6. | Installed Power |  |
| 7. | Voltage |  |
| 8. | Method of Starting |  |
| 9. | Insulation Class |  |
| 10. | Protection Class |  |
|  | **General** |  |
| 1. | Local Agent |  |
|  2. | Detail of similar use in installations, comparable to those intended, over the past ten years |  |
| 3. | After sales services available |  |
| 4. | Details of similar equipment installed in Sri Lanka |  |
| 5. | Details of registered workshop and facilities available |  |
| 6. | Factory Test Reports as per requirements of Volume IB of the Tender Dossier |  |
| 7. | Availability of ISO 9001 /BS EN ISO 9001 Certificates for Quality Management System for Manufacturing Factory. |  |
| Bid No:  |  |
| Bidder’s Signature |  |
| Date |  |

**11.6.6 SCADA system**

|  |
| --- |
| **SCADA system** |
| 1. | Manufacturers Name |  |
| 2. | Country of Origin |  |
| 3. | Model/number |  |
| 4. | Input output description |  |
| 5. |  List modules in the equipment |  |
| 6. | Communication Protocol |  |
|  | * Field level
 |  |
|  | * Control level
 |  |
|  | * Between main control centre and operator level
 |  |
| 7. | Communication Speed |  |
|  |  |  |
|  | **List features of the SCADA system** |  |
| 1. | At the Control Centre |  |
| 2. | At Control Level |  |
| 3. | Communication system to be utilized between devices |  |
|  |  |  |
|  | **General** |  |
| 1. | Local Agent |  |
| 2. | Detail of similar use in installations, comparable to those intended, over the past ten years |  |
| 3. | Available options for entering a service contract for 5 years |  |
| 4. | Available options for entering a service contract for 10 years |  |
| 5. | Details of similar equipment installed in Sri Lanka |  |
| 6. | Details of registered workshop and facilities available |  |
| 7. | Factory Test Reports |  |
| 8. | Availability of ISO 9001 /BS EN ISO 9001 Certificates for Quality Management System for Manufacturing Factory. |  |
|  |  |  |
|  | Bid No:  |  |
|  | Bidder’s Signature |  |
|  | Date |  |

**11.6.7 Level Sensor**

|  |
| --- |
| **Level Sensor** |
| A separate schedule is to be provided for each pumping station, tank etc |
|  | **LOCATION** |  |
|  |  |  |
| 1. | Make and Country of Manufacture |  |
| 2. | Type |  |
| 3. | Supply Voltage |  |
| 4. | Output Signal |  |
| 5. | Display |  |
| 6. | Level of Accuracy |  |
| 7. | Fault Indicators and Signals |  |
| 8. | Measurement Capacity |  |
|  |  |  |
|  | **General** |  |
| 1. | Local Agent |  |
| 2. | Detail of similar use in installations, comparable to those intended, over the past ten years |  |
| 3. | After sales services available |  |
| 4. | Details of similar equipment installed in Sri Lanka |  |
| 5. | Details of registered workshop and facilities available |  |
| 6. | Factory Test Reports |  |
| 7. | Availability of ISO 9001 /BS EN ISO 9001 Certificates for Quality Management System for Manufacturing Factory. |  |
|  |  |  |
|  | Bid No:  |  |
|  | Bidder’s Signature |  |
|  | Date |  |

* + 1. **Flow Meter**

|  |
| --- |
| **Flow Meter** |
| A separate schedule is to be provided for each size of meter |
|  | **Location** |  |
| 1. | Make and Country of Manufacture |  |
| 2. | Type/ Module No |  |
| 3. | Diameter |  |
| 4. | Level of Accuracy |  |
| 5. | Type of Isolation Valves |  |
| 6. | Paint Details |  |
|  |  |  |
|  | **General** |  |
| 1. | Local Agent |  |
| 2. | Detail of similar use in installations, comparable to those intended, over the past ten years |  |
| 3. | After sales services available |  |
| 4. | Details of similar equipment installed in Sri Lanka |  |
| 5. | Details of registered workshop and facilities available |  |
| 6. | Factory Test Reports as per requirements of the Tender |  |
| 7. | Availability of ISO 9001 /BS EN ISO 9001 Certificates for Quality Management System for Manufacturing Factory. |  |
|  |  |  |
| Bid No:  |  |
| Bidder’s Signature |  |
| Date |  |

**11.6.9 Main Switch Boards**

|  |
| --- |
| **Main Switch Boards** |
| A separate schedule is to be provided for each Switch Board |
| 1. | Manufacturer (s) |  |
| 2. | Country of Origin |  |
| 3. | Enclosure Material |  |
| 4. | Degree of Protection to BSEN60529/IEC60529 |  |
|  |  |  |
|  | **Standards** |  |
| 1. | Standard to which Switchboard /MCC’s manufactured |  |
| 2. | Standard to which Switchboard /MCC’s tested |  |
| 3. | Ratings |  |
| 4. | Service Voltage |  |
| 5. | Power frequency withstand Voltage  |  |
| 6. | Impulse withstand Voltage |  |
| 7. | Continuous current rating |  |
| 8. | Short time current |  |
|  | 1 second |  |
|  | 3 second |  |
|  |  |  |
|  | **Overall Dimensions/Mass** |  |
| 1. | Length |  |
| 2. | Width |  |
| 3. | Height |  |
| 4. | Weight |  |
|  |  |  |
|  | **Switches, Relays etc** |  |
| 1. | Phase Failure Relay |  |
|  | Make and Country of Manufacture |  |
|  | Type |  |
| 2. | Control Switches  |  |
|  | Make and Country of Manufacture |  |
|  | Type |  |
| 3. | Selector Switches |  |
|  | Make and Country of Manufacture |  |
|  | Type |  |
| 3. | Control Fuses |  |
|  | Make and Country of Manufacture |  |
|  | Type |  |
| 4. | Control Relays (240 VAC) |  |
|  | Make and Country of Manufacture |  |
|  | Type |  |
| 5. | Thermistor Relays |  |
|  | Make and Country of Manufacture |  |
|  | Type |  |
| 6. | PLC |  |
|  | Make and Country of Manufacture |  |
|  | Type |  |
|  | Rated Current |  |
|  | Rated Voltage |  |
| 7. | TP Circuit Breaker |  |
|  | Make and Country of Manufacture |  |
|  | Type |  |

|  |  |  |
| --- | --- | --- |
|  | **Breaking Capacity** |  |
| 1. | SP Circuit Breakers |  |
|  | Make and Country of Manufacture |  |
|  | Type |  |
| 2. | Contactors |  |
|  | Make and Country of Manufacture |  |
|  | Type |  |
| 3. | Thermal Overload Relays |  |
|  | Make and Country of Manufacture |  |
|  | Type |  |
|  |  |  |
|  | **Ammeters (each type to be supplied)** |  |
|  | Make and Country of Manufacture |  |
|  | Type |  |
|  | Locations |  |
|  |  |  |
|  | **General** |  |
| 1. | Local Agent |  |
| 2. | Detail of similar use in installations, comparable to those intended, over the past ten years |  |
| 3. | After sales services available |  |
| 4. | Details of similar equipment installed in Sri Lanka |  |
| 5. | Details of registered workshop and facilities available |  |
| 6. | Factory Test Reports as per requirements f the Tender |  |
| 7. | Availability of ISO 9001 /BS EN ISO 9001 Certificates for Quality Management System for Manufacturing Factory. |  |
|  |  |  |
| Bid No:  |  |
| Bidder’s Signature |  |
| Date |  |

* + 1. **Low Voltage Transformers**

|  |
| --- |
| A separate schedule is to be provided for each transformer proposed |
|  | **LOCATION** |  |
|  |  |  |
| 1. | Make and Country of Manufacture |  |
| 2. | Type /Model No |  |
| 3. | Number |  |
| 4. | Type of Installation |  |
|  |  |  |  |
|  | **Parameter/Requirement description** | **Required Specifications** | **Compliance****(Yes No)** |
| 1. | Applicable standard | IEC 600076:2000, 60296:1982 |  |
| 2. | Type /Model | Outdoor: floor mounted ONANIndoor : dry type, with moulded cast resin |  |
| 3. | Rating CMR |  (or as designed) |  |
| 4. | Primary voltage | 11kV |  |
| 5. | Secondary voltage | 0.4 kV |  |
| 6 | Frequency | 50 Hz |  |
| 7 | Vector Group | Dyn11 |  |
| 8 | Tap Changer | Off Load TC |  |
| 9. | Tapping Range and steps | +5% to -5% in steps of 2.5% |  |
| 10. | Insulation Class | A |  |
| 11. | Winding material | CU |  |
| 12. | Core material | Non aging grain oriented silicon steel |  |
| 13. | No Load Loss at 75 C | subject to IEC |  |
| 14. | Load Losses at 75 C | subject to IEC |  |
| 15. | % Impedance | 4.5% |  |
| 16. | Maximum sound  | 60 dB level at 0.3 M as per IEC 551 |  |
| 17. | HV connection | Cable Box |  |
| 18. | LV connection | Cable Box |  |
| 19. | If more than one transformer is provided, they shall be matched for parallel operation  | Yes |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  | **General** |  |  |
| 1. | Local Agent |  |
| 2. | Detail of similar use in installations, comparable to those intended, over the past ten years |  |
| 3. | After sales services available |  |
| 4. | Details of similar equipment installed in Sri Lanka |  |
| 5. | Details of registered workshop and facilities available |  |
| 6. | Availability of ISO 9001 /BS EN ISO 9001 Certificates for Quality Management System for Manufacturing Factory. |  |
| 7. | Factory Test Reports as per requirements of Volume IB of the Tender Dossier |  |
|  |  |  |
| Bid No:  |  |
| Bidder’s Signature |  |
| Date |  |

**11.6.11 Generator Sets**

|  |
| --- |
| **GENERATOR** |
| A separate Schedule is to be provided for each capacity being supplied |
|  | **LOCATION**  |  |
|  |  |  |
|  | **Generator Set** |  |
| 1. | Make and Country of Manufacture |  |
| 2. | Model No: |  |
| 3. | Engine Weight kg. |  |
| 4. | Alternator Weight kg. |  |
| 5. | Complete set weight (Engine plus alternator plus common bed) kg.  |  |
| 6. | Overall length of set |  |
| 7. | Overall length of set |  |
| 8. | Overall width of set |  |
|  |  |  |
|  | **Diesel Engine** |  |
| 1. | Make and Country of Manufacture |  |
| 2. | Type of Engine & Model No: |  |
| 3. | Out Put |  |
| 4. | At N.T.P. as specified: |  |
| 5. | Percent derating for Engine: |  |
| 6. | Revolutions R.P.M: |  |
| 7. | Bore x Stroke mm x mm:  |  |
| 8. | Mean effective pressure kg/ sq. cm:- full load g/k Wh:- at ½ load g/k Wh: |  |
| 9. | Recommended lub. Oil capacity –litre: |  |
| 10. | Lu. oil temperature at full rated output under specified conditions: |  |
| 11. | Design working range of cooling jacket water temperature Deg.C.: |  |
| 12. | Turbo Charged or Not? |  |
| 13. | Max. outlet cooling water temperature from engine at full rate output when air temperature inlet to radiator is Deg. C: |  |
| 14. | Safety Control setting of cooling water outlet temperature Deg. C |  |
| 15. | Type of Governor: |  |
| 16. | Starting Motor |  |
| 17. | Number of Starting Motors: |  |
|  |  |  |
|  | **Radiator:** |  |
| 1. | Manufacture’s Name & Address: |  |
| 2. | Type of Radiator |  |
| 3. | Tube Material: |  |
| 4. | Fin or fin core Material |  |
|  |  |  |
|  | **Fuel System** |  |
| 1. | Fuel injection pump type and manufacture’s name & address  |  |
| 2. | Fuel tank (daily service) (height; width; depth; storing capacity; material). |  |
|  |  |  |
|  | **Alternator** |  |
| 1. | Manufacture’s Name & Address: |  |
| 2. | Model No: |  |
| 3. | Rated Voltage: |  |
| 4. | Rated frequency |  |
| 5. | Power factor |  |
| 6. | Rated Output kW under local conditions |  |
| 7. | Rated Current |  |
| 8. | Efficiency % |  |
| 9. | Speed rpm |  |
| 10. | Type (brush or brushless)  |  |
| 11. | Alternator field voltage |  |
| 12. | Alternator field current |  |
| 13. | Alternator field power |  |
| 14. | Enclosure |  |
| 15. | Class of insulation |  |
| 16. | Maximum temperature rise 0C |  |
| 17. | Suitability for paralleled operation  |  |
|  |  |  |
|  | **Exciter** |  |
| 1. | Manufacture’s Name and Address & country of Manufacture |  |
| 2. | Type and Model No: |  |
| 3. | Rated Current |  |
| 4. | Rated Voltage |  |
| 5. | Rated Power |  |
| 6. | Type of Automatic Voltage Regulator |  |
| 7. | Maximum temperature rise 0C |  |
| 8. | Enclosures |  |
| 9. | Class of insulation |  |
|  |  |  |
|  | **Starting Battery:** |  |
| 1. | Manufacture’s Name and Address & country of Manufacture |  |
| 2. | Type |  |

|  |  |  |
| --- | --- | --- |
| 3. | Normal Voltage DC |  |
| 4. | Terminal voltage when floating DC  |  |
| 5. | No. of cells |  |
| 6. | Normal capacity |  |
| 7. | Normal charging current  |  |
| 8. | Normal voltage per cell DC |  |
| 9. | Final discharge voltage per cell volts DC |  |
|  |  |  |
|  | **Control Panel** |  |
| 1. | Manufacture’s Name and Address & country of Manufacture  |  |
| 2. | Type |  |
| 3. | Dimensions (height; width; depth). |  |
| 4. | Other detail |  |
|  |  |  |
|  | **General** |  |
| 1. | Local Agent |  |
| 2. | Detail of similar use in installations, comparable to those intended, over the past ten years |  |
| 3. | Availability of ISO 9001 /BS EN ISO 9001 Certificates for Quality Management System for Manufacturing Factories. |  |
| 4. | Details of similar equipment installed in Sri Lanka |  |
| 5. | Factory Test Reports as per requirements of Volume IB of the Tender Dossier |  |
| Bid No:  |  |
| Bidder’s Signature |  |
| Date |  |

**11.6.12 DI Pipes & Accessories**

|  |
| --- |
| **DI Pipes & Accessories** |
| **Socket and Spigot and Flanged Pipes** |
| 1. | Make and Country of Manufacture |  |
| 2. | Class of Pipe |  |
| 3. | Form of socket and sealing ring |  |
| 4. | Gaskets for flanges joints |  |
| 5. | Standard to which the product confirm |  |
|  | a) Socket and spigot pipes |  |
|  | b) Flanged pipes |  |
| 6. | Whether ISO 9001 Quality Management System Certificate is available. |  |
| 7. | Standard which joint rings/gaskets confirm  |  |
| 8. | Whether ISO 9001 Quality Management System Certificate is available for the joint rings/gaskets, manufacturing factory. |  |
| 9. | Material of joint rings/gaskets |  |
| 10. | Manufacturing Process |  |
| 11. | Bolts for flanges |  |
| 12. | Diameter |  |
| 13. | Length |  |
|  | **Materials** |  |
| 1. | Internal coating |  |
|  | (a). Thickness of Cement lining |  |
| 2. | External coating |  |
|  | a). Thickness of Bitumen |  |
|  | b). Thickness of Zinc |  |
| 3. | Protection of pipes and pipe ends in transit  |  |
| 4. | Nature of flanges (i.e. Integrally Cast or welded) : |  |
| 5. | State whether welding is done under factory conditions at the point of manufacture in the case of welded pipes |  |
| 6. | Indicate whether manufacturer’s Identification mark cast/embossed on pipes |  |
|  | **General** |  |
| 1. | Local Agent |  |
| 2. | Detail of similar use in installations, comparable to those intended, over the past ten years |  |
| 3. | Factory Test Reports as per requirements of Volume IB of the Bid Dossier |  |
| 4. | Details of equipment previously installed in Sri Lanka (if any) |  |
| 5. | Availability of ISO 9001 /BS EN ISO 9001 Certificates for Quality Management System for Manufacturing Factory. |  |
|  |  |  |
| Bid No:  |  |
| Bidder’s Signature |  |
| Date |  |

**11.6.13 Tees**

|  |
| --- |
| **Tees** |
|  |
| 1. | Make and Country of Manufacture |  |
| 2. | Class of Tee |  |
|  | a). Standard to which tees confirm: |  |
|  | b). Standard to which flanges confirm |  |
| 4. | Manufacturing Process |  |
| 5. | Ring for Tyton Joints /gaskets  |  |
|  | a). Standard to which the product confirm |  |
|  | b). Material |  |
| 6. | Whether ISO 9001 Quality Management System Certificate is available for the joint rings manufacturing factory. |  |
| 7. | Bolts for flanges |  |
|  | Dia. Length No. off for 1 set Material |  |
|  |  |  |
|  | **Materials** |  |
| 1. | Internal coating |  |
|  | (a). Thickness of Cement lining |  |
| 2. | External coating |  |
|  | a). Thickness of Bitumen |  |
|  | b). Thickness of Zinc |  |
| 3. | Nature of flanges (i.e. Integrally Cast or welded) |  |
| 4. | State whether welding is conducted under factory conditions at the point of manufacture in the case of welded tees |  |
| 5. | Indicate whether Manufacturer’s Identification mark cast/embossed on tees: |  |
|  |  |  |
|  | **General** |  |
| 1. | Local Agent |  |
| 2. | Detail of similar use in installations, comparable to those intended, over the past ten years |  |
| 3. | Availability of ISO 9001/BS EN ISO 9001 Certificates for Quality Management System for Manufacturing Factories  |  |
| 4. | Details of similar equipment installed in Sri Lanka |  |
| 5. | Factory Test Reports as per requirements of Volume IB of the Tender Dossier |  |
| Bid No:  |  |
| Bidder’s Signature |  |
| Date |  |

**11.6.14 Fittings (Except Tees)**

|  |
| --- |
| **Fittings (Except Tees)** |
| 1. | Make and Country of Manufacture |  |
| 2. | Class of Fitting |  |
|  | a). Standard to which fitting confirm: |  |
|  | b). Standard to which flanges confirm |  |
| 3. | Manufacturing Process |  |
| 4. | Ring for Tyton Joints |  |
|  | a). Standard to which the product confirm |  |
|  | b). Material |  |
| 5. | Whether ISO 9001 Quality Management System Certificate is available for the joint rings manufacturing factory. |  |
| 6. | Bolts for flanges |  |
|  | Dia. Length No. off for 1 set Material |  |
| 7. | Material of Bolts  |  |
|  | **Materials** |  |
| 8. | Internal coating |  |
|  | (a). Thickness of Cement lining |  |
| 9. | External coating |  |
|  | a). Thickness of Bitumen |  |
|  | b). Thickness of Zinc |  |
| 10. | Nature of flanges (i.e. Integrally Cast or welded) |  |
| 11. | State whether welding is conducted under factory conditions at the point of manufacture in the case of welded tees |  |
| 12. | Indicate whether Manufacturer’s Identification mark cast/embossed on fittings: |  |
|  |  |  |
|  | **General** |  |
| 1. | Local Agent |  |
| 2. | Detail of similar use in installations, comparable to those intended, over the past ten years |  |
| 3. | Availability of ISO 9001 /BS EN ISO 9001 Certificates for Quality Management System for Manufacturing Factory. |  |
| 4. | Details of similar equipment installed in Sri Lanka |  |
|  |  |  |
| Bid No:  |  |
| Bidder’s Signature |  |
| Date |  |

**11.6.15 Flanged Adaptors and Couplings**

|  |
| --- |
| **Flanged Adaptors and Couplings** |
| A separate schedule is to be provided for each model to be installed. |
| 1. | Make and Country of Manufacture |  |
| 2. | Standards to which flanged adaptors and couplings confirm. |  |
| 3. | Ring for Adaptors and Couplings |  |
| 4. | Standard to which the product confirm |  |
|  | a) Material of rings  |  |
|  | b) Standard to which flanges confirm to |  |
| 5. | Bolts for couplings and flange Adaptor |  |
|  | Dia. Length No. off for 1 set Material |  |
| 6. | Materials of Bolts  |  |
| 6. | Details of Corrosion Protection |  |
| 7. | Protection of flanged adaptors and couplings in transit |  |
| 8. | Protection of buried Flange Adaptors (Materials proposed and quantities for each size adaptors) |  |
| 9. | Indicate whether Manufacturer’s Identification mark cast/embossed on couplings |  |
|  |  |  |
|  | **General** |  |
| 1. | Local Agent |  |
| 2. | Detail of similar use in installations, comparable to those intended, over the past ten years |  |
| 3. | Factory Test Reports as per requirements of Volume IB of the Tender Dossier |  |
| 4. | Availability of ISO 9001 /BS EN ISO 9001 Certificates for Quality Management System for Manufacturing Factory. |  |
| Bid No:  |  |
| Bidder’s Signature |  |
| Date |  |

**11.6.16 Valves and Accessories**

|  |
| --- |
| Valves and Accessories: |
| A separate schedule is to be provided for each size and type of valve being supplied. |
|  | **LOCATION** |  |
|  |  |  |
| 1. | Make and Country of Manufacture |  |
| 2. | Packing and protection of valves in transit |  |
| 3. | Description of valves and reference to accompanying catalogue/ pamphlets (if any)  |  |
| 4. | Specify the Standards to which the valves confirm |  |
| 5. | Specify the standards to which other items confirm (specify item wise)  |  |
| 6. | Material of  |  |
|  | (a) Valve body |  |
|  | (b) Valve stem/shaft |  |
|  | (c) Valve disc  |  |
| 7. | Whether valve disc in and inner part is encapsulated with EPDM Rubber |  |
| 8. | Pressure rating of flanges  |  |
| 9. | External protection details of Valve |  |
| 10. | Type/model of actuator to be installed |  |
| 11. | Indicate whether Manufacturer’s Identification mark cast/embossed on valves |  |
| 12. | Material of joint rings/gaskets  |  |
| 13. | Standard to which joint rings confirm  |  |
| 14. | Whether joint rings/gaskets manufacturing factory posses ISO 9001 Quality Management System Certificate |  |
|  | **General** |  |
| 1. | Local Agent |  |
| 2. | Detail of similar use in installations, comparable to those intended, over the past ten years |  |
| 3. | After sales services available |  |
| 4. | Details of similar equipment installed in Sri Lanka |  |
| 5. | Details of registered workshop and facilities available |  |
| 6. | Factory Test Reports as per requirements of Volume IB of the Tender Dossier |  |
| 7. | Availability of ISO 9001 /BS EN ISO 9001 Certificates for Quality Management System for Manufacturing Factory. |  |
| Bid No:  |  |
| Bidder’s Signature |  |
| Date |  |

* + 1. **Sluice Gates/Penstocks**

|  |
| --- |
| **Sluice Gates/Penstocks** |
| A separate Schedule is to be provided for each size being supplied. |
|  | **LOCATION** |  |
|  |  |  |
| 1. | Make and Country of Manufacture |  |
| 2. | Type |  |
| 3. | Material/ Gate/ Spindle Headstock |  |
|  |  |  |
|  | **General** |  |
| 1. | Local Agent |  |
| 2. | Detail of similar use in installations, comparable to those intended, over the past ten years |  |
| 3. | After sales services available |  |
| 4. | Details of similar equipment installed in Sri Lanka |  |
| 5. | Details of registered workshop and facilities available |  |
| 6. | Factory Test Reports as per requirements of Volume IB of the Tender Dossier |  |
| 7. | Indicate whether ISO 9001 / BS EN ISO 9001 Certificate for Quality Management System for Manufacturing Factory. |  |
|  |  |  |
| Bid No:  |  |
| Bidder’s Signature |  |
| Date |  |

# **11.6.18 Fire Hydrants**

## Is this Pillar type or Underground type:

## Screw down type

### Country of Origin:…………………………

### Manufacturer’s name and Address:………………………………

 Is ISO 9001 : 2015 Quality Management System provided to the factory/ factories: …………………………………….

 Is product conformity certificate from relevant Standard Institution provided to the

 factory/ factories…………………………….

### Date of Manufacture:…………………

###  Standard to which it confirm:………………..

### Inlet Flanges

 Pressure rating:……………

Dimensions (mm):……………

Bolt circle dia(mm):……………….

Standard:……………………….

Standard of facing and drilling:…………………………..

### The direction of closing of the hydrant valve:……………..

### Body test pressure:……………. bars

### Valve and seat test pressure : ……………… bars

### Internal protective finish:………………

### External protective finish:……………………

### Weight of the hydrant: ……………………… kg

### Packing and protection of hydrants in transit:………………

### Reference of the catalogues, technical literature and drawings provided with the Bid:

###  ..................................................................................................................................

### Time of delivery of hydrants at port of shipment:……………………

### Name and address of supplier’s agent (if any) in Sri Lanka:…………………………

### Deviations from specifications (if any):………………………

**Dry Barrel Type**

Country of Manufacture :……………………

### Manufacturer’s name and Address:………………………………………………

### Date of Manufacture:……………………………….

Is ISO 9001 : 2015 Quality Management System provided to the factory/ factories ………………………………………………………………………………….

Is product conformity certificate from relevant Standard Institution provided to the factory/ factories……………………

### Standard to which it confirm:……………………….

### Burried length of hydrant: ……………….. m

Revised on 12-06-2018

### Number of outlet nozzles nominal diameter and standard:

 No. of outlet nozzles:………………….

 Nominal diameter (mm):……………………

 Standard:……………………..

### Inlet Flange

Pressure rating:………………..

Dimensions (mm):……………

Bolt circle dia(mm):………….

 Standard:………………………

### Material, Hardness range and standard

 Material Hardness range Standard

**Gaskets: ……………….… ………………. …………**

Nuts and Bolts: …………….. ………………… …………..

|  |  |
| --- | --- |
| Bid No:  |  |
| Bidder’s Signature |  |
| Date |  |

### The direction of closing of the hydrant valve:………………………………….

### Colour of the finish paint above ground line:

### Weight of the hydrant: ……………………… kg

### Packing and protection of hydrants in transit:

### Reference of the catalogues, technical literature and drawings provided with the tender:

### Port of shipment:

### Time of delivery of hydrants at port of shipment:

### Name and address of supplier’s agent (if any) in Sri Lanka:

### Deviations from specifications (if any):

* + 1. **Surface Boxes and Manhole Covers**

**Country of Manufacture :…………………………….**

**Manufacturer’s name and Address :………………………………………………….**

**Material :………………………………………**

**Class, Make, Standard and Date of Manufacture**

 Class Make Standard Date of Manufacture

 Manhole Covers : …………… …..………… ………………

 Surface Boxes : …………… …..………… ………………

Coating : …………… …..………… ………………

Lifting arrangements:

 Manhole Covers :………………

 Surface Boxes :……………………

Name and Address of Supplier’s agent (if any) in Sri Lanka :……………………….

Port of Shipment:……………………………

Time of Delivery of Material at port of shipment:………………………….

Deviations from Specification (if any):…………………………..

I/We certify that the details given above are true and the Goods supplied under this Contract comply with above.

|  |  |
| --- | --- |
| Bid No:  |  |
| Bidder’s Signature |  |
| Date |  |

**Note: Copies of the relevant standards used for pipes, specials and fittings should be forwarded along with the offer.**

**11.6.19 Chlorination System**

|  |
| --- |
| **a) Chlorinators** |
| 1 | Make and Country of Manufacture |  |
| 2 | Model/Type |  |
| 3 | No: of Units |  |
| 4 | Capacity (Kg/hr) |  |
| 5 | Accuracy |  |
|  |
| **b) Heaters** |  |
| 1 | Make and Country of Manufacture |  |
| 2 | Model/Type |  |
| 3 | Temperature range |  |
| 4 | Capacity |  |
| 5 | Power requirements |  |
|  |
| **c) Vacuum Regulators** |
| 1 | Make and Country of Manufacture |  |
| 2 | Model/Type |  |
| 3 | Material of Construction |  |
| 4 | No: of units |  |
| 5 | Capacity (Kg/hr) |  |
| 6 |  |  |
| **d) Filter** |
| 1 | Make and Country of Manufacture |  |
| 2 | Model/Type |  |
| 3 | Material of Construction |  |
| 4 | No: of Units |  |
| 5 | Capacity (liter) |  |
|  |
| **e) Injectors** |
| 1 | Make and Country of Manufacture |  |
| 2 | Model/Type |  |
| 3 | Material of Construction |  |
| 4 | No: of Units |  |
| 5 | Flow (Kg/hr) |  |
|  |  |  |
| **f) Drums** |
| 1 | Make and Country of Manufacture |  |
| 2 | Model/Type |  |
| 3 | Material of Construction |  |
| 4 | Hydraulic Test Pressure (bar) |  |
| 5 | Capacity (liter) |  |
| 6 | Weight (nominal 1000 Kg) |  |
| 7 | Shell Thickness (mm) |  |
| 8 | No: of Drums |  |
| 9 | Details of local supplier of Chlorine Gas and compatibility of drums to be supplied  |  |
|  |  |  |

|  |  |  |
| --- | --- | --- |
|  | **General (for all the above equipment)** |  |
| 1. | Local agents |  |
| 2. | Detail of similar use in installations, comparable to those intended, over the past ten years |  |
| 3. | After sales services available |  |
| 4. | Details of similar equipment installed in Sri Lanka |  |
| 5. | Indicate whether ISO 9001:2015 Certificates for Quality Management System for Manufacturing Factory. |  |
|  |  |  |
| Tender No:  |  |
| Tenderer’s Signature |  |
| Date |  |

**11.6.20 Air Blowers**

Revised on 12-06-2018

|  |
| --- |
| **Air Blowers** |
| A separate schedule is to be provided for each size of blower being supplied |
| 1 | Make and Country of Manufacture |  |
| 2 | Model/Type |  |
| 3 | No: of Stages |  |
| 4 | No: of Units |  |
| 5 | Discharge Pressure (Kg/cm²) |  |
| 6 | Discharge Temperature (ºc) |  |
| 7 | Suction Capacity (m³/min) |  |
| 8 | Material of Shaft |  |
| 9 | Material of Rotor |  |
| 10 | Material of Shaft Seal |  |
| 11 | Lubricant Type |  |
|  |  |  |
|  | **Motor** |  |
| 1 | Motor Power (kw) |  |
| 2 | Type of power transmission |  |
| 3 | Speed (rpm) |  |
| 4 | Motor Manufacturer |  |
| 5 | Motor Type |  |
| 6 | Weight – Motor (Kg) |  |
| 7 | Weight – Blower (Kg) |  |
| 8 | Weight – Total (Kg) |  |
| 9 | Noise level (Decibels) |  |
|  |  |  |
|  | **General** |  |
| 1. | Local Agent |  |
| 2. | Detail of similar use in installations, comparable to those intended, over the past ten years |  |
| 3. | After sales services available |  |
| 4. | Details of similar equipment installed in Sri Lanka |  |
| 5. | Details of registered workshop and facilities available |  |
| 6. | Factory Test Reports as per requirements of Volume IB of the Tender Dossier |  |
| 7. | Indicate whether ISO 9001: 2015 Certificates for Quality Management System for Manufacturing Factory. |  |
|  |  |  |
| Tender No:  |  |
| Tenderer’s Signature |  |
| Date |  |

Revised on 12-06-2018

**6.11.21 Air Compressor**

|  |
| --- |
| **Air Compressor** |
| A separate Schedule is to be provided for each capacity being supplied |
|  | **LOCATION and APPLICATION** |  |
|  |  |  |
| 1 | Make and Country of Manufacture |  |
| 2 | Model/Type |  |
| 3 | No: of Stages |  |
| 4 | No: of Units |  |
| 5 | Discharge Pressure (Kg/cm²) |  |
| 6 | Discharge Temperature (ºc) |  |
| 7 | Capacity (m³/min) |  |
| 8 | Hydraulic Test Pressure (bar) |  |
| 9 | Material of Construction |  |
|  |  |  |
|  | **Motor** |  |
| 1 | Motor Power (kw) |  |
| 2 | Type of power transmission |  |
| 3 | Speed (rpm) |  |
| 4 | Motor Manufacturer |  |
| 5 | Motor Type |  |
| 6 | Is soft start provided (Yes/No) Type/model etc |  |
| 7 | Weight – Motor (Kg) |  |
| 8 | Weight – Compressor (Kg) |  |
| 9 | Weight – Total (Kg) |  |
|  |  |  |
|  | **General** |  |
| 1. | Local Agent |  |
| 2. | Detail of similar use in installations, comparable to those intended, over the past ten years |  |
| 3. | After sales services available |  |
| 4. | Details of similar equipment installed in Sri Lanka |  |
| 5. | Details of registered workshop and facilities available |  |
| 6. | Factory Test Reports as per requirements of Volume IB of the Tender Dossier |  |
| 7. | Indicate whether ISO 9001:2015 Certificates for Quality Management System for Manufacturing Factory. |  |
|  |  |  |
| Tender No:  |  |
| Tenderer’s Signature |  |
| Date |  |

Revised on 12-06-2018

**6.11.22 Dosing Pumps**

|  |
| --- |
| **Dosing Pumps** |
| A separate Schedule is to be provided for each size and type being supplied. |
| 1 | Make and Country of Manufacture |  |
| 2 | Model/Type |  |
| 3 | No: of Units |  |
| 4 | Total Head (bar) |  |
| 5 | Range of flows (liter/hr) |  |
| 6 | Material of Construction |  |
| 7 | Motor Power (kw) |  |
| 8 | Type of power transmission |  |
| 9 | Speed (rpm) |  |
| 10 | Motor Manufacturer |  |
| 11 | Motor Type |  |
|  |  |  |
|  | **General** |  |
| 1. | Local Agent |  |
| 2. | Detail of similar use in installations, comparable to those intended, over the past ten years |  |
| 3. | After sales services available |  |
| 4. | Details of similar equipment installed in Sri Lanka |  |
| 5. | Details of registered workshop and facilities available |  |
| 6. | Indicate whether ISO 9001:2015 Certificates for Quality Management System for Manufacturing Factory. |  |
|  |  |  |
| Tender No:  |  |
| Tenderer’s Signature |  |
| Date |  |

**6.11.23 Battery backup**

Revised on 12-06-2018

|  |  |
| --- | --- |
| DESCRIPTION | **MOV** |
| 1. Make / model
 |  |
| 1. Country of manufacture
 |  |
| 1. Backup time
 |  |
| 1. Recharging time
 |  |
| 1. Battery type
 |  |
| 1. Replacement period
 |  |
| 1. Solar panel power capacity Make / Model
 |  |

**SPECIMEN FORM OF TEST CERTIFICATE FOR PIPES AND FITTINGS**

Customer: Date:

Manufacturer: Cert. No. :

Material to be tested : Pipes and fittings

Customer Order No. :

Identification of the Sample tested:

This is to certify that the inspection and testing of the above mentioned materials were duly made by us and in accordance with the specifications and the result was found satisfactory.

*[The followings, which shall be the test results/compliance, shall be included in the test certificate]*

1. Specification/Standard of conformity:
2. Appearance and shape :

i. Surface finish

ii. Check out roundness (ovality)

1. Physical properties
2. Tensile strength :
3. Elongation :
4. Hardness :
5. Microstructure :
6. Metallurgical Analysis:
7. Dimensions :

i. Wall thickness

ii. Socket dimensions (drawing / sketch)

iii. Plain end chamfer details

1. Coating and Lining

Details of standards, composition and thickness of

1. External zinc coating :
2. External bitumen coating :
3. Cement mortar lining :
4. Pressure (Hydrostatic) tests:

**SPECIMEN FORM OF TEST CERTIFICATE FOR VALVES AND HYDRANTS**

Customer: Date:

Manufacturer: Cert. No. :

Material to be tested : Valves and Hydrants

Customer Order No. :

Identification of the Sample tested:

This is to certify that the inspection and testing of the above mentioned materials were duly made by us and in accordance with the specifications and the result was found satisfactory.

*[The followings, which shall be the test results/compliance, shall be included in the test certificate]*

1. Specification/Standard of conformity:
2. Appearance and finish :

 i. Casting

 ii. Surface finish

1. Coating & Lining

Details of standards, composition & thickness

1. Internal coating :
2. External coating :
3. Test Pressures :
4. **Body test pressure & result:**
5. Seat test pressure & result:

(The medium used in the test shall be included.)

**SPECIMEN FORM OF TEST CERTIFICATE FOR JOINT RINGS AND GASKETS**

Customer: Date:

Manufacturer: Cert. No. :

Material to be tested : Joint Rings and Gaskets

Customer Order No. :

Identification of the Sample tested:

This is to certify that the inspection and testing of the above mentioned materials were duly made by us and in accordance with the specifications and the result was found satisfactory.

*[The followings, which shall be the test results/compliance, shall be included in the test certificate]*

1. Specification/Standard of conformity:
2. Appearance and finish :
3. Mechanical Properties
4. Tensile Strength & result :
5. Elongation at break & result:
6. Compression set & result
7. Hardness & result:
8. Test for microbiological deterioration :

**SPECIMEN FORM OF TEST CERTIFICATE FOR NUTS AND BOLTS**

Customer: Date:

Manufacturer: Cert. No. :

Material to be tested : Nuts and Bolts

Customer Order No. :

Identification of the Sample tested:

This is to certify that the inspection and testing of the above mentioned materials were duly made by us and in accordance with the specifications and the result was found satisfactory.

*[The followings, which shall be the test results/compliance, shall be included in the test certificate]*

1. Specification/Standard of conformity:
2. Mechanical properties of bolts
3. **Tensile strength & result:**
4. Yeild stress or stress at permanent set limit of 0.2% :
5. Percentage elongation after fracture:
6. Stress under proof load :
7. Strength under wedge loading :
8. Hardness & result :
9. :Galvanizing
10. **The standard which it confirm:**
11. Thickness of galvanized coating :

**SPECIMEN FORM OF TEST CERTIFICATE FOR MANHOLE COVERS**

Customer: Date:

Manufacturer: Cert. No. :

Material to be tested : Manhole covers

Customer Order No. :

Identification of the Sample tested:

This is to certify that the inspection and testing of the above mentioned materials were duly made by us and in accordance with the specifications and the result was found satisfactory.

*[The followings, which shall be the test results/compliance, shall be included in the test certificate]*

1. Specification/Standard of conformity:
2. Outer Dimensions of cover

Length :

Width :

Height of outer rim :

1. Coating :
2. Load test results:

# **11.7 Operational Cost (Annual)**

|  |  |  |
| --- | --- | --- |
|  |  | Time (Year) |
| 1 | 2 | 3 | 4 | 5 |
| Fixed costs | Licensing Charge |  |  |  |  |  |
| Rental for Service Provider |  |  |  |  |  |
| Frequency Charge |  |  |  |  |  |
| Usage | Tariff |  |  |  |  |  |
| Usage |  |  |  |  |  |
| Usage cost |  |  |  |  |  |
| Maintenance | Equipment Maintenance |  |  |  |  |  |

# **11.8 Estimated Cost for Preventive & Corrective Maintenance**

# **Works for 3rd, 4th & 5th Years**

After Laps of Warranty Period

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **Cost for 3rd year** | **Cost for 4th****year** | **Cost for 5th****year** |
| 1 | Preventive and corrective maintenance cost exclusive of cost of spare parts |  |  |  |
| 2 | Preventive and corrective maintenance cost inclusive of cost of spare parts |  |  |  |

**11.9 Questionnaire for Lightining Protection System and Accessories**

**Lightining Protection System And Accessories For Intake Pump House**

|  |  |
| --- | --- |
| DESCRIPTION |  |
| 1. Make & Country of origin of Air Terminals and Fixings
	* Type
	* Length
	* Diameter
	* Material
	* Weight
	* Air Terminal Base
 |  |
| 1. Make & Country of origin ofDown Conductors
	* Type
	* Material
	* Conductor Size
	* Weight
	* Conductor fixings
 |  |
| 1. Test and Junction Clamps
 |  |
| 1. Make & Country of origin of Earth Termination
	* Length
	* Diameter
	* Material
	* Weight
 |  |
| 1. Bonding
 |  |

#### Volume III

#### SECTION -12

**Drawings**