# Transnet National Ports Authority

# Port of Port Elizabeth

# SUPPLY AND INSTALLATION OF 3 NON-RETURN VALVES AND 3 PRESSURE REDUCING VALVES IN THE PORT OF PORT ELIZABETH FOR A ONCE OFF PERIOD.

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## PREQUALIFYING CRITERIA

1. Attendance of Compulsory Site Briefing
2. CIDB Grading of 2CE OR HIGHER
3. Valid Plumber trade test certificate- trade test certificate must be issued by Quality Council for Trades and Occupations (QCTO), OR National Artisan Moderating Body (NAMB) OR Department of Higher Education and Training accredited trade test centre OR Department of Labour.

## 1. SCOPE OF WORKS AND GENERIC CONDITIONS OF CONTRACT

### 1.1. BACKGROUND AND PURPOSE

Transnet National Ports Authority (TNPA) as the landlord within the Port of Port Elizabeth (PoPE) is responsible for water supply to tenants and port users.

The PoPE is supplied by three bulk water pipelines (160mm) from the Municipality. The water supply feed is at Humerail, Baakens and Campanile area. The bulk water supply pipes are made of cement fibre / HDPE. The port intends to install Pressure Reducing Valves (PRV's) and Non-Return Valves (NRV's) at these inflow points to assist with hydraulic stability of the network.

The locations of the 3 sites for installation are indicated below.




**Figure 1**: Location of the Three Project Sites




**Figure 2**: Humerail Site Location




**Figure 3**: Baakens Site Location




**Figure 4**: Campanile Site Location

## 1.2. SCOPE OF WORKS and SPECIFICATIONS

### 1.2.1. Excavations

1.2.1.1. The contractor is required to excavate for manholes with the depth varying from 1.2 m to 2.5 m for the installation of the PRV's and NRV's.

1.2.1.2. The contractor is to ensure compliance with all legal and safety requirements when excavating.

1.2.1.3. Contractors are to note site conditions and constrains and determine if hand excavations or mechanical excavations, or a combination thereof and subsequent proportion, is to be used.

1.2.1.4. Excavations to be adequately backfilled and compacted after closing of manholes.

### 1.2.2. Supply and Installation of PRV's and NRV's.

1.2.2.1. The specifications for the PRV's are as follows

| SPECIFICATIONS | PRESSURE REDUCING VALVE (PRV) |
|---|---|
| Nominal Sizes | DN160 |
| Pressure Rating | PN16 |
| Flow Medium | Potable Water |
| Bonnet | Ductile Iron |
| Body Material | Ductile Iron |
| End Connection | Flanged |
| Operation | Piloted |
| Installation Orientation | Horizontal installation only |
| Temperature Range | 0°C - 80°C |
| Diaphragm | Nylon Reinforced Rubber (EPDM + Nylon Fabric) |
| Seat | Stainless Steel |
| Seals | Rubber |
| Painting/Coating Color | Blue |
| Warranty | Minimum 12 Months |

1.2.2.2. The specifications for the NRV's are as follows

| SPECIFICATIONS | SWING NON-RETURN VALVE |
|---|---|
| Nominal Sizes | DN160 |
| Pressure Rating | PN12 |
| Flow Medium | Portable Water |
| Bonnet | Ductile/Cast Iron Bolted |
| Body Material | Ductile/Cast Iron |
| End Connection | Flanged |
| Operation | Hinged disc opens with flow and closes under reverse flow by gravity |
| Installation Orientation | Horizontal pipeline only |
| Temperature Range | 0°C - 80°C |
| Fasteners | Stainless Steel A2-70 |
| Gaskets | Ethylene Propylene Diene Monomer (EPDM) |
| Painting/Coating Color | Blue |
| Warranty | Minimum 12 Months |

1.2.2.3. The contractor is to supply and install the PRVs and NRVs as per the specifications above.

1.2.2.4. Each inflow point is to receive 1 PRV and 1 NRV. Both valves shall be installed within the same manhole adjacent to each other. Manhole to receive 2 cover openings.

1.2.2.5. The contractor is to prepare the existing pipes, including the addition of flanges and other piping, if required, to receive the PRVs and NRVs.

1.2.2.6. Each PRV and NRV is to be installed in pairs.

1.2.2.7. The contractor is to supply and install a SANS compliant precast heavy duty concrete manholes and heavy-duty composite manhole covers.

1.2.2.8. Concrete bases (200mm thickness) to be provided at the bottom of manholes.

1.2.2.9. Contractor is to commission all PRV's and NRV's.




**Figure 5**: Typical manhole cover that can be opened individually

## 1.3. LOCATION OF SITE AND ACCESS

The Pressure Reducing Valves and the Non-Return Valves will be installed bulk water line supplies of the port. Site access can be gained at any of the three port entrances- see figures Figure 1 to Figure 4.

## 1.4. WORKING HOURS

1.4.1. The working hours shall be from 08h00 to 16h00, Monday to Friday.

1.4.2. The Contractor must not vary the standard working hours without a written instruction from the Project Manager.

1.4.3. Care should be taken to minimise the impact on operations while conducting work. Work must be completed within agreed period.

## 1.5. INDEMNITY AND INJURY MANAGEMENT

TNPA will not indemnify and not be responsible for any injuries that might arise during transportation and execution of the project.

1.6. COMPLIANCE

1.6.1. The Contractor shall ensure that all current statutory laws & future legislation that may be passed pertaining to the storage, handling, removal, transportation and disposal of waste are/will be complied with and undertakes that the procedures for undertaking this work shall comply with all applicable Legislation, Codes of Practice, Local, Regional, Provincial, National Authorities' Requirements including but not limited to:

- South African National Standards (SANS).
- National Environmental Management Act (1998)
- National Environmental Management Waste Act (2008)
- The Occupational Health and Safety Act (1993)
- Common Law
- Nelson Mandela Bay Municipal Bylaws and
- Any other relevant legislation

1.6.2. The Contractor shall comply with the Port of Port Elizabeth's SHEQ regulations and requirements.

1.6.3. The Contractor shall submit a SHE file for approval by TNPA Port of Port Elizabeth SHEQ department.

1.7. PARKING & VEHICLES

1.7.1. Parking will be at any open parking. Vehicles used for people and equipment transport must be easily identifiable as a contractor vehicle.

1.8. ASSIGNMENT AND SUBCONTRACTING

1.8.1. If the Contractor has subcontracted the designated work, TNPA requires the Contractor to notify TNPA of any such appointments and to ensure that the subcontractor complies with all the conditions as stated in this contract.

1.8.2. The main Contractor will be responsible for all the terms and conditions as stated in this contract and under no circumstances will any responsibility be transferred to the subcontractor.

## 1.9. EXCAVATIONS AND EXISTING SERVICES

1.10.1 The Contractor must obtain existing services drawings from the TNPA Port Engineering Department before execution of the assigned works.

1.10.2 If the Contractor at the time of work had damage the services TNPA PORT OF PORT ELIZABETH must be notified immediately.

1.10.3 The Contractor will be held liable for all damages to existing services.

## BILL OF QUANTITIES

The bill of quantities should be completed only after reading the scope of work and pricing instructions. All items in the bill of quantities need to be priced to qualify for further evaluation. All rates must be inclusive of labor, material and all other items that will be required for successful completion of an activity.

| Item | Ref | Description | Unit | QTY | Rate | Total |
|---|---|---|---|---|---|---|
| | | | | | | |
| 1 | | **Preliminary and General** | | | | |
| 1.1 | | Submission of Safety File | Sum | 1 | | |
| | | | | | | |
| 2 | | **Supply, Installation and Commissioning of Valves and Pipework** | | | | |
| 2.1 | | Swing Check Valve, DN160, PN12, Ductile Iron body, EPDM seat, Flanged EN 1092-2, including all accessories such as flanges, nuts, bolts, gaskets. | No. | 3 | | |
| 2.2 | | Pressure Reducing Valve, DN160, PN16, ductile iron body, epoxy coated, flanged ends, pilot-operated, including all accessories | No. | 3 | | |
| 2.3 | | HDPE Pipe, DN150, PN16 | m | 12 | | |
| | | | | | | |
| 3 | | **Earthworks and Civil Works** | | | | |
| 3.1 | | Excavation works for manhole (12 $m^3$ per manhole) | $m^3$ | 36 | | |
| 3.2 | | Manhole (Rectangular, 2.5 m depth × 3 m length). | No. | 3 | | |
| 3.2 | | Heavy-duty lockable Manhole covers | No. | 3 | | |
| 3.4 | | Concrete Base Slab (200 mm thickness) | $m^3$ | 5 | | |
| | | | | | | |
| 4 | | **Subtotal** | | | | |
| 5 | | **Value Added Tax (15%)** | | | | |
| 6 | | **Grand Total** | | | | |