

FORM N: DETAILED SPECIFICATIONS

SUPPLY, DELIVERY AND ON-SITE INSPECTIONS OF NEWPCC SUBMERSIBLE PUMPING EQUIPMENT

- 1. INSTRUCTIONS FOR COMPLETION OF SPECIFICATIONS**
 - 1.1 All items in these specifications should be answered indicating compliance or non-compliance.
 - 1.2 **Bidder/Proponents shall fill in specifications and state “yes” where indicated for compliance or state “deviation”,** or give a reply where requested to do so. Deviations and/or equivalents shall be clearly stated and fully detailed. Deviations and/or equivalents will be considered subject to evaluation. In every instance where a brand name or design specifications is used, the City will also consider deviations and/or equivalents.
 - 1.3 Lengthy explanations of deviations may be included in a separate document and must reference the appropriate Detailed Specification.
 - 1.4 Each Bidder/Proponent is required to fill in every blank. Failure to do so may be used as a basis for rejection of bid/proposal.
 - 1.5 It will be the responsibility of the Bidder/Proponent to inform the City of any errors or omissions in these Detailed Specifications, for under this Contract, the Contractor shall be held responsible to ensure that the manufacturer will be responsible for the design, performance, reliability and satisfactory operational function of the unit.
- 2. DESCRIPTION OF EQUIPMENT**
 - 2.1 These specifications describe the submersible pumping equipment, instruments and other equipment and features as specified herein.
 - 2.2 The pumping equipment and instruments shall be new. Refurbished equipment will not be acceptable.
 - 2.3 The submersible pumping equipment and all other items/components shall be the manufacturer's latest model. The equipment shall be furnished complete and ready for operation. Any parts or accessories not specifically mentioned, but which are required to complete and place the equipment and associated attachments in successful operation shall be furnished as though specifically mentioned in these specifications. The equipment and associated attachments, and all parts thereof, shall conform in strength and quality of material and workmanship, to the best standards and engineering practice of the industry.
 - 2.4 The ratings specified herein merely state the minimum values acceptable to the City, not implying that those values are sufficient for the design of the particular equipment being bid/Proposed.
- 3. OTHER SPECIFICATIONS AND STANDARDS**
 - 3.1 All applicable CSA and Hydraulic Institute Standards for Submersible Equipment form an integral part of the pump specifications and shall have precedence in any conflict concerning minimum acceptable standards.
 - 3.2 The submersible pumps shall comply with the applicable regulations:
 - CSA C22.2 – Canadian Electrical Code
 - CSA C22.2 No. 100 – Motors and Generators
 - CSA C22.2 No. 145 – Electric Motors and Generators For Use in Hazardous (Classified) Locations
 - Hydraulic Institute Standards 11.6 – Rotodynamic Submersible Pumps For Hydraulic Performance, Hydrostatic Pressure, Mechanical and Electrical Acceptance Tests
 - Manitoba Building Code: https://web2.gov.mb.ca/laws/regs/current/_pdf-regs.php?reg=31/2011
 - 3.3 The completed unit shall include a Canadian Certification label (CSA, cUL) shown on the equipment nameplate.

4. REFERENCES

Bidder to provide three (3) references where this equipment is used in a working wastewater environment. State the application, model type of submersible pump used, how long pump has been in service, customer and contact information (names, phone numbers and email)

4.1 Reference 1:

4.2 Reference 2:

4.3 Reference 3:

5. MAKE & MODEL [Specification Ref E4.2f]

5.1 Pump Manufacturer Being Bid State _____

5.2 Pump Full Model Number Being Bid State _____

6. PUMP DETAILS [Specification Ref E4.1 / E4.2a]

6.1 Flow Rate Lower @ 6.5m head (Bidder to fill in) _____ ML/day

6.2 Flow Rate Higher @ 6.0m head (Bidder to fill in) _____ ML/day

6.3 Draft Tube Size Required (Bidder to fill in) _____ mm diameter

6.4 State Any Tube Adapters / Modifications Required:

6.5 Explosion Proof Enclosure (Bidder to answer YES / NO) _____

6.6 Pump Approval for Canada (Bidder to answer CSA / cUL / NO) _____

6.7 Certified Canada Service Shop (Bidder to list City & Province) _____

6.8 Wastewater Operation Compatible (Bidder to answer YES / NO) _____

6.9 Provide Explanation on Any Deviations Required:

7. MOTOR DETAILS [Specification Ref E4.2b / E4.2c]

7.1 Power Supply (Bidder to fill in) _____ VAC ___ Ph _____ Hz

7.2 Power Rating (Bidder to fill in) _____ HP

7.3 Approximate Full Load Amps (Bidder to fill in) _____ A

7.4 Approximate Efficiency (Bidder to fill in) _____ %

- 7.5 Nominal Speed (Bidder to fill in) _____ RPM
- 7.6 Starts per Hour Compatible (Bidder to fill in) _____
- 7.7 VFD Operation Compatible (Bidder to answer YES / NO) _____
- 7.8 Power Cabling Length (Bidder to fill in) _____ metres
- 7.9 Power Cabling Insulation Voltage (Bidder to fill in) _____ V
- 7.10 Provide Explanation on Any Deviations Required:

8. INSTRUMENT DETAILS [Specification Ref E4.2c / E4.2d, ex. Yes – Discrete Input 120 VAC]

- 8.1 Lower Bearing Temperature Sensor (Bidder to fill in) _____
- 8.2 Upper Bearing Temperature Sensor (Bidder to fill in) _____
- 8.3 Upper Bearing Vibration Sensor (Bidder to fill in) _____
- 8.4 Motor Winding Temperature Sensor (Bidder to fill in) _____
- 8.5 Pump Moisture Electrode (Bidder to fill in) _____
- 8.6 Pump Moisture Float (Seal Leak) (Bidder to fill in) _____
- 8.7 Control Cabling Length (Bidder to fill in) _____ metres
- 8.8 Provide Explanation on Any Deviations Required:

9. TOOLS, ACCESSORIES & SPARE PARTS [Specification Ref E5]

- 9.1 Special Tools (list) _____ (Bidder to indicate total quantity) _____
- 9.2 Special Tools (list) _____ (Bidder to indicate total quantity) _____
- 9.3 Spare Tube Adapters (list) _____ (Bidder to indicate total quantity) _____
- 9.4 Spare Pump Complete Cabling Sets (Bidder to indicate total quantity) _____
- 9.5 Spare Impellers (Bidder to indicate total quantity) _____
- 9.6 Spare Wear Rings / Plates (Bidder to indicate total quantity) _____
- 9.7 Spare Mechanical Seals (Bidder to indicate total quantity) _____
- 9.8 Spare O-Rings (Bidder to indicate total quantity) _____
- 9.9 Spare Joint Rings (Bidder to indicate total quantity) _____
- 9.10 Spare Lower Bearings (Pump Side) (Bidder to indicate total quantity) _____
- 9.11 Spare Upper Bearings (Motor Side) (Bidder to indicate total quantity) _____
- 9.12 Other Spare Parts (list) _____ (Bidder to indicate total quantity) _____
- 9.13 Other Spare Parts (list) _____ (Bidder to indicate total quantity) _____
- 9.14 Provide Explanation on any Deviations Required:

10. MANUFACTURER PARTS WARRANTY [Specification Ref E9.2]

10.1 The Supplier shall provide all detailed published Warranty information (including all exclusions) at the time of bid of the equipment. State the following [example. Replacement – 18 or 12 Months]:

- 10.2 Lower Bearings (Motor Side) State _____
- 10.3 Upper Bearings (Pump Side) State _____
- 10.4 Wear Rings State _____
- 10.5 Mechanical Seals State _____
- 10.6 Impellers State _____
- 10.7 Power Cabling State _____
- 10.8 Control Cabling State _____
- 10.9 Upper Bearing Vibration Sensor State _____
- 10.10 Motor Winding Temperature Sensor State _____
- 10.11 Motor Positive Temperature Coefficient State _____
- 10.12 Pump Moisture Electrode State _____
- 10.13 Pump Moisture Float (Seal Leak) State _____

10.14 Provide any additional manufacturer parts warranty information:

11. MANUFACTURER PUMPS WARRANTY [Specification Ref E9.3]

11.1 The Supplier shall provide all detailed published Warranty information (including all exclusions) at the time of bid of the equipment. State the following [example Replacement – 18 or 12 Months]:

- 11.2 Enclosure Exterior Finish State _____
- 11.3 Electric Motors State _____
- 11.4 Mechanical Pumps State _____
- 11.5 Mechanical Pump Shafts State _____

11.6 Provide any additional manufacturer pumps warranty information:

