FORM N: DETAILED SPECIFICATIONS

SUPPLY, DELIVERY AND ON-SITE INSPECTIONS OF WATER-COOLED CHILLER EQUIPMENT SOUTH END WATER POLLUTION CONTROL CENTRE (SEWPCC) B679 CHILLER REPLACEMENT

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 water-cooled chiller equipment CHLR-B679, instrumentsand other equipment and features as specified herein.

2.2 The chiller equipment and instruments shall be new. Refurbished equipment will not be acceptable.

2.3 The water-cooled chiller equipment **CHLR-B679** 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 ANSI/ASHRAE Standards for Chiller Equipment form an integral part of the chiller specifications and shall have precedence in any conflict concerning minimum acceptable standards.

3.2 The water-cooled chiller shall comply with the applicable regulations:

CSA C22.2 – Canadian Electrical Code

CSA C22.2 No. 100 – Motors and Generators

CSA B52:18 – Mechanical Refrigeration CodeANSI/ASHRAE Standard 15-2022 Safety Standard for Refrigeration Systems

CSA C743 – Performance Standard for Rating Packaged Water Chillers

ANSI/ASHRAE Standard 34-2022 Designation and Safety Classification of Refrigerants

ANSI/ASHRAE Standard 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings

AHRI Standard 550/590

Manitoba Building Code

Manitoba Energy Code for Buildings

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 similar application. State the application, model type of chiller used, how long chiller 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

5.1 Chiller Manufacturer Being Bid State _____

5.2 Chiller Full Model Number Being Bid State _____

6. CHILLER DETAILS

6.1	Design Capacity	(Bidder to fill in)	_____	TonR
6.2	Min. Evap. Water Flow Rate	(Bidder to fill in)	_____	L/s
6.3	Max. Evap. Water Flow Rate	(Bidder to fill in)	_____	L/s
6.4	Min. Condenser Water Flow Rate	(Bidder to fill in)	_____	L/s
6.5	Max. Condenser Water Flow Rate	(Bidder to fill in)	_____	L/s
6.6	Min. Evap. Leaving Liquid Temp	(Bidder to fill in)	_____	°C
6.7	Max. Evap. Leaving Liquid Temp	(Bidder to fill in)	_____	°C
6.8	Min. Entering Cond Water Liquid Temp	(Bidder to fill in)	_____	°C
6.9	Max. Entering Cond Water Liquid Temp	(Bidder to fill in)	_____	°C
6.10	IPLV.IP	(Bidder to fill in)	_____	kW/TonR
6.11	Full Load Capacity	(Bidder to fill in)	_____	kW/TonR
6.12	Unit Capacity Control	(Bidder to fill in)	_____	Steps
6.13	Evap. Water Pressure Drop (full load)	(Bidder to fill in)	_____	kPag
6.14	Condenser Water Pressure Drop (full load)	(Bidder to fill in)	_____	kPag
6.15	Evap. DWP Ref Side	(Bidder to fill in)	_____	kPag
6.16	Evap. DWP Water Side	(Bidder to fill in)	_____	kPag

6.17	Evap. Dia x Length	(Bidder to fill in)	_____	mm x mm
6.18	Evap. Water Volume	(Bidder to fill in)	_____	L
6.19	Evap. Connection Size	(Bidder to fill in)	_____	mm
6.20	Evap. No. of Passes	(Bidder to fill in)	_____	passes
6.21	Condenser DWP Ref Side	(Bidder to fill in)	_____	kPag
6.22	Condenser DWP Water Side	(Bidder to fill in)	_____	kPag
6.23	Condenser Dia x Length	(Bidder to fill in)	_____	mm x mm
6.24	Condenser Water Volume	(Bidder to fill in)	_____	L
6.25	Condenser Connection Size	(Bidder to fill in)	_____	mm
6.26	Condenser No. of Passes	(Bidder to fill in)	_____	passes
6.27	Evap. Fouling Factor	(Bidder to fill in)	_____	m^2K/W
6.28	Condenser Fouling Factor	(Bidder to fill in)	_____	m^2K/W
6.29	Weight (shipping)	(Bidder to fill in)	_____	kgs
6.30	Weight (operating)	(Bidder to fill in)	_____	kgs
6.31	Weight (shipping)	(Bidder to fill in)	_____	kgs
6.32	Refrigerant Type	(Bidder to fill in)	_____	
6.33	Refrigerant Charge	(Bidder to fill in)	_____	kgs
6.34	Chiller Length	(Bidder to fill in)	_____	mm
6.35	Chiller Width	(Bidder to fill in)	_____	mm
6.36	Chiller Height	(Bidder to fill in)	_____	mm

6.37 State Any Modifications Required:

_____

_____

_____

6.38	Approval for Canada	(Bidder to answer CSA / cUL / NO)	_____
6.39	Certified Canada Service Shop	(Bidder to list City & Province)	_____

6.40 Provide Explanation on Any Deviations Required:

_____

_____

_____

7. MOTOR DETAILS

7.1	Power Supply	(Bidder to fill in)	_____ VAC ___ Ph ____ Hz
7.2	Power Rating	(Bidder to fill in)	_____ HP/kW
7.3	Approximate Full Load Amps	(Bidder to fill in)	_____ A
7.4	Max O/C Protection	(Bidder to fill in)	_____ A
7.5	Short Circuit Current Rating (SCCR)	(Bidder to fill in)	_____ A
7.6	Power Connection Style	(Bidder to fill in)	____Single / Dual Power Point
7.7	Main Power Disconnect Style	(Bidder to fill in)	_____ Incl / Not Incl.

7.8 Provide Explanation on Any Deviations Required:

_____

_____

_____

8. CONTROLS DETAILS

8.1 HLI Protocol (Bidder to fill in) _____

8.2 Control Cabling Length (Bidder to fill in) _____ metres

8.3 Provide Explanation on Any Deviations Required:

_____

_____

_____