

ION APPROVED	B.M. ELEV.				CHECKED	EAK		ENGINEER'S SEAL	Q	THE CITY OF WINNIPEG
ROUND STRUCTURES		CONSTRUCTION COMPLETION DATE:			BY FAK		``\\b.			WATER AND WASTE DEPARTMENT
A CTURES DATE ERGROUND STRUCTURES AS SHOWN HE BEST INFORMATION AVAILABLE TEE IS GIVEN THAT ALL EXISTING E SHOWN OR THAT THE GIVEN (ACT. CONFIRMATION OF EXISTENCE ATION OF ALL SERVICES MUST BE THE INDIVIDUAL UTILITIES BEFORE DING WITH CONSTRUCTION.	\square				APPROVED BY	SSR	DILLON CONSULTING		Winnipèg	ENGINEERING DIVISION
					DESIGNED BY DRAWN BY	BSH			WILKES	ES RESERVOIR NORTH CELL REHABILITATION TEMPERATURE MONITORING LOCATION PLAN
						TLK				
					SCALE:		1		AND GENERAL NOTES	
					HORIZONTAL AS NOTED	AS NOTED	RELEASED FOR CONSTRUCTION	CONSULTANT DRAWING NUMBER	SHEET OF	CITY DRAWING NUMBER
	1	ISSUED FOR TENDER	2015 11 20	SSR			14-1411-M-100	16 17	1 - 0650R - M0001 - 001	
	NO.	. REVISIONS	DATE	BY	DATE	2015 11 20	DATE		40 47	
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CONTRACT NUMBER:



- 1. INTENT IS TO PROVIDE A MONITORING SYSTEM TO MEASURE AND RECORD THE TEMPERATURE AT THE UNDERSIDE AND UPPER MOST SURFACE OF THE HOLLOWCORE ROOF SLABS ON AN HOURLY BASIS, AT FOUR DISTINCT LOCATIONS AS SHOWN ON THE DRAWINGS. ACQUIRED DATA SHALL BE WIRELESSLY TRANSMITTED TO EXISTING CITY OF WINNIPEG SCADA SYSTEM. REFER TO SCHEMATIC ON THIS DRAWING.
 - EMPLOY A SPECIALIST ELECTRICAL/CONTROLS SUB-CONTRACTOR NORMALLY ENGAGED IN THIS TYPE OF WORK TO SUPPLY AND INSTALL ALL ASSOCIATED SENSORS, CONDUIT, WIRING, CONTROLLERS, HARDWARE AND SOFTWARE TO MEET INTENT AS DESCRIBED ABOVE.
- LOCATE NEW SENSORS AS LOCATED ON THE DRAWINGS, INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION
- CONTRACTOR SHALL BE RESPONSIBLE TO SELECT ALL DEVICES ASSOCIATED WITH NEW TEMPERATURE MONITORING SYSTEM, IN
- TEMPERATURE SENSORS SHALL BE 3-WIRE, RTD TYPE, WITH A PRECISION OF 0.1°C AND AN ACCURACY OF +/- 10% (MAXIMUM), SUITABLE FOR A TEMPERATURE RANGE OF AT LEAST -50°C TO +50°C. SELECT SENSORS APPROPRIATE FOR MONITORING APPLICATION AND LENGTH OF LEAD
- INSTALLATION DETAIL PROVIDED IN THIS DRAWING FOR SENSOR INSTALLATION IS AN EXAMPLE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE TO DEVELOP AND EMPLOY AN INSTALLATION DETAIL FOR THE SENSOR(S) SELECTED TO COMPLY WITH THE INTENT AS OUTLINED ABOVE. INSTALLATION DETAIL SHALL PROVIDE FOR THE ABILITY TO REMOVE AND REPLACE SENSOR(S) AS AND WHEN REQUIRED. PROVIDE FOR DIFFERENTIAL MOVEMENT BETWEEN HOLLOWCORE SLAB AND INSULATION PANELS AND THERMAL EXPANSION/CONTRACTION.
- SUPPLY AND INSTALL A NEW TEMPERATURE MONITORING PANEL CONSISTING OF A NEMA 4X ENCLOSURE (CSA CERTIFIED OR APPROVED BY MANITOBA DEPARTMENT OF LABOUR), SUFFICIENTLY SIZED TO ACCEPT LANDING OF 120V AC POWER SUPPLY, REDUCED VOLTAGE TRANSFORMERS AS REQUIRED, RTD CABLING AND ETHERNET CABLING AND ANY FUSING AND/OR PROTECTION REQUIRED TO MEET LOCAL ELECTRICAL CODES. PROVIDE LAMACOID NAME PLATE ON ENCLOSURE. THE TEMPERATURE MONITORING PANEL SHALL INCLUDE:
- 9.1. NEW SINGULAR OR MULTIPLE DATA LOGGER(S) TO RECEIVE SIGNALS FROM THE NEW TEMPERATURE MONITORING SENSORS. NEW DATA
 - 9.1.1. HAVE SUFFICIENT CAPACITY TO ACCOMMODATE ALL RTD SENSORS AS SPECIFIED ON THE DRAWINGS, PLUS AT LEAST TWO (2)
 - 9.1.1. INCORPORATE MODBUS TCP COMMUNICATIONS PROTOCOL FOR POLLING BY CITY OF WINNIPEG SCADA SYSTEM.
 - 9.1.3. UTILIZE 12-48 VDC POWER SUPPLY FOR ALL COMPONENTS OF NEW TEMPERATURE MONITORING SYSTEM.
- 9.2. AN ETHERNET SWITCH (PHOENIX CONTACT 8-PORT ETHERNET SWITCH, MODEL SF 8TX-2832771)
 - SINGULAR OR MULTIPLE 120 VAC TO 12-48 VDC POWER TRANSFORMER(S) AS REQUIRED TO SUPPORT ALL DEVICES TO BE INCORPORATED INTO THE TEMPERATURE MONITORING SYSTEM (i.e. DATA LOGGERS, ETHERNET SWITCH, ETC.), INCLUDING WIRELESS DATA TRANSMITTER TO BE PROVIDED AND INSTALLED BY THE CITY OF WINNIPEG. CO-ORDINATE ALL REQUIREMENTS FOR OWNER SUPPLIED EQUIPMENT AND DEVICES WITH THE CITY OF WINNIPEG REPRESENTATIVES AND THE CONTRACT ADMINISTRATOR
- PROVIDE AND INSTALL ALL NECESSARY ELECTRICAL POWER SUPPLIES, INCLUDING NEW BREAKERS INSTALLED INTO EXISTING ELECTRICAL DISTRIBUTION PANEL BOARDS, CONDUIT AND WIRING AS MAY BE REQUIRED FOR NEW TEMPERATURE MONITORING SYSTEM.
- 11.1. CATALOGUE CUT-SHEETS OF ALL DEVICES SELECTED AND INTENDED FOR INSTALLATION OF NEW TEMPERATURE MONITORING SYSTEM. 11.2. MANUFACTURER'S INSTALLATION INSTRUCTIONS OR INTENDED INSTALLATION DETAIL OF TEMPERATURE MONITORING SENSOR.
- 11.3. SCHEMATIC OF FINAL TEMPERATURE MONITORING SYSTEM INDICATING, INTER-RELATIONSHIP OF ALL DEVICES.
- 12. PROVIDE COPY OF FINAL APPROVED SHOP DRAWINGS AND ALL INSTALLATION AND MAINTENANCE DATA FOR MONITORING EQUIPMENT,
- DEVICES AND SYSTEM FOR INCLUSION INTO O & M MANUAL AS DESCRIBED ELSEWHERE IN THE SPECIFICATIONS. 13. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE INSTALLATION OF NEW TEMPERATURE SENSORS BE WATER TIGHT WITH NO WATER
- 14. CONTRACTORS ARE ADVISED THAT OVERALL CONSTRUCTION WORK RELATIVE TO THIS CONTRACT IS TO BE COMPLETED IN TWO STAGES.
 - STAGE 1 AND STAGE 2 INVOLVE REHABILITATION OF THE WEST AND EAST RESERVOIR CELLS RESPECTIVELY. REFER TO SPECIFICATIONS AND OTHER DRAWINGS FOR ADDITIONAL INFORMATION AND DETAILS. CO-ORDINATE WORK ACCORDINGLY.
 - 14.1. UNDER STAGE 1, PROVIDE FOR INSTALLATION OF CONDUIT AND WIRING AND INSTALLATION OF TEMPERATURE MONITOR SENSORS RELATIVE TO THE WEST RESERVOIR CELL. PROVIDE FOR TEMPORARY TERMINATION OF WIRING AND CONDUIT AS REQUIRED TO
 - 14.2. UNDER STAGE 2, PROVIDE FOR INSTALLATION OF CONDUIT AND WIRING AND INSTALLATION OF TEMPERATURE MONITOR SENSORS RELATIVE TO THE EAST RESERVOIR CELL AND ALL OTHER WORK ASSOCIATED WITH THE COMPLETION OF THE TEMPERATURE
 - 14.3. PROVIDE TENDER PRICING FOR TEMPERATURE MONITORING SYSTEM IN ACCORDANCE WITH CONSTRUCTION PROCESS AS DESCRIBED.