



- LEGEND:**
- GS GLYCOL SUPPLY
 - GR GLYCOL RETURN
 - EXP EXPANSION TANK
 - T TEMPERATURE SENSOR
 - AP AIR PURGER C/W AIR VENT
 - PT PRESSURE TEMPERATURE INDICATOR
 - CIRCULATING PUMP
 - PRESSURE GAUGE c/w BALL VALVE
 - THERMOMETER
 - CONTROL VALVE MODULATING (SIZE AS PER CONTROLS CONTRACTOR)
 - 3-WAY MIXING VALVE (SIZE AS PER CONTROLS CONTRACTOR)
 - GATE VALVE
 - BALL VALVE
 - CHECK VALVE
 - CIRCUIT SETTER
 - REDUCER
 - DRAIN
 - PRESSURE RELIEF VALVE SIZED TO DEPARTMENT OF LABOUR REQUIREMENTS
 - FLOW INDICATOR
 - FILTER
 - CONTROL WIRING
 - FLOW ARROW
 - ELECTRONIC THERMOSTAT

KEY NOTES:

- 1 FINAL INFLOOR ZONE FLOW RATES ARE TO BE OBTAINED FROM INFLOOR SHOP DRAWINGS. (TYP)

1 HEATING/CONTROL SYSTEM SCHEMATIC
SCALE: N.T.S.

HEATING OPTION 1 CONTROLS:

SCOPE OF WORK:

DESIGN, SUPPLY, INSTALL AND COMMISSION ALL CONTROLS REQUIRED TO MEET THE FOLLOWING SEQUENCE OF OPERATION. PROVIDE ALL CONTROL VALVES AND ACTUATORS.

SEQUENCE OF OPERATION:

- BOILER (B-1)**
- ENABLE/DISABLE BOILER BASED ON OUTDOOR TEMPERATURE. (BOILER SHALL OPERATE ON ITS OWN WHEN ENABLED).
- PUMPS (PU-1 AND PU-2)**
- PRIMARY PUMP SHALL OPERATE WHEN THE BOILER IS ENABLED. SECONDARY PUMP SHALL BE ON STANDBY. IN THE EVENT OF PRIMARY PUMP FAILURE, THE SECONDARY PUMP SHALL START AUTOMATICALLY. AN ALARM SHALL BE GENERATED TO INDICATE PUMP FAILURE.
 - PROVIDE AUTOMATIC DUTY CYCLING OF THE PUMPS.
- PUMPS (PU-3 AND PU-4)**
- PRIMARY PUMP SHALL OPERATE WHEN THE BOILER IS ENABLED. SECONDARY PUMP SHALL BE ON STANDBY. IN THE EVENT OF PRIMARY PUMP FAILURE, THE SECONDARY PUMP SHALL START AUTOMATICALLY. AN ALARM SHALL BE GENERATED TO INDICATE PUMP FAILURE.
 - PROVIDE AUTOMATIC DUTY CYCLING OF THE PUMPS.

CONTROL VALVES:

CONTROL VALVE CV-1:
MODULATE 3-WAY CONTROL VALVE CV-1 TO MAINTAIN GLYCOL TEMPERATURE AT SET POINT.

CONTROL VALVES (CV-2, CV-3 AND CV-4):
MODULATE CONTROL VALVES CV-2, CV-3 AND CV-4 TO MAINTAIN SPACE TEMPERATURES AT SET POINTS.

PRODUCTS:

CONTROL PANEL AND KEY PAD:
"INVENSYS" MODEL: MNL-800 DDC CONTROLLER C/W MNL-LDX KEYPAD INTERFACE.
AS SUPPLIED BY "BARCOL CONTROLS"

INFLOOR ZONE THERMOSTATS:
"ERIE" MODEL: TA168-001.

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NO.	REVISIONS	DATE	BY
0	ISSUED FOR TENDER	NOV.16/06	PSS

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DESIGNED BY PSS	CHECKED BY RBB	DRAWN BY VJH	APPROVED BY
HOR. SCALE VERTICAL AS NOTED		RELEASED FOR CONSTRUCTION	
DATE NOV. 2006	DATE	DATE	DATE



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THE CITY OF WINNIPEG
PLANNING PROPERTY AND DEVELOPMENT
Winnipeg * SERVICES DEPARTMENT

RIVER PATROL BOAT STORAGE BUILDING
HEATING SYSTEM OPTION 1
HEATING/CONTROL SYSTEM SCHEMATIC

SHEET 5 OF 8
CAD FILE DRAWING NUMBER 06-107-17M005.dwg
PROJECT NUMBER 2005-081