



### LEGEND

	BALL VALVE		INLINE PUMP
	BALANCING VALVE		POT FEEDER
	BUTTERFLY VALVE		FILTER
	NEEDLE VALVE		AIR SEPARATOR
	PRESSURE REGULATOR		EXPANSION TANK
	CHECK VALVE		COILING COIL
	TRIPLE DUTY VALVE		FANCOIL
	STRAINER		
	UNION		
	REDUCER		
	PRESSURE GAUGE		
	CAP		
	THERMOMETER		
	AUTO AIR VENT		
	FLOW ARROW		
	THERMOSTAT		
	FLOW IN L/S		

**LINE TYPES**

- EXISTING PIPING
- - - EXISTING EQUIP.
- NEW PIPING & EQUIPMENT

### PIPE IDENTIFICATION

XXX-YYY-ZZZZ

XXX = PIPE SIZE	YYY = COMMODITY	ZZZZ = PIPE MATERIAL/SPEC
013 - NPS 1/2"	CGS - CHILLED GLYCOL SUPPLY	PV40 - SCHEDULE 40 PVC
020 - NPS 3/4"	CGR - CHILLED GLYCOL RETURN	PV80 - SCHEDULE 80 PVC
025 - NPS 1"	RFG - REFRIGERANT GAS	CUK - COPPER TYPE K
032 - NPS 1 1/4"	RFL - REFRIGERANT LIQUID	CUL - COPPER TYPE L
040 - NPS 1 1/2"		
050 - NPS 2"		
065 - NPS 2 1/2"		
075 - NPS 3"		
100 - NPS 4"		
125 - NPS 5"		
150 - NPS 6"		

079 - 3/8" OD  
092 - 3/4" OD

PIPING SCHEMATIC  
N.T.S.

### CHILLER SCHEDULE

TAG	EQUIPMENT	CAPACITY		IPLV	EVAPORATOR SECTION								REFRIGERANT	VOLTS /PHASE	DESCRIPTION		
					EWT		LWT		FLOW		FLUID					PD	
					F	C	F	C	GPM	L/S	ft H2O	kPa					
CHLR-M640	AIR COOLED CHILLER	130	457.2	21	52.0	11	42.0	6	345	22	30% PG	12	35.9	HFO-1234ze	460/3	SMARTD CHILLER - MODEL LA065	

### CONDENSER SCHEDULE

TAG	EQUIPMENT	CAPACITY		PD	FAN DATA						REFRIGERANT	VOLTS /PHASE	DESCRIPTION
					EAT		AIR FLOW		FAN				
					ft H2O	kPa	F	C	CFM	L/S			
CDR-M640	AIR COOLED CONDENSER	130	457.2	3.5	10.5	95.0	35	1E+05	67017	21	HFO-1234ze	460/3	SMARTD CHILLER - MODEL A010

### PUMP SCHEDULE

TAG	SERVICE	CAPACITY		PRESSURE		MOTOR SIZE		VOLTAGE		RPM	DESCRIPTION							
												GPM	L/S	FT WC	KPA	HP	KW	VOLTS /PH
												P-M641	CHILLER SYSTEM	345	21.8	80	239.2	15
P-M642	CHILLER SYSTEM	345	21.8	80	239.2	15	11.2	575/3	1750	BELL & GOSSET E-80SC. 4x4x9.5B								

NOTE: PUMPS P-M641 AND P-M642 TO OPERATE IN DUTY AND STANDBY MODE

### ACTUATOR SCHEDULE FOR EXISTING DAMPERS

TAG	QUANTITY	SERVICE	DAMPER AIRFLOW		SIZE (width x height)		BLADE TYPE	MOUNT	ACTUATOR				PRODUCT DESCRIPTION
			(cfm)	(L/s)	(in)	(mm)			VOLTS	TORQUE (Nm)	CONTROL SIGNAL	FAIL POSITION	
XV-M6111	1	SUPPLY FAN 1	17,000	8023	30 x 60	914 x 1372	PB	FLANGE TO DUCT	120 VAC	25	ON/OFF	CLOSED	SCHISCHEK
XV-M6121	1	SUPPLY FAN 2	17,000	8023	30 x 60	914 x 1372	PB	FLANGE TO DUCT	120 VAC	25	ON/OFF	CLOSED	SCHISCHEK
XV-M6131	1	SUPPLY FAN 3	17,000	8023	55 x 66	1397 x 1676	PB	FLANGE TO DUCT	120 VAC	25	ON/OFF	CLOSED	SCHISCHEK
XV-M6144	1	MINIMUM OUTDOOR AIR	5,100	2407	24 x 52	610 X 1320	PB	FLANGE TO DUCT	120 VAC	18	ON/OFF	CLOSED	SCHISCHEK
FV-M6145	4	OUTDOOR AIR	45,900	21662	16 x 8	406 X 203	PB	REAR FLANGE	120 VAC	18	0-10V	CLOSED	SCHISCHEK
FV-M6146	2	RETURN AIR	51,000	24069	18 x 16	457 X 406	PB	FLANGE TO DUCT	120 VAC	18	0-10V	OPEN	SCHISCHEK
FV-M6147	1	RELIEF AIR	25,500	12035	18 x 16	457 X 406	PB	FLANGE TO DUCT	120 VAC	18	0-10V	CLOSED	SCHISCHEK
FV-M6148	1	RELIEF AIR	25,500	12035	18 x 16	457 X 406	PB	FLANGE TO DUCT	120 VAC	18	0-10V	CLOSED	SCHISCHEK

### HEATING COIL SCHEDULE

TAG	SERVICE	AIRFLOW		MAT			LAT			CAPACITY (kW)	SIZE		VOLTS/PH	ELEMENT	NOTES
		(cfm)	(L/s)	(°F)	(°C)	(°F)	(°C)	(in)	(mm)						
		HCE-M601	STATION SUPPLY AIR	51,000	24069	60	16	69	21		150.0	126 x 48			

### EXPANSION TANK SCHEDULE

TAG	SERVICE	VOLUME (L)	CONNECTION (MM)	DESCRIPTION
TK-M643	CHILLER SYSTEM	50	19	EXPANFLEX ALT50

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PATH: C:\Users\mohak\AppData\Local\Temp\AcPublish\_8880\1-0640M-M0009-001-00.dwg

1-0640M-A0048	INSTRUMENTATION PLAN - MEZZANINE LEVEL
1-0640M-E0040	ELECTRICAL EQUIPMENT PLAN - MEZZANINE LEVEL
1-0640M-M0007	ELEV. 233.020 PART PLAN
1-0640M-M0006	ELEV. 228.295 PART PLAN
DRAWING NUMBER	REFERENCE DRAWINGS



 SNC-LAVALIN INC. 148 Nature Park Way Winnipeg, MB, Canada R3P 0X7 204-786-8080		ENGINEER'S SEAL
DESIGNED BY: H. OJO	CHECKED BY: S. NORSWORTHY	 THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT MCPHILLIPS PUMPING STATION MAIN PUMPING STATION BUILDING MECHANICAL CHLR-M640 PROCESS FLOW DIAGRAM AND EQUIPMENT SCHEDULES
DRAWN BY: K. MOHAMMED	APPROVED BY: S. NORSWORTHY	
SCALE: N.T.S.	ISSUED FOR CONSTRUCTION BY: DATE: 2019/04/26	
DATE: 2019/11/01	DATE: 2019/11/01	CITY DRAWING NUMBER 1-0640M-M0009
NO. REVISIONS	DATE	SHEET REV. SIZE 001 00 A1