

DRAWING LIST	
DWG. No.	DESCRIPTION
M01	GENERAL NOTES, SYMBOL LEGEND, AND DRAWING LIST
M02	MAIN FLOOR PLAN - HVAC DEMOLITION
M03	MAIN FLOOR PLAN - HVAC NEW
M04	PIPING SCHEMATIC AND DETAILS
M05	HVAC CONTROLS
M06	MECHANICAL EQUIPMENT SCHEDULES
M07	EXISTING MECHANICAL EQUIPMENT PHOTOS
W-M1	REFERENCE DWG - FLOOR PLAN HEATING LAYOUT
W-M2	REFERENCE DWG - FLOOR PLAN PLUMBING LAYOUT
W-M3	REFERENCE DWG - CRAWLSPACE, SECTIONS & DETAILS
W-M4	REFERENCE DWG - CRAWLSPACE, SECTIONS, DETAILS & SCHEMATICS
DRAWING QUANTITY = 11	

PROJECT SCOPE OF WORK
<p>THE SCOPE OF WORK FOR THIS PROJECT IS THE REPLACEMENT OF MOST OF THE HVAC SYSTEM COMPONENTS IN THE SELKIRK COAST GUARD BUILDING. THIS INCLUDES THE FOLLOWING:</p> <p>REMOVAL/ DEMOLITION OF THE FOLLOWING:</p> <ol style="list-style-type: none"> PERIMETER RADIATORS, UNIT HEATERS, AND FORCE FLOW HEATERS INCLUDING CONTROL VALVES AND THERMOSTATS. EXISTING WIRING TO BE RETAINED. HYDRONIC PIPE MAINS ARE TO REMAIN. ALL GAS RADIANT HEATERS (BU-1 THROUGH 9) AND ASSOCIATED THERMOSTATS INCLUDING BU-4 AND 5 DOOR SWITCH AND OUTDOOR SENSOR TO BE REMOVED. AHU-1 AND CU-1 C/W CONTROLS, CONTROL PANEL, MOTORIZED DAMPERS, AND ACTUATORS. EXISTING HUMIDIFIER CONTROLS TO BE REMOVED, NOT TO BE REPLACED. EXHAUST FAN (EF-1 THROUGH 10, EXCLUDING EF-9) AND ASSOCIATED AIR INTAKE MOTORIZED DAMPERS AND ACTUATORS. EF-9 HAS ALREADY BEEN REMOVED. EXISTING VEHICLE EMISSION DETECTORS TO BE RETAINED AND CALIBRATED. EXTEND WIRING FOR NO DETECTORS UP TO ROOF LEVEL. CO DETECTORS TO REMAIN AS IS. SPRAY BOOTH AMU-1 AND EF-9 CONTROLS TO BE REMOVED, NOT TO BE REPLACED. BOILER B1 AND ASSOCIATED CONTROLS TO BE REMOVED. HYDRONIC HEATING PUMPS (P1, 2, AND 3) AND ASSOCIATED CONTROLS AND CONTROL PANEL TO BE REMOVED. EF-2 (LUNCHROOM) AND EF-4 (WORK SHOP) COUNT DOWN TIMER TO BE REMOVED. <p>SUPPLY, INSTALLATION AND COMMISSIONING OF THE FOLLOWING:</p> <ol style="list-style-type: none"> NEW PERIMETER RADIATORS, UNIT HEATERS, AND FORCE FLOW HEATERS TO REPLACE EXISTING INCLUDING NEW CONTROL VALVES AND THERMOSTATS. PROVIDE PROGRAMMABLE THERMOSTATS ON THE PERIMETER OFFICES ONLY, STANDARD THERMOSTATS FOR THE REMAINING OF THE HEATERS. PAINT WALLS AND MAKE GOOD TO MATCH EXISTING WHERE NEW HEATING UNITS ARE REPLACED. NEW GAS RADIANT HEATERS (BU-1 THROUGH 9) AND THERMOSTATS INCLUDING BU-4 AND 5 DOOR SWITCH AND OUTDOOR SENSORS. NEW AHU-1, CU-1, REFRIGERANT PIPING, CONTROLS, CONTROL PANEL, NEW MOTORIZED DAMPERS (OUTSIDE AIR, RETURN AIR, AND RELIEF AIR), AND ACTUATORS. PROVIDE NEW ENTHALPY ECONOMIZER, NEW DDC GRAPHIC DISPLAY, AND 7-DAY TIME CLOCK C/W REMOTE THERMOSTAT. PROVIDE NEW DDC CONTROLS FOR AHU1, CU1, BOILERS, MOTORIZED DAMPERS, AND PUMPS P1 AND P2. RETAIN EXISTING CONTROLS FOR EXHAUST FAN (EF-1 THROUGH 10, EXCLUDING EF-9) AND ASSOCIATED AIR INTAKE MOTORIZED DAMPERS AND ACTUATORS. CALIBRATE AND RECOMMISSION EXISTING VEHICLE EMISSION DETECTORS. VEHICLE VENTILATION SYSTEMS SHALL BE CONTROLLED BY EMISSION DETECTORS. PROVIDE NEW BOILERS B1 AND B2 C/W CONTROLS WITH OUTDOOR TEMPERATURE RESET AND BOILER STAGING. CONTROLS FOR HYDRONIC HEATING PUMPS P1 AND P2 TO BE PROVIDED IN NEW DDC LAPTOP. NEW COUNT DOWN TIMER FOR EF-2 (LUNCHROOM) AND EF-4 (WORK SHOP). COMMISSION NEW AHU CONTROLS BOTH IN SUMMER AND WINTER OPERATION. EXISTING HYDRONIC HEATING PIPING TO BE RETAINED. FLUSH EXISTING PIPING PRIOR TO DEMOLITION TO REMOVE SLUDGE. FLUSH PIPING A SECOND TIME AFTER NEW EQUIPMENT IS INSTALLED AND PROVIDE CHEMICAL TREATMENT. WORK PHASING: THE WORK SHALL BE SCHEDULED ASSUMING THE BUILDING IS FULLY OCCUPIED IN SUCH A WAY TO MINIMIZE DISRUPTION TO THE OCCUPANTS. THE HEATING SYSTEM SHALL BE UPGRADED IN SUMMER AFTER THE BOILER IS SHUT DOWN FOR THE SEASON. THE AIR CONDITIONING SYSTEM AND AIR HANDLING UNIT SHALL BE REPLACED IN THE WINTER OR SHOULDER SEASON WHEN AIR CONDITIONING IS NOT REQUIRED. MINIMIZE DISRUPTION OF THE VENTILATION SYSTEM INCLUDING THE AHU AND EXHAUST FANS TO SUIT THE BUILDING OCCUPANTS' SCHEDULE.

DEMOLITION GENERAL NOTES
<ol style="list-style-type: none"> CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES AND STANDARDS. PRIOR TO COMMENCEMENT OF ANY WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS TO COMPLETE THE DEMOLITION SCOPE OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING SAFE THE AREA OF DEMOLITION AND FOR ENSURING THAT SAFETY PROCEDURES, PRACTICES AND OPERATIONS ARE FOLLOWED. ALL DEMOLITION AND MATERIAL SHALL BE SAFELY REMOVED TO ALLOW FUTURE CONSTRUCTION AND ALL DEBRIS DISPOSED OF ON DAILY BASIS. CONTRACTOR SHALL PROVIDE SAFETY AND DUST PROOF BARRIERS TO PROTECT ALL PUBLICLY OCCUPIED AREAS DURING THE DEMOLITION AND CONSTRUCTION PERIOD. ALL AREAS, FURNITURE, EQUIPMENT ETC. THAT ARE ADJACENT OR NOT A PART OF THE DEMOLITION AREA SHALL BE PROTECTED FROM DAMAGE. ALL MATERIALS REMOVED DUE TO THE DEMOLITION OF EXISTING AREAS ARE OF THE OWNER'S PROPERTY IN WHICH THE OWNER HAS THE FIRST RIGHT TO CLAIM. ALL ITEMS THAT ARE NOT CLAIMED BY THE OWNER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE AND DISCARD FROM SITE. NON-DEMOLITION ITEMS MAY BE SHOWN ON THE DRAWINGS TO DESCRIBE THE INTENT OF THE OVERALL SCOPE OF WORK AND TO AID THE CONTRACTOR WITH THEIR COORDINATION. CONTRACTOR SHALL FIELD VERIFY ALL DEVICE LOCATIONS. SEAL ALL OPENINGS REMAINING FROM REMOVED EQUIPMENT, DUCTWORK, PIPING AND MAKE GOOD. EQUIPMENT LOCATIONS AND EXISTING PIPE ROUTING INDICATED ON THE DRAWINGS IS APPROXIMATE ONLY. CONFIRM IN THE FIELD. WHERE DIMENSIONS ARE INDICATED FOR PIPING, CORING EQUIPMENT, ETC. THESE ARE FOR BIDDING PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE TO VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO SUBMITTING A TENDER. IN THE EVENT THERE ARE DISCREPANCIES ON THE DRAWINGS AND/OR SPECIFICATIONS, THE CONTRACTOR SHALL REQUEST CLARIFICATION FROM THE CONSULTANT PRIOR TO CLOSE OF TENDERS AND NO EXTRA COSTS WILL BE ENTERTAINED FOR REQUESTS FOR CLARIFICATION ONCE THE PROJECT IS AWARDED.

HVAC GENERAL NOTES
<ol style="list-style-type: none"> PERFORM WORK IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS. REVIEW EQUIPMENT LOCATIONS WITH CONSULTANT PRIOR TO INSTALLATION. EQUIPMENT LOCATIONS, DUCT, AND PIPE ROUTING INDICATED ON THE DRAWINGS IS APPROXIMATE ONLY. CONFIRM IN THE FIELD. REROUTE DUCTWORK AND PIPING AS REQUIRED TO ELIMINATE FIELD INTERFERENCES WITH BUILDING STRUCTURE, ELECTRICAL, ETC. CONFIRM CHANGES WITH CONSULTANT. N.P. "COORDINATE WORK WITH ALL SUBTRADES". WHERE DIMENSIONS ARE INDICATED FOR PIPING, DUCTWORK, DUCT SIZES, EQUIPMENT SIZES, ETC. THESE ARE FOR BIDDING PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE TO VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO ORDERING EQUIPMENT AND COMMENCING INSTALLATION WITHOUT EXTRA CHARGES TO THE PROJECT. THE CONTRACTOR IS RESPONSIBLE TO ENSURE ALL EQUIPMENT, DUCTWORK, AND PIPING FITS IN THE SPACE AVAILABLE AND TO MAINTAIN THE GENERAL DESIGN INTENT FOR THE SYSTEMS. CONFORM TO SNAAC STANDARDS FOR SUPPLY AND INSTALLATION OF DUCTWORK. SEAL ALL DUCT JOINTS. SEAL ALL FLOOR, ROOF AND WALL PENETRATIONS WATER AND AIR TIGHT. FIRE SEAL ALL PENETRATIONS THROUGH FIRE SEPARATIONS. MAINTAIN SERVICE CLEARANCES FOR ALL EQUIPMENT AS PER SUPPLIER RECOMMENDATIONS. CONFORM TO NATIONAL GAS INSTALLATION CODE CAN/CSA-B149.1 AND MANITOBA GAS NOTICES FOR INSTALLATION OF GAS PIPING. OBTAIN APPROVAL FOR INSTALLATION OF EQUIPMENT FROM THE OFFICE OF THE FIRE COMMISSIONER PRIOR TO INSTALLATION. IN THE EVENT THERE ARE DISCREPANCIES ON THE DRAWINGS AND/OR SPECIFICATIONS, THE CONTRACTOR SHALL REQUEST CLARIFICATION FROM THE CONSULTANT PRIOR TO CLOSE OF TENDERS AND NO EXTRA COSTS WILL BE ENTERTAINED FOR REQUESTS FOR CLARIFICATION ONCE THE PROJECT IS AWARDED. CONTRACTOR TO TOUCH UP AND PAINT WALLS WHERE NEW EQUIPMENT IS INSTALLED TO MATCH EXISTING.

PIPING - GENERAL NOTES
<ol style="list-style-type: none"> PERFORM WORK IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS. REVIEW EQUIPMENT LOCATIONS WITH CONSULTANT PRIOR TO INSTALLATION. EQUIPMENT LOCATIONS, DUCT, AND PIPE ROUTING INDICATED ON THE DRAWINGS IS APPROXIMATE ONLY. CONFIRM IN THE FIELD. REROUTE DUCTWORK AND PIPING AS REQUIRED TO ELIMINATE FIELD INTERFERENCES WITH BUILDING STRUCTURES, ELECTRICAL, ETC. CONFIRM CHANGES WITH CONSULTANT. COORDINATE WORK WITH ALL SUBTRADES WHERE DIMENSIONS ARE INDICATED FOR PIPING, DUCTWORK, DUCT SIZES, EQUIPMENT SIZES, ETC. THESE ARE FOR BIDDING PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE TO VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO ORDERING EQUIPMENT AND COMMENCING INSTALLATION WITHOUT EXTRA CHARGES TO THE PROJECT. THE CONTRACTOR IS RESPONSIBLE TO ENSURE ALL EQUIPMENT, DUCTWORK, AND PIPING FITS IN THE SPACE AVAILABLE AND TO MAINTAIN THE GENERAL DESIGN INTENT FOR THE SYSTEMS. FIRE SEAL ALL PIPE PENETRATIONS TO MAINTAIN FIRE SEPARATIONS. REFER TO ARCHITECTURAL DWGS FOR FIRE RATING INFORMATION. PROVIDE ACCESS DOORS FOR ALL EQUIPMENT AND DAMPERS LOCATED ABOVE DRYWALL CEILINGS. PROVIDE EXIT FROM FLOOR SLAB BY MEANS OF PVC CONDUIT ELBOWS/PIPE SLEEVE TO MINIMIZE TENSION IN PIPE. AFTER INSTALLATION, A PRESSURE TEST SHALL BE PERFORMED USING 550 kPa TEST PRESSURE FOR A PERIOD OF 12-24 HOURS. IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. THE TEST MUST BE PERFORMED BEFORE AND DURING THE POURING OF CONCRETE. REFER TO PLUMBING AND VENTILATION DRAWING FOR LOCATIONS OF FLOOR PENETRATIONS. CONTRACTOR TO TOUCH UP AND PAINT WALLS WHERE NEW EQUIPMENT IS INSTALLED TO MATCH EXISTING. REFER TO SPECIFICATIONS FOR PIPE FLUSHING INSTRUCTIONS.

REFERENCE DRAWINGS
<p>THE FOLLOWING EXISTING BUILDING DRAWINGS ARE PROVIDED FOR REFERENCE</p> <p>W-M1: FLOOR PLAN HEATING LAYOUT W-M2: FLOOR PLAN PLUMBING LAYOUT W-M3: CRAWLSPACE, SECTIONS & DETAILS W-M4: CRAWLSPACE, SECTIONS, DETAILS & SCHEMATICS</p>

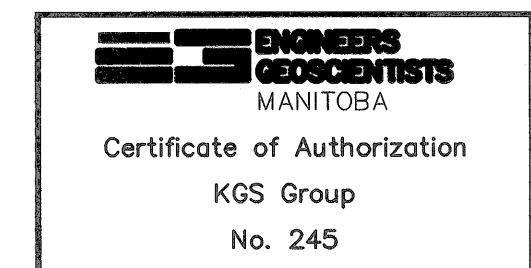
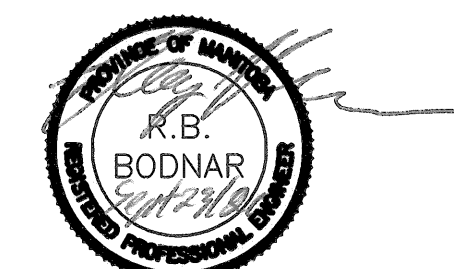
DEMOLITION SYMBOLS	
	EXISTING EQUIPMENT TO BE REMOVED
	EXISTING EQUIPMENT TO REMAIN

ABBREVIATIONS LIST	
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
S/A	SUPPLY AIR
E/A	EXHAUST AIR
GS	GLYCOL SUPPLY
GR	GLYCOL RETURN
O/A	OUTDOOR AIR
R/A	RETURN AIR
SAN	SANITARY SEWER

EQUIPMENT TAGS	
AHU-#	AIR HANDLING UNIT
B-#	BOILER
B/B-#	HYDRONIC BASEBOARD HEATER
BU-#	RADIANT HEATER
CU-#	CONDENSING UNIT
EF-#	EXHAUST FAN
ET-#	EXPANSION TANK
FD-#	FLOOR DRAIN
FF-#	FORCE FLOW HEATER
GMU-#	GLYCOL MAKE-UP UNIT
HUM-#	HUMIDIFIER
HWT-#	HOT WATER TANK
MD-#	MOTORIZED DAMPER
P-#	PUMP
UH-#	UNIT HEATER

HVAC SYMBOLS	
	NEW HVAC EQUIPMENT
	NEW DUCTWORK
	EXTERNALLY INSULATED DUCTWORK
	RETURN/EXHAUST DUCT DOWN
	RETURN/EXHAUST DUCT UP
	SUPPLY DUCT DOWN
	SUPPLY DUCT UP
	MOTORIZED DAMPER C/W DUCT ACCESS DOOR
	FIRE DAMPER C/W DUCT ACCESS DOOR
	GRILLE NO. -x- NECK SIZE -L/B AIR FLOW RATE
	LOUVER NO. -x- LOUVER SIZE -L/B AIR FLOW RATE

CONTROLS	
	CARBON DIOXIDE SENSOR
	CARBON MONOXIDE SENSOR
	CONTROL WIRING
	DIRECT DIGITAL CONTROL
	FLOW SENSOR
	TEMPERATURE SENSOR
	THERMOSTAT



Revision	Description	Date
1	Issued for Construction	2020/09/23
0	Issued for Tender	2020/03/23

Client: client

DFO CENTRAL AND ARCTIC REGION

CANADIAN COAST GUARD BASE

Project: SELKIRK, MANITOBA

HVAC REFURBISHMENT

Designed by: Conçu par MJ

Drawn by: Dessiné par MJ

Approved by: Approuvé par Aldin Jansen

DFO Project Manager / Administrateur de Projets MPO

Drawing title: Titre du dessin

MECHANICAL GENERAL NOTES, SYMBOL LEGEND AND DRAWING LISTS

Project no./No. du projet: M01
Drawing no./No. du dessin: OF 7
Revision no.: 1