

**FOR TENDER ONLY**  
NOT TO BE USED FOR CONSTRUCTION

DEVICES / EQUIPMENT	
	ELECTRICAL PANELBOARD
	SQUARE JUNCTION BOX
	FIELD DEVICE EQUIPMENT
	EQUIPMENT LOAD
	MOTOR
	MOTOR STARTER
	LOCAL DISCONNECT SWITCH
	UNIT HEATER
	RADIANT HEATER
	FORCE FLOW HEATER
	BASEBOARD HEATER
	BOILER EMERGENCY SHUTOFF SWITCH
	CARBON MONOXIDE (CO) DETECTOR

ABBREVIATION / SYMBOL MODIFIER LIST	
ITEM	DESCRIPTION
a	ABOVE COUNTER / MILLWORK
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BFC	BELOW FINISHED CEILING
CM	CEILING MOUNTED
EC	ELECTRICAL CONTRACTOR
FM	FLOOR MOUNTED
LV	LOW VOLTAGE
MC	MECHANICAL CONTRACTOR
WP	WEATHERPROOF

GENERAL	
	DETAIL / SECTION REFERENCE
	DRAWING REFERENCE

- GENERAL NOTES**
1. DEVICE SYMBOLS SHOWN ON THE DRAWINGS AS A "GREY" LINE WEIGHT DENOTES THAT THEY ARE EXISTING.
  2. COORDINATE THE CONNECTIONS OF ALL EQUIPMENT PROVIDED BY OTHERS WITH THE CONTRACTOR PROVIDING THE EQUIPMENT PRIOR TO ROUGH-IN. THIS INCLUDES, BUT IS NOT LIMITED TO MECHANICAL EQUIPMENT, ETC. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE THE APPROPRIATE DISCONNECTING MEANS FOR, AND TO MAKE THE FINAL CONNECTION TO, ANY HARDWIRED EQUIPMENT. THE ELECTRICAL CONTRACTOR IS ALSO RESPONSIBLE TO PROVIDE AN APPROPRIATE CORD AND PLUG FOR ANY CORD-AND-PLUG CONNECTED EQUIPMENT THAT IS NOT EQUIPPED WITH AN INTEGRAL CORD AND PLUG.
  3. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PRESERVING THE FIRE RATING OF ANY FIRE-RATED CEILING ASSEMBLIES.
  4. ALL EQUIPMENT AND DEVICES SHALL BE SUITABLE FOR THE ENVIRONMENT IN WHICH THEY ARE INSTALLED. EQUIPMENT MOUNTED OUTDOORS SHALL BE NEMA 3R. DEVICES MOUNTED IN DAMP OR WET LOCATIONS SHALL BE WEATHERPROOF. RECEPTACLES RATED 15- OR 20- AMPS AND 120 VOLTS WHICH ARE LOCATED IN DAMP OR WET LOCATIONS SHALL BE GFCI PROTECTED AND EQUIPPED WITH A SUITABLE WEATHERPROOF COVERPLATE (WHILE-IN-USE IN WET LOCATIONS).
  5. ALL LUGS, TERMINALS, ETC. IN ELECTRICAL DISTRIBUTION EQUIPMENT SHALL BE LISTED FOR A MINIMUM OF 75 DEGREES C CONDUCTORS. TERMINATIONS LISTED FOR ONLY 60 DEGREES C CONDUCTORS ARE NOT PERMITTED.
  6. CONDUCTORS #12 AWG AND SMALLER SHALL BE SOLID. CONDUCTORS #10 AWG AND LARGER ARE PERMITTED TO BE STRANDED.
  7. CONTRACTOR TO CONFIRM EXACT SIZE AND LOCATION AND WIRING REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION OF ANY WIRING, ADJUST WIRING, BREAKERS, ETC. TO SUIT. ALL COSTS TO BE INCLUDED IN BASE TENDER QUOTE.

- GENERAL DEMOLITION NOTES**
1. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES AND STANDARDS.
  2. PRIOR TO COMMENCEMENT OF ANY WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS TO COMPLETE THE DEMOLITION SCOPE OF WORK.
  3. 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 A DAILY BASIS.
  4. 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.
  5. 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.
  6. 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.
  7. WHERE CONDUITS ARE TO BE REMOVED WITHIN THE SCOPE OF WORK, ALL CONDUITS AND ASSOCIATED WIRING (I.E. FEEDER CIRCUIT WIRING) SHALL BE REMOVED BACK TO THEIR SOURCE AND NOT JUST TO THE NEAREST JUNCTION BOX.
  8. ALL OBSOLETE/ABANDONED CABLING AND CONDUIT WITHIN CEILING SPACES THAT ARE AFFECTED BY THE AREA OF DEMOLITION SHALL BE COMPLETELY REMOVED.
  9. WHERE ELECTRICAL EQUIPMENT HAS BEEN REMOVED, ALL WALLS/CEILINGS SHALL BE REPAIRED TO EXISTING CONDITIONS. SURFACES SHALL BE PATCHED AND PAINTED TO MATCH EXISTING.

- FIRE STOPPING NOTES**
1. ALL ELECTRICAL WIRES, CABLES, NON-COMBUSTIBLE RACEWAYS, OUTLET BOXES AND OTHER SIMILAR SERVICES THAT PENETRATE FIRE WALLS, FIRE SEPARATIONS OR ASSEMBLIES AND THAT ARE REQUIRED TO HAVE A FIRE RESISTANCE RATING OR FIRE SEPARATION, SHALL BE SEALED BY FIRE STOP SYSTEM WHICH HAS AN "F" AND/OR "FT" RATING NOT LESS THAN THE REQUIRED FIRE PROTECTION RATING OF FIRE SEPARATION.
  2. CONTRACTOR SHALL ONLY USE LISTED MATERIALS AND METHODS.
  3. SERVICE PENETRATION AND FIRE STOPPING OF SERVICE PENETRATION IN FIRE SEPARATION AND FIRE RATED ASSEMBLIES SHALL COMPLY WITH THE CURRENT BUILDING CODE.
  4. PROVIDE FOR FIRE STOPS IN CONCEALED SPACES AS REQUIRED BY THE CURRENT BUILDING CODE.
  5. ALL FIRE RESISTANCE RATED ASSEMBLIES (I.E. WALLS CEILINGS, ETC.) WHICH CONTAIN PANEL BOARDS, BACK BOXES, RECESSED LIGHTING FIXTURES, ETC. SHALL BE C/W FIRE RATED BACKING TO MAINTAIN THE INTEGRITY OF THE FIRE RESISTANCE.



Revision	Description	Date
0	Issued for Tender	2020/03/23

Client: client

**DFO CENTRAL AND ARCTIC REGION**

**CANADIAN COAST GUARD BASE**

Project: SELKIRK, MANITOBA

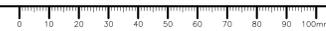
**HVAC REFURBISHMENT**

Designed by: SDC  
 Drawn by: SDC  
 Approved by: CLS  
 DFO Project Manager: ALDIN JANSEN  
 Administrateur de Projets MPO

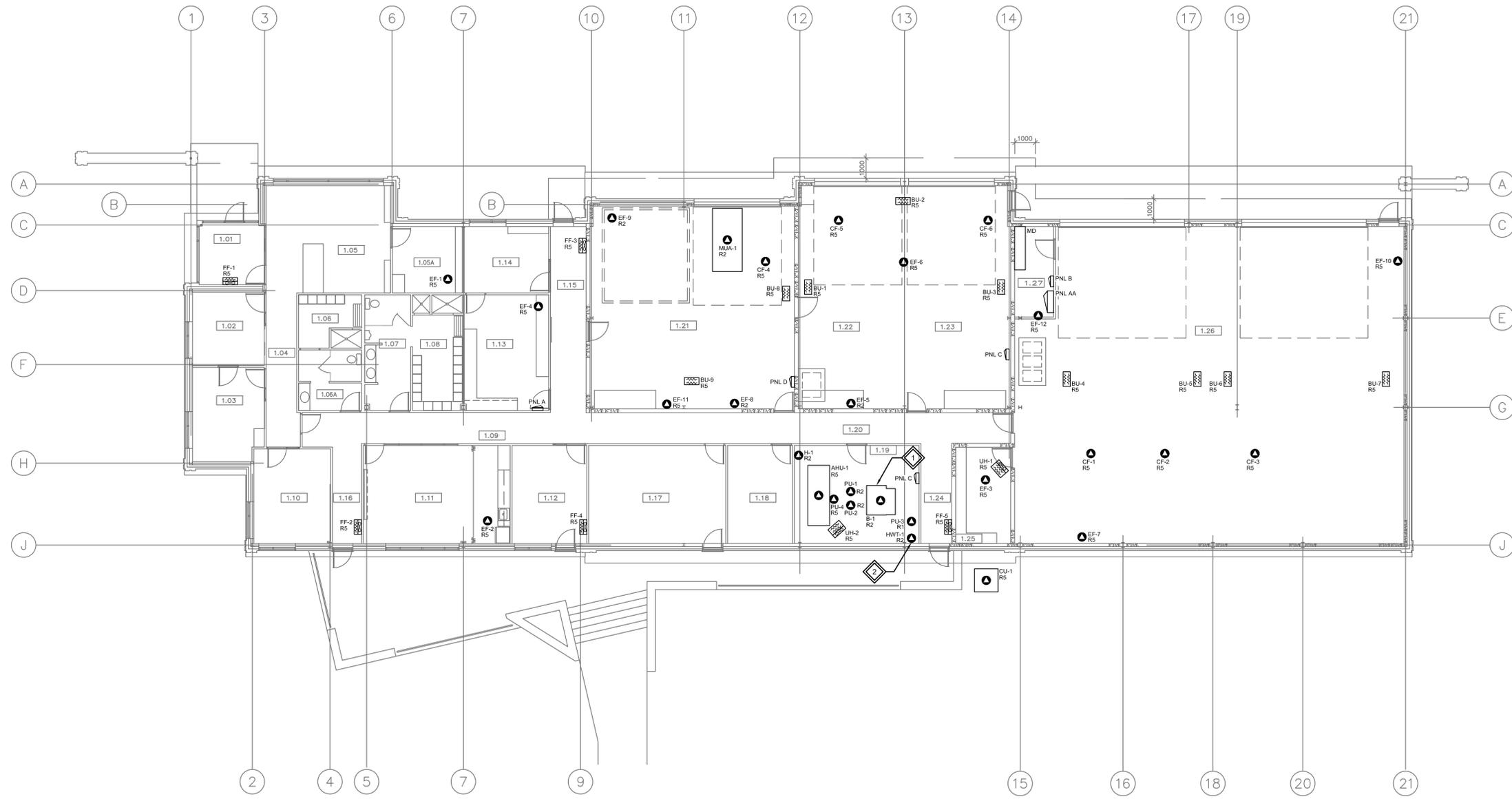
Drawing title: **ELECTRICAL GENERAL NOTES, SYMBOL LEGEND, AND DRAWING LIST**

Project no./No. du projet: E01  
 Drawing no./No. du dessin: OF 4  
 Revision no.: 0

DRAWING LIST	
DWG. No.	DESCRIPTION
E01	GENERAL NOTES, SYMBOL LEGEND, AND DRAWING LIST
E02	MAIN FLOOR PLAN – DEMOLITION
E03	MAIN FLOOR PLAN – NEW
E04	MECHANICAL EQUIPMENT SCHEDULES
DRAWING QUANTITY = 4	



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NOT TO BE USED FOR CONSTRUCTION



**1 MAIN FLOOR PLAN - DEMOLITION**  
SCALE: 1:100mm

**GENERAL NOTES:**

1. MAINTAIN EQUIPMENT WIRING, CONDUIT, BREAKERS, AND ASSOCIATED DISCONNECTS, STARTERS, ETC. FOR ALL EQUIPMENT LABELED AS 'R5'.
2. DISCONNECT AND REMOVE ALL EQUIPMENT LABELED 'R2' INCLUDING WIRING, CONDUIT, DISCONNECT SWITCHES, STARTERS, ETC. EXISTING BREAKERS ARE TO REMAIN AND BE LABELED AS 'SPARE'.
3. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF MECHANICAL EQUIPMENT.
4. EXISTING ELECTRICAL DISTRIBUTION PANELS ARE SHOWN OR REFERENCE ONLY AND ARE TO REMAIN.

**KEYNOTES:**

- 1. DISCONNECT AND REMOVE ALL WIRING, CONDUIT, DISCONNECT SWITCHES, AND ASSOCIATED PUMPS 'PU-1' & 'PU-2' FOR EXISTING BOILER 'B-1'. EXISTING BREAKERS ARE TO REMAIN AND BE LABELED AS 'SPARE'.
- 2. DISCONNECT AND REMOVE ALL WIRING, AND CONDUIT FOR EXISTING HOT WATER TANK 'HWT-1'. EXISTING BREAKER IS TO REMAIN AND BE LABELED AS 'SPARE'.

RENOVATION MATRIX						
TYPE	MAINTAIN	REMOVE	REUSE	REPLACE	RELOCATE	REINSTALL
R1	*					
R2	*					1,2
R3	*	X			X	-
R4	*	X		X	X	-
R5	*	X			X	1
R6	*	X	X	X	X	1,3

\* PRIMARY ACTION  
X SECONDARY ACTION(S)

NOTES:

1. ALL REMOVED EQUIPMENT SHALL BE HANDED TO OWNER FOR REVIEW OF DISPOSAL.
2. CONTRACTOR SHALL REMOVE ALL OLD WIRING, BACK BOXES AND CONDUIT AS REQUIRED. WALLS/CEILINGS SHALL BE PATCHED, PAINTED AND OR PROVIDED WITH STAINLESS STEEL COVER PLATES.
3. EXISTING WIRING AND CONDUIT SHALL BE EXTENDED TO SUIT NEW LOCATION(S) SHOWN. PROVIDE ALL REQUIRED WIRING, CONDUITS, JUNCTION BOXES, SUPPORTS, ETC. FOR A FULL AND OPERATIONAL SYSTEM.



**DFO CENTRAL AND ARCTIC REGION**

CANADIAN COAST GUARD BASE

SELKIRK, MANITOBA

**HVAC REFURBISHMENT**

Designed by: **SDC**

Drawn by: **SDC**

Approved by: **CLS**

DFO Project Manager: **ALDIN JANSEN**

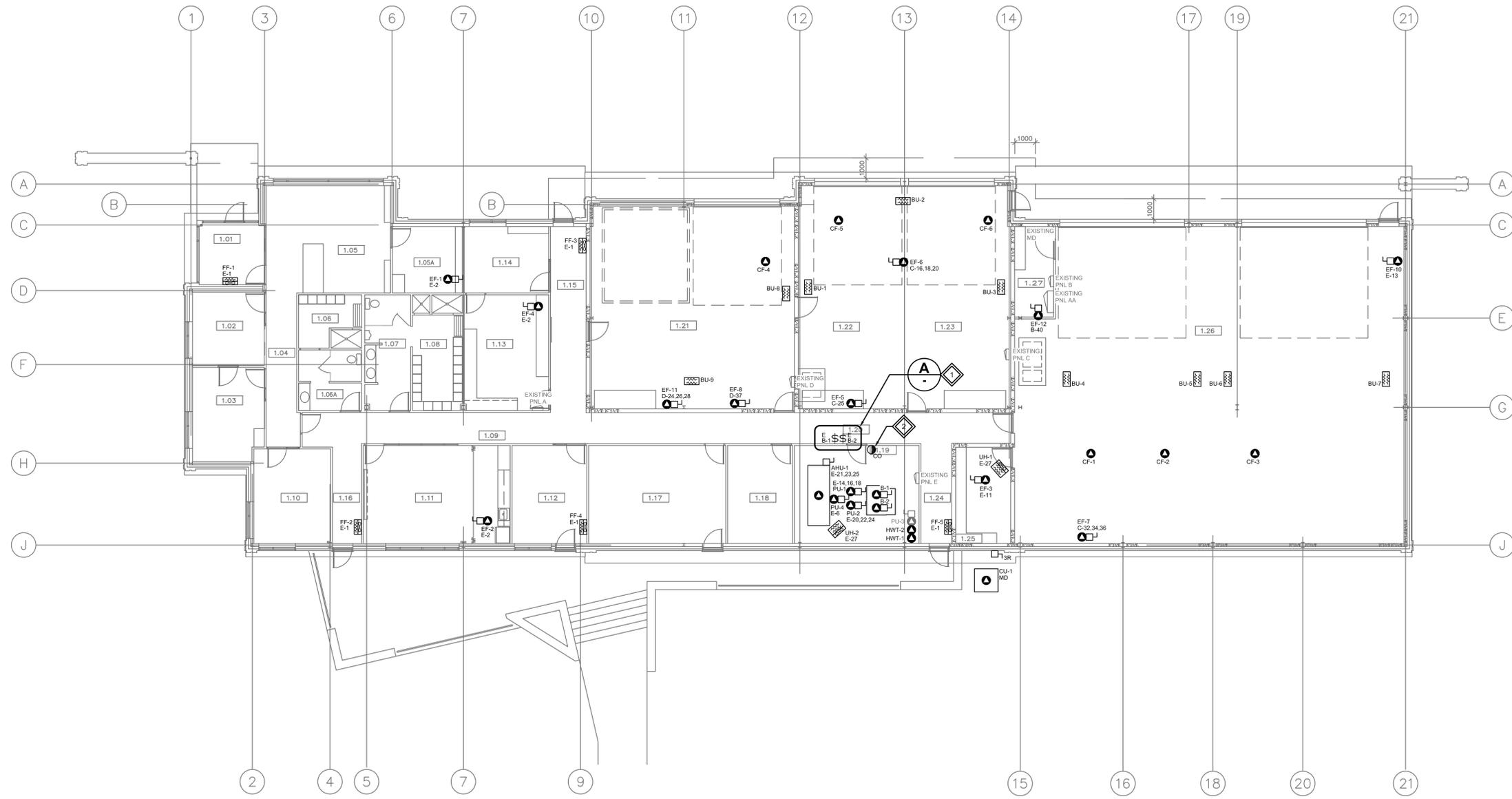
**ELECTRICAL  
MAIN FLOOR PLAN  
DEMOLITION**

Project no./No. du projet: \_\_\_\_\_ Drawing no./No. du dessin: \_\_\_\_\_ Revision no.: \_\_\_\_\_

**E02**  
OF 4

**0**

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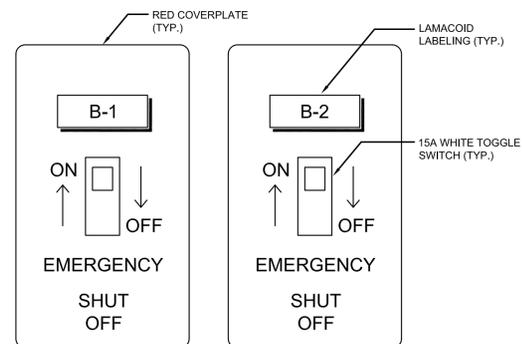
**1 MAIN FLOOR PLAN - NEW**  
SCALE: 1:100mm

**GENERAL NOTES:**

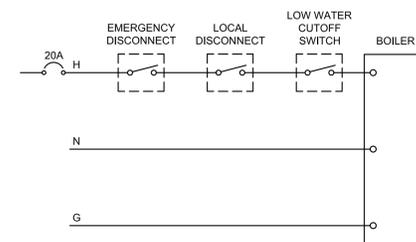
- REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF MECHANICAL EQUIPMENT.
- PROVIDE ELECTRICAL CONNECTIONS TO LINE VOLTAGE CONTROL DEVICES SUCH AS LOW WATER CUTOFF SWITCHES AS REQUIRED.
- EXISTING FIRE ALARM SYSTEM IS AN EDWARDS 'EST-6616' CONVENTIONAL SYSTEM.
- GARAGE AREA (1.26) IS EQUIPPED WITH AN EXISTING CO DETECTION SYSTEM.

**KEYNOTES:**

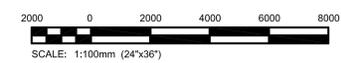
- PROVIDE EMERGENCY SHUTOFF SWITCHES FOR EACH BOILER AS PER DETAIL 'A' (2x TOTAL). LOCATE NEXT TO THE DOOR ON THE OUTSIDE OF ROOM 1.19. COORDINATE EMERGENCY STOP WIRING WITH BOILER SHOP DRAWINGS.
- PROVIDE A NEW CO DETECTOR WITHIN MECHANICAL ROOM (1.19) COMPLETE WITH FIRE ALARM MONITORING AND LOCAL ALARM. SUPPLY AND INSTALL NEW FIRE ALARM ZONE CARD, CONDUIT, REQUIRED DEVICES, AND WIRING BACK TO THE EXISTING MAIN FIRE ALARM CONTROL PANEL. INSTALL DEVICES PER CAN/ULC-S524 AND PROVIDE A PARTIAL FIRE ALARM VI REPORT PER CAN/ULC-S537.



**A EMERGENCY BOILER SHUTOFF SWITCHES**  
SCALE: N.T.S.



**B TYPICAL BOILER WIRING DIAGRAM**  
SCALE: N.T.S.



Revision	Description	Date
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: SDC Conçu par

Drawn by: SDC Dessiné par

Approved by: CLS Approuvé par

DFO Project Manager: ALDIN JANSEN Administrateur de Projets MPO

Drawing title: ELECTRICAL MAIN FLOOR PLAN NEW Titre du dessin

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
	<b>E03</b>	<b>0</b>



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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"> <li>PERIMETER RADIATORS, UNIT HEATERS, AND FORCE FLOW HEATERS INCLUDING CONTROL VALVES AND THERMOSTATS. EXISTING WIRING TO BE RETAINED. HYDRONIC PIPE MAINS ARE TO REMAIN.</li> <li>ALL GAS RADIANT HEATERS (BU-1 THROUGH 9) AND ASSOCIATED THERMOSTATS INCLUDING BU-4 AND 5 DOOR SWITCH AND OUTDOOR SENSOR TO BE REMOVED.</li> <li>AHU-1 AND CU-1 C/W CONTROLS, CONTROL PANEL, MOTORIZED DAMPERS, AND ACTUATORS.</li> <li>EXISTING HUMIDIFIER CONTROLS TO BE REMOVED, NOT TO BE REPLACED.</li> <li>EXHAUST FAN (EF-1 THROUGH 10, EXCLUDING EF-9) AND ASSOCIATED AIR INTAKE MOTORIZED DAMPERS AND ACTUATORS. EF-9 HAS ALREADY BEEN REMOVED.</li> <li>EXISTING VEHICLE EMISSION DETECTORS TO BE RETAINED AND CALIBRATED. EXTEND WIRING FOR NO DETECTORS UP TO ROOF LEVEL. CO DETECTORS TO REMAIN AS IS.</li> <li>SPRAY BOOTH AMU-1 AND EF-9 CONTROLS TO BE REMOVED, NOT TO BE REPLACED.</li> <li>BOILER B1 AND ASSOCIATED CONTROLS TO BE REMOVED.</li> <li>HYDRONIC HEATING PUMPS (P1, 2, AND 3) AND ASSOCIATED CONTROLS AND CONTROL PANEL TO BE REMOVED.</li> <li>EF-2 (LUNCHROOM) AND EF-4 (WORK SHOP) COUNT DOWN TIMER TO BE REMOVED.</li> </ol> <p>SUPPLY, INSTALLATION AND COMMISSIONING OF THE FOLLOWING:</p> <ol style="list-style-type: none"> <li>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.</li> <li>PAINT WALLS AND MAKE GOOD TO MATCH EXISTING WHERE NEW HEATING UNITS ARE REPLACED.</li> <li>NEW GAS RADIANT HEATERS (BU-1 THROUGH 9) AND THERMOSTATS INCLUDING BU-4 AND 5 DOOR SWITCH AND OUTDOOR SENSORS.</li> <li>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.</li> <li>RETAIN EXISTING CONTROLS FOR EXHAUST FAN (EF-1 THROUGH 10, EXCLUDING EF-9) AND ASSOCIATED AIR INTAKE MOTORIZED DAMPERS AND ACTUATORS.</li> <li>CALIBRATE AND RECOMMISSION EXISTING VEHICLE EMISSION DETECTORS. VEHICLE VENTILATION SYSTEMS SHALL BE CONTROLLED BY EMISSION DETECTORS.</li> <li>PROVIDE NEW BOILERS B1 AND B2 C/W CONTROLS WITH OUTDOOR TEMPERATURE RESET AND BOILER STAGING.</li> <li>CONTROLS FOR HYDRONIC HEATING PUMPS P1 AND P2 TO BE PROVIDED IN NEW DDC LAPTOP.</li> <li>NEW COUNT DOWN TIMER FOR EF-2 (LUNCHROOM) AND EF-4 (WORK SHOP).</li> <li>COMMISSION NEW AHU CONTROLS BOTH IN SUMMER AND WINTER OPERATION.</li> <li>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.</li> <li>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.</li> </ol>

DEMOLITION GENERAL NOTES
<ol style="list-style-type: none"> <li>CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES AND STANDARDS.</li> <li>PRIOR TO COMMENCEMENT OF ANY WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS TO COMPLETE THE DEMOLITION SCOPE OF WORK.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>SEAL ALL OPENINGS REMAINING FROM REMOVED EQUIPMENT, DUCTWORK, PIPING AND MAKE GOOD.</li> <li>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.</li> <li>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.</li> </ol>

HVAC GENERAL NOTES
<ol style="list-style-type: none"> <li>PERFORM WORK IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS.</li> <li>REVIEW EQUIPMENT LOCATIONS WITH CONSULTANT PRIOR TO INSTALLATION.</li> <li>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".</li> <li>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.</li> <li>CONFORM TO SMACNA STANDARDS FOR SUPPLY AND INSTALLATION OF DUCTWORK. SEAL ALL DUCT JOINTS.</li> <li>SEAL ALL FLOOR, ROOF AND WALL PENETRATIONS WATER AND AIR TIGHT.</li> <li>FIRE SEAL ALL PENETRATIONS THROUGH FIRE SEPARATIONS.</li> <li>MAINTAIN SERVICE CLEARANCES FOR ALL EQUIPMENT AS PER SUPPLIER RECOMMENDATIONS.</li> <li>CONFORM TO NATIONAL GAS INSTALLATION CODE CAN/CGA-B149.1 AND MANITOBA GAS NOTICES FOR INSTALLATION OF GAS PIPING. OBTAIN APPROVAL FOR INSTALLATION OF EQUIPMENT FROM THE OFFICE OF THE COMMISSIONER PRIOR TO INSTALLATION.</li> <li>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.</li> <li>CONTRACTOR TO TOUCH UP AND PAINT WALLS WHERE NEW EQUIPMENT IS INSTALLED TO MATCH EXISTING.</li> </ol>

PIPING - GENERAL NOTES
<ol style="list-style-type: none"> <li>PERFORM WORK IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS.</li> <li>REVIEW EQUIPMENT LOCATIONS WITH CONSULTANT PRIOR TO INSTALLATION.</li> <li>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.</li> <li>FIRE SEAL ALL PIPE PENETRATIONS TO MAINTAIN FIRE SEPARATIONS. REFER TO ARCHITECTURAL DWGS FOR FIRE RATING INFORMATION.</li> <li>PROVIDE ACCESS DOORS FOR ALL EQUIPMENT AND DAMPERS LOCATED ABOVE DRYWALL CEILINGS.</li> <li>PROVIDE EXIT FROM FLOOR SLAB BY MEANS OF PVC CONDUIT ELBOWS/PIPE SLEEVE TO MINIMIZE TENSION IN PIPE.</li> <li>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.</li> <li>REFER TO PLUMBING AND VENTILATION DRAWING FOR LOCATIONS OF FLOOR PENETRATIONS.</li> <li>CONTRACTOR TO TOUCH UP AND PAINT WALLS WHERE NEW EQUIPMENT IS INSTALLED TO MATCH EXISTING.</li> <li>REFER TO SPECIFICATIONS FOR PIPE FLUSHING INSTRUCTIONS.</li> </ol>

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 &amp; DETAILS W - M4: CRAWLSPACE, SECTIONS, DETAILS &amp; 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.
	NECK SIZE
	AIR FLOW RATE
	LOUVER NO.
	LOUVER SIZE
	AIR FLOW RATE

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

**KGS GROUP**

Revision	Description	Date
0	Issued for Tender	2020/03/23

Client: client

**DFO CENTRAL AND ARCTIC REGION**

Project: Project

**SELKIRK, MANITOBA**

**HVAC REFURBISHMENT**

Designed by: Conçu par **RBB**

Drawn by: Dessiné par **MJ**

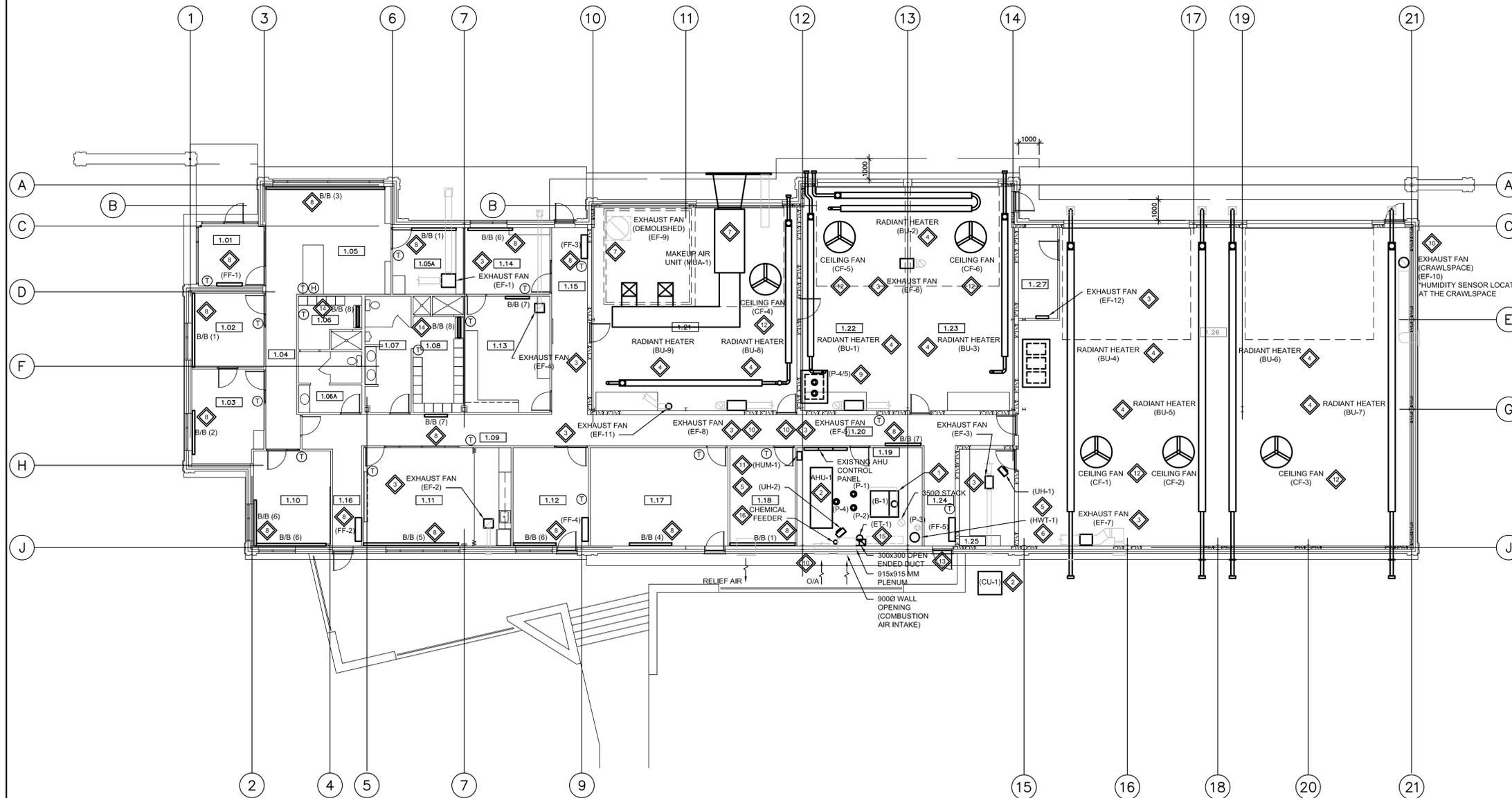
Approved by: Approuvé par

DFO Project Manager: Administrateur de Projets MPO  
**ALDIN JANSEN**

Drawing title: Titre du dessin  
**MECHANICAL GENERAL NOTES, SYMBOL LEGEND AND DRAWING LISTS**

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
	<b>M01</b>	<b>0</b>
	OF 7	

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**1 MAIN FLOOR PLAN – HVAC DEMO**  
SCALE: 1:100mm

**KEY NOTES:**

- 1. EXISTING BOILER (B-1) INCLUDING ASSOCIATED DRAIN LINES AND PIPING UP TO SHUTOFF VALVES TO BE REMOVED AND DISPOSED OF OFF SITE. EXISTING NATURAL GAS REGULATOR VALVE TO BE DEMOLISHED AND DISPOSED OF OFF SITE. EXISTING HEATING PUMPS (P-1 & 2) TO BE REMOVED AND DISPOSED OF OFF SITE. REMOVE A PORTION OF THE EXISTING FLUE STACK UP TO ROOF SERVING EXISTING BOILER AND HOT WATER TANK, AND THE REMAINDER OF THE STACK TO ENCLOSE THE NEW FLUE GAS PIPING OF THE NEW BOILERS. REMOVE EXISTING 5 PSI GAS LINE AS REQUIRED TO FACILITATE NEW BOILERS INSTALLATION. REFER TO DRAWING M04 FOR PIPING SCHEMATIC.
- 2. EXISTING AIR HANDLING UNIT (AHU-1) INCLUDING DUCT FLEXIBLE CONNECTIONS AND ASSOCIATED PIPING UP TO SHUTOFF VALVES TO BE REMOVED AND DISPOSED OF OFF SITE TO SUIT NEW DUCTWORK AND PIPING. HYDRONIC PUMP (P-4) SERVING AHU-1 TO BE REMOVED AND REPLACED TO SUIT NEW COIL. REMOVE EXISTING AHU REMOTE O/A, R/A, RELIEF AIR DAMPERS CONTROLS AND ACTUATORS AND DISPOSE OF OFF SITE. REMOVE EXISTING AHU CONTROL PANEL AND WIRING. REMOVE ASSOCIATED OUTDOOR CONDENSING UNIT (CU-1) INCLUDING ALL REFRIGERANT PIPING. REFRIGERANT AND ENCLOSURE AND DISPOSE OF OFF SITE. DEMOLISH EXISTING PAD SERVING EXISTING CONDENSING UNIT.
- 3. REMOVE EXISTING EXHAUST FANS (EF-1-12 EXCLUDING EF-9) INCLUDING ASSOCIATED DUCTWORK FLEXIBLE CONNECTIONS AND VIBRATION ISOLATORS TO SUIT NEW EXHAUST FANS. EXISTING EXTERIOR HOODS AND GRILLES TO REMAIN. REMOVE EXISTING INTAKE AIR DAMPERS CONTROLS AND ACTUATORS AND DISPOSE OF OFF SITE. TYPICAL.
- 4. REMOVE EXISTING RADIANT HEATERS (BU-1-8) INCLUDING ASSOCIATED COMBUSTION AIR AND FLUE GAS PIPING FLEX CONNECTIONS AND NATURAL GAS PIPING UP TO SHUTOFF VALVES AND THERMOSTATS AND DISPOSE OF OFF SITE TO SUIT NEW RADIANT HEATERS.
- 5. REMOVE EXISTING UNIT HEATERS (UH-1-2) INCLUDING ASSOCIATED HOT WATER SUPPLY AND RETURN PIPING UP TO UNIONS AND SHUTOFF VALVES AND THERMOSTATS AND DISPOSE OF OFF SITE TO SUIT NEW UNIT HEATERS.
- 6. REMOVE EXISTING DOMESTIC HOT WATER TANK (HWT-1) INCLUDING ASSOCIATED PIPING UP TO SHUTOFF VALVES AND FLUE GAS DUCTWORK AND DISPOSE OF OFF SITE. EXISTING NATURAL GAS PIPING SERVING EXISTING HWT-1 TO BE CUT BACK TO MAIN AND CAPPED. RETAIN DOMESTIC WATER RECIRCULATION PUMP.
- 7. REMOVE EXISTING MAKEUP AIR UNIT SERVING THE PREVIOUS PAINT SPRAY BOOTH INCLUDING ASSOCIATED DUCTWORK, PIPING, CONTROLS AND SUPPORTS AND DISPOSE OF OFF SITE. BLANK OFF EXISTING 2400X2400 MM ACTIVE LOUVER SERVING EXISTING MUA-1 AND LEAVE THE 400X400 MM PORTION OF THE LOUVER ACTIVE. EXISTING 1120 MM Ø EXHAUST DUCTWORK TO BE CUT BACK TO THE ROOF AND CAP. EXISTING MAKEUP AIR PLATFORM TO BE REMOVED AND DISPOSED OF OFF SITE.
- 8. EXISTING HYDRONIC BASEBOARD HEATERS (B/B (1-8)) AND FORCE FLOW HEATERS (FF-1-5) INCLUDING ALL ASSOCIATED UNIONS, SHUTOFF VALVES, THERMOSTATS AND CONTROL VALVES TO BE REMOVED AND DISPOSED OFF OF SITE. CUT SUPPLY AND RETURN PIPING BACK TO ALLOW INSTALLATION OF THE NEW BASEBOARD HEATERS. EXISTING HYDRONIC PIPING MAINS TO REMAIN AND TO BE FLUSHED.
- 9. EXISTING SEWAGE PUMPS (PU-4 & 5) TO REMAIN.
- 10. ALL EXISTING MOTORIZED DAMPERS AND ACTUATORS WITHIN THE FACILITY TO BE REPLACED. REFER TO SCHEDULE FOR SIZES. CONTRACTOR TO CONFIRM SIZES ON SITE PRIOR TO ORDERING.
- 11. REMOVE EXISTING ELECTRIC HUMIDIFIER INCLUDING ALL WIRING AND CONTROLS AND DISPOSE OFF OF SITE.
- 12. EXISTING CEILING FANS (CF-1-6) INCLUDING CONTROLS TO BE REMOVED OFF OF SITE. RETAIN EXISTING WIRING.
- 13. EXISTING 300X300 MM OPEN ENDED COMBUSTION INTAKE TO BE DEMOLISHED. EXISTING 9000 MM PLENUM ATTACHED TO THE EXISTING LOUVRE TO BE MODIFIED TO SUIT NEW COMBUSTION AIR INTAKE DUCTWORK.
- 14. EXISTING BASEBOARD HEATERS (B/B (8)) ARE LOCATED BELOW THE SHOWER BENCHES WITHIN MEN'S & WOMEN'S CHANGE ROOMS (1.08 & 1.06 RESPECTIVELY). CONTRACTOR TO CAREFULLY DETACH/ AND REATTACH THE SHOWER BENCHES DURING RENOVATION WORK.
- 15. EXISTING EXPANSION TANK INCLUDING ASSOCIATED PIPING AND VALVES TO BE DEMOLISHED AND REMOVED OFF SITE.
- 16. EXISTING CHEMICAL FEEDER INCLUDING ASSOCIATED PIPING UP TO SHUT OFF VALVES TO BE DEMOLISHED AND REMOVED OFF SITE.
- 17. EXISTING PIPE FLUSHING; (REFERENCE DRAWINGS W-M2 & W-M4) ALL EXISTING HYDRONIC PIPING AND EQUIPMENT SHALL BE FLUSHED PRIOR TO DEMOLITION TO REMOVE SLUDGE. THE PIPING SHALL BE FLUSHED A SECOND TIME AFTER NEW PIPING AND EQUIPMENT IS INSTALLED. PROVIDE CHEMICAL TREATMENT. REFER TO SPECIFICATIONS.

SCALE VERIFIED BY: \_\_\_\_\_



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Revision	Description	Date

Client \_\_\_\_\_ client

**DFO CENTRAL AND ARCTIC REGION**

CANADIAN COAST GUARD BASE

Project **SELKIRK, MANITOBA** Projet

**HVAC REFURBISHMENT**

Designed by **RBB** Conçu par

Drawn by **MJ** Dessiné par

Approved by \_\_\_\_\_ Approuvé par

DFO Project Manager **ALDIN JANSEN** Administrateur de Projets MPO

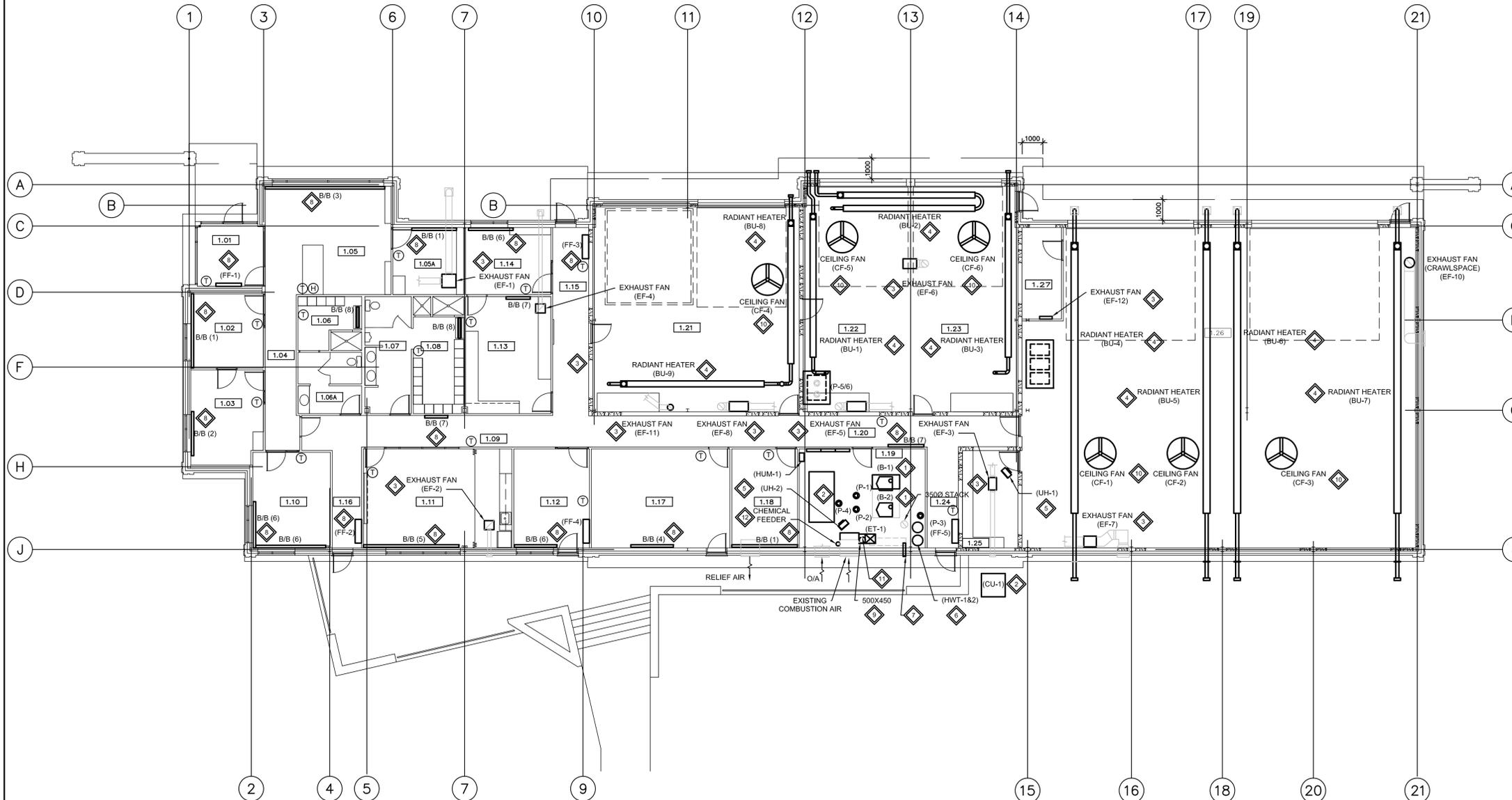
Drawing title **MECHANICAL HVAC - DEMOLITION MAIN FLOOR PLAN** Titre du dessin

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
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**M02** **0**  
OF 7



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**1 MAIN FLOOR PLAN – HVAC NEW**  
SCALE: 1:100mm

**KEY NOTES:**

- 1. INSTALL NEW BOILERS (B-1&2) ON THE EXISTING CONCRETE PAD. CONTRACTOR TO INSTALL AS PER UNIT'S REQUIRED CLEARANCES. EXTEND EXISTING CONCRETE PAD AS REQUIRED. PROVIDE NEW NATURAL GAS PIPING TO THE NEW BOILERS AND CONTRACTOR TO CONFORM TO NATIONAL GAS INSTALLATION CODE CAN/CGA-B149.1 AND MANITOBA GAS NOTICES FOR INSTALLATION OF GAS PIPING. PROVIDE NEW HEATING PUMPS (P-1&2) AS REQUIRED. RUN BOILER EXHAUST VENTS WITHIN EXISTING FLUE STACK/ CHIMNEY UP THROUGH ROOF AND SEAL WATER TIGHT. INSTALL PER MANUFACTURER'S INSTRUCTIONS. COMBUSTION AIR SHALL BE DRAWN FROM THE MODIFIED COMBUSTION AIR INTAKE WITHIN MECHANICAL ROOM. PROVIDE NEW BOILER CONTROLS.
- 2. SUPPLY NEW AIR HANDLER (AHU-1) IN PIECES AND INSTALL/ ASSEMBLE INSIDE MECHANICAL ROOM COMPLETE WITH NEW OUTDOOR CONDENSING UNIT (CU-1). MODIFY/ EXTEND DUCTWORK TO SUIT AND PROVIDE FLEXIBLE DUCT FITTINGS AT THE UNIT'S CONNECTIONS. INSULATE DUCTWORK TO MATCH EXISTING. PROVIDE NEW REFRIGERANT PIPING FROM THE NEW CU-1 TO THE NEW AHU-1 AND CHARGE PIPING WITH REQUIRED REFRIGERANT. CONTRACTOR SHALL DESIGN, SIZE, SUPPLY AND INSTALL INSULATED REFRIGERANT PIPING TO SUIT MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALUMINUM JACKET OVER THE INSULATED REFRIGERANT PIPING OUTSIDE. PROVIDE NEW CONTROL PANEL AND CONTROLS. CONTRACTOR SHALL MODIFY EXISTING AIR HANDLING UNIT AND CONDENSING UNIT SUPPORTS TO SUIT NEW UNITS. PAINT TO MATCH EXISTING. NEW CONDENSING UNIT (CU-1) SUPPORT TO BE INSTALLED ON A NEW CONCRETE PAD SIZED TO SUIT NEW UNIT.
- 3. PROVIDE AND INSTALL NEW EXHAUST FANS (EF-1-12 EXCLUDING EF-9). MODIFY/ EXTEND EXISTING DUCTWORK TO SUIT. PROVIDE FLEXIBLE FITTING AT EACH FAN CONNECTIONS AND VIBRATION ISOLATORS.
- 4. PROVIDE AND INSTALL NEW RADIANT HEATERS (BU-1-9) COMPLETE WITH NEW THERMOSTATS. MODIFY/ EXTEND NATURAL GAS PIPING AND COMBUSTION INTAKE AND EXHAUST TO EACH UNIT TO SUIT. TYPICAL. CONTRACTOR TO CONFORM TO NATIONAL GAS INSTALLATION CODE CAN/CGA-B149.1 AND MANITOBA GAS NOTICES FOR INSTALLATION OF GAS PIPING.
- 5. PROVIDE AND INSTALL NEW UNIT HEATERS (UH-1&2) COMPLETE WITH NEW THERMOSTATS. MODIFY/ EXTEND HYDRONIC PIPING TO EACH UNIT TO SUIT.
- 6. PROVIDE TWO (2) NEW ELECTRIC DOMESTIC HOT WATER TANK (HWT-1 &2). MODIFY/ EXTEND PLUMBING PIPING TO SUIT. INSTALL AS PER MANUFACTURER'S INSTRUCTIONS COMPLETE WITH EQUAL LENGTH MANIFOLDS. EXTEND EXISTING CONCRETE PAD TO SUIT
- 7. PROVIDE 125MM DIAMETER NEW VENTILATION OPENING AT THE EXTERIOR WALL OF THE EXISTING MECHANICAL/ BOILER ROOM TO MEET CODE.
- 8. PROVIDE AND INSTALL NEW HYDRONIC BASEBOARD HEATERS (BB-#) AND FORCE FLOW HEATERS (FF-1-5) COMPLETE WITH NEW THERMOSTATS. MODIFY/ EXTEND HYDRONIC PIPING TO SUIT. EXISTING WALL FIN IN THE CRAWLSPACE TO BE REPLACED. REFER TO ATTACHED REFERENCE DRAWINGS FOR INFORMATION.
- 9. EXTEND EXISTING 900Ø DIA COMBUSTION INTAKE PLENUM ATTACHED TO EXTERIOR LOUVRE TO ACCOMMODATE NEW 500X450 COMBUSTION AIR INTAKE. INSULATE DUCTWORK TO MATCH EXISTING.
- 10. SUPPLY AND INSTALL NEW CEILING FANS (CF-1-6) AS SHOWN COMPLETE WITH BIRD SCREEN.
- 11. SUPPLY AND INSTALL NEW FLOOR MOUNTED EXPANSION TANK AND PROVIDE NECESSARY PIPING ACCESSORIES SUCH AS UNIONS AND SHUTOFF VALVE. REFER TO PIPING SCHEMATIC.
- 12. SUPPLY AND INSTALL NEW CHEMICAL FEEDER AND CONNECT TO EXISTING. INSTALL AS PER MANUFACTURER'S INSTRUCTIONS.

SCALE VERIFIED BY: \_\_\_\_\_



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**DFO CENTRAL AND ARCTIC REGION**

**CANADIAN COAST GUARD BASE**

Project: **SELKIRK, MANITOBA**

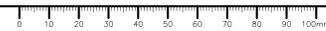
**HVAC REFURBISHMENT**

Designed by: **RBB**  
Drawn by: **MJ**  
Approved by: \_\_\_\_\_

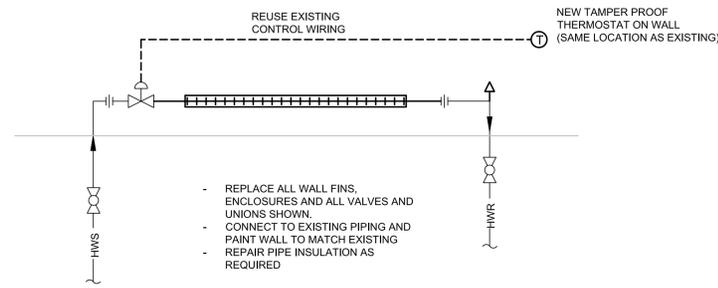
DFO Project Manager: **ALDIN JANSEN**

Drawing title: **MECHANICAL HVAC - NEW MAIN FLOOR PLAN**

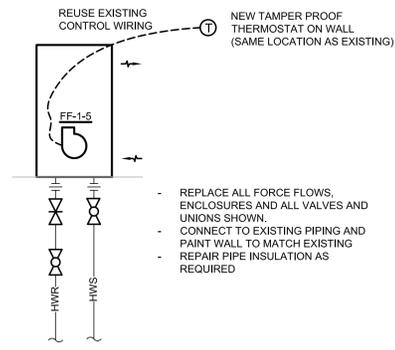
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	<b>M03</b>	<b>0</b>
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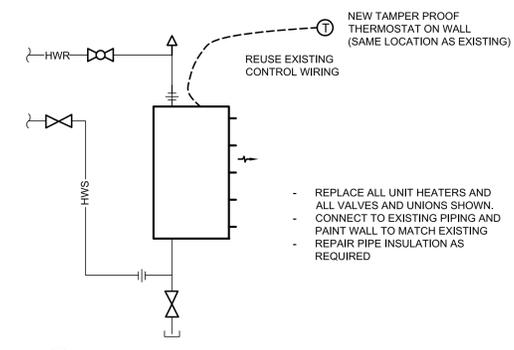
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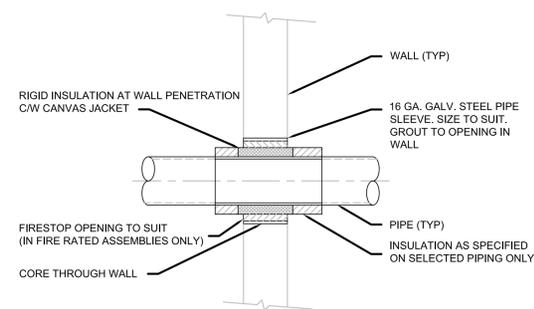
**1** HYDRONIC RADIATOR SCHEMATIC (TYP.)  
SCALE: N.T.S.



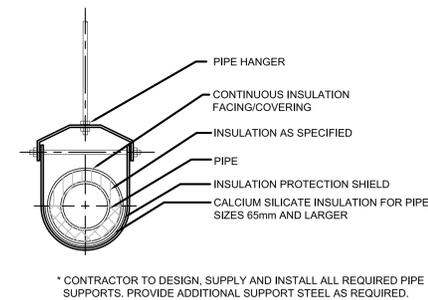
**2** CABINET FORCE FLOW SCHEMATIC  
SCALE: N.T.S.



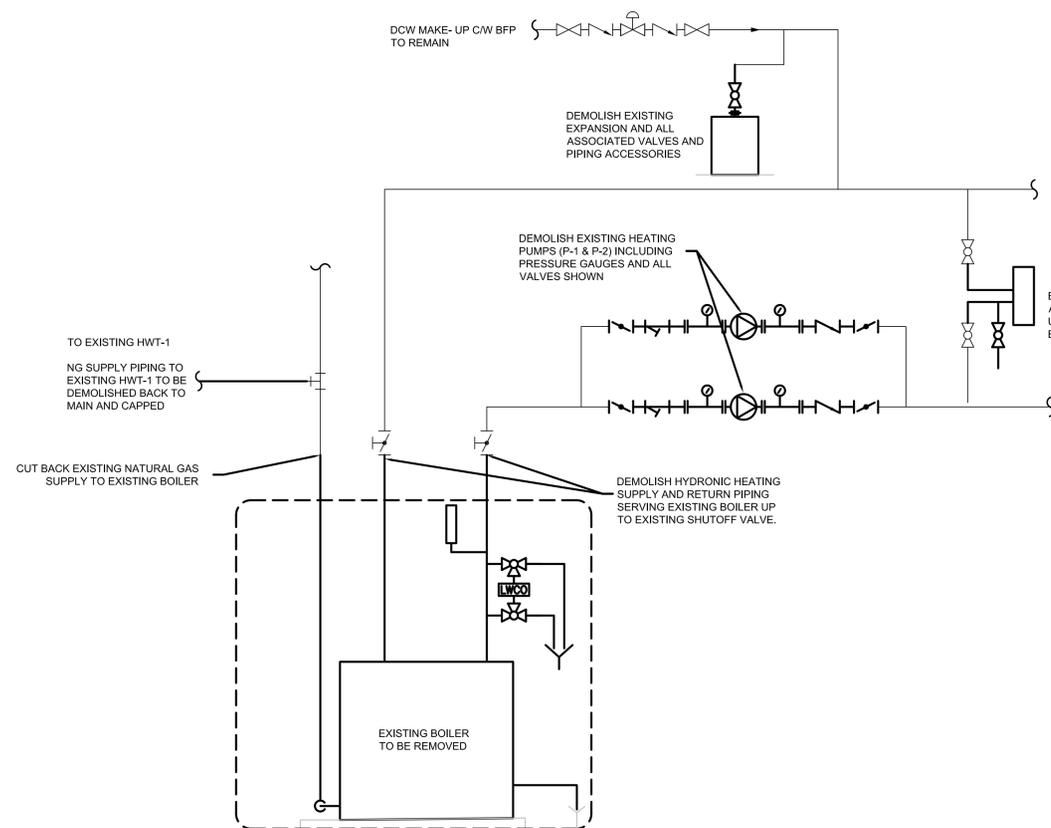
**3** UNIT HEATER SCHEMATIC  
SCALE: N.T.S.



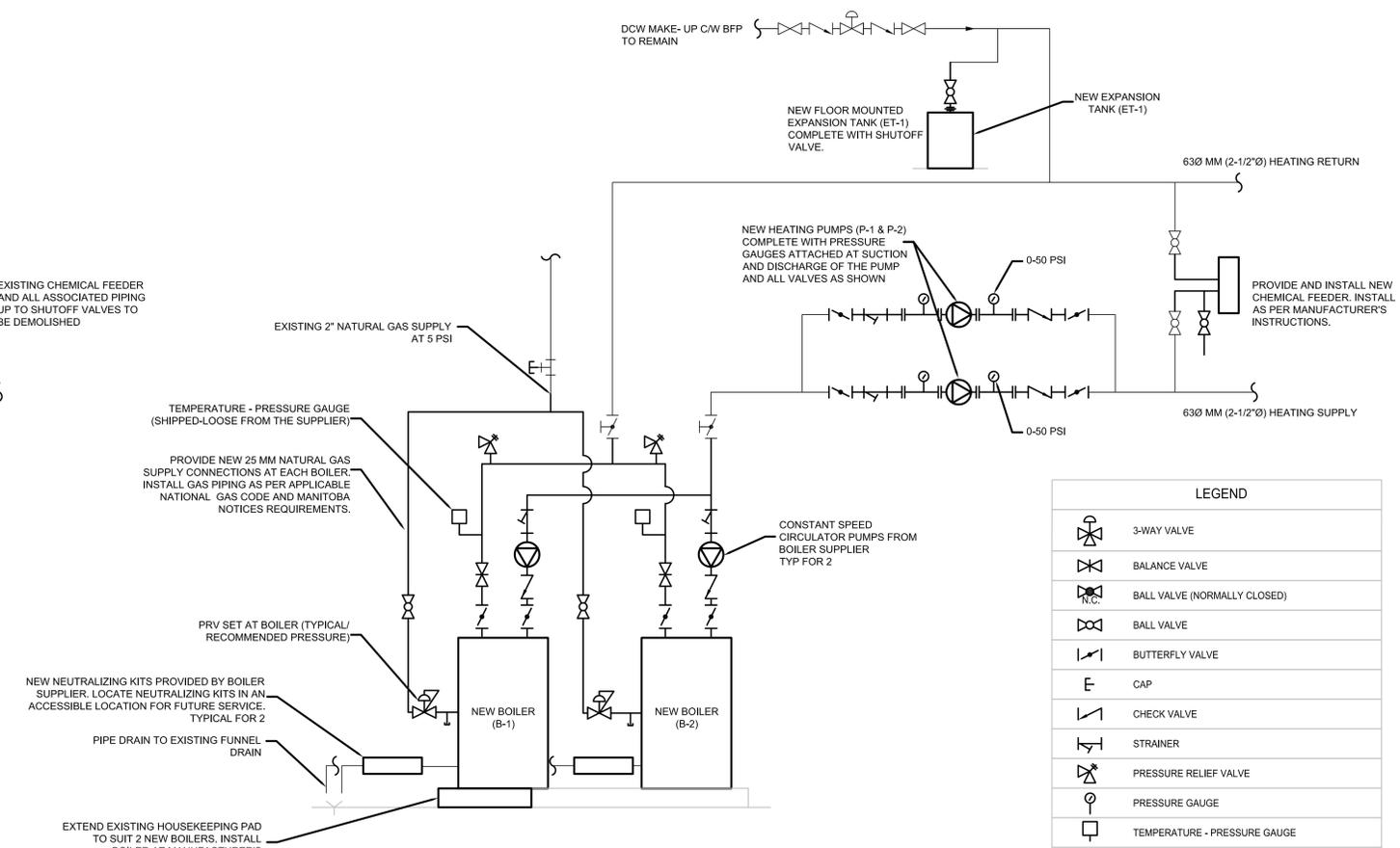
**4** PIPE WALL PENETRATION DETAIL (TYP.)  
SCALE: N.T.S.



**5** INSULATION/PIPE HANGER DETAIL (TYP.)  
SCALE: N.T.S.



**6** HOT WATER HEATING PIPING SCHEMATIC - DEMOLITION  
SCALE: N.T.S.



**7** HOT WATER HEATING PIPING SCHEMATIC - NEW  
SCALE: N.T.S.

LEGEND	
	3-WAY VALVE
	BALANCE VALVE
	BALL VALVE (NORMALLY CLOSED)
	BALL VALVE
	BUTTERFLY VALVE
	CAP
	CHECK VALVE
	STRAINER
	PRESSURE RELIEF VALVE
	PRESSURE GAUGE
	TEMPERATURE - PRESSURE GAUGE
	PRESSURE REDUCING VALVE
	DIRT TRAP

**KGS GROUP**

Revision	Description	Date
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Client: \_\_\_\_\_

**DFO CENTRAL AND ARCTIC REGION**

CANADIAN COAST GUARD BASE

Project: SELKIRK, MANITOBA

**HVAC REFURBISHMENT**

Designed by: RBB

Drawn by: MJ

Approved by: \_\_\_\_\_

DFO Project Manager: ALDIN JANSEN

Drawing title: MECHANICAL PIPING SCHEMATIC AND DETAILS

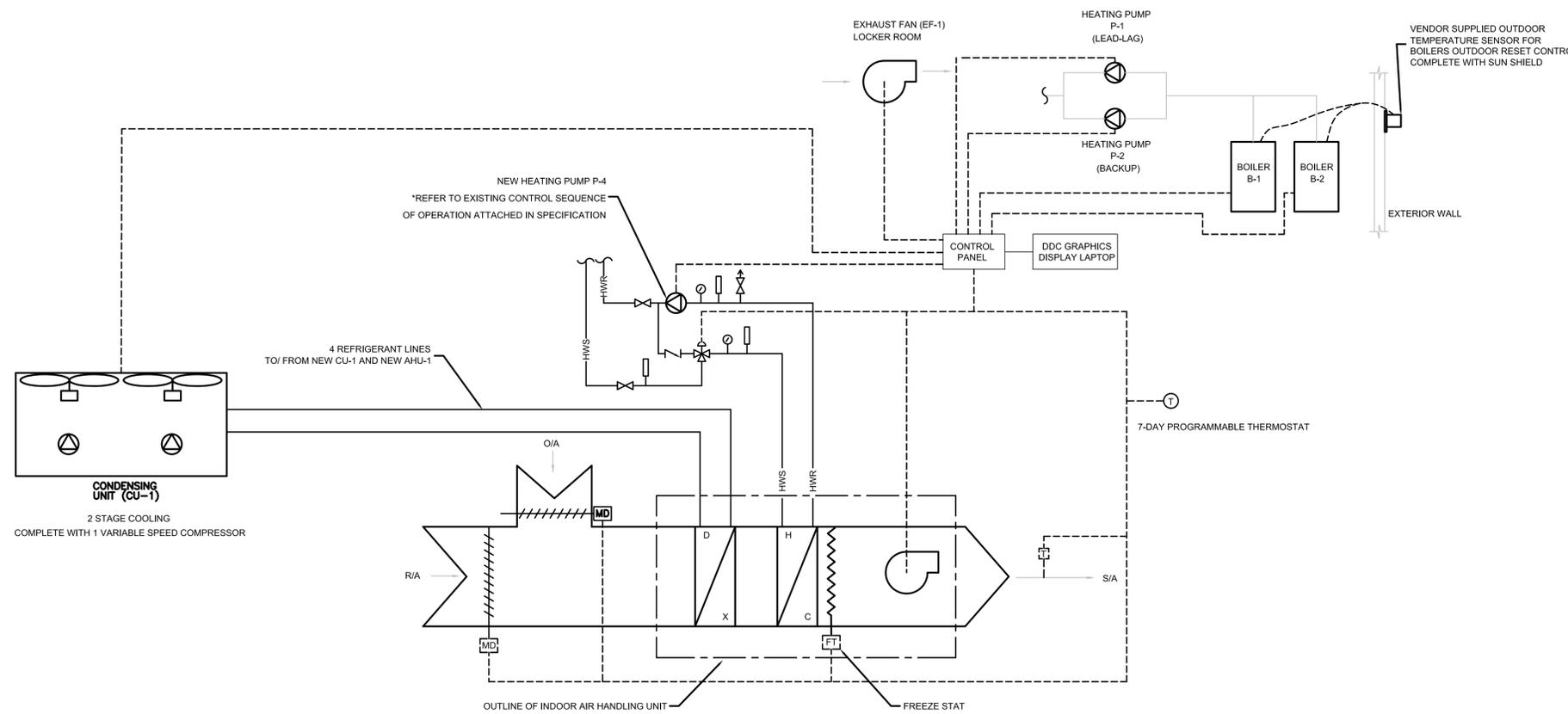
Project no./No. du projet: \_\_\_\_\_

**M04**

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**1**  
NEW AIR HANDLING UNIT (AHU-1) AND CONDENSING UNIT (CU-1) CONTROL SCHEMATIC  
(DDC CONTROLS BASE PRICE FOR ABOVE)  
SCALE: N.T.S.

**HVAC CONTROLS SCOPE OF WORK:**

- THE SCOPE OF WORK FOR THE HVAC SYSTEM REPLACEMENT INCLUDES THE FOLLOWING:
- REMOVAL/DEMOLITION OF THE FOLLOWING:**
1. PERIMETER RADIATOR, UNIT HEATER, AND FORCE FLOW CONTROL VALVES AND THERMOSTATS. EXISTING WIRING TO BE RETAINED.
  2. ALL GAS RADIANT HEATER (BU-1 THROUGH 9) THERMOSTATS INCLUDING BU-4 AND 5 DOOR SWITCH AND OUTDOOR SENSOR TO BE REMOVED.
  3. AHU-1 AND CU-1 CONTROLS, CONTROL PANEL, MOTORIZED DAMPERS, AND ACTUATORS.
  4. EXISTING HUMIDIFIER CONTROLS TO BE REMOVED, NOT TO BE REPLACED.
  5. EXHAUST FAN (EF-1 THROUGH 10, EXCLUDING EF-9) AND ASSOCIATED AIR INTAKE AND EXHAUST MOTORIZED DAMPERS AND ACTUATORS.
  6. EXISTING VEHICLE EMISSION DETECTORS TO BE RETAINED AND CALIBRATED. EXTEND WIRING FOR NEW NO DETECTORS UP TO ROOF LEVEL. CO DETECTORS TO REMAIN AS IS.
  7. SPRAY BOOTH AMU-1 AND EF-9 CONTROLS TO BE REMOVED, NOT TO BE REPLACED.
  8. BOILER CONTROLS TO BE REMOVED.
  9. HYDRONIC HEATING PUMPS (P-1, 2 AND 4) CONTROLS AND CONTROL PANEL TO BE REMOVED.
  10. EF-2 (LUNCHROOM) AND EF-4 (WORK SHOP) COUNT DOWN TIMER TO BE REMOVED.
  11. RETAIN ALL EXISTING CONTROL WIRING.
- SUPPLY, INSTALLATION, AND COMMISSIONING OF THE FOLLOWING:**
1. PERIMETER RADIATOR, UNIT HEATER, AND FORCE FLOW CONTROL VALVES AND THERMOSTATS. PROVIDE PROGRAMMABLE THERMOSTATS FOR PERIMETER OFFICES ONLY AND STANDARD THERMOSTATS FOR THE REMAINING HEATERS.
  2. ALL GAS RADIANT HEATER (BU-1 THROUGH 9) THERMOSTATS INCLUDING BU-4 AND 5 DOOR SWITCH AND OUTDOOR SENSORS.
  3. NEW AHU-1 AND CU-1, BOILERS, LOCKER EXHAUST FAN (EF-1), AHU HEATING PUMP (P-4) AND PRIMARY HEATING PUMPS (P-1 AND P-2) IN DDC CONTROLS, MOTORIZED DAMPERS (OUTSIDE AIR, RETURN AIR, AND RELIEF AIR), AND ACTUATORS, PROVIDE ENTHALPY ECONOMIZER, DDC GRAPHIC DISPLAY LAPTOP, AND 7-DAY TIME CLOCK C/W REMOTE THERMOSTAT. THIS INCLUDES NEW CONTROLS FOR HYDRONIC HEATING PUMPS P1 AND P2. AHU-1 TO BE PROTECTED BY A FREEZE STAT.
  4. PROVIDE NEW CONTROLS FOR NEW EXHAUST FANS (EF-1 THROUGH 10, EXCLUDING EF-9) INCLUDING ASSOCIATED AIR INTAKE AND EXHAUST MOTORIZED DAMPERS & ACTUATORS AND TEMPERATURE/HUMIDITY SENSORS.
  5. CALIBRATE AND RECOMMISSION EXISTING VEHICLE EMISSION DETECTORS. VEHICLE BAY VENTILATION SYSTEM SHALL BE CONTROLLED BY THE VEHICLE EMISSION DETECTORS. EXTEND CO2 SENSOR TO ROOF LEVEL.
  6. PROVIDE NEW BOILER VENDOR CONTROLS FOR B1 AND B2 C/W OUTDOOR TEMPERATURE RESET AND BOILER STAGING.
  7. NEW COUNT DOWN TIMER FOR EF-2 (LUNCHROOM) AND EF-4 (WORK SHOP).
  8. COMMISSION NEW AHU CONTROLS BOTH IN SUMMER AND WINTER OPERATION.
  9. ALL NEW WIRING TO BE IN CONDUIT.

**NOTE:**

1. REFER TO SPECIFICATIONS FOR EXISTING CONTROL DRAWINGS.



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Revision	Description	Date

Client: client

**DFO CENTRAL AND ARCTIC REGION**

**CANADIAN COAST GUARD BASE**

Project: SELKIRK, MANITOBA

**HVAC REFURBISHMENT**

Designed by: RBB  
Conçu par: RBB

Drawn by: MJ  
Dessiné par: MJ

Approved by: ALDIN JANSEN  
Approuvé par: ALDIN JANSEN

DFO Project Manager / Administrateur de Projets MPO

Drawing title: MECHANICAL HVAC - CONTROLS  
Titre du dessin: MECHANICAL HVAC - CONTROLS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
	<b>M05</b>	<b>0</b>
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**DFO CENTRAL AND ARCTIC REGION**

CANADIAN COAST GUARD BASE

SELKIRK, MANITOBA

**HVAC REFURBISHMENT**

Designed by RBB / Conçu par RBB

Drawn by MJ / Dessiné par MJ

Approved by / Approuvé par

DFO Project Manager ALDIN JANSEN / Administrateur de Projets MPO

Drawing title / Titre du dessin

**MECHANICAL SCHEDULES**

Project no./No. du projet Drawing no./No. du dessin Revision no.

**M06**  
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**NEW AIR HANDLING UNIT SCHEDULE**

TAG	AREA SERVED	SUPPLY FAN			UNIVERSAL COIL (HOT WATER HEATING)								WORKING FLUID	UNIVERSAL COIL (DX COOLING)		VOLTAGE	MAKE / MODEL
		AIRFLOW	E.S.P	MOTOR POWER	CAPACITY	FLOW RATE	PRESSURE DROP	EWT	LWT	EAT	LAT	CAPACITY					
		L/s (CFM)	(IN. W.C.)	KW (HP)	KW (MBH)	L/s (USGPM)	(ftHd)	°C (°F)	°C (°F)	°C (°F)	°C (°F)	KW (MBH)		TONS			
AHU-1	OFFICES	1133 (2400)	0.5	1.5 (2)	47.4 (161.63)	1 (15.7)	0.7	82 (180)	71 (160)	7 (45)	40 (105)	Hot Water	26.83 (91.55)	8	208/3	DAIKIN/ CAH007GDAM	

NOTE: SECTIONAL UNIT TO FIT THROUGH DOOR

**NEW CONDENSING UNIT SCHEDULE**

TAG	ASSOCIATED EQUIPMENT	TOTAL HEAT REJECTION	REFRIGERANT	SEER / EER	ELECTRICAL	OVERALL PHYSICAL DIMENSIONS	MAKE / MODEL
		(TONS)					
CU-1	AHU-1	8	R410A	13.1	600/3	35.8x35.8x45	Aaon/ CFA-009-B-A-4-DC00K:0-A0-00-00-000-0-N000-000B000-0A000B

**NEW BOILER SCHEDULE**

TAG	DESCRIPTION	INPUT	OUTPUT	GAS PRESSURE		WATER VOLUME	WATER FLOW			HEAD LOSS		EWT	LWT	RELIEF VALVE			ELECTRICAL POWER	MAKE / MODEL
				MINIMUM	MAXIMUM		20°F ΔT	40°F ΔT	20°F ΔT	40°F ΔT	SIZE			RATING	PRESSURE			
				(IN. W.C.)	(IN. W.C.)		L (USGAL)	L/s (USGPM)	L/s (USGPM)	(FT.)	(FT.)			°C (°F)	°C (°F)	mm (IN.)		
B-1	Natural Gas Boiler	175.84 (600)	171.45 (585)	4	14	45 (12)	3.7 (59)	1.8 (29)	4.40	2.80	71 (160)	82 (180)	19 (3/4)	697	50	120/1/60	Lochinvar / FTX600N	
B-2	Natural Gas Boiler	175.84 (600)	171.45 (585)	4	14	45 (12)	3.7 (59)	1.8 (29)	4.40	2.80	71 (160)	82 (180)	19 (3/4)	697	50	120/1/60	Lochinvar / FTX600N	

NOTE: 100% BACKUP

**NEW WALL FIN SCHEDULE**

TAG	DESCRIPTION	AREA SERVED	QUANTITY	HEATING PERFORMANCE			LENGTH		WORKING FLUID	MAKE / MODEL
				CAPACITY	FLOW RATE	AWT	FIN (MM)	COVER (MM)		
				KW (MBH)	L/s (USGPM)	°C (°F)				
1	HYDRONIC WALL FIN	1.02, 1.05A, 1.18	3	1.9 (6.48)	0.04 (0.66)	82 (180)	1219	3530, 2184, 3180	HOT WATER	ENGINEERED AIR/ WF-1A
2	HYDRONIC WALL FIN	1.03	1	2.8 (9.55)	0.06 (0.97)	82 (180)	1529	2133	HOT WATER	ENGINEERED AIR/ WF-1A
3	HYDRONIC WALL FIN	1.05	1	6 (20.47)	0.13 (2.08)	82 (180)	3952	6000	HOT WATER	ENGINEERED AIR/ WF-1A
4	HYDRONIC WALL FIN	1.17	1	2.5 (8.53)	0.05 (0.87)	82 (180)	1675	2007	HOT WATER	ENGINEERED AIR/ WF-1A
5	HYDRONIC WALL FIN	1.11	1	5.6 (19.11)	0.12 (1.94)	82 (180)	3858	4623	HOT WATER	ENGINEERED AIR/ WF-1A
6	HYDRONIC WALL FIN	1.12, 1.10, 1.10, 1.14	4	2.3 (7.85)	0.05 (0.8)	82 (180)	1524	2057, 3530/2235, 2160	HOT WATER	ENGINEERED AIR/ WF-1A
7	HYDRONIC WALL FIN	1.13, 1.09, 1.20	3	0.9 (3.07)	0.02 (0.31)	82 (180)	610	1092, 1118, 1220	HOT WATER	ENGINEERED AIR/ WF-1A
8	HYDRONIC WALL FIN	1.05, 1.06	2	0.9 (3.07)	0.02 (0.31)	82 (180)	610	914914	HOT WATER	ENGINEERED AIR/ WF-1A

NOTE: WALL FIN AND ENCLOSURE INCLUDED

**NEW RADIANT HEATER SCHEDULE**

TAG	DESCRIPTION	LOCATION	INPUT	LENGTH	ELECTRICAL	MAKE / MODEL	COMMENTS
			KW (MBH)	(MM)	(V/Ph)		
BU-1	NATURAL GAS RADIANT HEATER	VEHICLE WORKSHOP(1.22/1.23)	23.45 (80)	6650	120/1	SUPERIOR/ UA80	STRAIGHT CONFIGURATION
BU-2	NATURAL GAS RADIANT HEATER	VEHICLE WORKSHOP(1.22/1.23)	36.63 (125)	12750	120/1	SUPERIOR/ UA125 U	U-SHAPED RADIANT HEATER 12750 MM TO BE TOTAL LENGTH
BU-3	NATURAL GAS RADIANT HEATER	VEHICLE WORKSHOP(1.22/1.23)	23.45 (80)	6650	120/1	SUPERIOR/ UA80	STRAIGHT CONFIGURATION
BU-4	NATURAL GAS RADIANT HEATER	GARAGE AREA(1.26)	36.63 (125)	12750	120/1	SUPERIOR/ UA125 U	STRAIGHT CONFIGURATION
BU-5	NATURAL GAS RADIANT HEATER	GARAGE AREA(1.26)	36.63 (125)	12750	120/1	SUPERIOR/ UA125 U	STRAIGHT CONFIGURATION
BU-6	NATURAL GAS RADIANT HEATER	GARAGE AREA(1.26)	36.63 (125)	12750	120/1	SUPERIOR/ UA125 U	STRAIGHT CONFIGURATION
BU-7	NATURAL GAS RADIANT HEATER	GARAGE AREA(1.26)	36.63 (125)	12750	120/1	SUPERIOR/ UA125 U	STRAIGHT CONFIGURATION
BU-8	NATURAL GAS RADIANT HEATER	PAINT SPRAY BOOTH AREA(1.21)	23.45 (80)	6650	120/1	SUPERIOR/ UA80	STRAIGHT CONFIGURATION
BU-9	NATURAL GAS RADIANT HEATER	PAINT SPRAY BOOTH AREA(1.21)	23.45 (80)	6650	120/1	SUPERIOR/ UA80	STRAIGHT CONFIGURATION

**NEW DOMESTIC WATER HEATER SCHEDULE**

TAG	DESCRIPTION	STORAGE CAPACITY	RECOVERY RATE	HEATING CAPACITY	ELECTRICAL	MAKE / MODEL	NOTES
		L (USGAL)	LPH(GPH @ 100F)	(KW)	POWER		
		(V/Ph./Hz.)					
HWT-1	ELECTRIC WATER HEATER	151 (40)	68 (18)	5	208/3/60	BRADFORD WHITE/ LE240S3-3NCWW-458	NON-SIMULTANEOUS
HWT-2	ELECTRIC WATER HEATER	151 (40)	68 (18)	5	208/3/60	BRADFORD WHITE/ LE240S3-3NCWW-458	NON-SIMULTANEOUS

**NEW UNIT HEATER SCHEDULE**

TAG	AREA SERVED	HEATING	FAN		ELECTRICAL	DIMENSIONS				DESIGN MAKE / MODEL
		CAPACITY	AIRFLOW	MOTOR		HEIGHT	WIDTH	LENGTH	WEIGHT	
		KW (MBH)	L/s (CFM)	w (HP)		(V/Ph.)	mm	mm	mm	
UH-1	BATTERY STORAGE	8 (27.3)	224 (475)	37.3 (0.05)	115/1	560	470	610	43	ENGINEERED AIR/ H2 - EXPLOSION PROOF
UH-2	MECHANICAL ROOM	9.4 (32.07)	224 (475)	37.3 (0.05)	115/1	560	470	610	43	ENGINEERED AIR/ H2

**EXISTING FORCE FLOW HEATER SCHEDULE**

TAG	AREA SERVED	HEAT OUTPUT	AIRFLOW	HOT WATER FLOW	ELECTRICAL	ACTUAL MAKE / MODEL
		KW (MBH)	L/s (CFM)	L/s (GPM)	(V/Ph.)	
		(V/Ph.)				
FF-1	1.01	15.21 (51.91)	264 (560)	0.32 (5.07)	115/1	ENGINEERED AIR/ RECESSED TYPE
FF-2	1.16	5.61 (19.13)	104 (220)	0.13 (2.06)	115/1	ENGINEERED AIR/ CUH-3
FF-3	1.15	7.61 (25.96)	142 (300)	0.13 (2.06)	115/1	ENGINEERED AIR/ CUH-3
FF-4	1.12	7.61 (25.96)	142 (300)	0.13 (2.06)	115/1	ENGINEERED AIR/ CUH-3
FF-5	1.24	7.61 (25.96)	142 (300)	0.13 (2.06)	115/1	ENGINEERED AIR/ CUH-3

**EXPANSION TANK SCHEDULE**

TAG	DESCRIPTION	TANK VOLUME	ACCEPTANCE VOLUME	MAKE / MODEL	NOTES
		L (USGAL)	L (USGAL)		
ET-1	EXPANSION TANK	95 (25)	77 (21)	BELL AND GOSSETT/ D SERIES	ASME/ FLOOR MOUNTED

**CEILING FAN SCHEDULE**

TAG	LOCATION	FAN		MOTOR	ELECTRICAL	MAKE / MODEL	COMMENTS
		DIAMETER	SPEED	POWER	POWER		
		MM (in)	RPM	W	(V/Ph.)		
CF-1	WASHROOM EXHAUST FAN	1219 (48)	325.00	62.00	120/ 1	CANARM/ CP48HPWP	COMPLETE WITH FAN GUARD
CF-2	LUNCH/ CONFERENCE EXHAUST FAN	1219 (48)	325.00	62.00	120/ 1	CANARM/ CP48HPWP	COMPLETE WITH FAN GUARD
CF-3	BATTERY STORAGE EXHAUST FAN	1219 (48)	325.00	62.00	120/ 1	CANARM/ CP48HPWP	COMPLETE WITH FAN GUARD
CF-4	ELECT WORKSHOP EXHAUST FAN	1219 (48)	325.00	62.00	120/ 1	CANARM/ CP48HPWP	COMPLETE WITH FAN GUARD
CF-5	VEHICLE MAIN. EXHAUST FAN	1219 (48)	325.00	62.00	120/ 1	CANARM/ CP48HPWP	COMPLETE WITH FAN GUARD
CF-6	VEHICLE TAILPIPE EXHAUST FAN	1219 (48)	325.00	62.00	120/ 1	CANARM/ CP48HPWP	COMPLETE WITH FAN GUARD

**HYDRONIC PUMP SCHEDULE**

TAG	DESCRIPTION	FLUID	PERFORMANCE		MOTOR		MAKE / MODEL
			FLOW	HEAD	POWER	SPEED	
			L/s (USGPM)	kPa (FT.)	KW (HP)	(RPM)	
P-1	HYDRONIC HEATING	WATER	3.15 (50)	120 (40)	1.12 (1.5)	1725	BELL & GOSSETT / E-90 1.5AB
P-2	HYDRONIC HEATING	WATER	3.15 (50)	120 (40)	1.12 (1.5)	1725	BELL & GOSSETT / E-90 1.5AB
P-3	DOMESTIC HOT WATER RECIRCULATION PUMP	WATER	EXISTING TO REMAIN				
P-4	AHU-1	WATER	1 (15.7)	15 (5)	0.062 (0.0831)	2950	BELL & GOSSETT / NRF-25

**EXISTING MOTORIZED DAMPER SCHEDULE**

TAG	DAMPER	SIZE (mm)	INSULATED	APPLICATION	BLADE	MAKE	COMMENTS
				APPLICATION	BLADE	MAKE	
MD-1	AH-1 OUTSIDE AIR	460x460	YES	VERTICAL MULTIPLE BLADES	PARALLEL/ PB	ALUMAVENT/ 3900	COMPLETE WITH ACTUATOR MATCHED WITH EXISTING
MD-2	AH-1 RETURN AIR	400x400	YES	VERTICAL MULTIPLE BLADES	PARALLEL/ PB	ALUMAVENT/ 3900	COMPLETE WITH ACTUATOR MATCHED WITH EXISTING
MD-3	AH-1 RELIEF AIR	400x400	YES	VERTICAL MULTIPLE BLADES	PARALLEL/ PB	ALUMAVENT/ 3900	COMPLETE WITH ACTUATOR MATCHED WITH EXISTING
MD-4	EF-5 OUTSIDE AIR INTAKE	600x600	YES	VERTICAL MULTIPLE BLADES	PARALLEL/ PB	ALUMAVENT/ 3900	COMPLETE WITH ACTUATOR MATCHED WITH EXISTING
MD-5	EF-7 OUTSIDE AIR INTAKE	600x600	YES	VERTICAL MULTIPLE BLADES	PARALLEL/ PB	ALUMAVENT/ 3900	COMPLETE WITH ACTUATOR MATCHED WITH EXISTING
MD-6	EF-8 OUTSIDE AIR INTAKE	400x400	YES	VERTICAL MULTIPLE BLADES	PARALLEL/ PB	ALUMAVENT/ 3900	COMPLETE WITH ACTUATOR MATCHED WITH EXISTING
MD-7	EF-10 OUTSIDE AIR INTAKE	700x300	YES	VERTICAL MULTIPLE BLADES	PARALLEL/ PB	ALUMAVENT/ 3900	COMPLETE WITH ACTUATOR MATCHED WITH EXISTING
MD-8	CRAWLSPACE INTAKE	400x400	YES	VERTICAL MULTIPLE BLADES	PARALLEL/ PB	ALUMAVENT/ 3900	COMPLETE WITH ACTUATOR MATCHED WITH EXISTING

NOTE: VERIFY ALL SIZES ON SITE PRIOR TO ORDER.

**EXHAUST FAN SCHEDULE**

TAG	DESCRIPTION	FAN		MOTOR	ELECTRICAL	MAKE / MODEL
		AIRFLOW	E.S.P.	POWER	POWER	
		L/s (CFM)	Pa (IN. W.G.)	W (HP)	(V/Ph./Hz.)	
EF-1	WASHROOM EXHAUST FAN	236 (500)	93 (0.375)	186 (1/4)	115/60/1	CANARM/ 409
EF-2	LUNCH/ CONFERENCE EXHAUST FAN	90 (190)	32 (0.125)	fract	115/60/1	LOREN COOK/ GN-186
EF-3	BATTERY STORAGE EXHAUST FAN	118 (250)	62 (0.25)	142 (0.188)	115/60/1	LOREN COOK/ 60TCN28D (VF) - EXPLOSION PROOF
EF-4	ELECT WORKSHOP EXHAUST FAN	61 (130)	32 (0.125)	6.7 (0.0094)	115/60/1	LOREN COOK/ GN-148
EF-5	VEHICLE MAIN. EXHAUST FAN	736 (1560)	93 (0.375)	313 (0.42)	115/60/1	LOREN COOK/ 120SQ17D (VF)
EF-6	VEHICLE TAILPIPE EXHAUST FAN	236 (500)	622 (2.5)	1119 (1.5)	208/60/3	NEDERMAN/ F-2000
EF-7	GARAGE/ STORAGE EXHAUST FAN	1214 (2572)	93 (0.375)	373 (0.5)	208/60/3	LOREN COOK/ 165TCNH11D
EF-8	BUOY MAIN. EXHAUST FAN	736 (1560)	93 (0.375)	328 (0.44)	115/60/1	LOREN COOK/ 135SQ17D (VF)
EF-9	PAINT BOOTH (DEMOLISHED)					NOT REQUIRED
EF-10	CRAWLSPACE EXHAUST FAN	165 (350)	124 (0.5)	186 (1/4)	115/60/1	CANARM/ 407
EF-11	WELDING EXHAUST FAN	380 (807)	62 (0.25)	1119 (1.5)	208/60/3	NEDERMAN/ F-2000
EF-12	ELECTRICAL ROOM EXHAUST FAN	84 (178)	62 (0.25)	fract	115/60/1	BROAN/ 509N

\* UPSIZED OVER EXISTING UNIT





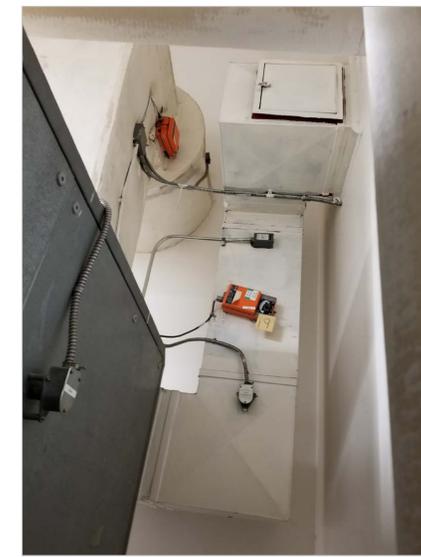
1 EXISTING BOILER (B-1)



2 HEATING SUPPLY AND RETURN - MECHANICAL ROOM



3 EXISTING AIR HANDLING UNIT (AHU-1)



4 EXISTING AHU-1 O/A & R/A MOTORIZED DAMPERS



5 EXISTING HUMIDIFIER (HUM-1)



6 EXISTING CONTROL PANEL



7 TYPICAL EXISTING FORCE FLOW AND THERMOSTAT



8 TYPICAL EXISTING HYDRONIC FINNED TUBE BASEBOARD HEATER



9 TYPICAL EXISTING RADIANT HEATER



10 EXISTING OUTDOOR CONDENSING UNIT

**FOR TENDER ONLY**  
NOT TO BE USED FOR CONSTRUCTION



Revision	Description	Date
0	Issued for Tender	2020/03/23

Client: DFO CENTRAL AND ARCTIC REGION

**DFO CENTRAL AND ARCTIC REGION**  
**CANADIAN COAST GUARD BASE**  
Project: SELKIRK, MANITOBA  
**HVAC REFURBISHMENT**

Designed by: RBB  
Drawn by: MJ  
Approved by:

DFO Project Manager: ALDIN JANSEN

Drawing title: **MECHANICAL EXISTING HVAC EQUIPMENT**

Project no./No. du projet: M07  
Drawing no./No. du dessin: OF 7  
Revision no.: 0