

HEATING & VENTILATING EQUIPMENT LIST		
ITEM No.	DESCRIPTION	MF'R/MODEL
B-1, B-2	OIL FIRED HOT WATER BOILERS, I=B=R NET RATING OF 1,220 MBH. C/W INSULATED STEEL JACKET, LOW WATER CUTOFF, ASME 30 PSI RELIEF VALVE, DUAL HIGH LIMIT AND OPERATING CONTROL, COMBINED TEMPERATURE/PRESSURE/ALTITUDE GAUGE, BUILT IN AIR ELIMINATOR, WELL FOR TEMPERATURE SENSOR AND AIR SEPARATOR.	WEIL-MCLAIN / 88 SERIES 2 MODEL 688
BRN-1, BRN-2	FORCED DRAFT OIL BURNERS FOR WEIL MCLAIN 88 SER. 2 MODEL 688 BOILERS. SET UP FOR ON - OFF OPERATION. C/W OIL PUMPS, BURNER CONTROLS AND ALARM PANEL THAT ACCEPTS CONTROL SIGNAL FROM BOILER CONTROL SYSTEM. ELECTRICS: 208 V / 3 PH / 60 HZ; 0.75 HP	RIELLO / RL 50/2
VS-1, VS-2	ENGINEERED MODULAR VENT STACK FOR BOILERS. ULC LISTED. C/W 0.64MM THICK ALUMINIZED STEEL OUTER SHELL, 0.95MM THICK TYPE 304 STAINLESS STEEL INNER LINER, AND ALL REQUIRED ACCESSORIES TO COMPLETE VENTING SYSTEM.	VAN PACKER / DW PLUS SYSTEM.
BC-1	BOILER CONTROLLER. CONTROLLER TO BE CAPABLE OF CONTROLLING 2 BOILERS, DHW SYSTEM CIRCULATOR AS WELL AS 2 MAIN CIRCULATORS. C/W THE FOLLOWING FEATURES: OUTDOOR TEMPERATURE RESET, OUTDOOR TEMPERATURE SENSOR, ON-OFF BOILER CONTROL, PRIMARY AND SECONDARY PUMP CONTROL, DHW PUMP OPERATION, ADJUSTABLE WARM WEATHER SHUTDOWN, PUMP EXERCISING ROUTINE, BOILER EQUAL RUN TIME ROTATION, EQUAL RUN TIME ROTATION FOR TWO REDUNDANT SECONDARY CIRCULATORS, FLOW OR COMBUSTION AIR PROOF.	TEKMAR / A 274
BC-2	HYDRONIC MIXING CONTROLLER. CONTROLLER TO ACCEPT TEMPERATURE INPUT FROM 10 K OHM THERMISTOR SENSOR. CONTROLLER TO OUTPUT VFD CONTROL OF CIRCULATORS UP TO 1/6 HP.	TEKMAR / A 361
CP-1, CP-2	MAIN INLINE CIRCULATING PUMP. FLOW: 10.9 L/s (172 USGPM) OF 60% PROPYLENE GLYCOL IN WATER. HEAD: 1.1m (3.6 FT). ELECTRICS: 208V/ 1PH / 60HZ; 1 HP	TACO / KV3007 SERIES
CP-3 EXISTING	EXISTING POTABLE HOT WATER CIRCULATOR	EXISTING B & G / SSF-22 SERIES
CP-4 EXISTING	EXISTING CIRCULATOR FOR 60% PROPYLENE GLYCOL SOLUTION TO HEAT EXCHANGER.	EXISTING
CP-5A CP-5B	HYDRONIC CIRCULATOR FOR ALL UNIT HEATERS. FLOW: 7.6 L/s (120.4 USGPM) HEAD: 5.8M (19 FT). ELECTRICS: 208 V / 3 PH / 60 HZ; 1 HP	TACO / KV3007 SERIES
CP-6	HYDRONIC CIRCULATOR FOR PROCESS ROOM FAN COIL UNIT, FC-1. FLOW: 1.14 L/S (18.1 USGPM) OF 60% PROPYLENE GLYCOL SOLUTION. HEAD: 5.1M (16.8 FT). ELECTRICS: 115 V / 1 PH / 60 HZ; 1/6 HP. MOTOR SUITABLE FOR VARIABLE SPEED USE WITH TEKMAR MODEL 361 CONTROLLER.	TACO / 0013 SERIES
CP-7	HYDRONIC CIRCULATOR FOR TRUCK BAY FAN COIL UNIT, FC-2. FLOW: 0.34 L/S (5.4 USGPM) OF 60% PROPYLENE GLYCOL SOLUTION. HEAD: 4.4M (14.3 FT). ELECTRICS: 115 V / 1 PH / 60 HZ; 1/8 HP. MOTOR SUITABLE FOR VARIABLE SPEED USE WITH TEKMAR MODEL 361 CONTROLLER.	TACO / 0014 SERIES
CP-8, CP-9	HYDRONIC CIRCULATOR FOR VESTIBULE FAN COIL UNITS, FC-3 & FC-4. FLOW: 0.18 L/S (2.8 USGPM) OF 60% PROPYLENE GLYCOL SOLUTION. HEAD: 1.49m (4.9 FT). ELECTRICS: 115 V / 1 PH / 60 HZ; 1/40 HP. MOTOR SUITABLE FOR VARIABLE SPEED USE WITH TEKMAR MODEL 361 CONTROLLER.	TACO / 006 SERIES
CP-10	HYDRONIC CIRCULATOR FOR COMBINED FAN COIL UNIT, FC-5. FLOW: 0.72 L/S (11.4 USGPM) OF 60% PROPYLENE GLYCOL SOLUTION. HEAD: 6.9M (22.8 FT). ELECTRICS: 115 V / 1 PH / 60 HZ; 1/6 HP. MOTOR SUITABLE FOR VARIABLE SPEED USE WITH TEKMAR MODEL 361 CONTROLLER.	Taco / 0013
CP-11	HYDRONIC CIRCULATOR FOR FIN TUBE RADIATION. FLOW: 0.38 L/S (6 USGPM) OF 60% PROPYLENE GLYCOL SOLUTION. HEAD: 2.0M (6.47 FT.) H2O. ELECTRICS: 115 V / 1 PH / 60 HZ; 1/35 HP. MOTOR SUITABLE FOR VARIABLE SPEED USE WITH TEKMAR MODEL 361 CONTROLLER.	TACO / 007 SERIES
HUH-1, 2, 3, 4	EXPLOSION PROOF HYDRONIC UNIT HEATERS, HORIZONTAL TYPE, H5 SIZE. RATED CAPACITY: 57.3 MBH OUTPUT. EWT: 180°F. AIRFLOW: 585 L/S (1240 CFM) PER UNIT. FLOW: 14.8 L/M (3.9 USGPM) OF 60% PROPYLENE GLYCOL SOLUTION. HEAD: 0.1 M (0.3 FT.) H2O. ELECTRICS: 115V / 1PH / 60 HZ; AMPS = 3.0; 1/6 HP. C/W NON-SPARKING CONSTRUCTION, EXPLOSION PROOF MOTORS.	EXPLOSION PROOF ENG AIR / H5 SERIES
HUH-5, 6, 7, 8	EXISTING HYDRONIC UNIT HEATERS, HORIZONTAL TYPE, H4 SIZE. RELOCATED FROM PROCESS ROOM. RATED CAPACITY: 56.8 MBH OUTPUT. AIRFLOW: 472 L/S (1000 CFM) EWT: 180°F. WATER FLOW: 32.6 L/M (8.6 USGPM) HEAD: 0.2M (0.7 FT.) H2O. ELECTRICS: 115V / 1PH / 60 HZ; AMPS = 3.0; 1/12 HP.	EXISTING UNITS, RELOCATED FROM PROCESS ROOM.
HUH-9 & 13	HYDRONIC UNIT HEATERS, HORIZONTAL TYPE, H5 SIZE, STANDARD DIFFUSERS. RATED CAPACITY: 57.3 MBH OUTPUT. AIRFLOW: 585 L/S (1240 CFM) EWT: 180°F. WATER FLOW: 14.8 L/M (3.9 USGPM) HEAD: 0.1M (0.3 FT.) H2O. ELECTRICS: 115V / 1PH / 60 HZ; AMPS = 3.0; 1/6 HP.	ENG AIR / H5 SERIES
HUH-10, 11, 12	EXISTING HYDRONIC UNIT HEATERS, HORIZONTAL TYPE, RELOCATED AS NOTED ON DRAWINGS.	EXISTING UNITS, RELOCATED AS NOTED ON DRAWINGS.
FN-1 (PROCESS RM)	EXPLOSION PROOF INLINE SUPPLY FAN. CAPACITY: 6,041 L/s @ 12.7 mm ESP (12,800 CFM @ 0.5" ESP) ELECTRICS: 208 V / 3PH / 60 HZ; 5 HP. C/W VIBRATION ISOLATION MOUNTING HDWE., NON-SPARKING CONSTRUCTION TYPE AMCA-A, SAFETY SCREEN, EXPLOSION PROOF MOTOR, EXTENDED LUB LINES, REINFORCED WHEEL.	EXPLOSION PROOF COOK / 270SQB SERIES
FN-2 (PROCESS RM)	EXPLOSION PROOF WALL MOUNTED EXHAUST FAN. CAPACITY: 6,135 L/s @ 38.1mm ESP (13,000 CFM @ 0.5" ESP) ELECTRICS: 208 V / 3 PH / 60 HZ; 3 HP. C/W VIBRATION ISOLATING MOUNTING HDWE., NON-SPARKING CONSTRUCTION TYPE AMCA-A, BIRD SCREEN, EXPLOSION PROOF MOTOR.	EXPLOSION PROOF COOK/ 36EMB SERIES
FN-3 (VESTIBULE)	CEILING CABINET FAN. CAPACITY: 80 L/s @ 6.3mm ESP. (170 CFM @ 0.25" ESP) ELECTRICS: 120V / 1 PH / 60 HZ; 123 W, 1.3 A. C/W FACTORY WIRED SPEED CONTROL, BACKDRAFT DAMPER, VIBRATION ISOLATION MOUNTING HARDWARE.	COOK / GC-164
FN-4 (VESTIBULE)	CEILING CABINET FAN. CAPACITY: 80 L/s @ 6.3mm ESP (170 CFM @ 0.25" ESP) ELECTRICS: 120V / 1 PH / 60 HZ; 123 W, 1.3 A. C/W FACTORY WIRED SPEED CONTROL, BACKDRAFT DAMPER, VIBRATION ISOLATION MOUNTING HARDWARE.	COOK / GC-164
FN-5 (LOWER ELEC. RM.)	CEILING CABINET FAN. CAPACITY: 79 L/s @ 6.3mm ESP (167 CFM @ 0.25" ESP) ELECTRICS: 120V / 1 PH / 60 HZ; 123 W, 1.3 A. C/W FACTORY WIRED SPEED CONTROL, BACKDRAFT DAMPER, VIBRATION ISOLATION MOUNTING HARDWARE.	COOK / GC-164

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FN-6 (MEZZ. RM.)	CEILING CABINET FAN. CAPACITY: 49 L/s @ 6.3mm ESP (104 CFM @ 0.25" ESP) ELECTRICS: 120V / 1 PH / 60 HZ; 66 W, 0.7 A. C/W FACTORY WIRED SPEED CONTROL, BACKDRAFT DAMPER, VIBRATION ISOLATION MOUNTING HARDWARE.	COOK / GC-144
FN-7 MECHANICAL RM.	CEILING CABINET FAN. CAPACITY: 207 L/s @ 6.3mm ESP (439 CFM @ 0.25" ESP) ELECTRICS: 120V / 1 PH / 60 HZ; 290 W, 4.9 A. C/W FACTORY WIRED SPEED CONTROL, BACKDRAFT DAMPER, VIBRATION ISOLATION MOUNTING HARDWARE.	COOK / GC-640
FN-8 (UPPER ELEC. RM.)	CEILING CABINET FAN. CAPACITY: 79 L/s @ 6.3mm ESP (167 CFM @ 0.25" ESP) ELECTRICS: 120V / 1 PH / 60 HZ; 123 W, 1.3 A. C/W FACTORY WIRED SPEED CONTROL, BACKDRAFT DAMPER, VIBRATION ISOLATION MOUNTING HARDWARE.	COOK / GC-164
FN-9 (TRUCK BAY)	INLINE EXHAUST FAN. CAPACITY: 382 L/s @ 38.1mm ESP (810CFM @ 1.5" ESP) ELECTRICS: 120 V / 1 PH / 60 HZ; 1/2 HP. C/W VIBRATION ISOLATION MOUNTING HARDWARE, BIRDSCREEN INSTALLED IN DUCT AT FAN INLET.	COOK/ 150 SQN SERIES
FN-10 DELETED	DELETED	DELETED
FN-11 EXISTING (WASHROOM)	EXISTING FAN IN WASHROOM. AIRFLOW: 52 L/s @ 2.5mm ESP (110 CFM @ 0.1" ESP) ELECTRICS: 120 V / 1 PH / 60 HZ; 1.3 A.	EXISTING BROAN / 676 SERIES.
FN-12 (PROCESS TANK)	EXPLOSION PROOF HIGH PRESSURE EXHAUST FAN. AIRFLOW: 140 L/s @ 25.4mm ESP (287 CFM @ 0.5" ESP). ELECTRICS: 120V / 1 PH / 60 HZ; 1/3 HP. C/W NON SPARKING CONSTRUCTION TO AMCA A, EXPLOSION PROOF MOTOR, EISENHEISS OR SIMILAR ANTI-CORROSION FINISH ON INTERIOR AND EXTERIOR SURFACES OF FAN HOUSING AND WHEEL. ARRANGEMENT 9.	EXPLOSION PROOF REVERSEOMATIC / AF-8-4
FN-13 (PROCESS RM)	EXPLOSION PROOF TWO SPEED, WALL MOUNTED EXHAUST FAN. CAPACITY, LOW SPEED: 755 L/s @ 13mm ESP (1,600 CFM @ 0.5" ESP). CAPACITY, HIGH SPEED: 1510 L/s @ 13mm ESP (3,200 CFM @ 0.5 ESP). ELECTRICS: 208 V / 3 PH / 60 HZ; 1 HP. C/W VFD TO PROVIDE 2 SPEED OPERATION INSTALLED OUTSIDE OF CLASSIFIED SPACE, VIBRATION ISOLATING MOUNTING HDWE., NON-SPARKING CONSTRUCTION TYPE AMCA-A, BIRD SCREEN, EXPLOSION PROOF MOTOR.	EXPLOSION PROOF COOK/ 24AT1 SERIES
FC-1 (PROCESS RM.)	EXPLOSION PROOF 2 SPEED FAN COIL UNIT. AIRFLOW: 708 & 1416 L/S @ 13MM ESP (1500 & 3000 CFM @ 0.5" ESP) ELECTRICS: 208V / 3 PH / 60 HZ; 3 HP. EAT: -42°C (-43.6°F) LAT: 13°C (55°F) EWT: 82°C (180°F) FLUID FLOW: 68.5 L/M (18.1 USGPM). HEAD: 0.9M (3.0 FT.) H2O. C/W VFD TO PROVIDE 2 SPEED OPERATION INSTALLED OUTSIDE OF CLASSIFIED SPACE, VIBRATION ISOLATING MOUNTING HARDWARE, NON-SPARKING CONSTRUCTION TYPE AMCA-A, BIRD SCREEN, EXPLOSION PROOF MOTOR.	EXPLOSION PROOF MCQUAY VISION / CAH006GHGC
FC-2 (TRUCK BAY)	FAN COIL UNIT. AIRFLOW: 401 L/S @ 13MM ESP (850CFM @ 0.5" ESP) ELECTRICS: 208V / 3 PH / 60 HZ; HP 3/4. EAT: -42°C (-43.6°F) LAT: 13°C (55°F) EWT: 82°C (180°F) FLUID FLOW: 20.1 L/M (5.4 USGPM). HEAD: 1.1M (3.5 FT.) H2O. C/W VIBRATION ISOLATING MOUNTING HARDWARE, BIRD SCREEN.	MCQUAY DESTINY / LAH002A
FC-3, FC-4 (SERVES VESTIBULE)	REDUNDANT INLINE FAN UNITS WITH HYDRONIC HEATING COILS & FLOW PROOF SWITCHES FOR AIR AND WATER. AIRFLOW: 80 L/S @ 13MM ESP (170 CFM @ 0.5" ESP) ELECTRICS: 120V / 1 PH / 60 HZ; HP 1/6. C/W DUCT MOUNTED HYDRONIC COILS. EAT: -42°C (-43.6°F) LAT: 32°C (89°F) EWT: 82°C (180°F) FLUID FLOW: 2.8 USGPM; HEAD: 2.5 FT. H2O. C/W AIRFLOW AND WATERFLOW PROVING SWITCHES, VIBRATION ISOLATING MOUNTING HARDWARE, BIRD SCREEN.	LAUREN COOK / 60SQN-B WITH COIL MCQUAY / S8S1402 SERIES
FC-5 (2ND FLR. ELEC. RM.)	FAN COIL UNIT. AIRFLOW: 477 L/s @ 28MM ESP (1010 CFM @ 1" ESP) ELECTRICS: 208V / 3 PH / 60 HZ; HP 1.5. EAT: -42°C (-43.6°F) LAT: 22°C (72°F) EWT: 82°C (180°F) FLUID FLOW: 43.2 L/M (11.4 USGPM). HEAD: 4.4M (14.3 FT.) H2O. C/W VIBRATION ISOLATING MOUNTING HARDWARE, BIRD SCREEN.	MCQUAY DESTINY / LAH002A
WF-1 (UTILITY RM.)	FIN TUBE BASEBOARD HEATER. LENGTH: 6 FT. C/W 1" DIA CUAL TUBE, 3-1/4" SQUARE FINS SPACED AT 40 FINS PER FOOT, ONE TIER.	STERLING VERSALINE/ JVA-S11 ENCL. C/W C34 TYPE ELEMENT
WF-2 (MEZZ. RM.)	FIN TUBE BASEBOARD HEATER. LENGTH: 13 FT. C/W 1" DIA CUAL TUBE, 3-1/4" SQUARE FINS SPACED AT 40 FINS PER FOOT, ONE TIER.	STERLING VERSALINE/ JVA-S11 ENCL. C/W C34 TYPE ELEMENT
WF-3 (WASH RM.) EXISTING	EXISTING - LOCATED IN WASHROOM	EXISTING
XTh	EXPLOSION PROOF HEATING THERMOSTAT	EXPLOSION PROOF BY DIV. 26.
XTv	EXPLOSION PROOF VENTILATION THERMOSTAT.	EXPLOSION PROOF BY DIV. 26.
XFTv	EXPLOSION PROOF VENTILATION FREEZE STAT. SET TO SHUT OFF HIGH RATE VENTILATION AT 5°C (41°F)	EXPLOSION PROOF BY DIV. 26.
Th	HEATING THERMOSTAT	BY DIV. 26.
Tv	VENTILATION THERMOSTAT.	BY DIV. 26.
MTh	MECHANICAL HEATING THERMOSTATS. MECHANICAL THERMOSTATIC RADIATOR VALVES. C/W STANDARD VALVE BODY, REMOTE THERMOSTATIC HEAD WITH USER ADJUSTMENT AND REGULUX LOCKSHIELD DRAIN/FILL FITTING.	HEIMEIER / STANDARD BODY C/W TYPE F REMOTE HEAD AND REGULUX LOCKSHIELD.
GD-1 GD-2	FLAMMABLE & TOXIC GAS DETECTORS	EXPLOSION PROOF BY DIV. 26.
GF-1	POLY PROPYLENE GLYCOL FEEDER SYSTEM. C/W 50 US GAL TANK IN STEEL FRAME, CONTROL SYSTEM, GEAR PUMP, INDICATOR LIGHTS & AUDIBLE LOW LEVEL ALARM AND SUCTION & DISCHARGE ASSEMBLIES. ELECTRICS: 120 V / 1 PH / 60 HZ; 1/3 HP	NEPTUNE / G-50-1A
EXP-1	BLADDER TYPE EXPANSION TANK. CARBON STEEL SHELL, HEAVY DUTY BUTYL/EPDM RUBBER DIAPHRAGM. RED OXIDE PRIMER FINISH. C/W AIR VENTS.	AMTROL / EXTROL AX80(V)

HEATING & VENTILATING EQUIPMENT LIST		
ITEM No.	DESCRIPTION	MF'R/MODEL
AFS-1, 2, 3 & 4	AIRFLOW SWITCHES, SAIL TYPE. DETECTION THRESHOLD: 100 SCFM "ON"; 50 SCFM "OFF" SWITCH RATING: 208V AC / 5 AMPS.	METEX / AT14161 SERIES
WFS-1, 2.	WATER FLOW SWITCHES, PADBLE TYPE. SENSITIVE TYPE SIZED TO SUIT PIPE SIZE. SWITCH RATING: 208 V AC / 1 HP (8.8 AMPS)	JOHNSON CONTROLS/ F61MD SERIES
SA GRILLES	ALUMINUM GRILLES. SIZED TO SUIT SERVICE DUCT DIMENSIONS. C/W 3/4" SPACING, W/OPOSED BLADE DAMPER.	MAILOR 510H-0
SB GRILLES	HIGH CAPACITY EXTRUDED ALUMINUM GRILLE. SIZED TO SUIT DUCT DIMENSIONS. C/W EXTRUDED ALUMINUM AIRFOIL BLADES ON 3" CENTERS, HORIZONTAL FRONT & VERTICAL REAR BLADES WITH OPPOSED BLADE DAMPER.	MAILOR 8130H-0
HC-1	ONE STAGE SETPOINT CONTROL. CONTROLLER TO ACCEPT TEMPERATURE INPUT FROM OUTDOOR SENSOR. CONTROLLER TO OUTPUT ON - OFF SIGNAL TO CONTROL WARM WEATHER SHUTDOWN ON EQUIPMENT INDICATED ON DRAWING.	TEKMAR / A 150
ODS-1	OUTDOOR SENSOR FOR USE WITH TEKMAR 274 AND 150 CONTROLS	TEKMAR / OUTDOOR SENSOR 070
BS-1	BOILER SUPPLY SENSOR FOR USE WITH TEKMAR 274 CONTROL	TEKMAR / OUTDOOR SENSOR 082
GS-1	GENERAL USE SENSOR FOR USE WITH TEKMAR 274 AND 361 CONTROLS	TEKMAR / SENSOR 071
Th-1	HYDRONIC SYSTEM THERMOMETER. RANGE: -1 TO 115 DEG. C (30 TO 240 DEG. F) SCALE SIZE: 14 CM (5-1/2" LONG). STRAIGHT OR RIGHT ANGLE TO SUIT APPLICATION. C/W 13MM (1/2") BRASS THERMOWELL	TRERICE / HT30 SERIES AND HT31 SERIES TO SUIT APPLICATION
PG-1	HYDRONIC SYSTEM PRESSURE GAUGE. INDUSTRIAL, LIQUID FILLED PRESSURE GAUGE WITH STAINLESS STEEL CASE, CRIMPED RING AND WETTED PARTS. DIAL SIZE: 100MM (4") RANGE: 0 TO 207 KPA (0 TO 30 PSI) STRAIGHT OR RIGHT ANGLE ARRANGMENT TO SUIT APPLICATION	TRERICE / 700 SERIES TO SUIT APPLICATION.
STR-1	WYE PATTERN BRONZE STRAINERS. SIZE TO SUIT PIPE SIZE. C/W STANDARD SCREEN AND SOLID RETAINER CAP WITH GASKET	WATTS / 777 SERIES
FD-1	FIRE DAMPER, DYNAMIC RATED, CURTAIN TYPE, STANDARD FRAME. C/W FUSIBLE LINK ACTUATOR. SIZED TO SUIT OPENING. FOR INSTALLATION WHERE INDICATED ON DRAWING AND ANYWHERE THAT DUCTWORK PENETRATES A FIRE SEPARATION.	MAILOR / SERIES D0110 TYPE A

#### HEATING & VENTILATION NOTES

- EQUIPMENT NOTED ON THIS DRAWING IS IDENTIFIED BY TRADE NAME TO INDICATE MINIMUM ACCEPTABLE QUALITY. REFER TO SPECIFICATIONS FOR INFORMATION REGARDING SUBSTITUTIONS.
- ALL EQUIPMENT NOTED ON THIS DRAWING TO BE NEW EQUIPMENT UNLESS OTHERWISE NOTED.
- INSULATE ALL DUCTWORK IN SUSPENDED CEILING SPACE WITH 25mm THICK FIBERGLASS DUCT WRAP, FINISHED WITH VAPOUR PROOF JACKET. SEAL ALL JACKET SEAMS.
- INSULATE ALL DUCTWORK IN ATTICS AND OTHER UNHEATED SPACES WITH 75mm THICK FIBREGLASS DUCT WRAP, FINISHED WITH VAPOUR PROOF JACKET. SEAL ALL JACKET SEAMS.
- ADJUST THE LOCATIONS OF EQUIPMENT, DUCTWORK, DIFFUSERS & GRILLES TO ACCOMMODATE OTHER TRADES.
- ALL DUCTWORK TO BE GALVANIZED STEEL UNLESS OTHERWISE NOTED, FABRICATED AND INSTALLED IN ACCORDANCE WITH ASHRAE SMACNA STANDARDS.
- SHORT (MAX. 750mm LONG) INSULATED FLEX DUCTS MAY BE USED TO CONNECT METAL DUCTS TO FLEXIBLE DUCT CONNECTORS (MIN. 150mm LONG) WHERE DUCTWORK CONNECTS TO DIFFUSERS & GRILLES.
- INSTALL FLEXIBLE DUCT CONNECTORS (MIN. 150mm LONG) WHERE DUCTWORK CONNECTS TO ANY MOTORIZED EQUIPMENT.
- MOUNT ALL FANS ON VIBRATION ISOLATORS.
- INSTALL ULC LISTED FIRE RATED FIRE DAMPERS WHERE SHOWN AND IN ALL DUCTS THAT PENETRATE FIRE SEPARATIONS (REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FIRE SEPARATIONS)
- INSULATE ALL EXHAUST AND INTAKE DUCTWORK AS WELL AS COMBUSTION AIR INTAKE DUCT TO EXTERIOR WALL WITH 25mm THICK FIBREGLASS DUCT WRAP COVERED WITH VAPOUR IMPERMEABLE JACKET.
- PROVIDE ALL INSULATION MATERIAL IN ACCORDANCE WITH CAN/ULC S102 WITH MAXIMUM FLAME SPREAD RATING OF 25 AND MAXIMUM SMOKE DEVELOPED RATING OF 50.
- CONTRACTOR TO ENSURE THAT EXISTING ELECTRICAL SERVICE IS SUITABLE FOR PROPOSED NEW MECHANICAL EQUIPMENT AS LISTED ABOVE.
- ALL STATIC PRESSURES, (ESP = EXTERNAL STATIC PRESSURE), NOTED ARE EXTERNAL TO ALL PACKAGED UNIT ACCESSORIES. ESP'S QUOTED DO NOT INCLUDE FILTER LOSSES.
- REFER TO SPECIFICATION FOR DETAILS ON ACOUSTIC AND THERMAL DUCT INSULATION REGARDING SUBSTITUTIONS.
- INSTALL BALANCING DAMPERS ON ALL SERVICE DUCTS TO EACH DIFFUSER.
- ALL EXPOSED DUCTWORK, DIFFUSERS, GRILLES AND REGISTERS SHALL BE FINISHED WITH WHITE POWDER COAT PAINT.

FUEL EQUIPMENT LIST		
ITEM No.	DESCRIPTION	MF'R/MODEL
FT-1	ABOVE GROUND DOUBLE WALL OUTDOOR FUEL STORAGE TANK FOR BOILERS. 15,000 L (3300 IMP. GAL.) CAPACITY C/W END SUPPORTS, VM-3 TANK MOUNTED VACUUM GAUGE WITH COVER, OVERFILL SPILL COLLECTOR, EMERGENCY VENT, NORMAL VENT, DIPSTICK AND GAUGE CHART, ACCESS STAIRS WITH HANDRAIL AND PLATFORM, BLAST FINISH WITH ONE COAT OF PRIMER AND ONE COAT OF WHITE ENAMEL COATINGS, REMOTE INTERSTITIAL VACUUM MONITORING AND HIGH / LOW LEVEL ALARM SWITCHES TO SUIT TANK.	CLEMMER / ITEM 1 PER QUOTE CCA-17563-12.DOC WITH ADDITIONAL LEVEL SWITCHES.
DT-1	ABOVEGROUND DOUBLE WALL INDOOR FUEL OIL DAY TANK FOR BOILERS. 1150 L CAPACITY (250 IMP. GAL.) BUILT AND LABELLED TO ULC S 602 BLAST FINISHED AND BLUE EPOXY COATED C/W SADDLES, INTERSTITIAL VENT CONNECTION, INTERSTITIAL VACUUM GAUGE WITH SWITCH, RPCA-2 REMOTE MONITOR AND 4 STATION LEVEL SWITCH TO SUIT TANK.	CLEMMER / ITEM 2 PER QUOTE CCA-17563-12.DOC WITH ADDITIONAL LEVEL SWITCHES.
FP-1	PACKAGED DUPLEX FUEL OIL PUMPING SYSTEM WITH CONTROLLER. C/W DUPLEX PUMPS, SUCTION STRAINER, RELIEF VALVES, ISOLATION VALVES, LIQUID FILLED PRESSURE GAUGES, ULC / CSA LISTED ALBANY DUCON SERIES DUPLEX FUEL MANAGEMENT CONTROL CENTER IN NEMA 12 ENCLOSURE AND ALL ASSOCIATED ACCESSORIES AND PIPING. SYSTEM CAPACITY: 7.6 L/M (2 USGPM) OF #2 HEATING OIL. ELECTRICAL: 208V / 3 PH / 60 HZ; 1/2 HP. SYSTEM IS TO PROVIDE DRY CONTACT ALARM OUTPUTS SUITABLE FOR INTEGRATION INTO SCADA CONTROLLER FOR MAIN TANK LOW FUEL, DAY TANK HIGH AND LOW LEVEL ALARM.	ALBANY PUMP / F00UP/03gc/BS

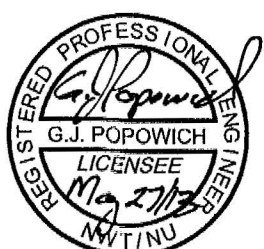
#### FUEL EQUIPMENT NOTES

- CONTRACTOR TO FIELD CONFIRM DIMENSIONS OF TANK PRIOR TO CONSTRUCTION.
- FUEL OIL STORAGE TANKS AND PIPING SYSTEM TO BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL FIRE CODE OF CANADA AND CCME ENVIRONMENTAL CODE OF PRACTICE FOR ABOVEGROUND AND UNDERGROUND STORAGE TANK SYSTEMS CONTAINING PETROLEUM AND ALLIED PETROLEUM PRODUCTS AND CSA B139-10.
- INSTALL EQUIPMENT TO APPLICABLE CODES, STANDARDS, DETAILS IN SPECIFICATIONS AND ON DRAWINGS, OR MANUFACTURERS RECOMMENDATIONS. IN THE EVENT OF A CONFLICT, CONSULT ENGINEER REGARDING DIRECTION.
- CONTRACTOR TO PROVIDE EQUIPMENT SHOP DRAWINGS OF ALL MECHANICAL & ELECTRICAL COMPONENTS FOR ENGINEER'S APPROVAL PRIOR TO SUPPLY & INSTALLATION.
- ABOVE GROUND PIPE TO BE WELDED.
- FUEL TRANSFER SUPPLY & RETURN PIPING TO BE AIR TESTED AT 1.5 TIMES MAXIMUM FUEL PUMP WORKING PRESSURE. CONTRACTOR TO PROVIDE PRESSURE TEST CERTIFICATE TO THE ENGINEER.
- MISCELLANEOUS STEEL TO BE PREPARED IN ACCORDANCE WITH STANDARD SSPC-SP2. CONTRACTOR TO INSTALL PIPE ANCHORS AND GUIDES AS REQUIRED TO SUPPORT ABOVE GROUND PIPING.  
MAX. PIPE SUPPORT/HANGER SPACING:  
50mm PIPE = 3 METERS  
75mm PIPE = 3.6 METERS
- CONTRACTOR TO RECORD AS-BUILT LOCATIONS OF ALL INSTALLED EQUIPMENT & PIPING.
- CONTRACTOR TO SUPPLY & INSTALL LINE IDENTIFICATION ON ALL EXPOSED PIPING C/W FLOW ARROWS.
- CONTRACTOR TO SUPPLY & INSTALL IDENTIFICATION LABELS TO ALL TANKS SO TANKS ARE EASILY IDENTIFIABLE IN RELATION TO CONTROL PANELS. LETTERS ARE TO BE BLACK IN COLOUR, 75mm HIGH.
- CONTRACTOR TO PROVIDE IDENTIFICATION TAGS FOR ALL EQUIPMENT & VALVES. CONTRACTOR TO PROVIDE VALVE SCHEDULE IN 0&M MANUAL ONCE PROJECT IS COMPLETE.
- TANK VENTS FOR MAIN TANKS TO BE 1.0m ABOVE TOP OF TANKS.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH HEATING AND HOARDING, IF REQUIRED. HEATING AND HOARDING MAYBE REQUIRED FOR CONCRETE CURING & BACKFILLING AT TANK SITE.
- CONTRACTOR TO POST FILL PROCEDURE AT MAIN TANK CONTROL PANEL LOCATION. FILL PROCEDURES TO BE INSCRIBED ON LAMACOID PLATES (WHITE LETTERING ON BLACK BACKGROUND) PERMANENTLY INSTALLED AT EACH LOCATION. PROVIDE SHOP DRAWINGS FOR ENGINEER'S APPROVAL.
- SEE TENDER DOCUMENTS FOR MATERIAL SPECIFICATIONS.

- This drawing is the exclusive property of Nuna Burnside and the reproduction of any part without prior written consent of this office is strictly prohibited.
- The contractor shall verify all dimensions, levels, and returns on site and report any discrepancies or omissions to this office prior to construction.
- This drawing is to be read and understood in conjunction with all other plans and documents applicable to this project.
- Do not scale the drawings.

Issue / Revision	Date
1. ISSUED FOR 66% SUBMISSION	NOVEMBER 2012
2. ISSUED FOR 99% SUBMISSION	JANUARY 2013
3. ISSUED FOR TENDER	FEBRUARY 2013
4. REVISED AS PER ADDENDUM 1 TO 4 AND ISSUED FOR CONSTRUCTION	APRIL 2013

**PERMIT TO PRACTICE**  
Nuna Burnside Engineering and Environmental Ltd.  
Signature: *[Signature]*  
Date: *May 27/13*  
**PERMIT NUMBER: P 535**  
The Association of Professional Engineers, Geologists and Geophysicists of NWTNU



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Client  
**GOVERNMENT OF NUNAVUT  
COMMUNITY & GOVERNMENT  
SERVICES**  
  
**RANKIN INLET  
SEWAGE TREATMENT PLANT**

Drawing Title  
**MECHANICAL EQUIPMENT  
SCHEDULE & NOTES**

Drawn By A.H.	Checked By D.Mack.	Drawing No.
Scale NTS	Project No. 300031281	<b>M-4</b>