

PROFESSIONAL ENGINEER  
T.L. GAUDET  
MEMBER 4772  
17 07 04  
TR. MN. DAY  
KARAT CHAWAN

ASSOCIATION OF PROFESSIONAL ENGINEERS OF SASKATCHEWAN  
CERTIFICATE OF AUTHORIZATION  
Stantec Consulting Ltd.  
NUMBER - CS69  
PERMISSION TO CONSULT HELD BY  
DESCRIPTION: MECH. 4772  
SIGNATURE: T.L. GAUDET

KEY PLAN - N.T.S.

**UNIT PERFORMANCE**

INDIRECT GAS FIRED MAKEUP AIR UNIT TO DELIVER 8307 L/S (17,600 CFM) AT 125 PA (1.0 INWG) AND EXTERNAL PRESSURE DROP, 500 PA (2.5 INWG) TOTAL APD; GAS INPUT 59.21 m<sup>3</sup>/hr (2091 CFH) WITH 61.00 DEG C (110 DEG F.) AIR TEMP RISE, TRIPLE BLOWER 3 x 18/18 FC DWDI SUPPLY AIR FAN, 840 RPM (ADJUSTABLE), 11.19 KW (15 BHP) 3 PHASE 575V MOTOR (1750 RPM).

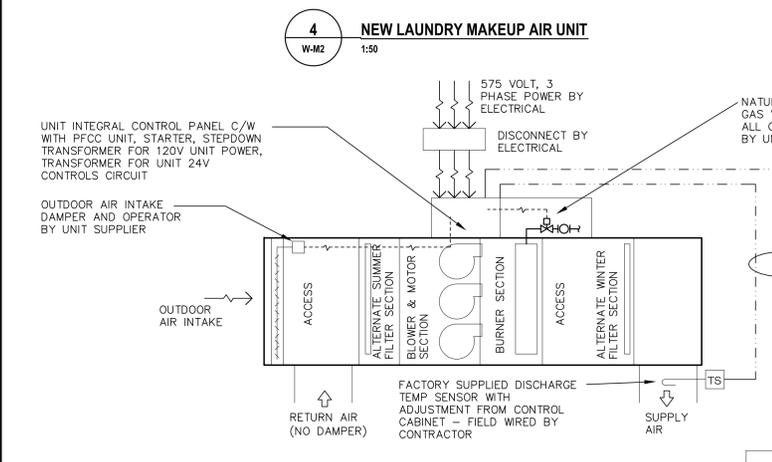
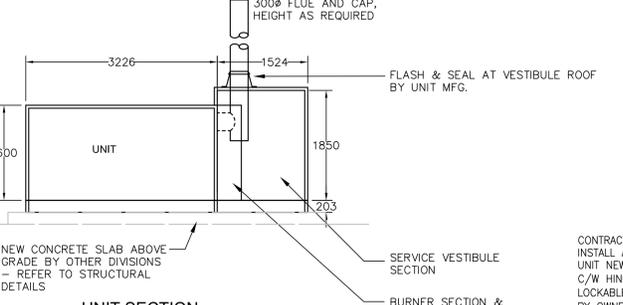
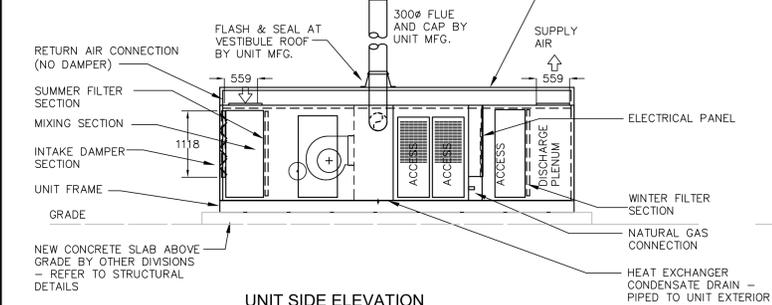
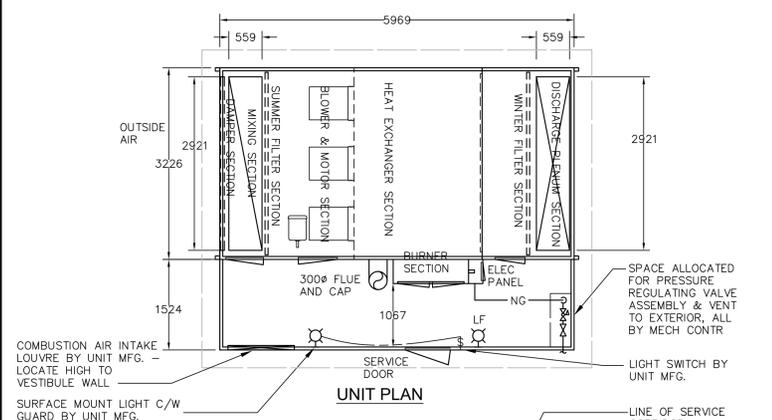
UNIT GAS HEAT EXCHANGER TO OPERATE ON 14 INWC NG

UNIT SUPPLY FAN MOTOR IS 14.1 FLA AMP AT 3 PH 575V, CONTROL CIRCUIT 0.87 AMP, UNIT COMPLETE WITH 120 VOLT TRANSFORMER FOR UNIT POWER, 24 VOLT CONTROL TRANSFORMER, BURNER MOTOR 1/2 HP, 1.74 AMP FLA, TOTAL UNIT AMP 24.6, MANUFACTURER RECOMMENDED FUSE AND BREAKER 35 AMP, PROVIDE FACTORY INSTALLED NON-FUSED DISCONNECT, PROVIDE FACTORY PFCC (POWER FACTOR CORRECTION CAPACITOR), PROVIDE FACTORY INSTALLED GFI CONVENIENCE OUTLET, PROVIDE FACTORY INSTALLED AND WIRED VESTIBULE CONVENIENCE LIGHTING AND SWITCH.

UNIT DIMENSION OVERALL INCLUDING SERVICE VESTIBULE: 5969mm (235") LONG x 4750mm (187") WIDE x 2053mm (80.8") HIGH, TOTAL WEIGHT INCLUDING VESTIBULE 5670 KG (12,500 LBS) - UNIT CONSISTS OF 2 POSITION OUTDOOR AIR INTAKE DAMPERS, MIX AIR SECTION WITH TOP RETURN AIR OPENING, ALTERNATE SUMMER FILTER SECTION, BLOWER SECTION, HEAT EXCHANGER & BURNER SECTION, ACCESS SECTION WITH ALTERNATE WINTER FILTER LOCATION, DISCHARGE AIR SECTION WITH TOP DISCHARGE, SERVICE VESTIBULE WITH HINGED DOOR WITH SINGLE HANDLE LOCKSET

EACH FILTER BANK SECTION TO BE ABLE TO CONTAIN 15 TOTAL UNITS, 5 UNITS @ NOM 600x300H; 10 UNITS AT NOM 600x600H, ALL 50mm THK, 30 % EFF; NOMINAL 4.55 m<sup>2</sup> (49 ft<sup>2</sup>) FACE AREA; 1.79 m/s (359 FPM) FACE VELOCITY, SLIDE OUT FILTER FRAMES.

ACCEPTABLE MANUFACTURER: ENGINEERED AIR OUTDOOR UNIT MODEL DG270/0, BOUSQUET, ICE



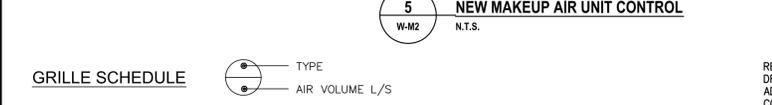
**UNIT OPERATION**

MAKEUP AIR UNIT TO START-STOP FROM TIME SCHEDULE (ADJUSTABLE). DURING MORNING START-UP, OUTDOOR AIR DAMPER TO OPEN, UNIT FAN TO START AFTER A TIME DELAY. IF DISCHARGE AIR TEMPERATURE SENSOR CALLS FOR HEAT, THEN HEATING SECTION IS ENERGIZED TO OPERATE, IF DISCHARGE AIR TEMPERATURE DROPS BELOW SET LIMIT, THEN SUPPLY AIR FAN TEMPORARILY SHUTS OFF, SUPPLY AIR FAN WILL THEN BE COMMANDED ON AFTER SET TIME PERIOD OR HEATING SECTION TO COMMAND FAN ON WITH WARMED HEAT EXCHANGER.

AMBIENT LOCKOUT THERMOSTAT TO LOCKOUT HEAT AT 18C (+65F)

NATURAL GAS MODULATING GAS VALVE AND ALL ASSOCIATED CONTROLS TO BE BY AIR HANDLING UNIT MANUFACTURER C/W HIGH LIMIT SENSOR AND LOW LIMIT SENSORS

MAKE-UP AIR UNIT VENTILATION TO OPERATE TO MAINTAIN DISCHARGE AIR TEMPERATURE OF 21.1 DEG C (70 DEG F) TO BE ADJUSTABLE.



**GRILLE SCHEDULE**

TYPE A - DOUBLE DEFLECTION LOUVRE FACE SUPPLY AIR GRILLE, 40mm (1 1/2") BLADE SPACING, ALL ALUMINUM CONSTRUCTION, 32mm (1 1/4") FLAT BORDER AND FRAME, WHITE POWDER COAT FINISH, OPPOSED BLADE STEEL DAMPER, A1 - 750x750

TYPE B - EGGRATE FACE RETURN AIR GRILLE, 15x15x15mm DEEP X (1/2x1/2x1/2"), ALL ALUMINUM CONSTRUCTION, 32mm (1 1/4") FLAT BORDER AND FRAME, WHITE POWDER COAT FINISH, B1 - 900x750H

ACCEPTABLE MANUFACTURER: PRICE AIR DISTRIBUTION

**LOUVRE SCHEDULE**

EXTRUDED ALUMINUM CONSTRUCTION STATIONARY DRAINABLE BLADES 100mm DEEP, 39 DEGREES ANGLE, NOMINAL 53.6% FREE AREA BASED ON 1220x1220 SIZE, WELDED CONSTRUCTION, MILL FINISH, ALUMINUM BIRDSCREEN 16 GAUGE 12.5 x212.5mm SPACING

ACCEPTABLE MANUFACTURER: PRICE AIR DISTRIBUTION DE439

**FILTER BANK FIL-1**

FILTER BANK SECTION TO CONTAIN 8 TOTAL UNITS, 4 UNITS WIDE x 2 UNITS HIGH @ NOM 600x600H, ALL 50mm THICK, 30 % EFF; NOMINAL 2.98 m<sup>2</sup> (32 ft<sup>2</sup>) FACE AREA; 2.75 m/s (550 FPM) FACE VELOCITY, PROVIDE CUSTOM BUILT FILTER FRAME SUCH THAT 2 VERTICAL FILTERS WILL BE FRONT LOAD WITH HOLDING CLIPS AND THE REMAINING FILTERS SHALL BE SLIDE OUT THRU THE FRONT LOAD ACCESS LOCATION, PROVIDE MAGNEHELIC GAUGE

