



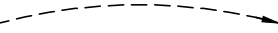






HVAC LEGEND	
SYMBOL	DESCRIPTION
	EX. DUCTWORK
	NEW DUCTWORK
	INLINE EXHAUST FAN
	MOTORIZED AIR DAMPER
	CONTROL WIRING
	CONTROL THERMOSTAT
	CEILING FAN SPEED CONTROL
	CARBON MONOXIDE MONITOR
	NITROGEN DIOXIDE MONITOR

GAS DETECTOR ALARM LEVELS				
GASES	1st ALARM SET POINT (TLV-TWA)	2nd ALARM SET POINT (TLV-STEL)	MOUNTING HEIGHT	COVERAGE RADIUS
CARBON MONOXIDE (CO)		100PPM	60" A.S.F.F.	50ft
NITROGEN DIOXIDE (NO2)	0.72PPM	2.0PPM	60" A.F.F.	50ft

GAS DETECTION EQUIPMENT SCHEDULE				
TAG ID	DESCRIPTION	MFR/MODEL	QTY.	REMARKS
CO	CARBON MONOXIDE SENSOR	QEL Q5-CO	2	INSTALL AS PER MANUFACTURERS INSTRUCTIONS.
NO2	NITROGEN DIOXIDE SENSOR	QEL Q5-NO2	2	INSTALL AS PER MANUFACTURERS INSTRUCTIONS.

RADIANT TUBE HEATER SCHEDULE								
UNIT #	DESCRIPTION	MAKE	MODEL #	HEATING INPUT KW (MBH)	VOLTAGE	FLA	MOCp	REMARKS
RTH-1/2	NEW 50' LONG RADIANT TUBE HEATER	SCHWANK	STS-JZ 200	32 (110)	120/60/1	1	15	C/W 2-STAGE T-STAT "MODEL: JS-0569-DT". T-STAT, VENT TERMINATION KIT. INSTALL PER MANUFACTURERS INSTALLATION INSTRUCTIONS, MOUNT AT 19'-0" A.F.F.
NOTE: ALTERNATE EQUIPMENT OF EQUAL PERFORMANCE IS ACCEPTABLE.								

LOUVERS & DAMPERS SCHEDULE					
TAG ID	DESCRIPTION	SIZE	MAKE	MODEL	REMARKS
MD-1, 2, 3, 4	MOTORIZED DAMPER	TO SUIT LOUVER & EXHAUST FAN	TAMCO	SERIES 9000 BF	THERMALLY BROKEN BLADES, BELIMO DAMPER MOTOR & ALL CONTROLS, END POSITION SWITCHES MOTOR ELECTRICAL: 120/1/60
LV-1	STATIONARY DRAINABLE INTAKE LOUVER	18x16	E.H. PRICE	DE439	W/ FORMED METAL SILL & BIRD SCREEN
LV-2, 3	STATIONARY DRAINABLE INTAKE LOUVER	36x34	E.H. PRICE	DE439	W/ FORMED METAL SILL & BIRD SCREEN

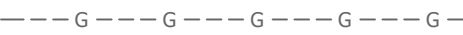
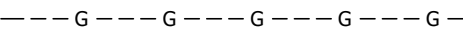




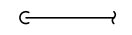
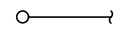

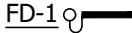
EXHAUST FAN SCHEDULE									
FAN #	DESCRIPTION	MAKE	MODEL	AIR FLOW (CFM)	FAN MOTOR HP	STATIC PRESSURE	VOLTAGE	UNIT WEIGHT kg (lbs)	REMARKS
EF-1	SIDEWALL EXHAUST FAN	GREENHECK	SBE-1H20-4	500	0.13	0.25 IN WG	115/60/1	75 (166)	C/W MOTOR GUARD. PROVIDE MS-1P MOTOR STARTER FOR FAN CONTROL.
EF-2	SIDEWALL EXHAUST FAN	GREENHECK	SBE-1H24-4	3200	0.31	0.25 IN WG	115/60/1	101 (223)	C/W MOTOR GUARD. PROVIDE MS-1P MOTOR STARTER FOR FAN CONTROL. INTERLOCK EXHAUST FAN WITH GAS DETECTION SYSTEM.

SEQUENCE OF OPERATIONS - GAS DETECTIONS SYSTEM - SERVICE BAY

- LOW LEVEL ALARM NITROGEN DIOXIDE (NO2)
IF ANY NITROGEN DIOXIDE (NO2) SENSOR POINT DETECTS 0.72PPM GAS OR MORE, DAMPERS MD-2 & MD-4 SHALL OPEN & WHEN FULLY OPENED AS SENSED BY THEIR END SWITCHES EF-2 SHALL BE ENERGIZED. LOW ALARM LED LIGHTS FOR POINT IN ALARM.
- HIGH LEVEL ALARM NITROGEN DIOXIDE (NO2)
IF NITROGEN DIOXIDE (NO2) GAS CONCENTRATION LEVELS CONTINUE TO RISE & ANY SENSOR DETECTS 2.0PPM GAS, W/ VENTILATION CONTACTS CONTINUING TO OPERATE, THE UNIT AUDIBLE ALARM SOUNDS & HIGH ALARM INDICATOR LIGHTS ON THE CENTRAL CONTROLLER DISPLAY.
- LOW LEVEL ALARM CARBON MONOXIDE (CO)
IF ANY CARBON MONOXIDE (CO) SENSOR POINT DETECTS 25PPM GAS OR MORE, DAMPERS MD-2 & MD-4 SHALL OPEN & WHEN FULLY OPENED AS SENSED BY THEIR END SWITCHES EF-2 SHALL BE ENERGIZED. LOW ALARM LED LIGHTS FOR POINT IN ALARM.
- HIGH LEVEL ALARM CARBON MONOXIDE (CO)
IF CARBON MONOXIDE (CO) GAS CONCENTRATION LEVELS CONTINUE TO RISE & ANY SENSOR DETECTS 100PPM GAS, W/ VENTILATION CONTACTS CONTINUING TO OPERATE, THE UNIT AUDIBLE ALARM SOUNDS & HIGH ALARM INDICATOR LIGHTS ON THE CENTRAL CONTROLLER DISPLAY.

SEQUENCE OF OPERATIONS - HVAC

- EXISTING GAS CONTROLLER TO BE INTERLOCKED SUCH THAT ALL EXISTING & NEW EFs & DAMPERS ARE ACTIVATED AT THE SAME TIME.
- EF-1 SHALL BE CONTROLLED BY AN "HOA" SWITCH. EF-1 SHALL BE INTERLOCKED W/ FRESH AIR & EXHAUST AIR DAMPERS MD-1 & MD-3.
- EF-1 SHALL BE ENERGIZED WHEN MD-1 & MD-3 ARE COMPLETELY OPENED AS SENSED BY THEIR END SWITCHES.
- EXHAUST FAN EF-2 SHALL BE INTERLOCKED W/ FRESH AIR & EXHAUST AIR DAMPERS MD-2 & MD-4 AS WELL AS THE GAS DETECTION SYSTEM (SEE "SEQUENCE OF OPERATIONS - GAS DETECTION SYSTEMS")
- EF-2 SHALL BE CONTROLLED BY AN "HOA" SWITCH. EF-2 SHALL BE ENERGIZED WHEN MD-2 & MD-4 ARE COMPLETELY OPENED AS SENSED BY THEIR END SWITCHES.
- LOCAL THERMOSTATS WILL MODULATE UNIT HEATERS ON AND OFF TO MAINTAIN ROOM TEMPERATURES.

PLUMBING LEGEND	
SYMBOL	DESCRIPTION
	EXISTING GAS LINE
	NEW GAS LINE
	EXISTING BURIED SANITARY
	NEW BURIED SANITARY
	4" SANITARY RUNNING TRAP
	CONNECT NEW SANITARY TO EXISTING
	PIPE TURN DOWN
	PIPE TURN UP
	FLOOR CLEANOUT
	3" FLOOR DRAIN

GAS DEMAND SCHEDULE - OFFICE		
UNIT #	DESCRIPTION	INPUT CAPACITY (MBH)
RTH-1	RADIANT TUBE HEATER	110x2
TOTAL GAS DEMAND		220 MBH

TRENCH DRAIN SCHEDULE		
DESCRIPTION	TAG ID	MODEL NO.
ZURN Z886-HDGFEC PRE-SLOPED HIGH DENSITY POLYETHYLENE TRENCH DRAIN SYSTEM W/ EXTRA-HEAVY DUTY GALVANIZED FRAME. 80" LONG CHANNEL SECTIONS, 6-1/4" WIDE REVEAL, 4" THROAT. SUPPLY MODEL NO. GDE GRATES, HEAVY DUTY GALVANIZED DUCTILE IRON, 20" LENGTHS.	TD-1	8601-E1
	TD-2	8602-E2
ZURN Z887 HIGH DENSITY POLYETHYLENE CATCH BASIN, 12"x24" w/ 2 TRANSITION FLANGES AND 'E3' 3" OUTLET CONNECTION. SUPPLY MODEL NO. GDE GRATE TO MATCH TRENCH DRAIN.	CB-1	Z887, 12"x24"

THIS DRAWING IS THE PROPERTY OF SPH ENGINEERING INC. AND IS NOT TO BE COPIED OR DISTRIBUTED FOR ANY REASON OR BY ANY MEANS WITHOUT THE PERMISSION OF THE OWNER.

STAMP	NORTH ARROW
-------	-------------

1	REMOVED RTH SIDE REFLECTOR	2021-10-06
No.	DESCRIPTION	DATE

REVISIONS		
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
2	ISSUED FOR PERMIT/TENDER	2021-09-10
1	ISSUED FOR CLIENT REVIEW	2020-11-27
No.	DESCRIPTION	DATE
ISSUED		



SPH ENGINEERING INC.
REAL WORLD ENGINEERING SOLUTIONS
65 SPRINGBANK AVE. N - UNIT #1
WOODSTOCK, ONTARIO
N4S 8V8
TEL: 519-539-5700
www.spheng.com

CLIENT

CITY OF WOODSTOCK

PROJECT

BUS SHELTER
EXPANSION

TITLE

MECHANICAL
LEGENDS, NOTES,
AND SCHEDULES

SCALE	DRAWN	CHECKED
AS NOTED	HS	RS
PLOT DATE	PROJECT No	DRAWING No
2020-12-04	20162	M0.2

Z:\2020\20162 BUS SHELTER\20162MAIN.M4.DWG