

SITE NAME: RUSSELL GARDENS PH 4
BUILDER: GREENPARK HOMES

WOB
TYPE: VALLEYCREEK 3

GFA: 2668

DATE: Jun-21
LO# 91343

WINTER NATURAL AIR CHANGE RATE 0.365
SUMMER NATURAL AIR CHANGE RATE 0.130

HEAT LOSS AT °F. 71
HEAT GAIN AT °F. 13

CSA-F280-12
SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	BED-2	BED-3	BED-4	S-ENS	ENS-2
			37	22	10	32	16	6	10
			9	9	9	9	9	9	9
GRS.WALL AREA	LOSS	GAIN	333	198	90	288	135	64	90
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS
NORTH	19.8	15.4	0	0	15	297	232	0	0
EAST	19.8	39.9	0	0	0	0	0	7	138
SOUTH	19.8	24.0	0	0	0	0	0	0	0
WEST	19.8	39.9	34	672	0	0	0	0	0
SKYLT.	34.6	101.5	0	0	0	0	0	0	0
DOORS	23.5	4.3	0	0	0	0	0	0	0
NET EXPOSED WALL	4.1	0.8	299	1240	75	311	56	234	970
NET EXPOSED BSMT WALL ABOVE GR	3.3	0.6	0	0	0	0	0	0	0
EXPOSED CLG	1.2	0.6	346	412	204	243	120	228	272
NO ATTIC EXPOSED CLG	2.6	1.3	0	0	0	0	0	0	0
EXPOSED FLOOR	2.4	0.4	0	0	27	64	12	228	540
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0
SUBTOTAL HT LOSS			2324	1340	915	2850	1024	753	659
SUB TOTAL HT GAIN			1785	1017	419	2564	563	263	348
LEVEL FACTOR / MULTIPLIER	0.20	0.34	0.20	0.34	0.20	0.34	0.20	0.34	0.20
AIR CHANGE HEAT LOSS			786	453	309	962	346	254	223
AIR CHANGE HEAT GAIN			131	74	31	188	41	19	25
DUCT LOSS			0	0	122	381	0	101	0
DUCT GAIN			0	0	134	394	0	28	0
HEAT GAIN PEOPLE	240	2	480	0	1	240	1	240	0
HEAT GAIN APPLIANCES/LIGHTS			647	0	647	647	647	0	0
TOTAL HT LOSS BTU/H			3109	1793	1346	4193	1370	1109	882
TOTAL HT GAIN x 1.3 BTU/H			3956	1418	1912	5203	1939	404	485

ROOM USE	EXP. WALL	CLG. HT.	DIN	FAM	BF/KT	LAUN	FOY	WOB	BAS
			29	34	36	26	49	44	129
			10	10	10	10	19	9	9
GRS.WALL AREA	LOSS	GAIN	290	340	360	250	931	396	774
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS
NORTH	19.8	15.4	0	0	0	0	0	0	0
EAST	19.8	39.9	0	0	0	0	0	0	0
SOUTH	19.8	24.0	26	514	624	0	0	0	0
WEST	19.8	39.9	0	0	44	870	1757	45	890
SKYLT.	34.6	101.5	0	0	0	0	0	0	0
DOORS	23.5	4.3	0	0	0	16	362	64	0
NET EXPOSED WALL	4.1	0.8	264	1094	198	296	1227	222	300
NET EXPOSED BSMT WALL ABOVE GR	3.3	0.6	0	0	0	0	0	0	0
EXPOSED CLG	1.2	0.6	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.6	1.3	0	0	0	0	0	0	0
EXPOSED FLOOR	2.4	0.4	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0
SUBTOTAL HT LOSS			1608	2097	2485	1632	5591	3414	4304
SUB TOTAL HT GAIN			822	1979	2086	361	2491	3353	477
LEVEL FACTOR / MULTIPLIER	0.30	0.38	0.30	0.38	0.30	0.38	0.30	0.38	0.50
AIR CHANGE HEAT LOSS			604	787	933	575	2099	182	8330
AIR CHANGE HEAT GAIN			60	145	153	26	0	0	280
DUCT LOSS			0	0	0	0	0	0	0
DUCT GAIN			0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS			647	647	647	647	647	0	647
TOTAL HT LOSS BTU/H			2212	2884	3418	2107	7689	3414	12634
TOTAL HT GAIN x 1.3 BTU/H			1988	3602	3751	1345	3476	4359	1826

REC BY: _____ DATE: _____
REFD TO: _____
CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department
AUG 25 2021

TOTAL HEAT GAIN BTU/H: 35942

TONS: 3.00

LOSS DUE TO VENTILATION LOAD BTU/H: 1616

STRUCTURAL HEAT LOSS: 48159

TOTAL COMBINED HEAT LOSS BTU/H: 49675

Michael O'Rourke

SITE NAME: RUSSELL GARDENS PH 4
BUILDER: GREENPARK HOMES

WOB
TYPE: VALLEYCREEK 3

DATE: Jun-21

GFA: 2868 LO# 91343

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 48,159 TOTAL HEAT GAIN 35,667
AIR FLOW RATE CFM 23.48 AIR FLOW RATE CFM 31.71

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35

#GOODMAN
GMEC960603BNA
FAN SPEED LOW

AFUE = 96 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 57,600

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	10	8	4
R/A	0	0	3	2	1

All S/A diffusers 4"x10" unless noted otherwise on layout.

All S/A runs 5"Ø unless noted otherwise on layout.

plenium pressure s/a 0.18
max s/a dif press. loss 0.02
min adjusted pressure s/a 0.16
r/a pressure 0.17
r/a grille press. Loss 0.02
adjusted pressure r/a 0.15

MEDLOW 928
MEDIUM 1017
HIGH 1131

DESIGN CFM = 1131
CFM @ 6" E.S.P.

TEMPERATURE RISE 47 °F

RUN #	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	19	20	21	22	23	24
ROOM NAME	MBR	ENS	BED-2	BED-3	BED-4	S-ENS	S-ENS	BED-3	MBR	ENS-2	DIN	FAM	BF/KT	BF/KT	FAM	LAUN	FOY	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH	1.55	1.79	1.35	2.10	1.37	0.65	0.55	2.10	1.55	0.88	2.21	1.44	1.71	1.71	1.44	2.11	3.84	3.84	4.01	4.01	4.01	4.01
CFM PER RUN HEAT	37	42	32	49	32	13	13	49	37	21	52	34	40	40	34	49	90	90	94	94	94	94
RM GAIN MBH	1.98	1.42	1.91	2.60	1.94	0.20	0.20	2.60	1.98	0.49	1.99	1.80	1.88	1.88	1.80	1.34	1.74	1.74	1.55	1.55	1.55	1.55
CFM PER RUN COOLING	63	45	61	82	61	6	6	82	63	15	63	57	59	59	57	43	55	55	49	49	49	49
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	32	42	42	40	44	37	31	45	38	32	19	30	21	24	26	10	43	36	43	44	22	37
EQUIVALENT LENGTH	120	190	170	170	160	140	140	120	140	170	160	140	150	130	120	150	180	100	120	130	140	120
TOTAL EFFECTIVE LENGTH	152	232	212	210	204	177	171	165	178	202	179	170	171	154	146	160	223	136	163	174	162	157
ADJUSTED PRESSURE	0.11	0.07	0.08	0.08	0.08	0.1	0.1	0.1	0.1	0.09	0.1	0.1	0.1	0.11	0.12	0.11	0.07	0.12	0.1	0.09	0.1	0.1
ROUND DUCT SIZE	5	5	6	6	6	4	4	6	5	4	5	5	5	5	5	4	6	6	6	6	6	6
HEATING VELOCITY (ft/min)	272	308	163	250	163	149	149	250	272	241	382	250	294	294	250	562	459	459	479	479	479	479
COOLING VELOCITY (ft/min)	463	330	311	418	311	69	69	418	463	172	463	419	433	433	419	493	280	280	250	250	250	250
OUTLET GRILL SIZE	3X10	3X10	4X10	4X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	4X10
TRUNK	A	B	D	C	C	D	D	D	A	B	D	A	B	A	A	D	C	C	B	B	C	C

RUN #
ROOM NAME
RM LOSS MBH
CFM PER RUN HEAT
RM GAIN MBH
CFM PER RUN COOLING
ADJUSTED PRESSURE
ACTUAL DUCT LGH.
EQUIVALENT LENGTH
TOTAL EFFECTIVE LENGTH
ADJUSTED PRESSURE
ROUND DUCT SIZE
HEATING VELOCITY (ft/min)
COOLING VELOCITY (ft/min)
OUTLET GRILL SIZE
TRUNK

CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department

AUG 25 2021

REC BY _____ DATE _____
REF'D TO _____ DATE _____

CITY OF HAMILTON
Building Division

Permit No. 20-187710-01

THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE

THE OWNER AND/OR CONTRACTOR SHALL COMPLY WITH
THE ONTARIO BUILDING CODE AND ALL OTHER APPLICABLE LAW

These drawings and/or specifications have been reviewed by

DDL Sept 28/21

SUPPLY AIR TRUNK SIZE

TRUNK	STATIC	ROUND	RECT	VELOCITY	TRUNK	STATIC	ROUND	RECT	VELOCITY
CFM	PRESS.	DUCT	DUCT	(ft/min)	CFM	PRESS.	DUCT	DUCT	(ft/min)
TRUNK A 182	0.10	7	8	x 8 410	TRUNK G 0	0.00	0	0	x 8 0
TRUNK B 473	0.07	11	14	x 8 608	TRUNK H 0	0.00	0	0	x 8 0
TRUNK C 449	0.07	10.7	14	x 8 577	TRUNK I 0	0.00	0	0	x 8 0
TRUNK D 657	0.07	12.4	20	x 8 591	TRUNK J 0	0.00	0	0	x 8 0
TRUNK E 0	0.00	0	0	x 8 0	TRUNK K 0	0.00	0	0	x 8 0
TRUNK F 0	0.00	0	0	x 8 0	TRUNK L 0	0.00	0	0	x 8 0

RETURN AIR TRUNK SIZE

TRUNK	STATIC	ROUND	RECT	VELOCITY	TRUNK	STATIC	ROUND	RECT	VELOCITY
CFM	PRESS.	DUCT	DUCT	(ft/min)	CFM	PRESS.	DUCT	DUCT	(ft/min)
TRUNK O 0	0.06	0	0	x 8 0	TRUNK X 1131	0.06	15.8	28	x 8 727
TRUNK P 0	0.06	0	0	x 8 0	TRUNK Y 310	0.06	9.7	12	x 8 465
TRUNK Q 0	0.06	0	0	x 8 0	TRUNK Z 0	0.06	0	0	x 8 0
TRUNK R 0	0.06	0	0	x 8 0	DROP 1131	0.06	15.8	24	x 10 679
TRUNK S 0	0.06	0	0	x 8 0					
TRUNK T 0	0.06	0	0	x 8 0					
TRUNK U 0	0.06	0	0	x 8 0					
TRUNK V 0	0.06	0	0	x 8 0					
TRUNK W 0	0.06	0	0	x 8 0					

RETURN AIR

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	19	20	21	22	23	24
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR VOLUME 130	195	115	360	180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLENUM PRESSURE 0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH. 41	31	56	25	18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH 215	135	135	175	160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH 256	186	191	200	176	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE 0.06	0.09	0.08	0.07	0.08	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE 7	7.4	6.2	9.9	7.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE 8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE 14	14	14	30	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: VALLEYCREEK 3
 SITE NAME: RUSSELL GARDENS PH 4

 LO # 91343
 WOB

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES		9.32.3.1(1)
a)	☒ Direct vent (sealed combustion) only	
b)	☐ Positive venting induced draft (except fireplaces)	
c)	☐ Natural draft, B-vent or induced draft gas fireplace	
d)	☐ Solid Fuel (including fireplaces)	
e)	☐ No Combustion Appliances	

HEATING SYSTEM		
☒	Forced Air	
☐	Electric Space Heat	

HOUSE TYPE		9.32.1(2)
☒	I Type a) or b) appliance only, no solid fuel	
☐	II Type I except with solid fuel (including fireplaces)	
☐	III Any Type c) appliance	
☐	IV Type I, or II with electric space heat	
☐	Other: Type I, II or IV no forced air	

SYSTEM DESIGN OPTIONS		O.N.H.W.P.
☐	1 Exhaust only/Forced Air System	
☐	2 HRV with Ducting/Forced Air System	
☒	3 HRV Simplified/connected to forced air system	
☐	4 HRV with Ducting/non forced air system	
☐	Part 6 Design	

TOTAL VENTILATION CAPACITY		9.32.3.3(1)
Basement + Master Bedroom	2 @ 21.2 cfm	42.4 cfm
Other Bedrooms	3 @ 10.6 cfm	31.8 cfm
Kitchen & Bathrooms	5 @ 10.6 cfm	53 cfm
Other Rooms	4 @ 10.6 cfm	42.4 cfm
Table 9.32.3.A.	TOTAL	169.6 cfm

PRINCIPAL VENTILATION CAPACITY REQUIRED		9.32.3.4(1)
1 Bedroom	31.8	cfm
2 Bedroom	47.7	cfm
3 Bedroom	63.6	cfm
4 Bedroom	79.5	cfm
5 Bedroom	95.4	cfm
TOTAL	79.5	cfm

SUPPLEMENTAL VENTILATION CAPACITY		8.32.3.6.
Total Ventilation Capacity	169.6	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	90.1	cfm

PRINCIPAL EXHAUST FAN CAPACITY		
Model:	VANEE V150H	Location: BSMT
79.5 cfm	3.0 sones	☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION		
CFM	ΔT °F	FACTOR % LOSS
79.5 CFM	71 F	1.08 X 0.25

SUPPLEMENTAL FANS		PANASONIC		
Location	Model	cfm	HVI	Sones
ENS	FV-05-11VK1	50	☒	0.3
S-ENS	FV-05-11VK1	50	☒	0.3
ENS-2	FV-05-11VK1	50	☒	0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE V150H	
150 cfm high	35 cfm low	
75 % Sensible Efficiency @ 32 deg F (0 deg C)	☒ HVI Approved	

LOCATION OF INSTALLATION	
Lot:	Concession
Township:	Plan:
Address:	
Roll #	CITY OF HAMILTON Building Division

BUILDER:	
Name:	GREENPARK HOMES
Address:	THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE
City:	THE OWNER AND/OR CONTRACTOR SHALL COMPLY WITH THE ONTARIO BUILDING CODE AND ALL OTHER APPLICABLE LAW
Telephone #:	Fax #:

INSTALLING CONTRACTOR	
Name:	FOR CHIEF BUILDING OFFICIAL
Address:	DATE
City:	
Telephone #:	Fax #:

DESIGNER CERTIFICATION	
I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.	
Name:	HVAC Designs Ltd.
Signature:	<i>Michael O'Rourke</i>
HRAI #	001620
Date:	June-21

CSA F280-12 Residential Heat Loss and Heat Gain Calculations
Formula Sheet (For Air Leakage / Ventilation Calculation)

LO#: 91343

Model: VALLEYCREEK 3

Builder: GREENPARK HOMES

Date: 2021-06-21

Volume Calculation
Air Change & Delta T Data
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1215	9	10935
First	1215	10	12150
Second	1453	9	13077
Third	0	9	0
Fourth	0	9	0
Total:			36,162.0 ft³
Total:			1024.0 m³

WINTER NATURAL AIR CHANGE RATE	0.365
SUMMER NATURAL AIR CHANGE RATE	0.130

Design Temperature Difference				
	Tin °C	Tout °C	ΔT °C	ΔT °F
Winter DTDh	22	-17	39	71
Summer DTDc	24	31	7	13

5.2.3.1 Heat Loss due to Air Leakage
6.2.6 Sensible Gain due to Air Leakage

$$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$$

$$0.365 \times 284.44 \times 39^\circ\text{C} \times 1.2 = 4882 \text{ W}$$

$$= 16659 \text{ Btu/h}$$

$$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$$

$$0.130 \times 284.44 \times 7^\circ\text{C} \times 1.2 = 317 \text{ W}$$

$$= 1081 \text{ Btu/h}$$

5.2.3.2 Heat Loss due to Mechanical Ventilation
6.2.7 Sensible heat Gain due to Ventilation

$$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$$

$$80 \text{ CFM} \times 71^\circ\text{F} \times 1.08 \times 0.25 = 1515 \text{ Btu/h}$$

$$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$$

$$80 \text{ CFM} \times 13^\circ\text{F} \times 1.08 \times 0.25 = 275 \text{ Btu/h}$$

5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)

$$HL_{airr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$$

Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{level})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HL _{level})
1	0.5	16,659	7,718	1.079
2	0.3		13,313	0.375
3	0.2		9,865	0.338
4	0		0	0.000
5	0		0	0.000

*HLairbv = Air leakage heat loss + ventilation heat loss

*For a balanced or supply only ventilation system HLairv = 0

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: VALLEYCREEK 3	WOB	BUILDER: GREENPARK HOMES
SFQT: 2668	LO# 91343	SITE: RUSSELL GARDENS PH 4

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	1	OUTDOOR DESIGN TEMP.	88
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75

BUILDING DATA

ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.57	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	36162.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.50	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 52.0 ft WIDTH: 34.0 ft		EXPOSED PERIMETER:	129.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	43.0 ft

2012 OBC - COMPLIANCE PACKAGE**Component****Compliance Package
A1****Nominal Min. Eff.**

Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 ci	21.12
Below Grade Slab Entire surface > 600 mm below grade Minimum RSI (R)-Value	-	-
Edge of Below Grade Slab ≤ 600 mm Below Grade Minimum RSI (R)-Value	10	10
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value	10	11.13
Windows and Sliding Glass Doors Maximum U-Value	0.28	-
Skylights Maximum U-Value	0.49	-
Space Heating Equipment Minimum AFUE	0.96	-
HRV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.8	-

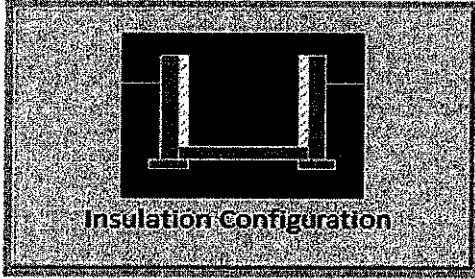
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

Michael O'Rourke

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

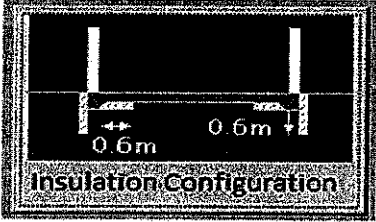
Weather Station Description		
Province:	Ontario	
Region:	Hamilton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	 Insulation Configuration
Floor Width (m):	10.4	
Exposed Perimeter (m):	39.3	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.54	
Window Area (m ²):	0.7	
Door Area (m ²):	1.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):	698	

TYPE: VALLEYCREEK 3
LO# 91343

WOB

Residential Slab on Grade Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Hamilton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Length (m):	1.5	 Insulation Configuration
Width (m):	10.1	
Exposed Perimeter (m):	13.1	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		162

TYPE: VALLEYCREEK 3

LO# 91343

WOB

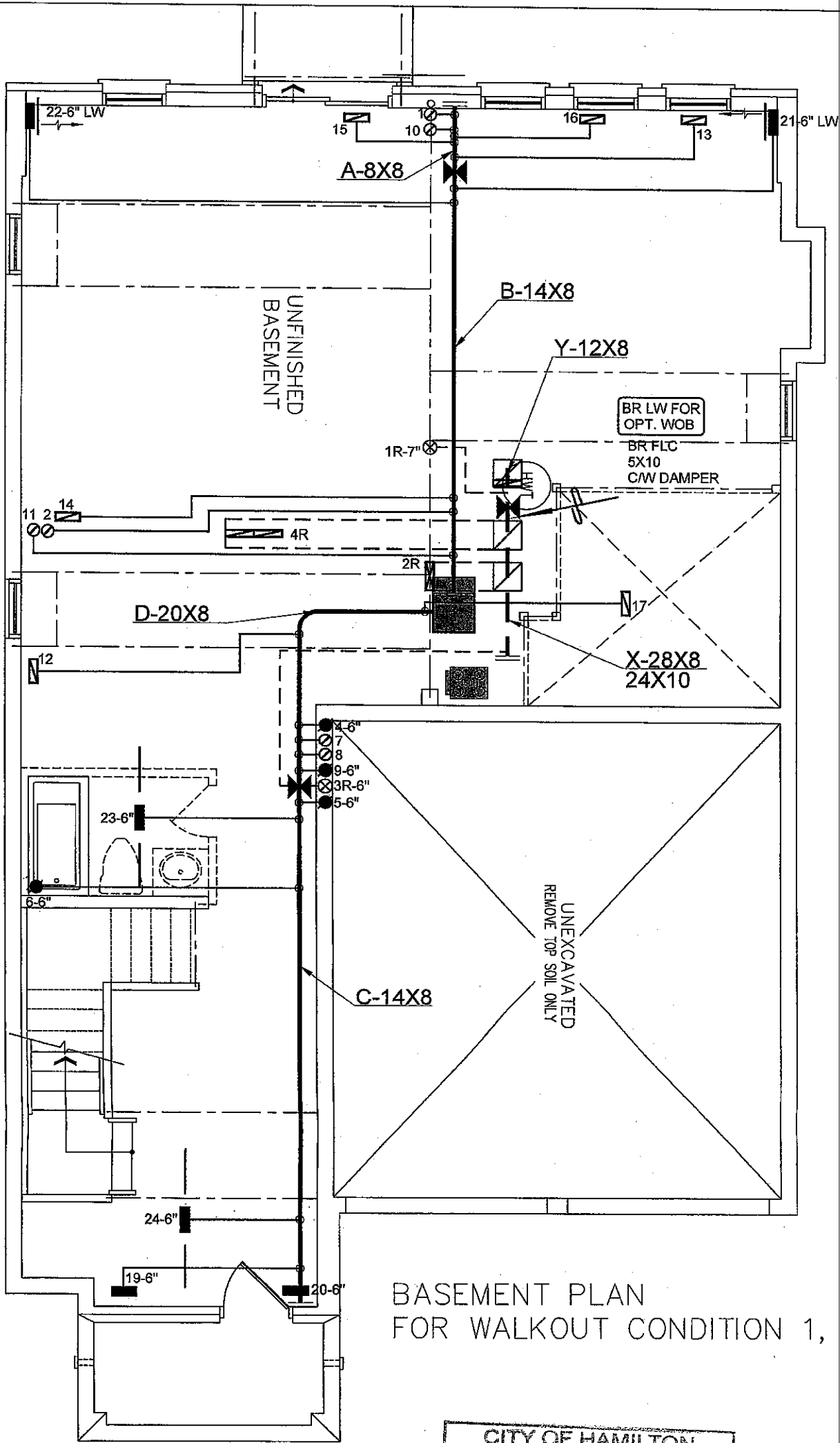
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

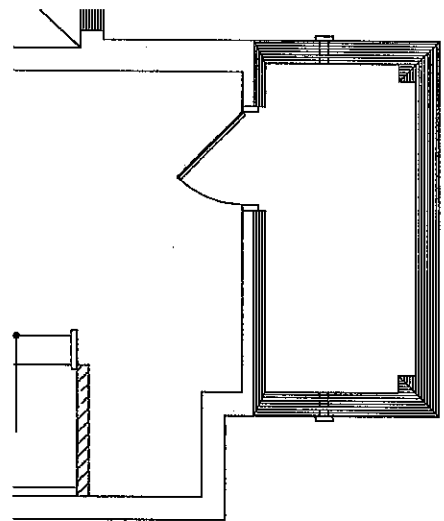
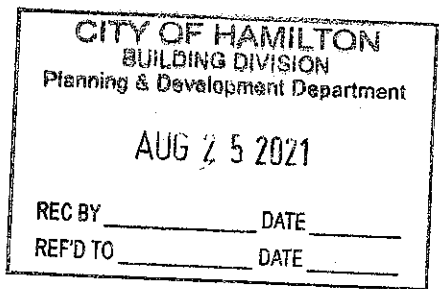
Weather Station Description			
Province:	Ontario		
Region:	Hamilton		
Weather Station Location:	Open flat terrain, grass		
Anemometer height (m):	10		
Local Shielding			
Building Site:	Suburban, forest		
Walls:	Heavy		
Flue:	Heavy		
Highest Ceiling Height (m):	8.53		
Building Configuration			
Type:	Detached		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m ³):	1024.0		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	1365.0 cm ²	
	3.57	ACH @ 50 Pa	
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust	
	37.5	37.5	
Flue Size			
Flue #:	#1	#2	#3
Diameter (mm):	0	0	0
Natural Infiltration Rates			
Heating Air Leakage Rate (ACH/H):	0.365		
Cooling Air Leakage Rate (ACH/H):	0.130		

TYPE: VALLEYCREEK 3
LO# 91343

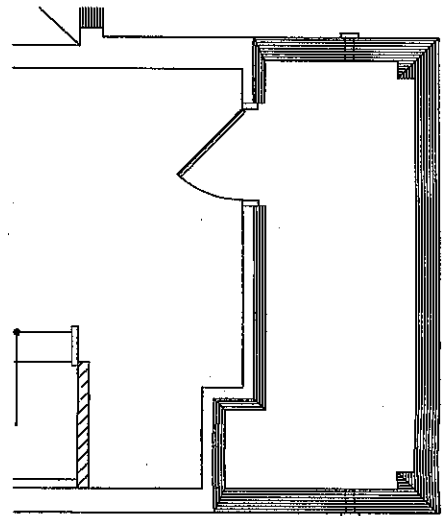
WOB



BASEMENT PLAN
FOR WALKOUT CONDITION 1,



BASEMENT PLAN 2



BASEMENT PLAN 3

CITY OF HAMILTON
Building Division

Permit No. 20-187710-01

THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE
THE OWNER AND/OR CONTRACTOR SHALL COMPLY WITH
THE ONTARIO BUILDING CODE AND ALL OTHER APPLICABLE LAW

These drawings and/or specifications have been reviewed by
DOC Sept 28/21
FOR CHIEF BUILDING OFFICIAL DATE

CSA-F280-12

WOB PACKAGE A1

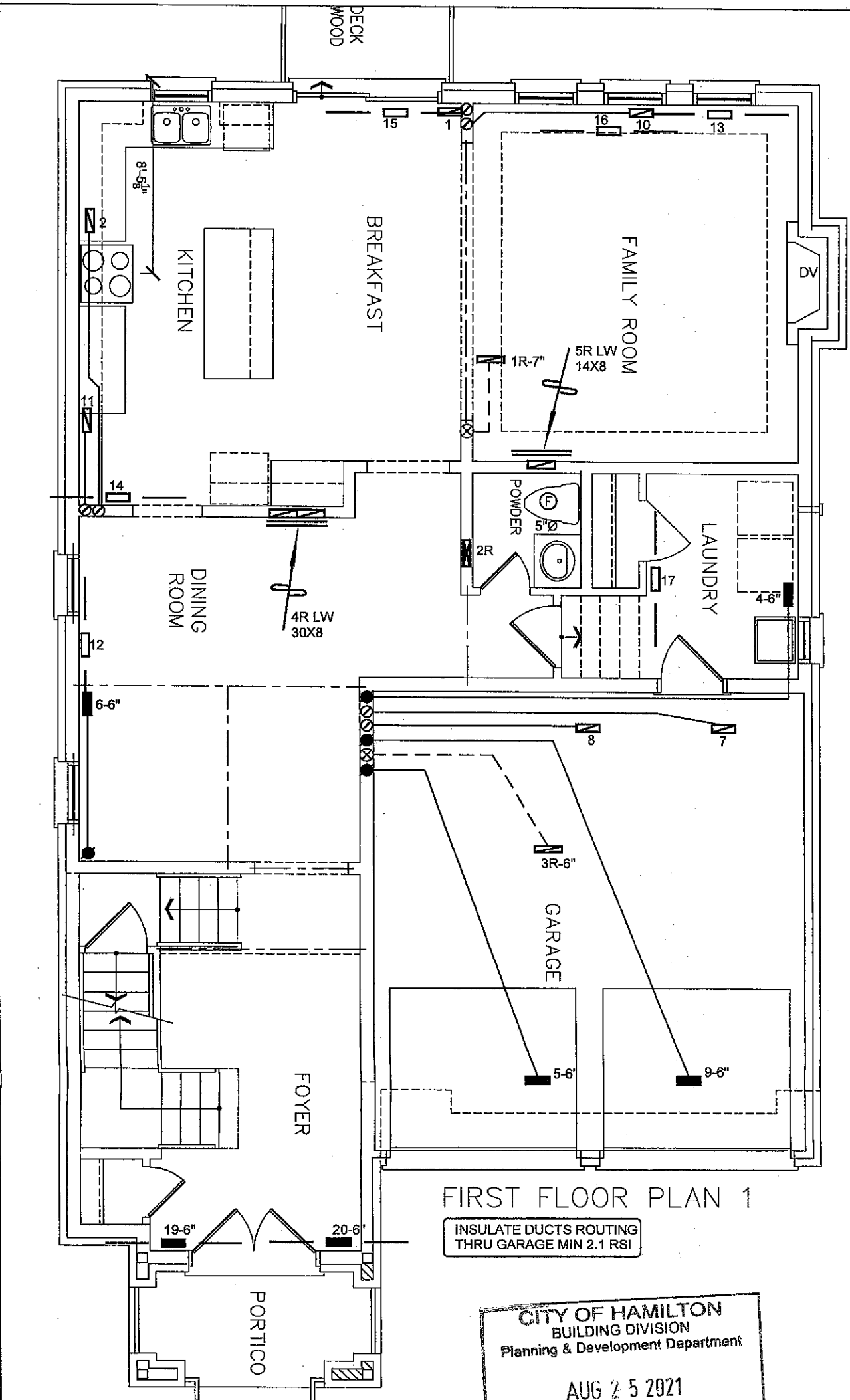
I MICHAEL O'ROURKE HAVE REVIEWED
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C.3.2.3 OF THE
BUILDING CODE.

Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

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Client GREENPARK HOMES		HVACDESIGNS LTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services	HEAT LOSS 49675 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS				Sheet Title		
Project Name RUSSELL GARDENS PH 4 HAMILTON, ONTARIO			MAKE GOODMAN		3RD FLOOR				BASEMENT HEATING LAYOUT		
			MODEL GMEC960603BNA		2ND FLOOR 10 3 3						
			INPUT 60 MBTU/H		1ST FLOOR 8 2 2						
WOB VALLEYCREEK 3 2668 sqft		OUTPUT 57.6 MBTU/H		BASEMENT 4 1 0.				Date JUNE/2021			
		COOLING 3.0 TONS		ALL S/A DIFFUSERS 4 "X10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A				Scale 3/16" = 1'-0"			
		FAN SPEED 1131 cfm @ 0.6" w.c.						BCIN# 19669			
								LO# 91343			
		Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.									



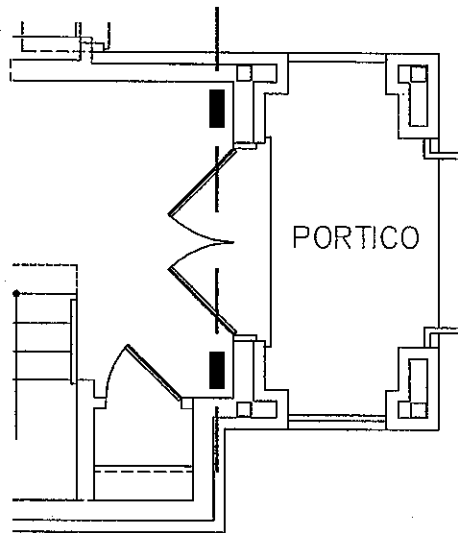
FIRST FLOOR PLAN 1

INSULATE DUCTS ROUTING
THRU GARAGE MIN 2.1 RSI

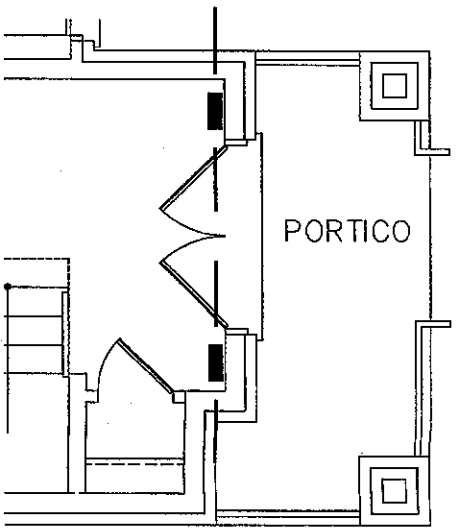
CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department

AUG 25 2021

REC BY _____ DATE _____
REF'D TO _____ DATE _____



FIRST FLOOR PLAN 2



FIRST FLOOR PLAN 3

CITY OF HAMILTON
Building Division

Permit No. 20-187710-01

THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE

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ADC Sept 28/21
FOR CHIEF BUILDING OFFICIAL DATE

I MICHAEL O'Rourke HAVE REVIEW
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C, 3.2.5 OF THE
BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

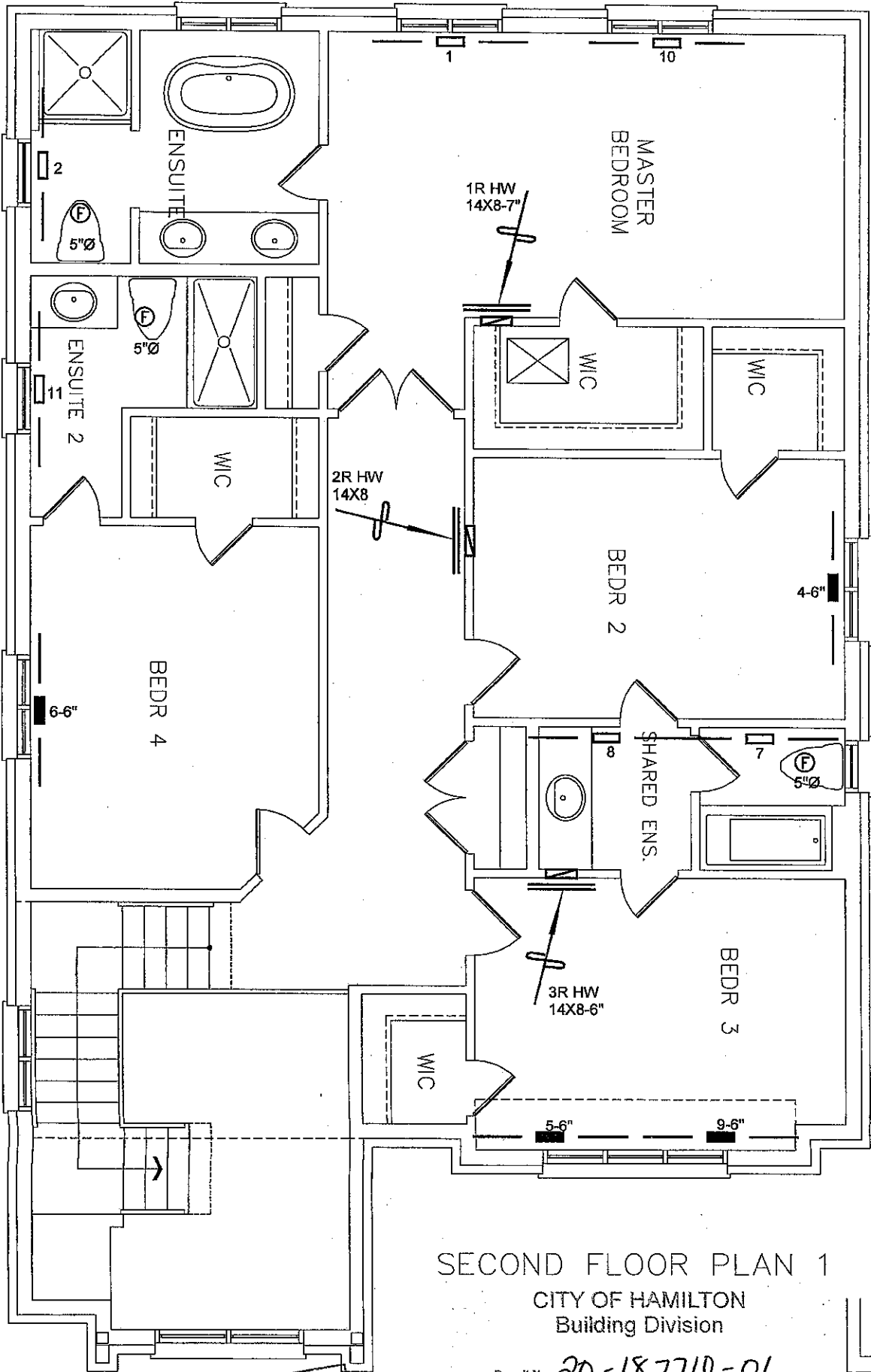
CSA-F280-12

WOB PACKAGE A1

HVAC LEGEND							3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description Date
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS	

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Client GREENPARK HOMES		HVACDESIGNS LTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.	Sheet Title FIRST FLOOR HEATING LAYOUT	
Project Name RUSSELL GARDENS PH 4 HAMILTON, ONTARIO			Date JUNE/2021	Scale 3/16" = 1'-0"
WOB VALLEYCREEK 3 2668 sqft			BCIN# 19669	
			LO#	91343



SECOND FLOOR PLAN 1

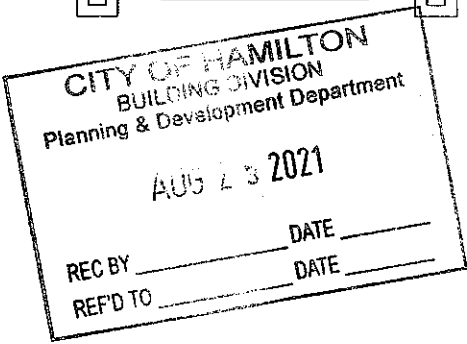
CITY OF HAMILTON
Building Division

Permit No. 20-187710-01

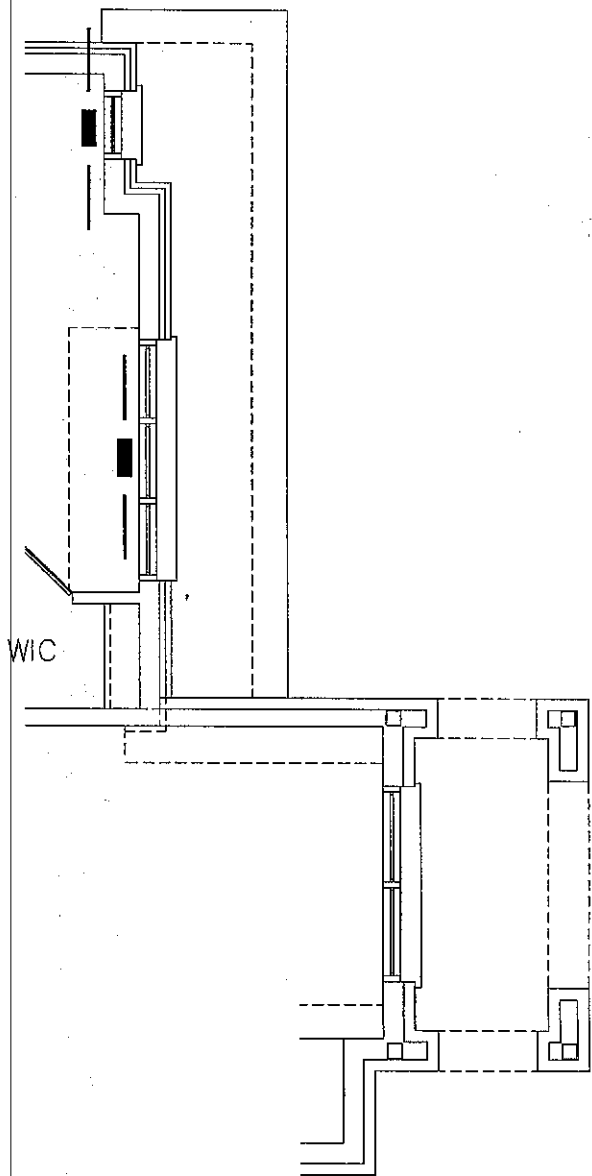
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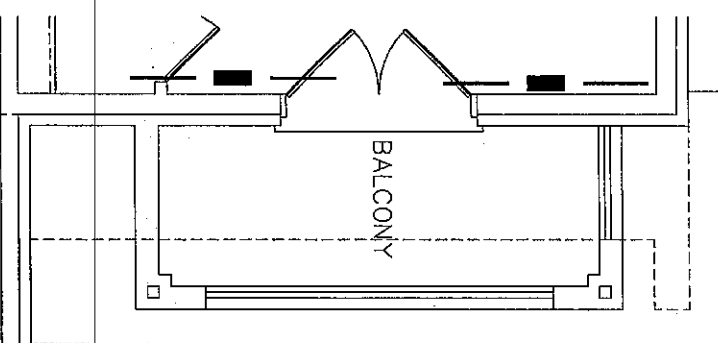
[Signature] Sept 28/21
FOR CHIEF BUILDING OFFICIAL DATE



I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C.12.3 OF THE BUILDING CODE.
[Signature]
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.



SECOND FLOOR PLAN 2



SECOND FLOOR PLAN 3

CSA-F280-12

WOB PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

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Project Name RUSSELL GARDENS PH 4 HAMILTON, ONTARIO				
WOB VALLEYCREEK 3 2668 sqft		Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.	Date JUNE/2021	
			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO# 91343	