

SITE NAME: RESSEL GARDENS PHASE 3
BUILDING: GREENPARK HOMES

TYPE: VALLEYCREEK 2

GFA: 2612

DATE: Mar-20
LO# 85775

WINTER NATURAL AIR CHANGE RATE 0.336
SUMMER NATURAL AIR CHANGE RATE 0.121

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

CSA-F200-12
SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	ENB-2
GRS.WALL AREA	LOSS	GAIN	333	267	72	281	288	135	81		
GLAZING	LOSS	GAIN									
NORTH	19.8	16.0	0	0	0	0	0	0	0	0	81
EAST	19.8	41.6	0	0	0	17	336	706	28	514	1080
SOUTH	19.8	24.9	0	0	0	8	158	199	0	0	0
WEST	19.8	41.6	35	592	1454	15	297	623	0	0	0
SKYLT.	34.6	101.5	0	0	0	0	0	0	0	0	0
DOORS	23.5	4.3	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.1	0.8	258	1235	224	184	783	138	55	228	41
NET EXPOSED BSMT WALL ABOVE GR	3.3	0.6	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.2	0.6	358	427	210	129	154	76	29	35	17
NO ATTIC EXPOSED CLG	2.6	1.3	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.4	0.4	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS											
SLAB ON GRADE HEAT LOSS											
SUBTOTAL HT LOSS			2354		1371		687		2464		
SUB TOTAL HT GAIN				1889	1037		777		1536		2332
LEVEL FACTOR / MULTIPLIER	0.20	0.25				0.20	0.25		0.20	0.25	
AIR CHANGE HEAT LOSS			596		347		159		624		562
AIR CHANGE HEAT GAIN			144		79		59		117		178
DUCT LOSS			0		0		84		389		278
DUCT GAIN			0		0		84		242		328
HEAT GAIN PEOPLE	240		2	480	0	0	0	1	240	1	240
HEAT GAIN APPLIANCES/LIGHTS				529	0	0	0	0	529	0	529
TOTAL HT LOSS BTU/H			2950		1718		920		3398		3060
TOTAL HT GAIN x 1.3 BTU/H			3954		1450		1195		3453		4688

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	FAM	DIN	K/D	LAUND	W/R	POY	WOD	BAS
GRS.WALL AREA	LOSS	GAIN	360	260	350				385		
GLAZING	LOSS	GAIN									
NORTH	19.8	16.0	0	0	0	0	0	0	0	0	0
EAST	19.8	41.6	0	0	0	0	0	0	0	0	0
SOUTH	19.8	24.9	0	0	0	0	0	0	0	0	0
WEST	19.8	41.6	30	593	1247	0	0	0	0	0	0
SKYLT.	34.6	101.5	0	0	0	0	0	0	0	0	0
DOORS	23.5	4.3	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.1	0.8	330	1358	248	233	966	175	287	1190	216
NET EXPOSED BSMT WALL ABOVE GR	3.3	0.6	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.2	0.6	0	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.6	1.3	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.4	0.4	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS											
SLAB ON GRADE HEAT LOSS											
SUBTOTAL HT LOSS			1961		1500		2435		1615		380
SUB TOTAL HT GAIN				1495	847		2833		359		214
LEVEL FACTOR / MULTIPLIER	0.30	0.42				0.30	0.42		0.30	0.42	
AIR CHANGE HEAT LOSS			820		627		1018		675		29
AIR CHANGE HEAT GAIN			114		55		216		0		16
DUCT LOSS			0		0		0		0		0
DUCT GAIN			0		0		0		0		0
HEAT GAIN PEOPLE	240		0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS				529	0	0	0	0	0	0	0
TOTAL HT LOSS BTU/H			2781		2126		3453		2290		529
TOTAL HT GAIN x 1.3 BTU/H			2779		1873		4652		1218		300

CITY OF HAMILTON
Building Division
187704

Permit No. _____
THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE
THE OWNER AND/OR CONTRACTOR SHALL COMPLY WITH
THE CANADIAN BUILDING CODE AND ALL OTHER APPLICABLE LAWS
These drawings and/or specifications have been reviewed by _____
FOR CHIEF BUILDING OFFICIAL _____ DATE _____

TOTAL HEAT GAIN BTU/H:

31098

TONS: 2.59

LOSS DUE TO VENTILATION LOAD BTU/H: 1515

STRUCTURAL HEAT LOSS: 45104

TOTAL COMBINED HEAT LOSS BTU/H: 46619

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

Michael O'Rourke

INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

SITE NAME: RESSEL GARDENS PHASE 3
 BUILDER: GREENPARK HOMES

TYPE: VALLEYCREEK 2

DATE: Mar-20

GFA: 2612 LO# 85775

 HEATING CFM 928 COOLING CFM 928
 TOTAL HEAT LOSS 45,104 TOTAL HEAT GAIN 30,823
 AIR FLOW RATE CFM 20.57 AIR FLOW RATE CFM 30.11

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

 plenum 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

 #GOODMAN
 GMEC960603BNA 60
 FAN SPEED LOW
 MEDLOW
 MEDIUM 928
 MEDIUM HIGH 1017
 HIGH 1131

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

 DESIGN CFM = 928
 CFM @ 5" E.S.P.

TEMPERATURE RISE 57 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	11	7	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.

RUN #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	17	18	19	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-2	BED-3	MBR	ENS-2	FAM	DIN	K/D	K/D	LAUND	W/R	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH	1.47	1.72	0.92	1.70	1.53	1.36	0.88	1.70	1.53	1.47	0.73	2.78	2.13	1.73	1.73	2.29	0.51	3.50	3.86	3.86	3.86	3.86
CFM PER RUN HEAT	30	35	19	35	31	28	18	35	31	30	15	57	44	36	36	47	10	72	79	79	79	79
RM GAIN MBH	1.98	1.45	1.20	1.73	2.34	1.85	0.51	1.73	2.34	1.98	0.33	2.78	1.87	2.33	2.33	1.22	0.30	0.63	0.48	0.48	0.48	0.48
CFM PER RUN COOLING	80	44	36	52	71	56	15	52	71	60	10	84	56	70	70	37	9	19	15	15	15	15
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH	47	29	45	55	54	19	36	49	61	38	48	31	34	39	28	29	32	36	30	32	29	39
EQUIVALENT LENGTH	140	150	130	150	150	120	160	140	150	140	180	120	100	140	120	120	160	100	110	140	150	130
TOTAL EFFECTIVE LENGTH	187	179	175	205	204	139	196	189	211	178	228	151	134	179	148	149	192	136	140	172	179	189
ADJUSTED PRESSURE	0.09	0.1	0.1	0.08	0.08	0.12	0.09	0.09	0.08	0.1	0.08	0.11	0.13	0.1	0.12	0.12	0.09	0.13	0.12	0.1	0.1	0.1
ROUND DUCT SIZE	5	4	4	5	6	6	4	5	6	5	4	6	5	5	5	4	4	5	5	5	5	5
HEATING VELOCITY (ft/min)	220	402	218	257	158	143	207	257	158	220	172	291	323	264	264	539	115	529	580	580	580	580
COOLING VELOCITY (ft/min)	441	505	413	382	362	286	172	382	362	441	115	428	411	514	514	424	103	140	110	110	110	110
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	D	C	B	B	A	C	B	B	A	D	B	C	B	D	D	C	A	A	A	A	A	A

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
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Building Division

Permit No.

187704

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FOR CHIEF BUILDING OFFICIAL

DATE

SUPPLY AIR TRUNK SIZE

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	302	0.08	9	10	544
TRUNK B	468	0.08	10.6	14	602
TRUNK C	246	0.10	7.8	8	554
TRUNK D	211	0.09	7.6	8	475
TRUNK E	457	0.09	10.2	12	686
TRUNK F	0	0.00	0	0	0

RETURN AIR TRUNK SIZE

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK G	0	0.00	0	0	0
TRUNK H	0	0.00	0	0	0
TRUNK I	0	0.00	0	0	0
TRUNK J	0	0.00	0	0	0
TRUNK K	0	0.00	0	0	0
TRUNK L	0	0.00	0	0	0
TRUNK O	0	0.06	0	0	8
TRUNK P	0	0.06	0	0	8
TRUNK Q	0	0.06	0	0	8
TRUNK R	0	0.06	0	0	8
TRUNK S	0	0.06	0	0	8
TRUNK T	0	0.06	0	0	8
TRUNK U	0	0.06	0	0	8
TRUNK V	0	0.06	0	0	8
TRUNK W	0	0.06	0	0	8
TRUNK X	618	0.06	12.6	18	618
TRUNK Y	310	0.06	9.7	12	465
TRUNK Z	0	0.06	0	0	8
DROP	928	0.06	14.7	24	557

RETURN AIR

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
AIR VOLUME	155	125	155	155	200	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	56	53	54	44	13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	185	175	180	190	135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	241	228	234	234	148	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.06	0.06	0.06	0.06	0.10	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	7.5	6.9	7.5	7.5	7.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	6	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	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: VALLEYCREEK 2
 SITE NAME: RESSEL GARDENS PHASE 3

LO # 85775

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
☐	Non 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		9.32.3.5.
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 65H
Location:	BSMT
79.5 cfm	3.0 sones
☒	HVI Approved

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

SUPPLEMENTAL FANS		PANASONIC		
Location	Model	cfm	HVI	Sones
ENS	FV-05-11VK1	50	✓	0.3
BATH	FV-05-11VK1	50	✓	0.3
ENS-2	FV-05-11VK1	50	✓	0.3
W/R	FV-05-11VK1	50	✓	0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE 65H	
185	cfm high	
64	cfm low	
75	% Sensible Efficiency	
@ 32 deg F (0 deg C)	☒	
	HVI Approved	

LOCATION OF INSTALLATION	
Lot:	Concession
Township	Plan:
Address	
Roll #	Building Permit #

BUILDER:	
GREENPARK HOMES	
Name:	CITY OF HAMILTON
Address:	Building Division
City:	187704
Permit No.	
Telephone #:	Fax #:

THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE	
INSTALLING CONTRACTOR	
THE OWNER AND/OR CONTRACTOR SHALL COMPLY WITH THE ONTARIO BUILDING CODE AND ALL OTHER APPLICABLE LAW	
Name:	
Address:	These drawings and/or specifications have been reviewed by
City:	
FOR CHIEF BUILDING OFFICIAL	DATE
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 #	001820
Date:	March-20

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

LO#: 85775

Model: VALLEYCREEK 2

Builder: GREENPARK HOMES

Date: 3/25/2020

Volume Calculation
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1158	8	9264
First	1158	10	11580
Second	1432	9	12888
Third	0	9	0
Fourth	0	9	0
Total:			33,732.0 ft³
Total:			955.2 m³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.338
SUMMER NATURAL AIR CHANGE RATE	0.121

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

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

0.338 x 265.33 x 39 °C x 1.2 = 4219 W

= 14395 Btu/h

6.2.6 Sensible Gain due to Air Leakage

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

= 0.121 x 265.33 x 7 °C x 1.2 = 274 W

= 935 Btu/h

5.2.3.2 Heat Loss due to Mechanical Ventilation

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

80 CFM x 71 °F x 1.08 x 0.25 = 1515 Btu/h

6.2.7 Sensible heat Gain due to Ventilation

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

80 CFM x 13 °F x 1.08 x 0.25 = 275 Btu/h

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

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

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 / HLlevel)
1	0.5	14,395	8,246	0.873
2	0.3		10,334	0.418
3	0.2		11,378	0.253
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 HLairve = 0

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** VALLEYCREEK 2**SFQT:** 2612**LO#** 85775**BUILDER:** GREENPARK HOMES**SITE:** RESSEL GARDENS PHASE 3**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):	33732.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	5.0 ft
LENGTH: 50.0 ft	WIDTH: 33.0 ft	EXPOSED PERIMETER:	166.0 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	-

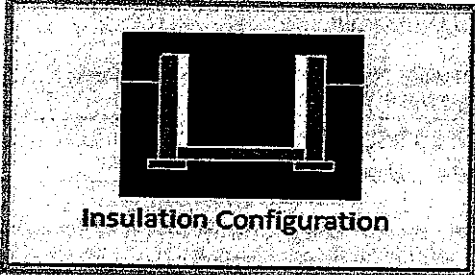
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



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):	15.2	
Floor Width (m):	10.1	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.4	
Depth Below Grade (m):	1.52	
Window Area (m ²):	1.1	
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):	1603	

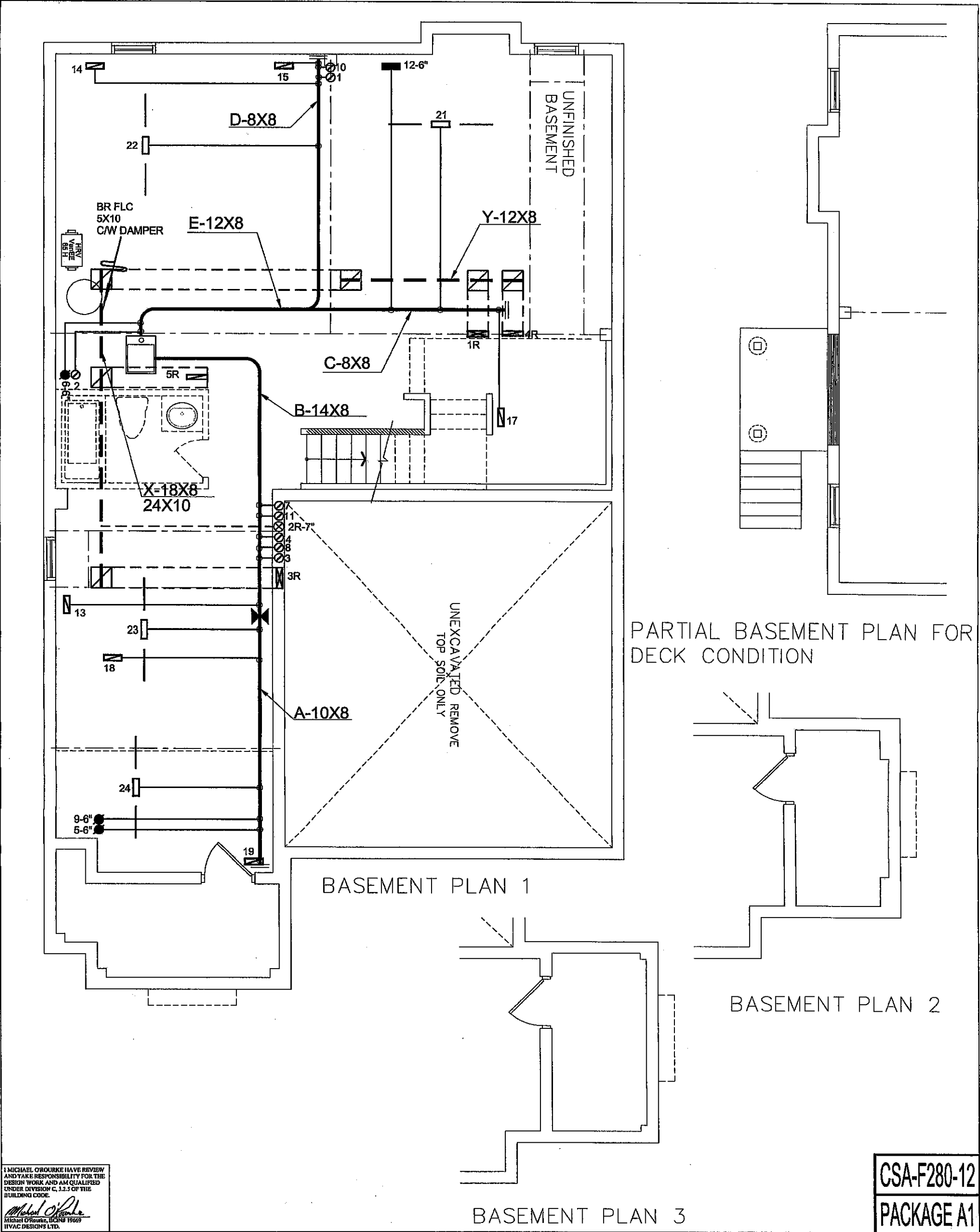
TYPE: VALLEYCREEK 2
LO# 85775

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):	7.62			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	955.2			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1273.3 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	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.338			
Cooling Air Leakage Rate (ACH/H):	0.121			

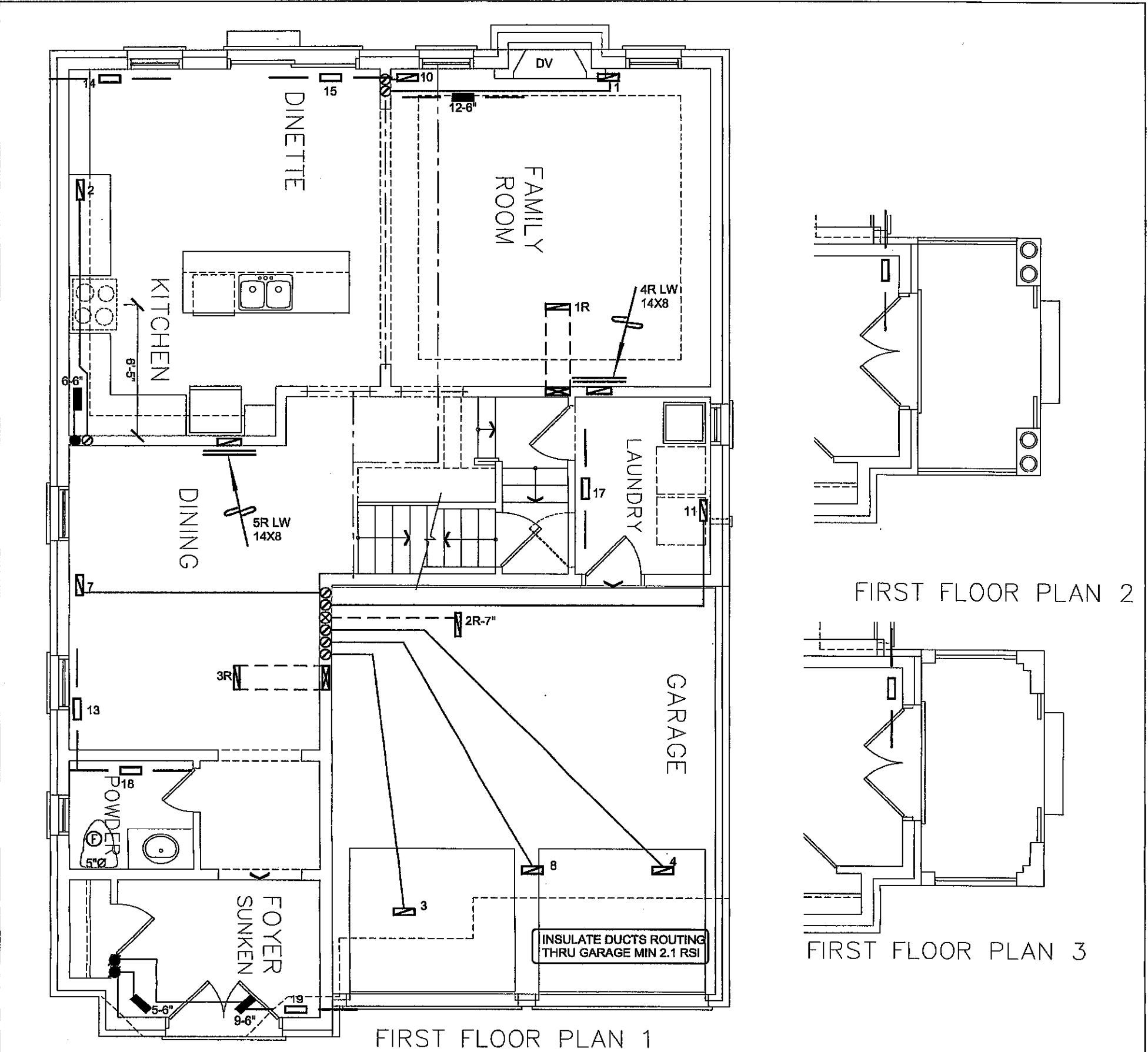
TYPE: VALLEYCREEK 2
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I MICHAEL O'Rourke HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 1.2.3 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
PACKAGE A1

HVAC LEGEND						3.				
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION			
	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.		
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER			
								REVISIONS		
ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.										
Client GREENPARK HOMES		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.			HEAT LOSS 46619 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS		Sheet Title	
Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO					MAKE GOODMAN		3RD FLOOR		BASEMENT HEATING LAYOUT	
VALLEYCREEK 2 2612 sqft					MODEL GMEC960603BNA		2ND FLOOR 11 3 3		Date MAR/2020 Scale 3/16" = 1'-0" BCIN# 19669	
		INPUT 60 MBTUH		1ST FLOOR 7 2 2						
		OUTPUT 57.6 MBTUH		BASEMENT 4 1 0						
		COOLING 2.5 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		LO#		85775		
		FAN SPEED 928 cfm @ 0.6" w.g.								



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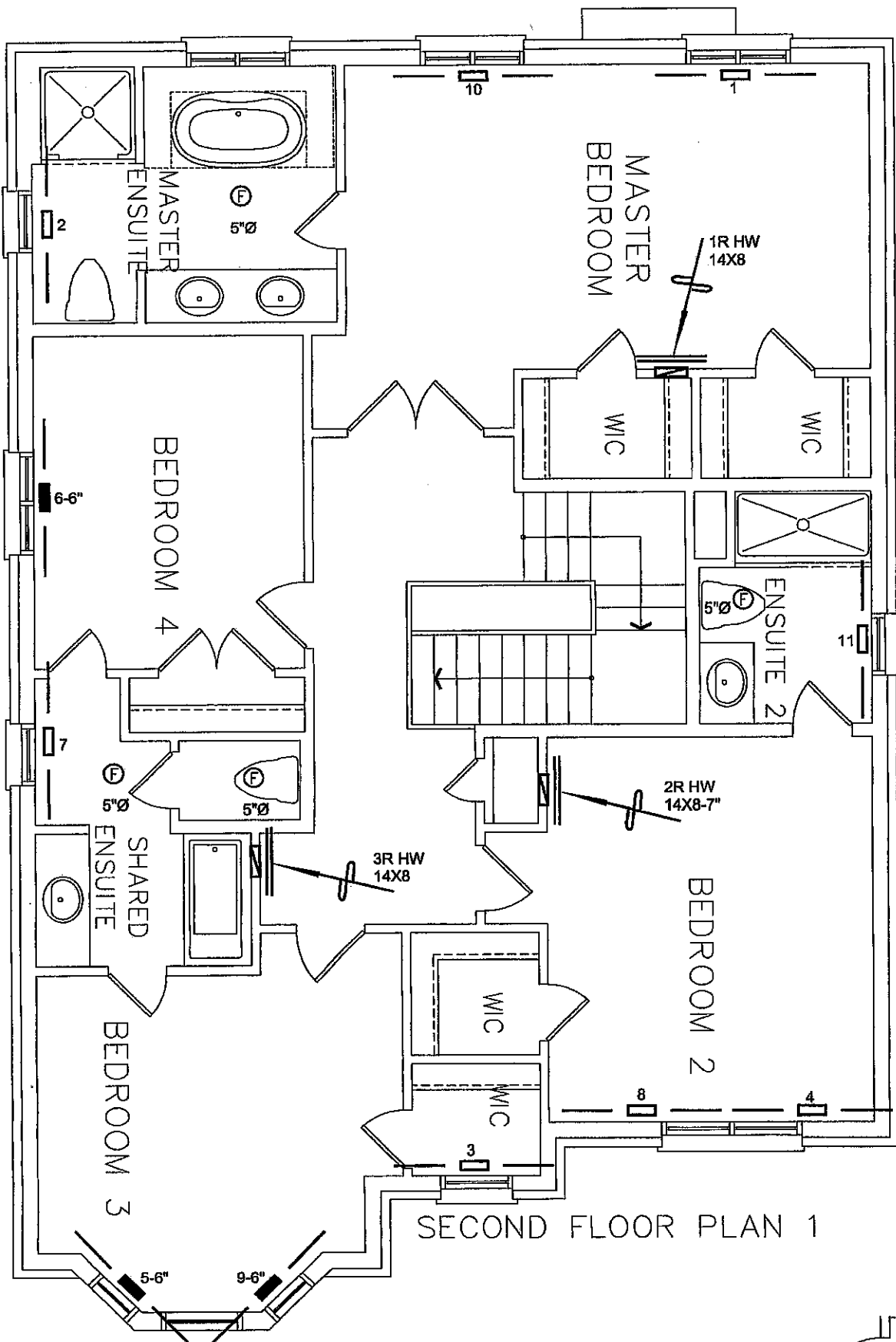
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CSA-F280-12
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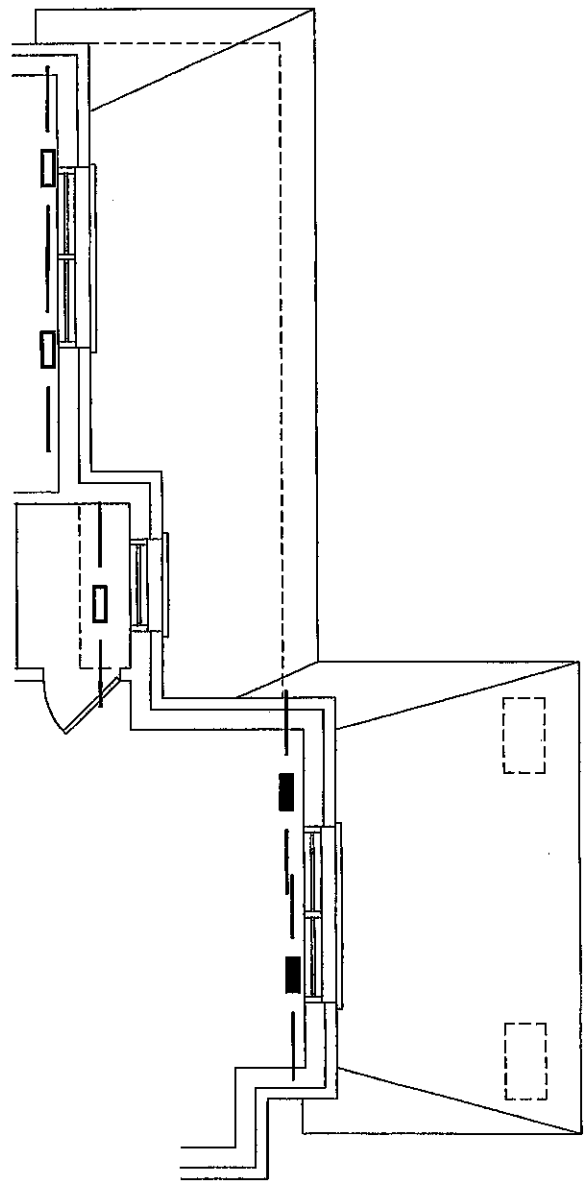
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		8" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR 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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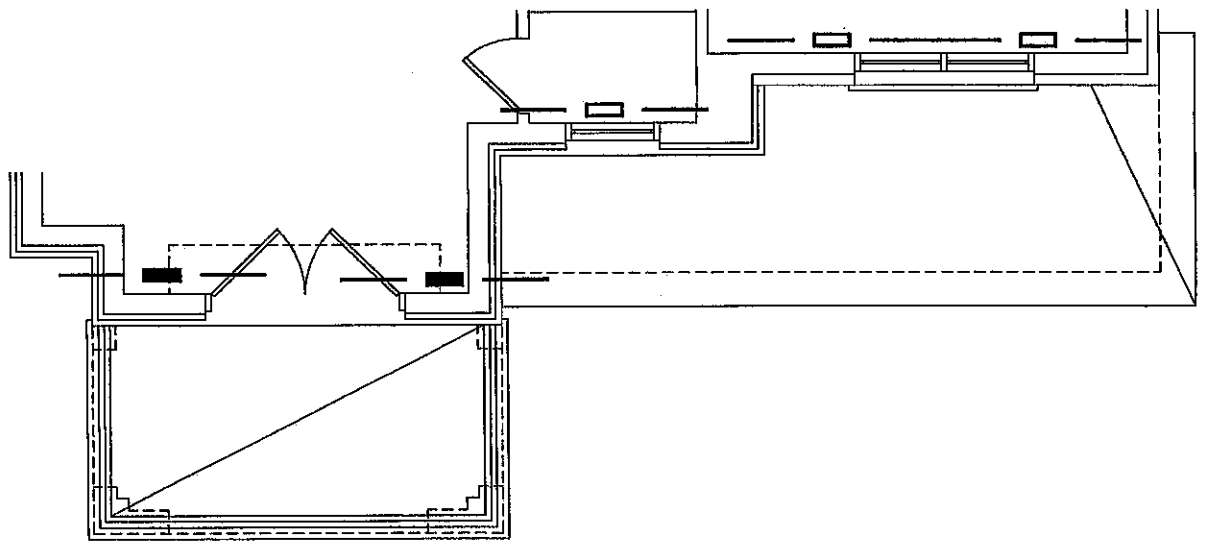
Client GREENPARK HOMES		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply 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 RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			Date MAR/2020	
VALLEYCREEK 2 2612 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO# 85775	



SECOND FLOOR PLAN 1



SECOND FLOOR PLAN 2



SECOND FLOOR PLAN 3

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CSA-F280-12

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
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	Date	

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Client
GREENPARK HOMES
Project Name
**RUSSEL GARDENS PHASE 3
HAMILTON, ONTARIO**
VALLEYCREEK 2 2612 sqft

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**SECOND FLOOR
HEATING
LAYOUT**
Date
MAR/2020
Scale
3/16" = 1'-0"
BCIN# 19669
LO# 85775