

ROOM USE	FAM		L/D		K/B		L/H		LND		W/R		FOY		BAS		
EXP. WALL	34		24		37		18		0		26		42		176		
CLG. HT.	11		11		11		11		9		12		11		9		
GRS.WALL AREA	374		264		407		198		0		312		462		1056		
GLAZING	LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		
NORTH	19.8	15.1	8	159	121	0	0	0	0	0	0	7	138	106	0	0	0
EAST	19.8	39.0	0	0	0	0	0	0	0	0	0	0	0	0	6	119	234
SOUTH	19.8	23.5	0	0	0	33	652	775	0	0	0	12	237	282	0	0	0
WEST	19.8	33.0	40	791	1561	0	0	0	60	1186	2341	0	0	0	0	0	0
SKYL.T.	34.6	101.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	23.5	4.3	0	0	0	0	0	12	281	51	0	0	0	0	20	469	85
NET EXPOSED WALL	4.1	0.8	326	1351	245	231	958	174	335	1389	262	186	771	140	0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.3	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.2	0.6	0	0	0	0	0	0	0	0	0	73	87	43	0	0	0
NO ATTIC EXPOSED CLG	2.6	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.4	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0			0			0			0			0		
SLAB ON GRADE HEAT LOSS						0			0			0			0		
SUBTOTAL HT LOSS			2300			1610			2856			1008			87		
SUB TOTAL HT GAIN				1927			948		2544			422		43		406	
LEVEL FACTOR / MULTIPLIER	0.30	0.43				0.30	0.43		0.30	0.43		0.20	0.26		0.30	0.43	
AIR CHANGE HEAT LOSS			994			695			1234			436		23		773	
AIR CHANGE HEAT GAIN				166			77		214			34		3		33	
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	
HEAT GAIN APPLIANCES/LIGHTS				486			486		486			486				0	
TOTAL HT LOSS BTU/H			3294			2305			4090			1444		110		2562	
TOTAL HT GAIN x 1.3 BTU/H				3339			1964		4346			1223		592		569	

TOTAL COMBINED HEAT LOSS BTU/H: 54991

SITE NAME: RUSSEL GARDENS PHASE 3
BUILDER: GREENPARK HOMES

LOT 282
TYPE: MOUNTAINASH 4

DATE: Nov-20

GFA: 3190 LO#: 88388

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 53,172 TOTAL HEAT GAIN 36,407
AIR FLOW RATE CFM 21.27 AIR FLOW RATE CFM 31.07

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

TEMPERATURE RISE 47 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	14	7	4
R/A	0	0	6	2	1

All S/A diffusers 4"x10" unless noted otherwise on layout.
All S/A runs 5" unless noted otherwise on layout.

RUN #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	ENS	MBR	FLEX	BED-2	BED-3	BED-4	ENS-3	FLEX	BED-3	MBR	S-ENS	FAM	L/D	K/B	K/B	L/H	BED-5	W/R	FOY	LND	BAS	BAS	BAS	BAS
RM LOSS MBH	1.63	1.56	2.16	1.68	1.19	1.07	0.83	2.16	1.19	1.56	1.00	3.29	2.31	2.05	2.05	1.44	0.99	2.56	3.98	0.11	4.34	4.34	4.34	4.34
CFM PER RUN HEAT	35	33	46	36	25	23	18	46	25	33	21	70	49	43	43	31	21	54	85	2	92	92	92	92
RM GAIN MBH	1.28	1.82	2.83	1.81	1.74	1.63	0.44	2.83	1.74	1.82	0.86	3.34	1.96	2.17	2.17	1.22	1.58	0.57	1.01	0.69	0.51	0.51	0.51	0.51
CFM PER RUN COOLING	40	57	88	56	54	51	14	88	54	57	27	104	61	68	68	38	49	18	31	21	16	16	16	16
ADJUSTED PRESSURE	0.17	0.17	0.16	0.17	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	0.16	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	27	67	51	56	61	46	49	58	49	40	56	26	25	38	44	40	23	47	48	48	34	20	24	41
EQUIVALENT LENGTH	130	150	160	140	100	210	200	130	190	100	130	130	140	120	120	140	160	130	110	160	120	100	130	130
TOTAL EFFECTIVE LENGTH	157	217	211	196	161	256	249	183	239	140	186	156	165	158	164	180	183	177	158	208	154	120	154	171
ADJUSTED PRESSURE	0.11	0.08	0.08	0.09	0.11	0.07	0.07	0.09	0.07	0.12	0.09	0.1	0.1	0.11	0.1	0.1	0.09	0.1	0.1	0.08	0.11	0.14	0.11	0.09
ROUND DUCT SIZE	4	5	6	6	5	4	6	5	5	4	6	5	5	5	4	6	5	6	4	6	6	6	6	6
HEATING VELOCITY (ft/min)	402	242	235	184	127	169	207	235	184	242	241	357	360	316	316	356	107	396	433	23	469	469	469	469
COOLING VELOCITY (ft/min)	459	419	449	286	275	374	161	449	356	419	310	530	448	499	499	436	250	132	158	241	82	82	82	82
OUTLET GRILL SIZE	3X10	3X10	4X10	4X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	3X10	4X10	4X10	4X10	4X10
TRUNK	C	A	D	A	E	D	D	D	D	C	E	C	E	B	B	D	C	A	D	A	B	C	E	D

RUN #	25
ROOM NAME	S-ENS
RM LOSS MBH	1.00
CFM PER RUN HEAT	21
RM GAIN MBH	0.86
CFM PER RUN COOLING	27
ADJUSTED PRESSURE	0.17
ACTUAL DUCT LGH	51
EQUIVALENT LENGTH	140
TOTAL EFFECTIVE LENGTH	191
ADJUSTED PRESSURE	0.09
ROUND DUCT SIZE	4
HEATING VELOCITY (ft/min)	241
COOLING VELOCITY (ft/min)	310
OUTLET GRILL SIZE	3X10
TRUNK	E

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	125	0.08	6.4	8	8	281	0	0	0
TRUNK B	178	0.10	6.9	8	8	401	0	0	0
TRUNK C	554	0.08	11.2	14	8	712	0	0	0
TRUNK D	366	0.07	10	12	8	549	0	0	0
TRUNK E	574	0.07	11.8	16	8	646	0	0	0
TRUNK F	0	0.00	0	0	8	0	0	0	0

RETURN AIR TRUNK SIZE

TRUNK	STATIC	ROUND	RECT	VELOCITY
CFM	PRESS.	DUCT	DUCT	(ft/min)
TRUNK O	0	0.05	0	0
TRUNK P	0	0.05	0	0
TRUNK Q	0	0.05	0	0
TRUNK R	0	0.05	0	0
TRUNK S	0	0.05	0	0
TRUNK T	0	0.05	0	0
TRUNK U	0	0.05	0	0
TRUNK V	0	0.05	0	0
TRUNK W	0	0.05	0	0
TRUNK X	876	0.05	15	26
TRUNK Y	435	0.05	11.6	16
TRUNK Z	255	0.05	9.5	10
DROP	1131	0.05	16.5	24

RETURN AIR #	1	2	3	4	5	6	7	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR VOLUME	85	95	95	85	75	280	155	85	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	0.15
ACTUAL DUCT LGH	51	42	57	53	63	26	26	48	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	205	165	155	205	210	185	190	155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	256	207	212	258	273	211	216	203	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.06	0.07	0.07	0.06	0.05	0.07	0.07	0.07	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	6	6	6	6	6	9	7.2	5.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	14	14	14	14	14	30	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: MOUNTAINASH 4
SITE NAME: RUSSEL GARDENS PHASE 3

LO # 88388
LOT 282

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	4 @ 10.6 cfm	42.4 cfm
Kitchen & Bathrooms	5 @ 10.6 cfm	53 cfm
Other Rooms	8 @ 10.6 cfm	84.8 cfm
Table 9.32.3.A.	TOTAL	222.6 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	95.4	cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.6.
Total Ventilation Capacity	222.6	cfm
Less Principal Ventil. Capacity	95.4	cfm
Required Supplemental Capacity	127.2	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	VANEE 65H
Location:	BSMT
95.4 cfm	3.0 sones
☒	HVI Approved

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

SUPPLEMENTAL FANS		PANASONIC		
Location	Model	cfm	HVI	Sones
ENS	FV-05-11VK1	50	☒	0.3
ENS-3	FV-05-11VK1	50	☒	0.3
S-ENS	FV-05-11VK1	50	☒	0.3
W/R	FV-05-11VK1	50	☒	0.3

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

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

BUILDER: GREENPARK HOMES	
Name:	
Address:	
City:	
Telephone #:	Fax #:

INSTALLING CONTRACTOR	
Name:	
Address:	
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 #	001820
Date:	November-20

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.6 OF THE BUILDING CODE.
INDIVIDUAL BCIN: 19869 *Michael O'Rourke* MICHAEL O'ROURKE

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

LO#: 88388

Model: MOUNTAINASH 4

Builder: GREENPARK HOMES

Date: 26/11/2020

Volume Calculation
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1398	9	12582
First	1398	11	15378
Second	1792	9	16128
Third	0	9	0
Fourth	0	9	0
Total:			44,088.0 ft³
Total:			1248.4 m³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.319
SUMMER NATURAL AIR CHANGE RATE	0.114

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

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

$$0.319 \times 346.79 \times 39^\circ\text{C} \times 1.2 = 5210 \text{ W}$$

$$= 17777 \text{ Btu/h}$$

6.2.6 Sensible Gain due to Air Leakage

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

$$0.114 \times 346.79 \times 7^\circ\text{C} \times 1.2 = 338 \text{ W}$$

$$= 1154 \text{ Btu/h}$$

5.2.3.2 Heat Loss due to Mechanical Ventilation

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

$$95 \text{ CFM} \times 71^\circ\text{F} \times 1.08 \times 0.25 = 1819 \text{ Btu/h}$$

6.2.7 Sensible heat Gain due to Ventilation

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

$$95 \text{ CFM} \times 13^\circ\text{F} \times 1.08 \times 0.25 = 330 \text{ Btu/h}$$

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)	HLairve 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	17,777	8,473	1.049
2	0.3		12,345	0.432
3	0.2		13,634	0.261
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:	MOUNTAINASH 4	LOT 282	BUILDER:	GREENPARK HOMES
SFQT:	3190	LO#	88388	SITE: RUSSEL 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):	44088.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH:	52.0 ft	WIDTH:	36.0 ft
		EXPOSED PERIMETER:	176.0 ft

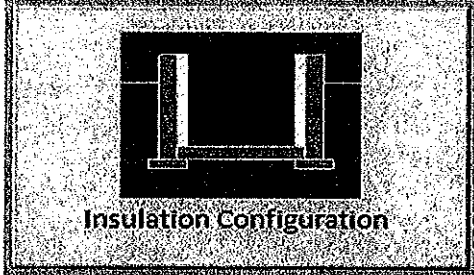
2012 OBC - COMPLIANCE PACKAGE		Compliance Package	
Component		A1	
		Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value		60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value		31	27.65
Exposed Floor Minimum RSI (R)-Value		31	29.80
Walls Above Grade Minimum RSI (R)-Value		22	17.03
Basement 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):	15.8	 Insulation Configuration
Floor Width (m):	11.0	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	2.0	
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):		1701

TYPE: MOUNTAINASH 4
LO# 88388

LOT 282

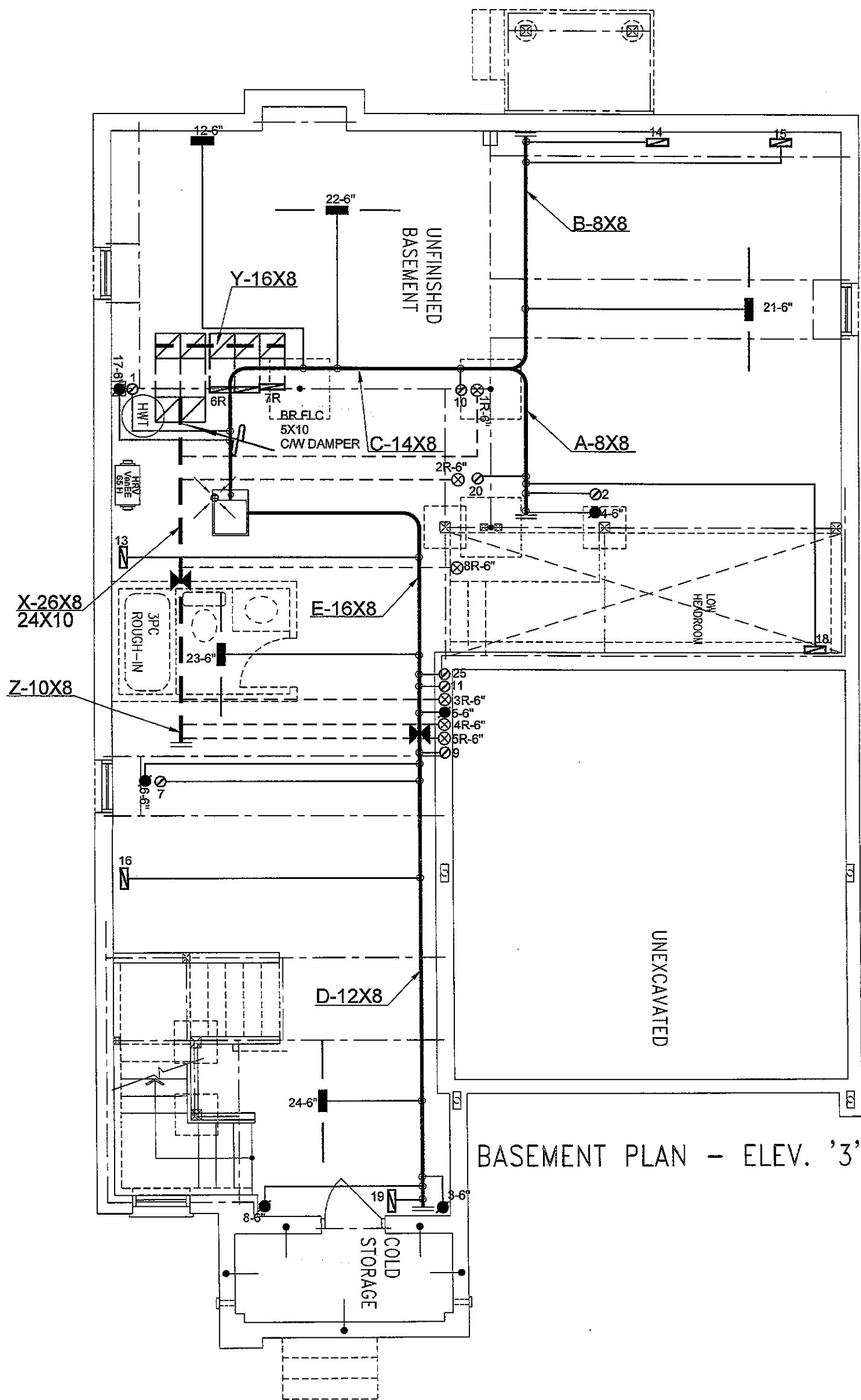
Air Infiltration Residential Load Calculator

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):	7.01		
Building Configuration			
Type:	Detached		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m ³):	1248.4		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa. 3.57	1664.2 cm ² ACH @ 50 Pa	
Mechanical Ventilation (L/s):	Total Supply 45.0	Total Exhaust 45.0	
Flue Size			
Flue #:	#1	#2	#3 #4
Diameter (mm):	0	0	0 0
Natural Infiltration Rates			
Heating Air Leakage Rate (ACH/H):	0.319		
Cooling Air Leakage Rate (ACH/H):	0.114		

TYPE: MOUNTAINASH 4
LO# 88388

LOT 282



BASEMENT PLAN - ELEV. '3'

LOT 282
CSA-F280-12
PACKAGE A1

HVAC LEGEND

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
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER

3.		
2.		
1.		
No.	Description	Date
REVISIONS		

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Client
GREENPARK HOMES

Project Name
**RUSSEL GARDENS PHASE 3
HAMILTON, ONTARIO**

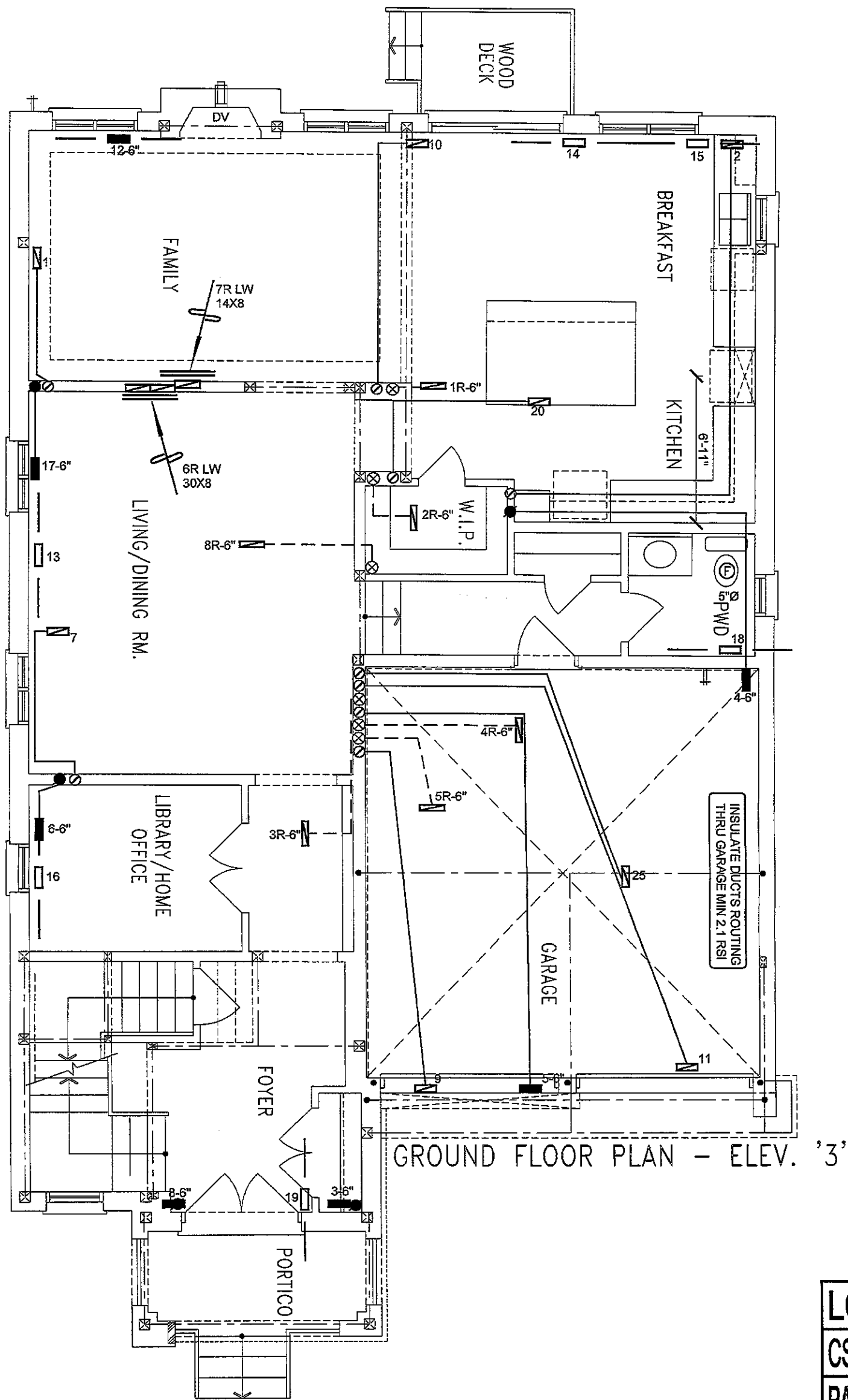
**LOT 282
MOUNTAINASH 4 3190 sqft**

375 Finley Ave. Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
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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 54991 BTU/H UNIT DATA		# OF RUNS	S/A	R/A	FANS
MAKE	GOODMAN	3RD FLOOR			
MODEL	GMEC960603BNA	2ND FLOOR	14	6	4
INPUT	60 MBTU/H	1ST FLOOR	7	2	2
OUTPUT	57.6 MBTU/H	BASEMENT	4	1	0
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			
FAN SPEED	1131 cfm @ 0.6" w.c.				

Sheet Title BASEMENT HEATING LAYOUT	
Date	NOV/2020
Scale	3/16" = 1'-0"
BCIN# 19669	
LO#	88388



GROUND FLOOR PLAN - ELEV. '3'

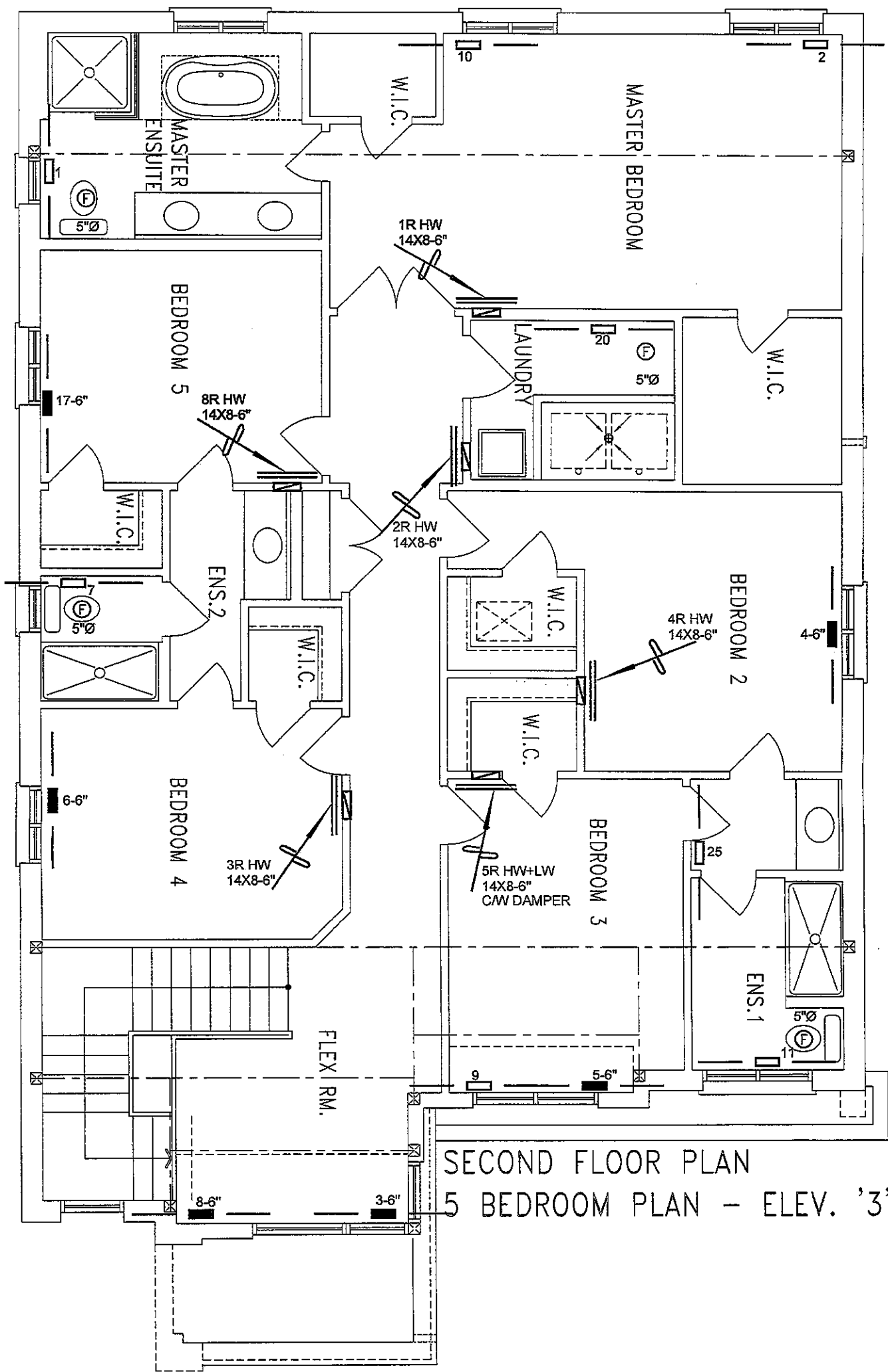
LOT 282
CSA-F280-12
PACKAGE A1

I MICHAEL O'Rourke HAVE REVIEWED 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.

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

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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	Sheet Title FIRST FLOOR HEATING LAYOUT	
Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			Date NOV/2020	
LOT 282			Scale 3/16" = 1'-0"	
MOUNTAINASH 4 3190 sqft			BCIN# 19669	
		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.	LO#	88388



SECOND FLOOR PLAN
5 BEDROOM PLAN - ELEV. '3'

LOT 282
CSA-F280-12
PACKAGE A1

I MICHAEL O'BROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 32.5 OF THE BUILDING CODE.
Michael O'Brourke
Michael O'Brourke, BCIN# 19669
HVAC DESIGNS LTD.

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

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Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			Date NOV/2020	
LOT 282 MOUNTAINASH 4 3190 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO#	88388