

NOT THE GRANTING OF A PERMIT NOR REVIEWING OF SPECS
& DRAWINGS NOR INSPECTIONS MADE DURING INSTALLATION
BY THE OFFICIAL HAVING JURISDICTION SHALL RELIEVE THE
OWNER FROM REQUIREMENTS OF THE ONTARIO BUILDING
CODE AND ANY OTHER REFERENCED REQUIREMENTS.

Garden 2 - Elev 1

SITE NAME: BARLASSINA										DATE: Aug-22										WINTER NATURAL AIR CHANGE RATE 0.307										HEAT LOSS ΔT °F. 72										CSA-F280-12																													
BUILDER: GREENPARK HOMES										TYPE: GARDEN 2										GFA: 2315										LO# 98638										SUMMER NATURAL AIR CHANGE RATE 0.084										HEAT GAIN ΔT °F. 9										SB-12 PACKAGE A									
ROOM USE				MBR				ENS				WIC				BED-2				BED-3				MEDIA				BATH																																									
EXP. WALL				40				28				8				32				36				22				8																																									
CLG. HT.				9				9				9				9				9				9				9																																									
FACTORS																																																																					
GRS.WALL AREA		LOSS GAIN		360				252				72				288				324				198				72																																									
GLAZING				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN																																									
NORTH		20.3	15.0	0	0	0		0	0	0		0	0	0		0	0	0		0	0	0		0	0	0		0	0	0																																							
EAST		20.3	40.5	0	0	0		0	0	0		0	0	0		30	608	1216		36	730	1460		0	0	0		0	0	0																																							
SOUTH		20.3	23.9	0	0	0		0	0	0		0	0	0		0	0	0		0	0	0		26	527	621		0	0	0																																							
WEST		20.3	40.5	24	487	973		14	284	568		0	0	0		0	0	0		0	0	0		0	0	0		0	0	0																																							
SKYLT.		35.5	99.8	0	0	0		0	0	0		0	0	0		0	0	0		0	0	0		0	0	0		0	0	0																																							
DOORS		19.1	2.4	0	0	0		0	0	0		0	0	0		0	0	0		0	0	0		0	0	0		0	0	0																																							
NET EXPOSED WALL		4.3	0.5	336	1428	182		238	1012	129		72	306	39		258	1097	139		288	1224	156		172	731	93		72	306	39																																							
NET EXPOSED BSMT WALL ABOVE GR		3.4	0.4	0	0	0		0	0	0		0	0	0		0	0	0		0	0	0		0	0	0		0	0	0																																							
EXPOSED CLG		1.2	0.5	373	456	197		171	209	90		104	127	55		232	284	122		189	231	100		264	323	139		104	127	55																																							
NO ATTIC EXPOSED CLG		2.6	1.1	0	0	0		0	0	0		0	0	0		15	39	17		15	39	17		0	0	0		0	0	0																																							
EXPOSED FLOOR		2.4	0.3	0	0	0		0	0	0		0	0	0		247	600	76		0	0	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				2371				1505				433				2628				2225				1581				433																																									
SUB TOTAL HT GAIN						1351				786				94				1571				1732				853				94																																							
LEVEL FACTOR / MULTIPLIER		0.20 0.22						0.20 0.22				0.20 0.22				0.20 0.22				0.20 0.22				0.20 0.22				0.20 0.22																																									
AIR CHANGE HEAT LOSS				512				325				94				568				481				342				94																																									
AIR CHANGE HEAT GAIN						59				34				4				69				76				37				4																																							
DUCT LOSS				0				0				0				320				0				0				0																																									
DUCT GAIN				0				0				0				249				0				0				0																																									
HEAT GAIN PEOPLE		240		2		480		0		0		0		1		240		1		240		0		0		0		0		0																																							
HEAT GAIN APPLIANCES/LIGHTS						613				0		0		0		613				613				613				0																																									
TOTAL HT LOSS BTU/H				2883				1830				527				3516				2705				1923				527																																									
TOTAL HT GAIN x 1.3 BTU/H				3254				1067				127				3565				3459				1955				127																																									

ROOM USE							K/B/L/D				LAUN			W/R			FOY							LOB			BAS				
EXP. WALL							86				19				6				49						34			160			
CLG. HT.							10				11				10				11						8			8			
FACTORS																															
GRS.WALL AREA	LOSS	GAIN					860				209			60			539							272			800				
GLAZING							LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN		
NORTH	20.3	15.0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
EAST	20.3	40.5	0	0	0		0	0	0	0	0	0	0	0	0	0	30	608	1216	0	0	0	0	0	0	0	0	0	0		
SOUTH	20.3	23.9	39	791	932		0	0	0	0	7	142	167	0	0	0	0	0	0	0	0	0	0	10	203	239	0	0	0		
WEST	20.3	40.5	64	1297	2595		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	142	284	0	0	0			
SKYLT.	35.5	99.8	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
DOORS	19.1	2.4	0	0	0		0	0	0	21	401	51	0	0	0	0	18	344	44	0	0	0	0	21	401	51	0	0	0		
NET EXPOSED WALL	4.3	0.5	757	3218	409		188	799	102	53	225	29	491	2087	265	0	0	0	0	0	0	0	265	1127	143	0	0	0	0		
NET EXPOSED BSMT WALL ABOVE GR	3.4	0.4	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	480	1645	209			
EXPOSED CLG	1.2	0.5	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
NO ATTIC EXPOSED CLG	2.6	1.1	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
EXPOSED FLOOR	2.4	0.3	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
BASEMENT/CRAWL HEAT LOSS							0				0				0				0										5098		
SLAB ON GRADE HEAT LOSS							0				0				0				0										0		
SUBTOTAL HT LOSS							5306				1200				367				3039						1269				7348		
SUB TOTAL HT GAIN								3936				153				196				1525					427				499		
LEVEL FACTOR / MULTIPLIER	0.30	0.37					0.30	0.37		0.30	0.37		0.30	0.37		0.30	0.37								0.50	0.70					
AIR CHANGE HEAT LOSS							1939				439				134				1111										6039		
AIR CHANGE HEAT GAIN								172				7				9				67									40		
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	0	0	0	0	0	0	0	0	0	0	0		
HEAT GAIN APPLIANCES/LIGHTS							613				613				0				0										613		
TOTAL HT LOSS BTU/H							7246				1639				501				4150						1269				13387		
TOTAL HT GAIN x 1.3 BTU/H							6137				1004				266				2070						555				1498		

TOTAL HEAT GAIN BTU/H:

25240

TONS: 2.10

LOSS DUE TO VENTILATION LOAD BTU/H: 1243

STRUCTURAL HEAT LOSS: 42103

TOTAL COMBINED HEAT LOSS BTU/H: 43346



SITE NAME: BARLASSINA
BUILDER: GREENPARK HOMES

TYPE: GARDEN 2

DATE: Aug-22

GFA: 2315 LO# 98638

HEATING CFM	928	COOLING CFM	928
TOTAL HEAT LOSS	42,103	TOTAL HEAT GAIN	25,082
AIR FLOW RATE CFM	22.04	AIR FLOW RATE CFM	37

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

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

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	10	6	4
R/A	0	0	4	1	1

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

MEDLOW	
MEDIUM	928
MEDIUM HIGH	1017
HIGH	1131

DESIGN CFM = 928
CFM @ .6" E.S.P.

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	14	15	16	17	18	19	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	MEDIA	BATH	BED-2	BED-3	MBR	K/B/L/D	K/B/L/D	K/B/L/D	LAUN	W/R	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.44	1.83	0.53	1.76	1.35	1.92	0.53	1.76	1.35	1.44	2.42	2.42	2.42	1.64	0.50	4.15	3.66	3.66	3.66	3.66
CFM PER RUN HEAT	32	40	12	39	30	42	12	39	30	32	53	53	53	36	11	91	81	81	81	81
RM GAIN MBH.	1.63	1.07	0.13	1.78	1.73	1.95	0.13	1.78	1.73	1.63	2.05	2.05	2.05	1.00	0.27	2.07	0.51	0.51	0.51	0.51
CFM PER RUN COOLING	60	39	5	66	64	72	5	66	64	60	76	76	76	37	10	77	19	19	19	19
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	50	33	25	67	57	34	14	69	65	44	42	35	23	9	39	40	31	19	28	35
EQUIVALENT LENGTH	140	160	100	170	130	120	100	160	140	170	100	140	120	120	130	90	150	160	80	130
TOTAL EFFECTIVE LENGTH	190	193	125	237	187	154	114	229	205	214	142	175	143	129	169	130	181	179	108	165
ADJUSTED PRESSURE	0.09	0.09	0.14	0.07	0.09	0.11	0.15	0.08	0.08	0.08	0.12	0.1	0.12	0.13	0.1	0.12	0.09	0.09	0.15	0.1
ROUND DUCT SIZE	5	4	4	6	5	5	4	6	5	5	5	5	5	4	4	6	6	6	6	6
HEATING VELOCITY (ft/min)	235	459	138	199	220	308	138	199	220	235	389	389	389	413	126	464	413	413	413	413
COOLING VELOCITY (ft/min)	441	447	57	337	470	529	57	337	470	441	558	558	558	424	115	393	97	97	97	97
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10
TRUNK	B	C		A	A	B	A	A	A	C	B	B	B	C	A	A	A	A	C	B

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

SUPPLY AIR TRUNK SIZE											RETURN AIR TRUNK SIZE												
	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT		VELOCITY (ft/min)		TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT		VELOCITY (ft/min)		TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT		VELOCITY (ft/min)			
TRUNK A	402	0.07	10.3	12	x	8	603	TRUNK G	0	0.00	0	0	0	0	TRUNK O	0	0.05	0	0	x	8	0	
TRUNK B	314	0.09	8.8	10	x	8	565	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0
TRUNK C	905	0.07	14	22	x	8	740	TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.05	0	0	x	8	0
TRUNK D	0	0.00	0	0	x	8	0	TRUNK J	0	0.00	0	0	x	8	0	TRUNK R	0	0.05	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 S	0	0.05	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	TRUNK T	0	0.05	0	0	x	8	0

[illegible]

TYPE: GARDEN 2
SITE NAME: BARLASSINA

LO # 98638

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	<u>2</u> @ 21.2 cfm	<u>42.4</u> cfm
Other Bedrooms	<u>2</u> @ 10.6 cfm	<u>21.2</u> cfm
Kitchen & Bathrooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Other Rooms	<u>5</u> @ 10.6 cfm	<u>53.0</u> cfm
Table 9.32.3.A.	TOTAL	<u>159.0</u> 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		<u>63.6</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>159</u>	cfm
Less Principal Ventil. Capacity	<u>63.6</u>	cfm
Required Supplemental Capacity	<u>95.4</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE V150H	Location: BSMT
<u>63.6</u> cfm	☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
63.6 CFM	X 72 F	X 1.08	X	0.25

SUPPLEMENTAL FANS		BY INSTALLING CONTRACTOR		
Location	Model	cfm	HVI	Sones
ENS	BY INSTALLING CONTRACTOR	50	☒	3.5
BATH	BY INSTALLING CONTRACTOR	50	☒	3.5
W/R	BY INSTALLING CONTRACTOR	50	☒	3.5

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE V150H		
<u>150</u> cfm high	<u>35</u> cfm low	
<u>75</u> % 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:	August-22

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 98638	Model: GARDEN 2	Builder: GREENPARK HOMES	Date: 8/24/2022																																																									
Volume Calculation			Air Change & Delta T Data																																																									
House Volume <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> </thead> <tbody> <tr> <td>Bsmt</td> <td>1064</td> <td>8</td> <td>8512</td> </tr> <tr> <td>First</td> <td>1064</td> <td>10</td> <td>10640</td> </tr> <tr> <td>Second</td> <td>1251</td> <td>9</td> <td>11259</td> </tr> <tr> <td>Third</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td>Fourth</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>30,411.0 ft³</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>861.1 m³</td> </tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1064	8	8512	First	1064	10	10640	Second	1251	9	11259	Third	0	9	0	Fourth	0	9	0	Total:			30,411.0 ft³	Total:			861.1 m³	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 30%;">0.307</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.084</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="5" style="text-align: center;">Design Temperature Difference</th> </tr> <tr> <th></th> <th>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> <th>ΔT °F</th> </tr> </thead> <tbody> <tr> <td>Winter DTDh</td> <td>22</td> <td>-18</td> <td>40</td> <td>72</td> </tr> <tr> <td>Summer DTDc</td> <td>24</td> <td>29</td> <td>5</td> <td>9</td> </tr> </tbody> </table>		WINTER NATURAL AIR CHANGE RATE	0.307	SUMMER NATURAL AIR CHANGE RATE	0.084	Design Temperature Difference						Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-18	40	72	Summer DTDc	24	29	5	9
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																																									
Bsmt	1064	8	8512																																																									
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Winter DTDh	22	-18	40	72																																																								
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5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.307 x 239.21 x 40 °C x 1.2 = 3540 W = 12078 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.084 x 239.21 x 5 °C x 1.2 = 123 W = 420 Btu/h																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 64 CFM x 72 °F x 1.08 x 0.25 = 1243 Btu/h			$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 64 CFM x 9 °F x 1.08 x 0.25 = 158 Btu/h																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																												
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																												
Level	Level Factor (LF)	HLairve Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HL _{clevel})																																																								
1	0.5	12,078	8,616	0.701																																																								
2	0.3		9,913	0.366																																																								
3	0.2		11,176	0.216																																																								
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																																																												
				Michael O'Rourke BCIN# 19669 																																																								

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** GARDEN 2**BUILDER:** GREENPARK HOMES**SFQT:** 2315**LO#** 98638**SITE:** BARLASSINA**DESIGN ASSUMPTIONS**

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	0	OUTDOOR DESIGN TEMP.	84
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75
		WINDOW SHGC	0.50

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 (ft ³):	30411.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	5.0 ft
LENGTH: 56.0 ft	WIDTH: 24.0 ft	EXPOSED PERIMETER:	160.0 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	96%	-
HRV/ERV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.8	-

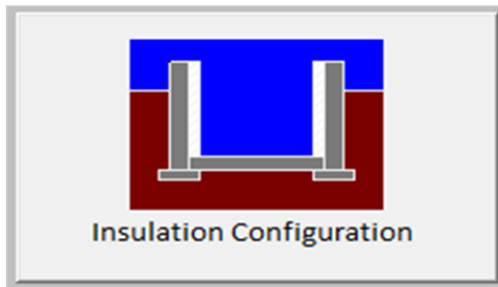
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Cambridge	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	17.1	 Insulation Configuration
Floor Width (m):	7.3	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.4	
Depth Below Grade (m):	1.52	
Window Area (m ²):	1.6	
Door Area (m ²):	2.0	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1494

TYPE: GARDEN 2
LO# 98638

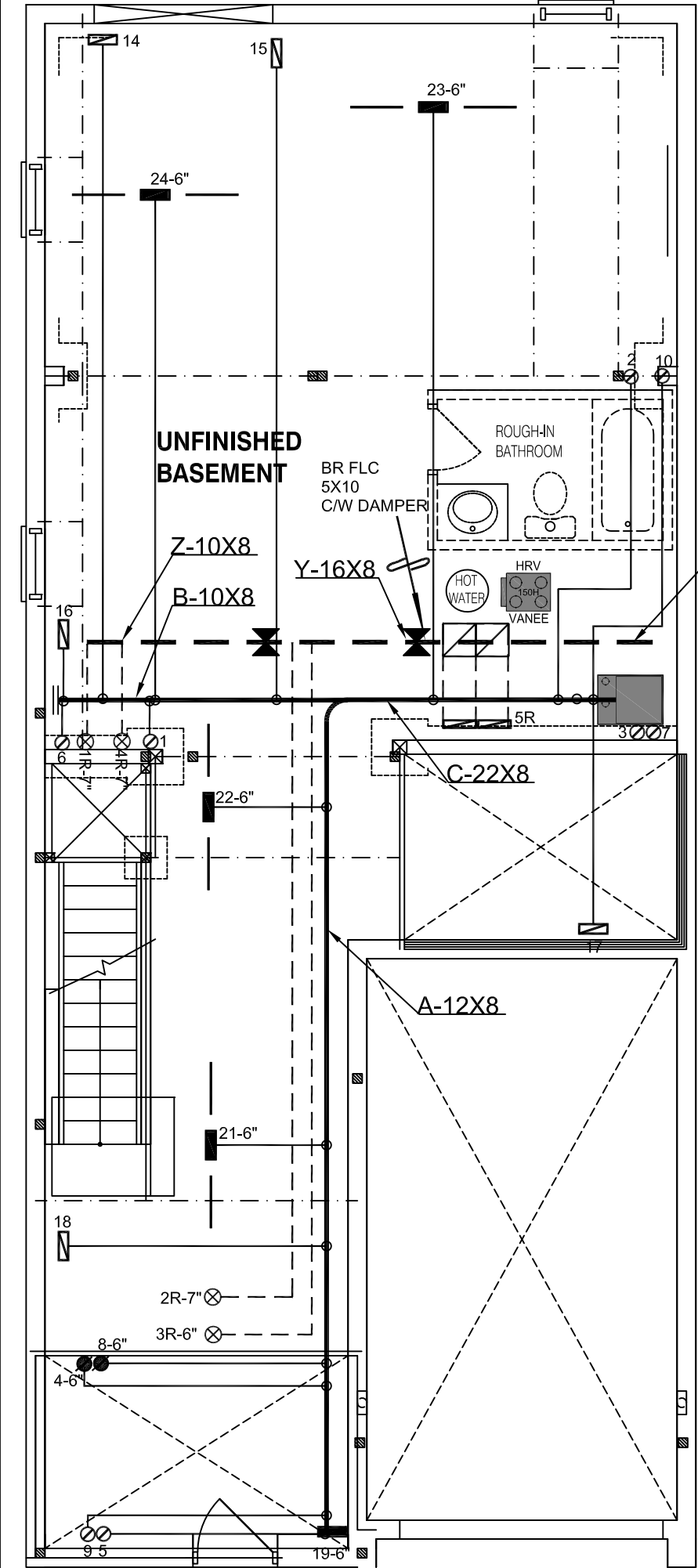
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

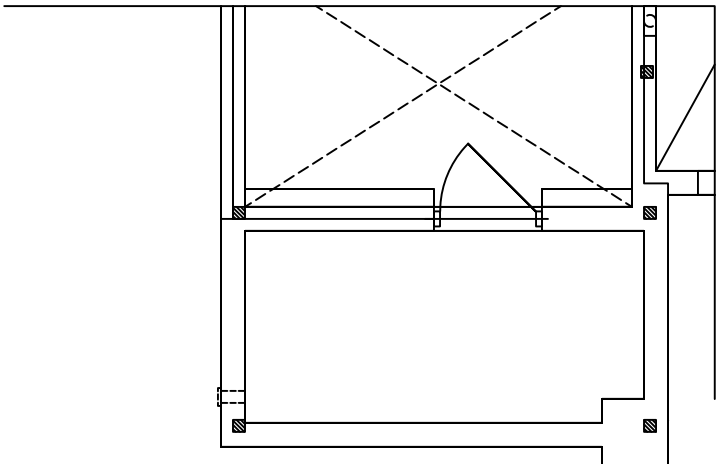
Weather Station Description				
Province:	Ontario			
Region:	Cambridge			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	6.71			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	861.1			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1147.9 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	30.0	30.0		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.307			
Cooling Air Leakage Rate (ACH/H):	0.084			

TYPE: GARDEN 2

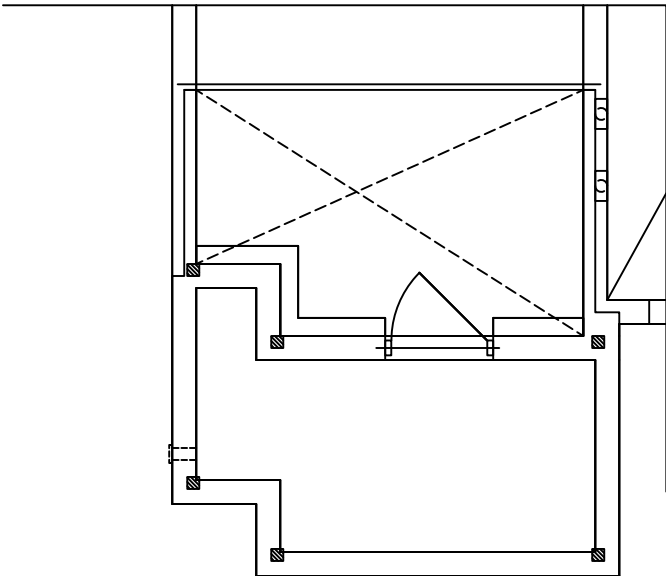
LO# 98638



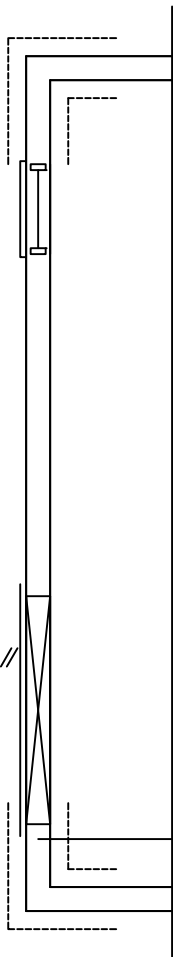
BASEMENT PLAN EL-1



BASEMENT PLAN EL-2



BASEMENT PLAN EL-3



PARTIAL BASEMENT LAYOUT
FOR DECK CONDITION EL-1 (EL-2,EL-3 SIMILAR)

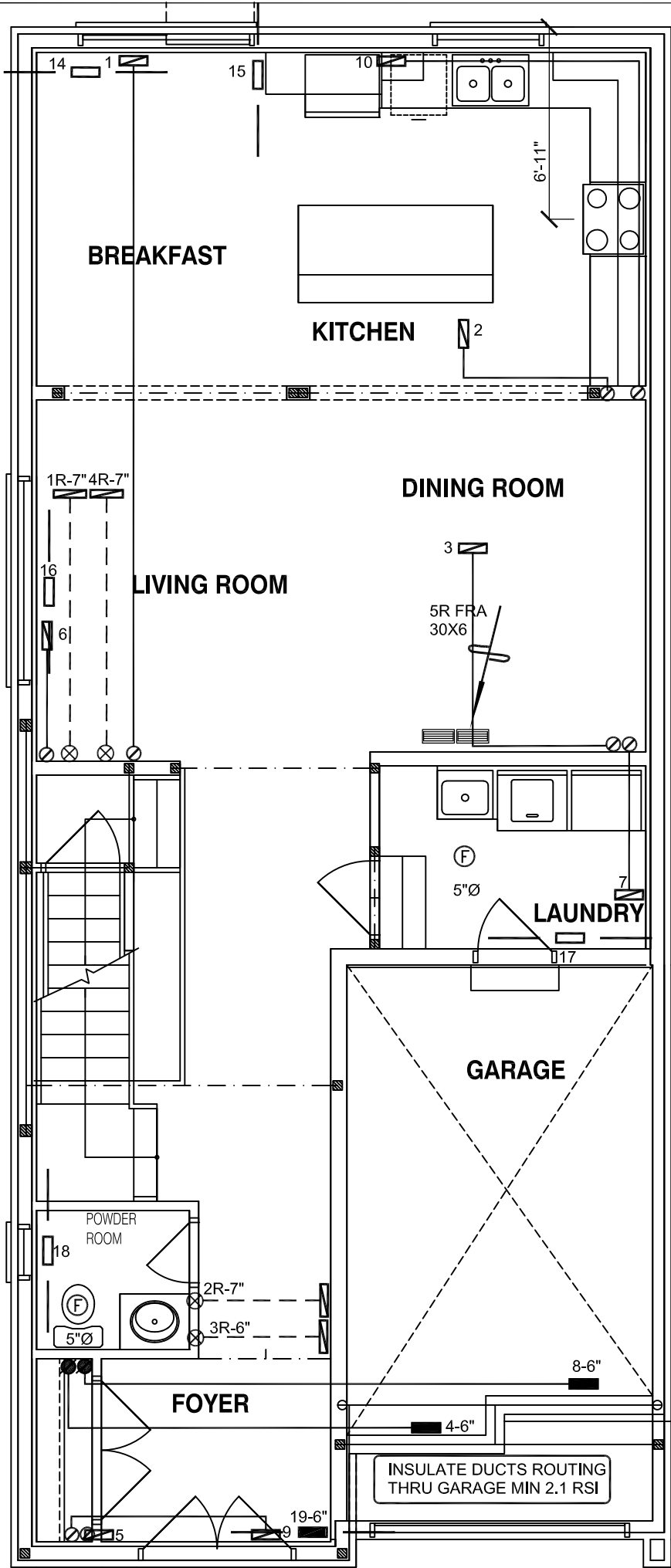
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UNDER DIVISION C, 3.2.5 OF THE
BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
PACKAGE A1

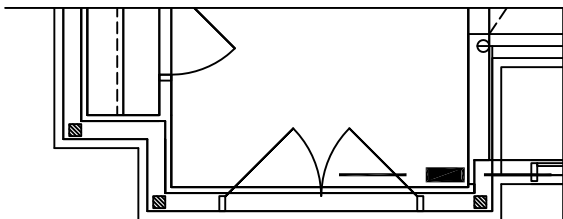
HVAC LEGEND							3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 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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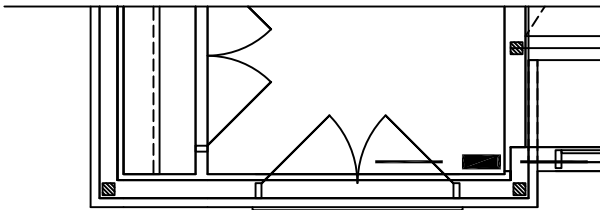
Client		HVACDESIGNS LTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply 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.	HEAT LOSS 43346 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title	
GREENPARK HOMES			MAKE GOODMAN		3RD FLOOR			BASEMENT HEATING LAYOUT	
Project Name BARLASSINA CAMBRIDGE, ONTARIO			MODEL GMEC960603BNA		2ND FLOOR	10	4	2	
Garden 2 - Elev 1			INPUT 60 MBTU/H		1ST FLOOR	6	1	3	
GARDEN 2 2315 sqft			OUTPUT 57.6 MBTU/H		BASEMENT	4	1	0	Date AUG/2022
		COOLING 2.0 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 928 cfm @ 0.6" w.c.						BCIN# 19669	
								LO# 98638	



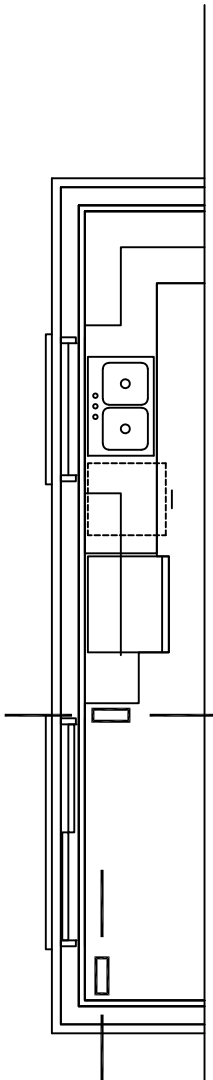
FIRST FLOOR PLAN EL-1



FIRST FLOOR PLAN EL-3



FIRST FLOOR PLAN EL-2



PARTIAL FIRST LAYOUT
FOR DECK CONDITION EL-1 (EL-2,EL-3 SIMIALR)

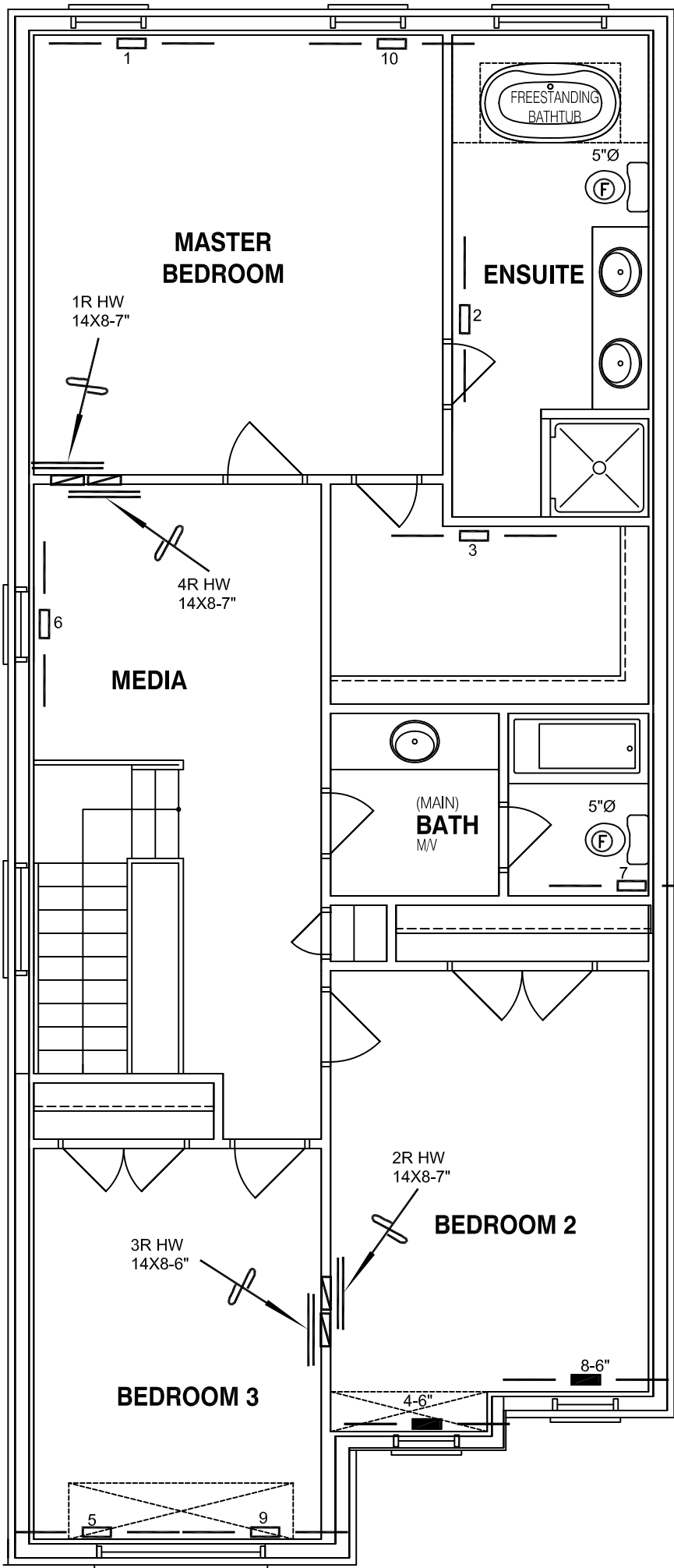
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Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
PACKAGE A1

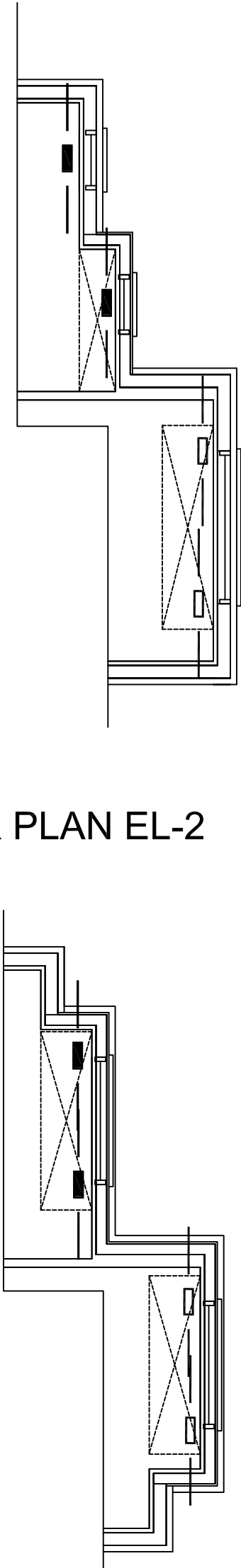
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR 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		 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 BARLASSINA CAMBRIDGE, ONTARIO			Date AUG/2022	
Garden 2 - Elev 1			Scale 3/16" = 1'-0"	
GARDEN 2 2315 sqft			BCIN# 19669	
			LO#	98638



SECOND FLOOR PLAN EL-2



SECOND FLOOR PLAN EL-1

SECOND FLOOR PLAN EL-3

CSA-F280-12
PACKAGE A1

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Project Name BARLASSINA CAMBRIDGE, ONTARIO			Date AUG/2022	
Garden 2 - Elev 1			Scale 3/16" = 1'-0"	
GARDEN 2 2315 sqft			BCIN# 19669	
			LO#	98638