

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				OPT 4 BED				DATE: Jan-23				WINTER NATURAL AIR CHANGE RATE 0.307				HEAT LOSS ΔT °F. 72				CSA-F280-12			
BUILDER: GREENPARK HOMES				TYPE: GARDEN 2				GFA: 2315				SUMMER NATURAL AIR CHANGE RATE 0.084				HEAT GAIN ΔT °F. 9				SB-12 PACKAGE A1			
ROOM USE				MBR				BED-2				BED-3				BED-4				BATH			
EXP. WALL				36				29				37				20				11			
CLG. HT.				9				9				9				9				9			
FACTORS																							
GRS.WALL AREA				324				261				333				180				99			
GLAZING				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN			
NORTH				20.3 14.4				0 0 0				0 0 0				0 0 0				0 0 0			
EAST				20.3 38.7				0 0 0				0 0 0				0 0 0				0 0 0			
SOUTH				20.3 22.9				0 0 0				0 0 0				26 527 595				0 0 0			
WEST				20.3 38.7				24 487 930				8 162 310				0 0 0				0 0 0			
SKYLT.				35.5 99.8				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			
NET EXPOSED WALL				4.3 0.5				300 1275 162				209 889 113				99 421 53							
NET EXPOSED BSMT WALL ABOVE GR				3.4 0.4				0 0 0				0 0 0				0 0 0							
EXPOSED CLG				1.2 0.5				294 359 155				194 237 102				145 177 76							
NO ATTIC EXPOSED CLG				2.6 1.1				0 0 0				0 0 0				0 0 0							
EXPOSED FLOOR				2.4 0.3				0 0 0				0 0 0				0 0 0							
BASEMENT/CRAWL HEAT LOSS								0				0				0							
SLAB ON GRADE HEAT LOSS								0				0				0							
SUBTOTAL HT LOSS				2121				1450				1390				598							
SUB TOTAL HT GAIN				1247				708				130											
LEVEL FACTOR / MULTIPLIER				0.20 0.24				0.20 0.24				0.20 0.24				0.20 0.24							
AIR CHANGE HEAT LOSS				500				342				141											
AIR CHANGE HEAT GAIN				62				35				6											
DUCT LOSS				0				0				0											
DUCT GAIN				0				0				0											
HEAT GAIN PEOPLE				240				2				480				0							
HEAT GAIN APPLIANCES/LIGHTS				613				0				0											
TOTAL HT LOSS BTU/H				2622				1792								739							
TOTAL HT GAIN x 1.3 BTU/H				3122				966								177							

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			860			209			60			539			272			800		
LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN		
GLAZING																				
NORTH			20.3	14.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST			20.3	38.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH			20.3	22.9	39	791	892	0	0	0	7	142	160	0	0	0	0	0	10	203
WEST			20.3	38.7	64	1297	2479	0	0	0	0	0	0	0	0	0	0	0	0	229
SKYLT.			35.5	99.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS			19.1	2.4	0	0	0	21	401	51	0	0	0	18	344	44	0	0	21	401
NET EXPOSED WALL			4.3	0.5	757	3218	409	188	799	102	53	225	29	491	2087	265	0	0	21	401
NET EXPOSED BSMT WALL ABOVE GR			3.4	0.4	0	0	0	0	0	0	0	0	0	0	0	0	265	1127	0	0
EXPOSED CLG			1.2	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	480	1645
NO ATTIC EXPOSED CLG			2.6	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	209
EXPOSED FLOOR			2.4	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS					0			0			0			0						
SLAB ON GRADE HEAT LOSS					0			0			0			0						
SUBTOTAL HT LOSS					5306			1200			367			3039					5098	
SUB TOTAL HT GAIN						3780			153			189			1471			414		489
LEVEL FACTOR / MULTIPLIER			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						186			8		9			73						45
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						613			613		0			0				0		613
TOTAL HT LOSS BTU/H					7246			1639			501			4150				1269		13387
TOTAL HT GAIN x 1.3 BTU/H					5954			1005			257			2007				539		1490

SITE NAME: BARLASSINA
BUILDER: GREENPARK HOMES

OPT 4 BED
TYPE: GARDEN 2

DATE: Jan-23

GFA: 2315 LO# 99993

HEATING CFM 928 COOLING CFM 928
TOTAL HEAT LOSS 41,147 TOTAL HEAT GAIN 24,515
AIR FLOW RATE CFM 22.55 AIR FLOW RATE CFM 37.85

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

TEMPERATURE RISE 57 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	9	6	4
R/A	0	0	5	1	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	4	5	6	7	8	9	10	14	15	16	17	18	19	21	22	23	24
ROOM NAME	MBR	ENS	BED-2	BED-3	BED-4	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.	1.31	1.79	1.64	1.41	1.72	0.74	1.64	1.41	1.31	2.42	2.42	2.42	1.64	0.50	4.15	3.66	3.66	3.66	3.66
CFM PER RUN HEAT	30	40	37	32	39	17	37	32	30	54	54	54	37	11	94	83	83	83	83
RM GAIN MBH.	1.56	0.97	1.72	1.70	2.16	0.18	1.72	1.70	1.56	1.98	1.98	1.98	1.01	0.26	2.01	0.51	0.51	0.51	0.51
CFM PER RUN COOLING	59	37	65	64	82	7	65	64	59	75	75	75	38	10	76	19	19	19	19
ADJUSTED PRESSURE	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	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	39	56	67	59	35	15	71	66	44	42	35	23	9	39	40	31	19	28	35
EQUIVALENT LENGTH	160	170	170	140	120	100	160	140	170	100	140	120	120	130	90	150	160	80	130
TOTAL EFFECTIVE LENGTH	199	226	237	199	155	115	231	206	214	142	175	143	129	169	130	181	179	108	165
ADJUSTED PRESSURE	0.09	0.08	0.07	0.09	0.1	0.15	0.07	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	5	6	5	6	4	6	5	5	5	5	5	4	4	6	6	6	6	6
HEATING VELOCITY (ft/min)	220	294	189	235	199	195	189	235	220	396	396	396	424	126	479	423	423	423	423
COOLING VELOCITY (ft/min)	433	272	331	470	418	80	331	470	433	551	551	551	436	115	388	97	97	97	97
OUTLET GRILL SIZE	3X10	3X10	4X10	3X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10
TRUNK	C	B	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 LGH.	EQUIVALENT LENGTH	TOTAL EFFECTIVE LENGTH	ADJUSTED PRESSURE	ROUND DUCT SIZE	HEATING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	OUTLET GRILL SIZE	TRUNK
1	MBR	1.31	30	1.56	59	0.17	39	160	199	0.09	5	220	433	3X10	C
2	ENS	1.79	40	0.97	37	0.17	56	170	226	0.08	5	294	272	3X10	B
4	BED-2	1.64	37	1.72	65	0.17	67	170	237	0.07	6	189	331	4X10	A
5	BED-3	1.41	32	1.70	64	0.17	59	140	199	0.09	5	235	470	3X10	A
6	BED-4	1.72	39	2.16	82	0.16	35	120	155	0.1	6	199	418	4X10	B
7	BATH	0.74	17	0.18	7	0.17	15	100	115	0.15	4	195	80	3X10	A
8	BED-2	1.64	37	1.72	65	0.17	71	160	231	0.07	6	189	331	4X10	A
9	BED-3	1.41	32	1.70	64	0.17	66	140	206	0.08	5	235	470	3X10	A
10	MBR	1.31	30	1.56	59	0.17	44	170	214	0.08	5	220	433	3X10	C
14	K/B/L/D	2.42	54	1.98	75	0.17	42	100	142	0.12	5	396	551	3X10	B
15	K/B/L/D	2.42	54	1.98	75	0.17	35	140	175	0.1	5	396	551	3X10	B
16	K/B/L/D	2.42	54	1.98	75	0.17	23	120	143	0.12	5	396	551	3X10	B
17	LAUN	1.64	37	1.01	38	0.17	9	120	129	0.13	4	424	436	3X10	C
18	W/R	0.50	11	0.26	10	0.17	39	130	169	0.1	4	126	115	3X10	A
19	FOY	4.15	94	2.01	76	0.16	40	90	130	0.12	6	479	388	4X10	A
21	BAS	3.66	83	0.51	19	0.16	31	150	181	0.09	6	423	97	4X10	A
22	BAS	3.66	83	0.51	19	0.16	19	160	179	0.09	6	423	97	4X10	A
23	BAS	3.66	83	0.51	19	0.16	28	80	108	0.15	6	423	97	4X10	C
24	BAS	3.66	83	0.51	19	0.16	35	130	165	0.1	6	423	97	4X10	B

SUPPLY AIR TRUNK SIZE															RETURN AIR TRUNK SIZE														
	TRUNK	STATIC	ROUND	RECT			VELOCITY		TRUNK	STATIC	ROUND	RECT			VELOCITY		TRUNK	STATIC	ROUND	RECT			VELOCITY						
	CFM	PRESS.	DUCT	DUCT			(ft/min)		CFM	PRESS.	DUCT	DUCT			(ft/min)		CFM	PRESS.	DUCT	DUCT			(ft/min)						
TRUNK A	409	0.07	10.4	12	x	8	614	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.05	0	0	x	8	0						
TRUNK B	324	0.08	9.2	10	x	8	583	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0						
TRUNK C	913	0.07	14	22	x	8	747	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						

RETURN AIR #	1	2	3	4	5	6	0	0	0	0	0	0	0	0	0	BR
AIR VOLUME	95	80	85	85	322	95	0	0	0	0	0	0	0	0	0	166
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
ACTUAL DUCT LGH.	40	66	68	55	17	52	1	1	1	1	1	1	1	1	1	18
EQUIVALENT LENGTH	155	215	175	180	180	175	0	0	0	0	0	0	0	0	0	175
TOTAL EFFECTIVE LH	195	281	243	235	197	227	1	1	1	1	1	1	1	1	1	193
ADJUSTED PRESSURE	0.08	0.05	0.06	0.06	0.08	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.08
ROUND DUCT SIZE	5.8	6.1	6	6	9.2	6	0	0	0	0	0	0	0	0	0	7.2
INLET GRILL SIZE	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	8
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	30	14	0	0	0	0	0	0	0	0	0	14

TYPE: GARDEN 2
SITE NAME: BARLASSINA

LO # 99993
OPT 4 BED

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>3</u> @ 10.6 cfm <u>31.8</u> cfm	
Kitchen & Bathrooms	<u>4</u> @ 10.6 cfm <u>42.4</u> cfm	
Other Rooms	<u>4</u> @ 10.6 cfm <u>42.4</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	79.5 cfm	

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>159</u> cfm	
Less Principal Ventil. Capacity	<u>79.5</u> cfm	
Required Supplemental Capacity	<u>79.5</u> cfm	

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE V150H	Location: BSMT
<u>79.5</u> cfm	☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
79.5 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 @ 32 deg F (0 deg C)	☒ HVI Approved	

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:	January-23

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 99993	Model: GARDEN 2	Builder: GREENPARK HOMES	Date: 1/17/2023																																																									
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)																																																									
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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																																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 72 °F x 1.08 x 0.25 = 1554 Btu/h			$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 9 °F x 1.08 x 0.25 = 197 Btu/h																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																												
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HLairve Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HL_{clevel})</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HL_{clevel})</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.5</td> <td rowspan="5" style="text-align: center; vertical-align: middle;">12,078</td> <td>8,616</td> <td>0.701</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>9,913</td> <td>0.366</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>10,242</td> <td>0.236</td> </tr> <tr> <td>4</td> <td>0</td> <td>0</td> <td>0.000</td> </tr> <tr> <td>5</td> <td>0</td> <td>0</td> <td>0.000</td> </tr> </tbody> </table> *HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0					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	10,242	0.236	4	0	0	0.000	5	0	0	0.000																														
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				Michael O'Rourke BCIN# 19669 																																																								

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: GARDEN 2	OPT 4 BED	BUILDER: GREENPARK HOMES
SFQT: 2315	LO# 99993	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:	5
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		Compliance Package A1	
Component		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	-

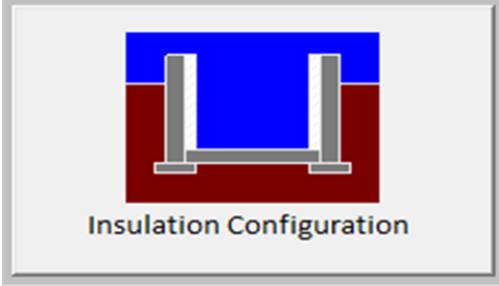
INDIVIDUAL BCIN: 19669

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# 99993

OPT 4 BED

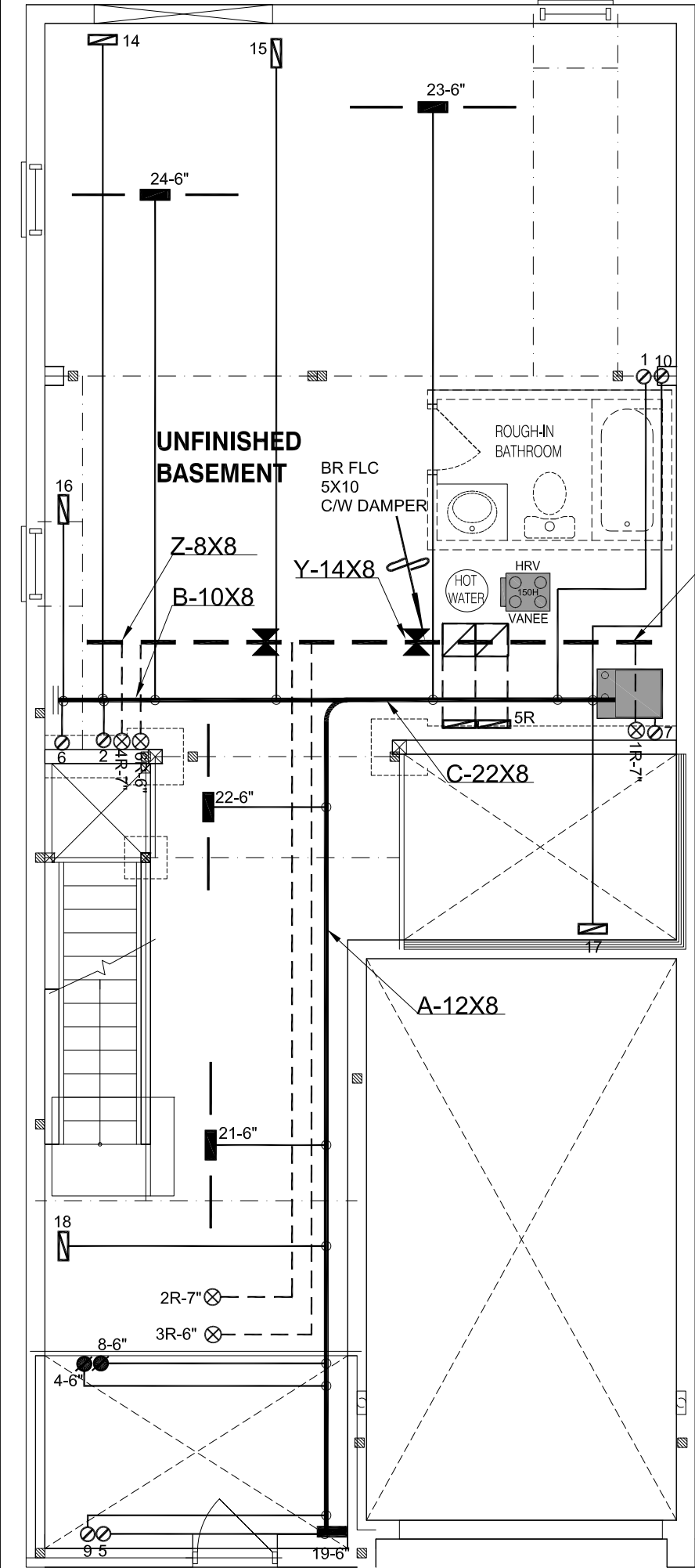
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

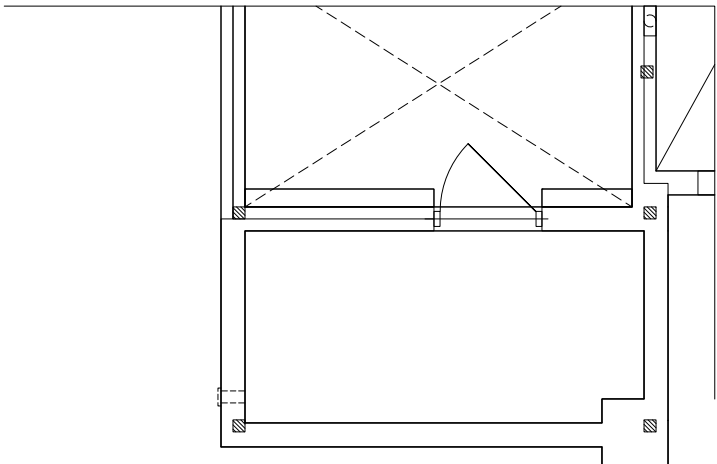
Weather Station Description				
Province:	Ontario			
Region:	Cambridge			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	6.71			
Building Configuration				
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		
	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):	0.307			
Cooling Air Leakage Rate (ACH/H):	0.084			

TYPE: GARDEN 2
LO# 99993

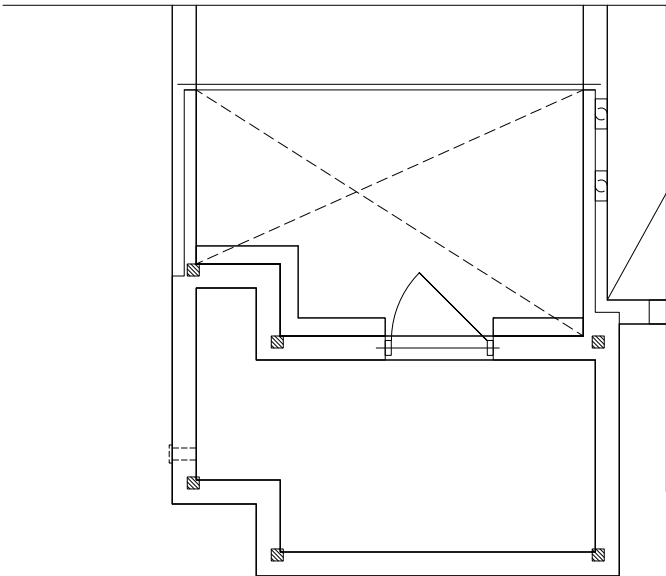
OPT 4 BED



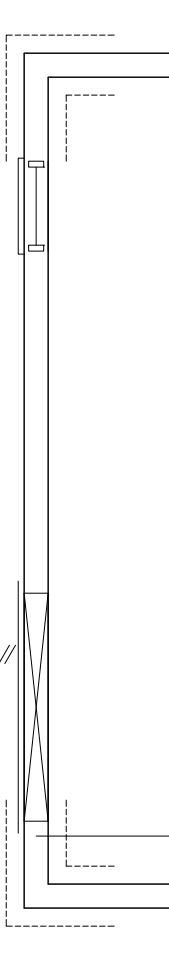
BASEMENT PLAN EL-1



BASEMENT PLAN EL-2



BASEMENT PLAN EL-3



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

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.

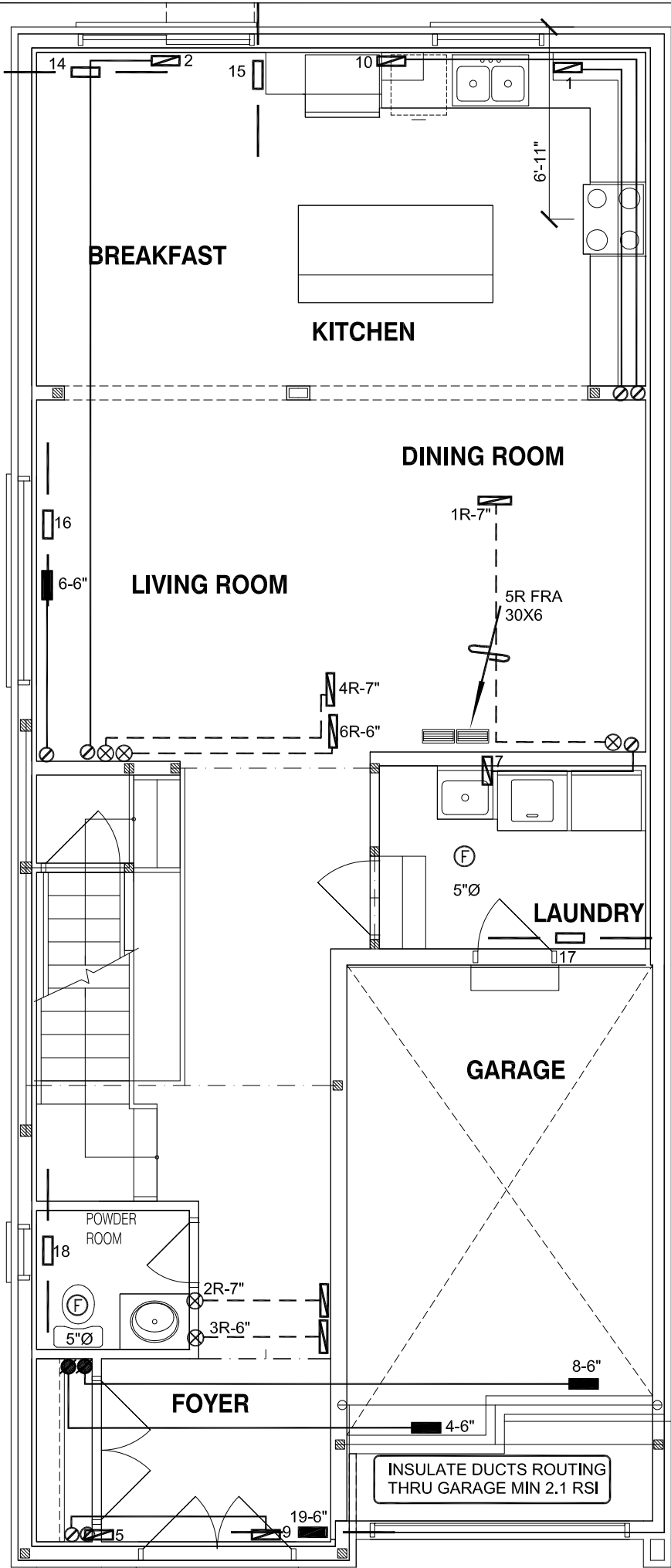
CSA-F280-12

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 42701 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title	
GREENPARK HOMES	Project Name BARLASSINA CAMBRIDGE, ONTARIO Garden 2 - Elev 1 OPT 4 BED GARDEN 2 2315 sqft		MAKE GOODMAN	3RD FLOOR				BASEMENT HEATING LAYOUT	
MODEL GMEC960603BNA			2ND FLOOR	9	5	2			
INPUT 60 MBTU/H			1ST FLOOR	6	1	3			
OUTPUT 57.6 MBTU/H			BASEMENT	4	1	0	Date	JAN/2023	
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#	99993	



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)

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.

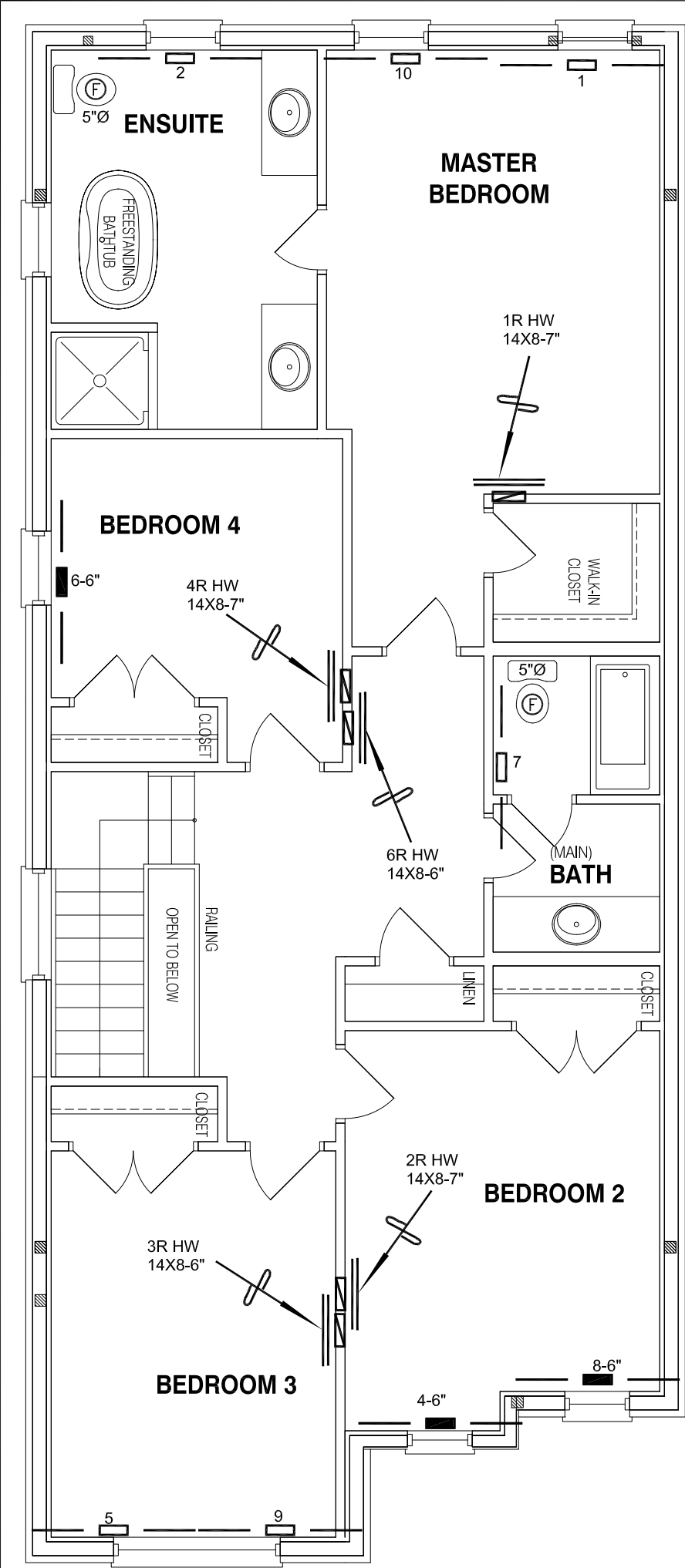
CSA-F280-12

PACKAGE A1

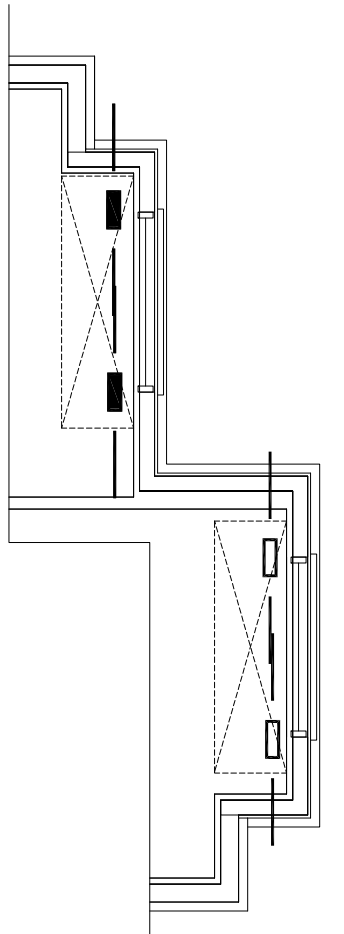
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GREENPARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	JAN/2023
BARLASSINA CAMBRIDGE, ONTARIO Garden 2 - Elev 1 OPT 4 BED GARDEN 2			Scale	3/16" = 1'-0"
2315 sqft			BCIN# 19669	
			LO#	99993



SECOND FLOOR PLAN EL-2



SECOND FLOOR PLAN EL-3

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.

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.		
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GREENPARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	JAN/2023
BARLASSINA CAMBRIDGE, ONTARIO Garden 2 - Elev 1 OPT 4 BED GARDEN 2			Scale	3/16" = 1'-0"
2315 sqft			BCIN# 19669	
		LO#	99993	