

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 1 - Elevation 3

SITE NAME: BARLASSINA				OPT 4 BED				DATE: Jan-23				WINTER NATURAL AIR CHANGE RATE 0.352				HEAT LOSS ΔT °F. 72				CSA-F280-12							
BUILDER: GREENPARK HOMES				TYPE: GARDEN 1 - WOB				GFA: 2197				LO# 99992				SUMMER NATURAL AIR CHANGE RATE 0.096				HEAT GAIN ΔT °F. 9				SB-12 PACKAGE A1			
ROOM USE				MBR				ENS				BED-2				BED-3				BED-4				BATH			
EXP. WALL				38				21				29				38				18				9			
CLG. HT.				9				9				9				9				9							
FACTORS																											
GRS.WALL AREA		LOSS GAIN		342				189				261				342				162				81			
GLAZING				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	
EAST		20.3	40.5	0	0	0		0	0	0		44	892	1784		56	1135	2270		0	0	0		0	0	0	
SOUTH		20.3	23.9	0	0	0		0	0	0		0	0	0		0	0	0		20	405	478		0	0	0	
WEST		20.3	40.5	20	405	811		14	284	568		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	
DOORS		19.1	2.4	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	322	1369	174		175	744	95		217	923	117		286	1216	155		142	604	77		81	344	44	
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	
EXPOSED CLG		1.2	0.5	309	378	163		143	175	75		194	237	102		209	256	110		195	238	103		126	154	66	
NO ATTIC EXPOSED CLG		2.6	1.1	0	0	0		0	0	0		0	0	0		22	58	25		0	0	0		0	0	0	
EXPOSED FLOOR		2.4	0.3	0	0	0		0	0	0		194	471	60		0	0	0		0	0	0		17	41	5	
BASEMENT/CRAWL HEAT LOSS				0				0				0				0				0				0			
SLAB ON GRADE HEAT LOSS				0				0				0				0				0				0			
SUBTOTAL HT LOSS				2152				1203				2523				2664				1248				540			
SUB TOTAL HT GAIN						1148				737				2063				2560				657				115	
LEVEL FACTOR / MULTIPLIER				0.20		0.25		0.20		0.25		0.20		0.25		0.20		0.25		0.20		0.25					
AIR CHANGE HEAT LOSS				547				306				641				677				317				137			
AIR CHANGE HEAT GAIN						46				29				82				102				26				5	
DUCT LOSS				0				0				316				0				0				68			
DUCT GAIN						0				0				297				0				0				12	
HEAT GAIN PEOPLE		240		2		480		0		0		1		240		1		240		1		240		0		0	
HEAT GAIN APPLIANCES/LIGHTS						580				0				580				580		1		580				0	
TOTAL HT LOSS BTU/H				2699				1508				3481				3342				1565				745			
TOTAL HT GAIN x 1.3 BTU/H						2929				997				4241				4526				1954				172	

ROOM USE							K/B/LD					LAUN			W/R			FOY									WOB			BAS				
EXP. WALL							77					22			6			52									34			118				
CLG. HT.							10					11			10			10									8			8				
FACTORS																																		
GRS.WALL AREA	LOSS	GAIN					770					242			60			520									272			590				
GLAZING							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			
EAST	20.3	40.5					0	0	0			0	0	0	0	0	0	30	608	1216					0	0	0	0	0	0	0			
SOUTH	20.3	23.9					22	446	526			0	0	0	8	162	191	0	0	0					0	0	0	5	101	119				
WEST	20.3	40.5					81	1642	3284			0	0	0	0	0	0	0	0	0					64	1297	2595	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			
DOORS	19.1	2.4					0	0	0			21	401	51	0	0	0	18	344	44					0	0	0	21	401	51				
NET EXPOSED WALL	4.3	0.5					667	2836	360			221	940	119	52	221	28	472	2007	255					208	884	112	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	354	1214	154				
EXPOSED CLG	1.2	0.5					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				
EXPOSED FLOOR	2.4	0.3					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																	
SLAB ON GRADE HEAT LOSS							0					0					0																	
SUBTOTAL HT LOSS							4924					1341			383			2959									375							
SUB TOTAL HT GAIN								4170					170			219				1515							2556							
LEVEL FACTOR / MULTIPLIER	0.30	0.41									0.30	0.41			0.30	0.41			0.30	0.41							2707			0.50	1.06			
AIR CHANGE HEAT LOSS							2019					550			157			1213																
AIR CHANGE HEAT GAIN								166					7			9				60														
DUCT LOSS							0					0			0			0																
DUCT GAIN								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	
HEAT GAIN APPLIANCES/LIGHTS								580					580			0				0							0							
TOTAL HT LOSS BTU/H							6943					1890			540			4172									2556							
TOTAL HT GAIN x 1.3 BTU/H							6391					984			296			2048									3519							

SITE NAME: BARLASSINA
BUILDER: GREENPARK HOMES

OPT 4 BED
TYPE: GARDEN 1 - WOB

DATE: Jan-23

GFA: 2197 LO# 99992

HEATING CFM 928 COOLING CFM 928
TOTAL HEAT LOSS 39,645 TOTAL HEAT GAIN 29,391
AIR FLOW RATE CFM 23.41 AIR FLOW RATE CFM 31.57

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	9	6	4
R/A	0	0	5	1	1

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
MEDIUM 928
MEDIUM HIGH 1017
HIGH 1131

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

TEMPERATURE RISE 57 °F

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/LD	K/B/LD	K/B/LD	LAUN	W/R	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.35	1.51	1.74	1.67	1.56	0.74	1.74	1.67	1.35	2.31	2.31	2.31	1.89	0.54	4.17	3.19	3.19	3.19	3.19
CFM PER RUN HEAT	32	35	41	39	37	17	41	39	32	54	54	54	44	13	98	75	75	75	75
RM GAIN MBH.	1.46	1.00	2.12	2.26	1.95	0.17	2.12	2.26	1.46	2.13	2.13	2.13	0.98	0.30	2.05	1.21	1.21	1.21	1.21
CFM PER RUN COOLING	46	31	67	71	62	5	67	71	46	67	67	67	31	9	65	38	38	38	38
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	0.16	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	35	49	52	61	37	34	67	64	39	20	33	19	22	40	41	21	35	17	36
EQUIVALENT LENGTH	150	170	150	170	160	150	170	190	120	170	130	110	130	160	110	150	140	150	170
TOTAL EFFECTIVE LENGTH	185	219	202	231	197	184	237	254	159	190	163	129	152	200	151	171	175	167	206
ADJUSTED PRESSURE	0.09	0.08	0.09	0.07	0.09	0.09	0.07	0.07	0.11	0.09	0.11	0.13	0.11	0.09	0.11	0.1	0.1	0.1	0.08
ROUND DUCT SIZE	4	4	6	6	6	4	6	6	4	5	5	5	4	4	6	6	6	6	6
HEATING VELOCITY (ft/min)	367	402	209	199	189	195	209	199	367	396	396	396	505	149	500	382	382	382	382
COOLING VELOCITY (ft/min)	528	356	342	362	316	57	342	362	528	492	492	492	356	103	331	194	194	194	194
OUTLET GRILL SIZE	3X10	3X10	4X10	4X10	4X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10
TRUNK	C	C	A	A	B	B	A	A	C	C	C	C	B	A	A	C	C	C	A

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/LD	K/B/LD	K/B/LD	LAUN	W/R	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.35	1.51	1.74	1.67	1.56	0.74	1.74	1.67	1.35	2.31	2.31	2.31	1.89	0.54	4.17	3.19	3.19	3.19	3.19
CFM PER RUN HEAT	32	35	41	39	37	17	41	39	32	54	54	54	44	13	98	75	75	75	75
RM GAIN MBH.	1.46	1.00	2.12	2.26	1.95	0.17	2.12	2.26	1.46	2.13	2.13	2.13	0.98	0.30	2.05	1.21	1.21	1.21	1.21
CFM PER RUN COOLING	46	31	67	71	62	5	67	71	46	67	67	67	31	9	65	38	38	38	38
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	0.16	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	35	49	52	61	37	34	67	64	39	20	33	19	22	40	41	21	35	17	36
EQUIVALENT LENGTH	150	170	150	170	160	150	170	190	120	170	130	110	130	160	110	150	140	150	170
TOTAL EFFECTIVE LENGTH	185	219	202	231	197	184	237	254	159	190	163	129	152	200	151	171	175	167	206
ADJUSTED PRESSURE	0.09	0.08	0.09	0.07	0.09	0.09	0.07	0.07	0.11	0.09	0.11	0.13	0.11	0.09	0.11	0.1	0.1	0.1	0.08
ROUND DUCT SIZE	4	4	6	6	6	4	6	6	4	5	5	5	4	4	6	6	6	6	6
HEATING VELOCITY (ft/min)	367	402	209	199	189	195	209	199	367	396	396	396	505	149	500	382	382	382	382
COOLING VELOCITY (ft/min)	528	356	342	362	316	57	342	362	528	492	492	492	356	103	331	194	194	194	194
OUTLET GRILL SIZE	3X10	3X10	4X10	4X10	4X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10
TRUNK	C	C	A	A	B	B	A	A	C	C	C	C	B	A	A	C	C	C	A

SUPPLY AIR TRUNK SIZE	TRUNK	STATIC	ROUND	RECT	VELOCITY	TRUNK	STATIC	ROUND	RECT	VELOCITY	RETURN AIR TRUNK SIZE	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	346	0.07	9.7	12	x 8	519	0	0.00	0	0	x 8	0	0.05	0	0	x 8
TRUNK B	444	0.07	10.7	16	x 8	500	0	0.00	0	0	x 8	0	0.05	0	0	x 8
TRUNK C	486	0.08	10.7	14	x 8	625	0	0.00	0	0	x 8	0	0.05	0	0	x 8
TRUNK D	930	0.07	14.1	24	x 8	698	0	0.00	0	0	x 8	0	0.05	0	0	x 8
TRUNK E	0	0.00	0	0	x 8	0	0	0.00	0	0	x 8	0	0.05	0	0	x 8
TRUNK F	0	0.00	0	0	x 8	0	0	0.00	0	0	x 8	0	0.05	0	0	x 8

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	14	15	16	17	18	19	21	22	23	24
AIR VOLUME	85	85	85	85	335	103	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
ACTUAL DUCT LGH.	68	55	61	61	35	40	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	255	240	235	215	225	160	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	323	295	296	276	260	200	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.05	0.05	0.05	0.05	0.06	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
ROUND DUCT SIZE	6.3	6.3	6.3	6.3	10	6.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	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
INLET GRILL SIZE	14	14	14	14	30	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: GARDEN 1 - WOB
SITE NAME: BARLASSINA

LO # 99992
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>3</u> @ 10.6 cfm	<u>31.8</u> cfm
Table 9.32.3.A.	TOTAL	<u>148.4</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>79.5</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>148.4</u>	cfm
Less Principal Ventil. Capacity	<u>79.5</u>	cfm
Required Supplemental Capacity	<u>68.9</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	☒ 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:	January-23

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 99992	Model: GARDEN 1 - WOB	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>999</td><td>8</td><td>7992</td></tr> <tr><td>First</td><td>999</td><td>10</td><td>9990</td></tr> <tr><td>Second</td><td>1198</td><td>9</td><td>10782</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="3" style="text-align: right;">Total:</td><td>28,764.0 ft³</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>814.5 m³</td></tr> </tbody> </table>		Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	999	8	7992	First	999	10	9990	Second	1198	9	10782	Third	0	9	0	Fourth	0	9	0	Total:			28,764.0 ft³	Total:			814.5 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%;">0.352</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.096</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <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> <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> </table>			WINTER NATURAL AIR CHANGE RATE	0.352	SUMMER NATURAL AIR CHANGE RATE	0.096	Design Temperature Difference						Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-18	40	72	Summer DTDc	24	29	5	9
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5.2.3.1 Heat Loss due to Air Leakage		6.2.6 Sensible Gain due to Air Leakage																																																										
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.352 x 226.25 x 40 °C x 1.2 = 3848 W = 13131 Btu/h		$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.096 x 226.25 x 5 °C x 1.2 = 134 W = 456 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)																																																												
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																												
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	13,131	6,194	1.060																																																								
2	0.3		9,606	0.410																																																								
3	0.2		10,329	0.254																																																								
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 1 - WOB	OPT 4 BED	BUILDER:	GREENPARK HOMES
SFQT:	2197	LO#	99992	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 (ft³):	28764.0	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: 52.0 ft	WIDTH: 24.0 ft	EXPOSED PERIMETER:	118.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	34.0 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	-

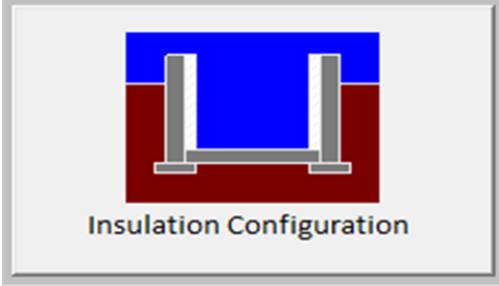
INDIVIDUAL BCIN: 19669

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):	4.6	 Insulation Configuration
Floor Width (m):	7.3	
Exposed Perimeter (m):	36.0	
Wall Height (m):	2.4	
Depth Below Grade (m):	1.24	
Window Area (m ²):	0.5	
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):		563

TYPE: GARDEN 1 - WOB
LO# 99992

OPT 4 BED

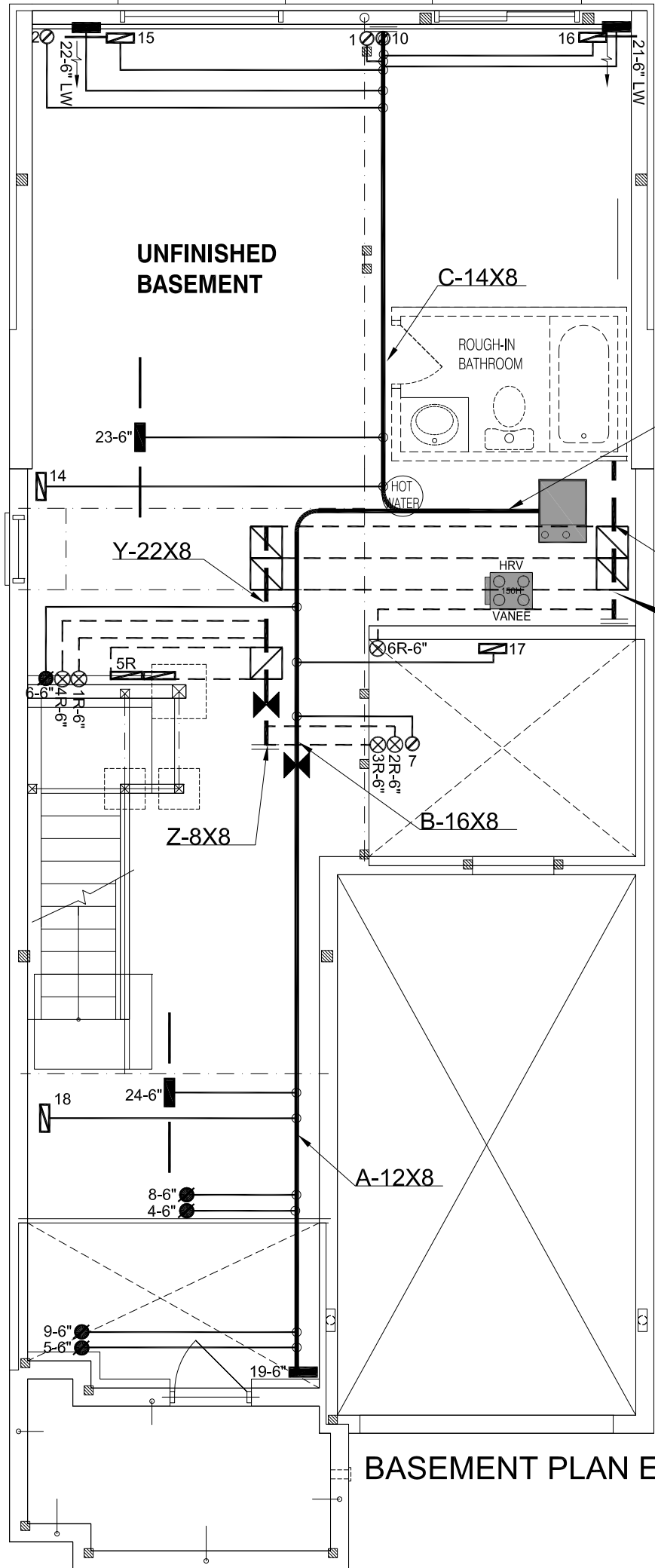
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

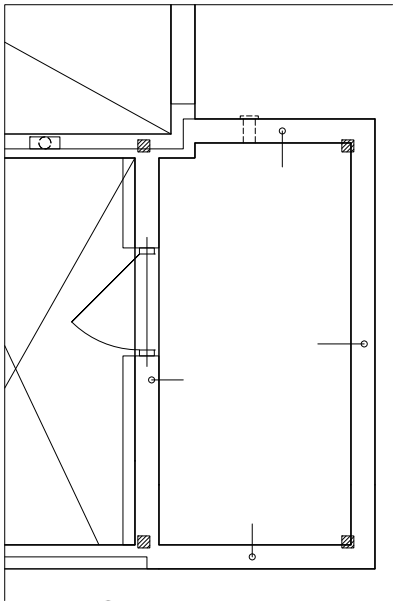
Weather Station Description				
Province:	Ontario			
Region:	Cambridge			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	8.23			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	814.5			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1085.8 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):	0.352			
Cooling Air Leakage Rate (ACH/H):	0.096			

TYPE: GARDEN 1 - WOB
LO# 99992

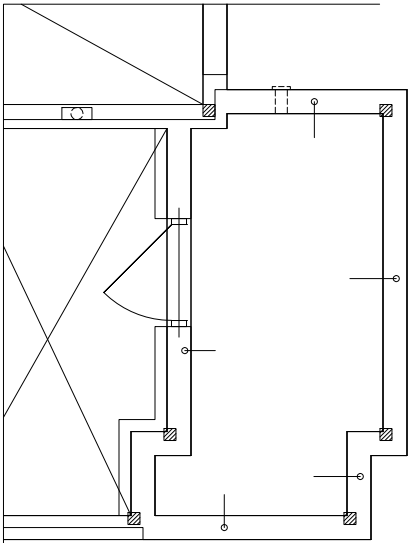
OPT 4 BED



BASEMENT PLAN EL-1



BASEMENT PLAN EL-2



BASEMENT PLAN EL-3

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HVAC DESIGNS LTD.

CSA-F280-12

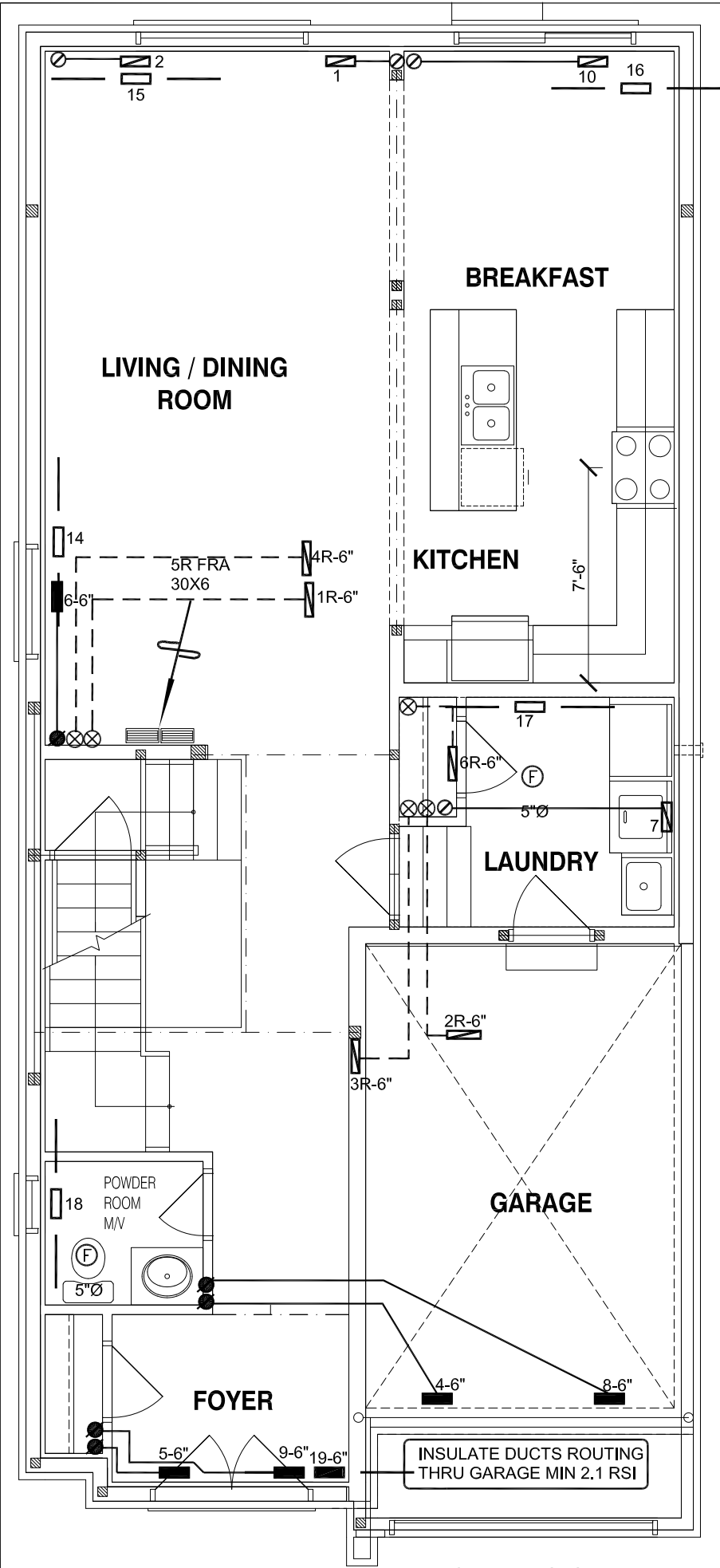
WOB

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	

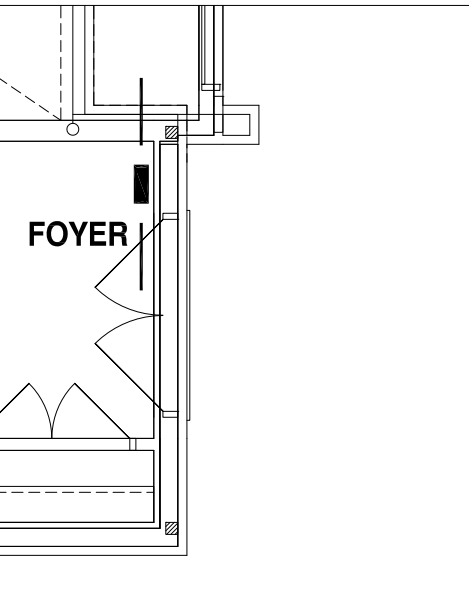
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Client	 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest 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 41199 BTU/H UNIT DATA		# OF RUNS			S/A	R/A	FANS	Sheet Title				
GREENPARK HOMES		MAKE GOODMAN	MODEL GMEC960603BNA		INPUT 60		MBTU/H		OUTPUT 57.6			MBTU/H		
Project Name BARLASSINA CAMBRIDGE, ONTARIO Garden 1 - Elevation 3 OPT 4 BED GARDEN 1 WOB 2197 sqft		COOLING 2.5		TONS		FAN SPEED 928		cfm @ 0.6" w.c.		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			BASEMENT HEATING LAYOUT	
										Date		JAN/2023		
										Scale		3/16" = 1'-0"		
												BCIN# 19669		
										LO#		99992		

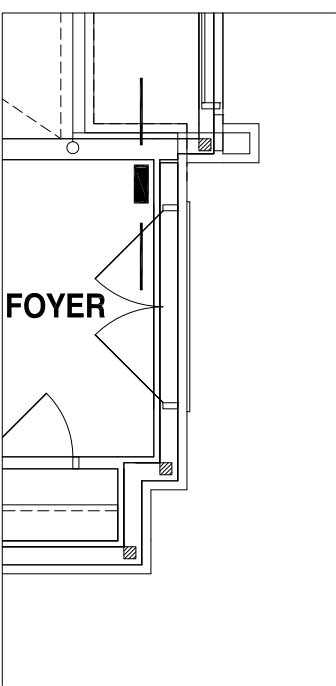


FIRST FLOOR EL-1

FIRST FLOOR EL-2



FIRST FLOOR EL-3



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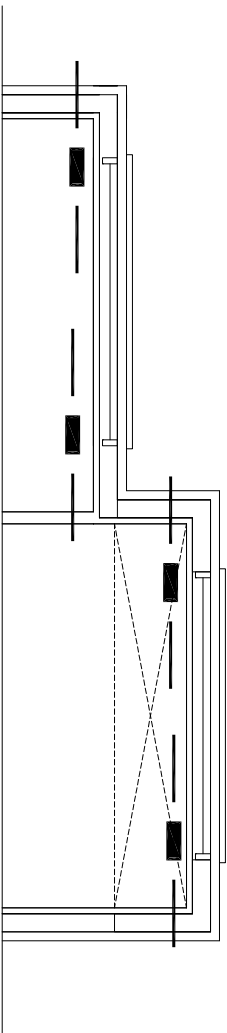
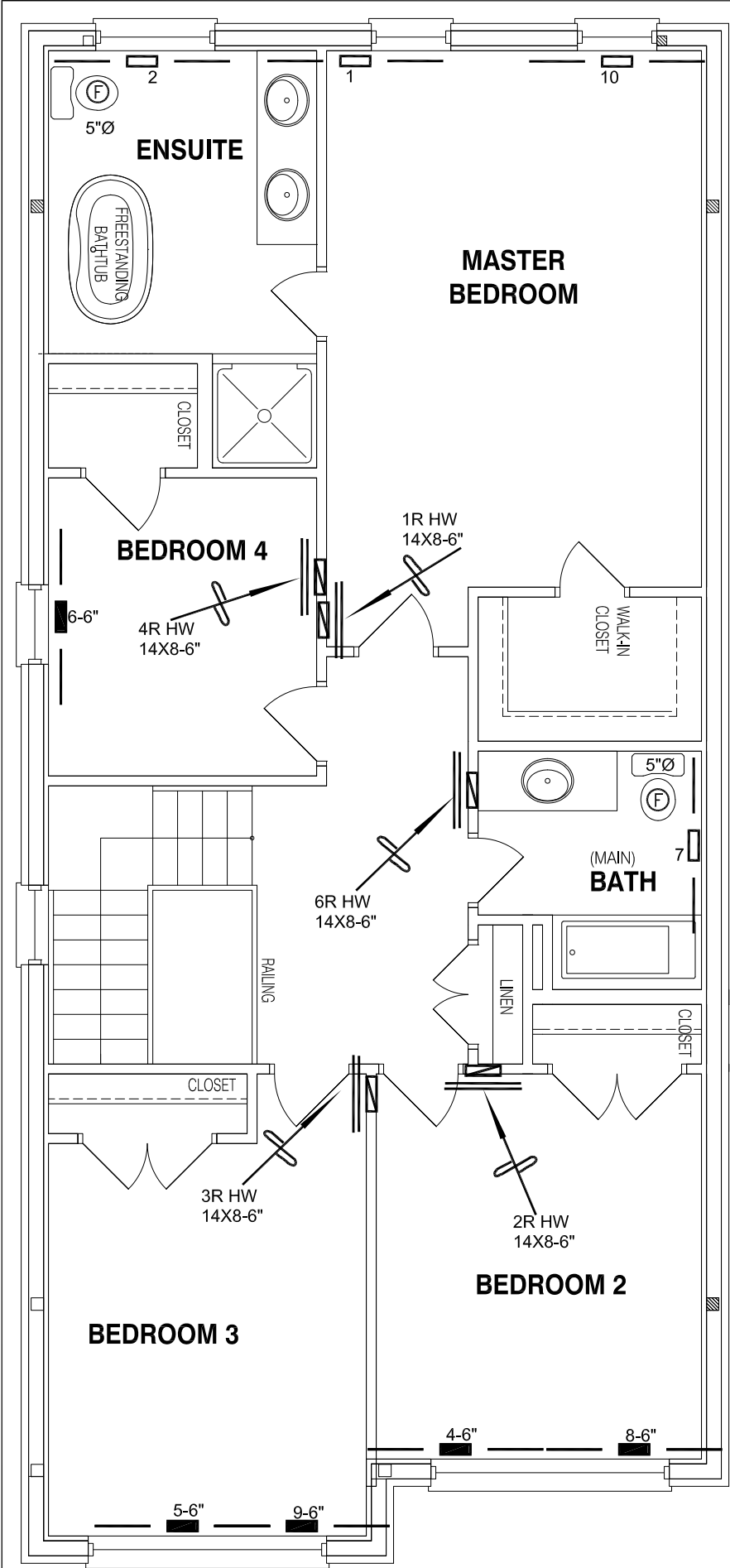
WOB

PACKAGE A1

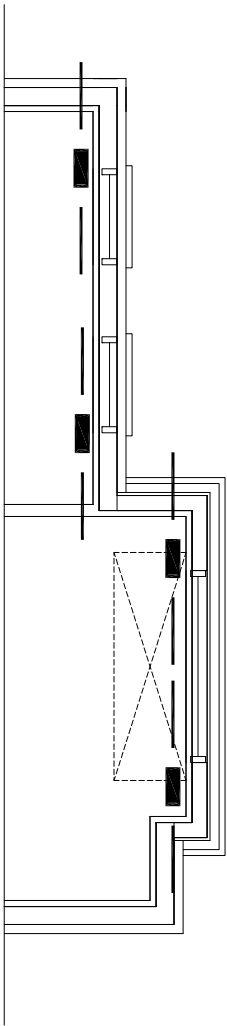
HVAC LEGEND								3.		
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	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER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

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Project Name			Date		JAN/2023	
BARLASSINA CAMBRIDGE, ONTARIO		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.	Scale		3/16" = 1'-0"	
Garden 1 - Elevation 3			BCIN# 19669			
OPT 4 BED			LO#		99992	
GARDEN 1 WOB 2197 sqft						



SECOND FLOOR EL-2



SECOND FLOOR EL-3

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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.		
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	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date
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GREENPARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	JAN/2023
BARLASSINA CAMBRIDGE, ONTARIO			Scale	3/16" = 1'-0"
Garden 1 - Elevation 3			BCIN# 19669	
OPT 4 BED			LO#	99992
GARDEN 1 WOB 2197 sqft				