

Block 121 Units 1 to 6

SITE NAME: BARLASSINA		WOB		GFA: 2030		DATE: Dec-22		WINTER NATURAL AIR CHANGE RATE 0.376		HEAT LOSS ΔT °F. 72		CSA-F280-12	
BUILDER: GREENPARK HOMES		TYPE: CHERRY 2				LO# 99793		SUMMER NATURAL AIR CHANGE RATE 0.100		HEAT GAIN ΔT °F. 9		SB-12 PACKAGE A1	
ROOM USE		MBR	ENS	WIC	BED-2	BED-3		BATH	FLEX				
EXP. WALL		13	7	0	11	13		0	0				
CLG. HT.		9	9	9	9	9		9	9				
FACTORS													
GRS.WALL AREA	LOSS GAIN	117	63	0	99	117		0	0				
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	18 365 730	16 324 649	0 0 0	0 0 0	0 0 0		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		0 0 0	0 0 0				
WEST	20.3 40.5	0 0 0	0 0 0	0 0 0	27 547 1095	24 487 973		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	99 421 53	47 200 25	0 0 0	72 306 39	93 395 50		0 0 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				
EXPOSED CLG	1.2 0.5	286 350 151	144 176 76	80 98 42	176 215 93	155 189 82		63 77 33	381 466 201				
NO ATTIC EXPOSED CLG	2.6 1.1	0 0 0	0 0 0	0 0 0	0 0 0	15 39 17		0 0 0	0 0 0				
EXPOSED FLOOR	2.4 0.3	42 102 13	79 192 24	60 146 19	176 428 54	13 32 4		63 153 19	55 134 17				
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		1237	892	244	1496	1142		230	599				
SUB TOTAL HT GAIN		947	774	61	1281	1126		53	218				
LEVEL FACTOR / MULTIPLIER	0.20 0.44		0.20 0.44	0.20 0.44	0.20 0.44	0.20 0.44		0.20 0.44	0.20 0.44				
AIR CHANGE HEAT LOSS		545	393	107	659	503		101	264				
AIR CHANGE HEAT GAIN		63	52	4	86	75		4	15				
DUCT LOSS		178	129	35	216	165		33	86				
DUCT GAIN		221	83	6	233	216		6	23				
HEAT GAIN PEOPLE	240	2	480	0	0	1		0	0				
HEAT GAIN APPLIANCES/LIGHTS		722	0	0	722	722		0	0				
TOTAL HT LOSS BTU/H		1961	1414	386	2371	1810		365	950				
TOTAL HT GAIN x 1.3 BTU/H		3163	1182	93	3330	3093		80	332				

ROOM USE				K/L/B				W/R	FOY					WOB	BAS
EXP. WALL				61				13	25					27	100
CLG. HT.				10				10	10					9	9
FACTORS															
GRS.WALL AREA	LOSS GAIN			610				130	250					243	600
GLAZING				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
EAST	20.3 40.5			24 487 973				0 0 0	0 0 0					45 912 1824	0 0 0
SOUTH	20.3 23.9			0 0 0				0 0 0	0 0 0					0 0 0	0 0 0
WEST	20.3 40.5			0 0 0				0 0 0	15 304 608					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
DOORS	19.1 2.4			20 382 49				0 0 0	40 764 97					20 382 49	20 382 49
NET EXPOSED WALL	4.3 0.5			566 2406 306				130 553 70	195 829 105					178 757 96	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	300 1028 131
EXPOSED CLG	1.2 0.5			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
EXPOSED FLOOR	2.4 0.3			0 0 0				0 0 0	0 0 0					0 0 0	0 0 0
BASEMENT/CRAWL HEAT LOSS				0				0	0					0	1275
SLAB ON GRADE HEAT LOSS				0				0	0					0	0
SUBTOTAL HT LOSS				3275				553	1897					247	2685
SUB TOTAL HT GAIN				1327				70	811					2298	179
LEVEL FACTOR / MULTIPLIER	0.30 0.67			0.30 0.67				0.30 0.67	0.30 0.67					1969	0.50 1.29
AIR CHANGE HEAT LOSS				2207				373	1279						6431
AIR CHANGE HEAT GAIN				89				5	54						144
DUCT LOSS				0				0	0						0
DUCT GAIN				0				0	0						0
HEAT GAIN PEOPLE	240			0				0	0					0	0
HEAT GAIN APPLIANCES/LIGHTS				722				0	0					0	722
TOTAL HT LOSS BTU/H				5482				925	3176					2298	9117
TOTAL HT GAIN x 1.3 BTU/H				2780				97	1124					2560	1359

TOTAL HEAT GAIN BTU/H:

19351

TONS: 1.61

LOSS DUE TO VENTILATION LOAD BTU/H: 1243

STRUCTURAL HEAT LOSS: 30253

TOTAL COMBINED HEAT LOSS BTU/H: 31496

SITE NAME: BARLASSINA
BUILDER: GREENPARK HOMES

WOB
TYPE: CHERRY 2

DATE: Dec-22

GFA: 2030 LO# 99793

HEATING CFM 695 COOLING CFM 695
TOTAL HEAT LOSS 30,253 TOTAL HEAT GAIN 19,193
AIR FLOW RATE CFM 22.97 AIR FLOW RATE CFM 36.21

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

#GOODMAN
GMEC960402BNA 40

AFUE = 96 %
INPUT (BTU/H) = 40,000
OUTPUT (BTU/H) = **38,400**

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	10	5	4
R/A	0	0	4	1	1

plenium pressure s/a 0.18
max s/a dif press. loss 0.01
min adjusted pressure s/a 0.17

r/a pressure 0.17
r/a grille press. Loss 0.02
adjusted pressure r/a 0.15

FAN SPEED
LOW
MEDLOW
MEDIUM 695
MEDIUM HIGH
HIGH 890

DESIGN CFM = **695**
CFM @ .6" E.S.P.

TEMPERATURE RISE 51 °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	3	4	5	6	7	8	9	10	14	15	16	18	19	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-3	BED-2	BED-2	BATH	FLEX	BED-3	MBR	K/L/B	K/L/B	K/L/B	W/R	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH.	0.98	1.41	0.39	0.90	1.19	1.19	0.36	0.95	0.90	0.98	1.83	1.83	1.83	0.93	3.18	2.85	2.85	2.85	2.85
CFM PER RUN HEAT	23	32	9	21	27	27	8	22	21	23	42	42	42	21	73	66	66	66	66
RM GAIN MBH.	1.58	1.18	0.09	1.55	1.66	1.66	0.08	0.33	1.55	1.58	0.93	0.93	0.93	0.10	1.12	0.98	0.98	0.98	0.98
CFM PER RUN COOLING	57	43	3	56	60	60	3	12	56	57	34	34	34	4	41	35	35	35	35
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	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	46	45	36	65	62	69	69	41	51	39	17	32	24	34	47	43	25	13	34
EQUIVALENT LENGTH	180	150	160	180	160	180	190	170	140	140	120	90	80	140	110	100	110	110	130
TOTAL EFFECTIVE LENGTH	226	195	196	245	222	249	259	211	191	179	137	122	104	174	157	143	135	123	164
ADJUSTED PRESSURE	0.08	0.09	0.09	0.07	0.08	0.07	0.07	0.08	0.09	0.1	0.13	0.14	0.17	0.1	0.11	0.12	0.13	0.14	0.1
ROUND DUCT SIZE	5	4	4	5	5	5	4	4	5	5	4	4	4	4	5	5	5	5	5
HEATING VELOCITY (ft/min)	169	367	103	154	198	198	92	252	154	169	482	482	482	241	536	485	485	485	485
COOLING VELOCITY (ft/min)	419	493	34	411	441	441	34	138	411	419	390	390	390	46	301	257	257	257	257
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	A	B	C	C	C	C	C	C	A	B	B	B	C	C	A	B	C	A

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

SUPPLY AIR TRUNK SIZE										RETURN AIR TRUNK SIZE									
TRUNK	STATIC	ROUND	RECT	VELOCITY						TRUNK	STATIC	ROUND	RECT	VELOCITY					
CFM	PRESS.	DUCT	DUCT							CFM	PRESS.	DUCT	DUCT						
TRUNK A	210	0.08	7.8	8	x	8	473			TRUNK G	0	0.00	0	0	x	8	0		
TRUNK B	411	0.08	10.1	12	x	8	617			TRUNK H	0	0.00	0	0	x	8	0		
TRUNK C	286	0.07	9.1	12	x	8	429			TRUNK I	0	0.00	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 E	0	0.00	0	0	x	8	0			TRUNK K	0	0.00	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		
RETURN AIR #	1	2	3	4	5														BR
AIR VOLUME	95	75	75	85	233	0	0	0	0	0	0	0	0	0	0	0	0	0	132
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
ACTUAL DUCT LGH.	44	41	26	27	36	1	1	1	1	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	100	270	265	225	185	0	0	0	0	0	0	0	0	0	0	0	0	0	135
TOTAL EFFECTIVE LH	144	311	291	252	221	1	1	1	1	1	1	1	1	1	1	1	1	1	149
ADJUSTED PRESSURE	0.10	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	0.10
ROUND DUCT SIZE	5.5	6	6	6	8.4	0	0	0	0	0	0	0	0	0	0	0	0	0	6.2
INLET GRILL SIZE	8	8	8	8	8	0	0	0	0	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	X	X	X
INLET GRILL SIZE	14	14	14	14	24	0	0	0	0	0	0	0	0	0	0	0	0	0	14

TYPE: CHERRY 2
SITE NAME: BARLASSINA

LO # 99793
WOB

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES		9.32.3.1(1)
a)	<input checked="" type="checkbox"/> Direct vent (sealed combustion) only	
b)	<input type="checkbox"/> Positive venting induced draft (except fireplaces)	
c)	<input type="checkbox"/> Natural draft, B-vent or induced draft gas fireplace	
d)	<input type="checkbox"/> Solid Fuel (including fireplaces)	
e)	<input type="checkbox"/> No Combustion Appliances	

HEATING SYSTEM	
<input checked="" type="checkbox"/> Forced Air	<input type="checkbox"/> Non Forced Air
<input type="checkbox"/> Electric Space Heat	

HOUSE TYPE		9.32.1(2)
<input checked="" type="checkbox"/> I	Type a) or b) appliance only, no solid fuel	
<input type="checkbox"/> II	Type I except with solid fuel (including fireplaces)	
<input type="checkbox"/> III	Any Type c) appliance	
<input type="checkbox"/> IV	Type I, or II with electric space heat	
<input type="checkbox"/>	Other: Type I, II or IV no forced air	

SYSTEM DESIGN OPTIONS		O.N.H.W.P.
<input type="checkbox"/> 1	Exhaust only/Forced Air System	
<input type="checkbox"/> 2	HRV with Ducting/Forced Air System	
<input checked="" type="checkbox"/> 3	HRV Simplified/connected to forced air system	
<input type="checkbox"/> 4	HRV with Ducting/non forced air system	
<input type="checkbox"/>	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>2</u> @ 10.6 cfm <u>21.2</u> cfm	
Table 9.32.3.A.	TOTAL <u>127.2</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	63.6 cfm	

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>127.2</u> cfm	
Less Principal Ventil. Capacity	<u>63.6</u> cfm	
Required Supplemental Capacity	<u>63.6</u> cfm	

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE V150H	Location: BSMT
<u>63.6</u> cfm	<input checked="" type="checkbox"/> 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	<input checked="" type="checkbox"/>	3.5
BATH	BY INSTALLING CONTRACTOR	50	<input checked="" type="checkbox"/>	3.5
W/R	BY INSTALLING CONTRACTOR	50	<input checked="" type="checkbox"/>	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)	<input checked="" type="checkbox"/> 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:	December-22

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																	
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																	
LO#: 99793		Model: CHERRY 2		Builder: GREENPARK HOMES			Date: 12/21/2022																																																										
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>812</td> <td>9</td> <td>7308</td> </tr> <tr> <td>First</td> <td>812</td> <td>10</td> <td>8120</td> </tr> <tr> <td>Second</td> <td>1218</td> <td>9</td> <td>10962</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>26,390.0 ft³</td> </tr> <tr> <td colspan="3" style="text-align: right;">Total:</td> <td>747.3 m³</td> </tr> </tbody> </table>					Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	812	9	7308	First	812	10	8120	Second	1218	9	10962	Third	0	9	0	Fourth	0	9	0	Total:			26,390.0 ft³	Total:			747.3 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%;">0.376</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.100</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	0.376	SUMMER NATURAL AIR CHANGE RATE	0.100	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																																																												
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ <p>0.376 x 207.58 x 40 °C x 1.2 = 3770 W</p> <p>= 12862 Btu/h</p>					$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ <p>= 0.100 x 207.58 x 5 °C x 1.2 = 127 W</p> <p>= 433 Btu/h</p>																																																												
5.2.3.2 Heat Loss due to Mechanical Ventilation					6.2.7 Sensible heat Gain due to Ventilation																																																												
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>64 CFM x 72 °F x 1.08 x 0.25 = 1243 Btu/h</p>					$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>64 CFM x 9 °F x 1.08 x 0.25 = 158 Btu/h</p>																																																												
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																																	
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																																	
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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 / HLlevel)																																																													
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2	0.3		5,725	0.674																																																													
3	0.2		5,841	0.440																																																													
4	0		0	0.000																																																													
5	0		0	0.000																																																													
<p>*HLairbv = Air leakage heat loss + ventilation heat loss</p> <p>*For a balanced or supply only ventilation system HLairve = 0</p>																																																																	
								<div style="border: 1px solid black; padding: 5px;"> Michael O'Rourke BCIN# 19669 </div>																																																									

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: CHERRY 2	WOB	BUILDER: GREENPARK HOMES
SFQT: 2030	LO# 99793	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:	ATTACHED	# 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):	26390.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
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: 62.0 ft	WIDTH: 17.0 ft	EXPOSED PERIMETER:	100.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	27.0 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	-

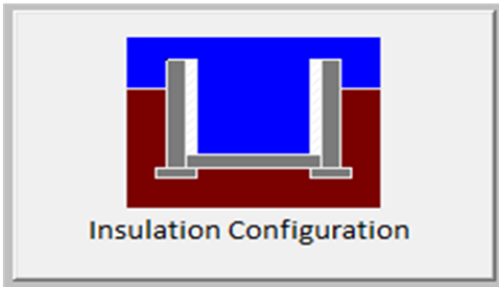
INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE

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.



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):	5.2	
Exposed Perimeter (m):	30.5	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.44	
Window Area (m ²):	0.0	
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):		374

TYPE: CHERRY 2
LO# 99793

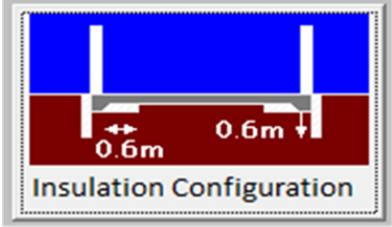
WOB

Michael O'Rourke BCIN #19669



Residential Slab on Grade 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		
Length (m):	1.5	
Width (m):	5.2	
Exposed Perimeter (m):	8.2	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		72

TYPE: CHERRY 2
LO# 99793

WOB

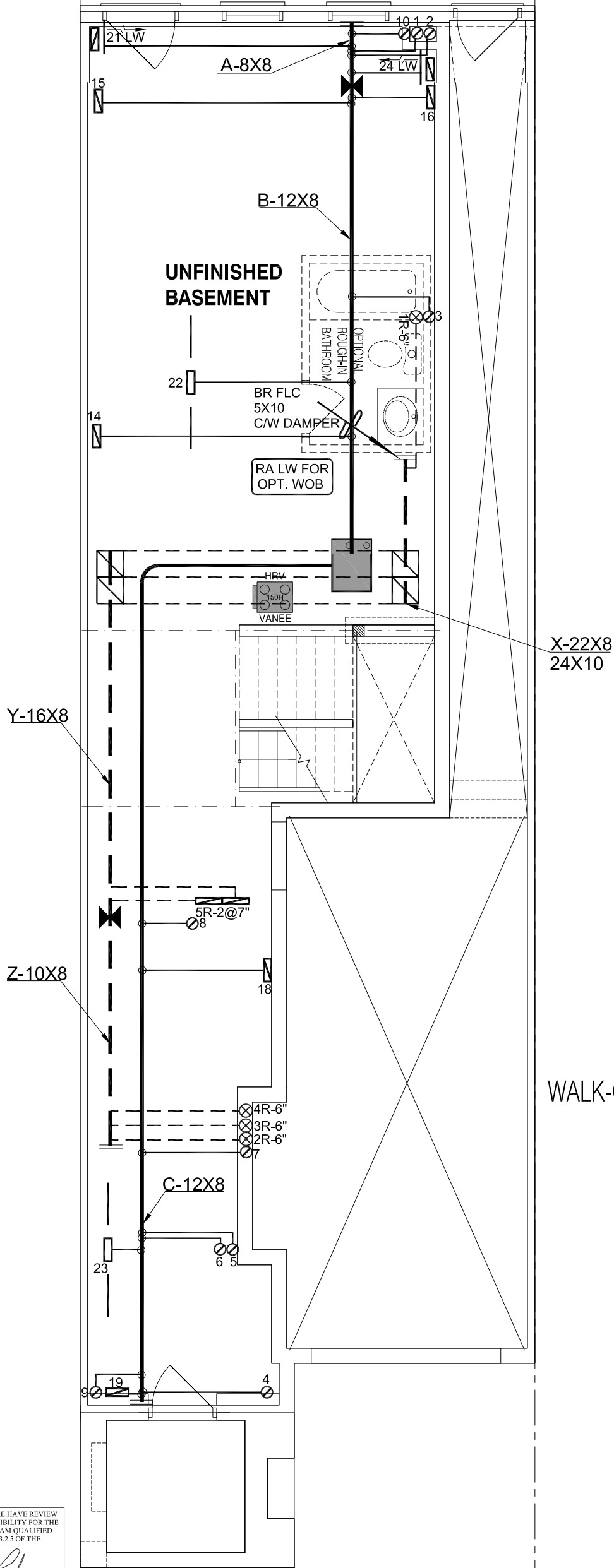
Air Infiltration Residential Load Calculator

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):	8.53			
Building Configuration				
Type:	Semi			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	747.3			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	996.1 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):	0.376			
Cooling Air Leakage Rate (ACH/H):	0.100			


TYPE: CHERRY 2
LO# 99793

WOB



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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, BCIN# 19669
HVAC DESIGNS LTD.

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Sheet Title

BASEMENT HEATING LAYOUT

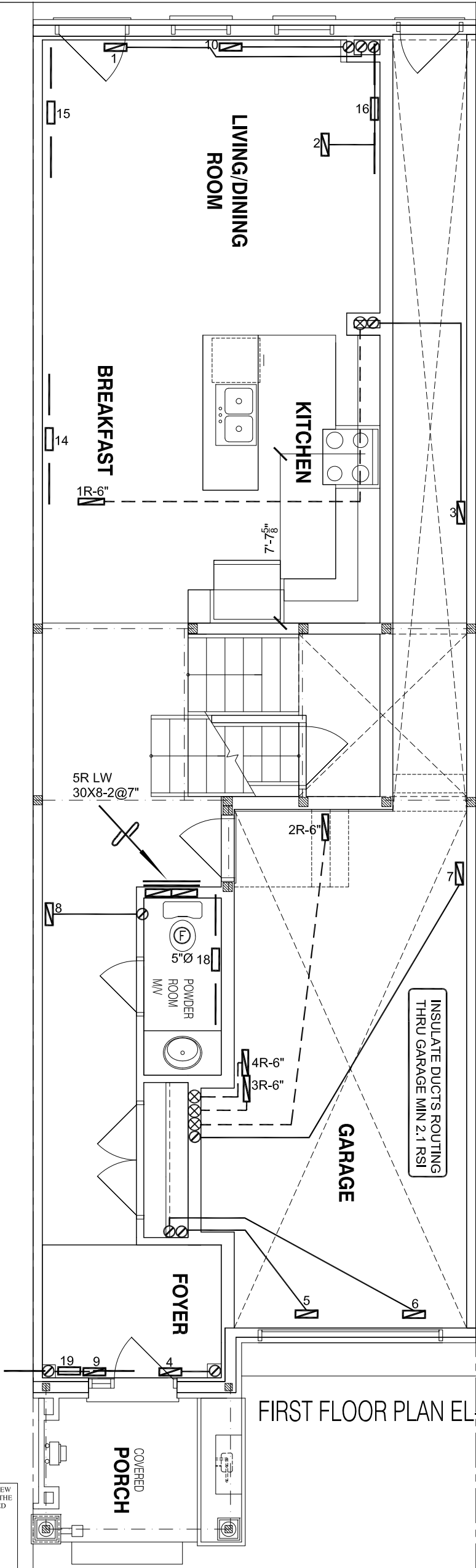
Client

GREENPARK HOMES

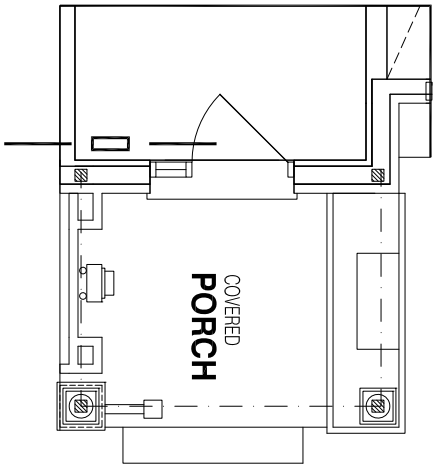
Project Name

BARLASSINA
CAMBRIDGE, ONTARIO
Block 121 Units 1 to 6
WOB
CHERRY 2 2030 sqft

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FIRST FLOOR PLAN EL-1



FIRST FLOOR PLAN EL-2

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

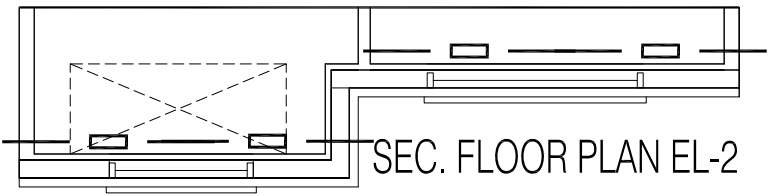
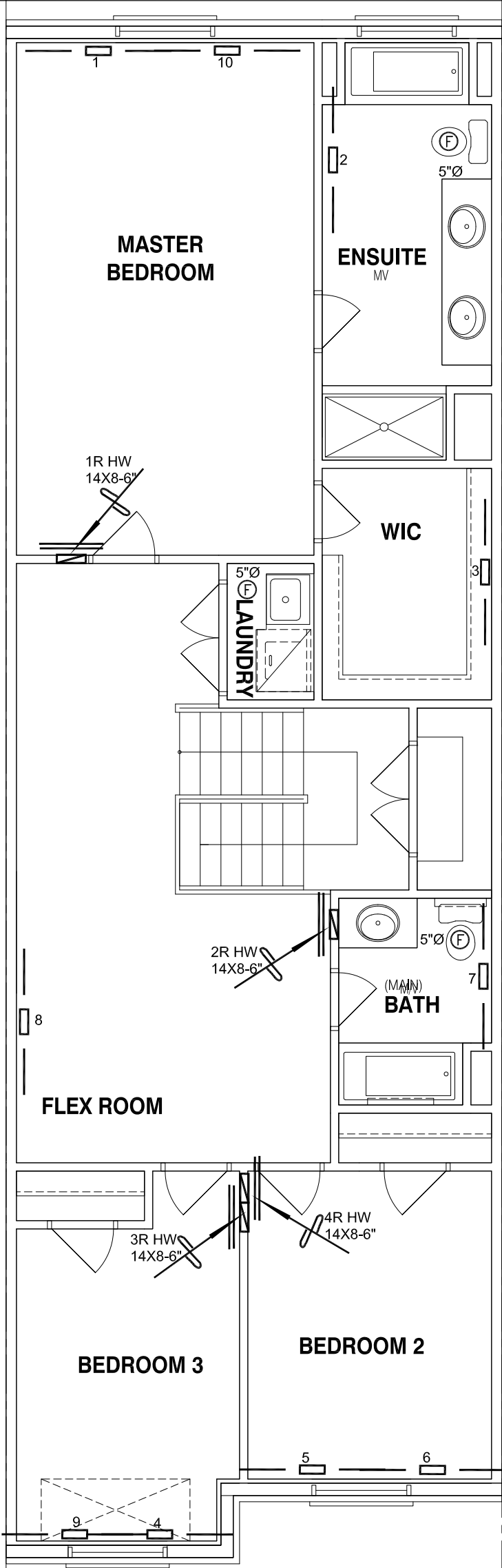
WOB
CSA-F280-12
PACKAGE A1

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		<div></div> <div>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</div> <div>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.</div>	Sheet Title	
GREENPARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	DEC/2022
BARLASSINA CAMBRIDGE, ONTARIO			Scale	3/16" = 1'-0"
Block 121 Units 1 to 6			BCIN# 19669	
WOB			LO#	99793
CHERRY 2	2030 sqft			

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SEC. FLOOR PLAN EL-1

SEC. FLOOR PLAN EL-2

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

WOB
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
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GREENPARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	DEC/2022
BARLASSINA CAMBRIDGE, ONTARIO			Scale	3/16" = 1'-0"
Block 121 Units 1 to 6			BCIN# 19669	
WOB		LO#	99793	
CHERRY 2	2030 sqft			