

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.

Block 122 Units 43 to 48

SITE NAME: BARLASSINA

BUILDER: GREENPARK HOMES

TYPE: WILLOW 3E

GFA: 1775

DATE: Aug-22

LO# 98655

WINTER NATURAL AIR CHANGE RATE 0.319

SUMMER NATURAL AIR CHANGE RATE 0.085

HEAT LOSS ΔT °F. 72

HEAT GAIN ΔT °F. 9

CSA-F280-12

SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	BED-2	BED-3	BATH	FLEX			
			34	0	10	30	0	25			
			9	9	9	9	9	9			
FACTORS											
GRS.WALL AREA	LOSS	GAIN	306	0	90	270	0	225			
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN			
NORTH	20.3	15.0	0	0	0	0	0	0			
EAST	20.3	40.5	0	0	0	0	0	0			
SOUTH	20.3	23.9	0	0	0	0	0	0			
WEST	20.3	40.5	24	487	973	0	0	0			
SKYLT.	35.5	99.8	0	0	0	0	0	0			
DOORS	19.1	2.4	0	0	0	0	0	0			
NET EXPOSED WALL	4.3	0.5	282	1199	152	0	0	0			
NET EXPOSED BSMT WALL ABOVE GR	3.4	0.4	0	0	0	0	0	0			
EXPOSED CLG	1.2	0.5	280	342	148	110	134	58			
NO ATTIC EXPOSED CLG	2.6	1.1	0	0	0	0	0	0			
EXPOSED FLOOR	2.4	0.3	0	0	0	0	0	0			
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0			
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0			
SUBTOTAL HT LOSS			2028		1451	1769	99	1856			
SUB TOTAL HT GAIN				1273		1137	43	1096			
LEVEL FACTOR / MULTIPLIER			0.20	0.27	0.20	0.27	0.20	0.27			
AIR CHANGE HEAT LOSS			549		393	479	27	502			
AIR CHANGE HEAT GAIN				66		59	2	57			
DUCT LOSS			0		184	225	0	236			
DUCT GAIN				0		190	0	162			
HEAT GAIN PEOPLE	240		2	480	0	1	240	0			
HEAT GAIN APPLIANCES/LIGHTS				468		468	0	468			
TOTAL HT LOSS BTU/H			2576		2028	2473	126	2594			
TOTAL HT GAIN x 1.3 BTU/H			2972	79	2723	2817	58	2317			

ROOM USE	EXP. WALL	CLG. HT.	K/B/L	W/R	FOY	MUD	BAS
			47	8	48	11	92
			10	10	10	10	9
FACTORS							
GRS.WALL AREA	LOSS	GAIN	470	80	480	110	552
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS
NORTH	20.3	15.0	0	0	0	0	0
EAST	20.3	40.5	0	0	0	0	0
SOUTH	20.3	23.9	22	446	526	0	0
WEST	20.3	40.5	56	1135	2270	0	0
SKYLT.	35.5	99.8	0	0	0	0	0
DOORS	19.1	2.4	8	153	19	11	210
NET EXPOSED WALL	4.3	0.5	384	1633	207	73	310
NET EXPOSED BSMT WALL ABOVE GR	3.4	0.4	0	0	0	0	0
EXPOSED CLG	1.2	0.5	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.6	1.1	0	0	0	0	0
EXPOSED FLOOR	2.4	0.3	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0
SUBTOTAL HT LOSS			3367		452	2428	780
SUB TOTAL HT GAIN				3023		840	99
LEVEL FACTOR / MULTIPLIER			0.30	0.42	0.30	0.42	0.30
AIR CHANGE HEAT LOSS			1427		192	1029	330
AIR CHANGE HEAT GAIN				157		44	5
DUCT LOSS			0		0	0	0
DUCT GAIN				0		0	0
HEAT GAIN PEOPLE	240		0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS				468		0	468
TOTAL HT LOSS BTU/H			4794		644	3458	1110
TOTAL HT GAIN x 1.3 BTU/H			4741		283	1149	743

TOTAL HEAT GAIN BTU/H:

19366

TONS: 1.61

LOSS DUE TO VENTILATION LOAD BTU/H: 1243

STRUCTURAL HEAT LOSS: 29368

TOTAL COMBINED HEAT LOSS BTU/H: 30611

SITE NAME: BARLASSINA

BUILDER: GREENPARK HOMES

TYPE: WILLOW 3E

DATE: Aug-22

GFA: 1775

LO# 98655

HEATING CFM 695 COOLING CFM 695
TOTAL HEAT LOSS 29,368 TOTAL HEAT GAIN 19,208
AIR FLOW RATE CFM 23.67 AIR FLOW RATE CFM 36.18

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

#GOODMAN

AFUE = 96 %

GMEC960402BNA

INPUT (BTU/H) = 40,000

FAN SPEED 40

OUTPUT (BTU/H) = 38,400

LOW

DESIGN CFM = 695

CFM @ .6" E.S.P.

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	9	6	3
R/A	0	0	3	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 695
MEDIUM HIGH
HIGH 890

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	10	14	15	16	18	19	20	21	22	23
ROOM NAME	MBR	ENS	BED-2	BED-2	BED-3	BED-3	BATH	FLEX	MBR	K/B/L	K/B/L	K/B/L	W/R	FOY	MUD	BAS	BAS	BAS
RM LOSS MBH.	1.29	0.17	1.01	1.01	1.24	1.24	0.13	2.59	1.29	1.60	1.60	1.60	0.64	3.46	1.11	3.13	3.13	3.13
CFM PER RUN HEAT	30	4	24	24	29	29	3	61	30	38	38	38	15	82	26	74	74	74
RM GAIN MBH.	1.49	0.08	1.36	1.36	1.41	1.41	0.06	2.32	1.49	1.58	1.58	1.58	0.28	1.15	0.74	0.44	0.44	0.44
CFM PER RUN COOLING	54	3	49	49	51	51	2	84	54	57	57	57	10	42	27	16	16	16
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	54	39	49	52	47	54	60	39	41	22	34	26	35	33	16	31	22	31
EQUIVALENT LENGTH	150	180	150	160	130	190	220	140	190	110	110	110	140	90	190	110	100	150
TOTAL EFFECTIVE LENGTH	204	219	199	212	177	244	280	179	231	132	144	136	175	123	206	141	122	181
ADJUSTED PRESSURE	0.08	0.08	0.09	0.08	0.1	0.07	0.06	0.09	0.07	0.13	0.12	0.13	0.1	0.13	0.08	0.12	0.14	0.1
ROUND DUCT SIZE	5	4	5	5	5	5	4	6	5	5	5	5	4	6	4	5	5	5
HEATING VELOCITY (ft/min)	220	46	176	176	213	213	34	311	220	279	279	279	172	418	298	543	543	543
COOLING VELOCITY (ft/min)	396	34	360	360	374	374	23	428	396	419	419	419	115	214	310	117	117	117
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10
TRUNK	B	A	C	C	C	C	C	B	A	B	A	A	C	C	C	A	B	C

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	1.29	30	1.49	54	0.17	54	150	204	0.08	5	220	396	3X10	B
2	ENS	0.17	4	0.08	3	0.17	39	180	219	0.08	4	46	34	3X10	A
3	BED-2	1.01	24	1.36	49	0.17	49	150	199	0.09	5	176	360	3X10	C
4	BED-2	1.01	24	1.36	49	0.17	52	160	212	0.08	5	176	360	3X10	C
5	BED-3	1.24	29	1.41	51	0.17	47	130	177	0.1	5	213	374	3X10	C
6	BED-3	1.24	29	1.41	51	0.17	54	190	244	0.07	5	213	374	3X10	C
7	BATH	0.13	3	0.06	2	0.17	60	220	280	0.06	4	34	23	3X10	C
8	FLEX	2.59	61	2.32	84	0.16	39	140	179	0.09	6	311	428	4X10	B
10	MBR	1.29	30	1.49	54	0.17	41	190	231	0.07	5	220	396	3X10	A
14	K/B/L	1.60	38	1.58	57	0.17	22	110	132	0.13	5	279	419	3X10	B
15	K/B/L	1.60	38	1.58	57	0.17	34	110	144	0.12	5	279	419	3X10	A
16	K/B/L	1.60	38	1.58	57	0.17	26	110	136	0.13	5	279	419	3X10	A
18	W/R	0.64	15	0.28	10	0.17	35	140	175	0.1	4	172	115	3X10	C
19	FOY	3.46	82	1.15	42	0.16	33	90	123	0.13	6	418	214	4X10	C
20	MUD	1.11	26	0.74	27	0.17	16	190	206	0.08	4	298	310	3X10	C
21	BAS	3.13	74	0.44	16	0.17	31	110	141	0.12	5	543	117	3X10	A
22	BAS	3.13	74	0.44	16	0.17	22	100	122	0.14	5	543	117	3X10	B
23	BAS	3.13	74	0.44	16	0.17	31	150	181	0.1	5	543	117	3X10	C

SUPPLY AIR TRUNK SIZE										RETURN AIR TRUNK SIZE									
TRUNK		STATIC	ROUND	RECT				VELOCITY		TRUNK		STATIC	ROUND	RECT				VELOCITY	
CFM	PRESS.	DUCT	DUCT				(ft/min)	CFM	PRESS.	DUCT	DUCT						(ft/min)		
TRUNK A	184	0.07	7.7	8	x	8	414	TRUNK G	0	0.00	0	0	x	8	0	0.07	8	0	
TRUNK B	387	0.07	10.2	12	x	8	581	TRUNK H	0	0.00	0	0	x	8	0	0.07	8	0	
TRUNK C	306	0.06	9.7	12	x	8	459	TRUNK I	0	0.00	0	0	x	8	0	0.07	8	0	
TRUNK D	0	0.00	0	0	x	8	0	TRUNK J	0	0.00	0	0	x	8	0	0.07	8	0	
TRUNK E	0	0.00	0	0	x	8	0	TRUNK K	0	0.00	0	0	x	8	0	0.07	8	0	
TRUNK F	0	0.00	0	0	x	8	0	TRUNK L	0	0.00	0	0	x	8	0	0.07	8	0	

RETURN AIR #	1	2	3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	BR
AIR VOLUME	110	110	100	300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75
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.	59	57	62	1	18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	150	145	135	0	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135
TOTAL EFFECTIVE LH	209	202	197	1	158	1	1	1	1	1	1	1	1	1	1	1	1	1	1	149
ADJUSTED PRESSURE	0.07	0.07	0.08	14.80	0.09	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	0.10
ROUND DUCT SIZE	6.3	6.3	5.9	0	8.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
INLET GRILL SIZE	8	8	8	0	8	0	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	X
INLET GRILL SIZE	14	14	14	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14

TYPE: WILLOW 3E
SITE NAME: BARLASSINA

LO # 98655

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>4</u> @ 10.6 cfm <u>42.4</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	63.6 cfm	

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>148.4</u> cfm	
Less Principal Ventil. Capacity	<u>63.6</u> cfm	
Required Supplemental Capacity	<u>84.8</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:	August-22

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																	
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																	
LO#: 98655		Model: WILLOW 3E		Builder: GREENPARK HOMES			Date: 2022-08-31																																																										
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>802</td> <td>9</td> <td>7218</td> </tr> <tr> <td>First</td> <td>802</td> <td>10</td> <td>8020</td> </tr> <tr> <td>Second</td> <td>973</td> <td>9</td> <td>8757</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>23,995.0 ft³</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>679.5 m³</td> </tr> </tbody> </table>					Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	802	9	7218	First	802	10	8020	Second	973	9	8757	Third	0	9	0	Fourth	0	9	0	Total:			23,995.0 ft³	Total:			679.5 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%;">0.319</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.085</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	0.319	SUMMER NATURAL AIR CHANGE RATE	0.085	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	802	9	7218																																																														
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Second	973	9	8757																																																														
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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>0.319 x 188.74 x 40 °C x 1.2 = 2910 W</p> <p>= 9928 Btu/h</p>					$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ <p>= 0.085 x 188.74 x 5 °C x 1.2 = 98 W</p> <p>= 334 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)																																																																	
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$ <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 / HLlevel)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.5</td> <td rowspan="5" style="text-align: center; vertical-align: middle;">9,928</td> <td>4,431</td> <td>1.120</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>7,027</td> <td>0.424</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>7,337</td> <td>0.271</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> <p>*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0</p>										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)	1	0.5	9,928	4,431	1.120	2	0.3	7,027	0.424	3	0.2	7,337	0.271	4	0	0	0.000	5	0	0	0.000																														
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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

375 Finley Ave. Suite 202 Ajax, ON L1S 2E2

Tel: 905.619.2300 Fax: 905.619.2375

Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: WILLOW 3E

BUILDER: GREENPARK HOMES

SFQT: 1775

LO# 98655

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 (ft ³):	23995.0	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:	6.0 ft
LENGTH: 52.0 ft	WIDTH: 20.0 ft	EXPOSED PERIMETER:	92.0 ft

2012 OBC - COMPLIANCE PACKAGE

Component

Compliance Package A1

Nominal	Min. Eff.
---------	-----------

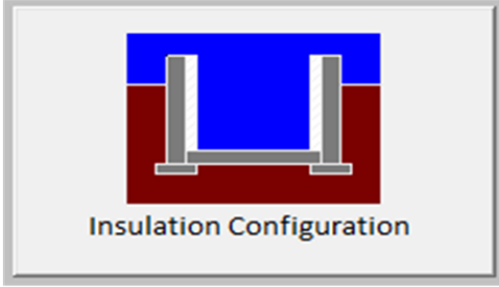
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 ci	21.12
Below Grade Slab Entire surface > 600 mm below 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):	15.8	 Insulation Configuration
Floor Width (m):	6.1	
Exposed Perimeter (m):	28.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	1.1	
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):		832

TYPE: WILLOW 3E
LO# 98655

Michael O'Rourke BCIN #19669



Air Infiltration Residential Load Calculator

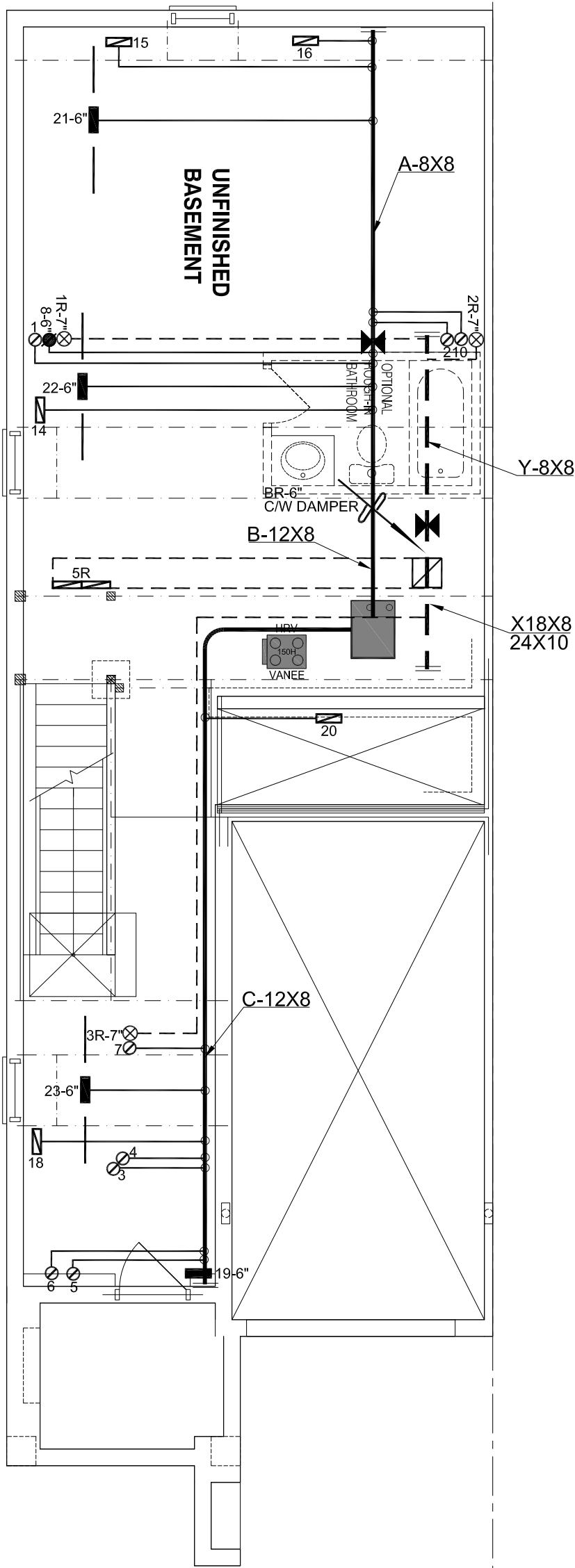
Supplemental tool for CAN/CSA-F280

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:	Semi			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	679.5			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	905.7 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):	0.319			
Cooling Air Leakage Rate (ACH/H):	0.085			

TYPE: WILLOW 3E

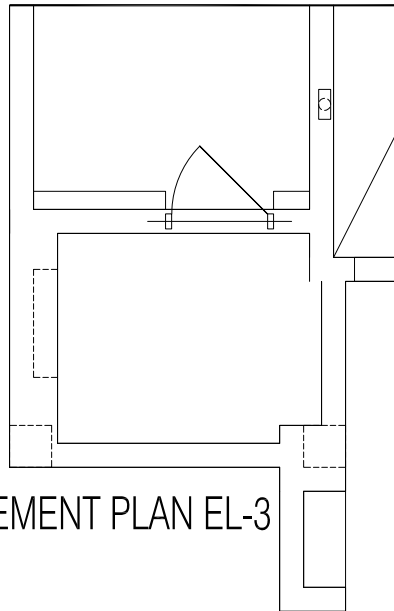
LO# 98655

COLDCELL LAB

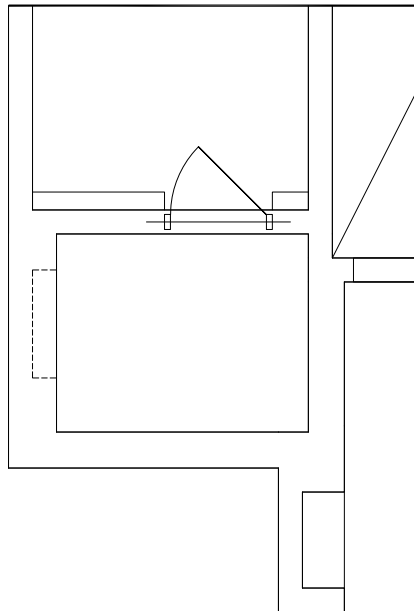


BASEMENT PLAN EL-1

COLDCELLAR



COLDCELLAR















BASEMENT PLAN EL-2

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

CSA-F280-12

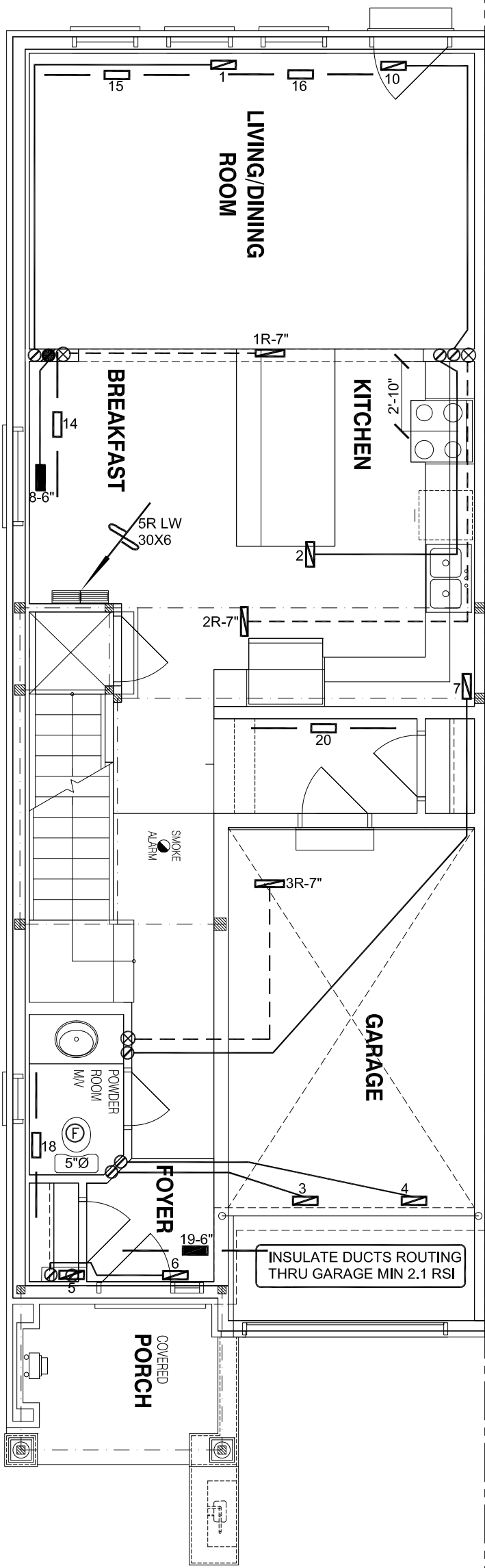
PACKAGE A1

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		

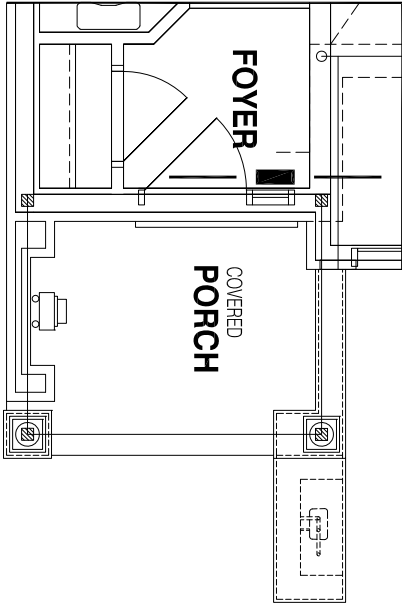
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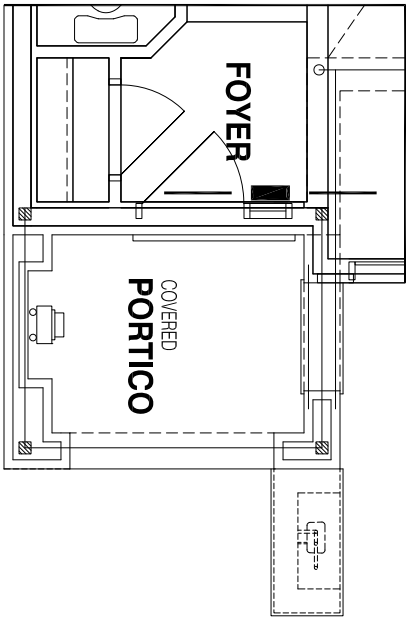
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FIRST FLOOR PLAN EL-1



FIRST FLOOR PLAN EL-3



FIRST FLOOR PLAN EL-2

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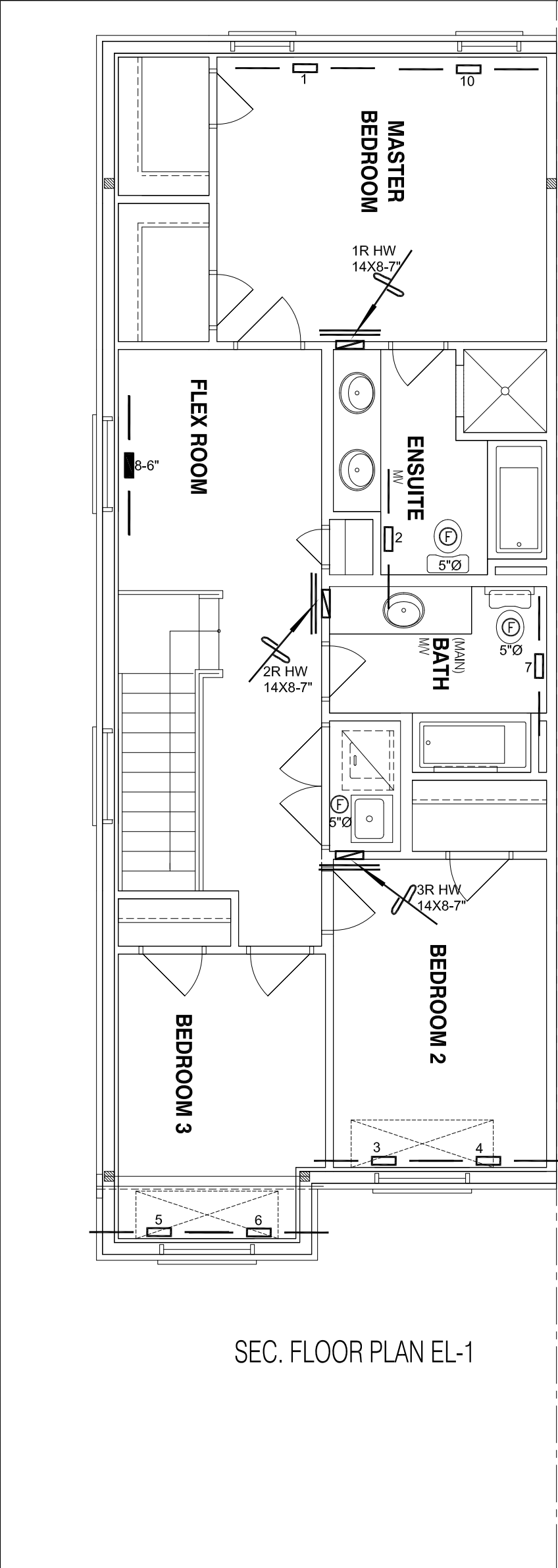
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CSA-F280-12
PACKAGE A1

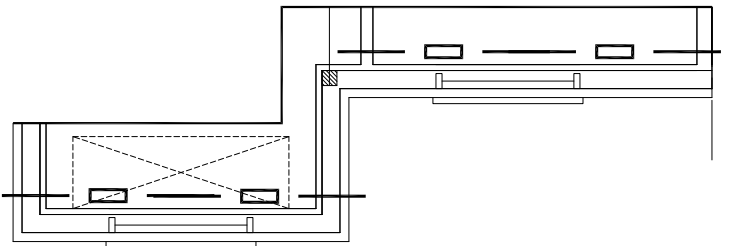
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SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
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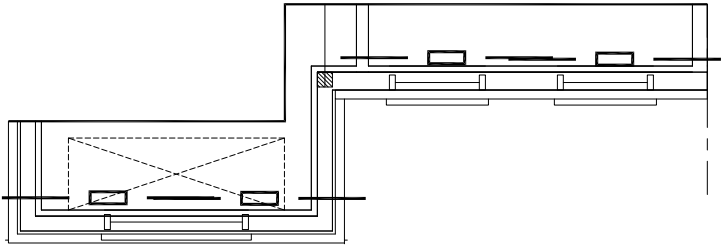
Client		<div></div> <div>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services</div> <div>Installation to comply with the latest Ontario Building Code. 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	AUG/2022
BARLASSINA CAMBRIDGE, ONTARIO			Scale	3/16" = 1'-0"
Block 122 Units 43 to 48			BCIN# 19669	
WILLOW 3E	1775 sqft		LO#	98655



SEC. FLOOR PLAN EL-1



SEC. FLOOR PLAN EL-3



SEC. FLOOR PLAN EL-2

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

CSA-F280-12
PACKAGE A1

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GREENPARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	AUG/2022
BARLASSINA CAMBRIDGE, ONTARIO			Scale	3/16" = 1'-0"
Block 122 Units 43 to 48			BCIN# 19669	
WILLOW 3E	1775 sqft		LO#	98655