

Block 122 Units 49 to 54

SITE NAME: BARLASSINA										DATE: Aug-22										WINTER NATURAL AIR CHANGE RATE 0.319										HEAT LOSS ΔT °F. 72										CSA-F280-12																													
BUILDER: GREENPARK HOMES										TYPE: WILLOW 3E										GFA: 1775										LO# 98655										SUMMER NATURAL AIR CHANGE RATE 0.085										HEAT GAIN ΔT °F. 9										SB-12 PACKAGE A1									
ROOM USE				MBR				ENS				BED-2				BED-3				BATH				FLEX																																													
EXP. WALL				34				0				10				30				0				25																																													
CLG. HT.				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		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN																																					
NORTH		20.3	15.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																					
EAST		20.3	40.5	0	0	0	0	0	0	0	0	23	466	933	24	487	973	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	36	730	860	0	0	0	0	0																																						
WEST		20.3	40.5	24	487	973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																						
SKYLT.		35.5	99.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0																																						
NET EXPOSED WALL		4.3	0.5	282	1199	152	0	0	0	0	0	67	285	36	246	1046	133	0	0	0	189	803	102	0	0	0	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	0	0	0	0	0	0	0																																						
EXPOSED CLG		1.2	0.5	280	342	148	110	134	58	0	0	189	231	100	148	181	78	0	0	0	81	99	43	250	306	132	0	0	0	0	0	0																																					
NO ATTIC EXPOSED CLG		2.6	1.1	0	0	0	0	0	0	0	0	12	31	14	12	31	14	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	180	437	56	10	24	3	0	0	0	0	0	0	7	17	2	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				134				1451				1769				99				1856																																													
SUB TOTAL HT GAIN						1273				58				1137		1201						43				1096																																											
LEVEL FACTOR / MULTIPLIER				0.20		0.27		0.20		0.27		0.20		0.27		0.20		0.27		0.20		0.27		0.20		0.27																																											
AIR CHANGE HEAT LOSS				549				36				393				479				27				502																																													
AIR CHANGE HEAT GAIN				66				3				59				62				2				57																																													
DUCT LOSS				0				0				184				225				0				236																																													
DUCT GAIN				0				0				190				197				0				162																																													
HEAT GAIN PEOPLE		240		2		480	0	0			1	240		1	240		240		0		0		0		0		0																																										
HEAT GAIN APPLIANCES/LIGHTS				468				0				468				468				0				468																																													
TOTAL HT LOSS BTU/H				2576				171				2028				2473				126				2594																																													
TOTAL HT GAIN x 1.3 BTU/H				2972				79				2723				2817				58				2317																																													

ROOM USE			K/B/L			W/R			FOY			MUD			BAS		
EXP. WALL			47			8			48			11			92		
CLG. HT.			10			10			10			10			9		
FACTORS																	
GRS.WALL AREA	LOSS	GAIN	470			80			480			110			552		
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	
EAST	20.3	40.5	0	0	0	0	0	0	14	284	568	0	0	0	0	0	
SOUTH	20.3	23.9	22	446	526	7	142	167	0	0	0	0	0	0	8	162	
WEST	20.3	40.5	56	1135	2270	0	0	0	0	0	0	0	0	0	4	81	
SKYLT.	35.5	99.8	0	0	0	0	0	0	0	0	0	0	0	0	0	162	
DOORS	19.1	2.4	8	153	19	0	0	0	11	210	27	21	401	51	0	0	
NET EXPOSED WALL	4.3	0.5	384	1633	207	73	310	39	455	1934	246	89	378	48	21	401	
NET EXPOSED BSMT WALL ABOVE GR	3.4	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
EXPOSED CLG	1.2	0.5	0	0	0	0	0	0	0	0	0	0	0	0	276	946	
NO ATTIC EXPOSED CLG	2.6	1.1	0	0	0	0	0	0	0	0	0	0	0	0	120	0	
EXPOSED FLOOR	2.4	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
BASEMENT/CRAWL HEAT LOSS			0			0			0			0			2840		
SLAB ON GRADE HEAT LOSS			0			0			0			0					
SUBTOTAL HT LOSS			3367			452			2428			780			4431		
SUB TOTAL HT GAIN			3023			207			840			99			525		
LEVEL FACTOR / MULTIPLIER	0.30	0.42				0.30			0.42			0.30			0.42		
AIR CHANGE HEAT LOSS			1427			192			1029			330			4964		
AIR CHANGE HEAT GAIN			157			11			44			5			27		
DUCT LOSS			0			0			0			0			0		
DUCT GAIN			0			0			0			0			0		
HEAT GAIN PEOPLE	240		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
HEAT GAIN APPLIANCES/LIGHTS			468			0			0			468			468		
TOTAL HT LOSS BTU/H			4794			644			3458			1110			9395		
TOTAL HT GAIN x 1.3 BTU/H			4741			283			1149			743			1325		

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
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	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

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

All S/A diffusers 4"x10" unless noted otherwise on layout.

All S/A runs 5"Ø unless noted otherwise on layout.

RUN #	1	2	3	4	5	6	7	8	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 #	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

SUPPLY AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	184	0.07	7.7	8	x 8	414	0.00	0	0	x 8
TRUNK B	387	0.07	10.2	12	x 8	581	0.00	0	0	x 8
TRUNK C	306	0.06	9.7	12	x 8	459	0.00	0	0	x 8
TRUNK D	0	0.00	0	0	x 8	0	0.00	0	0	x 8
TRUNK E	0	0.00	0	0	x 8	0	0.00	0	0	x 8
TRUNK F	0	0.00	0	0	x 8	0	0.00	0	0	x 8

RETURN AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK O	0	0.07	0	0	x 8	0	0.07	0	0	x 8
TRUNK P	0	0.07	0	0	x 8	0	0.07	0	0	x 8
TRUNK Q	0	0.07	0	0	x 8	0	0.07	0	0	x 8
TRUNK R	0	0.07	0	0	x 8	0	0.07	0	0	x 8
TRUNK S	0	0.07	0	0	x 8	0	0.07	0	0	x 8
TRUNK T	0	0.07	0	0	x 8	0	0.07	0	0	x 8
TRUNK U	0	0.07	0	0	x 8	0	0.07	0	0	x 8
TRUNK V	0	0.07	0	0	x 8	0	0.07	0	0	x 8
TRUNK W	0	0.07	0	0	x 8	0	0.07	0	0	x 8
TRUNK X	695	0.07	12.7	18	x 8	695	0.07	12.7	18	x 8
TRUNK Y	220	0.07	8.2	8	x 8	495	0.07	8.2	8	x 8
TRUNK Z	0	0.07	0	0	x 8	0	0.07	0	0	x 8
DROP	695	0.07	12.7	24	x 10	417	0.07	12.7	24	x 10

RETURN AIR #	1	2	3	5	6	7	8	10	14	15	16	18	19	20	21	22	23
AIR VOLUME	110	110	100	300	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
ACTUAL DUCT LGH.	59	57	62	1	18	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	135
TOTAL EFFECTIVE LH	209	202	197	1	158	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	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	5
INLET GRILL SIZE	8	8	8	0	8	0	0	0	0	0	0	0	0	0	0	0	8
INLET GRILL SIZE	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	14

TYPE: WILLOW 3E
SITE NAME: BARLASSINA

LO # 98655

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES		9.32.3.1(1)
a)	☒ Direct vent (sealed combustion) only	
b)	☐ Positive venting induced draft (except fireplaces)	
c)	☐ Natural draft, B-vent or induced draft gas fireplace	
d)	☐ Solid Fuel (including fireplaces)	
e)	☐ No Combustion Appliances	

HEATING SYSTEM	
☒ Forced Air	☐ Non Forced Air
☐ Electric Space Heat	

HOUSE TYPE		9.32.1(2)
☒ I	Type a) or b) appliance only, no solid fuel	
☐ II	Type I except with solid fuel (including fireplaces)	
☐ III	Any Type c) appliance	
☐ IV	Type I, or II with electric space heat	
☐	Other: Type I, II or IV no forced air	

SYSTEM DESIGN OPTIONS		O.N.H.W.P.
☐ 1	Exhaust only/Forced Air System	
☐ 2	HRV with Ducting/Forced Air System	
☒ 3	HRV Simplified/connected to forced air system	
☐ 4	HRV with Ducting/non forced air system	
☐	Part 6 Design	

TOTAL VENTILATION CAPACITY		9.32.3.3(1)
Basement + Master Bedroom	<u>2</u> @ 21.2 cfm <u>42.4</u> cfm	
Other Bedrooms	<u>2</u> @ 10.6 cfm <u>21.2</u> cfm	
Kitchen & Bathrooms	<u>4</u> @ 10.6 cfm <u>42.4</u> cfm	
Other Rooms	<u>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	☒ HVI Approved

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

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

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE V150H		
<u>150</u> cfm high	<u>35</u> cfm low	
<u>75</u> % Sensible Efficiency @ 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:	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																																																												
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5.2.3.1 Heat Loss due to Air Leakage					6.2.6 Sensible Gain due to Air Leakage																																																												
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.319 x 188.74 x 40 °C x 1.2 = 2910 W = 9928 Btu/h					$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.085 x 188.74 x 5 °C x 1.2 = 98 W = 334 Btu/h																																																												
5.2.3.2 Heat Loss due to Mechanical Ventilation					6.2.7 Sensible heat Gain due to Ventilation																																																												
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 64 CFM x 72 °F x 1.08 x 0.25 = 1243 Btu/h					$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 64 CFM x 9 °F x 1.08 x 0.25 = 158 Btu/h																																																												
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																																	
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*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0																																																																	
								Michael O'Rourke BCIN# 19669 																																																									



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.
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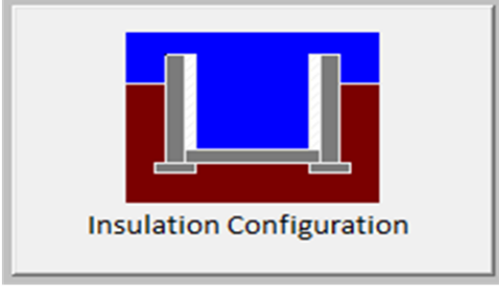
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 ci	21.12
Below Grade Slab Entire surface > 600 mm below 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

Air Infiltration Residential Load Calculator

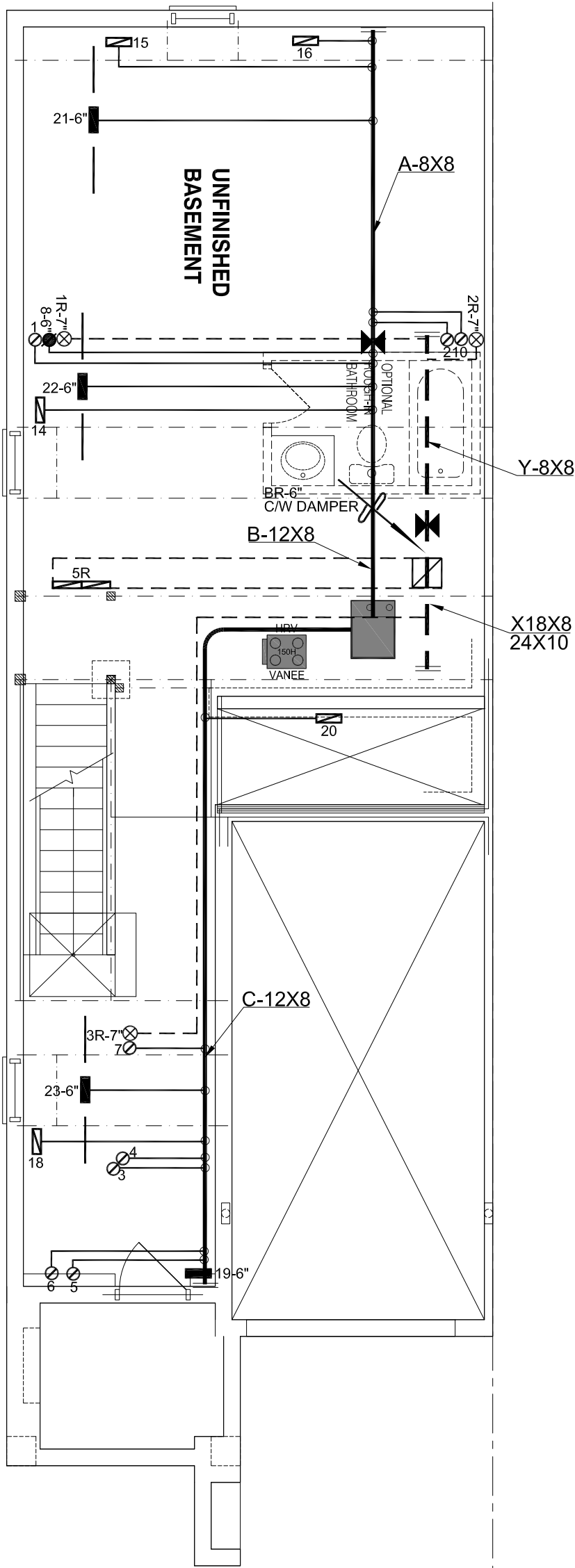
Supplemental tool for CAN/CSA-F280

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			

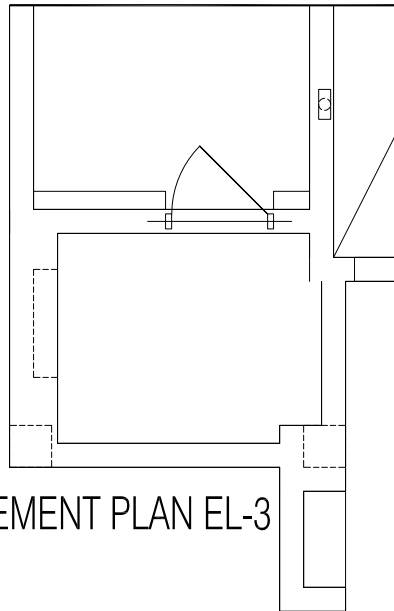
TYPE: WILLOW 3E

LO# 98655

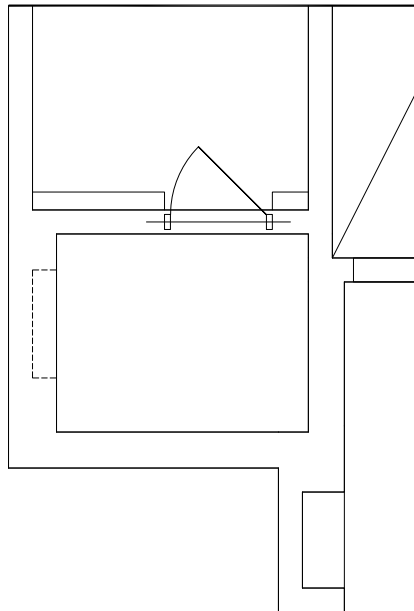
COLDCELLAR



COLDCELLAR



COLDCELLAR



BASEMENT PLAN EL-1

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		

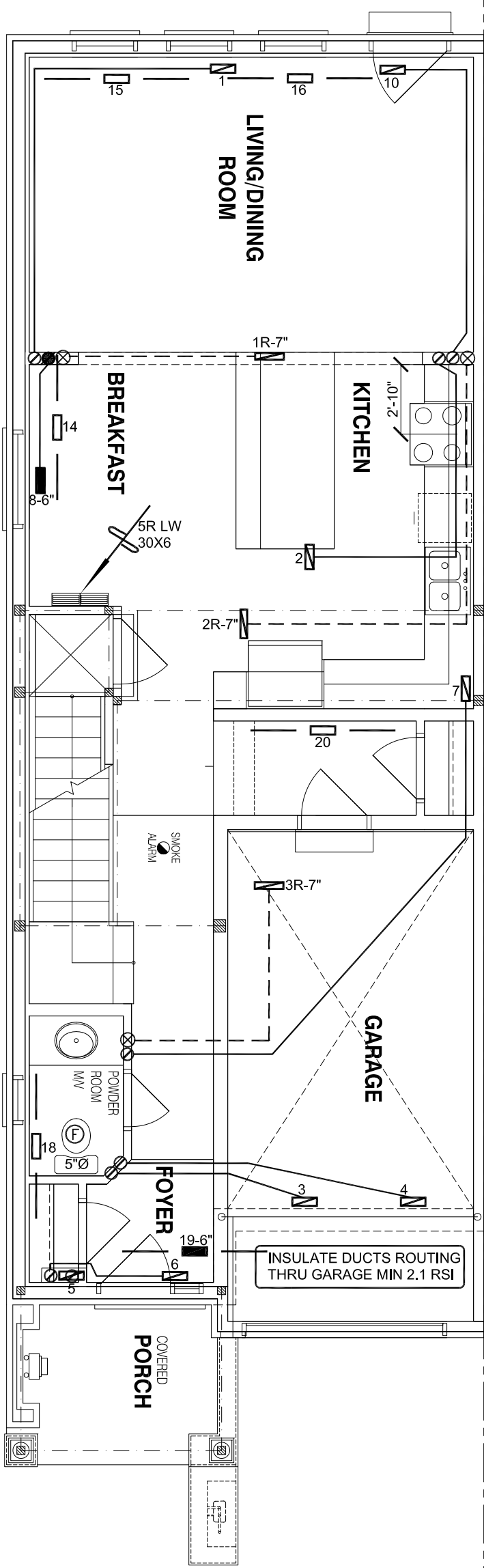
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GREENPARK HOMES		MAKE GOODMAN	3RD FLOOR					BASEMENT HEATING LAYOUT	
Project Name BARLASSINA CAMBRIDGE, ONTARIO		MODEL GMEC960402BNA	2ND FLOOR		9	3	3		
Block 122 Units 49 to 54		INPUT 40 MBTU/H	1ST FLOOR		6	1	2		
WILLOW 3E 1775 sqft		Installation to 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.	OUTPUT 38.4 MBTU/H	BASEMENT		3	1	0	Date AUG/2022
		COOLING 1.5 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 695 cfm @ 0.6" w.c.						BCIN# 19669	
								LO# 98655	

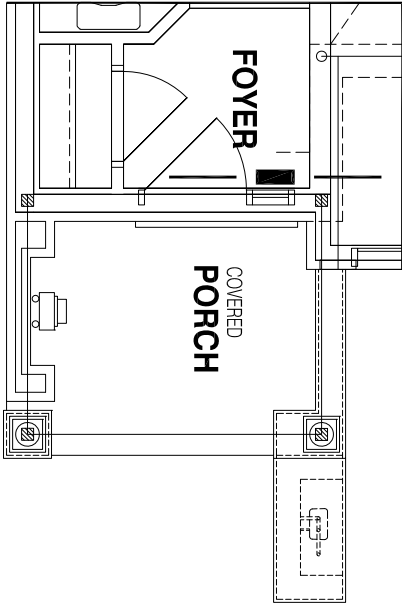
I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

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

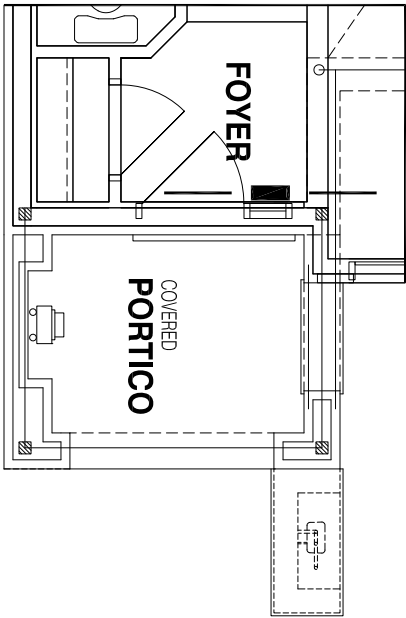
FIRST FLOOR PLAN EL-1



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FIRST FLOOR PLAN EL-3



FIRST FLOOR PLAN EL-2

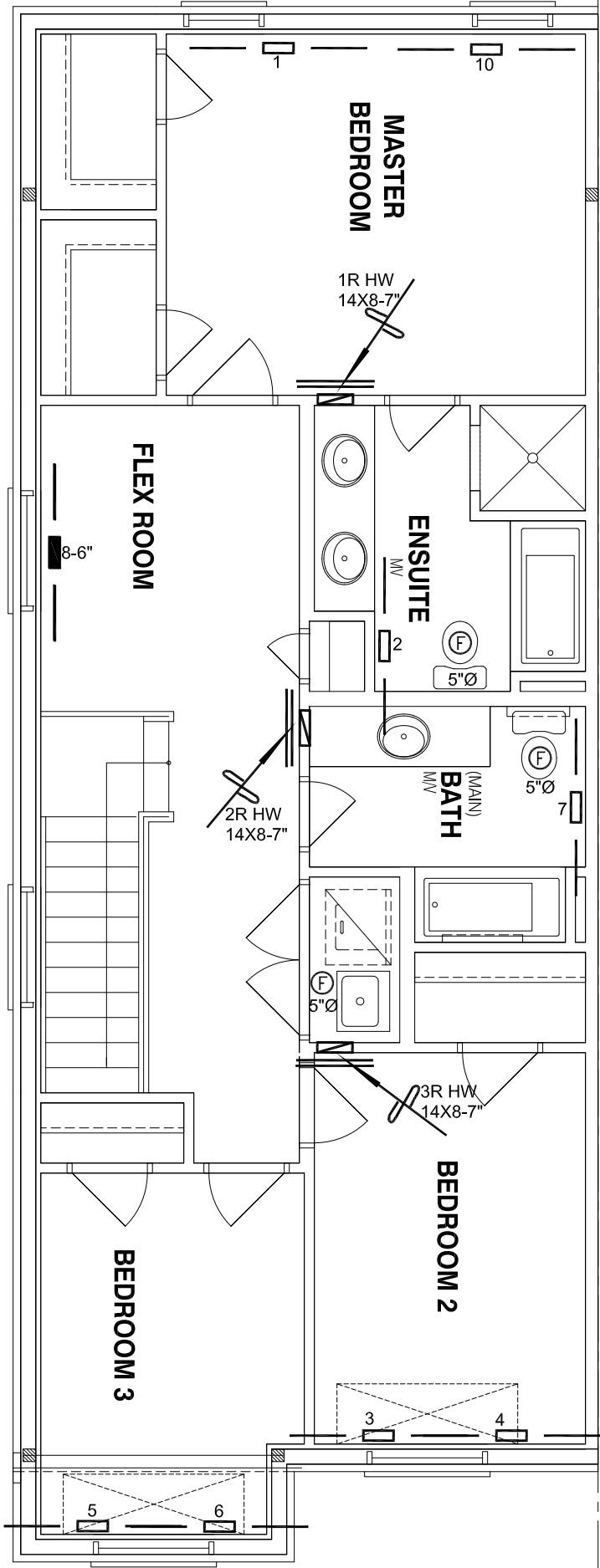
CSA-F280-12
PACKAGE A1

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	

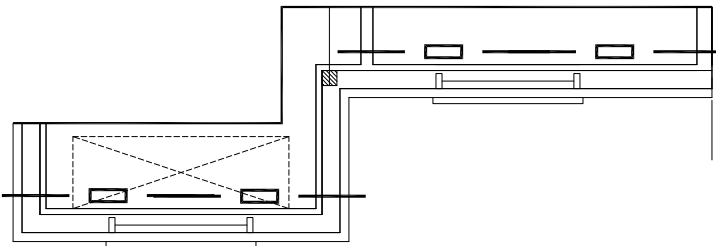
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GREENPARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	AUG/2022
BARLASSINA CAMBRIDGE, ONTARIO			Scale	3/16" = 1'-0"
Block 122 Units 49 to 54			BCIN# 19669	
WILLOW 3E	1775 sqft		LO#	98655

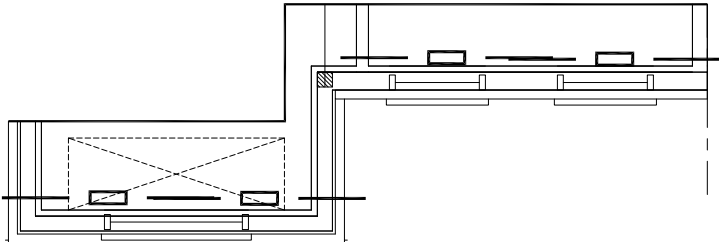
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SEC. FLOOR PLAN EL-1



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 49 to 54			BCIN# 19669	
WILLOW 3E	1775 sqft		LO#	98655