

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 1										GFA: 1696										LO# 98653										SUMMER NATURAL AIR CHANGE RATE 0.085										HEAT GAIN ΔT °F. 9										SB-12 PACKAGE A1									
ROOM USE				MBR		ENS				BED-2		BED-3		FLEX		BATH																																																					
EXP. WALL				20		0				10		16		0		0																																																					
CLG. HT.				9		9				9		9		9		9																																																					
FACTORS																																																																					
GRS.WALL AREA		LOSS GAIN		180		0				90		144		0		0																																																					
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	0	0	0	0	0	0	0	0																																							
EAST		20.3	40.5	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																																							
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	0	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																																							
SKYL.T.		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																																							
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																																							
NET EXPOSED WALL		4.3	0.5	156	663	84	0	0	0	0	67	285	36	120	510	65	0	0	0	0	0	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																																							
EXPOSED CLG		1.2	0.5	280	342	148	110	134	58	0	170	208	90	120	147	63	260	318	137	84	103	44																																															
NO ATTIC EXPOSED CLG		2.6	1.1	0	0	0	0	0	0	0	0	0	0	12	31	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																							
EXPOSED FLOOR		2.4	0.3	52	126	16	40	97	12	0	170	413	52	18	44	6	12	29	4	24	58	7																																															
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				1618		232				1372		1219		347		161																																																					
SUB TOTAL HT GAIN				1221		70				1111		1120		141		52																																																					
LEVEL FACTOR / MULTIPLIER		0.20	0.37			0.20	0.37			0.20	0.37			0.20	0.37			0.20	0.37																																																		
AIR CHANGE HEAT LOSS				604		86				512		455		130		60																																																					
AIR CHANGE HEAT GAIN				84		5				76		77		10		4																																																					
DUCT LOSS				222		32				188		167		48		22																																																					
DUCT GAIN				249		8				213		214		85		6																																																					
HEAT GAIN PEOPLE		240	2	480		0		0		1	240		1	240		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																							
HEAT GAIN APPLIANCES/LIGHTS				701		0				701		701		701		0																																																					
TOTAL HT LOSS BTU/H				2445		350				2073		1841		524		243																																																					
TOTAL HT GAIN x 1.3 BTU/H				3554		107				3043		3057		1217		79																																																					

ROOM USE					K/L/D			MUD	FOY								BAS		
EXP. WALL					44			13	29								86		
CLG. HT.					10			10	10								9		
FACTORS																			
GRS.WALL AREA	LOSS	GAIN			440			130	290								516		
GLAZING			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
EAST	20.3	40.5	0	0	0		0	0	0	14	284	568					0	0	0
SOUTH	20.3	23.9	0	0	0		0	0	0	0	0	0					0	0	0
WEST	20.3	40.5	42	851	1703		0	0	0	0	0	0					4	81	162
SKYLT.	35.5	99.8	0	0	0		0	0	0	0	0	0					0	0	0
DOORS	19.1	2.4	10	191	24		20	382	49	11	210	27					20	382	49
NET EXPOSED WALL	4.3	0.5	388	1650	210		110	468	59	265	1127	143					0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.4	0.4	0	0	0		0	0	0	0	0	0					258	884	112
EXPOSED CLG	1.2	0.5	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
EXPOSED FLOOR	2.4	0.3	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							2563		
SUBTOTAL HT LOSS			2692				850			1621									
SUB TOTAL HT GAIN				1937				108			737						3911		
LEVEL FACTOR / MULTIPLIER			0.30	0.54			0.30	0.54		0.30	0.54						0.50	1.18	323
AIR CHANGE HEAT LOSS			1445				456			870							4618		
AIR CHANGE HEAT GAIN				133				7			51								22
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
HEAT GAIN APPLIANCES/LIGHTS				701				0			0						0		701
TOTAL HT LOSS BTU/H					4137			1306			2490						8529		
TOTAL HT GAIN x 1.3 BTU/H				3602				150			1025								1360

TOTAL HEAT GAIN BTU/H:

17351

TONS: 1.45

LOSS DUE TO VENTILATION LOAD BTU/H: 1243

STRUCTURAL HEAT LOSS: 23938

TOTAL COMBINED HEAT LOSS BTU/H: 25181

SITE NAME: BARLASSINA
BUILDER: GREENPARK HOMES

TYPE: WILLOW 1

DATE: Aug-22

GFA: 1696

LO# 98653

HEATING CFM 614 COOLING CFM 614
TOTAL HEAT LOSS 23,938 TOTAL HEAT GAIN 17,193
AIR FLOW RATE CFM 25.65 AIR FLOW RATE CFM 35.71

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

#GOODMAN
GMEC960302BNA 30
FAN SPEED LOW
MEDLOW
MEDIUM 614
MEDIUM HIGH 895
HIGH

AFUE = 96 %
INPUT (BTU/H) = 30,000
OUTPUT (BTU/H) = 28,800

DESIGN CFM = 614
CFM @ .6" E.S.P.

TEMPERATURE RISE 43 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	9	4	3
R/A	0	0	4	1	1

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

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

RUN #	1	2	3	4	5	6	7	8	10	15	16	18	19	21	22	23
ROOM NAME	MBR	ENS	BED-2	BED-2	BED-3	FLEX	BATH	BED-3	MBR	K/L/D	K/L/D	MUD	FOY	BAS	BAS	BAS
RM LOSS MBH.	1.22	0.35	1.04	1.04	0.92	0.52	0.24	0.92	1.22	2.07	2.07	1.31	2.49	2.84	2.84	2.84
CFM PER RUN HEAT	31	9	27	27	24	13	6	24	31	53	53	33	64	73	73	73
RM GAIN MBH.	1.78	0.11	1.52	1.52	1.53	1.22	0.08	1.53	1.78	1.80	1.80	0.15	1.02	0.45	0.45	0.45
CFM PER RUN COOLING	63	4	54	54	55	43	3	55	63	64	64	5	37	16	16	16
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
ACTUAL DUCT LGH.	41	30	54	51	46	33	48	51	36	30	24	15	34	31	16	30
EQUIVALENT LENGTH	210	150	160	190	150	160	180	190	180	110	110	170	110	110	90	140
TOTAL EFFECTIVE LENGTH	251	180	214	241	196	193	228	241	216	140	134	185	144	141	106	170
ADJUSTED PRESSURE	0.07	0.1	0.08	0.07	0.09	0.09	0.08	0.07	0.08	0.12	0.13	0.09	0.12	0.12	0.16	0.1
ROUND DUCT SIZE	5	4	5	5	5	5	4	5	5	5	5	4	5	5	5	5
HEATING VELOCITY (ft/min)	228	103	198	198	176	95	69	176	228	389	389	379	470	536	536	536
COOLING VELOCITY (ft/min)	463	46	396	396	404	316	34	404	463	470	470	57	272	117	117	117
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	B	C	C	C	B	B	C	A	A	A	C	C	A	B	C

RUN #	1	2	3	4	5	6	7	8	10	15	16	18	19	21	22	23
ROOM NAME	MBR	ENS	BED-2	BED-2	BED-3	FLEX	BATH	BED-3	MBR	K/L/D	K/L/D	MUD	FOY	BAS	BAS	BAS
RM LOSS MBH.	1.22	0.35	1.04	1.04	0.92	0.52	0.24	0.92	1.22	2.07	2.07	1.31	2.49	2.84	2.84	2.84
CFM PER RUN HEAT	31	9	27	27	24	13	6	24	31	53	53	33	64	73	73	73
RM GAIN MBH.	1.78	0.11	1.52	1.52	1.53	1.22	0.08	1.53	1.78	1.80	1.80	0.15	1.02	0.45	0.45	0.45
CFM PER RUN COOLING	63	4	54	54	55	43	3	55	63	64	64	5	37	16	16	16
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
ACTUAL DUCT LGH.	41	30	54	51	46	33	48	51	36	30	24	15	34	31	16	30
EQUIVALENT LENGTH	210	150	160	190	150	160	180	190	180	110	110	170	110	110	90	140
TOTAL EFFECTIVE LENGTH	251	180	214	241	196	193	228	241	216	140	134	185	144	141	106	170
ADJUSTED PRESSURE	0.07	0.1	0.08	0.07	0.09	0.09	0.08	0.07	0.08	0.12	0.13	0.09	0.12	0.12	0.16	0.1
ROUND DUCT SIZE	5	4	5	5	5	5	4	5	5	5	5	4	5	5	5	5
HEATING VELOCITY (ft/min)	228	103	198	198	176	95	69	176	228	389	389	379	470	536	536	536
COOLING VELOCITY (ft/min)	463	46	396	396	404	316	34	404	463	470	470	57	272	117	117	117
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	B	C	C	C	B	B	C	A	A	A	C	C	A	B	C

SUPPLY AIR TRUNK SIZE										RETURN AIR TRUNK SIZE													
		TRUNK	STATIC	ROUND	RECT							TRUNK	STATIC	ROUND	RECT								
		CFM	PRESS.	DUCT	DUCT	(ft/min)						CFM	PRESS.	DUCT	DUCT	(ft/min)							
TRUNK A	241	0.07	8.5	10	x	8	434	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.05	0	0	x	8	0
TRUNK B	342	0.07	9.7	14	x	8	440	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0
TRUNK C	272	0.07	8.9	10	x	8	490	TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.05	0	0	x	8	0
TRUNK D	0	0.00	0	0	x	8	0	TRUNK J	0	0.00	0	0	x	8	0	TRUNK R	0	0.05	0	0	x	8	0
TRUNK E	0	0.00	0	0	x	8	0	TRUNK K	0	0.00	0	0	x	8	0	TRUNK S	0	0.05	0	0	x	8	0
TRUNK F	0	0.00	0	0	x	8	0	TRUNK L	0	0.00	0	0	x	8	0	TRUNK T	0	0.05	0	0	x	8	0

RETURN AIR #	1	2	3	4	5	6	7	8	10	15	16	18	19	21	22	23
AIR VOLUME	75	75	65	65	250	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
ACTUAL DUCT LGH.	51	61	64	58	25	1	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	215	185	230	225	175	0	0	0	0	0	0	0	0	0	0	220
TOTAL EFFECTIVE LH	266	246	294	283	200	1	1	1	1	1	1	1	1	1	1	234
ADJUSTED PRESSURE	0.06	0.06	0.05	0.05	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.06
ROUND DUCT SIZE	5.7	5.7	5.7	5.7	8.6	0	0	0	0	0	0	0	0	0	0	6
INLET GRILL SIZE	8	8	8	8	8	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
INLET GRILL SIZE	14	14	14	14	30	0	0	0	0	0	0	0	0	0	0	14

TYPE: WILLOW 1
SITE NAME: BARLASSINA

LO # 98653

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	2	@ 21.2 cfm	42.4	cfm
Other Bedrooms	2	@ 10.6 cfm	21.2	cfm
Kitchen & Bathrooms	4	@ 10.6 cfm	42.4	cfm
Other Rooms	4	@ 10.6 cfm	42.4	cfm
Table 9.32.3.A.	TOTAL		148.4	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	148.4	cfm
Less Principal Ventil. Capacity	63.6	cfm
Required Supplemental Capacity	84.8	cfm

PRINCIPAL EXHAUST FAN CAPACITY

Model: VANEE V150H Location: BSMT

63.6 cfm ☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

CFM	ΔT °F	FACTOR	% LOSS
63.6 CFM	72 F	1.08	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
LAUN	BY INSTALLING CONTRACTOR	50	☒	3.5
PWD	BY INSTALLING CONTRACTOR	50	☒	3.5

HEAT RECOVERY VENTILATOR 9.32.3.11.

Model: VANEE V150H

150 cfm high 35 cfm low

75 % 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: *Michael O'Rourke*

HRAI # 001820

Date: August-22

CSA F280-12 Residential Heat Loss and Heat Gain Calculations

Formula Sheet (For Air Leakage / Ventilation Calculation)

LO#: 98653

Model: WILLOW 1

Builder: GREENPARK HOMES

Date: 2022-08-30

Volume Calculation

House Volume

Level	Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)
Bsmt	706	9	6354
First	706	10	7060
Second	990	9	8910
Third	0	9	0
Fourth	0	9	0
Total:			22,324.0 ft ³
Total:			632.1 m ³

Air Change & Delta T Data

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

5.2.3.1 Heat Loss due to Air Leakage

$$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$$

$$0.319 \times 175.60 \times 40^\circ\text{C} \times 1.2 = 2707 \text{ W}$$

$$= 9237 \text{ Btu/h}$$

6.2.6 Sensible Gain due to Air Leakage

$$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$$

$$0.085 \times 175.60 \times 5^\circ\text{C} \times 1.2 = 91 \text{ W}$$

$$= 311 \text{ Btu/h}$$

5.2.3.2 Heat Loss due to Mechanical Ventilation

$$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$$

$$64 \text{ CFM} \times 72^\circ\text{F} \times 1.08 \times 0.25 = 1243 \text{ Btu/h}$$

6.2.7 Sensible heat Gain due to Ventilation

$$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$$

$$64 \text{ CFM} \times 9^\circ\text{F} \times 1.08 \times 0.25 = 158 \text{ Btu/h}$$

5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)

$$HL_{airr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$$

Level	Level Factor (LF)	HLairbv 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	9,237	3,911	1.181
2	0.3		5,162	0.537
3	0.2		4,949	0.373
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 HLairv = 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 1

BUILDER: GREENPARK HOMES

SFQT: 1696

LO# 98653

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):	22324.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.75	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 52.0 ft	WIDTH: 16.0 ft	EXPOSED PERIMETER:	86.0 ft

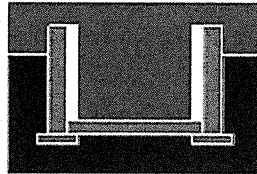
2012 OBC - COMPLIANCE PACKAGE		Compliance Package A1	
Component		Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value		60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value		31	27.65
Exposed Floor Minimum RSI (R)-Value		31	29.80
Walls Above Grade Minimum RSI (R)-Value		22	17.03
Basement 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):	15.8	 Insulation Configuration
Floor Width (m):	4.9	
Exposed Perimeter (m):	26.2	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	0.4	
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):		751

TYPE: WILLOW 1
LO# 98653

Air Infiltration Residential Load Calculator

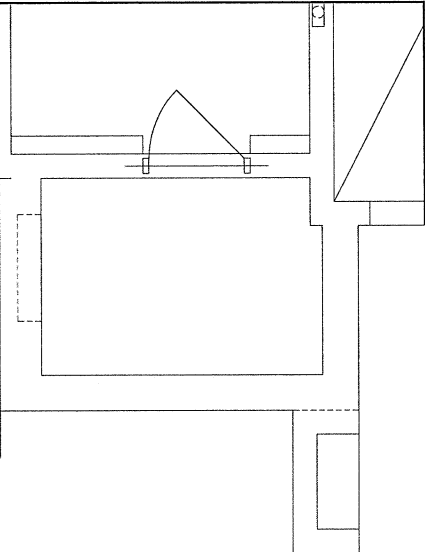
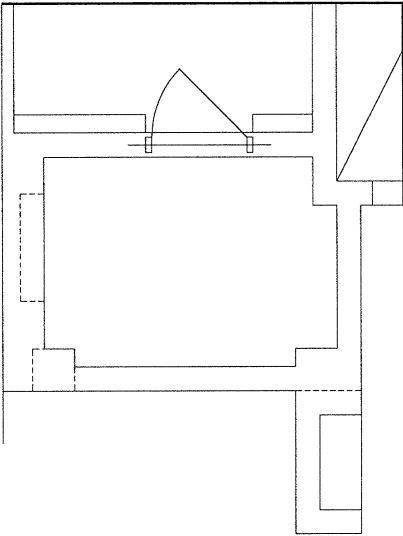
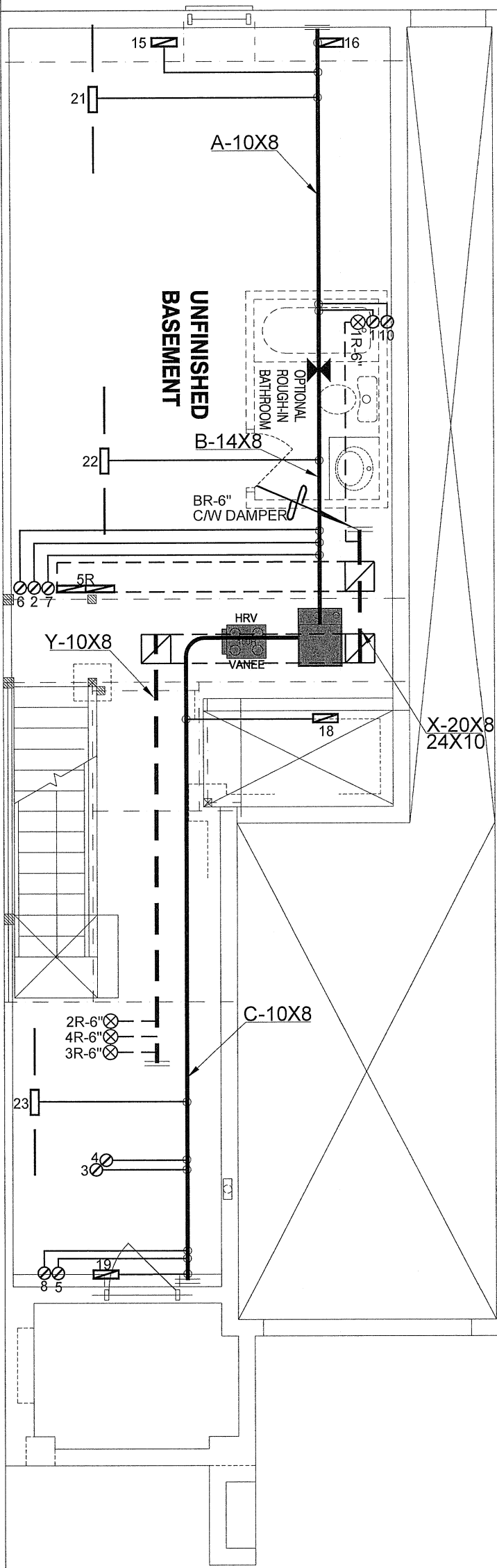
Supplemental tool for CAN/CSA-F280

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):	632.1			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	842.7 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 1

LO# 98653

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BASEMENT PLAN EL-1

BASEMENT PLAN EL-3

BASEMENT PLAN EL-2

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.

CSA-F280-12

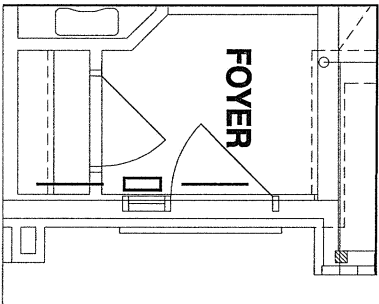
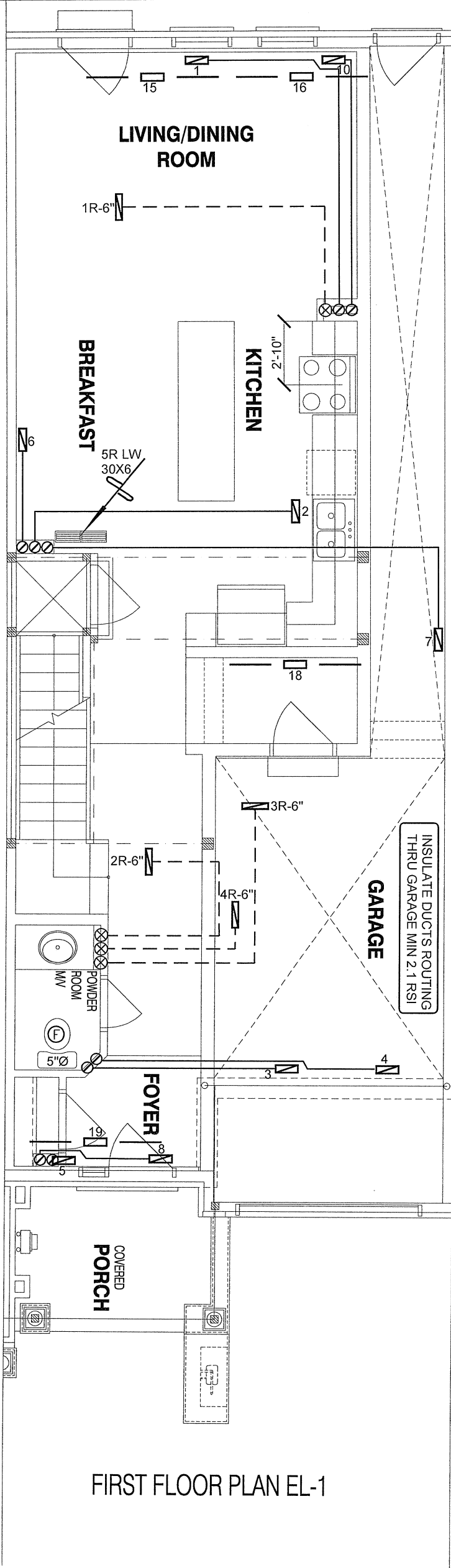
PACKAGE A1

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
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS	

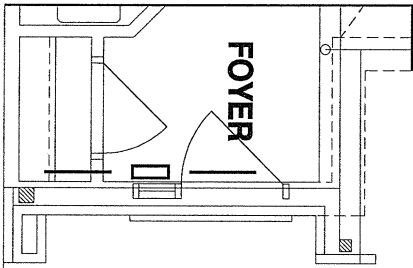
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Client		HVACDESIGNS LTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services	HEAT LOSS 25181 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title	
GREENPARK HOMES			MAKE GOODMAN		3RD FLOOR			BASEMENT HEATING LAYOUT	
Project Name BARLASSINA CAMBRIDGE, ONTARIO			MODEL GMEC960302BNA		2ND FLOOR	9	4	3	
Block 122 Units 49 to 54			INPUT 30 MBTU/H		1ST FLOOR	4	1	2	Date AUG/2022
WILLOW 1 1696 sqft			OUTPUT 28.8 MBTU/H		BASEMENT	3	1	0	Scale 3/16" = 1'-0"
		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				BCIN# 19669	
		FAN SPEED 614 cfm @ 0.6" w.c.						LO# 98653	

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FIRST FLOOR PLAN EL-3



FIRST FLOOR PLAN EL-2

FIRST FLOOR PLAN EL-1

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

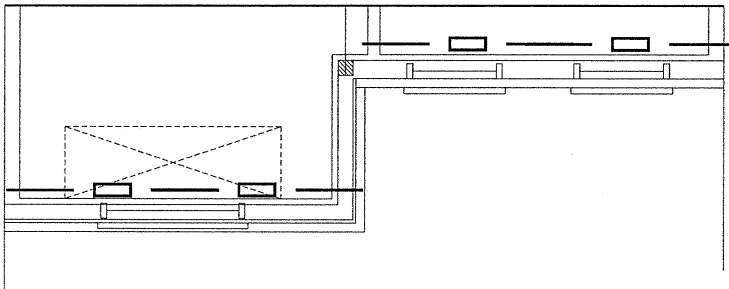
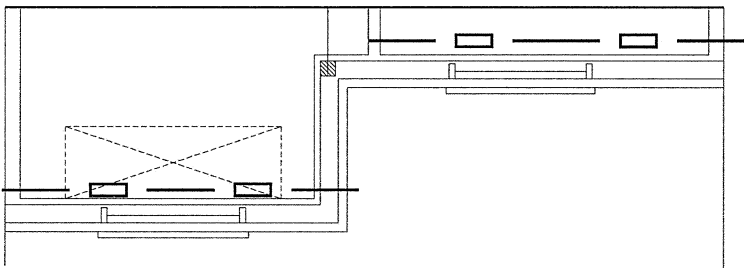
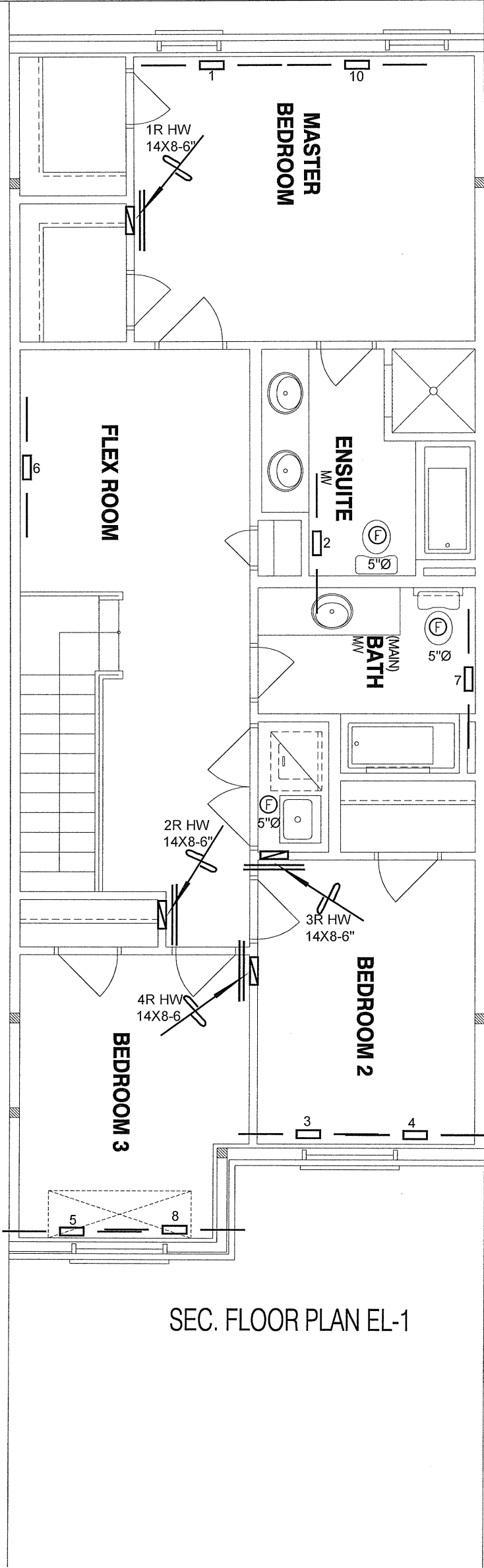
CSA-F280-12
PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

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Client		 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.	Sheet Title	
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 1	1696 sqft	LO#	98653	

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

CSA-F280-12
PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
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GREENPARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	AUG/2022
BARLASSINA CAMBRIDGE, ONTARIO			Scale	3/16" = 1'-0"
Block 122 Units 49 to 54			BCIN# 19669	
WILLOW 1	1696 sqft		LO#	98653