

NOT THE GRANTING OF A PERMIT NOR REVIEWING OF SPECS
& DRAWINGS NOR INSPECTIONS MADE DURING INSTALLATION
BY THE OFFICIAL HAVING JURISDICTION SHALL RELIEVE THE
OWNER FROM REQUIREMENTS OF THE ONTARIO BUILDING
CODE AND ANY OTHER REFERENCED REQUIREMENTS.

Garden 9 - Elevation 1

SITE NAME: BARLASSINA				OPT 4 BED				DATE: Jan-23				WINTER NATURAL AIR CHANGE RATE 0.307				HEAT LOSS ΔT °F. 72				CSA-F280-12			
BUILDER: GREENPARK HOMES				TYPE: GARDEN 9				GFA: 2490				LO# 99997				SUMMER NATURAL AIR CHANGE RATE 0.084				HEAT GAIN ΔT °F. 9			
ROOM USE				MBR				BED-2				BED-3				BED-4				BATH			
EXP. WALL				37				39				31				13				15			
CLG. HT.				9				9				9				9				9			
FACTORS																							
GRS.WALL AREA				333				351				279				117				135			
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			
EAST				20.3 40.5				0 0 0				0 0 0				0 0 0				0 0 0			
SOUTH				20.3 23.9				0 0 0				8 162 191				23 466 549				26 527 621			
WEST				20.3 40.5				24 487 973				8 162 324				0 0 0				0 0 0			
SKYLT.				35.5 99.8				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			
NET EXPOSED WALL				4.3 0.5				309 1314 167				182 774 98				94 400 51				109 463 59			
NET EXPOSED BSMT WALL ABOVE GR				3.4 0.4				0 0 0				0 0 0				0 0 0				0 0 0			
EXPOSED CLG				1.2 0.5				318 389 168				134 164 71				233 285 123				169 207 89			
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				0			
SLAB ON GRADE HEAT LOSS								0				0				0				0			
SUBTOTAL HT LOSS				2189				1262				2594				2172				1035			
SUB TOTAL HT GAIN								1308				684								1116			
LEVEL FACTOR / MULTIPLIER				0.20 0.24				0.20 0.24				0.20 0.24				0.20 0.24				0.20 0.24			
AIR CHANGE HEAT LOSS				516				298				612				512				244			
AIR CHANGE HEAT GAIN				52				27				81				48				27			
DUCT LOSS				0				0				0				0				0			
DUCT GAIN				0				0				0				0				0			
HEAT GAIN PEOPLE				240				2				480				0				0			
HEAT GAIN APPLIANCES/LIGHTS				512				0				0				0				0			
TOTAL HT LOSS BTU/H				2705				1560				3206				2953				1279			
TOTAL HT GAIN x 1.3 BTU/H				3057				925				3752				2877				1887			

ROOM USE			LIV/D			K/B/F			LAUN			W/R			FOY			MUD			BAS		
EXP. WALL			28			87			9			8			32			22			164		
CLG. HT.			10			10			9			10			10			11			8		
FACTORS																							
GRS.WALL AREA			280			870			81			80			320			242			820		
LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN		
GLAZING																							
NORTH			20.3	15.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
EAST			20.3	40.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SOUTH			20.3	23.9	51	1034	1218	60	1216	1433	13	264	311	12	243	287	12	243	287	0	0	0	
WEST			20.3	40.5	0	0	0	84	1703	3406	0	0	0	0	0	0	0	0	0	0	0	0	
SKYLT.			35.5	99.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DOORS			19.1	2.4	0	0	0	0	0	0	0	0	0	0	0	0	18	344	44	21	401	51	
NET EXPOSED WALL			4.3	0.5	229	974	124	726	3086	392	68	289	37	68	289	37	260	1105	140	221	940	119	
NET EXPOSED BSMT WALL ABOVE GR			3.4	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
EXPOSED CLG			1.2	0.5	0	0	0	0	0	0	66	81	35	0	0	0	0	0	0	0	0	0	
NO ATTIC EXPOSED CLG			2.6	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
EXPOSED FLOOR			2.4	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
BASEMENT/CRAWL HEAT LOSS					0			0			0			0		0			0				
SLAB ON GRADE HEAT LOSS					0			0			0			0		0			0				
SUBTOTAL HT LOSS					2007			6006			633			532		2301			1341				
SUB TOTAL HT GAIN						1342			5231			382			323			1687			170		
LEVEL FACTOR / MULTIPLIER			0.30	0.32				0.30	0.32		0.20	0.24		0.30	0.32		0.30	0.32		0.30	0.32		
AIR CHANGE HEAT LOSS					641			1918			149			170		735			428				
AIR CHANGE HEAT GAIN						53		206				15		13		67			7				
DUCT LOSS					0			0			0			0		0			0				
DUCT GAIN						0		0				0		0		0			0				
HEAT GAIN PEOPLE			240		0		0	0	0		0		0	0	0	0	0	0	0	0	0	0	
HEAT GAIN APPLIANCES/LIGHTS						512		512				512		0		0			512				
TOTAL HT LOSS BTU/H					2649			7924			783			702		3035			1769				
TOTAL HT GAIN x 1.3 BTU/H						2480		7735				1182		437		2280			896				

SITE NAME: BARLASSINA
BUILDER: GREENPARK HOMES

OPT 4 BED
TYPE: GARDEN 9

DATE: Jan-23

GFA: 2490 LO# 99997

HEATING CFM 928 COOLING CFM 928
TOTAL HEAT LOSS 44,072 TOTAL HEAT GAIN 30,009
AIR FLOW RATE CFM 21.06 AIR FLOW RATE CFM 30.92

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

#GOODMAN
GMEC960603BNA 60
FAN SPEED
LOW

AFUE = 96 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 57,600

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	11	7	4
R/A	0	0	5	1	1

plenum pressure s/a 0.18 r/a pressure 0.17
max s/a dif press. loss 0.01 r/a grille press. Loss 0.02
min adjusted pressure s/a 0.17 adjusted pressure r/a 0.15

MEDLOW
MEDIUM 928
MEDIUM HIGH 1017
HIGH 1131

DESIGN CFM = 928
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	4	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	BED-2	BED-3	BED-4	BATH	BED-3	MBR	BATH	BED-2	LIV/D	K/B/F	K/B/F	K/B/F	LAUN	W/R	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.35	1.56	1.60	1.48	1.28	0.69	1.48	1.35	0.69	1.60	2.65	2.64	2.64	2.64	0.78	0.70	3.04	1.77	3.53	3.53	3.53	3.53
CFM PER RUN HEAT	28	33	34	31	27	15	31	28	15	34	56	56	56	56	16	15	64	37	74	74	74	74
RM GAIN MBH.	1.53	0.92	1.88	1.44	1.89	0.50	1.44	1.53	0.50	1.88	2.48	2.58	2.58	2.58	1.18	0.44	2.28	0.90	0.38	0.38	0.38	0.38
CFM PER RUN COOLING	47	29	58	44	58	15	44	47	15	58	77	80	80	80	37	14	70	28	12	12	12	12
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	0.17	0.17	0.17
ACTUAL DUCT LGH.	39	44	69	73	40	42	65	30	49	76	33	37	22	31	59	46	57	51	33	34	30	50
EQUIVALENT LENGTH	160	150	190	180	200	190	160	160	160	200	110	130	110	120	240	170	130	100	120	90	130	180
TOTAL EFFECTIVE LENGTH	199	194	259	253	240	232	225	190	209	276	143	167	132	151	299	216	187	151	153	124	160	230
ADJUSTED PRESSURE	0.09	0.09	0.07	0.07	0.07	0.07	0.08	0.09	0.08	0.06	0.12	0.1	0.13	0.11	0.06	0.08	0.09	0.11	0.11	0.14	0.11	0.07
ROUND DUCT SIZE	5	4	6	5	6	4	5	5	4	6	5	6	6	6	5	4	5	4	6	6	6	6
HEATING VELOCITY (ft/min)	206	379	173	228	138	172	228	206	172	173	411	286	286	286	117	172	470	424	377	377	377	377
COOLING VELOCITY (ft/min)	345	333	296	323	296	172	323	345	172	296	565	408	408	408	272	161	514	321	61	61	61	61
OUTLET GRILL SIZE	3X10	3X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	D	C	A	A	B	B	A	D	B	A	B	C	C	C	A	A	A	B	C	D	B	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
1	MBR	1.35	28	1.53	47	0.17	39	160	199	0.09	5	206	345	3X10	D
2	ENS	1.56	33	0.92	29	0.17	44	150	194	0.09	4	379	333	3X10	C
4	BED-2	1.60	34	1.88	58	0.17	69	190	259	0.07	6	173	296	4X10	A
5	BED-3	1.48	31	1.44	44	0.17	73	180	253	0.07	5	228	323	3X10	A
6	BED-4	1.28	27	1.89	58	0.17	40	200	240	0.07	6	138	296	4X10	B
7	BATH	0.69	15	0.50	15	0.17	42	190	232	0.07	4	172	172	3X10	B
9	BED-3	1.48	31	1.44	44	0.17	65	160	225	0.08	5	228	323	3X10	A
10	MBR	1.35	28	1.53	47	0.17	30	160	190	0.09	5	206	345	3X10	D
11	BATH	0.69	15	0.50	15	0.17	49	160	209	0.08	4	172	172	3X10	B
12	BED-2	1.60	34	1.88	58	0.17	76	200	276	0.06	6	173	296	4X10	A
13	LIV/D	2.65	56	2.48	77	0.17	33	110	143	0.12	5	411	565	3X10	B
14	K/B/F	2.64	56	2.58	80	0.17	37	130	167	0.1	6	286	408	4X10	C
15	K/B/F	2.64	56	2.58	80	0.17	22	110	132	0.13	6	286	408	4X10	C
16	K/B/F	2.64	56	2.58	80	0.17	31	120	151	0.11	6	286	408	4X10	C
17	LAUN	0.78	16	0.44	37	0.17	59	240	299	0.06	5	117	272	3X10	A
18	W/R	0.70	15	0.44	14	0.17	46	170	216	0.08	4	172	161	3X10	A
19	FOY	3.04	64	2.28	70	0.17	57	130	187	0.09	5	470	514	3X10	A
20	MUD	1.77	37	0.90	28	0.17	51	100	151	0.11	4	424	321	3X10	B
21	BAS	3.53	74	0.38	12	0.17	33	120	153	0.11	6	377	61	4X10	C
22	BAS	3.53	74	0.38	12	0.17	34	90	124	0.14	6	377	61	4X10	D
23	BAS	3.53	74	0.38	12	0.17	30	130	160	0.11	6	377	61	4X10	B
24	BAS	3.53	74	0.38	12	0.17	50	180	230	0.07	6	377	61	4X10	A

SUPPLY AIR TRUNK SIZE															RETURN AIR TRUNK SIZE																
	TRUNK	STATIC	ROUND	RECT						TRUNK	STATIC	ROUND	RECT						TRUNK	STATIC	ROUND	RECT									
	CFM	PRESS.	DUCT	DUCT				VELOCITY		CFM	PRESS.	DUCT	DUCT				VELOCITY		CFM	PRESS.	DUCT	DUCT				VELOCITY					
							(ft/min)										(ft/min)									(ft/min)					
TRUNK A	299	0.06	9.6	12	x	8	449	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.05	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0
TRUNK B	523	0.06	11.8	16	x	8	588	TRUNK H	0	0.00	0	0	x	8	0	TRUNK Q	0	0.05	0	0	x	8	0	TRUNK R	0	0.05	0	0	x	8	0
TRUNK C	275	0.09	8.4	8	x	8	619	TRUNK I	0	0.00	0	0	x	8	0	TRUNK S	0	0.05	0	0	x	8	0	TRUNK T	0	0.05	0	0	x	8	0
TRUNK D	405	0.09	9.7	12	x	8	608	TRUNK J	0	0.00	0	0	x	8	0	TRUNK U	0	0.05	0	0	x	8	0	TRUNK V	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 W	0	0.05	0	0	x	8	0	TRUNK X	928	0.05	15.3	28	x	8	597
TRUNK F	0	0.00	0	0	x	8	0	TRUNK L	0	0.00	0	0	x	8	0	TRUNK Y	685	0.05	13.7	22	x	8	560	TRUNK Z	515	0.05	12.3	18	x	8	515

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
AIR VOLUME	95	85	85	85	345	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	65	72	71	66	50	70	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	160	215	255	215	240	220	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	225	287	326	281	290	290	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.07	0.05	0.05	0.05	0.05	0.05	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE	6	6.3	6.3	6.3	10.6	6.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	30	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: GARDEN 9
SITE NAME: BARLASSINA

LO # 99997
OPT 4 BED

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

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

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

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

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

TOTAL VENTILATION CAPACITY				9.32.3.3(1)
Basement + Master Bedroom	<u>2</u>	@ 21.2 cfm	<u>42.4</u>	cfm
Other Bedrooms	<u>3</u>	@ 10.6 cfm	<u>31.8</u>	cfm
Kitchen & Bathrooms	<u>4</u>	@ 10.6 cfm	<u>42.4</u>	cfm
Other Rooms	<u>5</u>	@ 10.6 cfm	<u>53.0</u>	cfm
Table 9.32.3.A.	TOTAL			<u>169.6</u> cfm

PRINCIPAL VENTILATION CAPACITY REQUIRED				9.32.3.4.(1)
1	Bedroom	31.8	cfm	
2	Bedroom	47.7	cfm	
3	Bedroom	63.6	cfm	
4	Bedroom	79.5	cfm	
5	Bedroom	95.4	cfm	
TOTAL		<u>79.5</u>	cfm	

SUPPLEMENTAL VENTILATION CAPACITY			9.32.3.5.
Total Ventilation Capacity	<u>169.6</u>	cfm	
Less Principal Ventil. Capacity	<u>79.5</u>	cfm	
Required Supplemental Capacity	<u>90.1</u>	cfm	

PRINCIPAL EXHAUST FAN CAPACITY			
Model:	VANEE V150H		Location: BSMT
<u>79.5</u>	cfm	☒	HVI Approved

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

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

HEAT RECOVERY VENTILATOR				9.32.3.11.
Model:	VANEE V150H			
<u>150</u>	cfm high	<u>35</u>	cfm low	
<u>75</u>	% Sensible Efficiency @ 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:	
HRAI #	001820
Date:	January-23

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 99997	Model: GARDEN 9	Builder: GREENPARK HOMES	Date: 1/23/2023																																																									
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																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.307 x 256.98 x 40 °C x 1.2 = 3803 W = 12975 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.084 x 256.98 x 5 °C x 1.2 = 132 W = 451 Btu/h																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 72 °F x 1.08 x 0.25 = 1554 Btu/h			$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 9 °F x 1.08 x 0.25 = 197 Btu/h																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																												
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				Michael O'Rourke BCIN# 19669 																																																								

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: GARDEN 9	OPT 4 BED	BUILDER: GREENPARK HOMES
SFQT: 2490	LO# 99997	SITE: BARLASSINA

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	0	OUTDOOR DESIGN TEMP.	84
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75
		WINDOW SHGC	0.50

BUILDING DATA

ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.57	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	32670.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	5.0 ft
LENGTH: 58.0 ft	WIDTH: 24.0 ft	EXPOSED PERIMETER:	164.0 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	-

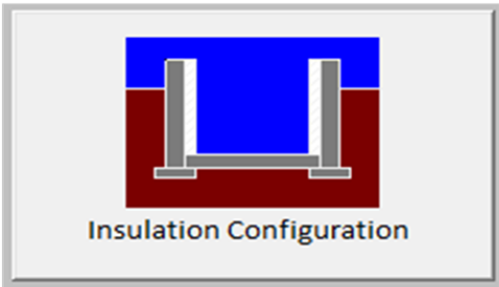
INDIVIDUAL BCIN: 19669

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):	17.7	 Insulation Configuration
Floor Width (m):	7.3	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.4	
Depth Below Grade (m):	1.52	
Window Area (m ²):	1.4	
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):		1538

TYPE: GARDEN 9
LO# 99997

OPT 4 BED

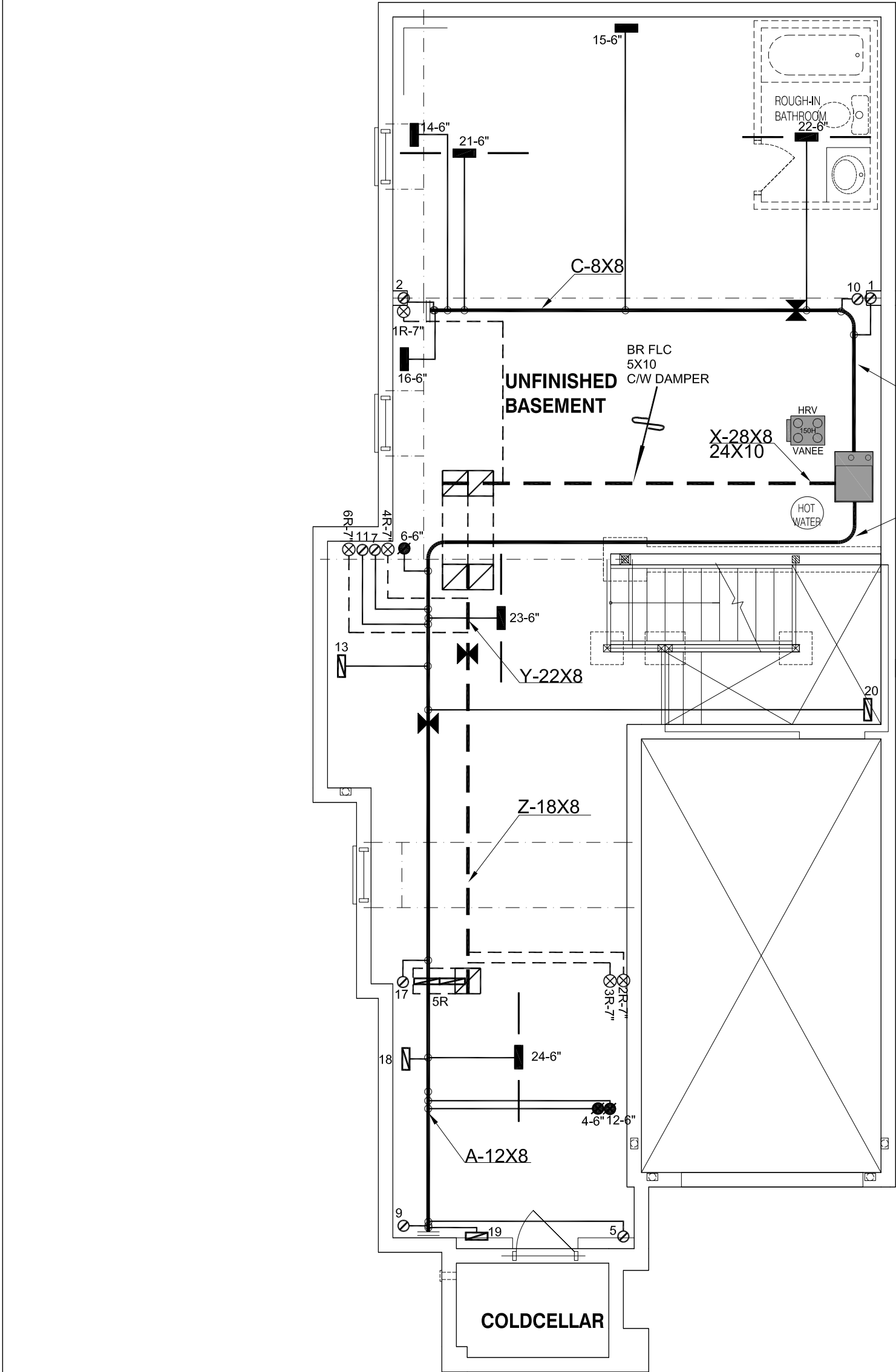
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Cambridge			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	6.71			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	925.1			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1233.2 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	37.5	37.5		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.307			
Cooling Air Leakage Rate (ACH/H):	0.084			

TYPE: GARDEN 9
LO# 99997

OPT 4 BED



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

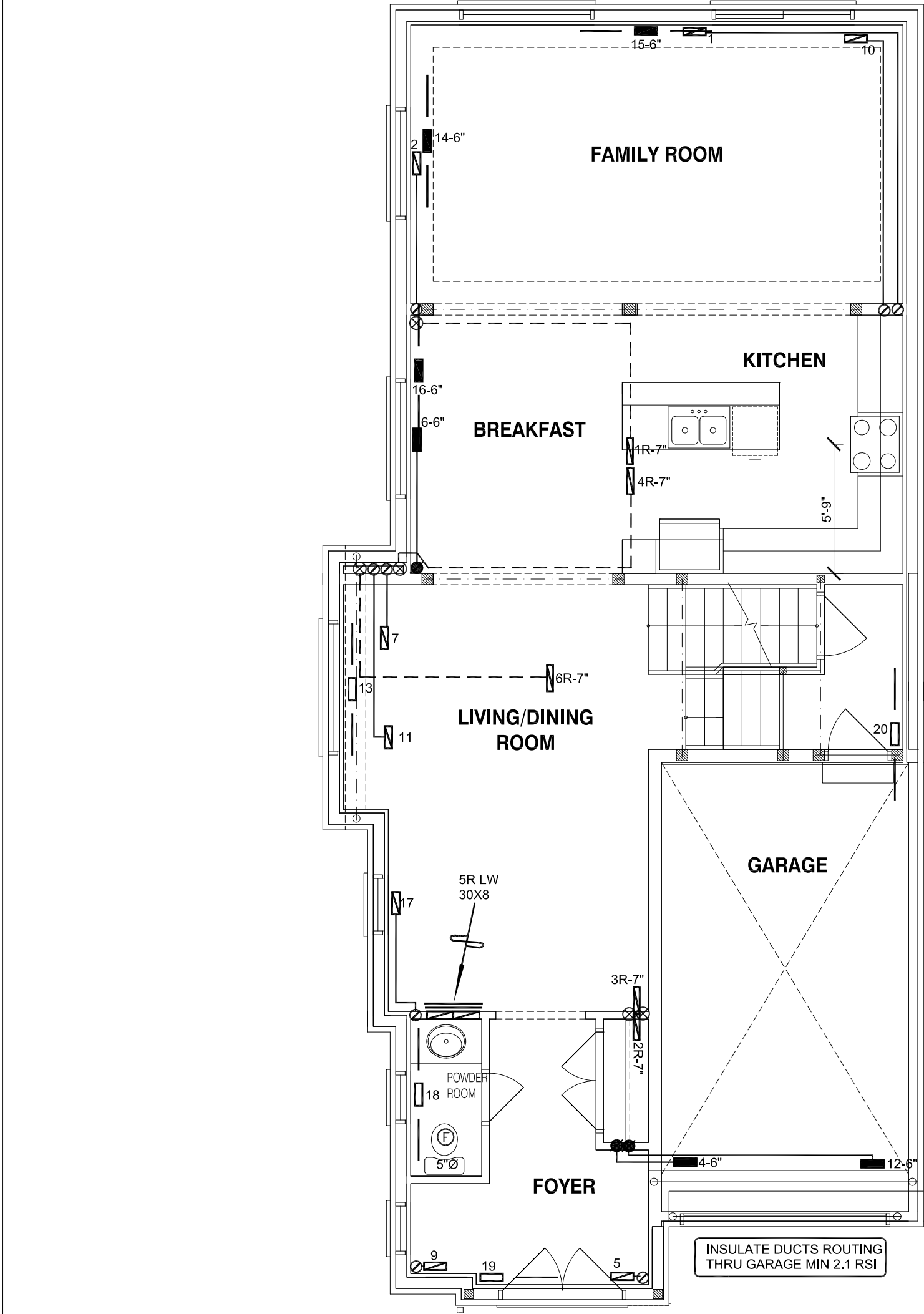
CSA-F280-12

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.	HEAT LOSS 45626 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 Garden 9 - Elevation 1 OPT 4 BED GARDEN 9		MODEL GMEC960603BNA	2ND FLOOR		11	5	2		
		INPUT 60 MBTU/H	1ST FLOOR		7	1	2		
		OUTPUT 57.6 MBTU/H	BASEMENT		4	1	0	Date	AUG/2022
		COOLING 2.5 TONS			Scale				
2490 sqft		FAN SPEED 928 cfm @ 0.6" w.c.	ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A					BCIN# 19669	
								LO#	99997



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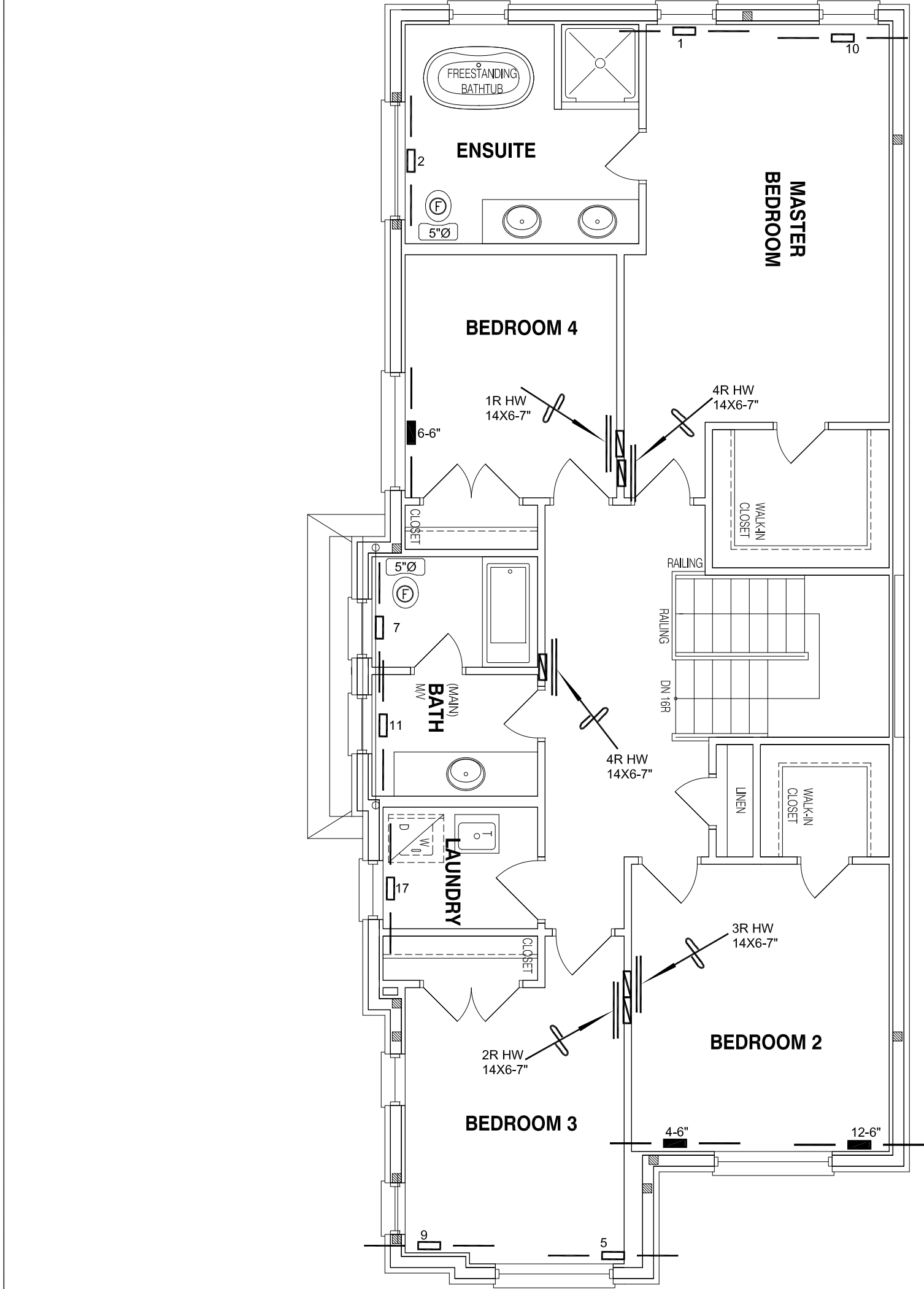
CSA-F280-12

PACKAGE A1

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GREENPARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	AUG/2022
BARLASSINA CAMBRIDGE, ONTARIO			Scale	3/16" = 1'-0"
Garden 9 - Elevation 1			BCIN# 19669	
OPT 4 BED GARDEN 9			LO#	99997
2490 sqft				



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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"
Garden 9 - Elevation 1			BCIN# 19669	
OPT 4 BED GARDEN 9			LO#	99997
2490 sqft				