

SITE NAME: RESSEL GARDENS PHASE 3

BUILDER: GREENPARK HOMES

TYPE: VALLEYCREEK 6

GFA: 2836

DATE: May-20

LO# 85953

WINTER NATURAL AIR CHANGE RATE 0.338

SUMMER NATURAL AIR CHANGE RATE 0.121

HEAT LOSS AT °F. 71

HEAT GAIN AT °F. 13

CSA-F280-12

SB-12 PACKAGE A1

BUILDING: GREENPARK HOMES			TYPE: VALLEYCREEK 6			GFA: 2836			LO# 86958			SUMMER NATURAL AIR CHANGE RATE 0.121			HEAT LOSS AT °F. 13			HEAT GAIN AT °F. 13			SB-12 PACKAGE A																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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ROOM USE			D/L/H		FAM		K/B		LAUND			W/R			FOY			MUD						WOD			BAS					
EXP. WALL			53		37		35		9			6			18			28						62			178					
CLG. HT.			10		10		10		9			10			10			11						9			9					
FACTORS																																
GRS.WALL AREA			530		370		360		81			60			180			308						558			1242					
LOSS GAIN			LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN						LOSS GAIN			LOSS GAIN					
GLAZING																																
NORTH			19.8	16.0	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			19.8	41.6	32	833	1330	0	0	0	0	0	0	0	0	0	0	0	7	138	112			0	0	0	3	59	48			
SOUTH			19.8	24.9	20	395	498	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
WEST			19.8	41.6	0	0	0	24	474	997	70	1384	2909	0	0	0	0	0	0	0	0	0	0	0	0	0	6	119	149			
SKYL.T.			34.6	101.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	257	540	0	0		
DOORS			23.5	4.3	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			4.1	0.8	478	1982	369	348	1434	260	280	1161	210	0	0	0	40	938	170	20	469	85			0	0	0	0	0	0		
NET EXPOSED BSMT WALL ABOVE GR			3.3	0.6	0	0	0	0	0	0	0	0	0	74	307	66	53	220	40	134	555	101	281	1165	211	0	0	0	20	489	85	
EXPOSED CLG			1.2	0.8	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		
NO ATTIC EXPOSED CLG			2.6	1.3	0	0	0	0	0	0	0	0	0	89	118	58	0	0	0	0	0	0	0	0	0	359	1200	218	342	1143	207	
EXPOSED FLOOR			2.4	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	
BASEMENT/CRAWL HEAT LOSS					0								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SLAB ON GRADE HEAT LOSS					0								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SUBTOTAL HT LOSS					3010			1909					563			358			1612			1772									5810	
SUB TOTAL HT GAIN						2187			1257			3119			288			214			520			408			1457			7601	490	
LEVEL FACTOR / MULTIPLIER			0.30	0.43			0.30	0.43		0.30	0.43		0.20	0.24		0.30	0.43		0.30	0.43		0.30	0.43				758			0.60	0.89	
AIR CHANGE HEAT LOSS					1295			822				1095				137			154			694			763					8039		
AIR CHANGE HEAT GAIN						163			88			218			20			15			36			29							87	
DUCT LOSS					0			0				0				0			0			0									0	
DUCT GAIN						0			0			0				0			0			0									0	
HEAT GAIN PEOPLE			240		0		0		0		0		0			0			0			0			0						0	
HEAT GAIN APPLIANCES/LIGHTS						572			572			572		0		0			0		0	0			0		0				0	
TOTAL HT LOSS BTU/H					4305			2730			3840			700				512			2306			2535			0				572	
TOTAL HT GAIN x 1.3 BTU/H						3785			2492			5081												566			1457				15638	1489

TOTAL HEAT GAIN BTU/H: 35481

TONS: 2.96

LOSS DUE TO VENTILATION LOAD BTU/H: 1515

STRUCTURAL HEAT LOSS: 60100

TOTAL COMBINED HEAT LOSS BTU/H: 61616

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.



INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

SITE NAME: RESSEL GARDENS PHASE 3
BUILDER: GREENPARK HOMES

TYPE: VALLEYCREEK 6

DATE: May-20

GFA: 2836 LO# 85958

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 50,100 TOTAL HEAT GAIN 35,186
AIR FLOW RATE CFM 22.57 AIR FLOW RATE CFM 32.14furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35#GOODMAN
GMCE960603BNA 60
FAN SPEED LOWAFUE = 96 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 67,600

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	8	4
R/A	0	0	5	2	1

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

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

plenum 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 0.15MEDLOW
MEDIUM 928
MEDIUM HIGH 1017
HIGH 1131DESIGN CFM = 1131
CFM @ 6" E.S.P.

TEMPERATURE RISE 47 °F

RUN #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC-3	BED-2	BED-3	BED-4	ENS-2	ENS	BED-3	MBR	ENS-3	D/L/H	FAM	K/B	K/B	D/L/H	LAUND	W/R	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.22	1.18	1.01	1.83	2.13	1.92	0.74	1.18	2.13	1.22	1.72	2.15	2.73	1.82	1.82	2.15	0.70	0.51	2.31	2.54	4.27	4.27	4.27	4.27
CFM PER RUN HEAT	27	27	23	41	48	43	17	27	48	27	39	49	62	41	41	49	16	12	52	57	96	96	96	96
RM GAIN MBH	1.84	0.87	1.24	1.95	2.90	2.03	0.35	0.87	2.90	1.84	1.84	1.89	2.49	2.54	2.54	1.89	1.14	0.30	0.72	0.57	0.62	0.62	0.62	0.62
CFM PER RUN COOLING	59	28	40	63	93	65	11	28	93	59	59	61	80	82	82	61	37	10	23	18	20	20	20	20
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	53	35	57	51	61	59	43	43	38	37	68	39	38	24	13	52	21	27	39	36	33	12	33	47
EQUIVALENT LENGTH	190	190	180	150	140	190	140	120	130	170	160	160	120	160	100	120	110	140	100	120	130	90	140	130
TOTAL EFFECTIVE LENGTH	243	225	237	201	201	249	183	163	168	207	228	199	158	184	113	172	131	167	139	156	163	102	173	177
ADJUSTED PRESSURE	0.07	0.08	0.07	0.09	0.08	0.07	0.09	0.11	0.1	0.08	0.08	0.09	0.11	0.09	0.14	0.1	0.13	0.1	0.12	0.11	0.1	0.16	0.09	0.09
ROUND DUCT SIZE	5	4	5	5	6	6	4	4	6	5	5	5	5	6	6	5	4	4	4	5	6	6	6	6
HEATING VELOCITY (f/min)	198	310	169	301	245	219	195	310	245	198	286	360	455	209	209	360	184	138	597	419	489	489	489	489
COOLING VELOCITY (f/min)	433	321	294	463	474	331	126	321	474	433	433	448	587	418	418	448	424	115	264	132	102	102	102	102
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	B	C	A	B	B	A	C	C	B	C	A	A	C	C	D	A	D	B	A	C	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 (f/min)	COOLING VELOCITY (f/min)	OUTLET GRILL SIZE	TRUNK
1	MBR	1.22	27	1.84	59	0.17	53	190	243	0.07	5	198	433	3X10	B
2	ENS	1.18	27	0.87	28	0.17	35	190	225	0.08	4	310	321	3X10	C
3	WIC-3	1.01	23	1.24	40	0.17	57	180	237	0.07	5	169	294	3X10	A
4	BED-2	1.83	41	1.95	63	0.17	51	150	201	0.09	5	301	463	3X10	B
5	BED-3	2.13	48	2.90	93	0.16	61	140	201	0.08	6	245	474	4X10	B
6	BED-4	1.92	43	2.03	65	0.17	59	190	249	0.07	6	219	331	4X10	A
7	ENS-2	0.74	17	0.35	11	0.17	43	140	183	0.09	4	195	126	3X10	C
8	ENS	1.18	27	0.87	28	0.17	43	120	163	0.11	4	310	321	3X10	C
9	BED-3	2.13	48	2.90	93	0.16	38	130	168	0.1	6	245	474	4X10	B
10	MBR	1.22	27	1.84	59	0.17	37	170	207	0.08	5	198	433	3X10	C
11	ENS-3	1.72	39	1.84	61	0.17	68	160	228	0.08	5	286	448	3X10	A
12	D/L/H	2.15	49	1.89	61	0.17	39	160	199	0.09	5	360	587	3X10	A
13	FAM	2.73	62	2.49	80	0.17	82	120	158	0.11	5	455	418	3X10	C
14	K/B	1.82	41	2.54	82	0.16	24	160	184	0.09	6	209	418	4X10	C
15	K/B	1.82	41	2.54	82	0.16	13	160	113	0.14	6	209	418	4X10	D
16	D/L/H	2.15	49	1.89	61	0.16	52	120	172	0.1	5	360	587	3X10	A
17	LAUND	0.70	16	0.30	37	0.17	21	110	131	0.13	4	184	115	3X10	D
18	W/R	0.51	12	0.30	10	0.17	27	140	167	0.1	4	138	264	3X10	B
19	FOY	2.31	52	0.72	23	0.17	39	100	139	0.12	4	597	132	3X10	A
20	MUD	2.54	57	0.57	18	0.17	36	120	156	0.11	5	419	102	3X10	C
21	BAS	4.27	96	0.62	20	0.16	33	130	163	0.1	6	489	102	4X10	C
22	BAS	4.27	96	0.62	20	0.16	12	90	102	0.16	6	489	102	4X10	D
23	BAS	4.27	96	0.62	20	0.16	33	140	173	0.09	6	489	102	4X10	B
24	BAS	4.27	96	0.62	20	0.16	33	130	177	0.09	6	489	102	4X10	A

SUPPLY AIR TRUNK SIZE												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	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)
TRUNK A	351	0.07	9.8	12	X	8	527	TRUNK G	0	0.00	0	0	X	8	0	TRUNK O	0	0.05	0	0	X	8	0
TRUNK B	623	0.07	12.1	18	X	8	623	TRUNK H	0	0.00	0	0	X	8	0	TRUNK P	0	0.05	0	0	X	8	0
TRUNK C	354	0.08	9.5	10	X	8	837	TRUNK I	0	0.00	0	0	X	8	0	TRUNK Q	0	0.05	0	0	X	8	0
TRUNK D	1130	0.07	15.2	26	X	8	782	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			

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	0	0	0	0	0	0	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	42	52	53	90	57	37	48	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	195	225	245	235	225	235	250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	237	277	298	325	282	272	298	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
ROUND DUCT SIZE	7.5	8	7.5	8	8	10.1	7.5	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	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	14	14	14	14	14	30	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: VALLEYCREEK 6
SITE NAME: RESSEL GARDENS PHASE 3

LO # 86968

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	3 @ 10.6 cfm	31.8 cfm
Kitchen & Bathrooms	5 @ 10.6 cfm	53 cfm
Other Rooms	6 @ 10.6 cfm	63.6 cfm
Table 9.32.3.A.	TOTAL	190.8 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		79.5 cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5
Total Ventilation Capacity	190.8	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	111.3	cfm

PRINCIPAL EXHAUST FAN CAPACITY			
Model: VANEE 65H	Location: BSMT		
79.5 cfm	3.0 sones ☒ HVI Approved		
PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	AT °F	FACTOR	% LOSS
79.5 CFM	X 71 F	X 1.08	X 0.25

SUPPLEMENTAL FANS		PANASONIC		
Location	Model	cfm	HVI	Sones
ENS	FV-05-11VK1	50	☒	0.3
ENS-2	FV-05-11VK1	50	☒	0.3
ENS-3	FV-05-11VK1	50	☒	0.3
W/R	FV-05-11VK1	50	☒	0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE 65H		
155 cfm high	64 cfm low	
75 % Sensible Efficiency	☒ HVI Approved	
@ 32 deg F (0 deg C)		

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:	May-20

CSA F280-12 Residential Heat Loss and Heat Gain Calculations
Formula Sheet (For Air Leakage / Ventilation Calculation)

LO#: 85958

Model: VALLEYCREEK 6

Builder: GREENPARK HOMES

Date: 04/05/2020

Volume Calculation
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1215	9	10935
First	1215	10	12150
Second	1621	9	14589
Third	0	9	0
Fourth	0	9	0
Total:			37,674.0 ft³
Total:			1066.8 m³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.338
SUMMER NATURAL AIR CHANGE RATE	0.121

Design Temperature Difference				
	T _{in} °C	T _{out} °C	ΔT °C	ΔT °F
Winter DTD _h	22	-17	39	71
Summer DTD _c	24	31	7	13

5.2.3.1 Heat Loss due to Air Leakage

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

$$0.338 \times 296.34 \times 39^\circ\text{C} \times 1.2 = 4712 \text{ W}$$

$$= 16078 \text{ Btu/h}$$

6.2.6 Sensible Gain due to Air Leakage

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

$$0.121 \times 296.34 \times 7^\circ\text{C} \times 1.2 = 306 \text{ W}$$

$$= 1044 \text{ Btu/h}$$

5.2.3.2 Heat Loss due to Mechanical Ventilation

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

$$80 \text{ CFM} \times 71^\circ\text{F} \times 1.08 \times 0.25 = 1515 \text{ Btu/h}$$

6.2.7 Sensible heat Gain due to Ventilation

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

$$80 \text{ CFM} \times 13^\circ\text{F} \times 1.08 \times 0.25 = 275 \text{ Btu/h}$$

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)	HL _{airbv} Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HL _{airbv} / HL _{clevel})
1	0.5	16,078	9,058	0.888
2	0.3		11,206	0.430
3	0.2		13,206	0.243
4	0		0	0.000
5	0		0	0.000

*HL_{airbv} = Air leakage heat loss + ventilation heat loss

*For a balanced or supply only ventilation system HL_{airv} = 0

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** VALLEYCREEK 6**BUILDER:** GREENPARK HOMES**SFQT:** 2836**LO#** 85958**SITE:** RESSEL GARDENS PHASE 3**DESIGN ASSUMPTIONS**

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	1	OUTDOOR DESIGN TEMP.	88
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75

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):	37674.0	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:	6.0 ft
LENGTH: 50.0 ft	WIDTH: 38.0 ft	EXPOSED PERIMETER:	176.0 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	0.96	-
HRV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.8	-

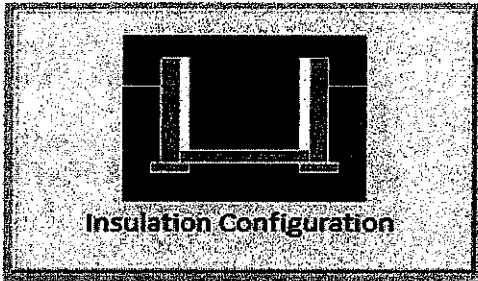
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Hamilton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	15.2	 Insulation Configuration
Floor Width (m):	11.6	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	2.0	
Door Area (m ²):	1.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1702

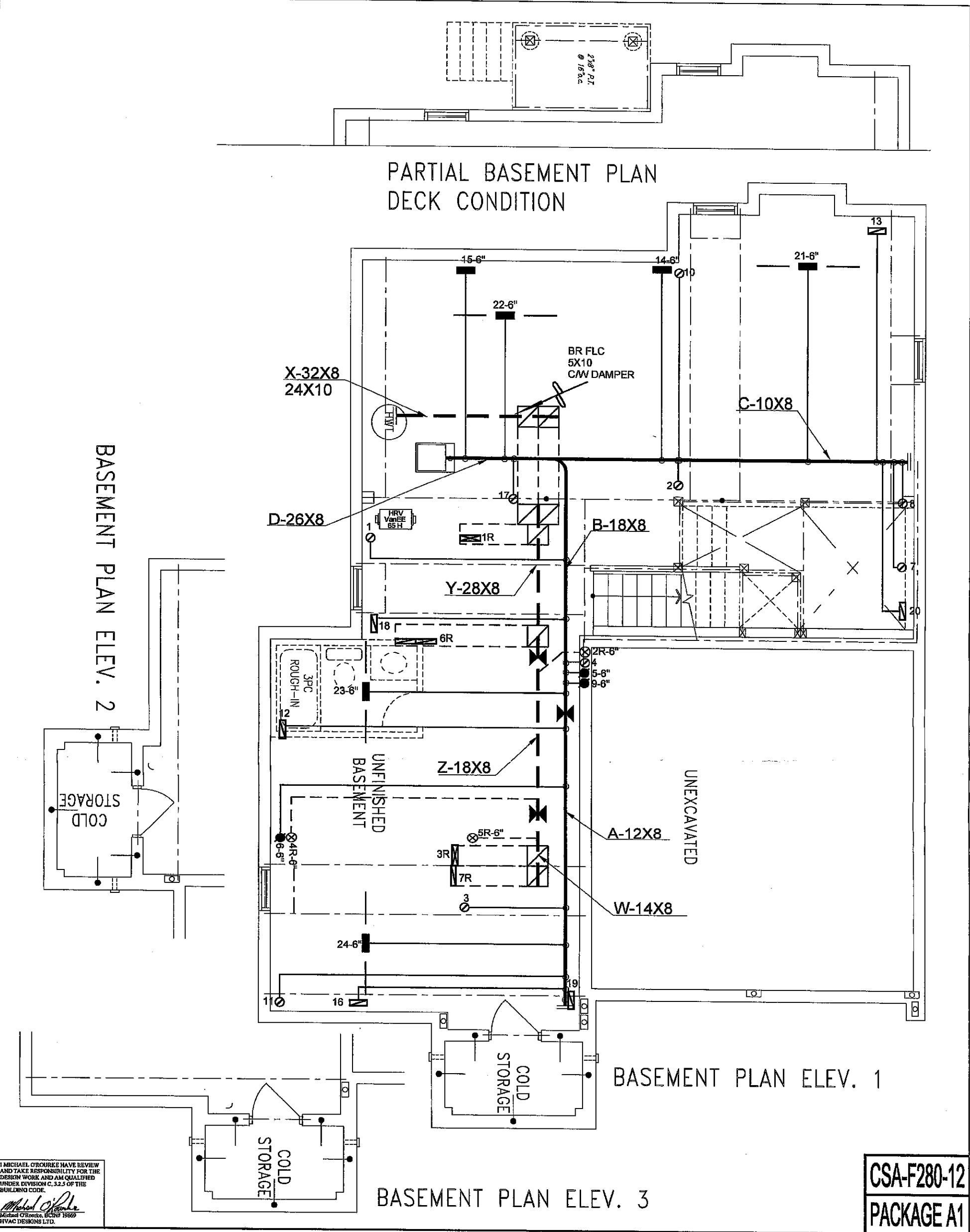
TYPE: VALLEYCREEK 6
LO# 85958

Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Hamilton			
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):	7.62			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1066.8			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1422.1 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):	0.338			
Cooling Air Leakage Rate (ACH/H):	0.121			

TYPE: VALLEYCREEK 6
LO# 85958



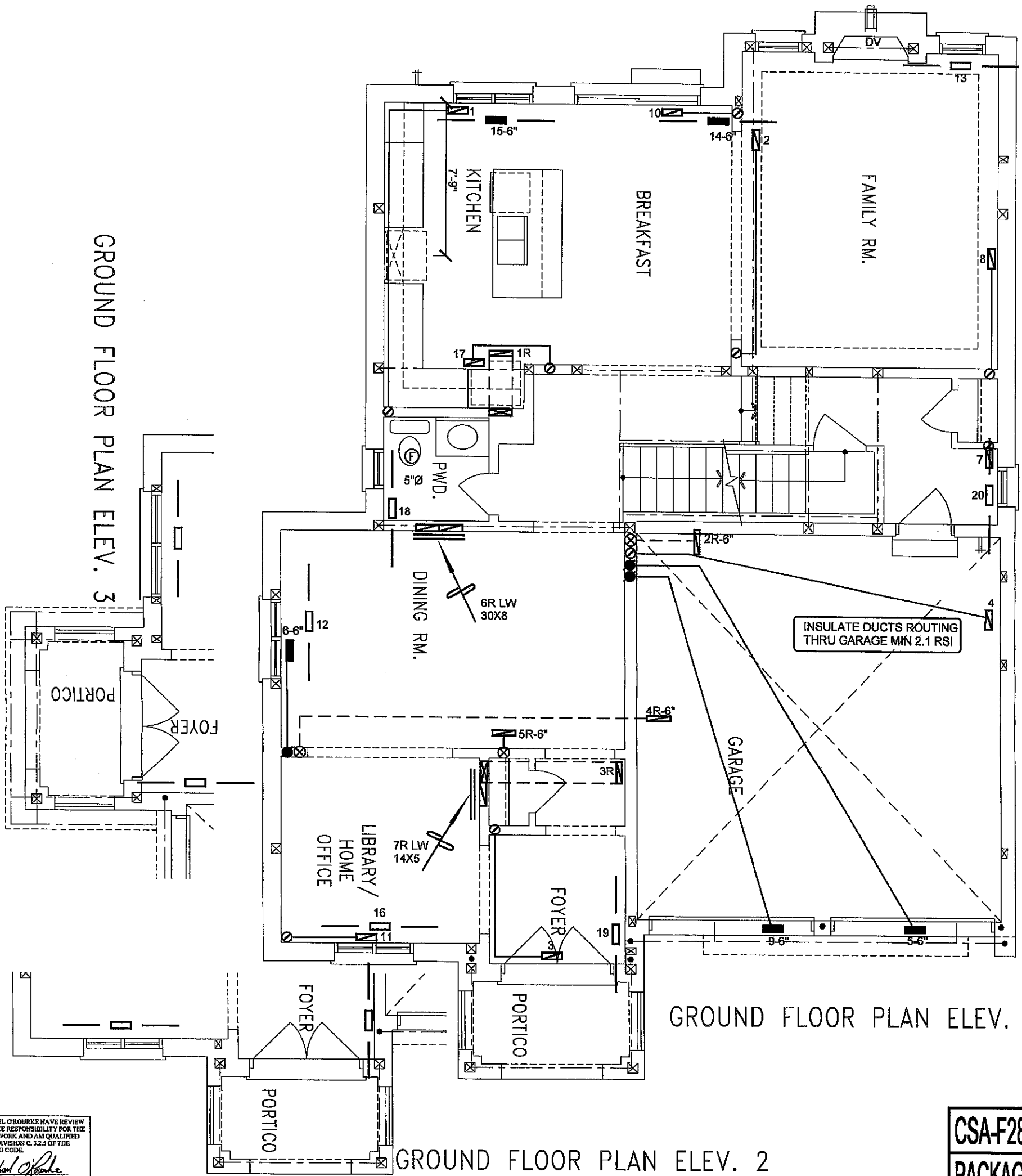
I MICHAEL O'Rourke HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C.32.5 OF THE BUILDING CODE.

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		
ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.										
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 51616 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS		Sheet Title	
GREENPARK HOMES					MAKE GOODMAN		3RD FLOOR		BASEMENT HEATING LAYOUT	
Project Name					MODEL GMEC960603BNA		2ND FLOOR 12 5 4		Date	
RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO					INPUT 60 MBTU/H		1ST FLOOR 8 2 2		APRIL/2020	
VALLEYCREEK 6 2836 sqft					OUTPUT 57.6 MBTU/H		BASEMENT 4 1 0		Scale	
		COOLING 3.0 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		3/16" = 1'-0"				
		FAN SPEED 1131 cfm @ 0.6" w.g.				BCIN# 19669				
						LO# 85958				

GROUND FLOOR PLAN ELEV. 3



GROUND FLOOR PLAN ELEV. 1

GROUND FLOOR PLAN ELEV. 2

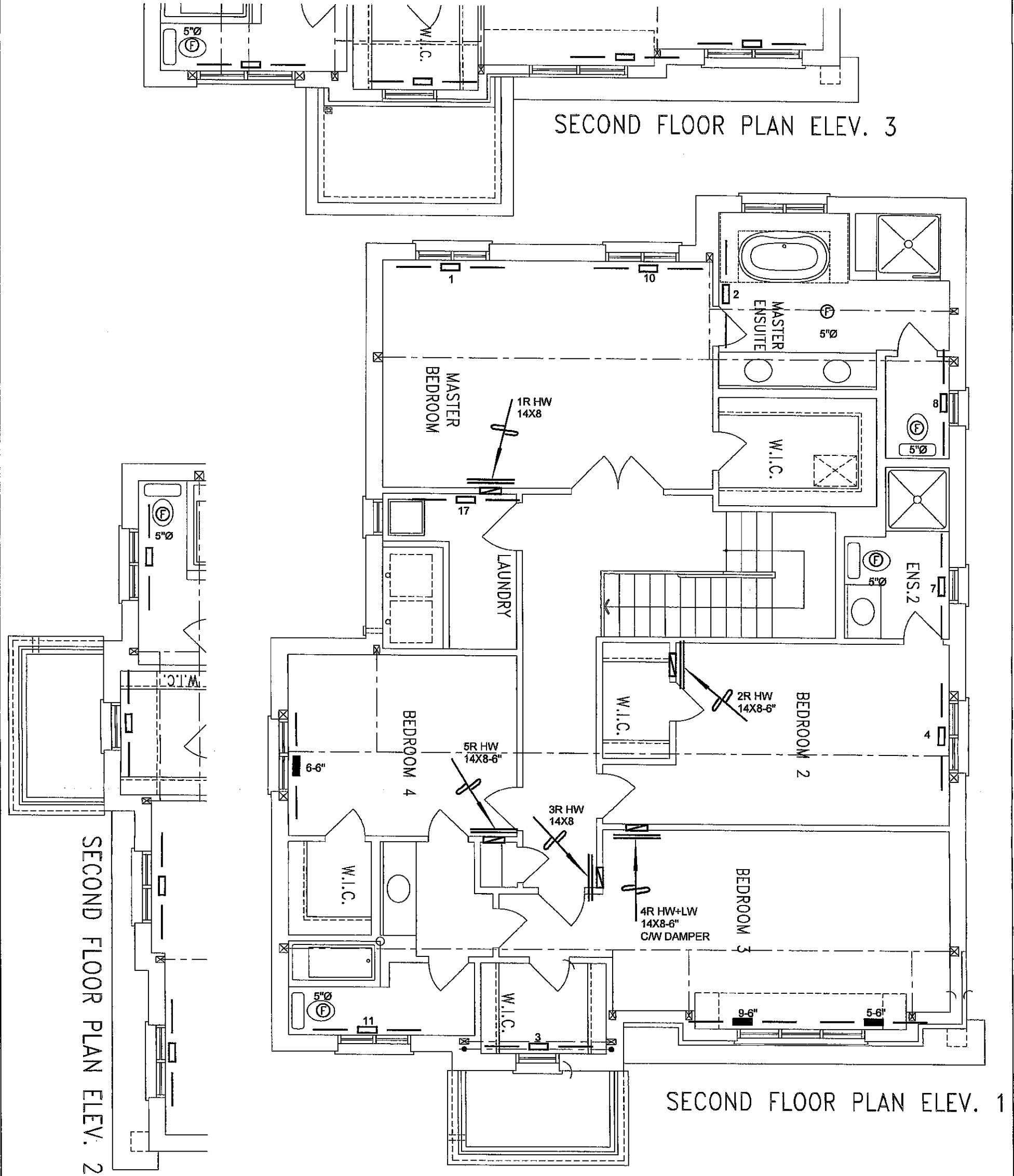
CSA-F280-12
PACKAGE A1

I MICHAEL O'Rourke HAS REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C.32.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

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

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Client GREENPARK HOMES		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 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 FIRST FLOOR HEATING LAYOUT	
Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			Date APRIL/2020	
VALLEYCREEK 6 2836 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO# 85958	



I MICHAEL O'BROOKS HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 32.5 OF THE BUILDING CODE.

Michael O'Brooks
Michael O'Brooks, 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		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 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			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	APRIL/2020
RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			Scale	3/16" = 1'-0"
VALLEYCREEK 6 2836 sqft			BCIN# 19669	
		LO#	85958	