

Schedule 1: Designer Information

Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

A. Project Information			
Building number, street name		Unit no.	Lot/con.
Municipality BRAMPTON	Postal code	Plan number/ other description	
B. Individual who reviews and takes responsibility for design activities			
Name MICHAEL O'ROURKE		Firm HVAC DESIGNS LTD.	
Street address 375 FINLEY AVE		Unit no. 202	Lot/con. N/A
Municipality AJAX	Postal code L1S 2E2	Province ONTARIO	E-mail info@hvacdesigns.ca
Telephone number (905) 619-2300	Fax number (905) 619-2375	Cell number ()	
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]			
☐ House ☐ Small Buildings ☐ Large Buildings ☐ Complex Buildings ☒ HVAC – House ☐ Building Services ☐ Detection, Lighting and Power ☐ Fire Protection ☐ Building Structural ☐ Plumbing – House ☐ Plumbing – All Buildings ☐ On-site Sewage Systems			
Description of designer's work HEAT LOSS / GAIN CALCULATIONS DUCT SIZING RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL SYSTEM DESIGN per CSA-F280-12		Model: 5003 Project: VALES OF HUMBER SOUTH	
D. Declaration of Designer			
I, <u>MICHAEL O'ROURKE</u> (print name) declare that (choose one as appropriate):			
☐ I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories. Individual BCIN: _____ Firm BCIN: _____			
☒ I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5. of Division C, of the Building Code. Individual BCIN: <u>19669</u> Basis for exemption from registration and qualification: <u>O.B.C SENTENCE 3.2.4.1 (4)</u>			
☐ The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification: _____			
I certify that:			
1. The information contained in this schedule is true to the best of my knowledge. 2. I have submitted this application with the knowledge and consent of the firm.			
March 4, 2022			
Date		Signature of Designer	

NOTE:

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d) of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
- Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of authorization, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

Application for a Permit Construct or Demolish – Effective January 1, 2015

SITE NAME: VALES OF HUMBER SOUTH

BUILDER: ROYAL PINE HOMES

TYPE: 5003

GFA: 4036

DATE: Mar-22

LO# 95281

WINTER NATURAL AIR CHANGE RATE 0.335

SUMMER NATURAL AIR CHANGE RATE 0.109

HEAT LOSS ΔT °F. 74

HEAT GAIN ΔT °F. 11

CSA-F280-12

SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LOSS	GAIN	MBR	ENS	BED-2	BED-3	BED-4	BTH-2/3	MD/B5	BTH-4/5
						46	28	18	18	34	25	14	10
						10	9	9	10	11	9	9	9
GRS.WALL AREA	GLAZING					460	252	162	180	374	225	126	90
						LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
NORTH	20.8	15.5	0	0	0	22	457	24	499	371	0	0	0
EAST	20.8	41.0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	20.8	24.4	0	0	0	0	0	0	0	0	0	0	0
WEST	20.8	41.0	46	956	1888	13	270	0	0	0	0	0	0
SKYLT.	36.4	100.7	0	0	0	0	0	0	0	0	0	0	0
DOORS	24.7	3.7	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.4	0.6	414	1804	267	217	945	138	601	89	136	593	88
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	593	743	330	195	244	360	451	201	249	312	139
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0	31	83	37
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	80	199	30	280	697	103
BASEMENT/CRAWL HEAT LOSS			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
SUBTOTAL HT LOSS			3503			1917		1750		2599		2946	
SUB TOTAL HT GAIN				2486		1123		691		2173		2283	
LEVEL FACTOR / MULTIPLIER	0.20	0.32				0.20	0.32	0.20	0.32		0.20	0.32	
AIR CHANGE HEAT LOSS			1123			615		561		833		944	
AIR CHANGE HEAT GAIN				161		73		45		140		148	
DUCT LOSS			0			0		231		343		0	
DUCT GAIN				0		0		179		337		0	
HEAT GAIN PEOPLE	240		2		480	0		1		240		1	
HEAT GAIN APPLIANCES/LIGHTS					816	0				816			
TOTAL HT LOSS BTU/H			4626			2532		2542		3776		3890	
TOTAL HT GAIN x 1.3 BTU/H				5126		1554		2562		4819		4533	

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LOSS	GAIN	FAM	DIN	KT/DN	LIV	LIB	PWD	FOY	LND	BAS
						39	16	40	13	32	7	20	25	202
						11	11	11	11	11	11	20	11	10
GRS.WALL AREA	GLAZING					429	176	440	143	352	77	400	275	2020
						LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS
NORTH	20.8	15.5	0	0	0	0	0	0	0	0	0	0	0	4
EAST	20.8	41.0	0	0	0	0	0	0	0	0	0	39	810	83
SOUTH	20.8	24.4	0	0	0	24	499	0	0	0	0	0	0	0
WEST	20.8	41.0	84	1745	3448	0	0	61	1267	2504	0	0	0	166
SKYLT.	36.4	100.7	0	0	0	0	0	0	0	0	0	0	0	166
DOORS	24.7	3.7	0	0	0	0	0	10	247	37	0	0	0	328
NET EXPOSED WALL	4.4	0.6	345	1503	223	152	662	369	1608	238	115	501	74	0
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.2	10	27	12	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.5	0.4	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
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS			3275			1161		3122		1083		2338		7197
SUB TOTAL HT GAIN				3683		684		2779		757		2207		8105
LEVEL FACTOR / MULTIPLIER	0.30	0.47				0.30	0.47	0.30	0.47		0.30	0.47		659
AIR CHANGE HEAT LOSS			1552			550		1480		513		1108		0.50
AIR CHANGE HEAT GAIN				238		44		180		49		143		1.63
DUCT LOSS			0			0		0		0		0		13225
DUCT GAIN				0		0		0		0		0		43
HEAT GAIN PEOPLE	240		0		0	0		0		0		0		0
HEAT GAIN APPLIANCES/LIGHTS					816	816		816		816		0		0
TOTAL HT LOSS BTU/H			4828			1711		4601		1596		495		21330
TOTAL HT GAIN x 1.3 BTU/H				6158		2007		4907		2109		4116		911

TOTAL HEAT GAIN BTU/H:

47979

TONS: 4.00

LOSS DUE TO VENTILATION LOAD BTU/H: 1911

STRUCTURAL HEAT LOSS: 68587

TOTAL COMBINED HEAT LOSS BTU/H: 70499



SITE NAME: VALES OF HUMBER SOUTH
BUILDER: ROYAL PINE HOMES

TYPE: 5003

DATE: Mar-22

GFA: 4036

LO# 95281

HEATING CFM 1600 COOLING CFM 1600
TOTAL HEAT LOSS 68,587 TOTAL HEAT GAIN 47,695
AIR FLOW RATE CFM 23.33 AIR FLOW RATE CFM 33.55

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

#*CARRIER

AFUE = 97 %

59SP5A-80-20

INPUT (BTU/H) = 80,000

FAN SPEED

OUTPUT (BTU/H) = 78,000

LOW 0

DESIGN CFM = 1600
CFM @ .6" E.S.P.

MEDLOW 1335

MEDIUM 1140

MEDIUM HIGH 1600

HIGH 1930

TEMPERATURE RISE 45 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	13	12	6
R/A	0	0	6	3	1

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

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

RUN #	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	ENS	MBR	BED-2	BED-3	BED-4	BTH-2/3	BTH-2/3	MD/B5	MBR	BTH-4/5	FAM	DIN	KT/DN	KT/DN	LIV	LIB	PWD	FOY	LND	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.27	2.31	2.54	1.89	1.95	1.21	1.21	1.78	2.31	1.02	2.41	1.71	2.30	2.30	1.60	1.72	0.49	2.43	3.15	3.55	3.55	3.55	3.55
CFM PER RUN HEAT	30	54	59	44	45	28	28	42	54	24	56	40	54	54	37	40	12	57	73	83	83	83	83
RM GAIN MBH.	0.78	2.56	2.56	2.41	2.27	0.60	0.60	2.48	2.56	0.54	3.08	2.01	2.45	2.45	2.11	2.06	0.07	1.38	1.84	0.15	0.15	0.15	0.15
CFM PER RUN COOLING	26	86	86	81	76	20	20	83	86	18	103	67	82	82	71	69	2	46	62	5	5	5	5
ADJUSTED PRESSURE	0.17	0.16	0.16	0.16	0.17	0.17	0.17	0.16	0.16	0.17	0.16	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	31	64	27	82	93	96	82	57	58	69	27	49	31	42	58	68	20	69	10	15	42	13	40
EQUIVALENT LENGTH	100	170	130	150	210	200	160	170	160	200	140	170	110	120	150	130	140	140	150	100	130	130	180
TOTAL EFFECTIVE LENGTH	131	234	157	232	303	296	242	227	218	269	167	219	141	162	208	198	160	209	160	115	172	143	220
ADJUSTED PRESSURE	0.13	0.07	0.1	0.07	0.06	0.06	0.07	0.07	0.07	0.06	0.1	0.08	0.11	0.1	0.08	0.09	0.11	0.08	0.11	0.14	0.09	0.11	0.07
ROUND DUCT SIZE	4	6	5	6	6	4	4	6	6	4	6	6	6	6	6	5	4	5	5	6	6	6	6
HEATING VELOCITY (ft/min)	344	275	433	224	229	321	321	214	275	275	286	204	275	275	189	294	138	419	536	423	423	423	423
COOLING VELOCITY (ft/min)	298	438	631	413	388	229	229	423	438	207	525	342	418	418	362	507	23	338	455	25	25	25	25
OUTLET GRILL SIZE	3X10	4X10	3X10	4X10	4X10	3X10	3X10	4X10	4X10	3X10	4X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	E	C	E	B	A	A	B	C	D	B	E	B	D	D	B	A	E	A	E	E	C	D	B

RUN #	25	26	28	29	30	31	32	34
ROOM NAME	BAS	BED-3	FAM	LIB	FOY	BED-4	BAS	ENS
RM LOSS MBH.	3.55	1.89	2.41	1.72	2.43	1.95	3.55	1.27
CFM PER RUN HEAT	83	44	56	40	57	45	83	30
RM GAIN MBH.	0.15	2.41	3.08	2.06	1.38	2.27	0.15	0.78
CFM PER RUN COOLING	5	81	103	69	46	76	5	26
ADJUSTED PRESSURE	0.16	0.16	0.16	0.17	0.17	0.17	0.16	0.17
ACTUAL DUCT LGH.	55	91	28	76	61	85	67	20
EQUIVALENT LENGTH	130	150	120	130	150	170	130	130
TOTAL EFFECTIVE LENGTH	185	241	148	206	211	255	197	150
ADJUSTED PRESSURE	0.09	0.07	0.11	0.08	0.08	0.07	0.08	0.11
ROUND DUCT SIZE	6	6	6	6	5	6	6	4
HEATING VELOCITY (ft/min)	423	224	286	204	419	229	423	344
COOLING VELOCITY (ft/min)	25	413	525	352	338	388	25	298
OUTLET GRILL SIZE	4X10	4X10	4X10	4X10	3X10	4X10	4X10	3X10
TRUNK	B	B	D	A	A	A	A	E

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	395	0.06	10.6	14	x	8	508	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	778	0.06	13.7	22	x	8	637	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	179	0.07	7.6	8	x	8	403	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	1258	0.06	16.4	26	x	10	697	TRUNK J	0	0.00	0	0	x	8	0
TRUNK E	1600	0.06	18	30	x	10	768	TRUNK K	0	0.00	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

RETURN AIR TRUNK SIZE

TYPE	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)
TRUNK O	0	0.05	0	0	x	8	0
TRUNK P	0	0.05	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 S	0	0.05	0	0	x	8	0
TRUNK T	0	0.05	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 W	250	0.05	9.4	10	x	8	450
TRUNK X	1600	0.05	18.8	34	x	10	678
TRUNK Y	975	0.05	15.6	28	x	8	627
TRUNK Z	480	0.05	12	16	x	8	540
DROP	1600	0.05	18.8	24	x	14	686

RETURN AIR #	1	2	3	4	5	6	7	8	9	
AIR VOLUME	0	0	0	0	0	0	0	0	0	BR
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	47	43	70	85	90	57	42	23	73	1
EQUIVALENT LENGTH	175	195	235	240	235	255	275	145	220	0
TOTAL EFFECTIVE LH	222	238	305	325	325	312	317	168	293	1
ADJUSTED PRESSURE	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.09	0.05	14.80
ROUND DUCT SIZE	6.8	7	7	7	7	7	9.4	8.7	7.5	0
INLET GRILL SIZE	8	8	8	8	8	8	8	8	8	0
	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	14	30	30	14	0

TYPE: 5003
SITE NAME: VALES OF HUMBER SOUTH

LO # 95281

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>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Kitchen & Bathrooms	<u>5</u> @ 10.6 cfm	<u>53</u> cfm
Other Rooms	<u>6</u> @ 10.6 cfm	<u>63.6</u> cfm
Table 9.32.3.A.	TOTAL	<u>201.4</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		<u>95.4</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>201.4</u>	cfm
Less Principal Ventil. Capacity	<u>95.4</u>	cfm
Required Supplemental Capacity	<u>106.0</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	VANEE V150H
Location:	BSMT
<u>95.4</u> cfm	☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
95.4 CFM	X 74 F	X 1.08	X	0.25

SUPPLEMENTAL FANS		BY INSTALLING CONTRACTOR		
Location	Model	cfm	HVI	Sones
ENS	BY INSTALLING CONTRACTOR	50	☒	3.5
BTH-2/3	BY INSTALLING CONTRACTOR	50	☒	3.5
BTH-4/5	BY INSTALLING CONTRACTOR	50	☒	3.5
PWD	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:	
ROYAL PINE 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:	March-22

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

Michael O'Rourke

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 95281	Model: 5003	Builder: ROYAL PINE HOMES	Date: 3/4/2022																																																									
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																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.335 x 468.20 x 41 °C x 1.2 = 7752 W = 26449 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.109 x 468.20 x 6 °C x 1.2 = 374 W = 1275 Btu/h																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 95 CFM x 74 °F x 1.08 x 0.25 = 1911 Btu/h			$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 95 CFM x 11 °F x 1.08 x 0.25 = 283 Btu/h																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																												
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																												
Level	Level Factor (LF)	HL _{airve} Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HL _{airbv} / HL _{level})																																																								
1	0.5	26,449	8,105	1.632																																																								
2	0.3		16,741	0.474																																																								
3	0.2		16,498	0.321																																																								
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_{airve} = 0																																																												

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 5003	BUILDER: ROYAL PINE HOMES
SFQT: 4036	SITE: VALES OF HUMBER SOUTH
LO# 95281	

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-2	OUTDOOR DESIGN TEMP.	86
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):	59523.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.50	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	7.0 ft
LENGTH: 57.0 ft	WIDTH: 44.0 ft	EXPOSED PERIMETER:	202.0 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 Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.8	-

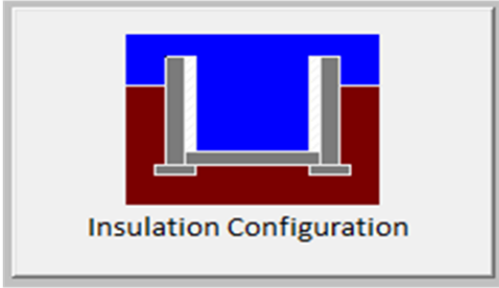
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	17.4	 Insulation Configuration
Floor Width (m):	13.4	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	1.9	
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):		2109

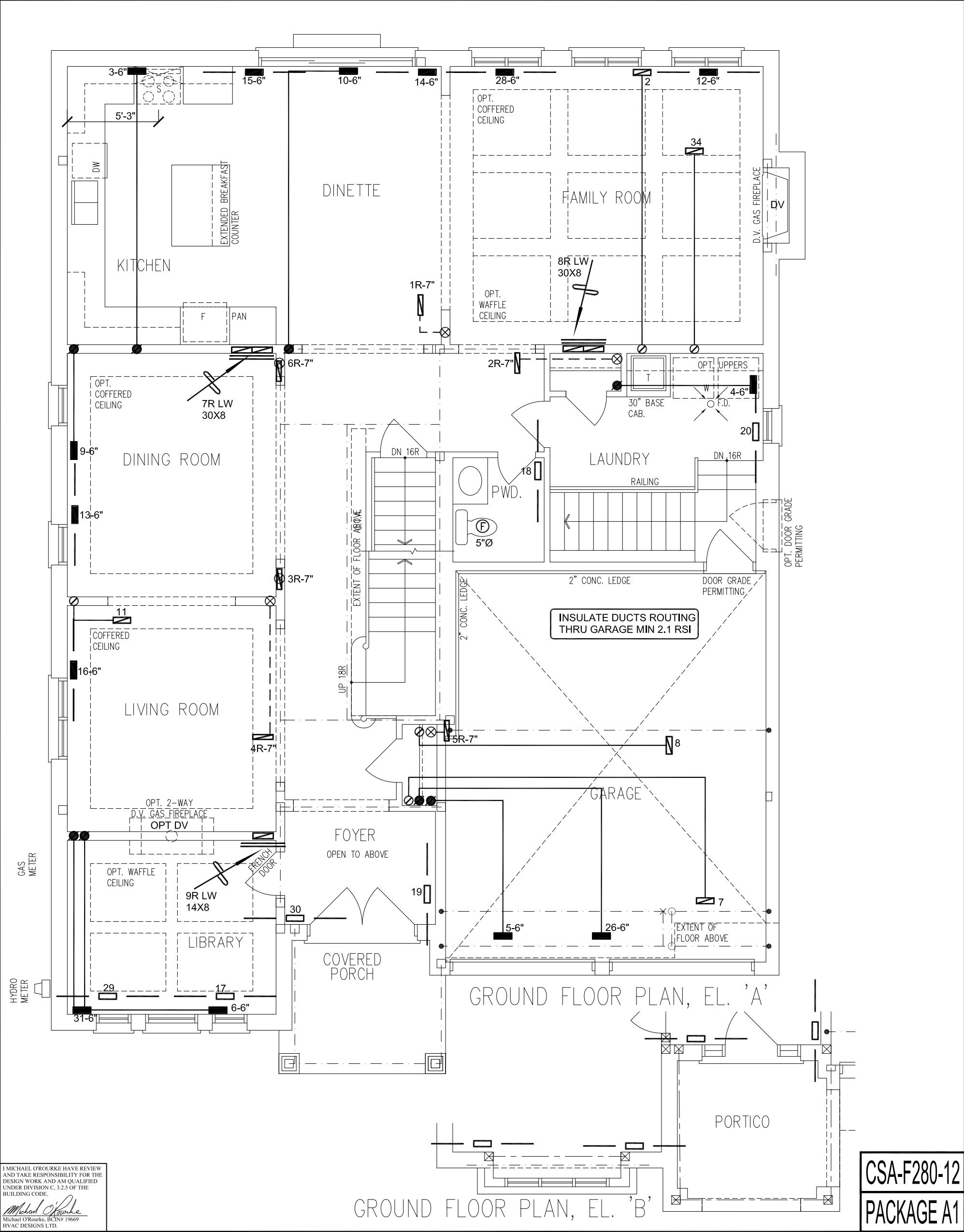
TYPE: 5003
LO# 95281

Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Brampton			
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):	7.01			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1685.5			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	2246.8 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	45.0	45.0		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.335			
Cooling Air Leakage Rate (ACH/H):	0.109			

TYPE: 5003
LO# 95281



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.

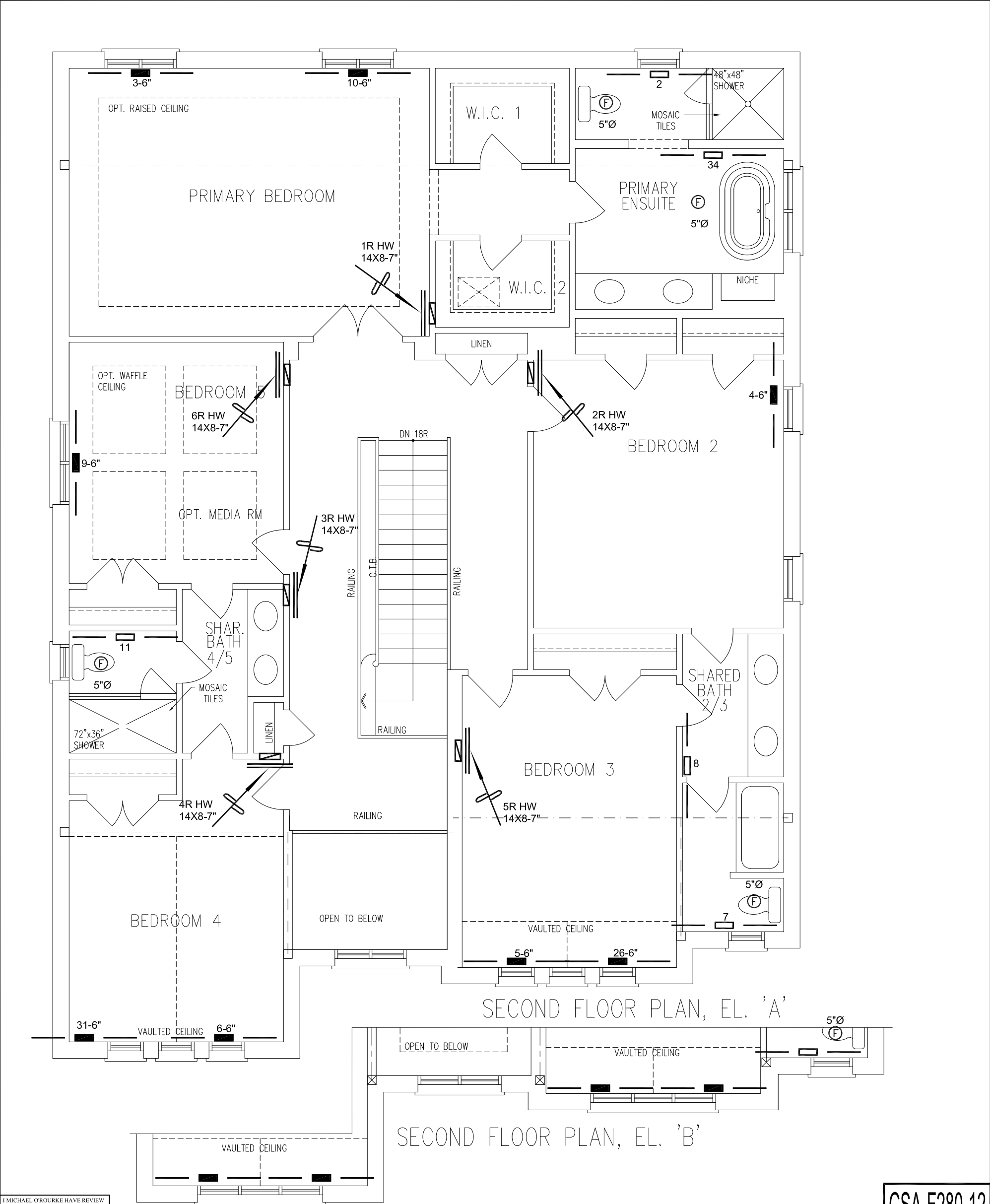
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

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	
ROYAL PINE HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	MAR/2022
VALES OF HUMBER SOUTH BRAMPTON, ONTARIO			Scale	3/16" = 1'-0"
			BCIN# 19669	
5003	4036 sqft		LO#	95281



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

CSA-F280-12

PACKAGE A1

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ROYAL PINE HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	MAR/2022
VALES OF HUMBER SOUTH BRAMPTON, ONTARIO			Scale	3/16" = 1'-0"
			BCIN# 19669	
5003	4036 sqft		LO#	95281