

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: 45-04 FLANKAGE - OPT 5 BED - GROUND Project: VALES OF HUMBER	
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 22, 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

FLANKAGE - OPT 5 BED - GROUND

DATE: Mar-22

WINTER NATURAL AIR CHANGE RATE 0.227

HEAT LOSS ΔT °F. 74

CSA-F280-12

BUILDER: ROYAL PINE HOMES

TYPE: 45-04

GFA: 3566

LO# 93098

SUMMER NATURAL AIR CHANGE RATE 0.074

HEAT GAIN ΔT °F. 11

SB-12 PERFORMANCE

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LOSS	GAIN	MBR	ENS	WIC-3	BED-2	BED-3	BED-4	ENS-2	ENS-3	BED-5	S-BATH	INLAW	IN-ENS
						39	11	16	33	15	44	10	9	12	9	21	6
						9	9	9	9	9	9	9	9	9	9	10	10
GRS.WALL AREA	GLAZING					351	99	144	297	135	396	90	81	108	81	210	60
						LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
NORTH	20.8	15.5	0	0	0	0	0	0	0	0	0	8	166	124	8	166	124
EAST	20.8	41.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	20.8	24.4	9	187	220	9	187	220	0	0	0	0	0	0	37	769	903
WEST	20.8	41.0	37	769	1519	0	0	0	0	0	0	0	0	0	0	0	0
SKYLT.	34.1	100.3	0	0	0	0	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	0	0	0	0
NET EXPOSED WALL	3.5	0.5	305	1058	157	90	312	46	125	433	64	269	933	138	88	305	45
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	350	439	195	143	179	80	63	79	35	252	316	140	125	157	70
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0	0	26	70	31	116	311	138
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0	63	157	23	0	0	0	151	376	56
BASEMENT/CRAWL HEAT LOSS			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
SUBTOTAL HT LOSS			2452			678			1064		1830			1281		1144	
SUB TOTAL HT GAIN				2090		346			903		1428		244		271		1081
LEVEL FACTOR / MULTIPLIER	0.20	0.20				0.20	0.20		0.20	0.20		0.20	0.20		0.20	0.20	
AIR CHANGE HEAT LOSS	488					135			212		364		125		165		351
AIR CHANGE HEAT GAIN			90			15			39		62		11		12		47
DUCT LOSS			0			0			128		0		0		100		0
DUCT GAIN			0			0			94		301		0		28		0
HEAT GAIN PEOPLE	240		2		480	0	0	0	1		240	1		240	0		240
HEAT GAIN APPLIANCES/LIGHTS					548	0	0	0			548			548	0		548
TOTAL HT LOSS BTU/H			2940			813			1403		2195		1096		1535		475
TOTAL HT GAIN x 1.3 BTU/H			4171			469			1346		2961		405		2458		224

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LOSS	GAIN	GRT	DIN	KT/BF	DEN	LND	PWD	FOY	MUD				BAS
						36	26	43	27	0	7	23	33				194
						10	10	10	10	9	10	10	10				10
GRS.WALL AREA	GLAZING					360	260	430	270	0	70	230	330				1358
						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	13	270	201	3
EAST	20.8	41.0	0	0	0	0	0	0	36	748	1478	0	0	0	0	0	0
SOUTH	20.8	24.4	0	0	0	48	997	1171	28	582	683	0	0	0	0	0	6
WEST	20.8	41.0	30	623	1231	0	0	0	72	1496	2955	0	0	0	0	0	6
SKYLT.	34.1	100.3	0	0	0	0	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	20	493	73	0
NET EXPOSED WALL	3.5	0.5	330	1144	170	212	735	109	330	1144	170	198	687	102	58	201	30
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0	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	96	120	53	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	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	0	0	0
BASEMENT/CRAWL HEAT LOSS			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
SUBTOTAL HT LOSS			1767			1732			3222		2182		262		450		6984
SUB TOTAL HT GAIN				1401		1280			3808		2458		323		1113		9341
LEVEL FACTOR / MULTIPLIER	0.30	0.31				0.30	0.31		0.30	0.31		0.30	0.31		0.30	0.31	0.50
AIR CHANGE HEAT LOSS	542					532			989		670		138		497		7518
AIR CHANGE HEAT GAIN			61			55			165		106		14		48		32
DUCT LOSS			0			0			0		31		0		0		0
DUCT GAIN			0			0			0		63		0		0		0
HEAT GAIN PEOPLE	240		0		0	0	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS					548	548			548		548			0			548
TOTAL HT LOSS BTU/H			2310			2264			4211		2852		2897		1510		16859
TOTAL HT GAIN x 1.3 BTU/H			2612			2448			5877		4045		664				1719

TOTAL HEAT GAIN BTU/H:

46341

TONS: 3.86

LOSS DUE TO VENTILATION LOAD BTU/H: 2556

STRUCTURAL HEAT LOSS: 54664

TOTAL COMBINED HEAT LOSS BTU/H: 57220



SITE NAME: VALES OF HUMBER
BUILDER: ROYAL PINE HOMES

FLANKAGE - OPT 5 BED - GROUND
TYPE: 45-04 DATE: Mar-22

GFA: 3566 LO# 93098

HEATING CFM 1540 COOLING CFM 1540
TOTAL HEAT LOSS 54,664 TOTAL HEAT GAIN 45,962
AIR FLOW RATE CFM 28.17 AIR FLOW RATE CFM 33.51

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

#CARRIER

59SP5A-80-16

FAN SPEED

LOW 0

MEDLOW 975

MEDIUM 1200

MEDIUM HIGH 1370

HIGH 1540

AFUE = 97 %
INPUT (BTU/H) = 80,000
OUTPUT (BTU/H) = 78,000

DESIGN CFM = 1540
CFM @ .6" E.S.P.

TEMPERATURE RISE 47 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	16	12	5
R/A	0	0	6	2	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	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	BED-2	MBR	ENS	BED-3	BED-4	BED-5	ENS-2	WIC-3	BED-4	MBR	S-BATH	INLAW	DIN	GRT	KT/BF	DEN	LND	PWD	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.10	1.47	0.81	0.83	2.17	1.54	0.75	1.40	2.17	1.47	0.70	1.49	2.26	1.15	2.11	1.43	0.35	0.59	2.12	2.90	3.37	3.37	3.37	3.37
CFM PER RUN HEAT	31	41	23	23	61	43	21	40	61	41	20	42	64	33	59	40	10	17	60	82	95	95	95	95
RM GAIN MBH.	1.48	2.09	0.47	1.44	3.08	2.46	0.33	1.35	3.08	2.09	0.44	2.49	2.45	1.31	2.94	2.02	0.89	0.44	1.51	0.66	0.34	0.34	0.34	0.34
CFM PER RUN COOLING	50	70	16	48	103	82	11	45	103	70	15	83	82	44	98	68	30	15	51	22	12	12	12	12
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.16	0.17	0.17	0.16	0.16	0.17	0.16	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	73	48	38	48	41	31	50	56	39	62	22	62	8	49	37	25	33	10	29	40	55	37	15	14
EQUIVALENT LENGTH	180	170	170	160	190	170	140	130	200	160	190	110	120	180	120	100	150	110	100	130	120	130	90	120
TOTAL EFFECTIVE LENGTH	253	218	208	208	231	201	190	186	239	222	212	172	128	229	157	125	183	120	129	170	175	167	105	134
ADJUSTED PRESSURE	0.07	0.08	0.08	0.08	0.07	0.08	0.09	0.09	0.07	0.08	0.08	0.09	0.13	0.08	0.1	0.14	0.09	0.14	0.13	0.1	0.09	0.1	0.15	0.12
ROUND DUCT SIZE	5	6	4	5	6	6	4	5	6	6	4	6	6	5	6	5	4	4	5	6	6	6	6	6
HEATING VELOCITY (ft/min)	228	209	264	169	311	219	241	294	311	209	229	214	326	242	301	294	115	195	441	418	484	484	484	484
COOLING VELOCITY (ft/min)	367	357	184	352	525	418	126	330	525	357	172	423	418	323	500	499	344	172	374	112	61	61	61	61
OUTLET GRILL SIZE	3X10	4X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	4X10	3X10	4X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10
TRUNK	A	E	E	C	D	E	C	C	D	B	D	A	C	A	B	D	C	D	D	E	A	B	C	D

RUN #	25	26	27	28	29	30	31	32	33
ROOM NAME	GRT	DEN	BAS	KT/BF	ENS-3	BED-3	BED-2	IN-ENS	BED-3
RM LOSS MBH.	1.15	1.43	3.37	2.11	1.10	0.83	1.10	0.48	0.83
CFM PER RUN HEAT	33	40	95	59	31	23	31	13	23
RM GAIN MBH.	1.31	2.02	0.34	2.94	0.40	1.44	1.48	0.22	1.44
CFM PER RUN COOLING	44	68	12	98	14	48	50	8	48
ADJUSTED PRESSURE	0.17	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	57	23	28	46	47	38	68	52	39
EQUIVALENT LENGTH	190	100	90	120	150	160	170	100	150
TOTAL EFFECTIVE LENGTH	247	123	118	166	197	198	238	152	189
ADJUSTED PRESSURE	0.07	0.14	0.14	0.1	0.09	0.09	0.07	0.11	0.09
ROUND DUCT SIZE	5	5	6	6	4	5	5	4	6
HEATING VELOCITY (ft/min)	242	294	484	301	356	169	228	149	117
COOLING VELOCITY (ft/min)	323	499	61	500	161	352	367	92	245
OUTLET GRILL SIZE	3X10	3X10	4X10	4X10	3X10	3X10	3X10	4X10	4X10
TRUNK	A	D	E	B	C	C	A	A	D

SUPPLY AIR TRUNK SIZE														RETURN AIR TRUNK SIZE																			
TRUNK		STATIC	ROUND	RECT					VELOCITY		TRUNK		STATIC	ROUND	RECT					VELOCITY		TRUNK		STATIC	ROUND	RECT					VELOCITY		
	CFM	PRESS.	DUCT	DUCT							CFM	PRESS.	DUCT	DUCT									CFM	PRESS.	DUCT	DUCT							
TRUNK A	278	0.07	9	12	x	8	417				TRUNK G	0	0.00	0	0	x	8	0				TRUNK O	0	0.05	0	0	x	8	0				
TRUNK B	532	0.07	11.4	16	x	8	599				TRUNK H	0	0.00	0	0	x	8	0				TRUNK P	0	0.05	0	0	x	8	0				
TRUNK C	1123	0.07	15.1	26	x	8	777				TRUNK I	0	0.00	0	0	x	8	0				TRUNK Q	0	0.05	0	0	x	8	0				
TRUNK D	417	0.07	10.4	14	x	8	536				TRUNK J	0	0.00	0	0	x	8	0				TRUNK R	0	0.05	0	0	x	8	0				
TRUNK E	816	0.07	13.4	20	x	8	734				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							BR
AIR VOLUME	115	115	130	145	145	410	155	115	0	0	0	0	0	0	210
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
ACTUAL DUCT LGH.	67	47	46	42	38	17	44	64	1	1	1	1	1	1	16
EQUIVALENT LENGTH	225	275	195	165	175	185	200	245	0	0	0	0	0	0	190
TOTAL EFFECTIVE LH	292	322	241	207	213	202	244	309	1	1	1	1	1	1	206
ADJUSTED PRESSURE	0.05	0.05	0.06	0.07	0.07	0.07	0.06	0.05	14.80	14.80	14.80	14.80	14.80	14.80	0.07
ROUND DUCT SIZE	7	7	7	7	7	10.4	7.5	7	0	0	0	0	0	0	8.1
INLET GRILL SIZE	8	8	8	8	8	8	8	8	0	0	0	0	0	0	8
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	30	14	14	0	0	0	0	0	0	24

TYPE: 45-04
SITE NAME: VALES OF HUMBER

LO # 93098
FLANKAGE - OPT 5 BED - GROUND

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>5</u> @ 10.6 cfm <u>53</u> cfm	
Kitchen & Bathrooms	<u>7</u> @ 10.6 cfm <u>74.2</u> cfm	
Other Rooms	<u>5</u> @ 10.6 cfm <u>53.0</u> cfm	
Table 9.32.3.A.	TOTAL <u>222.6</u> cfm	

PRINCIPAL VENTILATION CAPACITY REQUIRED		9.32.3.4.(1)
6 Bedrooms		
As Per Ashrea 62.2 Dwelling- Unit Ventilation		
4.1.1 Total Ventilation Rate		
$Q_{tot}=0.03A_{floor}+7.5(N_{br}+1)$		
TOTAL <u>159.5</u> cfm		

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>222.6</u>	cfm
Less Principal Ventil. Capacity	<u>159.5</u>	cfm
Required Supplemental Capacity	<u>63.1</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	VANEE G2400H ECM Location: BSMT
<u>159.5</u> cfm	☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
159.5 CFM	X 74 F	X 1.08	X	0.20

SUPPLEMENTAL FANS		BY INSTALLING CONTRACTOR		
Location	Model	cfm	HVI	Sones
ENS	BY INSTALLING CONTRACTOR	50	☒	3.5
ENS-2	BY INSTALLING CONTRACTOR	50	☒	3.5
S-BATH	BY INSTALLING CONTRACTOR	50	☒	3.5
PWD	BY INSTALLING CONTRACTOR	50	☒	3.5

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE G2400H ECM	
<u>210</u>	cfm high <u>50</u> cfm low	
<u>80</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

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 93098	Model: 45-04	Builder: ROYAL PINE HOMES	Date: 2022-03-22																																																									
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																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.227 x 391.85 x 41 °C x 1.2 = 4407 W = 15037 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.074 x 391.85 x 6 °C x 1.2 = 212 W = 724 Btu/h																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 160 CFM x 74 °F x 1.08 x 0.20 = 2556 Btu/h			$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 160 CFM x 11 °F x 1.08 x 0.20 = 379 Btu/h																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																												
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HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 45-04	FLANKAGE - OPT 5 BED - GROUND	BUILDER: ROYAL PINE HOMES
SFQT: 3566	LO# 93098	SITE: VALES OF HUMBER

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:	2.50	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	TIGHT	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft ³):	49817.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	7
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	7.0 ft
LENGTH: 60.0 ft	WIDTH: 37.0 ft	EXPOSED PERIMETER:	194.0 ft

2012 OBC - COMPLIANCE PACKAGE**Component****Compliance Package
SB-12 PERFORMANCE****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+1.5	21.40
Basement Walls Minimum RSI (R)-Value	20	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	1.6	-
Skylights Maximum U-Value	2.6	-
Space Heating Equipment Minimum AFUE	96%	-
HRV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.9	-

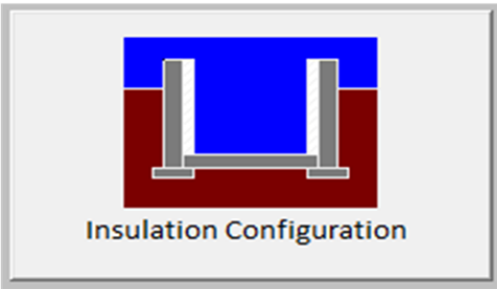
INDIVIDUAL BCIN: 19669

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):	18.3	 Insulation Configuration
Floor Width (m):	11.3	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	1.4	
Door Area (m ²):	0.0	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		2046

TYPE: 45-04
LO# 93098

FLANKAGE - OPT 5 BED - GROUND

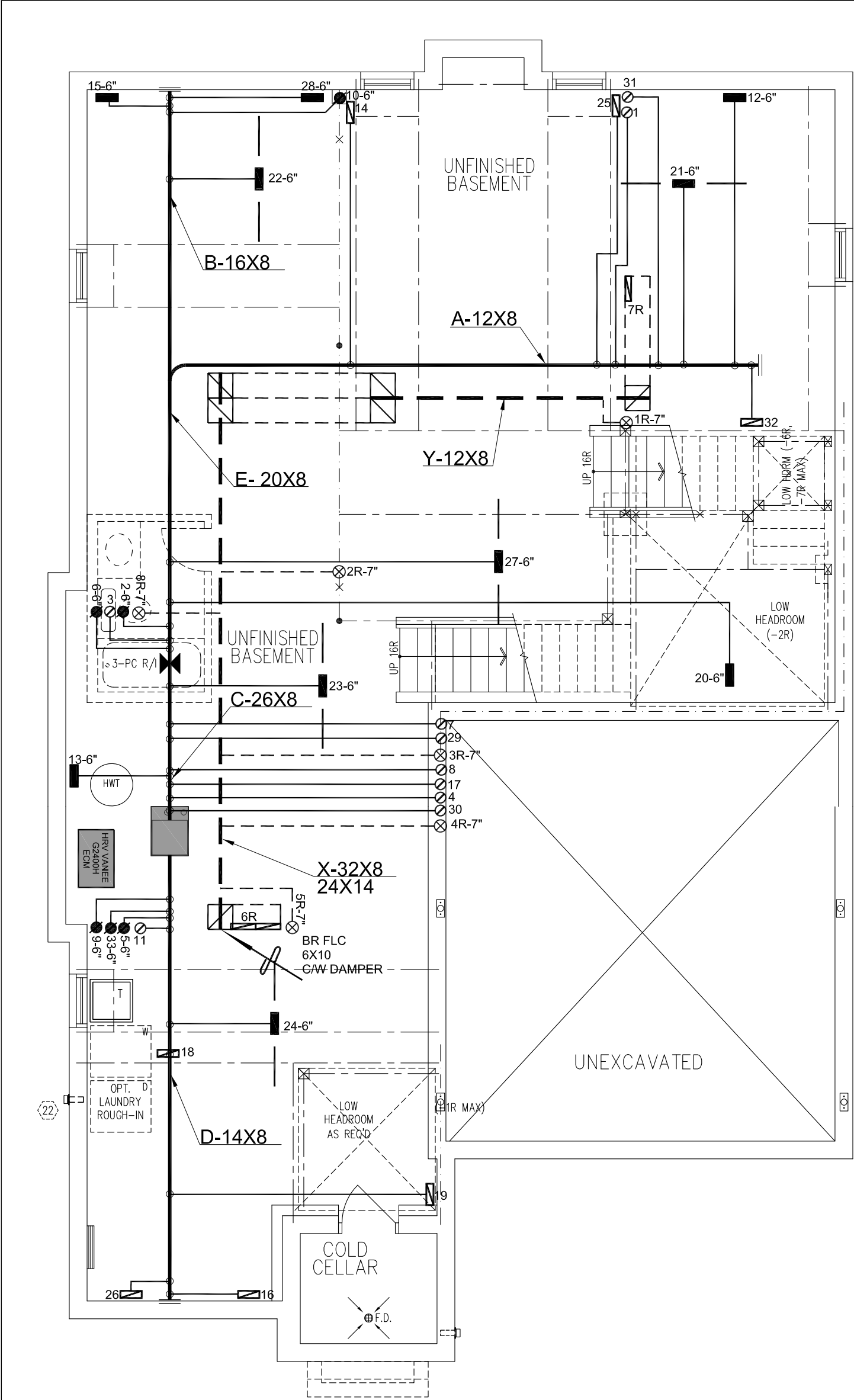
Air Infiltration Residential Load Calculator

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):	6.71			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1410.7			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.		1316.8 cm ²	
	2.50		ACH @ 50 Pa	
Mechanical Ventilation (L/s):	Total Supply		Total Exhaust	
	75.3		75.3	
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.227			
Cooling Air Leakage Rate (ACH/H):	0.074			

TYPE: 45-04
LO# 93098

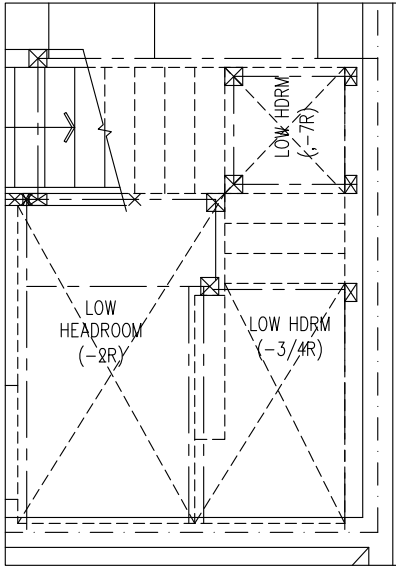
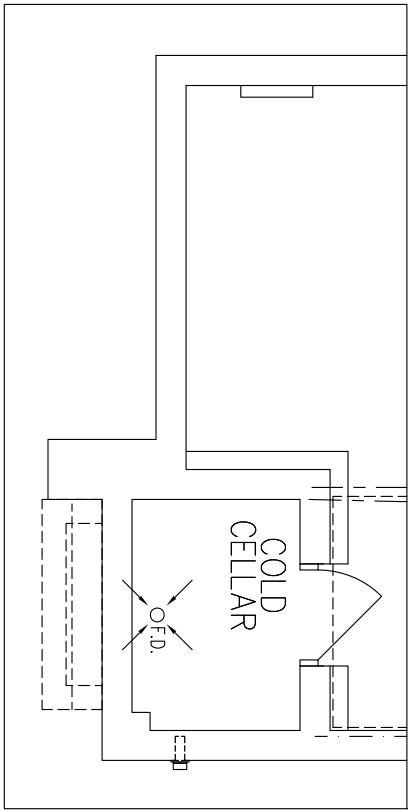
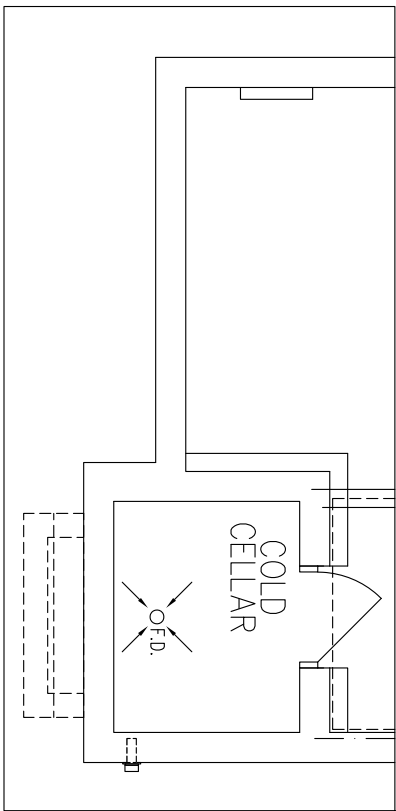
FLANKAGE - OPT 5 BED - GROUND



BASEMENT PLAN, EL. 'B'

PART. BASEMENT PLAN, EL. 'C'

PART. BASEMENT PLAN FOR OPT. SUNKEN CONDITION 'A', 'B' & 'C'.



PART. BASEMENT PLAN FOR OPT. GROUND FLOOR PLAN, EL. 'A'

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.

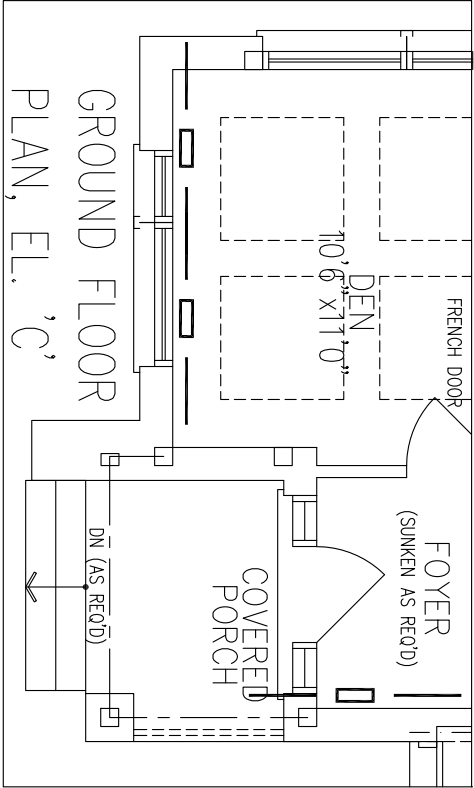
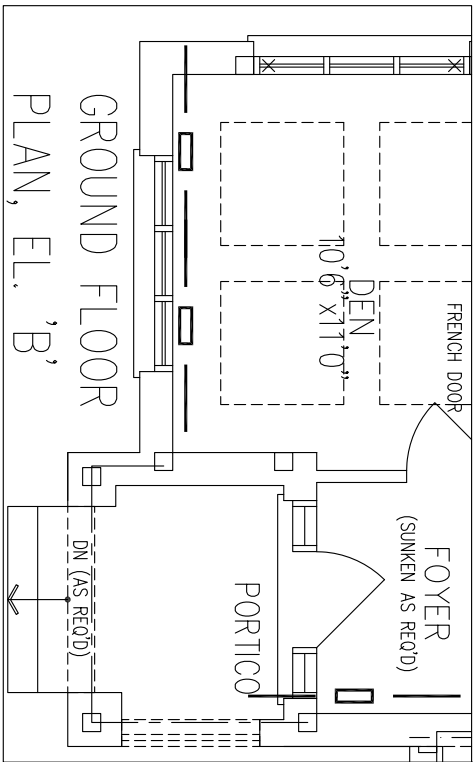
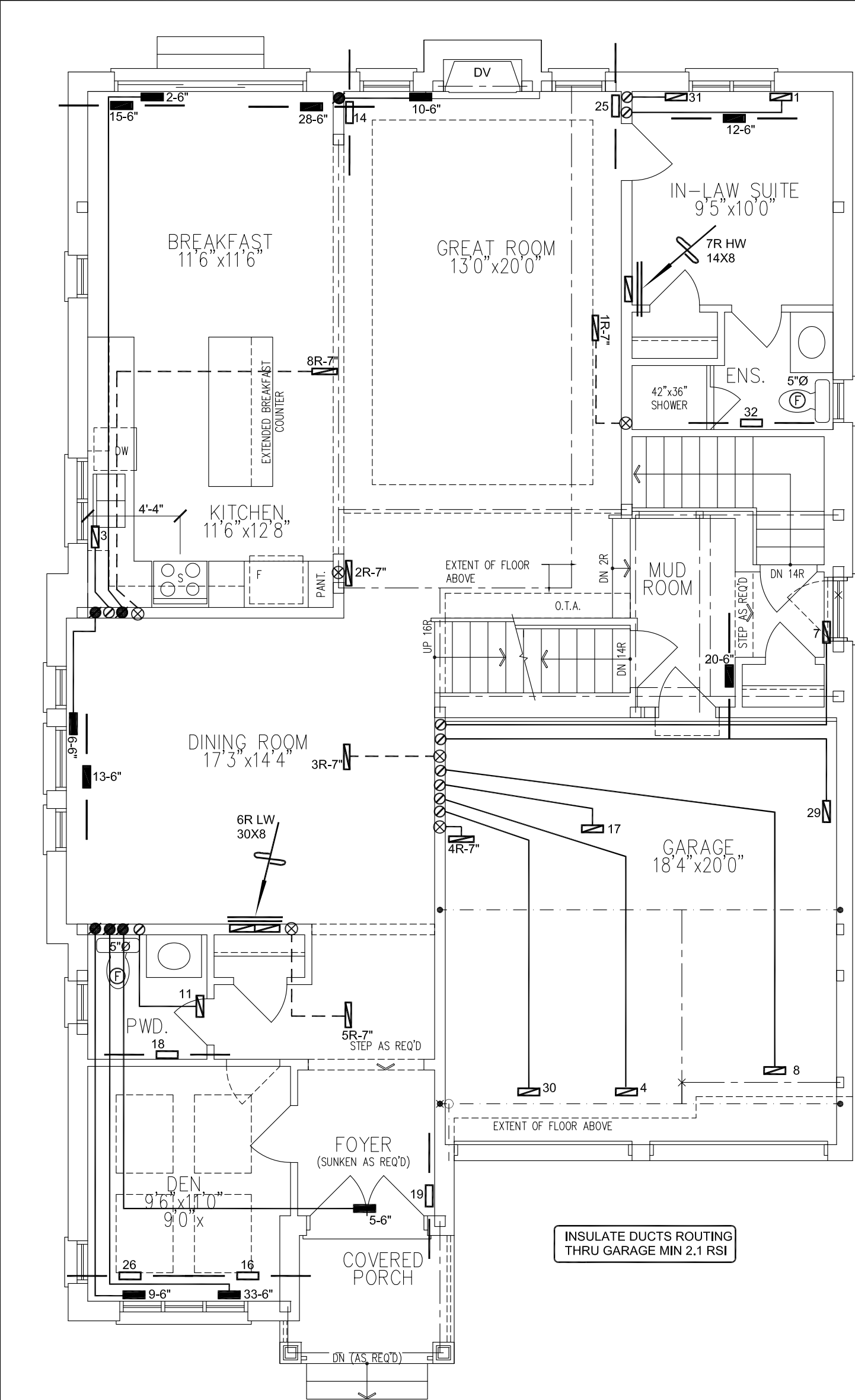
CSA-F280-12

SB-12 PERFORMANCE

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.	REVISED TO PERFORMANCE PATH
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	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER		Date
							REVISIONS		

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Client ROYAL PINE HOMES	Project Name VALES OF HUMBER BRAMPTON, ONTARIO OPT 5 BED - GROUND FLANKAGE 45-04	3566 sqft	 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 57220 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS				Sheet Title BASEMENT HEATING LAYOUT
				MAKE CARRIER		3RD FLOOR				
				MODEL 59SP5A-80-16		2ND FLOOR	16	6	5	Date OCT/2021
				INPUT 80	MBTU/H	1ST FLOOR	12	2	2	Scale 3/16" = 1'-0"
				OUTPUT 78	MBTU/H	BASEMENT	5	1	0	BCIN# 19669
				COOLING 4.0	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				LO# 93098
				FAN SPEED 1540	cfm @ 0.6" w.c.					



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

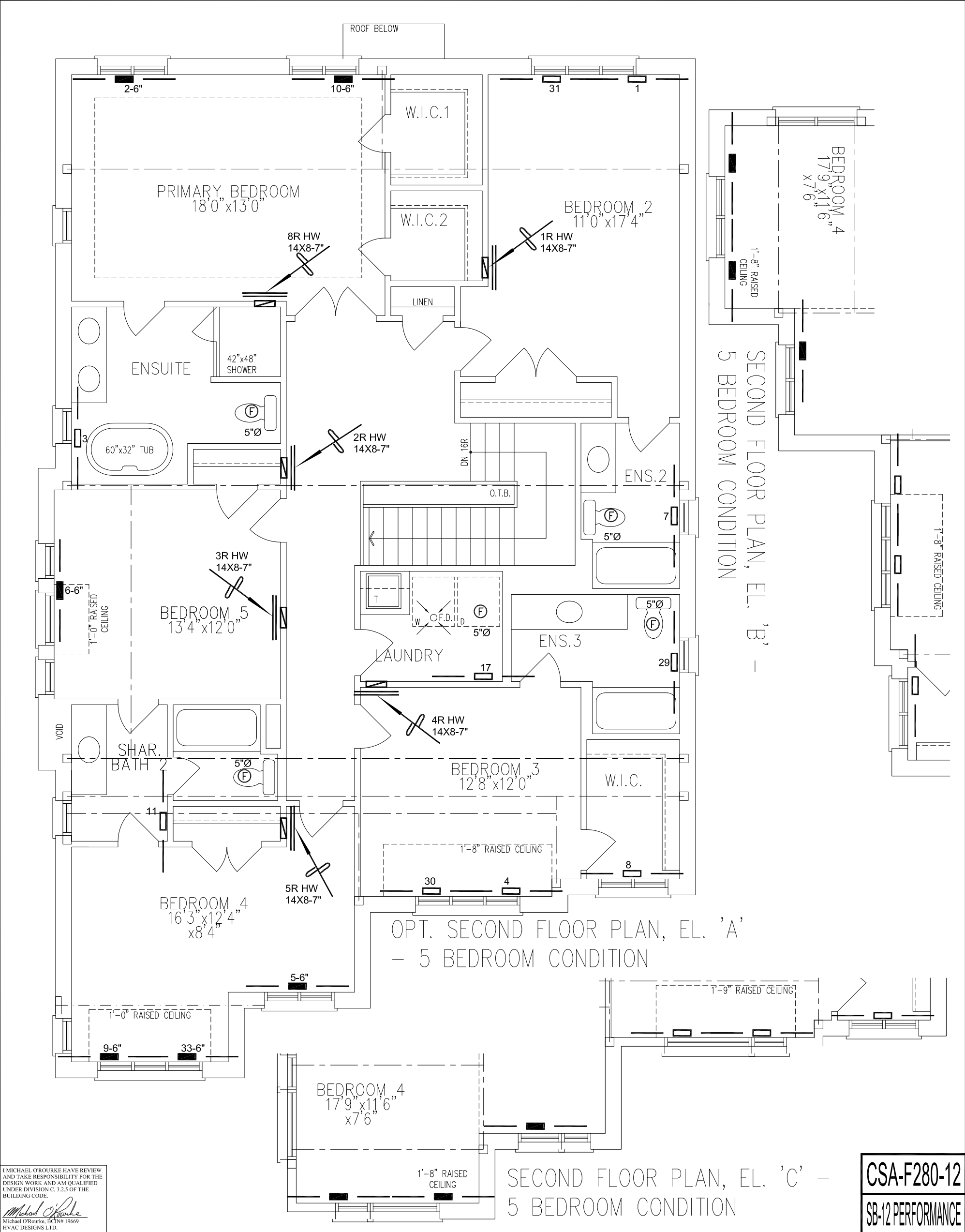
OPT. GROUND FLOOR PLAN, EL. 'A'
W/ IN-LAW SUITE

CSA-F280-12
SB-12 PERFORMANCE

HVAC LEGEND								3.		
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	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	REVISED TO PERFORMANCE PATH	MAR/2022
	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	Sheet Title	
ROYAL PINE HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name		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.	Date	OCT/2021
VALES OF HUMBER BRAMPTON, ONTARIO			Scale	3/16" = 1'-0"
OPT 5 BED - GROUND FLANKAGE			BCIN# 19669	
45-04	3566 sqft		LO#	93098



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ROYAL PINE HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	OCT/2021
VALES OF HUMBER BRAMPTON, ONTARIO			Scale	3/16" = 1'-0"
OPT 5 BED - GROUND FLANKAGE			BCIN# 19669	
45-04	3566 sqft		LO#	93098