

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: 40-5 Project: VALES OF HUMBER	
D. Declaration of Designer			
I, <u>MICHAEL O'ROURKE</u> declare that (choose one as appropriate): (print name)			
☐ 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 21, 2022		 Signature of Designer	
Date			

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										DATE: Mar-22										WINTER NATURAL AIR CHANGE RATE 0.248										HEAT LOSS ΔT °F. 74										CSA-F280-12																													
BUILDER: ROYAL PINE HOMES										TYPE: 40-5										GFA: 3245										LO# 92077										SUMMER NATURAL AIR CHANGE RATE 0.081										HEAT GAIN ΔT °F. 11										SB-12 PERFORMANCE									
ROOM USE				MBR				ENS				WIC				BED-2				BED-3				BED-4				ENS-2												S-BATH																													
EXP. WALL				33				25				8				19				28				13				8												8																													
CLG. HT.				9				9				9				9				9				9				9												9																													
FACTORS																																																																					
GRS.WALL AREA		LOSS GAIN		297				225				72				171				252				117				72												72																													
GLAZING				LOSS GAIN				LOSS GAIN				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	0	0	0	0	17	353	263	0	0	0	0	0	0	0	0	0	0	0	0	0	7	145	108																																		
EAST		20.8	41.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	1122	2217	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																
SOUTH		20.8	24.4	0	0	0	0	8	166	195	8	166	195	0	0	0	0	0	0	0	0	0	0	17	353	415	7	145	171	0	0	0	0	0	0	0	0																																
WEST		20.8	41.0	38	789	1560	19	395	780	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																																	
SKYLT.		34.1	100.3	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	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																	
NET EXPOSED WALL		3.5	0.5	259	898	133	198	687	102	64	222	33	154	534	79	198	687	102	100	347	51	65	225	33	65	225	33	65	225	33	65	225	33	65	225	33	65	225	33																														
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																
EXPOSED CLG		1.3	0.6	319	400	178	156	195	87	104	130	58	247	309	138	235	294	131	222	278	124	104	130	58	104	130	58	104	130	58	104	130	58	104	130	58	104	130	58																														
NO ATTIC EXPOSED CLG		2.7	1.2	0	0	0	0	0	0	0	0	0	0	0	0	12	32	14	0	0	0	0	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	247	615	91	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																					
SLAB ON GRADE HEAT LOSS				0				0				0				0				0				0				0				0				0				0				0				0																					
SUBTOTAL HT LOSS				2087				1443				518				1197				2750				978				501								583																																	
SUB TOTAL HT GAIN				1871				1164				286				480				2555				590				262								212																																	
LEVEL FACTOR / MULTIPLIER		0.20 0.28		0.20 0.28				0.20 0.28				0.20 0.28				0.20 0.28				0.20 0.28				0.20 0.28				0.20 0.28								0.20 0.28																																	
AIR CHANGE HEAT LOSS				581				402				144				333				765				272				139								162																																	
AIR CHANGE HEAT GAIN				94				58				14				24				128				30				13								11																																	
DUCT LOSS				0				0				0				0				352				0				0								75																																	
DUCT GAIN				0				0				0				0				347				0				0								22																																	
HEAT GAIN PEOPLE		240		2		480	0		0	0		0	1		240	1		240	1		240	0		0													0		0																														
HEAT GAIN APPLIANCES/LIGHTS				543				0				0				543				543				543				0								0																																	
TOTAL HT LOSS BTU/H				2668				1845				663				1530				3867				1250				641								820																																	
TOTAL HT GAIN x 1.3 BTU/H				3883				1589				390				1672				4955				1823				358								318																																	

ROOM USE			FAM		LIV		KT/BF		DIN		LD/HAL		PWD		FOY		MD/LD				WOD		BAS				
EXP. WALL			32		13		37		13		6		4		44		30				42		182				
CLG. HT.			10		10		10		10		9		11		20		11				10		10				
FACTORS																											
GRS.WALL AREA	LOSS	GAIN	320		130		370		130		54		44		880		330				420		1400				
GLAZING			LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	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	19	395	294	0	0	0	0	0	0	7	145	108					
EAST	20.8	41.0	0	0	0	0	0	0	0	0	0	0	0	12	249	493	0	0	0	62	1288	2545	0	0	0	0	
SOUTH	20.8	24.4	0	0	0	19	395	464	0	0	0	0	0	7	145	171	11	229	268	0	0	0	0	0	0	0	
WEST	20.8	41.0	45	935	1847	0	0	0	72	1496	2955	0	0	0	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	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	40	986	146	40	986	146	0	0	0	0	
NET EXPOSED WALL	3.5	0.5	275	954	141	111	385	57	298	1033	153	111	385	57	42	146	22	37	128	19	767	2659	394	283	981	145	0
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	0	0	0	0	0	0	0	0	0	
EXPOSED CLG	1.3	0.6	9	11	5	0	0	0	0	0	0	0	0	66	83	37	0	0	0	0	209	262	116	0	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	12	32	14	0	0	0	0	0	0	0	
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0	0	0	0	66	164	24	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						
SLAB ON GRADE HEAT LOSS			0		0		0		0		0		0		0		0		0		0						
SUBTOTAL HT LOSS			1900		780		2529		780		642		274		5456		2113				1058		8516				
SUB TOTAL HT GAIN			1994		521		3109		351		575		190		3485		400				537		485				
LEVEL FACTOR / MULTIPLIER	0.30	0.32	0.30	0.32	0.30	0.32	0.30	0.32	0.30	0.32	0.20	0.28	0.30	0.32	0.30	0.32	0.30	0.32			0.50	0.78					
AIR CHANGE HEAT LOSS			614		252		817		252		179		88		1762		682				7445						
AIR CHANGE HEAT GAIN			100		26		156		18		29		9		174		20				51						
DUCT LOSS			0		0		0		0		82		0		0		0				0						
DUCT GAIN			0		0		0		0		115		0		0		0				0						
HEAT GAIN PEOPLE	240		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0		
HEAT GAIN APPLIANCES/LIGHTS			543		543		543		543		543		543		0		543				543						
TOTAL HT LOSS BTU/H			2513		1031		3346		1031		903		362		7218		2795				1058		15961				
TOTAL HT GAIN x 1.3 BTU/H			3427		1416		4949		1185		1640		259		4757		1251				697		1402				

SITE NAME: VALES OF HUMBER
BUILDER: ROYAL PINE HOMES

TYPE: 40-5

DATE: Mar-22

GFA: 3245 LO# 92077

HEATING CFM	1145	COOLING CFM	1145
TOTAL HEAT LOSS	49,502	TOTAL HEAT GAIN	35,970
AIR FLOW RATE CFM	23.13	AIR FLOW RATE CFM	31.83

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-60-14

INPUT (BTU/H) = 60,000

FAN SPEED

OUTPUT (BTU/H) = 58,000

LOW

MEDLOW

MEDIUM

MEDIUM HIGH

HIGH

DESIGN CFM = 1145
CFM @ .6" E.S.P.

TEMPERATURE RISE 47 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	10	4
R/A	0	0	5	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 #	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	BED-2	BED-3	BED-4	ENS-2	BED-3	S-BATH	MBR	S-BATH	FAM	LIV	KT/BF	KT/BF	DIN	LD/HAL	PWD	FOY	MD/LD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.33	1.84	0.66	1.53	1.93	1.25	0.64	1.93	0.41	1.33	0.41	1.26	1.03	1.67	1.67	1.03	0.90	0.36	3.61	2.80	4.25	4.25	4.25	4.25
CFM PER RUN HEAT	31	43	15	35	45	29	15	45	9	31	9	29	24	39	39	24	21	8	83	65	98	98	98	98
RM GAIN MBH.	1.94	1.59	0.39	1.67	2.48	1.82	0.36	2.48	0.16	1.94	0.16	1.71	1.42	2.47	2.47	1.18	1.64	0.26	2.38	1.25	0.52	0.52	0.52	0.52
CFM PER RUN COOLING	62	51	12	53	79	58	11	79	5	62	5	55	45	79	79	38	52	8	76	40	17	17	17	17
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	0.16	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	47	50	41	43	55	44	30	50	38	40	27	40	19	46	35	20	44	21	34	14	35	31	16	31
EQUIVALENT LENGTH	130	160	150	150	130	130	130	120	130	110	150	110	140	140	110	110	140	150	100	170	140	130	120	110
TOTAL EFFECTIVE LENGTH	177	210	191	193	185	174	160	170	168	150	177	150	159	186	145	130	184	171	134	184	175	161	136	141
ADJUSTED PRESSURE	0.1	0.08	0.09	0.09	0.09	0.1	0.11	0.1	0.1	0.11	0.1	0.11	0.11	0.09	0.12	0.13	0.09	0.1	0.12	0.09	0.09	0.1	0.12	0.11
ROUND DUCT SIZE	5	5	4	6	6	6	4	6	4	5	4	5	4	5	5	4	5	4	6	5	6	6	6	6
HEATING VELOCITY (ft/min)	228	316	172	178	229	148	172	229	103	228	103	213	275	286	286	275	154	92	423	477	500	500	500	500
COOLING VELOCITY (ft/min)	455	374	138	270	403	296	126	403	57	455	57	404	516	580	580	436	382	92	388	294	87	87	87	87
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	4X10	4X10	4X10
TRUNK	B	D	D	D	F	B	C	F	F	C	D	B	F	A	A	C	E	F	E	D	A	B	D	E

RUN #	25	26
ROOM NAME	FAM	FOY
RM LOSS MBH.	1.26	3.61
CFM PER RUN HEAT	29	83
RM GAIN MBH.	1.71	2.38
CFM PER RUN COOLING	55	76
ADJUSTED PRESSURE	0.17	0.16
ACTUAL DUCT LGH.	38	27
EQUIVALENT LENGTH	130	130
TOTAL EFFECTIVE LENGTH	168	157
ADJUSTED PRESSURE	0.1	0.1
ROUND DUCT SIZE	5	6
HEATING VELOCITY (ft/min)	213	423
COOLING VELOCITY (ft/min)	404	388
OUTLET GRILL SIZE	3X10	4X10
TRUNK	A	E

SUPPLY AIR TRUNK SIZE										RETURN AIR TRUNK SIZE									
TRUNK	STATIC	ROUND	RECT	VELOCITY						TRUNK	STATIC	ROUND	RECT	VELOCITY					
CFM	PRESS.	DUCT	DUCT						(ft/min)	CFM	PRESS.	DUCT	DUCT						(ft/min)
TRUNK A	205	0.09	7.5	8	x	8	461			TRUNK G	0	0.00	0	0	x	8	0		
TRUNK B	187	0.10	7.1	8	x	8	421			TRUNK H	0	0.00	0	0	x	8	0		
TRUNK C	462	0.09	10.2	14	x	8	594			TRUNK I	0	0.00	0	0	x	8	0		
TRUNK D	727	0.08	12.4	18	x	8	727			TRUNK J	0	0.00	0	0	x	8	0		
TRUNK E	285	0.09	8.5	8	x	8	641			TRUNK K	0	0.00	0	0	x	8	0		
TRUNK F	416	0.09	9.8	14	x	8	535			TRUNK L	0	0.00	0	0	x	8	0		

RETURN AIR #	1	2	3	4	5	6	7	8									BR	TRUNK W TRUNK X TRUNK Y TRUNK Z DROP	0 0.05 16.1 30 x 8 0 636 527 8 0 687
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AIR VOLUME	85	95	75	85	130	170	190	135	0	0	0	0	0	0	0	180			
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15			
ACTUAL DUCT LGH.	49	35	45	52	55	30	29	28	1	1	1	1	1	1	1	18			
EQUIVALENT LENGTH	185	165	245	180	185	195	200	265	0	0	0	0	0	0	0	185			
TOTAL EFFECTIVE LH	234	200	290	232	240	225	229	293	1	1	1	1	1	1	1	203			
ADJUSTED PRESSURE	0.06	0.07	0.05	0.06	0.06	0.07	0.06	0.05	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.07			
ROUND DUCT SIZE	6	6	6	6	7	7.5	8.1	7.5	0	0	0	0	0	0	0	7.6			
INLET GRILL SIZE	8	8	8	8	8	8	8	8	0	0	0	0	0	0	0	8			
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
INLET GRILL SIZE	14	14	14	14	14	14	24	14	0	0	0	0	0	0	0	24			

TYPE: 40-5
SITE NAME: VALES OF HUMBER

LO # 92077

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>5</u> @ 10.6 cfm	<u>53</u> cfm
Other Rooms	<u>7</u> @ 10.6 cfm	<u>74.2</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>79.5</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>201.4</u>	cfm
Less Principal Ventil. Capacity	<u>79.5</u>	cfm
Required Supplemental Capacity	<u>121.9</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 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
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 V150H		
<u>150</u> cfm high	<u>35</u> cfm low	
<u>75</u> % Sensible Efficiency	☒ HVI Approved	
@ 32 deg F (0 deg C)		

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#: 92077		Model: 40-5		Builder: ROYAL PINE HOMES			Date: 2022-03-21																																																														
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$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.248 x 355.61 x 41 °C x 1.2 = 4364 W = 14890 Btu/h					$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.081 x 355.61 x 6 °C x 1.2 = 210 W = 718 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 74 °F x 1.08 x 0.25 = 1593 Btu/h					$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 11 °F x 1.08 x 0.25 = 236 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: 40-5	BUILDER: ROYAL PINE HOMES
SFQT: 3245	SITE: VALES OF HUMBER
LO# 92077	

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):	45210.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
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: 59.0 ft	WIDTH: 32.0 ft	EXPOSED PERIMETER:	182.0 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	-

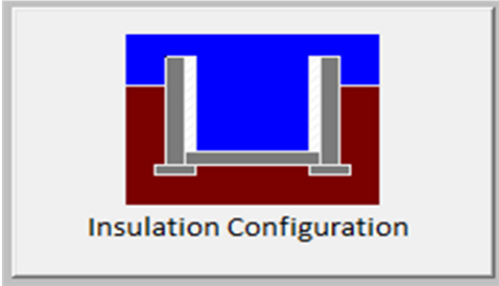
INDIVIDUAL BCIN: 19669

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):	18.0	
Floor Width (m):	9.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	1.8	
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):		1864

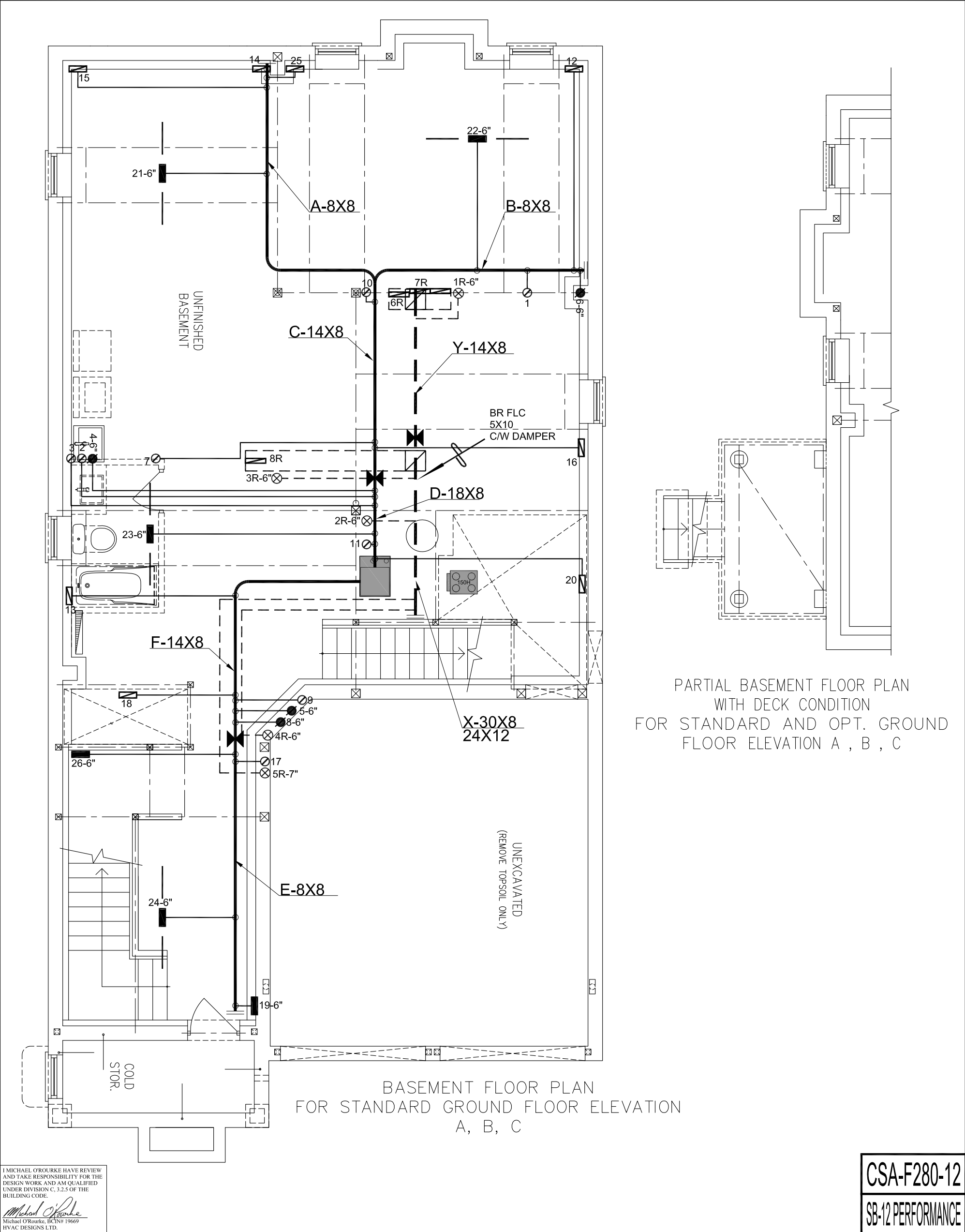
TYPE: 40-5
LO# 92077

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):	7.62			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1280.2			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1195.1 cm ²		
	2.50	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):	0.248			
Cooling Air Leakage Rate (ACH/H):	0.081			

TYPE: 40-5
LO# 92077



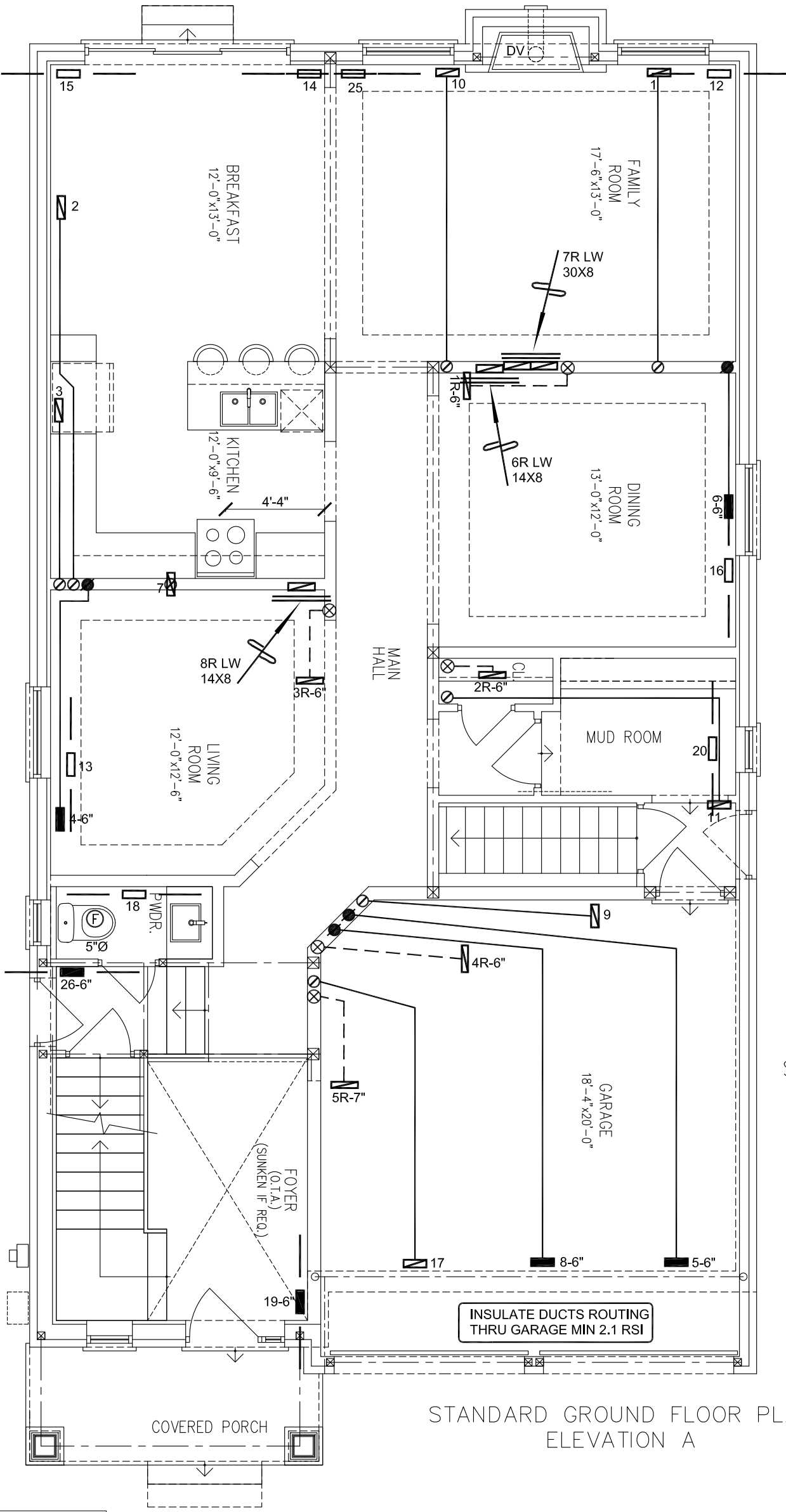
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HVAC DESIGNS LTD.

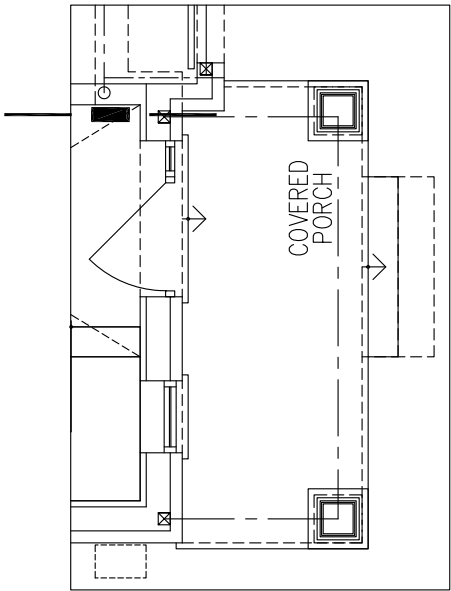
HVAC LEGEND						3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	2.
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	1. REVISED TO PERFORMANCE PATH MAR/2022
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	No. Description Date
REVISIONS								

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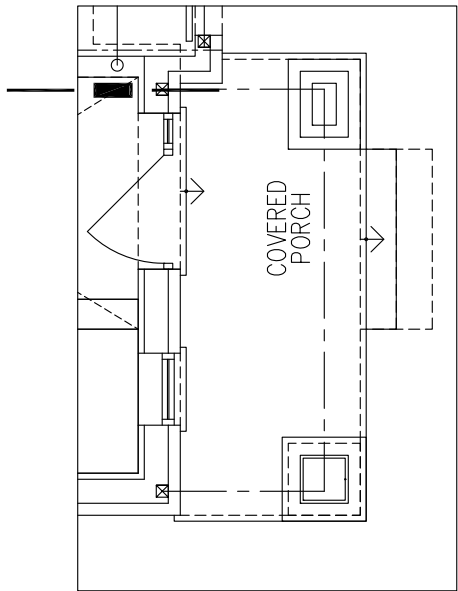
Client		HVACDESIGNS LTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services	HEAT LOSS 51095 BTU/H		# OF RUNS S/A R/A FANS				Sheet Title		
ROYAL PINE HOMES			UNIT DATA		3RD FLOOR				BASEMENT HEATING LAYOUT		
Project Name			MAKE CARRIER		2ND FLOOR		12	5	3		
VALES OF HUMBER BRAMPTON, ONTARIO			MODEL 59SP5A-60-14		1ST FLOOR		10	3	2		
			INPUT 60 MBTU/H		BASEMENT		4	1	0	Date AUG/2021	
		OUTPUT 58 MBTU/H		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						Scale 3/16" = 1'-0"	
		COOLING 3.0 TONS								BCIN# 19669	
40-5 3245 sqft		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.		FAN SPEED 1145 cfm @ 0.6" w.c.						LO# 92077	



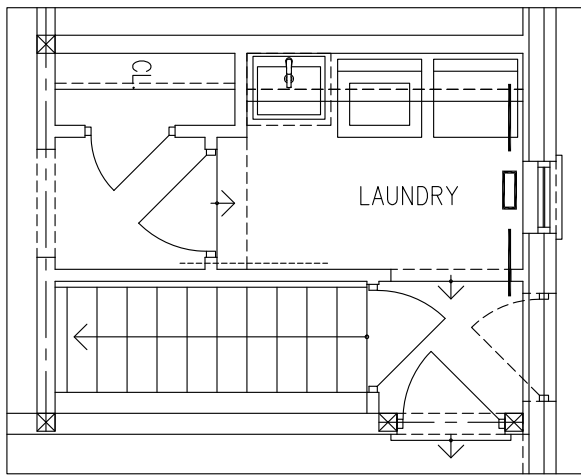
STANDARD GROUND FLOOR PLAN
ELEVATION A



STANDARD GROUND FLOOR PLAN
ELEVATION C



STANDARD GROUND FLOOR PLAN
ELEVATION B



OPTIONAL GROUND FLOOR
WITH LAUNDRY
ELEVATION A

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Michael O'Rourke, BCIN# 19669
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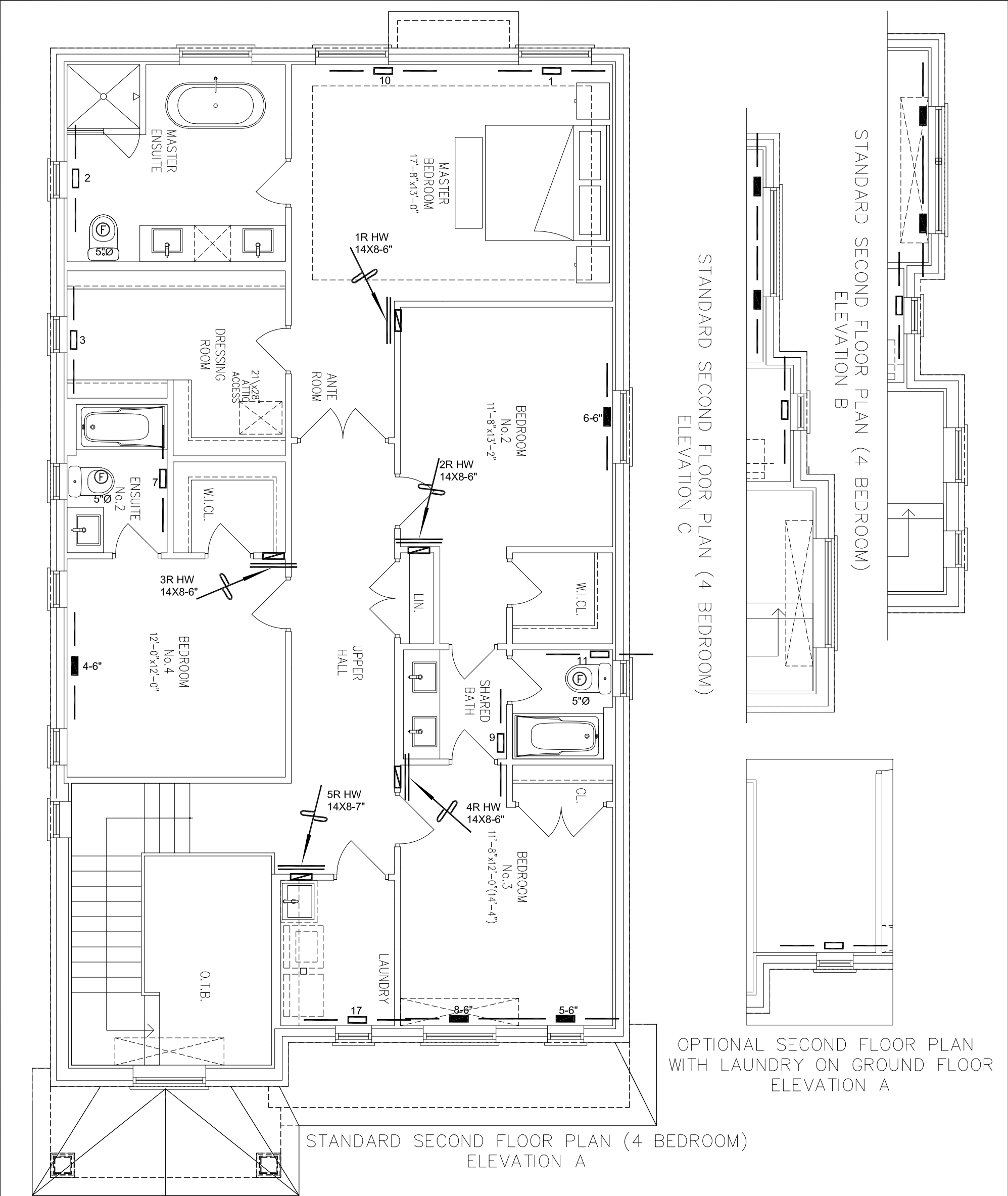
CSA-F280-12

SB-12 PERFORMANCE

HVAC LEGEND								3.		
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	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 VALES OF HUMBER BRAMPTON, ONTARIO			Date	AUG/2021
			Scale	3/16" = 1'-0"
			BCIN# 19669	
40-5	3245 sqft		LO#	92077



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CSA-F280-12

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ROYAL PINE HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	AUG/2021
VALES OF HUMBER BRAMPTON, ONTARIO			Scale	3/16" = 1'-0"
			BCIN# 19669	
			LO#	92077
40-5	3245 sqft			