

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@hvacdsgns.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: 3801 OPT 2ND Project: SUMMER RIDGE ESTATES	
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.			
May 16, 2024 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: SUMMER RIDGE ESTATES				OPT 2ND				DATE: May-24				WINTER NATURAL AIR CHANGE RATE 0.227				HEAT LOSS AT °F. 74				CSA-F280-12			
BUILDER: ROYAL PIE HOMES				TYPE: 3801				GFA: 2899				LO# 105072				SUMMER NATURAL AIR CHANGE RATE 0.074				HEAT GAIN AT °F. 11			
ROOM USE				MBR				ENS				WIC				BED-2				BED-3			
EXP. WALL				39				29				6				28				39			
CLG. HT.				9				9				9				9				9			
FACTORS																							
GRS.WALL AREA				351				261				54				252				351			
LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN			
GLAZING																							
NORTH				20.8 12.8				0 0 0				0 0 0				0 0 0				0 0 0			
EAST				20.8 32.9				0 0 0				0 0 0				40 831 1316				60 1247 1975			
SOUTH				20.8 19.8				23 478 456				0 0 0				0 0 0				18 374 357			
WEST				20.8 32.9				37 769 1218				19 395 625				0 0 0				0 0 0			
SKYLT.				34.1 132.1				0 0 0				0 0 0				0 0 0				0 0 0			
DOORS				19.6 2.9				0 0 0				0 0 0				0 0 0				5 98 15			
NET EXPOSED WALL				3.5 0.5				291 1009 150				242 839 124				54 187 28				212 735 109			
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				300 376 167				151 189 84				92 115 51				179 224 100			
NO ATTIC EXPOSED CLG				2.7 1.2				0 0 0				0 0 0				15 40 18				26 70 31			
EXPOSED FLOOR				2.5 0.4				0 0 0				0 0 0				194 483 72				71 177 26			
BASEMENT/CRAWL HEAT LOSS								0				0				0				0			
SLAB ON GRADE HEAT LOSS								0				0				0				0			
SUBTOTAL HT LOSS				2631				1423				303				2314				2915			
SUB TOTAL HT GAIN				1991				834				79				1615				2341			
LEVEL FACTOR / MULTIPLIER				0.20 0.19				0.20 0.19				0.20 0.19				0.20 0.19				0.20 0.19			
AIR CHANGE HEAT LOSS				498				270				57				438				552			
AIR CHANGE HEAT GAIN				117				49				5				95				137			
DUCT LOSS				0				0				0				275				347			
DUCT GAIN				0				0				0				228				305			
HEAT GAIN PEOPLE				240				2				480				0				1			
HEAT GAIN APPLIANCES/LIGHTS																							
TOTAL HT LOSS BTU/H				3130				1693				360				3027				3813			
TOTAL HT GAIN x 1.3 BTU/H				3791				1575				109				3258				4357			

ROOM USE			FAM			LV/DN			KT/BF			LAND			W/R			FOY			G-DOOR			BAS			
EXP. WALL			32			37			36			8			6			29			27			176			
CLG. HT.			10			10			10			10			11			11			11			9			
FACTORS																											
GRS.WALL AREA			320			370			360			80			66			319			297			1056			
LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			
GLAZING																											
NORTH			20.8	12.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
EAST			20.8	32.9	0	0	0	0	0	0	0	0	0	0	0	0	0	6	125	197	0	0	0	0	0		
SOUTH			20.8	19.8	0	0	0	45	935	892	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
WEST			20.8	32.9	22	457	724	0	0	0	64	1330	2106	0	0	0	0	0	0	0	0	0	0	0	0		
SKYLT.			34.1	132.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
DOORS			19.6	2.9	0	0	0	0	0	0	0	0	0	20	392	58	0	0	0	40	783	116	20	392	58		
NET EXPOSED WALL			3.5	0.5	298	1033	153	325	1127	167	296	1026	152	60	208	31	66	229	34	273	947	140	277	960	142		
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		
EXPOSED CLG			1.3	0.6	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			2.7	1.2	0	0	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	0	0	0	0	0	0	0	0	0		
BASEMENT/CRAWL HEAT LOSS			0			0			0			0			0			0			0			6124			
SLAB ON GRADE HEAT LOSS			0			0			0			0			0			0			0			0			
SUBTOTAL HT LOSS			1490			2062			2356			600			229			1854			1352			8662			
SUB TOTAL HT GAIN			877			1059			2259			89			34			454			200			702			
LEVEL FACTOR / MULTIPLIER			0.30	0.35				0.30	0.35				0.30	0.35				0.30	0.35				0.30	0.35			
AIR CHANGE HEAT LOSS			523			724			827			210			80			651			475			5817			
AIR CHANGE HEAT GAIN			51			62			132			5			2			27			12			41			
DUCT LOSS			0			0			0			0			0			0			0			0			
DUCT GAIN			0			0			0			0			0			0			0			0			
HEAT GAIN PEOPLE			240	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
HEAT GAIN APPLIANCES/LIGHTS			329			329			329			329			329			329			329			329			
TOTAL HT LOSS BTU/H			2013			2785			3183			810			309			2505			1827			14478			
TOTAL HT GAIN x 1.3 BTU/H			1635			1885			3536			550			474			1052			703			139			

SITE NAME: SUMMER RIDGE ESTATES
BUILDER: ROYAL PIE HOMES

OPT 2ND
TYPE: 3801

DATE: May-24

GFA: 2899 LO# 105072

HEATING CFM 975 COOLING CFM 975
TOTAL HEAT LOSS 43,365 TOTAL HEAT GAIN 28,030
AIR FLOW RATE CFM 22.48 AIR FLOW RATE CFM 34.78

furnace pressure 0.6
furnace filter 0.00
a/c coil pressure 0.21
available pressure for s/a & r/a 0.39

FACTORY INSTALLED

59SC6A060M17--16

CARRIER

AFUE = 97 %

INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 58,000

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	10	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.

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	BED-2	BED-2	BED-3	BED-4	ENS-2	BED-3	WIC	MBR	S-BATH	FAM	LV/DN	KT/BF	KT/BF	LAND	LOFT	W/R	FOY	G-DOOR	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.56	1.69	1.51	1.51	1.91	1.56	0.89	1.91	0.36	1.56	0.54	1.01	1.39	1.59	1.59	0.81	0.45	0.31	2.51	1.83	3.62	3.62	3.62	3.62
CFM PER RUN HEAT	35	38	34	34	43	35	20	43	8	35	12	23	31	36	36	18	10	7	56	41	81	81	81	81
RM GAIN MBH.	1.90	1.58	1.63	1.63	2.18	1.69	0.71	2.18	0.11	1.90	0.76	0.82	0.94	1.77	1.77	0.55	0.56	0.47	1.05	0.70	0.35	0.35	0.35	0.35
CFM PER RUN COOLING	66	55	57	57	76	59	25	76	4	66	26	28	33	61	61	19	19	16	37	24	12	12	12	12
ADJUSTED PRESSURE	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.18	0.18	0.18	0.18
ACTUAL DUCT LGH.	63	56	45	50	41	18	34	39	35	48	45	42	13	37	35	22	50	6	32	30	41	38	12	25
EQUIVALENT LENGTH	190	140	120	130	130	130	170	110	190	190	170	160	140	170	110	120	160	150	110	140	130	100	150	120
TOTAL EFFECTIVE LENGTH	253	196	165	180	171	148	204	149	225	238	215	202	153	207	145	142	210	156	142	170	171	138	162	145
ADJUSTED PRESSURE	0.08	0.1	0.12	0.11	0.11	0.13	0.09	0.13	0.09	0.08	0.09	0.1	0.13	0.09	0.13	0.14	0.09	0.12	0.14	0.11	0.11	0.13	0.11	0.13
ROUND DUCT SIZE	5	5	5	5	5	6	4	5	4	6	4	4	4	5	5	4	4	4	5	4	5	5	5	5
HEATING VELOCITY (ft/min)	257	279	250	250	316	178	229	316	92	178	138	264	356	264	264	207	115	80	411	470	595	595	595	595
COOLING VELOCITY (ft/min)	485	404	419	419	558	301	287	558	46	337	298	321	379	448	448	218	218	184	272	275	88	88	88	88
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	B	B	E	E	D	E	E	E	B	B	D	B	D	B	A	C	B	E	D	C	B	A	D	D

RUN #	25	26
ROOM NAME	FAM	LV/DN
RM LOSS MBH.	1.01	1.39
CFM PER RUN HEAT	23	31
RM GAIN MBH.	0.82	0.94
CFM PER RUN COOLING	28	33
ADJUSTED PRESSURE	0.19	0.19
ACTUAL DUCT LGH.	49	22
EQUIVALENT LENGTH	120	130
TOTAL EFFECTIVE LENGTH	169	152
ADJUSTED PRESSURE	0.11	0.13
ROUND DUCT SIZE	4	4
HEATING VELOCITY (ft/min)	264	356
COOLING VELOCITY (ft/min)	321	379
OUTLET GRILL SIZE	3X10	3X10
TRUNK	B	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			(ft/min)			CFM	PRESS.	DUCT	DUCT			(ft/min)			CFM	PRESS.	DUCT	DUCT				(ft/min)	
TRUNK A	117	0.13	5.6	8	x	8	263	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.06	0	0	x	8	0				
TRUNK B	289	0.08	8.8	10	x	8	520	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.06	0	0	x	8	0				
TRUNK C	465	0.08	10.5	14	x	8	598	TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.06	0	0	x	8	0				
TRUNK D	335	0.09	9	10	x	8	603	TRUNK J	0	0.00	0	0	x	8	0	TRUNK R	0	0.06	0	0	x	8	0				
TRUNK E	508	0.09	10.6	14	x	8	653	TRUNK K	0	0.00	0	0	x	8	0	TRUNK S	0	0.06	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	0.06	0	0	x	8	0				

RETURN AIR #	1	2	3	4	5	6	7	BR							
FLOOR	2	2	2	2	2	1	1	B							
AIR VOLUME	95	85	95	85	95	273	85	0	0	0	0	0	0	0	162
PLENUM 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
ACTUAL DUCT LGH.	40	62	51	57	62	16	45	1	1	1	1	1	1	1	16
EQUIVALENT LENGTH	205	225	175	215	185	150	245	0	0	0	0	0	0	0	240
TOTAL EFFECTIVE LH	245	287	226	272	247	166	290	1	1	1	1	1	1	1	256
ADJUSTED PRESSURE	0.07	0.06	0.07	0.06	0.07	0.10	0.06	16.72	16.72	16.72	16.72	16.72	16.72	16.72	0.07
ROUND DUCT SIZE	6	6	6	6	6	8	6	0	0	0	0	0	0	0	7.3
INLET GRILL SIZE	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
INLET GRILL SIZE	14	14	14	14	14	24	14	0	0	0	0	0	0	0	14

TYPE: 3801
SITE NAME: SUMMER RIDGE ESTATES

LO # 105072
OPT 2ND

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>5</u> @ 10.6 cfm	<u>53.0</u> cfm
Table 9.32.3.A.	TOTAL	<u>180.2</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>180.2</u>	cfm
Less Principal Ventil. Capacity	<u>79.5</u>	cfm
Required Supplemental Capacity	<u>100.7</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
W/R	BY INSTALLING CONTRACTOR	50	☒	3.5

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE V150H	
<u>150</u>	cfm high	<u>35</u> cfm low
<u>75</u>	% Sensible Efficiency @ 32 deg F (0 deg C)	☒ HVI Approved

LOCATION OF INSTALLATION	
Lot:	Concession
Township	Plan:
Address	
Roll #	Building Permit #

BUILDER:	
ROYAL PIE 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-24

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#: 105072		Model: 3801		Builder: ROYAL PIE HOMES																																																									
				Date: 5/16/2024																																																									
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 303.16 x 41 °C x 1.2 = 3409 W = 11633 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.074 x 303.16 x 6 °C x 1.2 = 164 W = 560 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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					Michael O'Rourke BCIN# 19669 																																																								

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 3801	OPT 2ND	BUILDER: ROYAL PIE HOMES
SFQT: 2899	LO# 105072	SITE: SUMMER RIDGE ESTATES

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
		WINDOW SHGC	0.60

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):	38541.0	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:	6.0 ft
LENGTH: 56.0 ft	WIDTH: 32.0 ft	EXPOSED PERIMETER:	176.0 ft

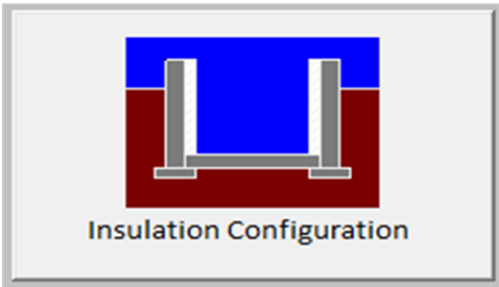
2012 OBC - COMPLIANCE PACKAGE		Compliance Package PERFORMANCE	
Component		Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value		60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value		31	27.65
Exposed Floor Minimum RSI (R)-Value		31	29.80
Walls Above Grade Minimum RSI (R)-Value		22+1.5	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/ERV 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):	17.1	 Insulation Configuration
Floor Width (m):	9.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	1.3	
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):		1794

TYPE: 3801
LO# 105072

OPT 2ND

Air Infiltration Residential Load Calculator

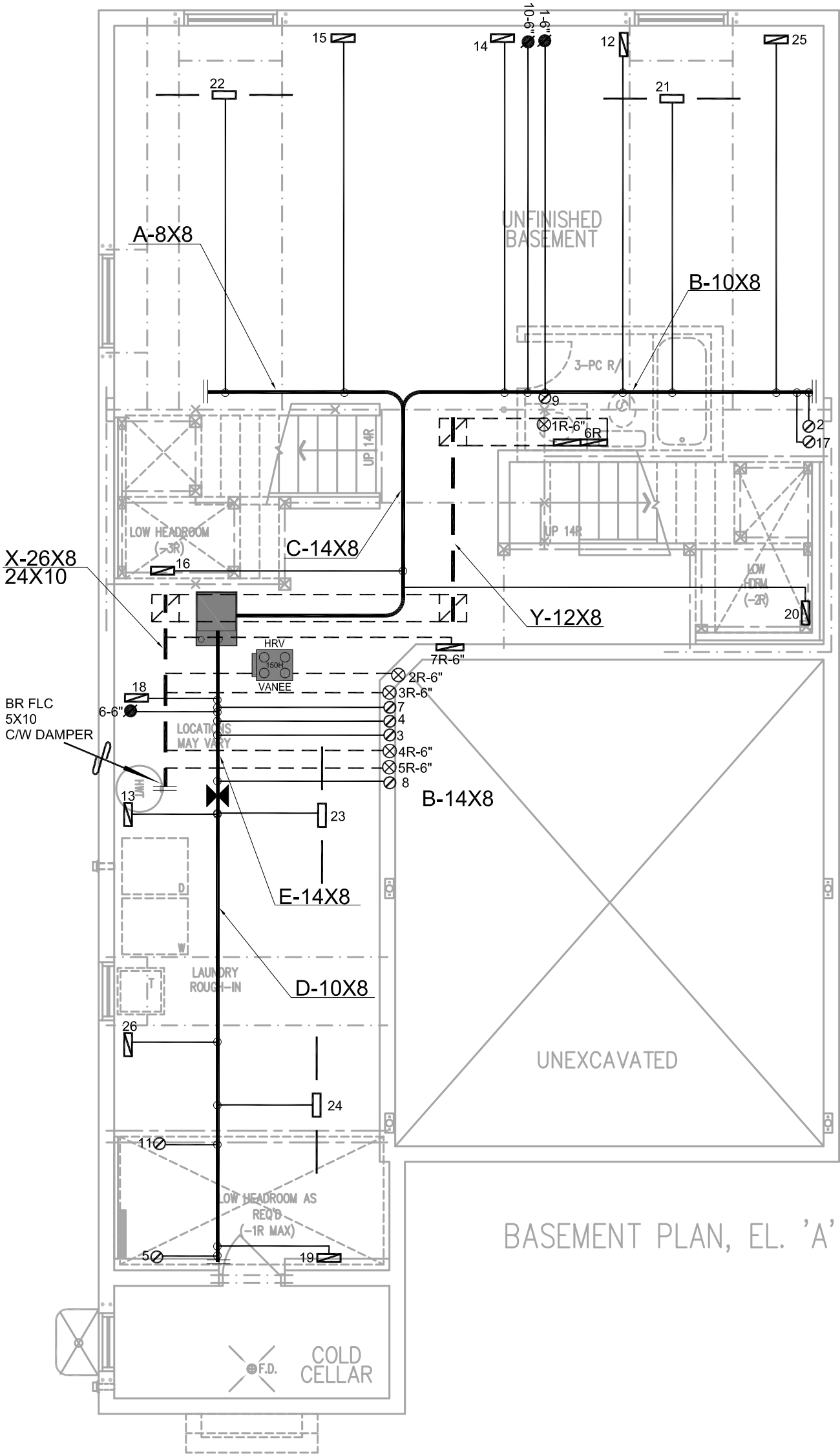
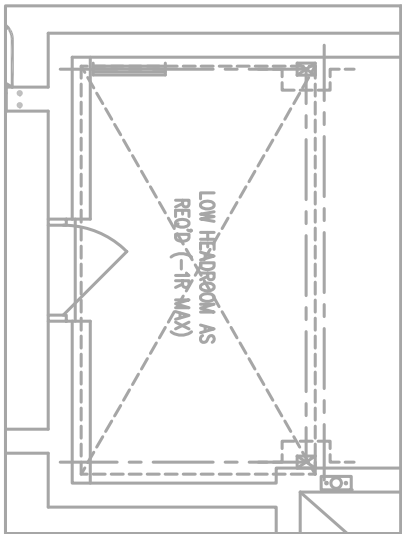
Supplemental tool for CAN/CSA-F280

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):	1091.4			
Air Leakage/Ventilation				
Air Tightness Type:	Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1018.8 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):	0.227			
Cooling Air Leakage Rate (ACH/H):	0.074			

TYPE: 3801
LO# 105072

OPT 2ND

PART. BASEMENT PLAN, EL. 'B' & 'C'

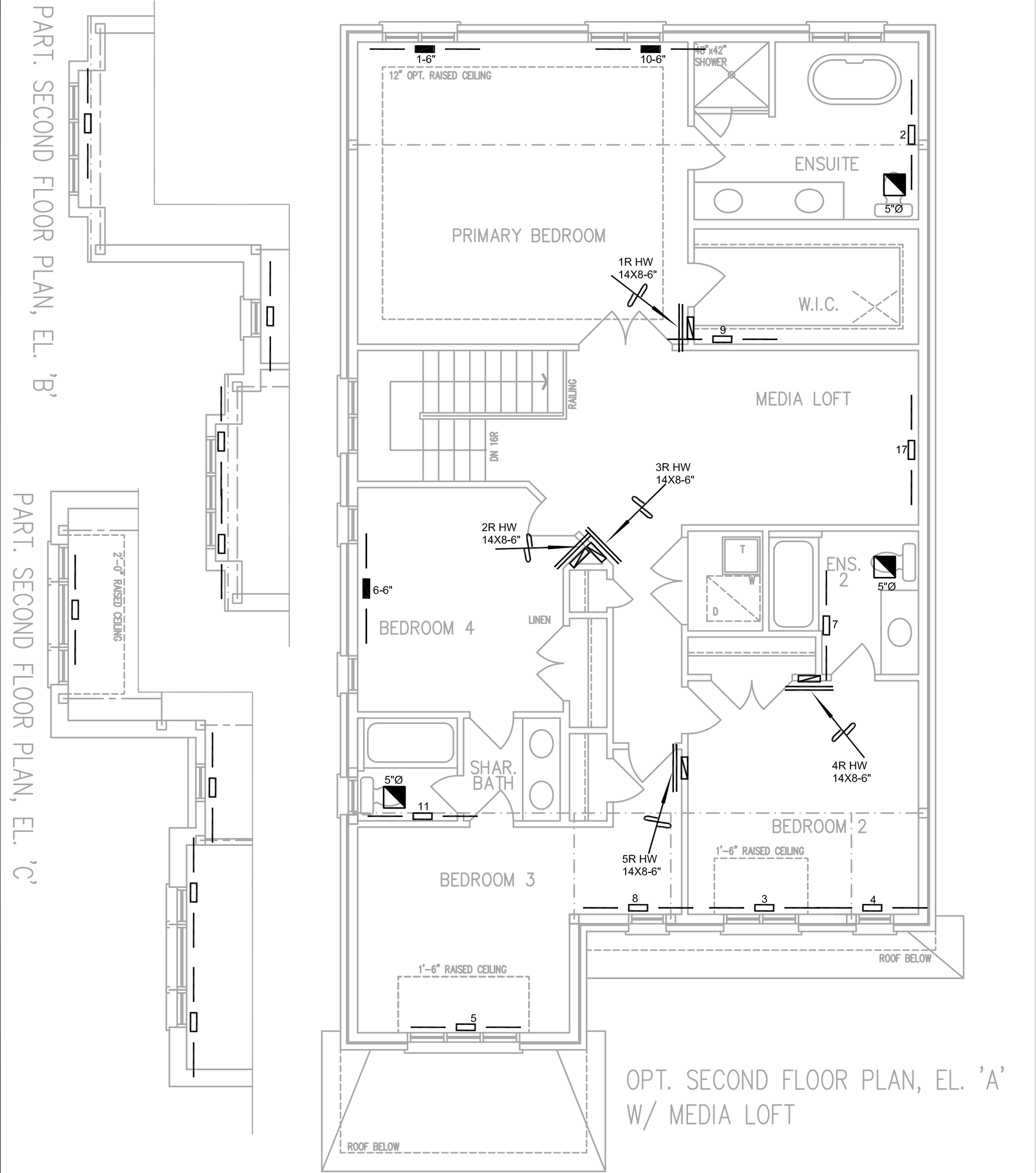


BASEMENT PLAN, EL. 'A'

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.						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.		PERFORMANCE			
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 44958 BTU/H		# OF RUNS S/A R/A FANS		Sheet Title			
ROYAL PINE HOMES						UNIT DATA		3RD FLOOR		BASEMENT HEATING LAYOUT			
						MAKE CARRIER		2ND FLOOR		12 5 3			
						MODEL 59SC6A060M17--16		1ST FLOOR		10 2 2			
						INPUT 60.0 MBTU/H		BASEMENT		4 1 0			
						OUTPUT 58.0 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		Date MAY/2024			
COOLING 2.5 TONS						Scale 3/16" = 1'-0"							
FAN SPEED 975 cfm @ 0.6" w.c.						BCIN# 19669							
						LO# 105072							
Project Name						SUMMER RIDGE HOMES							
						BRAMPTON, ONTARIO							
3801 - OPT 2ND		2899 sqft											



Sheet Title	
FIRST FLOOR HEATING LAYOUT	
Date	MAY/2024
Scale	3/16" = 1'-0"
BCIN# 19669	
LO#	105072



HVAC LEGEND								3.			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.			
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Project Name										SECOND FLOOR HEATING LAYOUT	
SUMMER RIDGE HOMES BRAMPTON, ONTARIO										Date MAY/2024	
										Scale 3/16" = 1'-0"	
3801 - OPT 2ND 2899 sqft										BCIN# 19669	
										LO#	105072