

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: 2005 OPT LAUN - FIN BSMT Project: SUMMER RIDGE ESTATES		
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.				
April 24, 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 LAUN - FIN BSMT										DATE: Apr-24		WINTER NATURAL AIR CHANGE RATE 0.282										HEAT LOSS AT °F. 74				CSA-F280-12					
BUILDER: ROYAL PIE HOMES										TYPE: 2005										GFA: 1971		LO# 104863		SUMMER NATURAL AIR CHANGE RATE 0.088										HEAT GAIN AT °F. 11				PERFORMANCE			
ROOM USE										MBR				ENS				WIC				BED-2				BED-3				BATH				B-BED4				B-BED5			
EXP. WALL										42				20				5				10				26				0				10				24			
CLG. HT.										9				9				9				9				11				9				9				9			
FACTORS										378				180				45				90				286				0				60				144			
GRS.WALL AREA										LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN			
GLAZING										20.8 12.2				20.8 12.2				20.8 18.7				20.8 18.7				20.8 30.9				20.8 30.9				20.8 30.9				20.8 30.9			
NORTH										0 0 0				0 0 0				0 0 0				0 0 0				0 0 0				0 0 0				0 0 0				0 0 0			
EAST										0 0 0				0 0 0				0 0 0				0 0 0				0 0 0				0 0 0				0 0 0				0 0 0			
SOUTH										86 1787 1609				23 478 430				14 291 262				0 0 0				35 727 655				0 0 0				10 208 309				0 0 0			
WEST										23 478 711				0 0 0				0 0 0				0 0 0				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				0 0 0				0 0 0				0 0 0				0 0 0			
NET EXPOSED WALL										3.5 0.5 269 933 138				157 544 81				31 107 16				64 222 33				216 749 111				0 0 0				0 0 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				30 105 16				72 253 38			
EXPOSED CLG										1.3 0.6 325 407 181				108 135 60				50 63 28				225 282 125				116 145 65				83 104 46				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				102 274 122				0 0 0				0 0 0				0 0 0			
EXPOSED FLOOR										2.5 0.4 0 0 0				4 10 1				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				520				520			
SLAB ON GRADE HEAT LOSS										0				0				0				0				0				0				0				0			
SUBTOTAL HT LOSS										3604				1167				461				1044				2622				104				833				981			
SUB TOTAL HT GAIN										2640				573				306				962				2035				46				325				225			
LEVEL FACTOR / MULTIPLIER										0.20 0.23				0.20 0.23				0.20 0.23				0.20 0.23				0.20 0.23				0.20 0.23				0.50 0.96				0.50 0.96			
AIR CHANGE HEAT LOSS										836				271				107				242				608				24				802				944			
AIR CHANGE HEAT GAIN										155				34				18				56				119				3				19				13			
DUCT LOSS										0				144				0				0				0				0				0				0			
DUCT GAIN										0				61				0				0				0				0				0				0			
HEAT GAIN PEOPLE										240				2				480				0				1				240				1				240			
HEAT GAIN APPLIANCES/LIGHTS										379				0				0				379				379				0				379				379			
TOTAL HT LOSS BTU/H										4440				1582				568				1286				3230				128				1635				1925			
TOTAL HT GAIN x 1.3 BTU/H										4749				867				421				2129				3604				64				1252				1114			

ROOM USE			LV/DN			K/B/F			ENTRY-1			FOY			ENTRY-2			B-BTH			REC			BAS			
EXP. WALL			36			42			7			5			14			0			45			23			
CLG. HT.			10			10			10			10			11			9			9			9			
FACTORS			360			420			70			50			154			0			270			138			
GRS.WALL AREA			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN						
GLAZING			20.8 12.2			20.8 12.2			20.8 12.2			20.8 12.2			20.8 12.2			20.8 12.2			20.8 12.2						
NORTH			20.8	12.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
EAST			20.8	30.9	74	1537	2288	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
SOUTH			20.8	18.7	37	769	692	38	789	711	0	0	0	13	270	243	0	0	0	0	0	0	0	0	0		
WEST			20.8	30.9	0	0	0	31	644	959	0	0	0	0	0	0	0	0	0	0	10	208	309	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			
DOORS			19.6	2.9	0	0	0	0	0	0	20	392	58	20	392	58	40	783	116	0	0	0	20	392	58		
NET EXPOSED WALL			3.5	0.5	249	863	128	351	1217	180	50	173	26	17	59	9	114	395	59	0	0	0	0	0	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			
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			
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			
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			
BASEMENT/CRAWL HEAT LOSS			0			0			0			0			0			185			1359			748			
SLAB ON GRADE HEAT LOSS			0			0			0			0			0			0			0			0			
SUBTOTAL HT LOSS			3169			2651			565			721			1178			185			2432			991			
SUB TOTAL HT GAIN			3109			1850			84			310			175			0			438			36			
LEVEL FACTOR / MULTIPLIER			0.30	0.38	0.30 0.38			0.30	0.38	0.30 0.38			0.30	0.38	0.30 0.38			0.50	0.96	0.50 0.96			0.50	0.96			
AIR CHANGE HEAT LOSS			1198			1002			214			272			445			178			2342			954			
AIR CHANGE HEAT GAIN			182			108			5			18			10			0			26			2			
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		
HEAT GAIN APPLIANCES/LIGHTS			379			379			0			0			379			0			379			379			
TOTAL HT LOSS BTU/H			4368			3653			778			993			1624			362			4774			1944			
TOTAL HT GAIN x1.3 BTU/H			4770			3038			115			427			733			0			1095			544			

SITE NAME: SUMMER RIDGE ESTATES
BUILDER: ROYAL PIE HOMES

OPT LAUN - FIN BSMT
TYPE: 2005

DATE: Apr-24

GFA: 1971 LO# 104863

HEATING CFM 770 COOLING CFM 770
TOTAL HEAT LOSS 33,291 TOTAL HEAT GAIN 24,919
AIR FLOW RATE CFM 23.13 AIR FLOW RATE CFM 30.9

furnace pressure 0.6
furnace filter 0.00
a/c coil pressure 0.26
available pressure for s/a & r/a 0.34

FACTORY INSTALLED

59SC6A040M14--10

CARRIER

AFUE = 96 %

INPUT (BTU/H) = 40,000
OUTPUT (BTU/H) = 39,000

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	9	8	7
R/A	0	0	4	2	3

plenium pressure s/a 0.18 r/a pressure 0.16
max s/a dif press. loss 0.01 r/a grille press. Loss 0.02
min adjusted pressure s/a 0.17 adjusted pressure r/a 0.14

FAN SPEED 40
LOW 0
MEDLOW 545
MEDIUM 770
MEDIUM HIGH 925
HIGH 0

DESIGN CFM = 770
CFM @ .6" E.S.P.

TEMPERATURE RISE 47 °F

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	10	11	12	13	14	15	16	17	19	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-3	BATH	BED-2	MBR	LV/DN	LV/DN	LV/DN	K/B/F	K/B/F	ENTRY-1	ENTRY-2	FOY	BAS	BAS	REC	REC
RM LOSS MBH.	2.22	1.58	0.57	0.64	1.62	1.62	0.13	0.64	2.22	1.46	1.46	1.46	1.83	1.83	0.78	1.62	0.99	0.97	0.97	2.39	2.39
CFM PER RUN HEAT	51	37	13	15	37	37	3	15	51	34	34	34	42	42	18	38	23	22	22	55	55
RM GAIN MBH.	2.37	0.87	0.42	1.06	1.80	1.80	0.06	1.06	2.37	1.59	1.59	1.59	1.52	1.52	0.12	0.73	0.43	0.27	0.27	0.55	0.55
CFM PER RUN COOLING	73	27	13	33	56	56	2	33	73	49	49	49	47	47	4	23	13	8	8	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	0.17	0.17	0.17
ACTUAL DUCT LGH.	55	44	32	30	27	48	14	42	42	30	33	24	33	31	29	37	20	26	7	26	35
EQUIVALENT LENGTH	180	190	120	180	140	170	170	180	150	120	140	100	120	110	130	130	110	100	130	180	140
TOTAL EFFECTIVE LENGTH	235	234	152	210	167	218	184	222	192	150	173	124	153	141	159	167	130	126	137	206	175
ADJUSTED PRESSURE	0.07	0.07	0.11	0.08	0.1	0.08	0.09	0.08	0.09	0.11	0.1	0.13	0.11	0.12	0.1	0.1	0.13	0.13	0.12	0.08	0.1
ROUND DUCT SIZE	6	4	4	4	5	5	4	4	6	4	4	5	4	5	4	4	4	5	5	5	5
HEATING VELOCITY (ft/min)	260	424	149	172	272	272	34	172	260	390	390	250	482	308	207	436	264	162	162	404	404
COOLING VELOCITY (ft/min)	372	310	149	379	411	411	23	379	372	562	562	360	539	345	46	264	149	59	59	125	125
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	A	D	D	D	C	D	C	B	C	C	C	A	B	A	A	D	A	B	A	D

RUN #	25	26	27
ROOM NAME	B-BED4	B-BED5	B-BTH
RM LOSS MBH.	1.64	1.92	0.36
CFM PER RUN HEAT	38	45	8
RM GAIN MBH.	1.25	1.11	0.00
CFM PER RUN COOLING	39	34	0
ADJUSTED PRESSURE	0.17	0.17	0.17
ACTUAL DUCT LGH.	33	38	10
EQUIVALENT LENGTH	140	140	120
TOTAL EFFECTIVE LENGTH	173	178	130
ADJUSTED PRESSURE	0.1	0.09	0.13
ROUND DUCT SIZE	4	4	4
HEATING VELOCITY (ft/min)	436	516	92
COOLING VELOCITY (ft/min)	447	390	0
OUTLET GRILL SIZE	3X10	3X10	3X10
TRUNK	C	C	D

SUPPLY 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	263	0.07	8.8	10	x 8	473	TRUNK G	0	0.00	0	0 x 8 0
TRUNK B	378	0.07	10.1	14	x 8	486	TRUNK H	0	0.00	0	0 x 8 0
TRUNK C	237	0.08	8.2	8	x 8	533	TRUNK I	0	0.00	0	0 x 8 0
TRUNK D	391	0.08	9.9	12	x 8	587	TRUNK J	0	0.00	0	0 x 8 0
TRUNK E	0	0.00	0	0	x 8	0	TRUNK K	0	0.00	0	0 x 8 0
TRUNK F	0	0.00	0	0	x 8	0	TRUNK L	0	0.00	0	0 x 8 0

RETURN AIR TRUNK SIZE

	TRUNK	STATIC	ROUND	RECT	VELOCITY
	CFM	PRESS.	DUCT	DUCT	(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	0	0.05	0	0	x 8 0
TRUNK X	770	0.05	14.3	24	x 8 578
TRUNK Y	450	0.05	11.7	16	x 8 506
TRUNK Z	205	0.05	8.7	10	x 8 369
DROP	770	0.05	14.3	24	x 10 462

RUN #	1	2	3	4	5	6	7	8	BR
FLOOR	2	2	2	2	1	1	B	B	B
AIR VOLUME	105	85	85	75	135	170	35	35	0 0 0 0 0 0 0 45
PLENUM PRESSURE	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14 0.14 0.14 0.14 0.14 0.14 0.14
ACTUAL DUCT LGH.	38	42	42	37	21	22	38	43	1 1 1 1 1 1 1 14
EQUIVALENT LENGTH	215	185	225	245	240	190	200	195	0 0 0 0 0 0 0 135
TOTAL EFFECTIVE LH	253	227	267	282	261	212	238	238	1 1 1 1 1 1 1 149
ADJUSTED PRESSURE	0.06	0.06	0.05	0.05	0.05	0.07	0.06	0.06	14.32 14.32 14.32 14.32 14.32 14.32 14.32 0.10
ROUND DUCT SIZE	6.5	6	6	6	7.5	7.5	4.3	4.3	0 0 0 0 0 0 0 4.2
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	14	14	0 0 0 0 0 0 0 14

TYPE: 2005
SITE NAME: SUMMER RIDGE ESTATES

LO # 104863
OPT LAUN - FIN BSMT

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>1</u> @ 21.2 cfm <u>21.2</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>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 95.4 cfm		

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>180.2</u> cfm	
Less Principal Ventil. Capacity	<u>95.4</u> cfm	
Required Supplemental Capacity	<u>84.8</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
BATH	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:	April-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

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																													
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																													
LO#: 104863		Model: 2005		Builder: ROYAL PIE HOMES																																																									
				Date: 2024-04-24																																																									
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																																																										
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.282 x 218.98 x 41 °C x 1.2 = 3059 W = 10438 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.088 x 218.98 x 6 °C x 1.2 = 142 W = 485 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)																																																													
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*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0					Michael O'Rourke BCIN# 19669																																																								

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 2005	OPT LAUN - FIN BSMT	BUILDER: ROYAL PIE HOMES
SFQT: 1971	LO# 104863	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	0.56

BUILDING DATA

ATTACHMENT:	ATTACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.00	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	TIGHT	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft ³):	27840.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
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: 54.0 ft	WIDTH: 22.0 ft	EXPOSED PERIMETER:	102.0 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	-

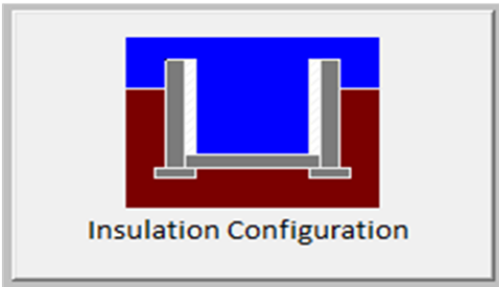
INDIVIDUAL BCIN: 19669

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):	16.5	
Floor Width (m):	6.7	
Exposed Perimeter (m):	31.1	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	2.8	
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):		976

TYPE: 2005
LO# 104863

OPT LAUN - FIN BSMT

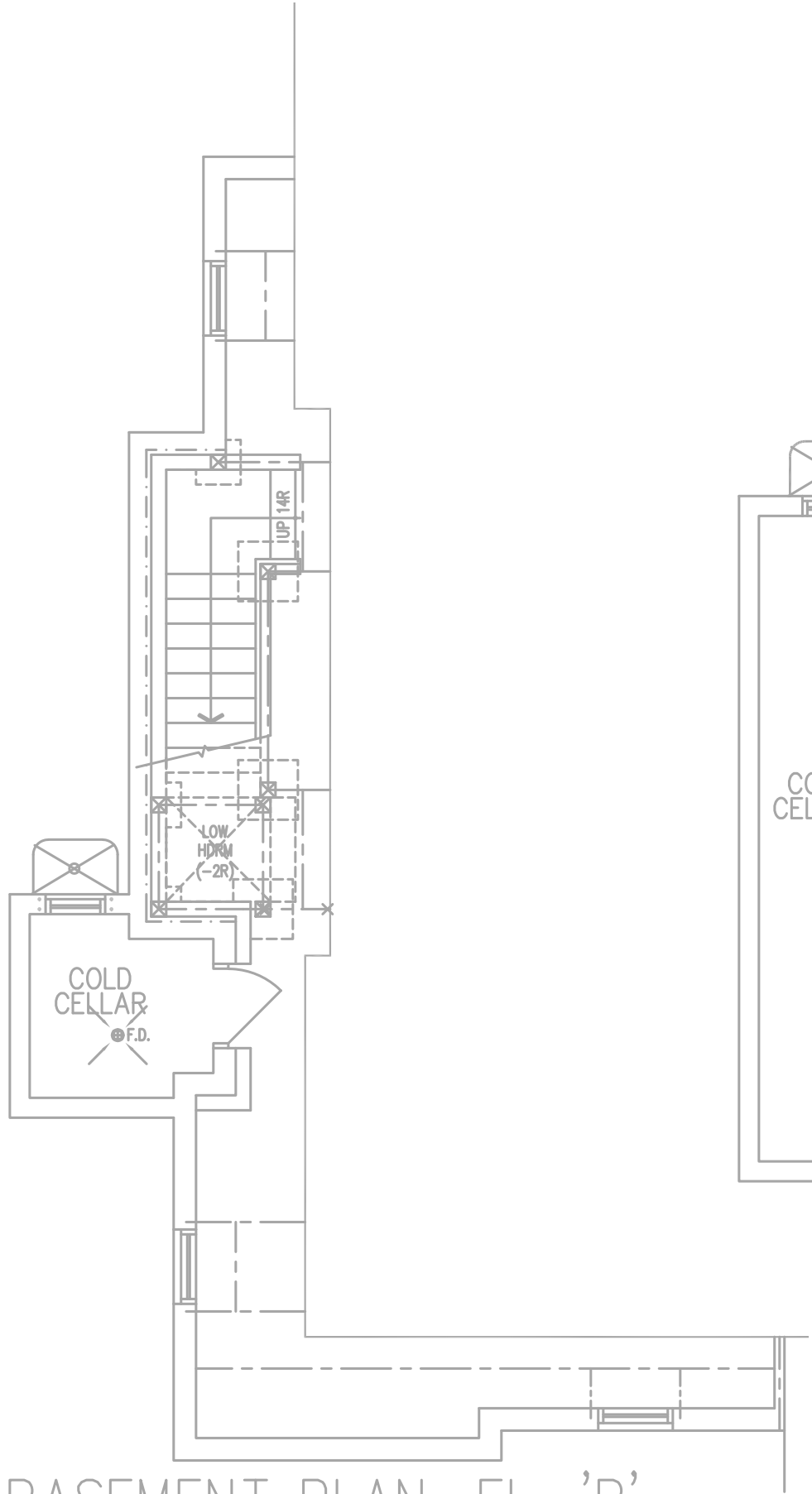
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

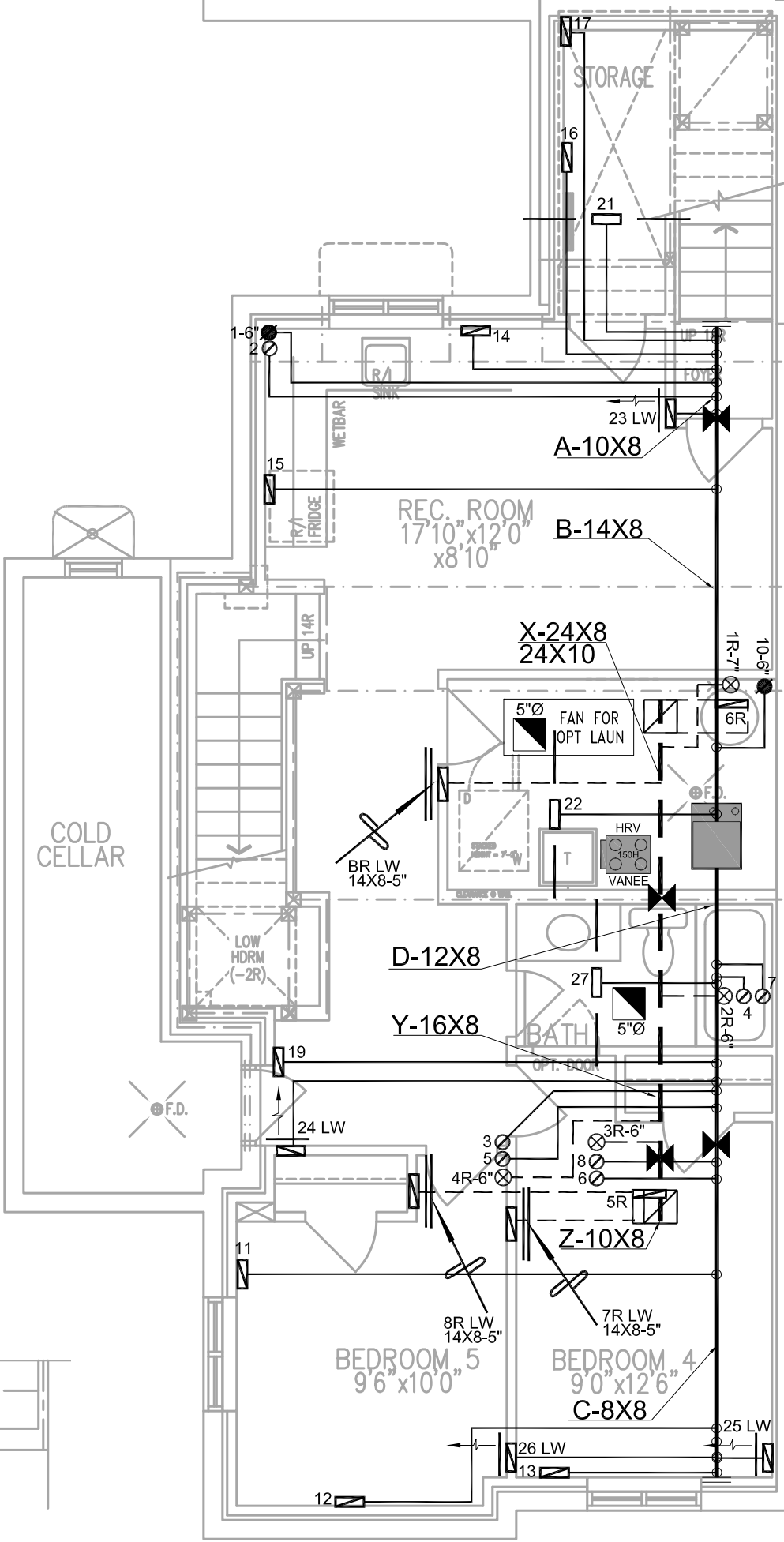
Weather Station Description				
Province:	Ontario			
Region:	Brampton			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	6.71			
Building Configuration				
Type:	Semi			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	788.3			
Air Leakage/Ventilation				
Air Tightness Type:	Attached (3.0 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	883.1 cm ²		
	3.00	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):	0.282			
Cooling Air Leakage Rate (ACH/H):	0.088			

TYPE: 2005
LO# 104863

OPT LAUN - FIN BSMT

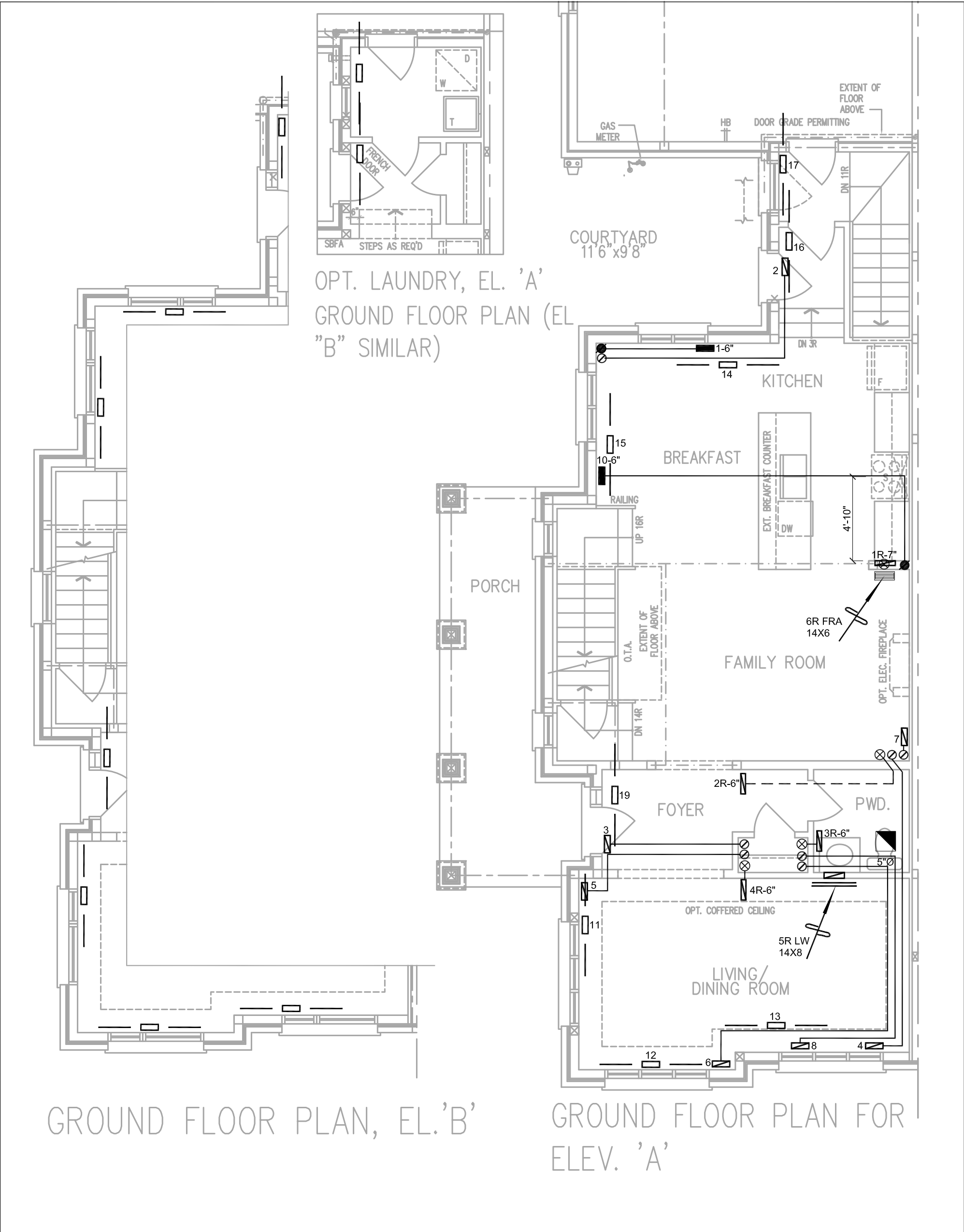


BASEMENT PLAN, EL. 'B'

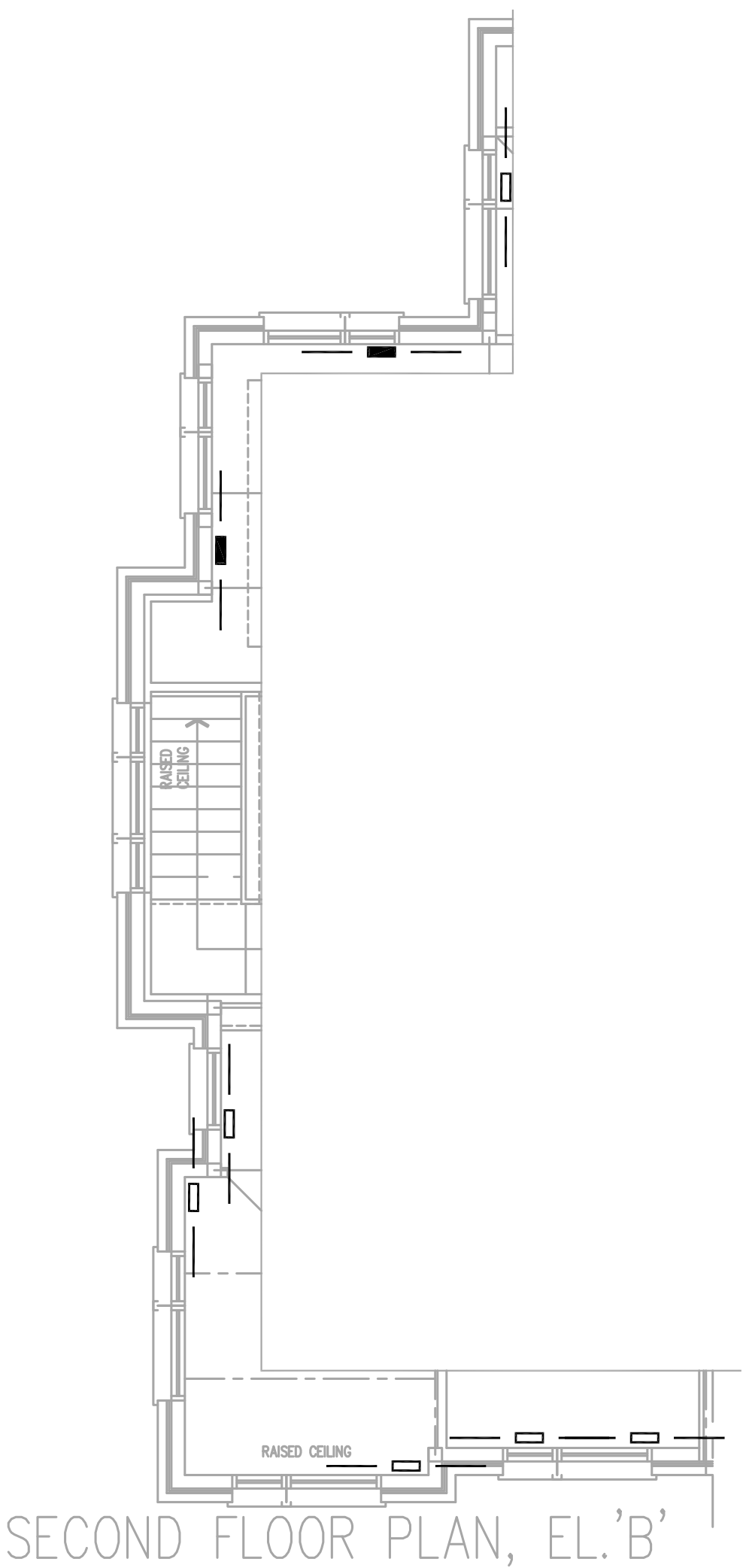


OPT. FINISHED BASEMENT PLAN,
ELEV. 'A'

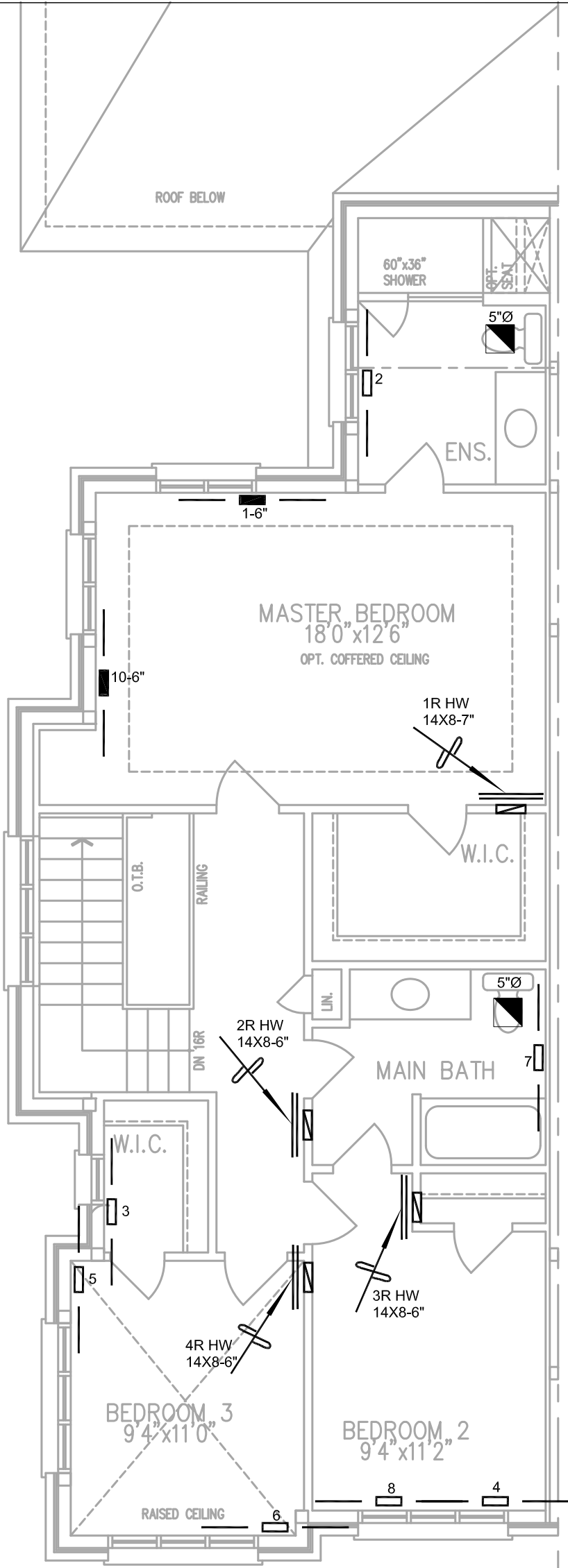
HVAC LEGEND								3.			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.			
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.			
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN 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				HEAT LOSS 35202 BTU/H		# OF RUNS S/A R/A FANS		Sheet Title	
ROYAL PINE HOMES						UNIT DATA		3RD FLOOR		BASEMENT HEATING LAYOUT	
Project Name						CARRIER		2ND FLOOR		9 4 2	
SUMMER RIDGE ESTATES						MODEL		1ST FLOOR		8 2 2	
BRAMPTON, ONTARIO						59SC6A040M14--10		BASEMENT		7 3 1(2)	
FIN BSMT						INPUT		40 MBTU/H		Date APR/2024	
2005 - OPT LAUN 1971 sqft						OUTPUT		39 MBTU/H		Scale 3/16" = 1'-0"	
						COOLING		2.0 TONS		BCIN# 19669	
						FAN SPEED		770 cfm @ 0.6" w.c.		LO# 104863	



HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION			
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Project Name						FIRST FLOOR HEATING LAYOUT				
SUMMER RIDGE ESTATES BRAMPTON, ONTARIO						Date APR/2024				
						Scale 3/16" = 1'-0"				
						BCIN# 19669				
FIN BSMT 2005 - OPT LAUN 1971 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.				LO#		104863		



SECOND FLOOR PLAN, EL. 'B'



OPT. SECOND FLOOR W.I.C
FOR OPT. GROUND FLOOR
LAUNDRY COND.

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
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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
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SECOND FLOOR HEATING LAYOUT										
Date	APR/2024									
Scale	3/16" = 1'-0"									
Project Name		BCIN# 19669		LO#		104863				
ROYAL PINE HOMES										
SUMMER RIDGE ESTATES BRAMPTON, ONTARIO										
FIN BSMT 2005 - OPT LAUN 1971 sqft										