


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]				
<input type="checkbox"/> House <input type="checkbox"/> Small Buildings <input type="checkbox"/> Large Buildings <input type="checkbox"/> Complex Buildings				
<input checked="" type="checkbox"/> HVAC – House <input type="checkbox"/> Building Services <input type="checkbox"/> Detection, Lighting and Power <input type="checkbox"/> Fire Protection				
<input type="checkbox"/> Building Structural <input type="checkbox"/> Plumbing – House <input type="checkbox"/> Plumbing – All Buildings <input type="checkbox"/> 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 Project: SUMMER RIDGE ESTATES		
D. Declaration of Designer				
I, <u>MICHAEL O'ROURKE</u> declare that (choose one as appropriate): (print name)				
<input type="checkbox"/> 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: _____				
<input checked="" type="checkbox"/> 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>				
<input type="checkbox"/> 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 22, 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				DATE: Apr-24				WINTER NATURAL AIR CHANGE RATE 0.282				HEAT LOSS AT °F. 74				CSA-F280-12			
BUILDER: ROYAL PIE HOMES				TYPE: 2005				LO# 104862				SUMMER NATURAL AIR CHANGE RATE 0.088				HEAT GAIN AT °F. 11				PERFORMANCE			
ROOM USE				MBR				ENS				WIC				BED-2				BED-3			
EXP. WALL				42				20				5				10				26			
CLG. HT.				9				9				9				9				11			
FACTORS																							
GRS.WALL AREA				378				180				45				90				286			
GLAZING				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN			
NORTH				20.8 12.8				0 0 0				0 0 0				0 0 0				0 0 0			
EAST				20.8 32.4				0 0 0				0 0 0				26 540 843				35 727 1135			
SOUTH				20.8 19.8				86 1787 1705				23 478 456				14 291 278				0 0 0			
WEST				20.8 32.9				23 478 757				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			
DOORS				19.6 2.9				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			
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				325 407 181				108 135 60				50 63 28				225 282 125			
NO ATTIC EXPOSED CLG				2.7 1.2				0 0 0				0 0 0				0 0 0				102 274 122			
EXPOSED FLOOR				2.5 0.4				0 0 0				4 10 1				0 0 0				0 0 0			
BASEMENT/CRAWL HEAT LOSS								0				0				0				0			
SLAB ON GRADE HEAT LOSS								0				0				0				0			
SUBTOTAL HT LOSS								3604				1167				1044				2622			
SUB TOTAL HT GAIN								2782				598				1001				2126			
LEVEL FACTOR / MULTIPLIER				0.20 0.23				0.20 0.23				0.20 0.23				0.20 0.23				0.20 0.23			
AIR CHANGE HEAT LOSS								836				271				242				608			
AIR CHANGE HEAT GAIN								136				29				49				104			
DUCT LOSS								0				144				0				0			
DUCT GAIN								0				63				0				0			
HEAT GAIN PEOPLE				240				2				480				0				1			
HEAT GAIN APPLIANCES/LIGHTS								541				0				1				240			
TOTAL HT LOSS BTU/H								4440				1582				1286				3230			
TOTAL HT GAIN x 1.3 BTU/H								5121				898				438				2381			

ROOM USE			LV/DN			K/B/F			ENTRY-1			FOY			ENTRY-2			BAS		
EXP. WALL			36			42			7			5			14			102		
CLG. HT.			10			10			10			10			11			9		
FACTORS																				
GRS.WALL AREA			360			420			70			50			154			612		
GLAZING			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN		
NORTH	20.8	12.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	20.8	32.4	74	1537	2399	0	0	0	0	0	0	0	0	0	0	0	0	10	208	324
SOUTH	20.8	19.8	37	769	734	38	789	753	0	0	0	13	270	258	0	0	0	10	208	198
WEST	20.8	32.9	0	0	0	31	644	1020	0	0	0	0	0	0	0	0	0	10	208	329
SKYLT.	34.1	132.1	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	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
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	306	1075	159
EXPOSED CLG	1.3	0.6	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
EXPOSED FLOOR	2.5	0.4	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			3331
SLAB ON GRADE HEAT LOSS					0			0			0			0			0			
SUBTOTAL HT LOSS				3169			2651			565			721			1178			5421	
SUB TOTAL HT GAIN					3260			1954			84			325		175				1069
LEVEL FACTOR / MULTIPLIER			0.30	0.38		0.30	0.38		0.30	0.38			0.30	0.38		0.30	0.38	0.50	0.96	
AIR CHANGE HEAT LOSS				1198			1002			214			272			445			5219	
AIR CHANGE HEAT GAIN					160			96			4			16		9				52
DUCT LOSS				0			0			0			0			0			0	
DUCT GAIN				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				541			541			0			0			541				541
TOTAL HT LOSS BTU/H				4368			3653			778			993			1624			10641	
TOTAL HT GAIN x 1.3 BTU/H				5150			3368			114			443			942			2161	

SITE NAME: SUMMER RIDGE ESTATES
BUILDER: ROYAL PIE HOMES

OPT LAUN
TYPE: 2005

DATE: Apr-24

GFA: 1971 LO# 104862

HEATING CFM 770 COOLING CFM 770
TOTAL HEAT LOSS 33,291 TOTAL HEAT GAIN 24,993
AIR FLOW RATE CFM 23.13 AIR FLOW RATE CFM 30.81

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	3
R/A	0	0	4	2	1

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

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

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

RUN #	1	2	3	4	5	6	7	8	10	11	12	13	14	15	16	17	19	21	22	23
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	BAS
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	3.55	3.55	3.55
CFM PER RUN HEAT	51	37	13	15	37	37	3	15	51	34	34	34	42	42	18	38	23	82	82	82
RM GAIN MBH.	2.56	0.90	0.44	1.19	1.96	1.96	0.06	1.19	2.56	1.72	1.72	1.72	1.68	1.68	0.11	0.94	0.44	0.72	0.72	0.72
CFM PER RUN COOLING	79	28	14	37	60	60	2	37	79	53	53	53	52	52	4	29	14	22	22	22
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	0.16	0.16	0.16
ACTUAL DUCT LGH.	55	44	32	30	27	48	14	42	42	30	33	24	33	31	29	37	20	27	11	27
EQUIVALENT LENGTH	180	190	120	180	140	170	170	180	150	120	140	100	120	110	130	130	110	100	130	110
TOTAL EFFECTIVE LENGTH	235	234	152	210	167	218	184	222	192	150	173	124	153	141	159	167	130	127	141	137
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	0.12	0.11	0.11
ROUND DUCT SIZE	6	4	4	4	5	5	4	4	6	5	5	5	4	5	4	4	4	6	6	6
HEATING VELOCITY (ft/min)	260	424	149	172	272	272	34	172	260	250	250	250	482	308	207	436	264	418	418	418
COOLING VELOCITY (ft/min)	403	321	161	424	441	441	23	424	403	389	389	389	597	382	46	333	161	112	112	112
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10
TRUNK	A	A	D	D	D	C	D	C	B	C	C	C	A	B	A	A	D	B	B	C

RUN #	ROOM NAME	RM LOSS MBH.	CFM PER RUN HEAT	RM GAIN MBH.	CFM PER RUN COOLING	ADJUSTED PRESSURE	ACTUAL DUCT LGH.	EQUIVALENT LENGTH	TOTAL EFFECTIVE LENGTH	ADJUSTED PRESSURE	ROUND DUCT SIZE	HEATING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	OUTLET GRILL SIZE	TRUNK
1	MBR	2.22	51	2.56	79	0.17	55	180	235	0.07	6	260	403	4X10	A
2	ENS	1.58	37	0.90	28	0.17	44	190	234	0.07	4	424	321	3X10	A
3	WIC	0.57	13	0.44	14	0.17	32	120	152	0.11	4	149	161	3X10	D
4	BED-2	0.64	15	1.19	37	0.17	30	180	210	0.08	4	172	424	3X10	D
5	BED-3	1.62	37	1.96	60	0.17	27	140	167	0.1	5	272	441	3X10	D
6	BED-3	1.62	37	1.96	60	0.17	48	170	218	0.08	5	272	441	3X10	C
7	BATH	0.13	3	0.06	2	0.17	14	170	184	0.09	4	34	23	3X10	D
8	BED-2	0.64	15	1.19	37	0.17	42	180	222	0.08	4	172	424	3X10	C
10	MBR	2.22	51	2.56	79	0.17	42	150	192	0.09	6	260	403	4X10	B
11	LV/DN	1.46	34	1.72	53	0.17	30	120	150	0.11	5	250	389	3X10	C
12	LV/DN	1.46	34	1.72	53	0.17	33	140	173	0.1	5	250	389	3X10	C
13	LV/DN	1.46	34	1.72	53	0.17	24	100	124	0.13	5	250	389	3X10	C
14	K/B/F	1.83	42	1.68	52	0.17	33	120	153	0.11	4	482	597	3X10	A
15	K/B/F	1.83	42	1.68	52	0.17	31	110	141	0.12	5	308	382	3X10	B
16	ENTRY-1	0.78	18	0.11	4	0.17	29	130	159	0.1	4	207	46	3X10	A
17	ENTRY-2	1.62	38	0.94	29	0.17	37	130	167	0.1	4	436	333	3X10	A
19	FOY	0.99	23	0.44	14	0.17	20	110	130	0.13	4	264	161	3X10	D
21	BAS	3.55	82	0.72	22	0.16	27	100	127	0.12	6	418	112	4X10	B
22	BAS	3.55	82	0.72	22	0.16	11	130	141	0.11	6	418	112	4X10	B
23	BAS	3.55	82	0.72	22	0.16	27	110	137	0.11	6	418	112	4X10	C

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	186	0.07	7.7	8	x	8	419	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.05	0	0	x	8	0				
TRUNK B	443	0.07	10.7	14	x	8	570	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0				
TRUNK C	236	0.08	8.2	8	x	8	531	TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.05	0	0	x	8	0				
TRUNK D	327	0.08	9.2	12	x	8	491	TRUNK J	0	0.00	0	0	x	8	0	TRUNK R	0	0.05	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 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	BR
FLOOR	2	2	2	2	1	1	B
AIR VOLUME	130	85	85	75	110	170	0
PLENUM PRESSURE	0.14	0.14	0.14	0.14	0.14	0.14	0.14
ACTUAL DUCT LGH.	38	42	42	37	21	22	1
EQUIVALENT LENGTH	215	185	225	245	240	190	0
TOTAL EFFECTIVE LH	253	227	267	282	261	212	1
ADJUSTED PRESSURE	0.06	0.06	0.05	0.05	0.05	0.07	14.32
ROUND DUCT SIZE	7	6	6	6	6.9	7.5	0
INLET GRILL SIZE	8	8	8	8	8	8	0
INLET GRILL SIZE	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	14	0

TYPE: 2005
SITE NAME: SUMMER RIDGE ESTATES

LO # 104862
OPT LAUN

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES		9.32.3.1(1)
a)	<input checked="" type="checkbox"/> Direct vent (sealed combustion) only	
b)	<input type="checkbox"/> Positive venting induced draft (except fireplaces)	
c)	<input type="checkbox"/> Natural draft, B-vent or induced draft gas fireplace	
d)	<input type="checkbox"/> Solid Fuel (including fireplaces)	
e)	<input type="checkbox"/> No Combustion Appliances	

HEATING SYSTEM	
<input checked="" type="checkbox"/> Forced Air	<input type="checkbox"/> Non Forced Air
<input type="checkbox"/> Electric Space Heat	

HOUSE TYPE		9.32.1(2)
<input checked="" type="checkbox"/> I	Type a) or b) appliance only, no solid fuel	
<input type="checkbox"/> II	Type I except with solid fuel (including fireplaces)	
<input type="checkbox"/> III	Any Type c) appliance	
<input type="checkbox"/> IV	Type I, or II with electric space heat	
<input type="checkbox"/>	Other: Type I, II or IV no forced air	

SYSTEM DESIGN OPTIONS		O.N.H.W.P.
<input type="checkbox"/> 1	Exhaust only/Forced Air System	
<input type="checkbox"/> 2	HRV with Ducting/Forced Air System	
<input checked="" type="checkbox"/> 3	HRV Simplified/connected to forced air system	
<input type="checkbox"/> 4	HRV with Ducting/non forced air system	
<input type="checkbox"/>	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>2</u> @ 10.6 cfm	<u>21.2</u> cfm
Kitchen & Bathrooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Other Rooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Table 9.32.3.A.	TOTAL	<u>148.4</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>63.6</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>148.4</u>	cfm
Less Principal Ventil. Capacity	<u>63.6</u>	cfm
Required Supplemental Capacity	<u>84.8</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE V150H	Location: BSMT
<u>63.6</u> cfm	<input checked="" type="checkbox"/> HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
63.6 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	<input checked="" type="checkbox"/>	3.5
BATH	BY INSTALLING CONTRACTOR	50	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/> HVI Approved	
@ 32 deg F (0 deg C)		

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

Michael O'Rourke

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																	
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																	
LO#: 104862		Model: 2005		Builder: ROYAL PIE HOMES			Date: 2024-04-22																																																										
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																																																												
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ <p>0.282 x 218.98 x 41 °C x 1.2 = 3059 W</p> <p style="text-align: right;">= 10438 Btu/h</p>					$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ <p>0.088 x 218.98 x 6 °C x 1.2 = 142 W</p> <p style="text-align: right;">= 485 Btu/h</p>																																																												
5.2.3.2 Heat Loss due to Mechanical Ventilation					6.2.7 Sensible heat Gain due to Ventilation																																																												
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>64 CFM x 74 °F x 1.08 x 0.25 = 1274 Btu/h</p>					$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>64 CFM x 11 °F x 1.08 x 0.25 = 189 Btu/h</p>																																																												
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																																	
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<p>*HLairbv = Air leakage heat loss + ventilation heat loss</p> <p>*For a balanced or supply only ventilation system HLairve = 0</p>																																																																	
								<div style="border: 1px solid black; padding: 5px;"> Michael O'Rourke BCIN# 19669 </div>																																																									

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 2005	OPT LAUN	BUILDER: ROYAL PIE HOMES
SFQT: 1971	LO# 104862	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:	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:	4
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	-

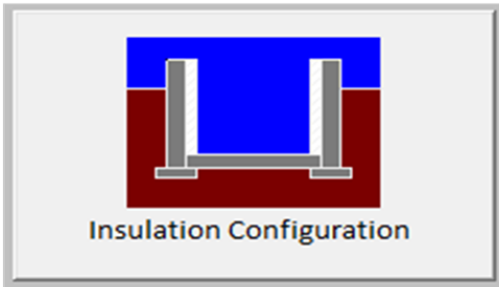
INDIVIDUAL BCIN: 19669

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	 Insulation Configuration
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# 104862

OPT LAUN

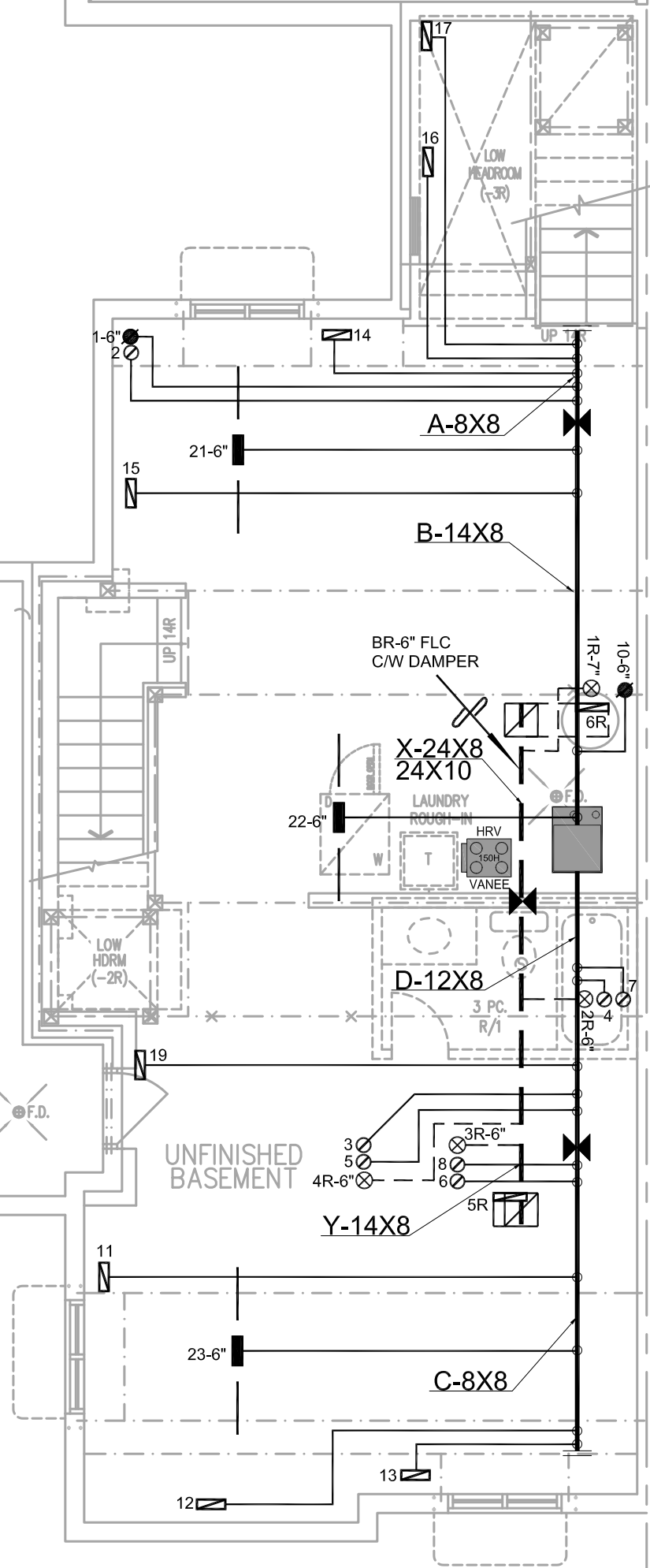
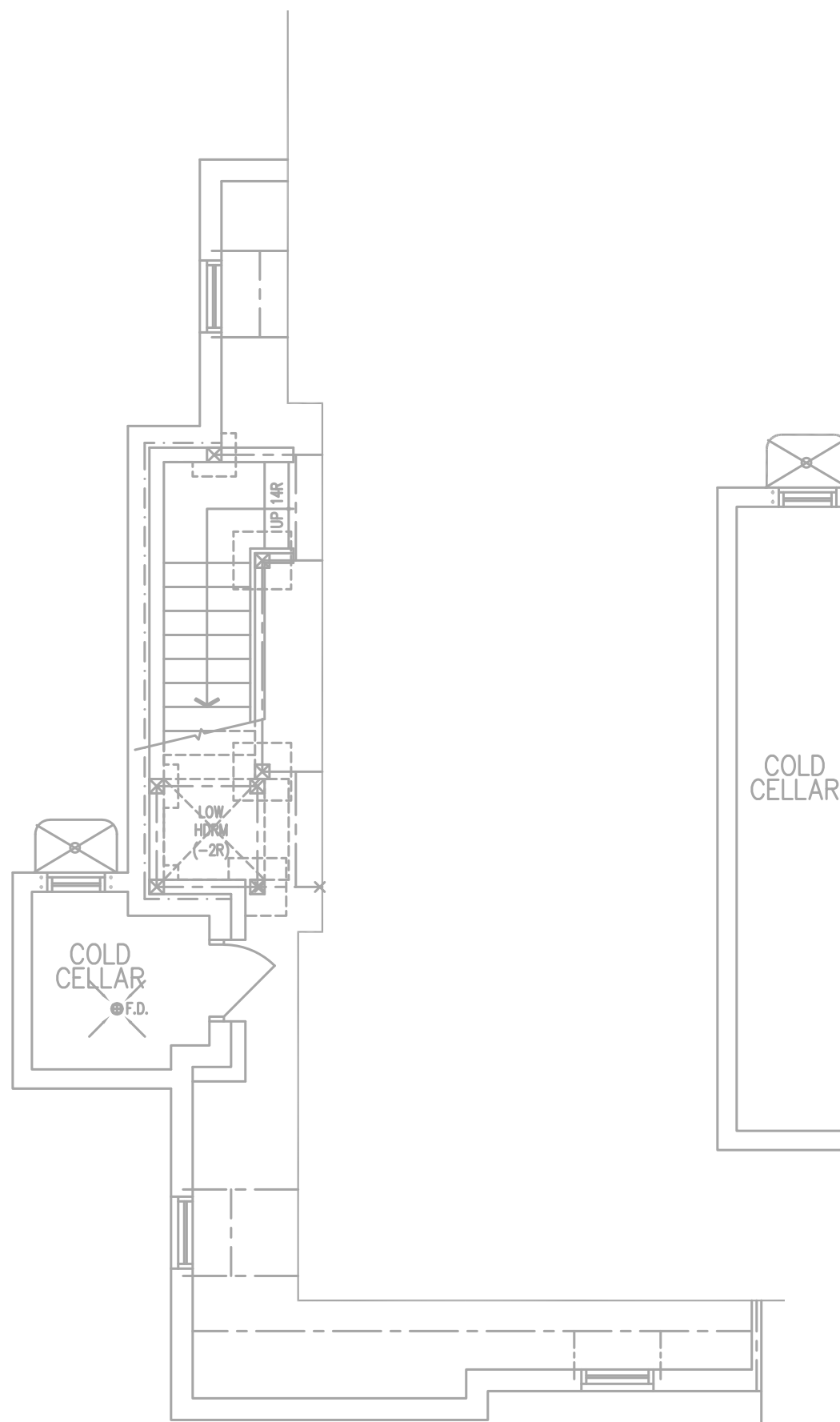
Air Infiltration Residential Load Calculator















Supplemental tool for CAN/CSA-F280

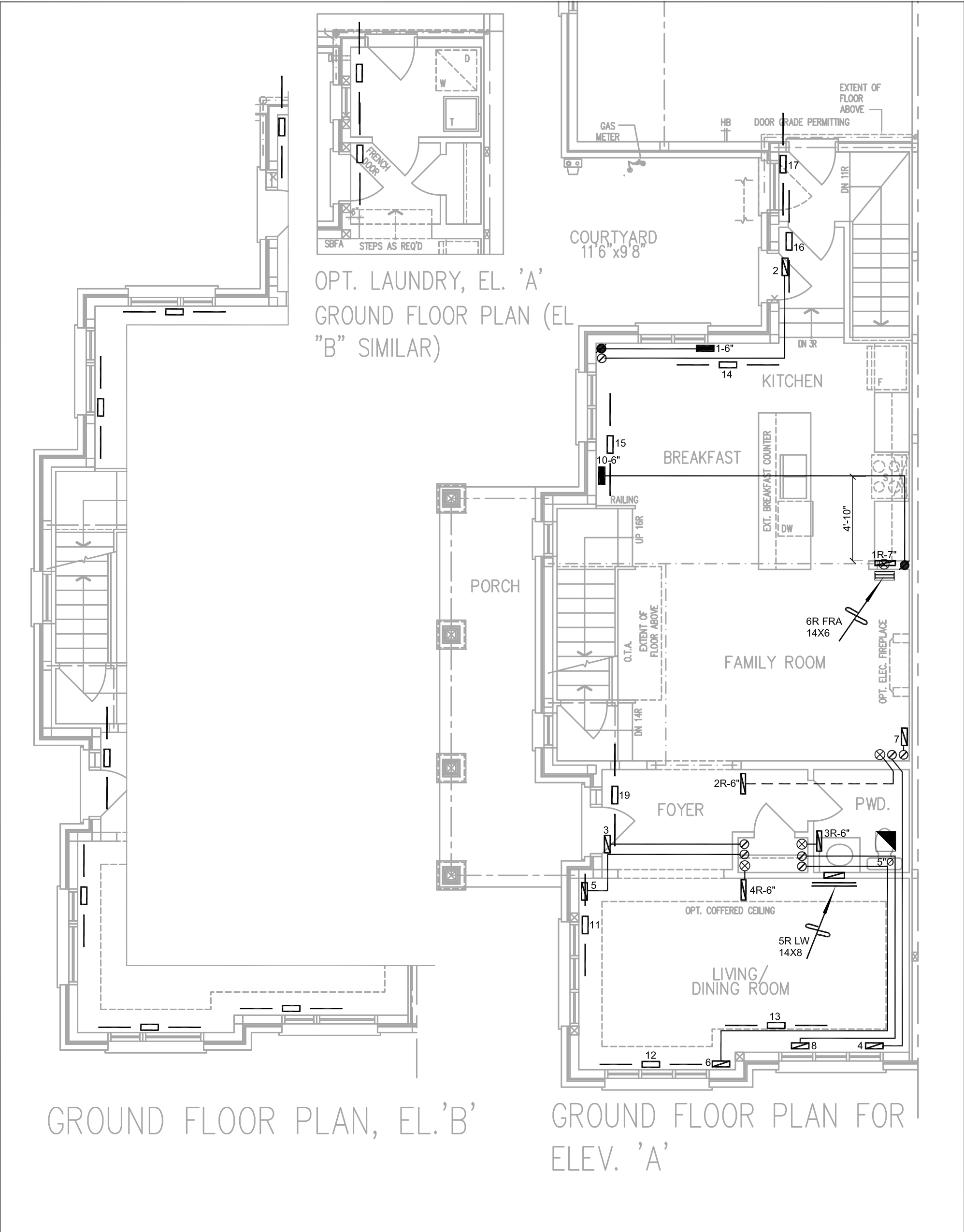
Weather Station Description				
Province:	Ontario			
Region:	Brampton			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	6.71			
Building Configuration				
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		
	30.0	30.0		
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# 104862

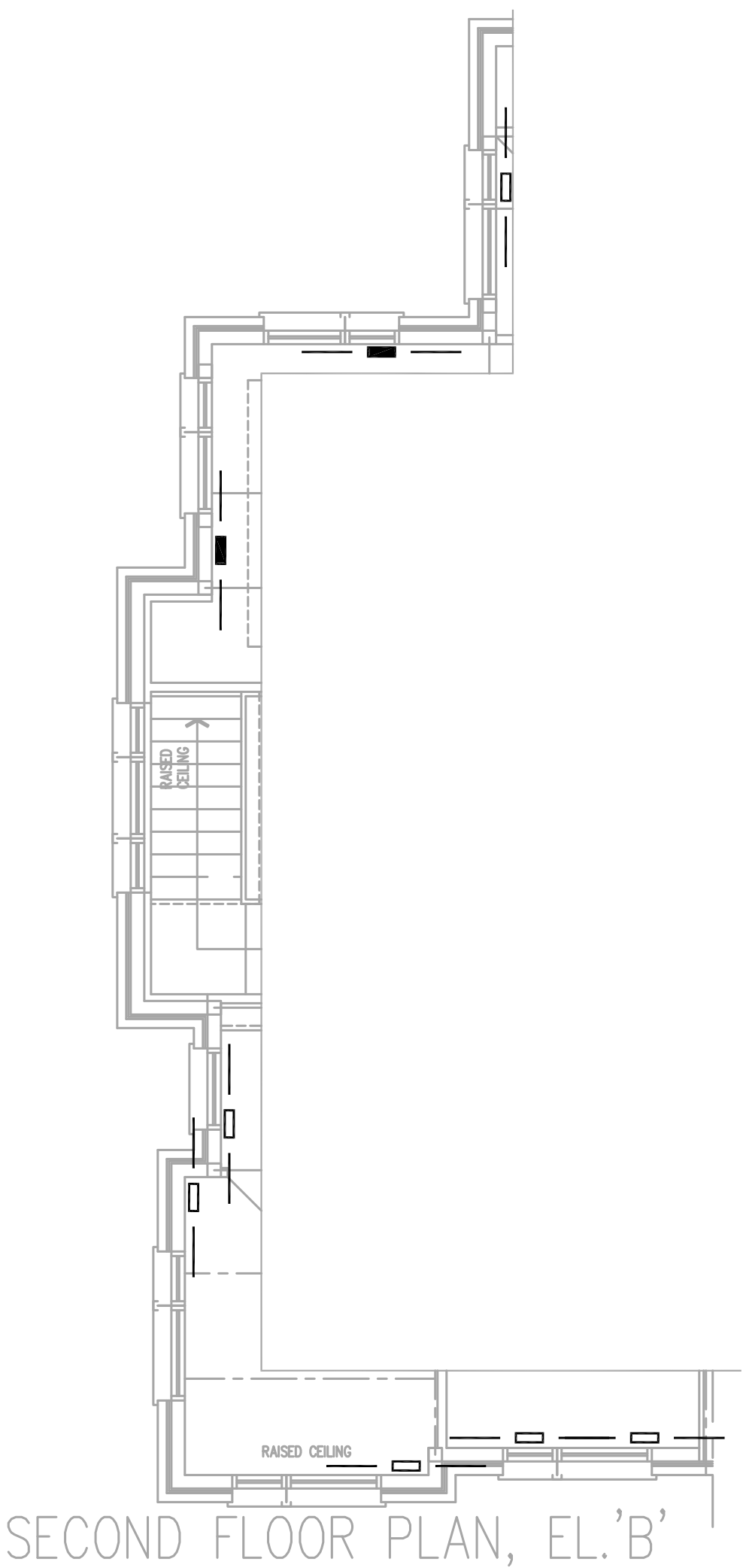
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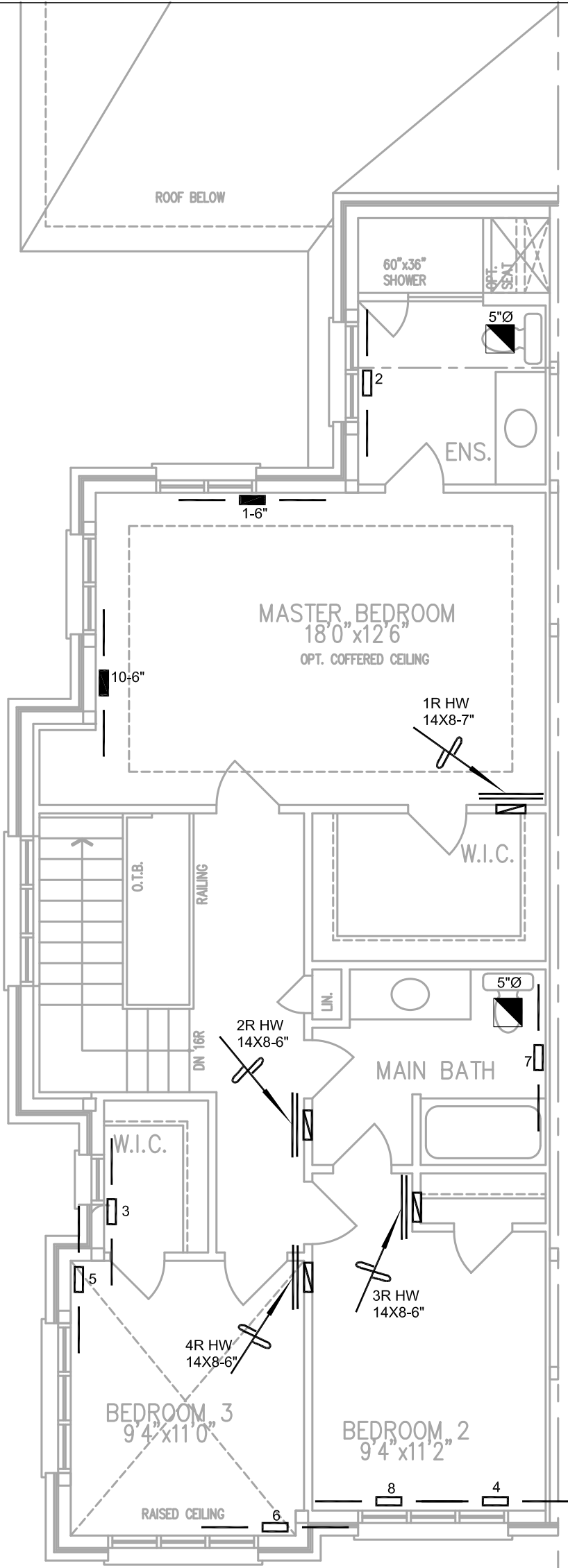
HVAC LEGEND								3.			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.			
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.			
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date	
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS			
<div>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.</div>						<div>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.</div>		<div> Michael O'Rourke BCIN # 19669 HVAC Designs Ltd.</div>		<div>PERFORMANCE</div>	
Client		<div> 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</div>				HEAT LOSS 34565 BTU/H		# OF RUNS S/A R/A FANS		Sheet Title	
Project Name						UNIT DATA		3RD FLOOR		BASEMENT HEATING LAYOUT	
						CARRIER		2ND FLOOR 9 4 2		Date	
						MODEL 59SC6A040M14--10		1ST FLOOR 8 2 2		APR/2024	
		INPUT 40 MBTU/H		BASEMENT 3 1 0		Scale					
		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.				OUTPUT 39 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		BCIN# 19669	
						COOLING 2.0 TONS				LO#	
						FAN SPEED 770 cfm @ 0.6" w.c.				104862	
2005 - OPT LAUN 1971 sqft											






HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
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Project Name								FIRST FLOOR HEATING LAYOUT		
SUMMER RIDGE ESTATES BRAMPTON, ONTARIO								Date	APR/2024	
								Scale	3/16" = 1'-0"	
2005 - OPT LAUN 1971 sqft								BCIN# 19669		
								LO#	104862	



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 BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS	
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ROYAL PINE HOMES								SECOND FLOOR HEATING LAYOUT	
Project Name								Date	
SUMMER RIDGE ESTATES BRAMPTON, ONTARIO				APR/2024					
				Scale					
				3/16" = 1'-0"					
				BCIN# 19669					
2005 - OPT LAUN 1971 sqft				LO#					
				104862					