

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 RICHMOND HILL	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: 38-9 OPT 2ND - FIN BSMT - WUB Project: CENTREFIELD (WEST GORMLEY)	
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.			
April 22, 2021 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

[illegible]

Michael O'Rourke.

SITE NAME: CENTREFIELD (WEST GORMLEY)
BUILDER: ROYAL PINE HOMES

TYPE: 38-9 OPT 2ND - FIN BSMT - WUB

GFA: 2444 LO# 90459

DATE: Apr-21

HEATING CFM 970

COOLING CFM 970

TOTAL HEAT LOSS 41,740

AIR FLOW RATE CFM 33.43

4th	3rd	2nd	1st	Bas
0	0	0	7	5
0	0	5	2	1

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

All S/A runs 5'0" unless noted otherwise on layout.

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure 0.35
for s/a & r/aplenum pressure s/a 0.18
max s/a diff press. loss 0.02
min adjusted pressure s/a 0.1659TNS6-060-14V 60
FAN SPEED
LOW 820
MEDIUM 970
HIGH 1520

**CARRIER

AFUE = 97 %

INPUT (BTU/H) = 60,000

OUTPUT (BTU/H) = 58,000

DESIGN CFM = 970
CFM @ .5" E.S.P.

TEMPERATURE RISE 55 °F

ROOM #	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	BATH	NOOK	BATH	MBR	BED-3	FAM	KT/BR	KT/BR	KT/BR	FORM	BATH-2	PWD	FOY	LAUN	BAS	BAS	B-BATH	BAS
RM LOSS MBH	1.17	1.47	0.31	1.20	1.81	1.14	0.51	2.09	0.51	1.17	1.81	2.60	1.61	1.61	1.61	1.81	0.97	0.98	4.11	1.23	3.26	3.26	0.60	3.26
CFM PER RUN HEAT	27	34	7	28	42	26	12	49	12	27	42	61	37	37	37	42	23	23	95	29	76	76	14	76
RM GAIN MBH	1.62	1.22	0.09	1.60	2.17	1.80	0.24	2.92	0.24	1.62	2.17	2.61	2.02	2.02	2.02	1.53	0.36	0.43	1.44	0.90	0.50	0.50	0.02	0.50
CFM PER RUN COOLING	54	41	3	53	72	60	8	98	8	54	72	87	68	68	68	51	12	14	48	30	17	17	1	17
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17
EQUIVALENT LENGTH	150	150	170	120	120	150	130	170	170	150	160	150	160	150	150	150	140	170	110	180	190	190	110	120
TOTAL EFFECTIVE LENGTH	193	204	221	207	162	184	163	217	208	199	208	192	203	185	172	172	176	198	144	199	243	243	131	159
ADJUSTED PRESSURE	0.09	0.08	0.08	0.08	0.11	0.09	0.11	0.07	0.08	0.09	0.08	0.08	0.08	0.09	0.09	0.1	0.1	0.09	0.11	0.09	0.07	0.07	0.13	0.11
ROUND DUCT SIZE	5	5	4	6	5	6	4	6	4	5	5	6	5	5	5	5	4	4	6	4	6	6	4	5
HEATING VELOCITY (ft/min)	198	250	80	143	308	133	138	250	138	198	308	311	272	272	272	308	264	264	484	333	388	388	161	558
COOLING VELOCITY (ft/min)	396	301	34	270	529	306	92	500	92	396	529	444	499	499	499	374	138	161	245	344	87	87	11	125
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	3X10	4X10	3X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	4X10	3X10	3X10
TRUNK	A	B	B	B	D	B	D	C	D	A	D	A	A	A	A	D	D	D	C	D	A	A	D	C

ROOM #	25
ROOM NAME	BAS
RM LOSS MBH	3.26
CFM PER RUN HEAT	76
RM GAIN MBH	0.50
CFM PER RUN COOLING	17
ADJUSTED PRESSURE	0.17
EQUIVALENT LENGTH	27
ACTUAL DUCT LGH.	100
TOTAL EFFECTIVE LENGTH	127
ADJUSTED PRESSURE	0.14
ROUND DUCT SIZE	5
HEATING VELOCITY (ft/min)	558
COOLING VELOCITY (ft/min)	125
OUTLET GRILL SIZE	3X10
TRUNK	B

TRUNK	CFM	RECT	ROUND	STATIC	TRUNK	VELOCITY	RECT	ROUND	STATIC	TRUNK	VELOCITY
TRUNK A	341	12	9.7	0.07	0	512	0	0	0.00	0	0
TRUNK B	512	16	11.3	0.07	0	576	0	0	0.00	0	0
TRUNK C	220	8	8.2	0.07	0	495	0	0	0.00	0	0
TRUNK D	459	14	10.8	0.07	0	590	0	0	0.00	0	0
TRUNK E	971	24	14.3	0.07	0	728	0	0	0.00	0	0
TRUNK F	0	0	0	0.00	0	0	0	0	0.00	0	0
RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11
AIR VOLUME	75	85	85	85	75	340	85	0	0	0	0
PLENUM PRESSURE	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.	46	40	51	58	53	20	37	1	1	1	1
EQUIVALENT LENGTH	235	195	256	213	298	140	267	1	1	1	1
TOTAL EFFECTIVE LENGTH	281	235	256	213	298	140	267	1	1	1	1
ADJUSTED PRESSURE	0.05	0.06	0.06	0.07	0.05	0.11	0.06	0.14	0.06	0.14	0.14
ROUND DUCT SIZE	6	6	6	5.8	6	8.6	6	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	8	0	0	0	0
INLET GRILL SIZE	14	14	14	14	14	30	14	0	0	0	0

TRUNK	CFM	RECT	ROUND	STATIC	TRUNK	VELOCITY	RECT	ROUND	STATIC	TRUNK	VELOCITY
TRUNK O	0	0	0	0.05	0	0	0	0	0.05	0	0
TRUNK P	0	0	0	0.05	0	0	0	0	0.05	0	0
TRUNK Q	0	0	0	0.05	0	0	0	0	0.05	0	0
TRUNK R	0	0	0	0.05	0	0	0	0	0.05	0	0
TRUNK S	0	0	0	0.05	0	0	0	0	0.05	0	0
TRUNK T	0	0	0	0.05	0	0	0	0	0.05	0	0
TRUNK U	0	0	0	0.05	0	0	0	0	0.05	0	0
TRUNK V	0	0	0	0.05	0	0	0	0	0.05	0	0
TRUNK W	0	0	0	0.05	0	0	0	0	0.05	0	0
TRUNK X	970	28	15.6	0.05	15.6	14	10	10	0.05	15.6	10
TRUNK Y	340	10.5	10.5	0.05	10.5	10	10	10	0.05	10.5	10
TRUNK Z	245	9.3	9.3	0.05	9.3	10	10	10	0.05	9.3	10
DROP	970	24	15.6	0.05	15.6	24	24	24	0.05	15.6	24

TYPE: 38-9
SITE NAME: CENTREFIELD (WEST GORMLEY)

LO # 90459
OPT 2ND - FIN BSMT - WUB

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>7</u> @ 10.6 cfm <u>74.2</u> cfm	
Other Rooms	<u>5</u> @ 10.6 cfm <u>53.0</u> cfm	
Table 9.32.3.A.	TOTAL <u>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	79.5 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: VANE 65H	Location: BSMT
<u>79.5</u> cfm	☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
79.5 CFM	X 78 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
PWD	BY INSTALLING CONTRACTOR	50	☒	3.5

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANE 65H		
<u>155</u> cfm high	<u>64</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:	April-21

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																							
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																							
LO#: 90459	Model: 38-9	Builder: ROYAL PINE HOMES	Date: 4/22/2021																																																																				
Volume Calculation		Air Change & Delta T Data																																																																					
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5.2.3.1 Heat Loss due to Air Leakage																																																																							
$HL_{airb} = LR_{airb} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$																																																																							
0.227	x	265.56	x																																																																				
		43 °C	x																																																																				
		1.2	x																																																																				
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			3120 W																																																																				
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			10647 Btu/h																																																																				
5.2.3.2 Heat Loss due to Mechanical Ventilation																																																																							
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																																							
80 CFM	x	78 °F	x																																																																				
		1.08	x																																																																				
		0.25	x																																																																				
			=																																																																				
			1670 Btu/h																																																																				
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																																							
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																																							
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*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0																																																																							

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 38-9	OPT 2ND - FIN BSMT - WUB	BUILDER: ROYAL PINE HOMES
SFQT: 2444	LO# 90459	SITE: CENTREFIELD (WEST GORMLEY)

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-6	OUTDOOR DESIGN TEMP.	88
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 (ft³):	33762.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.50	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	7.0 ft
LENGTH: 49.0 ft	WIDTH: 30.0 ft	EXPOSED PERIMETER:	141.0 ft

2012 OBC - COMPLIANCE PACKAGE		
Component	Compliance Package SB-12 PERFORMANCE	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.20
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.70
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22+1.5	18.50
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	0.96	-
HRV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	TE=94%	-

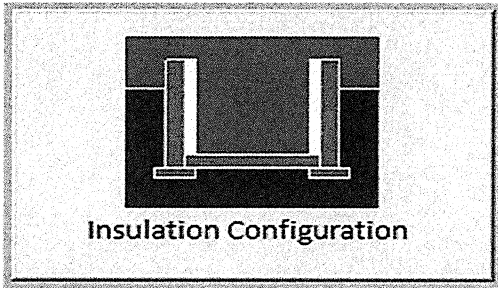
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

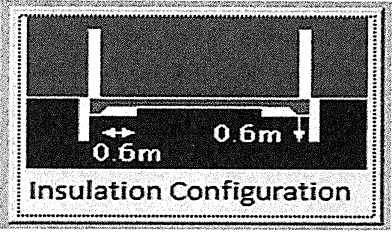
Weather Station Description		
Province:	Ontario	
Region:	Richmond Hill	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	14.9	 Insulation Configuration
Floor Width (m):	9.1	
Exposed Perimeter (m):	43.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	1.4	
Door Area (m ²):	3.7	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1364

TYPE: 38-9
LO# 90459

OPT 2ND - FIN BSMT - WUB

Residential Slab on Grade Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Richmond Hill	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Length (m):	0.6	
Width (m):	4.6	
Exposed Perimeter (m):	5.2	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		40

TYPE: 38-9
LO# 90459

OPT 2ND - FIN BSMT - WUB

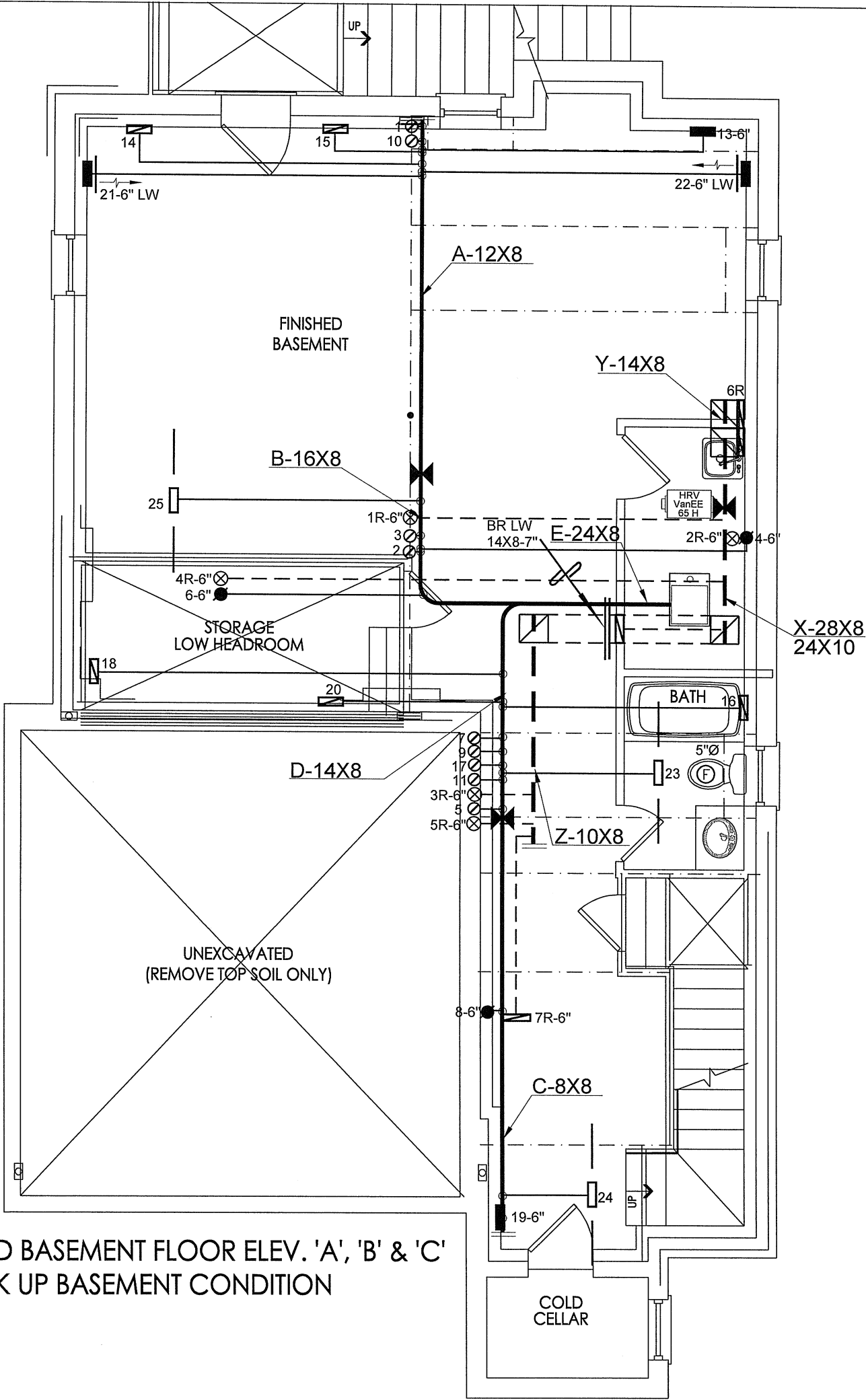
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

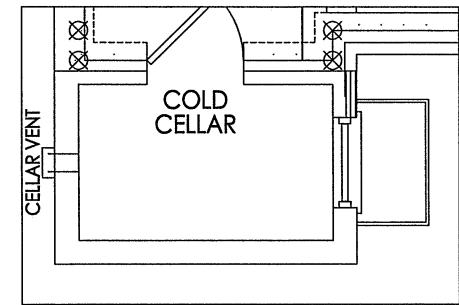
Weather Station Description				
Province:	Ontario			
Region:	Richmond Hill			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	6.74			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	956.0			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	892.5 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):	0.071			

TYPE: 38-9
LO# 90459

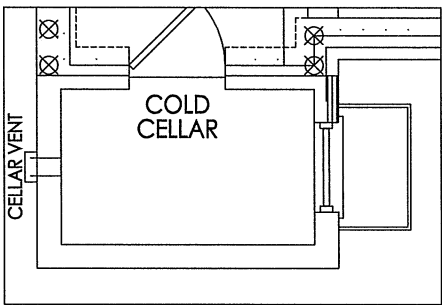
OPT 2ND - FIN BSMT - WUB



OPT FINISHED BASEMENT FLOOR ELEV. 'A', 'B' & 'C'
& OPT. WALK UP BASEMENT CONDITION



BASEMENT FLOOR ELEV. 'B'



BASEMENT FLOOR ELEV. 'C'

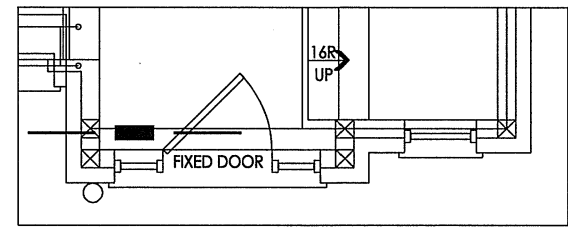
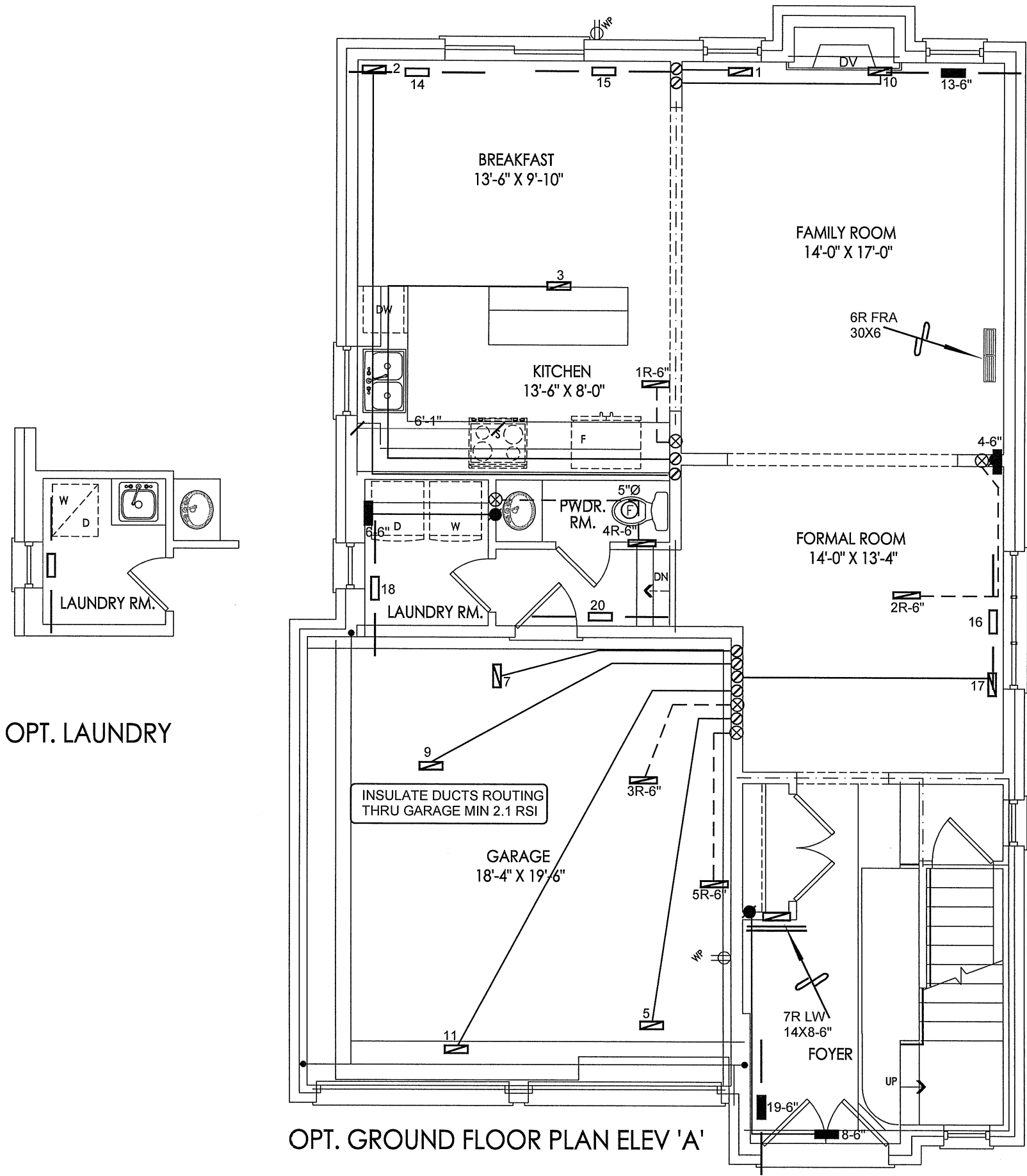
WUB
CSA-F280-12
SB-12 PERFORMANCE

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

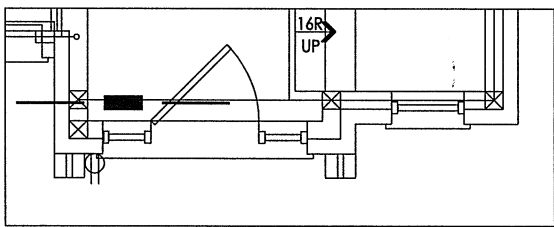
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR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

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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	HEAT LOSS 43410 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS				Sheet Title BASEMENT HEATING LAYOUT		
Project Name CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			MAKE CARRIER		3RD FLOOR						
			MODEL 59TN6A-060-14V		2ND FLOOR		12	5			3
			INPUT 60 MBTU/H		1ST FLOOR		7	2	2		
			OUTPUT 58 MBTU/H		BASEMENT		5	1	1		
FIN BSMT - WUB 38-9 - OPT 2ND 2444 sqft		COOLING 2.5 TONS		ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A				Date SEPT/2020			
		FAN SPEED 970 cfm @ 0.6" w.c.						Scale 3/16" = 1'-0"			
		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.		BCIN# 19669				LO# 90459			



GROUND FLOOR PLAN ELEV 'B'



GROUND FLOOR PLAN ELEV 'C'

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

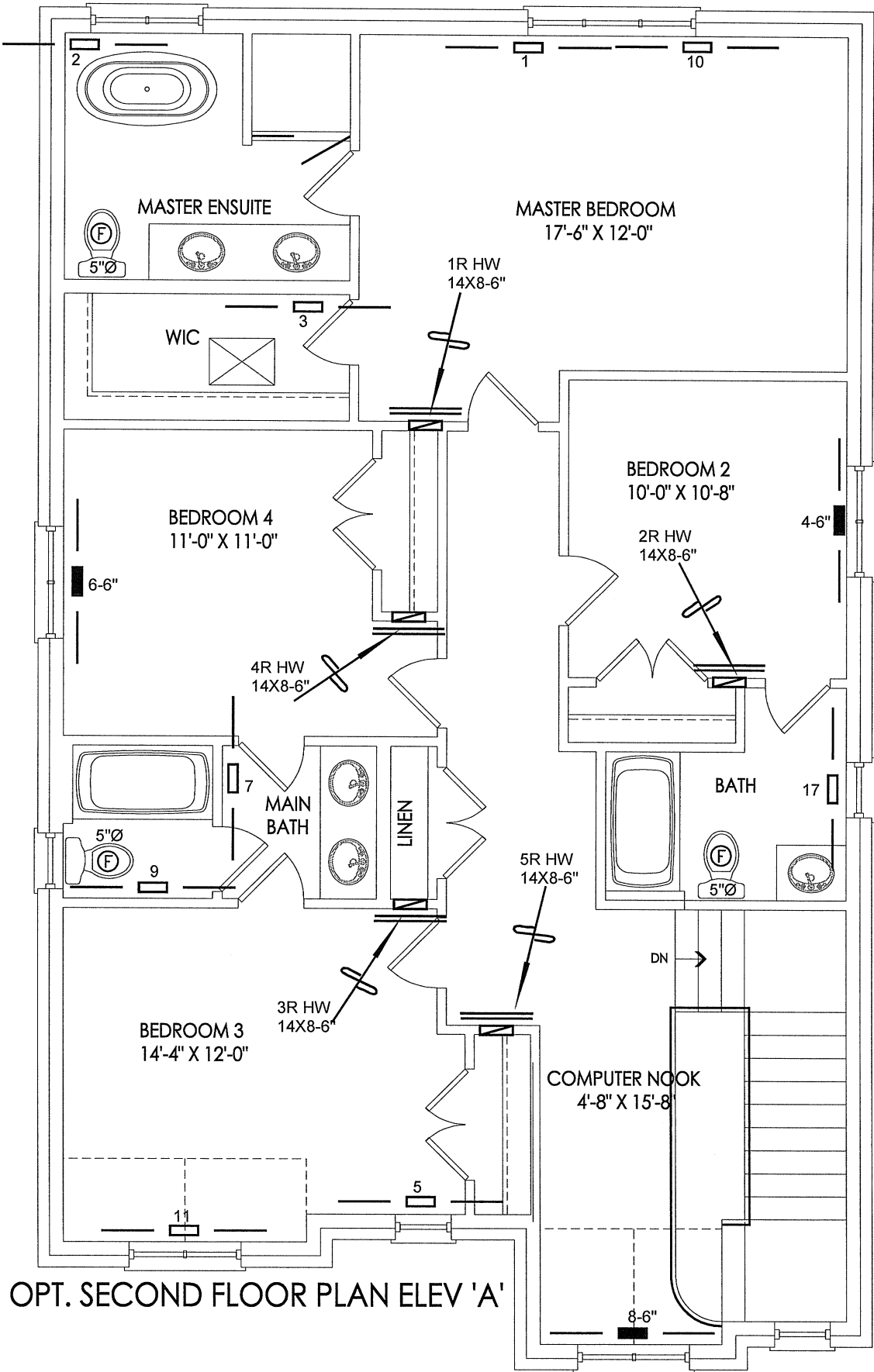
WUB
CSA-F280-12

SB-12 PERFORMANCE

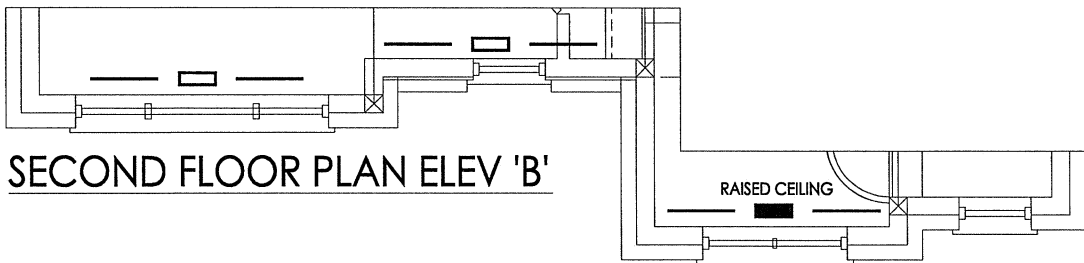
HVAC LEGEND							3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS	

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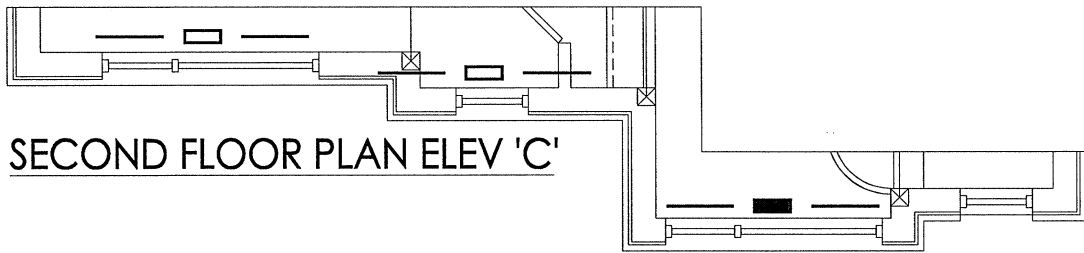
Client		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply branch outlets 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			Date	SEPT/2020
CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			Scale	3/16" = 1'-0"
FIN BSMT - WUB			BCIN# 19669	
38-9 - OPT 2ND	2444 sqft	LO#	90459	



OPT. SECOND FLOOR PLAN ELEV 'A'



SECOND FLOOR PLAN ELEV 'B'



SECOND FLOOR PLAN ELEV 'C'

WUB
CSA-F280-12

SB-12 PERFORMANCE

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

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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Client ROYAL PINE HOMES		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services	Sheet Title SECOND FLOOR HEATING LAYOUT	
Project Name CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			Date SEPT/2020	
FIN BSMT - WUB 38-9 - OPT 2ND 2444 sqft		Scale 3/16" = 1'-0"		
		BCIN# 19669		
		LO#	90459	