

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.
Municipality VAUGHAN (WOODBIDGE)			Postal code
Plan number/ other description			Lot/con.
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: 5005 - THE HIGHBOURNE OPT. 5 BED & ELEVATOR Project: PINE VALLEY & TESTON	
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.			
January 24, 2018			
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: PINE VALLEY & TESTON OPT. 5 BED & ELEVATOR TYPE: 5005 - THE HIGHBOURNE DATE: Jan-18 WINTER NATURAL AIR CHANGE RATE 0.360 HEAT LOSS AT °F. 76 CSA-F280-12
BUILDER: GOLD PARK HOMES LO# 77483 SUMMER NATURAL AIR CHANGE RATE 0.121 HEAT GAIN AT °F. 14 SB-12 PACKAGE A1

ROOM USE	EXP. WALL CLG. HT.	FACTORS	LIB	DIN	KITGT	CAB	LAUN	PWD	FOY	MUD	ENS-2	WIC-2	ENS-3	ENS-4	BED-5
GRS WALL AREA GLAZING	495	LOSS GAIN	290	LOSS GAIN	60	LOSS GAIN	374	LOSS GAIN	407	LOSS GAIN	60	LOSS GAIN	40	70	140
NORTH	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
SOUTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SKYL.T.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5	0.8	445	1986	361	266	1142	207	60	268	49	286	1276	232	306
NET EXPOSED BSMT WALL ABOVE GR.	3.6	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	440	865	266	204	262	123	102	131	62	216	277	131	256
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUB TOTAL HT LOSS	3515	2718	0.20	0.30	1753	0.20	0.30	3725	0.20	0.30	4318	0.20	0.30	1230	0.20
LEVEL FACTOR / MULTIPLIER	1087	216	640	139	9	1234	296	564	564	564	564	564	564	564	564
AIR CHANGE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DUCT LOSS	0	0	0	0	0	0	0	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 APPLANCES/LIGHTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL HT LOSS BTU/H	4701	6270	2768	2460	519	5672	7008	7924	6209	639	639	639	639	639	639
TOTAL HT GAIN x 1.3 BTU/H															

ROOM USE	EXP. WALL CLG. HT.	FACTORS	LIB	DIN	KITGT	CAB	LAUN	PWD	FOY	MUD	ENS-2	WIC-2	ENS-3	ENS-4	BED-5
GRS WALL AREA GLAZING	341	LOSS GAIN	352	LOSS GAIN	957	495	0	55	385	216	385	216	385	216	385
NORTH	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
SOUTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SKYL.T.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5	0.8	285	1272	231	318	1419	258	776	3463	629	369	1647	299	0
NET EXPOSED BSMT WALL ABOVE GR.	3.6	0.7	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
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUB TOTAL HT LOSS	2464	2574	0.30	0.44	1114	0.30	0.44	4784	0.30	0.44	4784	0.30	0.44	1114	0.30
LEVEL FACTOR / MULTIPLIER	1088	205	947	89	332	2169	381	7	1378	610	1378	610	1378	610	1378
AIR CHANGE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DUCT LOSS	0	0	0	0	0	0	0	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 APPLANCES/LIGHTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL HT LOSS BTU/H	3552	4443	3089	2394	10546	10221	7544	7924	6209	639	639	639	639	639	639
TOTAL HT GAIN x 1.3 BTU/H															

TOTAL HEAT GAIN BTU/H: 60760 TONS: 5.06 LOSS DUE TO VENTILATION LOAD BTU/H: 3181 STRUCTURAL HEAT LOSS: 88958 TOTAL COMBINED HEAT LOSS BTU/H: 92038

Michael O'Rourke

TYPE: 5005 - THE HIGBOURNE
SITE NAME: PINE VALLEY & TESTON

LO # 77483
OPT. 5 BED & ELEVATOR

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	2 @ 21.2 cfm	42.4 cfm
Other Bedrooms	4 @ 10.6 cfm	42.4 cfm
Kitchen & Bathrooms	7 @ 10.6 cfm	74.2 cfm
Other Rooms	8 @ 10.6 cfm	84.8 cfm
Table 9.32.3.A.	TOTAL	243.8 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	243.8	cfm
Less Principal Ventil. Capacity	155	cfm
Required Supplemental Capacity	88.8	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE 65H	Location: BSMT
155.0 cfm	3.0 sones
☒ HVI Approved	

PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
155.0 CFM	X 76 F	X 1.08	X 0.25

SUPPLEMENTAL FANS		NUTONE	
Location	Model	cfm	HVI Sones
ENS	QTXEN050C	50	☒ 0.3
ENS-2	QTXEN050C	50	☒ 0.3
ENS-4	QTXEN050C	50	☒ 0.3
PWD	QTXEN050C	50	☒ 0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE 65H		
155 cfm high	64 cfm low	
75 % Sensible Efficiency	☒ HVI Approved	
@ 32 deg F (0 deg C)		

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

BUILDER: GOLD PARK 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:	January-18

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																							
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																							
LO#: 77483	Model: 5005 - THE HIGHBORNE	Builder: GOLD PARK HOMES	Date: 01/24/2018																																																																				
Volume Calculation		Air Change & Delta T Data																																																																					
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Level	Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)																																																																				
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5.2.3.1 Heat Loss due to Air Leakage																																																																							
$HL_{air-b} = LR_{air-b} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$																																																																							
0.350	x	530.80	x	42 °C	x	1.2	=	9415 W																																																															
								=	32123 Btu/h																																																														
5.2.3.2 Heat Loss due to Mechanical Ventilation																																																																							
$HL_{vair-b} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																																							
155 CFM	x	76 °F	x	1.08	x	0.25	=	3181 Btu/h																																																															
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																																							
$HL_{air-r} = Level Factor \times HL_{air-bv} \times \{(HL_{aqcr} + HL_{bgcr}) \div (HL_{aqlevel} + HL_{bglevel})\}$																																																																							
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*Hlaivr = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system Hlaivr = 0																																																																							

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 5005 - THE HIGHBOURNE	OPT. 5 BED & ELEVATOR	BUILDER: GOLD PARK HOMES
SFQT: 4483	LO# 77483	SITE: PINE VALLEY & TESTON

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-4	OUTDOOR DESIGN TEMP.	88
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	74

BUILDING DATA

ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.57	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	67482.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	7.0 ft
LENGTH: 77.0 ft	WIDTH: 42.0 ft	EXPOSED PERIMETER:	238.0 ft

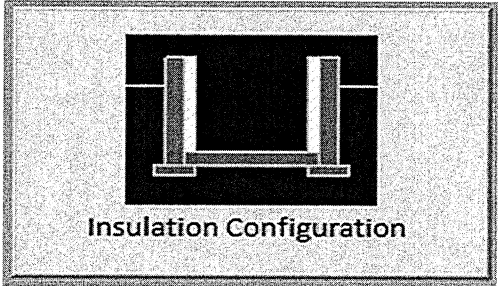
2012 OBC - COMPLIANCE PACKAGE		
Component	Compliance Package A1	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 ci	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	0.28	-
Skylights Maximum U-Value	0.49	-
Space Heating Equipment Minimum AFUE	0.96	-
HRV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.8	-

INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	23.5	 Insulation Configuration
Floor Width (m):	12.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	1.9	
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):		2472

TYPE: 5005 - THE HIGHBOURNE
LO# 77483

OPT. 5 BED & ELEVATOR

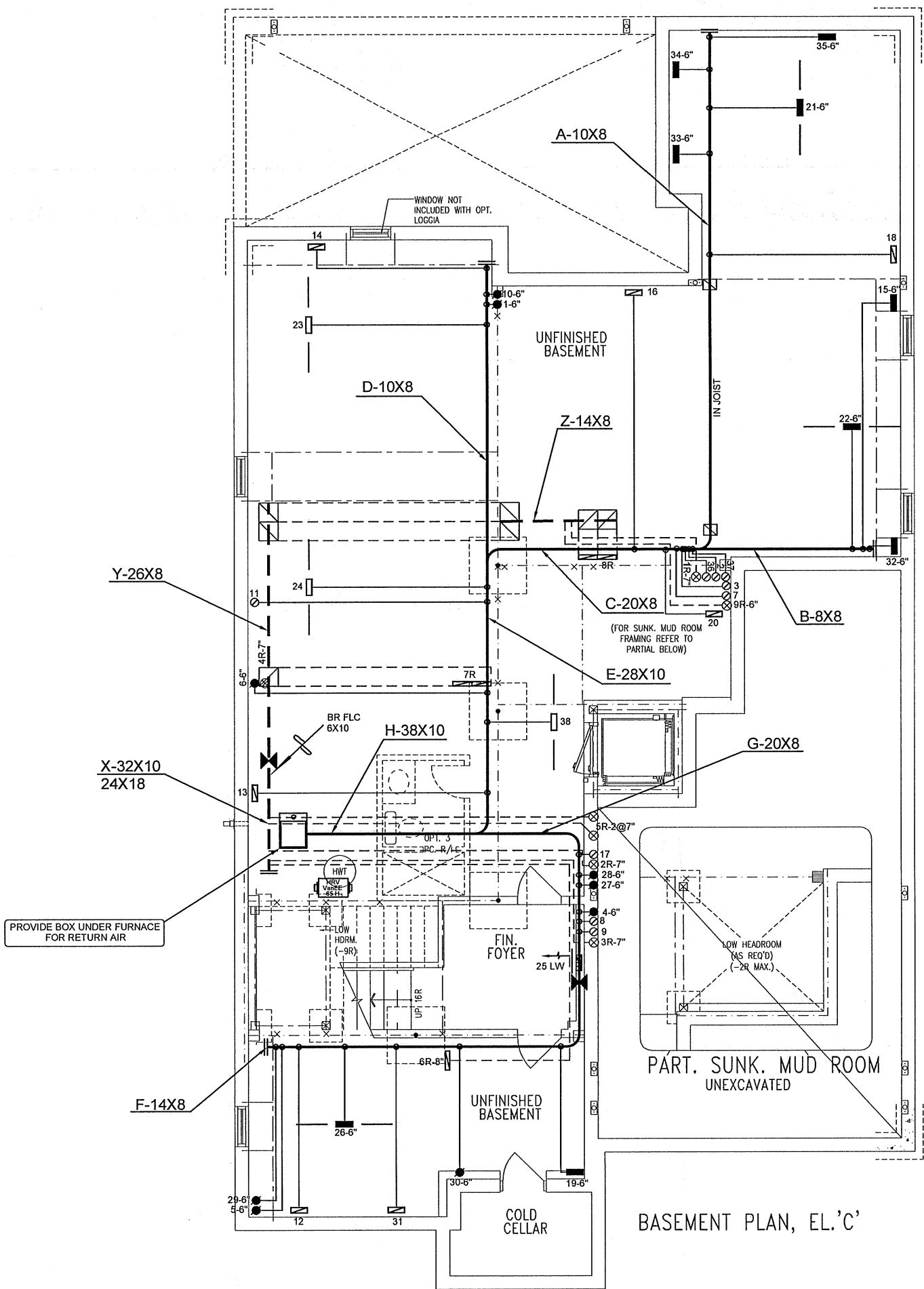
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

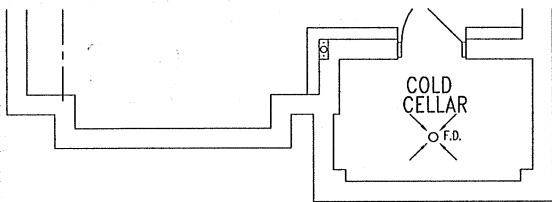
Weather Station Description				
Province:	Ontario			
Region:	Vaughan (Woodbridge)			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	7.32			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1910.9			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	2547.3 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	73.2	73.2		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.350			
Cooling Air Leakage Rate (ACH/H):	0.121			

TYPE: 5005 - THE HIGHBOURNE
LO# 77483

OPT. 5 BED & ELEVATOR



BASEMENT PLAN, EL.'C'



BASEMENT PLAN, EL.'A'

I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 32.5 OF THE BUILDING CODE.

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

CSA-F280-12
PACKAGE A1

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

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Client
GOLDPARK HOMES

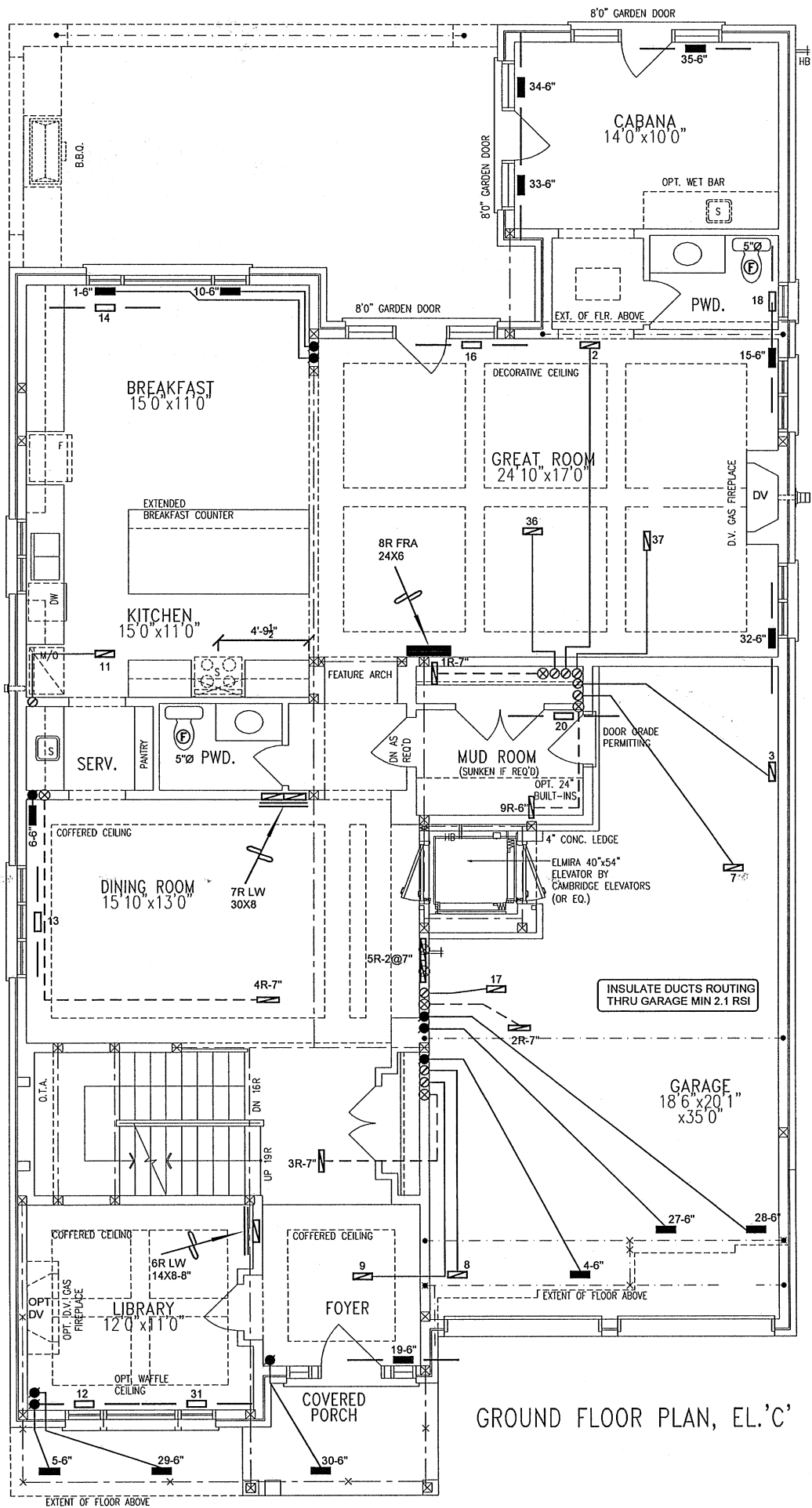
Project Name
**PINE VALLEY & TESTON
VAUGHAN, ONTARIO
OPT. 5 BED & ELEVATOR
THE HIGHBOURNE
5005 4483 sqft**

375 Finley Ave. Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
Email: info@hvacdsgns.ca
Web: www.hvacdsgns.ca
Specializing in Residential Mechanical Design Services

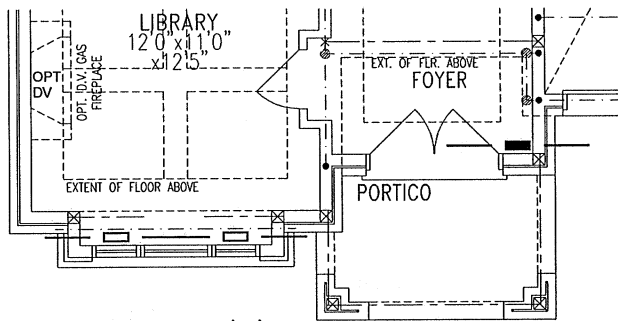
Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.

HEAT LOSS 92038 BTU/H UNIT DATA	# OF RUNS S/A R/A FANS
MAKE LENNOX	3RD FLOOR
MODEL EL296UH110XE60C	2ND FLOOR 18 6 7
INPUT 110 MBTU/H	1ST FLOOR 13 3 3
OUTPUT 106 MBTU/H	BASEMENT 7 1 0
COOLING 5.0 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
FAN SPEED 1955 cfm @ 0.6" w.c.	

Sheet Title	BASEMENT HEATING LAYOUT
Date	JAN/2018
Scale	1/8" = 1'-0"
BCIN#	19669
LO#	77483



GROUND FLOOR PLAN, EL.'C'



GROUND FLOOR PLAN, EL.'A'

I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C.3.2.3 OF THE BUILDING CODE.

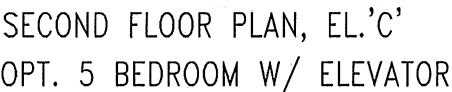
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
PACKAGE A1

HVAC LEGEND							3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	FLOOR 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 GOLDPARK HOMES		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdsgns.ca Web: www.hvacdsgns.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 FIRST FLOOR HEATING LAYOUT	
Project Name PINE VALLEY & TESTON VAUGHAN, ONTARIO OPT. 5 BED & ELEVATOR THE HIGHBOURNE 5005	4483 sqft			Date JAN/2018 Scale 1/8" = 1'-0" BCIN# 19669	LO# 77483



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

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