

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 VAUGHAN (WOODBIDGE)	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: 5013 - ELEV C - RIVERVIEW OPT 5 BED - OPT 5 BED - WO/LOFT - WOB Project: PINE VALLEY PH 2		
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.				
May 5, 2022		 Signature of Designer		
Date				

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 PH 2										DATE May-22										CSA-F280-12									
BUILDING: GOLD PARK HOMES										LO# 95711										SB-12 PACKAGE A1									
TYPE: 5013 - ELEV C - RIVERVIEW										GFA: 4502										HEAT LOSS AT °F. 76									
OPT 5 BED - OPT 5 BED - W/O/LOFT - WOB										WINTER NATURAL AIR CHANGE RATE 0.407										SUMMER NATURAL AIR CHANGE RATE 0.137									
ROOM USE										ENS-3										ENS-2									
EXP. WALL										ENS-3										ENS-2									
CLG. HT.										ENS-3										ENS-2									
FACTORS										ENS-3										ENS-2									
GRS.WALL AREA										ENS-3										ENS-2									
GLAZING										ENS-3										ENS-2									
NORTH										ENS-3										ENS-2									
EAST										ENS-3										ENS-2									
SOUTH										ENS-3										ENS-2									
WEST										ENS-3										ENS-2									
SKYL.T.										ENS-3										ENS-2									
DOORS										ENS-3										ENS-2									
NET EXPOSED WALL										ENS-3										ENS-2									
NET EXPOSED BSMT WALL ABOVE GR										ENS-3										ENS-2									
EXPOSED CLG										ENS-3										ENS-2									
NO ATTIC EXPOSED CLG										ENS-3										ENS-2									
EXPOSED FLOOR										ENS-3										ENS-2									
BASEMENT/CRAWL HEAT LOSS										ENS-3										ENS-2									
SLAB ON GRADE HEAT LOSS										ENS-3										ENS-2									
SUBTOTAL HT LOSS										ENS-3										ENS-2									
SUB TOTAL HT GAIN										ENS-3										ENS-2									
LEVEL FACTOR / MULTIPLIER										ENS-3										ENS-2									
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EXP. WALL	CLG. HT.	FACTORS	GRS.WALL AREA	GLAZING	NORTH	EAST	SOUTH	WEST	SKYL.T.	DOORS	NET EXPOSED WALL	NET EXPOSED BSMT WALL ABOVE GR	EXPOSED CLG	EXPOSED FLOOR	BASEMENT/CRAWL HEAT LOSS	SLAB ON GRADE HEAT LOSS	SUBTOTAL HT LOSS	SUB TOTAL HT GAIN	LEVEL FACTOR / MULTIPLIER	AIR CHANGE HEAT LOSS	AIR CHANGE HEAT GAIN	DUCT LOSS	DUCT GAIN	HEAT GAIN PEOPLE	HEAT GAIN APPLIANCES/LIGHTS	TOTAL HT LOSS BTU/H	TOTAL HT GAIN x 1.3 BTU/H		
EXP. WALL	CLG. HT.	FACTORS	GRS.WALL AREA	GLAZING	NORTH	EAST	SOUTH	WEST	SKYL.T.	DOORS	NET EXPOSED WALL	NET EXPOSED BSMT WALL ABOVE GR	EXPOSED CLG	EXPOSED FLOOR	BASEMENT/CRAWL HEAT LOSS	SLAB ON GRADE HEAT LOSS	SUBTOTAL HT LOSS	SUB TOTAL HT GAIN	LEVEL FACTOR / MULTIPLIER	AIR CHANGE HEAT LOSS	AIR CHANGE HEAT GAIN	DUCT LOSS	DUCT GAIN	HEAT GAIN PEOPLE	HEAT GAIN APPLIANCES/LIGHTS	TOTAL HT LOSS BTU/H	TOTAL HT GAIN x 1.3 BTU/H		
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EXP. WALL	CLG. HT.	FACTORS	GRS.WALL AREA	GLAZING	NORTH	EAST	SOUTH	WEST	SKYL.T.	DOORS	NET EXPOSED WALL	NET EXPOSED BSMT WALL ABOVE GR	EXPOSED CLG	EXPOSED FLOOR	BASEMENT/CRAWL HEAT LOSS	SLAB ON GRADE HEAT LOSS	SUBTOTAL HT LOSS	SUB TOTAL HT GAIN	LEVEL FACTOR / MULTIPLIER	AIR CHANGE HEAT LOSS	AIR CHANGE HEAT GAIN	DUCT LOSS	DUCT GAIN	HEAT GAIN PEOPLE	HEAT GAIN APPLIANCES/LIGHTS	TOTAL HT LOSS BTU/H	TOTAL HT GAIN x 1.3 BTU/H		
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EXP. WALL	CLG. HT.	FACTORS	GRS.WALL AREA	GLAZING	NORTH	EAST	SOUTH	WEST	SKYL.T.	DOORS	NET EXPOSED WALL	NET EXPOSED BSMT WALL ABOVE GR	EXPOSED CLG	EXPOSED FLOOR	BASEMENT/CRAWL HEAT LOSS	SLAB ON GRADE HEAT													

SITE NAME: PINE VALLEY PH 2
BUILDER: GOLD PARK HOMESTYPE: 5013-ELEV-C-RIVERVIEW DATE: May-22
OPT 5 BED - OPT 5 BED - WO/LOFT - WOB

GFA: 4502 LO# 96711 FURNACE 1

HEATING CFM 1170 COOLING CFM 1170
TOTAL HEAT LOSS 61,760 TOTAL HEAT GAIN 35,924
AIR FLOW RATE CFM 18.94 AIR FLOW RATE CFM 32.57FURNACE HEAT LOSS +
HRV / ERV HEAT LOSS
= 64838 BTUH\$LENNOX
ML198UH090XE36C 90
FAN SPEED LOW 0
MEDIUM 0
HIGH 1170
AFUE = 96 %
INPUT (BTU/H) = 88,000
OUTPUT (BTU/H) = 85,600

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	0	12	6
R/A	0	0	0	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 #	ROOM NAME	19	20	21	22	23	24
	ROOM NAME	FOY	GRT	GRT	GRT	GRT	DIN
	RM LOSS MBH.	3.26	2.51	2.51	2.51	2.51	3.19
	CFM PER RUN HEAT	62	48	48	48	48	60
	RM GAIN MBH.	1.86	3.22	3.22	3.22	3.22	2.36
	CFM PER RUN COOLING	61	105	105	105	105	77
	ADJUSTED PRESSURE	0.17	0.16	0.16	0.16	0.16	0.17
	ACTUAL DUCT LGH.	47	56	49	45	38	27
	EQUIVALENT LENGTH	100	110	150	130	150	140
	TOTAL EFFECTIVE LENGTH	147	166	199	175	188	167
	ADJUSTED PRESSURE	0.12	0.1	0.08	0.09	0.09	0.1
	ROUND DUCT SIZE	5	6	6	6	6	5
	HEATING VELOCITY (ft/min)	455	245	245	245	245	441
	COOLING VELOCITY (ft/min)	448	535	535	535	535	565
	OUTLET GRILL SIZE	3X10	4X10	4X10	4X10	4X10	3X10
	TRUNK	F	D	D	D	D	F

SITE NAME: PINE VALLEY PH 2
BUILDER: GOLD PARK HOMES

OPT 5 BED - OPT 5 BED - WO/LOFT - WOB

TYPE: 5013 - ELEV C - RIVERVIEW DATE: May-22

GFA: 4502 LO# 98711

FURNACE 2

HEATING CFM 980 COOLING CFM 980
TOTAL HEAT LOSS 28 880 TOTAL HEAT GAIN 31 505
AIR FLOW RATE CFM 33.93 AIR FLOW RATE CFM 31.11furnace pressure 0.6
furnace filter 0.05
alc coil pressure 0.2
available pressure for s/a & r/a 0.35FURNACE HEAT LOSS +
HRV / ERV HEAT LOSS
= 31958 BTUH

ML196UH045XE38B 45

FAN SPEED

LOW 620

MEDIUM 685

HIGH 980

MEDIUM HIGH 1110

HIGH 0

DESIGN CFM = 980

CFM @ .5" E.S.P.

AFUE = 96 %

INPUT (BTUH) = 44,000

OUTPUT (BTUH) = 42,800

TEMPERATURE RISE 40 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	20	0	0
R/A	0	0	5	0	0

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
ROOM NAME	PBR	ENS	ENS	ENS	WIC	ENS-5	BED-2	BED-2	BED-3	BED-3	BED-4	BED-4	BED-4	ENS-2	ENS-3	BED-5	LND	
RM LOSS MBH	1.86	1.86	1.02	1.02	0.91	0.84	1.48	1.48	1.58	1.58	1.87	1.87	1.87	1.95	1.94	0.81	0.32	
CFM PER RUN HEAT	63	35	35	35	31	29	50	50	54	54	64	64	64	66	66	28	11	
RM GAIN MBH	2.46	2.46	0.68	0.68	0.39	0.40	1.27	1.27	1.92	1.92	2.64	2.64	2.64	0.66	1.38	1.85	1.28	
CFM PER RUN COOLING	76	76	21	21	12	12	40	40	60	60	82	82	82	21	43	58	40	
ADJUSTED PRESSURE	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	0.17	0.17	0.17	0.17	
ACTUAL DUCT LGH	52	63	48	16	51	19	72	77	78	69	66	73	84	69	64	75	60	
EQUIVALENT LENGTH	190	180	255	130	245	120	170	180	140	190	180	190	170	190	180	160	130	
TOTAL EFFECTIVE LENGTH	242	243	303	146	296	139	242	257	218	259	249	256	243	274	244	235	190	
ADJUSTED PRESSURE	0.07	0.07	0.06	0.12	0.06	0.12	0.07	0.07	0.08	0.07	0.07	0.06	0.07	0.06	0.07	0.07	0.09	
ROUND DUCT SIZE	6	6	4	4	4	4	5	5	6	6	6	6	6	6	6	5	4	
HEATING VELOCITY (ft/min)	321	321	402	402	356	333	367	367	275	275	326	326	326	337	337	206	126	
COOLING VELOCITY (ft/min)	388	388	241	241	138	138	294	294	306	306	418	418	418	107	219	426	459	
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	3X10	3X10	
TRUNK	C	C	C	C	C	C	B	B	A	A	A	A	A	B	A	A	B	

RUN #	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
ROOM NAME	BED-3	BED-4	ENS-4	ENS-4	ENS-4	ENS-4	ENS-4	ENS-4	ENS-4	ENS-4	ENS-4	ENS-4	ENS-4	ENS-4	ENS-4	ENS-4	ENS-4	ENS-4	ENS-4
RM LOSS MBH	1.58	1.87	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
CFM PER RUN HEAT	54	64	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39
RM GAIN MBH	1.92	2.64	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
CFM PER RUN COOLING	60	82	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
ADJUSTED PRESSURE	0.17	0.16	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	67	71	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
EQUIVALENT LENGTH	190	170	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
TOTAL EFFECTIVE LENGTH	257	241	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270
ADJUSTED PRESSURE	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
ROUND DUCT SIZE	6	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
HEATING VELOCITY (ft/min)	275	326	286	286	286	286	286	286	286	286	286	286	286	286	286	286	286	286	286
COOLING VELOCITY (ft/min)	306	418	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

SUPPLY AIR TRUNK SIZE	TRUNK CFM	STAT. PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STAT. PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STAT. PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	497	0.06	11.6	18	8	497	0.00	0	0	8	0	0.05	0	0	8
TRUNK B	728	0.06	13.4	22	8	728	0.00	0	0	8	0	0.05	0	0	8
TRUNK C	984	0.06	15	26	8	984	0.00	0	0	8	0	0.05	0	0	8
TRUNK D	0	0.00	0	0	0	0	0.00	0	0	0	0	0.05	0	0	0
TRUNK E	0	0.00	0	0	0	0	0.00	0	0	0	0	0.05	0	0	0
TRUNK F	0	0.00	0	0	0	0	0.00	0	0	0	0	0.05	0	0	0

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
AIR VOLUME	155	260	115	115	335	0	0	0	0	0	0	0	0	0	0	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	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH	62	78	79	75	69	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	170	235	195	245	230	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LENGTH	232	313	274	320	299	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
ROUND DUCT SIZE	7.5	9.5	7	7	10.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	30	14	14	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: 5013 - ELEV C - RIVERVIEW
SITE NAME: PINE VALLEY PH 2

LO # 96711
OPT 5 BED - OPT 5 BED - WO/LOFT - WOB

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>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Kitchen & Bathrooms	<u>7</u> @ 10.6 cfm	<u>74.2</u> cfm
Other Rooms	<u>4</u> @ 10.6 cfm	<u>42.4</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	95.4	cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>201.4</u>	cfm
Less Principal Ventil. Capacity	<u>150</u>	cfm
Required Supplemental Capacity	<u>51.4</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE V150H	Location: BSMT
<u>150.0</u> cfm	☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	$\Delta T \cdot F$	FACTOR	% LOSS
150.0 CFM	X 76 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
ENS-3	BY INSTALLING CONTRACTOR	50	☒	3.5
ENS-4	BY INSTALLING CONTRACTOR	50	☒	3.5

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE V150H	INSTALL 2 HRV / ERV's	
<u>150</u> cfm high	<u>35</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: 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:	May-22

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																									
Formula Sheet (For Air Leakage / Ventilation Calculation)																																									
LO#: 96711		Model: 5013 - ELEV C - RIVERVIEW		Builder: GOLD PARK HOMES		Date: 2022-05-05																																			
Volume Calculation																																									
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> </thead> <tbody> <tr> <td>Bsmt</td> <td>2108</td> <td>10</td> <td>21080</td> </tr> <tr> <td>First</td> <td>2108</td> <td>11</td> <td>23188</td> </tr> <tr> <td>Second</td> <td>2793</td> <td>9</td> <td>25137</td> </tr> <tr> <td>Third</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Fourth</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>69,405.0 ft³</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>1965.3 m³</td> </tr> </tbody> </table>										Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	2108	10	21080	First	2108	11	23188	Second	2793	9	25137	Third	0	0	0	Fourth	0	9	0	Total:			69,405.0 ft³	Total:			1965.3 m³
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																						
Bsmt	2108	10	21080																																						
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Second	2793	9	25137																																						
Third	0	0	0																																						
Fourth	0	9	0																																						
Total:			69,405.0 ft³																																						
Total:			1965.3 m³																																						
Air Change & Delta T Data																																									
				WINTER NATURAL AIR CHANGE RATE		0.407																																			
				SUMMER NATURAL AIR CHANGE RATE		0.137																																			
Design Temperature Difference																																									
				Tin °C		Tout °C		ΔT °C																																	
				22		-20		42																																	
				24		31		7																																	
				Winter DTDh				ΔT °F																																	
								76																																	
				Summer DTDc				13																																	
6.2.6 Sensible Gain due to Air Leakage																																									
$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																									
0.407		x		545.93		x		7 °C		x		1.2		=		636 W																									
										=		2170 Btu/h																													
6.2.7 Sensible heat Gain due to Ventilation																																									
$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																									
300 CFM		x		13 °F		x		1.08		x		0.25		=		1,037 Btu/h																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																									
$HL_{airrr} = Level Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																									
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*HLairbv = Air leakage heat loss + ventilation heat loss **For a balanced or supply only ventilation system HLairve = 0																																									

Michael O'Rourke
BCIN# 19669

Michael O'Rourke

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 5013 - ELEV C - RIVERVIEW	OPT 5 BED - OPT 5 BED - WO/LOFT	BUILDER: GOLD PARK HOMES
SFQT: 4502	LO# 96711	SITE: PINE VALLEY PH 2

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-4	OUTDOOR DESIGN TEMP.	88
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75
		WINDOW SHGC	0.50

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):	69405.0	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: 70.0 ft	WIDTH: 43.0 ft	EXPOSED PERIMETER:	173.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	53.0 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	-

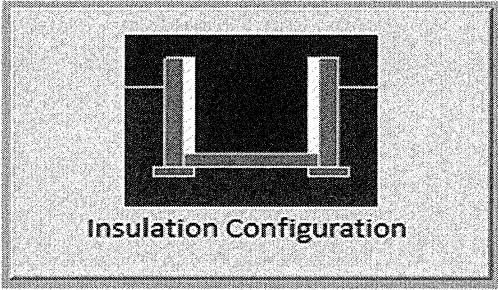
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

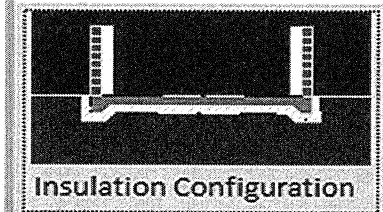
Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	 Insulation Configuration
Floor Width (m):	13.1	
Exposed Perimeter (m):	52.7	
Wall Height (m):	3.0	
Depth Below Grade (m):	1.84	
Window Area (m ²):	0.7	
Door Area (m ²):	0.0	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		902

TYPE: 5013 - ELEV C - RIVERVIEW
LO# 96711

OPT 5 BED - OPT 5 BED - WO/LOFT - WOB

Residential Slab on Grade 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		
Length (m):	1.5	 Insulation Configuration
Width (m):	13.1	
Exposed Perimeter (m):	16.2	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		224

TYPE: 5013 - ELEV C - RIVERVIEW
LO# 96711

OPT 5 BED - OPT 5 BED - WO/LOFT - WOB

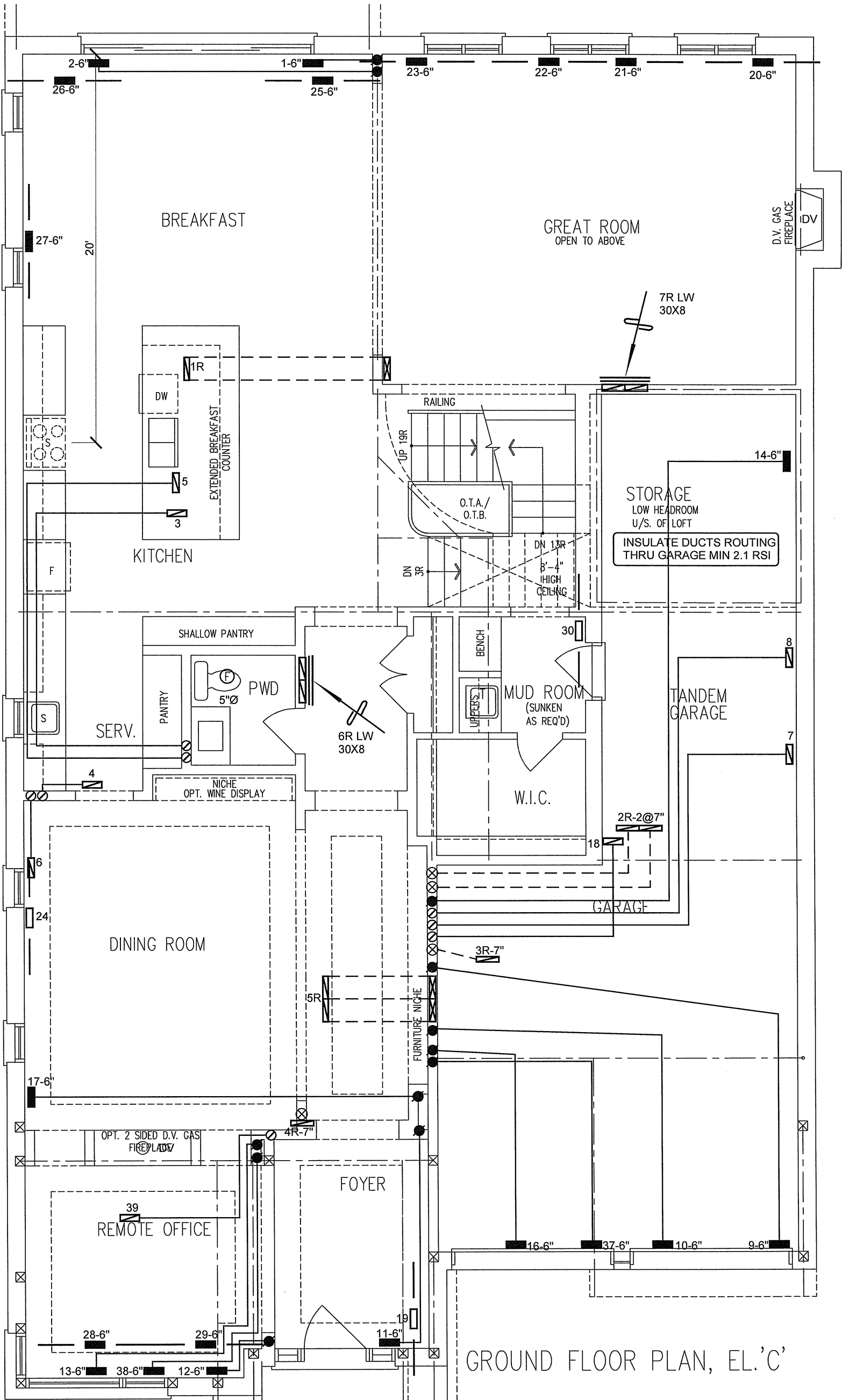
Air Infiltration Residential Load Calculator

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):	9.14			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1965.3			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	2619.8 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	70.8	70.8		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.407			
Cooling Air Leakage Rate (ACH/H):	0.137			

TYPE: 5013 - ELEV C - RIVERVIEW
LO# 96711

OPT 5 BED - OPT 5 BED - WO/LOFT - W



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.

WOB
CSA-F280-12
PACKAGE A1

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

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Client
GOLD PARK HOMES

Project Name
**PINE VALLEY PH 2
VAUGHAN, ONTARIO
WO/LOFT - WOB
RIVERVIEW - OPT 5 BED
5013 - ELEV C 4502 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.

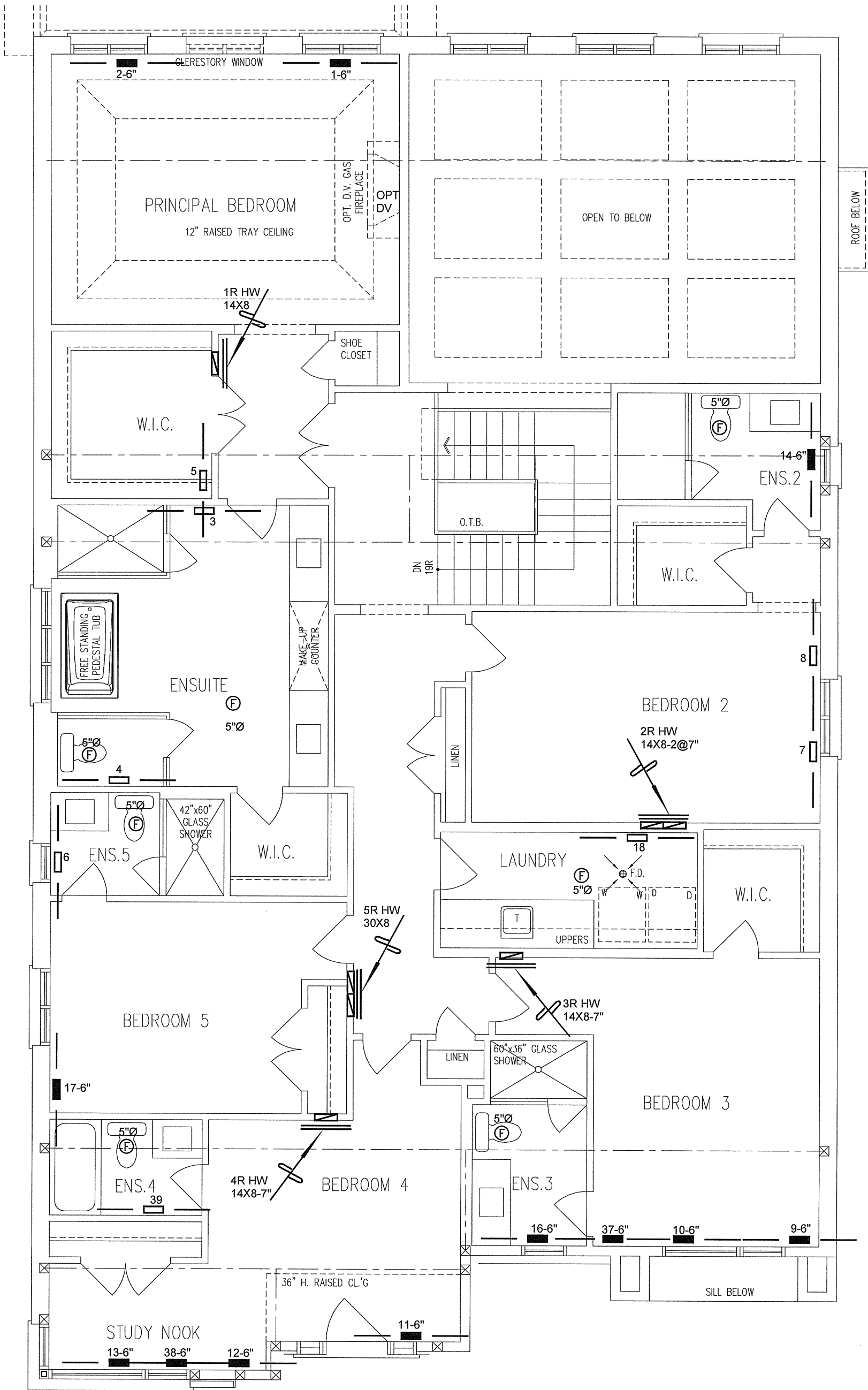
Sheet Title
**FIRST FLOOR
HEATING
LAYOUT**

Date
MAY/2022

Scale
3/16" = 1'-0"

BCIN# 19669

LO# 96711



OPT. 5 BEDROOM SECOND FLOOR PLAN, EL. 'C'

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.

WOB

CSA-F280-12

PACKAGE A1

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HVAC LEGEND				3.
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE	1.
	SUPPLY AIR GRILLE 6" BOOT		30"x6" RETURN AIR GRILLE	No.
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR	Description
	6" SUPPLY AIR STACK 2nd FLOOR		RETURN AIR STACK ABOVE	Date
	RETURN AIR STACK 2nd FLOOR		REDUCER	
REVISIONS				

Client
GOLD PARK HOMES

Project Name
**PINE VALLEY PH 2
VAUGHAN, ONTARIO
WO/LOFT - WOB
RIVERVIEW - OPT 5 BED
5013 - ELEV C 4502 sqft**

HVACDESIGNS LTD.

375 Finley Ave. Suite 202 - Ajax, Ontario
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Sheet Title
**SECOND FLOOR
HEATING
LAYOUT**

Date
MAY/2022

Scale
3/16" = 1'-0"

BCIN# 19669

LO# 96711

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.

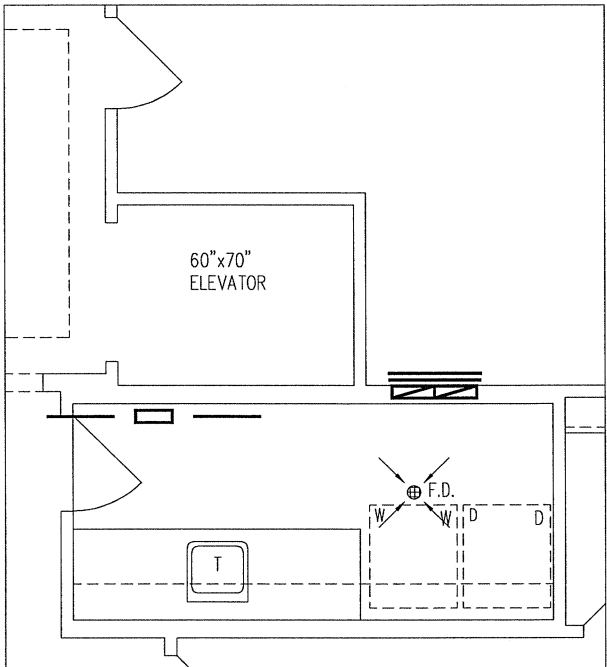
WOB

CSA-F280-12

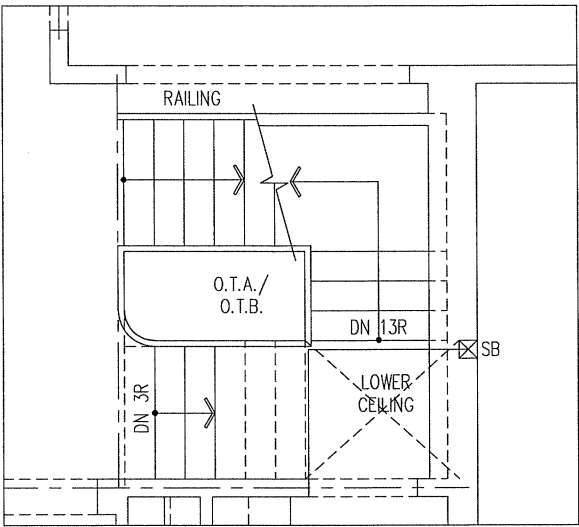
PACKAGE A1

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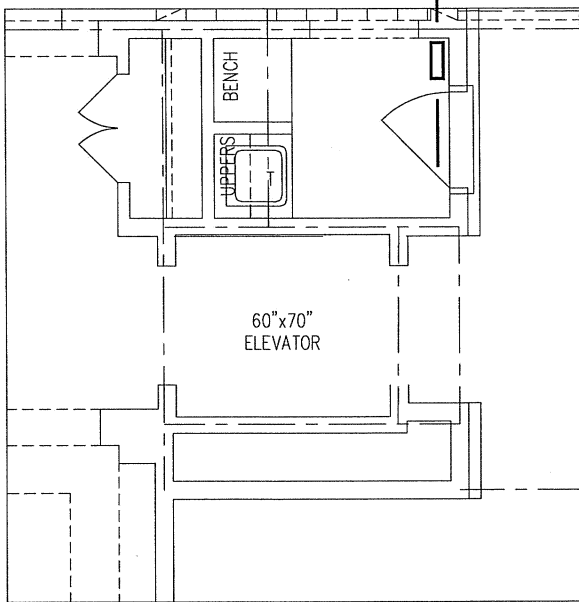
HVAC LEGEND				
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE	2.
	SUPPLY AIR GRILLE 6" BOOT		6" SUPPLY AIR STACK FROM 2nd FLOOR	1.
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR	No.
			30"x6" RETURN AIR GRILLE	Description
			FRA - FLOOR RETURN AIR GRILLE	Date
			RETURN AIR STACK ABOVE	
			REDUCER	



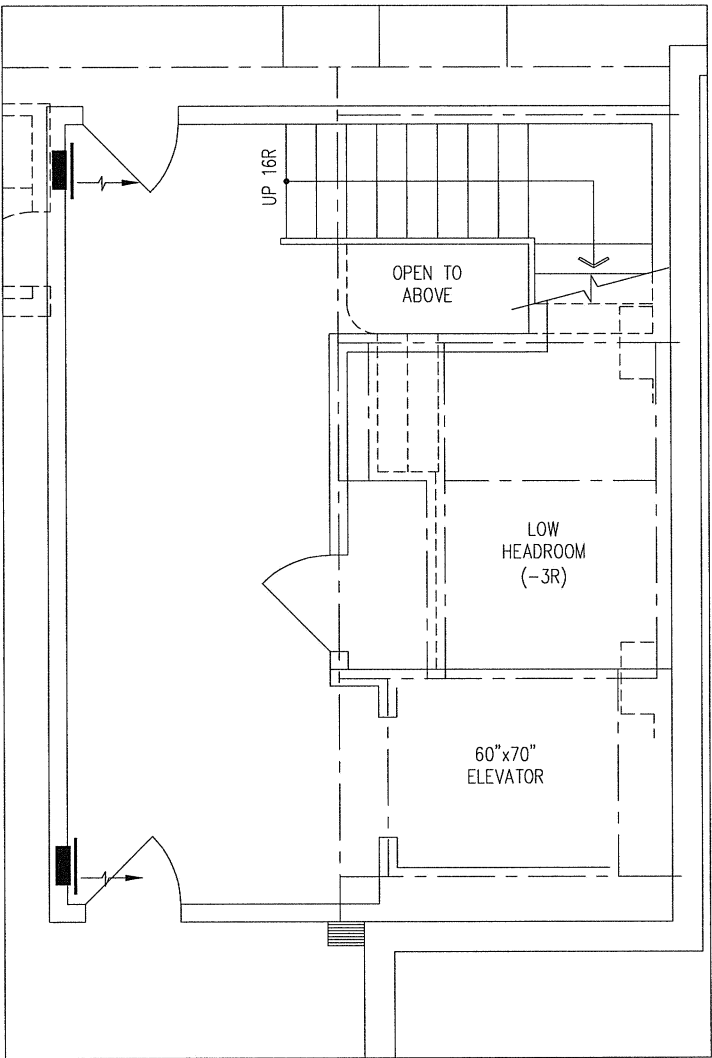
PART. OPT. 5 BEDROOM SECOND FLOOR PLAN, W/O. LOFT W/ ELEVATOR, EL. 'C'



PART. GROUND FLOOR PLAN, W/ NO LOFT CONDITION, EL. 'C'



PART. GROUND FLOOR PLAN, W/ OPT. ELEVATOR, EL. 'C'



PART BASEMENT FLOOR PLAN, W/ OPT. ELEVATOR, EL. 'C'

Client
GOLD PARK HOMES

Project Name
**PINE VALLEY PH 2
VAUGHAN, ONTARIO
WO/LOFT - WOB
RIVERVIEW - OPT 5 BED
5013 - ELEV C 4502 sqft**

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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
**STRIP PLAN
HEATING
LAYOUT**

Date
MAY/2022

Scale
3/16" = 1'-0"

BCIN# 19669

LO# 96711