

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@hvacdesigns.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 - WOB Project: PINE VALLEY PH 2	
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.			
May 5, 2022			
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.

SITE NAME: PINE VALLEY PH 2										OPT 5 BED - WOB										DATE May-22										WINTER NATURAL AIR CHANGE RATE 0.407										HEAT LOSS AT °F. 76										CSA-F280-12																			
BUILDER: GOLD PARK HOMES										TYPE: 5013 - ELEV C - RIVERVIEW										GFA: 4502										LO# 96710										SUMMER NATURAL AIR CHANGE RATE 0.137										HEAT GAIN AT °F. 13										SB-12 PACKAGE A									
ROOM USE		EXP. WALL		CLG. HT.		PBR		ENS		WIC		BED-2		BED-3		BED-4		ENS-2		ENS-3		LOFT		BED-5		ENS-5		ENS-4																																									
FACTORS		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN																																									
GRS.WALL AREA		333		144		90		251		423		63		153		99		7		17		11		7		72		63																																									
GLAZING		0		0		0		0		8		10		0		8		10		0		10		0		0		0																																									
NORTH		21.3		16.0		0		0		20		426		0		170		128		17		213		0		0		0																																									
EAST		21.3		41.6		0		0		0		0		57		133		2368		0		0		0		0		0																																									
SOUTH		21.3		24.9		0		0		0		0		0		21		447		0		0		10		6		128																																									
WEST		21.3		41.6		46		979		6		128		0		0		523		0		0		213		149		0																																									
SKYLT.		37.2		101.5		0		0		0		0		0		0		0		0		0		0		0		0																																									
DOORS		25.2		4.3		0		0		0		0		0		0		0		0		0		0		0		0																																									
NET EXPOSED WALL		4.5		0.8		287		1281		84		375		59		204		181		40		89		53		67		53																																									
NET EXPOSED BEINT WALL ABOVE GR		3.6		0.6		0		0		0		0		0		20		505		85		0		0		0		0																																									
EXPOSED CLG		1.3		0.6		340		436		200		256		329		150		119		153		70		219		281		129																																									
NO ATTIC EXPOSED CLG		2.7		1.3		0		0		0		0		0		26		71		33		96		44		0		0																																									
EXPOSED FLOOR		0		0		0		0		0		137		349		59		250		638		107		0		0		0																																									
BASEMENT/CRAWL HEAT LOSS		0		0		0		0		0		0		0		0		0		0		0		0		0		0																																									
SLAB ON GRADE HEAT LOSS		0		0		0		0		0		0		0		0		0		0		0		0		0		0																																									
SUBTOTAL HT LOSS		2696		1476		983		655		1409		566		3120		2794		6624		706		1282		352		285		380																																									
SUB TOTAL HT GAIN		0.20		0.39		2327		282		0.20		0.39		0.20		0.39		0.20		0.39		0.20		0.20		0.20		0.39																																									
LEVEL FACTOR / MULTIPLIER		1044		572		546		254		546		1208		193		2100		274		493		496		237		147		6																																									
AIR CHANGE HEAT LOSS		0		0		0		0		0		195		433		0		459		98		178		0		0		0																																									
DUCT LOSS		0		0		0		0		0		159		397		0		0		29		121		0		0		0																																									
HEAT GAIN PEOPLE		240		480		742		0		1		240		1		240		742		0		0		1		0		0																																									
HEAT GAIN APPLIANCES/LIGHTS		3740		2047		1367		909		2150		4761		7523		10484		1078		1943		1956		814		847		527																																									
TOTAL HT LOSS BTU/H		4823		2047		1367		393		2270		5975		7523		10484		1078		1943		1956		814		847		527																																									
TOTAL HT GAIN x 1.3 BTU/H																												129																																									

ROOM USE		EXP. WALL		CLG. HT.		GRT		DIN		KT/BF		OFF		LND		FOY		MUD		WOB		BAS	
FACTORS		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN		LOSS		LOSS		LOSS	
GRS.WALL AREA		605		352		649		330		0		231		374		530		1211		44		936	
GLAZING		0		0		0		0		0		0		0		0		0		0		0	
NORTH		21.3		16.0		0		0		0		0		0		0		0		0		0	
EAST		21.3		41.6		0		0		0		53		1128		2202		0		0		0	
SOUTH		21.3		24.9		0		0		38		809		946		17		362		423		7	
WEST		21.3		41.6		192		4086		102		2171		4238		0		0		0		149	
SKYLT.		37.2		101.5		0		0		102		2171		4238		0		0		0		38	
DOORS		25.2		4.3		0		0		0		0		0		0		0		0		809	
NET EXPOSED WALL		4.5		0.8		413		1843		324		1446		244		30		757		128		441	
NET EXPOSED BEINT WALL ABOVE GR		3.6		0.6		0		0		0		0		0		175		354		1580		0	
EXPOSED CLG		1.3		0.6		397		509		0		0		118		151		69		0		0	
NO ATTIC EXPOSED CLG		2.7		1.3		0		0		0		0		0		0		0		0		0	
EXPOSED FLOOR		2.6		0.4		0		0		0		0		24		61		10		0		0	
BASEMENT/CRAWL HEAT LOSS		0		0		0		0		0		0		0		0		0		0		0	
SLAB ON GRADE HEAT LOSS		0		0		0		0		0		0		0		0		0		0		0	
SUBTOTAL HT LOSS		6438		2042		5251		2650		213		2092		1339		2085		351		763		5095	
SUB TOTAL HT GAIN		0.30		0.56		8522		0.30		0.20		0.30		0.30		0.30		0.56		0.50		1.98	
LEVEL FACTOR / MULTIPLIER		3608		1144		2942		1485		82		1485		82		1172		1168		19200		227	
AIR CHANGE HEAT LOSS		0		0		590		0		29		0		6		0		24		0		0	
DUCT LOSS		0		0		0		0		0		0		0		0		0		0		0	
HEAT GAIN PEOPLE		240		480		742		0		83		0		742		0		0		0		0	
HEAT GAIN APPLIANCES/LIGHTS		10046		3186		8193		4135		324		4135		324		3264		3253		5388		24295	
TOTAL HT LOSS BTU/H		12810		2272		8703		4896		1183		4896		1862		488		3624		3624		931	

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

FURNACE 1

LO# 96710

GFA: 4502

DATE: May-22

TYPE: 5013 - ELEV C - RIVERVIEW

OPT 5 BED - WOB

HEATING CFM 1170 COOLING CFM 0.6
TOTAL HEAT LOSS 61,760 TOTAL HEAT GAIN 35,574
AIR FLOW RATE CFM 18.94 AIR FLOW RATE CFM 32.89

FURNACE HEAT LOSS +
HRV / ERV HEAT LOSS
= 64838 BTUH

\$LENNOX
ML196UH090XE36C 90
FAN SPEED LOW 0
MEDIUM 0
HIGH 1170

AFUE = 96 %
INPUT (BTU/H) = 88,000
OUTPUT (BTU/H) = 85,600
DESIGN CFM = 1170
CFM @ 8" E.S.P.

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	0	12	6
R/A	0	0	0	2	1

plenum pressure s/a 0.18
max s/a diff press. loss 0.02
min adjusted pressure s/a 0.16
r/a pressure 0.17
r/a grille press. loss 0.02
adjusted pressure r/a 0.15

All S/A diffusers 4"x10" unless noted otherwise on layout.
All S/A fans 5" unless noted otherwise on layout.

RUN #	ROOM NAME	RM LOSS MBH	CFM PER RUN HEAT	CFM PER RUN COOLING	ADJUSTED PRESSURE	ACTUAL DUCT LGH	EQUIVALENT LENGTH	ADJUSTED PRESSURE	ROUND DUCT SIZE	HEATING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	OUTLET GRILL SIZE
19	FOY	3.26	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51
20	GRT	48	48	48	48	48	48	48	48	48	48	48
21	GRT	48	48	48	48	48	48	48	48	48	48	48
22	GRT	48	48	48	48	48	48	48	48	48	48	48
23	GRT	48	48	48	48	48	48	48	48	48	48	48
24	DIN	60	60	60	60	60	60	60	60	60	60	60
25	Bas	1.86	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
26	Bas	61	105	105	105	105	105	105	105	105	105	105
27	Bas	47	56	56	56	56	56	56	56	56	56	56
28	Bas	100	110	110	110	110	110	110	110	110	110	110
29	Bas	147	166	166	166	166	166	166	166	166	166	166
30	Bas	0.12	0.1	0.08	0.09	0.1	0.09	0.1	0.09	0.1	0.09	0.1
31	Bas	455	245	245	245	245	245	245	245	245	245	245
32	Bas	448	535	535	535	535	535	535	535	535	535	535
33	Bas	3X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10
34	Bas	5	6	6	6	6	6	6	6	6	6	6
35	Bas	5	6	6	6	6	6	6	6	6	6	6
36	Bas	5	6	6	6	6	6	6	6	6	6	6

RUN #	ROOM NAME	KT/BF	KT/BF	KT/BF	KT/BF	KT/BF	KT/BF	KT/BF	KT/BF	KT/BF	KT/BF	KT/BF
25	Bas	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73
26	Bas	52	52	52	52	52	52	52	52	52	52	52
27	Bas	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90
28	Bas	95	95	95	95	95	95	95	95	95	95	95
29	Bas	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
30	Bas	34	34	34	34	34	34	34	34	34	34	34
31	Bas	100	100	100	100	100	100	100	100	100	100	100
32	Bas	134	134	134	134	134	134	134	134	134	134	134
33	Bas	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
34	Bas	265	265	265	265	265	265	265	265	265	265	265
35	Bas	484	484	484	484	484	484	484	484	484	484	484
36	Bas	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10

SUPPLY AIR TRUNK SIZE	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	0	0.00	0	0	8	TRUNK G	0	0.00	0	8
TRUNK B	0	0.00	0	0	8	TRUNK H	0	0.00	0	8
TRUNK C	0	0.00	0	0	8	TRUNK I	0	0.00	0	8
TRUNK D	380	0.08	9.8	14	8	TRUNK J	0	0.00	0	8
TRUNK E	724	0.08	12.4	20	8	TRUNK K	0	0.00	0	8
TRUNK F	450	0.09	10.1	12	8	TRUNK L	0	0.00	0	8

RETURN AIR TRUNK SIZE	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK O	0	0.07	0	0	8	TRUNK Q	0	0.07	0	8
TRUNK P	0	0.07	0	0	8	TRUNK R	0	0.07	0	8
TRUNK S	0	0.07	0	0	8	TRUNK T	0	0.07	0	8
TRUNK U	0	0.07	0	0	8	TRUNK V	0	0.07	0	8
TRUNK W	415	0.07	10.4	12	8	TRUNK X	755	0.07	13.1	8
TRUNK Y	755	0.07	13.1	20	8	TRUNK Z	0	0.07	0	8
TRUNK Z	0	0.07	0	0	8	DROP	1170	0.07	15.4	10

RETURN AIR #	6	7
AIR VOLUME	0.15	0.15
PLENUM PRESSURE	0.15	0.15
ACTUAL DUCT LGH	1	1
EQUIVALENT LENGTH	0	0
TOTAL EFFECTIVE LH	1	1
ADJUSTED PRESSURE	14.80	14.80
ROUND DUCT SIZE	0	0
INLET GRILL SIZE	0	0

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

OPT 5 BED - WOB

TYPE: 5013 - ELEV C - RIVERVIEW

DATE: May-22

GFA: 4502 LO# 96710

FURNACE 2

HEATING CFM 980 COOLING CFM 980
TOTAL HEAT LOSS 28,620 TOTAL HEAT GAIN 32,002
AIR FLOW RATE CFM 34.24 AIR FLOW RATE CFM 30.62furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure 0.35
for s/a & r/aML196UH045XE36B
FAN SPEED LOW 620
MEDIUM 685
HIGH 980AFUE = 96 %
INPUT (BTU/H) = 44,000
OUTPUT (BTU/H) = 42,800

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	21	0	0
R/A	0	0	6	0	0

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

All S/A runs 5'x10" unless noted otherwise on layout.

ROOM #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
ROOM NAME	PBR	ENS	ENS	WIC	ENS	ENS-5	BED-2	BED-2	BED-3	BED-3	BED-3	BED-4	BED-4	LOFT	ENS-2	ENS-3	BED-5	LND
RM LOSS MBH	1.87	1.87	1.02	1.02	0.91	0.85	1.07	1.07	1.59	1.59	1.88	1.88	1.88	1.96	1.08	1.94	0.81	0.32
CFM PER RUN HEAT	64	35	35	35	31	29	37	37	54	54	64	64	64	67	37	67	28	11
RM GAIN MBH	2.41	2.41	0.68	0.68	0.39	0.40	1.14	1.14	1.89	1.89	2.62	2.62	2.62	1.73	0.41	1.38	1.77	1.18
CFM PER RUN COOLING	74	21	21	21	12	12	35	35	58	58	80	80	80	53	13	42	54	36
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH	52	63	48	16	51	19	72	77	78	69	66	73	84	65	64	75	46	75
EQUIVALENT LENGTH	210	190	255	130	245	120	170	170	140	190	180	190	170	190	170	180	160	130
TOTAL EFFECTIVE LENGTH	262	253	303	146	296	139	242	257	218	259	249	256	243	274	235	244	235	176
ADJUSTED PRESSURE	0.07	0.07	0.06	0.12	0.06	0.12	0.07	0.07	0.08	0.07	0.07	0.07	0.07	0.06	0.07	0.07	0.07	0.1
ROUND DUCT SIZE	6	4	4	4	4	4	4	4	6	6	6	6	6	6	4	6	6	4
HEATING VELOCITY (ft/min)	326	326	402	402	356	333	424	424	275	326	326	326	326	342	424	342	143	126
COOLING VELOCITY (ft/min)	377	377	241	241	138	138	402	402	296	296	408	408	408	270	149	214	275	413
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	4X10	3X10	4X10	4X10	3X10
TRUNK	C	C	C	C	C	C	B	B	B	A	A	A	A	B	B	A	A	B

ROOM #	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	BED-3	BED-4	ENS-4	BED-3	BED-4	ENS-4	BED-3	BED-4	ENS-4	BED-3	BED-4	ENS-4	BED-3	BED-4	ENS-4	BED-3
RM LOSS MBH	1.59	1.88	0.53	1.59	1.88	0.53	1.59	1.88	0.53	1.59	1.88	0.53	1.59	1.88	0.53	1.59	1.88	0.53	1.59
CFM PER RUN HEAT	54	64	18	54	64	18	54	64	18	54	64	18	54	64	18	54	64	18	54
RM GAIN MBH	1.89	2.62	0.13	1.89	2.62	0.13	1.89	2.62	0.13	1.89	2.62	0.13	1.89	2.62	0.13	1.89	2.62	0.13	1.89
CFM PER RUN COOLING	58	80	4	58	80	4	58	80	4	58	80	4	58	80	4	58	80	4	58
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH	67	71	70	67	71	70	67	71	70	67	71	70	67	71	70	67	71	70	67
EQUIVALENT LENGTH	190	170	200	190	170	200	190	170	200	190	170	200	190	170	200	190	170	200	190
TOTAL EFFECTIVE LENGTH	257	241	270	257	241	270	257	241	270	257	241	270	257	241	270	257	241	270	257
ADJUSTED PRESSURE	0.07	0.07	0.06	0.07	0.07	0.06	0.07	0.07	0.06	0.07	0.07	0.06	0.07	0.07	0.06	0.07	0.07	0.06	0.07
ROUND DUCT SIZE	6	6	4	6	6	4	6	6	4	6	6	4	6	6	4	6	6	4	6
HEATING VELOCITY (ft/min)	275	326	207	275	326	207	275	326	207	275	326	207	275	326	207	275	326	207	275
COOLING VELOCITY (ft/min)	296	408	46	296	408	46	296	408	46	296	408	46	296	408	46	296	408	46	296
OUTLET GRILL SIZE	4X10	4X10	3X10	4X10	4X10	3X10	4X10	4X10	3X10	4X10	4X10	3X10	4X10	4X10	3X10	4X10	4X10	3X10	4X10
TRUNK	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

ROOM #	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
ROOM NAME	TRUNK A	TRUNK B	TRUNK C	TRUNK D	TRUNK E	TRUNK F	TRUNK G	TRUNK H	TRUNK I	TRUNK J	TRUNK K	TRUNK L	TRUNK M	TRUNK N	TRUNK O	TRUNK P	TRUNK Q	TRUNK R	TRUNK S
RM LOSS MBH	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CFM PER RUN HEAT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RM GAIN MBH	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CFM PER RUN COOLING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED PRESSURE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACTUAL DUCT LGH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EQUIVALENT LENGTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LENGTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED PRESSURE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ROUND DUCT SIZE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEATING VELOCITY (ft/min)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COOLING VELOCITY (ft/min)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OUTLET GRILL SIZE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRUNK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ROOM #	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93
ROOM NAME	TRUNK A	TRUNK B	TRUNK C	TRUNK D	TRUNK E	TRUNK F	TRUNK G	TRUNK H	TRUNK I	TRUNK J	TRUNK K	TRUNK L	TRUNK M	TRUNK N	TRUNK O	TRUNK P	TRUNK Q	TRUNK R	TRUNK S
RM LOSS MBH	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CFM PER RUN HEAT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RM GAIN MBH	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CFM PER RUN COOLING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED PRESSURE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACTUAL DUCT LGH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EQUIVALENT LENGTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LENGTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED PRESSURE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ROUND DUCT SIZE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEATING VELOCITY (ft/min)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COOLING VELOCITY (ft/min)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OUTLET GRILL SIZE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRUNK	0	0	0	0	0	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 # 96710
OPT 5 BED - 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	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	5 @ 10.6 cfm 53.0 cfm
Table 9.32.3.A.	TOTAL 212.0 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	212 cfm
Less Principal Ventil. Capacity	150 cfm
Required Supplemental Capacity	62.0 cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE V150H	Location: BSMT
150.0 cfm	☒ HVI Approved
PRINCIPAL EXHAUST HEAT LOSS CALCULATION	
CFM	$\Delta T \cdot F$
150.0 CFM	76 F
FACTOR	% LOSS
1.08	0.25

SUPPLEMENTAL FANS BY INSTALLING CONTRACTOR	
Location	Model
ENS	BY INSTALLING CONTRACTOR
ENS-2	BY INSTALLING CONTRACTOR
ENS-3	BY INSTALLING CONTRACTOR
ENS-4	BY INSTALLING CONTRACTOR

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

CSA F280-12 Residential Heat Loss and Heat Gain Calculations									
Formula Sheet (For Air Leakage / Ventilation Calculation)									
LO#: 96710		Model: 5013 - ELEV C - RIVERVIEW		Builder: GOLD PARK HOMES		Date: 2022-05-05			
Volume Calculation				Air Change & Delta T Data					
House Volume									
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)						
Bsmt	2108	10	21080					WINTER NATURAL AIR CHANGE RATE 0.407	
First	2108	11	23188					SUMMER NATURAL AIR CHANGE RATE 0.137	
Second	2793	9	25137						
Third	0	9	0						
Fourth	0	9	0						
		Total:	69,405.0 ft³						
		Total:	1965.3 m³						
Design Temperature Difference									
		Tin °C	Tout °C	ΔT °C					ΔT °F
		22	-20	42					76
		24	31	7					13
Winter DTDh									
Summer DTDc									
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	42 °C	x	1.2	=	11254 W	
								636 W	
								38399 Btu/h	
5.2.3.1 Heat Loss due to Air Leakage									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$									
0.407	x	545.93	x	42 °C	x	1.2	=	11254 W	
								636 W	
								38399 Btu/h	
5.2.3.2 Heat Loss due to Mechanical Ventilation									
$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$									
300 CFM	x	76 °F	x	1.08	x	0.25	=	6156 Btu/h	
								1,037 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	=	6156 Btu/h	
								1,037 Btu/h	
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)									
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$									
		Level		Level Factor (LF)		HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)		Level Conductive Heat Loss: (HLclevel)	
		1		0.5		38,399		9,720	
		2		0.3				20,557	
		3		0.2				19,830	
		4		0				0	
		5		0				0	
*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairbv = 0									
								Michael O'Rourke BCIN# 19669 	

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 5013 - ELEV C - RIVERVIEW	OPT 5 BED - WOB	BUILDER: GOLD PARK HOMES
SFQT: 4502	LO# 96710	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	-

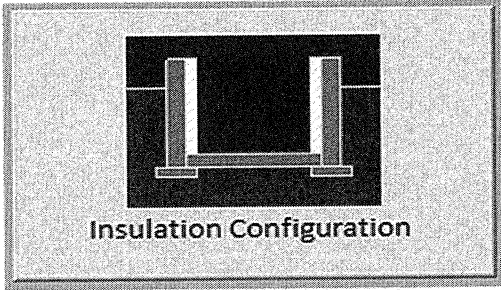
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

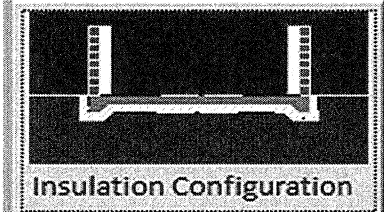
Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	 Insulation Configuration
Floor Width (m):	13.1	
Exposed 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# 96710

OPT 5 BED - 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# 96710

OPT 5 BED - WOB

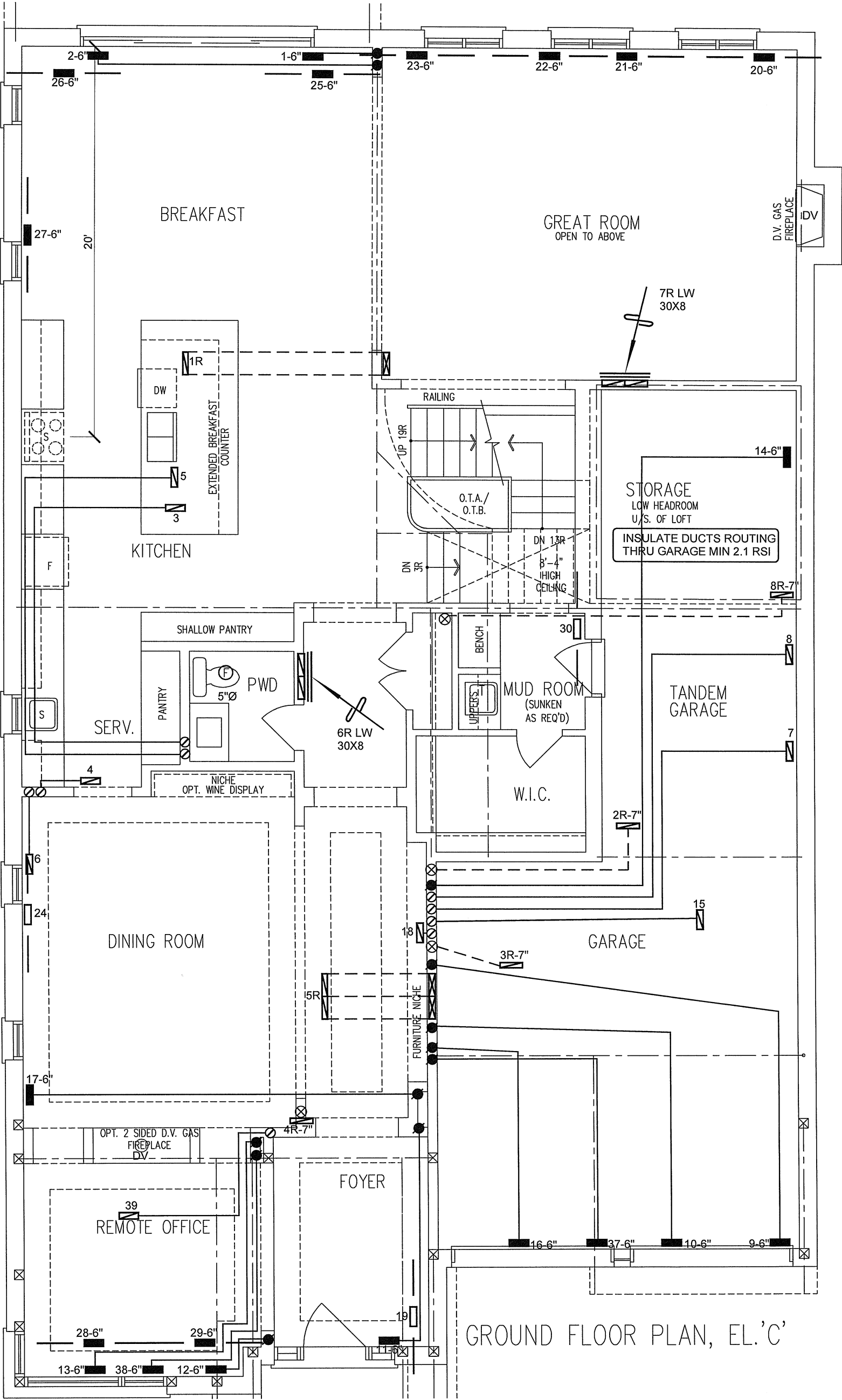
Air Infiltration Residential Load Calculator

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# 96710

OPT 5 BED - WOB



I MICHAEL O'ROURKE HAVE REVIEW 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	SYMBOL	DESCRIPTION	2.
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE	1.
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE	
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA - FLOOR RETURN AIR GRILLE	
			RETURN AIR STACK ABOVE		RETURN AIR STACK 2nd FLOOR	
			REDUCER			
REVISIONS					Description	Date

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Client
GOLD PARK HOMES

Project Name
PINE VALLEY PH 2
VAUGHAN, ONTARIO
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@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.

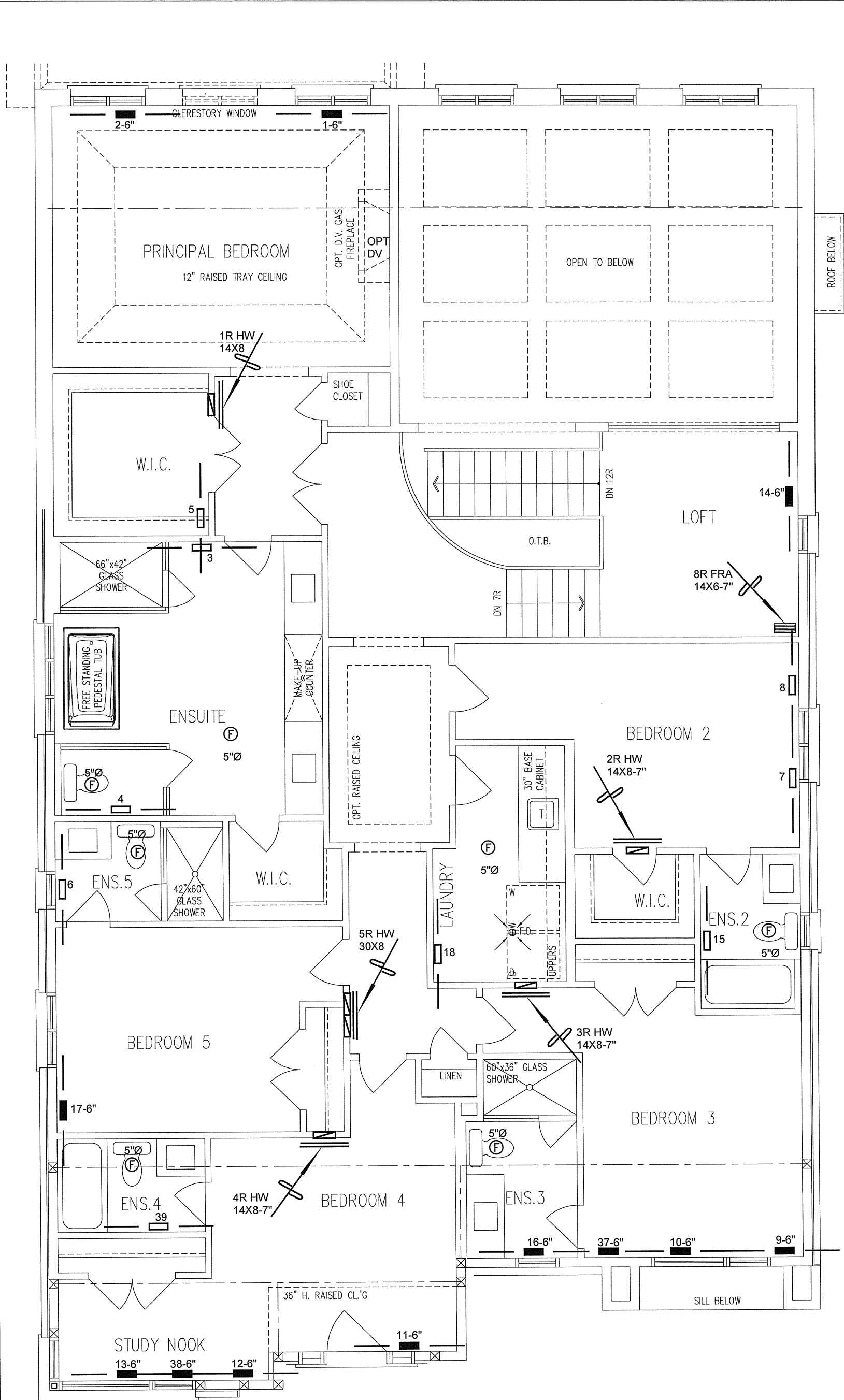
Sheet Title
FIRST FLOOR
HEATING
LAYOUT

Date
MAY/2022

Scale
3/16" = 1'-0"

BCIN# 19669

LO# 96710



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

HVAC LEGEND			3.
SYMBOL	DESCRIPTION	SYMBOL	2.
	SUPPLY AIR GRILLE		1.
	SUPPLY AIR BOOT ABOVE		No
	SUPPLY AIR BOOT ABOVE		Revisions
	SUPPLY AIR BOOT ABOVE		Date

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Client

GOLD PARK HOMES

Project Name

**PINE VALLEY PH 2
VAUGHAN, ONTARIO
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	
SECOND FLOOR HEATING LAYOUT	
Date	MAY/2022
Scale	3/16" = 1'-0"
BCIN# 19669	
LO#	96710

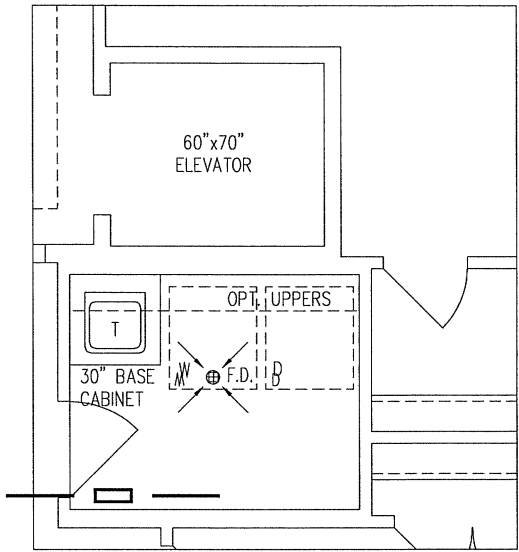
I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

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

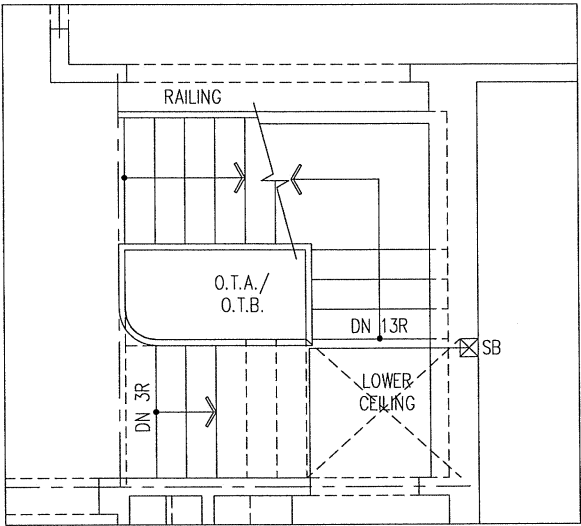
WOB
CSA-F280-12
PACKAGE A1

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	No.
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR	Description
	SUPPLY AIR STACK 2nd FLOOR		FRA-FLOOR RETURN AIR GRILLE	Date
	14" RETURN AIR GRILLE		30" RETURN AIR GRILLE	
	RETURN AIR STACK ABOVE		RETURN AIR STACK 2nd FLOOR	
	REDUCER			
REVISIONS				

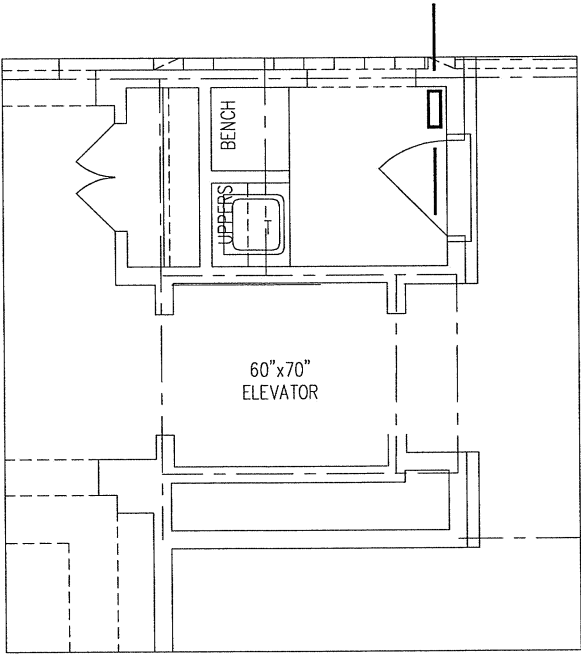
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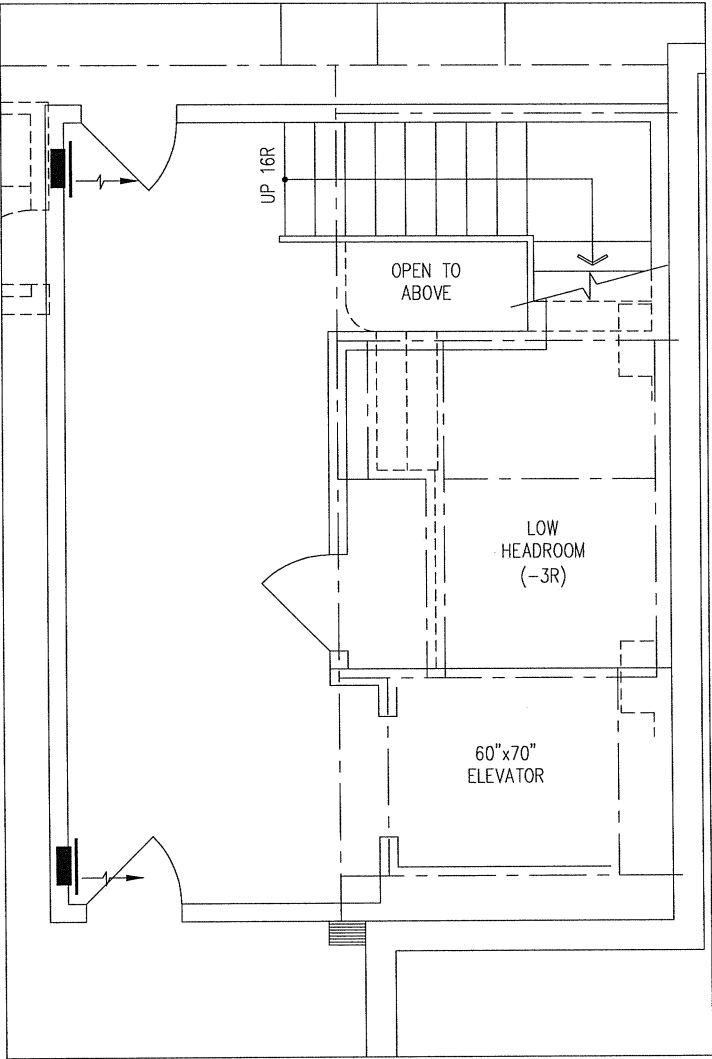
PART. OPT. 5 BEDROOM
SECOND FLOOR W/ ELEVATOR,
EL. 'C'



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
WOB
RIVERVIEW - OPT 5 BED
5013 - ELEV C 4502 sqft**

HVACDESIGNS LTD.

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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
**STRIP PLAN
HEATING
LAYOUT**

Date
MAY/2022

Scale
3/16" = 1'-0"

BCIN# 19669

LO# **96710**