

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 - RIVERVIEW LOT 88 & 129 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.			
July 20, 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.

Application for a Permit Construct or Demolish – Effective January 1, 2015

ROOM USE				GRT		DIN		KT/BF		OFF		LND				FOY		MUD								BAS		
EXP. WALL				55		32		59		30		0				21		34								226		
CLG. HT.				11		11		11		11		9				11		11								10		
FACTORS																												
GRS.WALL AREA		LOSS GAIN		605		352		649		330		0				231		374								1582		
GLAZING				LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN				LOSS GAIN		LOSS GAIN								LOSS GAIN		
NORTH		21.3	16.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST		21.3	41.6	0	0	0	0	0	0	0	48	1021	1994	0	0	0	26	553	1080	0	0	0	0	0	0	0	0	0
SOUTH		21.3	24.9	0	0	0	59	1256	1469	57	1213	1419	27	575	672	0	0	0	0	0	0	0	9	192	224	0	0	0
WEST		21.3	41.6	192	4086	7978	0	0	0	102	2171	4238	0	0	0	0	0	0	0	0	0	6	128	249	0	0	0	
SKYLT.		37.2	101.5	0	0	0	0	0	0	0	0	0	0	0	0	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	0	30	757	128	20	505	85	0	0	0	0	0	
NET EXPOSED WALL		4.5	0.8	413	1843	310	293	1308	220	490	2187	368	255	1138	192	0	175	781	132	354	1580	266	0	0	0	0	0	
NET EXPOSED BSMT WALL ABOVE GR		3.6	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	678	2440	411	0	0	0	
EXPOSED CLG		1.3	0.6	397	509	233	0	0	0	0	0	0	0	0	0	81	104	48	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	0	0	0	0	0	0	0	0	0	0	0	
EXPOSED FLOOR		2.6	0.4	0	0	0	0	0	0	0	0	0	0	0	0	24	61	10	0	0	0	0	0	0	0	0	0	
BASEMENT/CRAWL HEAT LOSS				0		0		0		0		0		0		0		0				8058						
SLAB ON GRADE HEAT LOSS				0		0		0		0		0		0		0		0										
SUBTOTAL HT LOSS				6438		2563		5570		2734		165				2092		2085				10817						
SUB TOTAL HT GAIN				8522		1689		6026		2858		58				1339		351				884						
LEVEL FACTOR / MULTIPLIER		0.30		0.45		0.30		0.45		0.30		0.45		0.20		0.30		0.45		0.30		1.48						
AIR CHANGE HEAT LOSS				2886		1149		2496		1225		56				937		934				16046						
AIR CHANGE HEAT GAIN				579		115		409		194		4				91		24				60						
DUCT LOSS				0		0		0		0		22				0		0				0						
DUCT GAIN				0		0		0		0		56				0		0				0						
HEAT GAIN PEOPLE		240		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
HEAT GAIN APPLIANCES/LIGHTS				495		495		495		495		495				495		495				26863						
TOTAL HT LOSS BTU/H				9324		3712		8067		3959		244				3029		3019				26863						
TOTAL HT GAIN x 1.3 BTU/H				12474		2988		9009		4611		796				2502		1130				1222						

TOTAL COMBINED HEAT LOSS BTU/H: 90444

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

LOT 88 & 129
TYPE: 5013 - RIVERVIEW

DATE: Jul-22

GFA: 4502 LO# 98031

FURNACE 1

HEATING CFM 1110 COOLING CFM 1110
TOTAL HEAT LOSS 57,973 TOTAL HEAT GAIN 33,942
AIR FLOW RATE CFM 19.15 AIR FLOW RATE CFM 32.7

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35

**FURNACE HEAT LOSS +
HRV / ERV HEAT LOSS
= 61051 BTUH**
\$LENNOX
ML196UH070XE36B
FAN SPEED 70
LOW 0
MEDLOW 0
MEDIUM 985
MEDIUM HIGH 1110
HIGH 1275

AFUE = 96 %
INPUT (BTU/H) = 66,000
OUTPUT (BTU/H) = **63,900**

DESIGN CFM = **1110**
CFM @ .6" E.S.P.

TEMPERATURE RISE 53 °F

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 #	19	20	21	22	23	24
ROOM NAME	FOY	GRT	GRT	GRT	GRT	DIN
RM LOSS MBH.	3.03	2.33	2.33	2.33	2.33	3.71
CFM PER RUN HEAT	58	45	45	45	45	71
RM GAIN MBH.	2.50	3.12	3.12	3.12	3.12	2.99
CFM PER RUN COOLING	82	102	102	102	102	98
ADJUSTED PRESSURE	0.16	0.16	0.16	0.16	0.16	0.16
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	0.11	0.1	0.08	0.09	0.09	0.1
ROUND DUCT SIZE	5	6	6	6	6	6
HEATING VELOCITY (ft/min)	426	229	229	229	229	362
COOLING VELOCITY (ft/min)	602	520	520	520	520	500
OUTLET GRILL SIZE	3X10	4X10	4X10	4X10	4X10	4X10
TRUNK	F	D	D	D	D	F

RUN #	25	26	27	28	29	30	31	32	33	34	35	36
ROOM NAME	KT/BF	KT/BF	KT/BF	OFF	OFF	MUD	BAS	BAS	BAS	BAS	BAS	BAS
RM LOSS MBH.	2.69	2.69	2.69	1.98	1.98	3.02	4.48	4.48	4.48	4.48	4.48	4.48
CFM PER RUN HEAT	51	51	51	38	38	58	86	86	86	86	86	86
RM GAIN MBH.	3.00	3.00	3.00	2.31	2.31	1.13	0.20	0.20	0.20	0.20	0.20	0.20
CFM PER RUN COOLING	98	98	98	75	75	37	7	7	7	7	7	7
ADJUSTED PRESSURE	0.16	0.16	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	34	39	31	65	60	21	51	37	32	16	15	49
EQUIVALENT LENGTH	100	140	170	130	120	140	110	140	130	130	130	130
TOTAL EFFECTIVE LENGTH	134	179	201	195	180	161	161	177	162	146	145	179
ADJUSTED PRESSURE	0.12	0.09	0.08	0.09	0.1	0.11	0.1	0.09	0.1	0.11	0.11	0.09
ROUND DUCT SIZE	6	6	6	5	5	5	6	6	5	6	6	6
HEATING VELOCITY (ft/min)	260	260	260	279	279	426	438	438	631	438	438	438
COOLING VELOCITY (ft/min)	500	500	500	551	551	272	36	36	51	36	36	36
OUTLET GRILL SIZE	4X10	4X10	4X10	3X10	3X10	3X10	4X10	4X10	3X10	4X10	4X10	4X10
TRUNK	E	E	E	F	F	F	D	D	E	E	F	F

SUPPLY AIR TRUNK SIZE

	TRUNK	STATIC	ROUND	RECT			VELOCITY		TRUNK	STATIC	ROUND	RECT			VELOCITY
	CFM	PRESS.	DUCT	DUCT			(ft/min)		CFM	PRESS.	DUCT	DUCT			(ft/min)
TRUNK A	0	0.00	0	0	x	8	0	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	0	0.00	0	0	x	8	0	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	0	0.00	0	0	x	8	0	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	352	0.08	9.5	14	x	8	453	TRUNK J	0	0.00	0	0	x	8	0
TRUNK E	677	0.08	12.1	20	x	8	609	TRUNK K	0	0.00	0	0	x	8	0
TRUNK F	435	0.09	10	12	x	8	653	TRUNK L	0	0.00	0	0	x	8	0

RETURN AIR TRUNK SIZE

	TRUNK	STATIC	ROUND	RECT		VELOCITY	
	CFM	PRESS.	DUCT	DUCT		(ft/min)	
TRUNK O	0	0.07	0	0	x	8	0
TRUNK P	0	0.07	0	0	x	8	0
TRUNK Q	0	0.07	0	0	x	8	0
TRUNK R	0	0.07	0	0	x	8	0
TRUNK S	0	0.07	0	0	x	8	0
TRUNK T	0	0.07	0	0	x	8	0
TRUNK U	0	0.07	0	0	x	8	0
TRUNK V	0	0.07	0	0	x	8	0
TRUNK W	415	0.07	10.4	12	x	8	623
TRUNK X	695	0.07	12.7	18	x	8	695
TRUNK Y	0	0.07	0	0	x	8	0
TRUNK Z	0	0.07	0	0	x	8	0
DROP	1110	0.07	15.1	24	x	10	666

RETURN AIR #

AIR VOLUME	0	0	0	0	0	425	415	0	0	0	0	0	0	0	0	270
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
ACTUAL DUCT LGH.	1	1	1	1	1	24	50	1	1	1	1	1	1	1	1	16
EQUIVALENT LENGTH	0	0	0	0	0	145	170	0	0	0	0	0	0	0	0	150
TOTAL EFFECTIVE LH	1	1	1	1	1	169	220	1	1	1	1	1	1	1	1	166
ADJUSTED PRESSURE	14.80	14.80	14.80	14.80	14.80	0.09	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.09
ROUND DUCT SIZE	0	0	0	0	0	9.9	10.4	0	0	0	0	0	0	0	0	8.3
INLET GRILL SIZE	0	0	0	0	0	8	8	0	0	0	0	0	0	0	0	8
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	0	0	0	0	0	30	30	0	0	0	0	0	0	0	0	24

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

LOT 88 & 129
TYPE: 5013 - RIVERVIEW

DATE: Jul-22

GFA: 4502 LO# 98031

FURNACE 2

HEATING CFM 980 COOLING CFM 980
TOTAL HEAT LOSS 26,315 TOTAL HEAT GAIN 27,248
AIR FLOW RATE CFM 37.24 AIR FLOW RATE CFM 35.97

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35

**FURNACE HEAT LOSS +
HRV / ERV HEAT LOSS
= 29393 BTUH**
**\$LENNOX
ML196UH045XE36B**

AFUE = 96 %
INPUT (BTU/H) = 44,000
OUTPUT (BTU/H) = **42,800**

FAN SPEED 45
LOW 620
MEDLOW 685
MEDIUM 980
MEDIUM HIGH 1110
HIGH 0

DESIGN CFM = **980**
CFM @ .6" E.S.P.

TEMPERATURE RISE 40 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	18	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"Ø unless noted otherwise on layout.

RUN #	1	2	3	4	5	6	7	8	9	12	13	14	15	16	17	18
ROOM NAME	PBR	PBR	ENS	ENS	WIC	WIC-E	BED-2	BED-2	BED-3	BED-4	BED-4	LOFT	ENS-2	ENS-3	ENS-4	LND
RM LOSS MBH.	2.17	2.17	0.88	0.88	1.14	1.08	1.04	1.04	2.23	1.83	1.83	1.89	1.04	1.78	1.01	0.24
CFM PER RUN HEAT	81	81	33	33	43	40	39	39	83	68	68	70	39	66	38	9
RM GAIN MBH.	2.79	2.79	0.84	0.84	1.48	0.84	0.96	0.96	1.78	1.81	1.81	1.37	1.12	2.04	1.47	0.80
CFM PER RUN COOLING	100	100	30	30	53	30	34	34	64	65	65	49	40	74	53	29
ADJUSTED PRESSURE	0.16	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	0.17	0.17
ACTUAL DUCT LGH.	52	63	48	16	51	19	72	77	78	66	73	84	65	64	75	46
EQUIVALENT LENGTH	190	180	255	130	245	120	170	180	200	190	170	190	170	180	160	130
TOTAL EFFECTIVE LENGTH	242	243	303	146	296	139	242	257	278	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	0.06	0.07	0.07	0.06	0.07	0.07	0.07	0.1
ROUND DUCT SIZE	6	6	4	4	5	4	5	5	6	6	6	6	5	6	5	4
HEATING VELOCITY (ft/min)	413	413	379	379	316	459	286	286	423	347	347	357	286	337	279	103
COOLING VELOCITY (ft/min)	510	510	344	344	389	344	250	250	326	331	331	250	294	377	389	333
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	3X10	4X10	3X10	3X10
TRUNK	C	C	C	C	C	C	B	B	A	A	A	B	B	A	A	B

RUN #	37	38
ROOM NAME	BED-3	BED-4
RM LOSS MBH.	2.23	1.83
CFM PER RUN HEAT	83	68
RM GAIN MBH.	1.78	1.81
CFM PER RUN COOLING	64	65
ADJUSTED PRESSURE	0.16	0.17
ACTUAL DUCT LGH.	67	71
EQUIVALENT LENGTH	190	170
TOTAL EFFECTIVE LENGTH	257	241
ADJUSTED PRESSURE	0.06	0.07
ROUND DUCT SIZE	6	6
HEATING VELOCITY (ft/min)	423	347
COOLING VELOCITY (ft/min)	326	331
OUTLET GRILL SIZE	4X10	4X10
TRUNK	A	A

SUPPLY AIR TRUNK SIZE

	TRUNK	STATIC	ROUND	RECT			VELOCITY		TRUNK	STATIC	ROUND	RECT			VELOCITY
	CFM	PRESS.	DUCT	DUCT			(ft/min)		CFM	PRESS.	DUCT	DUCT			(ft/min)
TRUNK A	474	0.06	11.4	16	x	8	533	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	670	0.06	13	22	x	8	548	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	981	0.06	15	26	x	8	679	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	0	0.00	0	0	x	8	0	TRUNK J	0	0.00	0	0	x	8	0
TRUNK E	0	0.00	0	0	x	8	0	TRUNK K	0	0.00	0	0	x	8	0
TRUNK F	0	0.00	0	0	x	8	0	TRUNK L	0	0.00	0	0	x	8	0

RETURN AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT		VELOCITY (ft/min)	
TRUNK O	0	0.05	0	0	x	8	0
TRUNK P	0	0.05	0	0	x	8	0
TRUNK Q	0	0.05	0	0	x	8	0
TRUNK R	0	0.05	0	0	x	8	0
TRUNK S	0	0.05	0	0	x	8	0
TRUNK T	0	0.05	0	0	x	8	0
TRUNK U	0	0.05	0	0	x	8	0
TRUNK V	0	0.05	0	0	x	8	0
TRUNK W	0	0.05	0	0	x	8	0
TRUNK X	825	0.05	14.7	26	x	8	571
TRUNK Y	450	0.05	11.7	16	x	8	506
TRUNK Z	155	0.05	7.8	8	x	8	349
DROP	980	0.05	15.7	24	x	10	588

RETURN AIR #	1	2	3	4	5	8											BR
AIR VOLUME	155	115	115	115	335	0	0	145	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
ACTUAL DUCT LGH.	62	93	79	75	69	1	1	59	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	170	235	195	245	230	0	0	165	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	232	328	274	320	299	1	1	224	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.06	0.05	0.05	0.05	0.05	14.80	14.80	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE	7.5	7	7	7	10.5	0	0	7	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	0	0	8	0	0	0	0	0	0	0	0	0
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	30	0	0	14	0	0	0	0	0	0	0	0	0

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

LO # 98031
LOT 88 & 129

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>6</u> @ 10.6 cfm	<u>63.6</u> cfm
Other Rooms	<u>5</u> @ 10.6 cfm	<u>53.0</u> cfm
Table 9.32.3.A.	TOTAL	<u>190.8</u> cfm

PRINCIPAL VENTILATION CAPACITY REQUIRED		9.32.3.4.(1)
1 Bedroom	31.8	cfm
2 Bedroom	47.7	cfm
3 Bedroom	63.6	cfm
4 Bedroom	79.5	cfm
5 Bedroom	95.4	cfm
TOTAL		<u>79.5</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>190.8</u>	cfm
Less Principal Ventil. Capacity	<u>150</u>	cfm
Required Supplemental Capacity	<u>40.8</u>	cfm

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

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °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 @ 32 deg F (0 deg C)	☒ HVI Approved

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:	July-22

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																	
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																	
LO#: 98031		Model: 5013 - RIVERVIEW		Builder: GOLD PARK HOMES			Date: 2022-07-20																																																										
Volume Calculation					Air Change & Delta T Data																																																												
House Volume <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>9</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	9	0	Fourth	0	9	0	Total:			69,405.0 ft³	Total:			1965.3 m³	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 20%;">0.340</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.114</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="5" style="text-align: center;">Design Temperature Difference</th> </tr> <tr> <th></th> <th>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> <th>ΔT °F</th> </tr> <tr> <td>Winter DTDh</td> <td>22</td> <td>-20</td> <td>42</td> <td>76</td> </tr> <tr> <td>Summer DTDc</td> <td>24</td> <td>31</td> <td>7</td> <td>13</td> </tr> </table>					WINTER NATURAL AIR CHANGE RATE	0.340	SUMMER NATURAL AIR CHANGE RATE	0.114	Design Temperature Difference						Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-20	42	76	Summer DTDc	24	31	7	13
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5.2.3.1 Heat Loss due to Air Leakage					6.2.6 Sensible Gain due to Air Leakage																																																												
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.340 x 545.93 x 42 °C x 1.2 = 9406 W = 32093 Btu/h					$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.114 x 545.93 x 7 °C x 1.2 = 533 W = 1817 Btu/h																																																												
5.2.3.2 Heat Loss due to Mechanical Ventilation					6.2.7 Sensible heat Gain due to Ventilation																																																												
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E) \times 2 \text{ HRV / ERV's}$ 300 CFM x 76 °F x 1.08 x 0.25 = 6156 Btu/h					$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 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)																																																																	
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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 																																																												

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 5013 - RIVERVIEW	LOT 88 & 129	BUILDER: GOLD PARK HOMES
SFQT: 4502	LO# 98031	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:	5
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:	226.0 ft

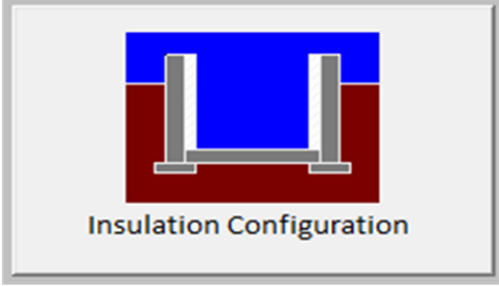
2012 OBC - COMPLIANCE PACKAGE		Compliance Package A1	
Component		Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value		60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value		31	27.65
Exposed Floor Minimum RSI (R)-Value		31	29.80
Walls Above Grade Minimum RSI (R)-Value		22	17.03
Basement 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):	21.3	 Insulation Configuration
Floor Width (m):	13.1	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	1.4	
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):		2361

TYPE: 5013 - RIVERVIEW
LO# 98031

LOT 88 & 129

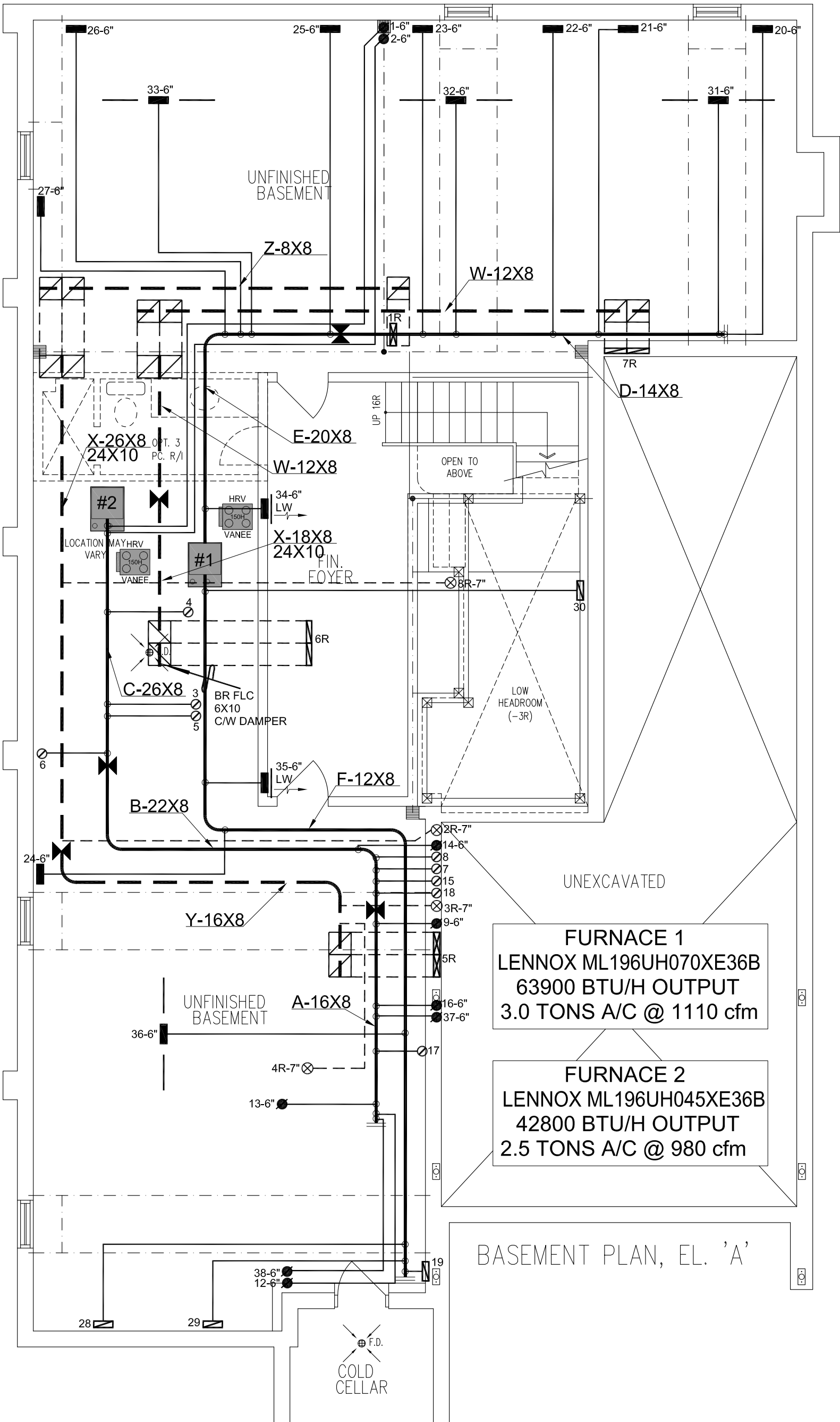
Air Infiltration Residential Load Calculator

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):	7.01			
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):	0.340			
Cooling Air Leakage Rate (ACH/H):	0.114			

TYPE: 5013 - RIVERVIEW
LO# 98031

LOT 88 & 129



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.

LOT 88 & 129

CSA-F280-12

PACKAGE A1

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

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FURNACE 1
LENNOX ML196UH070XE36B
63900 BTU/H OUTPUT
3.0 TONS A/C @ 1110 cfm

FURNACE 2
LENNOX ML196UH045XE36B
42800 BTU/H OUTPUT
2.5 TONS A/C @ 980 cfm

BASEMENT PLAN, EL. 'A'

Client

GOLD PARK HOMES

Project Name

PINE VALLEY PH 2
VAUGHAN, ONTARIO

RIVERVIEW - LOT 88 & 129
5013 4502 sqft

HVACDESIGNS LTD.

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.

	S/A	R/A	FANS
2ND	18	6	6
1ST	12	2	2
BAS	6	1	0

Sheet Title

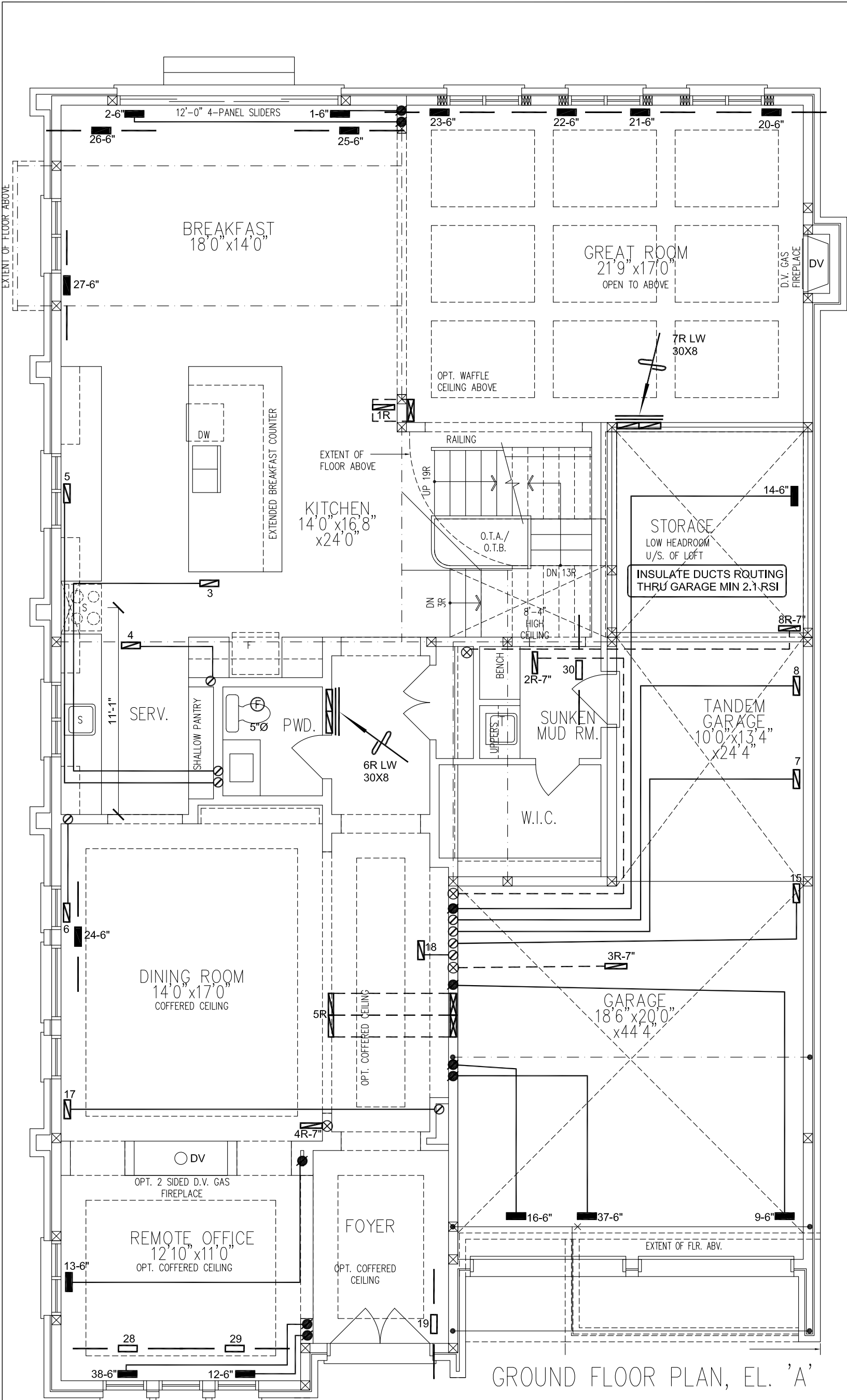
BASEMENT
HEATING
LAYOUT

Date JULY/2022

Scale 3/16" = 1'-0"

BCIN# 19669

LO# 98031



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.

LOT 88 & 129

CSA-F280-12

PACKAGE A1

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

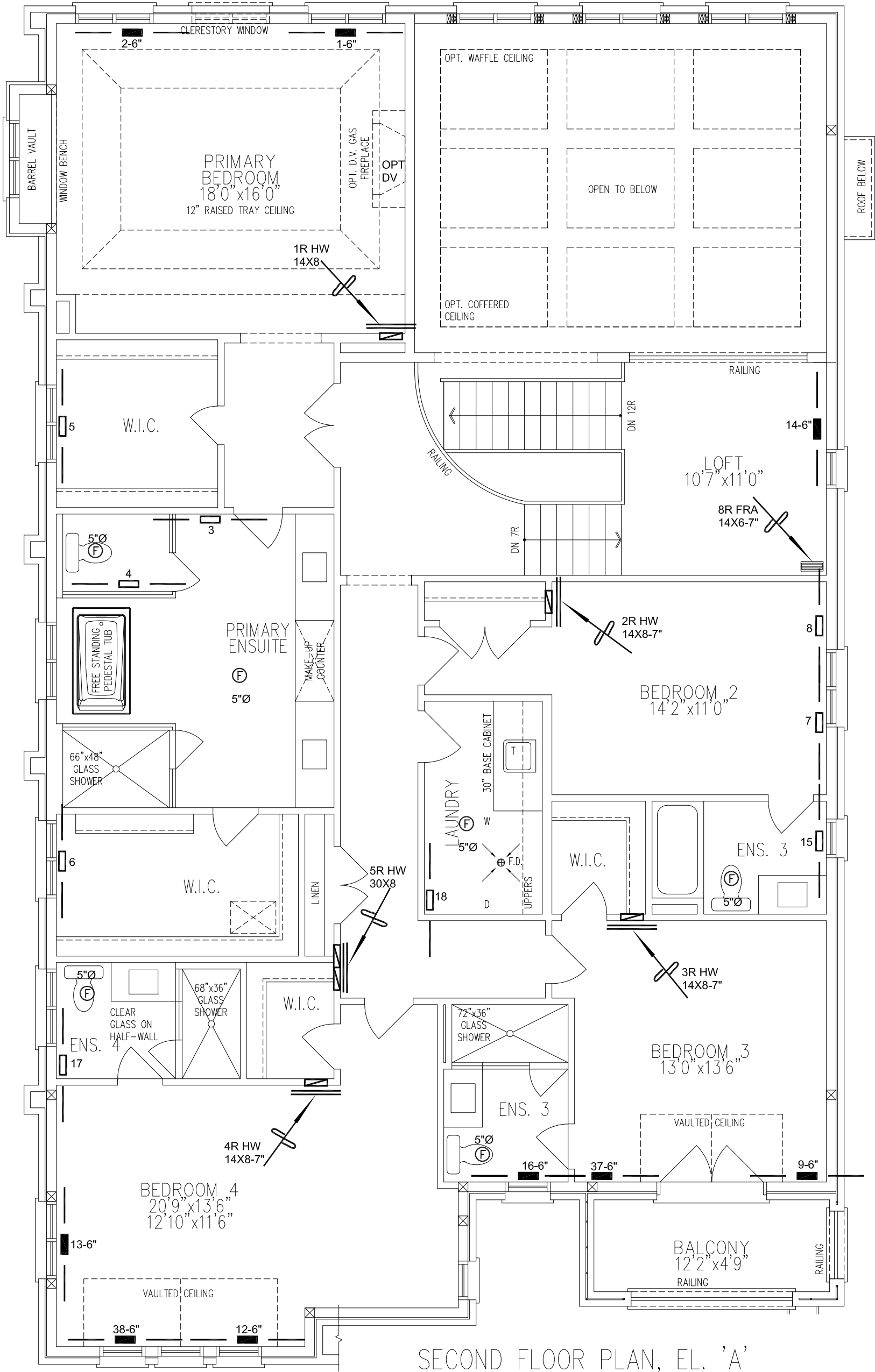
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Client	GOLD PARK HOMES
Project Name	PINE VALLEY PH 2 VAUGHAN, ONTARIO
	RIVERVIEW - LOT 88 & 129 5013 4502 sqft

375 Finley Ave. Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
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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	FIRST FLOOR HEATING LAYOUT
Date	JULY/2022
Scale	3/16" = 1'-0"
	BCIN# 19669
LO#	98031



SECOND FLOOR PLAN, EL. 'A'

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

LOT 88 & 129

CSA-F280-12

PACKAGE A1

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HVAC LEGEND											
SYMBOL		DESCRIPTION		SYMBOL		DESCRIPTION		SYMBOL		DESCRIPTION	
		SUPPLY AIR GRILLE				6" SUPPLY AIR BOOT ABOVE				RETURN AIR STACK ABOVE	
		SUPPLY AIR GRILLE 6" BOOT				SUPPLY AIR STACK FROM 2nd FLOOR				RETURN AIR STACK 2nd FLOOR	
		SUPPLY AIR BOOT ABOVE				6" SUPPLY AIR STACK 2nd FLOOR				REDUCER	

Client

GOLD PARK HOMES

Project Name

PINE VALLEY PH 2
VAUGHAN, ONTARIO

RIVERVIEW - LOT 88 & 129
5013 4502 sqft

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Sheet Title

SECOND FLOOR
HEATING
LAYOUT

Date JULY/2022

Scale 3/16" = 1'-0"

BCIN# 19669

LO# 98031