

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 WO/ LOFT - 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 4, 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

SITE NAME: PINE VALLEY PH 2										DATE May-22		WINTER NATURAL AIR CHANGE RATE 0.407		HEAT LOSS AT °F. 76		CSA-F280-12	
BUILDER: GOLD PARK HOMES										LO# 96527		SUMMER NATURAL AIR CHANGE RATE 0.137		HEAT GAIN AT °F. 13		SB-12 PACKAGE A1	
TYPE: 5013 - RIVERVIEW										WIC		ENS-3		ENS-4		WIC-E	
ROOM USE										BED-2		BED-3		BED-4		FOY	
EXP. WALL CLG. HT.										WIC		ENS		BED-2		BED-3	
FACTORS										LOSS		LOSS		LOSS		LOSS	
GRS.WALL AREA										GAIN		GAIN		GAIN		GAIN	
GLAZING										LOSS		LOSS		LOSS		LOSS	
NORTH										21.3 16.0		21.3 16.0		21.3 16.0		21.3 16.0	
EAST										21.3 41.6		21.3 41.6		21.3 41.6		21.3 41.6	
SOUTH										21.3 24.9		21.3 24.9		21.3 24.9		21.3 24.9	
WEST										21.3 41.6		21.3 41.6		21.3 41.6		21.3 41.6	
SKYL.T.										37.2 101.5		37.2 101.5		37.2 101.5		37.2 101.5	
DOORS										25.2 4.3		25.2 4.3		25.2 4.3		25.2 4.3	
NET EXPOSED WALL										4.5 0.8		4.5 0.8		4.5 0.8		4.5 0.8	
NET EXPOSED BEAM WALL ABOVE GR										3.6 0.6		3.6 0.6		3.6 0.6		3.6 0.6	
EXPOSED CLG										1.3 0.6		1.3 0.6		1.3 0.6		1.3 0.6	
NO ATTIC EXPOSED CLG										2.7 1.3		2.7 1.3		2.7 1.3		2.7 1.3	
EXPOSED FLOOR										2.6 0.4		2.6 0.4		2.6 0.4		2.6 0.4	
BASEMENT/CRAWL HEAT LOSS										0		0		0		0	
SLAB ON GRADE HEAT LOSS										0		0		0		0	
SUBTOTAL HT LOSS										2696		2696		2696		2696	
SUB TOTAL HT GAIN										2327		2327		2327		2327	
LEVEL FACTOR / MULTIPLIER										0.20 0.42		0.20 0.42		0.20 0.42		0.20 0.42	
AIR CHANGE HEAT LOSS										1119		1119		1119		1119	
AIR CHANGE HEAT LOSS										170		170		170		170	
DUCT LOSS										0		0		0		0	
DUCT GAIN										0		0		0		0	
HEAT GAIN PEOPLE										240		240		240		240	
HEAT GAIN APPLIANCES/LIGHTS										890		890		890		890	
TOTAL HT LOSS BTU/H										3815		3815		3815		3815	
TOTAL HT GAIN x 1.3 BTU/H										5027		5027		5027		5027	

SITE NAME: PINE VALLEY PH 2
BUILDER: GOLD PARK HOMESWOV/LOFT - WOB
TYPE: 5013 - RIVERVIEW
DATE: May-22

GFA: 4502 LO# 96527 FURNACE 1

HEATING CFM 1170 COOLING CFM 1170
TOTAL HEAT LOSS 61,458 TOTAL HEAT GAIN 35,832
AIR FLOW RATE CFM 19.04 AIR FLOW RATE CFM 32.65FURNACE HEAT LOSS +
HRV / ERV HEAT LOSS
= 64536 BTUHAFUE = 96 %
INPUT (BTUH) = 88,000
OUTPUT (BTUH) = 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.

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35
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 0.15DESIGN CFM = 1170
CFM @ .6" E.S.P.

TEMPERATURE RISE 68 °F

RUN #	ROOM NAME	RM LOSS MBH	CFM PER RUN HEAT	RM GAIN MBH	CFM PER RUN COOLING	ADJUSTED PRESSURE	ACTUAL DUCT LGH	EQUIVALENT LENGTH	TOTAL EFFECTIVE LENGTH	ADJUSTED PRESSURE	ROUND DUCT SIZE	HEATING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	OUTLET GRILL SIZE
19	FOY	3.28	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	3X10
20	GRT	2.53	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
21	GRT	2.53	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
22	GRT	2.53	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
23	GRT	2.53	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
24	DIN	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	3X10
25	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
26	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
27	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
28	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
29	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
30	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
31	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
32	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
33	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
34	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
35	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
36	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
37	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
38	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
39	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
40	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
41	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
42	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
43	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
44	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
45	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
46	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
47	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
48	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
49	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
50	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
51	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
52	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
53	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
54	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
55	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
56	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
57	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
58	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
59	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
60	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
61	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
62	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
63	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
64	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
65	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
66	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
67	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
68	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
69	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
70	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
71	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
72	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
73	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
74	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
75	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
76	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
77	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
78	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
79	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
80	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
81	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
82	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
83	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
84	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
85	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
86	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
87	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
88	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
89	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
90	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
91	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
92	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
93	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
94	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
95	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
96	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
97	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
98	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
99	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10
100	Bas	3.20	2.53	2.53	2.53	0.16	100	110	130	0.12	6	5	5	4X10

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	2.75	2.75	2.75	1.84	1.84	3.27	4.95	4.95	4.95	4.95	4.95	4.95
CFM PER RUN HEAT	52	52	52	35	35	62	94	94	94	94	94	94
RM GAIN MBH	2.97	2.97	2.97	2.23	2.23	0.49	0.76	0.76	0.76	0.76	0.76	0.76
CFM PER RUN COOLING	97	97	97	73	73	16	25	25	25	25	25	25
ADJUSTED PRESSURE	0.16	0.16	0.16	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	34	39	31	65	60	21	66	37	49	16	15	49
EQUIVALENT LENGTH	100	140	170	130	120	140	130	140	140	130	130	130
TOTAL EFFECTIVE LENGTH	134	179	201	195	180	161	196	177	189	146	145	179
ADJUSTED PRESSURE	0.12	0.09	0.08	0.09	0.1	0.11	0.08	0.09	0.09	0.11	0.11	0.09
ROUND DUCT SIZE	6	6	6	5	5	5	6	6	6	6	6	6
HEATING VELOCITY (ft/min)	265	265	265	257	257	455	479	479	479	479	479	479
COOLING VELOCITY (ft/min)	495	495	495	536	536	117	127	127	127	127	127	127
OUTLET GRILL SIZE	4X10	4X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	4X10
TRUNK	F	F	F	F	F	F	D	D	F	F	F	F

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

WO/ LOFT - WOB.
TYPE: 5013 - RIVERVIEW

GFA: 4502 LO# 98527 FURNACE 2

HEATING CFM 980 COOLING CFM 980
TOTAL HEAT LOSS 27,275 TOTAL HEAT GAIN 28,498
AIR FLOW RATE CFM 35.93 AIR FLOW RATE CFM 34.39

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35
plenum pressure s/a 0.18
max s/a diff press. loss 0.02
min adjusted pressure s/a 0.16

AFUE = 96 %
INPUT (BTU/H) = 44,000
OUTPUT (BTU/H) = 42,800
FAN SPEED
LOW 620
MEDLOW 685
MEDIUM 980
HIGH 1110
DESIGN CFM = 980
CFM @ .5" E.S.P.

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	19	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	PBR	ENS	ENS	WIC	WIC	BED-2	BED-2	BED-3	BED-3	BED-4	BED-4	BED-4	ENS-2	ENS-3	ENS-4	LND	
RM LOSS MBH	1.91	1.91	1.04	1.04	0.87	0.81	1.52	1.52	1.62	1.62	1.71	1.71	1.71	1.99	1.88	0.83	0.26	
CFM PER RUN HEAT	69	69	38	38	31	29	54	54	58	58	61	61	61	72	68	30	9	
RM GAIN MBH	2.51	2.51	0.69	0.69	0.37	0.37	1.33	1.33	1.97	1.97	2.23	2.23	2.23	0.67	1.34	0.49	1.36	
CFM PER RUN COOLING	86	86	24	24	13	13	46	46	68	68	77	77	77	23	46	17	47	
ADJUSTED PRESSURE	0.16	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	
EQUIVALENT LENGTH	210	190	255	130	245	120	170	170	200	190	180	190	170	190	180	160	130	
TOTAL EFFECTIVE LENGTH	262	253	303	146	296	139	242	257	278	259	249	256	243	274	244	235	176	
ADJUSTED PRESSURE	0.06	0.06	0.06	0.12	0.06	0.12	0.07	0.07	0.06	0.06	0.07	0.07	0.07	0.06	0.07	0.07	0.1	
ROUND DUCT SIZE	6	6	5	4	4	4	5	5	6	6	6	6	6	6	6	4	4	
HEATING VELOCITY (ft/min)	352	352	279	436	356	333	396	396	296	296	311	311	311	367	347	344	103	
COOLING VELOCITY (ft/min)	438	438	176	275	149	149	338	338	347	347	393	393	393	117	235	195	539	
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
ROOM NAME	BED-3	BED-4
RM LOSS MBH	1.62	1.71
CFM PER RUN HEAT	58	61
RM GAIN MBH	1.97	2.23
CFM PER RUN COOLING	68	77
ADJUSTED PRESSURE	0.17	0.17
EQUIVALENT LENGTH	67	71
TOTAL EFFECTIVE LENGTH	190	170
ADJUSTED PRESSURE	0.07	0.07
ROUND DUCT SIZE	6	6
HEATING VELOCITY (ft/min)	296	311
COOLING VELOCITY (ft/min)	347	393
OUTLET GRILL SIZE	4X10	4X10
TRUNK	A	A

SUPPLY AIR TRUNK SIZE	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	516	0.06	11.8	18	8	0	0.00	0	0	8	0	0.05	0	0	8
TRUNK B	705	0.06	13.2	22	8	0	0.00	0	0	8	0	0.05	0	0	8
TRUNK C	979	0.06	15	26	8	0	0.00	0	0	8	0	0.05	0	0	8
TRUNK D	0	0.00	0	0	8	0	0.00	0	0	8	0	0.05	0	0	8
TRUNK E	0	0.00	0	0	8	0	0.00	0	0	8	0	0.05	0	0	8
TRUNK F	0	0.00	0	0	8	0	0.00	0	0	8	0	0.05	0	0	8

RETURN AIR #	1	2	3	4	5
AIR VOLUME	155	260	115	115	335
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	62	93	79	75	69
EQUIVALENT LENGTH	170	195	195	245	230
TOTAL EFFECTIVE LH	232	288	274	320	299
ADJUSTED PRESSURE	0.06	0.05	0.05	0.05	0.05
ROUND DUCT SIZE	7.5	9.5	7	8	10.5
INLET GRILL SIZE	8	8	8	8	8
INLET GRILL SIZE	14	30	14	14	30

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

LO # 96527
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	2 @ 21.2 cfm	42.4 cfm
Other Bedrooms	3 @ 10.6 cfm	31.8 cfm
Kitchen & Bathrooms	6 @ 10.6 cfm	63.6 cfm
Other Rooms	4 @ 10.6 cfm	42.4 cfm
Table 9.32.3.A.	TOTAL	180.2 cfm

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

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	180.2	cfm
Less Principal Ventil. Capacity	150	cfm
Required Supplemental Capacity	30.2	cfm

PRINCIPAL EXHAUST FAN CAPACITY			
Model:	VANEE V150H		
Location:	BSMT		
150.0 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
ENS	BY INSTALLING CONTRACTOR	50	✓
ENS-2	BY INSTALLING CONTRACTOR	50	✓
ENS-3	BY INSTALLING CONTRACTOR	50	✓
ENS-4	BY INSTALLING CONTRACTOR	50	✓

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#: 96527		Model: 5013 - RIVERVIEW		Builder: GOLD PARK HOMES		Date: 2022-05-04																																			
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>9</td> <td>0</td> </tr> <tr> <td>Fourth</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td colspan="2">Total:</td> <td></td> <td>69,405.0 ft³</td> </tr> <tr> <td colspan="2">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
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5.2.3.1 Heat Loss due to Air Leakage																																									
$HL_{airb} = LR_{airb} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$																																									
0.407	x	545.93	x	42 °C	x	1.2	=	11254 W																																	
								=	38399 Btu/h																																
5.2.3.2 Heat Loss due to Mechanical Ventilation																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																									
300 CFM	x	76 °F	x	1.08	x	0.25	=	6156 Btu/h																																	
								x 2 HRV / ERV's																																	
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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5	0		0	0.000																																					
*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 - RIVERVIEW	WO/ LOFT - WOB	BUILDER: GOLD PARK HOMES
SFQT: 4502	LO# 96527	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:	173.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	53.0 ft

2012 OBC - COMPLIANCE PACKAGE

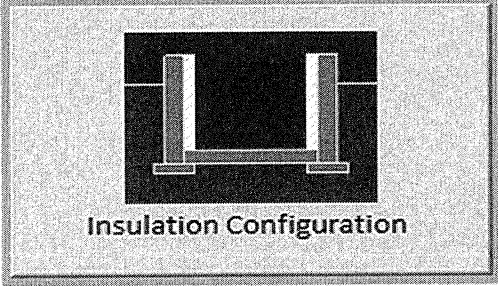
Component	Compliance Package A1	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 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

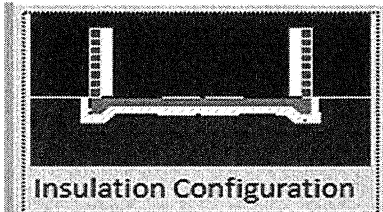
Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	 Insulation Configuration
Floor Width (m):	13.1	
Exposed 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 - RIVERVIEW
LO# 96527

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 - RIVERVIEW
LO# 96527

WO/ LOFT - WOB

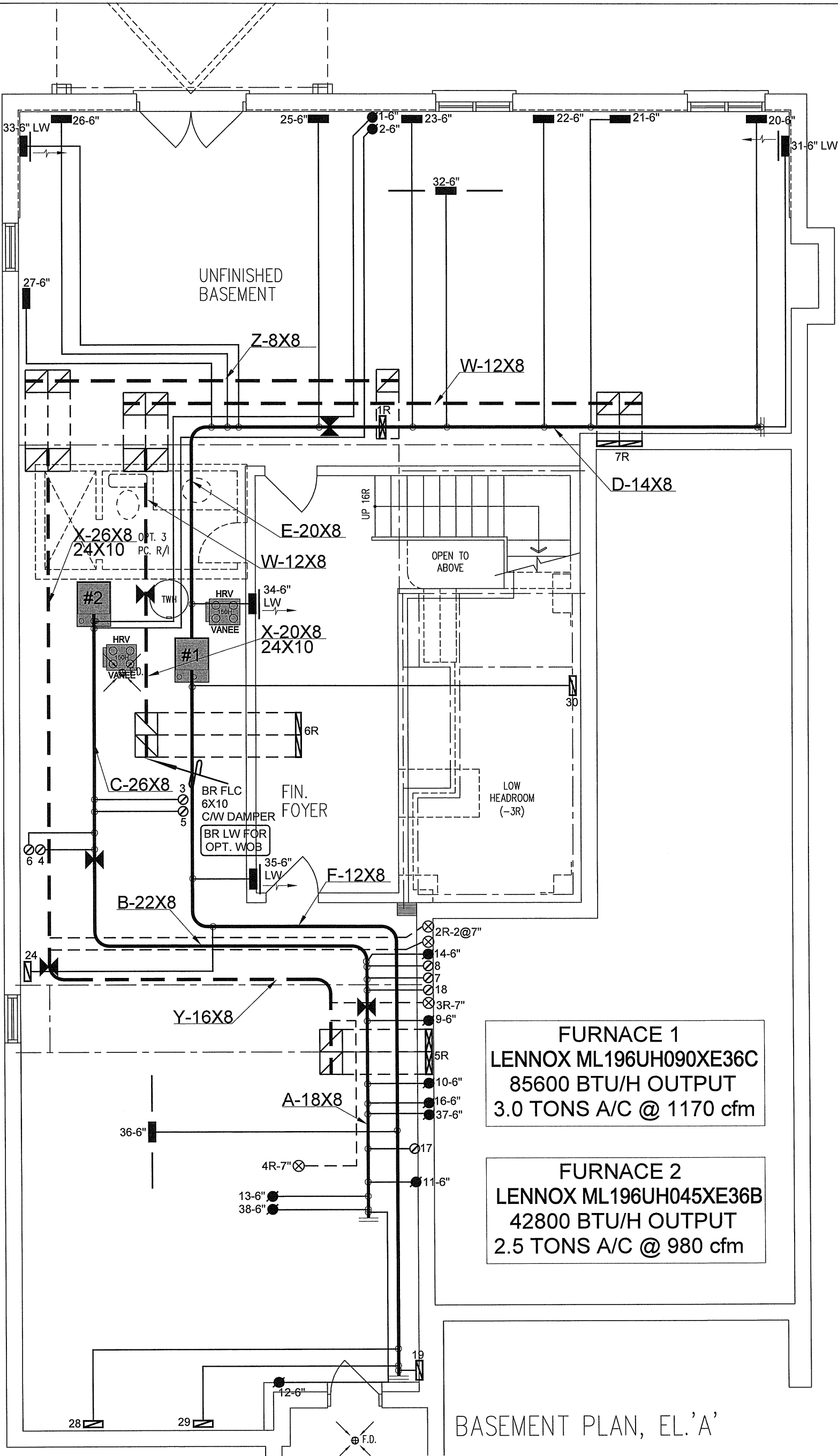
Air Infiltration Residential Load Calculator

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 - RIVERVIEW
LO# 96527

WO/ LOFT - WOB



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

FURNACE 1
LENNOX ML196UH090XE36C
85600 BTU/H OUTPUT
3.0 TONS A/C @ 1170 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 - WO/ LOFT
5013 - WOB 4502 sqft**

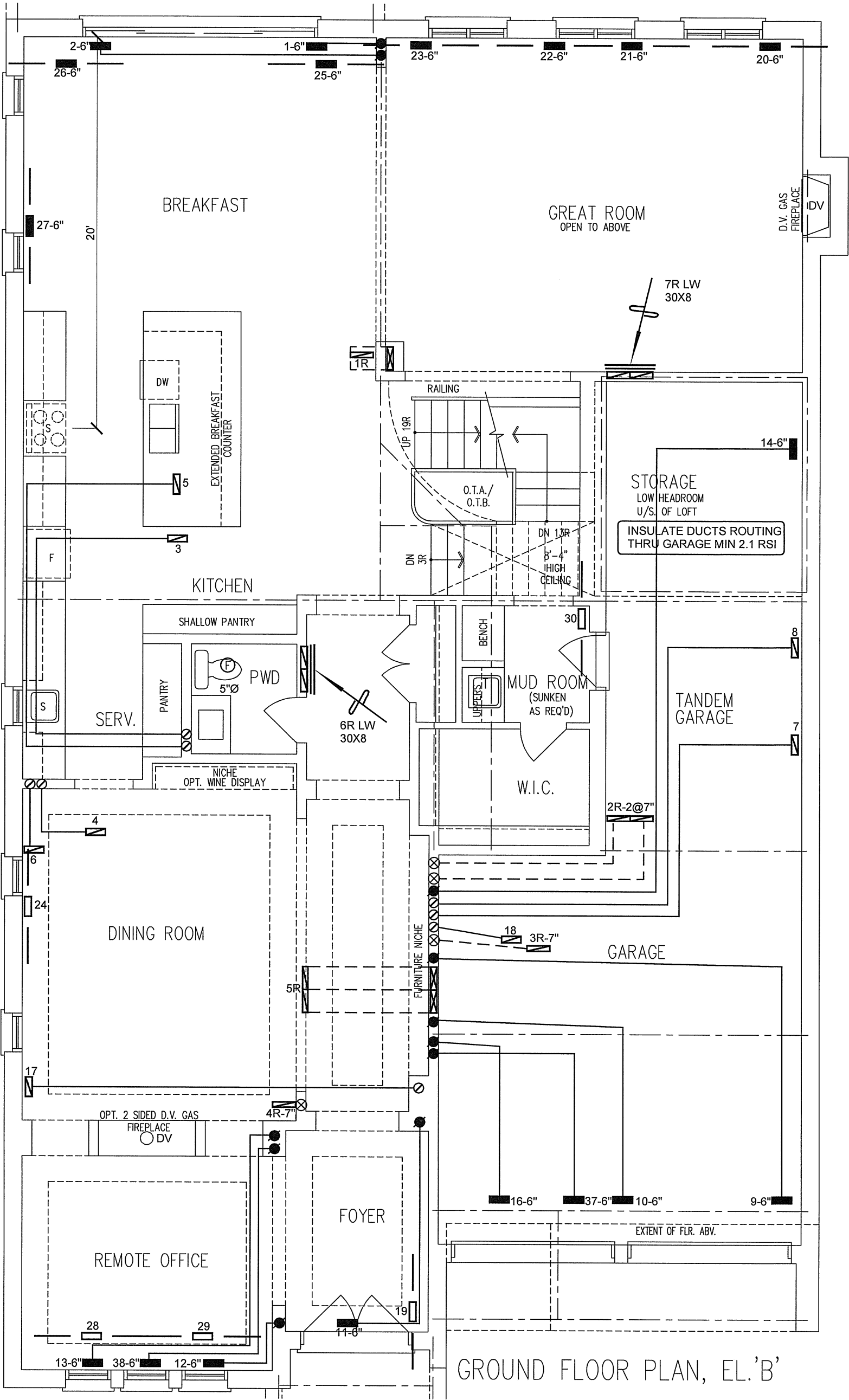
HVACDESIGNS LTD.

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	19	5	6
1ST	12	2	2
BAS	6	1	0

Sheet Title	
BASEMENT HEATING LAYOUT	
Date	MAY/2022
Scale	3/16" = 1'-0"
BCIN# 19669	
LO#	96527



GROUND FLOOR PLAN, EL.'B'

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			REVISIONS	
SYMBOL	DESCRIPTION	SYMBOL	No.	Date
	SUPPLY AIR GRILLE		1.	
	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			

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Client
GOLD PARK HOMES

Project Name
**PINE VALLEY PH 2
VAUGHAN, ONTARIO**

RIVERVIEW - WO/ LOFT
5013 - WOB **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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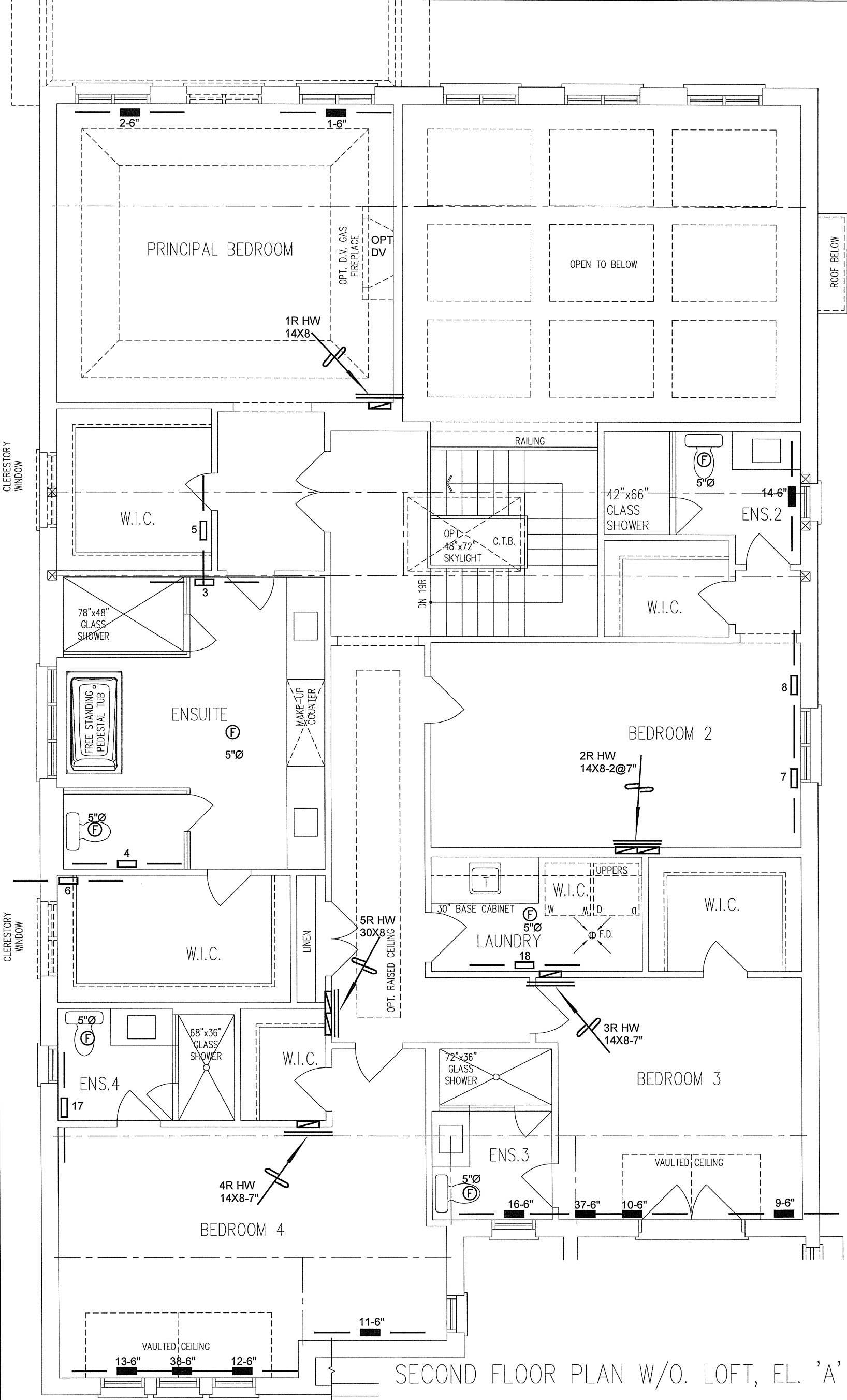
Sheet Title
**FIRST FLOOR
HEATING
LAYOUT**

Date
MAY/2022

Scale
3/16" = 1'-0"

BCIN# 19669

LO# 96527



SECOND FLOOR PLAN W/O. LOFT, EL. 'A'

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	SYMBOL	DESCRIPTION	2.	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14" RETURN AIR GRILLE	1.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30" 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

RIVERVIEW - WO/ LOFT
5013 - WOB 4502 sqft

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Sheet Title

SECOND FLOOR
HEATING
LAYOUT

Date

MAY/2022

Scale

3/16" = 1'-0"

BCIN# 19669

LO# 96527

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.

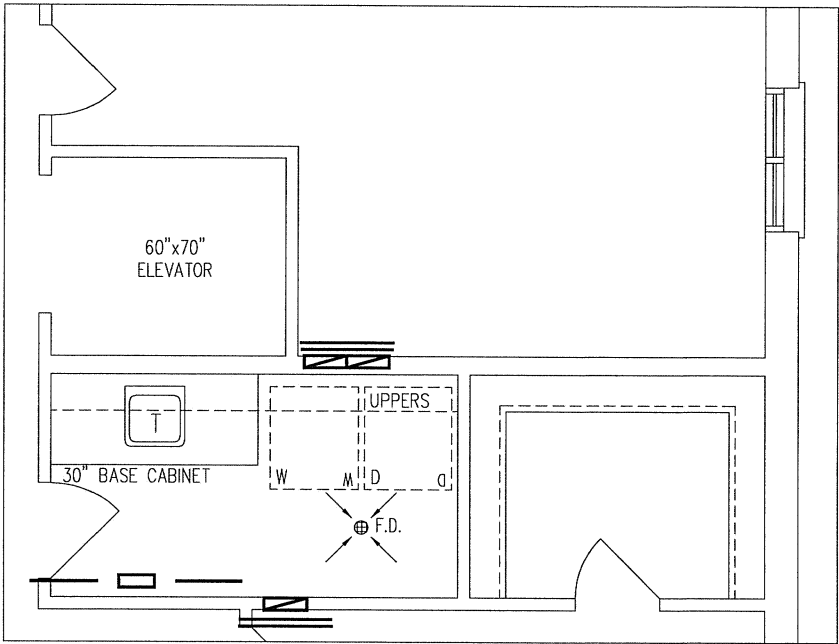
WOB

CSA-F280-12

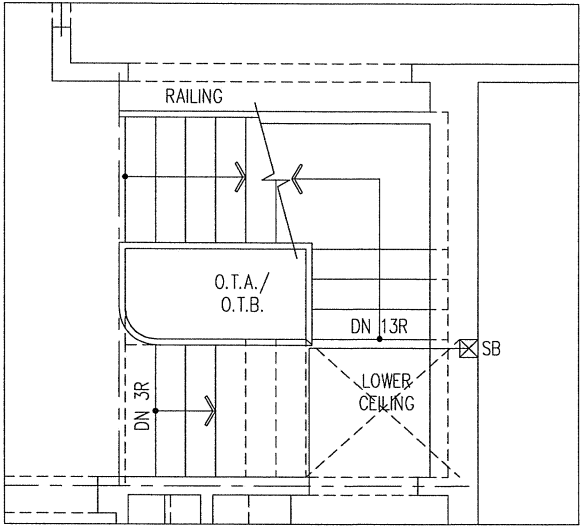
PACKAGE A1

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

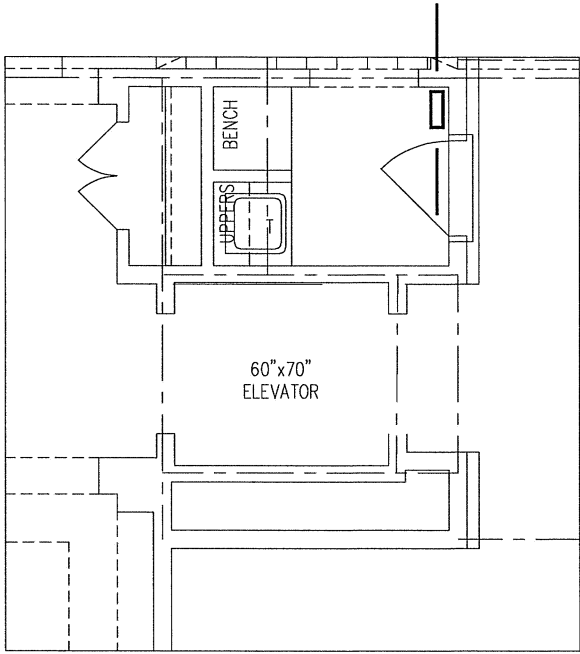
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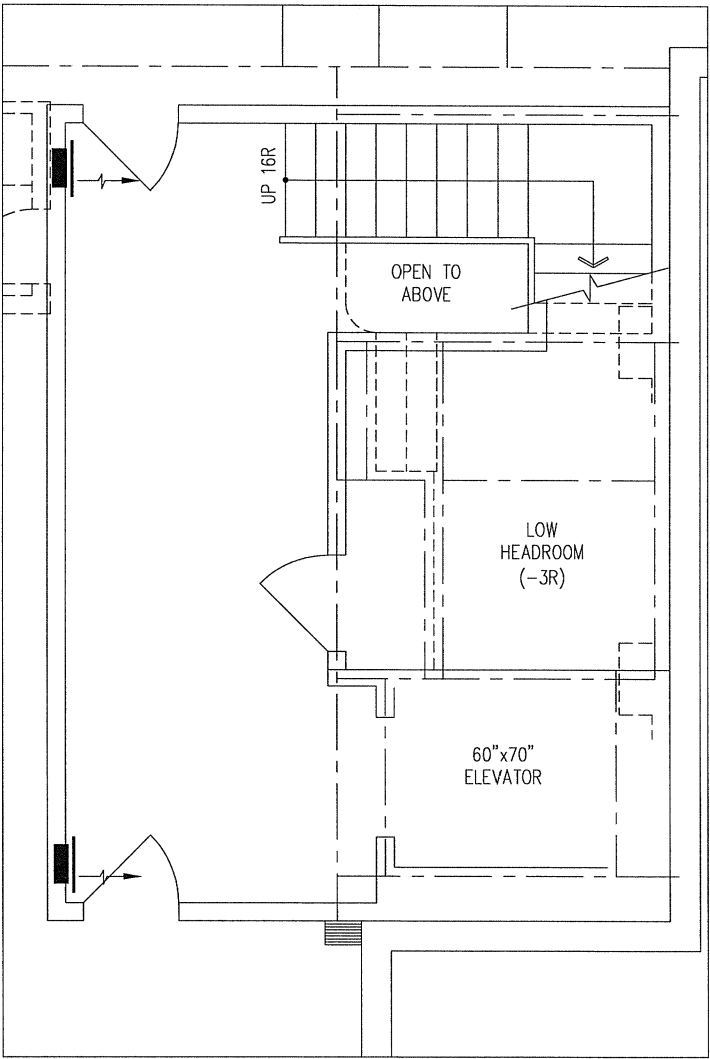
PART. SECOND FLOOR PLAN W/O.
LOFT W/ ELEVATOR, EL. 'A'



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



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



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

Client
GOLD PARK HOMES

Project Name
**PINE VALLEY PH 2
VAUGHAN, ONTARIO**

**RIVERVIEW - WO/ LOFT
5013 - WOB 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.

Sheet Title
**STRIP PLAN
HEATING
LAYOUT**

Date
MAY/2022

Scale
3/16" = 1'-0"

BCIN# 19669

LO# 96527

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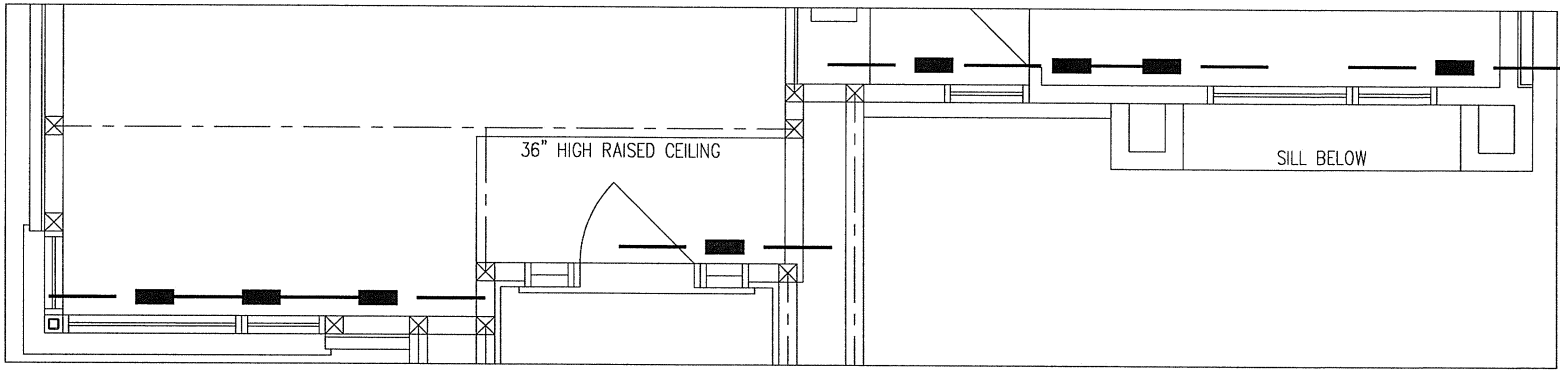
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CSA-F280-12

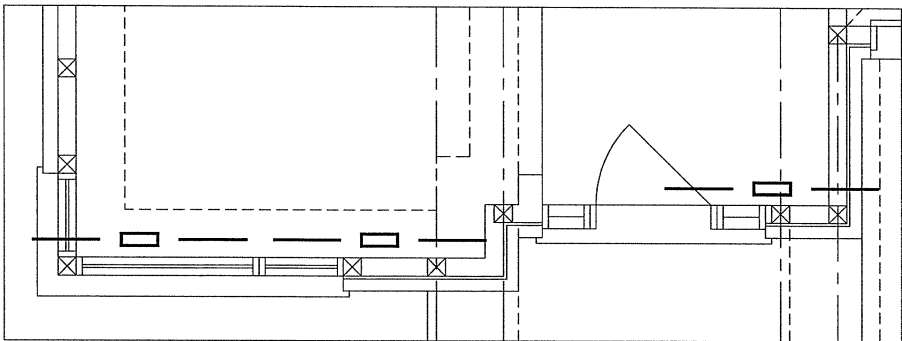
PACKAGE A1

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

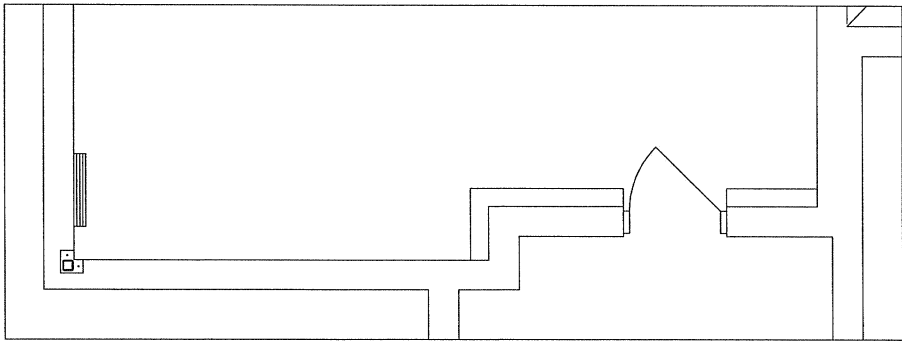
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PARTIAL SECOND FLOOR PLAN, EL.'C'



PARTIAL GROUND FLOOR PLAN, EL.'C'



PARTIAL BASEMENT PLAN, EL.'C'

Client
GOLD PARK HOMES

Project Name
PINE VALLEY PH 2
VAUGHAN, ONTARIO

RIVERVIEW - WO/ LOFT
5013 - WOB 4502 sqft

HVAC

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Sheet Title
ELEVATION
HEATING
LAYOUT

Date
MAY/2022

Scale
3/16" = 1'-0"

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