

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: 5012 WILLOWCREEK - OPT 5 BED 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

TOTAL HEAT GAIN BTU/H:	65004	TONS: 5.42	LOSS DUE TO VENTILATION LOAD BTU/H: 6156	STRUCTURAL HEAT LOSS: 87885	TOTAL COMBINED HEAT LOSS BTU/H: 94041
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SITE NAME: PINE VALLEY PH 2
BUILDER: GOLD PARK HOMES
TYPE: 5012
DATE: May-22
WILLOWCREEK - OPT 5 BED
GFA: 4461
LO# 96519
FURNACE 1

FURNACE HEAT LOSS +
HRV / ERV HEAT LOSS
= 63733 BTUH

ML196UH070XE36B
FAN SPEED
LOW
MEDIUM
HIGH

AFUE = 96 %
INPUT (BTUH) = 66,000
OUTPUT (BTUH) = 63,900

HEATING CFM	985	COOLING CFM	985
TOTAL HEAT LOSS	60,655	TOTAL HEAT GAIN	30,027
AIR FLOW RATE CFM	16.24	AIR FLOW RATE CFM	32.8

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

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

All S/A runs 5'10" unless noted otherwise on layout.

ROOM NAME	25	26	27	28	29	30	31	32	33	34	35	36
RM LOSS MBH.	2.26	2.26	2.26	2.11	2.11	3.14	2.73	5.94	5.94	5.94	5.94	5.94
CFM PER RUN HEAT	37	37	37	34	34	51	44	96	96	96	96	96
RM GAIN MBH.	2.50	2.50	2.50	2.67	2.67	1.97	0.44	0.49	0.49	0.49	0.49	0.49
CFM PER RUN COOLING	82	82	82	88	88	65	14	16	16	16	16	16
ADJUSTED PRESSURE	0.16	0.16	0.16	0.16	0.16	0.17	0.17	0.16	0.16	0.16	0.16	0.16
EQUIVALENT LENGTH	44	47	58	62	57	38	31	44	45	56	38	48
TOTAL EFFECTIVE LENGTH	100	120	130	130	110	110	110	140	130	150	130	130
ADJUSTED PRESSURE	144	167	188	192	167	148	121	184	175	166	188	178
ROUND DUCT SIZE	0.11	0.1	0.09	0.08	0.1	0.12	0.14	0.09	0.09	0.1	0.09	0.09
HEATING VELOCITY (ft/min)	6	6	6	6	6	5	4	6	6	6	6	6
COOLING VELOCITY (ft/min)	189	189	189	173	173	374	505	489	489	489	489	489
OUTLET GRILL SIZE	4X10	4X10	4X10	4X10	4X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10
TRUNK	D	D	D	G	G	G	F	E	D	E	G	G

ROOM NAME	25	26	27	28	29	30	31	32	33	34	35	36
RM LOSS MBH.	2.26	2.26	2.26	2.11	2.11	3.14	2.73	5.94	5.94	5.94	5.94	5.94
CFM PER RUN HEAT	37	37	37	34	34	51	44	96	96	96	96	96
RM GAIN MBH.	2.50	2.50	2.50	2.67	2.67	1.97	0.44	0.49	0.49	0.49	0.49	0.49
CFM PER RUN COOLING	82	82	82	88	88	65	14	16	16	16	16	16
ADJUSTED PRESSURE	0.16	0.16	0.16	0.16	0.16	0.17	0.17	0.16	0.16	0.16	0.16	0.16
EQUIVALENT LENGTH	44	47	58	62	57	38	31	44	45	56	38	48
TOTAL EFFECTIVE LENGTH	100	120	130	130	110	110	110	140	130	150	130	130
ADJUSTED PRESSURE	144	167	188	192	167	148	121	184	175	166	188	178
ROUND DUCT SIZE	0.11	0.1	0.09	0.08	0.1	0.12	0.14	0.09	0.09	0.1	0.09	0.09
HEATING VELOCITY (ft/min)	6	6	6	6	6	5	4	6	6	6	6	6
COOLING VELOCITY (ft/min)	189	189	189	173	173	374	505	489	489	489	489	489
OUTLET GRILL SIZE	4X10	4X10	4X10	4X10	4X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10
TRUNK	D	D	D	G	G	G	F	E	D	E	G	G

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	0	0.00	0	0	8	311	0.08	9.1	10	8
TRUNK B	0	0.00	0	0	8	TRUNK G	0.00	0	0	8
TRUNK C	0	0.00	0	0	8	TRUNK H	0.00	0	0	8
TRUNK D	207	0.09	7.5	8	8	TRUNK I	0.00	0	0	8
TRUNK E	364	0.09	9.3	10	8	TRUNK J	0.00	0	0	8
TRUNK F	615	0.09	11.3	16	8	TRUNK K	0.00	0	0	8
						TRUNK L	0.00	0	0	8

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	0	0.00	0	0	8	TRUNK O	0.06	0	0	8
TRUNK B	0	0.00	0	0	8	TRUNK P	0.06	0	0	8
TRUNK C	0	0.00	0	0	8	TRUNK Q	0.06	0	0	8
TRUNK D	207	0.09	7.5	8	8	TRUNK R	0.06	0	0	8
TRUNK E	364	0.09	9.3	10	8	TRUNK S	0.06	0	0	8
TRUNK F	615	0.09	11.3	16	8	TRUNK T	0.06	0	0	8
						TRUNK U	0.06	0	0	8
						TRUNK V	0.06	0	0	8
						TRUNK W	0.06	0	0	8
						TRUNK X	0.06	0	0	8
						TRUNK Y	0.06	0	0	8
						TRUNK Z	0.06	0	0	8
						DROP	985	0.06	15	10

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

WILLOWCREEK - OPT 5 BED

TYPE: 5012 DATE: May-22

GFA: 4461 LO# 96519

FURNACE 2

HEATING CFM 1110 COOLING CFM 1110
TOTAL HEAT LOSS 27,230 TOTAL HEAT GAIN 34,458
AIR FLOW RATE CFM 40.76 AIR FLOW RATE CFM 32.21furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure 0.35
for s/a & r/aML196UH045XE36B 45
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"Ø unless noted otherwise on layout.

plenum pressure s/a 0.18
max s/a dif 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

RUN #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
ROOM NAME	PBR	PBR	ENS-5	ENS	ENS	BED-2	BED-2	BED-3	BED-3	BED-3	BED-4	BED-4	BED-4	WIC	ENS-2	ENS-3	ENS-4	ENS-4	BED-5
RM LOSS MBH	1.31	1.31	0.68	0.76	0.76	1.38	1.38	1.42	1.42	1.42	1.92	1.92	1.92	1.31	0.98	1.87	1.39	1.39	1.27
CFM PER RUN HEAT	53	53	28	31	31	56	56	58	58	58	78	78	78	53	40	76	57	57	52
RM GAIN MBH	1.63	1.63	0.43	0.45	0.45	1.55	1.55	2.31	2.31	2.31	2.75	2.75	2.75	1.05	0.38	1.19	2.04	2.04	2.17
CFM PER RUN COOLING	52	52	14	15	15	50	50	74	74	74	89	89	89	34	12	38	66	66	70
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	0.17	0.17
ACTUAL DUCT LGH.	65	70	15	29	27	68	75	64	59	51	79	58	55	83	63	64	64	67	22
EQUIVALENT LENGTH	150	150	140	160	150	200	210	150	140	130	170	180	150	220	190	160	140	140	140
TOTAL EFFECTIVE LENGTH	215	220	155	189	177	268	285	214	199	181	249	238	205	303	253	224	204	207	162
ADJUSTED PRESSURE	0.08	0.08	0.11	0.09	0.1	0.06	0.06	0.08	0.09	0.1	0.07	0.07	0.08	0.06	0.07	0.08	0.08	0.08	0.11
ROUND DUCT SIZE	5	5	4	4	4	5	5	6	6	6	6	6	6	5	5	6	5	5	6
HEATING VELOCITY (ft/min)	389	389	321	356	356	411	411	296	296	296	398	398	398	389	294	388	419	419	265
COOLING VELOCITY (ft/min)	382	382	161	172	172	367	367	377	377	377	454	454	454	250	88	194	485	485	357
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	4X10	3X10	3X10	4X10	3X10	3X10	4X10
TRUNK	C	C	C	C	C	B	B	B	B	B	A	A	A	B	B	B	A	A	C

RUN #	37	38
ROOM NAME	PBR	LND
RM LOSS MBH	1.31	0.13
CFM PER RUN HEAT	53	5
RM GAIN MBH	1.63	1.10
CFM PER RUN COOLING	52	35
ADJUSTED PRESSURE	0.17	0.17
ACTUAL DUCT LGH.	75	34
EQUIVALENT LENGTH	190	200
TOTAL EFFECTIVE LENGTH	265	234
ADJUSTED PRESSURE	0.06	0.07
ROUND DUCT SIZE	5	4
HEATING VELOCITY (ft/min)	389	57
COOLING VELOCITY (ft/min)	382	402
OUTLET GRILL SIZE	3X10	3X10
TRUNK	C	B

SUPPLY AIR TRUNK SIZE										RETURN AIR TRUNK SIZE									
TRUNK	CFM	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	CFM
TRUNK A	348	0.07	9.8	12	8	TRUNK G	0	0.00	0	0	8	TRUNK O	0	0.05	0	0	8	TRUNK Q	0
TRUNK B	808	0.06	13.9	24	8	TRUNK H	0	0.00	0	0	8	TRUNK P	0	0.05	0	0	8	TRUNK R	0
TRUNK C	301	0.06	9.6	10	8	TRUNK I	0	0.00	0	0	8	TRUNK S	0	0.05	0	0	8	TRUNK T	0
TRUNK D	0	0.00	0	0	8	TRUNK J	0	0.00	0	0	8	TRUNK U	0	0.05	0	0	8	TRUNK V	0
TRUNK E	0	0.00	0	0	8	TRUNK K	0	0.00	0	0	8	TRUNK W	0	0.05	0	0	8	TRUNK X	0
TRUNK F	0	0.00	0	0	8	TRUNK L	0	0.00	0	0	8	TRUNK Y	0	0.05	0	0	8	TRUNK Z	0
RETURN AIR #										BR									
1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2
280	130	115	115	115	135	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0.15
64	77	62	69	64	60	1	1	1	1	1	1	1	1	1	1	1	1	1	1
180	185	235	235	235	195	0	0	0	0	0	0	0	0	0	0	0	0	0	0
244	262	297	304	284	255	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0.06	0.06	0.05	0.05	0.05	0.06	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80
9.4	7	7	7	7	7.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	14	14	14	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	14	14	14	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: 5012
SITE NAME: PINE VALLEY PH 2

LO # 96519
WILLOWCREEK - OPT 5 BED

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	4 @ 10.6 cfm	42.4 cfm
Table 9.32.3.A.	TOTAL	201.4 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	201.4	cfm
Less Principal Ventil. Capacity	150	cfm
Required Supplemental Capacity	51.4	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE V150H	Location: BSMT
150.0 cfm	☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	$\Delta T \cdot F$	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	
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

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

INDIVIDUAL BCIN: 19669

Michael O'Rourke

MICHAEL O'ROURKE

CSA F280-12 Residential Heat Loss and Heat Gain Calculations									
Formula Sheet (For Air Leakage / Ventilation Calculation)									
LO#: 96519		Model: 5012		Builder: GOLD PARK HOMES		Date: 2022-05-04			
Air Change & Delta T Data									
House Volume				Design Temperature Difference					
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Winter DTDh		Summer DTDc		Delta T (°F)	
Bsmt	2112	10	21120	22		24		42	
First	2112	11	23232	-20		31		76	
Second	2700	9	24300						
Third	0	9	0						
Fourth	0	9	0						
Total:			68,652.0 ft³						
Total:			1944.0 m³						
5.2.3.1 Heat Loss due to Air Leakage									
$HL_{airb} = LR_{airb} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$									
0.340	x	540.00	x	42 °C	x	1.2	=	9304 W	
								=	31745 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	
								=	1,037 Btu/h
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)									
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{aglevel} + HL_{bglevel})\}$									
Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{level})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)					
1	0.5	31,745	13,834	1.147					
2	0.3		21,425	0.445					
3	0.2		19,864	0.320					
4	0		0	0.000					
5	0		0	0.000					
*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairv = 0									
Michael O'Rourke BCIN# 19669 									

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 5012	WILLOWCREEK - OPT 5 BED	BUILDER: GOLD PARK HOMES
SFQT: 4461	LO# 96519	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):	68652.0	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: 72.0 ft	WIDTH: 43.0 ft	EXPOSED PERIMETER:	230.0 ft

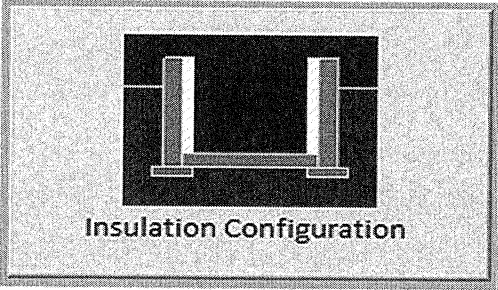
2012 OBC - COMPLIANCE PACKAGE		Compliance Package A1	
Component		Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value		60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value		31	27.65
Exposed Floor Minimum RSI (R)-Value		31	29.80
Walls Above Grade Minimum RSI (R)-Value		22	17.03
Basement 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):	21.9	 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):	2.1	
Door Area (m ²):	1.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		2372

TYPE: 5012
LO# 96519

WILLOWCREEK - OPT 5 BED

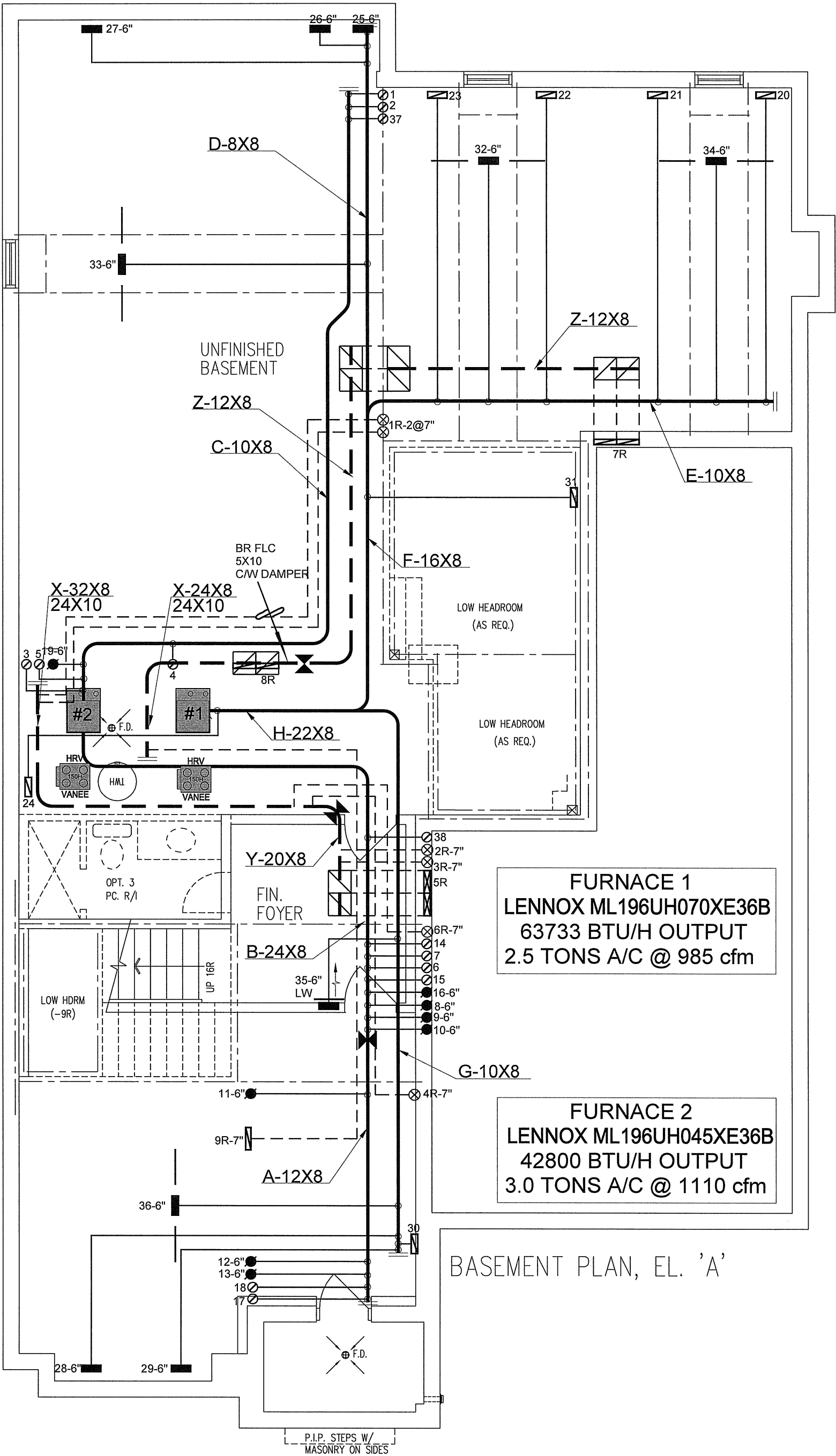
Air Infiltration Residential Load Calculator

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):	1944.0			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	2591.4 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: 5012
LO# 96519

WILLOWCREEK - OPT 5 BED



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.

LOD
WOD
CSA-F280-12
PACKAGE A1

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

FURNACE 1
LENNOX ML196UH070XE36B
63733 BTU/H OUTPUT
2.5 TONS A/C @ 985 cfm

FURNACE 2
LENNOX ML196UH045XE36B
42800 BTU/H OUTPUT
3.0 TONS A/C @ 1110 cfm

BASEMENT PLAN, EL. 'A'

Client
GOLD PARK HOMES

Project Name
PINE VALLEY PH 2
VAUGHAN, ONTARIO

WILLOWCREEK - OPT 5 BED
5012 4238 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	21	6	7
1ST	12	3	2
BAS	5	1	0

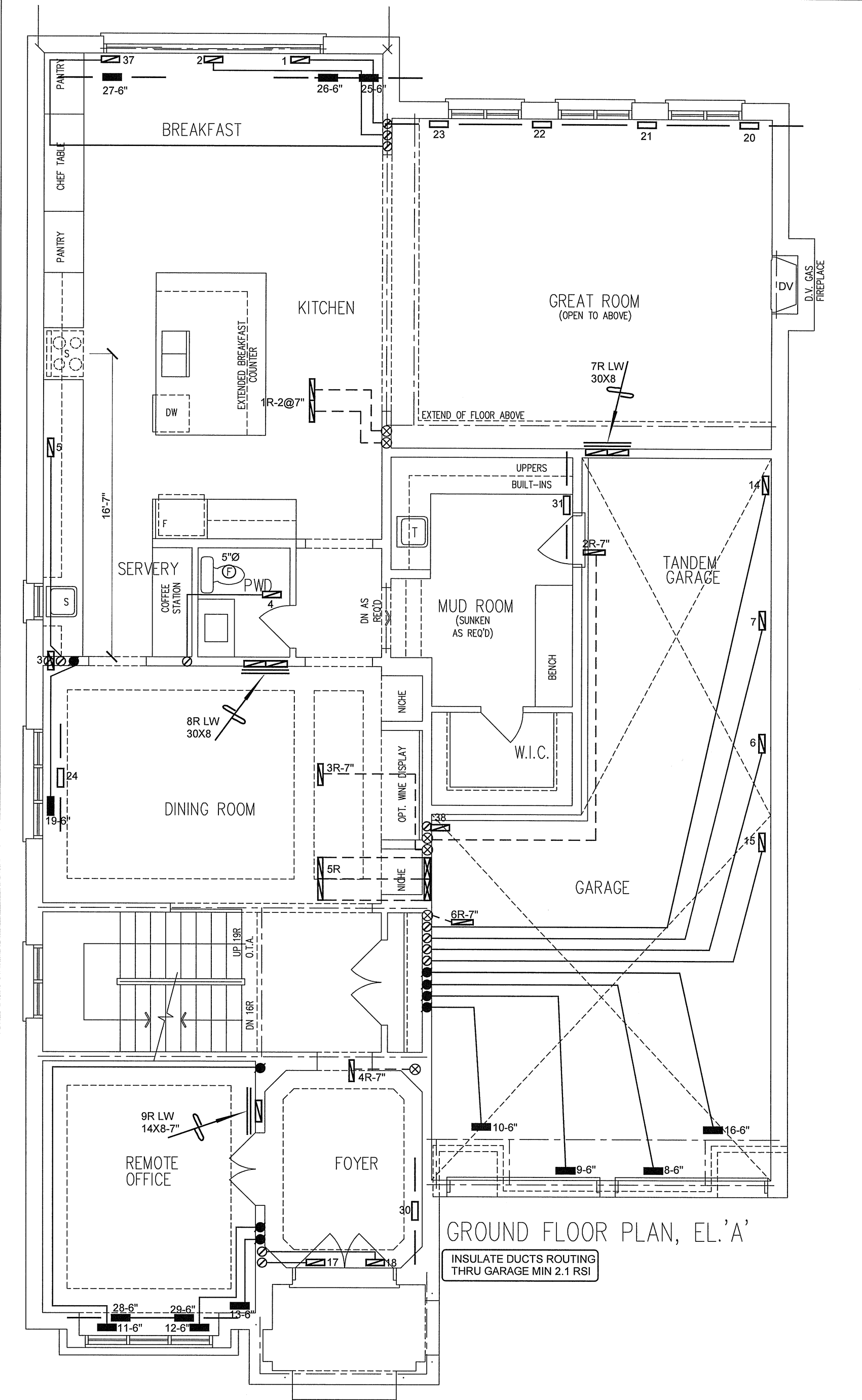
Sheet Title
BASEMENT
HEATING
LAYOUT

Date
MAY/2022

Scale
3/16" = 1'-0"

BCIN# 19669

LO# 96519



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.

LOD

WOD

CSA-F280-12

PACKAGE A1

HVAC LEGEND				3.	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14" RETURN AIR GRILLE
	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				No.	Date

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Client
GOLD PARK HOMES

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

**WILLOWCREEK - OPT 5 BED
5012 4238 sqft**

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L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
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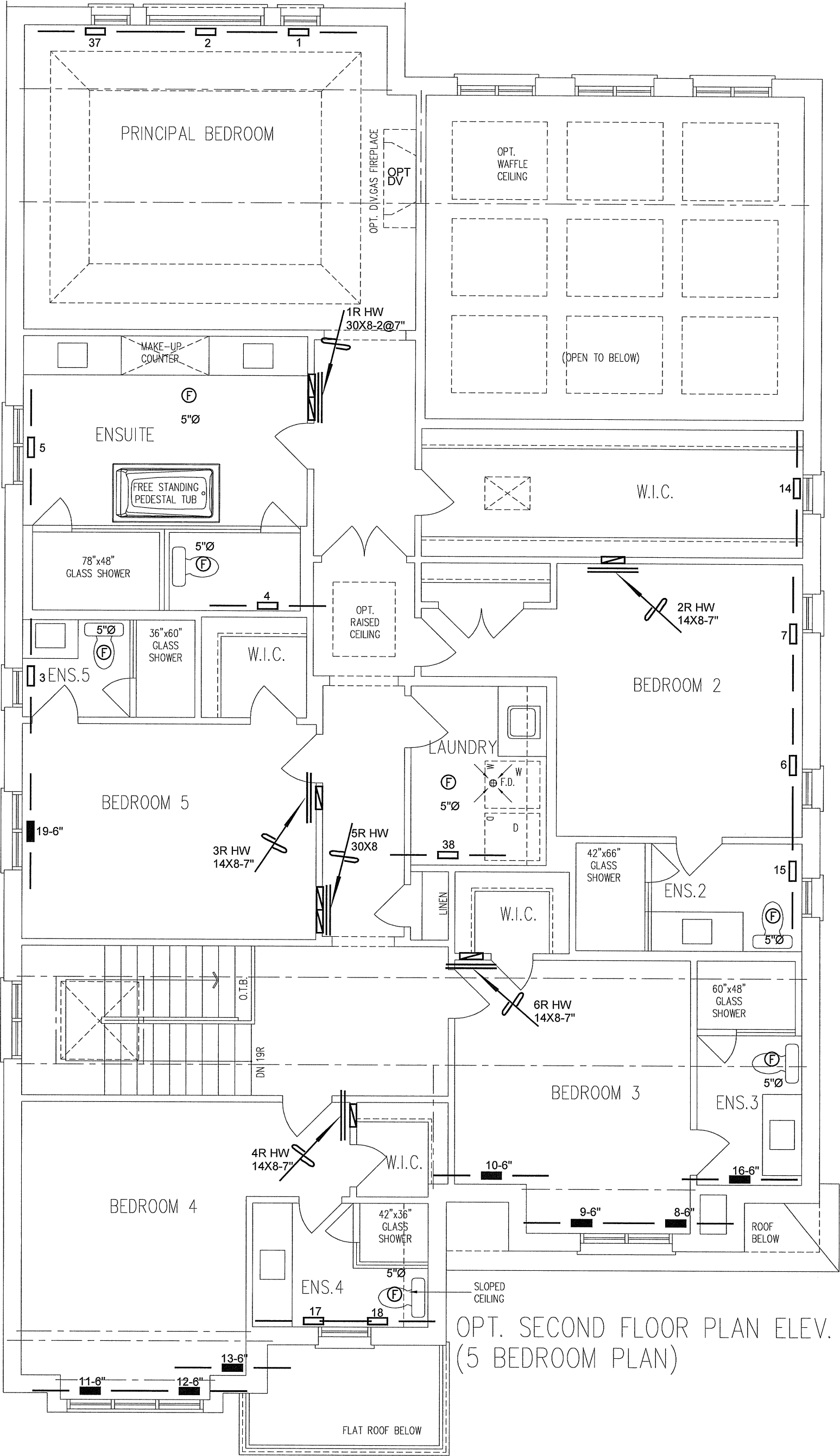
Sheet Title
**FIRST FLOOR
HEATING
LAYOUT**

Date
MAY/2022

Scale
3/16" = 1'-0"

BCIN# 19669

LO# **96519**



OPT. SECOND FLOOR PLAN ELEV. 'A'
(5 BEDROOM PLAN)

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

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

LOD

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CSA-F280-12

PACKAGE A1

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ONTARIO BUILDING CODE.

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	
	14"x8" RETURN AIR GRILLE		30"x8" RETURN AIR GRILLE	
	FRA FLOOR RETURN AIR GRILLE		RETURN AIR STACK ABOVE	
	REDUCER		RETURN AIR STACK 2nd FLOOR	
REVISIONS			Description	Date

Client
GOLD PARK HOMES

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

**WILLOWCREEK - OPT 5 BED
5012 4238 sqft**

HVACDESIGNS LTD.

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L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
Email: info@hvacdsgns.ca
Web: www.hvacdsgns.ca
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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.

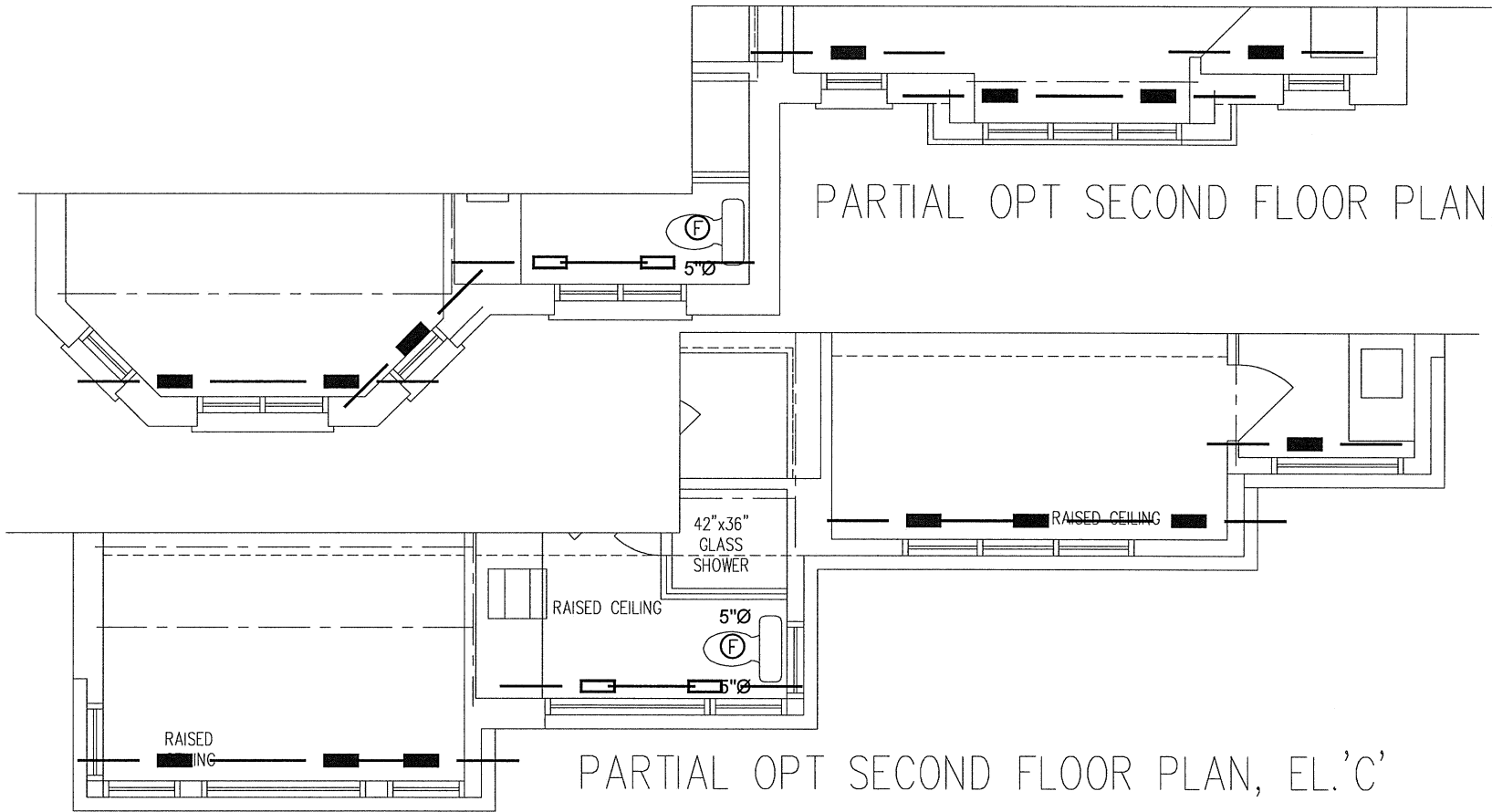
Sheet Title
**SECOND FLOOR
HEATING
LAYOUT**

Date
MAY/2022

Scale
3/16" = 1'-0"

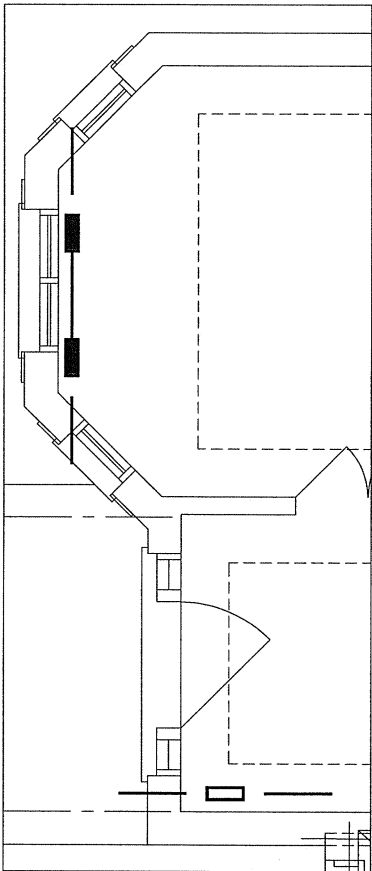
BCIN# 19669

LO# 96519

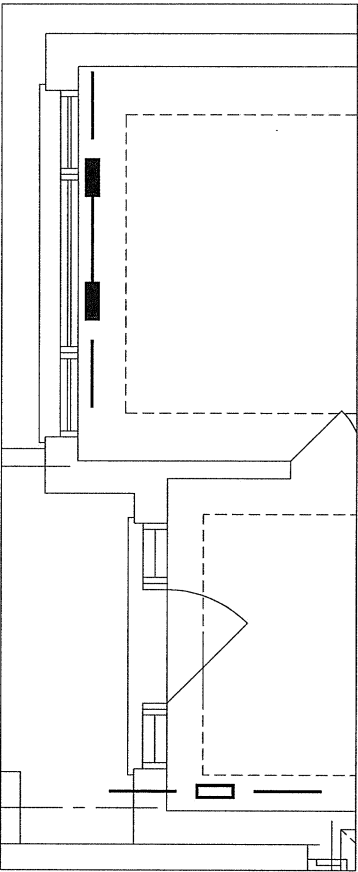


PARTIAL OPT SECOND FLOOR PLAN, EL.'B'

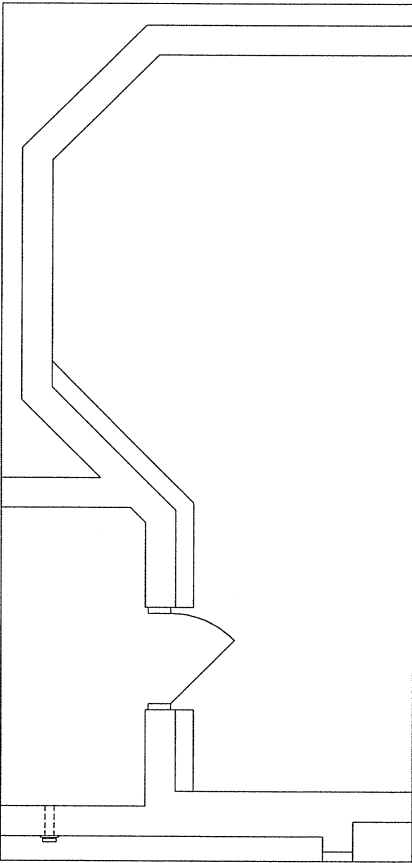
PARTIAL OPT SECOND FLOOR PLAN, EL.'C'



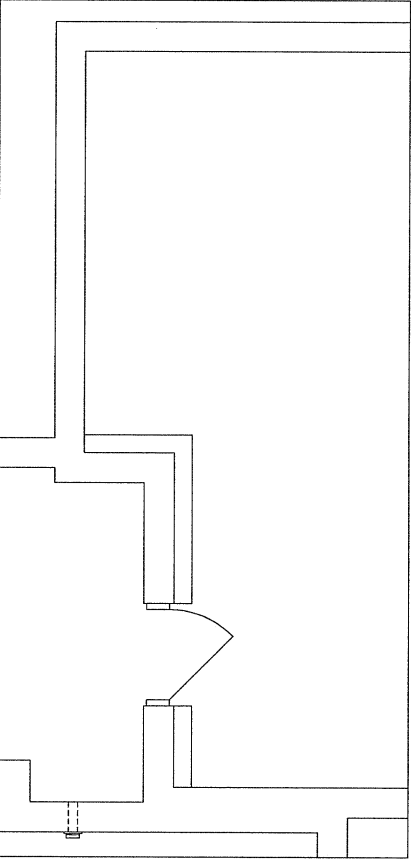
PARTIAL GROUND FLOOR PLAN, EL.'B'



PARTIAL GROUND FLOOR PLAN, EL.'C'



PARTIAL BASEMENT PLAN, EL.'B'



PARTIAL BASEMENT 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, LICIN# 19669
HVAC DESIGNS LTD.

LOD

WOD

CSA-F280-12

PACKAGE A1

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

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REVISIONS	

Client
GOLD PARK HOMES

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

**WILLOWCREEK - OPT 5 BED
5012 4238 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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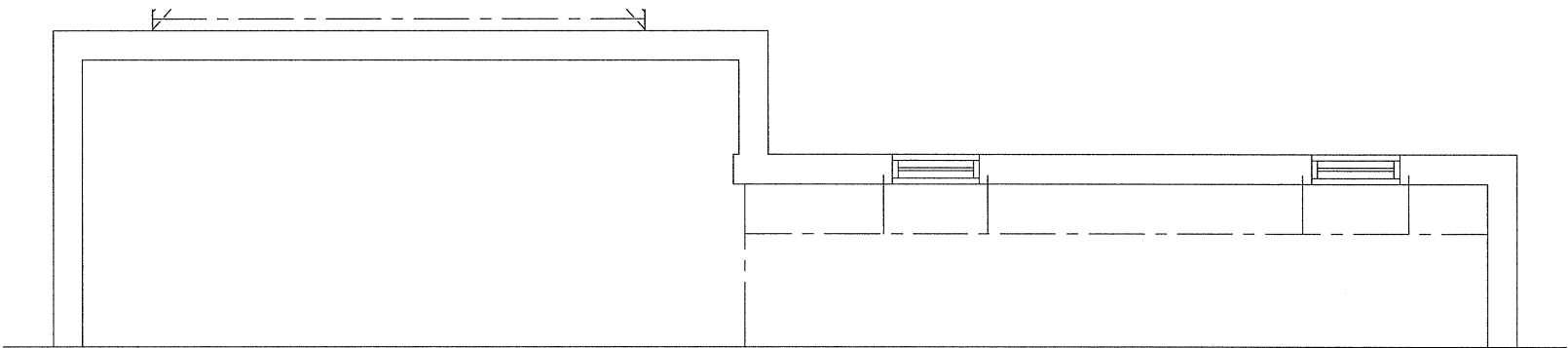
Sheet Title
**ELEVATIONS
HEATING
LAYOUT**

Date
MAY/2022

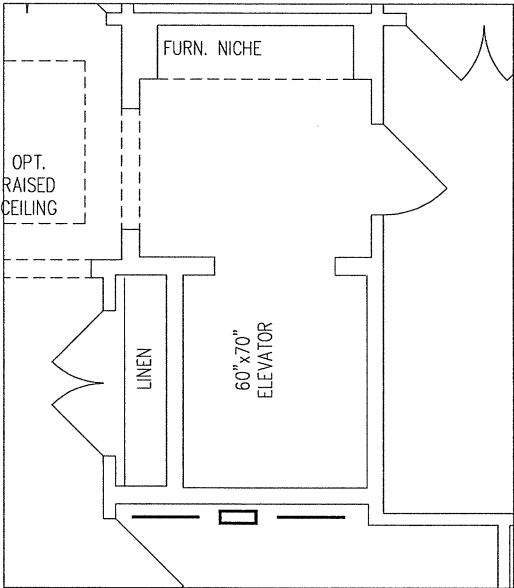
Scale
3/16" = 1'-0"

BCIN# 19669

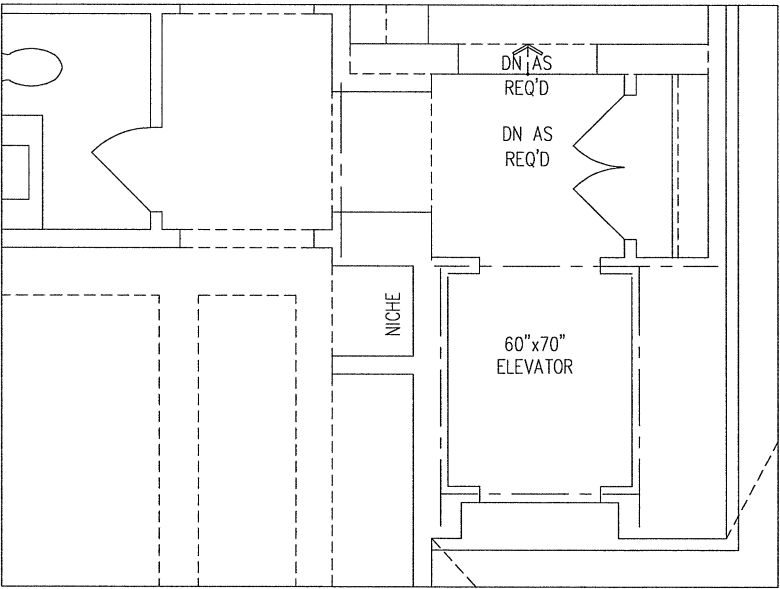
LO# **96519**



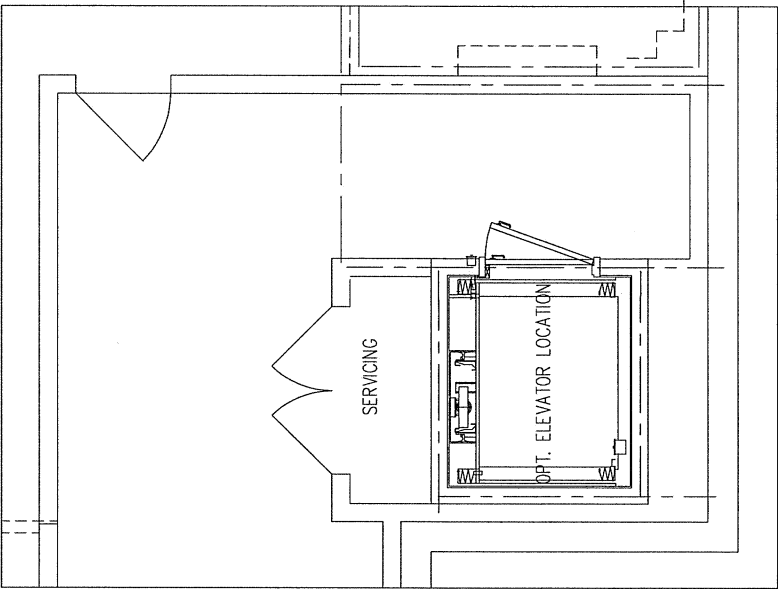
PART. BASEMENT PLAN ELEV. 'A' – W.O.D. COND.



PARTIAL OPT 5 BEDROOM SECOND FLOOR PLAN,
(W/ ELEVATOR) ELEV. 'A', 'B' & 'C'



PARTIAL GROUND FLOOR PLAN
(W/ ELEVATOR) ELEV. 'A', 'B' & 'C'



PARTIAL BASEMENT PLAN
(W/ ELEVATOR) ELEV. 'A', 'B' & 'C'

I MICHAEL O'ROURKE HAVE REVIEW
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C, 3.2.3 OF THE
BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

LOD

WOD

CSA-F280-12

PACKAGE A1

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

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Client
GOLD PARK HOMES

Project Name
PINE VALLEY PH 2
VAUGHAN, ONTARIO

WILLOWCREEK - OPT 5 BED
5012 4238 sqft

HVACDESIGNS LTD.

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L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
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adequately insulated and be gas-proofed.

Sheet Title
STRIP PLAN
HEATING
LAYOUT

Date
MAY/2022

Scale
3/16" = 1'-0"

BCIN# 19669

LO# 96519