

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: 6001 - QUEENSLAND - ELEV C OPT ELEVATOR Project: PINE VALLEY PH 2	
D. Declaration of Designer			
I, <u>MICHAEL O'ROURKE</u> declare that (choose one as appropriate): (print name)			
☐ I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories. Individual BCIN: _____ Firm BCIN: _____			
☒ I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5. of Division C, of the Building Code. Individual BCIN: <u>19669</u> Basis for exemption from registration and qualification: <u>O.B.C SENTENCE 3.2.4.1 (4)</u>			
☐ The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification: _____			
I certify that:			
1. The information contained in this schedule is true to the best of my knowledge. 2. I have submitted this application with the knowledge and consent of the firm.			
April 14, 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							OPT ELEVATOR							DATE Apr-22							WINTER NATURAL AIR CHANGE RATE 0.434							HEAT LOSS ΔT °F. 76							CSA-F280-12													
BUILDER: GOLD PARK HOMES							TYPE: 6001 - QUEENSLAND - ELEV C							GFA: 5401							LO# 96171							SUMMER NATURAL AIR CHANGE RATE 0.145							HEAT GAIN ΔT °F. 13							SB-12 PACKAGE A1						
ROOM USE			GREAT			KIT			DIN			LIBR			FOY			MUD																														
EXP. WALL			50			56			25			33			43			29																														
CLG. HT.			20			11			11			11			11			13																														
FACTORS																																																
GRS.WALL AREA			LOSS GAIN			1000			616			275			363			473			377																											
GLAZING						LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN																											
NORTH			21.3	16.0	46	979	735	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	0	0	65	1383	2701	25	532	1039	0	0	0	0	0	0	0	0	0	0	0																		
SOUTH			21.3	24.9	0	0	0	0	0	0	41	872	1021	18	383	448	0	0	0	0	0	0	0	0	0	0	0	0	0	0																		
WEST			21.3	41.6	134	2852	5568	134	2852	5568	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0																		
DOORS			25.2	4.3	0	0	0	0	0	0	0	0	0	0	0	0	30	757	128	20	505	85																										
NET EXPOSED WALL			4.5	0.8	820	3659	616	482	2151	362	234	1044	176	280	1250	210	418	1865	314	357	1593	268																										
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																										
EXPOSED CLG			1.3	0.6	430	552	253	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																										
NO ATTIC EXPOSED CLG			2.7	1.3	10	27	13	0	0	0	0	0	0	10	27	13	0	0	0	0	0	0																										
EXPOSED FLOOR			2.6	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																										
BASEMENT/CRAWL HEAT LOSS																																																
SLAB ON GRADE HEAT LOSS																																																
SUBTOTAL HT LOSS						8069			5003			1917			3043			3155			2098																											
SUB TOTAL HT GAIN							7184			5930			1197			3372			1481			353																										
LEVEL FACTOR / MULTIPLIER				0.30	0.63			0.30	0.63		0.30	0.63		0.30	0.63		0.30	0.63		0.30	0.63																											
AIR CHANGE HEAT LOSS						5073			3145			1205			1913			1983			1319																											
AIR CHANGE HEAT GAIN							605			499			101			284			125			30																										
DUCT LOSS						0			0			0			0			0			0																											
DUCT GAIN							0		0			0			0			0		0		0																										
HEAT GAIN PEOPLE			240			0		0		0	0		0	0		0	0		0	0		0																										
HEAT GAIN APPLIANCES/LIGHTS							1542			1542			1542			1542			0			0																										
TOTAL HT LOSS BTU/H						13142			8148			3122			4957			5138			3417																											
TOTAL HT GAIN x 1.3 BTU/H							12131			10363			3692			6758			2087			498																										

ROOM USE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				</
----------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	----

SITE NAME: PINE VALLEY PH 2										OPT ELEVATOR										DATE Apr-22		WINTER NATURAL AIR CHANGE RATE 0.434										HEAT LOSS ΔT °F. 76		CSA-F280-1-				
BUILDER: GOLD PARK HOMES										TYPE: 6001 - QUEENSLAND - ELEV C										GFA: 5401		LO# 96171		SUMMER NATURAL AIR CHANGE RATE 0.145										HEAT GAIN ΔT °F. 13		SB-12 PACKAGE A		
ROOM USE			MBR			ENS			BED-2			BED-3			BED-4			BED-5			ENS-2			ENS-3			ENS-4			ENS-5								
EXP. WALL			20			32			18			20			35			16			6			18			10			6								
CLG. HT.			10			9			9			10			10			9			9			9			9			9								
FACTORS																																						
GRS.WALL AREA			LOSS GAIN			200			288			162			200			350			144			54			162			90			54					
GLAZING						LOSS GAIN			LOSS GAIN			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	38	809	607	18	383	288	0	0	0	0	0	0	8	170	128	0	0	0	0	0	0	0	0	0				
EAST			21.3	41.6	0	0	0	0	0	0	0	0	0	65	1383	2701	65	1383	2701	0	0	0	0	0	0	10	213	416	0	0	0	0	0	0				
SOUTH			21.3	24.9	0	0	0	22	468	548	0	0	0	0	0	0	18	383	448	19	404	473	0	0	0	0	0	0	8	170	199	8	170	199				
WEST			21.3	41.6	42	894	1745	8	170	332	0	0	0	0	0	0	0	383	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0					
DOORS			25.2	4.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
NET EXPOSED WALL			4.5	0.8	158	705	119	258	1151	194	124	553	93	117	522	88	267	1192	201	125	558	94	46	205	35	152	678	114	82	366	62	46	205	35				
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	0	0	0	0	0	0	0	0	0	0	0	0				
EXPOSED CLG			1.3	0.6	380	488	223	240	308	141	438	562	257	323	415	190	268	344	157	304	390	179	66	85	39	72	92	42	80	103	47	72	92	42				
NO ATTIC EXPOSED CLG			2.7	1.3	0	0	0	0	0	0	0	0	0	55	151	69	55	151	69	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	200	510	86	228	581	98	0	0	0	0	0	0	66	168	28	72	184	31	0	0	0	0	0	0				
BASEMENT/CRAWL HEAT LOSS																																						
SLAB ON GRADE HEAT LOSS																																						
SUBTOTAL HT LOSS			2087			2098			2434			3436			3453			1352			629			1167			639			468								
SUB TOTAL HT GAIN			2087			1215			1044			3433			3576			746			229			603			308			276								
LEVEL FACTOR / MULTIPLIER			0.20	0.46			0.20	0.46			0.20	0.46			0.20	0.46			0.20	0.46			0.20	0.46			0.20	0.46			0.20	0.46						
AIR CHANGE HEAT LOSS			954			959			1112			1570			1578			618			287			533			292			214								
AIR CHANGE HEAT GAIN						176			102			88			289			301			63			19			51			26			23					
DUCT LOSS			0			0			355			501			0			0			92			170			0			0								
DUCT GAIN			0			0			291			550			0			0			25			65			0			0			0					
HEAT GAIN PEOPLE			240		2	480	0	1	240		1	240	1	240		1	240		1	240	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
HEAT GAIN APPLIANCES/LIGHTS						1542			0			1542			1542			1542			1542			0			0			0			0					
TOTAL HT LOSS BTU/H			3040			3056			3901			5506			5031			1970			1007			1871			931			682								
TOTAL HT GAIN x 1.3 BTU/H			5571			1713			4167			7872			7358			3368			356			935			434			389								

ROOM USE	LAUN			HALL		
EXP. WALL	0			18		
CLG. HT.	9			10		
FACTORS						
GRS.WALL AREA	LOSS	GAIN	0	180		
GLAZING			LOSS GAIN	LOSS GAIN		
NORTH	21.3	16.0	0 0 0	0 0 0		
EAST	21.3	41.6	0 0 0	44 936 1828		
SOUTH	21.3	24.9	0 0 0	0 0 0		
WEST	21.3	41.6	0 0 0	0 0 0		
SKYLT.	37.2	101.5	0 0 0	24 894 2437		
DOORS	25.2	4.3	0 0 0	30 757 128		
NET EXPOSED WALL	4.5	0.8	0 0 0	106 473 80		
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0 0 0	0 0 0		
EXPOSED CLG	1.3	0.6	84 108 49	224 287 132		
NO ATTIC EXPOSED CLG	2.7	1.3	0 0 0	50 137 63		
EXPOSED FLOOR	2.6	0.4	0 0 0	0 0 0		
BASEMENT/CRAWL HEAT LOSS			0	0		
SLAB ON GRADE HEAT LOSS			0	0		
SUBTOTAL HT LOSS			108	3486		
SUB TOTAL HT GAIN			49	4667		
LEVEL FACTOR / MULTIPLIER		0.20	0.46	0.20 0.46		
AIR CHANGE HEAT LOSS			49	1593		
AIR CHANGE HEAT GAIN			4	393		
DUCT LOSS			0	0		
DUCT GAIN			0	0		
HEAT GAIN PEOPLE	240	0	0	0		
HEAT GAIN APPLIANCES/LIGHTS			1542	0		
TOTAL HT LOSS BTU/H			157	5078		
TOTAL HT GAIN x 1.3 BTU/H			2075	6578		

TOTAL HEAT GAIN BTU/H: 78387

TONS: 6.53

LOSS DUE TO VENTILATION LOAD BTU/H: 6156

STRUCTURAL HEAT LOSS: 106760

TOTAL COMBINED HEAT LOSS BTU/H: 112916

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

OPT ELEVATOR
TYPE: 6001 - QUEENSLAND - ELEV C DATE: Apr-22

GFA: 5401 LO# 96171

FURNACE 1

HEATING CFM 1170 COOLING CFM 1170
TOTAL HEAT LOSS 74,529 TOTAL HEAT GAIN 37,054
AIR FLOW RATE CFM 15.7 AIR FLOW RATE CFM 31.58

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
= 77607 BTUH**
\$LENNOX
ML196UH090XE36C
FAN SPEED 90
LOW 0
MEDLOW 0
MEDIUM 0
MEDIUM HIGH 1170
HIGH 1300

AFUE = 96 %
INPUT (BTU/H) = 88,000
OUTPUT (BTU/H) = **85,600**

DESIGN CFM = **1170**
CFM @ .6" E.S.P.

TEMPERATURE RISE 68 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	0	16	8
R/A	0	0	0	3	1

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	18	21	22	23	24
ROOM NAME	GREAT	GREAT	GREAT	GREAT	GREAT	KIT	KIT	KIT	KIT	DIN	DIN	LIBR	LIBR	LIBR	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	2.63	2.63	2.63	2.63	2.63	2.04	2.04	2.04	2.04	1.56	1.56	1.65	1.65	1.65	5.14	3.42	4.58	4.58	4.58	4.58
CFM PER RUN HEAT	41	41	41	41	41	32	32	32	32	25	25	26	26	26	81	54	72	72	72	72
RM GAIN MBH.	2.43	2.43	2.43	2.43	2.43	2.59	2.59	2.59	2.59	1.85	1.85	2.25	2.25	2.25	2.09	0.50	0.19	0.19	0.19	0.19
CFM PER RUN COOLING	77	77	77	77	77	82	82	82	82	58	58	71	71	71	66	16	6	6	6	6
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	74	89	83	78	72	67	59	45	46	46	10	22	27	31	40	48	67	56	65	71
EQUIVALENT LENGTH	140	130	150	160	130	130	140	170	110	120	150	150	130	120	140	150	110	120	120	140
TOTAL EFFECTIVE LENGTH	214	219	233	238	202	197	199	215	156	166	160	172	157	151	180	198	177	176	185	211
ADJUSTED PRESSURE	0.08	0.08	0.07	0.07	0.09	0.08	0.08	0.08	0.1	0.1	0.11	0.1	0.11	0.11	0.09	0.09	0.1	0.1	0.09	0.08
ROUND DUCT SIZE	6	6	6	6	6	6	6	6	6	5	5	5	5	5	6	5	5	5	5	6
HEATING VELOCITY (ft/min)	209	209	209	209	209	163	163	163	163	184	184	191	191	191	413	396	529	529	529	367
COOLING VELOCITY (ft/min)	393	393	393	393	393	418	418	418	418	426	426	521	521	521	337	117	44	44	44	31
OUTLET GRILL SIZE	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	4X10
TRUNK	A	A	A	A	B	B	B	C	D	D	D	E	E	E	E	D	C	C	B	A

RUN #	25	26	27	28
ROOM NAME	BAS	BAS	BAS	BAS
RM LOSS MBH.	4.58	4.58	4.58	4.58
CFM PER RUN HEAT	72	72	72	72
RM GAIN MBH.	0.19	0.19	0.19	0.19
CFM PER RUN COOLING	6	6	6	6
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	39	44	23	41
EQUIVALENT LENGTH	140	160	140	130
TOTAL EFFECTIVE LENGTH	179	204	163	171
ADJUSTED PRESSURE	0.1	0.08	0.11	0.1
ROUND DUCT SIZE	5	6	5	5
HEATING VELOCITY (ft/min)	529	367	529	529
COOLING VELOCITY (ft/min)	44	31	44	44
OUTLET GRILL SIZE	3X10	4X10	3X10	3X10
TRUNK	D	E	E	E

SUPPLY AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	236	0.07	8.4	8	x 10 425
TRUNK B	413	0.07	10.4	12	x 10 496
TRUNK C	176	0.08	7.3	8	x 8 396
TRUNK D	797	0.07	13.3	16	x 12 598
TRUNK E	375	0.08	9.7	12	x 8 563
TRUNK F	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	0.06	0	0	x 8 0
TRUNK P	0	0.06	0	0	x 8 0
TRUNK Q	0	0.06	0	0	x 8 0
TRUNK R	0	0.06	0	0	x 8 0
TRUNK S	0	0.06	0	0	x 8 0
TRUNK T	0	0.06	0	0	x 8 0
TRUNK U	0	0.06	0	0	x 8 0
TRUNK V	0	0.06	0	0	x 8 0
TRUNK W	330	0.06	9.9	12	x 8 495
TRUNK X	840	0.06	14.1	16	x 12 630
TRUNK Y	580	0.06	12.3	12	x 10 696
TRUNK Z	275	0.06	9.3	10	x 8 495
DROP	1170	0.06	16	24	x 12 585

RETURN AIR #	1	2	3	BR
AIR VOLUME	275	305	330	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 260
PLENUM PRESSURE	0.15	0.15	0.15	0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15
ACTUAL DUCT LGH.	76	47	41	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 19
EQUIVALENT LENGTH	180	165	140	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 145
TOTAL EFFECTIVE LH	256	212	181	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 164
ADJUSTED PRESSURE	0.06	0.07	0.08	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 14.80 0.09
ROUND DUCT SIZE	9.3	9.3	9.3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 8.2
INLET GRILL SIZE	8	8	8	0 0 0 0 0 0 0 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 X X X
INLET GRILL SIZE	30	30	30	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 24

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

OPT ELEVATOR
TYPE: 6001 - QUEENSLAND - ELEV C DATE: Apr-22

GFA: 5401 LO# 96171

FURNACE 2

HEATING CFM 1270 COOLING CFM 1270
TOTAL HEAT LOSS 32,231 TOTAL HEAT GAIN 40,815
AIR FLOW RATE CFM 39.4 AIR FLOW RATE CFM 31.12

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
= 35309 BTUH**
**\$*LENNOX
ML196UH070XE48B
FAN SPEED 70**

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

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	22	0	0
R/A	0	0	6	0	0

plenium pressure s/a 0.18 r/a pressure 0.17
max s/a dif press. loss 0.02 r/a grille press. Loss 0.02
min adjusted pressure s/a 0.16 adjusted pressure r/a 0.15

LOW 0
MEDLOW 1070
MEDIUM 1270
MEDIUM HIGH 1515
HIGH 1595

DESIGN CFM = **1270**
CFM @ .6" E.S.P.

TEMPERATURE RISE 47 °F

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	19	20	21	22
ROOM NAME	MBR	MBR	MBR	ENS	ENS	BED-2	BED-2	ENS-2	BED-3	BED-3	BED-3	ENS-3	BED-4	BED-4	BED-4	ENS-4	BED-5	BED-5	ENS-5	LAUN	HALL	HALL
RM LOSS MBH.	1.01	1.01	1.01	2.29	0.76	1.95	1.95	1.01	1.84	1.84	1.84	1.87	1.68	1.68	1.68	0.93	0.99	0.99	0.68	0.16	2.54	2.54
CFM PER RUN HEAT	40	40	40	90	30	77	77	40	72	72	72	74	66	66	66	37	39	39	27	6	100	100
RM GAIN MBH.	1.86	1.86	1.86	1.28	0.43	2.08	2.08	0.36	2.62	2.62	2.62	0.93	2.45	2.45	2.45	0.43	1.68	1.68	0.39	2.07	3.29	3.29
CFM PER RUN COOLING	58	58	58	40	13	65	65	11	82	82	82	29	76	76	76	14	52	52	12	65	102	102
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	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	0.17	0.17	0.17	0.16	0.16
ACTUAL DUCT LGH.	67	72	83	75	69	85	95	102	79	85	91	86	37	30	42	32	24	28	67	82	34	48
EQUIVALENT LENGTH	150	160	220	180	180	160	170	180	170	180	170	160	170	150	140	200	210	180	180	190	110	140
TOTAL EFFECTIVE LENGTH	217	232	303	255	249	245	265	282	249	265	261	246	207	180	182	232	234	208	247	272	144	188
ADJUSTED PRESSURE	0.08	0.07	0.06	0.06	0.07	0.07	0.06	0.06	0.07	0.06	0.06	0.07	0.08	0.1	0.09	0.07	0.07	0.08	0.07	0.06	0.11	0.09
ROUND DUCT SIZE	6	6	6	6	4	6	6	5	6	6	6	6	5	5	5	4	5	5	4	6	6	6
HEATING VELOCITY (ft/min)	204	204	204	459	344	393	393	294	367	367	367	377	485	485	485	424	286	286	310	31	510	510
COOLING VELOCITY (ft/min)	296	296	296	204	149	331	331	81	418	418	418	148	558	558	558	161	382	382	138	331	520	520
OUTLET GRILL SIZE	4X10	4X10	4X10	4X10	3X10	4X10	4X10	3X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10
TRUNK	B	B	A	B	B	A	A	A	C	C	C	b	D	D	D	C	C	C	B	b	D	D

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	TRUNK
1	MBR	1.01	40	1.86	58	0.17	67	150	217	0.08	6	204	296	4X10	B
2	MBR	1.01	40	1.86	58	0.17	72	160	232	0.07	6	204	296	4X10	B
3	MBR	1.01	40	1.86	58	0.17	83	220	303	0.06	6	204	296	4X10	A
4	ENS	2.29	90	1.28	40	0.16	75	180	255	0.06	6	459	204	4X10	B
5	ENS	0.76	30	0.43	13	0.17	69	180	249	0.07	4	344	149	3X10	B
6	BED-2	1.95	77	2.08	65	0.17	85	160	245	0.07	6	393	331	4X10	A
7	BED-2	1.95	77	2.08	65	0.17	95	170	265	0.06	6	393	331	4X10	A
8	ENS-2	1.01	40	0.36	11	0.17	102	180	282	0.06	5	294	81	3X10	A
9	BED-3	1.84	72	2.62	82	0.16	79	170	249	0.07	6	367	418	4X10	C
10	BED-3	1.84	72	2.62	82	0.16	85	180	265	0.06	6	367	418	4X10	C
11	BED-3	1.84	72	2.62	82	0.16	91	170	261	0.06	6	367	418	4X10	C
12	ENS-3	1.87	74	0.93	29	0.17	86	160	246	0.07	6	377	148	4X10	b
13	BED-4	1.68	66	2.45	76	0.17	37	170	207	0.08	5	485	558	3X10	D
14	BED-4	1.68	66	2.45	76	0.17	30	150	180	0.1	5	485	558	3X10	D
15	BED-4	1.68	66	2.45	76	0.17	42	140	182	0.09	5	485	558	3X10	D
16	ENS-4	0.93	37	0.43	14	0.17	32	200	232	0.07	4	424	161	3X10	C
17	BED-5	0.99	39	1.68	52	0.17	24	210	234	0.07	5	286	382	3X10	C
18	BED-5	0.99	39	1.68	52	0.17	28	180	208	0.08	5	286	382	3X10	C
19	ENS-5	0.68	27	0.39	12	0.17	67	180	247	0.07	4	310	138	3X10	B
20	LAUN	0.16	6	2.07	65	0.17	82	190	272	0.06	6	31	331	4X10	b
21	HALL	2.54	100	3.29	102	0.16	34	110	144	0.11	6	510	520	4X10	D
22	HALL	2.54	100	3.29	102	0.16	48	140	188	0.09	6	510	520	4X10	D

SUPPLY AIR TRUNK SIZE															RETURN AIR TRUNK SIZE														
	TRUNK	STATIC	ROUND	RECT			VELOCITY		TRUNK	STATIC	ROUND	RECT			VELOCITY		TRUNK	STATIC	ROUND	RECT			VELOCITY						
	CFM	PRESS.	DUCT	DUCT			(ft/min)		CFM	PRESS.	DUCT	DUCT			(ft/min)		CFM	PRESS.	DUCT	DUCT			(ft/min)						
TRUNK A	234	0.06	8.7	8	x	10	421	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.05	0	0	x	8	0						
TRUNK B	541	0.06	12	12	x	10	649	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0						
TRUNK C	872	0.06	14.3	16	x	12	654	TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.05	0	0	x	8	0						
TRUNK D	398	0.08	9.9	12	x	8	597	TRUNK J	0	0.00	0	0	x	8	0	TRUNK R	0	0.05	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 S	0	0.05	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	TRUNK T	0	0.05	0	0	x	8	0						

RETURN AIR #	1	2	3	4	5	6	BR
AIR VOLUME	230	115	260	185	115	365	0
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	75	71	71	60	83	65	1
EQUIVALENT LENGTH	230	215	195	185	225	190	0
TOTAL EFFECTIVE LH	305	286	266	245	308	255	1
ADJUSTED PRESSURE	0.05	0.05	0.06	0.06	0.05	0.06	14.80
ROUND DUCT SIZE	9.1	7	9.1	8	7	10.3	0
INLET GRILL SIZE	8	8	8	8	8	8	0
INLET GRILL SIZE	X	X	X	X	X	X	X
INLET GRILL SIZE	30	14	30	24	14	30	0

TYPE: 6001 - QUEENSLAND - ELEV C
SITE NAME: PINE VALLEY PH 2

LO # 96171
OPT ELEVATOR

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES		9.32.3.1(1)
a)	☒ Direct vent (sealed combustion) only	
b)	☐ Positive venting induced draft (except fireplaces)	
c)	☐ Natural draft, B-vent or induced draft gas fireplace	
d)	☐ Solid Fuel (including fireplaces)	
e)	☐ No Combustion Appliances	

HEATING SYSTEM	
☒ Forced Air	☐ Non Forced Air
☐ Electric Space Heat	

HOUSE TYPE		9.32.1(2)
☒ I	Type a) or b) appliance only, no solid fuel	
☐ II	Type I except with solid fuel (including fireplaces)	
☐ III	Any Type c) appliance	
☐ IV	Type I, or II with electric space heat	
☐ Other:	Type I, II or IV no forced air	

SYSTEM DESIGN OPTIONS		O.N.H.W.P.
☐ 1	Exhaust only/Forced Air System	
☐ 2	HRV with Ducting/Forced Air System	
☒ 3	HRV Simplified/connected to forced air system	
☐ 4	HRV with Ducting/non forced air system	
☐	Part 6 Design	

TOTAL VENTILATION CAPACITY		9.32.3.3(1)
Basement + Master Bedroom	<u>2</u> @ 21.2 cfm	<u>42.4</u> cfm
Other Bedrooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Kitchen & Bathrooms	<u>7</u> @ 10.6 cfm	<u>74.2</u> cfm
Other Rooms	<u>5</u> @ 10.6 cfm	<u>53.0</u> cfm
Table 9.32.3.A.	TOTAL	<u>212.0</u> cfm

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

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>212</u>	cfm
Less Principal Ventil. Capacity	<u>150</u>	cfm
Required Supplemental Capacity	<u>62.0</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:	April-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#: 96171	Model: 6001 - QUEENSLAND - ELEV C	Builder: GOLD PARK HOMES	Date: 4/14/2022																																																									
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>2581</td><td>10</td><td>25810</td></tr> <tr><td>First</td><td>2581</td><td>11</td><td>28391</td></tr> <tr><td>Second</td><td>3175</td><td>9</td><td>28575</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="3" style="text-align: right;">Total:</td><td>82,776.0 ft³</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>2344.0 m³</td></tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	2581	10	25810	First	2581	11	28391	Second	3175	9	28575	Third	0	9	0	Fourth	0	9	0	Total:			82,776.0 ft³	Total:			2344.0 m³	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 30%;">0.434</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.145</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	0.434	SUMMER NATURAL AIR CHANGE RATE	0.145	Design Temperature Difference						Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-20	42	76	Summer DTDc	24	31	7	13
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																																									
Bsmt	2581	10	25810																																																									
First	2581	11	28391																																																									
Second	3175	9	28575																																																									
Third	0	9	0																																																									
Fourth	0	9	0																																																									
Total:			82,776.0 ft³																																																									
Total:			2344.0 m³																																																									
WINTER NATURAL AIR CHANGE RATE	0.434																																																											
SUMMER NATURAL AIR CHANGE RATE	0.145																																																											
Design Temperature Difference																																																												
	Tin °C	Tout °C	ΔT °C	ΔT °F																																																								
Winter DTDh	22	-20	42	76																																																								
Summer DTDc	24	31	7	13																																																								
5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.434 x 651.10 x 42 °C x 1.2 = 14301 W = 48795 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.145 x 651.10 x 7 °C x 1.2 = 806 W = 2751 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)																																																												
$HL_{airr} = Level \ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																												
Level	Level Factor (LF)	HLairve Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HL _{clevel})																																																								
1	0.5	48,795	12,207	1.999																																																								
2	0.3		23,285	0.629																																																								
3	0.2		21,355	0.457																																																								
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 HLairve = 0																																																												
				Michael O'Rourke BCIN# 19669 																																																								

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 6001 - QUEENSLAND - ELEV C	OPT ELEVATOR	BUILDER: GOLD PARK HOMES
SFQT: 5401	LO# 96171	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 (ft ³):	82776.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.85	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	7.0 ft
LENGTH: 66.0 ft	WIDTH: 55.0 ft	EXPOSED PERIMETER:	242.0 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	-

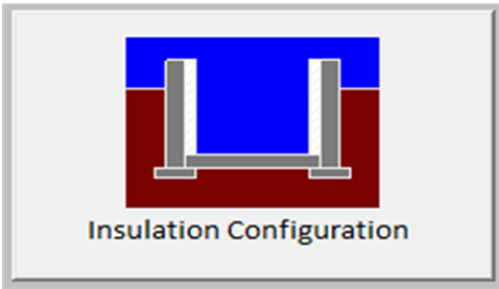
INDIVIDUAL BCIN: 19669

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):	20.1	 Insulation Configuration
Floor Width (m):	16.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	1.2	
Door Area (m ²):	3.7	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		2466

TYPE: 6001 - QUEENSLAND - ELEV C

OPT ELEVATOR

LO# 96171

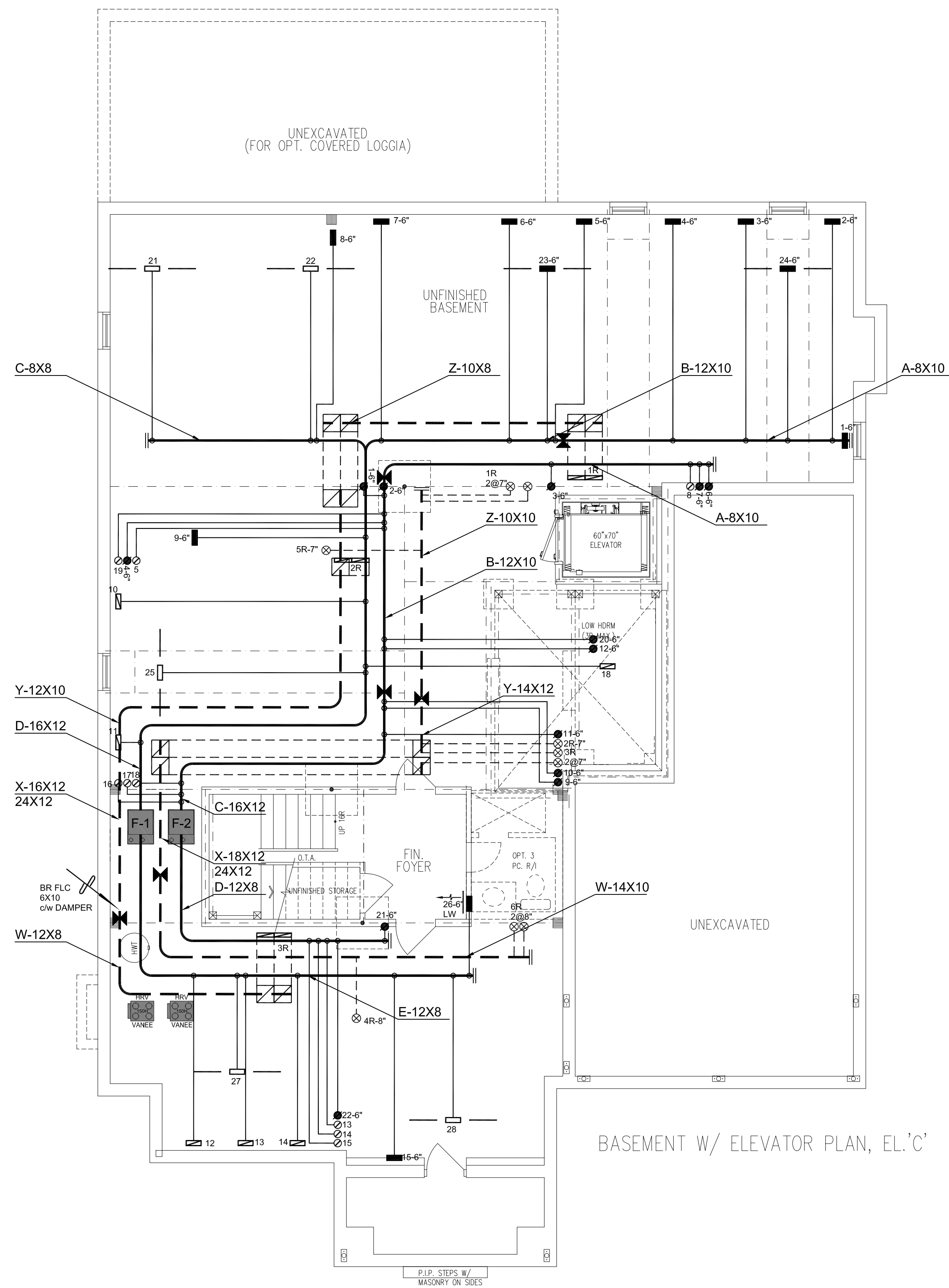
Air Infiltration Residential Load Calculator

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):	10.06			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	2344.0			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	3124.6 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):	0.434			
Cooling Air Leakage Rate (ACH/H):	0.145			

TYPE: 6001 - QUEENSLAND - ELEV C OPT ELEVATOR
LO# 96171

ALL S/A DIFFUSERS "4x10"
UNLESS NOTED OTHERWISE
ON LAYOUT. ALL S/A RUNS 5"Ø
UNLESS NOTED OTHERWISE
ON LAYOUT. UNDERCUT
DOORS 1" min. FOR R/A



FURNACE 1 (F-1)
LENNOX ML196UH090XE36C
85600 BTU/H OUTPUT
3.0 TONS A/C @ 1170 cfm

FURNACE 2 (F-2)
LENNOX ML196UH070XE48B
63900 BTU/H OUTPUT
3.5 TONS A/C @ 1270 cfm

	S/A	R/A	FANS
2ND	22	6	7
1ST	16	3	2
BAS	8	1	0

HVAC LEGEND	
	4X10 SUPPLY GRILLE
	14X9 RETURN GRILLE
	4X10 SUPPLY GRILLE 6\"/>
	30X9 RETURN GRILLE
	SUPPLY DUCTWORK
	RETURN DUCTWORK
	EXHAUST FAN
LW	LOW WALL
HW	HIGH WALL

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

Michael O'Brien, BCIN# 19609
HVAC DESIGNS LTD.

1	ISSUED FOR PERMIT	APRIL 2022
No.	Revision	Date

SB-12 PACKAGE

A1

HVAC DESIGNS LTD.
375 Finley Ave - Unit 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

Client **GOLDPARK HOMES**

Project Name **PINE VALLEY PH2
VAUGHAN, ONTARIO**

6001 - QUEENSLAND - ELEV C

OPT ELEVATOR

5401 SFT

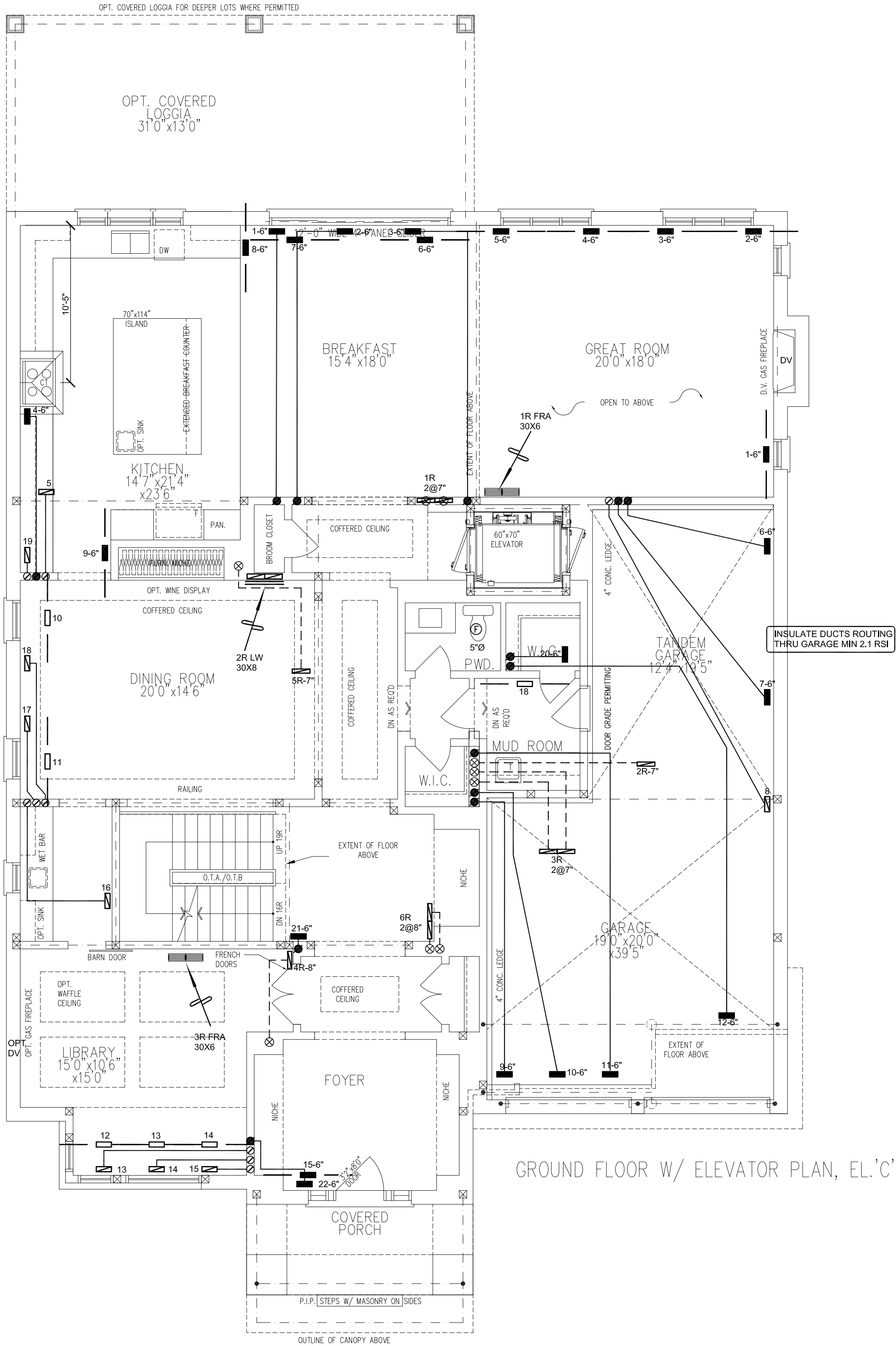
Copyright © 2009, by The McGraw-Hill Companies, Inc.		
Sheet Title BASEMENT HVAC LAYOUT		
Drawn By EG	Checked By MO	
Scale 3/16"=1'-0"	Sheet No.	
Date APRIL 2022		
LO # 96171		
	1	

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.® AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE. ALL SUPPLY BRANCH OUTLETS SHALL BE EQUIPPED WITH MANUAL BALANCING DAMPER. DUCTWORK WHICH PASSES THROUGH THE GARAGE OR UNHEATED SPACES SHALL BE ADEQUATELY INSULATED AND GAS-PROOFED

ALL S/A DIFFUSERS "4x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A

	S/A	R/A	FANS
2ND	22	6	7
1ST	16	3	2
BAS	8	1	0



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

HVAC LEGEND	
	4X10 SUPPLY GRILLE
	14X9 RETURN GRILLE
	4X10 SUPPLY GRILLE F'D BOOT
	30X8 RETURN GRILLE
	SUPPLY DUCTWORK
	RETURN DUCTWORK
	EXHAUST FAN
LW	LOW WALL
HW	HIGH WALL

I HEREBY CERTIFY THAT I HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED TO SIGN DRAWINGS IN ACCORDANCE WITH THE REGULATION OF THE PROFESSIONAL ENGINEERING ACT, R.S.O. 1990, CHAPTER 190, SECTION 127(1).

M. J. O'Connell
MECHANICAL ENGINEER

1. ISSUED FOR PERMIT APRIL 2022 EG
No. Revision Date By

SB-12 PACKAGE

A1

HVAC DESIGNS LTD.
375 Finley Ave - Unit 202 - Ajax, Ontario L1S 2E2
Tel: 905.619.2300 - 905.420.5300 Fax: 905.619.2375
Email: info@hvacadesigns.ca
Web: www.hvacadesigns.ca
Specializing in Residential Mechanical Design Services

Client: GOLDPARK HOMES
Project Name: PINE VALLEY PH2
VAUGHAN, ONTARIO
6001 - QUEENSLAND - ELEV C
OPT ELEVATOR
5401 SQFT

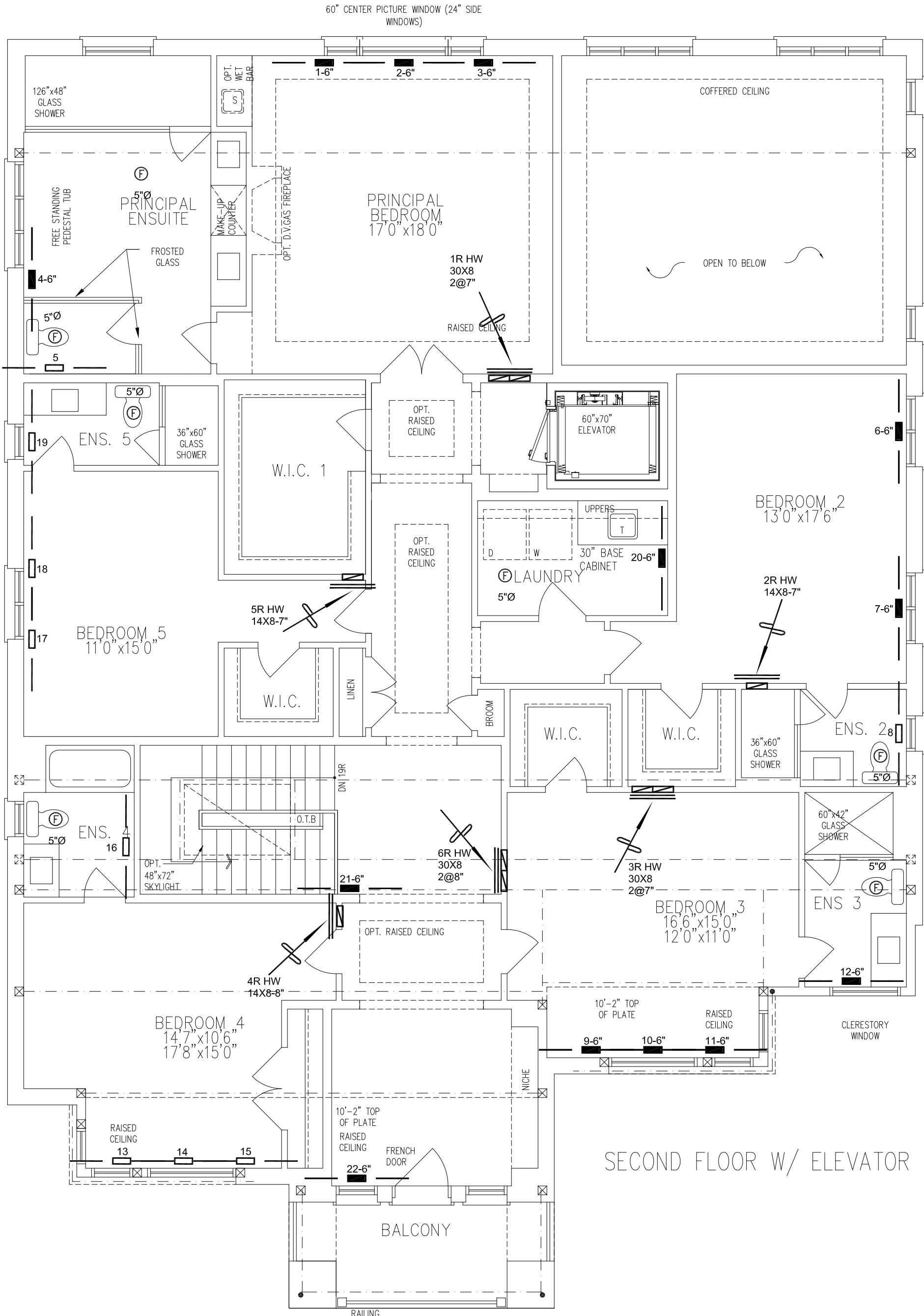
Sheet Title: FIRST FLOOR HVAC LAYOUT
Drawn By: EG
Scale: 3/16"=1'-0"
Date: APRIL 2022
LO #: 96171
Checked By: MO
Sheet No.: 2

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE. ALL SUPPLY BRANCH OUTLETS SHALL BE EQUIPPED WITH MANUAL BALANCING DAMPER. DUCTWORK WHICH PASSES THROUGH THE GARAGE OR UNHEATED SPACES SHALL BE ADEQUATELY INSULATED AND GAS-PROOFED

ALL S/A DIFFUSERS "4x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A

	S/A	R/A	FANS
2ND	22	6	7
1ST	16	3	2
BAS	8	1	0



SECOND FLOOR W/ ELEVATOR PLAN, EL.'C'

HVAC LEGEND	
	4X10 SUPPLY GRILLE
	14X8 RETURN GRILLE
	4X10 SUPPLY GRILLE F'ØD BOOT
	30X8 RETURN GRILLE
	SUPPLY DUCTWORK
	RETURN DUCTWORK
	EXHAUST FAN
LW	LOW WALL
HW	HIGH WALL

UNLESS OTHERWISE NOTED, I SHALL BE RESPONSIBLE FOR THE DESIGN WORK AND AM NOT PROVIDING ANY WARRANTY, GUARANTEE OR LIABILITY FOR THE DESIGN WORK.

DESIGNED BY: HVAC DESIGNS LTD. 1999
DRAWN BY: HVAC DESIGNS LTD.

1. ISSUED FOR PERMIT	APRIL 2022	EG
No. Revision	Date	By

SB-12 PACKAGE

A1

HVACDESIGNS LTD.

375 Finley Ave - Unit 202 - Ajax, Ontario L1S 2E2
Tel: 905.619.2300 - 905.420.5300 Fax 905.619.2375
Email: info@hvacadesigns.ca
Web: www.hvacadesigns.ca
Specializing in Residential Mechanical Design Services

Client: GOLDPARK HOMES
Project Name: PINE VALLEY PH2
VAUGHAN, ONTARIO
6001 - QUEENSLAND - ELEV C
OPT ELEVATOR
5401 SQFT

Sheet Title: SECOND FLOOR HVAC LAYOUT	Checked By: MO	Sheet No: 3
Drawn By: EG	Scale: 3/16"=1'-0"	Date: APRIL 2022
LO #	96171	