

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: 5010 - OAKWOOD 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										DATE: Apr-22										WINTER NATURAL AIR CHANGE RATE 0.416										HEAT LOSS ΔT °F. 76				CSA-F280-12																							
BUILDER: GOLD PARK HOMES										TYPE: 5010 - OAKWOOD										GFA: 3633										LO# 96125										SUMMER NATURAL AIR CHANGE RATE 0.139										HEAT GAIN ΔT °F. 13				SB-12 PACKAGE A1			
ROOM USE			PBR			ENS			BED-2			BED-3			BED-4			BATH			WIC-4			LOFT			ENS-2																														
EXP. WALL			44			11			14			34			21			13			13			12			16																														
CLG. HT.			11			11			11			9			9			9			9			9			11																														
FACTORS																																																									
GRS.WALL AREA			LOSS			GAIN			484			121			154			306			189			117			117			108			176																								
GLAZING									LOSS			GAIN			LOSS			GAIN			LOSS			GAIN			LOSS			GAIN			LOSS			GAIN																					
NORTH			21.3	16.0	0	0	0	30	638	479				20	426	319	17	362	272	0	0	0	9	192	144	0	0	0	0	0	0	10	213	160																							
EAST			21.3	41.6	0	0	0	0	0	0			0	0	0	0	0	0	68	1447	2826	0	0	0	0	0	0	0	0	0	0	0	0	0																							
SOUTH			21.3	24.9	0	0	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	489	573	0	0	0																							
WEST			21.3	41.6	54	1149	2244	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																							
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	16	596	1625	0	0	0																							
DOORS			20.1	3.4	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	430	1919	323	91	406	68			134	598	101	289	1290	217	121	540	91	108	482	81	117	522	88	85	379	64	166	741	125																								
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																							
EXPOSED CLG			1.3	0.6	320	411	188	120	154	71			0	0	0	274	352	161	100	128	59	95	122	56	45	58	26	369	474	217	0	0	0	0																							
NO ATTIC EXPOSED CLG			2.7	1.3	0	0	0	0	0	0			0	0	0	0	0	0	160	440	201	0	0	0	0	0	0	0	0	0	0	0	0	0																							
EXPOSED FLOOR			2.6	0.4	0	0	0	0	0	0			0	0	0	0	0	0	260	663	112	50	128	21	45	115	19	0	0	0	0	0	0	0																							
BASEMENT/CRAWL HEAT LOSS						0			0			0			0			0			0			0			0			0			0			0																					
SLAB ON GRADE HEAT LOSS						0			0			0			0			0			0			0			0			0			0			0																					
SUBTOTAL HT LOSS						3479			1199						1024			2003			3218			923			695			1938			954																								
SUB TOTAL HT GAIN						2755			618						420			650			3288			302			134			2478			285																								
LEVEL FACTOR / MULTIPLIER			0.30			0.42			0.30			0.42			0.30			0.42			0.20			0.89			0.20			0.89			0.20			0.89			0.30			0.42															
AIR CHANGE HEAT LOSS						1469			506						432			1786			2869			823			619			1728			403																								
AIR CHANGE HEAT GAIN						204			46						31			48			243			22			10			183			21																								
DUCT LOSS						0			0						0			0			609			175			131			0			0			0																					
DUCT GAIN						0			0						0			0			435			91			73			0			0			0																					
HEAT GAIN PEOPLE			240			2			480			0			1			240			1			240			0			0			0			0			0																		
HEAT GAIN APPLIANCES/LIGHTS						584			584						584			584			584			584			584			584			584			584			584																		
TOTAL HT LOSS BTU/H						4947			1704						1456			3789			6696			1920			1445			3666			1356																								
TOTAL HT GAIN x 1.3 BTU/H						5229			1622						1657			1978			6227			1299			1040			4218			1156																								

ROOM USE			DIN		FM/BR		KIT		LIB				PWD		FOY		MUD								LOD		BAS		
EXP. WALL			26		48		13		29				6		19		8								52		236		
CLG. HT.			16		16		11		14				11		20		12								10		10		
FACTORS																													
GRS.WALL AREA	LOSS	GAIN	416		768		143		406				66		380		96								520		1808		
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	64	48
EAST	21.3	41.6	0	0	0	0	0	0	0	0	0	105	2234	4363	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	21.3	24.9	50	1064	1245	23	489	573	0	0	0	0	0	0	0	73	1553	3033	0	0	0	0	0	0	0	0	6	128	149
WEST	21.3	41.6	0	0	0	221	4703	9183	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	532	1039	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
DOORS	20.1	3.4	0	0	0	0	0	0	0	0	0	0	0	0	0	40	802	135	20	401	68			0	0	0	20	401	68
NET EXPOSED WALL	4.5	0.8	366	1633	275	524	2338	394	143	638	107	301	1343	226	66	295	50	267	1192	201	76	339	57	0	0	0	0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	287	1033	174	552	1986	335
EXPOSED CLG	1.3	0.6	170	218	100	595	764	350	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.3	120	330	151	0	0	0	0	0	0	200	550	252	0	0	0	95	261	120	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	0	0	0	0	0	0	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					3245			8294			638			4127			295			3808			740				1565		10870
SUB TOTAL HT GAIN						1771					107			4841				50		3489			125				1213		599
LEVEL FACTOR / MULTIPLIER			0.30	0.42		0.30	0.42		0.30	0.42		0.30	0.42		0.30	0.42		0.30	0.42		0.30	0.42					0.50	1.57	
AIR CHANGE HEAT LOSS					1370			3502			269			1743			124			1608			313						19563
AIR CHANGE HEAT GAIN						131		776			8			358				4		258			9						134
DUCT LOSS					0			0			0			0			0			0			0						0
DUCT GAIN						0		0			0			0			0			0			0						0
HEAT GAIN PEOPLE	240		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS					584			584			584			584			0			0			0			0			584
TOTAL HT LOSS BTU/H					4615			11796			908			5870			419			5416			1053				1565		30433
TOTAL HT GAIN x 1.3 BTU/H						3231					909			7517				69		4870			174				1577		1712

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

TYPE: 5010 - OAKWOOD

DATE: Apr-22

GFA: 3633

LO# 96125

HEATING CFM 1995 COOLING CFM 1995
TOTAL HEAT LOSS 89,055 TOTAL HEAT GAIN 59,901
AIR FLOW RATE CFM 22.4 AIR FLOW RATE CFM 33.31

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

\$LENNOX
ML196UH110XE60C 110

AFUE = 96 %
INPUT (BTU/H) = 110,000
OUTPUT (BTU/H) = **107,200**

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	7	21	7
R/A	0	0	3	5	1

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

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

plenium 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

FAN SPEED
LOW 0
MEDLOW 1420
MEDIUM 1550
MEDIUM HIGH 1725
HIGH 1995

DESIGN CFM = **1995**
CFM @ .6" E.S.P.

TEMPERATURE RISE 50 °F

RUN #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	PBR	ENS	ENS	BED-2	BED-3	BED-4	BATH	WIC-4	LOFT	PBR	ENS-2	DIN	FM/BR	KIT	FM/BR	LIB	LIB	PWD	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	2.47	0.85	0.85	1.46	3.79	3.35	1.92	1.45	1.83	2.47	1.36	2.31	2.36	0.91	2.36	1.96	1.96	0.42	2.71	1.05	4.57	4.57	4.57	4.57
CFM PER RUN HEAT	55	19	19	33	85	75	43	32	41	55	30	52	53	20	53	44	44	9	61	24	102	102	102	102
RM GAIN MBH.	2.61	0.81	0.81	1.66	1.98	3.11	1.30	1.04	2.11	2.61	1.16	1.62	3.08	0.91	3.08	2.51	2.51	0.07	2.44	0.17	0.47	0.47	0.47	0.47
CFM PER RUN COOLING	87	27	27	55	66	104	43	35	70	87	39	54	103	30	103	83	83	2	81	6	16	16	16	16
ADJUSTED PRESSURE	0.16	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.17	0.16	0.17	0.17	0.16	0.17	0.16	0.16	0.16	0.17	0.16	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	51	28	18	8	29	54	25	52	68	40	8	50	62	34	61	64	70	17	50	10	61	43	12	49
EQUIVALENT LENGTH	100	140	160	90	200	140	180	150	160	110	160	150	140	170	110	110	160	120	150	140	110	110	90	130
TOTAL EFFECTIVE LENGTH	151	168	178	98	229	194	205	202	228	150	168	200	202	204	171	174	230	137	200	150	171	153	102	179
ADJUSTED PRESSURE	0.11	0.1	0.1	0.18	0.07	0.08	0.08	0.09	0.08	0.11	0.1	0.09	0.08	0.08	0.09	0.09	0.07	0.13	0.08	0.11	0.09	0.11	0.16	0.09
ROUND DUCT SIZE	6	4	4	6	6	6	5	4	6	6	4	5	6	4	6	6	6	4	6	4	6	6	6	6
HEATING VELOCITY (ft/min)	280	218	218	168	433	382	316	367	209	280	344	382	270	229	270	224	224	103	311	275	520	520	520	520
COOLING VELOCITY (ft/min)	444	310	310	280	337	530	316	402	357	444	447	396	525	344	525	423	423	23	413	69	82	82	82	82
OUTLET GRILL SIZE	4X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	3X10	4X10	4X10	4X10	3X10	4X10	3X10	4X10	4X10	4X10	4X10
TRUNK	A	A	C	D	G	G	G	G	E	A	G	E	B	F	C	F	E	G	F	G	C	A	D	F

RUN #	25	26	27	28	29	30	31	32	33	34	35
ROOM NAME	BAS	BAS	BAS	BED-4	LOFT	DIN	FM/BR	FM/BR	FM/BR	FOY	LIB
RM LOSS MBH.	4.57	4.57	4.57	3.35	1.83	2.31	2.36	2.36	2.36	2.71	1.96
CFM PER RUN HEAT	102	102	102	75	41	52	53	53	53	61	44
RM GAIN MBH.	0.47	0.47	0.47	3.11	2.11	1.62	3.08	3.08	3.08	2.44	2.51
CFM PER RUN COOLING	16	16	16	104	70	54	103	103	103	81	83
ADJUSTED PRESSURE	0.16	0.16	0.16	0.16	0.17	0.17	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	49	58	48	52	72	56	72	72	48	58	67
EQUIVALENT LENGTH	170	150	130	120	170	160	140	140	110	130	180
TOTAL EFFECTIVE LENGTH	219	208	178	172	242	216	212	212	158	188	247
ADJUSTED PRESSURE	0.07	0.08	0.09	0.09	0.07	0.08	0.08	0.08	0.1	0.09	0.07
ROUND DUCT SIZE	6	6	6	6	6	5	6	6	6	6	6
HEATING VELOCITY (ft/min)	520	520	520	382	209	382	270	270	270	311	224
COOLING VELOCITY (ft/min)	82	82	82	530	357	396	525	525	525	413	423
OUTLET GRILL SIZE	4X10	4X10	4X10	4X10	4X10	4X10	3X10	4X10	4X10	4X10	4X10
TRUNK	E	B	C	G	E	E	B	B	C	F	E

SUPPLY AIR TRUNK SIZE

	TRUNK	STATIC	ROUND	RECT			VELOCITY		TRUNK	STATIC	ROUND	RECT			VELOCITY
	CFM	PRESS.	DUCT	DUCT			(ft/min)		CFM	PRESS.	DUCT	DUCT			(ft/min)
TRUNK A	231	0.10	7.7	8	x	8	520	TRUNK G	1037	0.07	14.7	26	x	8	718
TRUNK B	261	0.08	8.5	8	x	8	587	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	590	0.08	11.5	16	x	8	664	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	956	0.08	13.8	22	x	8	782	TRUNK J	0	0.00	0	0	x	8	0
TRUNK E	376	0.07	10.1	12	x	8	564	TRUNK K	0	0.00	0	0	x	8	0
TRUNK F	664	0.07	12.4	18	x	8	664	TRUNK L	0	0.00	0	0	x	8	0

RETURN AIR TRUNK SIZE

	TRUNK	STATIC	ROUND	RECT		VELOCITY	
	CFM	PRESS.	DUCT	DUCT		(ft/min)	
TRUNK O	0	0.05	0	0	x	8	0
TRUNK P	0	0.05	0	0	x	8	0
TRUNK Q	0	0.05	0	0	x	8	0
TRUNK R	0	0.05	0	0	x	8	0
TRUNK S	0	0.05	0	0	x	8	0
TRUNK T	0	0.05	0	0	x	8	0
TRUNK U	0	0.05	0	0	x	8	0
TRUNK V	0	0.05	0	0	x	8	0
TRUNK W	0	0.05	0	0	x	8	0
TRUNK X	1995	0.05	20.4	36	x	12	665
TRUNK Y	1115	0.05	16.4	32	x	8	627
TRUNK Z	475	0.05	11.9	16	x	8	534
DROP	1995	0.05	20.4	24	x	18	665

RETURN AIR #	1	2	3	4	5	6	7	8								BR
AIR VOLUME	280	200	115	145	360	360	115	75	0	0	0	0	0	0	0	345
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	48	43	37	54	42	39	62	31	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	225	215	255	155	200	225	215	295	0	0	0	0	0	0	0	135
TOTAL EFFECTIVE LH	273	258	292	209	242	264	277	326	1	1	1	1	1	1	1	149
ADJUSTED PRESSURE	0.05	0.06	0.05	0.07	0.06	0.06	0.05	0.05	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.10
ROUND DUCT SIZE	9.8	8.2	7	7	10.3	10.3	7	6	0	0	0	0	0	0	0	8.9
INLET GRILL SIZE	8	8	8	8	8	8	8	8	0	0	0	0	0	0	0	8
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	30	24	14	14	30	30	14	14	0	0	0	0	0	0	0	30

TYPE: 5010 - OAKWOOD
SITE NAME: PINE VALLEY PH 2

LO # 96125

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

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

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

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

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

TOTAL VENTILATION CAPACITY		9.32.3.3(1)
Basement + Master Bedroom	<u>2</u> @ 21.2 cfm	<u>42.4</u> cfm
Other Bedrooms	<u>3</u> @ 10.6 cfm	<u>31.8</u> cfm
Kitchen & Bathrooms	<u>5</u> @ 10.6 cfm	<u>53</u> cfm
Other Rooms	<u>5</u> @ 10.6 cfm	<u>53.0</u> cfm
Table 9.32.3.A.	TOTAL	<u>180.2</u> cfm

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

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>180.2</u>	cfm
Less Principal Ventil. Capacity	<u>79.5</u>	cfm
Required Supplemental Capacity	<u>100.7</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	VANEE V150H
Location:	BSMT
<u>79.5</u> cfm	☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
79.5 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
BATH	BY INSTALLING CONTRACTOR	50	☒	3.5
ENS-2	BY INSTALLING CONTRACTOR	50	☒	3.5
PWD	BY INSTALLING CONTRACTOR	50	☒	3.5

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE V150H	
<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#: 96125	Model: 5010 - OAKWOOD	Builder: GOLD PARK HOMES	Date: 2022-04-14																																																									
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5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.416 x 544.23 x 42 °C x 1.2 = 11467 W = 39126 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.139 x 544.23 x 7 °C x 1.2 = 648 W = 2209 Btu/h																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 76 °F x 1.08 x 0.25 = 1631 Btu/h			$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 13 °F x 1.08 x 0.25 = 275 Btu/h																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																												
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HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 5010 - OAKWOOD	BUILDER: GOLD PARK HOMES
SFQT: 3633	SITE: PINE VALLEY PH 2
LO# 96125	

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):	69189.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	7.0 ft
LENGTH: 76.0 ft	WIDTH: 42.0 ft	EXPOSED PERIMETER:	236.0 ft

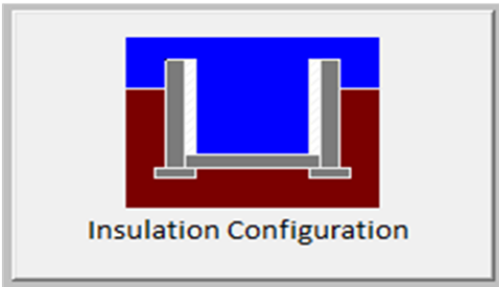
2012 OBC - COMPLIANCE PACKAGE		Compliance Package A1	
Component		Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value		60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value		31	27.65
Exposed Floor Minimum RSI (R)-Value		31	29.80
Walls Above Grade Minimum RSI (R)-Value		22	17.03
Basement 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		96%	-
HRV/ERV 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):	23.2	
Floor Width (m):	12.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	3.2	
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):		2429

TYPE: 5010 - OAKWOOD
LO# 96125

Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

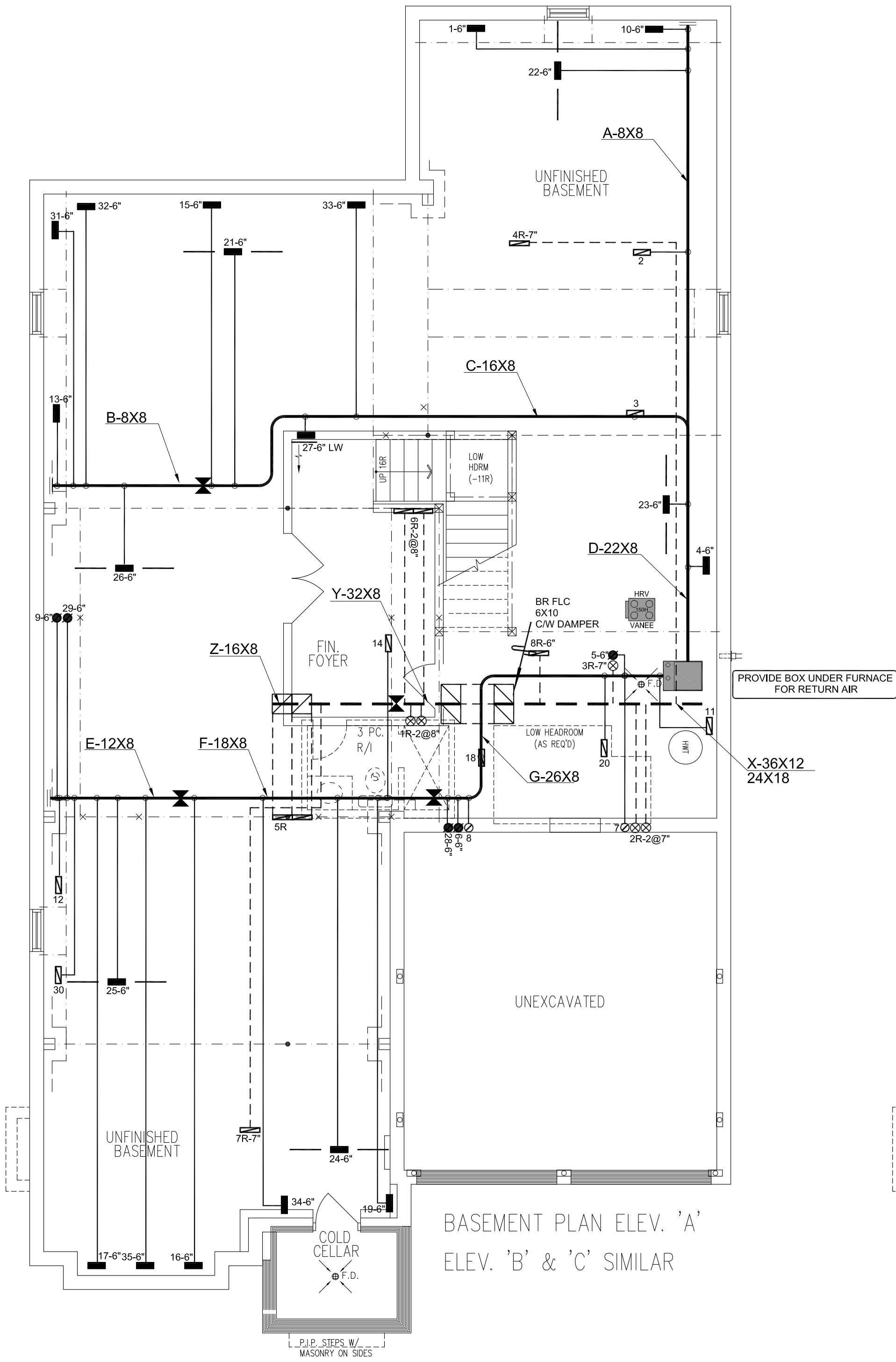
Weather Station Description				
Province:	Ontario			
Region:	Vaughan (Woodbridge)			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	9.45			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1959.2			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	2611.7 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	37.5	37.5		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.416			
Cooling Air Leakage Rate (ACH/H):	0.139			

TYPE: 5010 - OAKWOOD

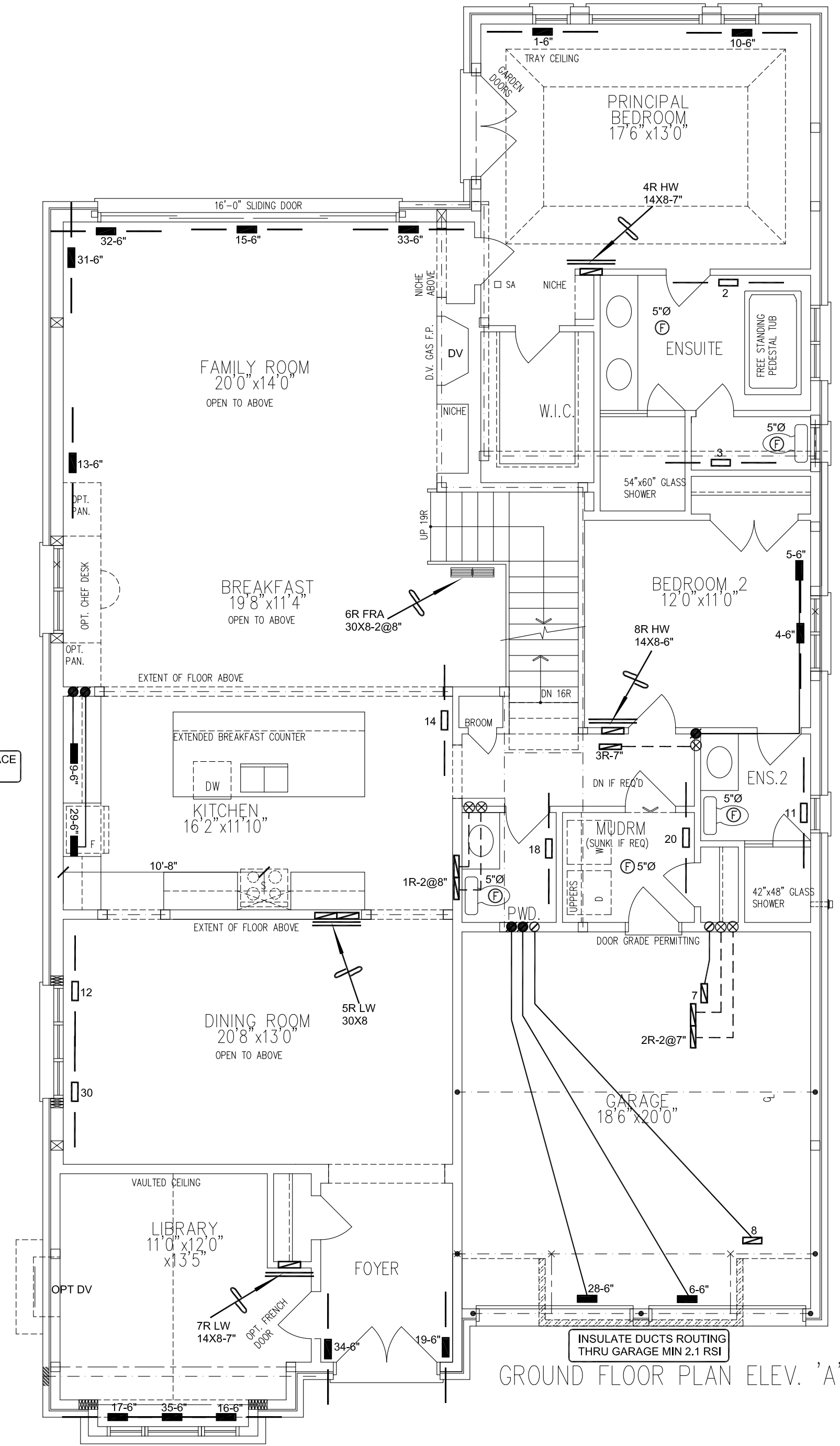
LO# 96125

HEAT LOSS 90687 BTUH		# OF RUNS			
UNIT DATA		S/A	R/A	FANS	
MAKE	LENNOX	2ND FLOOR	7	3	1
MODEL	ML196UH110XE60C	1ST FLOOR	21	5	6
INPUT	110	BASEMENT	7	1	0
OUTPUT	107.2				
COOLING	5.0				
FAN SPEED	1995				

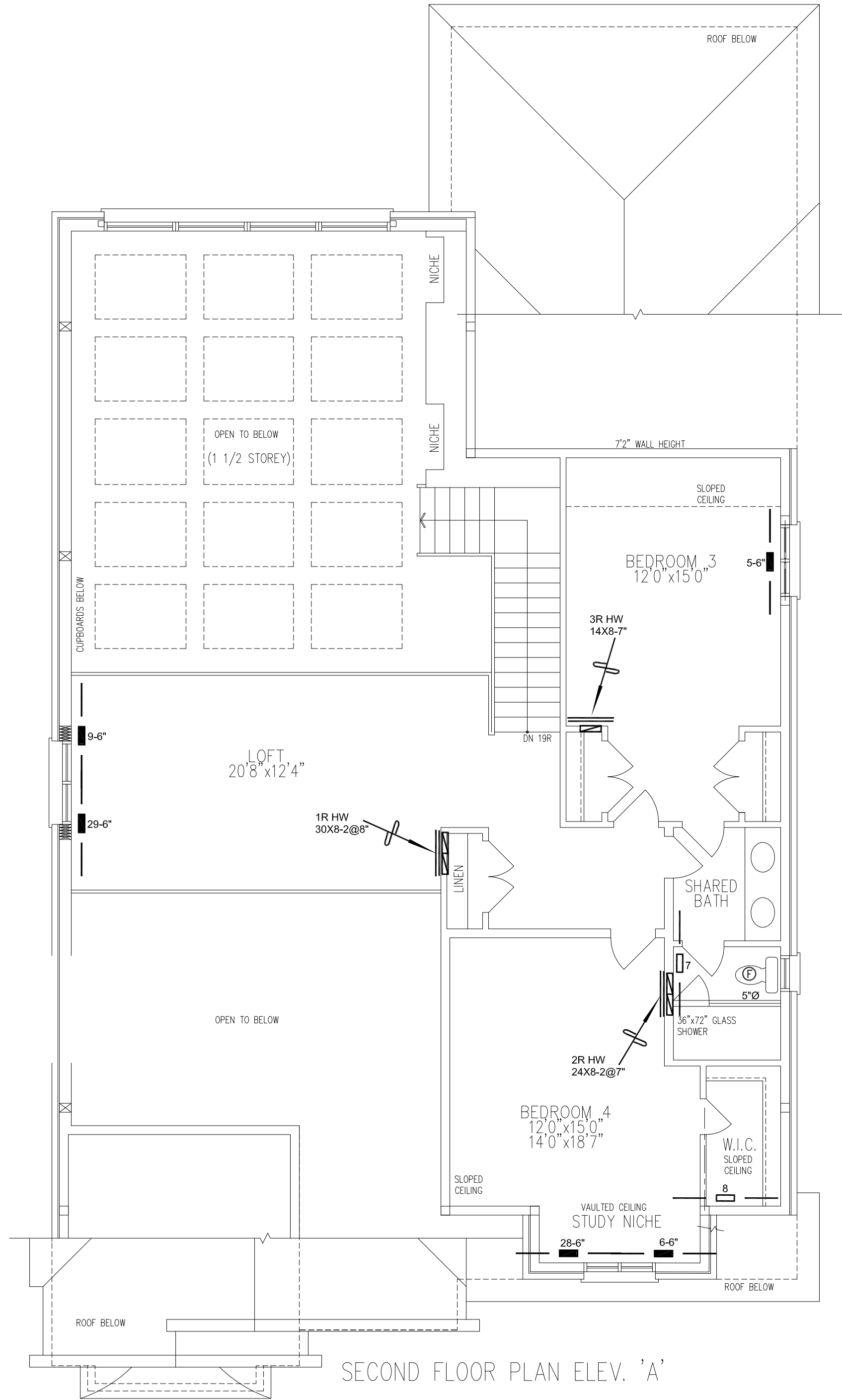
PART. BASEMENT PLAN ELEV. 'A', 'B' & 'C' - L.O.D. COND.



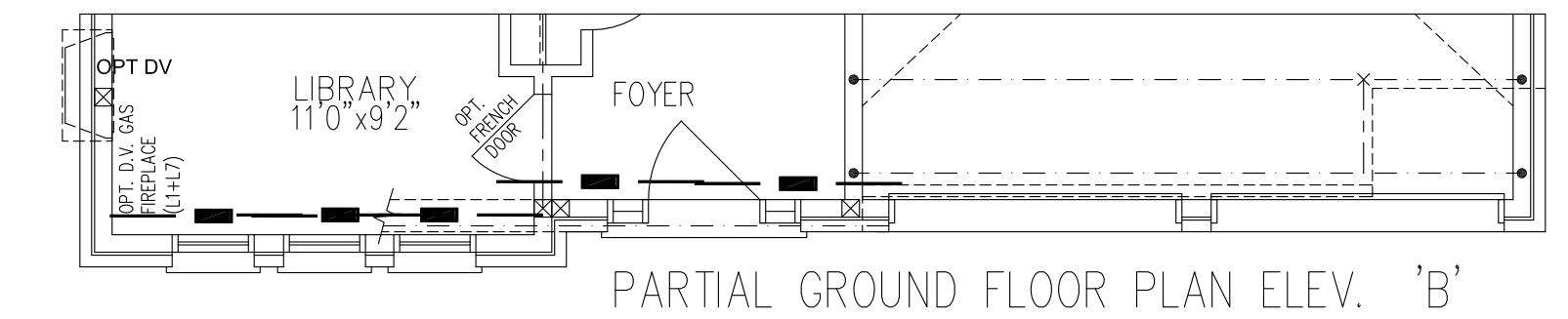
BASEMENT PLAN ELEV. 'A'
ELEV. 'B' & 'C' SIMILAR



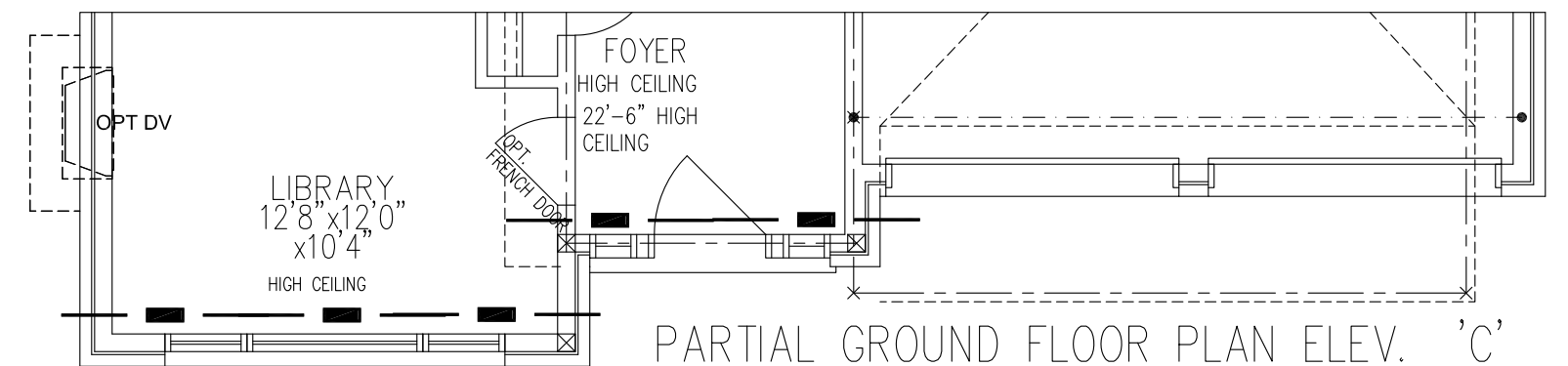
GROUND FLOOR PLAN ELEV. 'A'



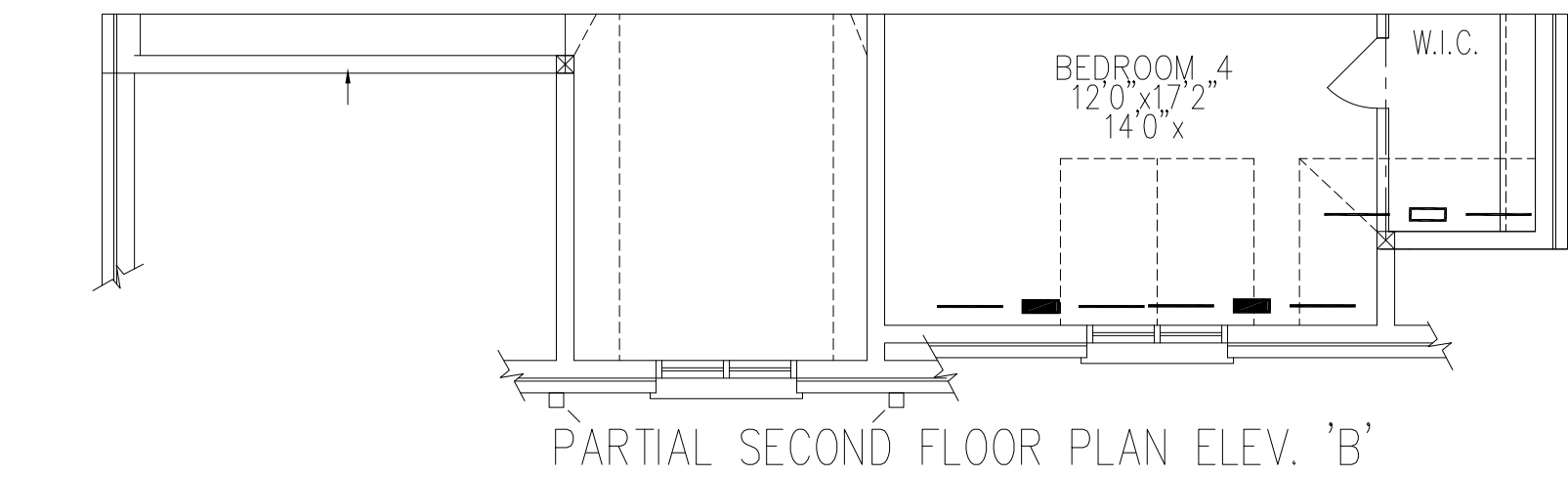
SECOND FLOOR PLAN ELEV. 'A'



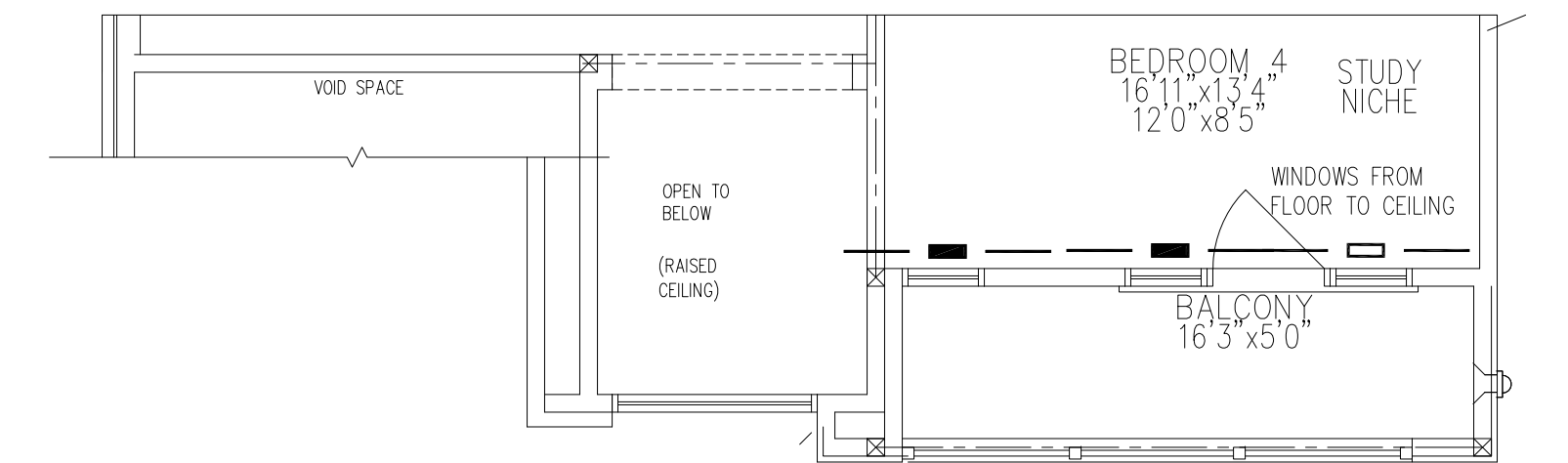
PARTIAL GROUND FLOOR PLAN ELEV. 'B'



PARTIAL GROUND FLOOR PLAN ELEV. 'C'



PARTIAL SECOND FLOOR PLAN ELEV. 'B'



PARTIAL SECOND FLOOR PLAN ELEV. 'C'

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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 5'0" UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A

HVAC LEGEND	
	4X10 SUPPLY GRILLE
	14X8 RETURN GRILLE
	4X10 SUPPLY GRILLE 6'0" BOOT
	30X8 RETURN GRILLE
	SUPPLY DUCTWORK
	RETURN DUCTWORK
	EXHAUST FAN
	LOW WALL
	HIGH WALL

THE CLIENT ORDERER HAS REVIEWED AND TAKES RESPONSIBILITY FOR THE DESIGN WORK AND ANY OMISSIONS UNDER ORDINANCE 2.2.3 OF THE BUILDING CODE.

2	ISSUED FOR PERMIT	APRIL 2022	JC
1	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@hvacdsgns.ca
Web: www.hvacdsgns.ca
Specializing in Residential Mechanical Design Services

Client: GOLDPARK HOMES

Project Name: PINE VALLEY PH2

Location: VAUGHAN, ONTARIO

5010 - OAKWOOD

3633 SQFT

Copyright & Copy: © 2022 HVAC Designs Ltd.

Sheet Title: MECHANICAL HVAC LAYOUT

Drawn By: JC

Scale: 3/16"=1'-0"

Date: APRIL 2022

LO #

96125

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