


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]			
<input type="checkbox"/> House <input type="checkbox"/> Small Buildings <input type="checkbox"/> Large Buildings <input type="checkbox"/> Complex Buildings			
<input checked="" type="checkbox"/> HVAC – House <input type="checkbox"/> Building Services <input type="checkbox"/> Detection, Lighting and Power <input type="checkbox"/> Fire Protection			
<input type="checkbox"/> Building Structural <input type="checkbox"/> Plumbing – House <input type="checkbox"/> Plumbing – All Buildings <input type="checkbox"/> 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: 6002 - KINGSVIEW WOB Project: PINE VALLEY PH 2	
D. Declaration of Designer			
I, <u>MICHAEL O'ROURKE</u>		declare that (choose one as appropriate):	
(print name)			
<input type="checkbox"/> 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: _____			
<input checked="" type="checkbox"/> 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>			
<input type="checkbox"/> 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
 BUILDER: GOLD PARK HOMES

WOB
 TYPE: 6002 - KINGSVIEW GFA: 5526

DATE Apr-22
 LO# 96143

WINTER NATURAL AIR CHANGE RATE 0.410
 SUMMER NATURAL AIR CHANGE RATE 0.137

HEAT LOSS ΔT °F. 76
 HEAT GAIN ΔT °F. 13

CSA-F280-12
 SB-12 PACKAGE A1

ROOM USE	FACTORS		LOSS		GAIN	
EXP. WALL						
CLG. HT.						
GRS.WALL AREA						
GLAZING						
NORTH	21.3	16.0				
EAST	21.3	41.6				
SOUTH	21.3	24.9				
WEST	21.3	41.6				
SKYLT.	37.2	101.5				
DOORS	25.2	4.3				
NET EXPOSED WALL	4.5	0.8				
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6				
EXPOSED CLG	1.3	0.6				
NO ATTIC EXPOSED CLG	2.7	1.3				
EXPOSED FLOOR	2.6	0.4				
BASEMENT/CRAWL HEAT LOSS						
SLAB ON GRADE HEAT LOSS						
SUBTOTAL HT LOSS						
SUB TOTAL HT GAIN						
LEVEL FACTOR / MULTIPLIER						
AIR CHANGE HEAT LOSS						
AIR CHANGE HEAT GAIN						
DUCT LOSS						
DUCT GAIN						
HEAT GAIN PEOPLE	240					
HEAT GAIN APPLIANCES/LIGHTS						
TOTAL HT LOSS BTU/H						
TOTAL HT GAIN x 1.3 BTU/H						

ROOM USE	OFFICE		FM/DN		KIT		GRT		CATER		PWD		FOY		MUD		WOB		BAS			
EXP. WALL	32		30		47		83		19		11		68		21		73		171			
CLG. HT.	11		11		11		11		11		11		11		11		10		10			
GRS.WALL AREA	355		333		522		921		211		122		755		233		737		1214			
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	12	255	192	0	0	0	0	
EAST	21.3	41.6	67	1426	2784	0	0	0	0	0	0	0	0	102	2171	4238	0	0	0	0		
SOUTH	21.3	24.9	0	0	0	69	1468	1718	0	0	0	0	0	0	0	0	0	0	8	170		
WEST	21.3	41.6	0	0	0	0	0	0	120	2554	4986	108	2298	4488	14	298	582	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	
DOORS	25.2	4.3	0	0	0	20	505	85	0	0	10	252	43	0	0	0	0	0	0	0	0	
NET EXPOSED WALL	4.5	0.8	288	1286	217	264	1178	198	382	1703	287	813	3630	611	187	834	140	122	545	92	640	2855
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
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0	375	481	220	0	0	0	0	116	149	68	0	0
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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
BASEMENT/CRAWL HEAT LOSS			0			0			0			0			0			0			0	
SLAB ON GRADE HEAT LOSS			0			0			0			0			0			0			0	
SUBTOTAL HT LOSS			2712			2646			4762			6409			1384			545			5503	
SUB TOTAL HT GAIN				3001		1916			5358			5319			765			92			4843	
LEVEL FACTOR / MULTIPLIER	0.30	0.57				0.30	0.57		0.30	0.57		0.30	0.57		0.30	0.57		0.30	0.57		0.30	0.57
AIR CHANGE HEAT LOSS			1550			1513			2722			3664			792			312			3146	
AIR CHANGE HEAT GAIN				222		142			397			394			57			7			358	
DUCT LOSS			0			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		0	0	
HEAT GAIN APPLIANCES/LIGHTS				1371		1371			1371			1371			0			0			0	
TOTAL HT LOSS BTU/H			4262			4159			7484			10073			2176			856			8649	
TOTAL HT GAIN x 1.3 BTU/H				5972		4458			9264			9209			1068			128			6761	

TOTAL HEAT GAIN BTU/H: 82325 TONS: 6.86 LOSS DUE TO VENTILATION LOAD BTU/H: 6156 STRUCTURAL HEAT LOSS: 107655 TOTAL COMBINED HEAT LOSS BTU/H: 113811



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

WOB
 TYPE: 6002 - KINGSVIEW

GFA: 5526

DATE Apr-22
 LO# 96143

WINTER NATURAL AIR CHANGE RATE 0.410
 SUMMER NATURAL AIR CHANGE RATE 0.137

HEAT LOSS AT °F. 76
 HEAT GAIN ΔT °F. 13

CSA-F280-12
 SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	PRI	ENS	PWIC-1	PWIC-2	BED-2	WIC-2	ENS-2	BED-3	WIC-3	ENS-3
			21	35	0	0	14	0	5	39	0	5
			9	9	9	9	9	9	9	9	9	9
FACTORS												
GRS.WALL AREA	LOSS	GAIN	191	319	0	0	127	0	46	355	0	46
GLAZING	LOSS	GAIN										
NORTH	21.3	16.0	0	0	0	0	0	0	9	192	144	9
EAST	21.3	41.6	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
WEST	21.3	41.6	44	936	1828	28	596	1163	0	0	0	0
SKYLT.	37.2	101.5	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
NET EXPOSED WALL	4.5	0.8	147	656	111	291	1296	218	0	0	0	37
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	440	565	259	304	390	179	52	67	31	165
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	55	140	24	218
BASEMENT/CRAWL HEAT LOSS			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
SUBTOTAL HT LOSS			2157		2282	67	352		604	4163	165	604
SUB TOTAL HT GAIN				2197	1560	31	121	661	44	3844	44	237
LEVEL FACTOR / MULTIPLIER	0.20	0.53		0.20	0.53	0.20	0.53	0.20	0.53	0.20	0.53	0.20
AIR CHANGE HEAT LOSS			1136		1202	35	185	962	87	2192	87	318
AIR CHANGE HEAT GAIN				163	115	2	9	49	3	285	3	18
DUCT LOSS			0		0	0	54	279	25	635	25	92
DUCT GAIN				0	0	0	13	232	5	574	5	25
HEAT GAIN PEOPLE	240		2	480	0	0	0	1	0	1	0	0
HEAT GAIN APPLIANCES/LIGHTS				1371	0	0	0	1371	0	1371	0	0
TOTAL HT LOSS BTU/H			3293		3484	102	591	3067	277	1014	277	1014
TOTAL HT GAIN x 1.3 BTU/H				5475	2179	43	185	3320	67	8208	67	364

ROOM USE	EXP. WALL	CLG. HT.	BED-4	ENS-4	LAUN	BED-5	ENS-5
			31	5	7	14	7
			9	9	9	9	9
FACTORS							
GRS.WALL AREA	LOSS	GAIN	282	46	64	127	64
GLAZING	LOSS	GAIN					
NORTH	21.3	16.0	0	0	0	0	0
EAST	21.3	41.6	67	1426	2784	0	0
SOUTH	21.3	24.9	0	0	0	9	192
WEST	21.3	41.6	0	0	0	0	0
SKYLT.	37.2	101.5	0	0	0	0	0
DOORS	25.2	4.3	0	0	0	0	0
NET EXPOSED WALL	4.5	0.8	215	960	162	37	163
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0	0	0	0	0
EXPOSED CLG	1.3	0.6	332	426	195	56	72
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0
SUBTOTAL HT LOSS			2812		426	718	1369
SUB TOTAL HT GAIN				3141	284	394	791
LEVEL FACTOR / MULTIPLIER	0.20	0.53		0.20	0.53	0.20	0.53
AIR CHANGE HEAT LOSS			1480		224	378	721
AIR CHANGE HEAT GAIN				232	21	29	59
DUCT LOSS			0		0	0	0
DUCT GAIN				0	0	0	0
HEAT GAIN PEOPLE	240		1	240	0	0	1
HEAT GAIN APPLIANCES/LIGHTS				1371	0	1371	0
TOTAL HT LOSS BTU/H			4292		651	1096	2090
TOTAL HT GAIN x 1.3 BTU/H				6480	397	2333	3200

TOTAL HEAT GAIN BTU/H: 82325 TONS: 6.86 LOSS DUE TO VENTILATION LOAD BTU/H: 6156 STRUCTURAL HEAT LOSS: 107655 TOTAL COMBINED HEAT LOSS BTU/H: 113811



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

WOB
TYPE: 6002 - KINGSVIEW

DATE: Apr-22

GFA: 5526 LO# 96143

FURNACE 1

HEATING CFM 1575 COOLING CFM 1575
TOTAL HEAT LOSS 78,601 TOTAL HEAT GAIN 48,690
AIR FLOW RATE CFM 20.04 AIR FLOW RATE CFM 32.35

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
= 81679 BTUH

\$*LENNOX
ML196UH090XE48C
FAN SPEED 90
LOW 0
MEDLOW 1080
MEDIUM 1190
MEDIUM HIGH 1340
HIGH 1575

AFUE = 96 %
INPUT (BTU/H) = 88,000
OUTPUT (BTU/H) = 85,600
DESIGN CFM = 1575
CFM @ 6" E.S.P.
TEMPERATURE RISE 50 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	0	17	8
R/A	0	0	0	4	1

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

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	23	24
ROOM NAME	FOY	FOY	FOY	OFFCE	OFFCE	FM/DN	FM/DN	GRT	GRT	GRT	KIT	KIT	KIT	KIT	CATER	MUD	PWD	BAS	BAS	BAS	BAS	BAS	BAS	BAS
RM LOSS MBH.	2.88	2.88	2.88	2.13	2.13	2.08	2.08	3.36	3.36	3.36	1.87	1.87	1.87	1.87	2.18	1.95	0.86	4.87	4.87	4.87	4.87	4.87	4.87	4.87
CFM PER RUN HEAT	58	58	58	43	43	42	42	67	67	67	37	37	37	37	44	39	17	98	98	98	98	98	98	98
RM GAIN MBH.	2.25	2.25	2.25	2.99	2.99	2.23	2.23	3.07	3.07	3.07	2.32	2.32	2.32	2.32	1.07	0.50	0.13	1.42	1.42	1.42	1.42	1.42	1.42	1.42
CFM PER RUN COOLING	73	73	73	97	97	72	72	99	99	99	75	75	75	75	35	16	4	46	46	46	46	46	46	46
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	58	60	52	51	58	37	27	45	45	36	31	32	32	42	49	36	32	36	24	41	28	28	49	41
EQUIVALENT LENGTH	150	180	150	160	190	110	170	120	110	110	190	140	130	110	120	120	120	120	150	110	130	130	160	110
TOTAL EFFECTIVE LENGTH	208	240	202	211	248	147	197	165	155	146	221	172	162	152	169	156	152	156	174	151	158	158	209	151
ADJUSTED PRESSURE	0.08	0.07	0.09	0.08	0.07	0.12	0.09	0.1	0.1	0.11	0.08	0.1	0.11	0.11	0.1	0.11	0.11	0.1	0.09	0.11	0.1	0.1	0.08	0.11
ROUND DUCT SIZE	6	6	5	6	6	5	5	6	6	6	6	6	6	6	6	4	4	4	6	6	6	6	6	6
HEATING VELOCITY (ft/min)	296	296	426	219	219	308	308	342	342	342	189	189	189	189	505	447	195	500	500	500	500	500	500	500
COOLING VELOCITY (ft/min)	372	372	536	495	495	529	529	505	505	505	382	382	382	382	402	184	46	235	235	235	235	235	235	235
OUTLET GRILL SIZE	4X10	4X10	3X10	4X10	4X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10
TRUNK	A	A	A	A	A	B	B	C	C	C	E	E	E	E	E	E	B	E	E	C	C	B	A	B

RUN #	25
ROOM NAME	BAS
RM LOSS MBH.	4.87
CFM PER RUN HEAT	98
RM GAIN MBH.	1.42
CFM PER RUN COOLING	46
ADJUSTED PRESSURE	0.16
ACTUAL DUCT LGH.	33
EQUIVALENT LENGTH	110
TOTAL EFFECTIVE LENGTH	143
ADJUSTED PRESSURE	0.11
ROUND DUCT SIZE	6
HEATING VELOCITY (ft/min)	500
COOLING VELOCITY (ft/min)	235
OUTLET GRILL SIZE	4X10
TRUNK	C

SUPPLY AIR TRUNK SIZE	TRUNK	STATIC	ROUND	RECT	VELOCITY					
	CFM	PRESS.	DUCT	DUCT	(ft/min)	TRUNK	STATIC	ROUND	RECT	VELOCITY
						CFM	PRESS.	DUCT	DUCT	(ft/min)
TRUNK A	358	0.07	9.9	14	x	8	460			
TRUNK B	655	0.07	12.4	18	x	8	655			
TRUNK C	495	0.10	10.2	12	x	8	743			
TRUNK D	1150	0.07	15.3	28	x	8	739			
TRUNK E	427	0.08	10.2	12	x	8	641			
TRUNK F	0	0.00	0	0	x	8	0			

RETURN AIR TRUNK SIZE	TRUNK	STATIC	ROUND	RECT	VELOCITY					
	CFM	PRESS.	DUCT	DUCT	(ft/min)	TRUNK	STATIC	ROUND	RECT	VELOCITY
						CFM	PRESS.	DUCT	DUCT	(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	185	0.06	8	8	x	8	416			
TRUNK X	1575	0.06	17.9	34	x	10	667			
TRUNK Y	1210	0.06	16.2	32	x	8	681			
TRUNK Z	565	0.06	12.2	18	x	8	565			
DROP	1575	0.06	17.9	24	x	14	675			

RETURN AIR #	1	2	3	4	BR																			
AIR VOLUME	185	380	460	185	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	58	53	44	34	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	195	200	150	160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	140
TOTAL EFFECTIVE LH	253	253	194	194	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	155
ADJUSTED PRESSURE	0.06	0.06	0.08	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	14.80	14.80	14.80	14.80	0.10
ROUND DUCT SIZE	8	10.5	10.5	7.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9.1
INLET GRILL SIZE	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	24	30	30	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30

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

WOB
 TYPE: 6002 - KINGSVIEW

DATE: Apr-22

GFA: 5526 LO# 96143

FURNACE 2

HEATING CFM 1110 COOLING CFM 1110
 TOTAL HEAT LOSS 29,055 TOTAL HEAT GAIN 33,116
 AIR FLOW RATE CFM 38.2 AIR FLOW RATE CFM 33.52

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
 = 32133 BTUH

\$LENNOX
ML196UH045XE36B
 FAN SPEED 45
 LOW 620
 MEDLOW 685
 MEDIUM 980
 MEDIUM HIGH 1110
 HIGH 0

AFUE = 96 %
 INPUT (BTU/H) = 44,000
 OUTPUT (BTU/H) = **42,800**
 DESIGN CFM = **1110**
 CFM @ .6" E.S.P.
 TEMPERATURE RISE 36 °F

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

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

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

RUN #	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
25	PRI	1.65	63	2.74	92	0.16	55	200	255	0.06	6	321	469	4X10	B
26	PRI	1.65	63	2.74	92	0.16	67	170	237	0.07	6	321	469	4X10	B
27	ENS	1.31	50	0.82	27	0.17	61	170	231	0.07	5	367	198	3X10	B
28	ENS	2.18	83	1.36	46	0.16	57	160	217	0.07	6	423	235	4X10	B
29	PWIC-1	0.10	23	0.04	1	0.17	29	170	199	0.09	4	46	11	3X10	B
30	PWIC-2	0.59	59	0.19	6	0.17	26	180	206	0.08	4	264	69	3X10	B
31	BED-2	1.53	59	1.66	56	0.17	40	200	230	0.07	5	433	411	3X10	B
32	BED-2	1.53	59	1.66	56	0.17	42	200	242	0.11	4	433	411	3X10	B
33	ENS-2	1.01	39	0.36	12	0.17	31	110	153	0.11	4	447	138	3X10	C
34	WIC-2	0.28	11	0.07	2	0.17	40	130	161	0.1	4	126	23	3X10	C
35	WIC-3	0.28	11	0.07	2	0.17	40	140	180	0.1	4	126	23	3X10	C
36	ENS-3	1.01	39	0.36	12	0.17	31	130	167	0.1	4	447	138	3X10	C
37	BED-3	2.33	89	2.74	92	0.16	57	160	217	0.07	6	454	469	4X10	C
38	BED-3	2.33	89	2.74	92	0.16	53	170	223	0.07	6	454	469	4X10	C
39	BED-3	2.33	89	2.74	92	0.16	50	150	209	0.08	6	454	469	4X10	C
40	BED-4	1.43	55	2.16	72	0.17	59	180	230	0.08	6	280	367	4X10	A
41	BED-4	1.43	55	2.16	72	0.17	79	190	269	0.07	6	280	367	4X10	A
42	BED-4	0.65	25	0.40	13	0.17	72	160	220	0.08	6	287	149	3X10	A
43	ENS-4	1.10	42	0.23	78	0.15	60	170	209	0.08	4	308	573	3X10	A
44	LAUN	2.09	80	2.33	107	0.15	49	170	209	0.08	5	408	546	4X10	A
45	BED-5	0.82	31	0.43	15	0.17	47	170	217	0.07	6	408	172	4X10	A
46	ENS-5	0.82	31	0.43	15	0.17	55	200	255	0.07	4	356	172	3X10	B

SUPPLY AIR TRUNK SIZE

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	312	0.06	9.7	14	x 8
TRUNK B	435	0.06	11	14	x 8
TRUNK C	802	0.06	13.9	22	x 8
TRUNK D	0	0.00	0	0	x 8
TRUNK E	0	0.00	0	0	x 8
TRUNK F	0	0.00	0	0	x 8

RETURN AIR TRUNK SIZE

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK O	0	0.05	0	0	x 8
TRUNK P	0	0.05	0	0	x 8
TRUNK Q	0	0.05	0	0	x 8
TRUNK R	0	0.05	0	0	x 8
TRUNK S	0	0.05	0	0	x 8
TRUNK T	0	0.05	0	0	x 8
TRUNK U	0	0.05	0	0	x 8
TRUNK V	0	0.05	0	0	x 8
TRUNK W	270	0.05	9.7	12	x 8
TRUNK X	1110	0.05	16.4	32	x 8
TRUNK Y	550	0.05	12.6	20	x 8
TRUNK Z	420	0.05	11.4	16	x 8
DROP	1110	0.05	16.4	24	x 10

RETURN AIR #

	1	2	3	4	5	6									
AIR VOLUME	270	155	135	110	130	310	0	0	0	0	0	0	0	0	0
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	90	31	48	78	91	75	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	110	135	175	200	150	195	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	200	166	223	278	241	270	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.07	0.09	0.07	0.05	0.06	0.05	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE	8.9	6.8	6.8	6.9	7	10.2	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	30	14	14	14	14	30	0	0	0	0	0	0	0	0	0

TYPE: 6002 - KINGSVIEW
 SITE NAME: PINE VALLEY PH 2

LO # 96143
 WOB

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES 9.32.3.1(1)

a) Direct vent (sealed combustion) only

b) Positive venting induced draft (except fireplaces)

c) Natural draft, B-vent or induced draft gas fireplace

d) Solid Fuel (including fireplaces)

e) No Combustion Appliances

HEATING SYSTEM

Forced Air Non Forced Air

Electric Space Heat

HOUSE TYPE 9.32.1(2)

I Type a) or b) appliance only, no solid fuel

II Type I except with solid fuel (including fireplaces)

III Any Type c) appliance

IV Type I, or II with electric space heat

Other: Type I, II or IV no forced air

SYSTEM DESIGN OPTIONS O.N.H.W.P.

1 Exhaust only/Forced Air System

2 HRV with Ducting/Forced Air System

3 HRV Simplified/connected to forced air system

4 HRV with Ducting/non forced air system

Part 6 Design

TOTAL VENTILATION CAPACITY 9.32.3.3(1)

Basement + Master Bedroom	<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>6</u>	@ 10.6 cfm	<u>63.6</u>	cfm
Table 9.32.3.A.		TOTAL	<u>222.6</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>222.6</u>	cfm
Less Principal Ventil. Capacity	<u>150</u>	cfm
Required Supplemental Capacity	<u>72.6</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY

Model: VANEE V150H Location: BSMT

150.0 cfm HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

CFM		ΔT °F		FACTOR		% LOSS
150.0 CFM	X	76 F	X	1.08	X	0.25

SUPPLEMENTAL FANS BY INSTALLING CONTRACTOR

Location	Model	cfm	HVI	Sones
ENS	BY INSTALLING CONTRACTOR	50	<input checked="" type="checkbox"/>	3.5
ENS-2	BY INSTALLING CONTRACTOR	50	<input checked="" type="checkbox"/>	3.5
ENS-3	BY INSTALLING CONTRACTOR	50	<input checked="" type="checkbox"/>	3.5
PWD	BY INSTALLING CONTRACTOR	50	<input checked="" type="checkbox"/>	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: *Michael O'Rourke*

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#: 96143	Model: 6002 - KINGSVIEW	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																																																													
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ <p>0.410 x 678.34 x 42 °C x 1.2 = 14077 W</p> <p>= 48031 Btu/h</p>			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ <p>= 0.137 x 678.34 x 7 °C x 1.2 = 795 W</p> <p>= 2714 Btu/h</p>																																																													
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																													
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E) \times 2 \text{ HRV / ERV's}$ <p>300 CFM x 76 °F x 1.08 x 0.25 = 6156 Btu/h</p>			$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>300 CFM x 13 °F x 1.08 x 0.25 = 1,037 Btu/h</p>																																																													
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																																
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<p>*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0</p>																																																																
				Michael O'Rourke BCIN# 19669 																																																												

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 6002 - KINGSVIEW	WOB	BUILDER: GOLD PARK HOMES
SFQT: 5526	LO# 96143	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):	86238.9	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.75	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	7.1 ft
LENGTH: 69.0 ft	WIDTH: 53.0 ft	EXPOSED PERIMETER:	171.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	73.0 ft

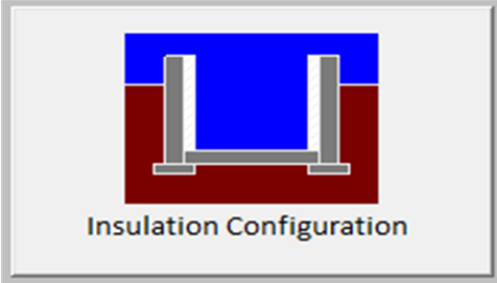
2012 OBC - COMPLIANCE PACKAGE

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):	6.1	 <p>Insulation Configuration</p>
Floor Width (m):	16.2	
Exposed Perimeter (m):	52.1	
Wall Height (m):	3.1	
Depth Below Grade (m):	1.93	
Window Area (m ²):	0.7	
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):	1017	

TYPE: 6002 - KINGSVIEW
 LO# 96143

WOB

Residential Slab on Grade Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Length (m):	3.0	
Width (m):	16.2	
Exposed Perimeter (m):	22.3	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):	356	

TYPE: 6002 - KINGSVIEW
 LO# 96143

WOB

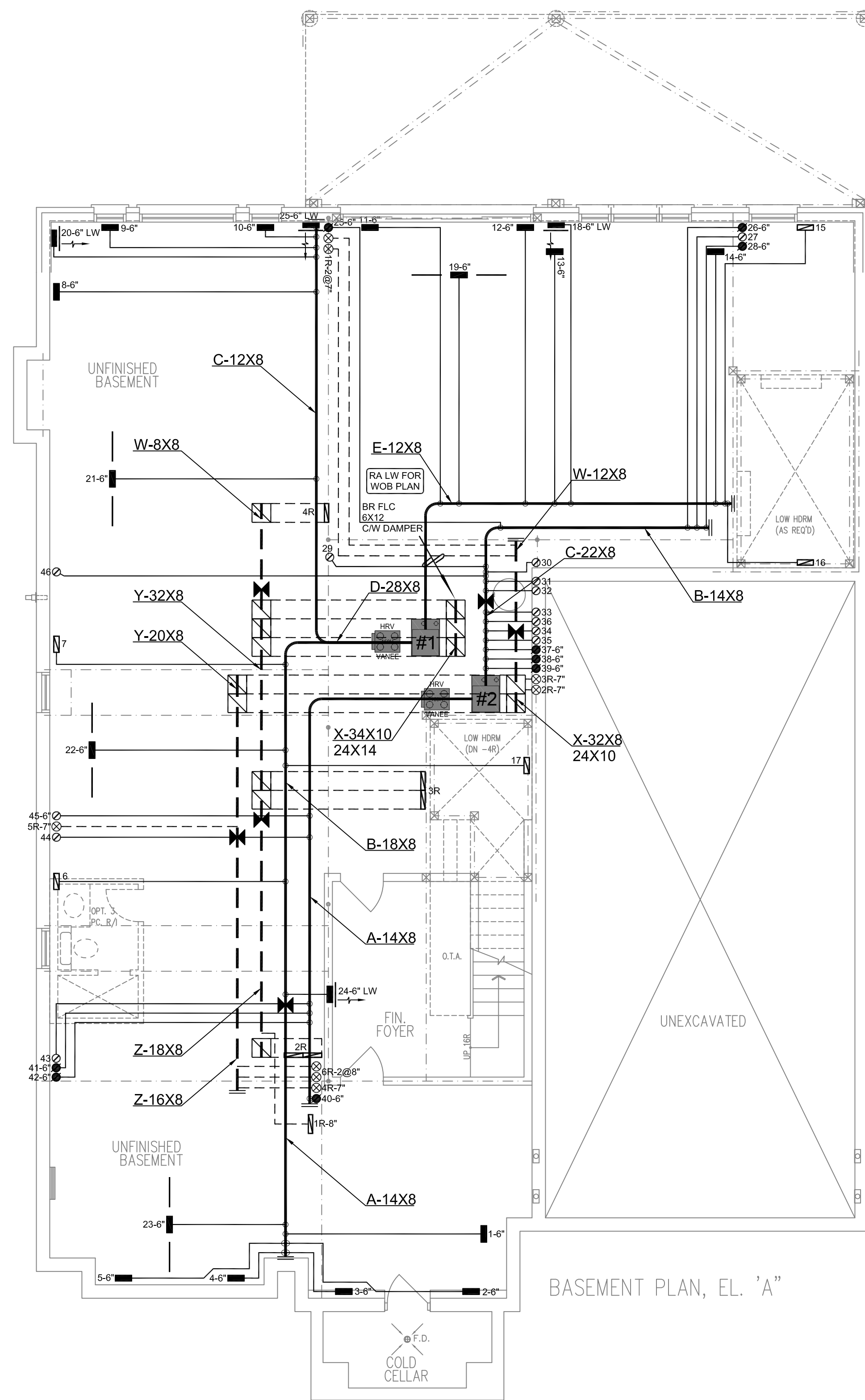
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description			
Province:	Ontario		
Region:	Vaughan (Woodbridge)		
Weather Station Location:	Open flat terrain, grass		
Anemometer height (m):	10		
Local Shielding			
Building Site:	Suburban, forest		
Walls:	Heavy		
Flue:	Heavy		
Highest Ceiling Height (m):	9.24		
Building Configuration			
Type:	Detached		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m ³):	2442.0		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	3255.3 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):	0.410		
Cooling Air Leakage Rate (ACH/H):	0.137		

TYPE: 6002 - KINGSVIEW
 LO# 96143

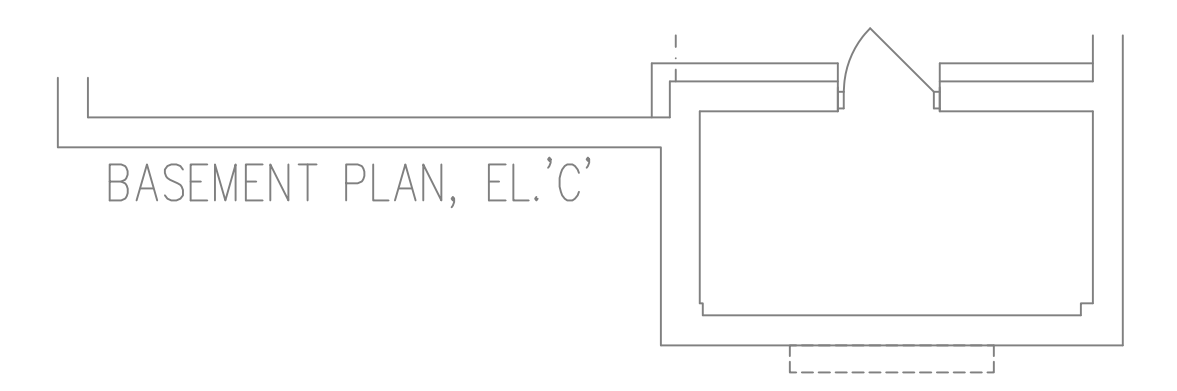
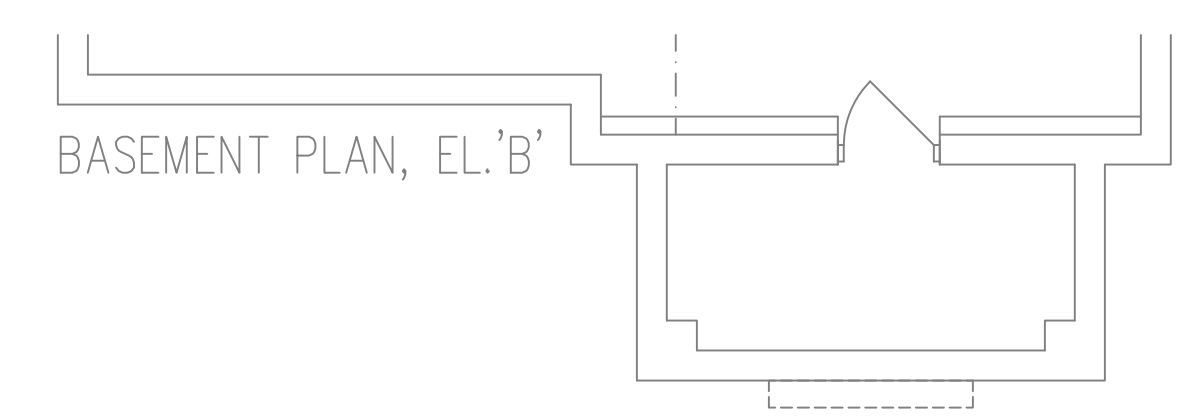
WOB



FURNACE 1
LENNOX ML196UH090XE48C
 85,600 BTU/H OUTPUT
 4.0 TONS A/C @ 1575 cfm

FURNACE 2
LENNOX ML196UH045XE36B
 42,800 BTU/H OUTPUT
 3.0 TONS A/C @ 1110 cfm

	S/A	R/A	FANS
2ND	22	6	6
1ST	17	4	2
BAS	8	1	0



HVAC LEGEND

[Symbol]	OUTLET BY AIRMAX
[Symbol]	4"X10" SUPPLY GRILLE - 5' BOOT
[Symbol]	4"X10" SUPPLY GRILLE - 4' BOOT
[Symbol]	FLEX DUCT
[Symbol]	HVAC SUPPLY AIR STACK
[Symbol]	1400 RETURN AIR GRILLE
[Symbol]	3000 RETURN AIR GRILLE
[Symbol]	FLOOR RETURN AIR GRILLE
[Symbol]	RETURN STACK ABOVE
[Symbol]	RETURN AIR STACK
[Symbol]	REDUCER
[Symbol]	SUPPLY DUCTWORK
[Symbol]	RETURN DUCTWORK
[Symbol]	LINT TRAP by REVERSOMATIC
[Symbol]	EXHAUST FAN
[Symbol]	DRYER BOOSTER FAN PROVIDES ACCESS PANEL IN RAVER
[Symbol]	DIRECT VENT
[Symbol]	LOW WALL
[Symbol]	HIGH WALL
[Symbol]	CEILING
[Symbol]	MOTORIZED ZONE DAMPER
[Symbol]	EXHAUST PIPE
[Symbol]	CONCENTRIC VENT KIT
[Symbol]	CONCENTRIC HRV or ERV VENT KIT
[Symbol]	SINGLE WALL BOX by REVERSOMATIC
[Symbol]	DOUBLE WALL BOX by REVERSOMATIC
[Symbol]	TRIPLE WALL BOX by REVERSOMATIC
[Symbol]	CONCENTRIC HRV/VENT by REVERSOMATIC

I, THE UNDERSIGNED, HEREBY DECLARE THAT I AM A QUALIFIED TRADE PROFESSIONAL, I, THE UNDERSIGNED, HAVE PREPARED THIS PLAN IN ACCORDANCE WITH THE REQUIREMENTS OF THE REGULATION OF PROFESSIONAL ENGINEERS ACT, 1998 AND THE REGULATIONS THEREUNDER.

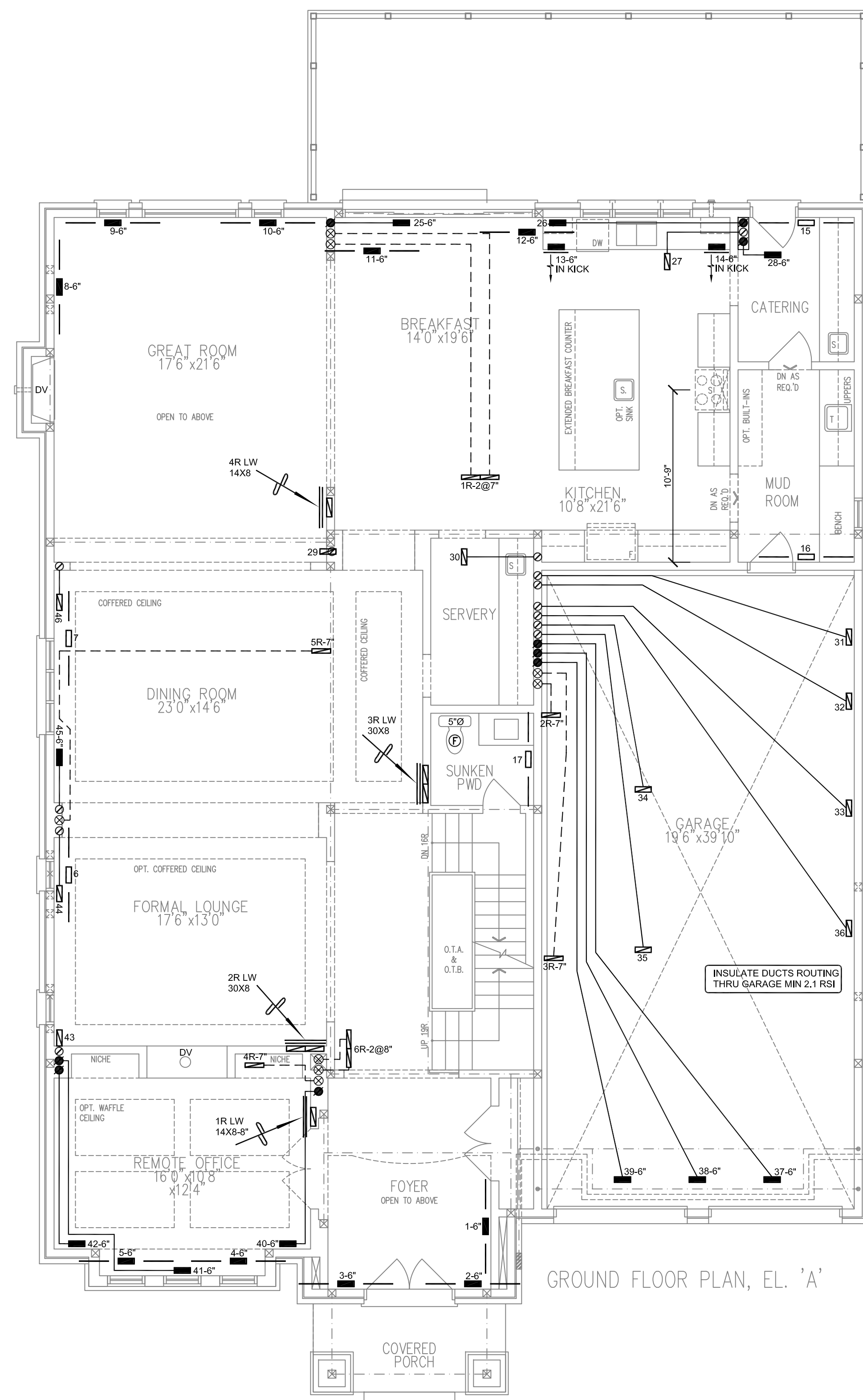
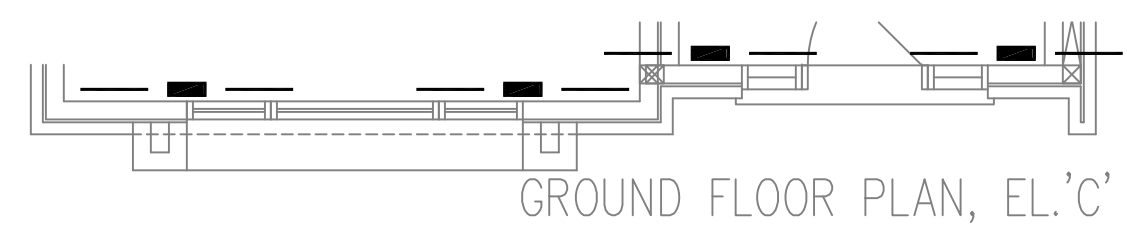
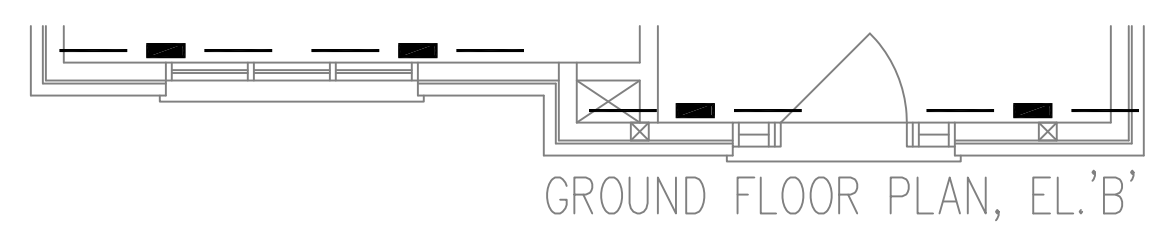
1	ISSUED FOR PERMIT	APRIL 2022	AK
2	Revision	Date	By

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**
 Address: **VAUGHAN, ONTARIO**
6002 - KINGSVIEW
WOB
 5526 SQFT

Sheet Title:	BASEMENT HVAC LAYOUT		
Drawn By:	AK	Checked By:	MO
Scale:	3/16"=1'-0"	Date:	APRIL 2022
Sheet No.:	96143	Sheet No.:	1



HVAC LEGEND	
	OUTLET BY ARMAX
	4x10' SUPPLY GRILLE - 5' BOOT
	4x10' SUPPLY GRILLE - 4' BOOT
	FLEX DUCT
	1400 RETURN AIR STACK
	1400 RETURN AIR GRILLE
	3000 RETURN AIR GRILLE
	FLOOR RETURN AIR GRILLE
	RETURN STACK ABOVE
	RETURN AIR STACK
	REDUCER
	SUPPLY DUCTWORK
	RETURN DUCTWORK
	LINT TRAP BY REVERSOMATIC
	EXHAUST FAN
	DRYER BOOSTER FAN PROVIDE ACCESS PANEL IN RAVER
	DIRECT VENT
	LOW WALL
	HIGH WALL
	CEILING
	MOTORIZED ZONE DAMPER
	EXHAUST PIPE
	CONCENTRIC VENT KIT
	CONCENTRIC HRV or ERV VENT KIT
	SINGLE WALL BOX BY REVERSOMATIC
	DOUBLE WALL BOX BY REVERSOMATIC
	TRIPLE WALL BOX BY REVERSOMATIC
	CONCENTRIC HRV VENT BY REVERSOMATIC

I, THE DESIGNER, HEREBY DECLARE THAT I AM A QUALIFIED PROFESSIONAL ENGINEER IN THE PROVINCE OF ONTARIO.

DATE: APRIL 2022

PROJECT: 6002 - KINGSVIEW WOB

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

DATE: APRIL 2022

BY: [Signature]

ISSUED FOR PERMIT APRIL 2022 AK

NO. Revision Date By

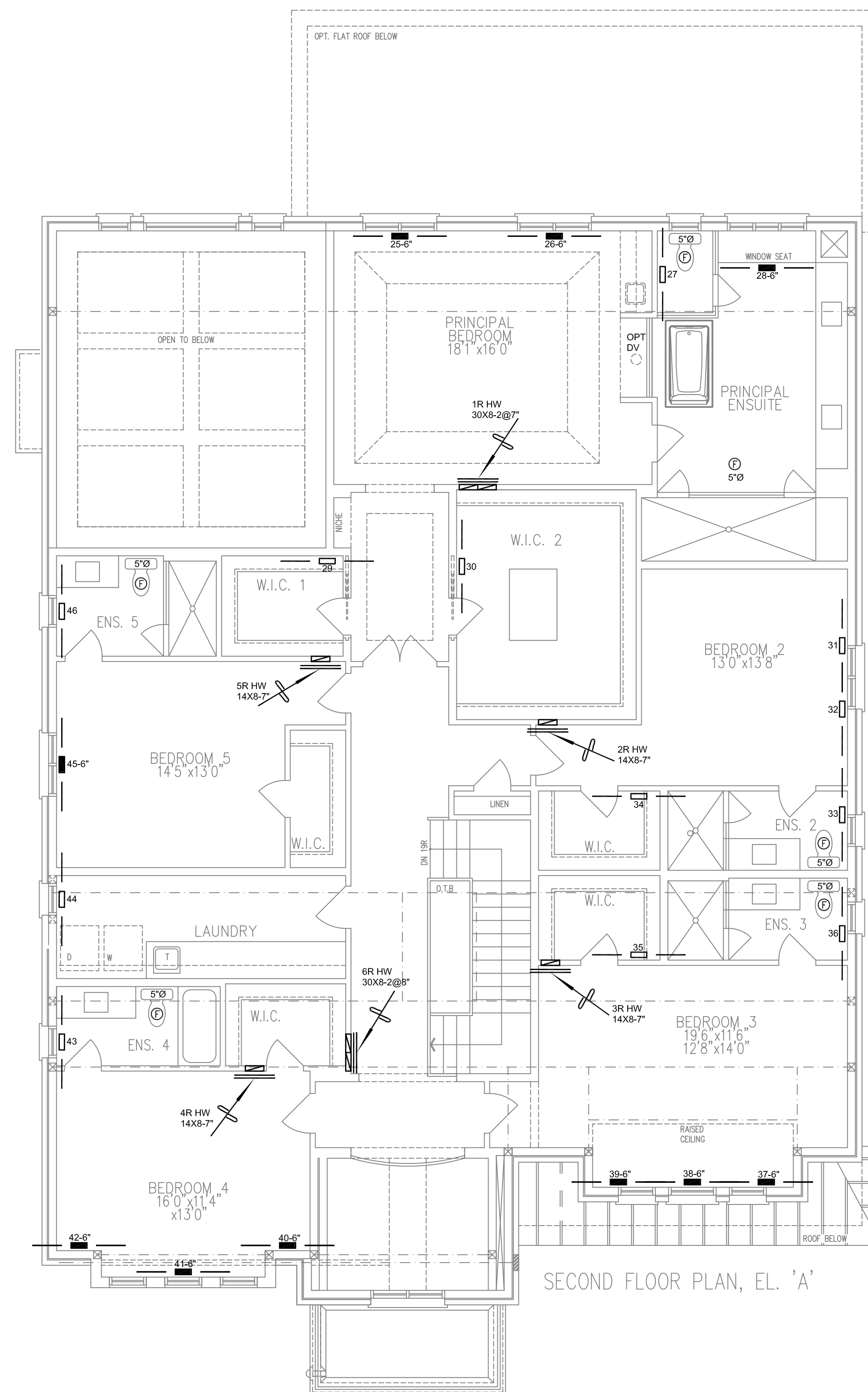
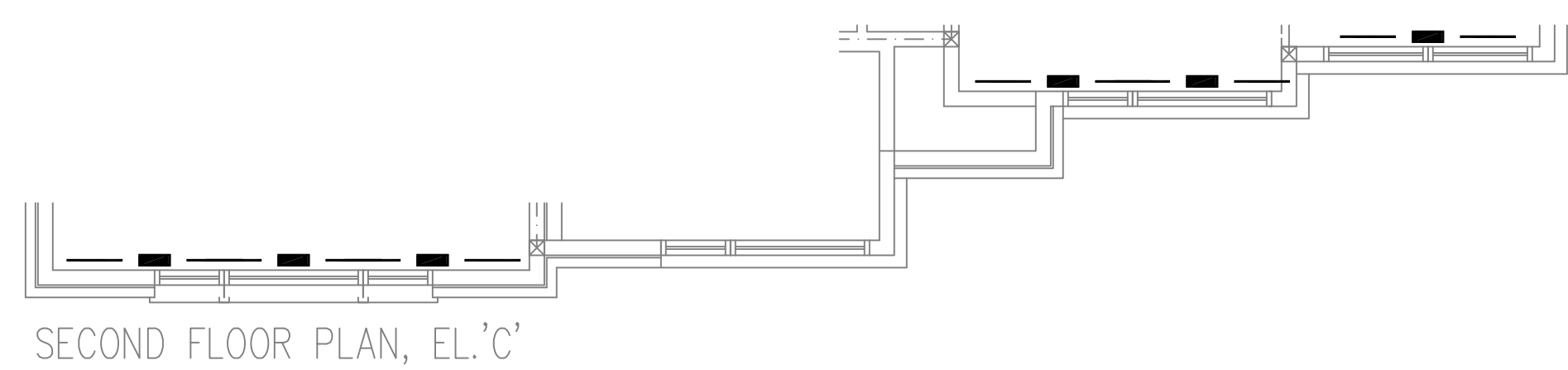
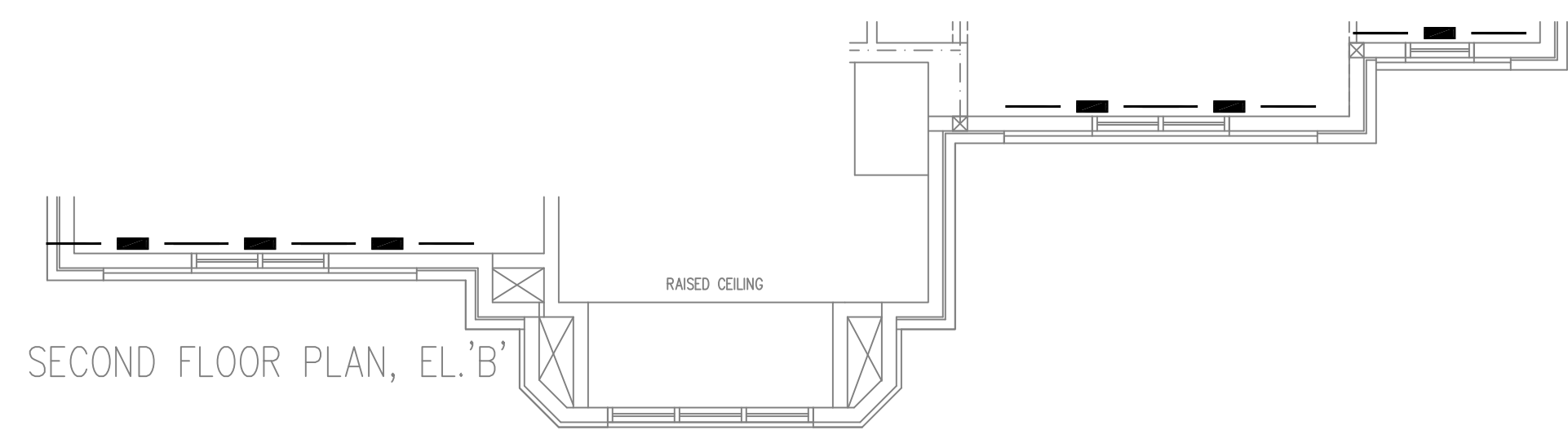
SB-12 PACKAGE A1

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Web: www.hvacedesigns.ca
Specializing in Residential Mechanical Design Services

Client: GOLDPARK HOMES
Project Name: PINE VALLEY PH2
Address: VAUGHAN, ONTARIO
6002 - KINGSVIEW
WOB
5526 SQFT

Sheet Title: FIRST FLOOR HVAC LAYOUT
Drawn By: AK
Scale: 3/16"=1'-0"
Date: APRIL 2022
LO #: 96143



HVAC LEGEND	
	OUTLET BY AIRMAX
	4'x10' SUPPLY GRILLE - 5' BOOT
	4'x10' SUPPLY GRILLE - 4' BOOT
	FLEX DUCT
	14x8 SUPPLY AIR STACK
	14x8 RETURN AIR GRILLE
	30x8 RETURN AIR GRILLE
	FLOOR RETURN AIR GRILLE
	RETURN STACK ABOVE
	RETURN AIR STACK
	REDUCER
	SUPPLY DUCTWORK
	RETURN DUCTWORK
	LINT TRAP by REVERSOMATIC
	EXHAUST FAN
	DRYER BOOSTER FAN - PROVIDES ACCESS PANEL in RAFTER
	DIRECT VENT
	LOW WALL
	HIGH WALL
	CEILING
	MOTORIZED ZONE DAMPER
	EXHAUST PIPE
	CONCENTRIC VENT KIT
	CONCENTRIC HRV or ERV VENT KIT
	SINGLE WALL BORE by REVERSOMATIC
	DOUBLE WALL BORE by REVERSOMATIC
	TRIPLE WALL BORE by REVERSOMATIC
	CONCENTRIC HRV VENT by REVERSOMATIC

I HAVE READ THESE BLUE PRINTS AND I ACCEPT RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION 1.2 OF THE REGULATION.
 HVAC DESIGNS LTD. *M. J. [Signature]*

2	ISSUED FOR PERMIT	APRIL 2022	AK
1	Revision	Date	By

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Client: **GOLDPARK HOMES**
 Project Name: **PINE VALLEY PH2**
 Location: **VAUGHAN, ONTARIO**
6002 - KINGSVIEW
WOB
 5526 SQFT

Sheet Title:	SECOND FLOOR HVAC LAYOUT		
Drawn By:	AK	Checked By:	MO
Scale:	3/16"=1'-0"		
Date:	APRIL 2022		
LD #	96143		3