


## 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		<b>Model:</b> 6002 - KINGSVIEW  OPT 2ND - ELEVATOR  <b>Project:</b> 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

OPT 2ND - ELEVATOR  
 TYPE: 6002 - KINGSVIEW GFA: 5901

DATE Apr-22  
 LO# 96142

WINTER NATURAL AIR CHANGE RATE 0.342  
 SUMMER NATURAL AIR CHANGE RATE 0.115

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

CSA-F280-12  
 SB-12 PACKAGE A1

ROOM USE														
EXP. WALL														
CLG. HT.														
FACTORS														
GRS.WALL AREA	LOSS	GAIN												
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		WOD		BAS		
EXP. WALL		32		30		47		44		19		11		68		21		73		244		
CLG. HT.		11		11		11		11		11		11		11		11		10		10		
FACTORS																						
GRS.WALL AREA	LOSS	GAIN		LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	
GLAZING																						
NORTH	21.3	16.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
EAST	21.3	41.6	67	1426	2784	0	0	0	0	0	0	0	0	102	2171	4238	0	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	0	8	170	
WEST	21.3	41.6	0	0	0	0	0	0	120	2554	4986	54	1149	2244	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	0	0	0	20	505	85	0	0	10	252	43	0	0	0	20	505	
NET EXPOSED WALL	4.5	0.8	288	1286	217	264	1178	198	382	1703	287	434	1939	327	187	834	140	122	545	92	640	
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	
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0	0	0	0	116	149	68	0	0	0	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	
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	
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			3088					5503			1242		
SUB TOTAL HT GAIN				3001			1916			5358			2570		765			4843			358	
LEVEL FACTOR / MULTIPLIER		0.30	0.55		0.30	0.55		0.30	0.55		0.30	0.55		0.30	0.55		0.30	0.55			0.50	
AIR CHANGE HEAT LOSS			1491			1455			2619			1698			761			3026			683	
AIR CHANGE HEAT GAIN				229			146			409			196		58				369		27	
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	
HEAT GAIN APPLIANCES/LIGHTS				1371			1371			1371			1371						0		0	0
TOTAL HT LOSS BTU/H			4203			4102			7381			4786			2146			845			1925	
TOTAL HT GAIN x 1.3 BTU/H				5981			4464			9280			5379		1070			128			6776	

TOTAL HEAT GAIN BTU/H: 72519      TONS: 6.04      LOSS DUE TO VENTILATION LOAD BTU/H: 6156      STRUCTURAL HEAT LOSS: 96374      TOTAL COMBINED HEAT LOSS BTU/H: 102530



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

OPT 2ND - ELEVATOR  
 TYPE: 6002 - KINGSVIEW  
 GFA: 5901

DATE Apr-22  
 LO# 96142

WINTER NATURAL AIR CHANGE RATE 0.342  
 SUMMER NATURAL AIR CHANGE RATE 0.115

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

CSA-F280-12  
 SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	PRI	ENS	WIC	WIC-2	BED-2	ENS-2	BED-3	WIC-3	ENS-3
GRS.WALL AREA	LOSS	GAIN	191	319	355	0	127	46	355	0	46
GLAZING	LOSS	GAIN									
NORTH	21.3	16.0	0	0	0	0	0	9	192	144	9
EAST	21.3	41.6	0	0	0	0	0	0	0	0	0
SOUTH	21.3	24.9	0	0	0	9	192	224	0	0	0
WEST	21.3	41.6	44	936	1828	28	596	1163	32	681	1330
SKYLT.	37.2	101.5	0	0	0	0	0	0	0	0	0
DOORS	25.2	4.3	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5	0.8	147	656	111	291	1296	218	314	1401	236
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	440	565	259	304	390	179	375	481	220
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	55	140	24
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS			2157		2282		2755		352		1827
SUB TOTAL HT GAIN				2197		1560		2010		121	
LEVEL FACTOR / MULTIPLIER			0.20	0.38		0.20	0.38		0.20	0.38	
AIR CHANGE HEAT LOSS			824		872		1052		134		698
AIR CHANGE HEAT GAIN				168		119		153		9	
DUCT LOSS			0		0		0		49		252
DUCT GAIN			0		0		0		13		232
HEAT GAIN PEOPLE	240		2	480		0	0		0	1	240
HEAT GAIN APPLIANCES/LIGHTS				1371		0	0		0		1371
TOTAL HT LOSS BTU/H			2982		3154		3807		535		2777
TOTAL HT GAIN x 1.3 BTU/H				5481		2183		2812		186	

ROOM USE	EXP. WALL	CLG. HT.	BED-4	ENS-4	LAUN	BED-5	ENS-5
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
SUB TOTAL HT GAIN				3141		284	
LEVEL FACTOR / MULTIPLIER			0.20	0.38		0.20	0.38
AIR CHANGE HEAT LOSS			1074		163		274
AIR CHANGE HEAT GAIN				240		22	
DUCT LOSS			0		0		0
DUCT GAIN			0		0		0
HEAT GAIN PEOPLE	240		1	240		0	0
HEAT GAIN APPLIANCES/LIGHTS				1371		0	0
TOTAL HT LOSS BTU/H			3886		589		992
TOTAL HT GAIN x 1.3 BTU/H				6489		398	

TOTAL HEAT GAIN BTU/H: 72519      TONS: 6.04      LOSS DUE TO VENTILATION LOAD BTU/H: 6156      STRUCTURAL HEAT LOSS: 96374      TOTAL COMBINED HEAT LOSS BTU/H: 102530



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

OPT 2ND - ELEVATOR  
 TYPE: 6002 - KINGSVIEW

DATE: Apr-22

GFA: 5901 LO# 96142

FURNACE 1

HEATING CFM 1190 COOLING CFM 1190  
 TOTAL HEAT LOSS 66,262 TOTAL HEAT GAIN 36,029  
 AIR FLOW RATE CFM 17.96 AIR FLOW RATE CFM 33.03

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  
 = 69340 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 = **1190**  
 CFM @ .6" E.S.P.  
 TEMPERATURE RISE 67 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	0	17	7
R/A	0	0	0	4	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	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.	2.84	2.84	2.84	2.10	2.10	2.05	2.05	1.60	1.60	1.60	1.85	1.85	1.85	1.85	2.15	1.93	0.84	4.62	4.62	4.62	4.62	4.62	4.62	4.62
CFM PER RUN HEAT	51	51	51	38	38	37	37	29	29	29	33	33	33	33	39	35	15	83	83	83	83	83	83	83
RM GAIN MBH.	2.26	2.26	2.26	2.99	2.99	2.23	2.23	1.79	1.79	1.79	2.32	2.32	2.32	2.32	1.07	0.50	0.13	0.35	0.35	0.35	0.35	0.35	0.35	0.35
CFM PER RUN COOLING	75	75	75	99	99	74	74	59	59	59	77	77	77	77	35	17	4	12	12	12	12	12	12	12
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	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	52	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	212	151
ADJUSTED PRESSURE	0.08	0.07	0.09	0.08	0.07	0.12	0.09	0.1	0.11	0.12	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	5	5	5	6	6	6	6	4	4	4	6	5	6	6	6	6	6
HEATING VELOCITY (ft/min)	260	260	374	194	194	272	272	213	213	213	168	168	168	168	447	402	172	423	609	423	423	423	423	423
COOLING VELOCITY (ft/min)	382	382	551	505	505	543	543	433	433	433	393	393	393	393	402	195	46	61	88	61	61	61	61	61
OUTLET GRILL SIZE	4X10	4X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	4X10	3X10	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 #	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

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	312	0.07	9.4	14	x	8	401	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	567	0.07	11.7	18	x	8	567	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	253	0.10	7.9	8	x	8	569	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	820	0.07	13.5	22	x	8	671	TRUNK J	0	0.00	0	0	x	8	0
TRUNK E	372	0.08	9.7	12	x	8	558	TRUNK K	0	0.00	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

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 W	175	0.06	7.8	8	x	8	394
TRUNK P	0	0.06	0	0	x	8	0	TRUNK X	1190	0.06	16.1	32	x	8	669
TRUNK Q	0	0.06	0	0	x	8	0	TRUNK Y	975	0.06	14.9	26	x	8	675
TRUNK R	0	0.06	0	0	x	8	0	TRUNK Z	430	0.06	11	14	x	8	553
TRUNK S	0	0.06	0	0	x	8	0	DROP	1190	0.06	16.1	24	x	12	595
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								

RETURN AIR #	1	2	3	4	BR											
AIR VOLUME	120	310	370	175	0	0	0	0	0	0	0	0	0	0	0	215
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.	58	53	44	34	1	1	1	1	1	1	1	1	1	1	1	15
EQUIVALENT LENGTH	195	200	150	160	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	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	0.10
ROUND DUCT SIZE	6.8	9.7	9.7	7.3	0	0	0	0	0	0	0	0	0	0	0	7.5
INLET GRILL SIZE	8	8	8	8	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
INLET GRILL SIZE	14	30	30	14	0	0	0	0	0	0	0	0	0	0	0	14

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

OPT 2ND - ELEVATOR  
 TYPE: 6002 - KINGSVIEW

DATE: Apr-22

GFA: 5901 LO# 96142

**FURNACE 2**

HEATING CFM 1110 COOLING CFM 1110  
 TOTAL HEAT LOSS 30,112 TOTAL HEAT GAIN 35,971  
 AIR FLOW RATE CFM 36.86 AIR FLOW RATE CFM 30.86

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  
 = 33190 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 #	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
ROOM NAME	PRI	PRI	ENS	ENS	WIC	WIC-2	BED-2	BED-2	ENS-2	WIC	WIC-3	ENS-3	BED-3	BED-3	BED-3	BED-4	BED-4	BED-4	ENS-4	LAUN	BED-5	ENS-5
RM LOSS MBH.	1.49	1.49	1.18	1.97	1.90	0.54	1.39	1.39	0.92	1.90	0.50	0.92	2.11	2.11	2.11	1.30	1.30	1.30	0.59	0.99	1.98	0.74
CFM PER RUN HEAT	55	55	44	73	70	20	51	51	34	70	18	34	78	78	78	48	48	48	22	37	73	27
RM GAIN MBH.	2.74	2.74	0.82	1.36	1.41	0.19	1.66	1.66	0.37	1.41	0.13	0.37	2.74	2.74	2.74	2.16	2.16	2.16	0.40	2.33	3.24	0.44
CFM PER RUN COOLING	85	85	25	42	43	6	51	51	11	43	4	11	85	85	85	67	67	67	12	72	100	13
ADJUSTED PRESSURE	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.16	0.17
ACTUAL DUCT LGH.	53	67	61	57	55	26	40	42	43	50	40	47	57	53	50	59	79	72	60	49	47	55
EQUIVALENT LENGTH	230	170	170	160	200	180	190	200	110	200	140	120	160	170	180	150	190	170	160	160	170	200
TOTAL EFFECTIVE LENGTH	283	237	231	217	255	206	230	242	153	250	180	167	217	223	230	209	269	242	220	209	217	255
ADJUSTED PRESSURE	0.06	0.07	0.07	0.08	0.07	0.08	0.07	0.07	0.11	0.07	0.1	0.1	0.07	0.07	0.07	0.08	0.06	0.07	0.08	0.08	0.07	0.07
ROUND DUCT SIZE	6	6	5	6	6	4	5	5	4	6	4	4	6	6	6	5	6	6	4	5	6	4
HEATING VELOCITY (ft/min)	280	280	323	372	357	229	374	374	390	357	207	390	398	398	398	352	245	245	252	272	372	310
COOLING VELOCITY (ft/min)	433	433	184	214	219	69	374	374	126	219	46	126	433	433	433	492	342	342	138	529	510	149
OUTLET GRILL SIZE	4X10	4X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	4X10	4X10	4X10	3X10	4X10	4X10	3X10	3X10	4X10	3X10
TRUNK	B	B	B	B	B	B	B	B	C	B	C	C	C	C	C	A	A	A	A	A	A	B

**SUPPLY AIR TRUNK SIZE**

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	276	0.06	9.3	14	x 8 355
TRUNK B	516	0.06	11.8	16	x 8 581
TRUNK C	836	0.06	14.1	24	x 8 627
TRUNK D	0	0.00	0	0	x 8 0
TRUNK E	0	0.00	0	0	x 8 0
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	0.05	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	270	0.05	9.7	12	x 8 405
TRUNK X	1110	0.05	16.4	32	x 8 624
TRUNK Y	550	0.05	12.6	20	x 8 495
TRUNK Z	420	0.05	11.4	16	x 8 473
DROP	1110	0.05	16.4	24	x 10 666

**RETURN AIR #**

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

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

LO # 96142  
 OPT 2ND - 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>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
<b>TOTAL</b>	<b>95.4</b>	<b>cfm</b>

**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

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																
LO#: 96142	Model: 6002 - KINGSVIEW	Builder: GOLD PARK HOMES	Date: 2022-04-14																																																													
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$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ <p>0.342 x 678.34 x 42 °C x 1.2 = 11757 W</p> <p>= 40114 Btu/h</p>			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ <p>= 0.115 x 678.34 x 7 °C x 1.2 = 666 W</p> <p>= 2271 Btu/h</p>																																																													
<b>5.2.3.2 Heat Loss due to Mechanical Ventilation</b>			<b>6.2.7 Sensible heat Gain due to Ventilation</b>																																																													
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E) \times 2 \text{ HRV / ERV's}$ <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>																																																													
<b>5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)</b>																																																																
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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

<b>MODEL:</b> 6002 - KINGSVIEW	OPT 2ND - ELEVATOR	<b>BUILDER:</b> GOLD PARK HOMES
<b>SFQT:</b> 5901	<b>LO#</b> 96142	<b>SITE:</b> 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 <sup>3</sup> ):	86238.9	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
INTERIOR LIGHTING LOAD (Btu/h/ft <sup>2</sup> ):	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:	244.0 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):	21.0	<p>Insulation Configuration</p>
Floor Width (m):	16.2	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.1	
Depth Below Grade (m):	2.16	
Window Area (m <sup>2</sup> ):	3.1	
Door Area (m <sup>2</sup> ):	1.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
<b>Heating Load (Watts):</b>	<b>2501</b>	

TYPE: 6002 - KINGSVIEW  
 LO# 96142

OPT 2ND - ELEVATOR

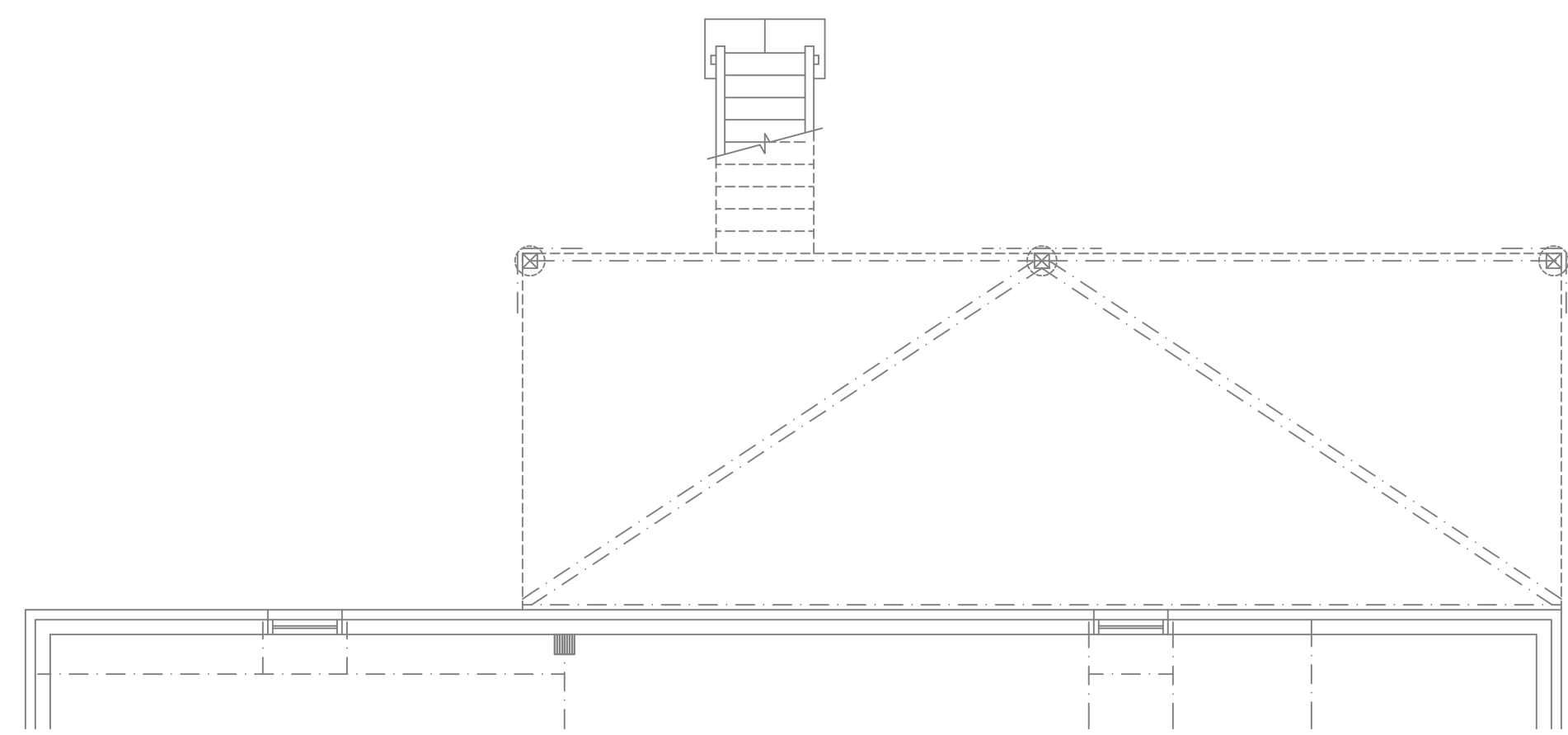
# Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

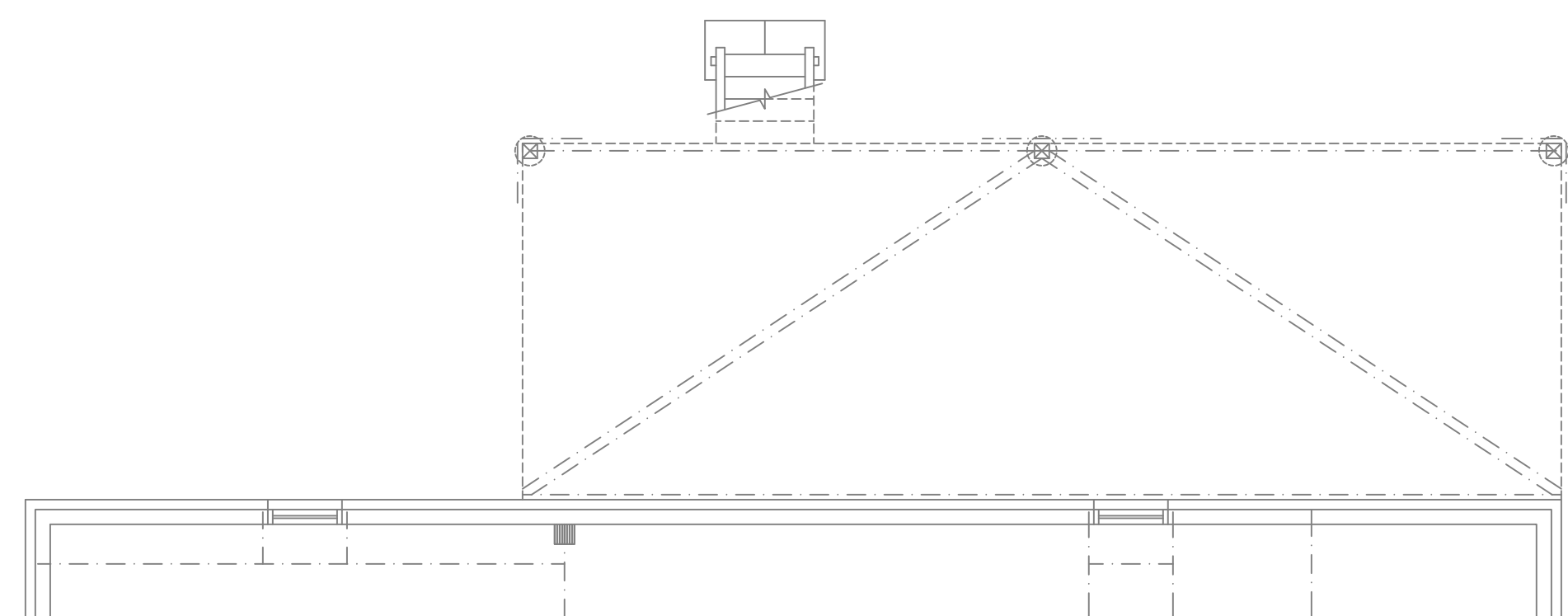
Weather Station Description			
Province:	Ontario		
Region:	Vaughan (Woodbridge)		
Weather Station Location:	Open flat terrain, grass		
Anemometer height (m):	10		
Local Shielding			
Building Site:	Suburban, forest		
Walls:	Heavy		
Flue:	Heavy		
Highest Ceiling Height (m):	7.07		
Building Configuration			
Type:	Detached		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m <sup>3</sup> ):	2442.0		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	3255.3 cm <sup>2</sup>	
	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			
<b>Heating Air Leakage Rate (ACH/H):</b>	<b>0.342</b>		
<b>Cooling Air Leakage Rate (ACH/H):</b>	<b>0.115</b>		

TYPE: 6002 - KINGSVIEW  
 LO# 96142

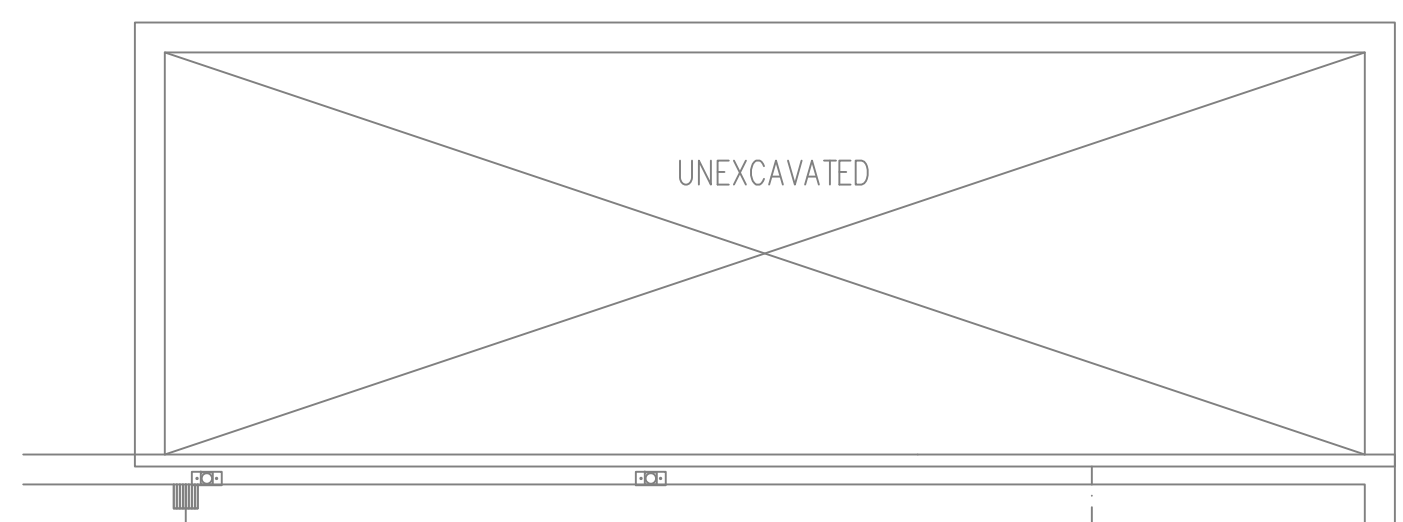
OPT 2ND - ELEVATOR



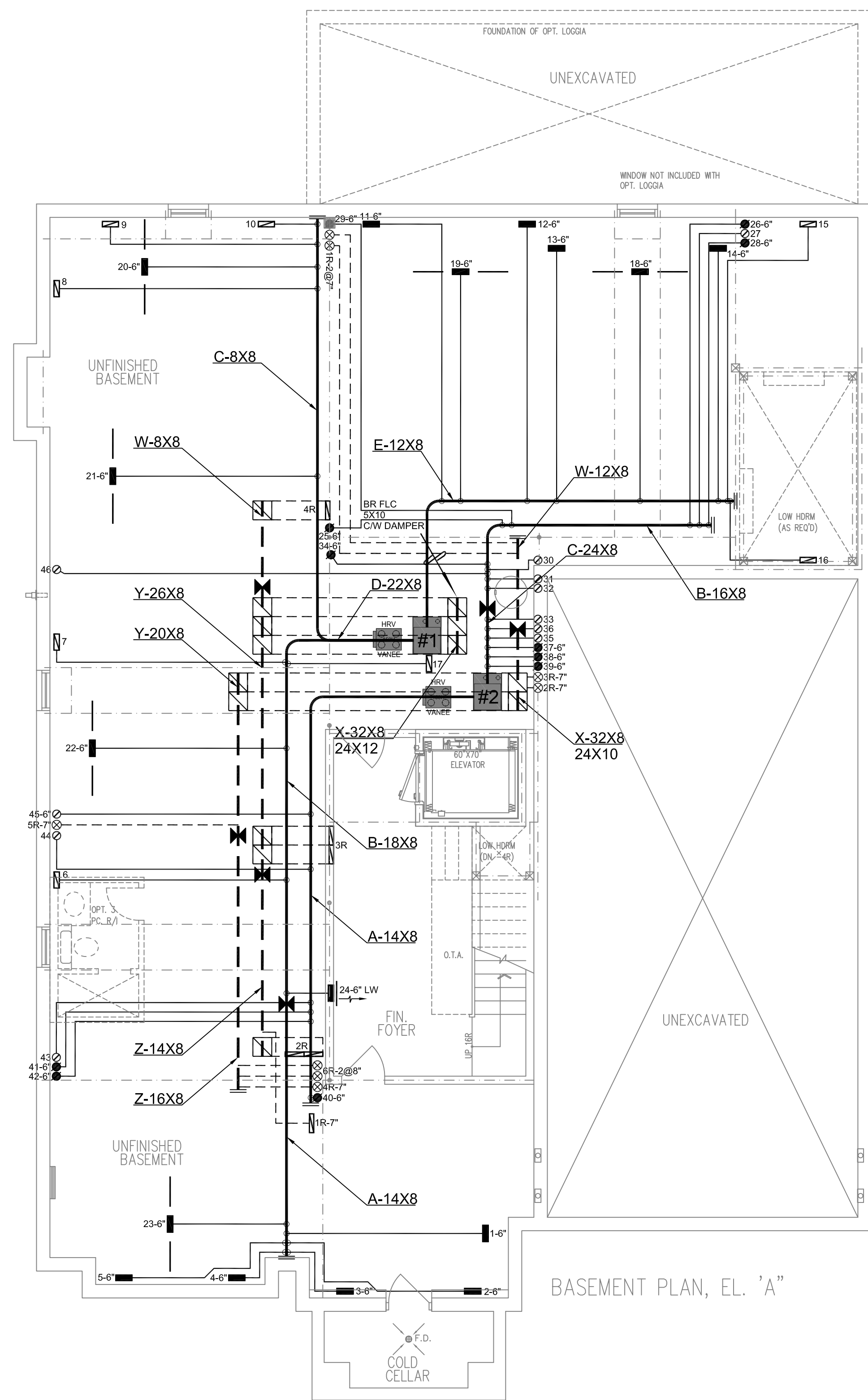
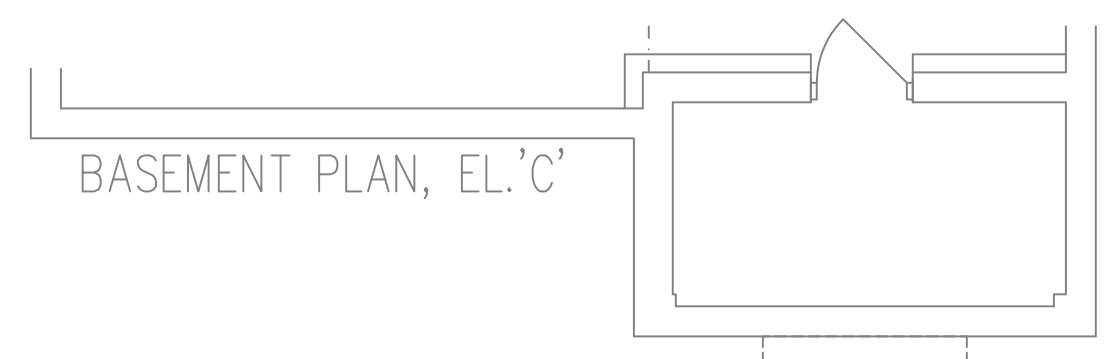
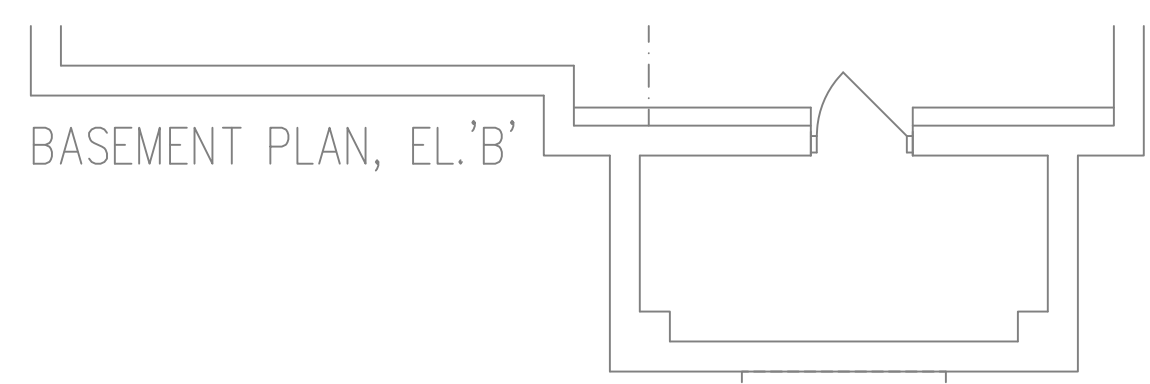
BASEMENT PLAN ELEV. 'A', 'B' & 'C' - L.O.D. COND.



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



BASEMENT PLAN ELEV. 'A', 'B' & 'C' (OPT. COVERED LOGGIA)



**FURNACE 1**  
**LENNOX ML196UH090XE48C**  
 85,600 BTU/H OUTPUT  
 3.0 TONS A/C @ 1190 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	7	1	0

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 BOWER
	DIRECT VENT
	LOW WALL
	HIGH WALL
	CEILING
	MOTORIZED ZONE DAMPER
	EXHAUST PIPE
	CONCENTRIC VENT KIT
	CONCENTRIC HR/V OF 5' VENT KIT
	SINGLE WALL BOX BY REVERSOMATIC
	DOUBLE WALL BOX BY REVERSOMATIC
	TRIPLE WALL BOX BY REVERSOMATIC
	CONCENTRIC HR/V VENT BY REVERSOMATIC

I HAVE READ THESE PLANS AND I ACCEPT RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER THE ENGINEERING ACT OF THE PROVINCE OF ONTARIO.

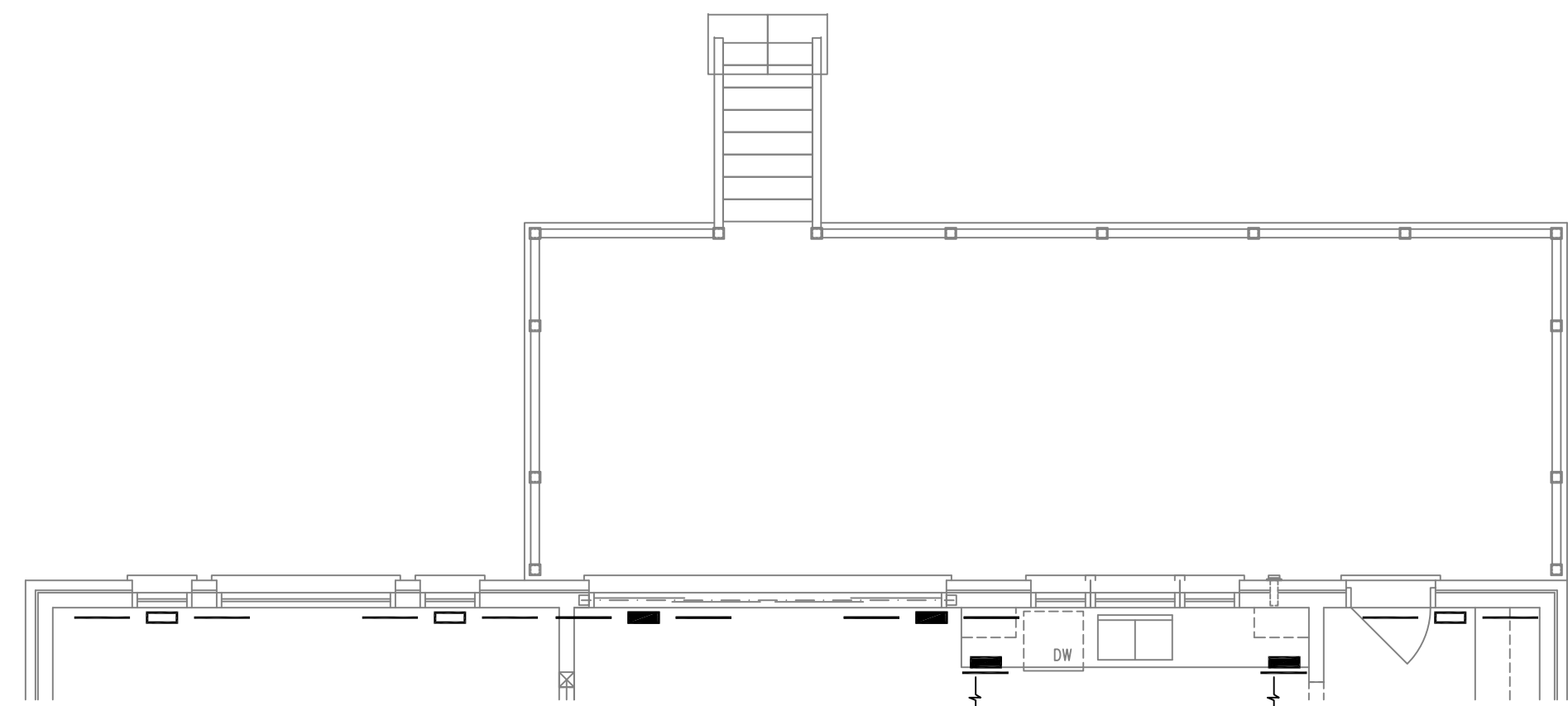
1	ISSUED FOR PERMIT	APRIL 2022	AK
2	Revision	Date	By

SB-12 PACKAGE **A1**

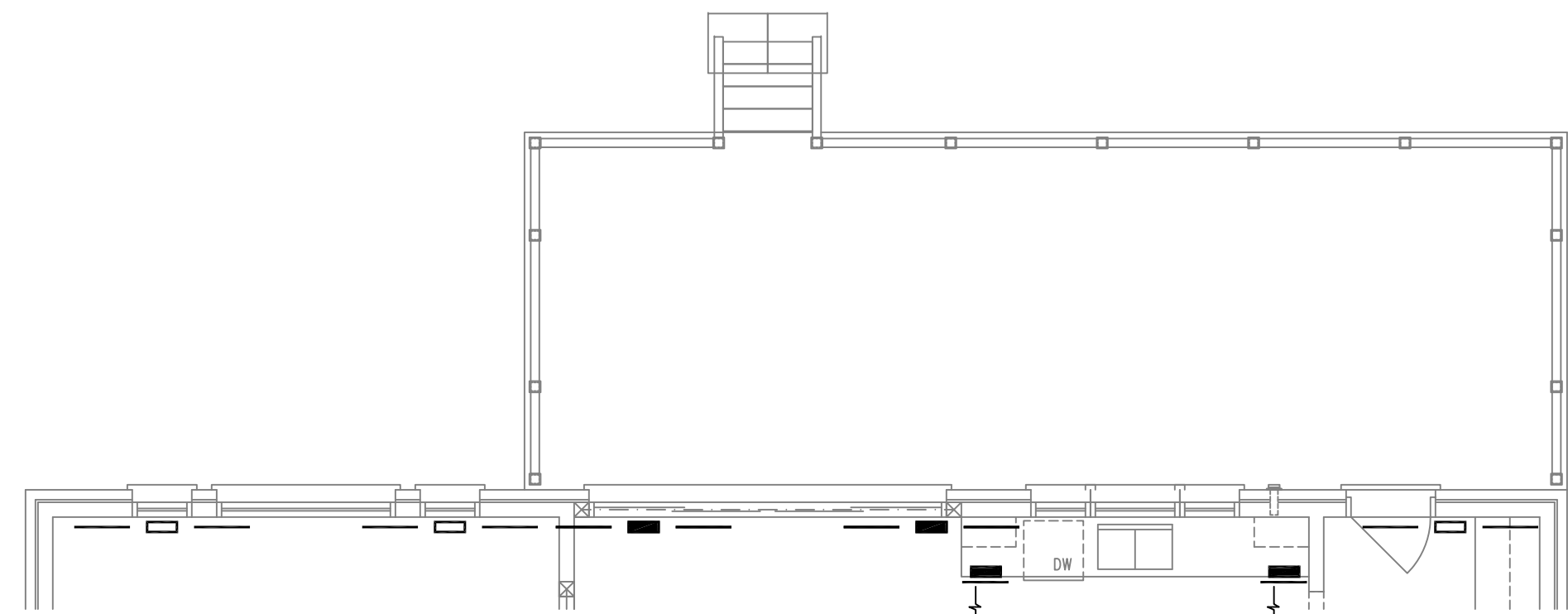
**HVACDESIGNS LTD.**  
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 Email: info@hvacedesigns.ca  
 Web: www.hvacedesigns.ca  
 Specializing in Residential Mechanical Design Services

Client: **GOLDPARK HOMES**  
 Project Name: **PINE VALLEY PH2**  
 Home Name: **VAUGHAN, ONTARIO**  
**6002 - KINGSVIEW**  
**OPT 2ND - ELEVATOR**  
 5901 SQFT

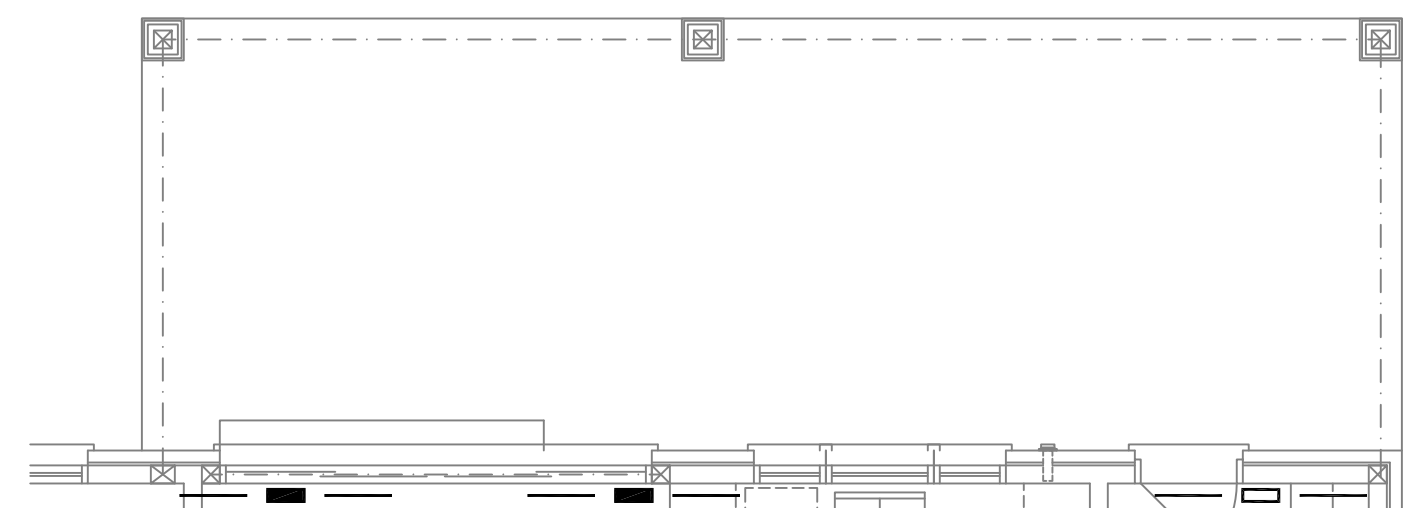
Sheet Title: <b>BASEMENT HVAC LAYOUT</b>	Checked By: <b>MO</b>
Drawn By: <b>AK</b>	Scale: <b>3/16"=1'-0"</b>
Date: <b>APRIL 2022</b>	Sheet No.: <b>1</b>
LD # <b>96142</b>	



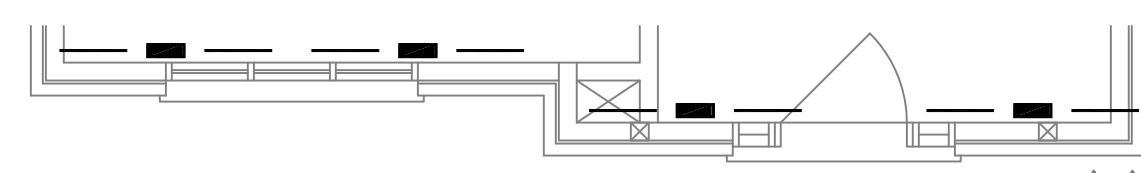
GROUND PLAN ELEV. 'A', 'B' & 'C' - W.O.D. COND.



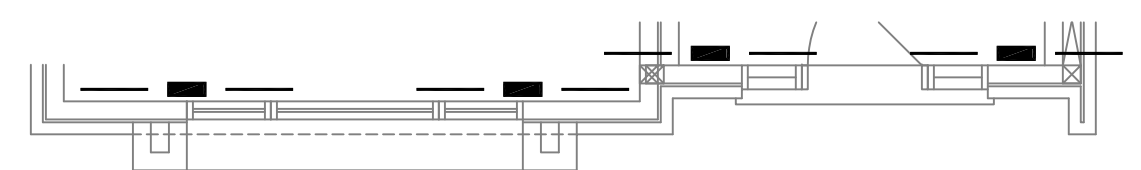
GROUND PLAN ELEV. 'A', 'B' & 'C' - W.O.D. COND.



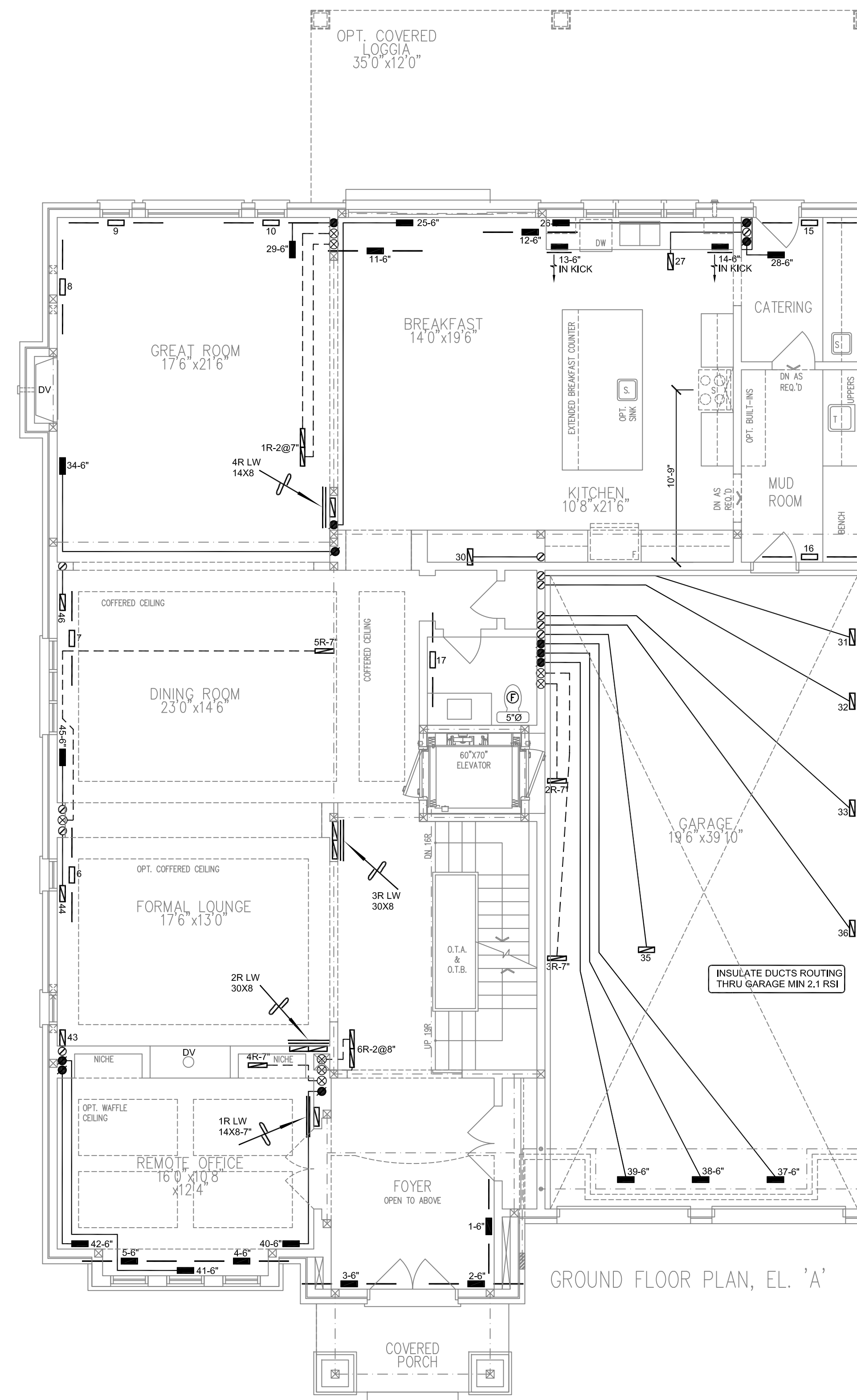
GROUND FLOOR PLAN ELEV. 'A', 'B' & 'C' (OPT. COVERED LOGGIA)



GROUND FLOOR PLAN, EL. 'B'



GROUND FLOOR PLAN, EL. 'C'



GROUND FLOOR PLAN, EL. 'A'

HVAC LEGEND	
	OUTLET BY AIRMAX
	4"x10" SUPPLY GRILLE - 8' BOOT
	4"x10" SUPPLY GRILLE - 4' BOOT
	FLEX DUCT
	1400 SUPPLY 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 - PROVIDES ACCESS PANEL IN BAYER
	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 HAVE READ THESE PLANS AND I AGREE TO BE RESPONSIBLE FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION 12 OF THE REGULATION.

MECHANICAL DESIGN LTD. *M. J. Kelly*

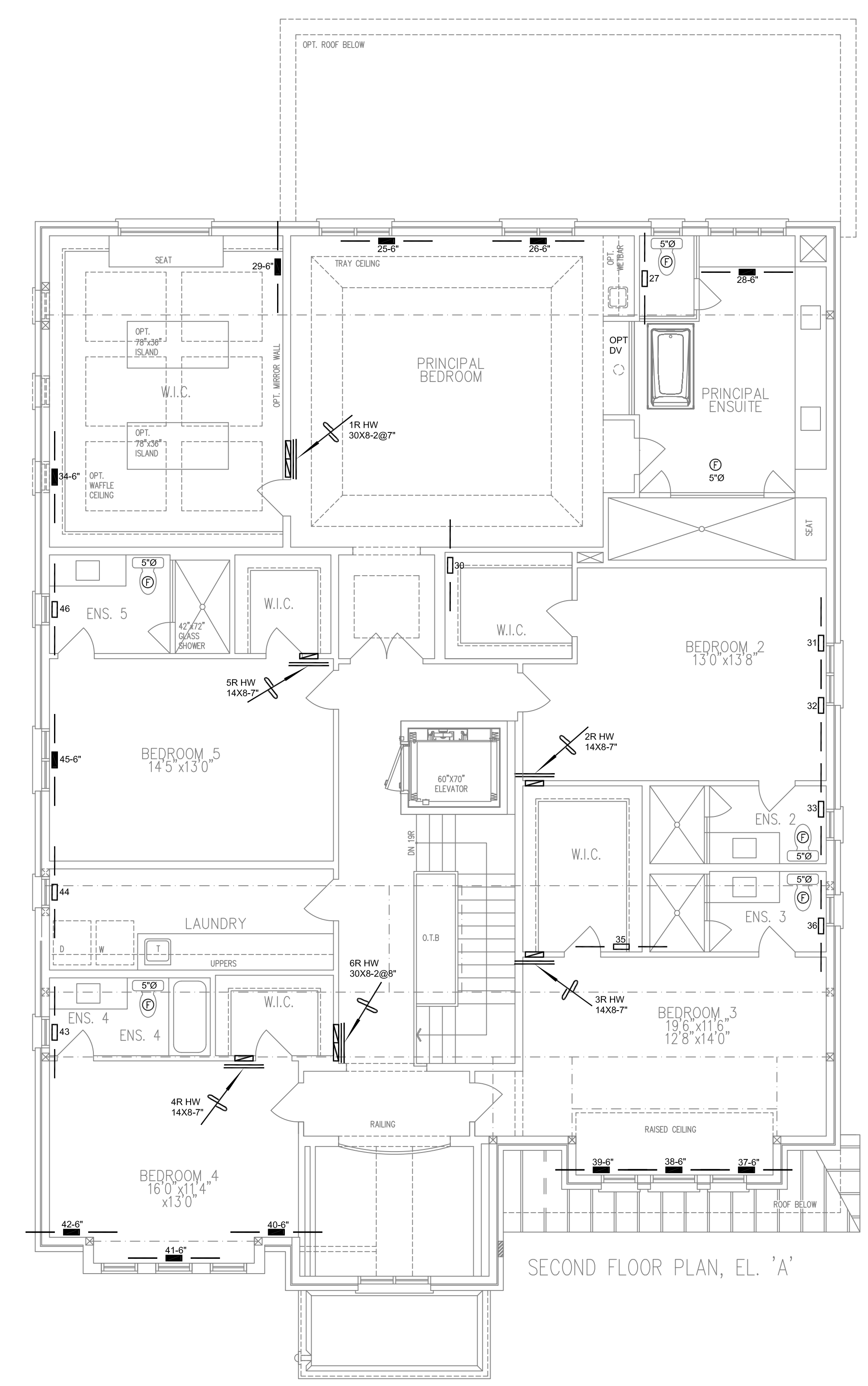
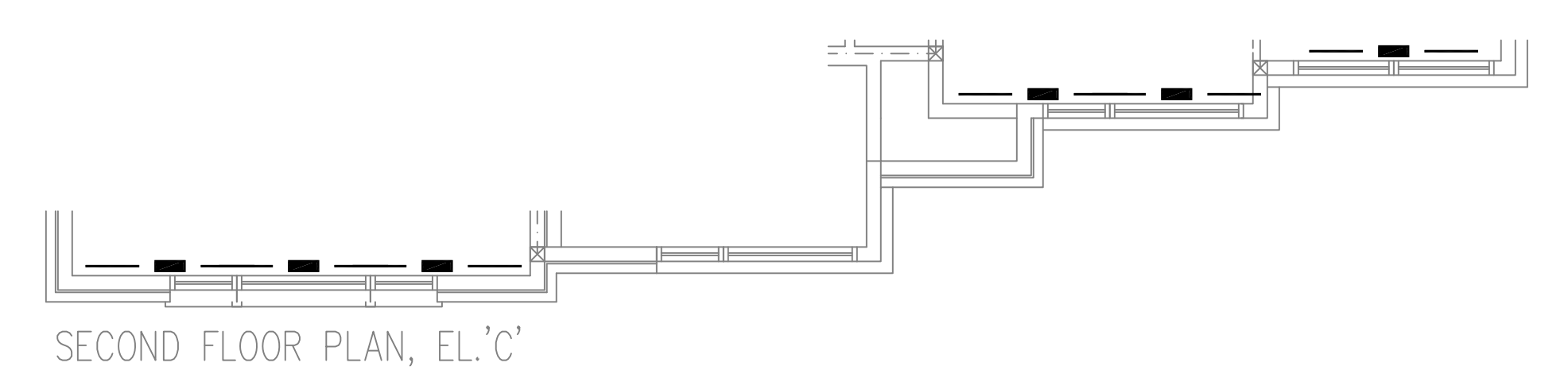
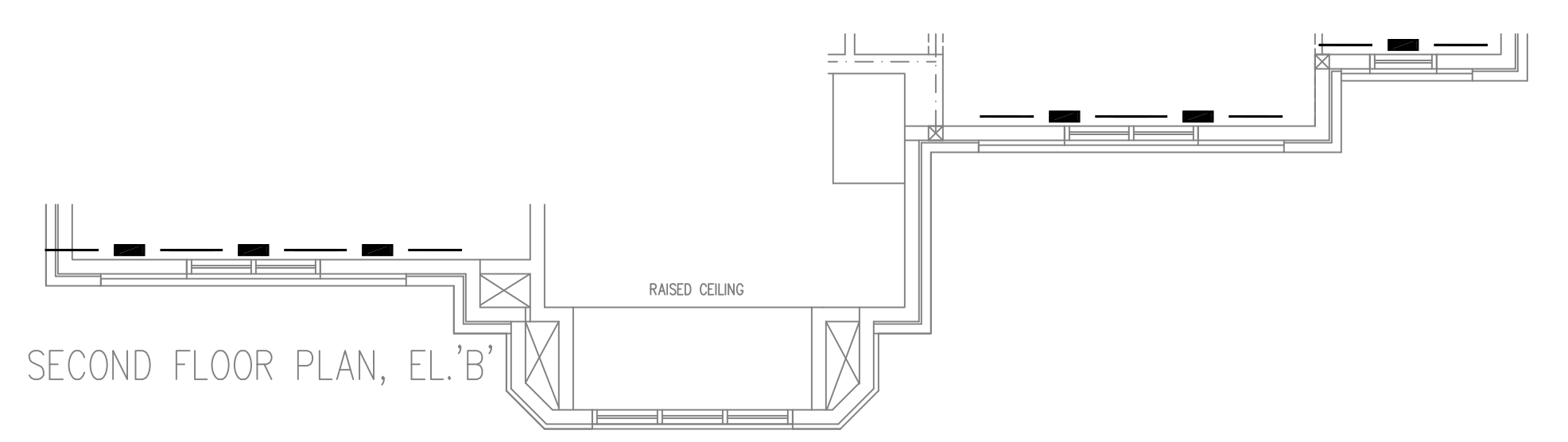
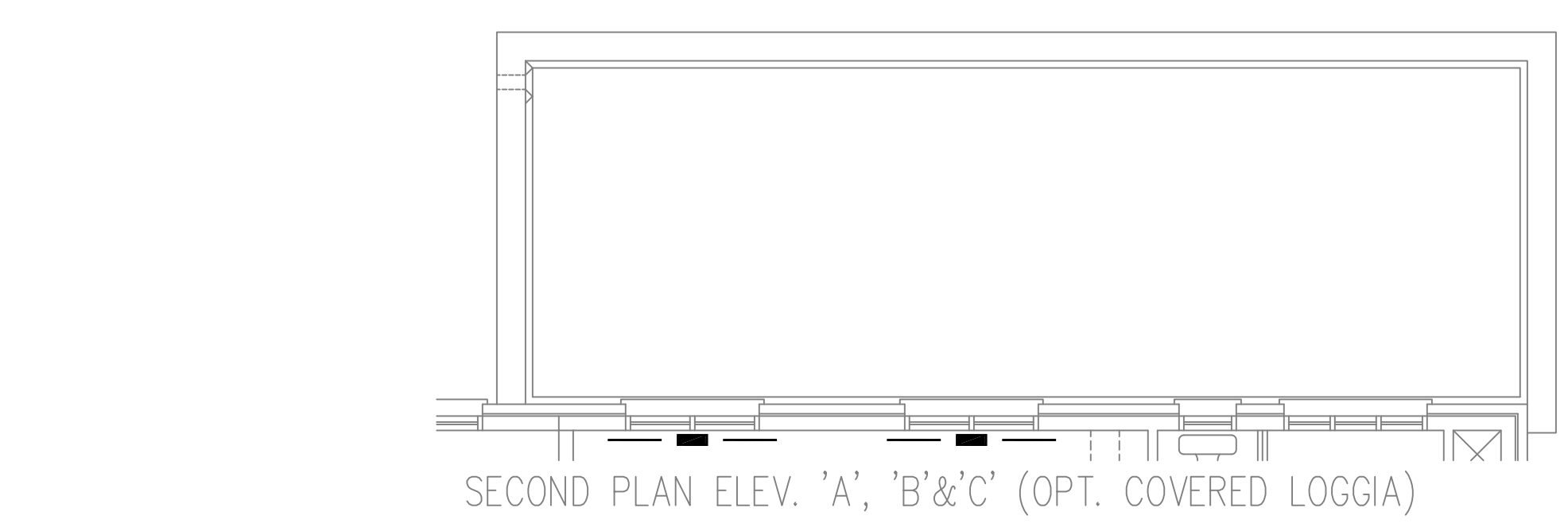
2 ISSUED FOR PERMIT APRIL 2022 AK  
 NCL Revision: \_\_\_\_\_ Date: \_\_\_\_\_ By: \_\_\_\_\_

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Client: GOLDPARK HOMES  
 Project Name: PINE VALLEY PH2  
 Location: VAUGHAN, ONTARIO  
**6002 - KINGSVIEW  
 OPT 2ND - ELEVATOR**  
 5901 SQFT

Sheet Title: FIRST FLOOR HVAC LAYOUT  
 Drawn By: AK  
 Scale: 3/16"=1'-0"  
 Date: APRIL 2022  
 LO #: 96142



HVAC LEGEND	
	OUTLET BY AIRMAX
	4"x10" SUPPLY GRILLE - 5' BOOT
	4"x10" SUPPLY GRILLE - 4' BOOT
	FLEX DUCT
	HW SUPPLY AIR STACK
	1400 RETURN AIR GRILLE
	3000 RETURN AIR GRILLE
	FLOOR RETURN AIR GRILLE
	RETURN STACK ABOVE
	RETURN AIR STACK
	REDUCER
	SUPPLY DUCTWORK
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	LINT TRAP BY REVERSOMATIC
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	CONCENTRIC VENT KIT
	CONCENTRIC HW 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, UNDERSTAND AND ACCEPT RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION 1.2 OF THE REGULATION.

Michael J. Goffe  
HVAC DESIGNER LTD.

2	ISSUED FOR PERMIT	APRIL 2022	AK
1	Revision	Date	By

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Client: **GOLDPARK HOMES**  
 Project Name: **PINE VALLEY PH2 VAUGHAN, ONTARIO**  
**6002 - KINGSVIEW OPT 2ND - ELEVATOR**  
 5901 SQFT

Sheet Title:	SECOND FLOOR HVAC LAYOUT		
Drawn By:	AK	Checked By:	MO
Scale:	3/16"=1'-0"	Date:	APRIL 2022
LD #	96142	Sheet No.:	<b>3</b>