

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: 5004 THE BEAUMONT LOT 23 Project: PINE VALLEY PH 2	
D. Declaration of Designer			
I, <u>MICHAEL O'ROURKE</u> (print name) declare that (choose one as appropriate):			
☐ I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories. Individual BCIN: _____ Firm BCIN: _____			
☒ I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5. of Division C, of the Building Code. Individual BCIN: <u>19669</u> Basis for exemption from registration and qualification: <u>O.B.C SENTENCE 3.2.4.1 (4)</u>			
☐ The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification: _____			
I certify that:			
1. The information contained in this schedule is true to the best of my knowledge. 2. I have submitted this application with the knowledge and consent of the firm.			
July 15, 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										LOT 23					DATE: Jul-22					WINTER NATURAL AIR CHANGE RATE 0.340					HEAT LOSS ΔT °F. 76					CSA-F280-12																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
BUILDER: GOLD PARK HOMES										TYPE: 5004 THE BEAUMONT					GFA: 4144					LO# 98028					SUMMER NATURAL AIR CHANGE RATE 0.124					HEAT GAIN ΔT °F. 16					SB-12 PACKAGE A1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
ROOM USE										MBR					ENS					DRESS					BED-2					BED-3					BED-4					ENS-2					WIC-2					ENS-3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
EXP. WALL										19					38					12					11					18					43					0					13					18																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
CLG. HT.										10					9					9					9					9					10					9					9					9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
FACTORS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
GRS.WALL AREA										LOSS					GAIN					190					342					108					99					162					430					0					117					162																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
GLAZING										LOSS					GAIN					LOSS					GAIN					LOSS					GAIN					LOSS					GAIN					LOSS					GAIN					LOSS					GAIN																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
NORTH										21.3	16.4	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ROOM USE			LIBR			DIN			KIT			GREAT			LAUN			ENS-4			FOY			MUD												BAS		
EXP. WALL			27			17			111			56			0			6			37			18												230		
CLG. HT.			11			11			11			16			9			9			11			13												10		
FACTORS																																						
GRS.WALL AREA	LOSS	GAIN	297			187			1221			896			0			54			407			234									1610					
GLAZING			LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN				
NORTH	21.3	16.4	0	0	0	0	0	0	39	830	640	26	553	426	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	64	49						
EAST	21.3	41.1	41	872	1686	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	745	1439	0	0	0	0	0	0	0	0	0	0						
SOUTH	21.3	25.0	12	255	300	51	1085	1276	10	213	250	26	553	651	0	0	0	8	170	200	0	0	0	0	0	0	0	9	192	225								
WEST	21.3	41.1	0	0	0	0	0	0	111	2362	4565	57	1213	2344	0	0	0	0	0	0	0	0	0	0	0	0	0	3	64	123								
SKYLT.	37.2	103.0	0	0	0	0	0	0	0	0	0	0	0	0	4	149	412	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
DOORS	25.2	5.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	505	105	20	505	105	20	505	105	20	505	105							
NET EXPOSED WALL	4.5	0.9	244	1089	226	136	607	126	1061	4735	984	787	3512	730	0	0	0	46	205	43	352	1571	327	214	955	199	0	0	0	0	0							
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	690	2483	516									
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	192	246	123	0	0	0	139	178	89	60	77	38	0	0	0	0	0	0	0	0	0	0	0							
NO ATTIC EXPOSED CLG	2.7	1.4	0	0	0	0	0	0	0	0	0	342	940	468	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
EXPOSED FLOOR	2.6	0.5	0	0	0	0	0	0	0	0	0	0	0	0	75	191	40	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			0									8131					
SLAB ON GRADE HEAT LOSS			0			0			0			0			0			0			0			0														
SUBTOTAL HT LOSS			2217			1692			8386			6772			519			453			2821			1460									11438					
SUB TOTAL HT GAIN			2213			1403			6562			4619			541			281			1871			304									1019					
LEVEL FACTOR / MULTIPLIER			0.30	0.36		0.30	0.36		0.30	0.36		0.30	0.36		0.20	0.32		0.20	0.32		0.30	0.36		0.30	0.36		0.50	1.23										
AIR CHANGE HEAT LOSS			803			613			3039			2454			166			145			1022			529									14100					
AIR CHANGE HEAT GAIN			188			119			557			392			46			24			159			26									86					
DUCT LOSS			0			0			0			0			68			0			0			0									0					
DUCT GAIN			0			0			0			0			129			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						
HEAT GAIN APPLIANCES/LIGHTS			706			706			706			706			706			706			0			706									0					
TOTAL HT LOSS BTU/H			3020			2305			11425			9225			753			598			3843			1989									25537					
TOTAL HT GAIN x 1.3 BTU/H			4039			2896			10173			7433			1849			397			2639			1346									143					

TOTAL HEAT GAIN BTU/H: 60560

TONS: 5.05

LOSS DUE TO VENTILATION LOAD BTU/H: 3181

STRUCTURAL HEAT LOSS: 82026

TOTAL COMBINED HEAT LOSS BTU/H: 85207

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

LOT 23
TYPE: 5004 THE BEAUMONT

DATE: Jul-22

GFA: 4144

LO# 98028

HEATING CFM 1955 COOLING CFM 1955
TOTAL HEAT LOSS 82,026 TOTAL HEAT GAIN 59,899
AIR FLOW RATE CFM 23.83 AIR FLOW RATE CFM 32.64

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

^LENNOX
EL296UH110XE60C 110

AFUE = 96 %
INPUT (BTU/H) = 110,000
OUTPUT (BTU/H) = 106,000

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	17	12	8
R/A	0	0	5	4	1

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

FAN SPEED 0
LOW 0
MEDLOW 1380
MEDIUM 1505
MEDIUM HIGH 1685
HIGH 1955

DESIGN CFM = 1955
CFM @ .6" E.S.P.

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	MBR	ENS	DRESS	BED-2	BED-3	BED-4	ENS-2	WIC-2	ENS-4	MBR	ENS-3	LIBR	DIN	KIT	KIT	GREAT	LAUN	KIT	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.61	2.18	1.64	2.33	1.27	1.88	0.32	1.19	0.60	1.61	1.80	1.51	2.31	2.86	2.86	3.08	0.75	2.86	3.84	1.99	3.19	3.19	3.19	3.19
CFM PER RUN HEAT	38	52	39	56	30	45	8	28	14	38	43	36	55	68	68	73	18	68	92	47	76	76	76	76
RM GAIN MBH.	2.87	1.31	2.22	2.90	1.98	2.22	0.12	0.31	0.40	2.87	1.18	2.02	2.90	2.54	2.54	2.48	1.85	2.54	2.64	1.35	0.18	0.18	0.18	0.18
CFM PER RUN COOLING	94	43	72	95	65	72	4	10	13	94	39	66	95	83	83	81	60	83	86	44	6	6	6	6
ADJUSTED PRESSURE	0.16	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.16	0.16	0.16	0.16	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	46	55	29	34	38	50	28	31	43	54	41	41	27	40	32	49	26	36	24	16	50	39	30	30
EQUIVALENT LENGTH	190	170	180	180	120	150	160	150	190	180	160	180	80	140	150	130	150	140	150	130	130	140	100	102
TOTAL EFFECTIVE LENGTH	236	225	209	214	158	200	188	181	233	234	201	221	107	180	182	179	176	176	174	146	180	190	139	132
ADJUSTED PRESSURE	0.07	0.08	0.08	0.08	0.11	0.09	0.09	0.1	0.07	0.07	0.09	0.08	0.15	0.09	0.09	0.09	0.1	0.09	0.09	0.12	0.1	0.09	0.12	0.13
ROUND DUCT SIZE	6	5	5	6	5	5	4	4	4	6	4	5	6	5	5	5	5	5	6	4	5	5	5	5
HEATING VELOCITY (ft/min)	194	382	286	286	220	330	92	321	161	194	493	264	280	499	499	536	132	499	469	539	558	558	558	558
COOLING VELOCITY (ft/min)	479	316	529	484	477	529	46	115	149	479	447	485	484	609	609	595	441	609	438	505	44	44	44	44
OUTLET GRILL SIZE	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10
TRUNK	B	D	D	F	F	E	F	D	E	B	F	E	F	C	C	A	D	B	E	D	A	A	C	C

RUN #	25	26	27	28	30	31	32	33	34	35	36	37	38
ROOM NAME	BAS	BAS	BAS	BAS	ENS	BED-3	BED-3	BED-4	BED-4	LIBR	KIT	GREAT	GREAT
RM LOSS MBH.	3.19	3.19	3.19	3.19	1.68	1.27	1.27	1.88	1.88	1.51	2.86	3.08	3.08
CFM PER RUN HEAT	76	76	76	76	40	30	30	45	45	36	68	73	73
RM GAIN MBH.	0.18	0.18	0.18	0.18	1.31	1.98	1.98	2.22	2.22	2.02	2.54	2.48	2.48
CFM PER RUN COOLING	6	6	6	6	43	65	65	72	72	66	83	81	81
ADJUSTED PRESSURE	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
ACTUAL DUCT LGH.	37	23	17	31	33	42	46	47	40	35	28	39	64
EQUIVALENT LENGTH	120	80	120	150	140	130	140	150	130	140	150	150	150
TOTAL EFFECTIVE LENGTH	157	103	137	181	173	172	186	197	170	175	178	189	214
ADJUSTED PRESSURE	0.11	0.17	0.13	0.1	0.1	0.1	0.09	0.09	0.1	0.1	0.09	0.09	0.08
ROUND DUCT SIZE	5	5	5	5	4	5	5	5	5	5	5	5	5
HEATING VELOCITY (ft/min)	558	558	558	558	459	220	220	330	330	264	499	536	536
COOLING VELOCITY (ft/min)	44	44	44	44	493	477	477	529	529	485	609	595	595
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	B	D	F	E	D	F	F	E	E	E	B	A	A

SUPPLY AIR TRUNK SIZE											RETURN AIR TRUNK SIZE													
	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)		TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)		TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)	
	TRUNK A	371	0.08	9.7	12	x	8	557	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.06	0	0	x	8	0
	TRUNK B	659	0.07	12.4	18	x	8	659	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.06	0	0	x	8	0
	TRUNK C	288	0.09	8.5	8	x	8	648	TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.06	0	0	x	8	0
	TRUNK D	1247	0.07	15.7	28	x	8	802	TRUNK J	0	0.00	0	0	x	8	0	TRUNK R	0	0.06	0	0	x	8	0
	TRUNK E	389	0.07	10.2	12	x	8	584	TRUNK K	0	0.00	0	0	x	8	0	TRUNK S	0	0.06	0	0	x	8	0
	TRUNK F	717	0.07	12.8	20	x	8	645	TRUNK L	0	0.00	0	0	x	8	0	TRUNK T	0	0.06	0	0	x	8	0

RETURN AIR #	1	2	3	4	5	6	7	8	9							BR	TRUNK V 0 0.00 0 0 x 8 0 0 0.06 0 0 x 8 0 TRUNK X 1465 0.06 17.4 32 x 10 659 TRUNK Y 685 0.06 13.1 20 x 8 617 TRUNK Z 490 0.06 11.5 16 x 8 551 DROP 1955 0.06 19.4 24 x 18 652
AIR VOLUME	120	120	120	120	305	85	300	300	185	0	0	0	0	0	300		
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.	38	37	37	45	43	59	27	25	34	1	1	1	1	1	18		
EQUIVALENT LENGTH	195	185	165	205	145	175	190	185	150	0	0	0	0	0	195		
TOTAL EFFECTIVE LH	233	222	202	250	188	234	217	210	184	1	1	1	1	1	213		
ADJUSTED PRESSURE	0.06	0.07	0.07	0.06	0.08	0.06	0.07	0.07	0.08	14.80	14.80	14.80	14.80	14.80	0.07		
ROUND DUCT SIZE	6.8	6.6	6.6	6.8	9	6	9.2	9.2	7.5	0	0	0	0	0	9.2		
INLET GRILL SIZE	8	8	8	8	8	8	8	8	8	0	0	0	0	0	8		
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
INLET GRILL SIZE	14	14	14	14	30	14	30	30	14	0	0	0	0	0	30		

TYPE: 5004 THE BEAUMONT
SITE NAME: PINE VALLEY PH 2

LO # 98028
LOT 23

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>6</u> @ 10.6 cfm <u>63.6</u> cfm	
Other Rooms	<u>6</u> @ 10.6 cfm <u>63.6</u> cfm	
Table 9.32.3.A.	TOTAL <u>201.4</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	79.5 cfm	

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>201.4</u> cfm	
Less Principal Ventil. Capacity	<u>155</u> cfm	
Required Supplemental Capacity	<u>46.4</u> cfm	

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE 65H	Location: BSMT
<u>155.0</u> cfm	<u>3.0</u> sones ☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
155.0 CFM	X 76 F	X 1.08	X	0.25

SUPPLEMENTAL FANS		NUTONE		
Location	Model	cfm	HVI	Sones
ENS	QTXEN050C	50	☒	0.3
ENS-2	QTXEN050C	50	☒	0.3
ENS-3	QTXEN050C	50	☒	0.3
ENS-4	QTXEN050C	50	☒	0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE 65H		
<u>155</u> cfm high	<u>64</u> cfm low	
<u>75</u> % Sensible Efficiency	☒ HVI Approved	
@ 32 deg F (0 deg C)		

LOCATION OF INSTALLATION	
Lot:	Concession
Township	Plan:
Address	
Roll #	Building Permit #

BUILDER:	
GOLD PARK HOMES	
Name:	
Address:	
City:	
Telephone #:	Fax #:

INSTALLING CONTRACTOR	
Name:	
Address:	
City:	
Telephone #:	Fax #:

DESIGNER CERTIFICATION	
I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.	
Name:	HVAC Designs Ltd.
Signature:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	July-22

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 98028	Model: 5004 THE BEAUMONT	Builder: GOLD PARK HOMES	Date: 2022-07-15																																																									
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>1974</td> <td>10</td> <td>19740</td> </tr> <tr> <td>First</td> <td>1974</td> <td>11</td> <td>21714</td> </tr> <tr> <td>Second</td> <td>2170</td> <td>9</td> <td>19530</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="2"></td> <td>Total:</td> <td>60,984.0 ft³</td> </tr> <tr> <td colspan="2"></td> <td>Total:</td> <td>1726.9 m³</td> </tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1974	10	19740	First	1974	11	21714	Second	2170	9	19530	Third	0	9	0	Fourth	0	9	0			Total:	60,984.0 ft³			Total:	1726.9 m³	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 20%; text-align: center;">0.340</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td style="text-align: center;">0.124</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 style="text-align: center;">22</td> <td style="text-align: center;">-20</td> <td style="text-align: center;">42</td> <td style="text-align: center;">76</td> </tr> <tr> <td>Summer DTDc</td> <td style="text-align: center;">22</td> <td style="text-align: center;">31</td> <td style="text-align: center;">9</td> <td style="text-align: center;">16</td> </tr> </table>		WINTER NATURAL AIR CHANGE RATE	0.340	SUMMER NATURAL AIR CHANGE RATE	0.124	Design Temperature Difference						Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-20	42	76	Summer DTDc	22	31	9	16
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																																									
Bsmt	1974	10	19740																																																									
First	1974	11	21714																																																									
Second	2170	9	19530																																																									
Third	0	9	0																																																									
Fourth	0	9	0																																																									
		Total:	60,984.0 ft³																																																									
		Total:	1726.9 m³																																																									
WINTER NATURAL AIR CHANGE RATE	0.340																																																											
SUMMER NATURAL AIR CHANGE RATE	0.124																																																											
Design Temperature Difference																																																												
	Tin °C	Tout °C	ΔT °C	ΔT °F																																																								
Winter DTDh	22	-20	42	76																																																								
Summer DTDc	22	31	9	16																																																								
5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.340 x 479.69 x 42 °C x 1.2 = 8265 W = 28199 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ 0.124 x 479.69 x 9 °C x 1.2 = 627 W = 2138 Btu/h																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 155 CFM x 76 °F x 1.08 x 0.25 = 3181 Btu/h			$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 155 CFM x 16 °F x 1.08 x 0.25 = 661 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 / HLlevel)																																																								
1	0.5	28,199	11,438	1.233																																																								
2	0.3		23,347	0.362																																																								
3	0.2		17,601	0.320																																																								
4	0		0	0.000																																																								
5	0		0	0.000																																																								
*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0																																																												

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL:	5004 THE BEAUMONT	LOT 23	BUILDER:	GOLD PARK HOMES
SFQT:	4144	LO#	98028	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)	72

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):	60984.0	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: 74.0 ft	WIDTH: 41.0 ft	EXPOSED PERIMETER:	230.0 ft

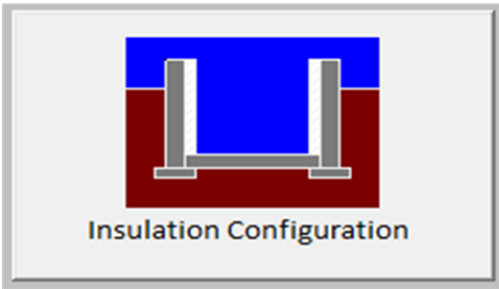
2012 OBC - COMPLIANCE PACKAGE		Compliance Package A1	
Component		Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value		60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value		31	27.65
Exposed Floor Minimum RSI (R)-Value		31	29.80
Walls Above Grade Minimum RSI (R)-Value		22	17.03
Basement Walls Minimum RSI (R)-Value		20 ci	21.12
Below Grade Slab Entire surface > 600 mm below grade Minimum RSI (R)-Value		-	-
Edge of Below Grade Slab ≤ 600 mm Below Grade Minimum RSI (R)-Value		10	10
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value		10	11.13
Windows and Sliding Glass Doors Maximum U-Value		0.28	-
Skylights Maximum U-Value		0.49	-
Space Heating Equipment Minimum AFUE		0.96	-
HRV Minimum Efficiency		75%	-
Domestic Hot Water Heater Minimum EF		0.8	-

INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	22.6	 Insulation Configuration
Floor Width (m):	12.5	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	1.4	
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):		2382

TYPE: 5004 THE BEAUMONT
LO# 98028

LOT 23

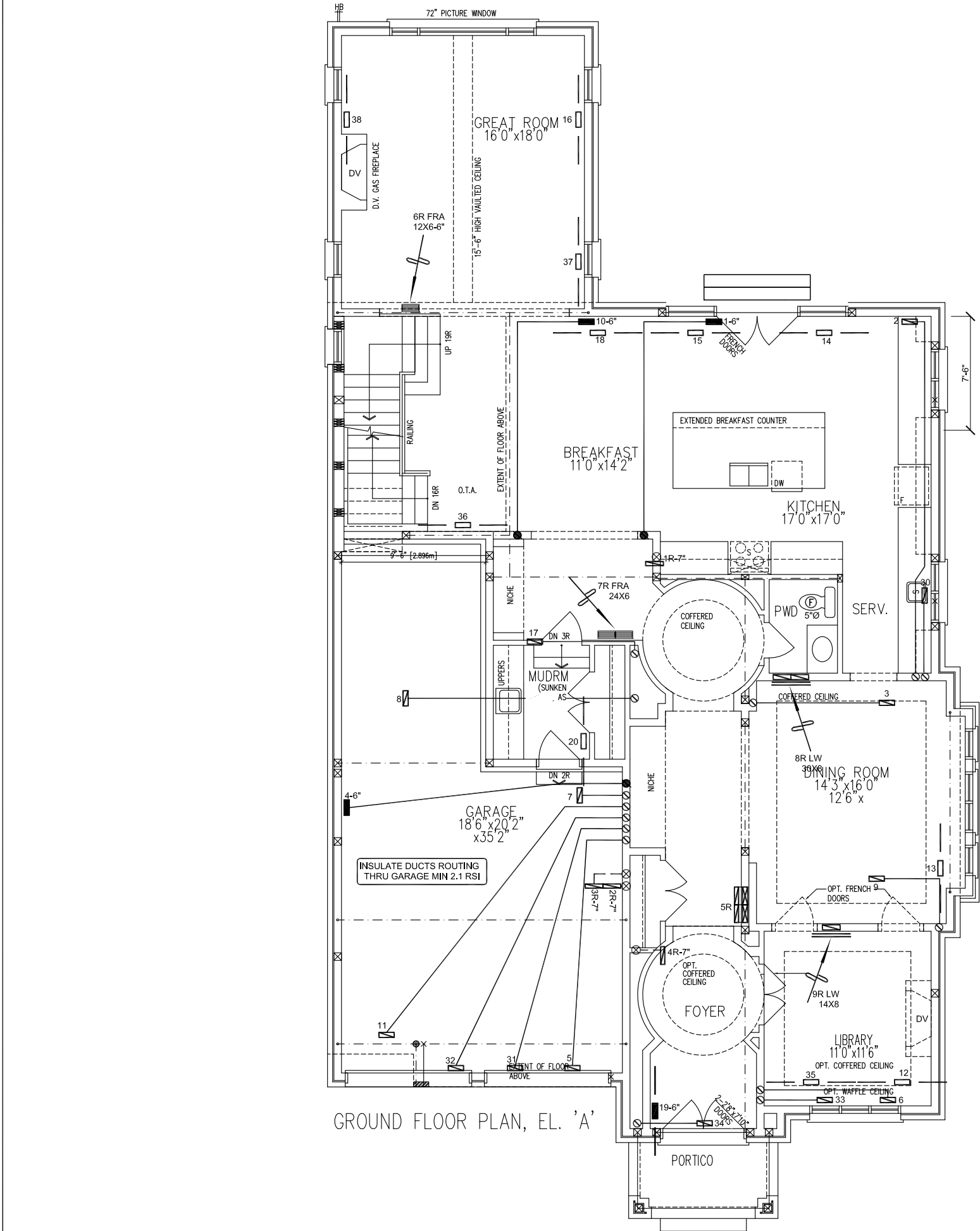
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Vaughan (Woodbridge)			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	7.01			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1726.9			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	2302.0 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	73.2	73.2		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.340			
Cooling Air Leakage Rate (ACH/H):	0.124			

TYPE: 5004 THE BEAUMONT
LO# 98028

LOT 23



GROUND FLOOR PLAN, EL. 'A'

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

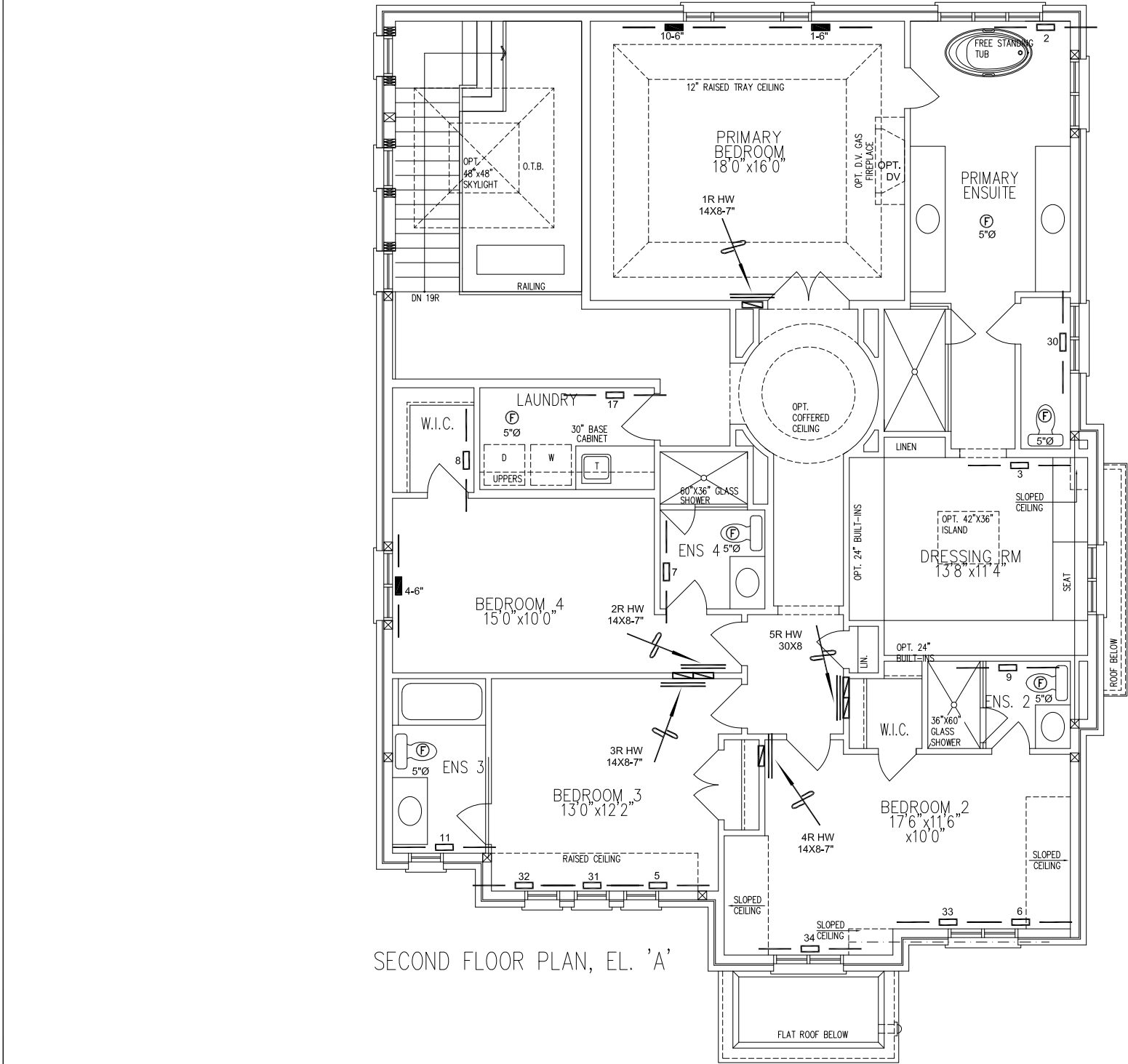
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

LOT 23
CSA-F280-12
PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

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.

Client		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.	Sheet Title	
GOLD PARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	JULY/2022
PINE VALLEY PH 2 VAUGHAN, ONTARIO			Scale	1/8" = 1'-0"
THE BEAUMONT - LOT 23 5004 4144 sqft			BCIN# 19669	
			LO#	98028



SECOND FLOOR PLAN, EL. 'A'

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

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

LOT 23

CSA-F280-12

PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

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.

Client		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.	Sheet Title	
GOLD PARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	JULY/2022
PINE VALLEY PH 2 VAUGHAN, ONTARIO			Scale	1/8" = 1'-0"
THE BEAUMONT - LOT 23 5004			BCIN# 19669	
4144 sqft			LO#	98028