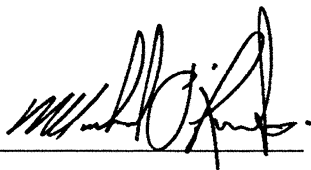


Schedule 1: Designer Information

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	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: 42-5 – OPT 1ST Project: KLEINBURG GLEN		
D. Declaration of Designer				
I <u>MICHAEL O'ROURKE</u> declare that (choose one as appropriate): (print name) ☐ I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories. Individual BCIN: _____ Firm BCIN: _____ ☒ I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5. of Division C, of the Building Code. Individual BCIN: <u>19669</u> Basis for exemption from registration and qualification: <u>O.B.C SENTENCE 3.2.4.1 (4)</u> ☐ The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification: _____				
I certify that: 1. The information contained in this schedule is true to the best of my knowledge. 2. I have submitted this application with the knowledge and consent of the firm.				
<u>February 1, 2016</u> 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.

SITE NAME: KLEINBURG GLEN BUILDING: GOLD PARK HOMES DATE: Feb-16 LO# 66892 WINTER NATURAL AIR CHANGE RATE 0.322 SUMMER NATURAL AIR CHANGE RATE 0.098 HEAT LOSS AT °F: 76 HEAT GAIN AT °F: 16 CSA-F280-12 8B-12 PACKAGE J

ROOM USE	EXP. WALL CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	ENS-2	DEN
GRS. WALL AREA	240	370	270	81	126	330	108	63	108	200
GLAZING	0	0	0	0	0	0	0	0	0	0
NORTH	24.1 17.5	0	0	0	0	0	0	0	0	0
EAST	24.1 43.0	32	771	1377	0	0	0	0	0	0
SOUTH	24.1 26.4	0	0	0	0	0	0	0	0	0
WEST	24.1 43.0	0	0	0	0	0	0	0	0	0
SKYLT.	24.1 88.1	0	0	0	0	0	0	0	0	0
DOORS	25.2 6.3	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	3.5 0.7	338	1168	246	242	836	176	81	280	59
NET EXPOSED BSMT WALL ABOVE GR	6.3 1.3	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.5 0.8	336	611	255	224	340	170	136	205	103
NO A T T I C EXPOSED CLG	2.5 1.2	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.5 0.5	0	0	0	0	0	0	0	0	0
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	2449	1878	1851	485	162	3122	2454	754	843	1021
SUB TOTAL HT GAIN	0.20	0.34	0.20	0.34	0.20	0.34	0.20	0.34	0.20	0.34
LEVEL FACTOR / MUL TIPLIER	828	828	626	164	388	1056	348	255	285	408
AIR CHANGE HEAT LOSS	117	0	0	0	10	153	32	18	0	0
AIR CHANGE HEAT GAIN	0	0	0	0	163	418	138	101	0	0
DUCT LOSS	0	0	0	0	170	240	1	31	0	0
DUCT GAIN	2	480	0	0	1	733	733	0	0	0
HEAT GAIN PEOPLE	240	733	0	0	1688	4595	1516	1109	1129	1429
HEAT GAIN APPLIANCES/LIGHTS	0	0	0	0	0	0	0	0	0	0
TOTAL HT LOSS BTU/H	3278	4171	2477	649	223	5119	2160	438	560	1720
TOTAL HT GAIN x 1.3 BTU/H	4171	4171	4171	4171	4171	4171	4171	4171	4171	4171

ROOM USE	EXP. WALL CLG. HT.	LVDN	KTGR	LAUN	WIR	FOY	MUD	BAS
GRS. WALL AREA	240	240	730	108	88	850	308	1188
GLAZING	0	0	0	0	0	0	0	0
NORTH	24.1 17.5	33	795	576	0	0	0	0
EAST	24.1 43.0	0	0	0	0	0	0	0
SOUTH	24.1 26.4	33	795	871	0	0	0	0
WEST	24.1 43.0	0	0	0	0	0	0	0
SKYLT.	24.1 88.1	0	0	0	0	0	0	0
DOORS	25.2 6.3	0	0	0	0	0	0	0
NET EXPOSED WALL	3.5 0.7	174	601	127	88	304	64	20
NET EXPOSED BSMT WALL ABOVE GR	6.3 1.3	0	0	0	0	0	0	0
EXPOSED CLG	1.5 0.8	0	0	0	0	0	0	0
EXPOSED FLOOR	2.5 1.2	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS	2191	1574	6567	400	64	3599	450	13182
SUB TOTAL HT GAIN	0.30	0.40	0.30	0.40	0.30	0.40	0.30	0.50
LEVEL FACTOR / MUL TIPLIER	875	875	2276	283	121	2019	665	10607
AIR CHANGE HEAT LOSS	98	0	409	25	4	224	28	0
AIR CHANGE HEAT GAIN	0	0	0	116	0	0	0	0
DUCT LOSS	0	0	0	0	0	0	0	0
DUCT GAIN	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240	733	7975	1274	425	7075	2330	23789
HEAT GAIN APPLIANCES/LIGHTS	0	0	0	0	0	0	0	0
TOTAL HT LOSS BTU/H	3066	3125	7975	1655	88	4971	1573	1675
TOTAL HT GAIN x 1.3 BTU/H	4171	4171	4171	4171	4171	4171	4171	4171

SITE NAME: KLEINBURG GLEN
BUILDING: GOLD PARK HOMES

TYPE: 42-5
OPT 1ST

DATE: Feb-16

GFA: 3552 LO# 66892

HEATING CFM 1255 COOLING CFM 1255
TOTAL HEAT LOSS 63,804 TOTAL HEAT GAIN 41,336
AIR FLOW RATE CFM 19.67 AIR FLOW RATE CFM 30.36

EL195UH090XE48C
FAN SPEED
LOW 0
MEDLOW 0
MEDIUM 1105
MEDIUM HIGH 1255
HIGH 1525

AFUE = 95.0 %
INPUT (BTU/H) = 88,000
OUTPUT (BTU/H) = 84,000

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	10	5
R/A	0	0	4	3	1

plenum pressure s/a 0.18
max s/a diff 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

DESIGN CFM = 1255
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.

ROOM NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
RM LOSS MBH	1.64	1.24	0.65	1.69	2.30	1.52	1.11	1.24	2.30	1.64	1.13	1.53	1.53	2.66	2.66	2.66	1.27	0.43	3.54	2.33	4.76	4.76	4.76	4.76
CFM PER RUN HEAT	32	24	13	33	45	30	22	24	45	32	22	30	30	52	52	52	25	8	70	46	94	94	94	94
RM GAIN MBH	2.09	0.70	0.22	2.43	2.56	2.16	0.44	0.70	2.56	2.09	0.56	1.56	1.56	3.34	3.34	3.34	1.66	0.09	2.49	1.57	0.33	0.33	0.33	0.33
CFM PER RUN COOLING	63	21	7	74	78	66	13	21	78	63	17	47	47	101	101	101	50	3	75	48	10	10	10	10
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
EQUIVALENT LENGTH	150	190	180	150	120	130	140	190	120	180	150	100	110	130	100	190	160	120	120	160	100	110	90	90
TOTAL EFFECTIVE LENGTH	191	235	217	193	165	160	177	237	161	229	189	119	131	166	128	231	192	152	157	182	135	137	106	113
ADJUSTED PRESSURE	0.09	0.07	0.08	0.09	0.1	0.11	0.1	0.07	0.11	0.08	0.09	0.14	0.13	0.1	0.13	0.07	0.09	0.11	0.11	0.09	0.12	0.12	0.15	0.14
ROUND DUCT SIZE	5	4	4	5	5	5	4	4	5	5	4	4	4	6	5	6	4	4	5	4	5	5	5	5
HEATING VELOCITY (ft/min)	235	275	149	242	330	220	252	275	330	235	252	344	344	265	382	265	287	92	514	528	690	690	690	690
COOLING VELOCITY (ft/min)	463	241	80	543	573	485	149	241	573	463	195	539	539	742	515	742	574	34	551	73	73	73	73	73
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	B	B	D	E	C	E	A	E	A	B	C	C	A	A	A	D	D	D	E	B	C	C	E

ROOM NAME	25	26	27	DEN
RM LOSS MBH	4.76	3.54	1.43	
CFM PER RUN HEAT	94	70	28	
RM GAIN MBH	0.33	2.49	1.72	
CFM PER RUN COOLING	10	75	52	
ADJUSTED PRESSURE	0.16	0.17	0.17	
EQUIVALENT LENGTH	110	110	130	
TOTAL EFFECTIVE LENGTH	145	153	153	
ADJUSTED PRESSURE	0.11	0.11	0.11	
ROUND DUCT SIZE	5	5	4	
HEATING VELOCITY (ft/min)	690	514	321	
COOLING VELOCITY (ft/min)	73	551	597	
OUTLET GRILL SIZE	3X10	3X10	3X10	
TRUNK	D	D	E	

TRUNK	CFM	RECT	ROUND	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	CFM	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	244	8	8.5	0.07	8.5	8	549	TRUNK G	0	0.00	0	0	0	0
TRUNK B	491	14	11.1	0.07	11.1	14	631	TRUNK H	0	0.00	0	0	0	0
TRUNK C	875	18	12.5	0.07	12.5	18	675	TRUNK I	0	0.00	0	0	0	0
TRUNK D	300	8.7	8.7	0.09	8.7	10	540	TRUNK J	0	0.00	0	0	0	0
TRUNK E	580	11.1	11.1	0.09	11.1	14	746	TRUNK K	0	0.00	0	0	0	0
TRUNK F	0	0	0	0.00	0	0	0	TRUNK L	0	0.00	0	0	0	0

RETURN AIR #	1	2	3	4	5	6	7	BR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
AIR VOLUME	155	150	145	75	175	175	175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TRUNK	CFM	RECT	ROUND	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK O	0	0.05	0	0	0	0	0
TRUNK P	0	0.05	0	0	0	0	0
TRUNK Q	0	0.05	0	0	0	0	0
TRUNK R	0	0.05	0	0	0	0	0
TRUNK S	0	0.05	0	0	0	0	0
TRUNK T	0	0.05	0	0	0	0	0
TRUNK U	0	0.05	0	0	0	0	0
TRUNK V	0	0.05	0	0	0	0	0
TRUNK W	0	0.05	0	0	0	0	0
TRUNK X	750	0.05	14.2	0.05	14.2	24	563
TRUNK Y	505	0.05	12.2	0.05	12.2	18	505
TRUNK Z	0	0.05	0	0.05	0	0	0
DROP	1255	0.05	17.2	0.05	17.2	24	685

Michael O'Rourke

TYPE: 42-5
SITE NAME: KLEINBURG GLEN

LO # 66892
OPT 1ST

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

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

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

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

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

TOTAL VENTILATION CAPACITY		9.32.3.3(1)
Basement + Master Bedroom	<u>2</u> @ 21.2 cfm	<u>42.4</u> cfm
Other Bedrooms	<u>3</u> @ 10.6 cfm	<u>31.8</u> cfm
Kitchen & Bathrooms	<u>5</u> @ 10.6 cfm	<u>53</u> cfm
Other Rooms	<u>6</u> @ 10.6 cfm	<u>63.6</u> cfm
Table 9.32.3.A.	TOTAL	<u>190.8</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
More than 5 - Part 6	TOTAL	<u>79.5</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>190.8</u>	cfm
Less Principal Ventil. Capacity	<u>95</u>	cfm
Required Supplemental Capacity	<u>95.8</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	VANEE 50H
Location:	BSMT
<u>95.0</u> cfm	<u>3.0</u> sones
☒	HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
95.0 CFM	X 76 F	X 1.08	X 0.34

SUPPLEMENTAL FANS		NUTONE	
Location	Model	cfm	Sones
ENS	QTXEN050C	50	✓ 0.3
BATH	QTXEN050C	50	✓ 0.3
ENS-2	QTXEN050C	50	✓ 0.3
W/R	QTXEN050C	50	✓ 0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE 50H	
<u>95</u> cfm high	<u>48</u> cfm low	
<u>66</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:	February-16

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 42-5	OPT 1ST	BUILDER: GOLD PARK HOMES
SFQT: 3552	LO# 66892	SITE: KLEINBURG GLEN

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 (ft³):	48448.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 65.0 ft	WIDTH: 34.0 ft	EXPOSED PERIMETER:	198.0 ft

2012 OBC - COMPLIANCE PACKAGE

Component	Compliance Package
	J
Ceiling with Attic Space Minimum RSI (R)-Value	50
Ceiling Without Attic Space Minimum RSI (R)-Value	31
Exposed Floor Minimum RSI (R)-Value	31
Walls Above Grade Minimum RSI (R)-Value	22
Basement Walls Minimum RSI (R)-Value	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
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value	10
Windows and Sliding Glass Doors Maximum U-Value	1.8
Skylights Maximum U-Value	2.8
Space Heating Equipment Minimum AFUE	0.94
HRV Minimum Efficiency	60%
Domestic Hot Water Heater Minimum EF	0.67

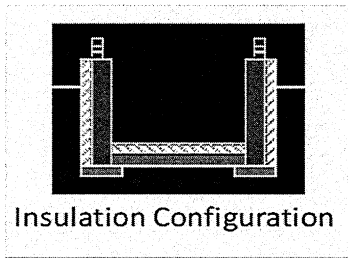
INDIVIDUAL BCIN: 19669

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):	19.8	 Insulation Configuration
Floor Width (m):	10.4	
Exposed Perimeter (m):	0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.8	
Window Area (m ²):	1.7	
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):	2485	

60.4

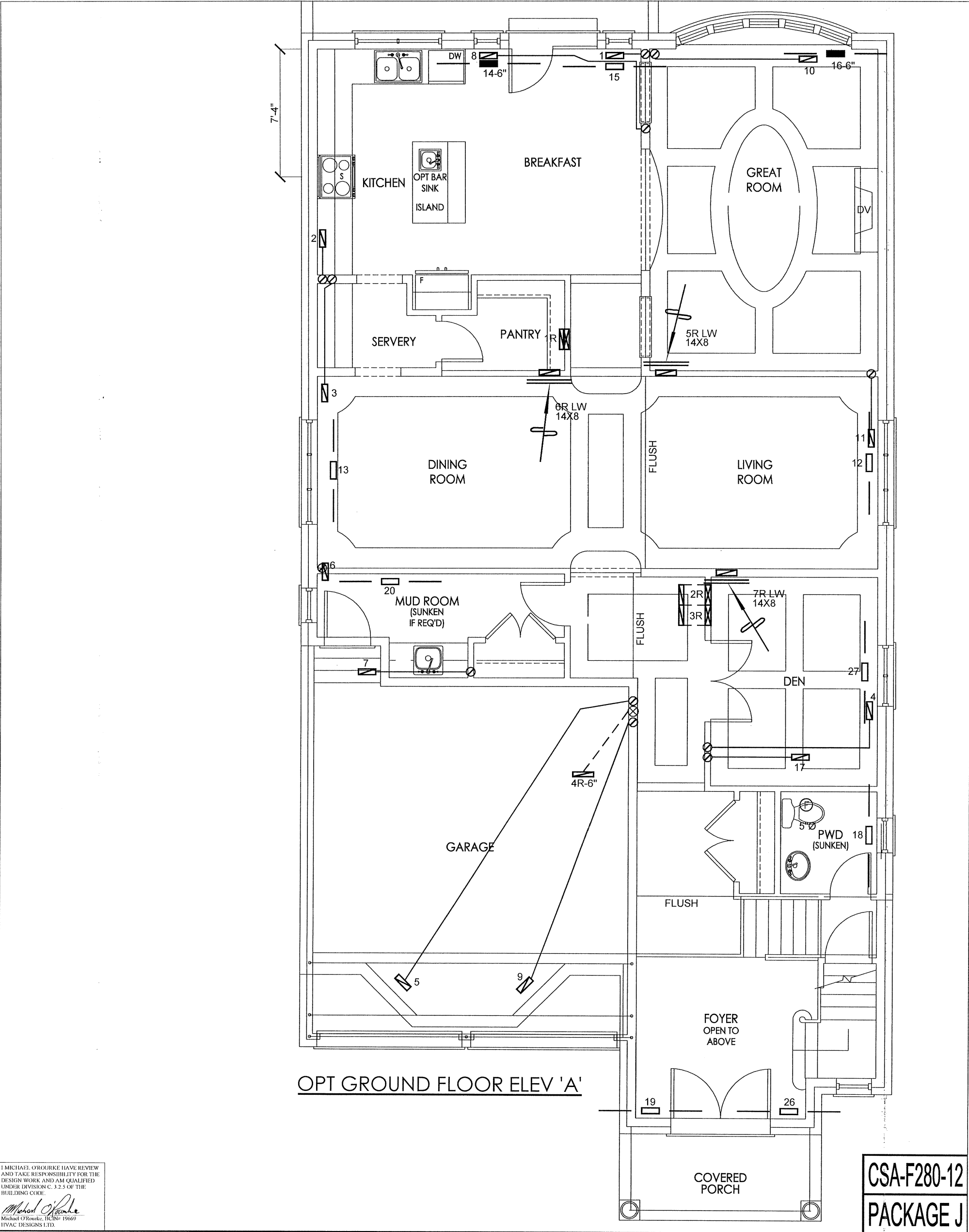
2.6 161.38

161.18

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):	6.71			
Building Configuration				
Type:	Detached ▼			
Number of Stories:	Two ▼			
Foundation:	Full ▼			
House Volume (m ³):	1371.9			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (ACH=3.57) ▼			
Custom BDT Data:	ELA @ 10 Pa. ▼ 716.42 cm² 3.57 ACH @ 50 Pa			
Mechanical Ventilation (L/s):	Total Supply:		Total Exhaust:	
	0		0	
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Change Rate (ACH/H):		0.322		
Cooling Air Change Rate (ACH/H):		0.098		



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.

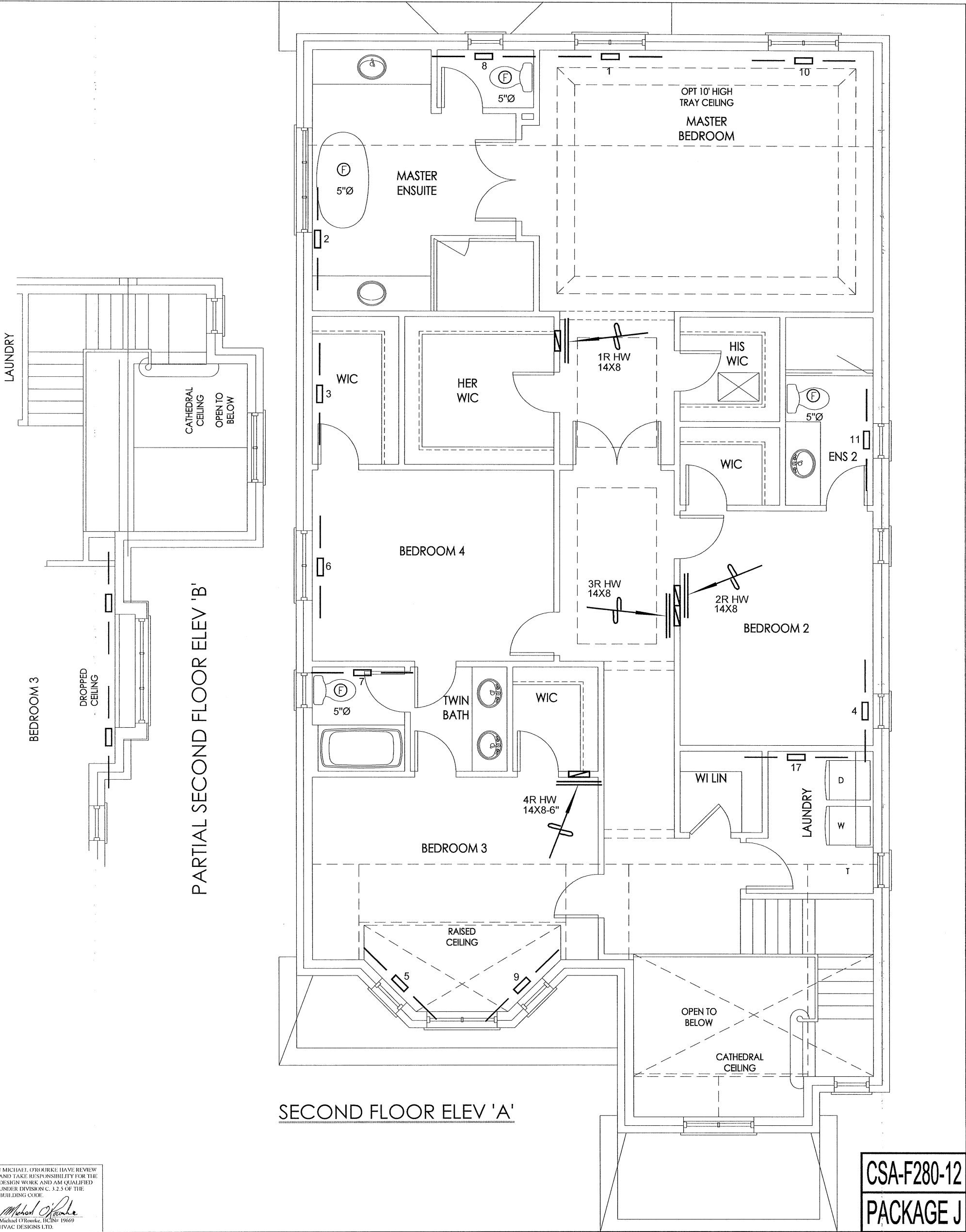
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
PACKAGE J

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	FLOOR 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		

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Client		 375 Finley Ave - Unit 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services 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	JAN/2016
KLEINBURG GLEN VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
OPT 1ST 42-5			BCIN# 19669	
3552 sqft			LO#	66892



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

CSA-F280-12
PACKAGE J

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	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

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GOLD PARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	JAN/2016
KLEINBURG GLEN VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
OPT 1ST 42-5 3552 sqft			BCIN# 19669	
			LO#	66892