

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@hvacdsgns.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: 5005 - THE HIGHBOURNE OPT. 5 BED Project: PINE VALLEY & TESTON	
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.			
January 24, 2018			
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 & TESTON TYPE: 5 BED OPT. 5 BED DATE: Jan-18 WINTER NATURAL AIR CHANGE RATE 0.350 HEAT LOSS AT °F 76 CSA-F280-12
BUILDING: GOLD PARK HOMES TYPE: 5005 - THE HIGHBOURNE LO# 77481 SUMMER NATURAL AIR CHANGE RATE 0.121 HEAT GAIN AT °F 14 SB-12 PACKAGE A1

ROOM USE	EXP. WALL CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-2	WIC-2	ENS-3	ENS-4	BED-5
FACTORS												
GRS.WALL AREA	485	290	60	374	407	260	260	60	90	40	70	140
GLAZING												
NORTH	21.3 16.3	0	0	0	0	0	0	0	0	0	0	0
EAST	21.3 41.8	0	0	0	18 383 293	0	0	8 170 130	0	0	0	18 383 293
SOUTH	21.3 25.2	0	0	0	70 1450 2928	73 1553 3054	0	0	0	0	0	0
WEST	21.3 41.8	0	0	0	0	28 596 705	32 681 806	0	0	0	8 170 201	0
SKYL.T.	37.2 102.0	0	0	0	0	0	0	0	0	0	0	0
DOORS	25.2 4.8	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5 0.8	445 1986 361	256 1142 207	60 288 49	286 1276 232	306 1366 248	228 1017 185	52 232 42	90 402 73	40 179 32	62 277 50	122 544 99
NET EXPOSED BSMT WALL ABOVE GR	3.6 0.7	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3 0.6	440 555 266	204 262 123	102 151 82	216 277 131	266 329 155	396 508 239	60 77 36	48 62 29	140 180 86	105 135 63	364 467 220
NO A T T I C EXPOSED FLOOR	2.7 1.3	0	0	0	0	24 66 31	84 231 109	0	0	0	0	0
EXPOSED FLOOR	2.6 0.5	0	0	0	0	104 265 48	0	60 153 28	48 122 22	140 357 65	0	154 393 71
BASEMENT/CRAWL HEAT LOSS		0	0	0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS		0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS		3615	2128	389	4104	4340	2207	632	586	715	582	1787
SUB TOTAL HT GAIN		2718	1753	110	3725	4318	1230	236	124	182	315	583
LEVEL FACTOR / MULTIPLIER		0.20	0.30	0.20	0.30	0.20	0.30	0.20	0.30	0.20	0.30	0.20
AIR CHANGE HEAT LOSS		1080	536	119	1227	1297	860	189	175	214	174	534
AIR CHANGE HEAT GAIN		0	0	0	533	564	0	82	76	93	0	232
DUCT GAIN		0	0	0	0	554	0	25	13	20	0	161
HEAT GAIN PEOPLE	240	480	0	0	1	240	1	0	0	0	0	240
HEAT GAIN APPLIANCES/LIGHTS		635	635	635	635	635	635	0	0	0	0	635
TOTAL HT LOSS BTU/H		4695	2764	518	5864	6200	2866	903	837	1022	756	2554
TOTAL HT GAIN x 1.3 BTU/H		5264	2459	581	7001	7816	2864	365	192	281	442	2306

ROOM USE	EXP. WALL CLG. HT.	LIB	DIN	KIT/GT	CAB	LAUN	PWD	FOY	MUD	BAS
FACTORS										
GRS.WALL AREA	341	352	957	495	0	0	55	385	216	1686
GLAZING										
NORTH	21.3 16.3	0	0	0	0	0	0	0	0	20
EAST	21.3 41.8	66 1192 2343	0	0	0	0	9 192 146	0	0	426 325
SOUTH	21.3 25.2	0	0	0	0	0	0	0	0	0
WEST	21.3 41.8	0	34 724 856	20 426 504	63 1341 1586	0	0	0	0	0
SKYL.T.	37.2 102.0	0	0	0	63 1341 2635	0	0	0	0	0
DOORS	25.2 4.8	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5 0.8	285 1272 231	318 1419 258	776 3463 629	359 1647 299	0	46 205 37	82 1565 284	20 605 92	20 605 92
NET EXPOSED BSMT WALL ABOVE GR	3.6 0.7	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3 0.6	0	0	0	0	102 131 62	0	0	0	0
NO A T T I C EXPOSED FLOOR	2.7 1.3	0	0	0	0	0	40 110 52	41 113 53	0	714 2669 467
EXPOSED FLOOR	2.6 0.5	0	0	0	0	56 143 26	0	0	0	0
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		2664	2143	7315	4886	274	507	3120	1380	8437
SUB TOTAL HT GAIN		2574	1114	6591	4784	88	235	599	251	11937
LEVEL FACTOR / MULTIPLIER		0.30	0.44	0.30	0.44	0.20	0.30	0.30	0.44	0.50
AIR CHANGE HEAT LOSS		1082	941	3213	2146	82	223	1370	606	15966
AIR CHANGE HEAT GAIN		0	0	0	0	7	19	47	20	70
DUCT LOSS		0	0	0	0	36	0	0	0	0
HEAT GAIN PEOPLE	240	480	0	0	0	73	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS		635	635	635	635	635	0	0	0	0
TOTAL HT LOSS BTU/H		3546	3084	10527	7032	391	729	4490	1986	27903
TOTAL HT GAIN x 1.3 BTU/H		4437	2389	10213	7637	1044	330	840	1178	2065

TOTAL HEAT GAIN BTU/H: 60680 TONS: 5.06 LOSS DUE TO VENTILATION LOAD BTU/H: 3181 STRUCTURAL HEAT LOSS: 8665 TOTAL COMBINED HEAT LOSS BTU/H: 91846

Michael O'Rourke

SITE NAME: PINE VALLEY & TESTON
BUILDER: GOLD PARK HOMES

OPT. 5 BED
TYPE: 5005 - THE HIGHBOURNE

DATE: Jan-18

GFA: 4472 LO# 77481

HEATING CFM	1955	COOLING CFM	1955
TOTAL HEAT LOSS	88,665	TOTAL HEAT GAIN	60,102
AIR FLOW RATE CFM	22.05	AIR FLOW RATE CFM	32.53

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

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

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	18	13	7
R/A	0	0	6	3	1

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
ROOM NAME	MBR	ENS	BED-5	BED-2	BED-3	BED-4	ENS-2	WIC-2	ENS-3	MBR	ENS-4	LIB	DIN	KIT/GT	KIT/GT	KIT/GT	LAUN	PWD	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	2.35	2.18	2.55	1.95	2.07	2.87	0.90	0.84	1.02	2.35	0.76	1.77	3.08	2.63	2.63	2.63	0.39	0.73	4.49	1.99	3.99	3.99	3.99	3.99
CFM PER RUN HEAT	52	48	56	43	46	63	20	18	23	52	17	39	68	58	58	58	9	16	99	44	88	88	88	88
RM GAIN MBH	2.63	1.93	2.31	2.33	2.64	2.86	0.36	0.19	0.28	2.63	0.44	2.22	2.39	2.55	2.55	2.55	1.04	0.33	0.84	1.18	0.30	0.30	0.30	0.30
CFM PER RUN COOLING	86	63	75	76	86	93	12	6	9	86	14	72	78	83	83	83	34	11	27	38	10	10	10	10
ADJUSTED PRESSURE	0.15	0.16	0.16	0.16	0.15	0.15	0.16	0.16	0.16	0.15	0.16	0.16	0.16	0.15	0.15	0.15	0.16	0.16	0.15	0.16	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH	70	70	53	49	75	48	47	48	53	64	59	57	29	52	69	54	38	73	40	47	67	60	54	38
EQUIVALENT LENGTH	200	200	170	160	170	160	200	150	170	170	150	140	103	120	140	110	200	170	210	160	150	120	103	90
TOTAL EFFECTIVE LENGTH	270	270	223	209	245	208	247	198	223	234	209	197	132	172	209	164	236	243	250	207	217	180	157	128
ADJUSTED PRESSURE	0.05	0.06	0.07	0.07	0.06	0.07	0.06	0.08	0.07	0.06	0.07	0.08	0.12	0.09	0.09	0.07	0.07	0.06	0.06	0.08	0.07	0.08	0.09	0.11
ROUND DUCT SIZE	6	5	5	6	6	6	4	4	4	6	4	5	5	5	6	6	4	4	6	4	6	6	5	5
HEATING VELOCITY (ft/min)	265	352	411	219	235	321	229	207	264	265	195	286	499	426	296	426	103	184	505	505	449	449	646	646
COOLING VELOCITY (ft/min)	438	463	551	388	438	474	138	69	103	438	161	529	573	609	423	609	390	126	138	436	51	51	73	73
OUTLET GRILL SIZE	4X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	3X10	3X10
TRUNK	D	C	E	G	F	E	E	G	G	D	E	F	E	D	B	C	G	A	F	C	A	B	D	E

ROOM NAME	25	26	27	28	29	30	31	32	33	34	35	36	37	38
ROOM NAME	BAS	BAS	BED-2	BED-2	BED-3	BED-3	LIB	KIT/GT	CAB	CAB	CAB	WIC	ENS	BAS
RM LOSS MBH	3.99	3.99	1.95	1.95	2.07	2.07	1.77	2.63	2.34	2.34	2.34	0.52	0.58	3.99
CFM PER RUN HEAT	88	88	43	43	46	46	39	58	52	52	52	11	13	88
RM GAIN MBH	0.30	0.30	2.33	2.33	2.64	2.64	2.22	2.55	2.51	2.51	2.51	0.98	0.53	0.30
CFM PER RUN COOLING	10	10	76	76	86	86	72	83	82	82	82	32	17	10
ADJUSTED PRESSURE	0.15	0.15	0.16	0.16	0.15	0.15	0.16	0.15	0.15	0.15	0.15	0.16	0.16	0.15
ACTUAL DUCT LGH	34	50	52	55	80	63	51	55	69	71	82	56	58	23
EQUIVALENT LENGTH	110	150	170	160	170	200	160	120	150	130	140	200	190	140
TOTAL EFFECTIVE LENGTH	144	200	222	215	250	263	211	175	219	201	222	256	248	163
ADJUSTED PRESSURE	0.1	0.07	0.07	0.07	0.06	0.06	0.07	0.08	0.07	0.07	0.07	0.06	0.06	0.09
ROUND DUCT SIZE	5	6	6	6	6	6	5	6	6	6	6	4	4	5
HEATING VELOCITY (ft/min)	646	449	219	219	235	235	286	296	265	265	265	126	149	646
COOLING VELOCITY (ft/min)	73	51	388	388	438	438	529	423	418	418	418	367	195	73
OUTLET GRILL SIZE	3X10	4X10	4X10	4X10	4X10	4X10	3X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10
TRUNK	G	F	G	G	F	F	F	B	A	A	A	C	C	E

SUPPLY AIR TRUNK SIZE	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	260	0.06	9.1	10	8	TRUNK G	670	0.06	13	20	TRUNK H	1955	0.05	20.3	603
TRUNK B	204	0.07	8	8	459	TRUNK I	0	0.00	0	0	TRUNK J	0	0.00	0	741
TRUNK C	638	0.06	12.7	18	638	TRUNK K	0	0.00	0	0	TRUNK L	0	0.00	0	0
TRUNK D	250	0.05	9.4	10	450	TRUNK M	0	0.00	0	0	TRUNK N	0	0.00	0	0
TRUNK E	1288	0.05	17.3	28	662	TRUNK O	0	0.00	0	0	TRUNK P	0	0.00	0	0
TRUNK F	403	0.06	10.7	14	518	TRUNK Q	0	0.00	0	0	TRUNK R	0	0.00	0	0
						TRUNK S	0	0.00	0	0	TRUNK T	0	0.00	0	0
						TRUNK U	0	0.00	0	0	TRUNK V	0	0.00	0	0
						TRUNK W	0	0.00	0	0	TRUNK X	1515	0.05	18.4	0
						TRUNK Y	880	0.05	15	32	TRUNK Z	415	0.05	11.3	682
						DROP	1955	0.05	20.3	24					609
															534
															652

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
AIR VOLUME	115	130	125	115	280	185	350	300	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLENUM PRESSURE	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
ACTUAL DUCT LGH	84	51	62	59	47	49	30	51	49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	200	135	155	185	135	140	170	195	175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LENGTH	284	186	217	244	182	189	200	248	224	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.05	0.07	0.06	0.05	0.07	0.07	0.07	0.05	0.06	13.36	13.36	13.36	13.36	13.36	13.36	13.36	13.36	13.36	13.36	13.36	13.36	13.36	13.36	13.36
ROUND DUCT SIZE	8	8	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	30	14	30	30	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: 5005 - THE HIGHBOURNE
SITE NAME: PINE VALLEY & TESTON

LO # 77481
OPT. 5 BED

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	2 @ 21.2 cfm	42.4 cfm
Other Bedrooms	4 @ 10.6 cfm	42.4 cfm
Kitchen & Bathrooms	7 @ 10.6 cfm	74.2 cfm
Other Rooms	8 @ 10.6 cfm	84.8 cfm
Table 9.32.3.A.	TOTAL	243.8 cfm

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

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	243.8	cfm
Less Principal Ventil. Capacity	155	cfm
Required Supplemental Capacity	88.8	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE 65H	Location: BSMT
155.0 cfm	3.0 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-4	QTXEN050C	50	✓	0.3
PWD	QTXEN050C	50	✓	0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE 65H		
155 cfm high	64 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:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	January-18

CSA F280-12 Residential Heat Loss and Heat Gain Calculations			
Formula Sheet (For Air Leakage / Ventilation Calculation)			
LO#: 77481	Model: 5005 - THE HIGHBOURNE	Builder: GOLD PARK HOMES	Date: 01/24/2018
Volume Calculation			
House Volume	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Level			
Bsmt	2033	10	20330
First	2033	11	22363
Second	2439	10	24390
Third	0	9	0
Fourth	0	9	0
	Total:		67,083.0 ft³
	Total:		1899.6 m³
WINTER NATURAL AIR CHANGE RATE			
			0.350
SUMMER NATURAL AIR CHANGE RATE			
			0.121
Design Temperature Difference			
	Tin °C	Tout °C	ΔT °C
Winter DTDh	22	-20	42
Summer DTDc	23	31	8
			ΔT °F
			76
			14
6.2.6 Sensible Gain due to Air Leakage			
$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$			
0.350	x	527.66	x
		8 °C	x
		1.2	=
			588 W
			=
			2005 Btu/h
6.2.7 Sensible heat Gain due to Ventilation			
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$			
155 CFM	x	14 °F	x
		1.08	x
		0.25	=
			578 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)	Hlaive Air Leakage + Ventilation Heat Loss (Btu/h)	Air Leakage Heat Loss Multiplier (LF x Hlaiveb / Hlevel)
1	0.5		1.338
2	0.3		0.439
3	0.2	31,933	0.299
4	0		0.000
5	0		0.000
*Hlaiveb = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system Hlaive = 0			

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 5005 - THE HIGHBOURNE	OPT. 5 BED	BUILDER: GOLD PARK HOMES
SFQT: 4472	LO# 77481	SITE: PINE VALLEY & TESTON

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-4	OUTDOOR DESIGN TEMP.	88
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	74

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):	67083.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
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: 77.0 ft	WIDTH: 42.0 ft	EXPOSED PERIMETER:	238.0 ft

2012 OBC - COMPLIANCE PACKAGE

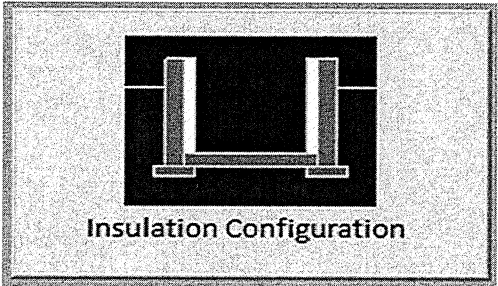
Component	Compliance Package A1	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 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):	23.5	 Insulation Configuration
Floor Width (m):	12.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	1.9	
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):		2472

TYPE: 5005 - THE HIGHBOURNE
LO# 77481

OPT. 5 BED

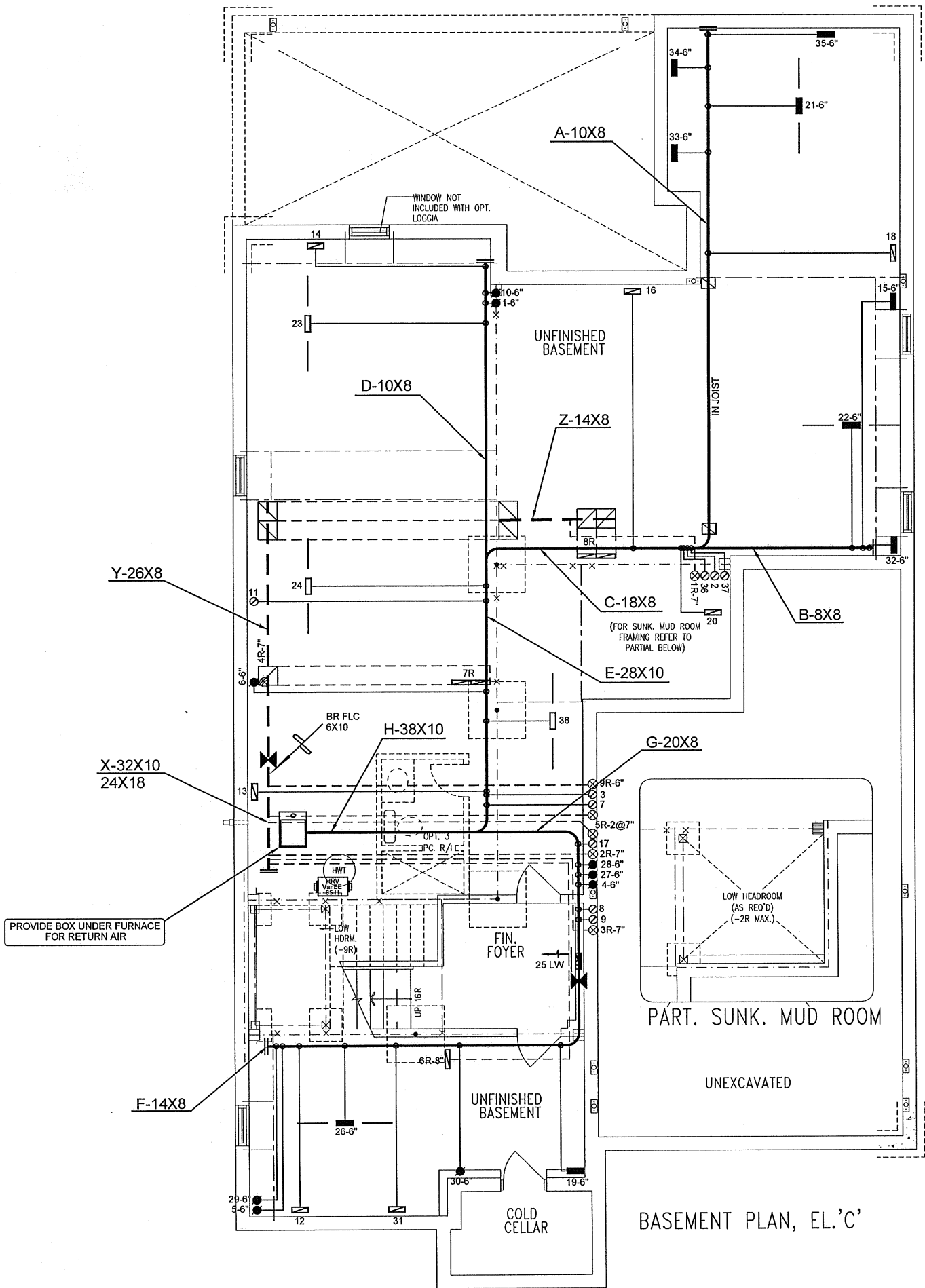
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

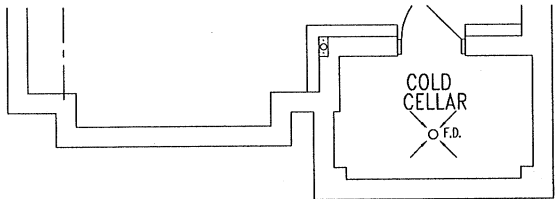
Weather Station Description				
Province:	Ontario			
Region:	Vaughan (Woodbridge)			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	7.32			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1899.6			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	2532.2 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):	0.350			
Cooling Air Leakage Rate (ACH/H):	0.121			

TYPE: 5005 - THE HIGHBOURNE
LO# 77481

OPT. 5 BED



BASEMENT PLAN, EL.'C'



BASEMENT PLAN, EL.'A'

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

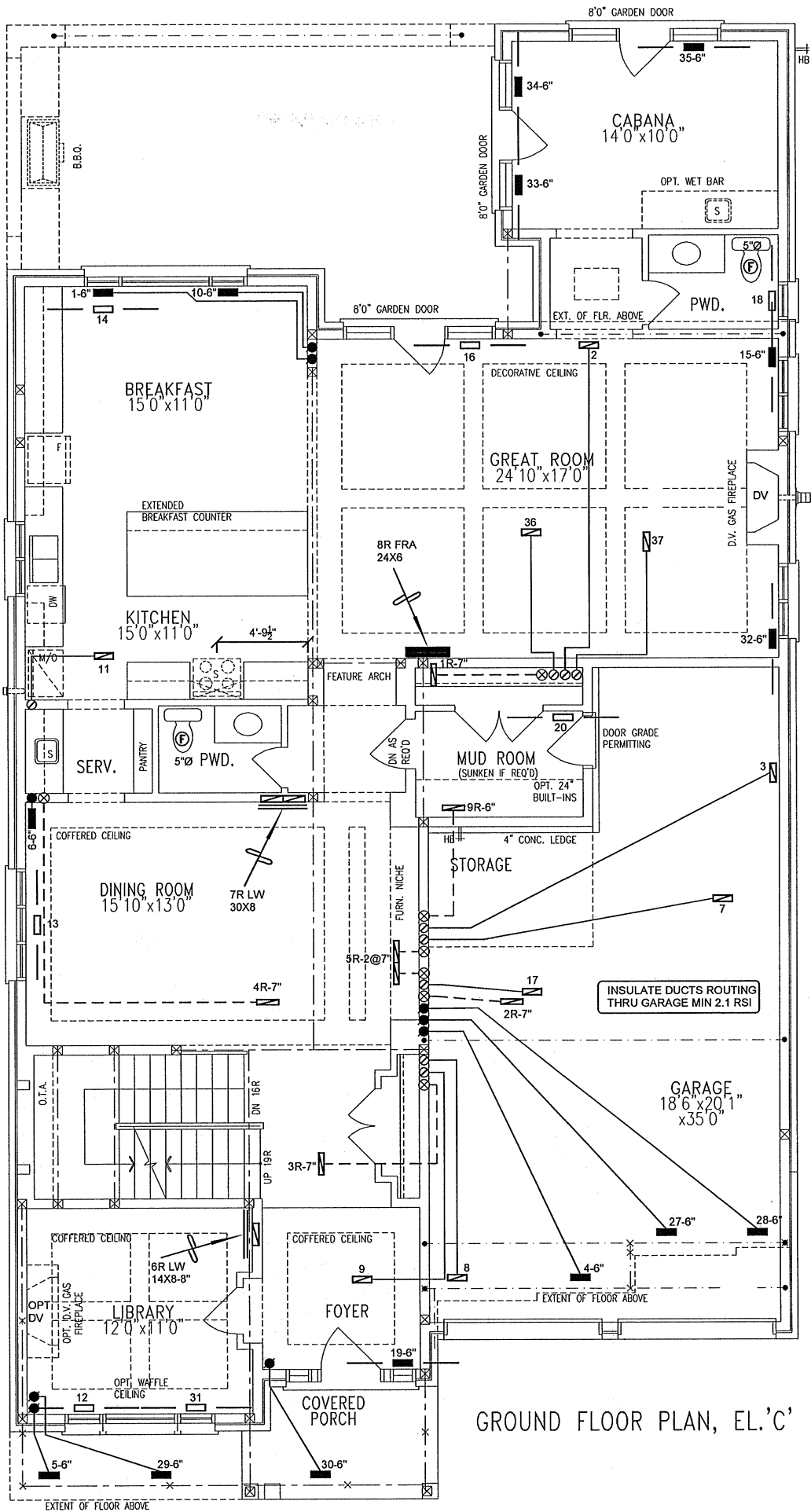
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
PACKAGE A1

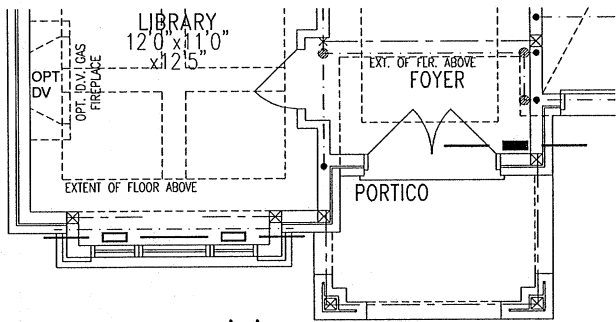
HVAC LEGEND						3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	2.
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN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

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Client GOLDPARK HOMES		 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	HEAT LOSS 91846 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS				Sheet Title BASEMENT HEATING LAYOUT	
Project Name PINE VALLEY & TESTON VAUGHAN, ONTARIO OPT. 5 BED THE HIGHBOURNE 5005 4472 sqft			MAKE LENNOX		3RD FLOOR					
			MODEL EL296UH110XE60C		2ND FLOOR		18 6 7			
			INPUT 110 MBTU/H		1ST FLOOR		13 3 3			
			OUTPUT 106 MBTU/H		BASEMENT		7 1 0			
		COOLING 5.0 TONS		ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A		Date JAN/2018				
		FAN SPEED 1955 cfm @ 0.6" w.c.				Scale 1/8" = 1'-0"				
						BCIN# 19669				
						LO# 77481				



GROUND FLOOR PLAN, EL. 'C'



GROUND FLOOR PLAN, EL. 'A'

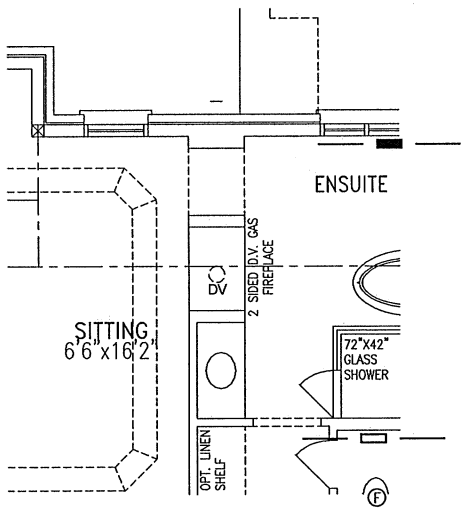
CSA-F280-12
PACKAGE A1

I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 32.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

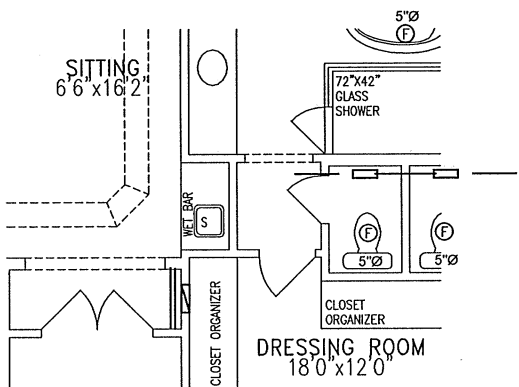
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		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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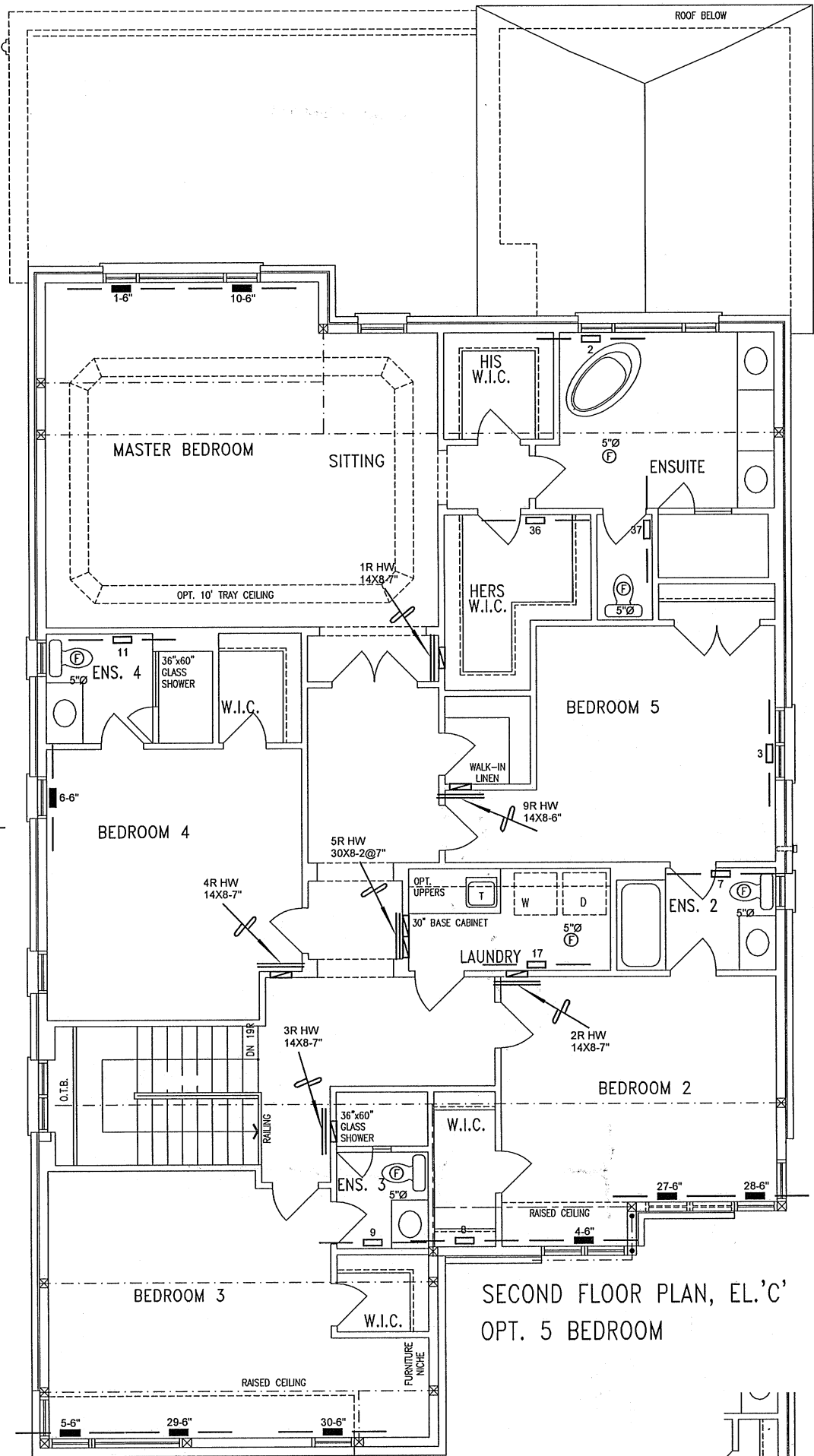
Client		HVAC DESIGNS LTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply 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	
GOLDPARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	JAN/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	1/8" = 1'-0"
OPT. 5 BED			BCIN# 19669	
THE HIGHBOURNE				
5005	4472 sqft	LO# 77481		



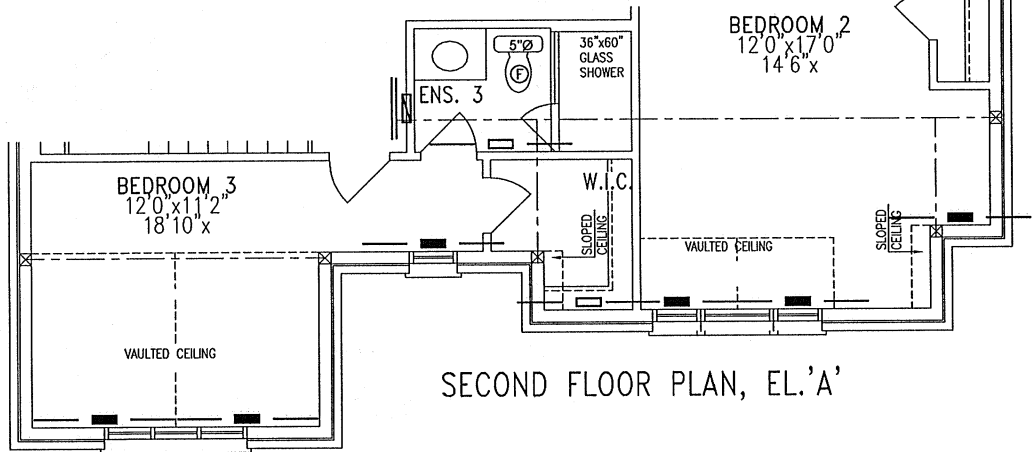
PART. SECOND FLOOR PLAN
OPT. SITTING AREA FIREPLACE



PART. SECOND FLOOR PLAN
OPT. SITTING AREA WET BAR



SECOND FLOOR PLAN, EL.'C'
OPT. 5 BEDROOM



SECOND FLOOR PLAN, EL.'A'

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

CSA-F280-12
PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
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Client GOLDPARK HOMES		HVACDESIGNS LTD. 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	Sheet Title SECOND FLOOR HEATING LAYOUT	
Project Name PINE VALLEY & TESTON VAUGHAN, ONTARIO OPT. 5 BED THE HIGHBOURNE 5005			Date JAN/2018	
4472 sqft		Scale 1/8" = 1'-0"		
		BCIN# 19669		
		LO#	77481	

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.