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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 MODEL CERTIFICATION		Unit no. N/A	Lot/con. N/A
Municipality KING CITY	Postal code N/A	Plan number/ other description N/A	

B. Individual who reviews and takes responsibility for design activities

Name **MICHAEL O'ROURKE**		Firm **HVAC DESIGNS LTD.**	
Street address **65 CHURCH STREET SOUTH**		Unit no.	Lot/con.
Municipality **AJAX**	Postal code **L1S 6A7**	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 Can/CSA-F280-M90

Model: 50-8

Project: CASTLES OF KING CITY

D. Declaration of Designer

I **MICHAEL O'ROURKE** declare that (choose one as appropriate):
(print name)

☐ 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 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: 19669

Basis for exemption from registration: O.B.C. SENTENCE 3.2.4.1.(4)

☐ 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 29, 2014
Date

Signature of Designer

NOTE:

1. 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.
2. 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.

65 Church St. South Ajax, ON L1S 6A7 Tel-905-619-2300 Fax-905-619-2375
Web: www.hvacdesigns.ca E-mail mike@hvacdesigns.ca

HVAC DESIGNS LTD

SITE NAME: CASTLES OF KING CITY GFA: 4334 DATE: Jan-14

BUILDER: ZANCOR HOMES TYPE: 50-8 0 LO# 53743 CALCULATIONS per HRAI TEMP DIFF. DEG F 78 SUMMER TEMP. DIFF. F. 15

ENERGYSTAR 12.1 2012 OBC - REV JAN 2014

ROOM USE			MBR			ENS			WIC			BED-2			BED-3			BED-4			ENS-2			ENS-3			ENS-4			WIC-2			R1			R2		
EXP. WALL			57			28			20			14			53			38			6			6			6			6			0			0		
RM AREA			480			240			237			210			310			295			90			178			162			162			0			0		
CLG. HT.			12			10			9			9			10			10			9			9			9			9			9			9		
COLD FLOOR			0			0			0			0			12			295			0			0			0			78			0			0		
COLD CEILING			480			240			237			210			310			295			90			178			162			162			0			0		
NO ATTIC EXPOSED CLG			0			0			0			0			0			0			0			0			0			0			0			0		
GROSS WALL BAS ABOVE GRADE			0			0			0			0			0			0			0			0			0			0			0			0		
GROSS WALL BAS BELOW GRADE			0			0			0			0			0			0			0			0			0			0			0			0		
FACTORS																																						
GRS.WALL AREA	LOSS	GAIN	684			280			180			126			530			380			54			54			54			54			0			0		
GLAZING				LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN
NORTH	19.50	13.96	20	390	279	0	0	0	0	0	0	16	312	223	0	0	0	0	0	0	6	117	84	6	117	84	0	0	0	0	0	0	0	0	0	0	0	0
EAST/WEST	19.50	33.00	54	1053	1782	29	566	957	0	0	0	0	0	0	53	1034	1749	45	878	1485	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	19.50	20.92	16	312	335	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	117	126	16	312	335	0	0	0	0	0	0
SKYLT.	19.50	136.72	0	0	0	16	312	2188	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	25.91	4.98	20	518	100	0	0	0	0	0	0	0	0	0	10	259	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	2.92	0.56	574	1679	323	251	734	141	180	526	101	110	322	62	467	1366	263	335	980	188	48	140	27	48	140	27	48	140	27	38	111	21	0	0	0	0	0	0
NET EXPOSED WALL BAS ABOVE GR	3.60	0.45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.48	0.70	480	712	338	224	332	158	237	352	167	210	312	148	310	460	218	295	438	208	90	134	63	178	264	125	162	240	114	162	240	114	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.42	1.15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.36	0.45	0	0	0	0	0	0	0	0	0	0	0	0	12	28	5	295	697	134	0	0	0	0	0	0	0	0	0	78	184	35	0	0	0	0	0	0
EXPOSED WALL BAS BELOW GRADE	22.00		0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0	
BELOW GRADE HT LOSS FLOOR	1.08		0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0	
SUBTOTAL HT LOSS				4664			1944			878			945			3147			2992			391			522			498			848			0			0	
SUB TOTAL HT GAIN					3156			3443			268			433			2285			2015			174			236			267			506			0			0
HT LOSS AIR LEAKAGE FACTOR	0.322			1500			625			282			304			1012			962			126			168			160			273			0			0	
HT GAIN AIR LEAKAGE FACTOR	0.106				336			366			29			46			243			214			19			25			28			54			0			0
HT GAIN PEOPLE/APPLIANCES	240		2		480	1		240	1		240	1		240	1		240	1		240	1		240	1		240	1		240	1		240			0			0
TOTAL HT LOSS BTU/H				6165			2569			1161			1250			4159			3954			517			689			658			1121			0			0	
TOTAL HT GAIN x 1.3 BTU/H					5164			5264			698			935			3599			3210			562			652			695			1039			0			0

I REVIEW AND TAKE RESPONIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

ROOM USE			LIV			DIN			KT/FM			FAM			LAUN			W/R			FOY			DEN			R3			R4			WOB	BAS		BAS		
EXP. WALL			0			15			86			0			31			11			37			40			0			0			0			198		
RM AREA			0			0			0			0			0			0			0			0			0			0			0			0		
CLG. HT.			10			10			10			10			12			10			10			10			9			9			9			9		
COLD FLOOR			0			0			0			0			0			0			0			0			0			0			0			0		
COLD CEILING			0			0			0			0			0			0			0			0			0			0			0			0		
NO ATTIC EXPOSED CLG			0			0			12			0			0			0			0			0			0			0			0			0		
GROSS WALL BAS ABOVE GRADE			0			0			0			0			0			0			0			0			0			0			0			594		
GROSS WALL BAS BELOW GRADE			0			0			0			0			0			0			0			0			0			0			0			1188		
FACTORS																																						
GRS.WALL AREA	LOSS	GAIN	0			150			860			0			372			110			370			400			0			0			0			0		
GLAZING				LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN
NORTH	19.50	13.96	0	0	0	30	585	419	34	663	475	0	0	0	0	0	0	11	215	154	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	195	140
EAST/WEST	19.50	33.00	0	0	0	0	0	0	145	2828	4785	0	0	0	0	0	0	0	0	0	10	195	330	45	878	1485	0	0	0	0	0	0	0	0	0	10	195	330
SOUTH	19.50	20.92	0	0	0	0	0	0	12	234	251	0	0	0	8	156	167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SKYLT.	19.50	136.72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	25.91	4.98	0	0	0	0	0	0	10	259	50	0	0	0	20	518	100	0	0	0	25	648	125	0	0	0	0	0	0	0	0	0	0	0	0	60	1555	299
NET EXPOSED WALL	2.92	0.56	0	0	0	120	351	67	659	1927	371	0	0	0	344	1006	193	99	290	56	335	980	188	355	1038	200	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL BAS ABOVE GR	3.60	0.45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	574	2064	261
EXPOSED CLG	1.48	0.70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.42	1.15	0	0	0	0	0	0	12	29	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.36	0.45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED WALL BAS BELOW GRADE	22.00		0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0		189	4158	
BELOW GRADE HT LOSS FLOOR	1.08		0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0		2003	2159	
SUBTOTAL HT LOSS				0			936			5940			0			1680			504			1823			1916			0			0			0			10326	
SUB TOTAL HT GAIN					0			486			5945			0			461			209			643			1685			0			0			0			1029
HT LOSS AIR LEAKAGE FACTOR	0.322			0			301			1911			0			540			162			586			616			0			0			0			3321	
HT GAIN AIR LEAKAGE FACTOR	0.106				0			52			632			0			49			22			68			179			0			0			0			109
HT GAIN PEOPLE/APPLIANCES	240				0	1		240	6		1440			0	6		1440	1		240	1		240	1		240			0			0			0			0
TOTAL HT LOSS BTU/H				0			1237			7851			0			2221			666			2409			2532			0			0			0			13647	
TOTAL HT GAIN x 1.3 BTU/H					0			1011			10422			0			2534			613			1237			2735			0			0			0			1480

TOTAL HEAT GAIN BTU/H **46762** **3.90** TONS LOSS DUE TO VENTILATION LOAD BTU/H **19645** TOTAL STRUCTURE HEAT LOSS BTU/H **52805** TOTAL COMBINED HEAT LOSS BTU/H **72450**

HVAC DESIGNS LTD.
65 Church St. South Ajax, ON L1S 6A7 Tel-905-619-2300 Fax-905-619-2375
Web: www.hvacdesigns.ca E-mail mike@hvacdesigns.ca

SITE NAME: CASTLES OF KING CITY 0

BUILDER: ZANCOR HOMES TYPE: 50-8 DATE: Jan-14 GFA: 4334 LO# 53743 CALCULATIONS per HRAI

FURNACE CFM	1460	FURNACE CFM	1460	furnace pressure	0.5
TOTAL HEAT LOSS	52805	TOTAL HEAT GAIN	41851	furnace filter	0.025
AIR FLOW RATE CFM	27.65	AIR FLOW RATE CFM	34.89	a/c coil pressure	0.2
				available pressure for s/a & r/a	**0.28**

RUN COUNT	3rd	2nd	1st	Bas
S/A	0	15	10	6
R/A	0	5	3	1

All S/A diffusers 4"x10" unless noted otherwise on layout.
All S/A runs 5"Ø unless noted otherwise on layout.

plenum pressure s/a	0.14	r/a pressure	0.14
s/a dif press. loss	0.01	r/a grille press. Loss	0.02
adjusted pressure s/a	**0.13**	adjusted pressure r/a	**0.12**

***LENNOX** HI-BOY HI-EFFIECENCY
ML195UH090XP48C **90** OUTPUT **85000** BTUH

FAN SPEED		CFM @ .5" E.S.P.
LOW	1285	
MEDLOW	1460	DESIGN CFM = **1460**
MEDIUM		
MEDIUM HIGH	1675	TEMPERATURE RISE 54 DEG/F.
HIGH	1830	

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	WIC	BED-2	BED-3	BED-4	ENS-2	ENS-3	ENS-4	MBR	WIC-2	DEN	DIN	KT/FM	KT/FM	KT/FM	LAUN	W/R	FOY	DEN	BAS	BAS	BAS	BAS
RM LOSS MBH.	2.05	1.28	1.16	1.25	2.08	1.98	0.52	0.69	0.66	2.05	1.12	1.27	1.24	1.96	1.96	1.96	2.22	0.67	2.41	1.27	2.27	2.27	2.27	2.27
CFM PER RUN HEAT	57	36	32	35	58	55	14	19	18	57	31	35	34	54	54	54	61	18	67	35	63	63	63	63
RM GAIN MBH.	1.72	2.63	0.70	0.93	1.80	1.61	0.56	0.65	0.70	1.72	1.04	1.37	1.01	2.61	2.61	2.61	2.53	0.61	1.24	1.37	0.25	0.25	0.25	0.25
CFM PER RUN COOLING	60	92	24	33	63	56	20	23	24	60	36	48	35	91	91	91	88	21	43	48	9	9	9	9
ADJUSTED PRESSURE	0.125	0.13	0.125	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	0.125	0.13	0.13	0.13	0.13	0.13
ACTUAL DUCT LGH.	83	38	34	38	54	43	32	43	59	35	53	39	20	35	41	66	52	30	39	39	61	35	32	42
EQUIVALENT LENGTH	190	230	200	170	180	140	180	140	190	200	200	130	170	130	200	170	120	110	170	130	180	150	120	140
TOTAL EFFECTIVE LH	273	268	234	208	234	183	212	183	249	235	253	169	190	165	241	236	172	140	209	169	241	185	152	182
ADJUSTED PRESSURE	0.05	0.05	0.05	0.06	0.05	0.07	0.06	0.07	0.05	0.05	0.05	0.07	0.07	0.08	0.05	0.05	0.07	0.09	0.06	0.07	0.05	0.07	0.08	0.07
ROUND DUCT SIZE	**6**	**6**	5	5	**6**	5	5	5	5	**6**	5	5	5	**6**	**6**	**6**	**6**	5	5	5	**6**	5	5	5
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10
TRUNK	A	A	C	E	D	E	C	E	C	A	E	D	E	B	A	A	C	E	D	D	A	B	C	D

RUN #	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
ROOM NAME	BAS	BAS	MBR	BED-4	BED-3	ENS	KT/FM																	
RM LOSS MBH.	2.27	2.27	2.05	1.98	2.08	1.28	1.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CFM PER RUN HEAT	63	63	57	55	58	36	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RM GAIN MBH.	0.25	0.25	1.72	1.61	1.80	2.63	2.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CFM PER RUN COOLING	9	9	60	56	63	92	91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED PRESSURE	0.125	0.13	0.125	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	0.125	0.13	0.13	0.13	0.13	0.13
ACTUAL DUCT LGH.	31	26	46	53	51	53	58	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	160	160	150	150	140	200	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	191	186	196	203	191	253	198	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.07	0.07	0.06	0.06	0.07	0.05	0.06	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
ROUND DUCT SIZE	5	5	5	5	5	**6**	**6**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	D	E	C	E	D	C	B																	

SUPPLY AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT				TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT		
TRUNK A	321	0.05	10.3	12	x	8	TRUNK F	1460	0.05	18.2	30	x	10
TRUNK B	492	0.05	12.1	17	x	8	TRUNK G	0	0.05	0	0	x	8
TRUNK C	773	0.05	14.3	23	x	8	TRUNK H	0	0.05	0	0	x	8
TRUNK D	379	0.05	11	14	x	8	TRUNK I	0	0.05	0	0	x	8
TRUNK E	689	0.05	13.7	21	x	8	TRUNK J	0	0.05	0	0	x	8

RETURN AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT		
TRUNK O	0	0.04	0	0	x	8
TRUNK P	0	0.04	0	0	x	8
TRUNK Q	0	0.04	0	0	x	8
TRUNK R	0	0.04	0	0	x	8
TRUNK S	0	0.04	0	0	x	8
TRUNK T	0	0.04	0	0	x	8
TRUNK U	0	0.04	0	0	x	8
TRUNK V	0	0.04	0	0	x	8
TRUNK W	655	0.04	14.2	23	x	8
TRUNK X	840	0.04	15.6	28	x	8
TRUNK Y	245	0.04	9.9	11	x	8
TRUNK Z	620	0.04	13.9	22	x	8
DROP	1460	0.04	19.2	24	x	14

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	BR
	0	0	2@6"	0	0	0	0	0	0	0	0	0	0	0	
AIR VOLUME	135	135	155	100	95	245	275	135	0	0	0	0	0	0	185
PLENUM PRESSURE	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
ACTUAL DUCT LGH.	61	56	55	56	77	56	27	46	1	1	1	1	1	1	16
EQUIVALENT LENGTH	205	185	195	195	205	170	185	200	0	0	0	0	0	0	165
TOTAL EFFECTIVE LH	266	241	250	251	282	226	212	246	1	1	1	1	1	1	181
ADJUSTED PRESSURE	0.05	0.05	0.05	0.05	0.04	0.05	0.06	0.05	12	12	12	12	12	12	0.07
ROUND DUCT SIZE	7.5	7.5	7.8	6.7	6.9	9.3	9.3	7.5	0	0	0	0	0	0	7.7
INLET GRILL SIZE	8	8	8	8	8	8	8	8	0	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	30	14	14	30	30	14	0	0	0	0	0	0	24

I REVIEW AND TAKE RESPONIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

Michael O'Rourke

MICHAEL O'ROURKE
BCIN: 19669

HVAC DESIGNS LTD.
65 Church St. South Ajax, ON L1S 6A7 Tel-905-619-2300 Fax-905-619-2375
Web: www.hvacdesigns.ca E-mail mike@hvacdesigns.ca

I REVIEW AND TAKE RESPONIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE. INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

TYPE: 50-8 LO # 53743

SITE NAME: CASTLES OF KING CITY

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	3	@ 10.6 cfm	31.8	cfm
Kitchen & Bathrooms	8	@ 10.6 cfm	84.8	cfm
Other Rooms	7	@ 10. 6cfm	74.2	cfm
Table 9.32.3.A.	TOTAL		233.2	cfm

PRINCIPAL VENTILATION CAPACITY REQUIRED 9.32.3.4.(1)

Master Bedroom	31.8 cfm	
Two Bedrooms	47.7 cfm	
Three Bedrooms	63.6 cfm	
Four Bedrooms	79.5 cfm	
Table 9.32.3.B.	TOTAL 79.5	cfm
More than 5 - Part 6		

SUPPLEMENTAL VENTILATION CAPACITY 9.32.3.5.

Total Ventilation Capacity	233.2	cfm
Less Principal Ventil. Capacity	125	cfm
Required Supplemental Capacity	108.2	cfm

PRINCIPAL EXHAUST FAN CAPACITY

Model: VANEE 90H-V ECM Location: BSMT

125 cfm [✓] HVI Approved

0.6 sones

SUPPLEMENTAL FANS NUTONE

Location	Model	cfm	HVI	Sones
ENS	QTXEN050C	50	✓	0.3
W/R	QTXEN050C	50	✓	0.3
ENS-2	QTXEN050C	50	✓	0.3
LAUN	QTXEN050C	50	✓	0.3

HEAT RECOVERY VENTILATOR 9.32.3.11.

Model: VANEE 90H-V ECM

159 cfm high 65 cfm low

75 % Sensible Efficiency @ 32 deg F (0 deg C) [✓] HVI Approved

LOCATION OF INSTALLATION

Lot: Concession

Township Plan:

Address

Roll # Building Permit #

BUILDER

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:

HRAI # 001820

Date: January-14

HVAC DESIGNS LTD.
65 Church St. South Ajax, Ontario L1S 6A7

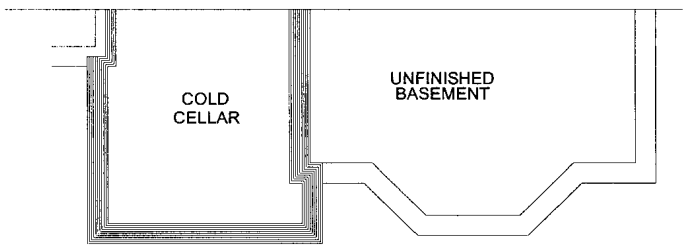
MODEL: 50-8 **LO#** 53743 **BUILDER:** ZANCOR HOMES
SFQT: 4334

ENERGYSTAR 12.1

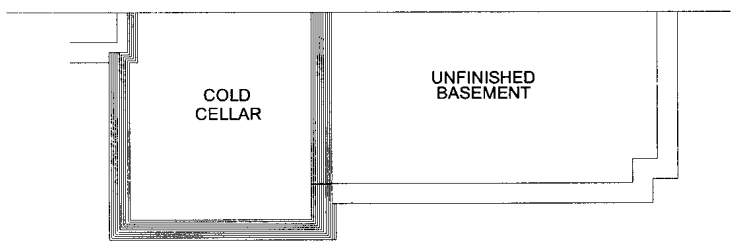
Component	Compliance Package ZONE 1
Ceiling with Attic Space Minimum RSI (R)-Value	50
Ceiling Without Attic Space Minimum RSI (R)-Value	31
Exposed Floor Minimum RSI (R)-Value	31
Walls Above Grade Minimum RSI (R)-Value	24
Basement Walls Minimum RSI (R)-Value	20
Below Grade Slab Entire surface > 600 mm 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	ZONE C
Skylights Maximum U-Value	2.8
Space Heating Equipment Minimum AFUE	95%
HRV Minimum Efficiency	75%
Domestic Hot Water Heater Minimum EF	0.9

Michael O'Rourke

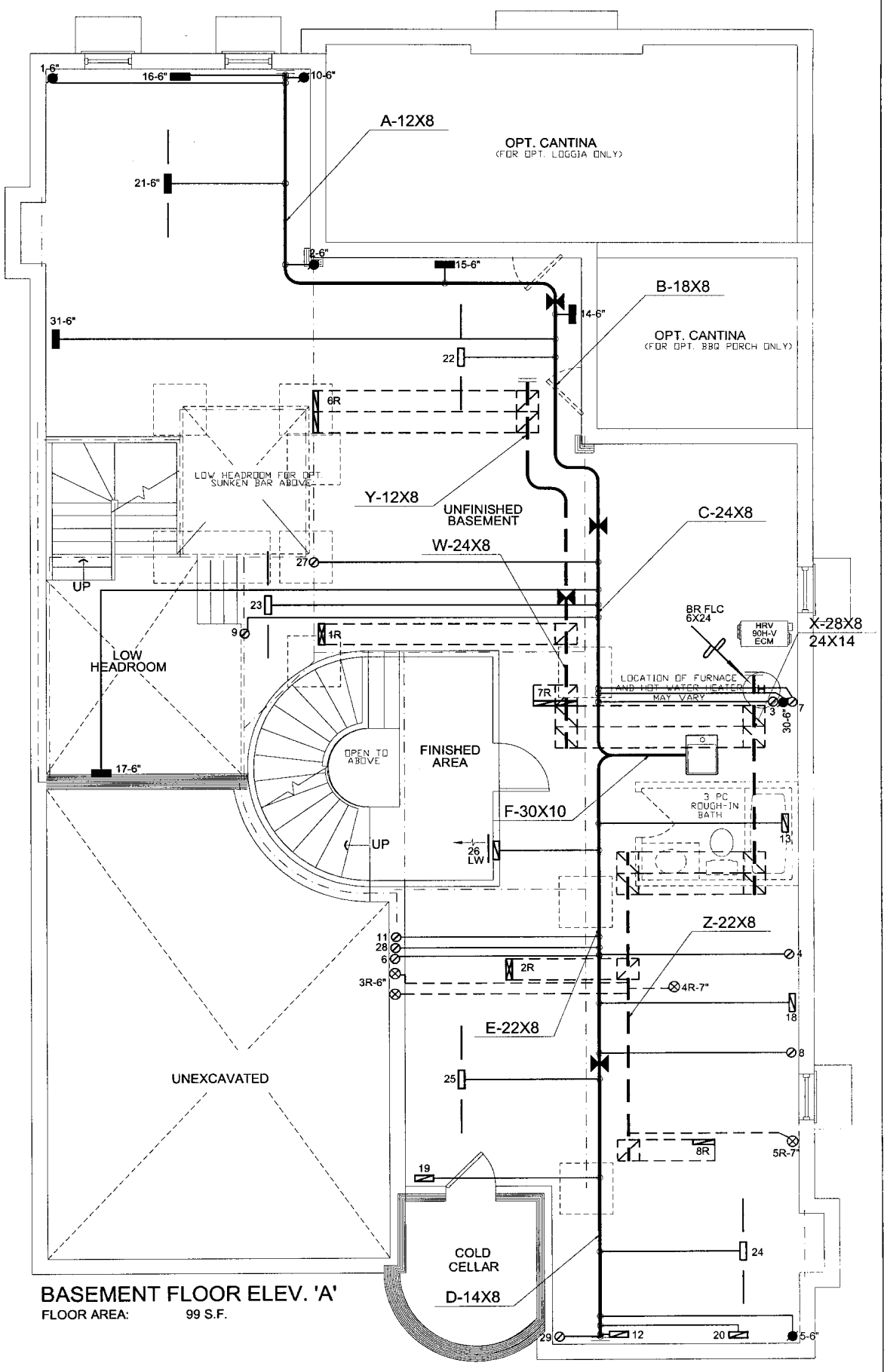
INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE



PARTIAL BASEMENT FLOOR ELEV. 'B'
FLOOR AREA: 99 S.F.



PARTIAL BASEMENT FLOOR ELEV. 'C'
FLOOR AREA: 99 S.F.



BASEMENT FLOOR ELEV. 'A'
FLOOR AREA: 99 S.F.

OBC 2012-Rev. 2014

ENERGY STAR

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

HVAC LEGEND

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
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER

No.	Description	Date
2.		
1.		

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Client
ZANCOR HOMES

Project Name
CASTLES OF KING CITY
KING CITY, ONTARIO

50-8 4334 sqft

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L1S 6A7 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
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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.

HEAT LOSS 72450 BTU/H

UNIT DATA

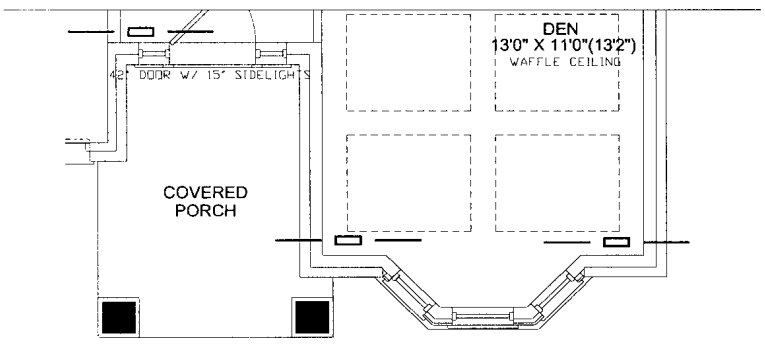
MAKE	LENNOX
MODEL	ML195UH090XP48C-90
INPUT	88 MBTU/H
OUTPUT	85 MBTU/H
COOLING	4.0 TONS
FAN SPEED	1460 cfm @ 0.5" w.c.

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	15	5	5
1ST FLOOR	10	3	3
BASEMENT	6	1	0

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

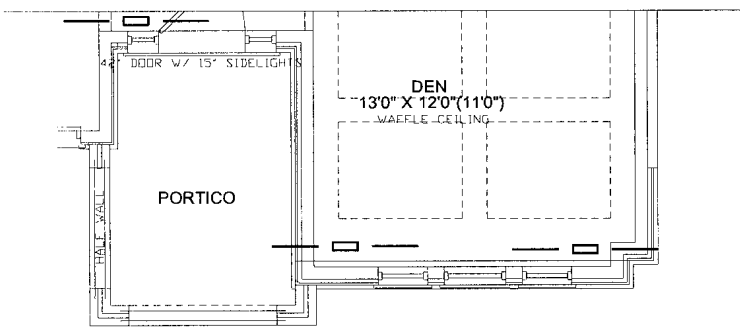
Sheet Title
BASEMENT HEATING LAYOUT

Date JAN/2014
Scale 1/8" = 1'-0"
BCIN# 19669
LO# 53743



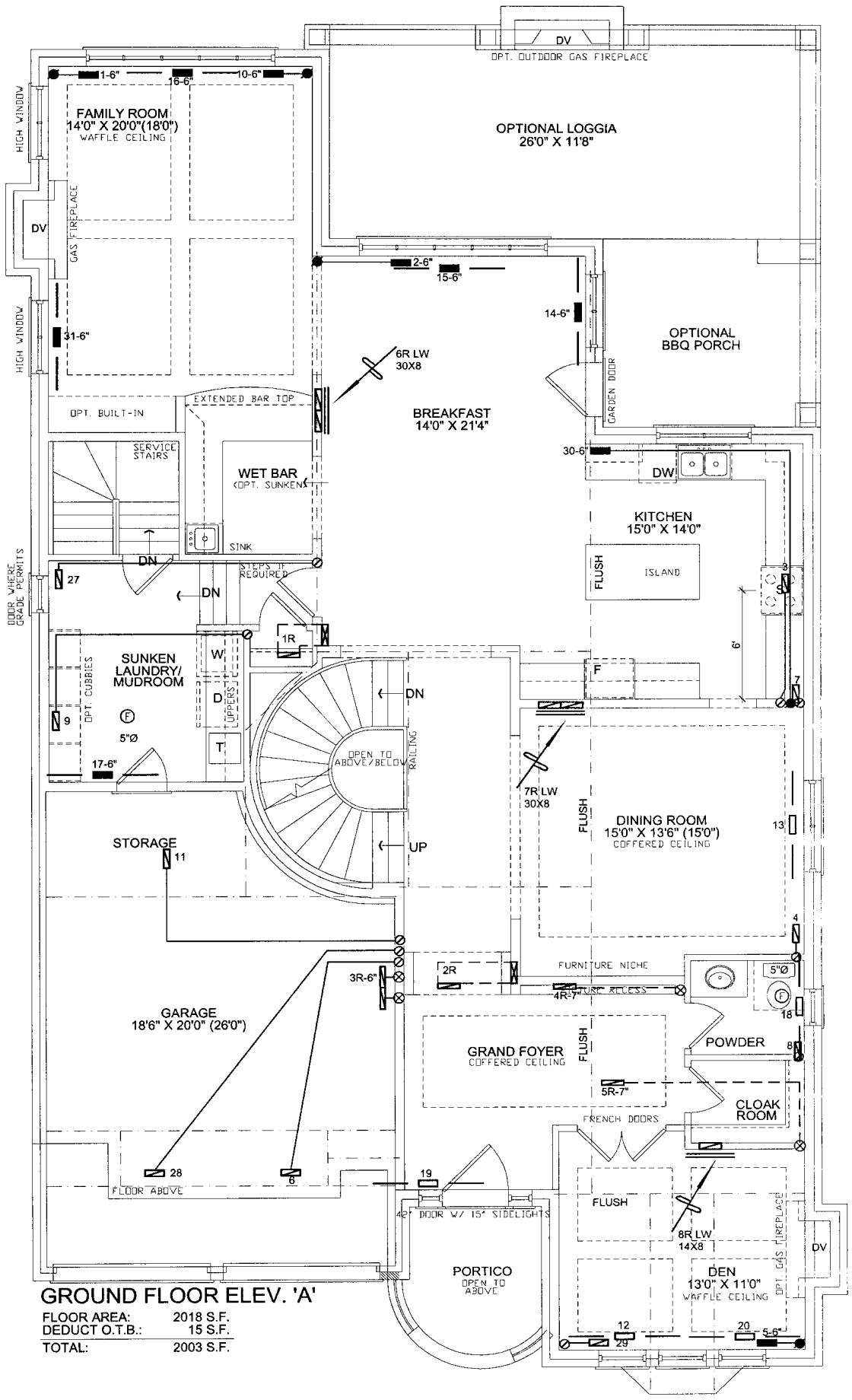
PARTIAL GROUND FLOOR ELEV. 'B'

FLOOR AREA:	2019 S.F.
DEDUCT O.T.B.:	15 S.F.
TOTAL:	2004 S.F.



PARTIAL GROUND FLOOR ELEV. 'C'

FLOOR AREA:	2019 S.F.
DEDUCT O.T.B.:	15 S.F.
TOTAL:	2004 S.F.



GROUND FLOOR ELEV. 'A'

FLOOR AREA:	2018 S.F.
DEDUCT O.T.B.:	15 S.F.
TOTAL:	2003 S.F.

OBC 2012-Rev. 2014

ENERGY STAR

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ZANCOR HOMES

Project Name
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KING CITY, ONTARIO

50-8 4334 sqft

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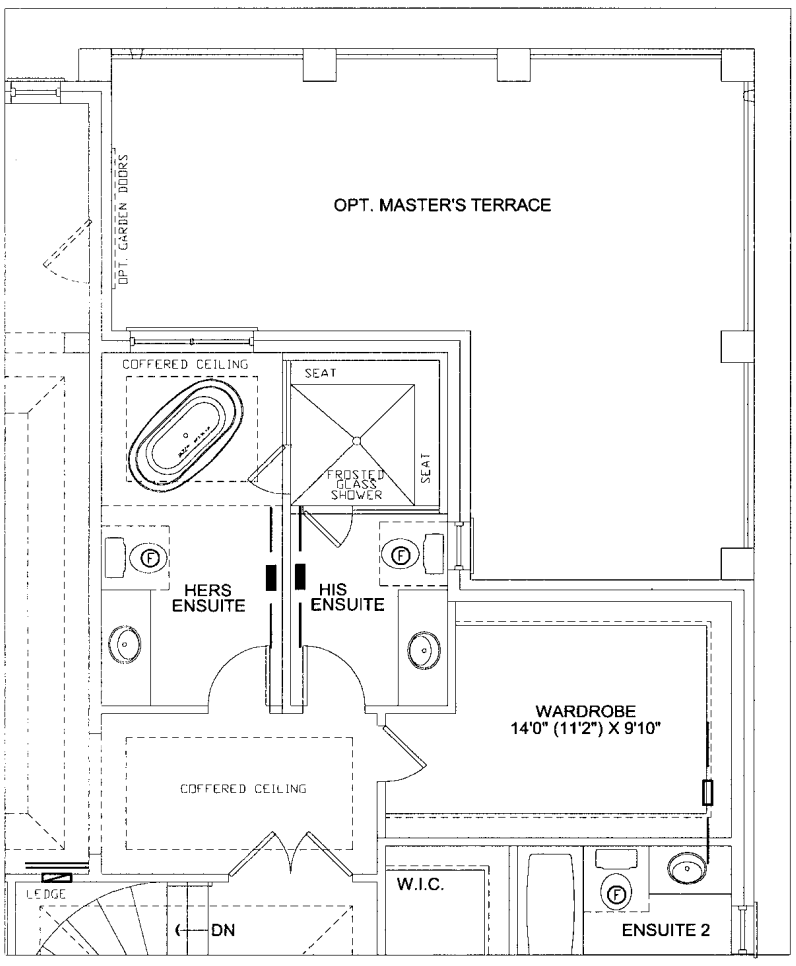
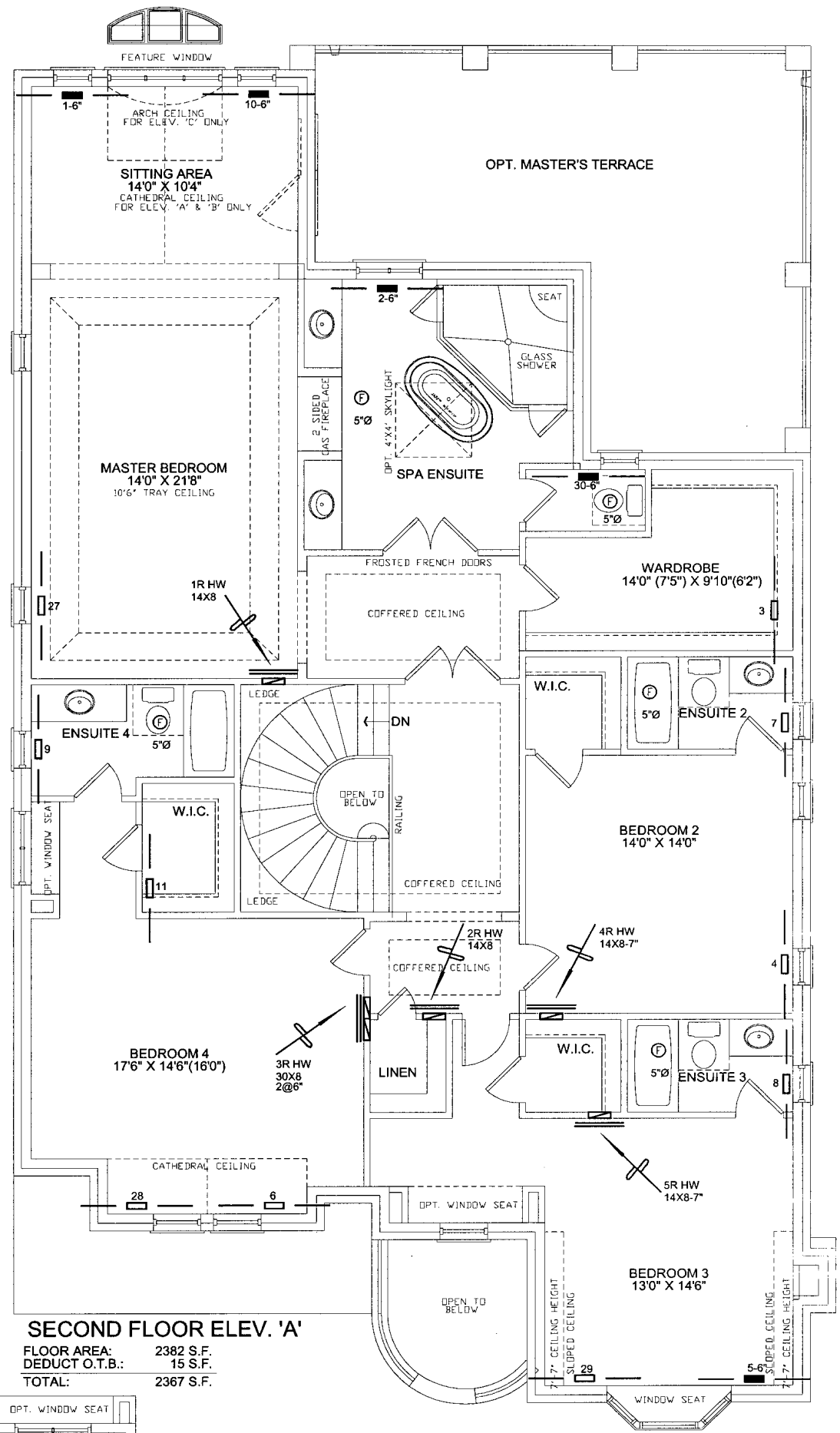
Sheet Title
FIRST FLOOR HEATING LAYOUT

Date	JAN/2014
Scale	1/8" = 1'-0"
BCIN# 19669	
LO#	53743

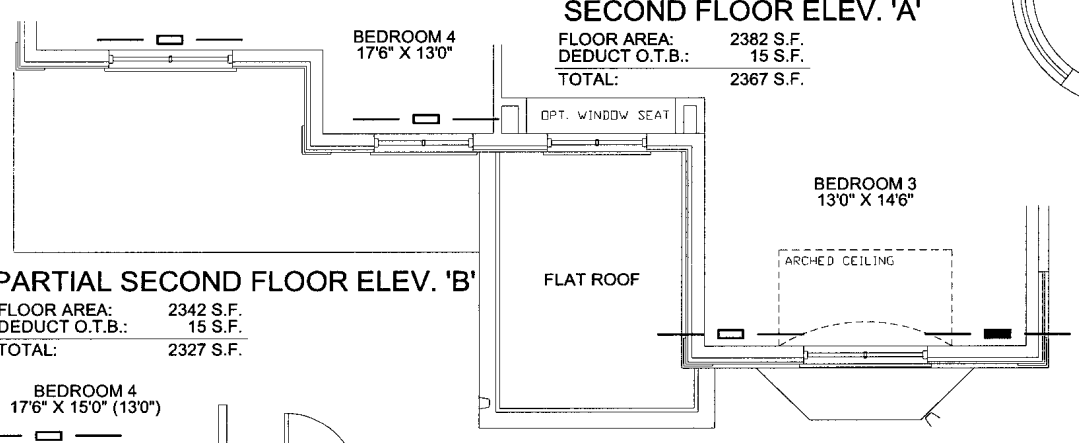


OPT. HIS/HERS ENSUITE



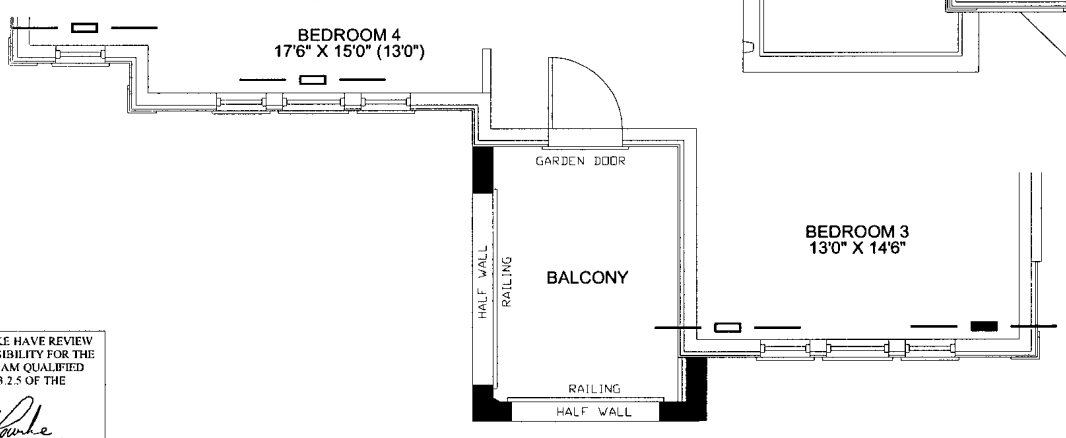
SECOND FLOOR ELEV. 'A'

FLOOR AREA:	2382 S.F.
DEDUCT O.T.B.:	15 S.F.
TOTAL:	2367 S.F.



PARTIAL SECOND FLOOR ELEV. 'B'

FLOOR AREA:	2342 S.F.
DEDUCT O.T.B.:	15 S.F.
TOTAL:	2327 S.F.



PARTIAL SECOND FLOOR ELEV. 'C'

FLOOR AREA:	2345 S.F.
DEDUCT O.T.B.:	15 S.F.
TOTAL:	2330 S.F.

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Sheet Title
SECOND FLOOR HEATING LAYOUT

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