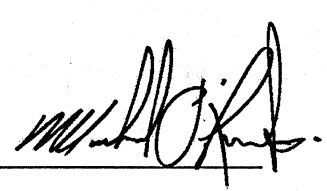


Schedule 1: Designer Information

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 BRAMPTON	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]							
<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; vertical-align: top;"> ☐ House ☐ Small Buildings ☐ Large Buildings ☐ Complex Buildings </td> <td style="width: 33%; vertical-align: top;"> ☒ HVAC – House ☐ Building Services ☐ Detection, Lighting and Power ☐ Fire Protection </td> <td style="width: 33%; vertical-align: top;"> ☐ Building Structural ☐ Plumbing – House ☐ Plumbing – All Buildings ☐ On-site Sewage Systems </td> </tr> </table>					☐ 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
☐ 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: AUBURN 2 Project: OSTIENSE				
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>May 3, 2017</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: OSTIENSE
BUILDER: GREENTYORK HOMES
DATE: May-17
LO# 73909
TYPE: AUBURN 2
GFA: 2819
WINTER NATURAL AIR CHANGE RATE 0.293
HEAT LOSS $\Delta T^{\circ}F$ 74
CSA-F280-12
SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	WIC-2	ENS-2
GRS.WALL AREA	420	234	234	234	72	108	220	320	180	54	54
GLAZING	16	332	281	0	0	0	0	0	0	0	0
NORTH	20.7	16.3	0	0	0	0	0	0	0	0	0
EAST	20.7	41.9	0	0	0	0	0	0	0	0	0
SOUTH	20.7	25.2	0	0	0	0	0	0	0	0	0
WEST	20.7	41.9	0	0	0	0	0	0	0	0	0
SKYLT.	20.7	86.9	0	0	0	0	0	0	0	0	0
DOORS	24.6	4.7	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.3	0.8	372	1616	306	206	895	169	72	313	59
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.7	0	0	0	0	0	0	0	0	0
NO A T T I C EXPOSED CLG	1.2	0.5	460	575	280	144	180	88	105	131	84
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	0
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0
SUB TOTAL HT LOSS	3186	2187	1655	1197	444	1092	2311	2122	1288	453	454
LEVEL FACTOR / MUL TIPLIER	0.20	0.27	0.20	0.27	0.20	0.27	0.20	0.27	0.20	0.27	0.20
AIR CHANGE HEAT LOSS	869	183	446	100	120	294	623	572	347	125	123
AIR CHANGE HEAT GAIN	0	0	0	0	0	0	0	0	0	0	0
DUCT LOSS	0	0	0	0	0	0	0	0	0	0	0
DUCT GAIN	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	2	480	0	0	0	1	240	1	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	548	548	0	0	0	548	548	548	548	0	548
TOTAL HT LOSS BTU/H	4045	2102	1686	1525	3228	3605	3203	1746	577	639	1000
TOTAL HT GAIN x 1.3 BTU/H											

ROOM USE	EXP. WALL	CLG. HT.	LIV	KIT/FM	LAUN	WR	FOY	WUB	BAS
GRS.WALL AREA	430	430	430	430	430	430	430	430	430
GLAZING	26	539	424	0	0	0	0	0	0
NORTH	20.7	16.3	0	0	0	0	0	0	0
EAST	20.7	41.9	0	0	0	0	0	0	0
SOUTH	20.7	25.2	0	0	0	0	0	0	0
WEST	20.7	41.9	0	0	0	0	0	0	0
SKYLT.	20.7	86.9	0	0	0	0	0	0	0
DOORS	24.6	4.7	0	0	0	0	0	0	0
NET EXPOSED WALL	4.3	0.8	359	1560	295	0	0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.7	0	0	0	0	0	0	0
NO A T T I C EXPOSED CLG	1.2	0.6	0	0	0	0	0	0	0
EXPOSED FLOOR	2.7	1.3	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS	2.5	0.5	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0
SUB TOTAL HT LOSS	3031	2604	4970	5474	453	348	2058	962	8033
LEVEL FACTOR / MUL TIPLIER	0.30	0.42	0.30	0.42	0.30	0.42	0.30	0.42	0.60
AIR CHANGE HEAT LOSS	1287	218	2324	417	38	148	874	180	8777
AIR CHANGE HEAT GAIN	0	0	0	0	0	0	0	0	0
DUCT LOSS	0	0	0	0	0	0	0	0	0
DUCT GAIN	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	1	240	548	548	548	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	4318	4694	8028	7798	2125	495	2932	952	16810
TOTAL HT LOSS BTU/H									
TOTAL HT GAIN x 1.3 BTU/H									

SITE NAME: OSTIENSE
BUILDER: GREENYORK HOMES

TYPE: AUBURN 2
furnace pressure 0.6
furnace filler 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35
plenum pressure s/a 0.18
s/a diff press. loss 0.01
adjusted pressure s/a 0.17

DATE: May-17

GFA: 2819 LO# 73909

HEATING CFM	1030	COOLING CFM	1030		
TOTAL HEAT LOSS	52,552	TOTAL HEAT GAIN	34,738		
AIR FLOW RATE CFM	19.6	AIR FLOW RATE CFM	29.65		
RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	11	8	4
R/A	0	0	4	2	1

#CARRIER
59SP5A-60-12 60
FAN SPEED LOW 0
MEDLOW 785
MEDIUM 845
HIGH 970
HIGH 1030

AFUE = 96 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 58,000

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	2.02	1.05	0.56	1.80	1.80	3.23	0.59	2.69	1.05	2.02	0.58	1.52	2.16	2.60	2.60	2.60	2.13	0.50	2.93	2.60	2.16	2.16	2.16	2.16
CFM PER RUN HEAT	40	21	11	35	35	63	12	53	21	40	11	30	42	51	51	51	42	10	57	51	42	42	42	42
RM GAIN MBH	2.21	0.84	0.17	1.75	1.75	3.60	0.64	3.20	0.84	2.21	2.10	2.10	2.35	2.68	2.68	2.68	1.35	0.09	0.55	2.68	2.35	2.35	2.35	2.35
CFM PER RUN COOLING	65	25	5	52	52	107	19	95	25	65	30	62	70	79	79	79	40	3	16	79	70	70	70	70
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	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
EQUIVALENT LENGTH	110	130	120	140	140	160	150	160	150	170	140	140	150	110	160	160	130	100	100	130	150	100	110	160
TOTAL EFFECTIVE LENGTH	158	169	156	193	193	194	187	203	186	210	174	180	181	136	180	180	154	105	222	160	188	126	125	191
ADJUSTED PRESSURE	0.11	0.11	0.11	0.09	0.09	0.09	0.09	0.08	0.09	0.08	0.1	0.1	0.1	0.13	0.1	0.1	0.11	0.16	0.08	0.11	0.09	0.14	0.14	0.09
ROUND DUCT SIZE	5	4	4	4	4	6	4	6	4	5	4	5	5	5	5	5	4	4	5	5	5	5	5	5
HEATING VELOCITY (ft/min)	294	241	126	402	402	321	138	270	241	294	126	220	308	374	374	374	482	115	419	374	308	639	639	639
COOLING VELOCITY (ft/min)	477	287	57	597	597	546	218	484	287	477	344	455	514	580	580	580	459	34	117	580	514	81	81	81
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	B	C	B	B	E	E	D	B	A	E	B	D	A	A	A	B	C	D	B	D	A	E	D

All S/A diffusers 4"X10" unless noted otherwise on layout.
All S/A runs 5"Ø unless noted otherwise on layout.

TEMPERATURE RISE 52 °F

DESIGN CFM = 1030
CFM @ 8" E.S.P.

RETURN AIR TRUNK SIZE

TRUNK A 25 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK B

RETURN AIR TRUNK SIZE

TRUNK C 26 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK D

RETURN AIR TRUNK SIZE

TRUNK E 27 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK F

RETURN AIR TRUNK SIZE

TRUNK G 28 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK H

RETURN AIR TRUNK SIZE

TRUNK I 29 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK J

RETURN AIR TRUNK SIZE

TRUNK K 30 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK L

RETURN AIR TRUNK SIZE

TRUNK M 31 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK N

RETURN AIR TRUNK SIZE

TRUNK O 32 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK P

RETURN AIR TRUNK SIZE

TRUNK Q 33 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK R

RETURN AIR TRUNK SIZE

TRUNK S 34 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK T

RETURN AIR TRUNK SIZE

TRUNK U 35 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK V

RETURN AIR TRUNK SIZE

TRUNK W 36 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK X

RETURN AIR TRUNK SIZE

TRUNK Y 37 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK Z

RETURN AIR TRUNK SIZE

TRUNK AA 38 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK AB

RETURN AIR TRUNK SIZE

TRUNK AC 39 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK AD

RETURN AIR TRUNK SIZE

TRUNK AE 40 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK AF

RETURN AIR TRUNK SIZE

TRUNK AG 41 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK AH

RETURN AIR TRUNK SIZE

TRUNK AI 42 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK AJ

RETURN AIR TRUNK SIZE

TRUNK AK 43 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK AL

RETURN AIR TRUNK SIZE

TRUNK AM 44 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK AN

RETURN AIR TRUNK SIZE

TRUNK AO 45 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK AP

RETURN AIR TRUNK SIZE

TRUNK AQ 46 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK AR

RETURN AIR TRUNK SIZE

TRUNK AS 47 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK AT

RETURN AIR TRUNK SIZE

TRUNK AU 48 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK AV

RETURN AIR TRUNK SIZE

TRUNK AW 49 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK AX

RETURN AIR TRUNK SIZE

TRUNK AY 50 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK AZ

RETURN AIR TRUNK SIZE

TRUNK BA 51 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK BB

RETURN AIR TRUNK SIZE

TRUNK BC 52 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK BD

RETURN AIR TRUNK SIZE

TRUNK BE 53 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK BF

RETURN AIR TRUNK SIZE

TRUNK BG 54 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK BH

RETURN AIR TRUNK SIZE

TRUNK BI 55 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK BJ

RETURN AIR TRUNK SIZE

TRUNK BK 56 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK BL

RETURN AIR TRUNK SIZE

TRUNK BM 57 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK BN

RETURN AIR TRUNK SIZE

TRUNK BO 58 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK BP

RETURN AIR TRUNK SIZE

TRUNK BQ 59 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK BR

RETURN AIR TRUNK SIZE

TRUNK BS 60 BAS 4.44
RM LOSS MBH 87
CFM PER RUN HEAT 87
RM GAIN MBH 0.36
CFM PER RUN COOLING 11
ADJUSTED PRESSURE 0.17
EQUIVALENT LENGTH 36
EQUIVALENT LENGTH 180
ADJUSTED PRESSURE 0.17
ROUND DUCT SIZE 6
HEATING VELOCITY (ft/min) 444
COOLING VELOCITY (ft/min) 56
OUTLET GRILL SIZE 4X10
TRUNK BT

RETURN AIR TRUNK SIZE

TYPE: AUBURN 2
SITE NAME: OSTIENSE

LO # 73909

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>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Other Rooms	<u>6</u> @ 10.6 cfm	<u>63.6</u> cfm
Table 9.32.3.A.	TOTAL	<u>180.2</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>180.2</u>	cfm
Less Principal Ventil. Capacity	<u>139</u>	cfm
Required Supplemental Capacity	<u>41.2</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY			
Model: VANEE 60H-V+	Location: BSMT		
<u>139.0</u> cfm	<u>3.0</u> sones		
☒	HVI Approved		
PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
139.0 CFM	X 74 F	X 1.08	X 0.25

SUPPLEMENTAL FANS		NUTONE	
Location	Model	cfm	HVI
ENS	QTXEN050C	50	☒
BATH	QTXEN050C	50	☒
W/R	QTXEN050C	50	☒

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE 60H-V+		
<u>139</u> cfm high	<u>50</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: GREENYORK 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:	May-17

I REVIEW AND TAKE RESPONSIBILITY 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

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** AUBURN 2**BUILDER:** GREENYORK HOMES**SFQT:** 2819**LO#** 73909**SITE:** OSTIENSE**DESIGN ASSUMPTIONS**

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-2	OUTDOOR DESIGN TEMP.	86
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	72

BUILDING DATA

ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	WEST	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):	38114.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.75	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 43.0 ft	WIDTH: 39.0 ft	EXPOSED PERIMETER:	0.0 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	29.8
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	-

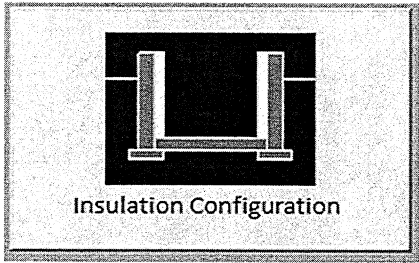
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	13.1	 Insulation Configuration
Floor Width (m):	11.9	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.8	
Window Area (m ²):	1.1	
Door Area (m ²):	3.7	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1632

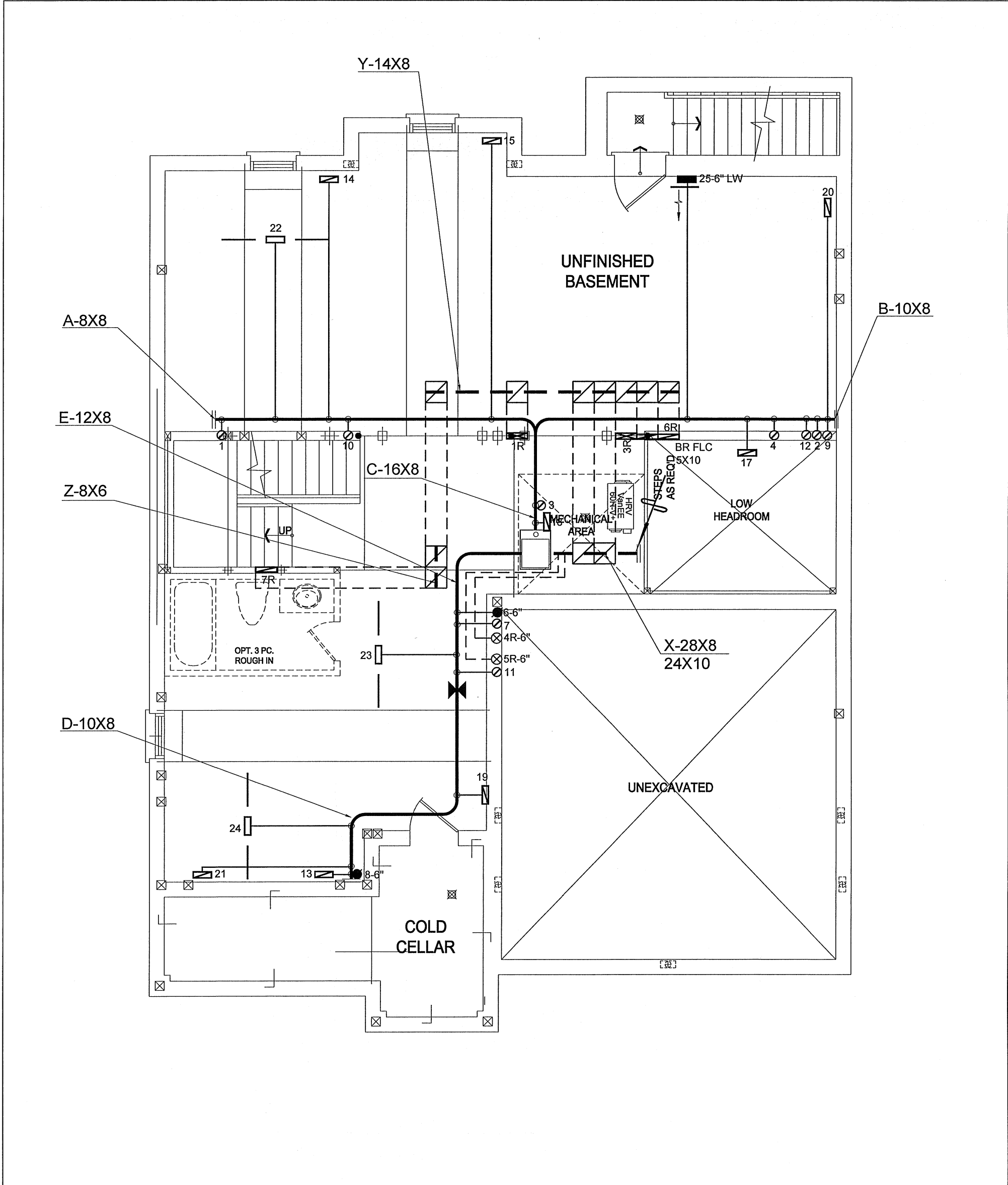
TYPE: AUBURN 2
LO# 73909

Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Brampton			
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):	5.79			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1079.3			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1438.7 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	65.6	65.6		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.293			
Cooling Air Leakage Rate (ACH/H):	0.104			

TYPE: AUBURN 2
LO# 73909



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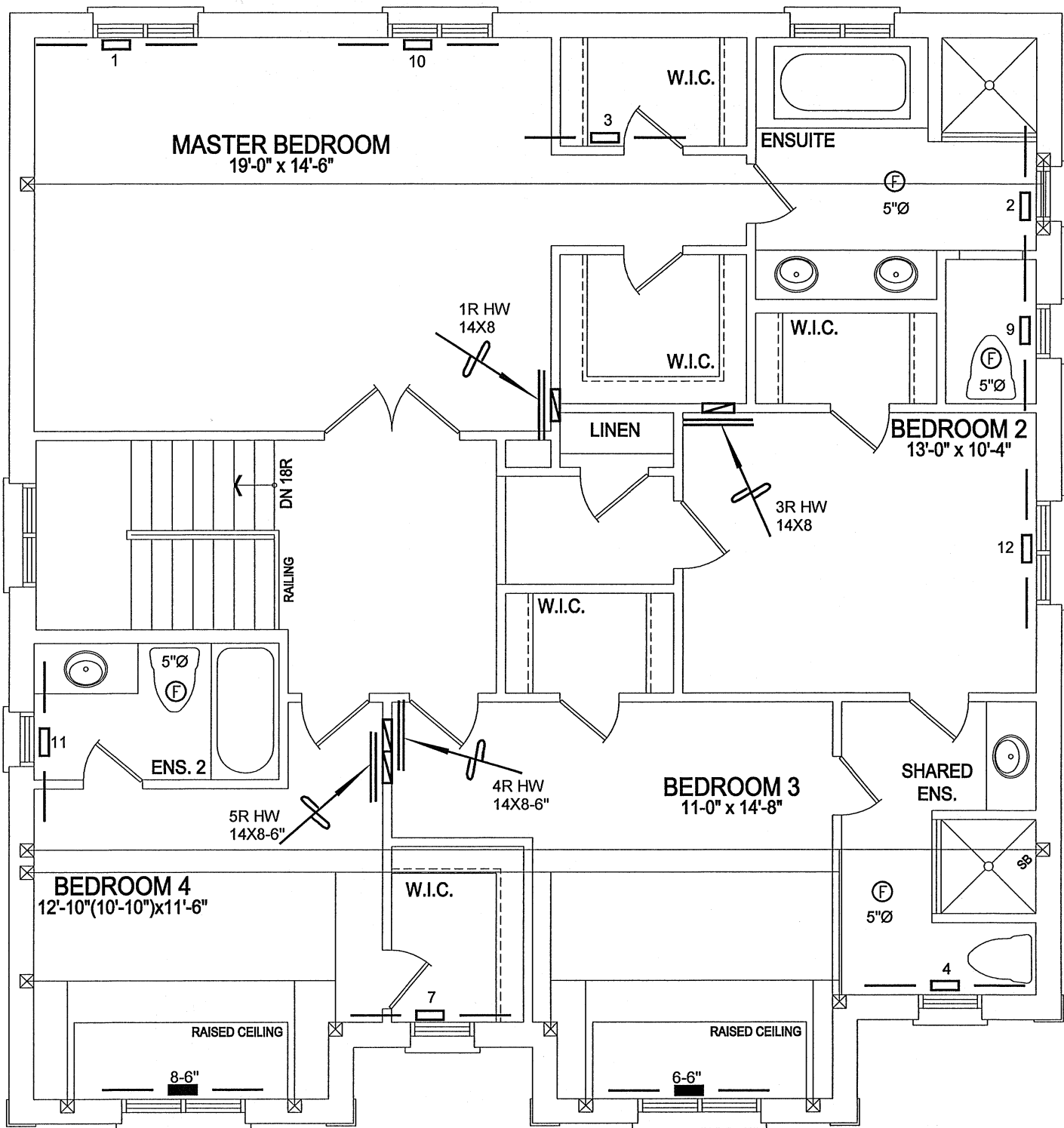
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
PACKAGE A1

HVAC LEGEND							3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	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		HVACDESIGNS LTD. 375 Finley Ave, Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: mike@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.	HEAT LOSS 52552 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title		
ARIA COMFORT SYSTEMS			MAKE	CARRIER	3RD FLOOR			BASEMENT HEATING LAYOUT		
Project Name			MODEL	59SP5A-60-12	2ND FLOOR	11	4	4	Date	MAY/2017
GREENYORK HOMES OSTIENSE BRAMPTON, ONTARIO			INPUT	60 MBTU/H	1ST FLOOR	8	2	3		
AUBURN 2			OUTPUT	58 MBTU/H	BASEMENT	4	1	0	Date	MAY/2017
2819 sqft		COOLING	3.0 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				Scale	3/16" = 1'-0"	
		FAN SPEED	1030 cfm @ 0.5" w.c.					BCIN# 19669		
						LO#		73909		



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

CSA-F280-12
PACKAGE A1

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Client
ARIA COMFORT SYSTEMS

Project Name
GREENYORK HOMES
OSTIENSE
BRAMPTON, ONTARIO

AUBURN 2 2819 sqft

HVACDESIGNS LTD.

375 Finley Ave, Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
Email: mike@hvacdsgns.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.

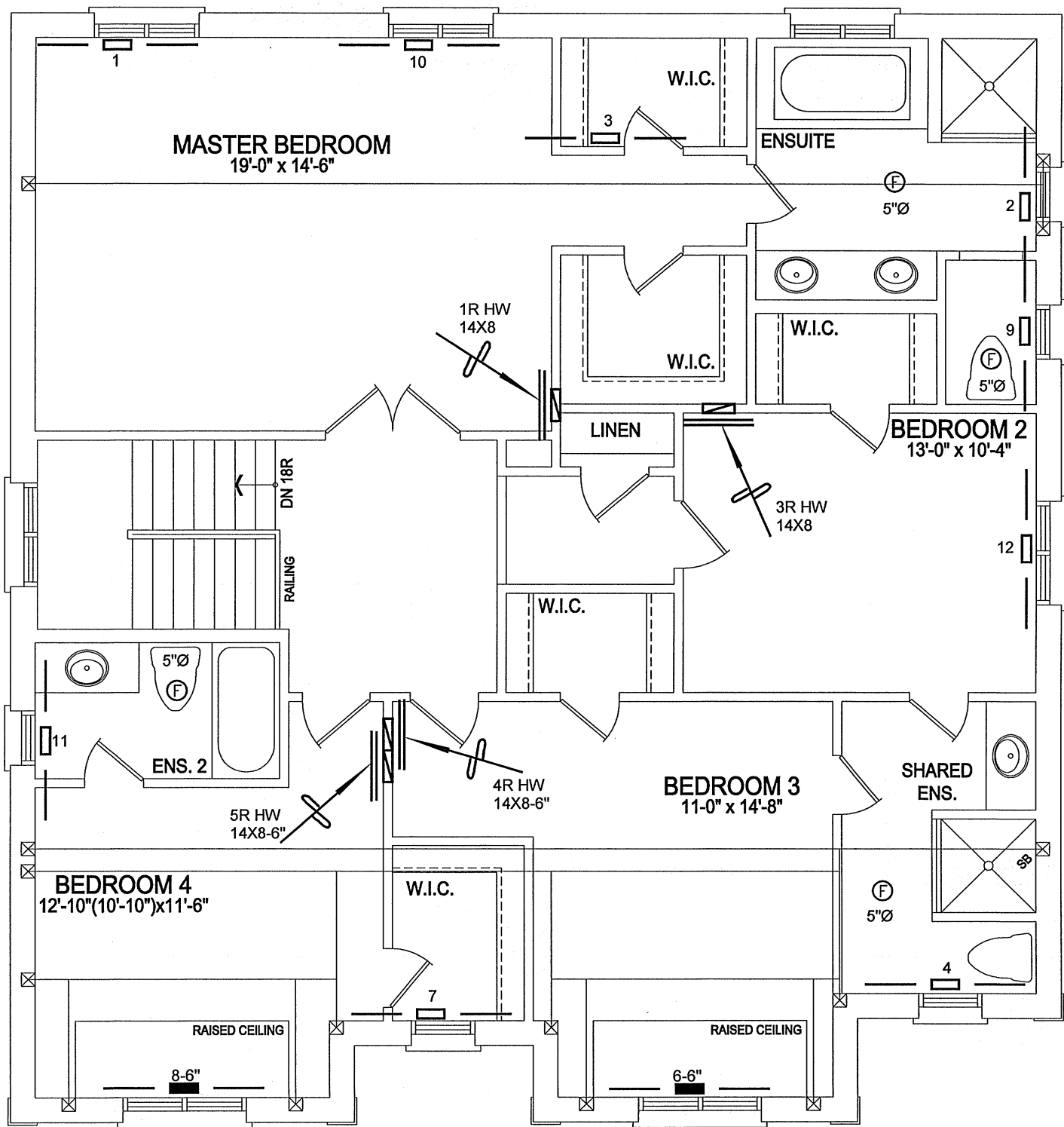
Sheet Title
SECOND FLOOR
HEATING
LAYOUT

Date MAY/2017

Scale 3/16" = 1'-0"

BCIN# 19669

LO# 73909



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