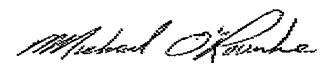


Schedule 1: Designer Information

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]				
☐ 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: INDIGO 1 Project: GRANELLI HOME CORP		
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.				
June 18, 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: GRANELLI HOME CORP				BUILDER: GREENYORK HOMES				TYPE: INDIGO 1				GFA: 2917				DATE: Jun-18 LO# 78997				WINTER NATURAL AIR CHANGE RATE 0.335 SUMMER NATURAL AIR CHANGE RATE 0.119				HEAT LOSS AT °F. 74 HEAT GAIN AT °F. 14				CSA-F280-12 SB-12 PACKAGE A1			
ROOM USE		MBR		ENS		WIC		BED-2		BED-3		BED-4		BATH		ENS-2															
EXP. WALL		38		23		10		37		29		12		13		6															
CLG. HT.		9		9		9		9		9		9		9		9															
FACTORS																															
GRS.WALL AREA		342		207		90		333		261		108		117		54															
GLAZING		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN															
NORTH		0		0		0		0		0		0		0		0		0													
EAST		20.8		16.3		0		16		332		261		0		0		0													
SOUTH		20.8		41.9		0		19		395		796		36		748		1508													
WEST		20.8		25.2		0		0		0		0		20		416		505		18		374		454		0					
SKYL.T.		40		831		16		332		670		0		0		0		0		0		0		0		0					
DOORS		36.4		102.1		0		0		0		0		0		0		0		0		0		0		0					
		24.7		4.7		0		0		0		0		0		0		0		0		0		0		0					
NET EXPOSED WALL		4.4		0.8		302		1316		248		171		745		141		90		392		74		103		449					
NET EXPOSED BSMT WALL ABOVE GR		3.5		0.7		0		0		0		0		0		0		0		0		0		0		0					
EXPOSED CLG		1.3		0.6		345		432		210		107		134		65		118		148		72		300		376					
NO ATTIC EXPOSED CLG		2.7		1.3		0		0		0		0		0		33		0		40		107		52		0					
EXPOSED FLOOR		2.5		0.5		0		0		0		0		0		0		186		463		87		0		93					
BASEMENT/CRAWL HEAT LOSS																															
SLAB ON GRADE HEAT LOSS																															
SUBTOTAL HT LOSS		2579		1694		540		2865		2362		1003		1088		504															
SUB TOTAL HT GAIN										1572		643		771		339															
LEVEL FACTOR / MULTIPLIER		0.20		0.27		0.20		0.27		0.20		0.27		0.20		0.27															
AIR CHANGE HEAT LOSS		689		452		144		765		631		268		281		135															
AIR CHANGE HEAT GAIN		150		99		10		111		164		45		54		24															
DUCT LOSS		0		0		0		363		0		0		138		0															
DUCT GAIN		0		0		0		0		258		0		83		0															
HEAT GAIN PEOPLE		240		0		0		1		240		1		240		0															
HEAT GAIN APPLIANCES/LIGHTS		659		2147		684		3993		2993		1271		1516		638															
TOTAL HT LOSS BTU/H		3268		4449		1966		203		3691		4409		2063		1181															
TOTAL HT GAIN x 1.3 BTU/H																															

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LVDN	KIT	FAM	LAUN	FOY	MUD	WUP	BAS						
GRS.WALL AREA	594				440	485	81	154	390	162	1044						
GLAZING																	
NORTH	0	0	0	0	0	0	0	0	0	0	0						
EAST	0	0	0	0	0	0	0	0	0	0	0						
SOUTH	0	0	0	0	0	0	0	0	0	0	0						
WEST	0	0	0	0	0	0	0	0	0	0	0						
SKYL.T.	36.4	102.1	0	0	0	0	0	0	0	0	0						
DOORS	24.7	4.7	0	0	0	0	0	0	0	0	0						
NET EXPOSED WALL	4.4	0.8	511	2226	420	424	1847	349	51	266	50						
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.7	0	0	0	0	0	0	0	0	0						
EXPOSED CLG	1.3	0.6	0	0	0	0	0	189	237	115	0						
NO ATTIC EXPOSED CLG	2.7	1.3	48	129	62	34	91	44	0	0	0						
EXPOSED FLOOR	2.5	0.5	0	0	0	0	0	25	62	12	0						
BASEMENT/CRAWL HEAT LOSS																	
SLAB ON GRADE HEAT LOSS																	
SUBTOTAL HT LOSS				4080	3083	3414	980	1581	2368	1112	8631						
SUB TOTAL HT GAIN				3210	3277	2617	681	426	645	210	976						
LEVEL FACTOR / MULTIPLIER	0.30	0.38			0.30	0.38	0.20	0.27	0.30	0.38	0.50						
AIR CHANGE HEAT LOSS	1532				1158	1282	262	594	889	0	9091						
AIR CHANGE HEAT GAIN	226				0	0	124	0	45	0	83						
DUCT LOSS	0				0	0	0	0	0	0	0						
DUCT GAIN	0				0	0	0	0	0	0	0						
HEAT GAIN PEOPLE	240				0	0	0	0	0	0	0						
HEAT GAIN APPLIANCES/LIGHTS	659				0	659	659	0	659	0	659						
TOTAL HT LOSS BTU/H	5612				4240	4696	1366	2175	3257	1112	17721						
TOTAL HT GAIN x 1.3 BTU/H				5323	5417	4498	1985	583	1754	273	2234						

TOTAL HEAT GAIN BTU/H: 40798 TONS: 3.40 LOSS DUE TO VENTILATION LOAD BTU/H: 1529 STRUCTURAL HEAT LOSS: 56688 TOTAL COMBINED HEAT LOSS BTU/H: 58217

Michael O'Rourke

SITE NAME: GRANELLI HOME CORP
BUILDER: GREENYORK HOMES

TYPE: INDIGO 1

DATE: Jun-18

GFA: 2917 LO# 78997

HEATING CFM 1200 COOLING CFM 1200
TOTAL HEAT LOSS 56,688 TOTAL HEAT GAIN 40,510
AIR FLOW RATE CFM 21.17 AIR FLOW RATE CFM 29.62#CARRIER
59SP5A-80-16 80
FAN SPEED LOW 0
MEDIUM 975
HIGH 1200
DESIGN CFM = 1200
CFM @ .6" E.S.P.
AFUE = 97 %
INPUT (BTU/H) = 80,000
OUTPUT (BTU/H) = 78,000

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

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

All S/A runs 5'Ø unless noted otherwise on layout.

RUN #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-4	BED-3	BED-2	BATH	BED-2	BED-3	MBR	ENS-2	LVDN	LVDN	KIT	KIT	FAM	LAUN	FAM	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.63	2.15	0.68	1.27	1.50	2.00	1.52	2.00	1.50	1.63	0.64	2.81	2.81	2.12	2.12	2.12	1.37	2.35	2.18	3.26	3.77	3.77	3.77	3.77
CFM PER RUN HEAT	35	45	14	42	32	42	32	42	32	35	14	59	59	45	45	50	29	50	46	69	80	80	80	80
RM GAIN MBH	2.22	1.97	0.20	1.85	2.20	1.85	1.18	1.85	2.20	2.22	0.47	2.66	2.66	2.71	2.71	2.25	1.99	2.25	0.59	1.75	0.50	0.50	0.50	0.50
CFM PER RUN COOLING	66	58	6	55	65	55	35	55	65	66	14	79	79	80	80	67	59	67	18	52	15	15	15	15
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
ACTUAL DUCT LGH	45	56	18	61	65	63	58	63	66	55	46	51	54	27	21	36	46	32	27	17	32	26	14	26
EQUIVALENT LENGTH	140	140	150	160	180	190	190	180	170	130	170	190	140	130	140	130	150	160	150	100	90	200	140	190
TOTAL EFFECTIVE LENGTH	185	196	168	221	245	247	248	243	236	185	216	241	194	157	161	166	196	192	177	117	122	226	154	216
ADJUSTED PRESSURE	0.09	0.09	0.1	0.08	0.07	0.07	0.07	0.07	0.07	0.09	0.08	0.07	0.09	0.11	0.11	0.11	0.09	0.09	0.1	0.15	0.14	0.08	0.11	0.08
ROUND DUCT SIZE	5	5	4	5	5	5	4	5	5	5	4	5	5	5	5	5	5	5	4	5	5	5	5	5
HEATING VELOCITY (ft/min)	257	330	161	308	235	308	367	308	235	257	161	433	433	330	330	367	213	367	528	507	587	587	587	587
COOLING VELOCITY (ft/min)	485	426	69	404	477	404	402	404	477	485	161	580	580	587	587	492	433	492	207	382	110	110	110	110
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	D	A	E	C	B	C	B	C	B	D	A	B	B	D	E	A	C	A	A	E	A	A	E	A

RUN #	25
ROOM NAME	BAS
RM LOSS MBH	3.77
CFM PER RUN HEAT	80
RM GAIN MBH	0.50
CFM PER RUN COOLING	15
ADJUSTED PRESSURE	0.17
ACTUAL DUCT LGH	49
EQUIVALENT LENGTH	160
TOTAL EFFECTIVE LENGTH	209
ADJUSTED PRESSURE	0.08
ROUND DUCT SIZE	5
HEATING VELOCITY (ft/min)	587
COOLING VELOCITY (ft/min)	110
OUTLET GRILL SIZE	3X10
TRUNK	B

SUPPLY AIR TRUNK SIZE	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	445	0.08	10.4	12	8	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK B	294	0.07	9.2	12	8	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK C	434	0.07	10.6	16	8	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK D	994	0.07	14.5	26	8	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK E	208	0.10	7.4	6	8	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK F	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0

RETURN AIR TRUNK SIZE	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK O	0	0.05	0	0	0	0	0.05	0	0	0
TRUNK P	0	0.05	0	0	0	0	0.05	0	0	0
TRUNK Q	0	0.05	0	0	0	0	0.05	0	0	0
TRUNK R	0	0.05	0	0	0	0	0.05	0	0	0
TRUNK S	0	0.05	0	0	0	0	0.05	0	0	0
TRUNK T	0	0.05	0	0	0	0	0.05	0	0	0
TRUNK U	0	0.05	0	0	0	0	0.05	0	0	0
TRUNK V	0	0.05	0	0	0	0	0.05	0	0	0
TRUNK W	0	0.05	0	0	0	0	0.05	0	0	0
TRUNK X	1200	0.05	16.9	32	8	1200	0.05	16.9	32	8
TRUNK Y	690	0.05	13.7	22	8	690	0.05	13.7	22	8
TRUNK Z	0	0.05	0	0	0	0	0.05	0	0	0
DROP	1200	0.05	16.9	24	12	1200	0.05	16.9	24	12

Michael O'Rourke

INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

TYPE: INDIGO 1
SITE NAME: GRANELLI HOME CORP

LO # 78997

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	5 @ 10.6 cfm 53 cfm
Other Rooms	6 @ 10.6 cfm 63.6 cfm
Table 9.32.3.A.	TOTAL 190.8 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	79.5 cfm

SUPPLEMENTAL VENTILATION CAPACITY 9.32.3.5.	
Total Ventilation Capacity	190.8 cfm
Less Principal Ventil. Capacity	79.5 cfm
Required Supplemental Capacity	111.3 cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: LIFE BREATH RNC5-HEX	Location: BSMT
79.5 cfm	3.0 sones ☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION	
CFM	$\Delta T \cdot F$
79.5 CFM	74 F
X	X
1.08	X
	0.24

SUPPLEMENTAL FANS NUTONE	
Location	Model
ENS	QTXEN050C
BATH	QTXEN050C
ENS-2	QTXEN050C
cfm	HVI
50	✓
50	✓
50	✓
	Sones
	0.3
	0.3
	0.3

HEAT RECOVERY VENTILATOR 9.32.3.11.	
Model: LIFE BREATH RNC5-HEX	
108	cfm high 59 cfm low
76	% Sensible Efficiency @ 32 deg F (0 deg C) ☒ HVI Approved

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:	June-18

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** INDIGO 1**BUILDER:** GREENYORK HOMES**SFQT:** 2917**LO#** 78997**SITE:** GRANELLI HOME CORP**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:	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):	40916.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.55	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 50.0 ft	WIDTH: 37.0 ft	EXPOSED PERIMETER:	174.0 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	-

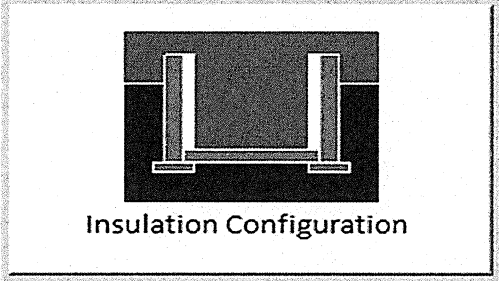
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	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):	15.2	 Insulation Configuration
Floor Width (m):	11.3	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	1.5	
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):		1750

TYPE: INDIGO 1
LO# 78997

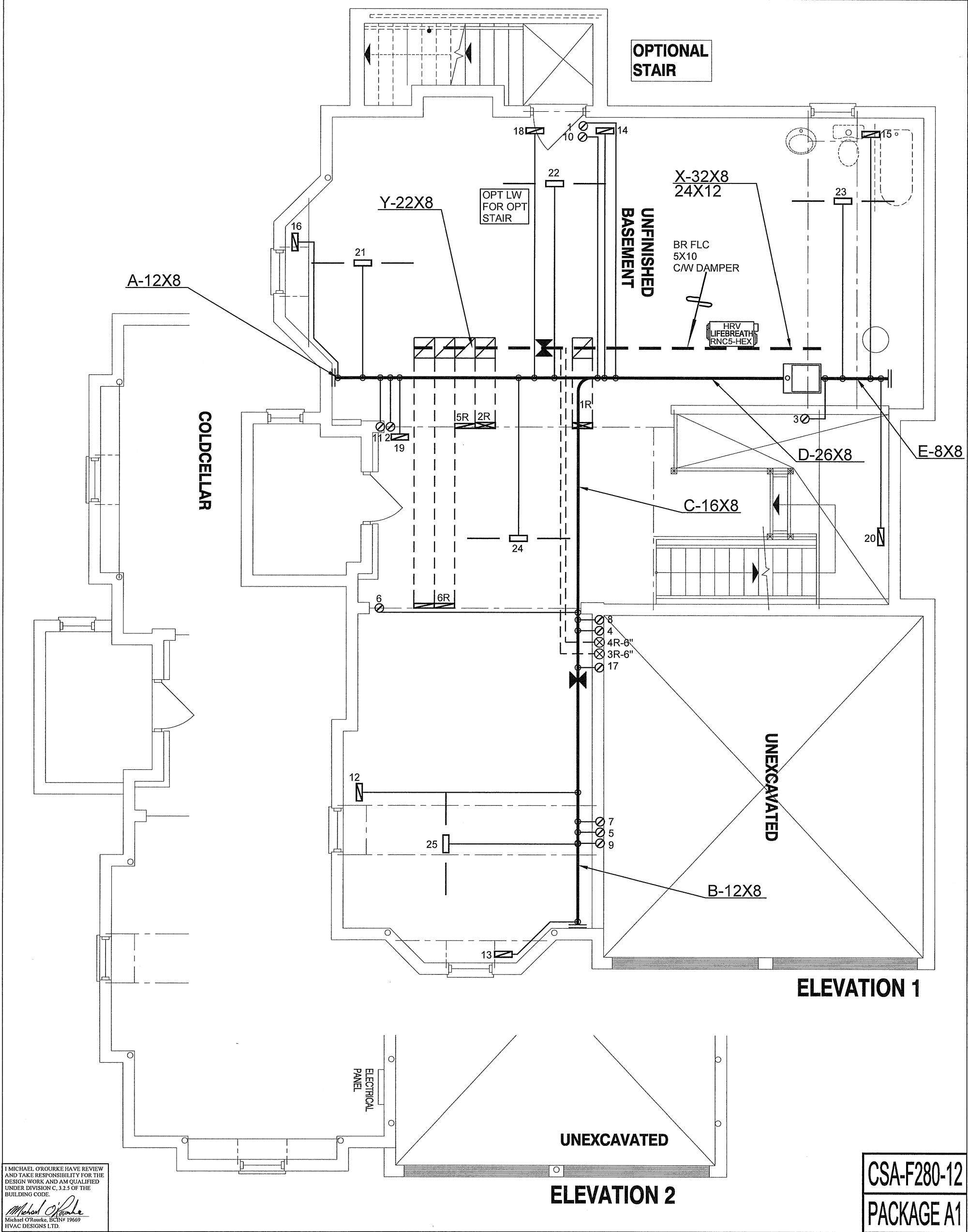
Air Infiltration Residential Load Calculator

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):	7.01			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1158.6			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1544.5 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	37.5	37.5		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.335			
Cooling Air Leakage Rate (ACH/H):	0.119			

TYPE: INDIGO 1
LO# 78997

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																					
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																					
LO#: 78997		Model: IND/GO 1		Builder: GREENYORK HOMES		Date: 6/18/2018																																																															
Volume Calculation					Air Change & Delta T Data																																																																
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6.2.6 Sensible Gain due to Air Leakage																																																																					
$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																																																					
$= 0.119 \times 321.84 \times 8 \times 1.2 = 356 \text{ W}$																																																																					
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6.2.7 Sensible heat Gain due to Ventilation																																																																					
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																																					
$80 \text{ CFM} \times 14 \text{ °F} \times 1.08 \times 0.24 = 288 \text{ Btu/h}$																																																																					
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																																					
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*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairev = 0																																																																					



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.

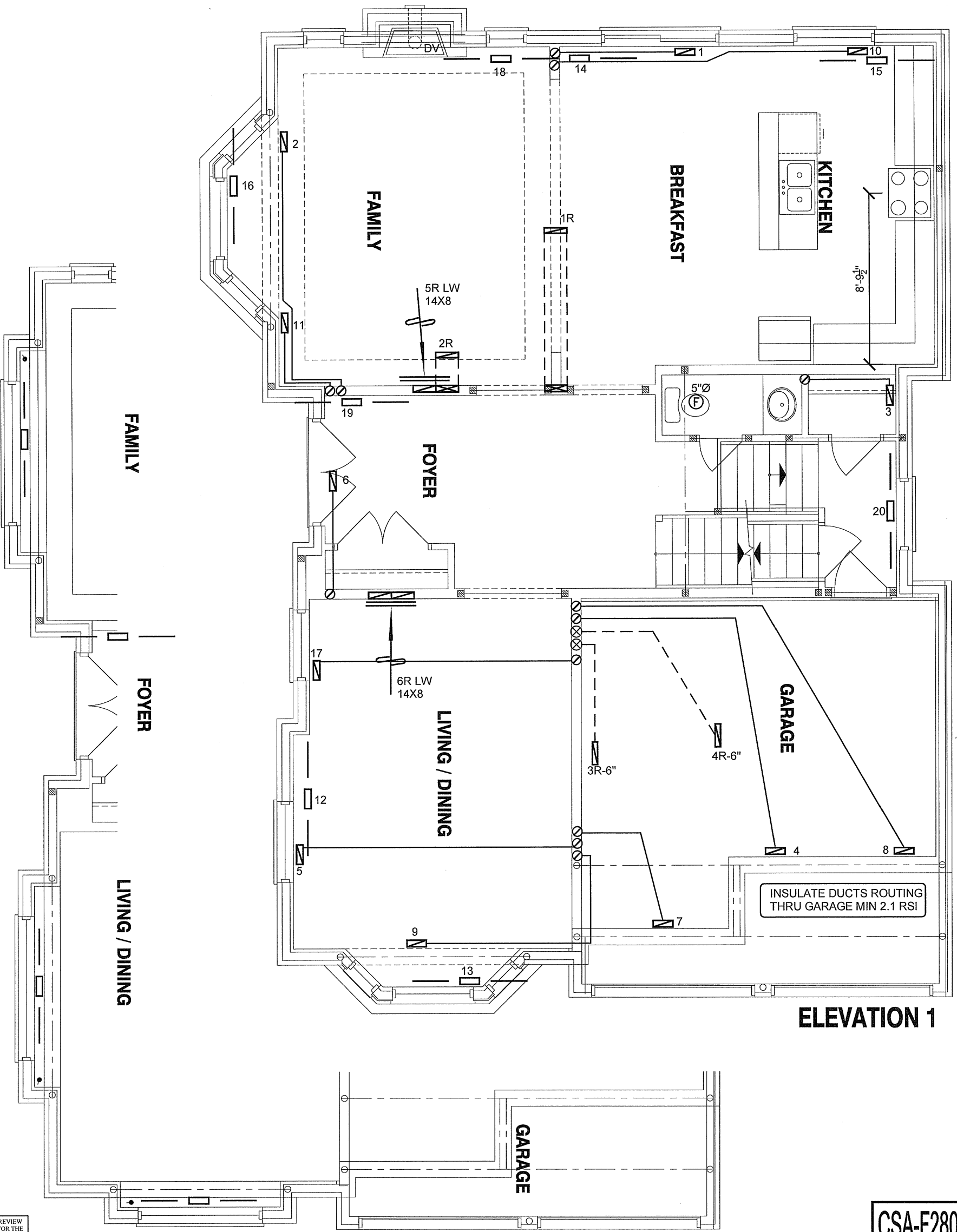
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
PACKAGE A1

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

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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: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services	HEAT LOSS 58217 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title		
GREENYORK HOMES			MAKE CARRIER		3RD FLOOR			BASEMENT HEATING LAYOUT		
Project Name GRANELLI HOMES CORP BRAMPTON, ONTARIO			MODEL 59SP5A-80-16-80		2ND FLOOR			12	4	3
			INPUT 80 MBTU/H		1ST FLOOR			8	2	2
INDIGO 1			OUTPUT 78 MBTU/H		BASEMENT			5	1	0
3187 sqft		COOLING 3.5 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 JUNE/2018			
		FAN SPEED 1200 cfm @ 0.6" w.c.					Scale 3/16" = 1'-0"			
							BCIN# 19669			
							LO#		78997	



ELEVATION 1

ELEVATION 2

CSA-F280-12
PACKAGE A1

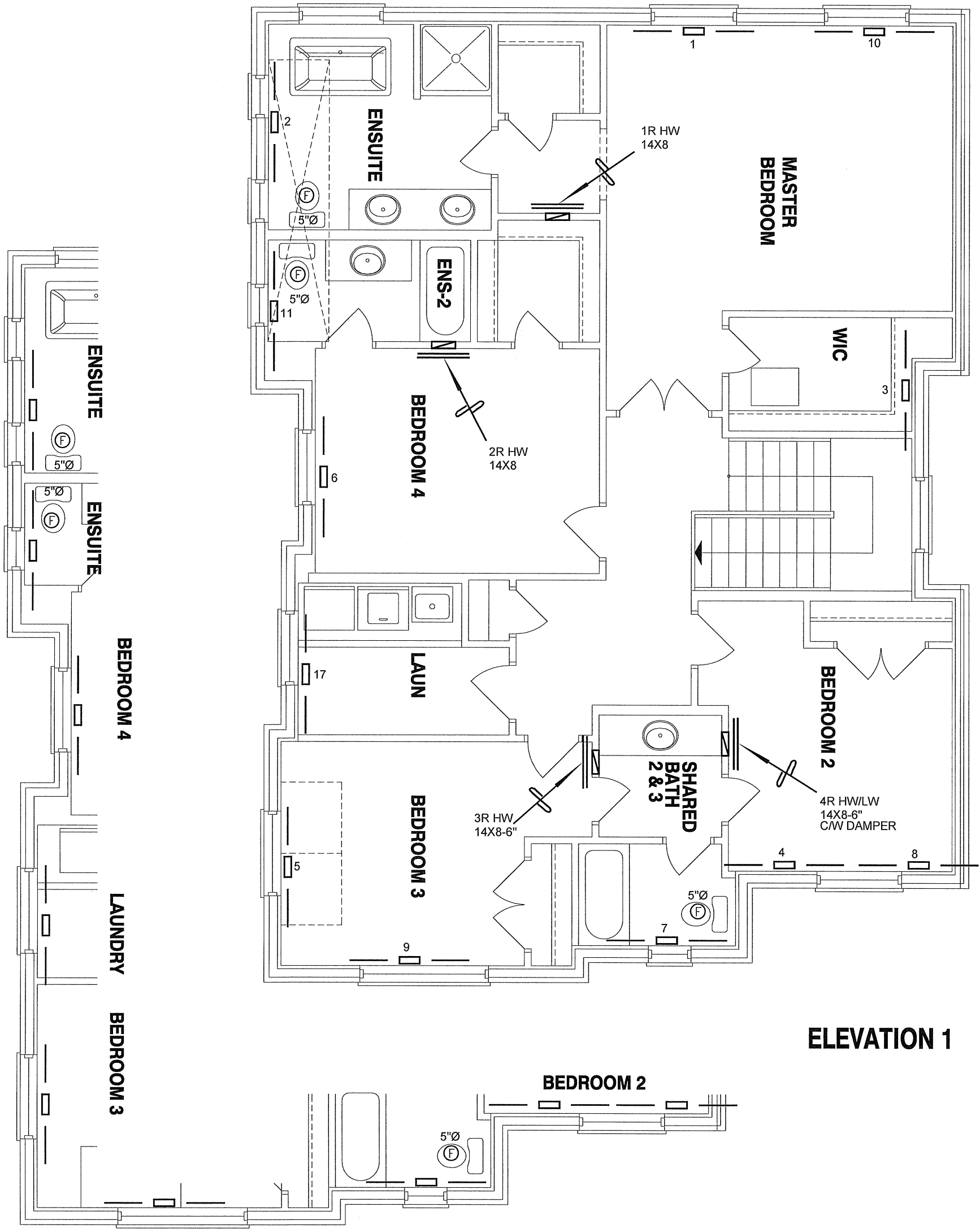
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Michael O'Rourke
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Client		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.	Sheet Title	
GREENYORK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name GRANELLI HOMES CORP BRAMPTON, ONTARIO			Date	JUNE/2018
			Scale	3/16" = 1'-0"
		BCIN# 19669		
INDIGO 1	3187 sqft	LO#	78997	



ELEVATION 1

ELEVATION 2

CSA-F280-12
PACKAGE A1

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Client GREENYORK 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 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	
Project Name GRANELLI HOMES CORP BRAMPTON, ONTARIO			Date JUNE/2018	
			Scale 3/16" = 1'-0"	
			BCIN# 19669	
INDIGO 1	3187 sqft		LO#	78997