

19-444365 000 00 R12

SITE NAME: GRANELLI HOME CORP

BUILDER: GREENYORK HOMES

TYPE: AMELIA 1

GFA: 2831

DATE: Jun-18

LO# 78887

WINTER NATURAL AIR CHANGE RATE 0.335

SUMMER NATURAL AIR CHANGE RATE 0.112

HEAT LOSS ΔT °F. 74HEAT GAIN ΔT °F. 12

CSA-F280-12

SB-12 PACKAGE A1

ROOM USE			MBR		ENS		WIC		BED-2		BED-3		BED-4		BATH		HALL				ENS-2							
EXP. WALL			36		25		7		26		14		13		6		42				11							
CLG. HT.			9		9		9		9		9		9		9		9				9							
FACTORS																												
GRS.WALL AREA			LOSS GAIN		316		226		63		234		126		117		54		378		99							
GLAZING			LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN							
NORTH			20.8	15.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
EAST			20.8	41.3	0	0	0	0	0	0	0	26	540	1075	0	0	0	0	0	0	45	935	1860	0	0	0	0	
SOUTH			20.8	24.7	0	0	0	7	145	173	0	0	0	0	15	312	370	7	145	173	0	0	0	0	0	0	0	
WEST			20.8	41.3	30	623	1240	13	270	537	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SKYL.T.			36.4	101.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DOORS			24.7	4.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NET EXPOSED WALL			4.4	0.7	285	1242	201	206	893	144	63	274	44	208	906	147	111	484	78	102	444	72	47	205	33	333	1451	235
NET EXPOSED BSMT WALL ABOVE GR			3.5	0.6	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			1.3	0.6	323	405	185	156	195	90	85	107	49	203	254	117	172	216	99	155	194	89	79	99	45	203	254	117
NO ATTIC EXPOSED CLG			2.7	1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	35	16	
EXPOSED FLOOR			2.5	0.4	0	0	0	0	0	0	0	0	0	203	505	82	0	0	0	0	0	0	0	0	0	85	214	35
BASEMENT/CRAWL HEAT LOSS					0		0		0		0		0		0		0		0		0		0		85	214	35	
SLAB ON GRADE HEAT LOSS					0		0		0		0		0		0		0		0		0		0		0		0	
SUBTOTAL HT LOSS					2270		1604		381		2206		1011		950		449		2889		541							
SUB TOTAL HT GAIN						1626		944				1419			547			531			251			2262				
LEVEL FACTOR / MULTIPLIER			0.20	0.29			0.20	0.29		0.20	0.29		0.20	0.29		0.20	0.29		0.20	0.29		0.20	0.29		0.20	0.29		
AIR CHANGE HEAT LOSS					656		434		110		937		292		274		130		834		158			158				
AIR CHANGE HEAT GAIN						130		76		7		114		44		43		20			181			181				
DUCT LOSS					0		0		0		284		0		0		0		372		70			70				
DUCT GAIN					0		0		0		243		0		0		0		244		12			12				
HEAT GAIN PEOPLE			240	2	480		0		0		1		240		1		240		0		0		0		0			
HEAT GAIN APPLIANCES/LIGHTS					660		0		0		660		660		660		660		0		0		0		0			
TOTAL HT LOSS BTU/H					2925		1939		491		3128		1303		1225		579		4096		768			768				
TOTAL HT GAIN x 1.3 BTU/H						3766		1326		131		3479		1938		1915		353		3493		174			174			

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LV/DN	K/B/F	LAUN	PWD	FOY	MUD	WUB	BAS
				31	68	0	16	30	24	14	163
				11	11	9	11	11	11	9	9
GRS.WALL AREA	LOSS	GAIN		341	748	0	176	330	264	126	978
GLAZING	LOSS	GAIN		LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
NORTH	20.8	15.8		8	166	126	0	0	0	0	0
EAST	20.8	41.3		0	0	0	0	0	0	0	0
SOUTH	20.8	24.7		33	686	814	0	0	0	0	0
WEST	20.8	41.3		0	0	0	82	1704	3388	0	0
SKYL.T.	36.4	101.2		0	0	0	0	0	0	0	0
DOORS	24.7	4.0		0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.4	0.7		300	1307	211	666	2902	469	20	493
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.6		0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6		0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.2		0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.5	0.4		0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS				0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS				0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS				2169	4605	88	882	2090	1556	112	5826
SUB TOTAL HT GAIN					1162	40	292	908	252	1116	7962
LEVEL FACTOR / MULTIPLIER	0.30	0.47		0.30	0.47	0.20	0.29	0.30	0.47	0.50	0.98
AIR CHANGE HEAT LOSS				1018	2171	25	416	985	734	0	8873
AIR CHANGE HEAT GAIN					92	3	23	73	20		63
DUCT LOSS				0	0	0	0	0	0		0
DUCT GAIN				0	0	0	0	0	0		0
HEAT GAIN PEOPLE	240			0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS					660	660	660	660	660	0	660
TOTAL HT LOSS BTU/H				3177	6777	113	1298	3076	2290	1116	16835
TOTAL HT GAIN x 1.3 BTU/H				2475	6275	914	410	1274	353	359	

ATTACHED NOTES ARE PART OF THE SUBMITTED DRAWINGS

REVIEWED BY: S. DESAI

MAR 26 2018

CITY OF BRAMPTON

TOTAL HEAT GAIN BTU/H:

30478

TONS: 2.54

LOSS DUE TO VENTILATION LOAD BTU/H: 1829

STRUCTURAL HEAT LOSS: 51133

TOTAL COMBINED HEAT LOSS BTU/H: 52682

Michael O'Rourke

M-2057 LOT 3

SITE NAME: GRANELLI HOME CORP
BUILDER: GREENYORK HOMES

TYPE: AMELIA 1

DATE: Jun-18

GFA: 2831

LO# 78987

HEATING CFM 970 COOLING CFM 970
TOTAL HEAT LOSS 51,133 TOTAL HEAT GAIN 30,231
AIR FLOW RATE CFM 18.97 AIR FLOW RATE CFM 32.09

furnace pressure 0.8
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35

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

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

DESIGN CFM = 970
CFM @ 6" E.S.P.

TEMPERATURE RISE 55 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	13	7	4
R/A	0	0	5	1	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
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	HALL	ENS	MBR	ENS-2	BED-2	LV/DN	K/B/F	K/B/F	LV/DN	LAUN	PWD	FOY	MUD	BAS	BAS	BAS
RM LOSS MBH	1.46	0.97	0.49	1.56	1.30	1.22	0.58	4.10	0.97	1.46	0.77	1.56	1.59	3.39	3.39	1.59	0.11	1.30	3.08	2.29	4.49	4.49	4.49
CFM PER RUN HEAT	28	18	9	30	25	23	11	78	18	28	15	30	30	64	64	30	2	25	58	43	85	85	85
RM GAIN MBH	1.88	0.88	0.13	1.74	1.94	1.92	0.35	3.49	0.88	1.88	0.17	1.74	1.24	3.14	3.14	1.24	0.91	0.41	1.27	0.35	0.49	0.49	0.49
CFM PER RUN COOLING	60	21	4	56	62	61	11	112	21	60	6	56	40	101	101	40	29	13	41	11	16	16	16
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.15	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16
ACTUAL DUCT LGH	52	66	23	57	49	56	46	52	65	40	51	52	40	33	30	10	26	38	50	11	42	25	30
EQUIVALENT LENGTH	220	180	190	120	160	150	170	150	180	210	140	190	110	120	170	200	210	140	130	140	100	130	110
TOTAL EFFECTIVE LENGTH	272	246	213	177	209	206	216	202	245	250	191	242	150	153	200	210	236	178	180	151	142	155	140
ADJUSTED PRESSURE	0.06	0.07	0.08	0.1	0.08	0.08	0.08	0.07	0.07	0.09	0.07	0.07	0.11	0.11	0.08	0.08	0.07	0.1	0.1	0.11	0.11	0.1	0.12
ROUND DUCT SIZE	5	4	4	5	6	6	4	6	4	5	4	5	5	6	6	5	4	4	5	4	6	6	6
HEATING VELOCITY (ft/min)	206	207	103	220	127	117	126	398	207	206	172	220	220	326	326	220	23	287	426	493	433	433	433
COOLING VELOCITY (ft/min)	441	241	46	411	316	311	126	571	241	441	69	411	294	515	515	294	333	149	301	126	82	82	82
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10
TRUNK	D	C	D	C	B	C	C	B	C	D	C	B	A	A	D	D	C	B	B	C	A	D	A

RUN #	25
ROOM NAME	BAS
RM LOSS MBH	4.49
CFM PER RUN HEAT	85
RM GAIN MBH	0.49
CFM PER RUN COOLING	16
ADJUSTED PRESSURE	0.16
ACTUAL DUCT LGH	45
EQUIVALENT LENGTH	110
TOTAL EFFECTIVE LENGTH	155
ADJUSTED PRESSURE	0.1
ROUND DUCT SIZE	6
HEATING VELOCITY (ft/min)	433
COOLING VELOCITY (ft/min)	82
OUTLET GRILL SIZE	4X10
TRUNK	B

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
MAR 26 2019
ATTACHED NOTES ARE PART
OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH CBC

SUPPLY AIR TRUNK SIZE																	RETURN AIR TRUNK SIZE															
	TRUNK	STATIC	ROUND	RECT			VELOCITY		TRUNK	STATIC	ROUND	RECT			VELOCITY	TRUNK	STATIC	ROUND	RECT			VELOCITY										
	CFM	PRESS.	DUCT	DUCT			(ft/min)		CFM	PRESS.	DUCT	DUCT			(ft/min)	CFM	PRESS.	DUCT	DUCT			(ft/min)										
TRUNK A	264	0.11	7.9	8	X	8	594		TRUNK G	0	0.00	0	0	X	8	0	0	0	0	X	8	0										
TRUNK B	301	0.07	9.2	10	X	8	542		TRUNK H	0	0.00	0	0	X	8	0	0	0	0	X	8	0										
TRUNK C	461	0.07	10.8	14	X	8	593		TRUNK I	0	0.00	0	0	X	8	0	0	0	0	X	8	0										
TRUNK D	508	0.06	11.7	16	X	8	572		TRUNK J	0	0.00	0	0	X	8	0	0	0	0	X	8	0										
TRUNK E	0	0.00	0	0	X	8	0		TRUNK K	0	0.00	0	0	X	8	0	0	0	0	X	8	0										
TRUNK F	0	0.00	0	0	X	8	0		TRUNK L	0	0.00	0	0	X	8	0	0	0	0	X	8	0										
																	TRUNK O	0	0.05	0	0	X	8	0	TRUNK P	0	0.05	0	0	X	8	0
																	TRUNK Q	0	0.05	0	0	X	8	0	TRUNK R	0	0.05	0	0	X	8	0
																	TRUNK S	0	0.05	0	0	X	8	0	TRUNK T	0	0.05	0	0	X	8	0
																	TRUNK U	0	0.05	0	0	X	8	0	TRUNK V	0	0.05	0	0	X	8	0
																	TRUNK W	0	0.05	0	0	X	8	0	TRUNK X	970	0.05	15.6	28	X	8	624
																	TRUNK Y	535	0.05	12.5	18	X	8	535	TRUNK Z	0	0.05	0	0	X	8	0
																	DROP	970	0.05	15.6	24	X	10	582								

RETURN AIR #	1	2	3	4	5	6									BR
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AIR VOLUME	95	75	85	85	95	370	0	0	0	0	0	0	0	0	165
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	37	57	53	57	64	18	1	1	1	1	1	1	1	1	20
EQUIVALENT LENGTH	175	255	175	175	135	115	0	0	0	0	0	0	0	0	150
TOTAL EFFECTIVE LH	212	312	228	232	199	133	1	1	1	1	1	1	1	1	170
ADJUSTED PRESSURE	0.07	0.05	0.06	0.06	0.07	0.11	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.09
ROUND DUCT SIZE	6	6	6	6	6	8.9	0	0	0	0	0	0	0	0	6.9
INLET GRILL SIZE	8	8	8	8	8	8	0	0	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	14	14	14	30	0	0	0	0	0	0	0	0	14

RETURN AIR #	1	2	3	4	5	6											BR
AIR VOLUME	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	165
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH	37	57	53	57	64	18	1	1	1	1	1	1	1	1	1	1	20
EQUIVALENT LENGTH	175	255	175	175	135	115	0	0	0	0	0	0	0	0	0	0	150
TOTAL EFFECTIVE LH	212	312	228	232	199	133	1	1	1	1	1	1	1	1	1	1	170
ADJUSTED PRESSURE	0.07	0.05	0.06	0.06	0.07	0.11	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.0
ROUND DUCT SIZE	6	6	6	6	6	8.9	0	0	0	0	0	0	0	0	0	0	6.9
INLET GRILL SIZE	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	8
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	30	0	0	0	0	0	0	0	0	0	0	14

TYPE: AMELIA 1
SITE NAME: GRANELLI HOME CORP

LO # 78987

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	4	@ 10.6 cfm	42.4	cfm
Table 9.32.3.A.		TOTAL	169.6	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	169.6	cfm
Less Principal Vent. Capacity	79.5	cfm
Required Supplemental Capacity	90.1	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	ΔT °F	FACTOR	% LOSS
79.5 CFM	X 74 F	X 1.08	X 0.24

SUPPLEMENTAL FANS NUTONE

Location	Model	cfm	HVI	Sones
ENS	QTXEN050C	50	✓	0.3
BATH	QTXEN050C	50	✓	0.3
ENS-2	QTXEN050C	50	✓	0.3
PWD	QTXEN050C	50	✓	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: *Michael O'Rourke*
HRAI #: 001820
Date: June-18

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** AMELIA 1**BUILDER:** GREENYORK HOMES**SFQT:** 2831**LO#** 78987**SITE:** GRANELLI HOME CORP**DESIGN ASSUMPTIONS**

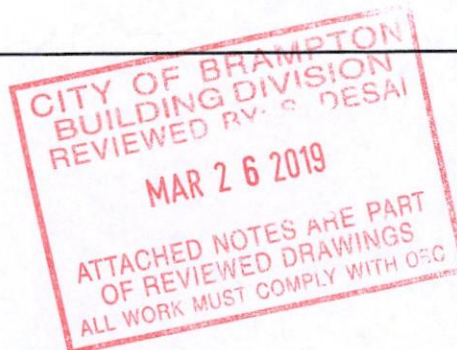
HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-2	OUTDOOR DESIGN TEMP.	86
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	74

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 (ft³):	39939.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 60.0 ft	WIDTH: 30.0 ft	EXPOSED PERIMETER:	163.0 ft

2012 OBC - COMPLIANCE PACKAGE**Component**

Ceiling with Attic Space Minimum RSI (R)-Value
Ceiling Without Attic Space Minimum RSI (R)-Value
Exposed Floor Minimum RSI (R)-Value
Walls Above Grade Minimum RSI (R)-Value
Basement Walls Minimum RSI (R)-Value
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
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value
Windows and Sliding Glass Doors Maximum U-Value
Skylights Maximum U-Value
Space Heating Equipment Minimum AFUE
HRV Minimum Efficiency
Domestic Hot Water Heater Minimum EF

**Compliance Package****A1**

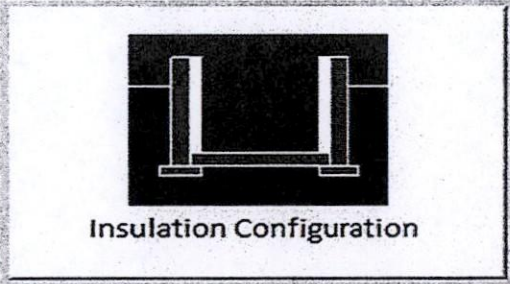
Nominal	Min. Eff.
60	59.22
31	27.65
31	29.80
22	17.03
20 ci	21.12
-	-
10	10
10	11.13
0.28	-
0.49	-
0.96	-
75%	-
0.8	-

INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

Residential Foundation Thermal Load Calculator

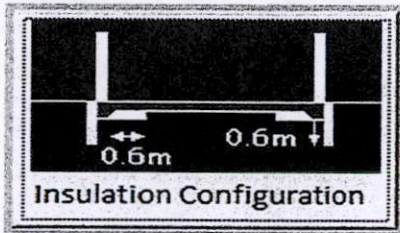
Supplemental tool for CAN/CSA-F280

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):	18.3	 Insulation Configuration
Floor Width (m):	9.1	
Exposed Perimeter (m):	49.7	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	0.8	
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):	1648	

TYPE: AMELIA 1
LO# 78987

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

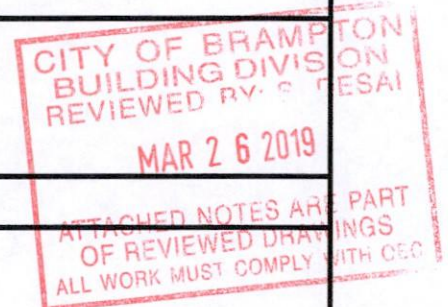
Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Length (m):	4.3	
Width (m):	0.9	
Exposed Perimeter (m):	5.2	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		33

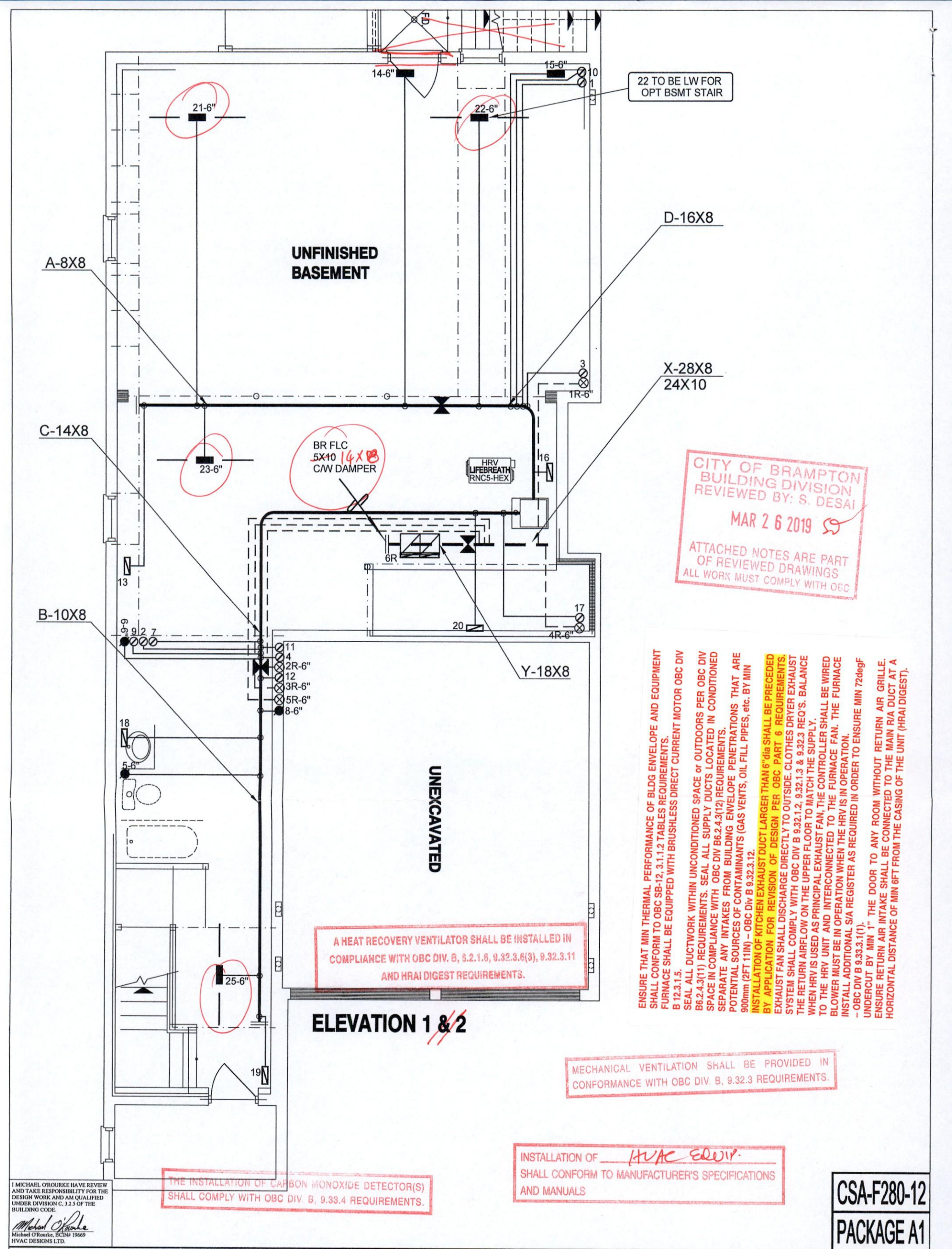
TYPE: AMELIA 1
LO# 78987

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):	1130.9			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1507.6 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):	0.112			

TYPE: AMELIA 1
LO# 78987



ENSURE THAT MIN THERMAL PERFORMANCE OF BLDG ENVELOPE AND EQUIPMENT SHALL CONFORM TO OBC SB-12, 3.1.1.2 TABLES REQUIREMENTS. FURNACE SHALL BE EQUIPPED WITH BRUSHLESS DIRECT CURRENT MOTOR OBC DIV B 12.3.1.5. SEAL ALL DUCTWORK WITHIN UNCONDITIONED SPACE OR OUTDOORS PER OBC DIV B6.2.4.3(11) REQUIREMENTS. SEAL ALL SUPPLY DUCTS LOCATED IN CONDITIONED SPACE IN COMPLIANCE WITH OBC DIV B6.2.4.3(12) REQUIREMENTS. SEPARATE ANY INTAKES FROM BUILDING ENVELOPE PENETRATIONS THAT ARE POTENTIAL SOURCES OF CONTAMINANTS (GAS VENTS, OIL FILL PIPES, etc. BY MIN 900mm (2FT 11IN) - OBC Div B 9.32.3.12. INSTALLATION OF KITCHEN EXHAUST DUCT LARGER THAN 6" dia SHALL BE PRECEDED BY APPLICATION FOR REVISION OF DESIGN PER OBC PART 6 REQUIREMENTS. EXHAUST FAN SHALL DISCHARGE DIRECTLY TO OUTSIDE. CLOTHES DRYER EXHAUST SYSTEM SHALL COMPLY WITH OBC DIV B 9.32.1.2, 9.32.1.3 & 9.32.3 REQ'S. BALANCE THE RETURN AIRFLOW ON THE UPPER FLOOR TO MATCH THE SUPPLY. WHEN HRV IS USED AS PRINCIPAL EXHAUST FAN, THE CONTROLLER SHALL BE WIRED TO THE HRV UNIT AND INTERCONNECTED TO THE FURNACE FAN. THE FURNACE BLOWER MUST BE IN OPERATION WHEN THE HRV IS IN OPERATION. INSTALL ADDITIONAL S/A REGISTER AS REQUIRED IN ORDER TO ENSURE MIN 72degF UNDERCUT BY MIN 1" THE DOOR TO ANY ROOM WITHOUT RETURN AIR GRILLE. ENSURE RETURN AIR INTAKE SHALL BE CONNECTED TO THE MAIN R/A DUCT AT A HORIZONTAL DISTANCE OF MIN 6FT FROM THE CASING OF THE UNIT (HRAI DIGEST).

MECHANICAL VENTILATION SHALL BE PROVIDED IN CONFORMANCE WITH OBC DIV. B, 9.32.3 REQUIREMENTS.

INSTALLATION OF HVAC EQUIP. SHALL CONFORM TO MANUFACTURER'S SPECIFICATIONS AND MANUALS

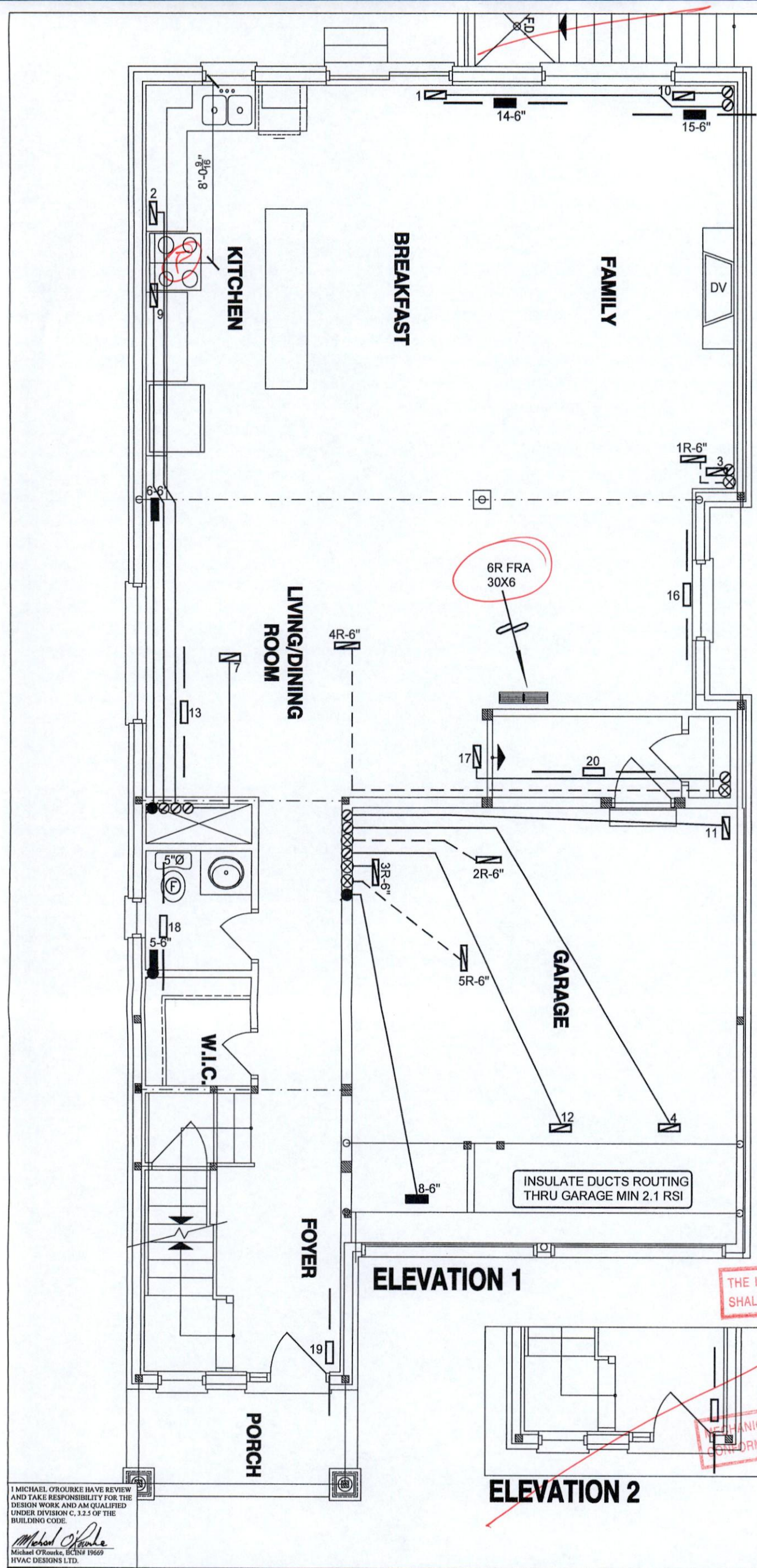
THE INSTALLATION OF CARBON MONOXIDE DETECTOR(S) SHALL COMPLY WITH OBC DIV. B, 9.33.4 REQUIREMENTS.

A HEAT RECOVERY VENTILATOR SHALL BE INSTALLED IN COMPLIANCE WITH OBC DIV. B, 9.2.1.8, 9.32.3.6(3), 9.32.3.11 AND HRAI DIGEST REQUIREMENTS.

ELEVATION 1 & 2

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			
ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.											
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				HEAT LOSS 52662 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS		Sheet Title	
Project Name GRANELLI HOMES CORP BRAMPTON, ONTARIO						MAKE CARRIER		3RD FLOOR		BASEMENT HEATING LAYOUT	
M-2057 LOT 3 AMELIA 1 2831 sqft		MODEL 59SP5A-60-12		2ND FLOOR 13 5 4		Date JUNE/2018					
		INPUT 60 MBTU/H		1ST FLOOR 7 1 2		Scale 3/16" = 1'-0"					
		OUTPUT 58 MBTU/H		BASEMENT 4 1 0		BCIN# 19669					
		COOLING 2.5 TONS		ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"xØ UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A		LO# 78987					
		FAN SPEED 970 cfm @ 0.6" w.c.									



THIS INSTALLATION OF A GAS FIREPLACE IS REGULATED UNDER THE T.S.E.A. BY C.S.A. B149.1 NATURAL GAS AND PROPANE INSTALLATION CODE CALL ENBRIDGE FOR INSPECTION AT 1-800-785-1314

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
MAR 26 2019
ATTACHED NOTES ARE PART OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH OBC

THE INSTALLATION OF CARBON MONOXIDE DETECTOR(S) SHALL COMPLY WITH OBC DIV. B, 9.33.4 REQUIREMENTS.

MECHANICAL VENTILATION SHALL BE PROVIDED IN CONFORMANCE WITH OBC DIV. B, 9.32.3 REQUIREMENTS.

ELEVATION 1

ELEVATION 2

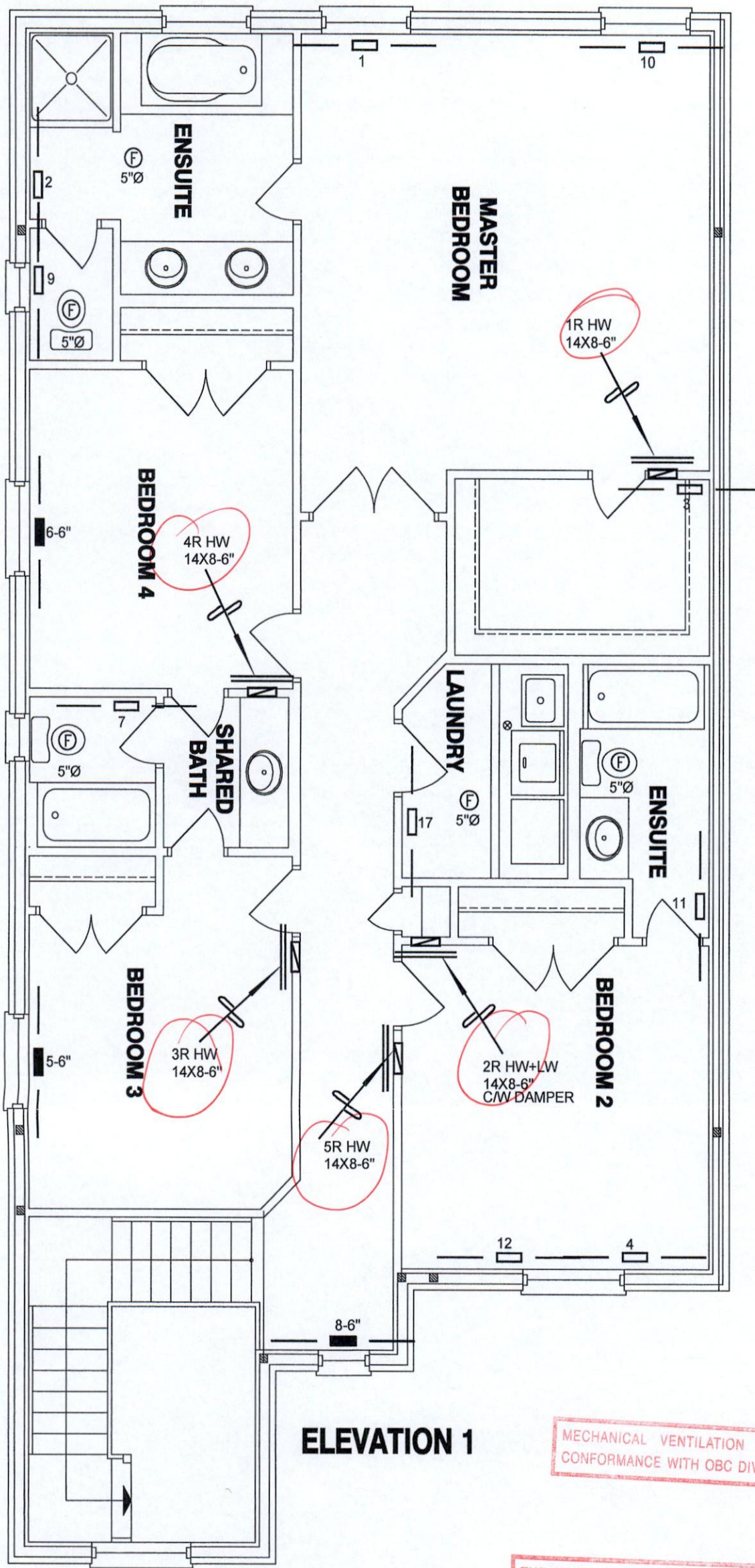
CSA-F280-12
PACKAGE A1

I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

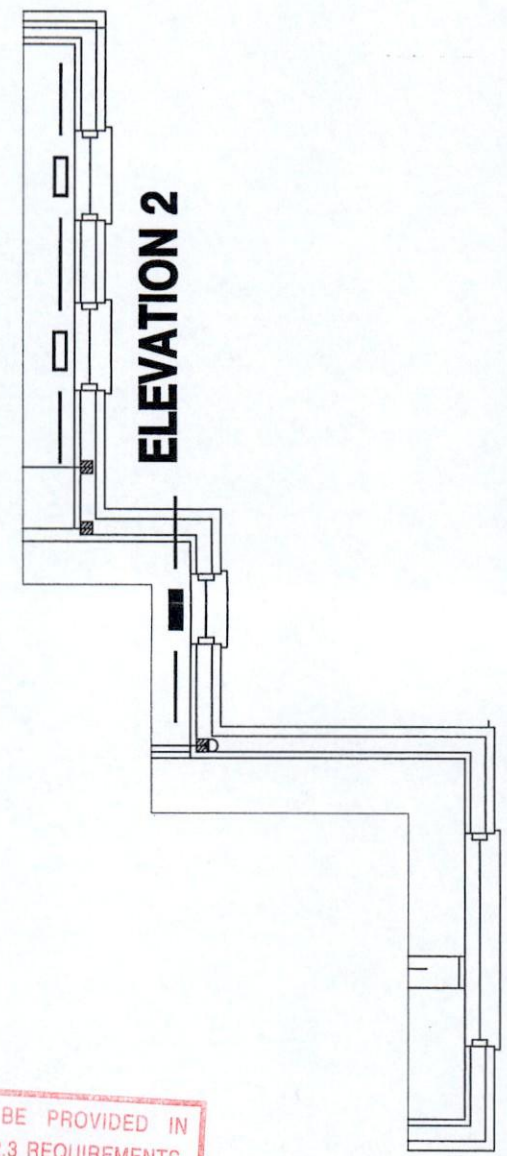
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR 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 GREENYORK 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 FIRST FLOOR HEATING LAYOUT	
Project Name GRANELLI HOMES CORP BRAMPTON, ONTARIO			Date JUNE/2018	
M-2057 LOT 3		Scale 3/16" = 1'-0"	BCIN# 19669	
AMELIA 1	2831 sqft	LO#		78987



CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
MAR 26 2019
ATTACHED NOTES ARE PART
OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH OBC



ELEVATION 1

MECHANICAL VENTILATION SHALL BE PROVIDED IN
CONFORMANCE WITH OBC DIV. B, 9.32.3 REQUIREMENTS.

THE INSTALLATION OF CARBON MONOXIDE DETECTOR(S)
SHALL COMPLY WITH OBC DIV. B, 9.33.4 REQUIREMENTS.

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

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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 <i>M-2057 LOT 3</i> AMELIA 1	2831 sqft		
			Date JUNE/2018
			Scale 3/16" = 1'-0"
			BCIN# 19669
			LO# 78987



Planning and Development Services
Building Division
8850 McLaughlin Road, Unit 1
Brampton, ON L6Y 5T1

WATER PIPE SIZING AND PLUMBING DATA SHEET

CERTIFIED MODEL WITH ONE DWELLING UNIT

THIS TABLE IS APPLICABLE FOR A HOUSE AFTER DECEMBER 31, 2017

Builder Name: Greenyork Homes
Certified Model Name: AMELIA 1 (LO#78987)
Optional Floor Layout:
Application No.:



SWhite

The Ontario Building Code Div. B, 7.6.3 regulates size and capacity of pipes for a new house. Please enter the number of individual fixtures as listed and bathroom groups⁽⁶⁾ or powder room groups⁽⁷⁾ per floor. The fixture units and required minimum size of water service will automatically be calculated.

Description	Basement Floor	First Floor	Second Floor	Third Floor
	Qty.	Qty.	Qty.	Qty.
Bathroom group ⁽⁶⁾	1		3	
Bidet				
Extra Shower			1	
Lav			1	
Bar Sink				
Powder room ⁽⁷⁾		1		
Kitchen Sink		1		
Dishwasher		1		
Laundry Tub			1	
Washing Machine			1	
Hose Bib		2		

Total Fixture Units 30

Minimum Diameter of Water Service Pipe
Required from the Property Line to the
House (Inch)

1

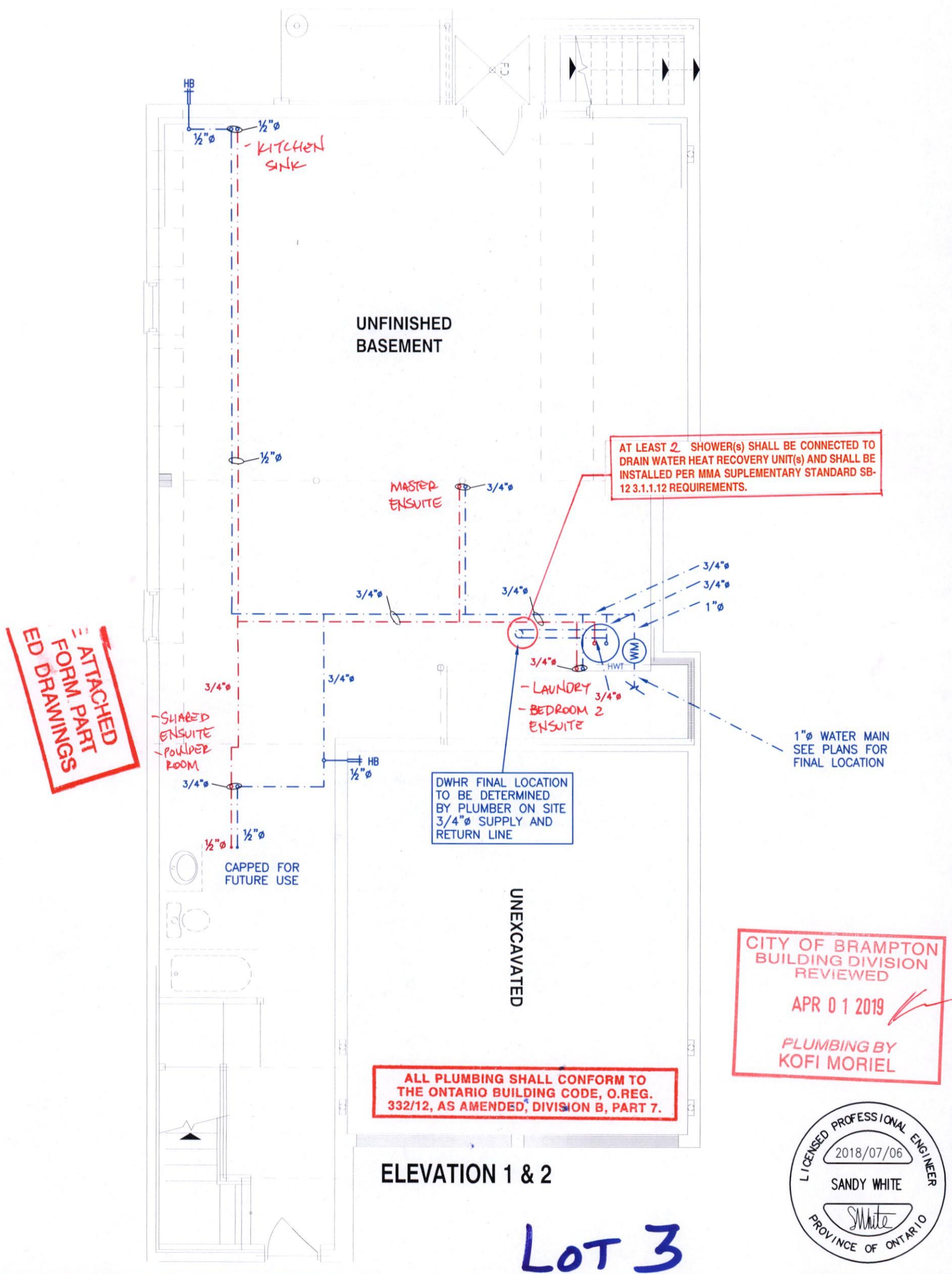
Notes:

- (1) A potable water system shall be designed, constructed and installed to conform to good engineering practice appropriate to the circumstances, such as that described in the ASHRAE Handbooks and ASPE Data Books.
- (2) No water system between the point of connection with the water service pipe or the water meter and the first branch that supplies a water heater that serves more than one fixture shall be less than ¾ in. in size.
- (3) The minimum water pressure at the entry to the building is 200 kPa, and the total maximum length of the water system is 90 m.
- (4) In a hot water distribution system of a developed length of more than 30 m from the HWT to the farthest fixture or supplying more than 4 storeys, the water temperature shall be maintained by, (a) recirculation, or (b) a self-regulating heat tracing system.
- (5) Where piping may be exposed to freezing conditions, it shall be protected from the effects of freezing.
- (6) A bathroom group consists of 1 water closet, 1 lavatory, and 1 bathtub (with or without showerhead)
- (7) A powder room group consists of 1 water closet and 1 lavatory.

PLEASE SEE THE
NOTES AS THEY
OF THE REVIEW

1. DRAWINGS ARE TO BE PRINTED IN COLOUR
2. WHERE A 3/4"Ø TUB SPOUT/ SPIGOT CONNECTION IS USED ON THE BATHTUB FAUCET THE WATER SUPPLY PIPE SHALL BE 3/4"Ø TO THE BRANCH FOR THE BATHTUB
3. BASEMENT BATHROOM ROUGH-IN SHALL BE USED IN SIZING OF WATER PIPE
4. EXACT LOCATION OF ALL PLUMBING PIPING TO BE DETERMINED ON SITE

SYMBOL	DESCRIPTION (SEE PLAN FOR PIPE SIZING)
	WATER METER, PROVIDE SUPPLY PIPE SIZE/ ϕ
	HOSE BIB
	PROPOSED COLD WATER LINE & RISER
	PROPOSED HOT WATER LINE & RISER
FD	FLOOR DRAIN

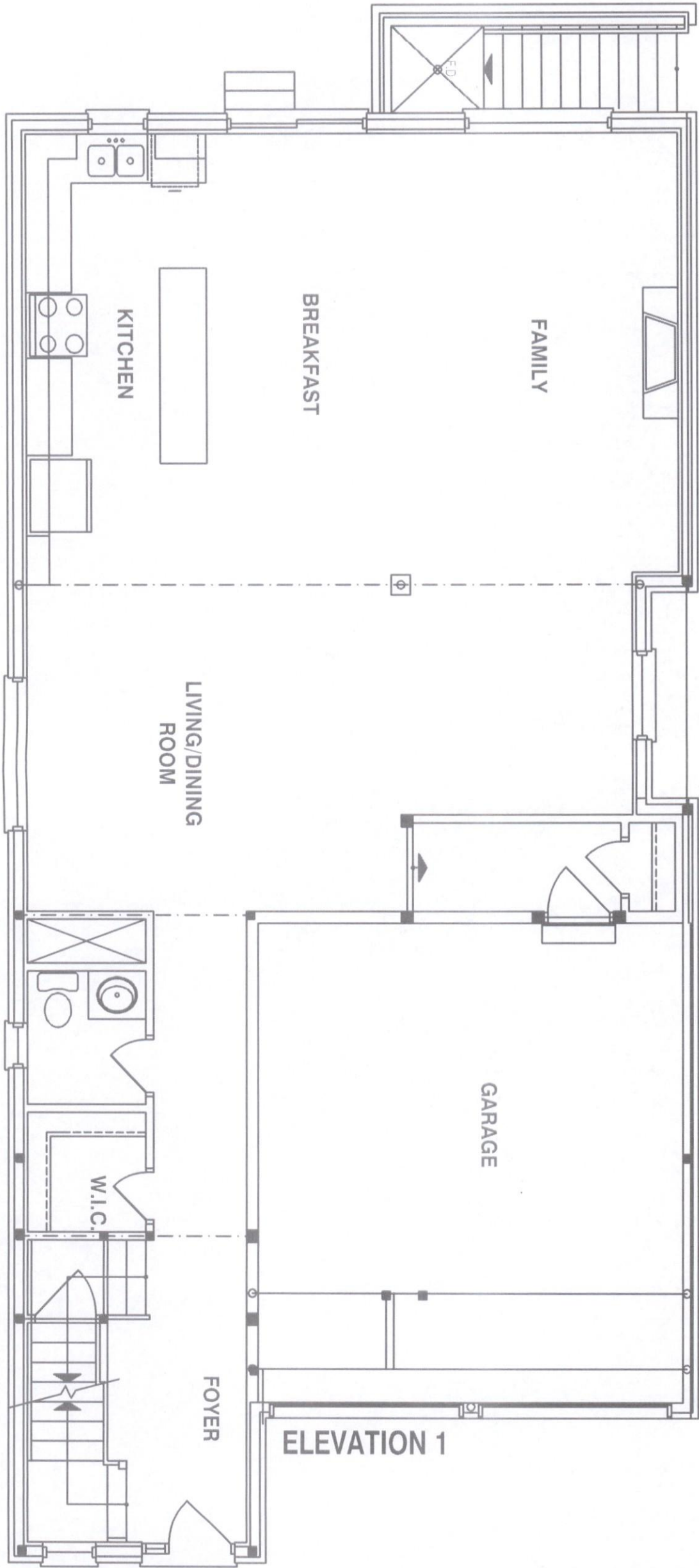


NOTES

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4. EXACT LOCATION OF ALL PLUMBING PIPING TO BE DETERMINED ON SITE

LEGEND

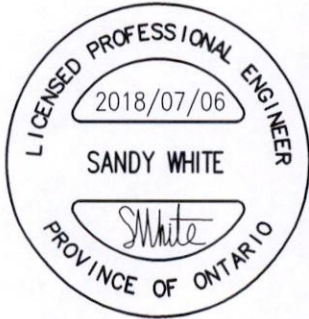
SYMBOL	DESCRIPTION (SEE PLAN FOR PIPE SIZING)
	WATER METER, PROVIDE SUPPLY PIPE SIZE/ Ø
	HOSE BIB
	PROPOSED COLD WATER LINE & RISER
	PROPOSED HOT WATER LINE & RISER
	FLOOR DRAIN



CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED

APR 01 2019

PLUMBING BY
KOFI MORIEL



Client
GREENYORK HOMES

Project Name
GRANELLI HOMES CORP
BRAMPTON, ONTARIO

M-2057 LOT 3

AMELIA 1

2831 sqft



375 Finley Ave. Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
Email: info@hvadesigns.ca
Web: www.hvadesigns.ca
Specializing in Residential Mechanical Design Services

Sheet Title
FIRST FLOOR
PLUMBING
LAYOUT

Date
JULY 2018

Scale
3/16" = 1'-0"

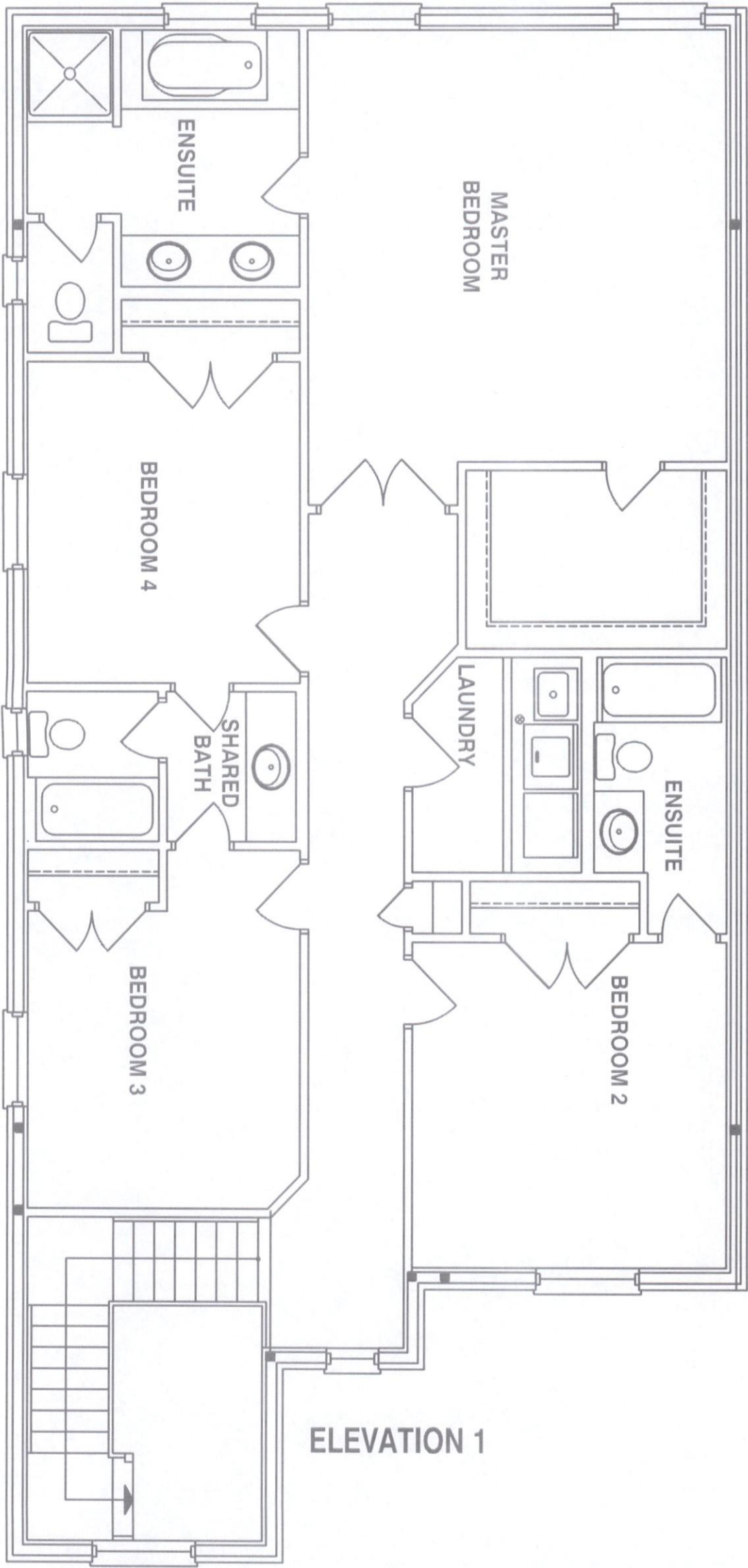
LO# 78987-P

NOTES

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3. BASEMENT BATHROOM ROUGH-IN SHALL BE USED IN SIZING OF WATER PIPE
4. EXACT LOCATION OF ALL PLUMBING PIPING TO BE DETERMINED ON SITE

LEGEND

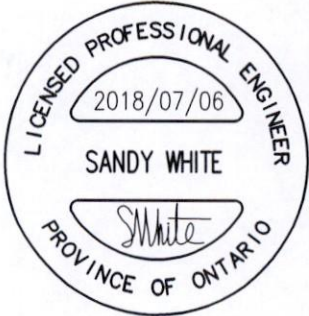
SYMBOL	DESCRIPTION (SEE PLAN FOR PIPE SIZING)
	WATER METER, PROVIDE SUPPLY PIPE SIZE/ Ø
	HOSE BIB
	PROPOSED COLD WATER LINE & RISER
	PROPOSED HOT WATER LINE & RISER
	FLOOR DRAIN



CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED

APR 01 2019

PLUMBING BY
KOFI MORIEL



Client

GREENYORK HOMES

Project Name

GRANELLI HOMES CORP
BRAMPTON, ONTARIO

M-2057 LOT 3

AMELIA 1

2831 sqft

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
PLUMBING
LAYOUT

Date

JULY 2018

Scale

3/16" = 1'-0"

LO#

78987-P

19-444365 000 00 RR

Energy Efficiency Design Summary: Prescriptive Method

(Building Code Part 9, Residential)

This form is used by a designer to demonstrate that the energy efficiency design of a house complies with the building code using the prescriptive method described in Subsection 3.1.1. of SB-12. This form is applicable where the ratio of gross area of windows/sidelights/skylights/glazing in doors and sliding glass doors to the gross area of peripheral walls is not more than 22%.

For use by Principal Authority	
Application No:	Model/Certification Number AMELIA 1, EL-1

A. Project Information

Building number, street name		Unit number	Lot/Con 3
Municipality City of Brampton	Postal code	Reg. Plan number / other description 43M-2057	

B. Prescriptive Compliance [indicate the building code compliance package being employed in this house design]

SB-12 Prescriptive (input design package): Package: A1 Table: _____

C. Project Design Conditions

Climatic Zone (SB-1): ☐ Zone 1 (< 5000 degree days) ☐ Zone 2 (≥ 5000 degree days)	Heating Equipment Efficiency ☐ ≥ 92% AFUE ☐ ≥ 84% < 92% AFUE	Space Heating Fuel Source ☐ Gas ☐ Propane ☐ Solid Fuel ☐ Oil ☐ Electric ☐ Earth Energy
Ratio of Windows, Skylights & Glass (W, S & G) to Wall Area Area of walls = <u>370.22</u> m ² or _____ ft ² Area of W, S & G = <u>30.18</u> m ² or _____ ft ² W, S & G % = <u>8.15%</u> Utilize window averaging: ☐ Yes ☐ No		Other Building Characteristics ☐ Log/Post&Beam ☐ ICF Above Grade ☐ ICF Basement ☐ Slab-on-ground ☐ Walkout Basement ☐ Air Conditioning ☐ Combo Unit ☐ Air Sourced Heat Pump (ASHP) ☐ Ground Sourced Heat Pump (GSHP)

D. Building Specifications [provide values and ratings of the energy efficiency components proposed]

Energy Efficiency Substitutions				
☐ ICF (3.1.1.2.(5) & (6) / 3.1.1.3.(5) & (6)) ☐ Combined space heating and domestic water heating systems (3.1.1.2.(7) / 3.1.1.3.(7)) ☐ Airtightness substitution(s) Airtightness test required (Refer to Design Guide Attached) ☐ Table 3.1.1.4.B Required: _____ Permitted Substitution: _____ ☐ Table 3.1.1.4.C Required: _____ Permitted Substitution: _____ Required: _____ Permitted Substitution: _____				
Building Component	Minimum RSI / R values or Maximum U-Value ⁽¹⁾		Building Component	Efficiency Ratings
Thermal Insulation	Nominal	Effective	Windows & Doors Provide U-Value ⁽¹⁾ or ER rating	
Ceiling with Attic Space	10.57	10.43	Windows/Sliding Glass Doors	1.6
Ceiling without Attic Space	5.46	4.87	Skylights/Glazed Roofs	2.8
Exposed Floor	5.46	5.25	Mechanicals	
Walls Above Grade	4.22	3.00	Heating Equip.(AFUE)	96%
Basement Walls	3.52	3.72	HRV Efficiency (SRE% at 0° C)	75%
Slab (all >600mm below grade)	-	-	DHW Heater (EF)	0.83
Slab (edge only ≤600mm below grade)	1.76	1.76	DWHR (CSA B55.1 (min. 42% efficiency))	42 # Showers <u>2</u>
Slab (all ≤600mm below grade, or heated)	1.76	1.96	Combined Heating System	N/A

(1) U value to be provided in either W/(m²·K) or Btu/(h·ft²·F) but not both.**E. Designer(s)** [name(s) & BCIN(s), if applicable, of person(s) providing information herein to substantiate that design meets the building code]

Qualified Designer Declaration of designer to have reviewed and take responsibility for the design work.			
Name Walter Botter Jardin Design Group Inc.	BCIN 21031 27763	Signature 