

19-444457 000 00 RL

**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 <b>AMELIA 2-04 , EL-2</b>

**A. Project Information**

Building number, street name		Unit number	Lot/Con <b>4</b>
Municipality <b>City of Brampton</b>	Postal code	Reg. Plan number / other description <b>43M-2057</b>	

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

<b>SB-12 Prescriptive (input design package):</b> Package: <b>A1</b> Table: _____
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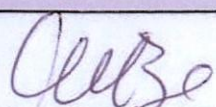
**C. Project Design Conditions**

<b>Climatic Zone (SB-1):</b> <input type="checkbox"/> Zone 1 (< 5000 degree days) <input type="checkbox"/> Zone 2 (≥ 5000 degree days)	<b>Heating Equipment Efficiency</b> <input type="checkbox"/> ≥ 92% AFUE <input type="checkbox"/> ≥ 84% < 92% AFUE	<b>Space Heating Fuel Source</b> <input type="checkbox"/> Gas <input type="checkbox"/> Propane <input type="checkbox"/> Solid Fuel <input type="checkbox"/> Oil <input type="checkbox"/> Electric <input type="checkbox"/> Earth Energy
<b>Ratio of Windows, Skylights &amp; Glass (W, S &amp; G) to Wall Area</b> Area of walls = <u>354.67</u> m <sup>2</sup> or _____ ft <sup>2</sup> W, S & G % = <u>9.03%</u> Area of W, S & G = <u>32.04</u> m <sup>2</sup> or _____ ft <sup>2</sup> Utilize window averaging: <input type="checkbox"/> Yes <input type="checkbox"/> No		<b>Other Building Characteristics</b> <input type="checkbox"/> Log/Post&Beam <input type="checkbox"/> ICF Above Grade <input type="checkbox"/> ICF Basement <input type="checkbox"/> Slab-on-ground <input type="checkbox"/> Walkout Basement <input type="checkbox"/> Air Conditioning <input type="checkbox"/> Combo Unit <input type="checkbox"/> Air Sourced Heat Pump (ASHP) <input type="checkbox"/> Ground Sourced Heat Pump (GSHP)

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

Energy Efficiency Substitutions				
<input type="checkbox"/> ICF (3.1.1.2.(5) & (6) / 3.1.1.3.(5) & (6)) <input type="checkbox"/> Combined space heating and domestic water heating systems (3.1.1.2.(7) / 3.1.1.3.(7)) <input type="checkbox"/> Airtightness substitution(s) Airtightness test required (Refer to Design Guide Attached) <input type="checkbox"/> Table 3.1.1.4.B Required: _____ Permitted Substitution: _____ <input type="checkbox"/> Table 3.1.1.4.C Required: _____ Permitted Substitution: _____ Required: _____ Permitted Substitution: _____				
Building Component	Minimum RSI / R values or Maximum U-Value <sup>(1)</sup>		Building Component	Efficiency Ratings
<b>Thermal Insulation</b>	Nominal	Effective	<b>Windows &amp; Doors</b> Provide U-Value <sup>(1)</sup> 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	<b>Mechanicals</b>	
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/(m<sup>2</sup>.K) or Btu/(h.ft<sup>2</sup>.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 <b>Walter Botter Jardin Design Group Inc.</b>	BCIN <b>21031 27763</b>	Signature 



SITE NAME: GRANELLI HOME CORP  
BUILDER: GREENYORK HOMES

TYPE: AMELIA 2

GFA: 2818

DATE: Jun-18  
LO# 78988WINTER NATURAL AIR CHANGE RATE 0.335  
SUMMER NATURAL AIR CHANGE RATE 0.112HEAT LOSS AT °F. 74  
HEAT GAIN AT °F. 12CSA-F280-12  
SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-2	ENS-3/4
			33	24	12	37	30	13	10	7
			9	9	9	9	9	9	9	9
GRS.WALL AREA	LOSS	GAIN	297	216	108	333	270	117	90	63
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
NORTH	20.8	15.8	0	0	0	0	0	0	0	0
EAST	20.8	41.3	0	0	0	0	0	0	0	0
SOUTH	20.8	24.7	0	0	0	0	0	0	0	0
WEST	20.8	41.3	26	540	1075	13	270	537	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	271	1181	191	203	884	143	108	471
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.6	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	303	380	174	141	177	81	89	112
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	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			2101	1331	582	3313	1865	944	598	518
SUB TOTAL HT GAIN			1439	761	127	2356	1366	628	158	271
LEVEL FACTOR / MULTIPLIER	0.20	0.31		0.20	0.31	0.20	0.31	0.20	0.31	0.20
AIR CHANGE HEAT LOSS			648	411	180	1022	675	291	184	160
AIR CHANGE HEAT GAIN			115	61	10	189	109	42	13	22
DUCT LOSS			0	0	0	433	0	0	0	0
DUCT GAIN			0	0	0	336	0	0	0	0
HEAT GAIN PEOPLE	240	2	480	0	0	1	240	1	240	0
HEAT GAIN APPLIANCES/LIGHTS			673	0	0	673	673	673	673	0
TOTAL HT LOSS BTU/H			2748	1742	762	4768	2440	1235	782	678
TOTAL HT GAIN x 1.3 BTU/H			3390	1089	179	4801	2976	1799	221	381

ROOM USE	EXP. WALL	CLG. HT.	FAM	LV/DN	KT/BR	LAUN	PWD	FOY	WUB	BAS
			31	29	42	19	8	29	16	147
			11	11	11	12	11	11	9	9
GRS.WALL AREA	LOSS	GAIN	341	319	462	228	88	319	135	882
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
NORTH	20.8	15.8	0	0	0	0	0	0	0	0
EAST	20.8	41.3	0	0	0	0	0	0	0	0
SOUTH	20.8	24.7	0	0	0	0	0	0	0	0
WEST	20.8	41.3	46	956	1901	39	810	962	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	295	1285	208	280	1220	197	406	1769
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	2.6	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			2241	2030	2932	1467	498	2317	93	4981
SUB TOTAL HT GAIN			2109	1160	2600	237	230	640	1136	7210
LEVEL FACTOR / MULTIPLIER	0.30	0.45		0.30	0.45	0.30	0.45	0.30	0.45	0.80
AIR CHANGE HEAT LOSS			1016	920	1329	665	226	1050	283	104
AIR CHANGE HEAT GAIN			169	93	208	19	18	51	0	67
DUCT LOSS			0	0	0	213	0	0	0	0
DUCT GAIN			0	0	0	83	0	0	0	0
HEAT GAIN PEOPLE	240	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS			573	573	573	573	573	573	573	573
TOTAL HT LOSS BTU/H			3267	2850	4261	2344	724	3366	1136	16885
TOTAL HT GAIN x 1.3 BTU/H			3706	2373	4397	1186	323	899	367	1550

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

TOTAL HEAT GAIN BTU/H:

29865

TONS: 2.49

LOSS DUE TO VENTILATION LOAD BTU/H: 1629

STRUCTURAL HEAT LOSS: 49080

TOTAL COMBINED HEAT LOSS BTU/H: 80609



SITE NAME: GRANELLI HOME CORP  
BUILDER: GREENYORK HOMES

TYPE: AMELIA 2

DATE: Jun-18

GFA: 2818

LO# 78988

HEATING CFM 970 COOLING CFM 970  
TOTAL HEAT LOSS 49,080 TOTAL HEAT GAIN 29,618  
AIR FLOW RATE CFM 19.76 AIR FLOW RATE CFM 32.75

furnace pressure 0.6  
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	10	8	4
R/A	0	0	5	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	10	11	12	13	14	15	16	17	18	19	21	22	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-2	BED-2	MBR	ENS-3/4	FAM	LV/DN	KT/BR	KT/BR	FAM	LAUN	PWD	FOY	BAS	BAS	BAS
RM LOSS MBH	1.37	1.74	0.76	2.38	2.44	1.24	0.78	2.38	1.37	0.68	1.63	2.95	2.13	2.13	1.63	2.34	0.72	3.37	4.26	4.26	4.26
CFM PER RUN HEAT	27	34	15	47	48	24	15	47	27	13	32	58	42	42	32	46	14	67	84	84	84
RM GAIN MBH	1.70	1.07	0.18	2.40	2.98	1.80	0.22	2.40	1.70	0.38	1.85	2.37	2.20	2.20	1.85	1.19	0.32	0.90	0.48	0.48	0.48
CFM PER RUN COOLING	56	35	6	79	97	59	7	79	56	12	61	78	72	72	61	39	11	29	16	16	16
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.16	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	0.16	0.16	0.16
ACTUAL DUCT LGH.	48	38	32	67	70	45	35	64	41	65	40	33	26	18	30	29	47	48	36	13	35
EQUIVALENT LENGTH	180	160	160	180	170	150	130	170	180	210	160	110	120	120	150	140	130	100	90	100	100
TOTAL EFFECTIVE LENGTH	228	198	192	247	240	195	165	234	221	275	200	143	146	138	180	169	177	148	126	113	135
ADJUSTED PRESSURE	0.08	0.09	0.09	0.07	0.07	0.09	0.1	0.07	0.08	0.06	0.09	0.12	0.12	0.12	0.1	0.1	0.1	0.12	0.13	0.14	0.12
ROUND DUCT SIZE	5	4	4	6	6	6	4	6	5	4	5	5	5	5	5	4	4	5	6	6	6
HEATING VELOCITY (ft/min)	198	390	172	240	245	122	172	240	198	149	235	426	308	308	235	528	161	492	428	428	428
COOLING VELOCITY (ft/min)	411	402	69	403	495	301	80	403	411	138	448	573	529	529	448	447	126	213	82	82	82
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10
TRUNK	A	A	B	C	C	B	D	C	A	C	A	D	A	A	A	D	C	C	B	B	D

RUN #	25
ROOM NAME	BAS
RM LOSS MBH	4.26
CFM PER RUN HEAT	84
RM GAIN MBH	0.48
CFM PER RUN COOLING	16
ADJUSTED PRESSURE	0.16
ACTUAL DUCT LGH.	52
EQUIVALENT LENGTH	110
TOTAL EFFECTIVE LENGTH	162
ADJUSTED PRESSURE	0.1
ROUND DUCT SIZE	6
HEATING VELOCITY (ft/min)	428
COOLING VELOCITY (ft/min)	82
OUTLET GRILL SIZE	4X10
TRUNK	C

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REVIEWED BY: S. DESAI

MAR 26 2019

ATTACHED NOTES ARE PART  
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#### SUPPLY AIR TRUNK SIZE

TRUNK	STATIC	ROUND	RECT	VELOCITY	TRUNK	STATIC	ROUND	RECT	VELOCITY
CFM	PRESS	DUCT	DUCT	(ft/min)	CFM	PRESS	DUCT	DUCT	(ft/min)
TRUNK A	236	0.08	8.2	10	X	8	425		
TRUNK B	443	0.08	10.3	14	X	8	570		
TRUNK C	320	0.06	9.8	12	X	8	480		
TRUNK D	523	0.06	11.8	16	X	8	588		
TRUNK E	0	0.00	0	0	X	8	0		
TRUNK F	0	0.00	0	0	X	8	0		
TRUNK G	0	0.00	0	0	X	8	0		
TRUNK H	0	0.00	0	0	X	8	0		
TRUNK I	0	0.00	0	0	X	8	0		
TRUNK J	0	0.00	0	0	X	8	0		
TRUNK K	0	0.00	0	0	X	8	0		
TRUNK L	0	0.00	0	0	X	8	0		

#### RETURN AIR TRUNK SIZE

TRUNK		STATIC	ROUND	RECT	VELOCITY		
	CFM	PRESS	DUCT	DUCT			(ft/min)
TRUNK O	0	0.06	0	0	x	8	0
TRUNK P	0	0.06	0	0	x	8	0
TRUNK Q	0	0.06	0	0	x	8	0
TRUNK R	0	0.06	0	0	x	8	0
TRUNK S	0	0.06	0	0	x	8	0
TRUNK T	0	0.06	0	0	x	8	0
TRUNK U	0	0.06	0	0	x	8	0
TRUNK V	0	0.06	0	0	x	8	0
TRUNK W	0	0.06	0	0	x	8	0
TRUNK X	970	0.06	14.9	26	x	8	672
TRUNK Y	0	0.06	0	0	x	8	0
TRUNK Z	0	0.06	0	0	x	8	0
DROP	970	0.06	14.9	24	x	10	582

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
AIR VOLUME	85	95	95	95	85	350	0	0	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	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	46	63	62	50	46	29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	220	135	140	175	215	175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135
TOTAL EFFECTIVE LENGTH	266	198	202	225	261	204	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	149
ADJUSTED PRESSURE	0.06	0.07	0.07	0.07	0.06	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.10
ROUND DUCT SIZE	6	6	6	6	6	9.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.8
INLET GRILL SIZE	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14



TYPE: AMELIA 2  
SITE NAME: GRANELL HOME CORP

LO # 78988

**RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY**

COMBUSTION APPLIANCES		9.32.3.1(1)
a) <input checked="" type="checkbox"/>	Direct vent (sealed combustion) only	
b) <input type="checkbox"/>	Positive venting induced draft (except fireplaces)	
c) <input type="checkbox"/>	Natural draft, B-vent or induced draft gas fireplace	
d) <input type="checkbox"/>	Solid Fuel (including fireplaces)	
e) <input type="checkbox"/>	No Combustion Appliances	

HEATING SYSTEM	
<input checked="" type="checkbox"/>	Forced Air
<input type="checkbox"/>	Non Forced Air
<input type="checkbox"/>	Electric Space Heat

HOUSE TYPE		9.32.1(2)
<input checked="" type="checkbox"/>	I Type a) or b) appliance only, no solid fuel	
<input type="checkbox"/>	II Type I except with solid fuel (including fireplaces)	
<input type="checkbox"/>	III Any Type c) appliance	
<input type="checkbox"/>	IV Type I, or II with electric space heat	
<input type="checkbox"/>	Other: Type I, II or IV no forced air	

SYSTEM DESIGN OPTIONS		O.N.H.W.P.
<input type="checkbox"/>	1 Exhaust only/Forced Air System	
<input type="checkbox"/>	2 HRV with Ducting/Forced Air System	
<input checked="" type="checkbox"/>	3 HRV Simplified/connected to forced air system	
<input type="checkbox"/>	4 HRV with Ducting/non forced air system	
<input type="checkbox"/>	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	5 @ 10.6 cfm	53.0 cfm
Table 9.32.3.A.	TOTAL	180.2 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	180.2	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	100.7	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	LIFEBREATH RNC5-HEX
Location:	BSMT
79.5 cfm	3.0 sones
<input checked="" type="checkbox"/>	HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	$\Delta T$ °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
ENS-2	QTXEN050C	50	✓	0.3
ENS-3/4	QTXEN050C	50	✓	0.3
PWD	QTXEN050C	50	✓	0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	LIFEBREATH RNC5-HEX	
108	cfm high	59 cfm low
76	% Sensible Efficiency	<input checked="" type="checkbox"/> HVI Approved
@ 32 deg F ( 0 deg C)		

LOCATION OF INSTALLATION	
Lot:	Concession
Township	Plan:
Address	
Roll #	

BUILDER:		GREENYORK HOMES
Name:		
Address:		
City:		
Telephone #:		

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

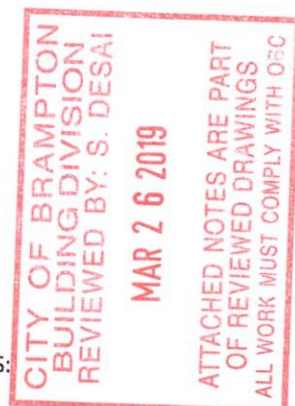
I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C. 3.2.5 OF THE BUILDING CODE.  
INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

**HEAT LOSS AND GAIN SUMMARY SHEET****MODEL:** AMELIA 2  
**SFQT:** 2818**LO#** 78988**BUILDER:** GREENYORK HOMES  
**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):	39046.0	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: 51.0 ft	WIDTH: 30.0 ft	EXPOSED PERIMETER:	147.0 ft

**2012 OBC - COMPLIANCE PACKAGE****Component****Compliance Package  
A1****Nominal Min. Eff.**

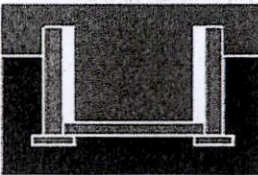
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 ci	21.12
Below Grade Slab Entire surface > 600 mm below 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

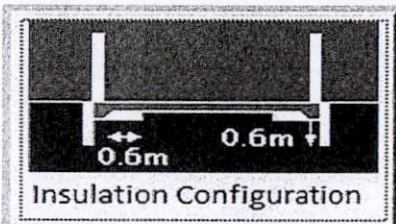
Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	15.5	 Insulation Configuration
Floor Width (m):	9.1	
Exposed Perimeter (m):	44.8	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m <sup>2</sup> ):	1.1	
Door Area (m <sup>2</sup> ):	3.7	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1459

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

TYPE: AMELIA 2  
LO# 78988

## 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):	4.0	
Width (m):	0.6	
Exposed Perimeter (m):	4.6	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		27

TYPE: AMELIA 2  
LO# 78988





HVAC Designs Ltd.  
375 Finley Ave, Suite 202  
Ajax ON, L1S 2E2  
905-619-2300

# Air Infiltration Residential Load Calculator

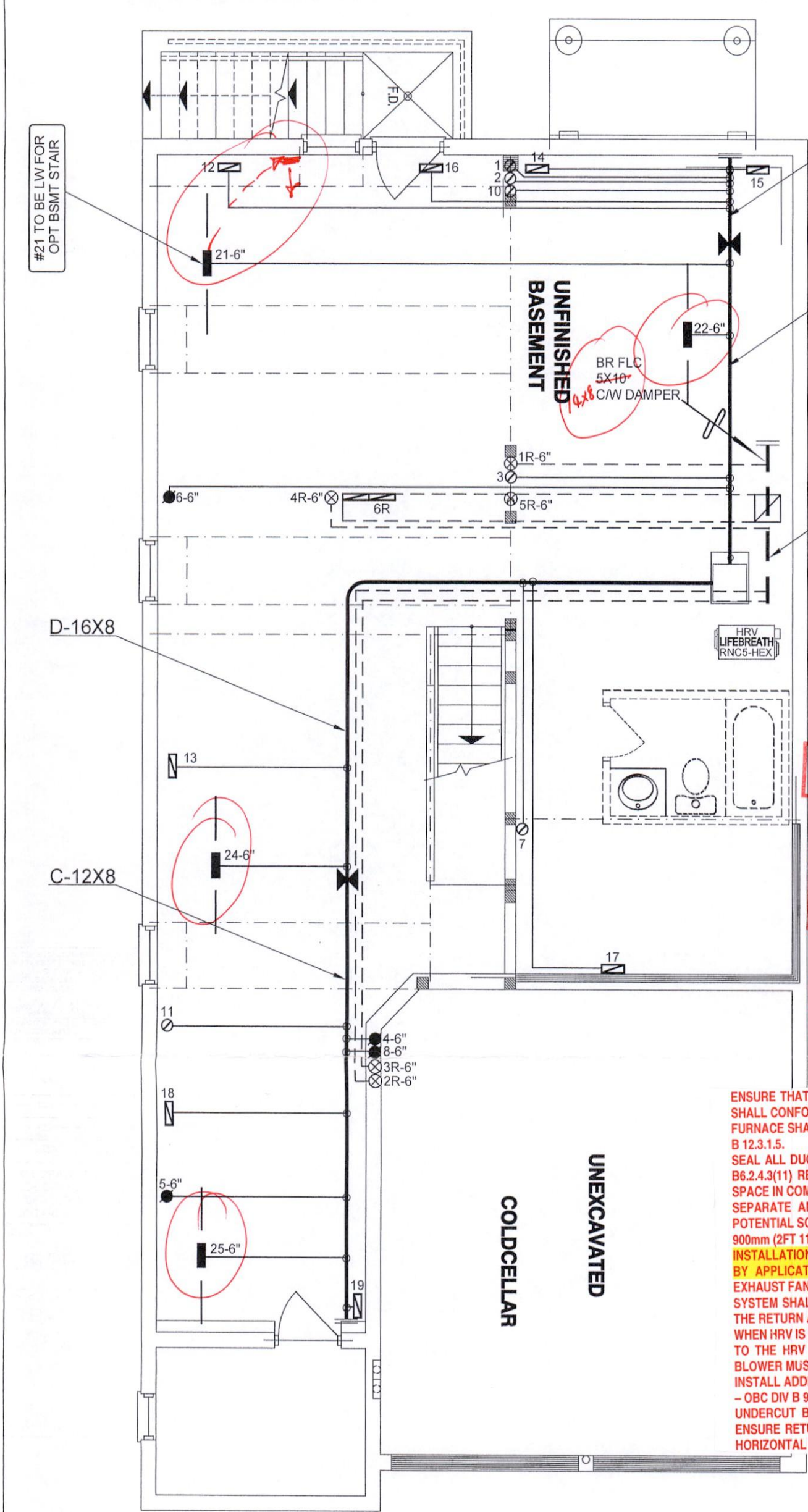
Supplemental tool for CAN/CSA-F280

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 <sup>3</sup> ):	1105.7			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1473.9 cm <sup>2</sup>		
	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		

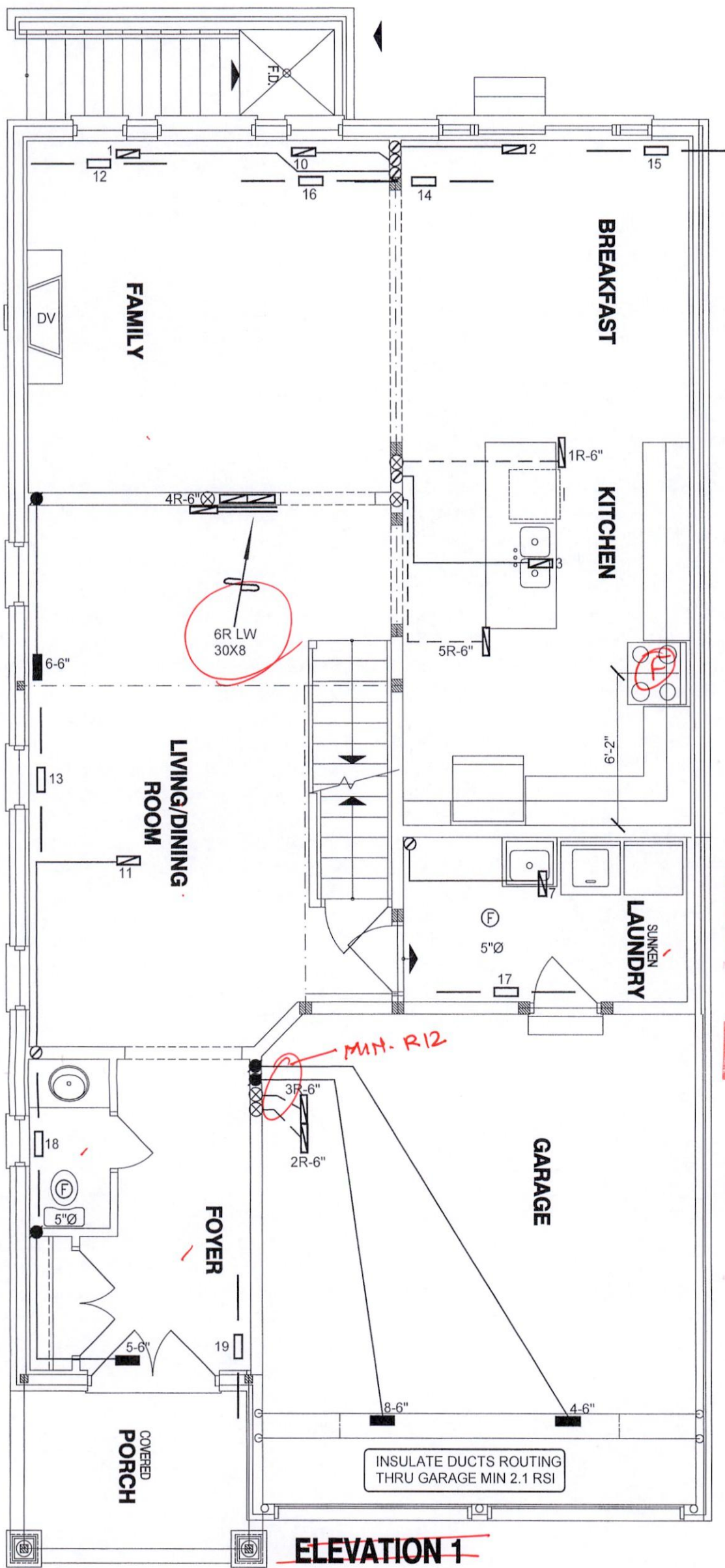
CITY OF BRAMPTON  
BUILDING DIVISION  
REVIEWED BY: S. DESAI  
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TYPE: AMELIA 2  
LO# 78988







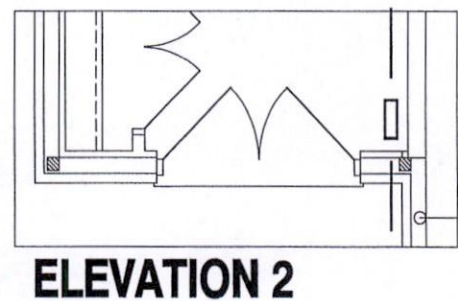


CITY OF BRAMPTON  
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MAR 26 2019  
  
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THIS INSTALLATION OF A GAS FIREPLACE IS REGULATED UNDER  
THE T.S.S.A. BY C.S.A. B149.1 NATURAL GAS AND PROPANE  
INSTALLATION CODE CALL ENBRIDGE FOR INSPECTION AT  
1-800-785-1314

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 OROURKE 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

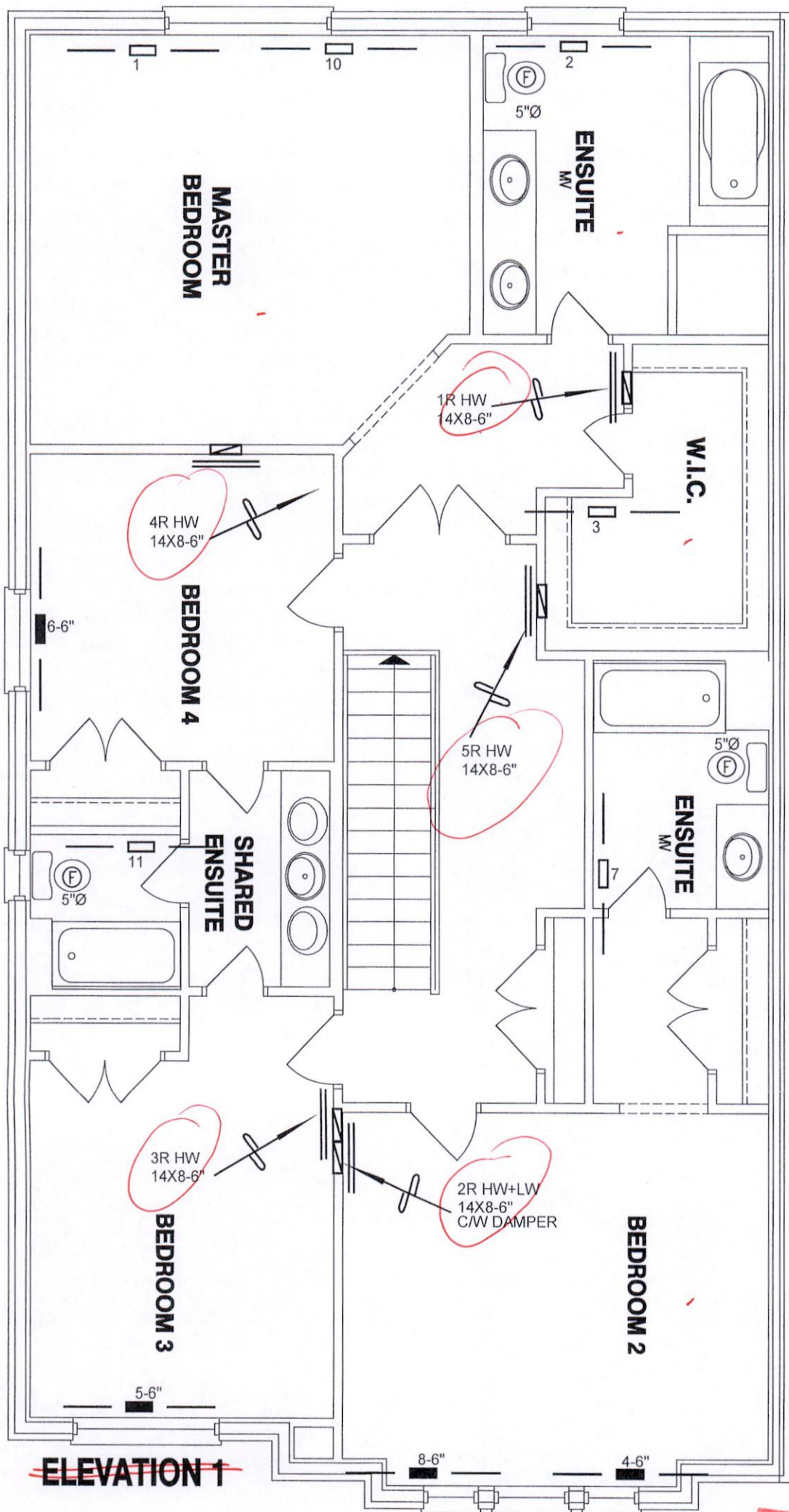
HVAC LEGEND									
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	No.	Description
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	3.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN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

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.

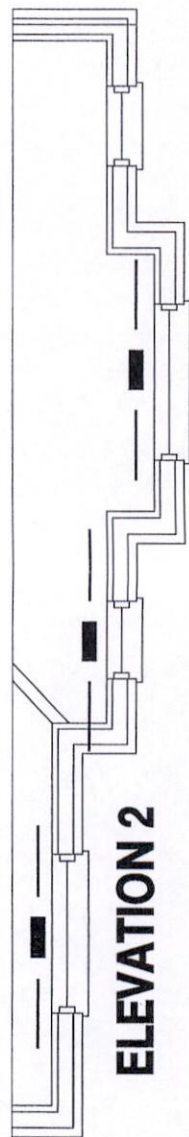
Client <b>GREENYORK HOMES</b>		<div><p>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services</p></div>	Sheet Title <b>FIRST FLOOR HEATING LAYOUT</b>	
Project Name <b>GRANELLI HOMES CORP BRAMPTON, ONTARIO</b>  <b>M-2057 LOT 4</b>  <b>AMELIA 2                      2818 sqft</b>			Date <b>JUNE/2018</b>  Scale <b>3/16" = 1'-0"</b>  <b>BCIN# 19669</b>  <b>LO#        78988</b>	

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.





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.

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, BCNR 19669  
HVAC DESIGNS LTD.

CSA-F280-12  
PACKAGE A1

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

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Client GREENYORK HOMES		<div><p>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</p></div>	Sheet Title SECOND FLOOR HEATING LAYOUT	
Project Name GRANELLI HOMES CORP BRAMPTON, ONTARIO  M-2057 LOT 4  AMELIA 2 2818 sqft			Date JUNE/2018	
		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.	Scale 3/16" = 1'-0"	
			BCIN# 19669	
		LO# 78988		



# Schedule 1: Designer Information

Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

<b>A. Project Information</b>			
Building number, street name 26 OSECO WAY		Unit no.	Lot/con. 4
Municipality <b>BRAMPTON</b>	Postal code	Plan number/ other description 43M-2057	
<b>B. Individual who reviews and takes responsibility for design activities</b>			
Name <b>SANDY WHITE, P.Eng.</b>		Firm <b>ANDA ENGINEERING LTD.</b>	
Street address <b>5125 ARDOCH ROAD</b>		Unit no.	Lot/con.
Municipality <b>ARDOCH</b>	Postal code <b>K0H-1C0</b>	Province <b>ONTARIO</b>	E-mail <b>design@andaengineering.com</b>
Telephone number <b>(613) 479-0161</b>	Fax number <b>( ) N/A</b>	Cell number <b>(416) 476-1105</b>	
<b>C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1. of Division C]</b>			
<input type="checkbox"/> House	<input type="checkbox"/> HVAC – House	<input type="checkbox"/> Building Structural	
<input type="checkbox"/> Small Buildings	<input type="checkbox"/> Building Services	<input checked="" type="checkbox"/> Plumbing – House	
<input type="checkbox"/> Large Buildings	<input type="checkbox"/> Detection, Lighting and power	<input type="checkbox"/> Plumbing – All Buildings	
<input type="checkbox"/> Complex Buildings	<input type="checkbox"/> Fire Protection	<input type="checkbox"/> On-site Sewage Systems	
Description of designer's work AMELIA 2 EL. 2 WALK-UP & DECK CONDITION <b>GRANELLI HOMES CORP.</b>			
<b>D. Declaration of Designer</b>			
I <b>SANDY WHITE,</b> declare that (choose one as appropriate): (print name)			
<input type="checkbox"/> 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: _____			
<input type="checkbox"/> 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: _____ Basis for exemption from registration: _____			
<input checked="" type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification: <b>P.Eng. exempt, note 2</b>			
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.			
<b>2019/24/01</b>		<b>SANDY WHITE</b>	
Date		Signature of Designer	

## NOTE:

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) (c) 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 practice, 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.





**BRAMPTON**  
Flower City

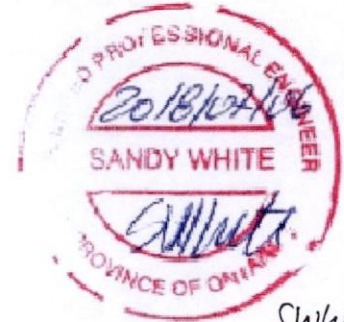
Planning and Development Services  
Building Division  
8850 McLaughlin Road, Unit 1  
Brampton, ON L6Y 5T1

### 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 2 (LO#78988-P)  
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<sup>(6)</sup> or powder room groups<sup>(7)</sup> 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 <sup>(6)</sup>	1		3	
Bidet				
Extra Shower			1	
Lav			1	
Bar Sink				
Powder room <sup>(7)</sup>		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**

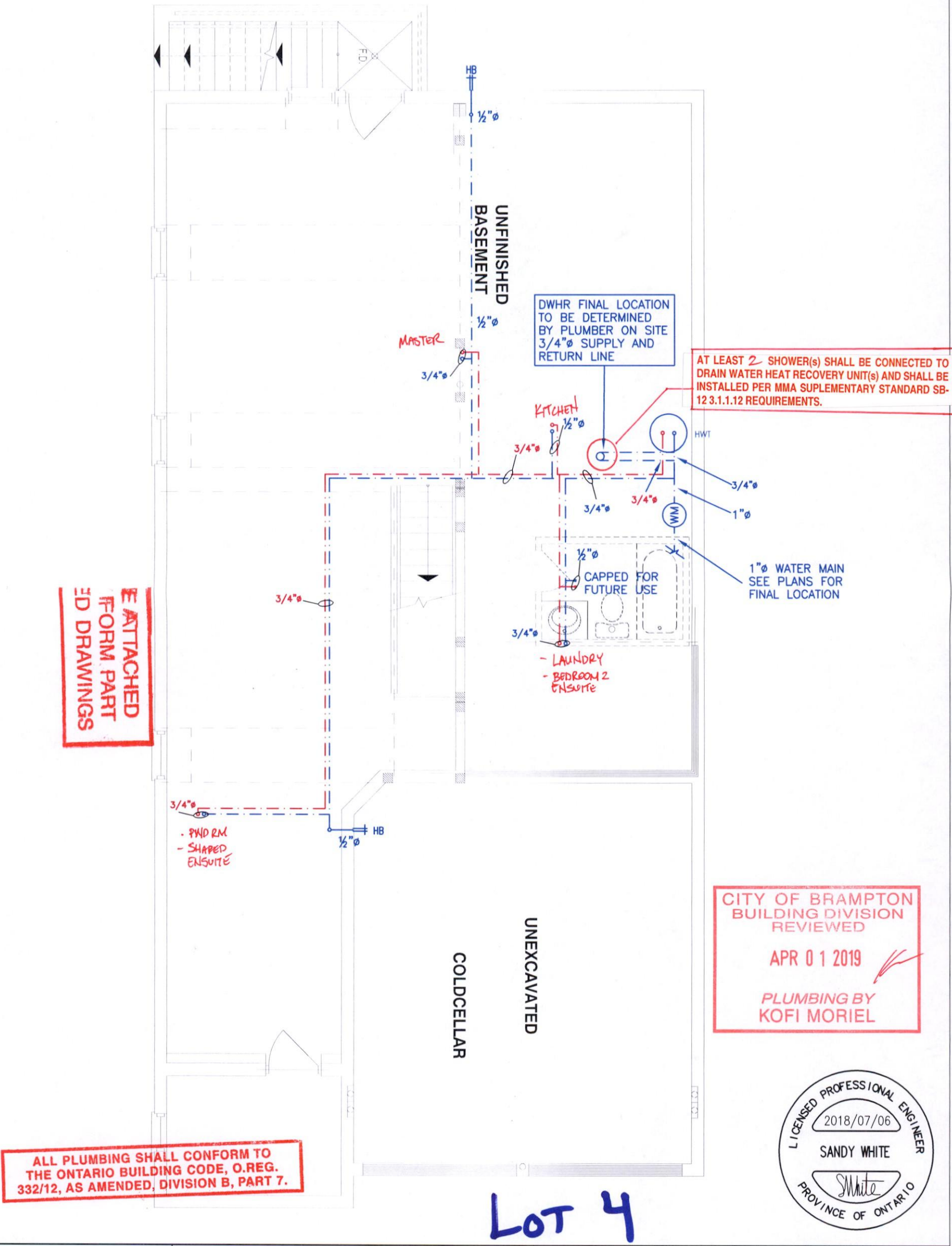


NOTES

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

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



ALL PLUMBING SHALL CONFORM TO THE ONTARIO BUILDING CODE, O.REG. 332/12, AS AMENDED, DIVISION B, PART 7.

Client  
GREENYORK HOMES

Project Name  
GRANELLI HOMES CORP  
BRAMPTON, ONTARIO

AMELIA 2      2818 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@hvacdsgns.ca  
Web: www.hvacdesigns.ca  
Specializing in Residential Mechanical Design Services

Sheet Title  
BASEMENT  
PLUMBING  
LAYOUT

Date  
JULY 2018

Scale  
3/16" = 1'-0"

LO#      78988-P

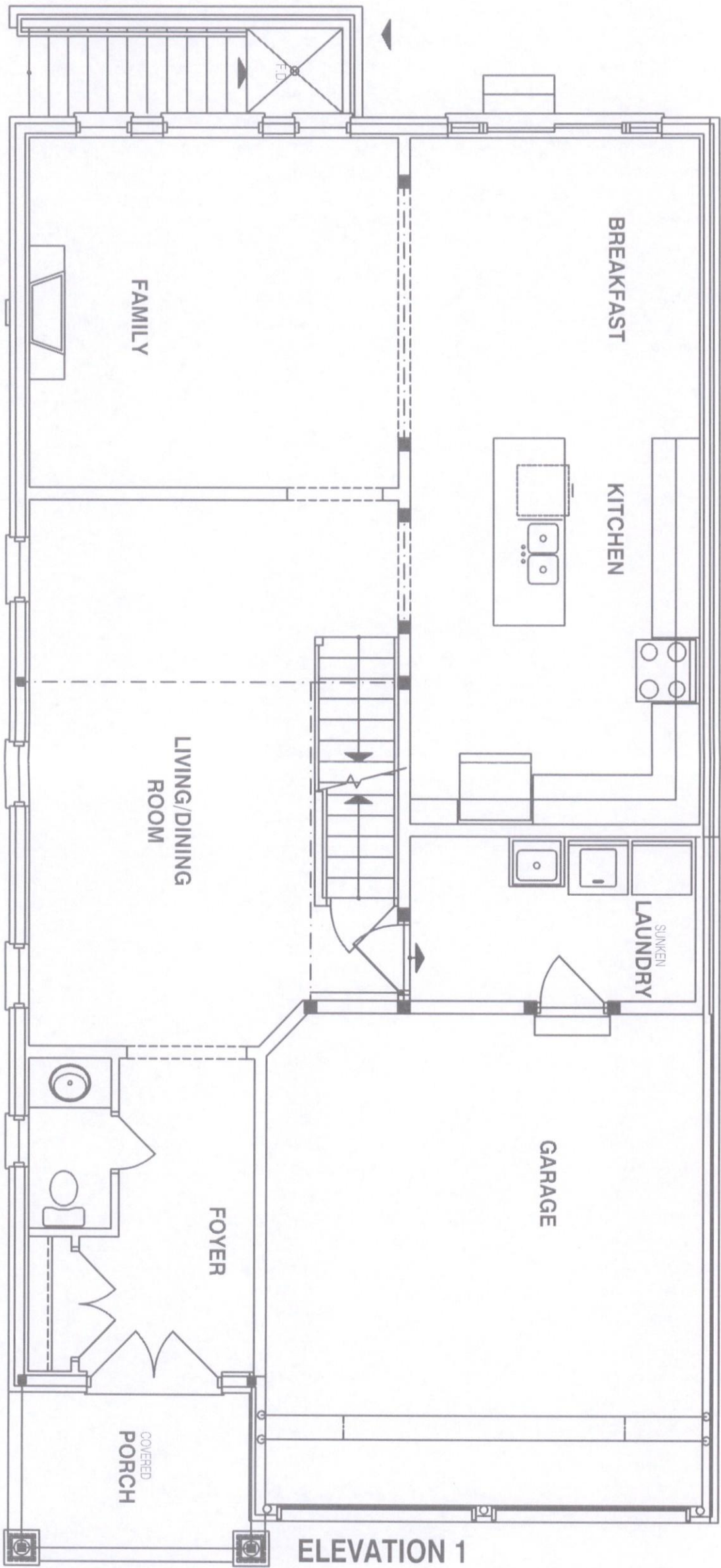


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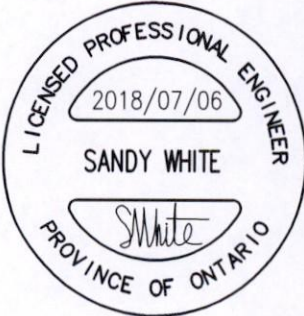
SYMBOL	DESCRIPTION (SEE PLAN FOR PIPE SIZING)
	WATER METER, PROVIDE SUPPLY PIPE SIZE/ Ø
	HOSE BIB
	PROPOSED COLD WATER LINE & RISER
	PROPOSED HOT WATER LINE & RISER
	FLOOR DRAIN



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 LOT4

AMELIA 2 2818 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# 78988-P

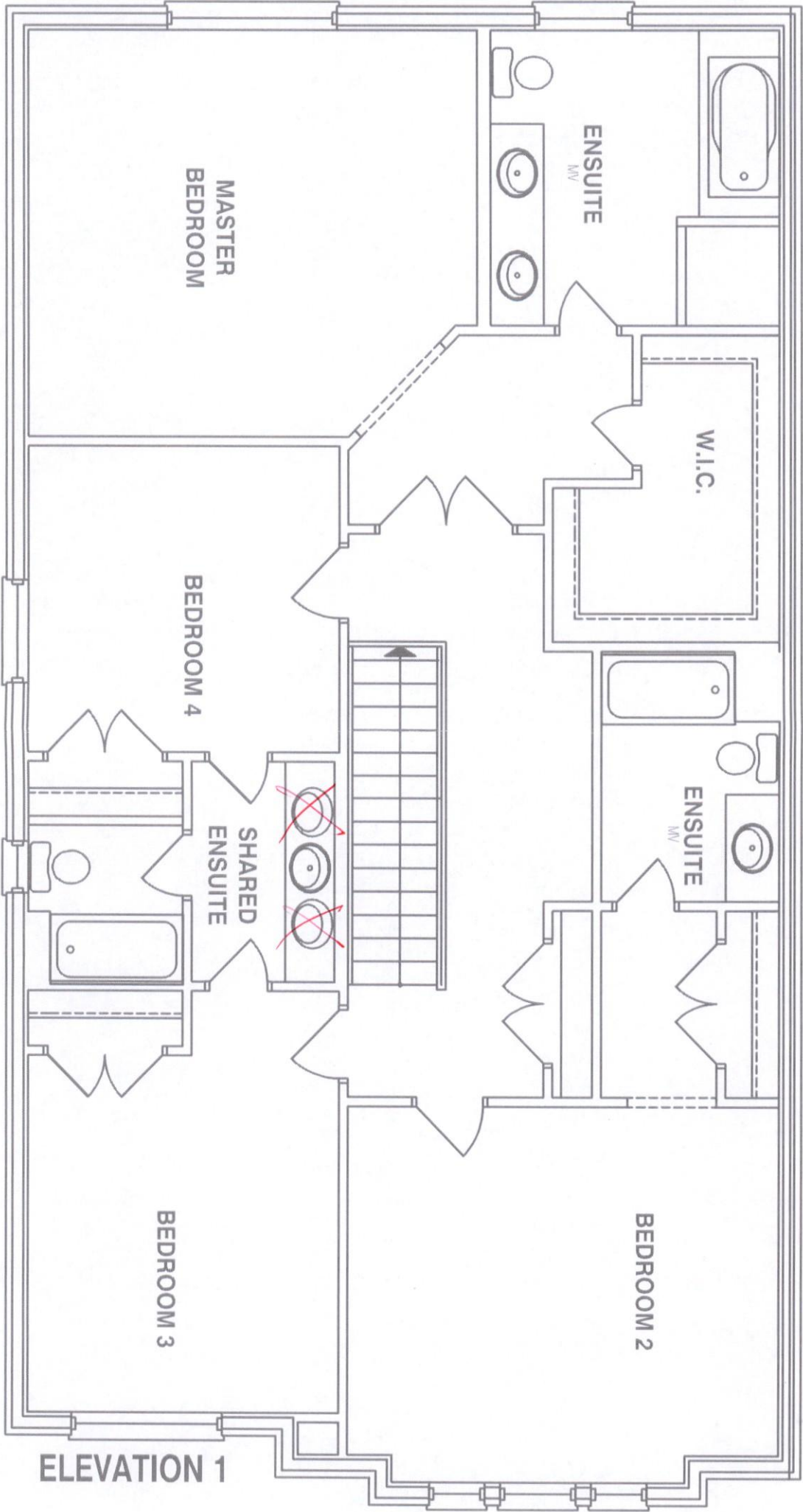


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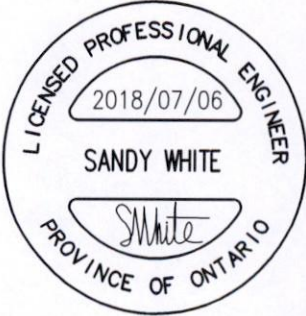
SYMBOL	DESCRIPTION (SEE PLAN FOR PIPE SIZING)
	WATER METER, PROVIDE SUPPLY PIPE SIZE/ Ø
	HOSE BIB
	PROPOSED COLD WATER LINE & RISER
	PROPOSED HOT WATER LINE & RISER
	FLOOR DRAIN



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 4

AMELIA 2 2818 sqft



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# 78988-P