

19-44 4478 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 12-13, EL-1

A. Project Information

Building number, street name		Unit number	Lot/Con 13
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

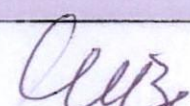
Climatic Zone (SB-1):	Heating Equipment Efficiency	Space Heating Fuel Source
<input type="checkbox"/> Zone 1 (< 5000 degree days)	<input type="checkbox"/> ≥ 92% AFUE	<input type="checkbox"/> Gas <input type="checkbox"/> Propane <input type="checkbox"/> Solid Fuel
<input type="checkbox"/> Zone 2 (≥ 5000 degree days)	<input type="checkbox"/> ≥ 84% < 92% AFUE	<input type="checkbox"/> Oil <input type="checkbox"/> Electric <input type="checkbox"/> Earth Energy
Ratio of Windows, Skylights & Glass (W, S & G) to Wall Area		Other Building Characteristics
Area of walls = <u>352.2</u> m ² or _____ ft ²		<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)
W, S & G % = <u>12.74%</u>		
Area of W, S & G = <u>44.8</u> m ² or _____ ft ²		Utilize window averaging: <input type="checkbox"/> Yes <input type="checkbox"/> No

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 ⁽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 

SITE NAME: GRANELLI HOME CORP

BUILDER: GREENYORK HOMES

TYPE: AMELIA 12

GFA: 2638

DATE: Jun-18

LO# 78991

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	EXP. WALL	CLG. HT.	FACTORS	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	ENS-4
EXP. WALL				33	6	10	27	38	33	7	10
CLG. HT.				9	9	9	9	9	9	9	9
GRS.WALL AREA	LOSS	GAIN		297	84	90	243	342	297	83	90
GLAZING	LOSS	GAIN									
NORTH	20.8	16.3	0	0	0	0	0	0	0	0	0
EAST	20.8	41.9	0	0	0	0	0	0	0	0	0
SOUTH	20.8	26.2	0	0	0	0	0	0	0	0	0
WEST	20.8	41.9	30	623	1257	13	270	848	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	267	1163	219	41	179	34	90	392	74
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	276	346	168	137	172	83	128	160	78
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	26	67	33
EXPOSED FLOOR	2.6	0.6	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS											
SLAB ON GRADE HEAT LOSS											
SUBTOTAL HT LOSS				2132		820		727	2392		2798
SUB TOTAL HT GAIN				1644		662		186	2335		2312
LEVEL FACTOR / MULTIPLIER	0.20	0.24			0.20	0.24		0.20	0.24		0.20
AIR CHANGE HEAT LOSS				508		148		173	570		667
AIR CHANGE HEAT GAIN				112		45		13	127		169
DUCT LOSS				0		0		90	296		0
DUCT GAIN				0		0		20	281		0
HEAT GAIN PEOPLE	240		2	480	0	0	0	1	240	1	240
HEAT GAIN APPLIANCES/LIGHTS				577	0	0	0	577	577	0	577
TOTAL HT LOSS BTU/H				2841		768		990	3258		3465
TOTAL HT GAIN x 1.3 BTU/H				3556		918		282	4012		4304

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LV/DN	K/B/F	LAUN	W/R	FOY	WUB	BAS
EXP. WALL				65	89	26	8	14	18	166
CLG. HT.				11	11	11	11	11	9	9
GRS.WALL AREA	LOSS	GAIN		606	769	286	88	154	162	936
GLAZING	LOSS	GAIN								
NORTH	20.8	16.3	0	0	0	0	0	0	0	0
EAST	20.8	41.9	39	810	1634	0	0	0	0	0
SOUTH	20.8	26.2	35	727	883	0	0	0	0	0
WEST	20.8	41.9	0	0	0	0	0	0	0	0
SKYL.T.	36.4	102.1	0	0	0	0	0	0	0	0
DOORS	24.7	4.7	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.4	0.8	531	2314	437	647	2819	532	20	493
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.7	0	0	0	0	0	0	142	619
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.3	15	40	20	25	67	33	0	0
EXPOSED FLOOR	2.6	0.6	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS										
SLAB ON GRADE HEAT LOSS										
SUBTOTAL HT LOSS				3891		5213		1681	119	
SUB TOTAL HT GAIN				2973		4606		312	1231	
LEVEL FACTOR / MULTIPLIER	0.30	0.36			0.30	0.36		0.30	0.36	
AIR CHANGE HEAT LOSS				1400		1875		594	210	
AIR CHANGE HEAT GAIN				202		313		21	29	
DUCT LOSS				0		0		0	0	
DUCT GAIN				0		0		0	0	
HEAT GAIN PEOPLE	240		0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS				577	0	577	0	0	0	0
TOTAL HT LOSS BTU/H				5291		7088		2248	1231	
TOTAL HT GAIN x 1.3 BTU/H				4877		7145		1183	273	

TOTAL HEAT GAIN BTU/H:

35412

TONS: 2.95

LOSS DUE TO VENTILATION LOAD BTU/H: 1529

STRUCTURAL HEAT LOSS: 50816

TOTAL COMBINED HEAT LOSS BTU/H: 52345

19-444473 000 00124 M-2057 LOT 13

ATTACHED NOTES ARE PART
OF REVIEWED DRAWINGS
REVIEWED BY: JESAI
MAR 27 2019

CITY OF BRAMPTON
BUILDING DIVISION

SITE NAME: GRANELLI HOME CORP
BUILDER: GREENYORK HOMES

TYPE: AMELIA 12

DATE: Jun-18

GFA: 2538

LO# 78991

HEATING CFM 1030 COOLING CFM 1030
TOTAL HEAT LOSS 50,816 TOTAL HEAT GAIN 35,123
AIR FLOW RATE CFM 20.27 AIR FLOW RATE CFM 29.33

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 = 1030
CFM @ 6" E.S.P.

TEMPERATURE RISE 52 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	13	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.

plenium pressure s/a 0.18 r/a pressure 0.17
max s/a dif press. loss 0.02 r/a grille press. Loss 0.02
min adjusted pressure s/a 0.16 adjusted pressure r/a 0.15

RUN #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-2	BED-3	MBR	ENS-4	BED-4	LV/DN	K/B/F	K/B/F	LV/DN	LAUN	W/R	FOY	K/B/F	BAS	BAS	BAS
RM LOSS MBH	1.32	0.77	0.99	1.63	1.73	1.67	0.65	1.63	1.73	1.32	0.84	1.67	2.65	2.36	2.36	2.65	2.25	0.81	2.15	2.36	4.15	4.15	4.15
CFM PER RUN HEAT	27	16	20	33	35	34	13	33	35	27	17	34	54	48	48	54	46	16	44	48	84	84	84
RM GAIN MBH	1.83	0.92	0.28	2.01	2.15	2.14	0.47	2.01	2.15	1.83	0.53	2.14	2.44	2.38	2.38	2.44	1.18	0.54	0.59	2.38	0.47	0.47	0.47
CFM PER RUN COOLING	54	27	8	59	63	63	14	59	63	54	15	63	72	70	70	72	35	16	17	70	14	14	14
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	0.16	0.16	0.16
ACTUAL DUCT LGH.	50	46	45	68	65	46	49	62	56	54	44	48	56	39	32	55	12	32	34	28	32	12	38
EQUIVALENT LENGTH	130	150	170	150	220	150	130	140	160	150	180	150	120	130	120	130	150	150	150	120	110	160	150
TOTAL EFFECTIVE LENGTH	180	196	215	218	285	196	179	202	216	204	224	198	176	169	152	185	162	182	184	148	142	172	188
ADJUSTED PRESSURE	0.1	0.09	0.08	0.08	0.06	0.09	0.1	0.09	0.08	0.08	0.08	0.09	0.1	0.11	0.11	0.09	0.11	0.09	0.09	0.12	0.11	0.09	0.09
ROUND DUCT SIZE	5	4	4	5	6	5	4	5	6	5	4	5	5	5	5	5	4	4	4	5	6	6	6
HEATING VELOCITY (ft/min)	198	184	229	242	178	250	149	242	178	198	195	250	396	352	352	396	528	184	505	352	428	428	428
COOLING VELOCITY (ft/min)	396	310	92	433	321	463	161	433	321	396	172	463	529	514	514	529	402	184	195	514	71	71	71
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10
TRUNK	D	D	D	B	A	C	B	B	A	D	B	C	A	C	C	A	D	D	B	D	C	D	A

RUN #	25	26
ROOM NAME	BAS	BATH
RM LOSS MBH	4.15	0.65
CFM PER RUN HEAT	84	13
RM GAIN MBH	0.47	0.47
CFM PER RUN COOLING	14	14
ADJUSTED PRESSURE	0.16	0.17
ACTUAL DUCT LGH.	55	58
EQUIVALENT LENGTH	110	160
TOTAL EFFECTIVE LENGTH	165	218
ADJUSTED PRESSURE	0.1	0.08
ROUND DUCT SIZE	6	4
HEATING VELOCITY (ft/min)	428	149
COOLING VELOCITY (ft/min)	71	161
OUTLET GRILL SIZE	4X10	3X10
TRUNK	A	B

REVIEWED BY: S. DESAI
 MAR 27 2019
 ATTACHED NOTES ARE PART
 OF REVIEWED DRAWINGS
 ALL WORK MUST COMPLY WITH CBC

SUPPLY AIR TRUNK SIZE

TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	0.06	10.1	12	8
TRUNK B	0.06	11.8	16	8
TRUNK C	0.09	8.1	8	8
TRUNK D	0.06	15.2	26	8
TRUNK E	0.00	0	0	8
TRUNK F	0.00	0	0	8

RETURN AIR TRUNK SIZE

TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK G	0.00	0	0	8
TRUNK H	0.00	0	0	8
TRUNK I	0.00	0	0	8
TRUNK J	0.00	0	0	8
TRUNK K	0.00	0	0	8
TRUNK L	0.00	0	0	8
TRUNK O	0.06	0	0	8
TRUNK P	0.06	0	0	8
TRUNK Q	0.06	0	0	8
TRUNK R	0.06	0	0	8
TRUNK S	0.06	0	0	8
TRUNK T	0.06	0	0	8
TRUNK U	0.06	0	0	8
TRUNK V	0.06	0	0	8
TRUNK W	0.06	0	0	8
TRUNK X	0.06	15.2	28	8
TRUNK Y	0.06	12.6	18	8
TRUNK Z	0.06	0	0	8
DROP	0.06	15.2	24	10

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	23	24
AIR VOLUME	85	85	85	85	85	360	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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
ACTUAL DUCT LGH.	46	70	58	40	43	32	46	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	175	180	165	175	215	220	175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	221	250	223	215	258	252	221	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.07	0.06	0.07	0.07	0.06	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
ROUND DUCT SIZE	5.8	6	5.8	5.8	6	10.3	5.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	14	14	14	14	14	30	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Michael O'Rourke

TYPE: AMELIA 12
SITE NAME: GRANELLI HOME CORP

LO # 78991

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	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	<input checked="" type="checkbox"/>	0.3
BATH	QTXEN050C	50	<input checked="" type="checkbox"/>	0.3
ENS-4	QTXEN050C	50	<input checked="" type="checkbox"/>	0.3
W/R	QTXEN050C	50	<input checked="" type="checkbox"/>	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 #	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:** AMELIA 12**BUILDER:** GREENYORK HOMES**SFQT:** 2538**LO#** 78991**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:	SOUTH	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):	34898.0	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: 54.0 ft	WIDTH: 33.0 ft	EXPOSED PERIMETER:	156.0 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	-

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: RESAI
MAR 27 2019
ATTACHED NOTES ARE PART
OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH OBC

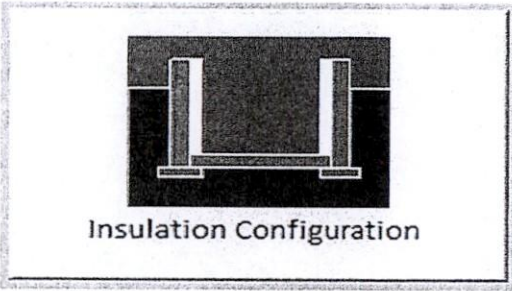
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

Michael O'Rourke

Residential Foundation Thermal Load Calculator

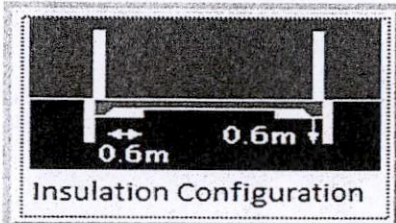
Supplemental tool for CAN/CSA-F280

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):	16.5	 Insulation Configuration
Floor Width (m):	10.1	
Exposed Perimeter (m):	47.5	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	0.6	
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):	1573	

TYPE: AMELIA 12
LO# 78991

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):	4.6	
Width (m):	0.9	
Exposed Perimeter (m):	5.5	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):	35	

TYPE: AMELIA 12
LO# 78991

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
MAR 27 2019
ATTACHED NOTES ARE PART
OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH OTC

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):	988.2			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1317.3 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: AMELIA 12

LO# 78991



CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
MAR 27 2019 SD
ATTACHED NOTES ARE PART
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ALL WORK MUST COMPLY WITH OEC



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.

A HEAT RECOVERY VENTILATOR SHALL BE INSTALLED IN COMPLIANCE WITH OBC DIV. B, 6.2.1.6, 9.32.3.6(3), 9.32.3.11 AND HRAI DIGEST REQUIREMENTS.

CSA-F280-12
PACKAGE A1

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.

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x6" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x6" 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		<div></div> <div>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</div>	HEAT LOSS 52345 BTU/H UNIT DATA		# OF RUNS	S/A	R/A	FANS	Sheet Title BASEMENT HEATING LAYOUT	
Project Name GRANELLI HOMES CORP BRAMPTON, ONTARIO			MAKE CARRIER	3RD FLOOR						Date JUNE/2018 Scale 3/16" = 1'-0"
M-2057 LOT 13			MODEL 59SP5A-60-12	2ND FLOOR		13	5	3		
AMELIA 12			INPUT 60 MBTU/H	1ST FLOOR		8	2	3		
2538 sqft			OUTPUT 58 MBTU/H	BASEMENT		4	1	0		BCIN# 19669 LO# 78991
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.		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							
		FAN SPEED 1030 cfm @ 0.6" w.c.								

ELEVATION 2

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
APR 01 2019
ATTACHED NOTES ARE PART
OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH OBC

PORCH

LIVING/DINING
ROOM

FOYER

7R LW
14X8-6"

ELEVATION 1

BREAKFAST

KITCHEN

LAUNDRY

GARAGE

INSULATE DUCTS ROUTING
THRU GARAGE MIN 2.1 RSI

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

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.

RECEIVED
MAR 29 2019
Building Division

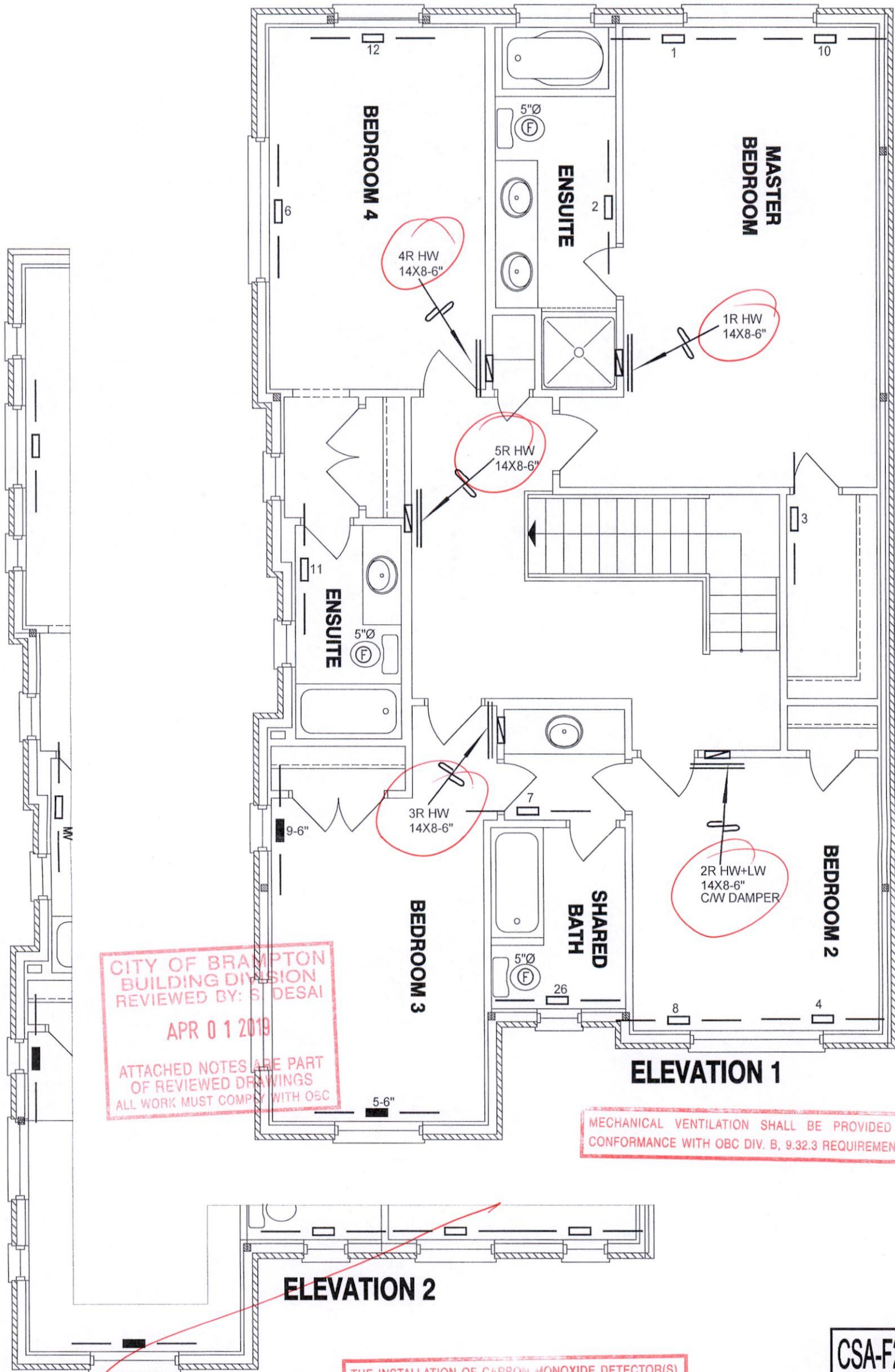
CSA-F280-12
PACKAGE A1

I MICHAEL O'Rourke HAVE REVIEWED
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C, 3.2.1 OF THE
BUILDING CODE.
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

HVAC LEGEND						
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	
	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	No.
					RETURN AIR STACK 2nd FLOOR	Description
					REDUCER	Date

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Client GREENYORK HOMES		<div>HVACDESIGNS LTD.</div> <div>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</div>	LOT 13	Sheet Title FIRST FLOOR HEATING LAYOUT
Project Name GRANELLI HOMES CORP BRAMPTON, ONTARIO				Date JUNE/2018
AMELIA 12		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.	LOT 13	Scale 3/16" = 1'-0"
2538 sqft				BCIN# 19669
				LO# 78991



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.

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.	
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	Description	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@hvacdsgns.ca Web: www.hvacdsgns.ca Specializing in Residential Mechanical Design Services	Sheet Title SECOND FLOOR HEATING LAYOUT	
Project Name GRANELLI HOMES CORP BRAMPTON, ONTARIO M-2057 LOT 13 AMELIA 12 2538 sqft			Date JUNE/2018 Scale 3/16" = 1'-0" BCIN# 19669 LO# 78991	
		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.		

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 6 OSECO WAY		Unit no.	Lot/con. 13
Municipality BRAMPTON	Postal code	Plan number/ other description 43M-2057	
B. Individual who reviews and takes responsibility for design activities			
Name SANDY WHITE, P.Eng.		Firm ANDA ENGINEERING LTD.	
Street address 5125 ARDOCH ROAD		Unit no.	Lot/con.
Municipality ARDOCH	Postal code K0H-1C0	Province ONTARIO	E-mail design@andaengineering.com
Telephone number (613) 479-0161	Fax number () N/A	Cell number (416) 476-1105	
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1. of Division C]			
<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 – II Buildings	
<input type="checkbox"/> Complex Buildings	<input type="checkbox"/> Fire Protection	<input type="checkbox"/> On-site Sewage Systems	
Description of designer's work AMELIA 12 EL. 1 WALK-UP & DECK CONDITION GRANELLI HOMES CORP.			
D. Declaration of Designer			
I, <u>SANDY WHITE,</u> 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: <u>P.Eng. exempt, note 2</u>			
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>2019/24/01</u>		SANDY WHITE	
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.



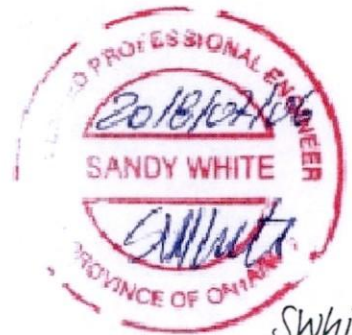
Planning and Development Services
Building Division
8850 McLaughlin Road, Unit 1
Brampton, ON L6Y 5T1

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 12 (LO#78991)
Optional Floor Layout:
Application No.:



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.

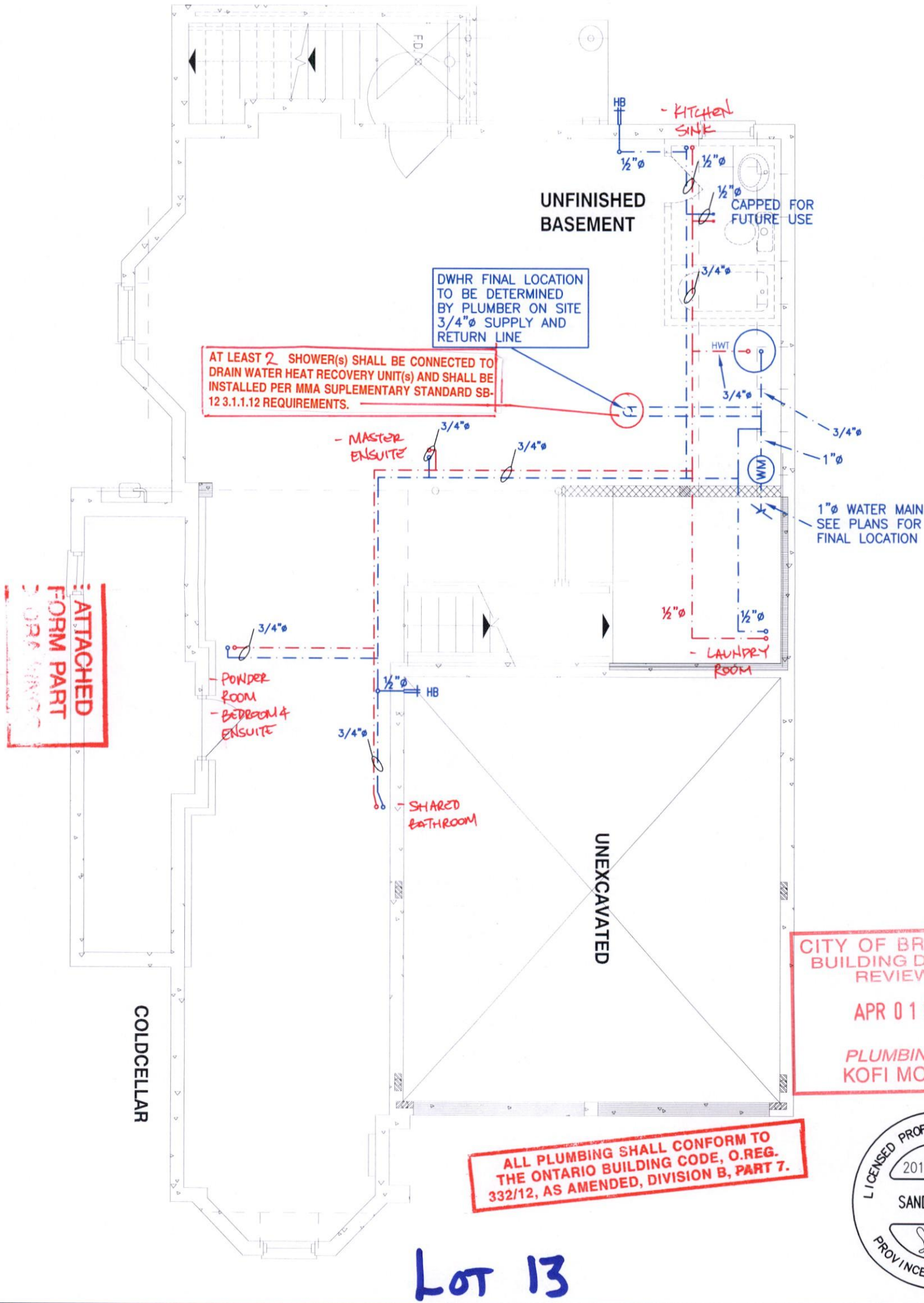
PLEASE SEE THE
NOTES AS THEY
OF THE REVIEWER

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



Client
GREENYORK HOMES

Project Name
GRANELLI HOMES CORP
BRAMPTON, ONTARIO

AMELIA 12

2538 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

BASEMENT
PLUMBING
LAYOUT

Date
JUNE/2018

Scale
3/16" = 1'-0"

LO#

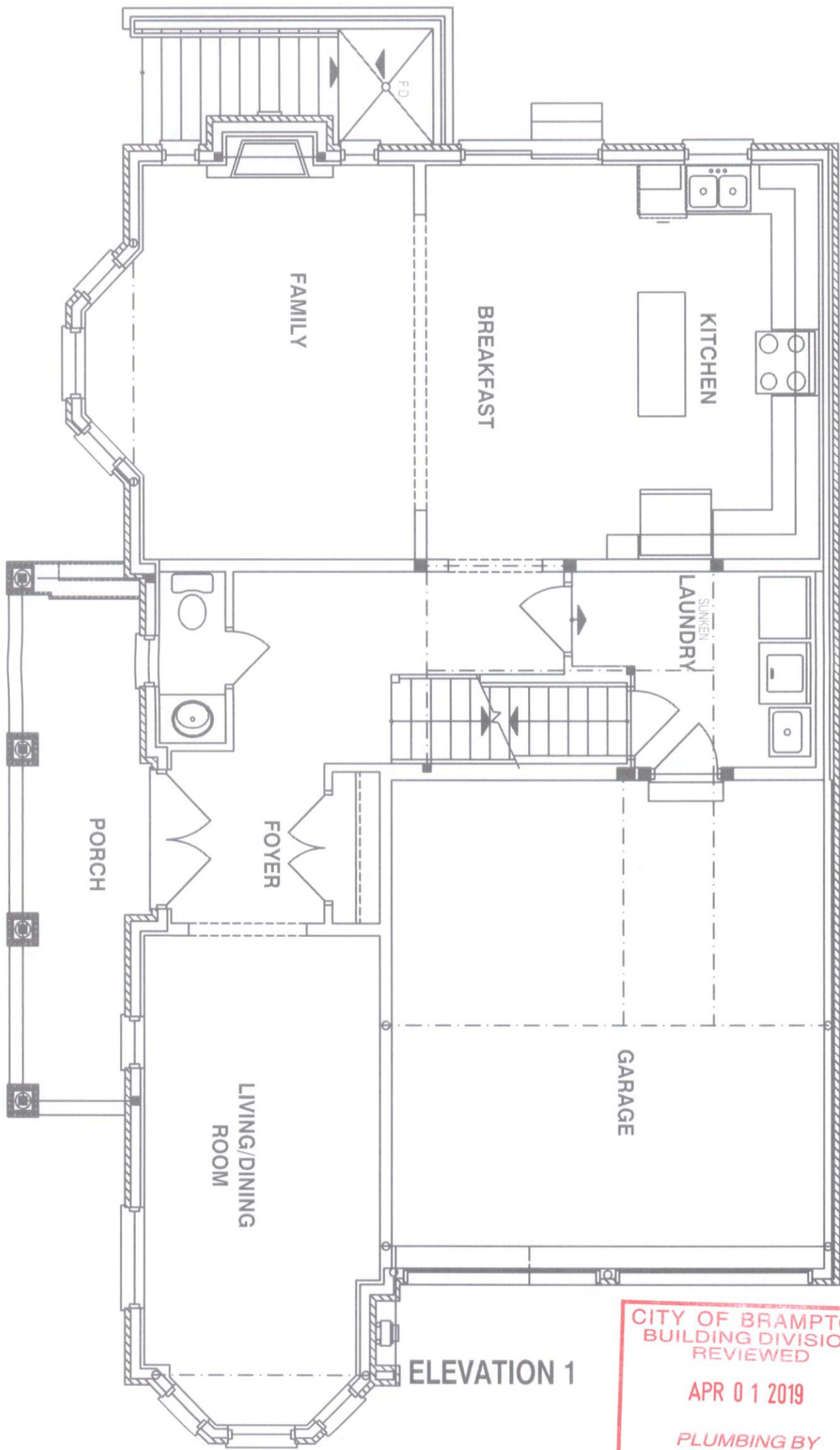
78991-P

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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



ELEVATION 1

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 LOT13

AMELIA 12 2538 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.hvacdsgns.ca
Specializing in Residential Mechanical Design Services

Sheet Title

FIRST FLOOR
PLUMBING
LAYOUT

Date

JUNE/2018

Scale

3/16" = 1'-0"

LO#

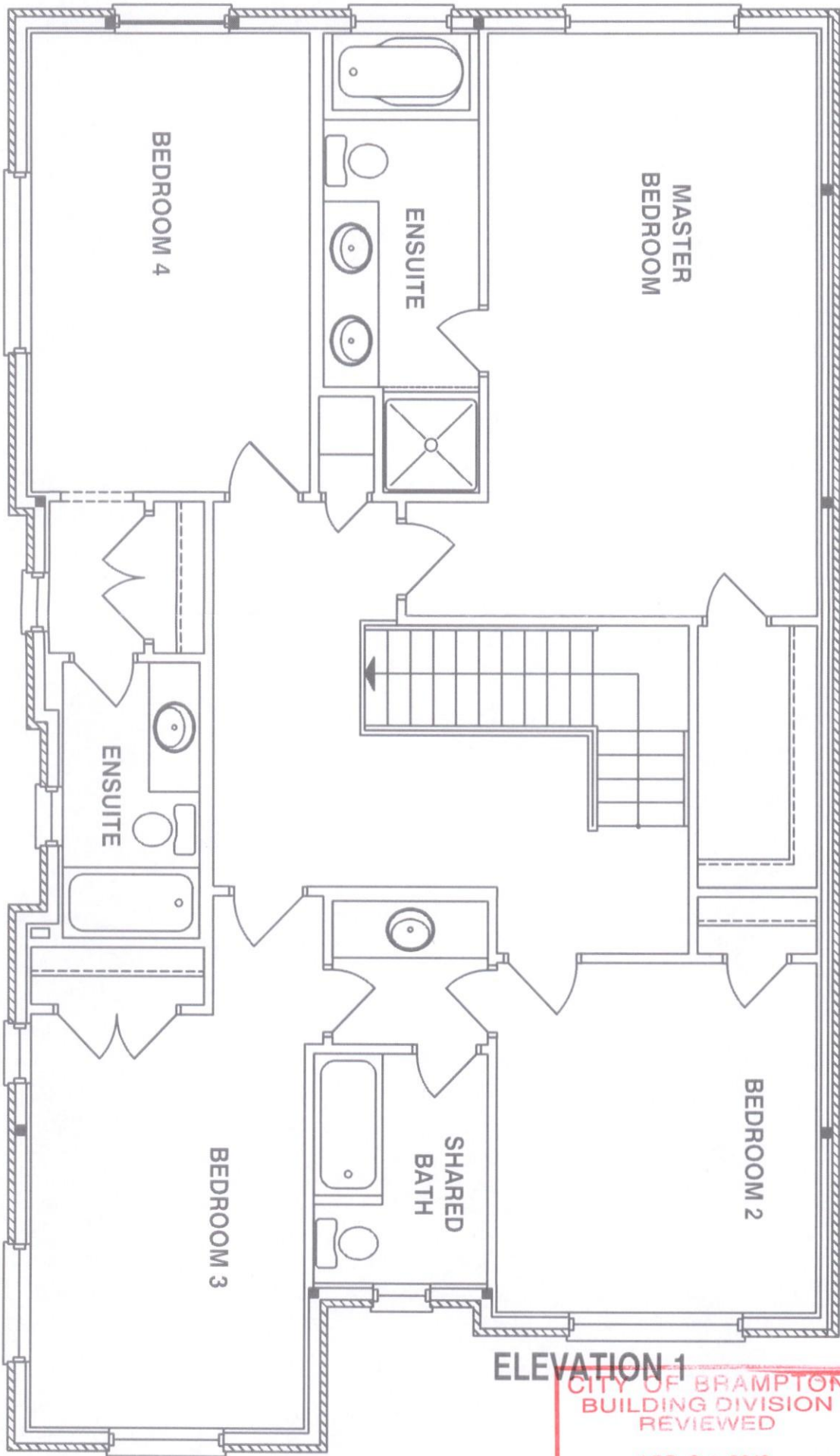
78991-P

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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



ELEVATION 1

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 13

AMELIA 12 2538 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

JUNE/2018

Scale

3/16" = 1'-0"

LO#

78991-P