

19-447141 000 00 R12

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 3-06, EL-1

A. Project Information

Building number, street name		Unit number	Lot/Con 6
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: _____

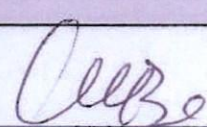
C. Project Design Conditions

Climatic Zone (SB-1): <input type="checkbox"/> Zone 1 (< 5000 degree days) <input type="checkbox"/> Zone 2 (≥ 5000 degree days)	Heating Equipment Efficiency <input type="checkbox"/> ≥ 92% AFUE <input type="checkbox"/> ≥ 84% < 92% AFUE	Space Heating Fuel Source <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
Ratio of Windows, Skylights & Glass (W, S & G) to Wall Area Area of walls = <u>368.4</u> m ² or _____ ft ² Area of W, S & G = <u>38.46</u> m ² or _____ ft ² W, S & G % = <u>10.4%</u> Utilize window averaging: <input type="checkbox"/> Yes <input type="checkbox"/> No		Other Building Characteristics <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)

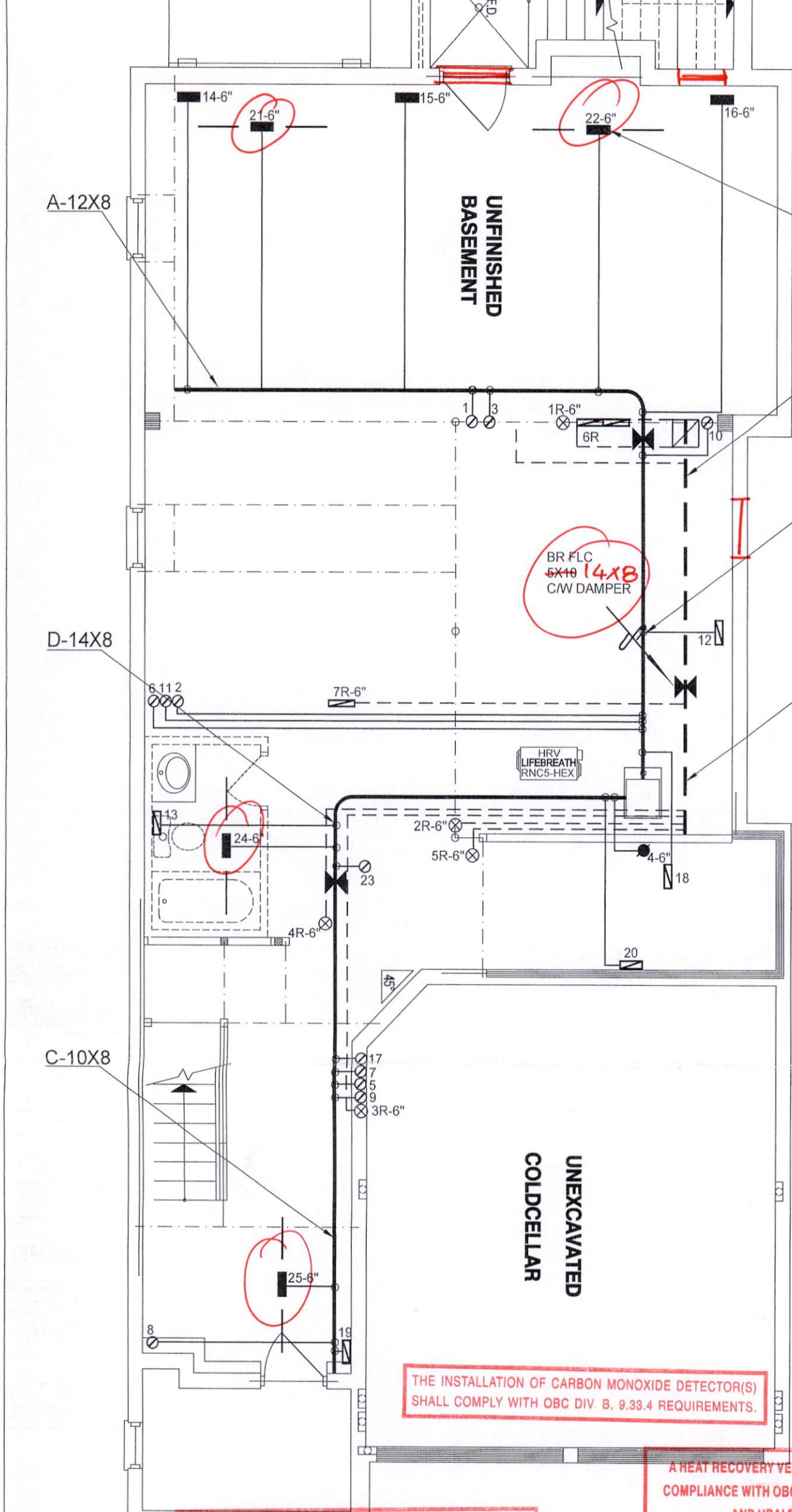
Energy Efficiency Substitutions				
<input type="checkbox"/> ICF (3.1.1.2.(5) & (6) / 3.1.1.3.(5) & (6)) <input type="checkbox"/> Combined space heating and domestic water heating systems (3.1.1.2.(7) / 3.1.1.3.(7)) <input type="checkbox"/> Airtightness substitution(s) Airtightness test required (Refer 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 ⁽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 

M-2057 LOT 6

19-447141 000 00 RR



CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
APR 10 2019
ATTACHED NOTES ARE PART
OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH OBC

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 SIA 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).

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.

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

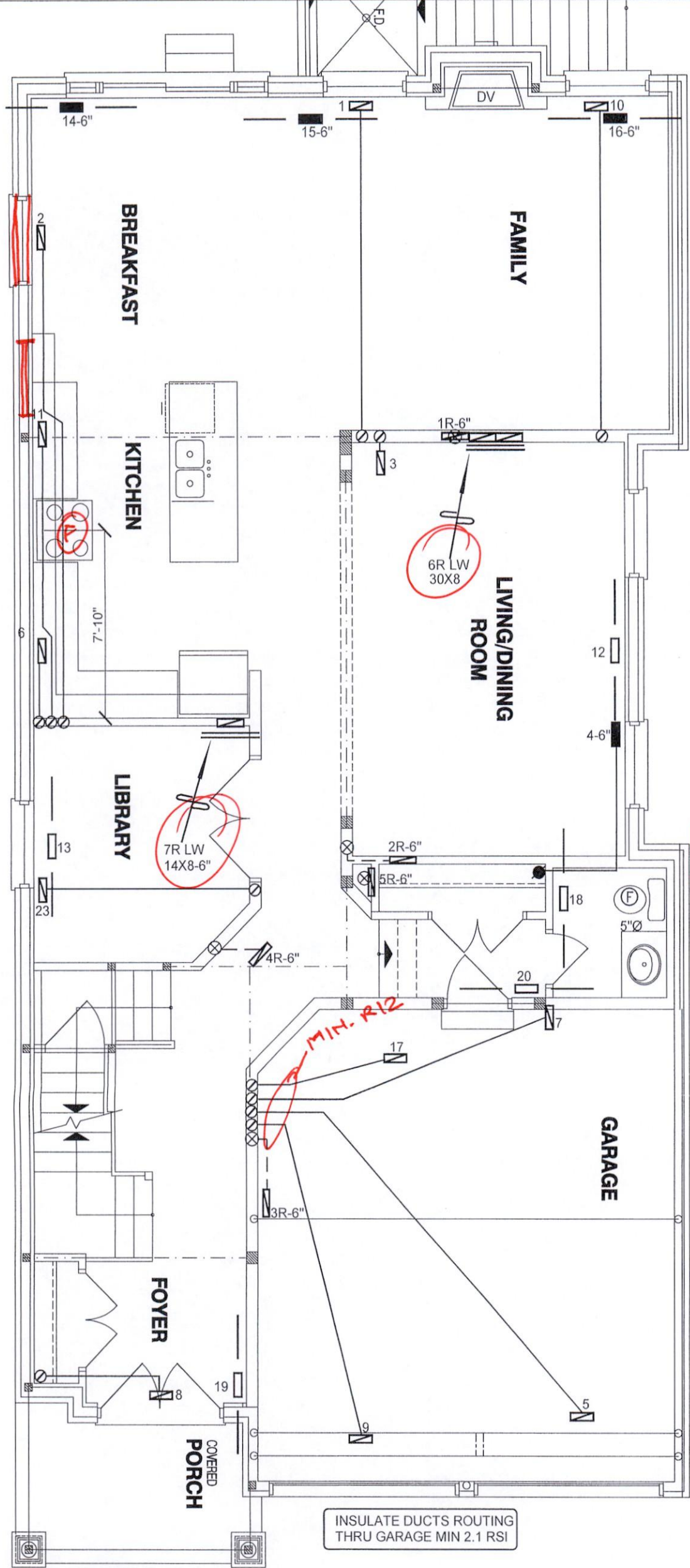
CSA-F280-12
PACKAGE A1

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, BCIN# 19669
HVAC DESIGNS LTD.

HVAC LEGEND								REVISIONS	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	No.	Date
	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

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Client GREENYORK HOMES		<div><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></div>	HEAT LOSS 56030 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title BASEMENT HEATING LAYOUT	
Project Name GRANELLI HOMES CORP BRAMPTON, ONTARIO M-2057 LOT 6 ALT 2ND AMELIA 3 2970 sqft			MAKE CARRIER	3RD FLOOR					Date JUNE/2018 Scale 3/16" = 1'-0" BCIN# 19669 LO# 78990
			MODEL 59SP5A-60-12	2ND FLOOR		13	5	5	
			INPUT 60 MBTU/H	1ST FLOOR		8	2	2	
			OUTPUT 58 MBTU/H	BASEMENT		4	1	0	
		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.							

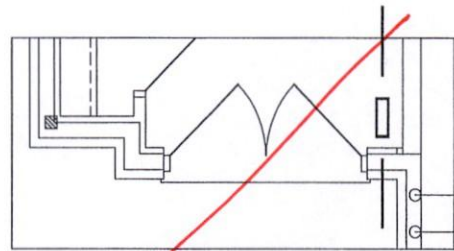


CITY OF BRAMPTON
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REVIEWED BY: S. DESAI
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MECHANICAL VENTILATION SHALL BE PROVIDED IN
CONFORMANCE WITH OBC DIV. B, 9.32.3 REQUIREMENTS.

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

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



ELEVATION 2

ELEVATION 1

I MICHAEL O'ROURKE HAVE REVIEWED
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
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CSA-F280-12
PACKAGE A1

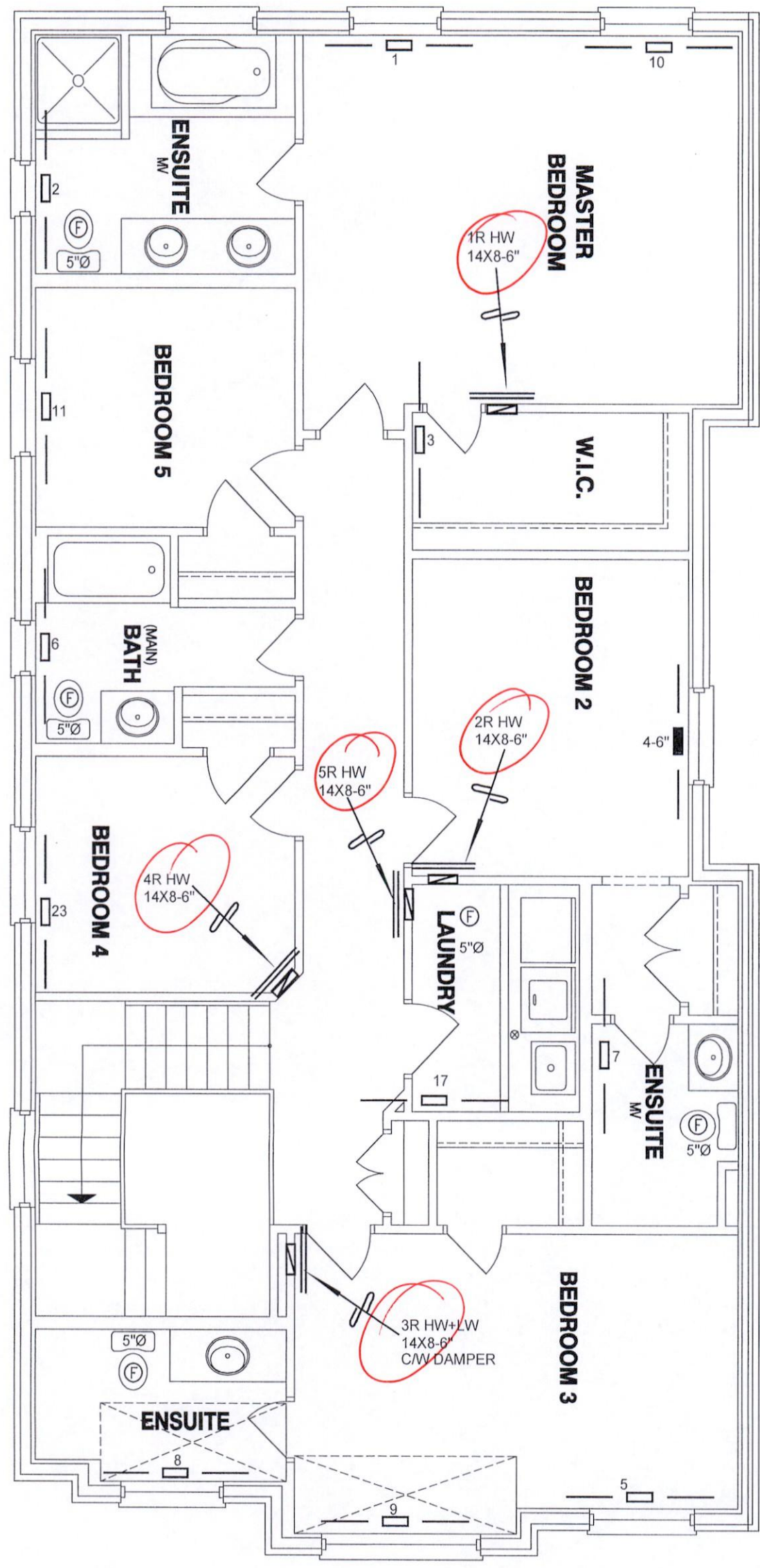
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR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

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Client
GREENYORK HOMES
Project Name
GRANELLI HOMES CORP
BRAMPTON, ONTARIO
M-2057 LOT 6
ALT 2ND
AMELIA 3
2970 sqft

HVAC DESIGNS 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
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.

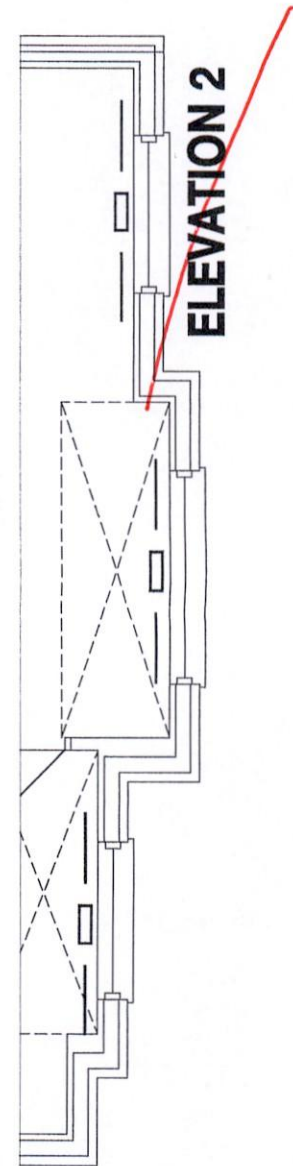
Sheet Title
**FIRST FLOOR
HEATING
LAYOUT**
Date
JUNE/2018
Scale
3/16" = 1'-0"
BCIN# 19669
LO# **78990**



CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI

APR 10 2019

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HVAC LEGEND								REVISIONS	
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Client

GREENYORK HOMES

Project Name

**GRANELLI HOMES CORP
BRAMPTON, ONTARIO**

M-2057 LOT 6

**ALT 2ND
AMELIA 3**

2970 sqft

HVACDESIGNS LTD.

375 Finley Ave. Suite 202 - Ajax, Ontario
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Specializing in Residential Mechanical Design Services

Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.

Sheet Title

**SECOND FLOOR
HEATING
LAYOUT**

Date

JUNE/2018

Scale

3/16" = 1'-0"

BCIN# 19669

LO#

78990

SITE NAME: GRANELLI HOME CORP
BUILDER: GREENYORK HOMESALT 2ND
TYPE: AMELIA 3

GFA: 2970

DATE: Jun-18
LO# 78990WINTER NATURAL AIR CHANGE RATE 0.335
SUMMER NATURAL AIR CHANGE RATE 0.119HEAT LOSS ΔT °F. 74
HEAT GAIN ΔT °F. 14CSA-F280-12
SB-12 PACKAGE A1

ROOM USE	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-2	ENS-3	BED-5	BATH		
EXP. WALL	37	24	5	12	31	25	16	23	10	10		
CLG. HT.	9	9	9	9	9	9	9	9	9	9		
FACTORS												
GRS.WALL AREA	333	216	45	108	279	226	144	207	90	90		
GLAZING	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN		
NORTH	20.8 16.3	0 0 0	0 0 0	0 0 0	15 312 245	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0		
EAST	20.8 41.9	0 0 0	0 0 0	0 0 0	57 1184 2388	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0		
SOUTH	20.8 25.2	0 0 0	8 166 202	0 0 0	0 0 0	23 478 580	0 0 0	8 166 202	15 312 379	8 166 202		
WEST	20.8 41.9	30 623 1257	13 270 545	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0		
SKYL.T.	36.4 102.1	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0		
DOORS	24.7 4.7	0 0 0	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 0.8	303 1320 249	198 860 160	45 196 37	93 405 76	222 967 183	202 880 166	144 627 118	176 767 145	75 327 62	82 367 67	
NET EXPOSED BSMT WALL ABOVE GR	3.5 0.7	0 0 0	0 0 0	0 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	267 335 162	130 163 79	125 157 76	203 264 123	213 267 129	150 188 91	117 147 71	49 61 30	120 160 73	110 138 67	
NO ATTIC EXPOSED CLG	2.7 1.3	0 0 0	0 0 0	0 0 0	0 0 0	30 81 39	0 0 0	0 0 0	26 67 33	0 0 0	0 0 0	
EXPOSED FLOOR	2.5 0.5	0 0 0	0 0 0	0 0 0	0 0 0	243 605 114	0 0 0	50 124 23	0 0 0	0 0 0	0 0 0	
BASEMENT/CRAWL HEAT LOSS		0	0	0	0	0	0	0	0	0	0	
SLAB ON GRADE HEAT LOSS		0	0	0	0	0	0	0	0	0	0	
SUBTOTAL HT LOSS		2278	1449	353	971	3104	1546	859	1539	789	661	
SUB TOTAL HT GAIN			1668	986	113	445	2853	838	213	1372	513	336
LEVEL FACTOR / MULTIPLIER	0.20 0.27	0.20 0.27	0.20 0.27	0.20 0.27	0.20 0.27	0.20 0.27	0.20 0.27	0.20 0.27	0.20 0.27	0.20 0.27	0.20 0.27	
AIR CHANGE HEAT LOSS		611	389	95	261	833	415	241	413	212	177	
AIR CHANGE HEAT GAIN			143	85	10	38	245	72	18	118	44	29
DUCT LOSS		0	0	0	0	394	0	114	0	0	0	
DUCT GAIN		0	0	0	0	393	0	23	0	0	0	
HEAT GAIN PEOPLE	240	2	480	0	0	1	240	1	240	0	1	240
HEAT GAIN APPLIANCES/LIGHTS			590	0	0	590	590	0	0	0	1	240
TOTAL HT LOSS BTU/H		2889	1837	447	1232	4330	1961	1253	1952	1000	839	
TOTAL HT GAIN x 1.3 BTU/H			3745	1392	160	1706	5616	2261	331	1937	1803	475

ROOM USE	LV/DN	LIB	KT/BR	FAM	LAUN	W/R	FOY	MUD			WUB	BAS
EXP. WALL	17	23	40	33	0	16	30	14			17	165
CLG. HT.	11	11	11	11	9	11	11	11			9	9
FACTORS												
GRS.WALL AREA	187	253	440	363	0	165	330	154			153	930
GLAZING	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN			LOSS GAIN	LOSS GAIN
NORTH	20.8 16.3	38 789 620	0 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 41.9	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0			0 0 0	0 0 0
SOUTH	20.8 25.2	0 0 0	19 395 479	19 395 479	0 0 0	0 0 0	7 145 293	7 145 293			0 0 0	0 0 0
WEST	20.8 41.9	0 0 0	0 0 0	68 1413 2848	38 789 1592	0 0 0	0 0 0	0 0 0			0 0 0	0 0 0
SKYL.T.	36.4 102.1	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0			0 0 0	0 0 0
DOORS	24.7 4.7	0 0 0	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 0.8	149 649 122	234 1020 192	353 1538 290	325 1416 267	0 0 0	165 719 136	283 1233 233	127 553 104		133 579 109	0 0 0
NET EXPOSED BSMT WALL ABOVE GR	3.5 0.7	0 0 0	0 0 0	0 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	0 0 0	0 0 0	0 0 0	0 0 0	92 115 66	0 0 0	0 0 0	0 0 0		0 0 0	0 0 0
NO ATTIC EXPOSED CLG	2.7 1.3	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0		0 0 0	0 0 0
EXPOSED FLOOR	2.5 0.5	0 0 0	0 0 0	0 0 0	0 0 0	25 62 12	0 0 0	0 0 0	0 0 0		0 0 0	0 0 0
BASEMENT/CRAWL HEAT LOSS		0	0	0	0	0	0	0	0		0	0
SLAB ON GRADE HEAT LOSS		0	0	0	0	0	0	0	0		0	0
SUBTOTAL HT LOSS		1439	1414	3345	2206	178	719	2365	1192		106	7578
SUB TOTAL HT GAIN			742	672	3618	1859	68	136	712		202	553
LEVEL FACTOR / MULTIPLIER	0.30 0.44	0.30 0.44	0.30 0.44	0.30 0.44	0.20 0.27	0.30 0.44	0.30 0.44	0.30 0.44	0.30 0.44		0.50 1.05	
AIR CHANGE HEAT LOSS		629	618	1452	964	48	314	1033	521		9232	65
AIR CHANGE HEAT GAIN			64	58	311	160	8	12	61			
DUCT LOSS		0	0	0	0	23	0	0	0		0	
DUCT GAIN		0	0	0	0	66	0	0	0		0	
HEAT GAIN PEOPLE	240	0	0	0	0	0	0	0	0		0	0
HEAT GAIN APPLIANCES/LIGHTS			590	590	590	590	590	0	0		0	590
TOTAL HT LOSS BTU/H		2067	2032	4807	3169	248	1033	3398	1712		1179	16810
TOTAL HT GAIN x 1.3 BTU/H			1814	1715	5874	3391	948	1005	693		263	1569

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TOTAL HEAT GAIN BTU/H:

37235

TONS: 3.10

LOSS DUE TO VENTILATION LOAD BTU/H: 1835

STRUCTURAL HEAT LOSS: 54196

TOTAL COMBINED HEAT LOSS BTU/H: 56030

SITE NAME: GRANELLI HOME CORP
BUILDER: GREENYORK HOMES

ALT 2ND
TYPE: AMELIA 3

DATE: Jun-18

GFA: 2970 LO# 78990

HEATING CFM 1030 COOLING CFM 1030
TOTAL HEAT LOSS 54,196 TOTAL HEAT GAIN 36,889
AIR FLOW RATE CFM 19.01 AIR FLOW RATE CFM 27.92

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.

RUN #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BATH	ENS-2	ENS-3	BED-3	MBR	BED-5	LV/DN	LIB	KT/BR	KT/BR	FAM	LAUN	W/R	FOY	MUD	BAS	BAS	BED-4	BAS
RM LOSS MBH	1.44	1.84	0.45	1.23	2.17	0.84	1.25	1.95	2.17	1.44	1.00	2.07	2.03	2.40	2.40	3.17	0.25	1.03	3.40	1.71	4.50	4.50	1.96	4.50
CFM PER RUN HEAT	27	35	9	23	41	16	24	37	41	27	19	39	39	46	46	60	5	20	65	33	85	85	37	85
RM GAIN MBH	1.87	1.39	0.16	1.71	2.81	0.47	0.33	1.94	2.81	1.87	1.80	1.81	1.71	2.94	2.94	3.39	0.95	0.19	1.01	0.69	0.46	0.48	2.26	0.46
CFM PER RUN COOLING	52	39	4	48	78	13	9	54	78	52	50	51	48	82	82	95	26	5	28	19	13	13	63	13
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	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.16
ACTUAL DUCT LGH	49	53	35	23	56	35	50	61	52	43	43	11	23	50	37	33	42	9	38	10	46	30	35	20
EQUIVALENT LENGTH	150	170	160	210	130	180	140	140	120	150	180	110	140	110	130	190	150	170	110	170	110	150	120	130
TOTAL EFFECTIVE LENGTH	199	223	195	233	186	215	190	201	172	193	223	121	163	160	167	223	192	179	148	180	156	180	155	150
ADJUSTED PRESSURE	0.09	0.08	0.09	0.07	0.09	0.08	0.09	0.09	0.1	0.09	0.08	0.14	0.11	0.1	0.1	0.07	0.09	0.1	0.12	0.1	0.1	0.09	0.11	0.11
ROUND DUCT SIZE	4	4	4	6	5	5	4	5	5	4	5	5	5	6	6	6	4	4	5	4	6	6	5	6
HEATING VELOCITY (ft/min)	310	402	103	117	301	117	275	272	301	310	140	286	286	235	235	306	57	229	477	379	433	433	272	433
COOLING VELOCITY (ft/min)	597	447	46	245	573	95	103	396	573	597	367	374	352	418	418	484	298	57	206	218	66	66	463	66
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10	4X10
TRUNK	A	B	A	D	C	B	C	C	C	B	B	B	D	A	A	A	C	B	C	D	A	A	D	D

RUN #	25
ROOM NAME	BAS
RM LOSS MBH	4.50
CFM PER RUN HEAT	85
RM GAIN MBH	0.46
CFM PER RUN COOLING	13
ADJUSTED PRESSURE	0.16
ACTUAL DUCT LGH	37
EQUIVALENT LENGTH	120
TOTAL EFFECTIVE LENGTH	157
ADJUSTED PRESSURE	0.1
ROUND DUCT SIZE	6
HEATING VELOCITY (ft/min)	433
COOLING VELOCITY (ft/min)	66
OUTLET GRILL SIZE	4X10
TRUNK	C

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI

APR 10 2019

ATTACHED NOTES ARE PART
OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH OBC

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	358	0.07	9.9	12	x	8	537		
TRUNK B	514	0.07	11.3	14	x	8	661		
TRUNK C	298	0.09	8.7	10	x	8	536		
TRUNK D	515	0.07	11.3	14	x	8	662		
TRUNK E	0	0.00	0	0	x	8	0		
TRUNK F	0	0.00	0	0	x	8	0		

RETURN AIR TRUNK SIZE

TRUNK	STATIC	ROUND	RECT	VELOCITY
CFM	PRESS	DUCT	DUCT	(ft/min)
TRUNK G	0	0.06	0	0
TRUNK H	0	0.06	0	0
TRUNK I	0	0.06	0	0
TRUNK J	0	0.06	0	0
TRUNK K	0	0.06	0	0
TRUNK L	0	0.06	0	0
TRUNK M	0	0.06	0	0
TRUNK N	0	0.06	0	0
TRUNK O	0	0.06	0	0
TRUNK P	0	0.06	0	0
TRUNK Q	0	0.06	0	0
TRUNK R	0	0.06	0	0
TRUNK S	0	0.06	0	0
TRUNK T	0	0.06	0	0
TRUNK U	0	0.06	0	0
TRUNK V	0	0.06	0	0
TRUNK W	0	0.06	0	0
TRUNK X	1030	0.06	15.2	28
TRUNK Y	445	0.06	11.1	14
TRUNK Z	0	0.06	0	0
DROP	1030	0.06	15.2	24

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
AIR VOLUME	95	85	85	95	85	350	80	0	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	0.15
ACTUAL DUCT LGH	49	36	55	47	37	30	20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	175	215	175	165	220	180	165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LENGTH	224	251	230	212	257	210	185	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.07	0.06	0.06	0.07	0.06	0.07	0.08	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
ROUND DUCT SIZE	6	6	6	6	6	9.8	5.4	0	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	0
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
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	0

TYPE: AMELIA 3
SITE NAME: GRANELL HOME CORP

LO # 78990
ALT 2ND

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	4	@ 10.6 cfm	42.4	cfm
Kitchen & Bathrooms	6	@ 10.6 cfm	63.6	cfm
Other Rooms	6	@ 10.6 cfm	63.6	cfm
Table 9.32.3.A.	TOTAL		212.0	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	95.4	cfm

SUPPLEMENTAL VENTILATION CAPACITY 9.32.3.5.

Total Ventilation Capacity	212	cfm
Less Principal Ventil. Capacity	95.4	cfm
Required Supplemental Capacity	116.6	cfm

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

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

CFM	ΔT °F	FACTOR	% LOSS
95.4 CFM	74 F	1.08	0.24

SUPPLEMENTAL FANS NUTONE

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

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: AMELIA 3	ALT 2ND	BUILDER: GREENYORK HOMES
SFQT: 2970	LO# 78990	SITE: GRANELLI HOME CORP

DESIGN ASSUMPTIONS

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

BUILDING DATA

ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.57	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	41553.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.50	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 56.0 ft	WIDTH: 30.0 ft	EXPOSED PERIMETER:	155.0 ft

2012 OBC - COMPLIANCE PACKAGE**Component**

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	-

**Compliance Package
A1****Nominal Min. Eff.**

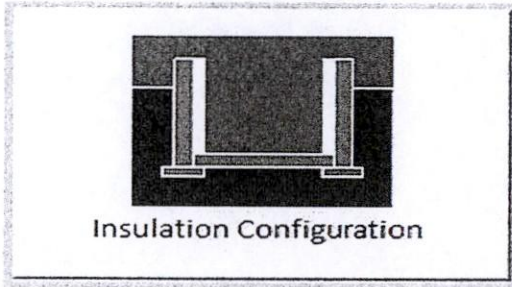
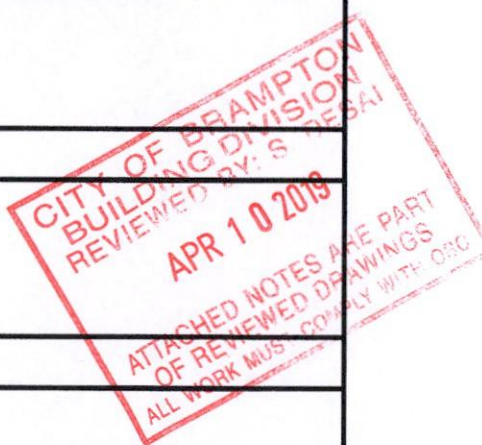
CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
APR 10 2019
ATTACHED NOTES ARE PART
OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH OBC

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):	17.1	 Insulation Configuration
Floor Width (m):	9.1	
Exposed Perimeter (m):	47.2	
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):	1561	

TYPE: AMELIA 3
LO# 78990

ALT 2ND

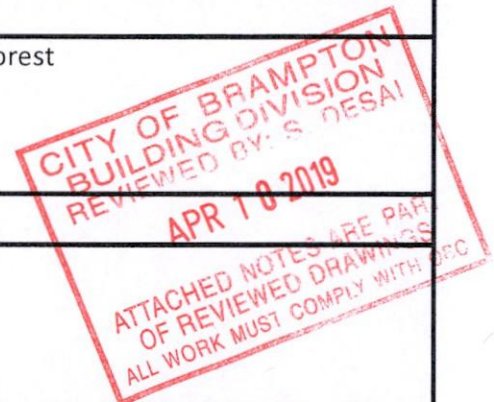
Air Infiltration Residential Load Calculator

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):	1176.6			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1568.5 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	45.0	45.0		
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 3
LO# 78990

ALT 2ND



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 30 OSECO WAY		Unit no.	Lot/con. 6			
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]						
<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; vertical-align: top;"> <input type="checkbox"/> House <input type="checkbox"/> Small Buildings <input type="checkbox"/> Large Buildings <input type="checkbox"/> Complex Buildings </td> <td style="width: 33%; vertical-align: top;"> <input type="checkbox"/> HVAC – House <input type="checkbox"/> Building Services <input type="checkbox"/> Detection, Lighting and power <input type="checkbox"/> Fire Protection </td> <td style="width: 33%; vertical-align: top;"> <input type="checkbox"/> Building Structural <input checked="" type="checkbox"/> Plumbing – House <input type="checkbox"/> Plumbing – II Buildings <input type="checkbox"/> On-site Sewage Systems </td> </tr> </table>				<input type="checkbox"/> House <input type="checkbox"/> Small Buildings <input type="checkbox"/> Large Buildings <input type="checkbox"/> Complex Buildings	<input type="checkbox"/> HVAC – House <input type="checkbox"/> Building Services <input type="checkbox"/> Detection, Lighting and power <input type="checkbox"/> Fire Protection	<input type="checkbox"/> Building Structural <input checked="" type="checkbox"/> Plumbing – House <input type="checkbox"/> Plumbing – II Buildings <input type="checkbox"/> On-site Sewage Systems
<input type="checkbox"/> House <input type="checkbox"/> Small Buildings <input type="checkbox"/> Large Buildings <input type="checkbox"/> Complex Buildings	<input type="checkbox"/> HVAC – House <input type="checkbox"/> Building Services <input type="checkbox"/> Detection, Lighting and power <input type="checkbox"/> Fire Protection	<input type="checkbox"/> Building Structural <input checked="" type="checkbox"/> Plumbing – House <input type="checkbox"/> Plumbing – II Buildings <input type="checkbox"/> On-site Sewage Systems				
Description of designer's work AMELIA 3 EL. 1 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> Date		 SANDY WHITE 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.

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 3 ALT 2ND (LO#78990-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⁽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		4	
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 **33.6**
 Minimum Diameter of Water Service Pipe
 Required from the Property Line to the House (Inch) **1 1/4**

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 3/4 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.

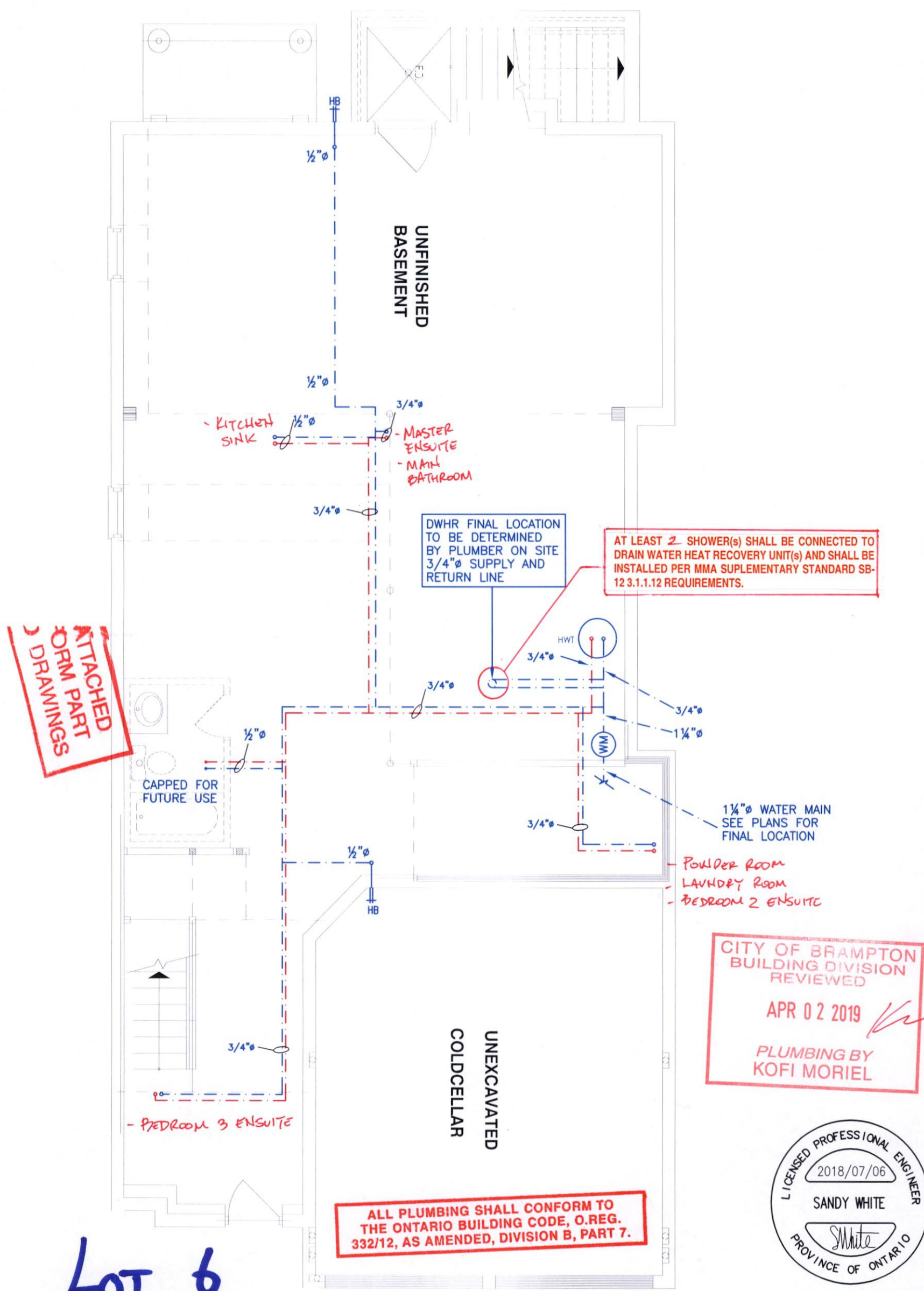
PLEASE SEE THE
 NOTES AS THEY
 OF THE REVIEWER

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/ ϕ
	HOSE BIB
	PROPOSED COLD WATER LINE & RISER
	PROPOSED HOT WATER LINE & RISER
	FLOOR DRAIN



Lot 6

Client

GREENYORK HOMES

Project Name
GRANELLI HOMES CORP
BRAMPTON, ONTARIO

ALT 2ND
AMELIA 3

2970 sqft

HVAC DESIGNS 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

BASEMENT PLUMBING LAYOUT

Date JULY 2018

Scale	3/16" = 1'-0"
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LO#	78990-P
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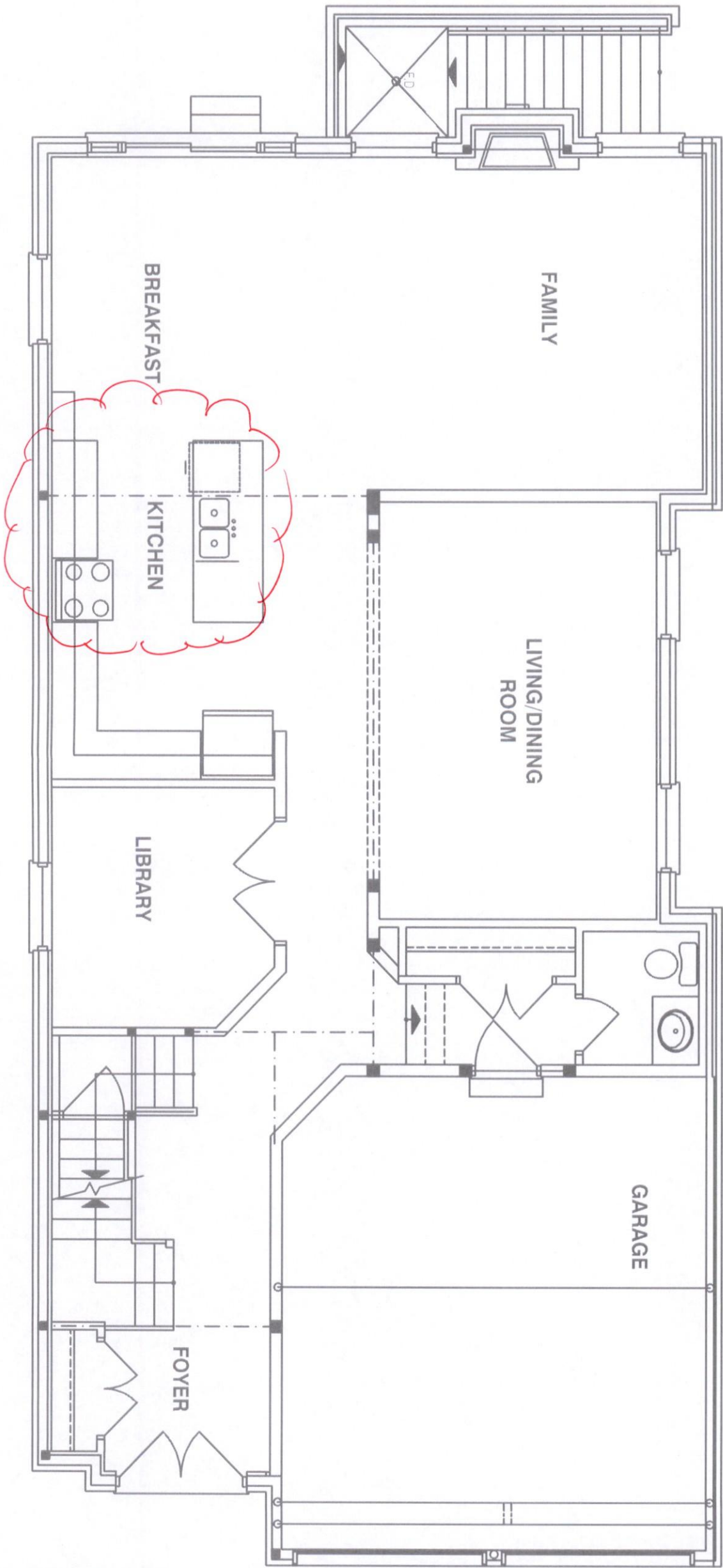
NOTES

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

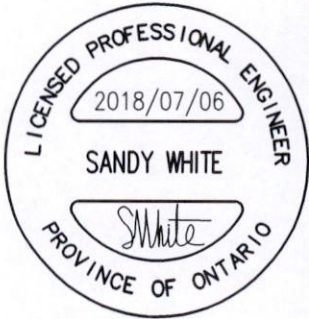
REFER TO
ARCHITECTURAL
DRAWINGS FOR THE
LOCATION OF THE
KITCHEN SINK



CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED

APR 02 2019

PLUMBING BY
KOFI MORIEL



Client
GREENYORK HOMES

Project Name
GRANELLI HOMES CORP
BRAMPTON, ONTARIO
M-2057 LOT 6
ALT 2ND
AMELIA 3 2970 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
FIRST FLOOR
PLUMBING
LAYOUT

Date JULY 2018
Scale 3/16" = 1'-0"

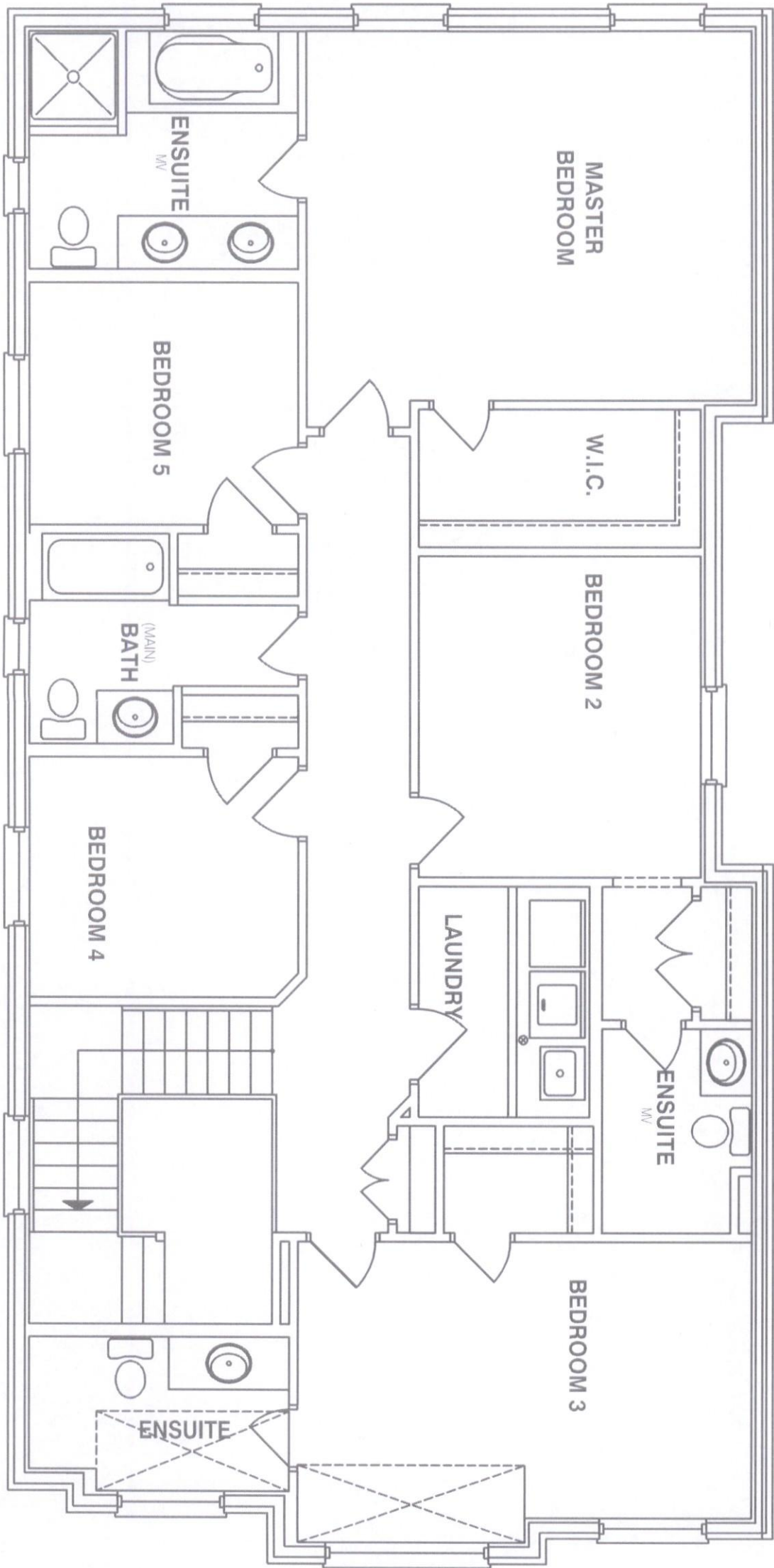
LO# 78990-P

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Sheet Title
SECOND FLOOR
PLUMBING
LAYOUT

Date JULY 2018
Scale 3/16" = 1'-0"

LO# 78990-P