

19-447155 000 00RR

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 12-15, EL-2

A. Project Information

Building number, street name 20500 Way	Unit number	Lot/Con 15
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 = 375.2 m ² or _____ ft ²	<input type="checkbox"/> Log/Post&Beam <input type="checkbox"/> ICF Above Grade <input type="checkbox"/> ICF Basement	
Area of W, S & G = 44.5 m ² or _____ ft ²	<input type="checkbox"/> Slab-on-ground <input type="checkbox"/> Walkout Basement	
W, S & G % = 11.86%	<input type="checkbox"/> Air Conditioning <input type="checkbox"/> Combo Unit	
Utilize window averaging: <input type="checkbox"/> Yes <input type="checkbox"/> No	<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 2
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 Walter Botter

19-447155 000 00RR

ENSURE THAT MIN THERMAL PERFORMANCE OF BLDG ENVELOPE AND EQUIPMENT SHALL CONFORM TO OBC SB-12, 3.1.1.2 TABLES REQUIREMENTS.
FURNACE SHALL BE EQUIPPED WITH BRUSHLESS DIRECT CURRENT MOTOR OBC DIV B 12.3.1.5.
SEAL ALL DUCTWORK WITHIN UNCONDITIONED SPACE or OUTDOORS PER OBC DIV B6.2.4.3(11) REQUIREMENTS. SEAL ALL SUPPLY DUCTS LOCATED IN CONDITIONED SPACE IN COMPLIANCE WITH OBC DIV B6.2.4.3(12) REQUIREMENTS.
SEPARATE ANY INTAKES FROM BUILDING ENVELOPE PENETRATIONS THAT ARE POTENTIAL SOURCES OF CONTAMINANTS (GAS VENTS, OIL FILL PIPES, etc. BY MIN 900mm (2FT 11IN) - OBC Div B 9.32.3.12.
INSTALLATION OF KITCHEN EXHAUST DUCT LARGER THAN 6"dia SHALL BE PRECEDED BY APPLICATION FOR REVISION OF DESIGN PER OBC PART 6 REQUIREMENTS. EXHAUST FAN SHALL DISCHARGE DIRECTLY TO OUTSIDE. CLOTHES DRYER EXHAUST SYSTEM SHALL COMPLY WITH OBC Div B 9.32.1.2, 9.32.1.3 & 9.32.3 REQ'S. BALANCE THE RETURN AIRFLOW ON THE UPPER FLOOR TO MATCH THE SUPPLY.
WHEN HRV IS USED AS PRINCIPAL EXHAUST FAN, THE CONTROLLER SHALL BE WIRED TO THE HRV UNIT AND INTERCONNECTED TO THE FURNACE FAN. THE FURNACE BLOWER MUST BE IN OPERATION WHEN THE HRV IS IN OPERATION.
INSTALL ADDITIONAL S/A REGISTER AS REQUIRED IN ORDER TO ENSURE MIN 72degF - OBC Div B 9.33.3.1(1).
THE DOOR TO ANY ROOM WITHOUT RETURN AIR GRILLE, UNDERCUT BY MIN 1" THE 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).

#21 TO BE LW FOR
OPT BSMT STAIR

UNFINISHED
BASEMENT

Y-18X8

X-28X8
24X10

BR FLC
5X10 14X8
C/W DAMPER

HRV
LIFEBREATH
RNC5-HEX

C-8X8

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

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.

B-16X8

UNEXCAVATED

COLDCELLAR

A-12X8

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.

INSTALLATION OF _____
SHALL CONFORM TO MANUFACTURER'S SPECIFICATIONS
AND MANUALS

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI

APR 12 2019 *sd*

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

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

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Client
GREENYORK HOMES
Project Name
GRANELLI HOMES CORP
BRAMPTON, ONTARIO
M-2057 LOT 15
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

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.

HEAT LOSS 52345 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS		
MAKE	CARRIER	3RD FLOOR		
MODEL	59SP5A-60-12	2ND FLOOR	13	5 3
INPUT	60 MBTU/H	1ST FLOOR	8	2 3
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.			

Sheet Title	
BASEMENT HEATING LAYOUT	
Date	JUNE/2018
Scale	3/16" = 1'-0"
BCIN#	19669
LO#	78991

RECEIVED

MAR 29 2019

Building Division

ELEVATION 2

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI

APR 12 2019

ATTACHED NOTES ARE PART
OF REVIEWED DRAWINGS
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PORCH

FOYER

LIVING/DINING
ROOM

FAMILY

BREAKFAST

KITCHEN

LAUNDRY

GARAGE

ELEVATION 1

INSULATE DUCTS ROUTING
THRU GARAGE MIN 2.1 RSI

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

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.

CSA-F280-12

PACKAGE A1

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

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	3.		
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	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	No.	Description	Date

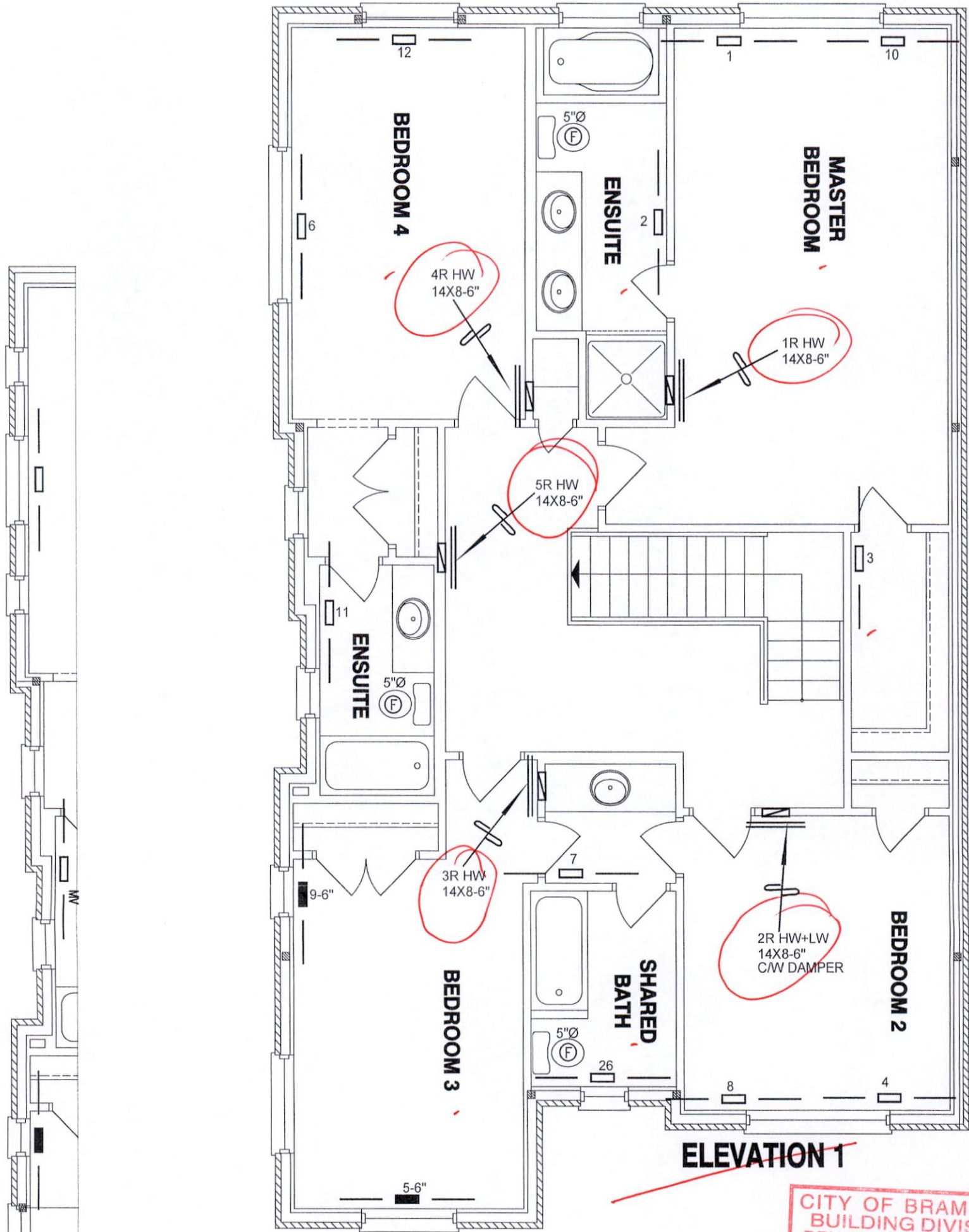
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Client
GREENYORK HOMES
Project Name
**GRANELLI HOMES CORP
BRAMPTON, ONTARIO**
AMELIA 12 **2538 sqft**

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.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.

**LOT
15**

Sheet Title
**FIRST FLOOR
HEATING
LAYOUT**
Date **JUNE/2018**
Scale **3/16" = 1'-0"**
BCIN# 19669
LO# **78991**



ELEVATION 1

ELEVATION 2

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
APR 12 2019
ATTACHED NOTES ARE PART
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THE INSTALLATION OF CARBON MONOXIDE DETECTOR(S)
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MECHANICAL VENTILATION SHALL BE PROVIDED IN
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PACKAGE A1

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

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Client GREENYORK HOMES		HVACDESIGNS LTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdsgns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services	Sheet Title SECOND FLOOR HEATING LAYOUT
Project Name GRANELLI HOMES CORP BRAMPTON, ONTARIO M-2057 LOT 15 AMELIA 12 2538 sqft	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.		Date JUNE/2018 Scale 3/16" = 1'-0" BCIN# 19669 LO# 78991

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 ΔT °F. 74HEAT GAIN ΔT °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
				33	6	10	27	38	33	7	10
				9	9	9	9	9	9	9	9
GRS.WALL AREA	LOSS	GAIN		297	84	90	243	342	287	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	38	727	1486	25	619
SOUTH	20.8	25.2	0	0	0	0	0	0	0	0	0
WEST	20.8	41.9	30	823	1267	13	270	846	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 BMT 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	0.5	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS											
SLAB ON GRADE HEAT LOSS											
SUBTOTAL HT LOSS				2132		620		727		2392	
SUB TOTAL HT GAIN					1644		662		186		1862
LEVEL FACTOR / MULTIPLIER	0.20	0.24							0.20	0.24	
AIR CHANGE HEAT LOSS				508		148		173		570	
AIR CHANGE HEAT GAIN					112		45		13		127
DUCT LOSS				0		0		90		296	
DUCT GAIN				0		0		20		281	
HEAT GAIN PEOPLE	240	2		480	0	0	0	1	240	1	240
HEAT GAIN APPLIANCES/LIGHTS				577	0	0	0	577	577	577	577
TOTAL HT LOSS BTU/H				2641		768		990		3268	
TOTAL HT GAIN x 1.3 BTU/H				3656		918		282		4012	

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LV/DN	K/B/F	LAUN	W/R	FOY	WUB	BAS
				55	69	26	8	14	18	166
				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	25.2	36	727	883	39	810	984	0	0
WEST	20.8	41.9	0	0	0	73	1617	3088	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 BMT WALL ABOVE GR	3.5	0.7	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	1.3	18	40	20	26	67	33	0	0
EXPOSED FLOOR	2.6	0.5	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS										
SLAB ON GRADE HEAT LOSS										
SUBTOTAL HT LOSS				3891		5213		1682		597
SUB TOTAL HT GAIN					2973		4606		1681	
LEVEL FACTOR / MULTIPLIER	0.30	0.36							0.30	0.36
AIR CHANGE HEAT LOSS				1400		1875		594		215
AIR CHANGE HEAT GAIN					202		313		21	26
DUCT LOSS				0		0		0		0
DUCT GAIN				0		0		0		0
HEAT GAIN PEOPLE	240	2		0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS				577	0	577	577	577	577	577
TOTAL HT LOSS BTU/H				5291		7088		2246		812
TOTAL HT GAIN x 1.3 BTU/H				4877		7145		1183		541

CITY OF BRAMPTON
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TOTAL HEAT GAIN BTU/H:

35412

TONS: 2.95

LOSS DUE TO VENTILATION LOAD BTU/H: 1629

STRUCTURAL HEAT LOSS: 50816

TOTAL COMBINED HEAT LOSS BTU/H: 52345

M-2057 LOT 15

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 @ 8" 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	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	0.1	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	B	B	D	C	D	A

RUN #	25	26
ROOM NAME	BAS	BATH
RM LOSS MBH	4.15	0.85
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

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI

APR 12 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 346	0.06	10.1	12	X 8 519	TRUNK G 0	0.00	0	0	X 8 0
TRUNK B 515	0.06	11.8	16	X 8 579	TRUNK H 0	0.00	0	0	X 8 0
TRUNK C 248	0.09	8.1	8	X 8 558	TRUNK I 0	0.00	0	0	X 8 0
TRUNK D 1031	0.06	15.2	26	X 8 714	TRUNK J 0	0.00	0	0	X 8 0
TRUNK E 0	0.00	0	0	X 8 0	TRUNK K 0	0.00	0	0	X 8 0
TRUNK F 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 1030	0.06	15.2	28	X 8 662
TRUNK Y 615	0.06	12.6	18	X 8 615
TRUNK Z 0	0.06	0	0	X 8 0
DROP 1030	0.06	15.2	24	X 10 618

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	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

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	✓	0.3
BATH	QTXEN050C	50	✓	0.3
ENS-4	QTXEN050C	50	✓	0.3
W/R	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 #:	Building Permit #
BUILDER: GREENYORK HOMES	
Name:	
Address:	
City:	
Telephone #:	Fax #:

INSTALLING CONTRACTOR	
Name:	
Address:	
City:	
Telephone #:	Fax #:

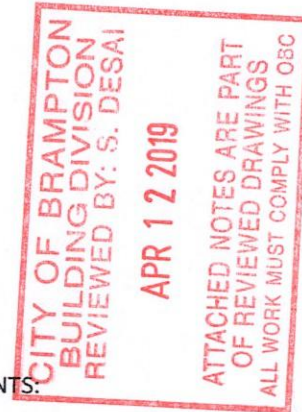
DESIGNER CERTIFICATION	
I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.	
Name:	HVAC Designs Ltd.
Signature:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	June-18

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 (ft ³):	34898.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	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**

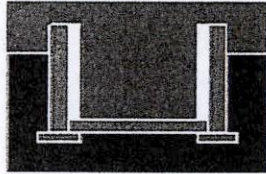
Component	Compliance Package A1	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 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

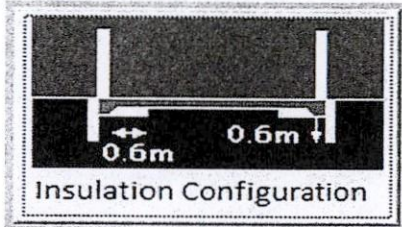
Supplemental tool for CAN/CSA-F280

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):	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

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

Schedule 1: Designer Information

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

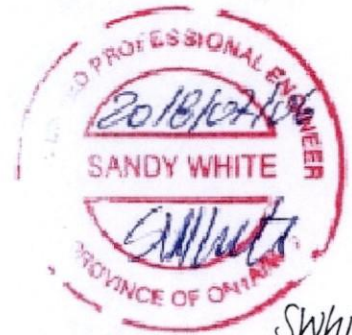
A. Project Information			
Building number, street name <u>2 Oseco Way</u>		Unit no.	Lot/con. 15
Municipality BRAMPTON	Postal code	Plan number/ other description 43M-2057	
B. Individual who reviews and takes responsibility for design activities			
Name SANDY WHITE, P.Eng.		Firm ANDA ENGINEERING LTD.	
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 – 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 12 EL. 2		GRANELLI HOMES CORP.	
WALK-UP & DECK CONDITION			
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.

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 Diametre 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.

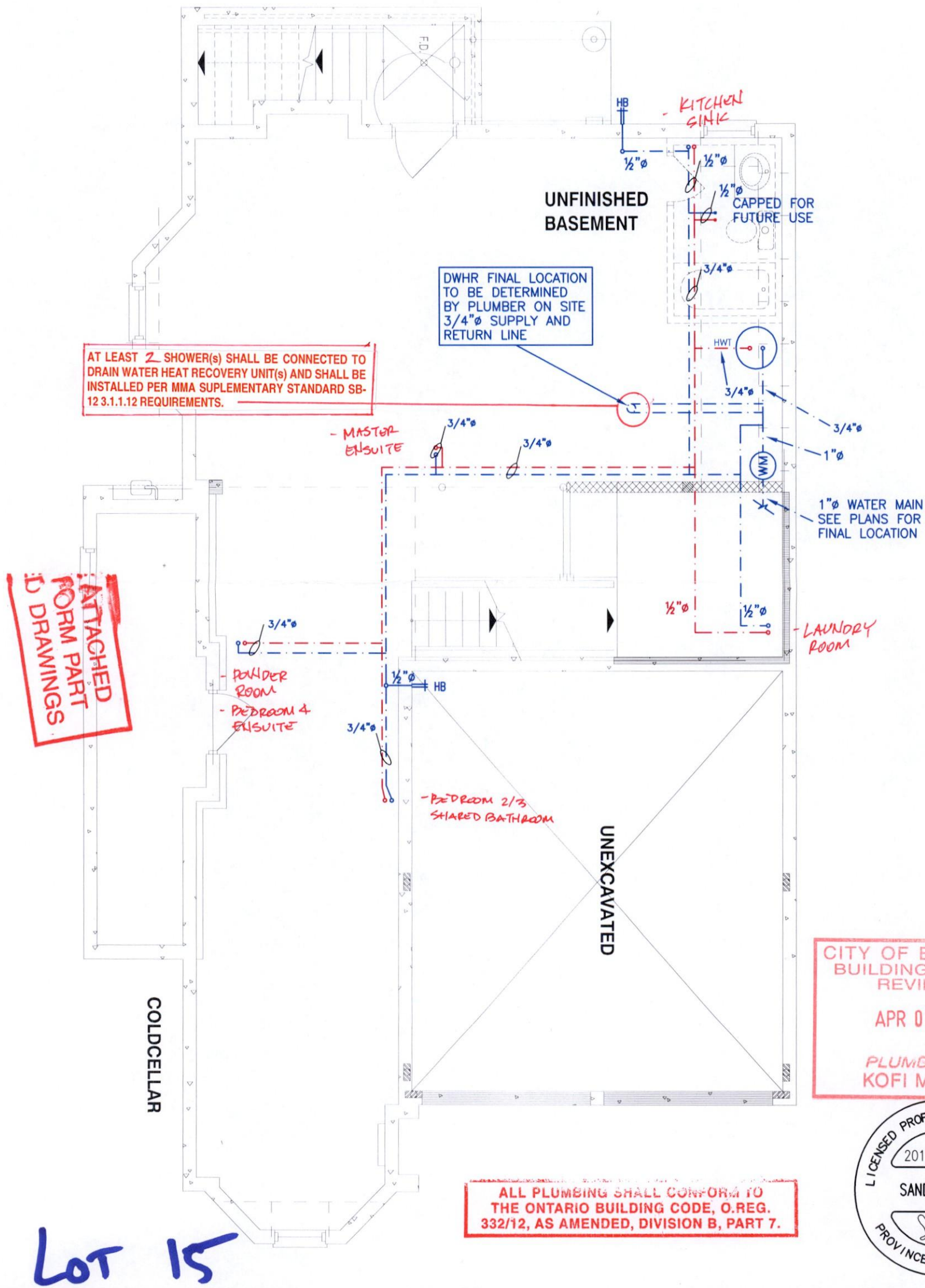
**PLEASE SEE THE
NOTES AS THEY
OF THE REVIEW**

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



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"

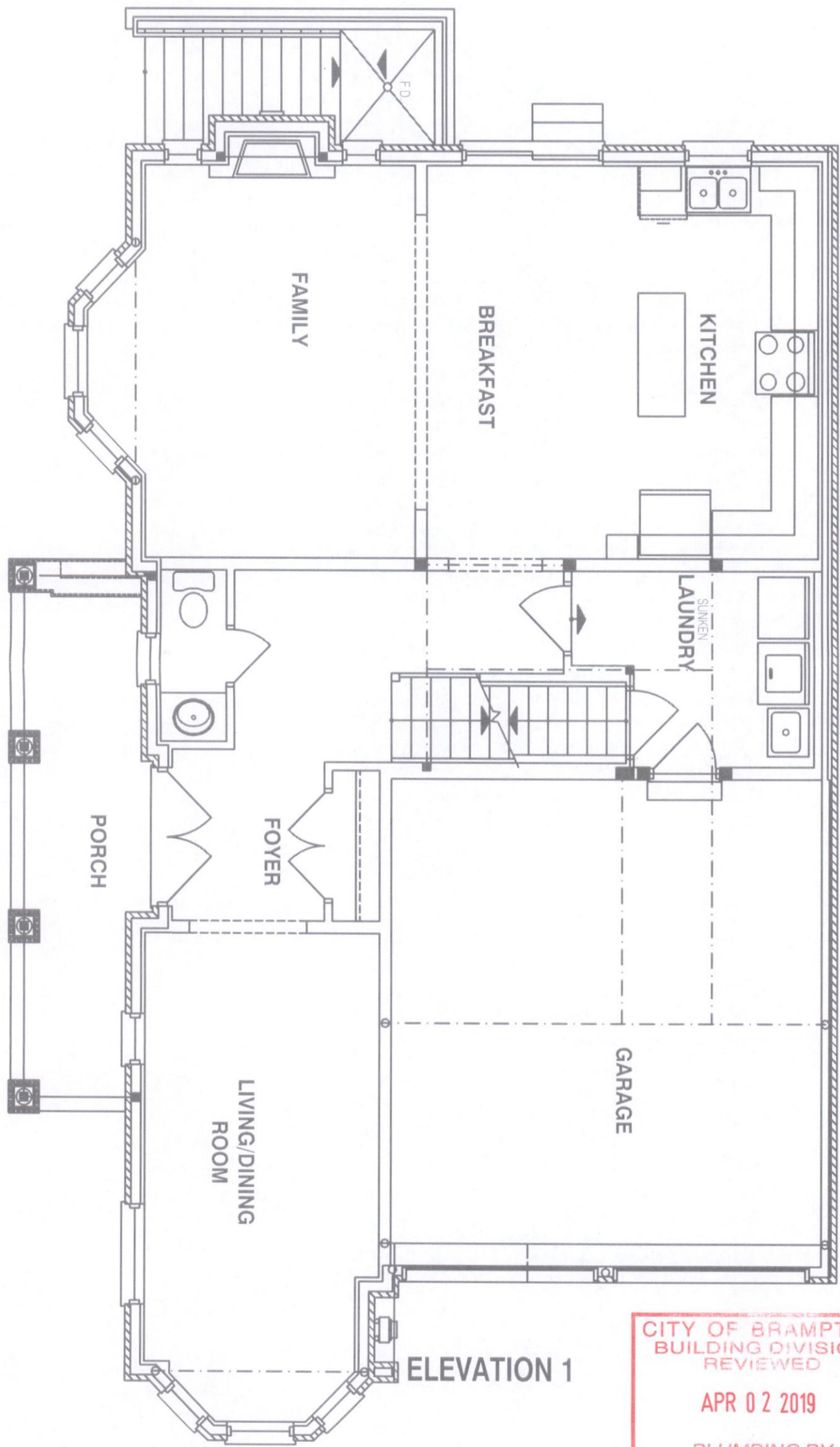
LO# 78991-P

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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



ELEVATION 1

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 15

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

FIRST FLOOR
PLUMBING
LAYOUT

Date

JUNE/2018

Scale

3/16" = 1'-0"

LO#

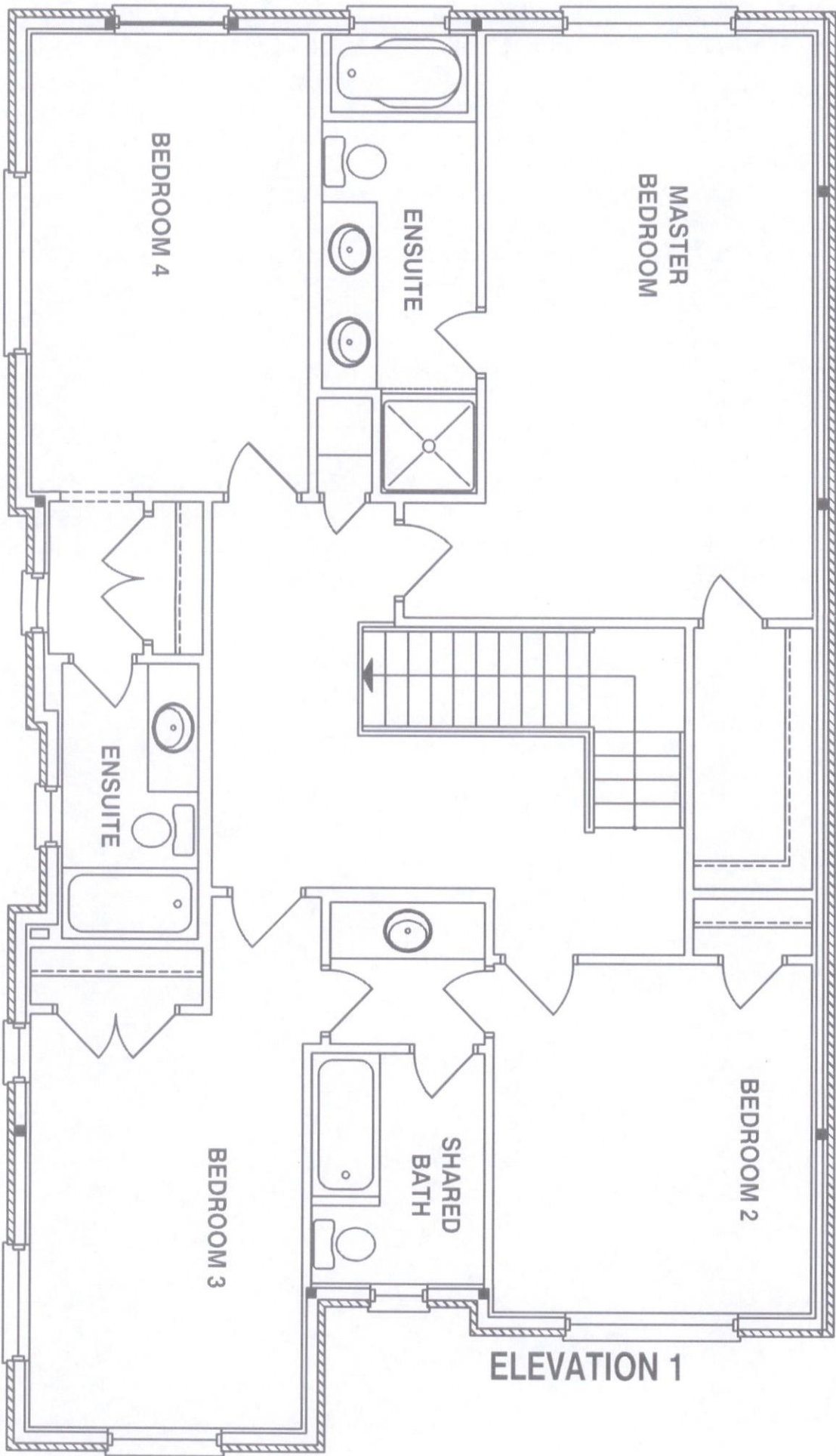
78991-P

NOTES

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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
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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 02 2019

PLUMBING BY
KOFI MORIEL



Client
GREENYORK HOMES

Project Name
GRANELLI HOMES CORP
BRAMPTON, ONTARIO

M-2057 LOT 15

AMELIA 12 2538 sqft

HVACDESIGNS LTD.

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Sheet Title
SECOND FLOOR
PLUMBING
LAYOUT

Date JUNE/2018

Scale 3/16" = 1'-0"

LO# 78991-P