

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 LIANA 3, EL-1

A. Project Information

Building number, street name		Unit number	Lot/Con 24
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

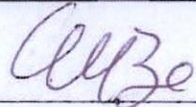
Climatic Zone (SB-1):	Heating Equipment Efficiency	Space Heating Fuel Source
<input type="checkbox"/> Zone 1 (< 5000 degree days)	<input type="checkbox"/> ≥ 92% AFUE	<input type="checkbox"/> Gas <input type="checkbox"/> Propane <input type="checkbox"/> Solid Fuel
<input type="checkbox"/> Zone 2 (≥ 5000 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>288.24</u> m ² or _____ ft ²	W, S & G % = <u>9.21%</u>	<input type="checkbox"/> Log/Post&Beam <input type="checkbox"/> ICF Above Grade <input type="checkbox"/> ICF Basement
Area of W, S & G = <u>26.55</u> m ² or _____ ft ²	Utilize window averaging: <input type="checkbox"/> Yes <input type="checkbox"/> No	<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 

19-447167 000 00

OPTIONAL
STAIR

ENSURE THAT MIN THERMAL PERFORMANCE OF BLDG ENVELOPE AND EQUIPMENT SHALL CONFORM TO OBC S8-12, 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 9.32.3.1(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).

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.

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.

X-28X8
24X10

E-14X8

D-8X8

UNFINISHED
BASEMENT

Y-18X8

OPT LW
FOR OPT
STAIR

A-8X8

Z-12X8

B-8X8

C-14X8

BR FLC
5X10 14x8
C/W DAMPER

23-6"

24-6"

COLDCELLAR

UNEXCAVATED

ELEVATION 2

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
APR 15 2019
ATTACHED NOTES ARE PART
OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH OBC

COLDCELLAR

UNEXCAVATED

ELEVATION 1

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 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 24
LIANA 3 **2292 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
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 45463 BTU/H UNIT DATA		# OF RUNS	S/A	R/A	FANS	Sheet Title BASEMENT HEATING LAYOUT Date JUNE/2018 Scale 3/16" = 1'-0" BCIN# 19669 LO# 79001
MAKE	CARRIER	3RD FLOOR				
MODEL	59SP5A-60-12-60	2ND FLOOR	10	4	2	
INPUT	60 MBTU/H	1ST FLOOR	8	2	3	
OUTPUT	58 MBTU/H	BASEMENT	4	1	0	
COOLING	2.5 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	970 cfm @ 0.6" w.c.					

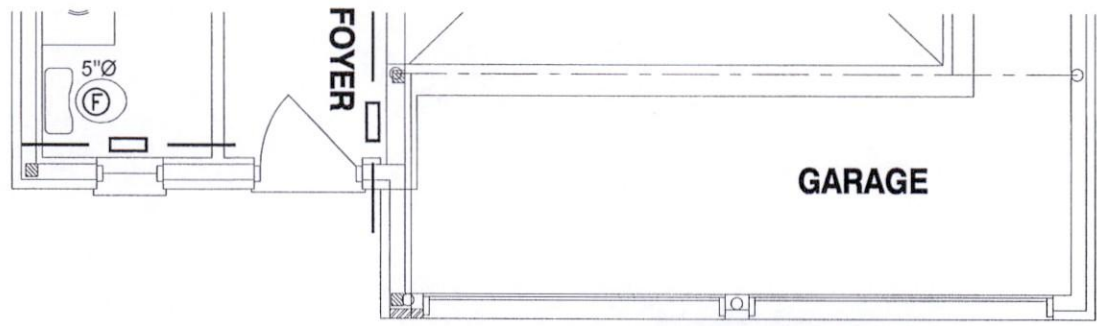
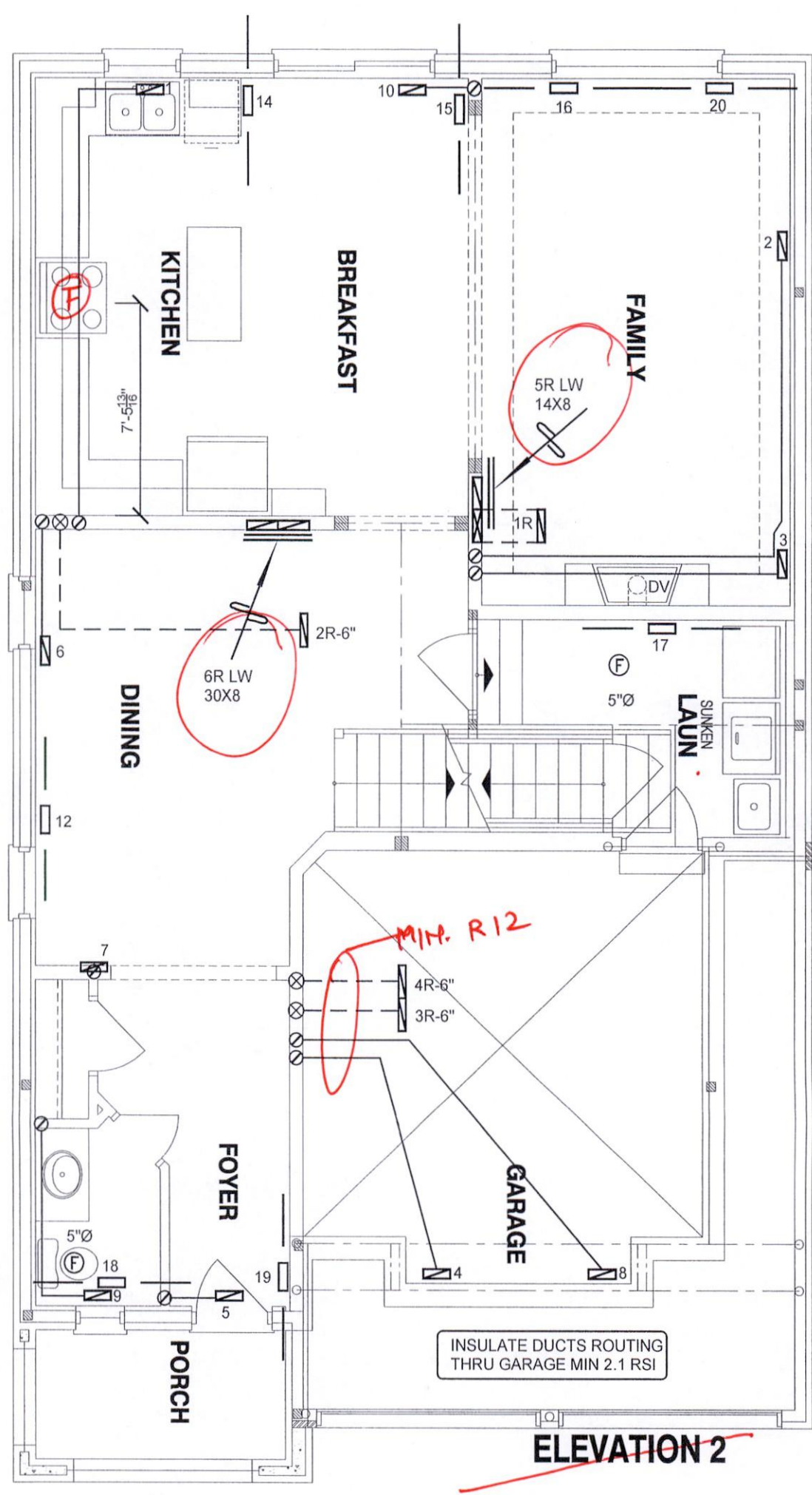
THE INSTALLATION OF CARBON MONOXIDE DETECTOR(S) SHALL COMPLY WITH OBC DIV. B, 9.33.4 REQUIREMENTS.

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

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI

APR 15 2019

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ELEVATION 1

ELEVATION 2

I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.3 OF THE BUILDING CODE.

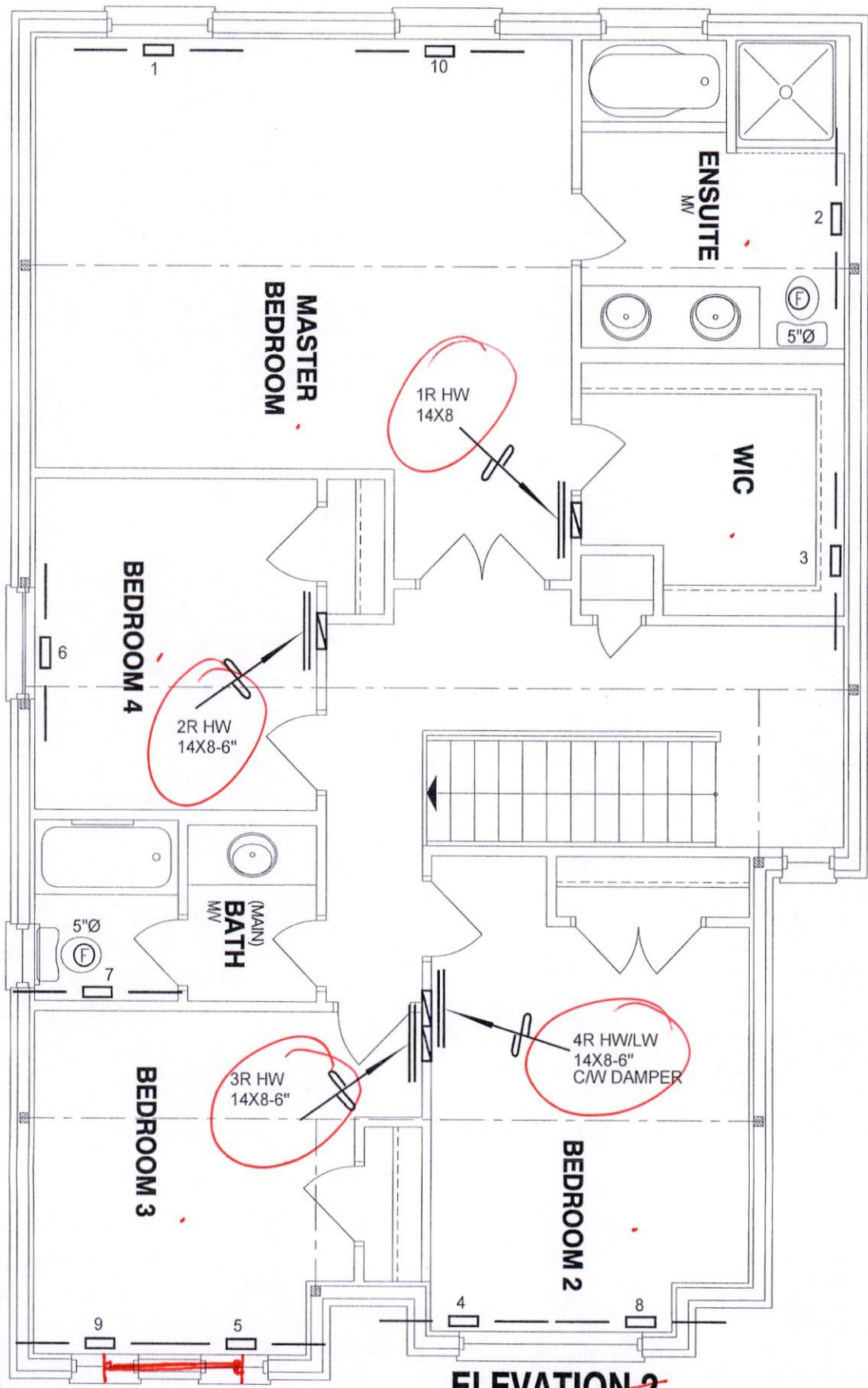
Michael O'Rourke, TCHN 19669
HVAC DESIGNS LTD.

CSA-F280-12
PACKAGE A1

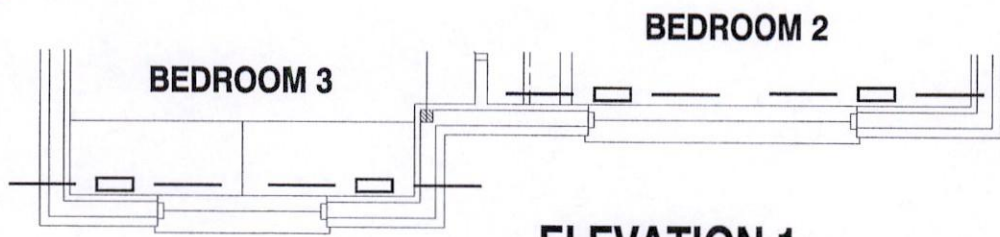
HVAC LEGEND							3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description 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		<div><p>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services</p></div>	Sheet Title FIRST FLOOR HEATING LAYOUT	
Project Name GRANELLI HOMES CORP BRAMPTON, ONTARIO			Date JUNE/2018	Scale 3/16" = 1'-0"
M-2057 LOT 24		BCIN# 19669		
LIANA 3 2292 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.		
		LO#	79001	



ELEVATION 2



ELEVATION 1

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

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

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
APR 15 2019

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Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
PACKAGE A1

HVAC LEGEND							
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE
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						No.	Description
							Date

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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 24 LIANA 3	2292 sqft		Date JUNE/2018	Scale 3/16" = 1'-0"
		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.	BCIN# 19669	LO# 79001

SITE NAME: GRANELLI HOME CORP

BUILDER: GREENYORK HOMES

TYPE: LIANA 3

GFA: 2292

DATE: Jun-18

LO# 79001

WINTER NATURAL AIR CHANGE RATE 0.335

HEAT LOSS ΔT °F. 74

CSA-F280-12

SUMMER NATURAL AIR CHANGE RATE 0.119

HEAT GAIN ΔT °F. 14

SB-12 PACKAGE A1

ROOM USE	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH						
EXP. WALL	36	21	15	33	28	12	7						
CLG. HT.	9	9	9	9	9	9	9						
FACTORS													
GRS.WALL AREA	324	189	135	297	252	108	63						
GLAZING	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	0 0 0	0 0 0	0 0 0						
EAST	20.8 41.9	0 0 0	0 0 0	0 0 0	44 914 1843	27 561 1131	0 0 0						
SOUTH	20.8 25.2	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	16 332 404						
WEST	20.8 41.9	28 582 1173	12 249 503	0 0 0	0 0 0	0 0 0	0 0 0						
SKYLT.	36.4 102.1	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						
NET EXPOSED WALL	4.4 0.8	296 1290 243	177 771 146	135 588 111	253 1102 208	225 980 185	92 401 76						
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						
EXPOSED CLG	1.3 0.6	320 401 195	110 138 67	150 188 91	228 286 139	150 188 91	240 301 146						
NO ATTIC EXPOSED CLG	2.7 1.3	0 0 0	0 0 0	0 0 0	0 0 0	20 54 26	0 0 0						
EXPOSED FLOOR	2.5 0.5	0 0 0	0 0 0	0 0 0	228 568 107	40 100 19	0 0 0						
BASEMENT/CRAWL HEAT LOSS		0	0	0	0	0	0						
SLAB ON GRADE HEAT LOSS		0	0	0	0	0	0						
SUBTOTAL HT LOSS		2272	1158	776	2870	1882	1034						
SUB TOTAL HT GAIN			1611	715	202	2297	1452						
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						
AIR CHANGE HEAT LOSS		607	309	207	767	503	276						
AIR CHANGE HEAT GAIN			139	61	17	198	125						
DUCT LOSS		0	0	0	364	239	0						
DUCT GAIN		0	0	0	329	237	0						
HEAT GAIN PEOPLE	240	2	480	0	0	1	240						
HEAT GAIN APPLIANCES/LIGHTS			552	0	0	552	552						
TOTAL HT LOSS BTU/H		2880	1468	984	4000	2624	1310						
TOTAL HT GAIN x 1.3 BTU/H			3616	1009	285	4700	3388						

**CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI**

APR 15 2019

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ROOM USE	DIN	KIT	FAM	LAUN	W/R	FOY				WUP	BAS
EXP. WALL	16	33	32	27	19	23				20	148
CLG. HT.	11	11	11	12	11	11				9	9
FACTORS											
GRS.WALL AREA	176	363	352	324	209	253				180	888
GLAZING	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	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	9 187 377	3 62 126				0 0 0	0 0 0
SOUTH	20.8 25.2	28 582 707	0 0 0	0 0 0	0 0 0	0 0 0				0 0 0	8 165 202
WEST	20.8 41.9	0 0 0	51 1060 2136	33 686 1382	0 0 0	0 0 0				0 0 0	4 83 168
SKYLT.	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
DOORS	24.7 4.7	0 0 0	0 0 0	20 493 93	0 0 0	20 493 93				20 493 93	20 493 93
NET EXPOSED WALL	4.4 0.8	148 645 122	312 1359 256	319 1390 262	304 1325 250	200 871 164				160 697 132	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	444 1560 294
EXPOSED CLG	1.3 0.6	0 0 0	0 0 0	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
EXPOSED FLOOR	2.5 0.5	0 0 0	0 0 0	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	4846
SLAB ON GRADE HEAT LOSS		0	0	0	0	0				0	
SUBTOTAL HT LOSS		1227	2419	2075	1818	1058				1190	7148
SUB TOTAL HT GAIN			2393	1645	343	541				225	757
LEVEL FACTOR / MULTIPLIER	0.30 0.42		0.30 0.42	0.30 0.42	0.30 0.42	0.30 0.42					0.50 0.85
AIR CHANGE HEAT LOSS		513	1012	868	760	443					7081
AIR CHANGE HEAT GAIN			206	141	29	47					84
DUCT LOSS		0	0	0	0	0					0
DUCT GAIN		0	0	0	0	0					0
HEAT GAIN PEOPLE	240	0	0	0	0	0				0	0
HEAT GAIN APPLIANCES/LIGHTS			552	552	552	552				0	552
TOTAL HT LOSS BTU/H		1740	3431	2944	2578	1501				1190	14229
TOTAL HT GAIN x 1.3 BTU/H			4096	3040	1202	764				292	1812

TOTAL HEAT GAIN BTU/H:

29372

TONS: 2.45

LOSS DUE TO VENTILATION LOAD BTU/H: 1529

STRUCTURAL HEAT LOSS: 43934

TOTAL COMBINED HEAT LOSS BTU/H: 45463

SITE NAME: GRANELLI HOME CORP
BUILDER: GREENYORK HOMES

TYPE: LIANA 3

DATE: Jun-18

GFA: 2292

LO# 79001

HEATING CFM 970 COOLING CFM 970
TOTAL HEAT LOSS 43,934 TOTAL HEAT GAIN 29,084
AIR FLOW RATE CFM 22.08 AIR FLOW RATE CFM 33.35

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35

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

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

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

TEMPERATURE RISE 55 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	10	8	4
R/A	0	0	4	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	12	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-2	BED-3	MBR	DIN	KIT	KIT	FAM	LAUN	W/R	FOY	FAM	BAS	BAS	BAS	BAS
RM LOSS MBH	1.44	1.47	0.98	2.00	1.31	1.31	0.85	2.00	1.31	1.44	1.74	1.72	1.72	1.47	2.58	1.50	2.21	1.47	3.85	3.85	3.85	3.85
CFM PER RUN HEAT	32	32	22	44	29	29	19	44	29	32	38	38	38	33	57	33	49	33	85	85	85	85
RM GAIN MBH	1.81	1.01	0.29	2.35	1.69	1.91	0.50	2.35	1.69	1.81	1.89	2.05	2.05	1.52	1.20	0.76	0.58	1.52	0.53	0.53	0.53	0.53
CFM PER RUN COOLING	60	34	10	78	56	64	17	78	56	60	63	68	68	51	40	25	19	51	18	18	18	18
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	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	34	60	36	47	45	22	24	51	44	49	12	26	37	35	32	26	32	40	31	21	14	27
EQUIVALENT LENGTH	150	160	160	140	140	150	140	140	190	150	170	140	140	140	130	140	150	160	180	160	170	150
TOTAL EFFECTIVE LENGTH	184	220	196	187	185	172	164	191	234	199	182	166	177	175	162	166	182	200	211	181	184	177
ADJUSTED PRESSURE	0.09	0.08	0.09	0.09	0.09	0.1	0.1	0.09	0.07	0.09	0.09	0.1	0.1	0.1	0.11	0.1	0.09	0.09	0.08	0.09	0.09	0.09
ROUND DUCT SIZE	5	4	4	5	5	5	4	5	5	5	5	5	5	4	5	4	4	4	6	6	6	6
HEATING VELOCITY (ft/min)	235	367	252	323	213	213	218	323	213	235	279	279	279	379	419	379	562	379	433	433	433	433
COOLING VELOCITY (ft/min)	441	390	115	573	411	470	195	573	411	441	463	499	499	585	294	287	218	585	92	92	92	92
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	C	B	B	E	D	C	E	E	D	A	E	C	C	A	B	D	D	A	A	C	E	D

RUN #	ROOM NAME	RM LOSS MBH	CFM PER RUN HEAT	RM GAIN MBH	CFM PER RUN COOLING	ADJUSTED PRESSURE	ACTUAL DUCT LGH	EQUIVALENT LENGTH	TOTAL EFFECTIVE LENGTH	ADJUSTED PRESSURE	ROUND DUCT SIZE	HEATING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	OUTLET GRILL SIZE	TRUNK
1	MBR	1.44	32	1.81	60	0.17	34	150	184	0.09	5	235	441	3X10	C
2	ENS	1.47	32	1.01	34	0.17	60	160	220	0.08	4	367	390	3X10	B
3	WIC	0.98	22	0.29	10	0.17	36	160	196	0.09	4	252	115	3X10	B
4	BED-2	2.00	44	2.35	78	0.17	47	140	187	0.09	5	323	573	3X10	E
5	BED-3	1.31	29	1.69	56	0.17	45	140	185	0.09	5	213	411	3X10	D
6	BED-4	1.31	29	1.91	64	0.17	22	150	172	0.1	5	213	470	3X10	C
7	BATH	0.85	19	0.50	17	0.17	24	140	164	0.1	4	218	195	3X10	E
8	BED-2	2.00	44	2.35	78	0.17	51	140	191	0.09	5	323	573	3X10	E
9	BED-3	1.31	29	1.69	56	0.17	44	190	234	0.07	5	213	411	3X10	D
10	MBR	1.44	32	1.81	60	0.17	49	150	199	0.09	5	235	441	3X10	A
12	DIN	1.74	38	1.89	63	0.17	12	170	182	0.09	5	279	463	3X10	E
14	KIT	1.72	38	2.05	68	0.17	26	140	166	0.1	5	279	499	3X10	C
15	KIT	1.72	38	2.05	68	0.17	37	140	177	0.1	5	279	499	3X10	C
16	FAM	1.47	33	1.52	51	0.17	35	130	162	0.1	4	379	585	3X10	A
17	LAUN	2.58	57	1.20	40	0.17	32	140	166	0.1	5	419	294	3X10	B
18	W/R	1.50	33	0.76	25	0.17	26	140	182	0.09	4	379	287	3X10	D
19	FOY	2.21	49	0.58	19	0.17	32	150	200	0.09	4	562	218	3X10	D
20	FAM	1.47	33	1.52	51	0.17	40	160	211	0.08	4	379	585	3X10	A
21	BAS	3.85	85	0.53	18	0.16	31	180	211	0.08	6	433	92	4X10	A
22	BAS	3.85	85	0.53	18	0.16	21	160	181	0.09	6	433	92	4X10	C
23	BAS	3.85	85	0.53	18	0.16	14	170	184	0.09	6	433	92	4X10	E
24	BAS	3.85	85	0.53	18	0.16	27	150	177	0.09	6	433	92	4X10	D

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI

APR 15 2019

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OF REVIEWED DRAWINGS
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SUPPLY AIR TRUNK SIZE

TRUNK A								TRUNK G							
TRUNK	STATIC	ROUND	RECT			VELOCITY		TRUNK	STATIC	ROUND	RECT			VELOCITY	
CFM	PRESS.	DUCT	DUCT			(ft/min)		CFM	PRESS.	DUCT	DUCT			(ft/min)	
TRUNK A	183	0.08	7.4	6	x	8	549	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	111	0.08	6.2	4	x	8	500	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	516	0.08	10.9	14	x	8	663	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	225	0.07	8.3	8	x	8	506	TRUNK J	0	0.00	0	0	x	8	0
TRUNK E	455	0.07	10.8	14	x	8	585	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

Y	RETURN AIR FROM SIZE				VELOCITY			
	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT		(ft/min)		
	TRUNK O	0	0.05	0	0	x	8	0
	TRUNK P	0	0.05	0	0	x	8	0
	TRUNK Q	0	0.05	0	0	x	8	0
	TRUNK R	0	0.05	0	0	x	8	0
	TRUNK S	0	0.05	0	0	x	8	0
	TRUNK T	0	0.05	0	0	x	8	0
	TRUNK U	0	0.05	0	0	x	8	0
	TRUNK V	0	0.05	0	0	x	8	0
	TRUNK W	0	0.05	0	0	x	8	0
	TRUNK X	970	0.05	15.6	28	x	8	624
	TRUNK Y	530	0.05	12.4	18	x	8	530
	TRUNK Z	270	0.05	9.7	12	x	8	405
	DROP	970	0.05	15.6	24	x	10	582

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
AIR VOLUME	135	95	95	95	135	260	0	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	54	48	46	44	23	34	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	240	135	175	180	185	235	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	294	183	221	224	208	269	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.05	0.08	0.07	0.07	0.07	0.06	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE	7.5	5.8	6	6	6.8	9.1	0	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	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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):	902.5			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1203.0 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			

CITY OF BRAMPTON
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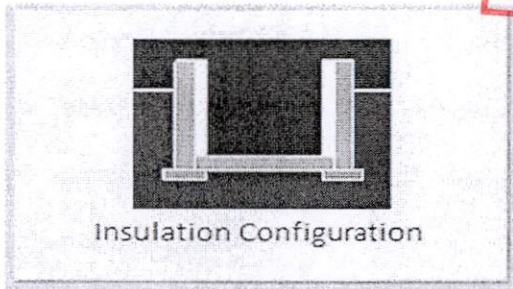
ATTACHED NOTES ARE PART
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TYPE: LIANA 3
LO# 79001

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):	8.8	 Insulation Configuration
Floor Width (m):	13.7	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	1.1	
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):		1420

CITY OF BRAMPTON
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TYPE: LIANA 3
LO# 79001

HEAT LOSS AND GAIN SUMMARY SHEET
MODEL: LIANA 3

BUILDER: GREENYORK HOMES

SFQT: 2292

LO# 79001

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

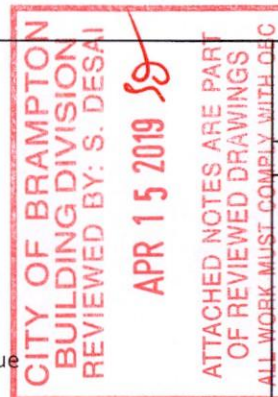
ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.57	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	31870.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
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: 29.0 ft	WIDTH: 45.0 ft	EXPOSED PERIMETER:	148.0 ft

2012 OBC - COMPLIANCE PACKAGE
Component

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

**Compliance Package
A1**

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



INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

TYPE: LIANA 3
SITE NAME: GRANELLI HOME CORP

LO # 79001

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY
COMBUSTION APPLIANCES 9.32.3.1(1)

- a) ☒ Direct vent (sealed combustion) only
- b) ☐ Positive venting induced draft (except fireplaces)
- c) ☐ Natural draft, B-vent or induced draft gas fireplace
- d) ☐ Solid Fuel (including fireplaces)
- e) ☐ No Combustion Appliances

HEATING SYSTEM

- ☒ Forced Air ☐ Non Forced Air
- ☐ Electric Space Heat

HOUSE TYPE 9.32.1(2)

- ☒ I Type a) or b) appliance only, no solid fuel
- ☐ II Type I except with solid fuel (including fireplaces)
- ☐ III Any Type c) appliance
- ☐ IV Type I, or II with electric space heat
- ☐ Other: Type I, II or IV no forced air

SYSTEM DESIGN OPTIONS O.N.H.W.P.

- ☐ 1 Exhaust only/Forced Air System
- ☐ 2 HRV with Ducting/Forced Air System
- ☒ 3 HRV Simplified/connected to forced air system
- ☐ 4 HRV with Ducting/non forced air system
- ☐ Part 6 Design

TOTAL VENTILATION CAPACITY 9.32.3.3(1)

Basement + Master Bedroom	2	@ 21.2 cfm	42.4	cfm
Other Bedrooms	3	@ 10.6 cfm	31.8	cfm
Kitchen & Bathrooms	4	@ 10.6 cfm	42.4	cfm
Other Rooms	4	@ 10.6 cfm	42.4	cfm
Table 9.32.3.A.		TOTAL	159.0	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	79.5	cfm

SUPPLEMENTAL VENTILATION CAPACITY 9.32.3.5.

Total Ventilation Capacity	159	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	79.5	cfm

PRINCIPAL EXHAUST FAN CAPACITY

Model: LIFE BREATH RNC5-HEX Location: BSMT

79.5 cfm 3.0 sones ☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

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

SUPPLEMENTAL FANS

Location	Model	cfm	HVI	Sones
ENS	QTXEN050C	50	<input checked="" type="checkbox"/>	0.3
BATH	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: 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:

HRAI #

001820

Date:

June-18

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
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CSA F280-12 Residential Heat Loss and Heat Gain Calculations
Formula Sheet (For Air Leakage / Ventilation Calculation)

LO#: 79001

Model: LIANA 3

Builder: GREENYORK HOMES

Date: 6/19/2018

Volume Calculation
Air Change & Delta T Data
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1022	9	9198
First	1022	11	11242
Second	1270	9	11430
Third	0	9	0
Fourth	0	9	0
Total:			31,870.0 ft³
Total:			902.5 m³

WINTER NATURAL AIR CHANGE RATE	0.335
SUMMER NATURAL AIR CHANGE RATE	0.119

Design Temperature Difference

	Tin °C	Tout °C	ΔT °C	ΔT °F
Winter DTDh	22	-19	41	74
Summer DTDc	22	30	8	14

5.2.3.1 Heat Loss due to Air Leakage
6.2.6 Sensible Gain due to Air Leakage

$$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$$

$$0.335 \times 250.68 \times 41^\circ\text{C} \times 1.2 = 4150 \text{ W}$$

$$= 14162 \text{ Btu/h}$$

$$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$$

$$= 0.119 \times 250.68 \times 8^\circ\text{C} \times 1.2 = 278 \text{ W}$$

$$= 947 \text{ Btu/h}$$

5.2.3.2 Heat Loss due to Mechanical Ventilation
6.2.7 Sensible heat Gain due to Ventilation

$$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$$

$$80 \text{ CFM} \times 74^\circ\text{F} \times 1.08 \times 0.24 = 1529 \text{ Btu/h}$$

$$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$$

$$80 \text{ CFM} \times 14^\circ\text{F} \times 1.08 \times 0.24 = 288 \text{ Btu/h}$$

5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)

$$HL_{airr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$$

Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)
1	0.5	14,162	8,338	0.849
2	0.3		10,154	0.418
3	0.2		10,600	0.267
4	0		0	0.000
5	0		0	0.000

*HLairbv = Air leakage heat loss + ventilation heat loss

*For a balanced or supply only ventilation system HLairve = 0

CITY OF BRAMPTON
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APR 15 2019

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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	112 THORNDAL ROAD	Unit no.	Lot/con. 24
Municipality	BRAMPTON	Postal code	lan 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	Province
Telephone number	(613) 479-0161	Fax number	Cell number

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

LIANA 3 EL. 1

GRANELLI HOMES CORP.

D. Declaration of Designer

I, SANDY WHITE, declare that (choose one as appropriate):
(print name)

☐ 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: _____

☐ 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: _____

☒ The design work is exempt from the registration and qualification requirements of the Building Code.

Basis for exemption from registration and qualification: P.Eng. exempt, note 2

I certify that:

- The information contained in this schedule is true to the best of my knowledge.
- I have submitted this application with the knowledge and consent of the firm.

2019/24/01

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.



BRAMPTON
Flower City

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

WATER PIPE SIZING AND PLUMBING DATA SHEET

CERTIFIED MODEL WITH ONE DWELLING UNIT

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

Builder Name: Greenyork Homes
Certified Model Name: LIANA 3 (LO#79001-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	2	2	
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 26.4 FU.

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

1 1/4 1" φ

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.

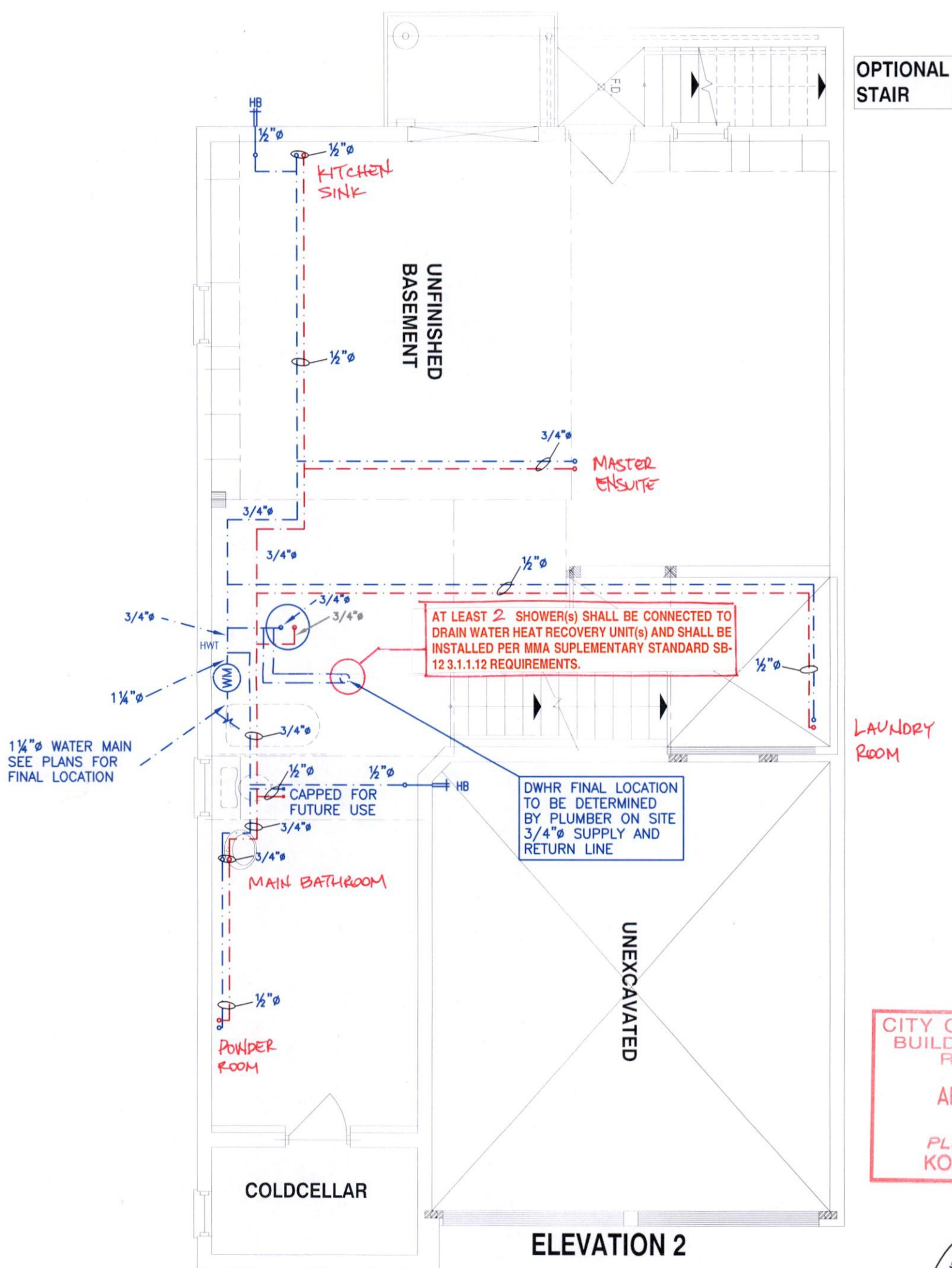


NOTES

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



THE ATTACHED
PART
FORM DRAININGS
END

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED
APR 03 2019 *K*
PLUMBING BY
KOFI MORIEL



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

Lot 24

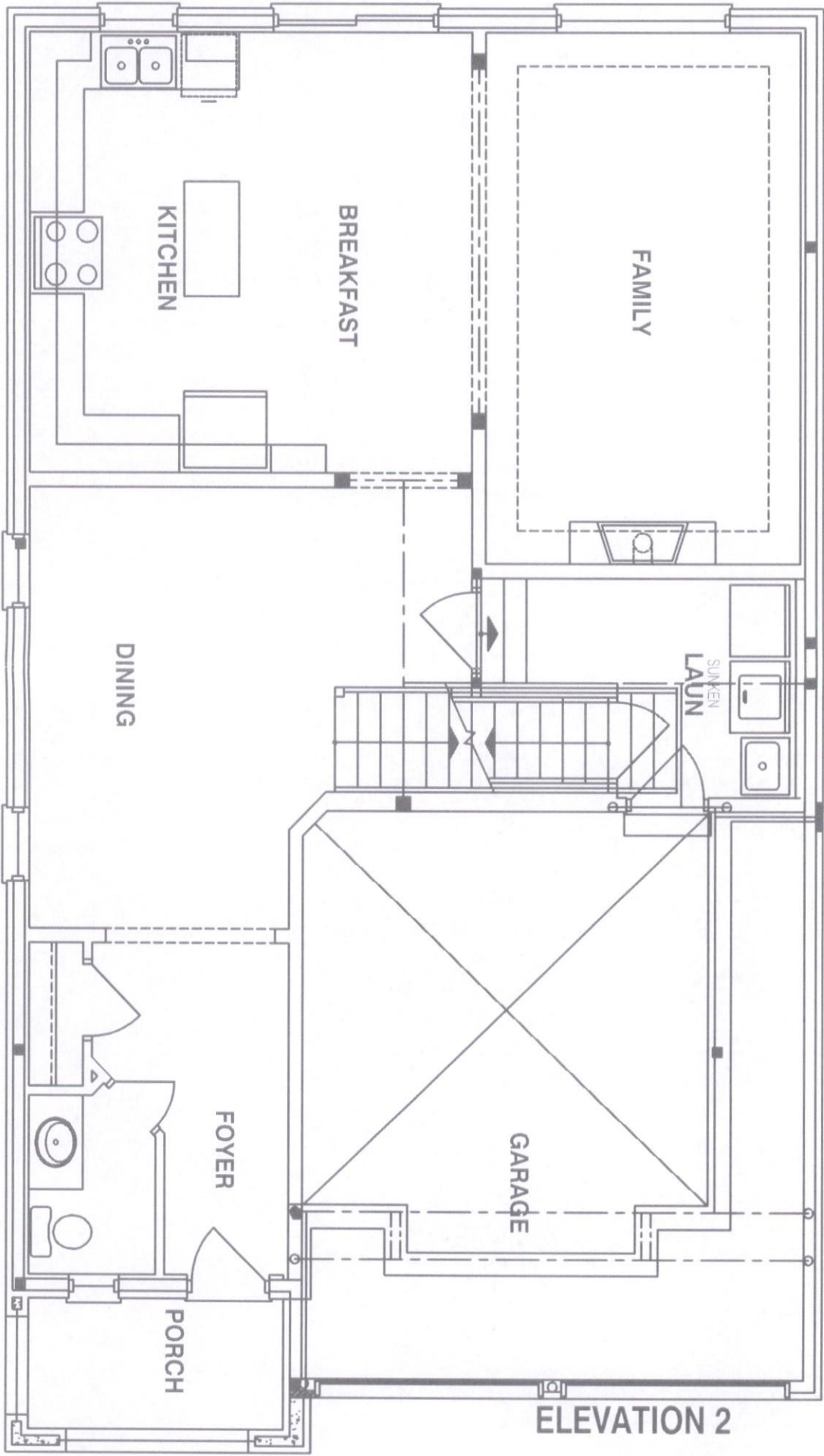
Client	 <p>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services</p>	Sheet Title	BASEMENT PLUMBING LAYOUT	
Project Name		Date	JULY 2018	
GRANELLI HOMES CORP BRAMPTON, ONTARIO		Scale	3/16" = 1'-0"	
LIANA 3				
2292 sqft		LO#	79001-P	

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CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED

APR 03 2019

PLUMBING BY
KOFI MORIEL



Client
GREENYORK HOMES

Project Name
GRANELLI HOMES CORP
BRAMPTON, ONTARIO

M-2057 LOT 24

LIANA 3 2292 sqft

HVACDESIGNS LTD.

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

Sheet Title
FIRST FLOOR
PLUMBING
LAYOUT

Date JULY 2018

Scale 3/16" = 1'-0"

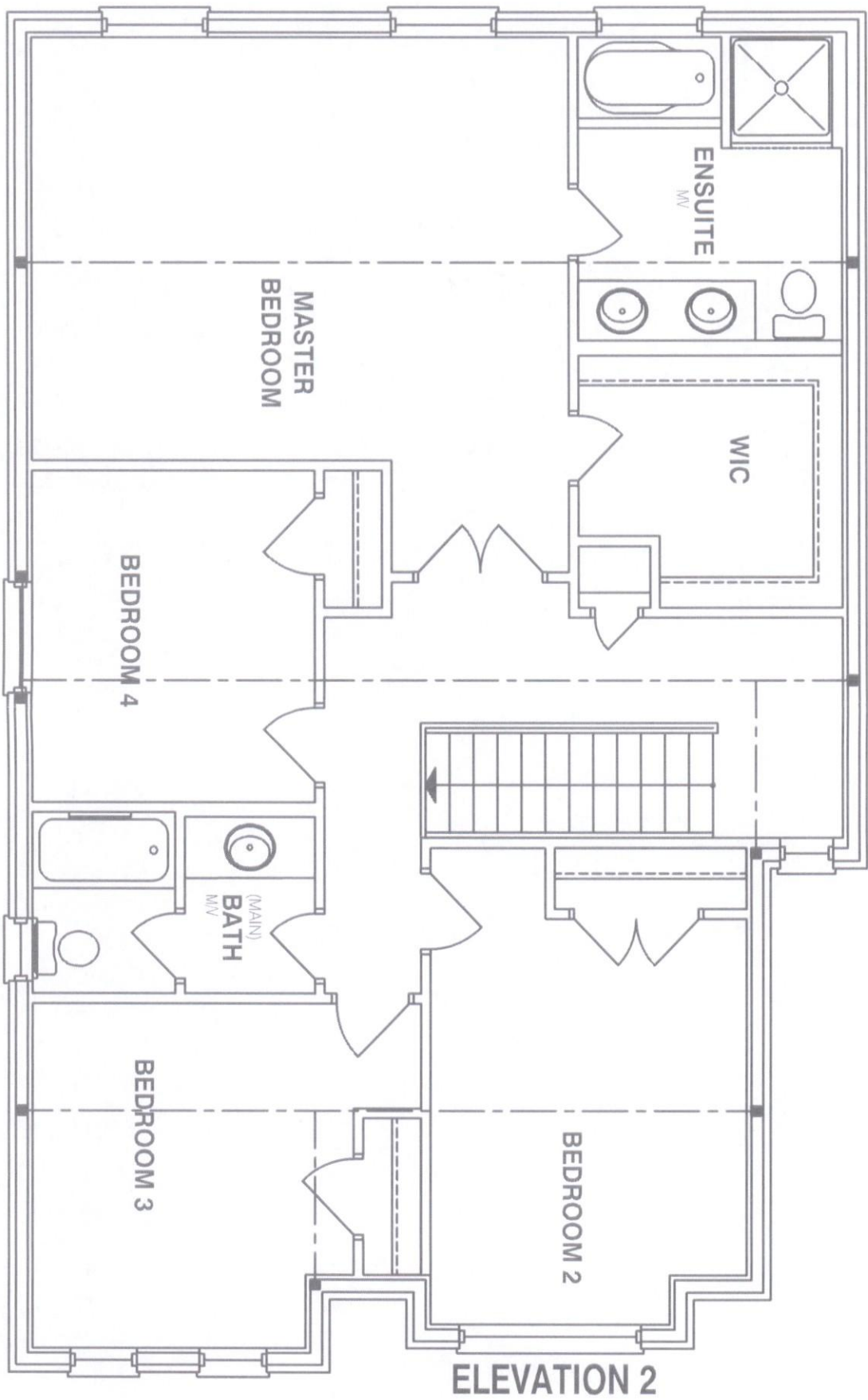
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KOFI MORIEL



Client

GREENYORK HOMES

Project Name

GRANELLI HOMES CORP
BRAMPTON, ONTARIO

M-2057 LOT 24

LIANA 3 2292 sqft

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Sheet Title

SECOND FLOOR
PLUMBING
LAYOUT

Date

JULY 2018

Scale

3/16" = 1'-0"

LO#

79001-P