19-447186 000 00 RR

Energy Efficiency Design Summary: Prescriptive Method

(Building Code Part 9, Residential)

This form is used by a designer to demonstrate that the energy efficiency design of a house complies with the building code using the prescriptive method described in Subsection 3.1.1. of SB-12. This form is applicable where the ratio of gross area of windows/sidelights/skylights/glazing in doors and sliding glass doors to the gross area of peripheral walls is not more than 22%.

For use by Principal Authority	
Application No:	Model/Certification Number: LIANA 1, EL-2

A. Project Information

Building number, street name		Unit number	Lot/Con
			29
Municipality	**Postal code**	**Reg. Plan number / other description**	
City of Brampton		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**		
□ Zone 1 (< 5000 degree days)	□ ≥ 92% AFUE	□ Gas	□ Propane	□ Solid Fuel
□ Zone 2 (≥ 5000 degree days)	□ ≥ 84% < 92% AFUE	□ Oil	□ Electric	□ Earth Energy
Ratio of Windows, Skylights & Glass (W, S & G) to Wall Area		**Other Building Characteristics**		
Area of walls = 293.62 m^2 or _____ ft^2	W, S & G % = 9.42%	□ Log/Post&Beam	□ ICF Above Grade	□ ICF Basement
		□ Slab-on-ground	□ Walkout Basement	
		□ Air Conditioning	□ Combo Unit	
Area of W, S & G = 27.67 m^2 or _____ ft^2	Utilize window averaging: □Yes □No	□ Air Sourced Heat Pump (ASHP)		
		□ Ground Sourced Heat Pump (GSHP)		

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

Energy Efficiency Substitutions

□ ICF (3.1.1.2.(5) & (6) / 3.1.1.3.(5) & (6))

□ Combined space heating and domestic water heating systems (3.1.1.2.(7) / 3.1.1.3.(7))

□ Airtightness substitution(s)		
Airtightness test required (Refer to Design Guide Attached)	□ Table 3.1.1.4.B Required: _____	Permitted Substitution: _____
	□ Table 3.1.1.4.C Required: _____	Permitted Substitution: _____
	Required: _____	Permitted Substitution: _____

CITY OF BRAMPTON BUILDING DIVISION REVIEWED BY: S. DESAI APR 16 2019 ATTACHED NOTES ARE PART OF REVIEWED DRAWINGS ALL WORK MUST COMPLY WITH OBC

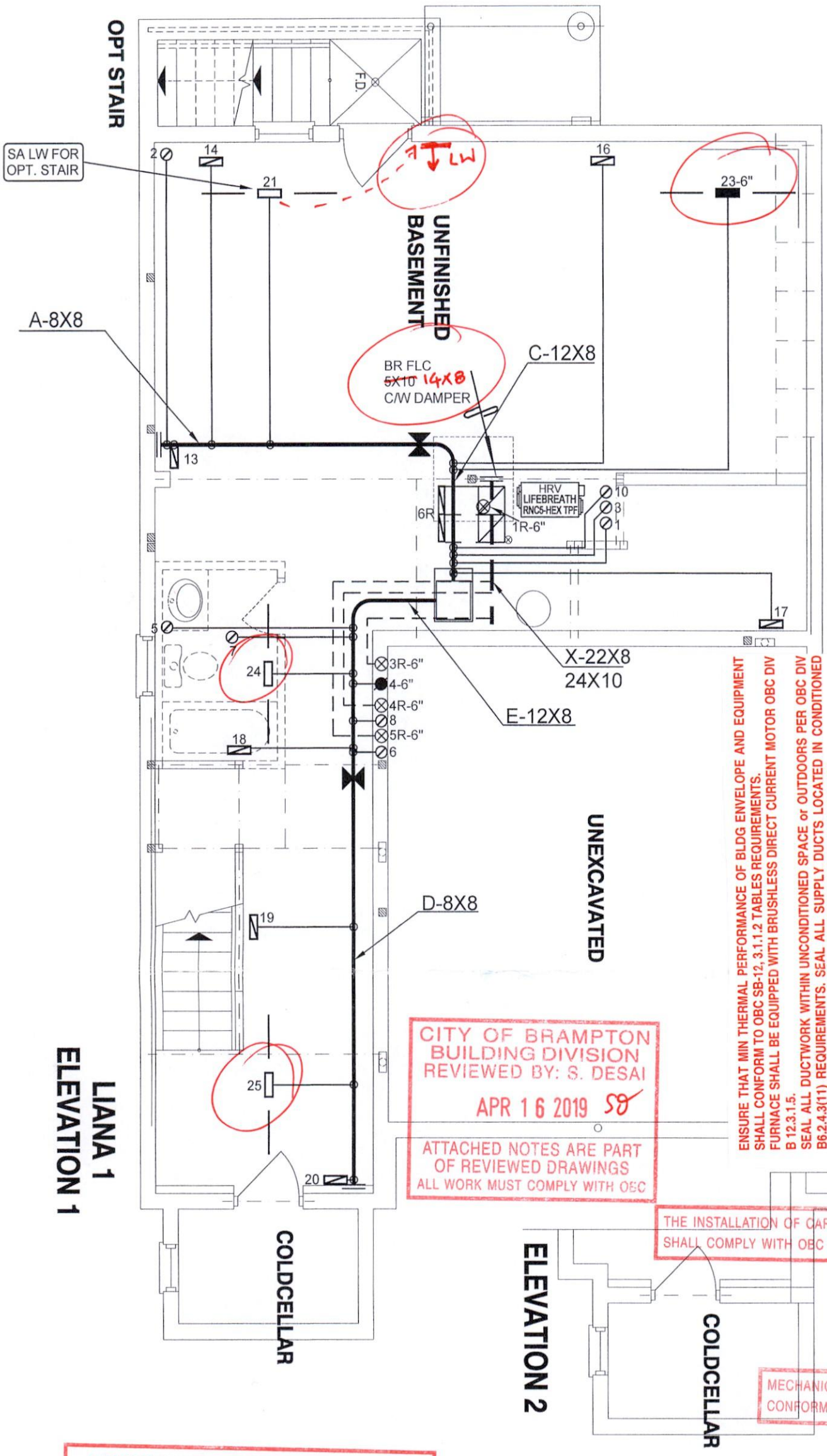
Building Component	**Minimum RSI / R values or Maximum U-Value(1)**		**Building Component**	**Efficiency Ratings**	
Thermal Insulation	Nominal	Effective	**Windows & Doors** Provide U-Value(1) or ER rating		
Ceiling with Attic Space	10.57	10.43	Windows/Sliding Glass Doors	1.6	
Ceiling without Attic Space	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/(m^2•K) or Btu/(h•ft^2•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	WBe		

19-447186 000 00 RR



LIANA 1
ELEVATION 1

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).
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).

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
APR 16 2019
ATTACHED NOTES ARE PART OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH OBC

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

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

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 HVAC EQUIP. SHALL CONFORM TO MANUFACTURER'S SPECIFICATIONS AND MANUALS

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.

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
—▬—	SUPPLY AIR GRILLE 6" BOOT	⊘	SUPPLY AIR STACK FROM 2nd FLOOR	▭▭	30"x8" RETURN AIR GRILLE	⊠	RETURN AIR STACK 2nd FLOOR
▱	SUPPLY AIR BOOT ABOVE	●	6" SUPPLY AIR STACK 2nd FLOOR	▬	FRA- FLOOR RETURN AIR GRILLE	⧗	REDUCER

No.	Description	Date
3.		
2.		
1.		

REVISIONS

Client
GREENYORK HOMES

Project Name
GRANELLI HOMES CORP
BRAMPTON, ONTARIO
M-2057 LOT 29
ALT 2ND FL
LIANA 1 2041 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.

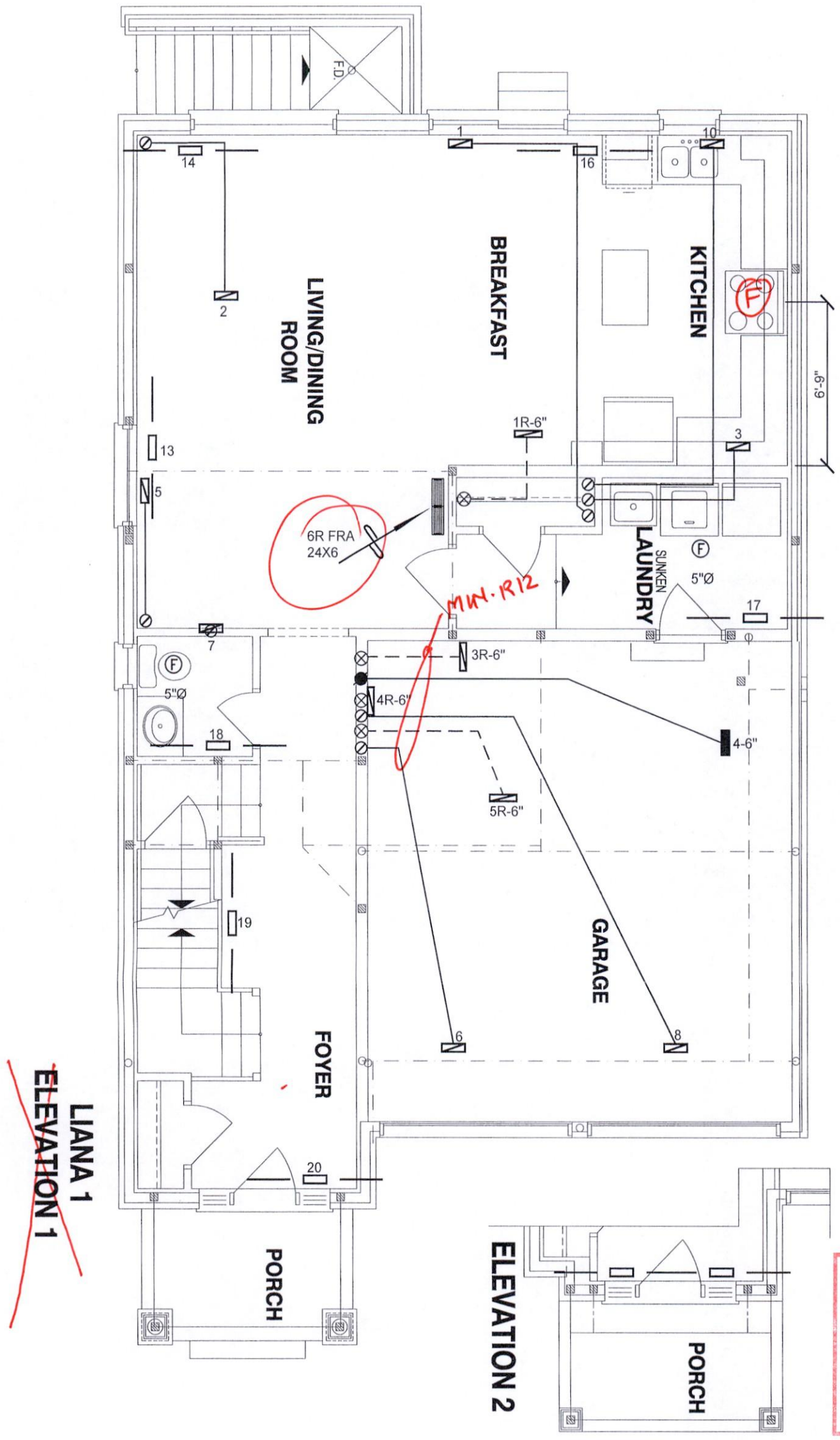
HEAT LOSS 42790 BTU/H	
UNIT DATA	
MAKE	CARRIER
MODEL	59SP5A-60-12
INPUT	60 MBTU/H
OUTPUT	58 MBTU/H
COOLING	2.0 TONS
FAN SPEED	785 cfm @ 0.6" w.c.

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	9	4	2
1ST FLOOR	7	1	3
BASEMENT	4	1	0

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

Sheet Title
BASEMENT HEATING LAYOUT

Date JUNE/2018
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 78999



LIANA 1
ELEVATION 1

ELEVATION 2

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
APR 16 2019
ATTACHED NOTES ARE PART OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH OBC

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.

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

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

CSA-F280-12
PACKAGE A1

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
— ▬ —	SUPPLY AIR GRILLE 6" BOOT	⊘	SUPPLY AIR STACK FROM 2nd FLOOR	▨	30"x8" RETURN AIR GRILLE	▩	RETURN AIR STACK 2nd FLOOR
▨	SUPPLY AIR BOOT ABOVE	●	6" SUPPLY AIR STACK 2nd FLOOR	▬	FRA- FLOOR RETURN AIR GRILLE	⧗	REDUCER

No.	Description	Date
3.		
2.		
1.		

REVISIONS

Client
GREENYORK HOMES

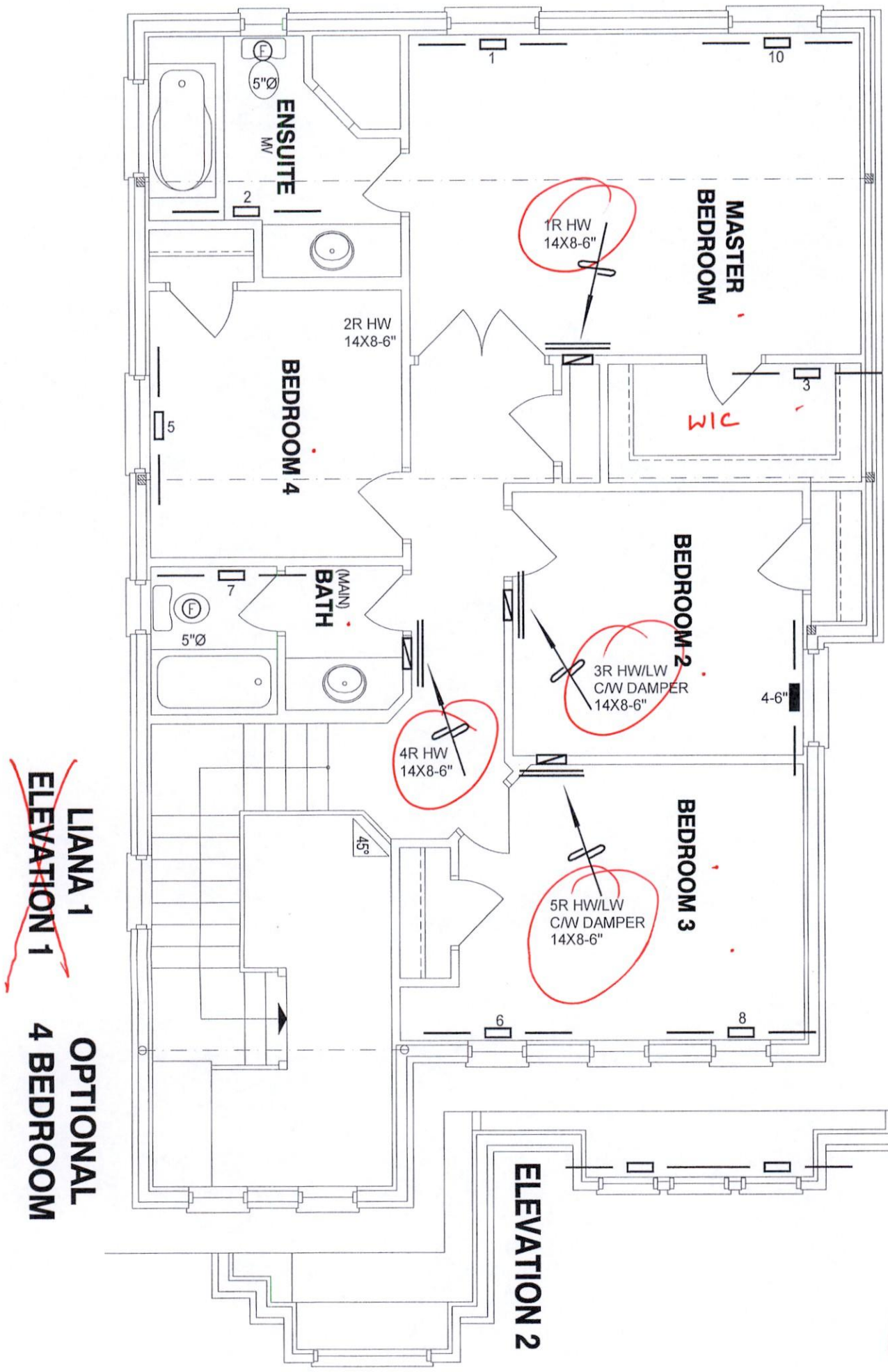
Project Name
GRANELLI HOMES CORP
BRAMPTON, ONTARIO
M-2057 LOT 29
ALT 2ND FL
LIANA 1 2041 sqft

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# 78999



LIANA 1
ELEVATION 1

OPTIONAL
4 BEDROOM

ELEVATION 2

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
APR 16 2019
ATTACHED NOTES ARE PART OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH OBC

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

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

I MICHAEL 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.

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
	SUPPLY AIR GRILLE 6" BOOT	⊘	SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER

No.	Description	Date
3.		
2.		
1.		

REVISIONS

Client
GREENYORK HOMES

Project Name
GRANELLI HOMES CORP
BRAMPTON, ONTARIO
M-2057 LOT 29
ALT 2ND FL
LIANA 1 2041 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
HEATING LAYOUT

Date JUNE/2018
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 78999

HVAC DESIGNS LTD.

375 Finley Ave. Suite 202 Ajax, ON L1S 2E2
Tel: 905.619.2300 Fax: 905.619.2375
Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

SITE NAME: GRANELLI HOMES CORP — ALT 2ND FL — DATE: Jun-18 — WINTER NATURAL AIR CHANGE RATE 0.325 — HEAT LOSS ΔT °F. 74 — CSA-F280-12*
BUILDER: GREENYORK HOMES — TYPE: LIANA 1 — GFA: 2041 — LO# 78999 — SUMMER NATURAL AIR CHANGE RATE 0.106 — HEAT GAIN ΔT °F. 11 — SB-12 PACKAGE A1

ROOM USE			MBR			ENS			WIC			BED-2			BED-3			BED-4			BATH		
EXP. WALL			32			21			5			12			10			30			10		
CLG. HT.			9			9			9			9			9			9			9		
	FACTORS																						
GRS.WALL AREA	LOSS	GAIN	288			189			45			108			90			270			90		
GLAZING			LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN	
NORTH	20.8	14.6	0	0	0	0	0	0	0	0	0	13	270	190	0	0	0	0	0	0	0	0	0
EAST	20.8	38.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	686	1265	0	0	0
SOUTH	20.8	22.9	0	0	0	13	270	297	0	0	0	0	0	0	15	312	343	0	0	0	8	166	183
WEST	20.8	38.3	30	623	1150	7	145	268	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SKYLT.	36.4	100.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	24.7	3.7	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	0.6	258	1124	167	169	736	109	45	196	29	95	414	61	75	327	48	237	1033	153	82	357	53
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	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	247	309	138	110	138	61	95	119	53	182	228	101	110	138	61	187	234	104	110	138	61
NO ATTIC EXPOSED CLG	2.7	1.2	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	0.4	0	0	0	0	0	0	0	0	0	125	311	46	0	0	0	187	466	69	0	0	0
BASEMENT/CRAWL HEAT LOSS				0			0			0			0			0			0			0	
SLAB ON GRADE HEAT LOSS				0			0			0			0			0			0			0	
SUBTOTAL HT LOSS				2057			1290			315			1223			776			2418			661	
SUB TOTAL HT GAIN					1454			736			82			399			453			1591			297
LEVEL FACTOR / MULTIPLIER			0.20	0.28		0.20	0.28		0.20	0.28		0.20	0.28		0.20	0.28		0.20	0.28		0.20	0.28	
AIR CHANGE HEAT LOSS				577			362			88			343			218			678			185	
AIR CHANGE HEAT GAIN					91			46			5			25			28			99			19
DUCT LOSS				0			0			0			157			0			310			0	
DUCT GAIN					0			0			0			122			0			249			0
HEAT GAIN PEOPLE	240		2		480	0		0	0		0	1		240	1		240	1		240	0		0
HEAT GAIN APPLIANCES/LIGHTS					555			0			0			555			555			555			0
TOTAL HT LOSS BTU/H				2634			1651			403			1723			994			3406			847	
TOTAL HT GAIN x 1.3 BTU/H					3354			1017			113			1742			1659			3555			411

ROOM USE					K/L/D				LAUN			W/R			FOY				WUB			BAS		
EXP. WALL					65				26			9			81				15			137		
CLG. HT.					10				12			10			10				9			9		
	FACTORS																							
GRS.WALL AREA	LOSS	GAIN			650				312			90			810				135			822		
GLAZING					LOSS	GAIN			LOSS	GAIN		LOSS	GAIN		LOSS	GAIN			LOSS	GAIN		LOSS	GAIN	
NORTH	20.8	14.6			0	0	0		0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
EAST	20.8	38.3			0	0	0		0	0	0	0	0	0	48	997	1840		0	0	0	0	0	0
SOUTH	20.8	22.9			22	457	503		0	0	0	7	145	160	11	229	252		0	0	0	3	62	69
WEST	20.8	38.3			87	1808	3335		0	0	0	0	0	0	0	0	0		5	104	192	0	0	0
SKYLT.	36.4	100.7			0	0	0		0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
DOORS	24.7	3.7			0	0	0		20	493	73	0	0	0	20	493	73		20	493	73	20	493	73
NET EXPOSED WALL	4.4	0.6			541	2357	349		292	1272	189	83	362	54	731	3185	472		110	479	71	0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5			0	0	0		0	0	0	0	0	0	0	0	0		0	0	0	411	1444	214
EXPOSED CLG	1.3	0.6			0	0	0		0	0	0	0	0	0	165	207	92		0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.2			0	0	0		0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
EXPOSED FLOOR	2.5	0.4			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						4607	
SLAB ON GRADE HEAT LOSS						0				0			0			0				108				
SUBTOTAL HT LOSS						4622				1765			507			5111				1184		6607		
SUB TOTAL HT GAIN							4188				262			214			2729				336			356
LEVEL FACTOR / MULTIPLIER					0.30	0.31			0.30	0.31		0.30	0.31		0.30	0.31						0.50	0.79	
AIR CHANGE HEAT LOSS						1416				541			155			1566						6129		
AIR CHANGE HEAT GAIN							261				16			13			170							43
DUCT LOSS						0				0			0			0						0		
DUCT GAIN							0				0			0			0							0
HEAT GAIN PEOPLE	240				0		0		0		0	0		0	0		0		0		0	0		0
HEAT GAIN APPLIANCES/LIGHTS							555				555			0			0				0			555
TOTAL HT LOSS BTU/H						6038				2306			662			6676				1184		12736		
TOTAL HT GAIN x 1.3 BTU/H							6505				1083			295			3769				437			1240

TOTAL HEAT GAIN BTU/H: 25406 — TONS: 2.12 — LOSS DUE TO VENTILATION LOAD BTU/H: 1529 — STRUCTURAL HEAT LOSS: 41261 — TOTAL COMBINED HEAT LOSS BTU/H: 42790

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.

Michael O'Rourke

INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
APR 16 2019
ATTACHED NOTES ARE PART OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH OBC

HVAC DESIGNS LTD.

375 Finley Ave. Suite 202 Ajax, ON L1S 2E2
Tel: 905.619.2300 Fax: 905.619.2375
Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

SITE NAME: GRANELLI HOMES CORP
BUILDER: GREENYORK HOMES

ALT 2ND FL
TYPE: LIANA 1

DATE: Jun-18

GFA: 2041 LO# 78999

HEATING CFM	785	COOLING CFM	785
TOTAL HEAT LOSS	41,261	TOTAL HEAT GAIN	25,180
AIR FLOW RATE CFM	19.03	AIR FLOW RATE CFM	31.18

furnace pressure	0.6
furnace filter	0.05
a/c coil pressure	0.2
available pressure for s/a & r/a	0.35
plenum pressure s/a	0.18
max s/a dif press. loss	0.01
min adjusted pressure s/a	0.17
r/a pressure	0.17
r/a grille press. Loss	0.02
adjusted pressure r/a	0.15

#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 = 785
CFM @ .6 " E.S.P.

TEMPERATURE RISE 68 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	9	7	4
R/A	0	0	4	1	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 (4)	6 (3)	7	8 (3)	10	13	14	16	17	18	19	20	21	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-4	MBR	K/L/D	K/L/D	K/L/D	LAUN	W/R	FOY	FOY	BAS	BAS	BAS
RM LOSS MBH.	1.32	1.65	0.40	1.72	0.99	1.70	0.85	1.70	1.32	2.01	2.01	2.01	2.31	0.66	3.34	3.34	3.48	3.48	3.48
CFM PER RUN HEAT	25	31	8	33	19	32	16	32	25	38	38	38	44	13	64	64	66	66	66
RM GAIN MBH.	1.68	1.02	0.11	1.74	1.66	1.78	0.41	1.78	1.68	2.17	2.17	2.17	1.08	0.30	1.88	1.88	0.42	0.42	0.42
CFM PER RUN COOLING	52	32	4	54	52	55	13	55	52	68	68	68	34	9	59	59	13	13	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	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	29	52	29	38	31	37	20	45	40	20	30	25	18	15	28	30	25	29	12
EQUIVALENT LENGTH	165	170	150	155	205	125	170	145	145	120	130	150	130	130	140	120	120	160	140
TOTAL EFFECTIVE LENGTH	194	222	179	193	236	162	190	190	185	140	160	175	148	145	168	150	145	189	152
ADJUSTED PRESSURE	0.09	0.08	0.1	0.09	0.07	0.11	0.09	0.09	0.09	0.12	0.11	0.1	0.12	0.12	0.1	0.11	0.12	0.09	0.11
ROUND DUCT SIZE	4	4	4	6	5	5	4	5	4	5	5	5	4	4	5	5	5 (6)	6	5 (6)
HEATING VELOCITY (ft/min)	287	356	92	168	140	235	184	235	287	279	279	279	505	149	470	470	485	337	485
COOLING VELOCITY (ft/min)	597	367	46	275	382	404	149	404	597	499	499	499	390	103	433	433	95	66	95
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10
TRUNK	C	A	C	E	E	E	E	E	C	A	A	C	C	E	D	D	A	C	E

RUN #	25
ROOM NAME	BAS
RM LOSS MBH.	3.48
CFM PER RUN HEAT	66
RM GAIN MBH.	0.42
CFM PER RUN COOLING	13
ADJUSTED PRESSURE	0.17
ACTUAL DUCT LGH.	30
EQUIVALENT LENGTH	120
TOTAL EFFECTIVE LENGTH	150
ADJUSTED PRESSURE	0.11
ROUND DUCT SIZE	5 (6)
HEATING VELOCITY (ft/min)	485
COOLING VELOCITY (ft/min)	95
OUTLET GRILL SIZE	3X10
TRUNK	D

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
APR 16 2019 SB
ATTACHED NOTES ARE PART OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH OBC

SUPPLY AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)		TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)
TRUNK A	173	0.08	7.3	8	x	8	389	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	0	0.00	0	0	x	8	0	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	379	0.08	9.7	12	x	8	569	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	194	0.10	7.2	8	x	8	437	TRUNK J	0	0.00	0	0	x	8	0
TRUNK E	405	0.07	10.3	12	x	8	608	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 CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (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	785	0.06	13.8	22	x	8	642
TRUNK Y	0	0.06	0	0	x	8	0
TRUNK Z	0	0.06	0	0	x	8	0
DROP	785	0.06	13.8	24	x	10	471

RETURN AIR #	1		3	4	5	6										BR
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AIR VOLUME	95	0	95	95	85	315	0	0	0	0	0	0	0	0	0	100
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
ACTUAL DUCT LGH.	34	1	38	40	48	12	1	1	1	1	1	1	1	1	1	18
EQUIVALENT LENGTH	185	165	185	165	185	120	0	0	0	0	0	0	0	0	0	190
TOTAL EFFECTIVE LH	219	166	223	205	233	132	1	1	1	1	1	1	1	1	1	208
ADJUSTED PRESSURE	0.07	0.09	0.07	0.07	0.06	0.11	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.07
ROUND DUCT SIZE	6	0	6	6	6	8.4	0	0	0	0	0	0	0	0	0	6.1
INLET GRILL SIZE	8	0	8	8	8	8	0	0	0	0	0	0	0	0	0	8
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	0	14	14	14	24	0	0	0	0	0	0	0	0	0	14

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

HVAC DESIGNS LTD.

375 Finley Ave. Suite 202 Ajax, ON L1S 2E
Tel: 905.619.2300 Fax: 905.619.237
Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.c

TYPE: LIANA 1
SITE NAME: GRANELLI HOMES CORP

LO # 78999
ALT 2ND FL

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: LIFEBREATH 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	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
LAUN	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 @ 32 deg F (0 deg C) [✓] HVI Approved

LOCATION OF INSTALLATION

Lot: Concession:
Township Plan:
Address
Roll # Building Permit #

CITY OF BRAMPTON BUILDING DIVISION REVIEWED BY: S DESAI APR 16 2019 58 ATTACHED NOTES ARE PART OF REVIEWED DRAWINGS ALL WORK MUST COMPLY WITH OBC

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

I REVIEW AND TAKE RESPONIBILITY 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. MICHAEL O'ROURKE

HVAC DESIGNS LTD.
375 Finley Ave. Suite 202 Ajax, ON L1S 2E2
Tel: 905.619.2300 Fax: 905.619.2375
Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: LIANA 1 ALT 2ND FL
SFQT: 2041 **LO#** 78999
BUILDER: GREENYORK HOMES
SITE: GRANELLI HOMES 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)	75

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 (ft^3):	28440.0	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: 46.0 ft	WIDTH: 30.0 ft	EXPOSED PERIMETER:	137.0 ft

CITY OF BRAMPTON BUILDING DIVISION REVIEWED BY: S. DESAI APR 16 2019 ATTACHED NOTES ARE PART OF REVIEWED DRAWINGS ALL WORK MUST COMPLY WITH OBC

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

Michael O'Rourke

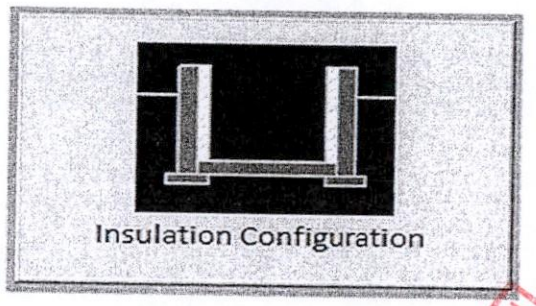
HVAC Designs Ltd.
375 Finley Ave, Suite 202
Ajax ON, L1S 2E2
905-619-2300

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):	14.0	
Floor Width (m):	9.1	
Exposed Perimeter (m):	41.8	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m^2):	0.7	
Door Area (m^2):	3.7	


Insulation Configuration

Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):	**1350**	

TYPE: LIANA 1
LO# 78999

ALT 2ND FL

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

Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Weather Station Location:	Open flat terrain, grass	
Anemometer height (m):	10	
Local Shielding		
Building Site:	Suburban, forest	
Walls:	Heavy	
Flue:	Heavy	
Highest Ceiling Height (m):	6.71	
Building Configuration		
Type:	Detached	
Number of Stories:	Two	
Foundation:	Full	
House Volume (m^3):	805.3	
Air Leakage/Ventilation		
Air Tightness Type:	Present (1961-) (3.57 ACH)	
Custom BDT Data:	ELA @ 10 Pa.	1073.5 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):	**0.325**	
Cooling Air Leakage Rate (ACH/H):	**0.106**	

TYPE: LIANA 1
LO# 78999

ALT 2ND FL

HVAC DESIGNS LTD.

375 Finley Ave. Suite 202 Ajax, ON L1S 2E2
Tel: 905.619.2300 Fax: 905.619.2375
Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

CSA F280-12 Residential Heat Loss and Heat Gain Calculations

Formula Sheet (For Air Leakage / Ventiliation Calculation)

LO#: 78999 Model: LIANA 1 Builder: GREENYORK HOMES Date: 6/19/2018

Volume Calculation

House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	909	9	8181
First	909	10	9090
Second	1241	9	11169
Third	0	9	0
Fourth	0	9	0
		Total:	28,440.0 ft³
		Total:	805.3 m³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.325
SUMMER NATURAL AIR CHANGE RATE	0.106

Design Temperature Difference

	Tin °C	Tout °C	ΔT °C	ΔT °F
Winter DTDh	22	-19	41	74
Summer DTDc	24	30	6	11

5.2.3.1 Heat Loss due to Air Leakage

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

0.325 x 223.70 x 41 °C x 1.2 = 3593 W

= **12258 Btu/h**

6.2.6 Sensible Gain due to Air Leakage

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

= 0.106 x 223.70 x 6 °C x 1.2 = 173 W

= **591 Btu/h**

5.2.3.2 Heat Loss due to Mechanical Ventilation

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

80 CFM x 74 °F x 1.08 x 0.24 = **1529 Btu/h**

6.2.7 Sensible heat Gain due to Ventilation

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

80 CFM x 11 °F x 1.08 x 0.24 = **227 Btu/h**

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

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

Level	Level Factor (LF)	HLairve 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	12,258	7,791	0.787
2	0.3		12,005	0.306
3	0.2		8,741	0.280
4	0		0	0.000
5	0		0	0.000

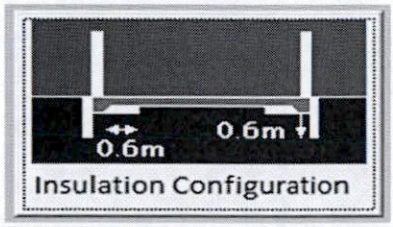
*HLairbv = Air leakage heat loss + ventilation heat loss
*For a balanced or supply only ventilation system HLairve = 0

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
APR 16 2019
ATTACHED NOTES ARE PART OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH OBC

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

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):	0.3	 Insulation Configuration
Width (m):	4.0	
Exposed Perimeter (m):	4.6	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):	**32**	

TYPE: LIANA 1
LO# 78998

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		Unit no.	Lot/con.
5 PENLEA GATE			29

Municipality	ostal code	lan number/ other description
BRAMPTON		43M-2057

B. Individual who reviews and takes responsibility for design activities

Name	Firm
SANDY WHITE, P.Eng.	ANDA ENGINEERING LTD.

Street address	Unit no.	Lot/con.
5125 ARDOCH ROAD		

Municipality	ostal code	Province	E-mail
ARDOCH	K0H-1C0	ONTARIO	design@andaengineering.com

Telephone number	Fax number	Cell number
(613) 479-0161	( ) N/A	(416) 476-1105

C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1. of Division C]

☐ House	☐ HVAC – House	☐ Building Structural
☐ Small Buildings	☐ Building Services	☑ lumbing – House
☐ Large Buildings	☐ Detection, Lighting and Power	☐ lumbing – ll Buildings
☐ Complex Buildings	☐ Fire Protection	☐ On-site Sewage Systems

Description of designer's work

LIANA 1 - ELEV. 2 (4 BEDROOM) 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:

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.

SANDY WHITE

2019/24/01

Date

Signature of Designer

NOTE:

1. 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.
2. 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 o 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.

M-2057 LOT 29

BRAMPTON Flower City
brampton.ca

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

SWhite

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 1 OPT 2ND FLOOR (LO78999-P)
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		2	
Bidet				
Extra Shower			1	
Lav				
Bar Sink				
Powder room [7]		1		
Kitchen Sink		1		
Dishwasher		1		
Laundry Tub		1		
Washing Machine		1		
Hose Bib		2		

Total Fixture Units	**25.7**
Minimum Diametre of Water Service Pipe Required from the Property Line to the House (Inch)	**3/4**

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 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.

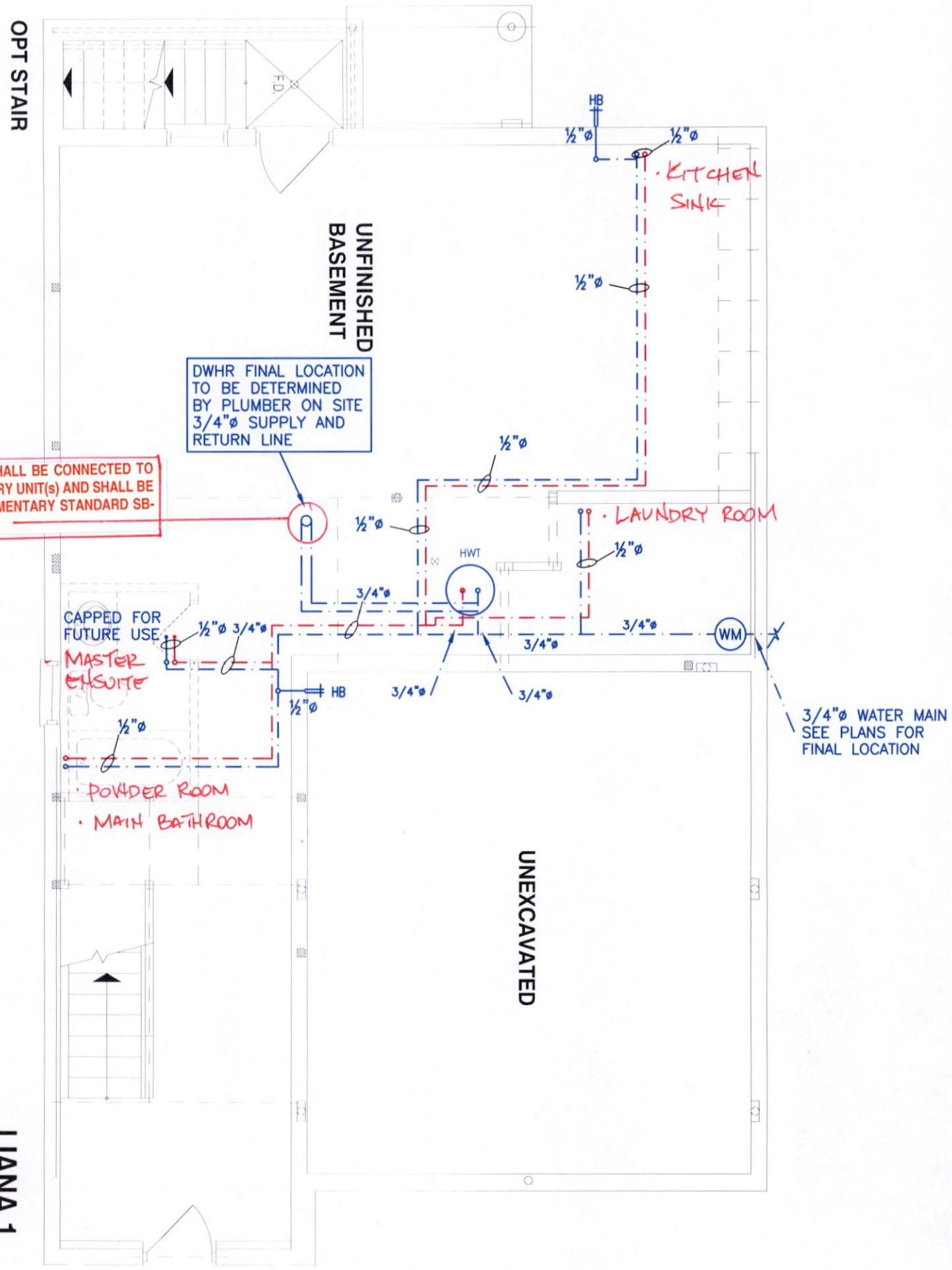
PLEASE SEE THE ATT
NOTES AS THEY FOR
OF THE REVIEWED DR

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)
WM	WATER METER, PROVIDE SUPPLY PIPE SIZE/ ø
HB	HOSE BIB
	PROPOSED COLD WATER LINE & RISER
	PROPOSED HOT WATER LINE & RISER
FD	FLOOR DRAIN



ATTACHED AS PART OF DRAWINGS

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

Lot 29

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

LICENSED PROFESSIONAL ENGINEER
2018/07/06
SANDY WHITE
PROVINCE OF ONTARIO

Client
GREENYORK HOMES

Project Name
GRANELLI HOMES CORP
BRAMPTON, ONTARIO

ALT 2ND FL
LIANA 1 2041 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

Sheet Title
BASEMENT PLUMBING LAYOUT

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

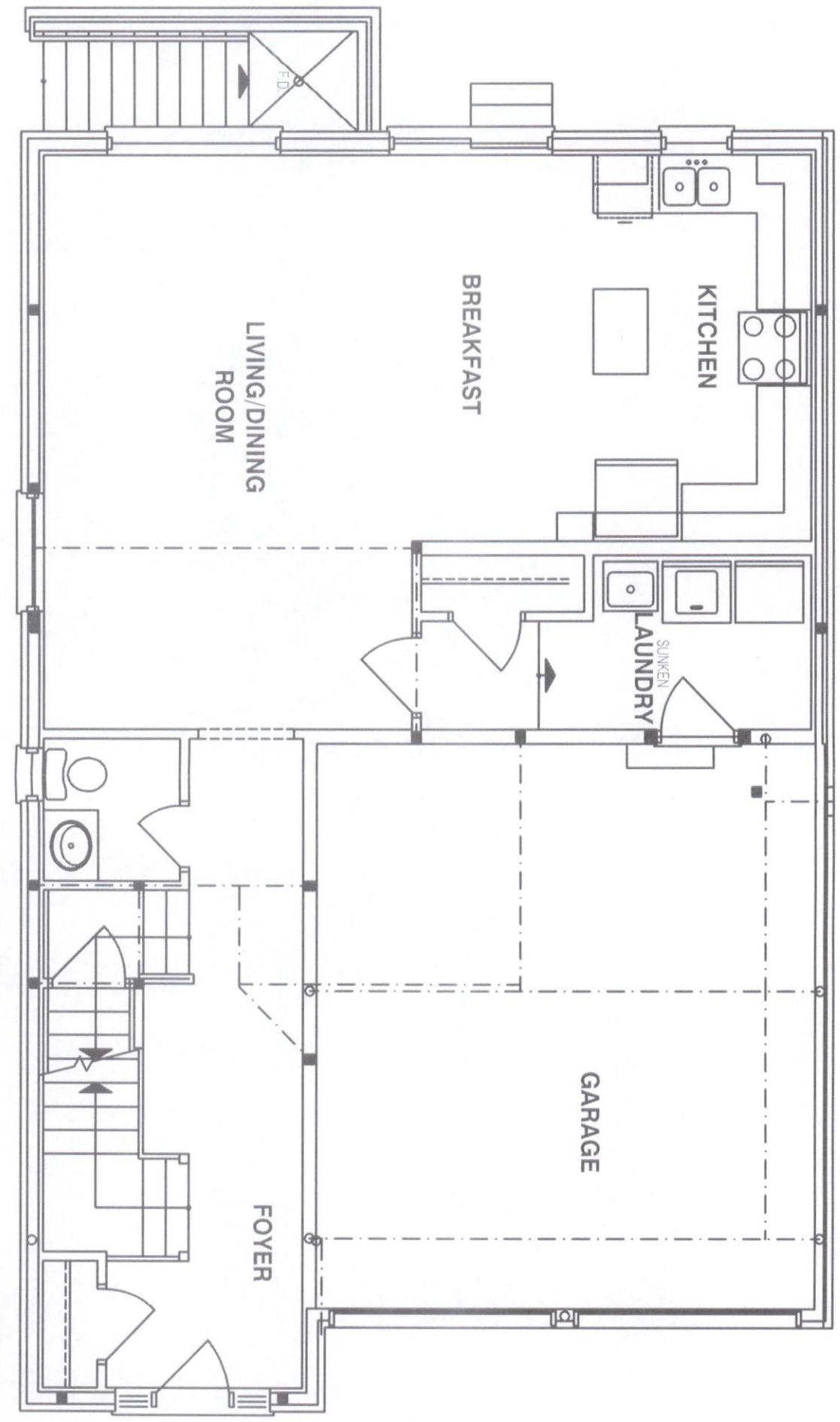
LO# 78999-P

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)
WM	WATER METER, PROVIDE SUPPLY PIPE SIZE/ ø
HB	HOSE BIB
	PROPOSED COLD WATER LINE & RISER
	PROPOSED HOT WATER LINE & RISER
FD	FLOOR DRAIN



LIANA 1
ELEVATION 1

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

LICENSED PROFESSIONAL ENGINEER
2018/07/06
SANDY WHITE
PROVINCE OF ONTARIO

Client
GREENYORK HOMES

Project Name
GRANELLI HOMES CORP
BRAMPTON, ONTARIO
M-2057 LOT 29
ALT 2ND FL
LIANA 1 2041 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

Sheet Title
FIRST FLOOR PLUMBING LAYOUT

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

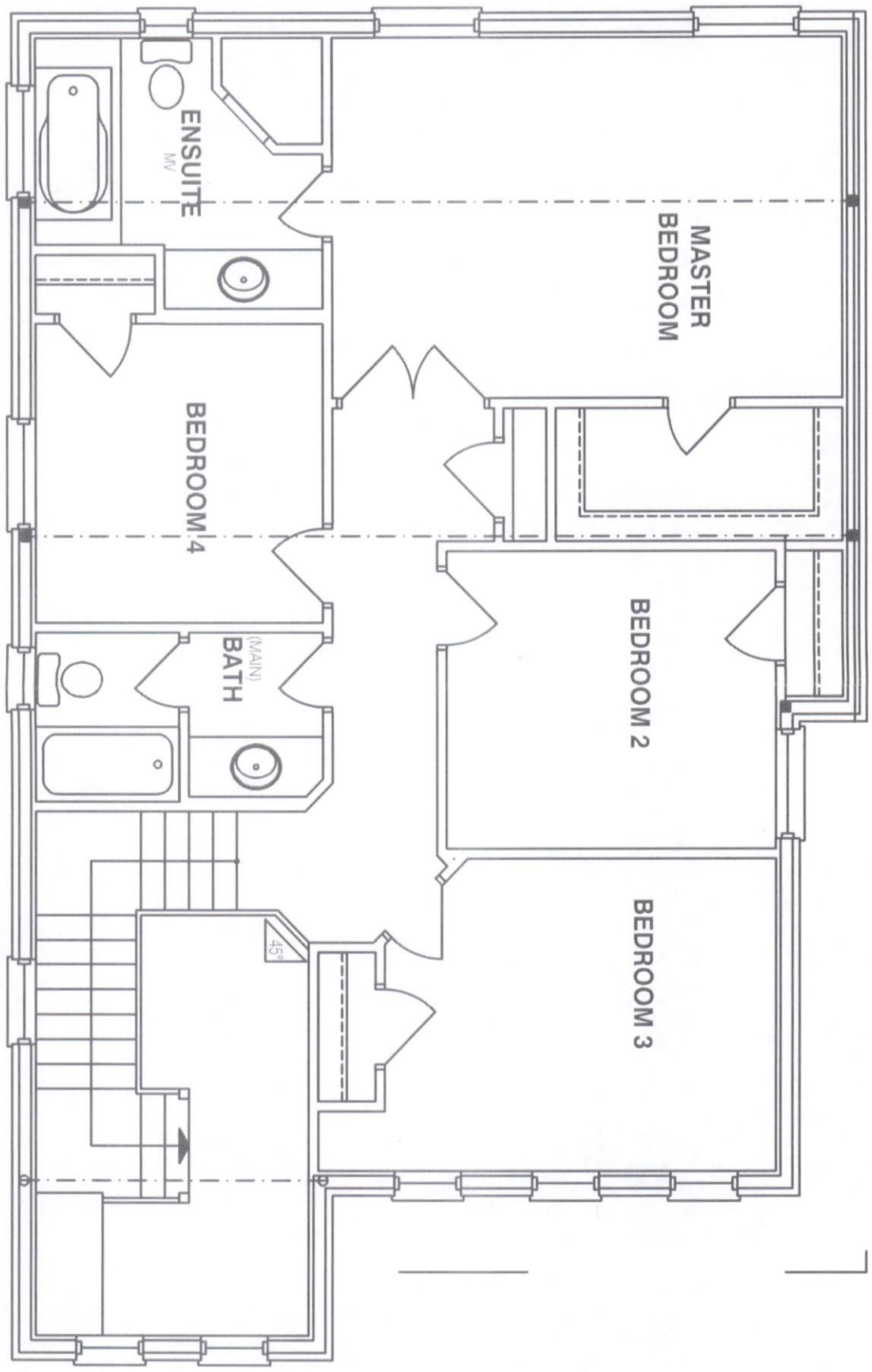
LO# 78999-P

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)
WM	WATER METER, PROVIDE SUPPLY PIPE SIZE/ ø
HB	HOSE BIB
	PROPOSED COLD WATER LINE & RISER
	PROPOSED HOT WATER LINE & RISER
FD	FLOOR DRAIN



LIANA 1 OPTIONAL
ELEVATION 1 4 BEDROOM

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

LICENSED PROFESSIONAL ENGINEER
2018/07/06
SANDY WHITE
PROVINCE OF ONTARIO

Client
GREENYORK HOMES

Project Name
GRANELLI HOMES CORP
BRAMPTON, ONTARIO
M-2057 LOT 29
ALT 2ND FL
LIANA 1 2041 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

Sheet Title
SECOND FLOOR PLUMBING LAYOUT

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

LO# 78999-P