



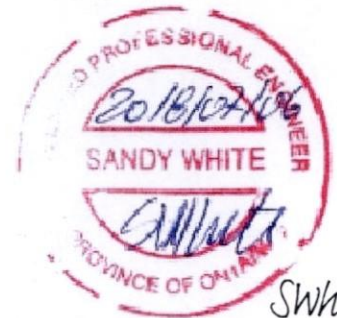
Planning and Development Services
Building Division
8850 McLaughlin Road, Unit 1
Brampton, ON L6Y 5T1

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 2 (LO#79000-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		23	
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

26.4 30 F.U.

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

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 $\frac{3}{4}$ in. in size.
- (3) The minimum water pressure at the entry to the building is 200 kPa, and the total maximum length of the water system is 90 m.
- (4) In a hot water distribution system of a developed length of more than 30 m from the HWT to the farthest fixture or supplying more than 4 storeys, the water temperature shall be maintained by, (a) recirculation, or (b) a self-regulating heat tracing system.
- (5) Where piping may be exposed to freezing conditions, it shall be protected from the effects of freezing.
- (6) A bathroom group consists of 1 water closet, 1 lavatory, and 1 bathtub (with or without showerhead)
- (7) A powder room group consists of 1 water closet and 1 lavatory.

PLEASE SEE THE ATTACHED NOTES AS THEY FORM PART OF THE REVIEWED DRAWING

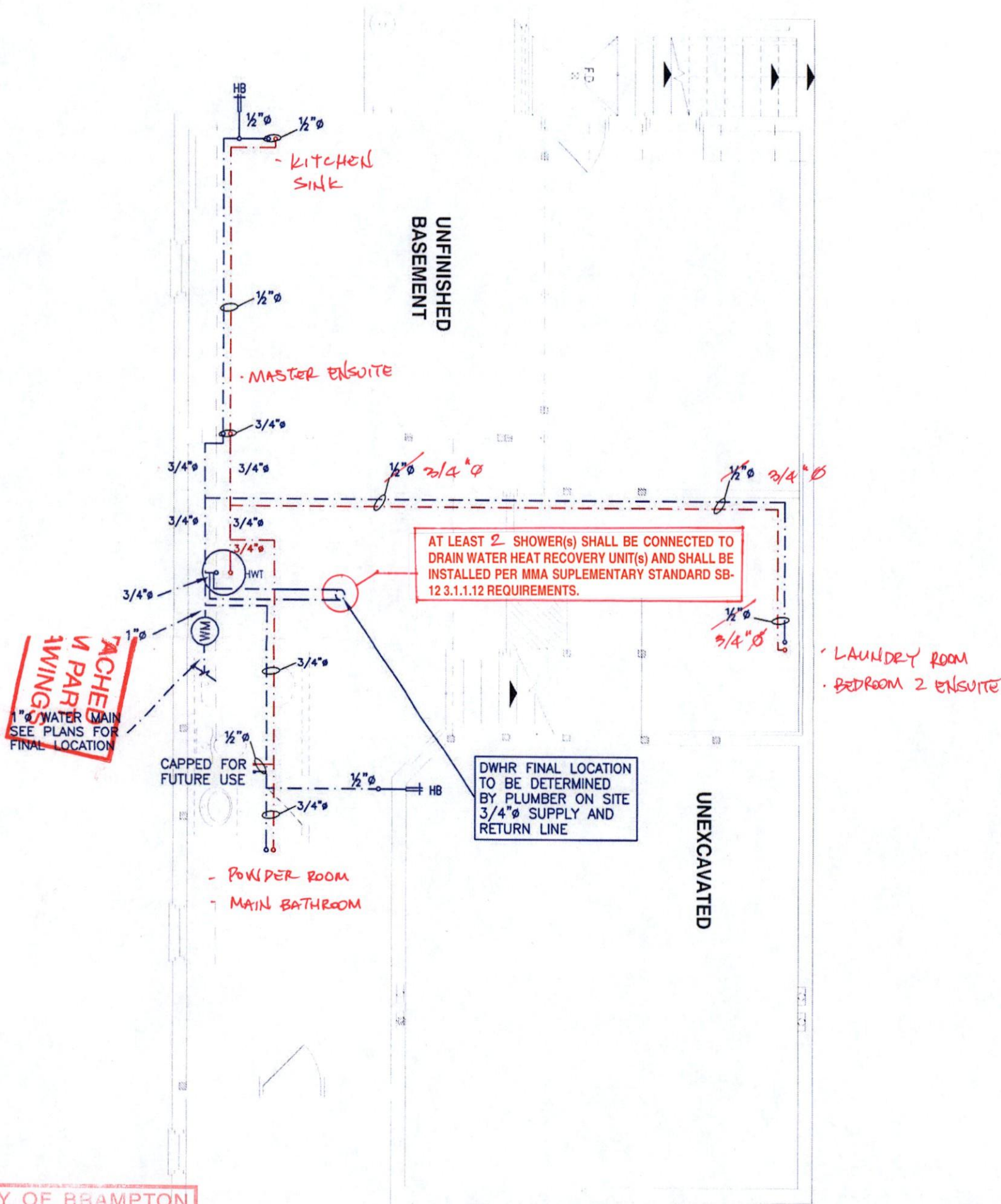


NOTES

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



ELEVATION 1 & 2

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED

APR 04 2019

PLUMBING BY
KOFI MORIEL

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



GREENYORK HOMES

Project Name
GRANELLI HOMES CORP
BRAMPTON, ONTARIO

LOT 18

LIANA 2

2284 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

RECEIVED

APR 04 2019

Building Division

Sheet Title

BASEMENT
PLUMBING
LAYOUT

Date JULY 2018

Scale 3/16" = 1'-0"

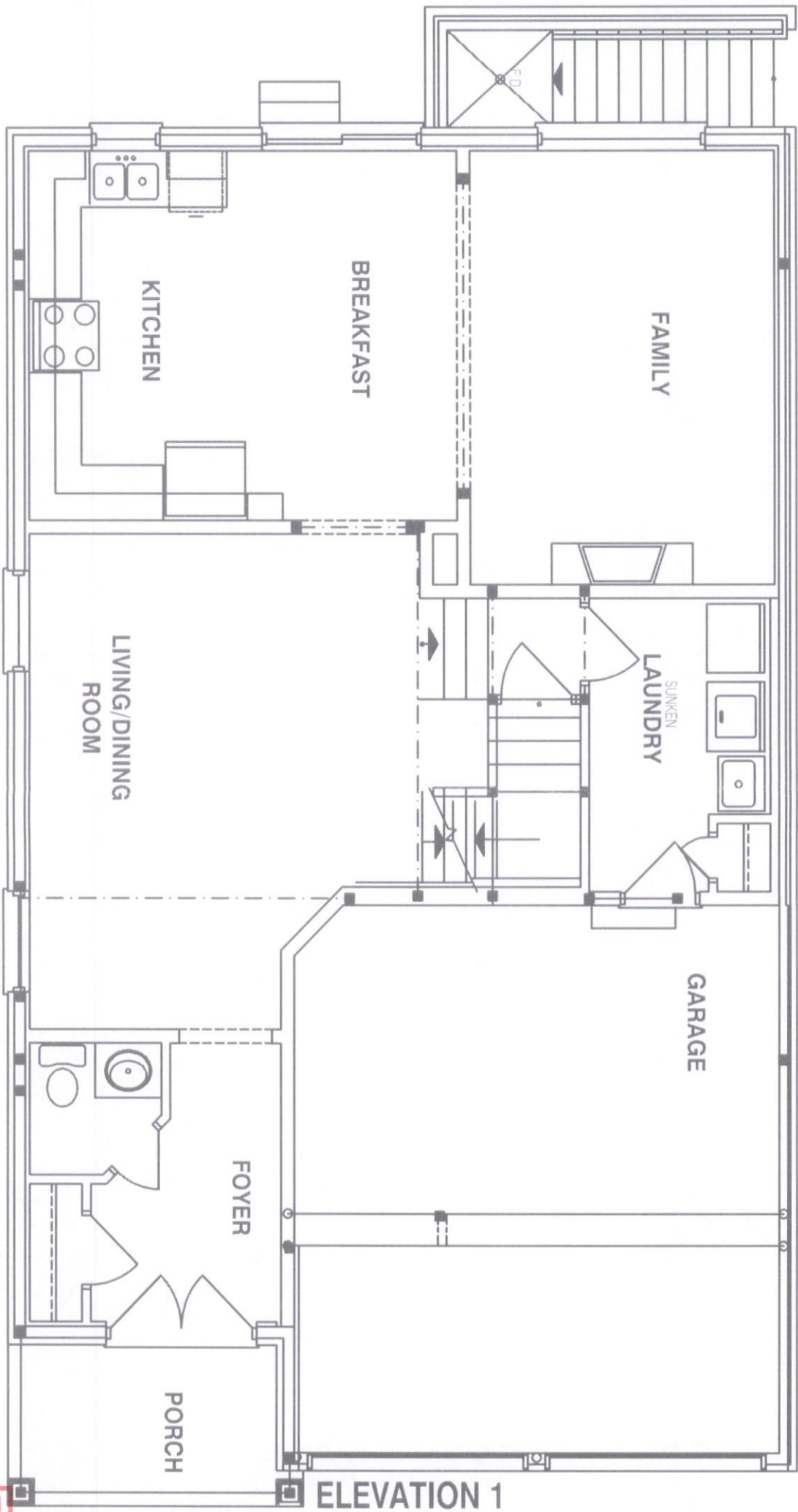
LO# 79000-P

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)
	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 04 2019

PLUMBING BY
KOFI MORIEL



Client
GREENYORK HOMES

Project Name
GRANELLI HOMES CORP
BRAMPTON, ONTARIO

M-2057 LOT 18

LIANA 2 2284 sqft



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

Sheet Title
FIRST FLOOR
PLUMBING
LAYOUT

Date
JULY 2018

Scale
3/16" = 1'-0"

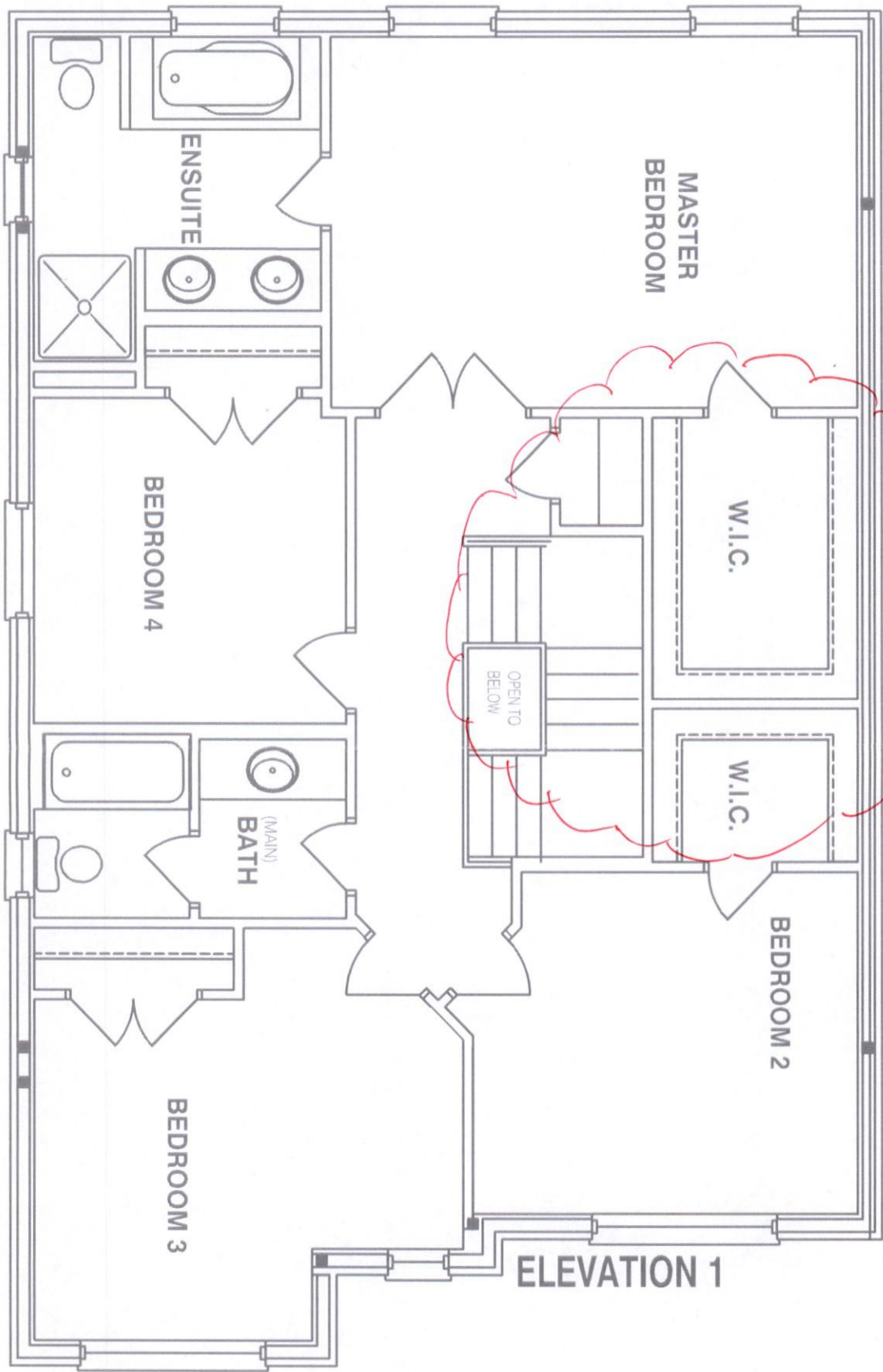
LO# 79000-P

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)
	WATER METER, PROVIDE SUPPLY PIPE SIZE/ Ø
	HOSE BIB
	PROPOSED COLD WATER LINE & RISER
	PROPOSED HOT WATER LINE & RISER
	FLOOR DRAIN



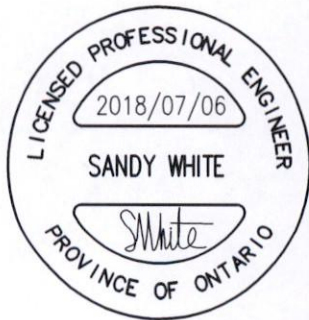
ELEVATION 1

REFER TO THE
ARCHITECTURAL DRAWINGS
FOR THE LOCATION
OF THE ENSUITE
SERVING BEDROOM 2

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED

APR 04 2019

PLUMBING BY
KOFI MORIEL



Client
GREENYORK HOMES

Project Name
GRANELLI HOMES CORP
BRAMPTON, ONTARIO

M-2057 LOT 18

LIANA 2 2284 sqft



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

Sheet Title
SECOND FLOOR
PLUMBING
LAYOUT

Date JULY 2018

Scale 3/16" = 1'-0"

LO# 79000-P

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 12.3.1.15.

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.

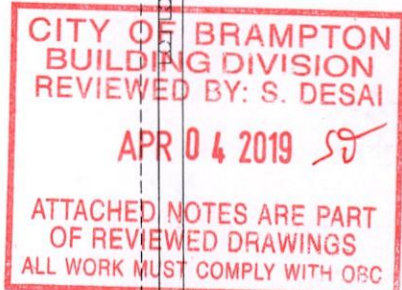
EXHAUST FAN SHALL DISCHARGE DIRECTLY TO OUTSIDE. CLOTHES DRYER EXHAUST SYSTEM SHALL COMPLY WITH OBC DIV B 9.32.1.2, 9.32.1.3 & 9.32.3 REQ'S. BALANCE THE RETURN AIRFLOW ON THE UPPER FLOOR TO MATCH THE SUPPLY.

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 (HRAIDIGEST).



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

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.

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.

LOT 18
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.

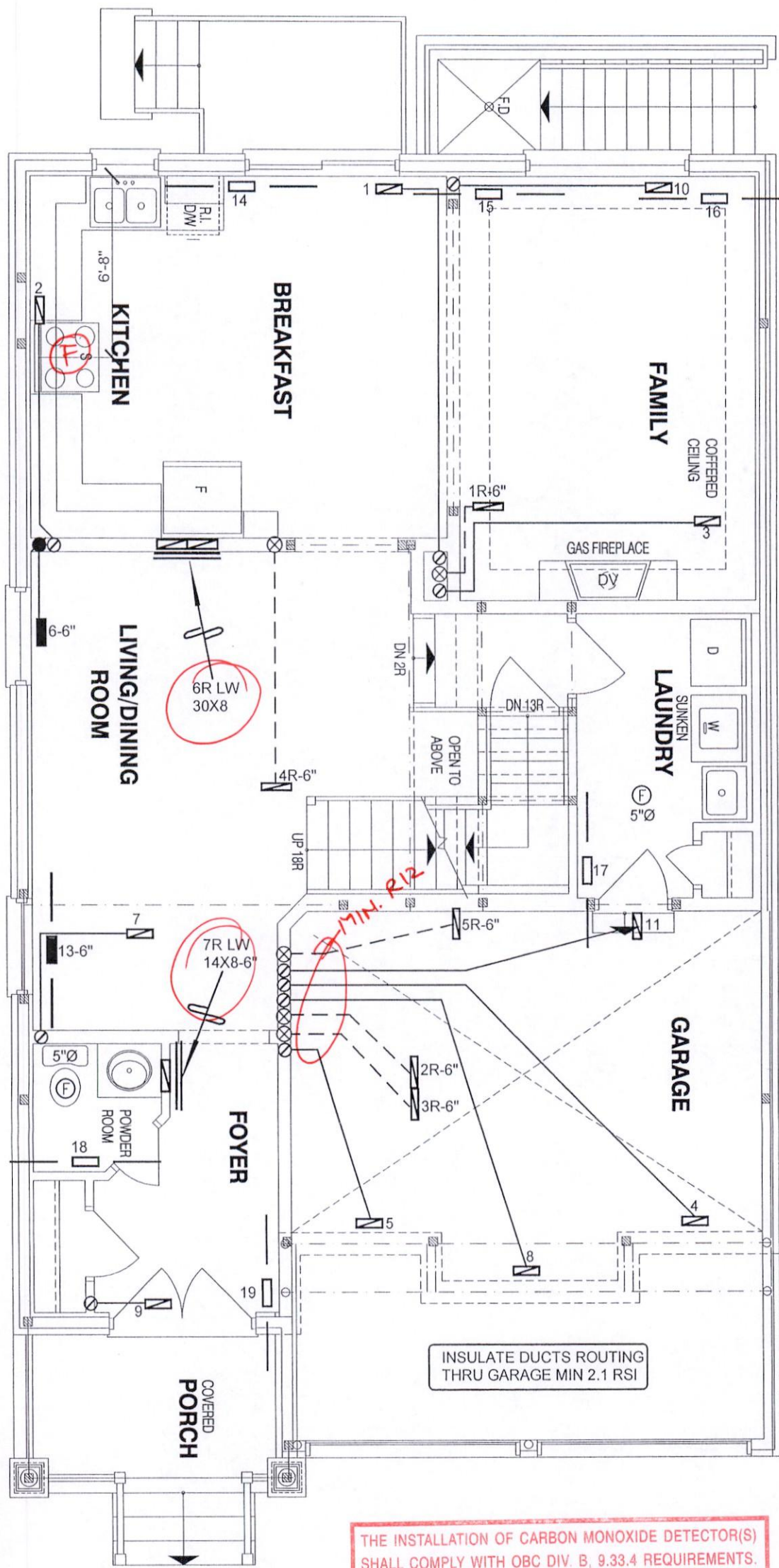
Michael O'Rourke

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		

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

Client	HVACDESIGNSLTD. 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 44478 BTU/H	# OF RUNS	S/A	R/A	FANS	Sheet Title		
GREENYORK HOMES		UNIT DATA	3RD FLOOR				BASEMENT HEATING LAYOUT		
Project Name		CARRIER	2ND FLOOR	11	5	3	Date JAN/2019		
GRANELLI HOMES CORP		MODEL	1ST FLOOR	7	2	3	Scale 3/16" = 1'-0"		
BRAMPTON, ONTARIO		INPUT	BASEMENT	4	1	0	BCIN# 19669		
M-2057	60 MBTU/H	OUTPUT	58 MBTU/H	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				LO#	81142
LOT 18	COOLING 2.5 TONS	FAN SPEED	970 cfm @ 0.6" w.c.						
LIANA 2	2284 sqft								



CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
APR 04 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.

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

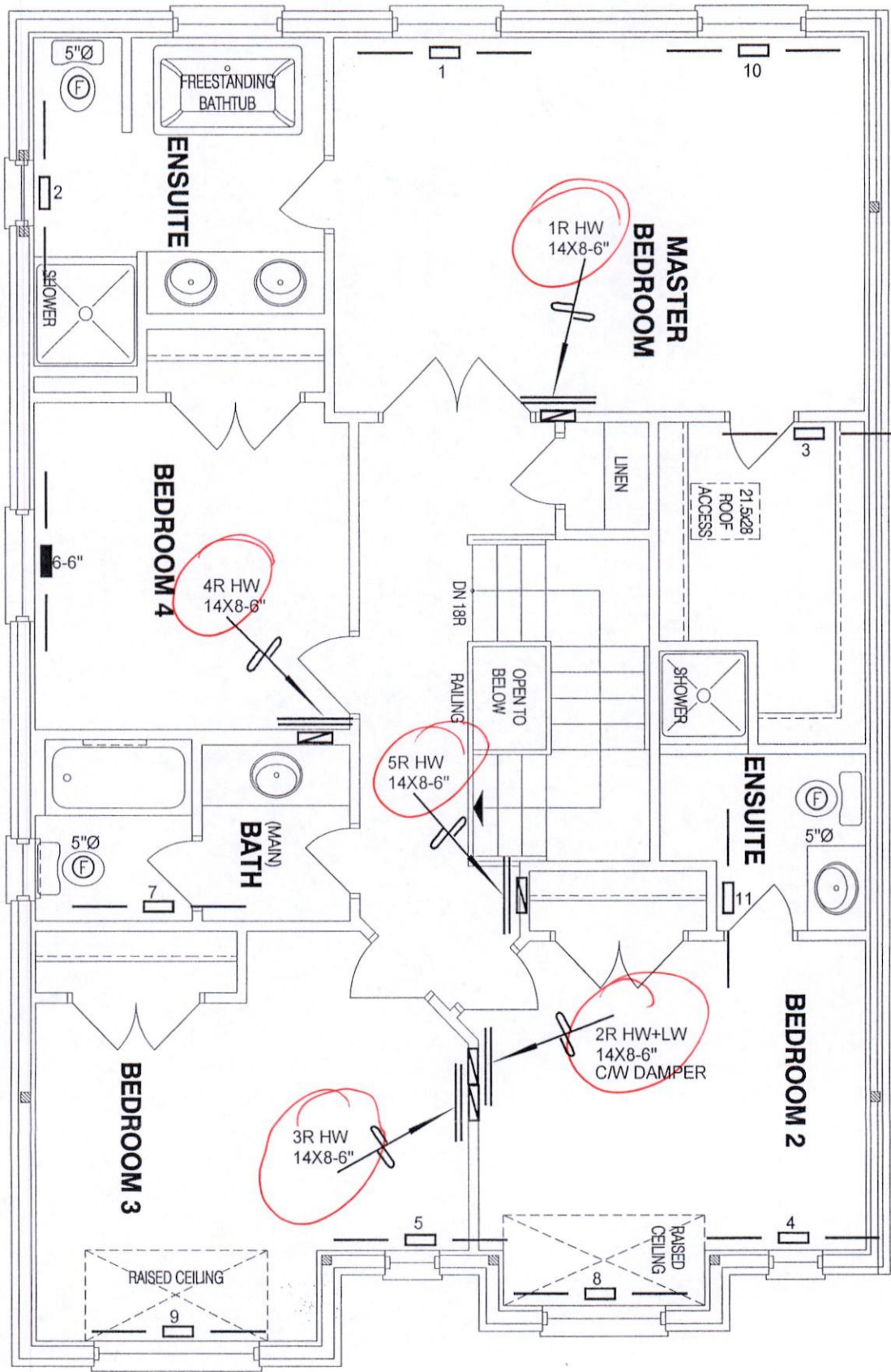
LOT 18
CSA-F280-12
PACKAGE A1

I MICHAEL O'ROURKE HAVE REVIEWED
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C, 3.2.5 OF THE
BUILDING CODE.
Michael O'Rourke, 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		

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

Client GREENYORK HOMES		 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	
Project Name GRANELLI HOMES CORP BRAMPTON, ONTARIO M- 2057 LOT 18 LIANA 2	2284 sqft		Date JAN/2019 Scale 3/16" = 1'-0" BCIN# 19669 LO# 81142	



CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
APR 04 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.

LOT 18
CSA-F280-12
PACKAGE A1

I MICHAEL O'ROURKE HAVE REVIEW
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C, 3.2.3 OF THE
BUILDING CODE.
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

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

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

Client

GREENYORK HOMES

Project Name

GRANELLI HOMES CORP
BRAMPTON, ONTARIO
M-2057
LOT 18
LIANA 2

2284 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

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

Sheet Title

SECOND FLOOR
HEATING
LAYOUT

Date

JAN/2019

Scale

3/16" = 1'-0"

BCIN# 19669

LO#

81142

SITE NAME: GRANELLI HOME CORP
BUILDER: GREENYORK HOMESLOT 18
TYPE: LIANA 2

GFA: 2284

DATE: Jan-19
LO# 81142WINTER NATURAL AIR CHANGE RATE 0.335
SUMMER NATURAL AIR CHANGE RATE 0.119HEAT LOSS ΔT °F. 74
HEAT GAIN ΔT °F. 14CSA-F280-12
SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	ENS-2
			32	23	10	31	25	11	6	7
			9	9	9	9	9	9	9	9
FACTORS	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
GRS.WALL AREA	20.8	16.3	20.8	16.3	20.8	16.3	20.8	16.3	20.8	16.3
GLAZING	20.8	41.9	20.8	41.9	20.8	41.9	20.8	41.9	20.8	41.9
NORTH	20.8	41.9	20.8	41.9	20.8	41.9	20.8	41.9	20.8	41.9
EAST	20.8	41.9	20.8	41.9	20.8	41.9	20.8	41.9	20.8	41.9
SOUTH	20.8	41.9	20.8	41.9	20.8	41.9	20.8	41.9	20.8	41.9
WEST	20.8	41.9	20.8	41.9	20.8	41.9	20.8	41.9	20.8	41.9
SKYLT.	36.4	102.1	36.4	102.1	36.4	102.1	36.4	102.1	36.4	102.1
DOORS	24.7	4.7	24.7	4.7	24.7	4.7	24.7	4.7	24.7	4.7
NET EXPOSED WALL	4.4	0.8	4.4	0.8	4.4	0.8	4.4	0.8	4.4	0.8
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.7	3.5	0.7	3.5	0.7	3.5	0.7	3.5	0.7
EXPOSED CLG	1.3	0.6	1.3	0.6	1.3	0.6	1.3	0.6	1.3	0.6
NO ATTIC EXPOSED CLG	2.7	1.3	2.7	1.3	2.7	1.3	2.7	1.3	2.7	1.3
EXPOSED FLOOR	2.5	0.5	2.5	0.5	2.5	0.5	2.5	0.5	2.5	0.5
BASEMENT/CRAWL HEAT LOSS										
SLAB ON GRADE HEAT LOSS										
SUBTOTAL HT LOSS										
SUB TOTAL HT GAIN										
LEVEL FACTOR / MULTIPLIER	0.20	0.28	0.20	0.28	0.20	0.28	0.20	0.28	0.20	0.28
AIR CHANGE HEAT LOSS										
AIR CHANGE HEAT GAIN										
DUCT LOSS										
DUCT GAIN										
HEAT GAIN PEOPLE	240		240		240		240		240	
HEAT GAIN APPLIANCES/LIGHTS										
TOTAL HT LOSS BTU/H										
TOTAL HT GAIN x 1.3 BTU/H										

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LOSS	GAIN	LV/DN	K/B/F	LAUN	W/R	FOY	WUB	BAS
						25	62	26	6	27	15	133
						11	11	12	11	11	9	9
GRS.WALL AREA						275	682	312	66	297	135	798
GLAZING						LOSS	GAIN	LOSS	GAIN	LOSS	LOSS	GAIN
NORTH	20.8	16.3		0	0	0	0	0	0	0	0	0
EAST	20.8	41.9		0	0	0	0	0	0	0	0	0
SOUTH	20.8	25.2		38	789	959	0	0	0	7	145	293
WEST	20.8	41.9		0	0	0	82	1704	3435	0	0	0
SKYLT.	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		0	0	0	0	0	0	0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.7		237	1033	195	600	2614	493	40	985	186
EXPOSED CLG	1.3	0.6		0	0	0	0	0	0	250	1089	206
NO ATTIC EXPOSED CLG	2.7	1.3		0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.5	0.5		0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS				0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS				0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS				1822			4318	1765	288	2221	114	4460
SUB TOTAL HT GAIN					1154		3928	333	54	685	1108	6479
LEVEL FACTOR / MULTIPLIER				0.30	0.41		0.30	0.41		0.30	0.41	0.50
AIR CHANGE HEAT LOSS				742			1757	718	117	904	188	7064
AIR CHANGE HEAT GAIN					100		340	29	5	59		60
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	0	0
HEAT GAIN APPLIANCES/LIGHTS					723		723	723	0	0	0	723
TOTAL HT LOSS BTU/H				2564			6075	2484	405	3125	1108	13543
TOTAL HT GAIN x 1.3 BTU/H					2570		6489	1411	77	967	244	1681

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

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
APR 04 2019

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

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
APR 04 2019

TOTAL HEAT GAIN BTU/H:

30237

TONS: 2.52

LOSS DUE TO VENTILATION LOAD BTU/H: 1529

STRUCTURAL HEAT LOSS: 42949

TOTAL COMBINED HEAT LOSS BTU/H: 44478

SITE NAME: GRANELLI HOME CORP
 BUILDER: GREENYORK HOMES

 LOT 18
 TYPE: LIANA 2

DATE: Jan-19

GFA: 2284 LO# 81142

 HEATING CFM 970 COOLING CFM 970
 TOTAL HEAT LOSS 42,949 TOTAL HEAT GAIN 29,948
 AIR FLOW RATE CFM 22.58 AIR FLOW RATE CFM 32.39

 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	11	7	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	13	14	15	16	17	18	19	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-2	BED-3	MBR	ENS-2	LV/DN	K/B/F	K/B/F	K/B/F	LAUN	W/R	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH	1.32	1.80	0.70	1.73	1.36	1.15	0.64	1.73	1.36	1.32	0.56	2.56	2.03	2.03	2.03	2.48	0.40	3.12	3.66	3.66	3.66	3.66
CFM PER RUN HEAT	30	41	16	39	31	26	14	39	31	30	13	58	46	46	46	56	9	71	83	83	83	83
RM GAIN MBH	1.93	1.38	0.21	2.01	2.19	2.04	0.43	2.01	2.19	1.93	0.18	2.57	2.16	2.16	2.16	1.41	0.08	0.97	0.48	0.48	0.48	0.48
CFM PER RUN COOLING	62	45	7	65	71	66	14	65	71	62	6	83	70	70	70	46	2	31	16	16	16	16
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	29	23	36	50	41	20	50	45	52	46	47	28	35	29	39	34	33	32	37	45	25	35
EQUIVALENT LENGTH	190	160	190	150	120	130	150	140	140	160	160	130	140	140	150	140	150	110	150	150	140	120
TOTAL EFFECTIVE LENGTH	219	183	226	200	161	150	200	185	192	206	207	158	175	169	189	174	183	142	187	195	165	155
ADJUSTED PRESSURE	0.08	0.09	0.08	0.09	0.11	0.11	0.09	0.09	0.09	0.08	0.08	0.1	0.1	0.1	0.09	0.1	0.09	0.12	0.09	0.08	0.1	0.1
ROUND DUCT SIZE	5	4	4	5	5	6	4	5	5	5	4	6	5	5	5	5	4	5-6	6	6	6	6
HEATING VELOCITY (ft/min)	220	470	184	286	228	133	161	286	228	220	149	296	338	338	338	411	103	521	423	423	423	423
COOLING VELOCITY (ft/min)	455	516	80	477	521	337	161	477	521	455	69	423	514	514	514	338	23	228	82	82	82	82
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	B	E	B	D	D	E	D	D	C	A	D	D	A	A	A	B	C	C	A	B	D	C

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	

 ATTACHED NOTES ARE PART
 OF REVIEWED DRAWINGS
 REVIEWED BY: S. DESA
 APR 04 2019

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	251	0.08	8.4	8	8	565			
TRUNK B	436	0.08	10.3	12	x	8	654		
TRUNK C	194	0.09	7.4	8	x	8	437		
TRUNK D	471	0.08	10.6	14	x	8	606		
TRUNK E	974	0.08	13.9	22	x	8	797		
TRUNK F	0	0.00	0	0	x	8	0		
TRUNK G	0	0.00	0	0	x	8	0		
TRUNK H	0	0.00	0	0	x	8	0		
TRUNK I	0	0.00	0	0	x	8	0		
TRUNK J	0	0.00	0	0	x	8	0		
TRUNK K	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
TRUNK P	0	0.06	0	0
TRUNK Q	0	0.06	0	0
TRUNK R	0	0.06	0	0
TRUNK S	0	0.06	0	0
TRUNK T	0	0.06	0	0
TRUNK U	0	0.06	0	0
TRUNK V	0	0.06	0	0
TRUNK W	0	0.06	0	0
TRUNK X	970	0.06	14.9	26
TRUNK Y	340	0.06	10.1	12
TRUNK Z	0	0.06	0	0
DROP	970	0.06	14.9	24

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19	21	22	23	24
AIR VOLUME	85	85	85	85	85	320	85	0	0	0	0	0	0	0	0	0	0	0	140	140	140	140
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
ACTUAL DUCT LGH	43	53	55	42	39	18	34	1	1	1	1	1	1	1	1	1	1	1	20	20	20	20
EQUIVALENT LENGTH	175	215	175	165	220	135	200	0	0	0	0	0	0	0	0	0	0	0	215	215	215	215
TOTAL EFFECTIVE LH	218	268	230	207	259	153	234	1	1	1	1	1	1	1	1	1	1	1	235	235	235	235
ADJUSTED PRESSURE	0.07	0.06	0.06	0.07	0.06	0.10	0.06	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.06	0.06	0.06	0.06
ROUND DUCT SIZE	5.8	6	6	5.8	6	8.7	6	0	0	0	0	0	0	0	0	0	0	0	7.2	7.2	7.2	7.2
INLET GRILL SIZE	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	8	8	8	8
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
INLET GRILL SIZE	14	14	14	14	14	30	14	0	0	0	0	0	0	0	0	0	0	0	14	14	14	14

TYPE: LIANA 2
SITE NAME: GRANELL HOME CORP

LO # 81142
LOT 18

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	5	@ 10.6 cfm	53	cfm
Other Rooms	4	@ 10.6 cfm	42.4	cfm
Table 9.32.3.A.	TOTAL			169.6 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	169.6	cfm
Less Principal Ventl. Capacity	79.5	cfm
Required Supplemental Capacity	90.1	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 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: LIFE BREATH 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 #

BUILDER: GREENYORK HOMES

Name:

Address:

City:

Telephone #:

Building Permit # APR 04 2019

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

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: January-19

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** LIANA 2**LOT 18****BUILDER:** GREENYORK HOMES**SFQT:** 2284**LO#** 81142**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):	31793.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.75	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 44.0 ft	WIDTH: 30.0 ft	EXPOSED PERIMETER:	133.0 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

**CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
APR 04 2019
ATTACHED NOTES ARE PART
OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH OBC**

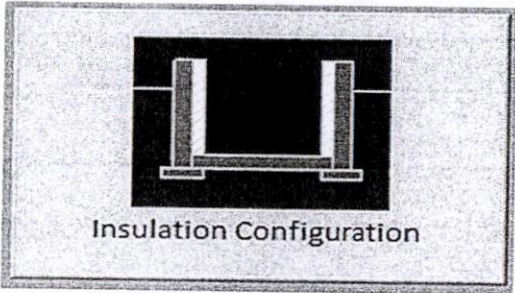
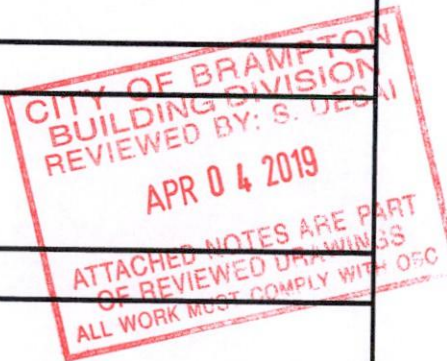
**Compliance Package
A1**

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*Michael O'Rourke*

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

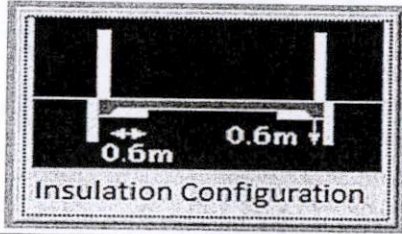
Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	13.4	 Insulation Configuration
Floor Width (m):	9.1	
Exposed Perimeter (m):	40.5	
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):	1307	

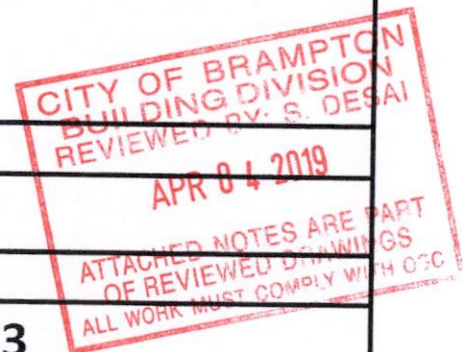
TYPE: LIANA 2
LO# 81142

LOT 18

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):	0.6	
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):	33	

TYPE: LIANA 2
LO# 81142

LOT 18

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):	900.3		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	1200.1 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
Diameter (mm):	0	0	0
	#4	0	
Natural Infiltration Rates			
Heating Air Leakage Rate (ACH/H):	0.335		
Cooling Air Leakage Rate (ACH/H):	0.119		

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
APR 04 2019
ATTACHED NOTES ARE PART
OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH OGC

TYPE: LIANA 2
LO# 81142

LOT 18