

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-1 |

A. Project Information

| | | | |
|---|-------------|---|----------------------|
| Building number, street name | | Unit number | Lot/Con 28 |
| 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

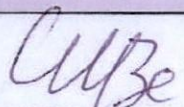
| | | |
|--|---|---|
| Climatic Zone (SB-1): | Heating Equipment Efficiency | Space Heating Fuel Source |
| <input type="checkbox"/> Zone 1 (< 5000 degree days) | <input type="checkbox"/> ≥ 92% AFUE | <input type="checkbox"/> Gas <input type="checkbox"/> Propane <input type="checkbox"/> Solid Fuel |
| <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>290.32</u> m ² or _____ ft ² | | <input type="checkbox"/> Log/Post&Beam <input type="checkbox"/> ICF Above Grade <input type="checkbox"/> ICF Basement |
| W, S & G % = <u>9.53%</u> | | <input type="checkbox"/> Slab-on-ground <input type="checkbox"/> Walkout Basement |
| Area of W, S & G = <u>27.67</u> m ² or _____ ft ² | | <input type="checkbox"/> Air Conditioning <input type="checkbox"/> Combo Unit |
| Utilize window averaging: <input type="checkbox"/> Yes <input type="checkbox"/> No | | <input type="checkbox"/> Air Sourced Heat Pump (ASHP) |
| | | <input type="checkbox"/> Ground Sourced Heat Pump (GSHP) |

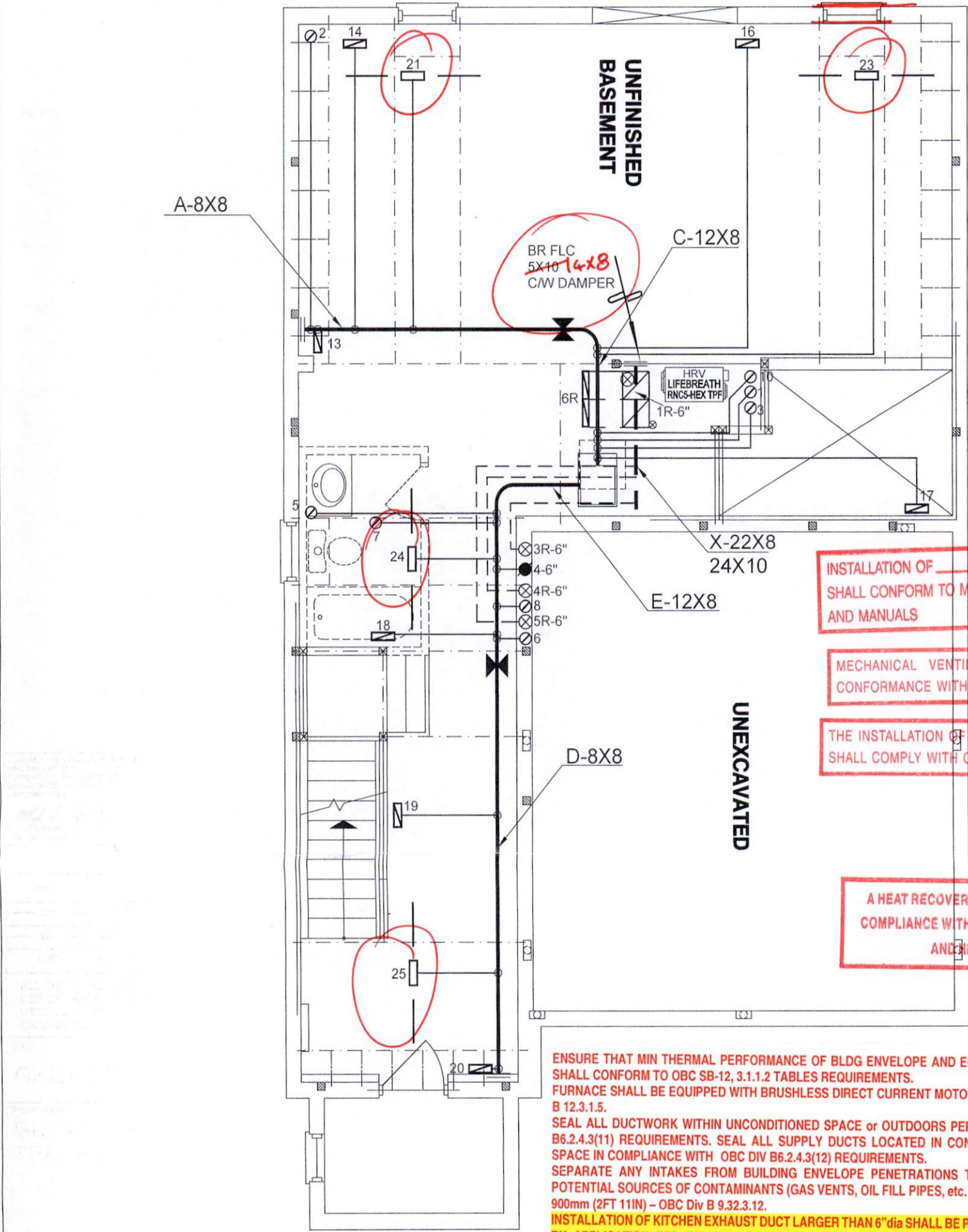
D. Building Specifications [provide values and ratings of the energy efficiency components proposed]

| Energy Efficiency Substitutions | | | | |
|---|---|---|--|-----------------------|
| <input type="checkbox"/> ICF (3.1.1.2.(5) & (6) / 3.1.1.3.(5) & (6)) <input type="checkbox"/> Combined space heating and domestic water heating systems (3.1.1.2.(7) / 3.1.1.3.(7)) <input type="checkbox"/> Airtightness substitution(s) | | | | |
| Airtightness test required (Refer to Design Guide Attached) | | <input type="checkbox"/> Table 3.1.1.4.B Required: _____ Permitted Substitution: _____ <input type="checkbox"/> Table 3.1.1.4.C Required: _____ Permitted Substitution: _____ Required: _____ Permitted Substitution: _____ | | |
| Building Component | Minimum RSI / R values or Maximum U-Value ⁽¹⁾ | | Building Component | Efficiency Ratings |
| Thermal Insulation | Nominal | Effective | Windows & Doors Provide U-Value ⁽¹⁾ or ER rating | |
| Ceiling with Attic Space | 10.57 | 10.43 | Windows/Sliding Glass Doors | 1.6 |
| Ceiling without Attic Space | 5.46 | 4.87 | Skylights/Glazed Roofs | 2.8 |
| Exposed Floor | 5.46 | 5.25 | Mechanicals | |
| Walls Above Grade | 4.22 | 3.00 | Heating Equip.(AFUE) | 96% |
| Basement Walls | 3.52 | 3.72 | HRV Efficiency (SRE% at 0°C) | 75% |
| Slab (all >600mm below grade) | - | - | DHW Heater (EF) | 0.83 |
| Slab (edge only ≤600mm below grade) | 1.76 | 1.76 | DWHR (CSA B55.1 (min. 42% efficiency)) | 42 # Showers <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  |



CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
APR 18 2019
ATTACHED NOTES ARE PART
OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH OBC

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.

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).

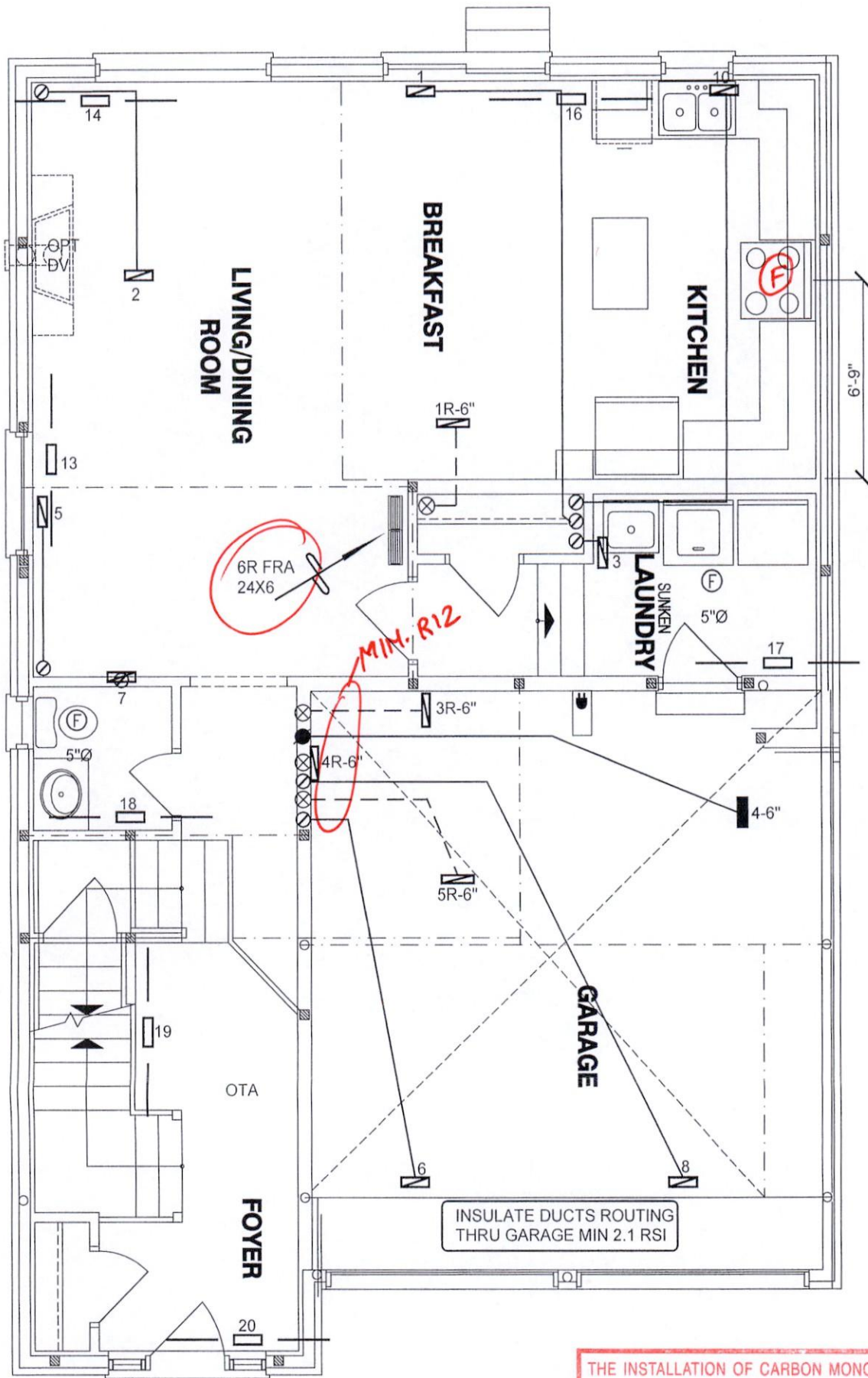
LOT 28
CSA-F280-12
PACKAGE A1

I MICHAEL O'BROURKE HAVE REVIEWED
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C, 3.2.5 OF THE
BUILDING CODE.
Michael O'Brourke
HVAC DESIGNS LTD.

| HVAC LEGEND | | | | | | REVISIONS | |
|-------------|---------------------------|--------|---------------------------------|--------|------------------------------|-----------|-------------|
| SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION | No. | Date |
| | SUPPLY AIR GRILLE | | 6" SUPPLY AIR BOOT ABOVE | | 14"x8" RETURN AIR GRILLE | 3. | |
| | SUPPLY AIR GRILLE 6" BOOT | | SUPPLY AIR STACK FROM 2nd FLOOR | | 30"x8" RETURN AIR GRILLE | 2. | |
| | SUPPLY AIR BOOT ABOVE | | 6" SUPPLY AIR STACK 2nd FLOOR | | FRA- FLOOR RETURN AIR GRILLE | 1. | |
| | | | | | REDUCER | 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 DATE 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 | | <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> | HEAT LOSS 42014 BTU/H UNIT DATA | | # OF RUNS S/A R/A FANS | | | | Sheet Title BASEMENT HEATING LAYOUT | | |
| Project Name GRANELLI HOMES CORP BRAMPTON, ONTARIO M-2057 | | | MAKE CARRIER | | 3RD FLOOR | | | | | | |
| | | | MODEL 59SP5A-60-12 | | 2ND FLOOR | | 9 | 4 | | | 3 |
| | | | INPUT 60 MBTU/H | | 1ST FLOOR | | 7 | 1 | 3 | | |
| LIANA 1 - LOT 28 2041 sqft | | OUTPUT 58 MBTU/H | | BASEMENT | | | | 4 | 1 | 0 | Date JAN/2019 |
| | | COOLING 2.0 TONS | | ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A | | | | Scale 3/16" = 1'-0" | | BCIN# 19669 | |
| | | FAN SPEED 785 cfm @ 0.6" w.c. | | | | | | LO# | | 81165 | |
| | | 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. | | | | | | | | | |



CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI

APR 18 2019 *SD*

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.

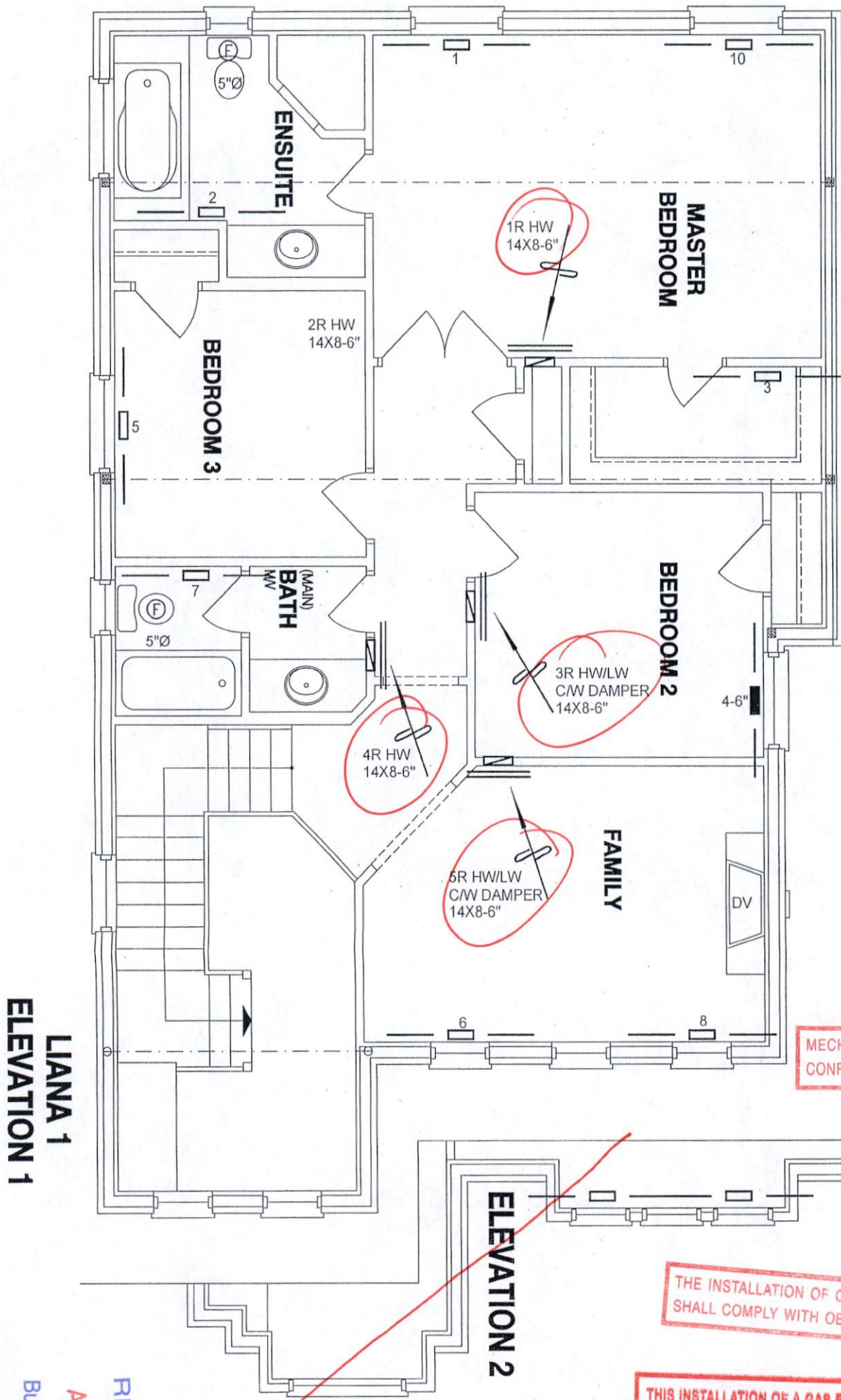
LOT 28
CSA-F280-12
PACKAGE A1

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

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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 | | 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 FIRST FLOOR HEATING LAYOUT |
| Project Name GRANELLI HOMES CORP BRAMPTON, ONTARIO M-2057 LIANA 1 - LOT 28 2041 sqft | | | |
| | | | Date JAN/2019 |
| | | | Scale 3/16" = 1'-0" |
| | | | BCIN# 19669 |
| | | | LO# 81165 |



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BUILDING DIVISION
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APR 18 2019 *SD*
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THE INSTALLATION OF CARBON MONOXIDE DETECTOR(S)
SHALL COMPLY WITH OBC DIV. B, 9.33.4 REQUIREMENTS.

THIS INSTALLATION OF A GAS FIREPLACE IS REGULATED UNDER
THE T.S.S.A. BY C.S.A. B149.1 NATURAL GAS AND PROPANE
INSTALLATION CODE CALL ENBRIDGE FOR INSPECTION AT
1-800-785-1314

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 | | <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><p>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.</p></div> | Sheet Title SECOND FLOOR HEATING LAYOUT | |
| Project Name GRANELLI HOMES CORP BRAMPTON, ONTARIO | | | Date JUNE/2018 | |
| LIANA 1 | | | Scale 3/16" = 1'-0" | |
| 2041 sqft | | | BCIN# 19669 | |
| | | | LO# 78998 | |

SITE NAME: GRANELLI HOMES CORP
BUILDER: GREENYORK HOMESLOT 28
TYPE: LIANA 1

GFA: 2041

DATE: Jan-19
LO# 81165WINTER NATURAL AIR CHANGE RATE 0.325
SUMMER NATURAL AIR CHANGE RATE 0.106HEAT LOSS ΔT °F. 74
HEAT GAIN ΔT °F. 11CSA-F280-12
SB-12 PACKAGE A1

| ROOM USE | EXP. WALL | CLG. HT. | MBR | ENS | BED-2 | BED-3 | FAM | BATH | ENS-2 | WIC |
|--------------------------------|-----------|----------|------|------|-------|-------|------|------|-------|------|
| | | | 32 | 21 | 12 | 10 | 30 | 10 | 5 | |
| | | | 9 | 9 | 9 | 9 | 9 | 9 | 9 | |
| GRS.WALL AREA | LOSS | GAIN | 288 | 189 | 108 | 90 | 270 | 90 | 46 | |
| GLAZING | LOSS | GAIN | LOSS | GAIN | LOSS | GAIN | LOSS | GAIN | LOSS | GAIN |
| NORTH | 20.8 | 14.6 | 0 | 0 | 13 | 270 | 190 | 0 | 0 | 0 |
| EAST | 20.8 | 38.3 | 0 | 0 | 0 | 0 | 0 | 27 | 561 | 1035 |
| SOUTH | 20.8 | 22.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WEST | 20.8 | 38.3 | 30 | 623 | 1150 | 7 | 145 | 268 | 0 | 0 |
| SKYL.T. | 36.4 | 100.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| DOORS | 24.7 | 3.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NET EXPOSED WALL | 4.4 | 0.6 | 258 | 1124 | 167 | 169 | 736 | 109 | 45 | 196 |
| NET EXPOSED BSMT WALL ABOVE GR | 3.5 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EXPOSED CLG | 1.3 | 0.6 | 287 | 360 | 160 | 110 | 138 | 61 | 55 | 69 |
| NO ATTIC EXPOSED CLG | 2.7 | 1.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EXPOSED FLOOR | 2.5 | 0.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| BASEMENT/CRAWL HEAT LOSS | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SLAB ON GRADE HEAT LOSS | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SUBTOTAL HT LOSS | | | 2107 | 1290 | 1223 | 776 | 2320 | 711 | 265 | 60 |
| SUB TOTAL HT GAIN | | | 1477 | 736 | 399 | 453 | 1365 | 305 | 60 | |
| 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 | | | 594 | 364 | 345 | 219 | 654 | 201 | 75 | 4 |
| AIR CHANGE HEAT GAIN | | | 96 | 48 | 26 | 29 | 88 | 20 | 0 | 0 |
| DUCT LOSS | | | 0 | 0 | 157 | 0 | 297 | 91 | 0 | 0 |
| DUCT GAIN | | | 0 | 0 | 122 | 0 | 201 | 32 | 0 | 0 |
| HEAT GAIN PEOPLE | 240 | 2 | 480 | 0 | 1 | 240 | 0 | 0 | 0 | 0 |
| HEAT GAIN APPLIANCES/LIGHTS | | | 555 | 0 | 555 | 555 | 555 | 0 | 0 | 0 |
| TOTAL HT LOSS BTU/H | | | 2701 | 1653 | 1725 | 995 | 3271 | 1003 | 340 | 83 |
| TOTAL HT GAIN x 1.3 BTU/H | | | 3390 | 1019 | 1744 | 1660 | 2872 | 464 | | |

| | | | | | | | | | | | | | | | | | | | |
|--------------------------------|------|-------|-------|------|------|------|------|------|------|------|------|------|------|-----|--|--|-------|------|-----|
| ROOM USE | | | K/L/D | | | LAUN | | W/R | | FOY | | | | | | | BAS | | |
| EXP. WALL | | | 65 | | | 26 | | 9 | | 81 | | | | | | | 162 | | |
| CLG. HT. | | | 10 | | | 12 | | 10 | | 10 | | | | | | | 9 | | |
| FACTORS | | | | | | | | | | | | | | | | | | | |
| GRS.WALL AREA | LOSS | GAIN | 650 | | | 312 | | 90 | | 810 | | | | | | | 912 | | |
| GLAZING | | | 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 |
| EAST | 20.8 | 38.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 499 | 920 | | | | | 0 | 0 | 0 |
| SOUTH | 20.8 | 22.9 | 22 | 467 | 503 | 0 | 0 | 7 | 145 | 160 | 0 | 0 | 0 | | | | 5 | 104 | 114 |
| WEST | 20.8 | 38.3 | 87 | 1808 | 3335 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | 10 | 208 | 383 |
| SKYL.T. | 36.4 | 100.7 | 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 | 30 | 740 | 110 | | | | 20 | 493 | 73 |
| NET EXPOSED WALL | 4.4 | 0.6 | 541 | 2357 | 349 | 292 | 1272 | 189 | 83 | 362 | 54 | 756 | 3294 | 488 | | | 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 | | | 456 | 1602 | 238 |
| EXPOSED CLG | 1.3 | 0.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 105 | 132 | 69 | | | 0 | 0 | 0 |
| NO ATTIC EXPOSED CLG | 2.7 | 1.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 161 | 72 | | | 0 | 0 | 0 |
| EXPOSED FLOOR | 2.5 | 0.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 |
| BASEMENT/CRAWL HEAT LOSS | | | 0 | | | 0 | | 0 | | 0 | | 0 | | | | | 5170 | | |
| SLAB ON GRADE HEAT LOSS | | | 0 | | | 0 | | 0 | | 0 | | 0 | | | | | | | |
| SUBTOTAL HT LOSS | | | 4622 | | | 1765 | | 507 | | 4825 | | | | | | | 7577 | | |
| SUB TOTAL HT GAIN | | | | 4188 | | | 262 | | 214 | | 1648 | | | | | | | 808 | |
| LEVEL FACTOR / MULTIPLIER | 0.30 | 0.31 | | | | 0.30 | 0.31 | | 0.30 | 0.31 | | 0.30 | 0.31 | | | | 0.60 | 0.81 | |
| AIR CHANGE HEAT LOSS | | | 1450 | | | 554 | | 159 | | 1514 | | | | | | | 6129 | | |
| AIR CHANGE HEAT GAIN | | | | 271 | | | 17 | | 14 | | 107 | | | | | | | 52 | |
| 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 | | | | | | 555 | |
| TOTAL HT LOSS BTU/H | | | 6072 | | | 2319 | | 666 | | 6339 | | | | | | | 13706 | | |
| TOTAL HT GAIN x 1.3 BTU/H | | | | 6518 | | | 1084 | | 296 | | 2281 | | | | | | | | |

CITY OF BRAMPTON
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APR 18 2019

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TOTAL HEAT GAIN BTU/H:

23433

TONS: 1.95

LOSS DUE TO VENTILATION LOAD BTU/H: 1223

STRUCTURAL HEAT LOSS: 40791

TOTAL COMBINED HEAT LOSS BTU/H: 42014

SITE NAME: GRANELLI HOMES CORP
BUILDER: GREENYORK HOMES

LOT 28
TYPE: LIANA 1

DATE: Jan-19

GFA: 2041 LO# 81165

HEATING CFM 785 COOLING CFM 785
TOTAL HEAT LOSS 40,791 TOTAL HEAT GAIN 23,251
AIR FLOW RATE CFM 19.24 AIR FLOW RATE CFM 33.76

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 = 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 | 6 | 7 | 8 | 10 | 13 | 14 | 16 | 17 | 18 | 19 | 20 | 21 | 23 | 24 |
|---------------------------|------|------|-------|-------|-------|------|------|------|------|-------|-------|-------|------|------|------|------|------|------|------|
| ROOM NAME | MBR | ENS | ENS-2 | BED-2 | BED-3 | FAM | BATH | FAM | MBR | K/L/D | K/L/D | K/L/D | LAUN | W/R | FOY | FOY | BAS | BAS | BAS |
| RM LOSS MBH | 1.35 | 1.65 | 0.34 | 1.73 | 1.00 | 1.64 | 1.00 | 1.64 | 1.35 | 2.02 | 2.02 | 2.02 | 2.32 | 0.67 | 3.17 | 3.17 | 3.43 | 3.43 | 3.43 |
| CFM PER RUN HEAT | 26 | 32 | 7 | 33 | 19 | 31 | 19 | 31 | 26 | 39 | 39 | 39 | 45 | 13 | 61 | 61 | 66 | 66 | 66 |
| RM GAIN MBH | 1.69 | 1.02 | 0.08 | 1.74 | 1.66 | 1.44 | 0.46 | 1.44 | 1.69 | 2.17 | 2.17 | 2.17 | 1.08 | 0.30 | 1.14 | 1.14 | 0.46 | 0.46 | 0.46 |
| CFM PER RUN COOLING | 57 | 34 | 3 | 59 | 56 | 48 | 16 | 48 | 57 | 73 | 73 | 73 | 37 | 10 | 39 | 39 | 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 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| ACTUAL DUCT LGH | 29 | 52 | 21 | 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 | 171 | 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 | 5 | 4 | 4 | 6 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 5 |
| HEATING VELOCITY (ft/min) | 191 | 367 | 80 | 168 | 140 | 228 | 218 | 228 | 191 | 286 | 286 | 286 | 516 | 149 | 448 | 448 | 485 | 485 | 485 |
| COOLING VELOCITY (ft/min) | 419 | 390 | 34 | 301 | 411 | 352 | 184 | 352 | 419 | 536 | 536 | 536 | 424 | 115 | 286 | 286 | 117 | 117 | 117 |
| OUTLET GRILL SIZE | 3X10 | 3X10 | 3X10 | 4X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 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 | 3.43 |
| CFM PER RUN HEAT | 66 |
| RM GAIN MBH | 0.46 |
| CFM PER RUN COOLING | 16 |
| ADJUSTED PRESSURE | 0.17 |
| ACTUAL DUCT LGH | 30 |
| EQUIVALENT LENGTH | 120 |
| TOTAL EFFECTIVE LENGTH | 150 |
| ADJUSTED PRESSURE | 0.11 |
| ROUND DUCT SIZE | 5 |
| HEATING VELOCITY (ft/min) | 485 |
| COOLING VELOCITY (ft/min) | 117 |
| OUTLET GRILL SIZE | 3X10 |
| TRUNK | D |

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI

APR 18 2019

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

SUPPLY AIR TRUNK SIZE

| TRUNK | STATIC | ROUND | RECT | VELOCITY |
|---------|--------|-------|------|----------|
| CFM | PRESS | DUCT | DUCT | (ft/min) |
| TRUNK A | 176 | 0.08 | 7.3 | 8 |
| TRUNK B | 0 | 0.00 | 0 | 0 |
| TRUNK C | 385 | 0.08 | 9.8 | 12 |
| TRUNK D | 188 | 0.10 | 7.1 | 8 |
| TRUNK E | 400 | 0.07 | 10.3 | 12 |
| TRUNK F | 0 | 0.00 | 0 | 0 |

RETURN AIR TRUNK SIZE

| TRUNK | STATIC | ROUND | RECT | VELOCITY |
|---------|--------|-------|------|----------|
| CFM | PRESS | DUCT | DUCT | (ft/min) |
| TRUNK G | 0 | 0.00 | 0 | 0 |
| TRUNK H | 0 | 0.00 | 0 | 0 |
| TRUNK I | 0 | 0.00 | 0 | 0 |
| TRUNK J | 0 | 0.00 | 0 | 0 |
| TRUNK K | 0 | 0.00 | 0 | 0 |
| TRUNK L | 0 | 0.00 | 0 | 0 |

| | | | | | | | | | | | | | | | | | | | |
|--------------------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| RETURN AIR # | 1 | 3 | 4 | 5 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AIR VOLUME | 85 | 0 | 85 | 95 | 85 | 315 | 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 |
| ACTUAL DUCT LGH | 34 | 1 | 38 | 40 | 48 | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| EQUIVALENT LENGTH | 185 | 165 | 185 | 165 | 185 | 120 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL EFFECTIVE LH | 219 | 166 | 223 | 205 | 233 | 132 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 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 | 14.80 | 14.80 | 14.80 | 14.80 |
| ROUND DUCT SIZE | 5.8 | 0 | 5.8 | 6 | 6 | 8.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| INLET GRILL SIZE | 8 | 0 | 8 | 8 | 8 | 8 | 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 |
| INLET GRILL SIZE | 14 | 0 | 14 | 14 | 14 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | |
|---------|-----|------|------|----|----|-----|
| TRUNK O | 0 | 0.06 | 0 | 0 | 8 | 0 |
| TRUNK P | 0 | 0.06 | 0 | 0 | 8 | 0 |
| TRUNK Q | 0 | 0.06 | 0 | 0 | 8 | 0 |
| TRUNK R | 0 | 0.06 | 0 | 0 | 8 | 0 |
| TRUNK S | 0 | 0.06 | 0 | 0 | 8 | 0 |
| TRUNK T | 0 | 0.06 | 0 | 0 | 8 | 0 |
| TRUNK U | 0 | 0.06 | 0 | 0 | 8 | 0 |
| TRUNK V | 0 | 0.06 | 0 | 0 | 8 | 0 |
| TRUNK W | 0 | 0.06 | 0 | 0 | 8 | 0 |
| TRUNK X | 785 | 0.06 | 13.8 | 22 | 8 | 642 |
| TRUNK Y | 0 | 0.06 | 0 | 0 | 8 | 0 |
| TRUNK Z | 0 | 0.06 | 0 | 0 | 8 | 0 |
| DROP | 785 | 0.06 | 13.8 | 24 | 10 | 471 |

TYPE: LIANA 1
SITE NAME: GRANELL HOMES CORP

LO # 81165
LOT 28

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

| COMBUSTION APPLIANCES | | 9.32.3.1(1) |
|--|--|-------------|
| a) <input checked="" type="checkbox"/> | Direct vent (sealed combustion) only | |
| b) <input type="checkbox"/> | Positive venting induced draft (except fireplaces) | |
| c) <input type="checkbox"/> | Natural draft, B-vent or induced draft gas fireplace | |
| d) <input type="checkbox"/> | Solid Fuel (including fireplaces) | |
| e) <input type="checkbox"/> | No Combustion Appliances | |

| HEATING SYSTEM | |
|-------------------------------------|---------------------|
| <input checked="" type="checkbox"/> | Forced Air |
| <input type="checkbox"/> | Non Forced Air |
| <input type="checkbox"/> | Electric Space Heat |

| HOUSE TYPE | | 9.32.1(2) |
|-------------------------------------|---|-----------|
| <input checked="" type="checkbox"/> | I Type a) or b) appliance only, no solid fuel | |
| <input type="checkbox"/> | II Type I except with solid fuel (including fireplaces) | |
| <input type="checkbox"/> | III Any Type c) appliance | |
| <input type="checkbox"/> | IV Type I, or II with electric space heat | |
| <input type="checkbox"/> | Other: Type I, II or IV no forced air | |

| SYSTEM DESIGN OPTIONS | | O.N.H.W.P. |
|-------------------------------------|---|------------|
| <input type="checkbox"/> | 1 Exhaust only/Forced Air System | |
| <input type="checkbox"/> | 2 HRV with Ducting/Forced Air System | |
| <input checked="" type="checkbox"/> | 3 HRV Simplified/connected to forced air system | |
| <input type="checkbox"/> | 4 HRV with Ducting/non forced air system | |
| <input type="checkbox"/> | Part 6 Design | |

| TOTAL VENTILATION CAPACITY | | 9.32.3.3(1) |
|----------------------------|--------------|-------------|
| Basement + Master Bedroom | 2 @ 21.2 cfm | 42.4 cfm |
| Other Bedrooms | 2 @ 10.6 cfm | 21.2 cfm |
| Kitchen & Bathrooms | 5 @ 10.6 cfm | 53 cfm |
| Other Rooms | 5 @ 10.6 cfm | 53.0 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 | | 63.6 cfm |

| SUPPLEMENTAL VENTILATION CAPACITY | | 9.32.3.5. |
|-----------------------------------|-------|-----------|
| Total Ventilation Capacity | 169.6 | cfm |
| Less Principal Ventil. Capacity | 63.6 | cfm |
| Required Supplemental Capacity | 106.0 | cfm |

| PRINCIPAL EXHAUST FAN CAPACITY | |
|--|----------------|
| Model: LIFE BREATH RNC5-HEX | Location: BSMT |
| 63.6 cfm | 3.0 sones |
| <input checked="" type="checkbox"/> HVI Approved | |

| PRINCIPAL EXHAUST HEAT LOSS CALCULATION | | | |
|---|--------|--------|--------|
| CFM | ΔT °F | FACTOR | % LOSS |
| 63.6 CFM | X 74 F | X 1.08 | X 0.24 |

| SUPPLEMENTAL FANS | | NUTONE | | |
|-------------------|-----------|--------|-------------------------------------|-------|
| Location | Model | cfm | HVI | Sones |
| ENS | QTXEN050C | 50 | <input checked="" type="checkbox"/> | 0.3 |
| BATH | QTXEN050C | 50 | <input checked="" type="checkbox"/> | 0.3 |
| LAUN | 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 | <input checked="" type="checkbox"/> HVI Approved | |
| @ 32 deg F (0 deg C) | | |

| LOCATION OF INSTALLATION | |
|--------------------------|-------------------|
| Lot: | Concession |
| Township | Plan: |
| Address | |
| Roll # | Building Permit # |
| BUILDER: GREENYORK HOMES | |
| Name: | |
| Address: | |
| City: | |
| Telephone #: | Fax #: |

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

| DESIGNER CERTIFICATION | |
|---|-------------------------|
| I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code. | |
| Name: | HVAC Designs Ltd. |
| Signature: | <i>Michael O'Rourke</i> |
| HRAI # | 001820 |
| Date: | January-19 |

HEAT LOSS AND GAIN SUMMARY SHEET

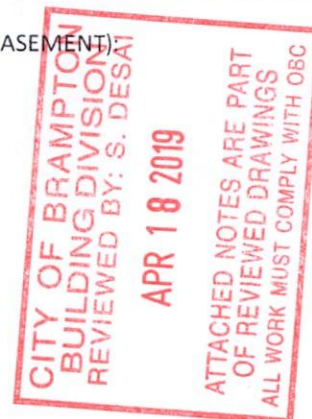
| | | |
|-----------------------|------------------|----------------------------------|
| MODEL: LIANA 1 | LOT 28 | BUILDER: GREENYORK HOMES |
| SFQT: 2041 | LO# 81165 | SITE: GRANELLI HOMES CORP |

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 (ft³): | 28440.0 | ASSUMED (Y/N): | Y |
| INTERNAL SHADING: | BLINDS/CURTAINS | ASSUMED OCCUPANTS: | 4 |
| INTERIOR LIGHTING LOAD (Btu/h/ft²): | 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: | 152.0 ft |


2012 OBC - COMPLIANCE PACKAGE
Component
Compliance Package
A1
Nominal Min. Eff.

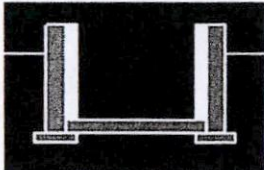
| | | |
|--|-------|-------|
| Ceiling with Attic Space Minimum RSI (R)-Value | 60 | 59.22 |
| Ceiling Without Attic Space Minimum RSI (R)-Value | 31 | 27.65 |
| Exposed Floor Minimum RSI (R)-Value | 31 | 29.80 |
| Walls Above Grade Minimum RSI (R)-Value | 22 | 17.03 |
| Basement Walls Minimum RSI (R)-Value | 20 ci | 21.12 |
| Below Grade Slab Entire surface > 600 mm below grade Minimum RSI (R)-Value | - | - |
| Edge of Below Grade Slab ≤ 600 mm Below Grade Minimum RSI (R)-Value | 10 | 10 |
| Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value | 10 | 11.13 |
| Windows and Sliding Glass Doors Maximum U-Value | 0.28 | - |
| Skylights Maximum U-Value | 0.49 | - |
| Space Heating Equipment Minimum AFUE | 0.96 | - |
| HRV Minimum Efficiency | 75% | - |
| Domestic Hot Water Heater Minimum EF | 0.8 | - |

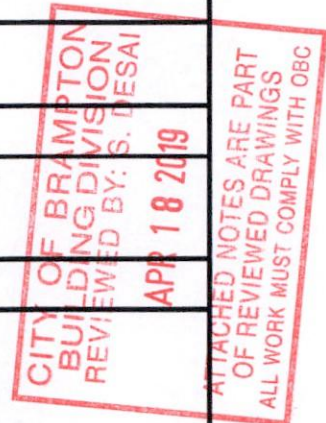
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

| Weather Station Description | | |
|--------------------------------|---|---|
| Province: | Ontario | |
| Region: | Brampton | |
| Site Description | | |
| Soil Conductivity: | Normal conductivity: dry sand, loam, clay | |
| Water Table: | Normal (7-10 m, 23-33 ft) | |
| Foundation Dimensions | | |
| Floor Length (m): | 14.0 |  Insulation Configuration |
| Floor Width (m): | 9.1 | |
| Exposed Perimeter (m): | 0.0 | |
| Wall Height (m): | 2.7 | |
| Depth Below Grade (m): | 1.83 | |
| Window Area (m ²): | 1.4 | |
| Door Area (m ²): | 1.9 | |
| Radiant Slab | | |
| Heated Fraction of the Slab: | 0 | |
| Fluid Temperature (°C): | 33 | |
| Design Months | | |
| Heating Month | 1 | |
| Foundation Loads | | |
| Heating Load (Watts): | | 1515 |

TYPE: LIANA 1
LO# 81165

LOT 28

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 | | |
| | 30.0 | 30.0 | | |
| 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# 81165

LOT 28



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 3 PENLEA GATE | | Unit no. | Lot/con. 28 |
| 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 K0H-1C0 | Province ONTARIO | E-mail design@andaengineering.com |
| Telephone number (613) 479-0161 | Fax number () N/A | Cell number (416) 476-1105 | |
| C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1. of Division C] | | | |
| <input type="checkbox"/> House | <input type="checkbox"/> HVAC – House | <input type="checkbox"/> Building Structural | |
| <input type="checkbox"/> Small Buildings | <input type="checkbox"/> Building Services | <input checked="" type="checkbox"/> Plumbing – House | |
| <input type="checkbox"/> Large Buildings | <input type="checkbox"/> Detection, Lighting and power | <input type="checkbox"/> Plumbing – 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 1 EL. 1 GRANELLI HOMES CORP. | | | |
| D. Declaration of Designer | | | |
| I SANDY WHITE, declare that (choose one as appropriate): | | | |
| (print name) | | | |
| <input type="checkbox"/> I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories. | | | |
| Individual BCIN: _____ | | | |
| Firm BCIN: _____ | | | |
| <input type="checkbox"/> I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5. of Division C, of the Building Code. | | | |
| Individual BCIN: _____ | | | |
| Basis for exemption from registration: _____ | | | |
| <input checked="" type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code. | | | |
| Basis for exemption from registration and qualification: 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. | | | |
| 2019/24/01 | | SANDY WHITE | |
| Date | | Signature of Designer | |

NOTE:

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) (c) of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
- Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of practice, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.



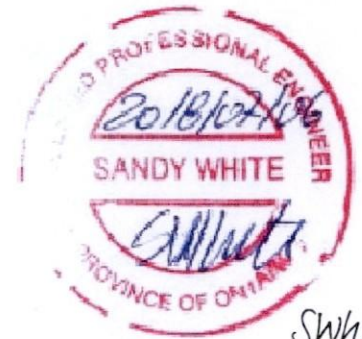
Planning and Development Services
Building Division
8850 McLaughlin Road, Unit 1
Brampton, ON L6Y 5T1

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 1 (LO78998-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 | |
| 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 Diameter 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 3/4 in. in size.
- (3) The minimum water pressure at the entry to the building is 200 kPa, and the total maximum length of the water system is 90 m.
- (4) In a hot water distribution system of a developed length of more than 30 m from the HWT to the farthest fixture or supplying more than 4 storeys, the water temperature shall be maintained by, (a) recirculation, or (b) a self-regulating heat tracing system.
- (5) Where piping may be exposed to freezing conditions, it shall be protected from the effects of freezing.
- (6) A bathroom group consists of 1 water closet, 1 lavatory, and 1 bathtub (with or without showerhead)
- (7) A powder room group consists of 1 water closet and 1 lavatory.

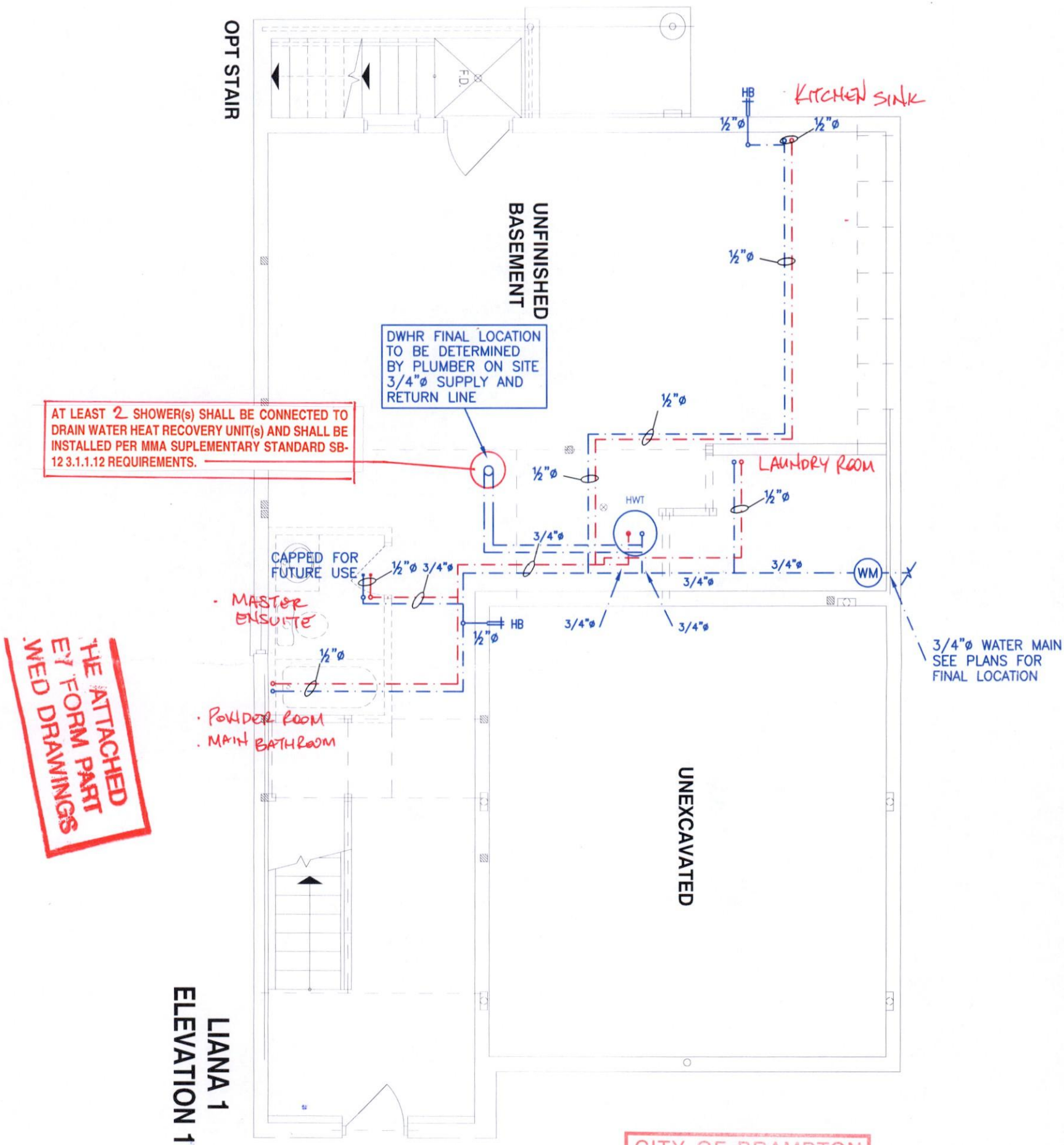
PLEASE SEE THE
NOTES AS THE
OF THE REVIEW

NOTES

- 1. DRAWINGS ARE TO BE PRINTED IN COLOUR
- 2. WHERE A 3/4"Ø TUB SPOUT/ SPIGOT CONNECTION IS USED ON THE BATHTUB FAUCET THE WATER SUPPLY PIPE SHALL BE 3/4"Ø TO THE BRANCH FOR THE BATHTUB
- 3. BASEMENT BATHROOM ROUGH-IN SHALL BE USED IN SIZING OF WATER PIPE
- 4. EXACT LOCATION OF ALL PLUMBING PIPING TO BE DETERMINED ON SITE

LEGEND

| SYMBOL | DESCRIPTION (SEE PLAN FOR PIPE SIZING) |
|--------|--|
| | WATER METER, PROVIDE SUPPLY PIPE SIZE/ Ø |
| | HOSE BIB |
| | PROPOSED COLD WATER LINE & RISER |
| | PROPOSED HOT WATER LINE & RISER |
| | FLOOR DRAIN |



Client
GREENYORK HOMES

Project Name
GRANELLI HOMES CORP
BRAMPTON, ONTARIO

ALT 2ND FL
LIANA 1

2041 sqft

HVACDESIGNS LTD.

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

Sheet Title
BASEMENT
PLUMBING
LAYOUT

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

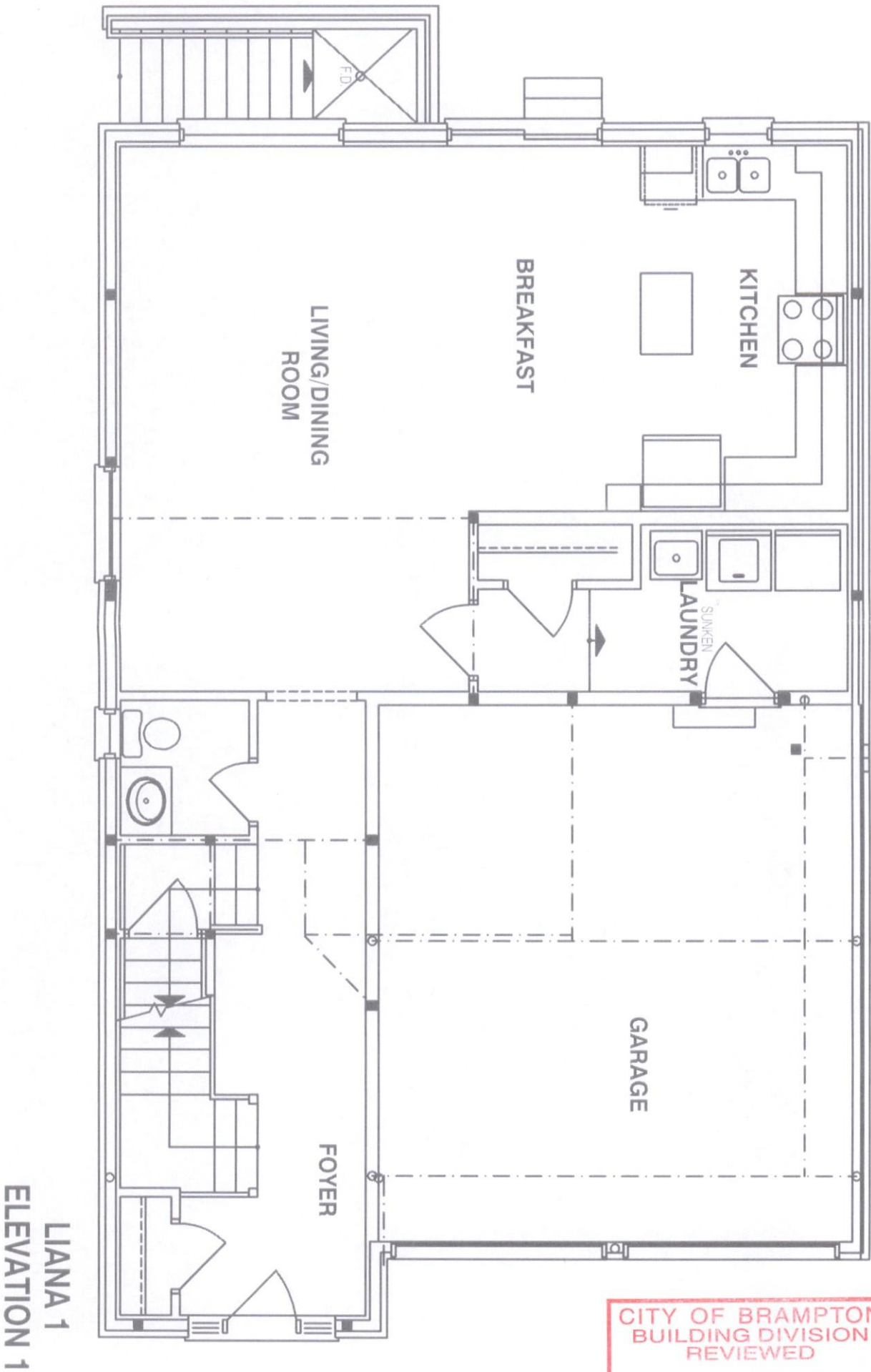
LO# 78999-P

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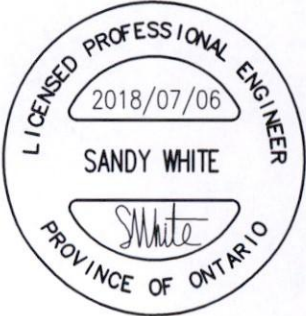
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CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED

APR 03 2019

PLUMBING BY
KOFI MORIEL



Client

GREENYORK HOMES

Project Name

GRANELLI HOMES CORP
BRAMPTON, ONTARIO

M-2057 LOT 28

LIANA 1

2041 sqft

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Sheet Title

FIRST FLOOR
PLUMBING
LAYOUT

Date

JUNE/2018

Scale

3/16" = 1'-0"

LO#

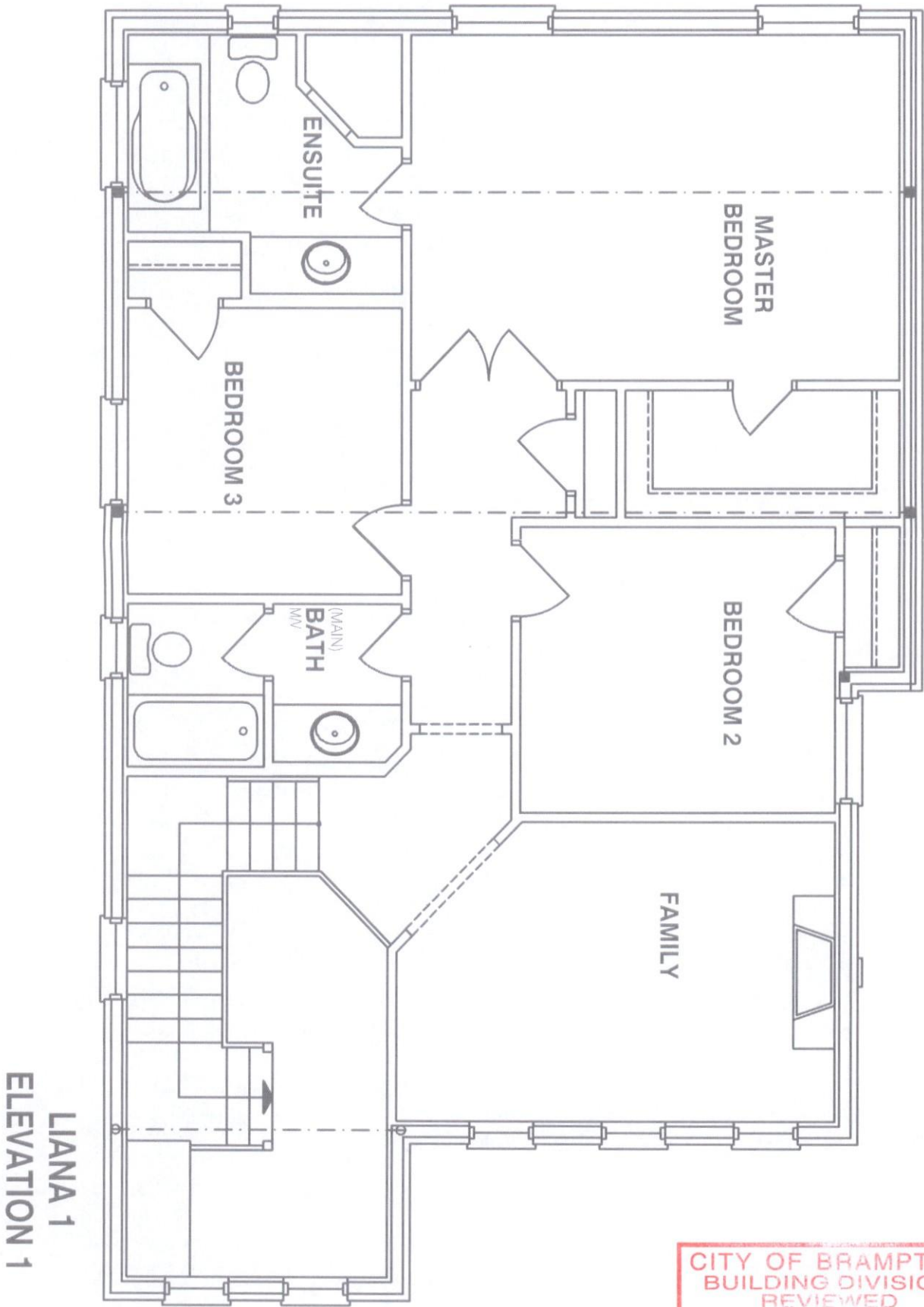
78998-P

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REVIEWED

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Client

GREENYORK HOMES

Project Name

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BRAMPTON, ONTARIO

M-2057 LOT 28

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Sheet Title

SECOND FLOOR
PLUMBING
LAYOUT

Date

JUNE/2018

Scale

3/16" = 1'-0"

LO#

78998-P