

## Schedule 1: Designer Information

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

|                                                                                                                                                                                                                                                                                                                                                     |                              |                                                                                      |                             |          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------|-----------------------------|----------|
| <b>A. Project Information</b>                                                                                                                                                                                                                                                                                                                       |                              |                                                                                      |                             |          |
| Building number, street name                                                                                                                                                                                                                                                                                                                        |                              |                                                                                      | Unit no.                    | Lot/con. |
| Municipality<br>BRAMPTON                                                                                                                                                                                                                                                                                                                            | Postal code                  | Plan number/ other description                                                       |                             |          |
| <b>B. Individual who reviews and takes responsibility for design activities</b>                                                                                                                                                                                                                                                                     |                              |                                                                                      |                             |          |
| Name<br>MICHAEL O'ROURKE                                                                                                                                                                                                                                                                                                                            |                              | Firm<br>HVAC DESIGNS LTD                                                             |                             |          |
| Street address<br>375 FINLEY AVE                                                                                                                                                                                                                                                                                                                    |                              | Unit no.<br>202                                                                      | Lot/con.<br>N/A             |          |
| Municipality<br>AJAX                                                                                                                                                                                                                                                                                                                                | Postal code<br>L1S 2E2       | Province<br>ONTARIO                                                                  | E-mail<br>info@hvacdsgns.ca |          |
| Telephone number<br>(905) 619-2300                                                                                                                                                                                                                                                                                                                  | Fax number<br>(905) 619-2375 | Cell number<br>( )                                                                   |                             |          |
| <b>C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]</b>                                                                                                                                                                                                                           |                              |                                                                                      |                             |          |
| <input type="checkbox"/> House<br><input type="checkbox"/> Small Buildings<br><input type="checkbox"/> Large Buildings<br><input type="checkbox"/> Complex Buildings                                                                                                                                                                                |                              |                                                                                      |                             |          |
| <input checked="" type="checkbox"/> HVAC – House<br><input type="checkbox"/> Building Services<br><input type="checkbox"/> Detection, Lighting and Power<br><input type="checkbox"/> Fire Protection                                                                                                                                                |                              |                                                                                      |                             |          |
| <input type="checkbox"/> Building Structural<br><input type="checkbox"/> Plumbing – House<br><input type="checkbox"/> Plumbing – All Buildings<br><input type="checkbox"/> On-site Sewage Systems                                                                                                                                                   |                              |                                                                                      |                             |          |
| Description of designer's work<br>HEAT LOSS / GAIN CALCULATIONS<br>DUCT SIZING<br>RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY<br>RESIDENTIAL SYSTEM DESIGN per CSA-F280-12                                                                                                                                                                    |                              | Model: 3003<br>OPT 4 BED 3 BATH<br>Project: SUMMER RIDGE ESTATES                     |                             |          |
| <b>D. Declaration of Designer</b>                                                                                                                                                                                                                                                                                                                   |                              |                                                                                      |                             |          |
| I, <u>MICHAEL O'ROURKE</u> declare that (choose one as appropriate):<br>(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.<br>Individual BCIN: _____<br>Firm BCIN: _____                                          |                              |                                                                                      |                             |          |
| <input checked="" 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.<br>Individual BCIN: <u>19669</u><br>Basis for exemption from registration and qualification: <u>O.B.C SENTENCE 3.2.4.1 (4)</u> |                              |                                                                                      |                             |          |
| <input type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code.<br>Basis for exemption from registration and qualification: _____                                                                                                                                                     |                              |                                                                                      |                             |          |
| 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.                                                                                                                                                                                                                                                                    |                              |                                                                                      |                             |          |
| May 16, 2024                                                                                                                                                                                                                                                                                                                                        |                              |  |                             |          |
| Date                                                                                                                                                                                                                                                                                                                                                |                              | Signature of Designer                                                                |                             |          |

**NOTE:**

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d) 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 authorization, 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.

**Application for a Permit Construct or Demolish – Effective January 1, 2015**

| SITE NAME: SUMMER RIDGE ESTATES |  |  |           |  |  |          |  |  |         | OPT 4 BED 3 BATH |  |               |  |  |         |  |  |       |  | DATE: May-24 |       |  |  | WINTER NATURAL AIR CHANGE RATE 0.279 |  |  |      |                                      |  |        |  |  |       | HEAT LOSS ΔT °F. 74 |  |                  |  | CSA-F280-12         |                                |  |  |             |  |  |                      |  |  |               |  |  |                          |  |  |                         |  |  |                  |  |  |                   |  |  |                           |  |  |                      |  |  |                      |  |  |           |  |  |           |  |  |                  |  |  |                             |  |  |                     |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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| BUILDER: ROYAL PIE HOMES        |  |  |           |  |  |          |  |  |         | TYPE: 3003       |  |               |  |  |         |  |  |       |  | GFA: 2165    |       |  |  | LO# 105063                           |  |  |      | SUMMER NATURAL AIR CHANGE RATE 0.087 |  |        |  |  |       |                     |  |                  |  | HEAT GAIN ΔT °F. 11 |                                |  |  | PERFORMANCE |  |  |                      |  |  |               |  |  |                          |  |  |                         |  |  |                  |  |  |                   |  |  |                           |  |  |                      |  |  |                      |  |  |           |  |  |           |  |  |                  |  |  |                             |  |  |                     |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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| ROOM USE                        |  |  | EXP. WALL |  |  | CLG. HT. |  |  | FACTORS |                  |  | GRS.WALL AREA |  |  | GLAZING |  |  | NORTH |  |              | EAST  |  |  | SOUTH                                |  |  | WEST |                                      |  | SKYLT. |  |  | DOORS |                     |  | NET EXPOSED WALL |  |                     | NET EXPOSED BSMT WALL ABOVE GR |  |  | EXPOSED CLG |  |  | NO ATTIC EXPOSED CLG |  |  | EXPOSED FLOOR |  |  | BASEMENT/CRAWL HEAT LOSS |  |  | SLAB ON GRADE HEAT LOSS |  |  | SUBTOTAL HT LOSS |  |  | SUB TOTAL HT GAIN |  |  | LEVEL FACTOR / MULTIPLIER |  |  | AIR CHANGE HEAT LOSS |  |  | AIR CHANGE HEAT GAIN |  |  | DUCT LOSS |  |  | DUCT GAIN |  |  | HEAT GAIN PEOPLE |  |  | HEAT GAIN APPLIANCES/LIGHTS |  |  | TOTAL HT LOSS BTU/H |  |  | TOTAL HT GAIN x 1.3 BTU/H |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 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|                                 |  |  |           |  |  |          |  |  | PRI     |                  |  | ENS           |  |  | WIC     |  |  | BED-4 |  |              | BED-3 |  |  | BED-2                                |  |  | BATH |                                      |  |        |  |  |       |                     |  |                  |  |                     |                                |  |  |             |  |  |                      |  |  |               |  |  |                          |  |  |                         |  |  |                  |  |  |                   |  |  |                           |  |  |                      |  |  |                      |  |  |           |  |  |           |  |  |                  |  |  |                             |  |  |                     |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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| ROOM USE                       |      |       | LV/DN |      | ENTRY |      | KT/FM |      |     |      | W/R  |      | FOY  |      | MUD  |      |      |      |      |      |      |      | BAS   |  |
|--------------------------------|------|-------|-------|------|-------|------|-------|------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|--|
| EXP. WALL                      |      |       | 38    |      | 9     |      | 66    |      |     |      | 12   |      | 17   |      | 11   |      |      |      |      |      |      |      | 133   |  |
| CLG. HT.                       |      |       | 10    |      | 10    |      | 10    |      |     |      | 10   |      | 10   |      | 10   |      |      |      |      |      |      |      | 9     |  |
| GRS.WALL AREA                  | LOSS | GAIN  | 365   |      | 86    |      | 634   |      |     |      | 115  |      | 163  |      | 106  |      |      |      |      |      | 745  |      |       |  |
| GLAZING                        |      |       | LOSS  | GAIN | LOSS  | GAIN | LOSS  | GAIN |     |      | LOSS | GAIN | LOSS | GAIN | LOSS | GAIN |      |      | LOSS | GAIN |      |      |       |  |
| NORTH                          | 20.8 | 12.8  | 0     | 0    | 0     | 0    | 0     | 0    | 0   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      |      | 0    | 0    | 0    |       |  |
| EAST                           | 20.8 | 32.9  | 0     | 0    | 0     | 0    | 0     | 0    | 0   | 0    | 0    | 0    | 33   | 686  | 1086 | 0    | 0    | 0    |      |      | 0    | 0    | 0     |  |
| SOUTH                          | 20.8 | 19.8  | 44    | 914  | 872   | 0    | 0     | 0    | 0   | 0    | 0    | 0    | 8    | 166  | 159  | 0    | 0    | 0    |      |      | 4    | 83   | 79    |  |
| WEST                           | 20.8 | 32.9  | 0     | 0    | 0     | 0    | 0     | 0    | 79  | 1641 | 2600 | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      |      | 8    | 166  | 263   |  |
| SKYLT.                         | 34.1 | 132.1 | 0     | 0    | 0     | 0    | 0     | 0    | 0   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      |      | 0    | 0    | 0     |  |
| DOORS                          | 19.6 | 2.9   | 0     | 0    | 0     | 0    | 0     | 0    | 10  | 196  | 29   | 0    | 0    | 0    | 9    | 176  | 26   | 20   | 392  | 58   |      |      |       |  |
| NET EXPOSED WALL               | 3.5  | 0.5   | 321   | 1112 | 165   | 86   | 300   | 44   | 545 | 1888 | 280  | 107  | 372  | 55   | 121  | 420  | 62   | 86   | 297  | 44   |      |      |       |  |
| 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    |      |      |       |  |
| EXPOSED CLG                    | 1.3  | 0.6   | 0     | 0    | 0     | 0    | 0     | 0    | 19  | 24   | 11   | 0    | 0    | 0    | 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       |      |       |       |      |       |      |       |      |     |      |      |      |      |      |      |      |      |      |      |      |      |      |       |  |
| SLAB ON GRADE HEAT LOSS        |      |       |       |      |       |      |       |      |     |      |      |      |      |      |      |      |      |      |      |      |      |      |       |  |
| SUBTOTAL HT LOSS               |      |       |       |      | 2026  |      |       | 300  |     |      | 3749 |      |      | 538  |      | 1282 |      | 688  |      |      |      |      |       |  |
| SUB TOTAL HT GAIN              |      |       |       |      |       | 1037 |       |      | 44  |      | 2920 |      |      |      | 214  |      | 1175 |      | 102  |      |      |      |       |  |
| LEVEL FACTOR / MULTIPLIER      |      |       | 0.30  | 0.37 |       |      | 0.30  | 0.37 |     |      | 0.30 | 0.37 |      | 0.30 | 0.37 |      | 0.30 | 0.37 |      |      | 0.50 | 0.81 |       |  |
| AIR CHANGE HEAT LOSS           |      |       |       |      | 752   |      |       | 111  |     |      | 1391 |      |      | 200  |      | 476  |      | 255  |      |      |      |      | 5307  |  |
| AIR CHANGE HEAT GAIN           |      |       |       |      |       | 56   |       | 2    |     |      | 159  |      |      |      | 12   |      | 64   |      | 6    |      |      |      | 33    |  |
| DUCT LOSS                      |      |       |       |      | 0     |      |       | 0    |     |      | 0    |      |      |      | 0    |      | 0    |      | 0    |      |      |      | 0     |  |
| DUCT GAIN                      |      |       |       |      |       | 0    |       | 0    |     |      | 0    |      |      |      | 0    |      | 0    |      | 0    |      |      |      | 0     |  |
| HEAT GAIN PEOPLE               | 240  |       |       | 0    |       | 0    |       | 0    |     | 0    | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      | 0    |      | 0     |  |
| HEAT GAIN APPLIANCES/LIGHTS    |      |       |       |      | 949   |      |       | 0    |     |      | 949  |      |      |      | 0    |      | 0    |      | 0    |      | 0    |      | 949   |  |
| TOTAL HT LOSS BTU/H            |      |       |       |      | 2778  |      |       | 411  |     |      | 5140 |      |      | 737  |      | 1758 |      | 944  |      |      |      |      | 11873 |  |
| TOTAL HT GAIN x 1.3 BTU/H      |      |       |       |      |       | 2655 |       | 61   |     |      | 5236 |      |      |      | 293  |      | 1610 |      | 140  |      |      |      | 20868 |  |

TOTAL HEAT GAIN BTU/H: 29238 TONS: 2.44 LOSS DUE TO VENTILATION LOAD BTU/H: 1593 STRUCTURAL HEAT LOSS: 36093 TOTAL COMBINED HEAT LOSS BTU/H: 37686

SITE NAME: SUMMER RIDGE ESTATES  
BUILDER: ROYAL PIE HOMES

OPT 4 BED 3 BATH  
TYPE: 3003

DATE: May-24

GFA: 2165 LO# 105063

HEATING CFM 925 COOLING CFM 925  
TOTAL HEAT LOSS 36,093 TOTAL HEAT GAIN 29,001  
AIR FLOW RATE CFM 25.63 AIR FLOW RATE CFM 31.9

furnace pressure 0.6  
furnace filter 0.00  
a/c coil pressure 0.26  
available pressure for s/a & r/a 0.34

FACTORY INSTALLED

59SC6A040M14--10 CARRIER

AFUE = 96 %  
INPUT (BTU/H) = 40,000  
OUTPUT (BTU/H) = 39,000

| RUN COUNT | 4th | 3rd | 2nd | 1st | Bas |
|-----------|-----|-----|-----|-----|-----|
| S/A       | 0   | 0   | 11  | 7   | 4   |
| R/A       | 0   | 0   | 4   | 2   | 1   |

plenum pressure s/a 0.18 r/a pressure 0.16  
max s/a dif press. loss 0.02 r/a grille press. Loss 0.02  
min adjusted pressure s/a 0.16 adjusted pressure r/a 0.14

FAN SPEED 40  
LOW 0  
MEDLOW 0  
MEDIUM 0  
MEDIUM HIGH 925  
HIGH 0

DESIGN CFM = 925  
CFM @ .6" E.S.P.

TEMPERATURE RISE 39 °F

All S/A diffusers 4"x10" unless noted otherwise on layout.

All S/A runs 5"Ø unless noted otherwise on layout.

| RUN #                     | 1    | 2    | 3    | 4     | 5     | 6     | 7    | 8     | 9     | 10   | 11    | 12    | 13    | 14    | 15    | 18   | 19   | 20   | 21   | 22   | 23   | 24   |
|---------------------------|------|------|------|-------|-------|-------|------|-------|-------|------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|
| ROOM NAME                 | PRI  | ENS  | WIC  | BED-4 | BED-3 | BED-2 | BATH | BED-4 | BED-3 | PRI  | ENS-2 | LV/DN | ENTRY | KT/FM | KT/FM | W/R  | FOY  | MUD  | BAS  | BAS  | BAS  | BAS  |
| RM LOSS MBH.              | 1.46 | 1.47 | 0.34 | 1.19  | 1.60  | 1.21  | 0.32 | 1.19  | 1.60  | 1.46 | 0.60  | 2.78  | 0.41  | 2.57  | 2.57  | 0.74 | 1.76 | 0.94 | 2.97 | 2.97 | 2.97 | 2.97 |
| CFM PER RUN HEAT          | 38   | 38   | 9    | 30    | 41    | 31    | 8    | 30    | 41    | 38   | 15    | 71    | 11    | 66    | 66    | 19   | 45   | 24   | 76   | 76   | 76   | 76   |
| RM GAIN MBH.              | 2.09 | 1.04 | 0.10 | 2.14  | 2.41  | 2.31  | 0.09 | 2.14  | 2.41  | 2.09 | 0.13  | 2.66  | 0.06  | 2.62  | 2.62  | 0.29 | 1.61 | 0.14 | 0.52 | 0.52 | 0.52 | 0.52 |
| CFM PER RUN COOLING       | 67   | 33   | 3    | 68    | 77    | 74    | 3    | 68    | 77    | 67   | 4     | 85    | 2     | 84    | 84    | 9    | 51   | 4    | 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  | 0.16  | 0.16  | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| ACTUAL DUCT LGH.          | 56   | 55   | 32   | 33    | 60    | 36    | 41   | 37    | 59    | 66   | 41    | 8     | 19    | 39    | 45    | 20   | 27   | 16   | 38   | 34   | 7    | 19   |
| EQUIVALENT LENGTH         | 160  | 220  | 130  | 120   | 180   | 180   | 160  | 120   | 170   | 140  | 170   | 190   | 170   | 130   | 180   | 120  | 120  | 170  | 120  | 140  | 170  | 130  |
| TOTAL EFFECTIVE LENGTH    | 216  | 275  | 162  | 153   | 240   | 216   | 201  | 157   | 229   | 206  | 211   | 198   | 189   | 169   | 225   | 140  | 147  | 186  | 158  | 174  | 177  | 149  |
| ADJUSTED PRESSURE         | 0.08 | 0.06 | 0.1  | 0.11  | 0.07  | 0.08  | 0.08 | 0.11  | 0.07  | 0.08 | 0.08  | 0.08  | 0.09  | 0.09  | 0.07  | 0.12 | 0.11 | 0.09 | 0.11 | 0.1  | 0.09 | 0.11 |
| ROUND DUCT SIZE           | 5    | 5    | 4    | 5     | 6     | 6     | 4    | 5     | 6     | 5    | 4     | 6     | 4     | 6     | 6     | 4    | 4    | 4    | 5    | 5    | 5    | 5    |
| HEATING VELOCITY (ft/min) | 279  | 279  | 103  | 220   | 209   | 158   | 92   | 220   | 209   | 279  | 172   | 362   | 126   | 337   | 337   | 218  | 516  | 275  | 558  | 558  | 558  | 558  |
| COOLING VELOCITY (ft/min) | 492  | 242  | 34   | 499   | 393   | 377   | 34   | 499   | 393   | 492  | 46    | 433   | 23    | 428   | 428   | 103  | 585  | 46   | 117  | 117  | 117  | 117  |
| OUTLET GRILL SIZE         | 3X10 | 3X10 | 3X10 | 3X10  | 4X10  | 4X10  | 3X10 | 3X10  | 4X10  | 3X10 | 3X10  | 4X10  | 3X10  | 4X10  | 4X10  | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 |
| TRUNK                     | A    | A    | B    | C     | B     | C     | B    | C     | B     | A    | B     | B     | B     | A     | A     | C    | C    | B    | A    | A    | B    | 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 |
|-------|-----------|--------------|------------------|--------------|---------------------|-------------------|------------------|-------------------|------------------------|-------------------|-----------------|---------------------------|---------------------------|-------------------|-------|
| 1     | PRI       | 1.46         | 38               | 2.09         | 67                  | 0.17              | 56               | 160               | 216                    | 0.08              | 5               | 279                       | 492                       | 3X10              | A     |
| 2     | ENS       | 1.47         | 38               | 1.04         | 33                  | 0.17              | 55               | 220               | 275                    | 0.06              | 5               | 279                       | 242                       | 3X10              | A     |
| 3     | WIC       | 0.34         | 9                | 0.10         | 3                   | 0.17              | 32               | 130               | 162                    | 0.1               | 4               | 103                       | 34                        | 3X10              | B     |
| 4     | BED-4     | 1.19         | 30               | 2.14         | 68                  | 0.17              | 33               | 120               | 153                    | 0.11              | 5               | 220                       | 499                       | 3X10              | C     |
| 5     | BED-3     | 1.60         | 41               | 2.41         | 77                  | 0.17              | 60               | 180               | 240                    | 0.07              | 6               | 209                       | 393                       | 4X10              | B     |
| 6     | BED-2     | 1.21         | 31               | 2.31         | 74                  | 0.17              | 36               | 180               | 216                    | 0.08              | 6               | 158                       | 377                       | 4X10              | C     |
| 7     | BATH      | 0.32         | 8                | 0.09         | 3                   | 0.17              | 41               | 160               | 201                    | 0.08              | 4               | 92                        | 34                        | 3X10              | B     |
| 8     | BED-4     | 1.19         | 30               | 2.14         | 68                  | 0.17              | 37               | 120               | 157                    | 0.11              | 5               | 220                       | 499                       | 3X10              | C     |
| 9     | BED-3     | 1.60         | 41               | 2.41         | 77                  | 0.17              | 59               | 170               | 229                    | 0.07              | 6               | 209                       | 393                       | 4X10              | B     |
| 10    | PRI       | 1.46         | 38               | 2.09         | 67                  | 0.17              | 66               | 140               | 206                    | 0.08              | 5               | 279                       | 492                       | 3X10              | A     |
| 11    | ENS-2     | 0.60         | 15               | 0.13         | 4                   | 0.17              | 41               | 170               | 211                    | 0.08              | 4               | 172                       | 46                        | 3X10              | B     |
| 12    | LV/DN     | 2.78         | 71               | 2.66         | 85                  | 0.16              | 8                | 190               | 198                    | 0.08              | 6               | 362                       | 433                       | 4X10              | B     |
| 13    | ENTRY     | 0.41         | 11               | 0.06         | 2                   | 0.17              | 19               | 170               | 189                    | 0.09              | 4               | 126                       | 23                        | 3X10              | B     |
| 14    | KT/FM     | 2.57         | 66               | 2.62         | 84                  | 0.16              | 39               | 130               | 169                    | 0.09              | 6               | 337                       | 428                       | 4X10              | A     |
| 15    | KT/FM     | 2.57         | 66               | 2.62         | 84                  | 0.16              | 45               | 180               | 225                    | 0.07              | 6               | 337                       | 428                       | 4X10              | A     |
| 18    | W/R       | 0.74         | 19               | 0.29         | 9                   | 0.17              | 20               | 120               | 140                    | 0.12              | 4               | 218                       | 103                       | 3X10              | C     |
| 19    | FOY       | 1.76         | 45               | 1.61         | 51                  | 0.17              | 27               | 120               | 147                    | 0.11              | 4               | 516                       | 585                       | 3X10              | C     |
| 20    | MUD       | 0.94         | 24               | 0.14         | 4                   | 0.17              | 16               | 170               | 186                    | 0.09              | 4               | 275                       | 46                        | 3X10              | B     |
| 21    | BAS       | 2.97         | 76               | 0.52         | 16                  | 0.17              | 38               | 140               | 158                    | 0.11              | 5               | 558                       | 117                       | 3X10              | A     |
| 22    | BAS       | 2.97         | 76               | 0.52         | 16                  | 0.17              | 34               | 170               | 174                    | 0.1               | 5               | 558                       | 117                       | 3X10              | A     |
| 23    | BAS       | 2.97         | 76               | 0.52         | 16                  | 0.17              | 7                | 170               | 177                    | 0.09              | 5               | 558                       | 117                       | 3X10              | B     |
| 24    | BAS       | 2.97         | 76               | 0.52         | 16                  | 0.17              | 19               | 130               | 149                    | 0.11              | 5               | 558                       | 117                       | 3X10              | C     |

| SUPPLY AIR TRUNK SIZE | TRUNK | STATIC | ROUND | RECT | VELOCITY | TRUNK | STATIC | ROUND | RECT | VELOCITY | RETURN AIR TRUNK SIZE | TRUNK | STATIC | ROUND | RECT | VELOCITY |
|-----------------------|-------|--------|-------|------|----------|-------|--------|-------|------|----------|-----------------------|-------|--------|-------|------|----------|
|                       | CFM   | PRESS. | DUCT  | DUCT | (ft/min) | CFM   | PRESS. | DUCT  | DUCT | (ft/min) |                       | CFM   | PRESS. | DUCT  | DUCT | (ft/min) |
| TRUNK A               | 398   | 0.06   | 10.7  | 14   | x 8      | 512   | 0      | 0.00  | 0    | 0        | x 8                   | 0     | 0.05   | 0     | 0    | x 8      |
| TRUNK B               | 694   | 0.06   | 13.1  | 20   | x 8      | 625   | 0      | 0.00  | 0    | 0        | x 8                   | 0     | 0.05   | 0     | 0    | x 8      |
| TRUNK C               | 231   | 0.08   | 8.1   | 10   | x 8      | 416   | 0      | 0.00  | 0    | 0        | x 8                   | 0     | 0.05   | 0     | 0    | x 8      |
| TRUNK D               | 0     | 0.00   | 0     | 0    | x 8      | 0     | 0      | 0.00  | 0    | 0        | x 8                   | 0     | 0.05   | 0     | 0    | x 8      |
| TRUNK E               | 0     | 0.00   | 0     | 0    | x 8      | 0     | 0      | 0.00  | 0    | 0        | x 8                   | 0     | 0.05   | 0     | 0    | x 8      |
| TRUNK F               | 0     | 0.00   | 0     | 0    | x 8      | 0     | 0      | 0.00  | 0    | 0        | x 8                   | 0     | 0.05   | 0     | 0    | x 8      |
| TRUNK G               | 0     | 0.00   | 0     | 0    | x 8      | 0     | 0      | 0.00  | 0    | 0        | x 8                   | 0     | 0.05   | 0     | 0    | x 8      |
| TRUNK H               | 0     | 0.00   | 0     | 0    | x 8      | 0     | 0      | 0.00  | 0    | 0        | x 8                   | 0     | 0.05   | 0     | 0    | x 8      |
| TRUNK I               | 0     | 0.00   | 0     | 0    | x 8      | 0     | 0      | 0.00  | 0    | 0        | x 8                   | 0     | 0.05   | 0     | 0    | x 8      |
| TRUNK J               | 0     | 0.00   | 0     | 0    | x 8      | 0     | 0      | 0.00  | 0    | 0        | x 8                   | 0     | 0.05   | 0     | 0    | x 8      |
| TRUNK K               | 0     | 0.00   | 0     | 0    | x 8      | 0     | 0      | 0.00  | 0    | 0        | x 8                   | 0     | 0.05   | 0     | 0    | x 8      |
| TRUNK L               | 0     | 0.00   | 0     | 0    | x 8      | 0     | 0      | 0.00  | 0    | 0        | x 8                   | 0     | 0.05   | 0     | 0    | x 8      |

| RETURN AIR #       | 1    | 2    | 3    | 4    | 5    | 6    | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | BR   |
|--------------------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| FLOOR              | 2    | 2    | 2    | 2    | 1    | 1    |       |       |       |       |       |       |       |       |       | B    |
| AIR VOLUME         | 115  | 75   | 85   | 115  | 105  | 280  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 150  |
| PLENUM PRESSURE    | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14  | 0.14  | 0.14  | 0.14  | 0.14  | 0.14  | 0.14  | 0.14  | 0.14  | 0.14 |
| ACTUAL DUCT LGH.   | 57   | 76   | 63   | 71   | 29   | 47   | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 14   |
| EQUIVALENT LENGTH  | 215  | 240  | 205  | 225  | 155  | 180  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 135  |
| TOTAL EFFECTIVE LH | 272  | 316  | 268  | 296  | 184  | 227  | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 149  |
| ADJUSTED PRESSURE  | 0.05 | 0.05 | 0.05 | 0.05 | 0.08 | 0.06 | 14.32 | 14.32 | 14.32 | 14.32 | 14.32 | 14.32 | 14.32 | 14.32 | 14.32 | 0.10 |
| ROUND DUCT SIZE    | 7    | 6    | 6    | 7    | 6    | 9.4  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 6.5  |
| INLET GRILL SIZE   | 8    | 8    | 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   | 14   | 14   | 14   | 14   | 30   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 14   |

TYPE: 3003  
SITE NAME: SUMMER RIDGE ESTATES

LO # 105063  
OPT 4 BED 3 BATH

**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  | <u>2</u> @ 21.2 cfm | <u>42.4</u> cfm  |
| Other Bedrooms             | <u>3</u> @ 10.6 cfm | <u>31.8</u> cfm  |
| Kitchen & Bathrooms        | <u>4</u> @ 10.6 cfm | <u>42.4</u> cfm  |
| Other Rooms                | <u>4</u> @ 10.6 cfm | <u>42.4</u> cfm  |
| Table 9.32.3.A.            | TOTAL               | <u>159.0</u> 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                                   |      | <u>79.5</u> cfm |

| SUPPLEMENTAL VENTILATION CAPACITY |             | 9.32.3.5. |
|-----------------------------------|-------------|-----------|
| Total Ventilation Capacity        | <u>159</u>  | cfm       |
| Less Principal Ventil. Capacity   | <u>79.5</u> | cfm       |
| Required Supplemental Capacity    | <u>79.5</u> | cfm       |

| PRINCIPAL EXHAUST FAN CAPACITY          |                                                  |        |        |
|-----------------------------------------|--------------------------------------------------|--------|--------|
| Model:                                  | VANEE V150H                                      |        |        |
| Location:                               | BSMT                                             |        |        |
| <u>79.5</u> cfm                         | <input checked="" type="checkbox"/> HVI Approved |        |        |
| PRINCIPAL EXHAUST HEAT LOSS CALCULATION |                                                  |        |        |
| CFM                                     | $\Delta T$ °F                                    | FACTOR | % LOSS |
| 79.5 CFM                                | X 74 F                                           | X 1.08 | X 0.25 |

| SUPPLEMENTAL FANS |                          | BY INSTALLING CONTRACTOR |                                     |
|-------------------|--------------------------|--------------------------|-------------------------------------|
| Location          | Model                    | cfm                      | HVI                                 |
| ENS               | BY INSTALLING CONTRACTOR | 50                       | <input checked="" type="checkbox"/> |
| ENS-2             | BY INSTALLING CONTRACTOR | 50                       | <input checked="" type="checkbox"/> |
| W/R               | BY INSTALLING CONTRACTOR | 50                       | <input checked="" type="checkbox"/> |

| HEAT RECOVERY VENTILATOR        |                                                  | 9.32.3.11. |
|---------------------------------|--------------------------------------------------|------------|
| Model:                          | VANEE V150H                                      |            |
| <u>150</u> cfm high             | <u>35</u> cfm low                                |            |
| <u>75</u> % 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:        |        |
|-----------------|--------|
| ROYAL PIE 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:                                                                                                         | May-24                  |

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

INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

*Michael O'Rourke*

| CSA F280-12 Residential Heat Loss and Heat Gain Calculations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                   |                                                     |                                                                                                                                                                                                                                                                                                                                      |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------------|--------------|------|-----|---|--------|-------|-----|----|--------|--------|------|---|-------|-------|---|---|---|--------|---|---|---|--------|--|--|--------------|--------|--|--|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------|-------|--------------------------------|-------|-------------------------------|--|--|--|--|--|--------|---------|-------|-------|-------------|----|-----|----|----|-------------|----|----|---|----|
| Formula Sheet (For Air Leakage / Ventilation Calculation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                   |                                                     |                                                                                                                                                                                                                                                                                                                                      |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| LO#: 105063                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Model: 3003       | Builder: ROYAL PIE HOMES                            | Date: 2024-05-16                                                                                                                                                                                                                                                                                                                     |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| <b>Volume Calculation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                   |                                                     | <b>Air Change &amp; Delta T Data</b>                                                                                                                                                                                                                                                                                                 |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| <b>House Volume</b> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> </thead> <tbody> <tr><td>Bsmt</td><td>998</td><td>9</td><td>8582.8</td></tr> <tr><td>First</td><td>998</td><td>10</td><td>9580.8</td></tr> <tr><td>Second</td><td>1167</td><td>9</td><td>10503</td></tr> <tr><td>Third</td><td>0</td><td>9</td><td>0</td></tr> <tr><td>Fourth</td><td>0</td><td>9</td><td>0</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>28,666.6 ft³</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>811.7 m³</td></tr> </tbody> </table> |                   |                                                     | Level                                                                                                                                                                                                                                                                                                                                | Floor Area (ft²)                                                                                       | Floor Height (ft) | Volume (ft³) | Bsmt | 998 | 9 | 8582.8 | First | 998 | 10 | 9580.8 | Second | 1167 | 9 | 10503 | Third | 0 | 9 | 0 | Fourth | 0 | 9 | 0 | Total: |  |  | 28,666.6 ft³ | Total: |  |  | 811.7 m³ | <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 70%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 30%; text-align: center;">0.279</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td style="text-align: center;">0.087</td> </tr> </table><br><table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <tr> <th colspan="5" style="text-align: center;">Design Temperature Difference</th> </tr> <tr> <th></th> <th>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> <th>ΔT °F</th> </tr> <tr> <td>Winter DTDh</td> <td style="text-align: center;">22</td> <td style="text-align: center;">-19</td> <td style="text-align: center;">41</td> <td style="text-align: center;">74</td> </tr> <tr> <td>Summer DTDc</td> <td style="text-align: center;">24</td> <td style="text-align: center;">30</td> <td style="text-align: center;">6</td> <td style="text-align: center;">11</td> </tr> </table> |  | WINTER NATURAL AIR CHANGE RATE | 0.279 | SUMMER NATURAL AIR CHANGE RATE | 0.087 | Design Temperature Difference |  |  |  |  |  | Tin °C | Tout °C | ΔT °C | ΔT °F | Winter DTDh | 22 | -19 | 41 | 74 | Summer DTDc | 24 | 30 | 6 | 11 |
| Level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Floor Area (ft²)  | Floor Height (ft)                                   | Volume (ft³)                                                                                                                                                                                                                                                                                                                         |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Bsmt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 998               | 9                                                   | 8582.8                                                                                                                                                                                                                                                                                                                               |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| First                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 998               | 10                                                  | 9580.8                                                                                                                                                                                                                                                                                                                               |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1167              | 9                                                   | 10503                                                                                                                                                                                                                                                                                                                                |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Third                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0                 | 9                                                   | 0                                                                                                                                                                                                                                                                                                                                    |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Fourth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0                 | 9                                                   | 0                                                                                                                                                                                                                                                                                                                                    |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Total:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                   |                                                     | 28,666.6 ft³                                                                                                                                                                                                                                                                                                                         |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Total:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                   |                                                     | 811.7 m³                                                                                                                                                                                                                                                                                                                             |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| WINTER NATURAL AIR CHANGE RATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.279             |                                                     |                                                                                                                                                                                                                                                                                                                                      |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| SUMMER NATURAL AIR CHANGE RATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.087             |                                                     |                                                                                                                                                                                                                                                                                                                                      |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Design Temperature Difference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                   |                                                     |                                                                                                                                                                                                                                                                                                                                      |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Tin °C            | Tout °C                                             | ΔT °C                                                                                                                                                                                                                                                                                                                                | ΔT °F                                                                                                  |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Winter DTDh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 22                | -19                                                 | 41                                                                                                                                                                                                                                                                                                                                   | 74                                                                                                     |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Summer DTDc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 24                | 30                                                  | 6                                                                                                                                                                                                                                                                                                                                    | 11                                                                                                     |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| <b>5.2.3.1 Heat Loss due to Air Leakage</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |                                                     | <b>6.2.6 Sensible Gain due to Air Leakage</b>                                                                                                                                                                                                                                                                                        |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| $HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ <p>0.279      x      225.49      x      41 °C      x      1.2      =      <span style="border: 1px solid black; padding: 2px;">3111 W</span></p> <p style="text-align: right;">=      <span style="border: 1px solid black; padding: 2px;">10614 Btu/h</span></p>                                                                                                                                                                                                                                                                                                                                                                                          |                   |                                                     | $HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ <p>0.087      x      225.49      x      6 °C      x      1.2      =      <span style="border: 1px solid black; padding: 2px;">144 W</span></p> <p style="text-align: right;">=      <span style="border: 1px solid black; padding: 2px;">493 Btu/h</span></p> |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| <b>5.2.3.2 Heat Loss due to Mechanical Ventilation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                   |                                                     | <b>6.2.7 Sensible heat Gain due to Ventilation</b>                                                                                                                                                                                                                                                                                   |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| $HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>80 CFM      x      74 °F      x      1.08      x      0.25      =      <span style="border: 1px solid black; padding: 2px;">1593 Btu/h</span></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                                                     | $HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>80 CFM      x      11 °F      x      1.08      x      0.25      =      <span style="border: 1px solid black; padding: 2px;">236 Btu/h</span></p>                                                                                                                       |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| <b>5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |                                                     |                                                                                                                                                                                                                                                                                                                                      |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| $HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                   |                                                     |                                                                                                                                                                                                                                                                                                                                      |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Level Factor (LF) | HLairve Air Leakage + Ventilation Heat Loss (Btu/h) | Level Conductive Heat Loss: (HL <sub>clevel</sub> )                                                                                                                                                                                                                                                                                  | Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)                                              |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.5               | 10,614                                              | 6,566                                                                                                                                                                                                                                                                                                                                | 0.808                                                                                                  |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.3               |                                                     | 8,584                                                                                                                                                                                                                                                                                                                                | 0.371                                                                                                  |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.2               |                                                     | 9,984                                                                                                                                                                                                                                                                                                                                | 0.213                                                                                                  |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0                 |                                                     | 0                                                                                                                                                                                                                                                                                                                                    | 0.000                                                                                                  |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0                 |                                                     | 0                                                                                                                                                                                                                                                                                                                                    | 0.000                                                                                                  |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| <p>*HLairbv = Air leakage heat loss + ventilation heat loss</p> <p>*For a balanced or supply only ventilation system HLairve = 0</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   |                                                     |                                                                                                                                                                                                                                                                                                                                      |                                                                                                        |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                                                     |                                                                                                                                                                                                                                                                                                                                      | <div style="border: 1px solid black; padding: 5px;"> Michael O'Rourke<br/>BCIN# 19669<br/><br/> </div> |                   |              |      |     |   |        |       |     |    |        |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |

**HEAT LOSS AND GAIN SUMMARY SHEET**

|                    |                         |                                   |
|--------------------|-------------------------|-----------------------------------|
| <b>MODEL:</b> 3003 | <b>OPT 4 BED 3 BATH</b> | <b>BUILDER:</b> ROYAL PIE HOMES   |
| <b>SFQT:</b> 2165  | <b>LO#</b> 105063       | <b>SITE:</b> SUMMER RIDGE ESTATES |

**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   |
|                      |    | WINDOW SHGC                    | 0.60 |

**BUILDING DATA**

|                                                  |                 |                           |          |
|--------------------------------------------------|-----------------|---------------------------|----------|
| ATTACHMENT:                                      | ATTACHED        | # OF STORIES (+BASEMENT): | 3        |
| FRONT FACES:                                     | EAST            | ASSUMED (Y/N):            | Y        |
| AIR CHANGES PER HOUR:                            | 3.00            | ASSUMED (Y/N):            | Y        |
| AIR TIGHTNESS CATEGORY:                          | TIGHT           | ASSUMED (Y/N):            | Y        |
| WIND EXPOSURE:                                   | SHELTERED       | ASSUMED (Y/N):            | Y        |
| HOUSE VOLUME (ft <sup>3</sup> ):                 | 28666.6         | ASSUMED (Y/N):            | Y        |
| INTERNAL SHADING:                                | BLINDS/CURTAINS | ASSUMED OCCUPANTS:        | 5        |
| INTERIOR LIGHTING LOAD (Btu/h/ft <sup>2</sup> ): | 2.10            | DC BRUSHLESS MOTOR (Y/N): | Y        |
| FOUNDATION CONFIGURATION                         | BCIN_1          | DEPTH BELOW GRADE:        | 5.6 ft   |
| LENGTH: 53.0 ft                                  | WIDTH: 26.0 ft  | EXPOSED PERIMETER:        | 133.0 ft |

**2012 OBC - COMPLIANCE PACKAGE**

| Component                                                                  | Compliance Package PERFORMANCE |           |
|----------------------------------------------------------------------------|--------------------------------|-----------|
|                                                                            | 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+1.5                         | 21.40     |
| Basement Walls Minimum RSI (R)-Value                                       | 20                             | 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                            | 1.6                            | -         |
| Skylights Maximum U-Value                                                  | 2.6                            | -         |
| Space Heating Equipment Minimum AFUE                                       | 96%                            | -         |
| HRV/ERV Minimum Efficiency                                                 | 75%                            | -         |
| Domestic Hot Water Heater Minimum EF                                       | 0.9                            | -         |

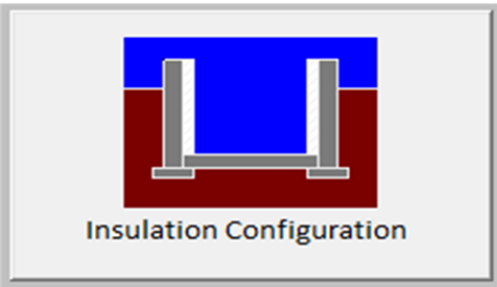
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



# Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

| Weather Station Description    |                                           |                                                                                                                 |
|--------------------------------|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Province:                      | Ontario                                   |                                                                                                                 |
| Region:                        | Brampton                                  |                                                                                                                 |
| Site Description               |                                           |                                                                                                                 |
| Soil Conductivity:             | Normal conductivity: dry sand, loam, clay |                                                                                                                 |
| Water Table:                   | Normal (7-10 m, 23-33 ft)                 |                                                                                                                 |
| Foundation Dimensions          |                                           |                                                                                                                 |
| Floor Length (m):              | 16.2                                      | <br>Insulation Configuration |
| Floor Width (m):               | 7.9                                       |                                                                                                                 |
| Exposed Perimeter (m):         | 40.5                                      |                                                                                                                 |
| Wall Height (m):               | 2.6                                       |                                                                                                                 |
| Depth Below Grade (m):         | 1.71                                      |                                                                                                                 |
| Window Area (m <sup>2</sup> ): | 1.1                                       |                                                                                                                 |
| Door Area (m <sup>2</sup> ):   | 1.9                                       |                                                                                                                 |
| Radiant Slab                   |                                           |                                                                                                                 |
| Heated Fraction of the Slab:   | 0                                         |                                                                                                                 |
| Fluid Temperature (°C):        | 33                                        |                                                                                                                 |
| Design Months                  |                                           |                                                                                                                 |
| Heating Month                  | 1                                         |                                                                                                                 |
| Foundation Loads               |                                           |                                                                                                                 |
| Heating Load (Watts):          |                                           | 1325                                                                                                            |

TYPE: 3003  
LO# 105063

OPT 4 BED 3 BATH

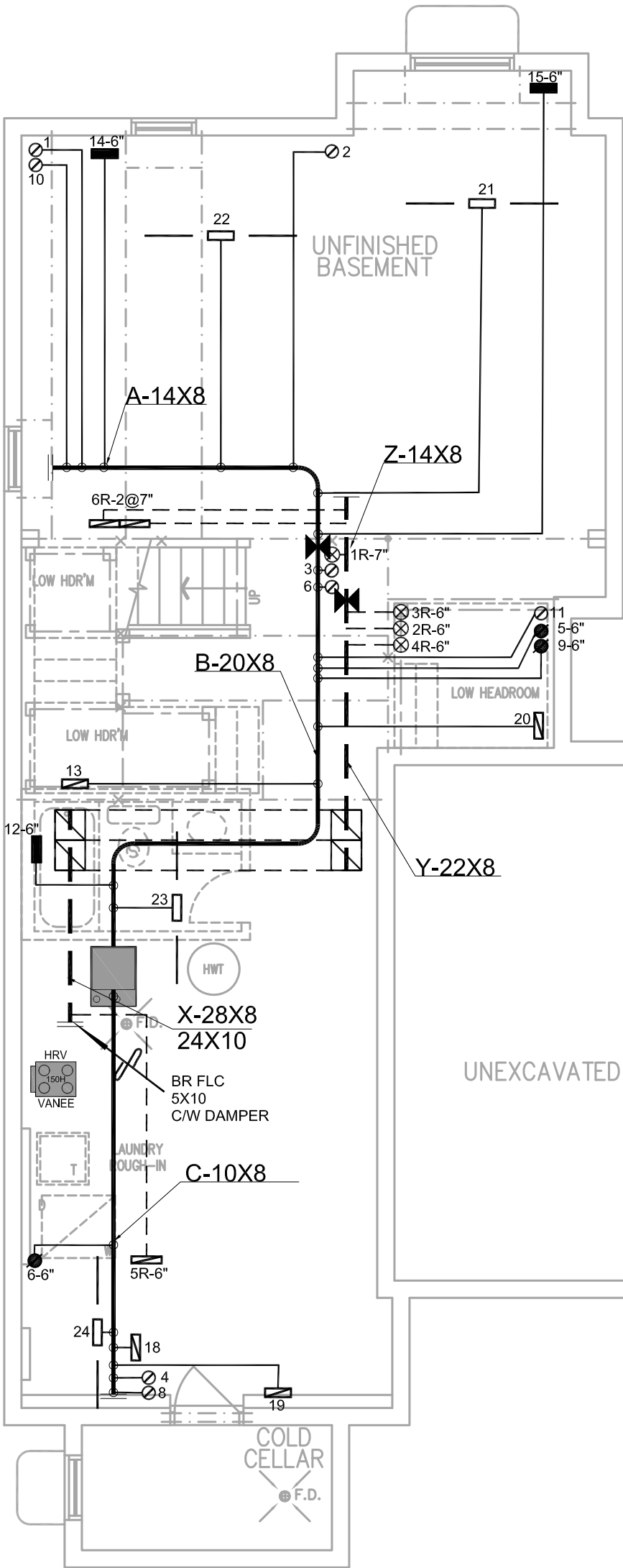
# Air Infiltration Residential Load Calculator

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):       | 6.58                     |                       |    |    |
| Building Configuration            |                          |                       |    |    |
| Type:                             | Semi                     |                       |    |    |
| Number of Stories:                | Two                      |                       |    |    |
| Foundation:                       | Full                     |                       |    |    |
| House Volume (m <sup>3</sup> ):   | 811.7                    |                       |    |    |
| Air Leakage/Ventilation           |                          |                       |    |    |
| Air Tightness Type:               | Attached (3.0 ACH)       |                       |    |    |
| Custom BDT Data:                  | ELA @ 10 Pa.             | 909.3 cm <sup>2</sup> |    |    |
|                                   | 3.00                     | 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): | 0.279                    |                       |    |    |
| Cooling Air Leakage Rate (ACH/H): | 0.087                    |                       |    |    |

TYPE: 3003  
LO# 105063

OPT 4 BED 3 BATH

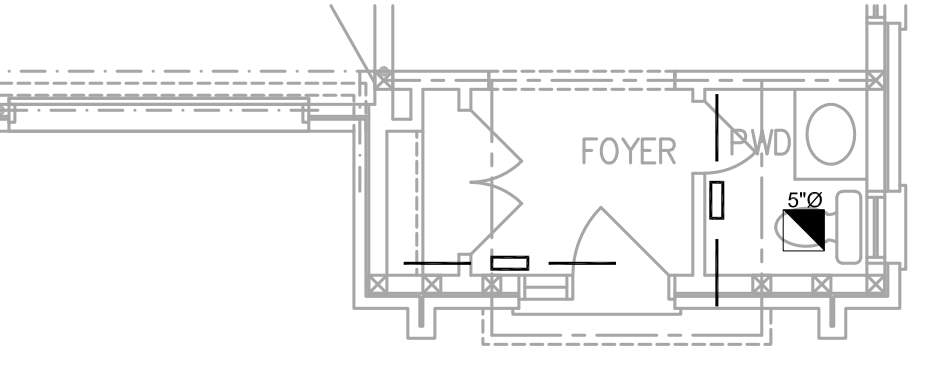
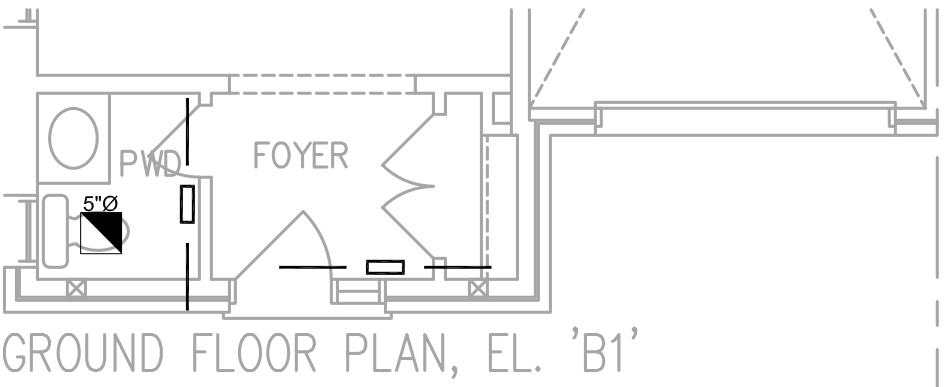
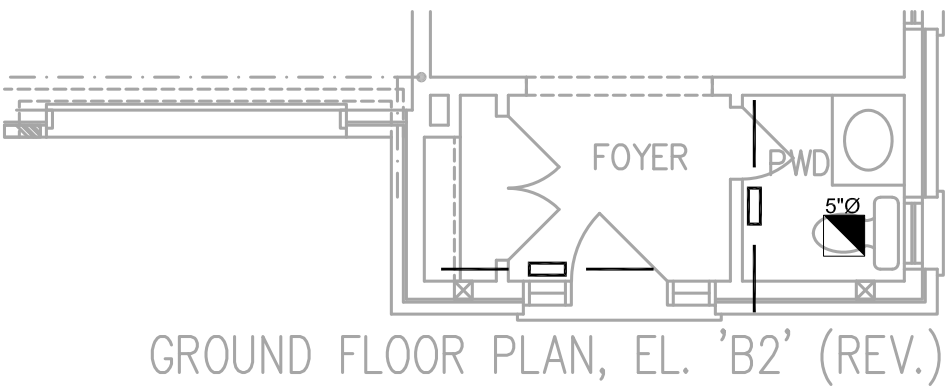
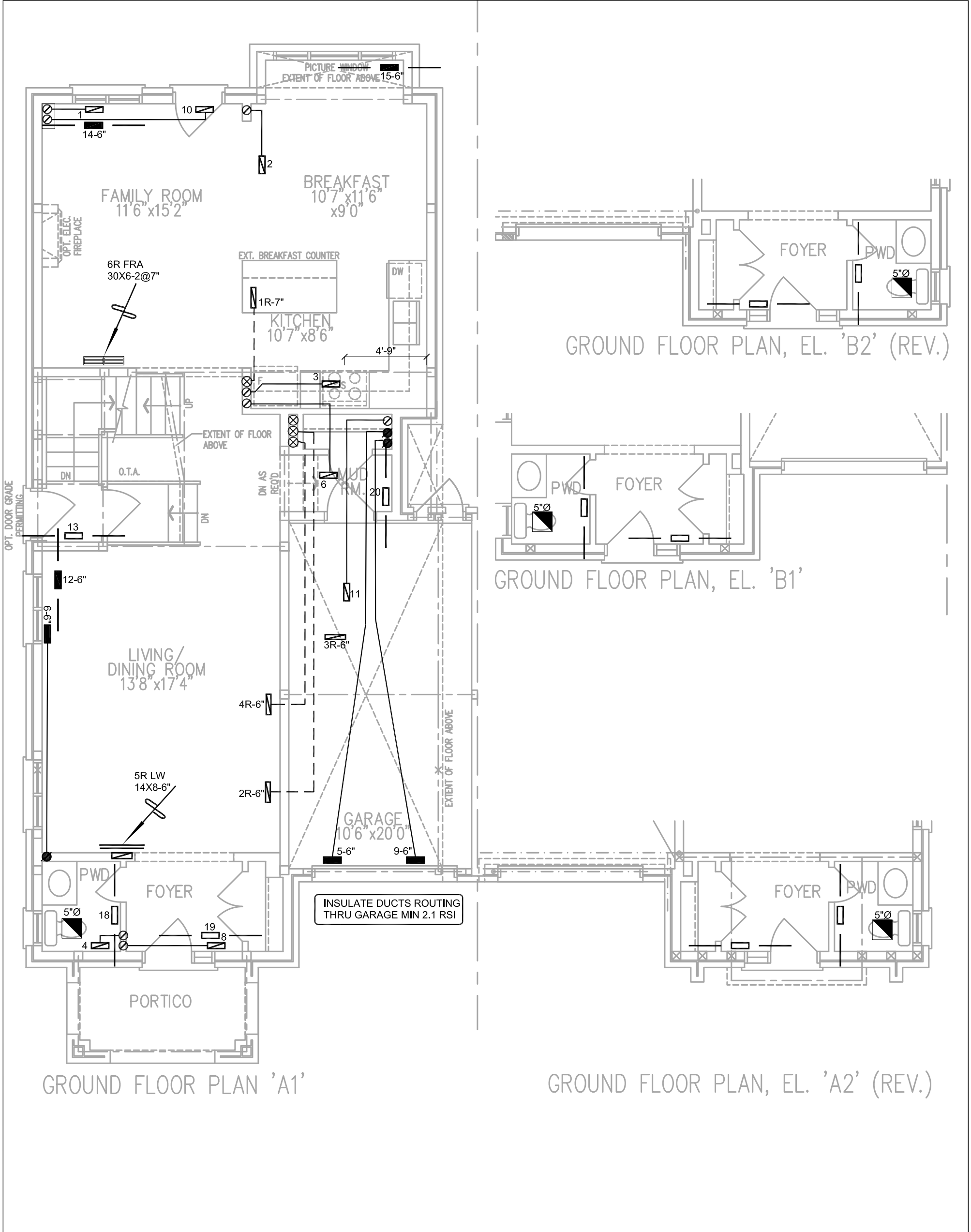


BASEMENT PLAN 'A1' & 'B1'

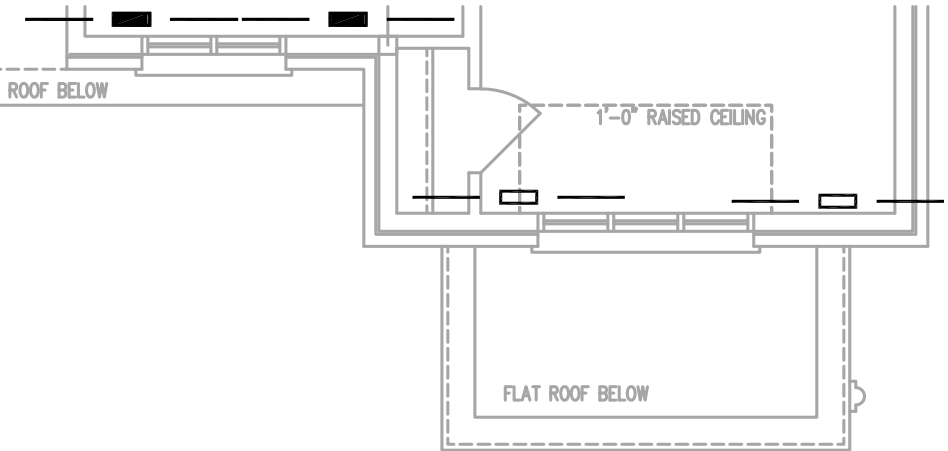
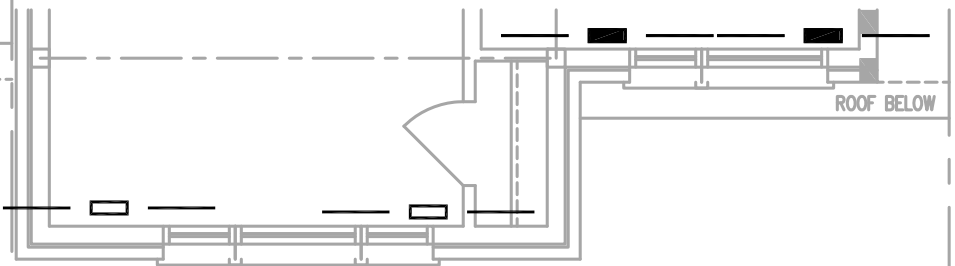
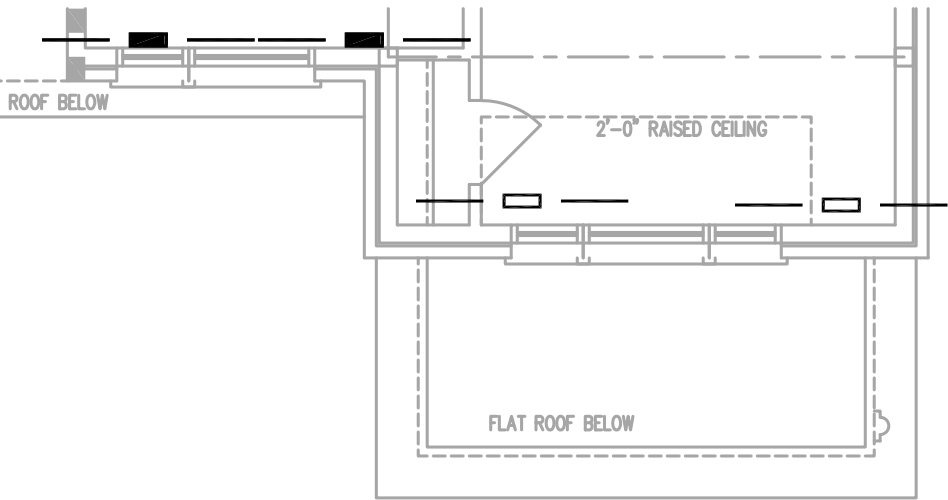
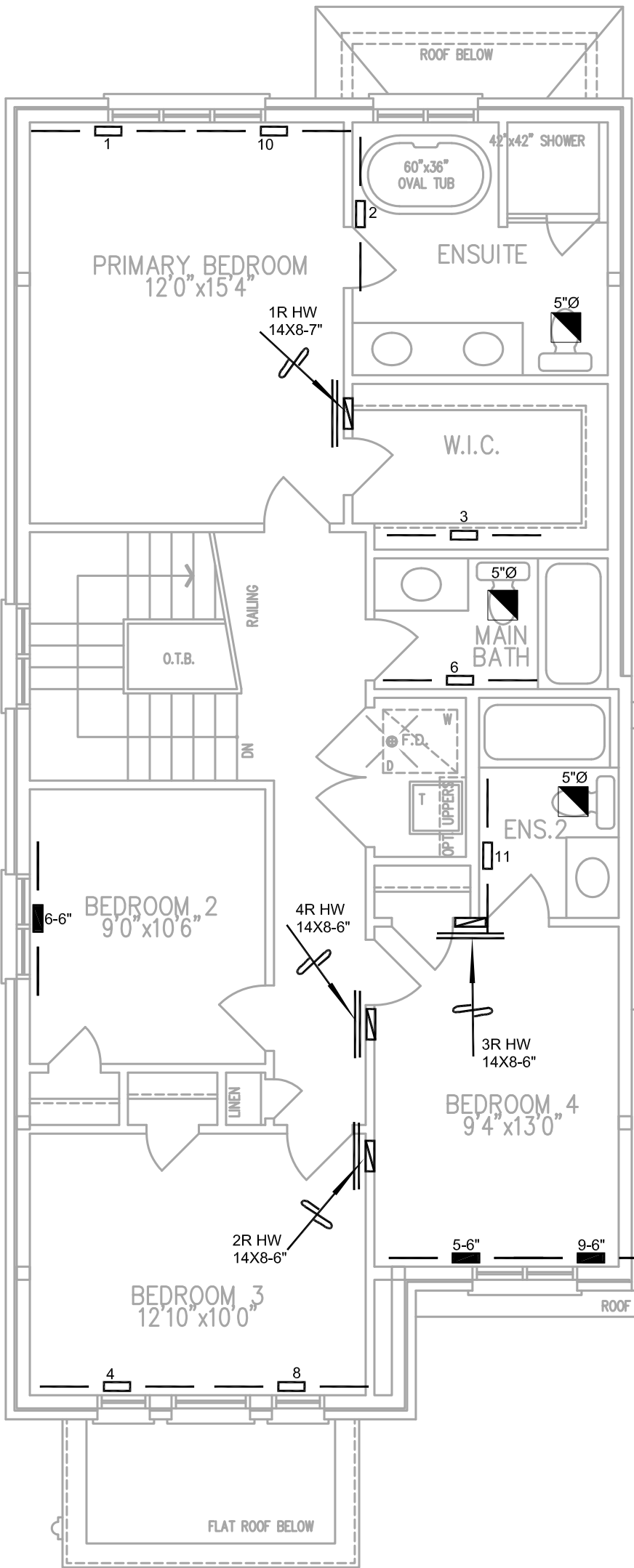


BASEMENT PLAN, EL. 'A2' & 'B2' (REV.)

| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                           | <div><br/>375 Finley Ave. Suite 202 - Ajax, Ontario<br/>L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375<br/>Email: info@hvacdesigns.ca<br/>Web: www.hvacdesigns.ca<br/>Specializing in Residential Mechanical Design Services</div>           |                                 |        |                              | HEAT LOSS 37686 BTU/H<br>UNIT DATA                                                                                                                                                                                        |                            | # OF RUNS S/A R/A FANS                                                                                                                        |             | Sheet Title |                               |             |               |  |  |  |  |
| Project Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                           |                                                                                                                                                                                                                                                         |                                 |        |                              | MAKE                                                                                                                                                                                                                      | CARRIER                    | 3RD FLOOR                                                                                                                                     |             |             | BASEMENT<br>HEATING<br>LAYOUT |             |               |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                           |                                                                                                                                                                                                                                                         |                                 |        |                              | MODEL                                                                                                                                                                                                                     | 59SC6A040M14--10           | 2ND FLOOR                                                                                                                                     | 11          | 4           |                               | 3           |               |  |  |  |  |
| SUMMER RIDGE ESTATES<br>BRAMPTON, ONTARIO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                           |                                                                                                                                                                                                                                                         |                                 |        |                              | INPUT                                                                                                                                                                                                                     | 40 MBTU/H                  | 1ST FLOOR                                                                                                                                     | 7           | 2           | 2                             | Date        | MAY/2024      |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                           |                                                                                                                                                                                                                                                         |                                 |        |                              | OUTPUT                                                                                                                                                                                                                    | 39 MBTU/H                  | BASEMENT                                                                                                                                      | 4           | 1           | 0                             | Scale       | 3/16" = 1'-0" |  |  |  |  |
| OPT 4 BED 3 BATH<br>3003 2165 sqft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                           |                                                                                                                                                                                                                                                         |                                 |        |                              | COOLING                                                                                                                                                                                                                   | 2.5 TONS                   | ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A |             |             |                               | BCIN# 19669 |               |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                           |                                                                                                                                                                                                                                                         |                                 |        |                              | FAN SPEED                                                                                                                                                                                                                 | 925 cfm @ 0.6" w.c.        |                                                                                                                                               |             |             |                               | LO# 105063  |               |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                           | 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. |                                 |        |                              |                                                                                                                                                                                                                           |                            |                                                                                                                                               |             |             |                               |             |               |  |  |  |  |



| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                           | <div></div> <div>375 Finley Ave. Suite 202 - Ajax, Ontario<br/>L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375<br/>Email: info@hvacdesigns.ca<br/>Web: www.hvacdesigns.ca<br/>Specializing in Residential Mechanical Design Services</div> <div>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.</div> |                                 |        |                              |                                                                                                                                            |                            |                                                        |             | Sheet Title                      |  |
| ROYAL PINE HOMES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                 |        |                              |                                                                                                                                            |                            |                                                        |             | FIRST FLOOR<br>HEATING<br>LAYOUT |  |
| Project Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                 |        |                              |                                                                                                                                            |                            |                                                        |             | Date MAY/2024                    |  |
| SUMMER RIDGE ESTATES<br>BRAMPTON, ONTARIO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                 |        |                              |                                                                                                                                            |                            |                                                        |             | Scale 3/16" = 1'-0"              |  |
| OPT 4 BED 3 BATH<br>3003 2165 sqft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                 |        |                              |                                                                                                                                            |                            |                                                        |             | BCIN# 19669                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                 |        |                              | LO# 105063                                                                                                                                 |                            |                                                        |             |                                  |  |



OPT. SECOND FLOOR PLAN  
W/ 4 BEDROOMS & 3 BATHS EL. 'A1'

SECOND FLOOR PLAN EL. 'A2' (REV)

| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                           | <div><br/>375 Finley Ave. Suite 202 - Ajax, Ontario<br/>L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375<br/>Email: info@hvacdesigns.ca<br/>Web: www.hvacdesigns.ca<br/>Specializing in Residential Mechanical Design Services</div> <div>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.</div> |                                 |        |                              | <div></div>                                                                                                                                |                            | Sheet Title                                                                                                                                                                     |                  |
| SECOND FLOOR HEATING LAYOUT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                 |        |                              |                                                                                                                                            |                            |                                                                                                                                                                                 |                  |
| Date MAY/2024                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                 |        |                              |                                                                                                                                            |                            |                                                                                                                                                                                 |                  |
| Project Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                           | <div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                 |        |                              | Scale 3/16" = 1'-0"                                                                                                                        |                            |                                                                                                                                                                                 |                  |
| SUMMER RIDGE ESTATES<br>BRAMPTON, ONTARIO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                 |        |                              | BCIN# 19669                                                                                                                                |                            |                                                                                                                                                                                 |                  |
| OPT 4 BED 3 BATH<br>3003                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                 |        |                              | LO# 105063                                                                                                                                 |                            |                                                                                                                                                                                 |                  |
| 2165 sqft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                 |        |                              |                                                                                                                                            |                            |                                                                                                                                                                                 |                  |