

## 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: 2004<br>FIN BSMT<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.                                                                                                                                                                                                                                                                    |                              |                                                                                      |                             |          |
| April 24, 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 |  |  |  | FIN BSMT   |  |  |  | DATE: Apr-24 |  |  |  | WINTER NATURAL AIR CHANGE RATE 0.282 |  |  |  | HEAT LOSS AT °F. 74 |  |  |  | CSA-F280-12 |  |  |  |
|---------------------------------|--|--|--|------------|--|--|--|--------------|--|--|--|--------------------------------------|--|--|--|---------------------|--|--|--|-------------|--|--|--|
| BUILDER: ROYAL PIE HOMES        |  |  |  | TYPE: 2004 |  |  |  | LO# 104859   |  |  |  | SUMMER NATURAL AIR CHANGE RATE 0.088 |  |  |  | HEAT GAIN AT °F. 11 |  |  |  | PERFORMANCE |  |  |  |
| ROOM USE                        |  |  |  | MBR        |  |  |  | ENS          |  |  |  | BED-2                                |  |  |  | BED-3               |  |  |  | BATH        |  |  |  |
| EXP. WALL                       |  |  |  | 41         |  |  |  | 20           |  |  |  | 10                                   |  |  |  | 26                  |  |  |  | 0           |  |  |  |
| CLG. HT.                        |  |  |  | 9          |  |  |  | 9            |  |  |  | 9                                    |  |  |  | 9                   |  |  |  | 9           |  |  |  |
| FACTORS                         |  |  |  |            |  |  |  |              |  |  |  |                                      |  |  |  |                     |  |  |  |             |  |  |  |
| GRS.WALL AREA                   |  |  |  | 369        |  |  |  | 180          |  |  |  | 90                                   |  |  |  | 234                 |  |  |  | 0           |  |  |  |
| GLAZING                         |  |  |  | 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       |  |  |  |
| EAST                            |  |  |  | 20.8 32.9  |  |  |  | 0 0 0        |  |  |  | 26 540 856                           |  |  |  | 35 727 1152         |  |  |  | 0 0 0       |  |  |  |
| SOUTH                           |  |  |  | 20.8 19.8  |  |  |  | 17 353 337   |  |  |  | 0 0 0                                |  |  |  | 0 0 0               |  |  |  | 0 0 0       |  |  |  |
| WEST                            |  |  |  | 20.8 32.9  |  |  |  | 30 623 987   |  |  |  | 0 0 0                                |  |  |  | 0 0 0               |  |  |  | 0 0 0       |  |  |  |
| SKYLT.                          |  |  |  | 34.1 132.1 |  |  |  | 0 0 0        |  |  |  | 0 0 0                                |  |  |  | 0 0 0               |  |  |  | 0 0 0       |  |  |  |
| DOORS                           |  |  |  | 19.6 2.9   |  |  |  | 0 0 0        |  |  |  | 0 0 0                                |  |  |  | 0 0 0               |  |  |  | 0 0 0       |  |  |  |
| NET EXPOSED WALL                |  |  |  | 3.5 0.5    |  |  |  | 322 1116 166 |  |  |  | 164 569 84                           |  |  |  | 64 222 33           |  |  |  | 199 690 102 |  |  |  |
| NET EXPOSED BSMT WALL ABOVE GR  |  |  |  | 3.5 0.5    |  |  |  | 0 0 0        |  |  |  | 0 0 0                                |  |  |  | 0 0 0               |  |  |  | 0 0 0       |  |  |  |
| EXPOSED CLG                     |  |  |  | 1.3 0.6    |  |  |  | 327 410 182  |  |  |  | 117 147 65                           |  |  |  | 198 248 110         |  |  |  | 186 233 104 |  |  |  |
| NO ATTIC EXPOSED CLG            |  |  |  | 2.7 1.2    |  |  |  | 0 0 0        |  |  |  | 0 0 0                                |  |  |  | 0 0 0               |  |  |  | 18 48 21    |  |  |  |
| EXPOSED FLOOR                   |  |  |  | 2.5 0.4    |  |  |  | 0 0 0        |  |  |  | 4 10 1                               |  |  |  | 0 0 0               |  |  |  | 0 0 0       |  |  |  |
| BASEMENT/CRAWL HEAT LOSS        |  |  |  |            |  |  |  | 0            |  |  |  | 0                                    |  |  |  | 0                   |  |  |  | 0           |  |  |  |
| SLAB ON GRADE HEAT LOSS         |  |  |  |            |  |  |  | 0            |  |  |  | 0                                    |  |  |  | 0                   |  |  |  | 0           |  |  |  |
| SUBTOTAL HT LOSS                |  |  |  |            |  |  |  | 2503         |  |  |  | 1058                                 |  |  |  | 1010                |  |  |  | 1699        |  |  |  |
| SUB TOTAL HT GAIN               |  |  |  |            |  |  |  | 1672         |  |  |  | 468                                  |  |  |  | 999                 |  |  |  | 1379        |  |  |  |
| LEVEL FACTOR / MULTIPLIER       |  |  |  | 0.20 0.32  |  |  |  | 0.20 0.32    |  |  |  | 0.20 0.32                            |  |  |  | 0.20 0.32           |  |  |  | 0.20 0.32   |  |  |  |
| AIR CHANGE HEAT LOSS            |  |  |  |            |  |  |  | 801          |  |  |  | 338                                  |  |  |  | 323                 |  |  |  | 543         |  |  |  |
| AIR CHANGE HEAT GAIN            |  |  |  |            |  |  |  | 136          |  |  |  | 38                                   |  |  |  | 81                  |  |  |  | 112         |  |  |  |
| DUCT LOSS                       |  |  |  |            |  |  |  | 0            |  |  |  | 140                                  |  |  |  | 0                   |  |  |  | 0           |  |  |  |
| DUCT GAIN                       |  |  |  |            |  |  |  | 0            |  |  |  | 51                                   |  |  |  | 0                   |  |  |  | 0           |  |  |  |
| HEAT GAIN PEOPLE                |  |  |  | 240        |  |  |  | 2            |  |  |  | 480                                  |  |  |  | 0                   |  |  |  | 0           |  |  |  |
| HEAT GAIN APPLIANCES/LIGHTS     |  |  |  |            |  |  |  | 736          |  |  |  | 0                                    |  |  |  | 1                   |  |  |  | 240         |  |  |  |
| TOTAL HT LOSS BTU/H             |  |  |  |            |  |  |  | 3303         |  |  |  | 1536                                 |  |  |  | 1333                |  |  |  | 2242        |  |  |  |
| TOTAL HT GAIN x 1.3 BTU/H       |  |  |  |            |  |  |  | 3931         |  |  |  | 724                                  |  |  |  | 2673                |  |  |  | 3208        |  |  |  |

| ROOM USE                       |      |       | DIN       |      |      | G/K       |      |      | LAND      |      |      | LND       |      |      | W/R       |      |      | FOY       |      |      | LD/MD     |      |      | REC       |    |     | BAS  |      |  |
|--------------------------------|------|-------|-----------|------|------|-----------|------|------|-----------|------|------|-----------|------|------|-----------|------|------|-----------|------|------|-----------|------|------|-----------|----|-----|------|------|--|
| EXP. WALL                      |      |       | 12        |      |      | 24        |      |      | 16        |      |      | 0         |      |      | 6         |      |      | 20        |      |      | 20        |      |      | 43        |    |     | 56   |      |  |
| CLG. HT.                       |      |       | 10        |      |      | 10        |      |      | 10        |      |      | 9         |      |      | 10        |      |      | 10        |      |      | 10        |      |      | 9         |    |     | 9    |      |  |
| FACTORS                        |      |       |           |      |      |           |      |      |           |      |      |           |      |      |           |      |      |           |      |      |           |      |      |           |    |     |      |      |  |
| GRS.WALL AREA                  |      |       | 120       |      |      | 240       |      |      | 160       |      |      | 0         |      |      | 60        |      |      | 200       |      |      | 200       |      |      | 258       |    |     | 336  |      |  |
| GLAZING                        |      |       | LOSS GAIN |      |      | 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    | 0         | 0    | 0    | 0         | 0  | 0   | 0    |      |  |
| EAST                           | 20.8 | 32.9  | 37        | 769  | 1218 | 0         | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    | 0         | 5    | 104  | 165       | 0    | 0    | 0         | 0    | 0    | 0         | 0  | 0   | 0    |      |  |
| SOUTH                          | 20.8 | 19.8  | 0         | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 8    | 166       | 159  | 0    | 0         | 0    | 0    | 0         | 0    | 0    | 0         | 0  | 0   | 0    |      |  |
| WEST                           | 20.8 | 32.9  | 0         | 0    | 0    | 33        | 686  | 1086 | 0         | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    | 0         | 0  | 10  | 208  | 329  |  |
| SKYLT.                         | 34.1 | 132.1 | 0         | 0    | 0    | 0         | 0    | 0    | 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    | 0         | 0    | 0    | 0         | 0    | 0    | 0         | 36   | 705  | 104       | 60   | 1175 | 174       | 0    | 0    | 0         | 0  | 20  | 392  | 58   |  |
| NET EXPOSED WALL               | 3.5  | 0.5   | 83        | 288  | 43   | 207       | 718  | 106  | 160       | 555  | 82   | 0         | 0    | 0    | 52        | 180  | 27   | 159       | 551  | 82   | 140       | 485  | 72   | 0         | 0  | 0   | 0    | 0    |  |
| NET EXPOSED BSMT WALL ABOVE GR | 3.5  | 0.5   | 0         | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 129  | 453       | 67 | 168 | 590  | 88   |  |
| EXPOSED CLG                    | 1.3  | 0.6   | 0         | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    | 55        | 69   | 31   | 0         | 0    | 0    | 0         | 0    | 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    | 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    | 0         | 0    | 0    | 0         | 0  | 0   | 0    | 0    |  |
| BASEMENT/CRAWL HEAT LOSS       |      |       |           |      | 0    |           |      | 0    |           |      | 0    |           |      | 0    |           |      | 0    |           |      |      |           | 1470 |      |           |    |     | 1296 |      |  |
| SLAB ON GRADE HEAT LOSS        |      |       |           |      | 0    |           |      | 0    |           |      | 0    |           |      | 0    |           |      | 0    |           |      |      |           | 0    |      |           |    |     |      |      |  |
| SUBTOTAL HT LOSS               |      |       |           | 1056 |      |           | 1403 |      |           | 555  |      |           | 69   |      | 347       |      | 1360 |           | 1660 |      | 1923      |      |      |           |    |     | 2485 |      |  |
| SUB TOTAL HT GAIN              |      |       |           |      | 1260 |           |      | 1192 |           |      | 82   |           | 31   |      | 185       |      | 351  |           | 246  |      | 67        |      |      |           |    |     | 475  |      |  |
| LEVEL FACTOR / MULTIPLIER      |      |       | 0.30      | 0.48 |      |           | 0.30 | 0.48 |           | 0.30 | 0.48 |           | 0.20 | 0.32 |           | 0.30 | 0.48 |           | 0.30 | 0.48 |           | 0.50 | 0.93 |           |    |     | 0.50 | 0.93 |  |
| AIR CHANGE HEAT LOSS           |      |       |           | 512  |      |           | 680  |      |           | 269  |      |           | 22   |      | 168       |      | 659  |           | 804  |      | 1796      |      |      |           |    |     | 2321 |      |  |
| AIR CHANGE HEAT GAIN           |      |       |           |      | 102  |           |      | 97   |           |      | 7    |           | 2    |      | 15        |      | 28   |           | 20   |      | 5         |      |      |           |    |     | 39   |      |  |
| DUCT LOSS                      |      |       |           | 0    |      |           | 0    |      |           | 0    |      |           | 0    |      | 0         |      | 0    |           | 0    |      | 0         |      |      |           |    |     | 0    |      |  |
| DUCT GAIN                      |      |       |           | 0    |      |           | 0    |      |           | 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    | 0    | 0         |      |      |           |    | 0   | 0    |      |  |
| HEAT GAIN APPLIANCES/LIGHTS    |      |       |           | 736  |      |           | 736  |      |           | 0    |      |           | 736  |      | 0         |      | 0    |           | 736  |      | 736       |      |      |           |    |     | 736  |      |  |
| TOTAL HT LOSS BTU/H            |      |       |           | 1568 |      |           | 2083 |      |           | 823  |      |           | 91   |      | 514       |      | 2019 |           | 2464 |      | 3719      |      |      |           |    |     | 4806 |      |  |
| TOTAL HT GAIN x 1.3 BTU/H      |      |       |           | 2728 |      |           | 2633 |      |           | 116  |      |           | 1000 |      | 261       |      | 493  |           | 1303 |      | 1051      |      |      |           |    |     | 1624 |      |  |

SITE NAME: SUMMER RIDGE ESTATES  
BUILDER: ROYAL PIE HOMES

FIN BSMT  
TYPE: 2004

DATE: Apr-24

GFA: 1949 LO# 104859

HEATING CFM 770 COOLING CFM 770  
TOTAL HEAT LOSS 28,779 TOTAL HEAT GAIN 23,560  
AIR FLOW RATE CFM 26.76 AIR FLOW RATE CFM 32.68

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   | 9   | 6   | 6   |
| R/A       | 0   | 0   | 4   | 2   | 2   |

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

FAN SPEED 40  
LOW 0  
MEDLOW 545  
MEDIUM 770  
MEDIUM HIGH 925  
HIGH 0

DESIGN CFM = 770  
CFM @ .6" E.S.P.

TEMPERATURE RISE 47 °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    | 10   | 13   | 15   | 16   | 17   | 18   | 19   | 21   | 22    | 23    | 24    |
|---------------------------|------|------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
| ROOM NAME                 | MBR  | ENS  | BED-2 | BED-2 | BED-3 | BED-3 | BATH | MBR  | DIN  | G/K  | LAND | LND  | W/R  | FOY  | REC  | B-BTH | B-BED | LD/MD |
| RM LOSS MBH.              | 1.65 | 1.54 | 0.67  | 0.67  | 1.12  | 1.12  | 0.13 | 1.65 | 1.57 | 2.08 | 0.82 | 0.09 | 0.51 | 2.02 | 1.86 | 0.46  | 1.69  | 2.46  |
| CFM PER RUN HEAT          | 44   | 41   | 18    | 18    | 30    | 30    | 4    | 44   | 42   | 56   | 22   | 2    | 14   | 54   | 50   | 12    | 45    | 66    |
| RM GAIN MBH.              | 1.97 | 0.72 | 1.34  | 1.34  | 1.60  | 1.60  | 0.06 | 1.97 | 2.73 | 2.63 | 0.12 | 1.00 | 0.26 | 0.49 | 0.53 | 0.00  | 1.75  | 1.30  |
| CFM PER RUN COOLING       | 64   | 24   | 44    | 44    | 52    | 52    | 2    | 64   | 89   | 86   | 4    | 33   | 9    | 16   | 17   | 0     | 57    | 43    |
| ADJUSTED PRESSURE         | 0.17 | 0.17 | 0.17  | 0.17  | 0.17  | 0.17  | 0.17 | 0.17 | 0.16 | 0.16 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17  | 0.17  | 0.17  |
| ACTUAL DUCT LGH.          | 62   | 75   | 46    | 29    | 23    | 19    | 27   | 68   | 28   | 47   | 32   | 62   | 37   | 13   | 55   | 22    | 25    | 56    |
| EQUIVALENT LENGTH         | 190  | 210  | 210   | 170   | 180   | 200   | 160  | 200  | 140  | 140  | 130  | 150  | 120  | 130  | 200  | 130   | 150   | 150   |
| TOTAL EFFECTIVE LENGTH    | 252  | 285  | 256   | 199   | 203   | 219   | 187  | 268  | 168  | 187  | 162  | 212  | 157  | 143  | 255  | 152   | 175   | 206   |
| ADJUSTED PRESSURE         | 0.07 | 0.06 | 0.07  | 0.08  | 0.08  | 0.08  | 0.09 | 0.06 | 0.09 | 0.08 | 0.1  | 0.08 | 0.11 | 0.12 | 0.07 | 0.11  | 0.1   | 0.08  |
| ROUND DUCT SIZE           | 6    | 5    | 5     | 5     | 5     | 5     | 4    | 6    | 6    | 6    | 4    | 4    | 4    | 5    | 5    | 4     | 5     | 5     |
| HEATING VELOCITY (ft/min) | 224  | 301  | 132   | 132   | 220   | 220   | 46   | 224  | 214  | 286  | 252  | 23   | 161  | 396  | 367  | 138   | 330   | 485   |
| COOLING VELOCITY (ft/min) | 326  | 176  | 323   | 323   | 382   | 382   | 23   | 326  | 454  | 438  | 46   | 379  | 103  | 117  | 125  | 0     | 419   | 316   |
| OUTLET GRILL SIZE         | 4X10 | 3X10 | 3X10  | 3X10  | 3X10  | 3X10  | 3X10 | 4X10 | 4X10 | 4X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10  | 3X10  | 3X10  |
| TRUNK                     | A    | A    | B     | C     | C     | C     | B    | A    | C    | A    | B    | B    | B    | C    | A    | B     | C     | A     |

| RUN #                     | 25   | 26   | 27   |
|---------------------------|------|------|------|
| ROOM NAME                 | BAS  | BAS  | REC  |
| RM LOSS MBH.              | 2.40 | 2.40 | 1.86 |
| CFM PER RUN HEAT          | 64   | 64   | 50   |
| RM GAIN MBH.              | 0.81 | 0.81 | 0.53 |
| CFM PER RUN COOLING       | 27   | 27   | 17   |
| ADJUSTED PRESSURE         | 0.17 | 0.17 | 0.17 |
| ACTUAL DUCT LGH.          | 49   | 9    | 24   |
| EQUIVALENT LENGTH         | 150  | 120  | 120  |
| TOTAL EFFECTIVE LENGTH    | 199  | 129  | 144  |
| ADJUSTED PRESSURE         | 0.08 | 0.13 | 0.12 |
| ROUND DUCT SIZE           | 5    | 5    | 4    |
| HEATING VELOCITY (ft/min) | 470  | 470  | 574  |
| COOLING VELOCITY (ft/min) | 198  | 198  | 195  |
| OUTLET GRILL SIZE         | 3X10 | 3X10 | 3X10 |
| TRUNK                     | A    | C    | C    |

**SUPPLY AIR TRUNK SIZE**

|         | TRUNK | STATIC | ROUND | RECT |   |   | VELOCITY |         | TRUNK | STATIC | ROUND | RECT |   |   | VELOCITY |
|---------|-------|--------|-------|------|---|---|----------|---------|-------|--------|-------|------|---|---|----------|
|         | CFM   | PRESS. | DUCT  | DUCT |   |   | (ft/min) |         | CFM   | PRESS. | DUCT  | DUCT |   |   | (ft/min) |
| TRUNK A | 365   | 0.06   | 10.3  | 12   | x | 8 | 548      | TRUNK G | 0     | 0.00   | 0     | 0    | x | 8 | 0        |
| TRUNK B | 437   | 0.06   | 11.1  | 16   | x | 8 | 492      | TRUNK H | 0     | 0.00   | 0     | 0    | x | 8 | 0        |
| TRUNK C | 770   | 0.06   | 13.7  | 22   | x | 8 | 630      | TRUNK I | 0     | 0.00   | 0     | 0    | x | 8 | 0        |
| TRUNK D | 0     | 0.00   | 0     | 0    | x | 8 | 0        | TRUNK J | 0     | 0.00   | 0     | 0    | x | 8 | 0        |
| TRUNK E | 0     | 0.00   | 0     | 0    | x | 8 | 0        | TRUNK K | 0     | 0.00   | 0     | 0    | x | 8 | 0        |
| TRUNK F | 0     | 0.00   | 0     | 0    | x | 8 | 0        | TRUNK L | 0     | 0.00   | 0     | 0    | x | 8 | 0        |

**RETURN AIR TRUNK SIZE**

| TYPE    | TRUNK | STATIC | ROUND | RECT | VELOCITY |          |     |
|---------|-------|--------|-------|------|----------|----------|-----|
|         | CFM   | PRESS. | DUCT  | DUCT |          | (ft/min) |     |
| TRUNK O | 0     | 0.05   | 0     | 0    | x        | 8        | 0   |
| TRUNK P | 0     | 0.05   | 0     | 0    | x        | 8        | 0   |
| TRUNK Q | 0     | 0.05   | 0     | 0    | x        | 8        | 0   |
| TRUNK R | 0     | 0.05   | 0     | 0    | x        | 8        | 0   |
| TRUNK S | 0     | 0.05   | 0     | 0    | x        | 8        | 0   |
| TRUNK T | 0     | 0.05   | 0     | 0    | x        | 8        | 0   |
| TRUNK U | 0     | 0.05   | 0     | 0    | x        | 8        | 0   |
| TRUNK V | 0     | 0.05   | 0     | 0    | x        | 8        | 0   |
| TRUNK W | 0     | 0.05   | 0     | 0    | x        | 8        | 0   |
| TRUNK X | 770   | 0.05   | 14.3  | 24   | x        | 8        | 578 |
| TRUNK Y | 390   | 0.05   | 11.1  | 14   | x        | 8        | 501 |
| TRUNK Z | 0     | 0.05   | 0     | 0    | x        | 8        | 0   |
| DROP    | 770   | 0.05   | 14.3  | 24   | x        | 10       | 462 |

| RETURN AIR #       | 1    | 2    | 3    | 4    | 5    | 6    | 7    |       |       |       |       |       |       |       |      | BR |
|--------------------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|------|----|
| FLOOR              | 2    | 2    | 2    | 2    | 1    | 1    | B    |       |       |       |       |       |       |       |      | B  |
| AIR VOLUME         | 75   | 95   | 95   | 85   | 145  | 140  | 55   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 80   |    |
| 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 |    |
| ACTUAL DUCT LGH.   | 75   | 40   | 43   | 61   | 26   | 52   | 30   | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 38   |    |
| EQUIVALENT LENGTH  | 215  | 175  | 215  | 175  | 200  | 200  | 155  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 195  |    |
| TOTAL EFFECTIVE LH | 290  | 215  | 258  | 236  | 226  | 252  | 185  | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 233  |    |
| ADJUSTED PRESSURE  | 0.05 | 0.07 | 0.06 | 0.06 | 0.06 | 0.06 | 0.08 | 14.32 | 14.32 | 14.32 | 14.32 | 14.32 | 14.32 | 14.32 | 0.06 |    |
| ROUND DUCT SIZE    | 6    | 6    | 6    | 6    | 7.3  | 7    | 4.7  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 5.9  |    |
| INLET GRILL SIZE   | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 8    |    |
|                    | X    | X    | X    | X    | X    | X    | X    | X     | X     | X     | X     | X     | X     | X     | X    |    |
| INLET GRILL SIZE   | 14   | 14   | 14   | 14   | 14   | 14   | 14   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 14   |    |

TYPE: 2004  
SITE NAME: SUMMER RIDGE ESTATES

LO # 104859  
FIN BSMT

**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>1</u> @ 21.2 cfm | <u>21.2</u> cfm  |
| Other Bedrooms             | <u>3</u> @ 10.6 cfm | <u>31.8</u> cfm  |
| Kitchen & Bathrooms        | <u>5</u> @ 10.6 cfm | <u>53</u> cfm    |
| Other Rooms                | <u>5</u> @ 10.6 cfm | <u>53.0</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                                 | Sones |
| ENS               | BY INSTALLING CONTRACTOR | 50                       | <input checked="" type="checkbox"/> | 3.5   |
| BATH              | BY INSTALLING CONTRACTOR | 50                       | <input checked="" type="checkbox"/> | 3.5   |
| W/R               | BY INSTALLING CONTRACTOR | 50                       | <input checked="" type="checkbox"/> | 3.5   |

| 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:                                                                                                         | April-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#: 104859                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   | Model: 2004                                         |                                                                                                                                        | Builder: ROYAL PIE HOMES                                  |                                         |              |                   |                                                     |                                                     |                                                           |       |     |        |       |        |     |     |       |       |   |     |       |        |   |   |   |        |   |   |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   |                                                     |                                                                                                                                        | Date: 2024-04-24                                          |                                         |              |                   |                                                     |                                                     |                                                           |       |     |        |       |        |     |     |       |       |   |     |       |        |   |   |   |        |   |   |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| <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;"> <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>981</td> <td>9</td> <td>8829</td> </tr> <tr> <td>First</td> <td>981</td> <td>10</td> <td>9810</td> </tr> <tr> <td>Second</td> <td>982</td> <td>9</td> <td>8838</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="2" style="text-align: right;">Total:</td> <td></td> <td>27,477.0 ft³</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>778.1 m³</td> </tr> </tbody> </table>                                                                                                                               |                   |                                                     | Level                                                                                                                                  | Floor Area (ft²)                                          | Floor Height (ft)                       | Volume (ft³) | Bsmt              | 981                                                 | 9                                                   | 8829                                                      | First | 981 | 10     | 9810  | Second | 982 | 9   | 8838  | Third | 0 | 9   | 0     | Fourth | 0 | 9 | 0 | Total: |   |   | 27,477.0 ft³ | Total: |  |  | 778.1 m³ | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 20%;">0.282</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.088</td> </tr> </table><br><table border="1" style="width: 100%; border-collapse: collapse;"> <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>22</td> <td>-19</td> <td>41</td> <td>74</td> </tr> <tr> <td>Summer DTDc</td> <td>24</td> <td>30</td> <td>6</td> <td>11</td> </tr> </table> |  |  | WINTER NATURAL AIR CHANGE RATE | 0.282 | SUMMER NATURAL AIR CHANGE RATE | 0.088 | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 981               | 9                                                   | 8829                                                                                                                                   |                                                           |                                         |              |                   |                                                     |                                                     |                                                           |       |     |        |       |        |     |     |       |       |   |     |       |        |   |   |   |        |   |   |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| First                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 981               | 10                                                  | 9810                                                                                                                                   |                                                           |                                         |              |                   |                                                     |                                                     |                                                           |       |     |        |       |        |     |     |       |       |   |     |       |        |   |   |   |        |   |   |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 982               | 9                                                   | 8838                                                                                                                                   |                                                           |                                         |              |                   |                                                     |                                                     |                                                           |       |     |        |       |        |     |     |       |       |   |     |       |        |   |   |   |        |   |   |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Third                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0                 | 9                                                   | 0                                                                                                                                      |                                                           |                                         |              |                   |                                                     |                                                     |                                                           |       |     |        |       |        |     |     |       |       |   |     |       |        |   |   |   |        |   |   |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Fourth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0                 | 9                                                   | 0                                                                                                                                      |                                                           |                                         |              |                   |                                                     |                                                     |                                                           |       |     |        |       |        |     |     |       |       |   |     |       |        |   |   |   |        |   |   |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Total:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |                                                     | 27,477.0 ft³                                                                                                                           |                                                           |                                         |              |                   |                                                     |                                                     |                                                           |       |     |        |       |        |     |     |       |       |   |     |       |        |   |   |   |        |   |   |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Total:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |                                                     | 778.1 m³                                                                                                                               |                                                           |                                         |              |                   |                                                     |                                                     |                                                           |       |     |        |       |        |     |     |       |       |   |     |       |        |   |   |   |        |   |   |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| WINTER NATURAL AIR CHANGE RATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.282             |                                                     |                                                                                                                                        |                                                           |                                         |              |                   |                                                     |                                                     |                                                           |       |     |        |       |        |     |     |       |       |   |     |       |        |   |   |   |        |   |   |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| SUMMER NATURAL AIR CHANGE RATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.088             |                                                     |                                                                                                                                        |                                                           |                                         |              |                   |                                                     |                                                     |                                                           |       |     |        |       |        |     |     |       |       |   |     |       |        |   |   |   |        |   |   |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 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>0.282 x 216.13 x 41 °C x 1.2 = 3019 W</p> <p>= 10302 Btu/h</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                   |                                                     | $HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ <p>= 0.088 x 216.13 x 6 °C x 1.2 = 140 W</p> <p>= 478 Btu/h</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 = 1593 Btu/h</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 = 236 Btu/h</p>                             |                                                           |                                         |              |                   |                                                     |                                                     |                                                           |       |     |        |       |        |     |     |       |       |   |     |       |        |   |   |   |        |   |   |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| <b>5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   |                                                     |                                                                                                                                        |                                                           |                                         |              |                   |                                                     |                                                     |                                                           |       |     |        |       |        |     |     |       |       |   |     |       |        |   |   |   |        |   |   |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| $HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HLairve Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HL<sub>clevel</sub>)</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.5</td> <td rowspan="5" style="text-align: center; vertical-align: middle;">10,302</td> <td>5,517</td> <td>0.934</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>6,381</td> <td>0.484</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>6,439</td> <td>0.320</td> </tr> <tr> <td>4</td> <td>0</td> <td>0</td> <td>0.000</td> </tr> <tr> <td>5</td> <td>0</td> <td>0</td> <td>0.000</td> </tr> </tbody> </table> |                   |                                                     |                                                                                                                                        |                                                           |                                         | 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 | 10,302 | 5,517 | 0.934  | 2   | 0.3 | 6,381 | 0.484 | 3 | 0.2 | 6,439 | 0.320  | 4 | 0 | 0 | 0.000  | 5 | 0 | 0            | 0.000  |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 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               | 10,302                                              | 5,517                                                                                                                                  | 0.934                                                     |                                         |              |                   |                                                     |                                                     |                                                           |       |     |        |       |        |     |     |       |       |   |     |       |        |   |   |   |        |   |   |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.3               |                                                     | 6,381                                                                                                                                  | 0.484                                                     |                                         |              |                   |                                                     |                                                     |                                                           |       |     |        |       |        |     |     |       |       |   |     |       |        |   |   |   |        |   |   |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.2               |                                                     | 6,439                                                                                                                                  | 0.320                                                     |                                         |              |                   |                                                     |                                                     |                                                           |       |     |        |       |        |     |     |       |       |   |     |       |        |   |   |   |        |   |   |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                   |                                                     |                                                                                                                                        |                                                           | <p>Michael O'Rourke<br/>BCIN# 19669</p> |              |                   |                                                     |                                                     |                                                           |       |     |        |       |        |     |     |       |       |   |     |       |        |   |   |   |        |   |   |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |

**HEAT LOSS AND GAIN SUMMARY SHEET**

|                    |                   |                                   |
|--------------------|-------------------|-----------------------------------|
| <b>MODEL:</b> 2004 | <b>FIN BSMT</b>   | <b>BUILDER:</b> ROYAL PIE HOMES   |
| <b>SFQT:</b> 1949  | <b>LO#</b> 104859 | <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> ):                 | 27477.0         | ASSUMED (Y/N):            | Y        |
| INTERNAL SHADING:                                | BLINDS/CURTAINS | ASSUMED OCCUPANTS:        | 5        |
| INTERIOR LIGHTING LOAD (Btu/h/ft <sup>2</sup> ): | 2.50            | DC BRUSHLESS MOTOR (Y/N): | Y        |
| FOUNDATION CONFIGURATION                         | BCIN_1          | DEPTH BELOW GRADE:        | 6.0 ft   |
| LENGTH: 54.0 ft                                  | WIDTH: 21.0 ft  | EXPOSED PERIMETER:        | 109.0 ft |

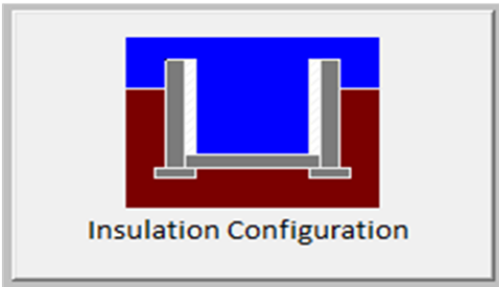
| 2012 OBC - COMPLIANCE PACKAGE                                              |  | Compliance Package PERFORMANCE |           |
|----------------------------------------------------------------------------|--|--------------------------------|-----------|
| Component                                                                  |  | 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):              | 16.5                                      | <br>Insulation Configuration |
| Floor Width (m):               | 6.4                                       |                                                                                                                 |
| Exposed Perimeter (m):         | 33.2                                      |                                                                                                                 |
| Wall Height (m):               | 2.7                                       |                                                                                                                 |
| Depth Below Grade (m):         | 1.83                                      |                                                                                                                 |
| Window Area (m <sup>2</sup> ): | 1.9                                       |                                                                                                                 |
| 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):          |                                           | 1043                                                                                                            |

TYPE: 2004  
LO# 104859

FIN BSMT

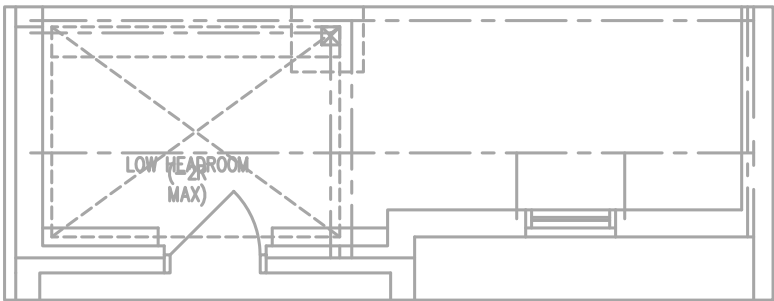
# Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

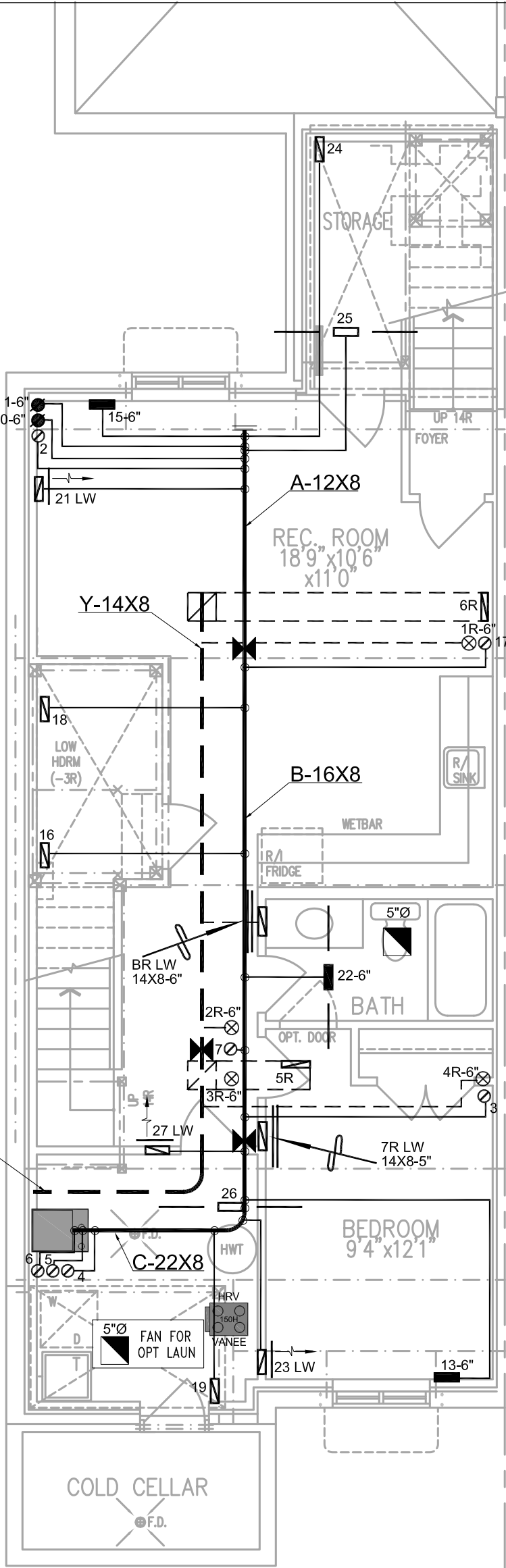
| Weather Station Description       |                          |                       |    |    |
|-----------------------------------|--------------------------|-----------------------|----|----|
| Province:                         | Ontario                  |                       |    |    |
| Region:                           | Brampton                 |                       |    |    |
| Weather Station Location:         | Open flat terrain, grass |                       |    |    |
| Anemometer height (m):            | 10                       |                       |    |    |
| Local Shielding                   |                          |                       |    |    |
| Building Site:                    | Suburban, forest         |                       |    |    |
| Walls:                            | Heavy                    |                       |    |    |
| Flue:                             | Heavy                    |                       |    |    |
| Highest Ceiling Height (m):       | 6.71                     |                       |    |    |
| Building Configuration            |                          |                       |    |    |
| Type:                             | Semi                     |                       |    |    |
| Number of Stories:                | Two                      |                       |    |    |
| Foundation:                       | Full                     |                       |    |    |
| House Volume (m <sup>3</sup> ):   | 778.1                    |                       |    |    |
| Air Leakage/Ventilation           |                          |                       |    |    |
| Air Tightness Type:               | Attached (3.0 ACH)       |                       |    |    |
| Custom BDT Data:                  | ELA @ 10 Pa.             | 871.6 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): | 0.282                    |                       |    |    |
| Cooling Air Leakage Rate (ACH/H): | 0.088                    |                       |    |    |

TYPE: 2004  
LO# 104859

FIN BSMT

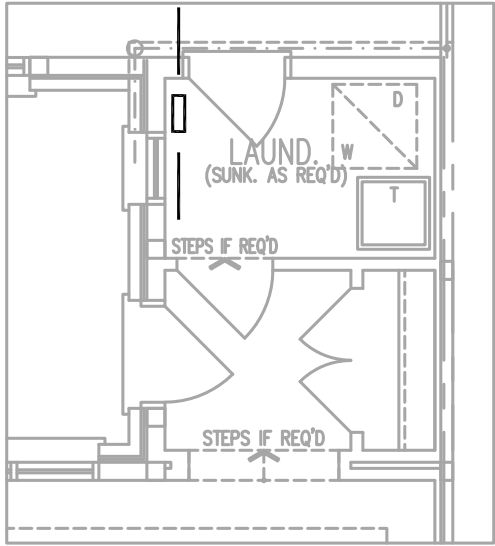


PART. BASEMENT  
PLAN, ELEV. 'B'

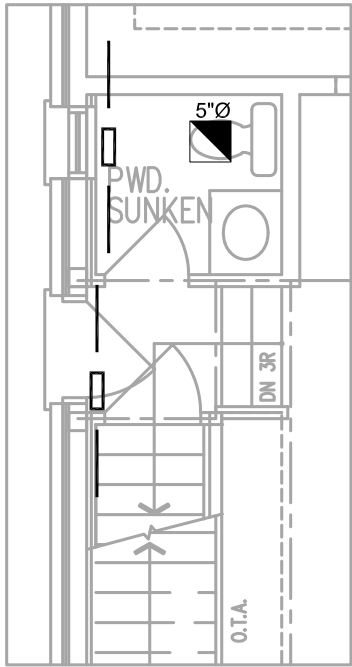


OPT. FINISHED  
BASEMENT PLAN,  
ELEV. 'A'

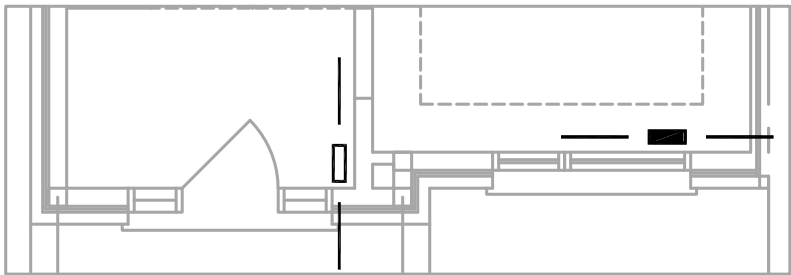
| HVAC LEGEND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                           |                                                                                                                                                                                                                                                      |                                 |        |                              |                                                                                                                                            |                            | 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> |                                 |        |                              | HEAT LOSS 30372 BTU/H<br>UNIT DATA                                                                                                         |                            | # OF RUNS S/A R/A FANS                                                                                                                                                                                                                                  |             | Sheet Title |   |      |                               |                     |
| ROYAL PINE HOMES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                                                                                                                                                                                                                                                      |                                 |        |                              | MAKE CARRIER                                                                                                                               |                            | 3RD FLOOR                                                                                                                                                                                                                                               |             |             |   |      | BASEMENT<br>HEATING<br>LAYOUT |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                           |                                                                                                                                                                                                                                                      |                                 |        |                              | MODEL 59SC6A040M14--10                                                                                                                     |                            | 2ND FLOOR                                                                                                                                                                                                                                               |             | 9           | 4 | 3    |                               |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                           |                                                                                                                                                                                                                                                      |                                 |        |                              | INPUT 40 MBTU/H                                                                                                                            |                            | 1ST FLOOR                                                                                                                                                                                                                                               |             | 6           | 2 | 2    |                               |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                           |                                                                                                                                                                                                                                                      |                                 |        |                              | OUTPUT 39 MBTU/H                                                                                                                           |                            | BASEMENT                                                                                                                                                                                                                                                |             | 5           | 2 | 1(2) | Date APR/2024                 |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                           |                                                                                                                                                                                                                                                      |                                 |        |                              | COOLING 2.0 TONS                                                                                                                           |                            | ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A                                                                                                           |             |             |   |      |                               | Scale 3/16" = 1'-0" |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                           |                                                                                                                                                                                                                                                      |                                 |        |                              | FAN SPEED 770 cfm @ 0.6" w.c.                                                                                                              |                            | BCIN# 19669                                                                                                                                                                                                                                             |             |             |   |      |                               | LO# 104859          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                           |                                                                                                                                                                                                                                                      |                                 |        |                              |                                                                                                                                            |                            |                                                                                                                                                                                                                                                         |             |             |   |      |                               |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                           |                                                                                                                                                                                                                                                      |                                 |        |                              | Project Name                                                                                                                               |                            | 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. |             |             |   |      |                               |                     |
| SUMMER RIDGE ESTATES<br>BRAMPTON, ONTARIO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                           |                                                                                                                                                                                                                                                      |                                 |        |                              |                                                                                                                                            |                            |                                                                                                                                                                                                                                                         |             |             |   |      |                               |                     |
| 2004 - FIN BSMT 1949 sqft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                           |                                                                                                                                                                                                                                                      |                                 |        |                              |                                                                                                                                            |                            |                                                                                                                                                                                                                                                         |             |             |   |      |                               |                     |



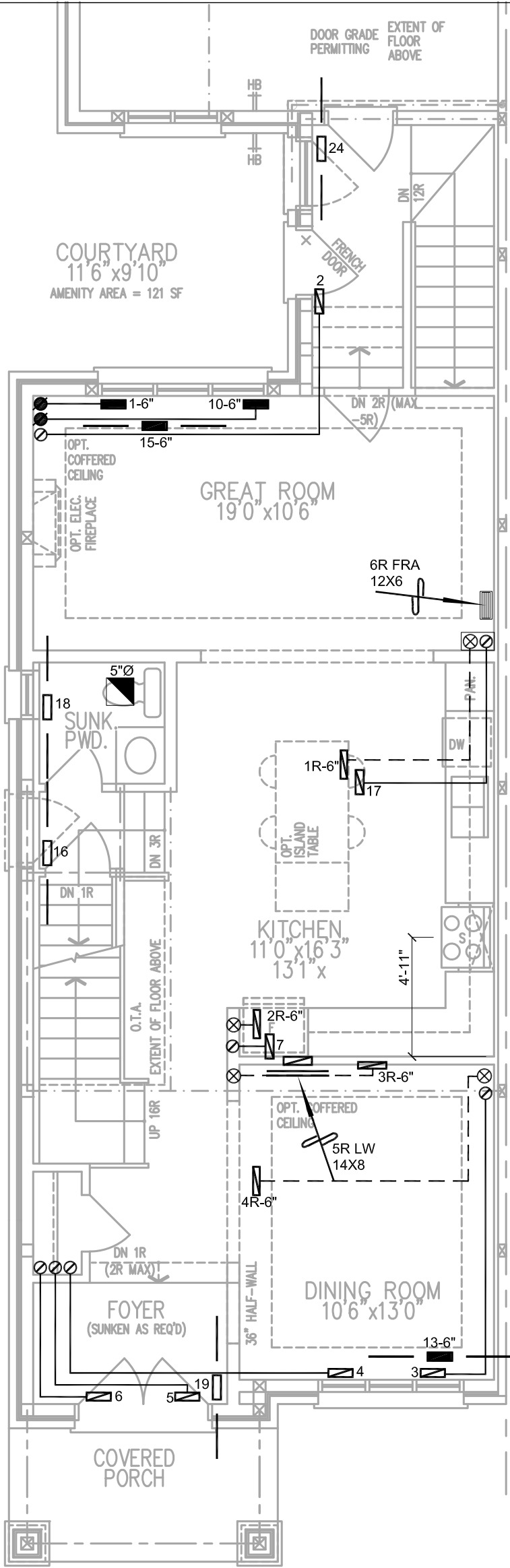
PART. GROUND FLOOR PLAN  
W/ OPT. LAUNDRY, ELEV. 'A'  
(ELEV. 'B' SIMILAR)



PART. GROUND FLOOR PLAN  
W/ OPT. DOOR, ELEV. 'A'  
(ELEV. 'B' SIMILAR)

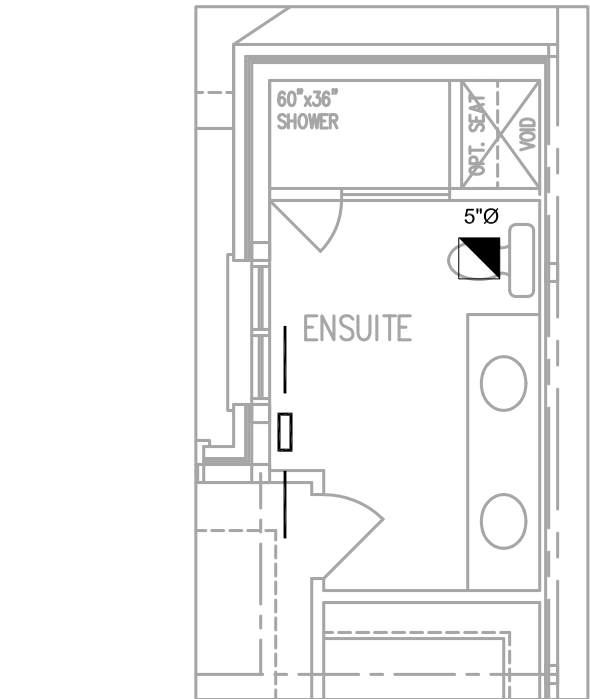


PART. GROUND FLOOR  
PLAN, ELEV. 'B'

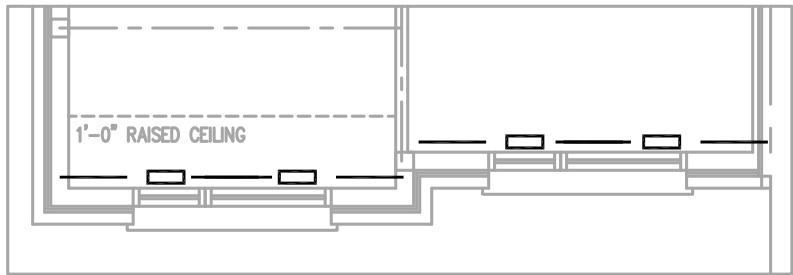


GROUND FLOOR PLAN,  
ELEV. 'A'

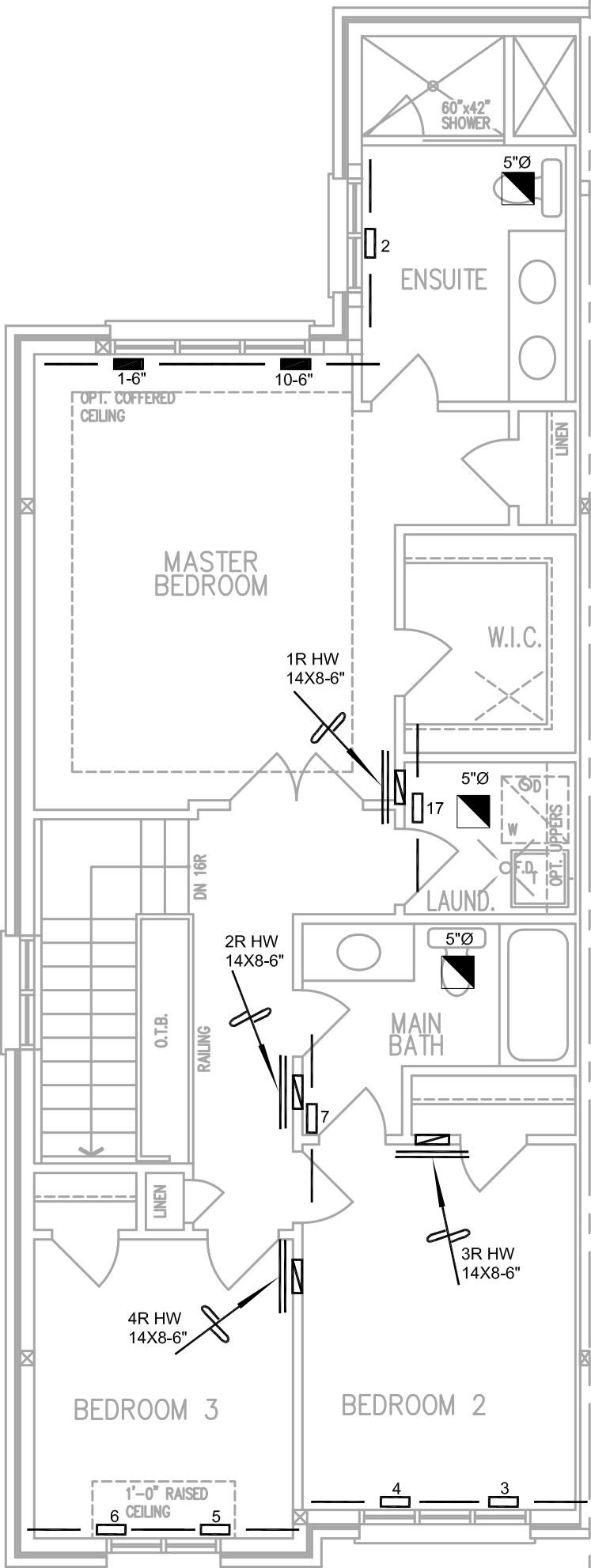
| HVAC LEGEND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                 |               |                              |                                                                                                                                                                                 | 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@hvacdsgns.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.<br/>Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.</div> |                                 |               |                              | <div><br/>Michael O'Rourke BCIN # 19669<br/>HVAC Designs Ltd.</div> <div>PERFORMANCE</div> |                            | Sheet Title                                                                                                                                                                     |                  |
| ROYAL PINE HOMES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                 |               |                              |                                                                                                                                                                                 |                            | FIRST FLOOR<br>HEATING<br>LAYOUT                                                                                                                                                |                  |
| Project Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                 |               |                              |                                                                                                                                                                                 |                            | Date                                                                                                                                                                            |                  |
| SUMMER RIDGE ESTATES<br>BRAMPTON, ONTARIO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                 | APR/2024      |                              |                                                                                                                                                                                 |                            |                                                                                                                                                                                 |                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                 | Scale         |                              |                                                                                                                                                                                 |                            |                                                                                                                                                                                 |                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                 | 3/16" = 1'-0" |                              |                                                                                                                                                                                 |                            |                                                                                                                                                                                 |                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                 | BCIN# 19669   |                              |                                                                                                                                                                                 |                            |                                                                                                                                                                                 |                  |
| 2004 - FIN BSMT 1949 sqft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                 | LO# 104859    |                              |                                                                                                                                                                                 |                            |                                                                                                                                                                                 |                  |



OPT. SECOND FLOOR ENSUITE



PART SECOND FLOOR  
PLAN, ELEV. 'B'



SECOND FLOOR PLAN,  
ELEV. 'A'

| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                           | <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                           |                                 |        |                              |                                                                                                                                            |                            |                                                        |             | Sheet Title |  | SECOND FLOOR<br>HEATING<br>LAYOUT |
| Project Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                           |                                                                                                                                                                                                                                                         |                                 |        |                              |                                                                                                                                            |                            |                                                        |             | Date        |  | APR/2024                          |
| SUMMER RIDGE ESTATES<br>BRAMPTON, ONTARIO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                           |                                                                                                                                                                                                                                                         |                                 |        |                              |                                                                                                                                            |                            |                                                        |             | Scale       |  | 3/16" = 1'-0"                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                           |                                                                                                                                                                                                                                                         |                                 |        |                              |                                                                                                                                            |                            |                                                        |             | BCIN# 19669 |  |                                   |
| 2004 - FIN BSMT 1949 sqft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                           | Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed. |                                 |        |                              | LO# 104859                                                                                                                                 |                            |                                                        |             |             |  |                                   |