

## 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@hvacdesigns.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: 7001 - ELEV C<br>OPT LAUN<br>Project: VALES OF HUMBER SOUTH                                            |                               |
| <b>D. Declaration of Designer</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                              |                                                                                                               |                               |
| I, <u>MICHAEL O'ROURKE</u><br>(print name)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                              | declare that (choose one as appropriate):                                                                     |                               |
| <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.<br>2. I have submitted this application with the knowledge and consent of the firm.                                                                                                                                                                                                                                                                                                                                                                                                      |                              |                                                                                                               |                               |
| July 10, 2024<br>Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                              | <br>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: VALES OF HUMBER SOUTH |  |           |       |           |      |       |       |           |      | OPT LAUN            |      |           |      |     |    | DATE Jul-24 |      |      |      | WINTER NATURAL AIR CHANGE RATE 0.241 |      |      |      |                                      |      |      |      | HEAT LOSS AT °F. 74 |      |    |     | CSA-F280-12         |      |      |      |                   |      |     |     |           |     |   |   |   |   |
|----------------------------------|--|-----------|-------|-----------|------|-------|-------|-----------|------|---------------------|------|-----------|------|-----|----|-------------|------|------|------|--------------------------------------|------|------|------|--------------------------------------|------|------|------|---------------------|------|----|-----|---------------------|------|------|------|-------------------|------|-----|-----|-----------|-----|---|---|---|---|
| BUILDER: ROYAL PINE HOMES        |  |           |       |           |      |       |       |           |      | TYPE: 7001 - ELEV C |      |           |      |     |    | GFA: 5590   |      |      |      | LO# 95346                            |      |      |      | SUMMER NATURAL AIR CHANGE RATE 0.078 |      |      |      |                     |      |    |     | HEAT GAIN AT °F. 11 |      |      |      | SB-12 PERFORMANCE |      |     |     |           |     |   |   |   |   |
| ROOM USE                         |  |           |       | GREAT     |      |       |       | KIT       |      |                     |      | PANT      |      |     |    | DIN         |      |      |      | LIV                                  |      |      |      | FOY                                  |      |      |      | LIBR                |      |    |     | PWD-1               |      |      |      | PWD-2             |      |     |     | MD/LN     |     |   |   |   |   |
| EXP. WALL                        |  |           |       | 48        |      |       |       | 32        |      |                     |      | 20        |      |     |    | 26          |      |      |      | 30                                   |      |      |      | 20                                   |      |      |      | 33                  |      |    |     | 3                   |      |      |      | 8                 |      |     |     | 33        |     |   |   |   |   |
| CLG. HT.                         |  |           |       | 21        |      |       |       | 11        |      |                     |      | 11        |      |     |    | 11          |      |      |      | 11                                   |      |      |      | 23                                   |      |      |      | 11                  |      |    |     | 11                  |      |      |      | 11                |      |     |     | 12        |     |   |   |   |   |
| FACTORS                          |  |           |       |           |      |       |       |           |      |                     |      |           |      |     |    |             |      |      |      |                                      |      |      |      |                                      |      |      |      |                     |      |    |     |                     |      |      |      |                   |      |     |     |           |     |   |   |   |   |
| GRS.WALL AREA                    |  | LOSS GAIN |       | 1008      |      |       |       | 352       |      |                     |      | 220       |      |     |    | 286         |      |      |      | 330                                  |      |      |      | 460                                  |      |      |      | 363                 |      |    |     | 33                  |      |      |      | 88                |      |     |     | 396       |     |   |   |   |   |
| GLAZING                          |  |           |       | LOSS GAIN |      |       |       | LOSS GAIN |      |                     |      | LOSS GAIN |      |     |    | LOSS GAIN   |      |      |      | LOSS GAIN                            |      |      |      | LOSS GAIN                            |      |      |      | LOSS GAIN           |      |    |     | LOSS GAIN           |      |      |      | LOSS GAIN         |      |     |     | LOSS GAIN |     |   |   |   |   |
| NORTH                            |  | 20.8      | 15.5  | 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    |                   | 25   | 519 | 387 |           |     |   |   |   |   |
| EAST                             |  | 20.8      | 41.0  | 0         | 0    | 0     |       | 0         | 0    | 0                   |      | 0         | 0    | 0   | 0  |             | 34   | 706  | 1396 | 43                                   |      | 893  | 1765 | 34                                   |      | 706  | 1396 | 0                   | 0    | 0  | 0   |                     | 0    | 0    | 0    | 0                 |      | 0   | 0   | 0         | 0   |   | 0 | 0 | 0 |
| SOUTH                            |  | 20.8      | 24.4  | 0         | 0    | 0     |       | 0         | 0    | 0                   |      | 0         | 0    | 0   | 39 |             | 810  | 951  | 0    | 0                                    |      | 0    | 0    | 0                                    | 0    |      | 0    | 0                   | 0    | 0  |     | 0                   | 0    | 0    | 0    |                   | 0    | 0   | 0   | 0         |     | 0 | 0 | 0 |   |
| WEST                             |  | 20.8      | 41.0  | 192       | 3989 | 7881  |       | 107       | 2223 | 4392                |      | 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 | 0 |   |
| SKYLT.                           |  | 34.1      | 100.3 | 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    |                   | 0    | 0   | 0   | 0         |     | 0 | 0 | 0 |   |
| DOORS                            |  | 24.7      | 3.7   | 0         | 0    | 0     |       | 20        | 493  | 73                  |      | 0         | 0    | 0   | 0  |             | 0    | 0    | 0    | 0                                    |      | 50   | 1233 | 183                                  | 0    |      | 0    | 0                   | 0    | 0  |     | 0                   | 0    | 0    | 0    |                   | 40   | 986 | 146 |           |     |   |   |   |   |
| NET EXPOSED WALL                 |  | 3.5       | 0.5   | 816       | 2829 | 419   |       | 225       | 780  | 116                 |      | 220       | 763  | 113 |    | 247         | 856  | 127  | 296  |                                      | 1026 | 152  | 367  |                                      | 1272 | 189  | 329  | 1141                | 169  | 33 |     | 114                 | 17   | 88   |      | 305               | 45   | 331 |     | 1148      | 170 |   |   |   |   |
| NET EXPOSED BSMT WALL ABOVE GR   |  | 3.5       | 0.5   | 0         | 0    | 0     |       | 0         | 0    | 0                   |      | 0         | 0    | 0   | 0  |             | 0    | 0    | 0    | 0                                    |      | 0    | 0    | 0                                    | 0    |      | 0    | 0                   | 0    | 0  |     | 0                   | 0    | 0    | 0    |                   | 0    | 0   | 0   | 0         |     | 0 | 0 | 0 |   |
| EXPOSED CLG                      |  | 1.3       | 0.6   | 503       | 630  | 280   |       | 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   | 0         |     | 0 | 0 | 0 |   |
| NO ATTIC EXPOSED CLG             |  | 2.7       | 1.2   | 10        | 27   | 12    |       | 0         | 0    | 0                   |      | 0         | 0    | 0   | 0  |             | 0    | 0    | 0    | 0                                    |      | 80   | 215  | 95                                   | 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    |                   | 0    | 0   | 0   | 0         |     | 0 | 0 | 0 |   |
| BASEMENT/CRAWL HEAT LOSS         |  |           |       |           |      |       |       |           |      |                     |      |           |      |     |    |             |      |      |      |                                      |      |      |      |                                      |      |      |      |                     |      |    |     |                     |      |      |      |                   |      |     |     |           |     |   |   |   |   |
| SLAB ON GRADE HEAT LOSS          |  |           |       |           |      |       |       |           |      |                     |      |           |      |     |    |             |      |      |      |                                      |      |      |      |                                      |      |      |      |                     |      |    |     |                     |      |      |      |                   |      |     |     |           |     |   |   |   |   |
| SUBTOTAL HT LOSS                 |  |           |       |           |      | 7475  |       |           |      | 3496                |      |           |      | 763 |    |             |      | 1667 |      |                                      | 1733 |      |      |                                      | 3613 |      |      | 1847                |      |    | 114 |                     |      | 305  |      |                   | 2653 |     |     |           |     |   |   |   |   |
| SUB TOTAL HT GAIN                |  |           |       |           |      |       | 8593  |           |      |                     | 4581 |           |      | 113 |    |             | 1078 |      |      | 1548                                 |      |      |      | 2232                                 |      |      | 1565 |                     |      | 17 |     |                     | 45   |      |      | 703               |      |     |     |           |     |   |   |   |   |
| LEVEL FACTOR / MULTIPLIER        |  |           |       | 0.30      | 0.37 |       |       | 0.30      | 0.37 |                     |      | 0.30      | 0.37 |     |    | 0.30        | 0.37 |      |      | 0.30                                 | 0.37 |      |      | 0.30                                 | 0.37 |      |      | 0.30                | 0.37 |    |     | 0.30                | 0.37 |      |      | 0.30              | 0.37 |     |     |           |     |   |   |   |   |
| AIR CHANGE HEAT LOSS             |  |           |       |           |      | 2793  |       |           |      | 1306                |      |           |      | 285 |    |             |      | 623  |      |                                      | 647  |      |      |                                      | 1350 |      |      | 690                 |      |    | 43  |                     |      | 114  |      |                   | 991  |     |     |           |     |   |   |   |   |
| AIR CHANGE HEAT GAIN             |  |           |       |           |      |       | 458   |           |      |                     | 244  |           |      | 6   |    |             | 57   |      |      | 82                                   |      |      |      | 119                                  |      |      | 83   |                     |      | 1  |     |                     | 2    |      |      | 37                |      |     |     |           |     |   |   |   |   |
| DUCT LOSS                        |  |           |       |           |      | 0     |       |           |      | 0                   |      |           |      | 0   |    |             | 0    |      |      | 0                                    |      |      |      | 0                                    |      |      | 0    |                     |      | 0  |     |                     | 0    |      |      | 0                 |      |     |     |           |     |   |   |   |   |
| DUCT GAIN                        |  |           |       |           |      | 0     |       |           |      | 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  |     | 0                   | 0    | 0    | 0    |                   | 0    | 0   | 0   |           |     |   |   |   |   |
| HEAT GAIN APPLIANCES/LIGHTS      |  |           |       |           |      |       | 872   |           |      | 872                 |      |           | 0    |     |    | 872         |      |      | 872  |                                      |      | 872  |      |                                      | 0    |      |      | 872                 |      |    | 0   |                     |      | 0    |      |                   | 872  |     |     |           |     |   |   |   |   |
| TOTAL HT LOSS BTU/H              |  |           |       |           |      | 10268 |       |           |      | 4802                |      |           | 1048 |     |    | 2289        |      |      | 2380 |                                      |      | 4963 |      |                                      | 2537 |      |      | 157                 |      |    | 419 |                     |      | 3644 |      |                   |      |     |     |           |     |   |   |   |   |
| TOTAL HT GAIN x 1.3 BTU/H        |  |           |       |           |      |       | 12899 |           |      |                     | 7406 |           |      | 155 |    |             | 2610 |      |      | 3252                                 |      |      | 3056 |                                      |      | 3276 |      |                     | 23   |    |     | 62                  |      |      | 2096 |                   |      |     |     |           |     |   |   |   |   |

|                                |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------|------|-------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| ROOM USE                       |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| EXP. WALL                      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CLG. HT.                       |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| FACTORS                        |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| GRS.WALL AREA                  | LOSS | GAIN  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| GLAZING                        |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NORTH                          | 20.8 | 15.5  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| EAST                           | 20.8 | 41.0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SOUTH                          | 20.8 | 24.4  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| WEST                           | 20.8 | 41.0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SKYLT.                         | 34.1 | 100.3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| DOORS                          | 24.7 | 3.7   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NET EXPOSED WALL               | 3.5  | 0.5   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NET EXPOSED BSMT WALL ABOVE GR | 3.5  | 0.5   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| EXPOSED CLG                    | 1.3  | 0.6   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NO ATTIC EXPOSED CLG           | 2.7  | 1.2   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| EXPOSED FLOOR                  | 2.5  | 0.4   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| BASEMENT/CRAWL HEAT LOSS       |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SLAB ON GRADE HEAT LOSS        |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SUBTOTAL HT LOSS               |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SUB TOTAL HT GAIN              |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| LEVEL FACTOR / MULTIPLIER      | 0.50 | 1.17  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| AIR CHANGE HEAT LOSS           |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| AIR CHANGE HEAT GAIN           |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| DUCT LOSS                      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| DUCT GAIN                      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| HEAT GAIN PEOPLE               | 240  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| HEAT GAIN APPLIANCES/LIGHTS    |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| TOTAL HT LOSS BTU/H            |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| TOTAL HT GAIN x 1.3 BTU/H      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

TOTAL HEAT GAIN BTU/H:

66203

TONS: 5.52

LOSS DUE TO VENTILATION LOAD BTU/H: 6010

STRUCTURAL HEAT LOSS: 84349

TOTAL COMBINED HEAT LOSS BTU/H: 90360



| SITE NAME: VALES OF HUMBER SOUTH |  |  |      |       |      |      |      |       |      | OPT LAUN            |       |     |      |       |      | DATE Jul-24 |       |     |      | WINTER NATURAL AIR CHANGE RATE 0.241 |      |      |      |                                      |      | HEAT LOSS ΔT °F. 74 |      |     |       | CSA-F280-12         |      |     |      |                   |  |  |  |
|----------------------------------|--|--|------|-------|------|------|------|-------|------|---------------------|-------|-----|------|-------|------|-------------|-------|-----|------|--------------------------------------|------|------|------|--------------------------------------|------|---------------------|------|-----|-------|---------------------|------|-----|------|-------------------|--|--|--|
| BUILDER: ROYAL PINE HOMES        |  |  |      |       |      |      |      |       |      | TYPE: 7001 - ELEV C |       |     |      |       |      | GFA: 5590   |       |     |      | LO# 95346                            |      |      |      | SUMMER NATURAL AIR CHANGE RATE 0.078 |      |                     |      |     |       | HEAT GAIN ΔT °F. 11 |      |     |      | SB-12 PERFORMANCE |  |  |  |
| ROOM USE                         |  |  | PRI  |       | ENS  |      |      | DRESS |      |                     | BED-2 |     |      | BED-3 |      |             | BED-4 |     |      | BED-5                                |      |      | RETR |                                      |      | ENS-2               |      |     | ENS-3 |                     |      |     |      |                   |  |  |  |
| EXP. WALL                        |  |  | 25   |       | 27   |      |      | 11    |      |                     | 13    |     |      | 20    |      |             | 24    |     |      | 30                                   |      |      | 10   |                                      |      | 6                   |      |     | 20    |                     |      |     |      |                   |  |  |  |
| CLG. HT.                         |  |  | 10   |       | 10   |      |      | 10    |      |                     | 10    |     |      | 11    |      |             | 10    |     |      | 10                                   |      |      | 10   |                                      |      | 10                  |      |     | 10    |                     |      |     |      |                   |  |  |  |
| FACTORS                          |  |  |      |       |      |      |      |       |      |                     |       |     |      |       |      |             |       |     |      |                                      |      |      |      |                                      |      |                     |      |     |       |                     |      |     |      |                   |  |  |  |
| GRS.WALL AREA                    |  |  | LOSS |       | GAIN |      | 250  |       | 270  |                     | 110   |     | 130  |       | 220  |             | 240   |     | 300  |                                      | 100  |      | 60   |                                      | 200  |                     |      |     |       |                     |      |     |      |                   |  |  |  |
| GLAZING                          |  |  |      |       |      |      | LOSS |       | GAIN |                     | LOSS  |     | GAIN |       | LOSS |             | GAIN  |     | LOSS |                                      | GAIN |      | LOSS |                                      | GAIN |                     | LOSS |     | GAIN  |                     |      |     |      |                   |  |  |  |
| NORTH                            |  |  | 20.8 | 15.5  | 0    | 0    | 0    | 0     | 0    | 0                   | 0     | 0   | 0    | 27    | 561  | 418         | 0     | 0   | 0    | 0                                    | 0    | 0    | 0    | 0                                    | 9    | 187                 | 139  | 0   | 0     | 0                   |      |     |      |                   |  |  |  |
| EAST                             |  |  | 20.8 | 41.0  | 0    | 0    | 0    | 0     | 0    | 0                   | 0     | 0   | 0    | 0     | 0    | 0           | 16    | 340 | 672  | 32                                   | 665  | 1314 | 32   | 665                                  | 1314 | 0                   | 0    | 0   | 28    | 582                 | 1149 |     |      |                   |  |  |  |
| SOUTH                            |  |  | 20.8 | 24.4  | 0    | 0    | 0    | 32    | 665  | 781                 | 8     | 166 | 195  | 0     | 0    | 0           | 0     | 0   | 0    | 0                                    | 0    | 0    | 18   | 374                                  | 439  | 0                   | 0    | 0   | 0     | 0                   | 0    |     |      |                   |  |  |  |
| WEST                             |  |  | 20.8 | 41.0  | 54   | 1122 | 2217 | 23    | 478  | 944                 | 0     | 0   | 0    | 0     | 0    | 0           | 0     | 0   | 0    | 0                                    | 0    | 0    | 0    | 0                                    | 0    | 0                   | 0    | 0   | 0     | 0                   | 0    |     |      |                   |  |  |  |
| SKYLT.                           |  |  | 34.1 | 100.3 | 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                   | 0    |     |      |                   |  |  |  |
| DOORS                            |  |  | 24.7 | 3.7   | 0    | 0    | 0    | 0     | 0    | 0                   | 0     | 0   | 0    | 0     | 0    | 0           | 0     | 0   | 0    | 0                                    | 0    | 0    | 0    | 0                                    | 0    | 0                   | 0    | 0   | 0     | 0                   | 0    |     |      |                   |  |  |  |
| NET EXPOSED WALL                 |  |  | 3.5  | 0.5   | 196  | 680  | 101  | 215   | 745  | 111                 | 102   | 354 | 52   | 103   | 357  | 53          | 204   | 706 | 105  | 208                                  | 721  | 107  | 268  | 929                                  | 138  | 82                  | 284  | 42  | 51    | 177                 | 26   | 172 | 596  | 88                |  |  |  |
| NET EXPOSED BSMT WALL ABOVE GR   |  |  | 3.5  | 0.5   | 0    | 0    | 0    | 0     | 0    | 0                   | 0     | 0   | 0    | 0     | 0    | 0           | 0     | 0   | 0    | 0                                    | 0    | 0    | 0    | 0                                    | 0    | 0                   | 0    | 0   | 0     | 0                   | 0    | 0   | 0    |                   |  |  |  |
| EXPOSED CLG                      |  |  | 1.3  | 0.6   | 546  | 684  | 304  | 180   | 226  | 100                 | 165   | 207 | 92   | 325   | 407  | 181         | 211   | 264 | 118  | 275                                  | 345  | 153  | 216  | 271                                  | 120  | 310                 | 388  | 173 | 66    | 83                  | 37   | 91  | 114  | 51                |  |  |  |
| NO ATTIC EXPOSED CLG             |  |  | 2.7  | 1.2   | 0    | 0    | 0    | 0     | 0    | 0                   | 0     | 0   | 0    | 0     | 0    | 0           | 50    | 134 | 60   | 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    | 20    | 50   | 7           | 261   | 650 | 96   | 30                                   | 75   | 11   | 0    | 0                                    | 0    | 0                   | 66   | 164 | 24    | 91                  | 227  | 34  |      |                   |  |  |  |
| BASEMENT/CRAWL HEAT LOSS         |  |  |      |       |      |      |      |       |      |                     |       |     |      |       |      |             |       |     |      |                                      |      |      |      |                                      |      |                     |      |     |       |                     |      |     |      |                   |  |  |  |
| SLAB ON GRADE HEAT LOSS          |  |  |      |       |      |      |      |       |      |                     |       |     |      |       |      |             |       |     |      |                                      |      |      |      |                                      |      |                     |      |     |       |                     |      |     |      |                   |  |  |  |
| SUBTOTAL HT LOSS                 |  |  |      |       | 2486 |      |      |       | 2114 |                     | 727   |     |      |       | 1375 |             | 2094  |     |      |                                      | 1805 |      | 1865 |                                      | 1047 |                     |      |     | 611   |                     | 1519 |     |      |                   |  |  |  |
| SUB TOTAL HT GAIN                |  |  |      |       |      |      | 2622 |       |      |                     | 1936  |     | 340  |       |      |             | 659   |     | 1050 |                                      |      |      | 1585 |                                      | 1572 |                     | 654  |     |       |                     | 227  |     | 1322 |                   |  |  |  |
| LEVEL FACTOR / MULTIPLIER        |  |  |      |       | 0.20 |      | 0.34 |       | 0.20 |                     | 0.34  |     | 0.20 |       | 0.34 |             | 0.20  |     | 0.34 |                                      | 0.20 |      | 0.34 |                                      | 0.20 |                     | 0.34 |     | 0.20  |                     | 0.34 |     |      |                   |  |  |  |
| AIR CHANGE HEAT LOSS             |  |  |      |       | 835  |      |      |       | 710  |                     | 244   |     |      |       | 462  |             | 704   |     |      |                                      | 607  |      | 627  |                                      | 352  |                     |      |     | 205   |                     | 510  |     |      |                   |  |  |  |
| AIR CHANGE HEAT GAIN             |  |  |      |       |      |      | 140  |       |      |                     | 103   |     | 18   |       | 35   |             | 56    |     |      |                                      | 84   |      | 84   |                                      | 35   |                     |      |     | 12    |                     | 70   |     |      |                   |  |  |  |
| DUCT LOSS                        |  |  |      |       | 0    |      |      |       | 0    |                     | 0     |     |      |       | 184  |             | 280   |     |      |                                      | 241  |      | 0    |                                      | 0    |                     | 82   |     |       |                     | 203  |     |      |                   |  |  |  |
| DUCT GAIN                        |  |  |      |       | 0    |      |      |       | 0    |                     | 0     |     |      |       | 181  |             | 222   |     |      |                                      | 278  |      | 0    |                                      | 0    |                     | 24   |     |       |                     | 139  |     |      |                   |  |  |  |
| HEAT GAIN PEOPLE                 |  |  | 240  |       | 2    |      | 480  |       | 0    |                     | 0     |     | 1    |       | 240  |             | 1     |     | 240  |                                      | 1    |      | 240  |                                      | 0    |                     | 0    |     | 0     |                     | 0    |     |      |                   |  |  |  |
| HEAT GAIN APPLIANCES/LIGHTS      |  |  |      |       |      |      | 872  |       | 0    |                     | 0     |     |      |       | 872  |             |       |     | 872  |                                      |      |      | 872  |                                      | 872  |                     | 0    |     |       |                     | 0    |     |      |                   |  |  |  |
| TOTAL HT LOSS BTU/H              |  |  |      |       | 3321 |      |      |       | 2824 |                     | 971   |     | 2021 |       | 3078 |             | 2653  |     | 2491 |                                      | 1398 |      | 898  |                                      |      |                     |      |     | 2232  |                     |      |     |      |                   |  |  |  |
| TOTAL HT GAIN x 1.3 BTU/H        |  |  |      |       | 5347 |      | 2650 |       | 465  |                     | 2582  |     | 3171 |       | 3977 |             | 3597  |     | 2029 |                                      | 341  |      | 1991 |                                      |      |                     |      |     | 1991  |                     |      |     |      |                   |  |  |  |

| ROOM USE                       |      |       | ENS-4 |      |    | SHARED |      |     | WIC-4 |      |     | LAUN |      |     | HALL |      |     |  |  |  |  |  |  |  |
|--------------------------------|------|-------|-------|------|----|--------|------|-----|-------|------|-----|------|------|-----|------|------|-----|--|--|--|--|--|--|--|
| EXP. WALL                      |      |       | 0     |      |    | 6      |      |     | 6     |      |     | 0    |      |     | 0    |      |     |  |  |  |  |  |  |  |
| CLG. HT.                       |      |       | 10    |      |    | 10     |      |     | 10    |      |     | 10   |      |     | 10   |      |     |  |  |  |  |  |  |  |
| GRS.WALL AREA                  | LOSS | GAIN  | 0     |      |    | 60     |      |     | 60    |      |     | 0    |      |     | 0    |      |     |  |  |  |  |  |  |  |
| GLAZING                        |      |       | LOSS  | GAIN |    | LOSS   | GAIN |     | LOSS  | GAIN |     | LOSS | GAIN |     | LOSS | GAIN |     |  |  |  |  |  |  |  |
| NORTH                          | 20.8 | 15.5  | 0     | 0    | 0  | 0      | 0    | 0   | 0     | 0    | 0   | 0    | 0    | 0   | 0    | 0    | 0   |  |  |  |  |  |  |  |
| EAST                           | 20.8 | 41.0  | 0     | 0    | 0  | 0      | 0    | 0   | 16    | 332  | 657 | 0    | 0    | 0   | 0    | 0    | 0   |  |  |  |  |  |  |  |
| SOUTH                          | 20.8 | 24.4  | 0     | 0    | 0  | 9      | 187  | 220 | 0     | 0    | 0   | 0    | 0    | 0   | 0    | 0    | 0   |  |  |  |  |  |  |  |
| WEST                           | 20.8 | 41.0  | 0     | 0    | 0  | 0      | 0    | 0   | 0     | 0    | 0   | 0    | 0    | 0   | 0    | 0    | 0   |  |  |  |  |  |  |  |
| SKYLT.                         | 34.1 | 100.3 | 0     | 0    | 0  | 0      | 0    | 0   | 0     | 0    | 0   | 0    | 0    | 0   | 0    | 0    | 0   |  |  |  |  |  |  |  |
| DOORS                          | 24.7 | 3.7   | 0     | 0    | 0  | 0      | 0    | 0   | 0     | 0    | 0   | 0    | 0    | 0   | 0    | 0    | 0   |  |  |  |  |  |  |  |
| NET EXPOSED WALL               | 3.5  | 0.5   | 0     | 0    | 0  | 51     | 177  | 26  | 44    | 153  | 23  | 0    | 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   |  |  |  |  |  |  |  |
| EXPOSED CLG                    | 1.3  | 0.6   | 70    | 88   | 39 | 90     | 113  | 50  | 42    | 53   | 23  | 77   | 96   | 43  | 397  | 497  | 221 |  |  |  |  |  |  |  |
| NO ATTIC EXPOSED CLG           | 2.7  | 1.2   | 0     | 0    | 0  | 0      | 0    | 0   | 0     | 0    | 0   | 0    | 0    | 0   | 0    | 0    | 0   |  |  |  |  |  |  |  |
| EXPOSED FLOOR                  | 2.5  | 0.4   | 40    | 100  | 15 | 0      | 0    | 0   | 42    | 105  | 16  | 0    | 0    | 0   | 0    | 0    | 0   |  |  |  |  |  |  |  |
| BASEMENT/CRAWL HEAT LOSS       |      |       |       |      |    |        |      |     |       |      |     |      |      |     |      |      |     |  |  |  |  |  |  |  |
| SLAB ON GRADE HEAT LOSS        |      |       |       |      |    |        |      |     |       |      |     |      |      |     |      |      |     |  |  |  |  |  |  |  |
| SUBTOTAL HT LOSS               |      |       |       | 187  |    |        | 477  |     |       | 642  |     |      | 96   |     |      | 497  |     |  |  |  |  |  |  |  |
| SUB TOTAL HT GAIN              |      |       |       |      | 54 |        |      | 296 |       | 718  |     |      |      | 43  |      |      | 221 |  |  |  |  |  |  |  |
| LEVEL FACTOR / MULTIPLIER      |      |       | 0.20  | 0.34 |    | 0.20   | 0.34 |     | 0.20  | 0.34 |     | 0.20 | 0.34 |     | 0.20 | 0.34 |     |  |  |  |  |  |  |  |
| AIR CHANGE HEAT LOSS           |      |       |       | 63   |    |        | 160  |     |       | 216  |     |      | 32   |     |      | 167  |     |  |  |  |  |  |  |  |
| AIR CHANGE HEAT GAIN           |      |       |       |      | 3  |        |      | 16  |       | 38   |     |      |      | 2   |      |      | 12  |  |  |  |  |  |  |  |
| DUCT LOSS                      |      |       |       | 25   |    |        | 0    |     |       | 86   |     |      | 0    |     |      | 0    |     |  |  |  |  |  |  |  |
| DUCT GAIN                      |      |       |       |      | 6  |        |      | 0   |       | 76   |     |      |      | 0   |      |      | 0   |  |  |  |  |  |  |  |
| HEAT GAIN PEOPLE               | 240  |       | 0     |      | 0  | 0      |      | 0   | 0     | 0    | 0   | 0    |      | 0   | 0    |      | 0   |  |  |  |  |  |  |  |
| HEAT GAIN APPLIANCES/LIGHTS    |      |       |       |      | 0  |        |      | 0   |       | 0    |     |      |      | 872 |      |      | 0   |  |  |  |  |  |  |  |
| TOTAL HT LOSS BTU/H            |      |       |       | 275  |    |        | 637  |     |       | 944  |     |      | 129  |     |      | 665  |     |  |  |  |  |  |  |  |
| TOTAL HT GAIN x 1.3 BTU/H      |      |       |       |      | 81 |        |      | 405 |       | 1082 |     |      | 1192 |     |      | 303  |     |  |  |  |  |  |  |  |

SITE NAME: VALES OF HUMBER SOUTH  
BUILDER: ROYAL PINE HOMES

OPT LAUN  
TYPE: 7001 - ELEV C

DATE: Jul-24

GFA: 5590 LO# 95346

FURNACE 1

HEATING CFM 1105  
TOTAL HEAT LOSS 59,813  
AIR FLOW RATE CFM 18.47

COOLING CFM 1105  
TOTAL HEAT GAIN 36,545  
AIR FLOW RATE CFM 30.24

FACTORY  
INSTALLED

furnace pressure 0.6  
furnace filter 0  
a/c coil pressure 0.25  
available pressure for s/a & r/a 0.35

FURNACE HEAT LOSS +  
HRV / ERV HEAT LOSS  
= 62818 BTUH

CARRIER  
59SC6A080M17--16

AFUE = 97 %  
INPUT (BTU/H) = 80,000  
OUTPUT (BTU/H) = 78,000

| RUN COUNT | 4th | 3rd | 2nd | 1st | Bas |
|-----------|-----|-----|-----|-----|-----|
| S/A       | 0   | 0   | 0   | 20  | 8   |
| R/A       | 0   | 0   | 0   | 5   | 1   |

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

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

| RUN #                     | 1     | 2     | 3     | 4     | 5     | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18    | 19    | 20    | 21   | 22   | 23   | 24   |
|---------------------------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|------|------|------|------|
| ROOM NAME                 | GREAT | GREAT | GREAT | GREAT | GREAT | KIT  | KIT  | KIT  | PANT | DIN  | DIN  | LIV  | LIV  | FOY  | FOY  | LIBR | LIBR | PWD-1 | PWD-2 | MD/LN | BAS  | BAS  | BAS  | BAS  |
| RM LOSS MBH.              | 2.05  | 2.05  | 2.05  | 2.05  | 2.05  | 1.60 | 1.60 | 1.60 | 1.05 | 1.14 | 1.14 | 1.19 | 1.19 | 2.48 | 2.48 | 1.27 | 1.27 | 0.16  | 0.42  | 3.64  | 3.41 | 3.41 | 3.41 | 3.41 |
| CFM PER RUN HEAT          | 38    | 38    | 38    | 38    | 38    | 30   | 30   | 30   | 19   | 21   | 21   | 22   | 22   | 46   | 46   | 23   | 23   | 3     | 8     | 67    | 63   | 63   | 63   | 63   |
| RM GAIN MBH.              | 2.58  | 2.58  | 2.58  | 2.58  | 2.58  | 2.47 | 2.47 | 2.47 | 0.15 | 1.30 | 1.30 | 1.63 | 1.63 | 1.53 | 1.53 | 1.64 | 1.64 | 0.02  | 0.06  | 2.10  | 0.21 | 0.21 | 0.21 | 0.21 |
| CFM PER RUN COOLING       | 78    | 78    | 78    | 78    | 78    | 75   | 75   | 75   | 5    | 39   | 39   | 49   | 49   | 46   | 46   | 50   | 50   | 1     | 2     | 63    | 6    | 6    | 6    | 6    |
| ADJUSTED PRESSURE         | 0.17  | 0.17  | 0.17  | 0.17  | 0.17  | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17  | 0.17  | 0.17  | 0.17 | 0.17 | 0.17 | 0.17 |
| ACTUAL DUCT LGH.          | 31    | 25    | 21    | 23    | 28    | 35   | 47   | 53   | 55   | 50   | 62   | 78   | 74   | 78   | 82   | 81   | 87   | 31    | 11    | 18    | 53   | 38   | 21   | 25   |
| EQUIVALENT LENGTH         | 100   | 100   | 120   | 140   | 120   | 110  | 90   | 110  | 100  | 120  | 110  | 100  | 120  | 150  | 130  | 120  | 130  | 120   | 170   | 140   | 110  | 100  | 130  | 130  |
| TOTAL EFFECTIVE LENGTH    | 131   | 125   | 141   | 163   | 148   | 145  | 137  | 163  | 155  | 170  | 172  | 178  | 194  | 228  | 212  | 201  | 217  | 151   | 181   | 158   | 163  | 138  | 151  | 155  |
| ADJUSTED PRESSURE         | 0.13  | 0.14  | 0.12  | 0.11  | 0.12  | 0.12 | 0.13 | 0.11 | 0.11 | 0.1  | 0.1  | 0.1  | 0.09 | 0.08 | 0.08 | 0.09 | 0.08 | 0.11  | 0.1   | 0.11  | 0.11 | 0.12 | 0.11 | 0.11 |
| ROUND DUCT SIZE           | 6     | 6     | 6     | 6     | 6     | 6    | 6    | 5    | 4    | 4    | 4    | 5    | 5    | 5    | 5    | 5    | 5    | 4     | 4     | 5     | 5    | 5    | 5    | 5    |
| HEATING VELOCITY (ft/min) | 194   | 194   | 194   | 194   | 194   | 153  | 153  | 220  | 218  | 241  | 241  | 162  | 162  | 338  | 338  | 169  | 169  | 34    | 92    | 492   | 463  | 463  | 463  | 463  |
| COOLING VELOCITY (ft/min) | 398   | 398   | 398   | 398   | 398   | 382  | 382  | 551  | 57   | 447  | 447  | 360  | 360  | 338  | 338  | 367  | 367  | 11    | 23    | 463   | 44   | 44   | 44   | 44   |
| OUTLET GRILL SIZE         | 4X10  | 4X10  | 4X10  | 4X10  | 4X10  | 4X10 | 4X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10  | 3X10  | 3X10  | 3X10 | 3X10 | 3X10 | 3X10 |
| TRUNK                     | F     | F     | F     | E     | E     | E    | E    | D    | D    | C    | C    | A    | A    | A    | B    | B    | B    | E     | E     | F     | D    | E    | E    | F    |

| RUN #                     | 25   | 26   | 27   | 28   |
|---------------------------|------|------|------|------|
| ROOM NAME                 | BAS  | BAS  | BAS  | BAS  |
| RM LOSS MBH.              | 3.41 | 3.41 | 3.41 | 3.41 |
| CFM PER RUN HEAT          | 63   | 63   | 63   | 63   |
| RM GAIN MBH.              | 0.21 | 0.21 | 0.21 | 0.21 |
| CFM PER RUN COOLING       | 6    | 6    | 6    | 6    |
| ADJUSTED PRESSURE         | 0.17 | 0.17 | 0.17 | 0.17 |
| ACTUAL DUCT LGH.          | 52   | 58   | 71   | 78   |
| EQUIVALENT LENGTH         | 110  | 110  | 110  | 100  |
| TOTAL EFFECTIVE LENGTH    | 162  | 168  | 181  | 178  |
| ADJUSTED PRESSURE         | 0.11 | 0.1  | 0.1  | 0.1  |
| ROUND DUCT SIZE           | 5    | 5    | 5    | 5    |
| HEATING VELOCITY (ft/min) | 463  | 463  | 463  | 463  |
| COOLING VELOCITY (ft/min) | 44   | 44   | 44   | 44   |
| OUTLET GRILL SIZE         | 3X10 | 3X10 | 3X10 | 3X10 |
| TRUNK                     | C    | C    | A    | B    |

| SUPPLY AIR TRUNK SIZE |       |        |       |      |   |   |          |         |       |        |       |      | RETURN AIR TRUNK SIZE |   |          |         |       |        |       |      |   |   |          |  |  |
|-----------------------|-------|--------|-------|------|---|---|----------|---------|-------|--------|-------|------|-----------------------|---|----------|---------|-------|--------|-------|------|---|---|----------|--|--|
|                       | TRUNK | STATIC | ROUND | RECT |   |   | VELOCITY |         | TRUNK | STATIC | ROUND | RECT |                       |   | VELOCITY |         | TRUNK | STATIC | ROUND | RECT |   |   | VELOCITY |  |  |
|                       | CFM   | PRESS. | DUCT  | DUCT |   |   | (ft/min) |         | CFM   | PRESS. | DUCT  | DUCT |                       |   | (ft/min) |         | CFM   | PRESS. | DUCT  | DUCT |   |   | (ft/min) |  |  |
| TRUNK A               | 153   | 0.08   | 6.9   | 8    | x | 8 | 344      | TRUNK G | 0     | 0.00   | 0     | 0    | x                     | 8 | 0        | TRUNK O | 0     | 0.06   | 0     | 0    | x | 8 | 0        |  |  |
| TRUNK B               | 155   | 0.08   | 7     | 8    | x | 8 | 349      | TRUNK H | 0     | 0.00   | 0     | 0    | x                     | 8 | 0        | TRUNK P | 0     | 0.06   | 0     | 0    | x | 8 | 0        |  |  |
| TRUNK C               | 476   | 0.08   | 10.6  | 14   | x | 8 | 612      | TRUNK I | 0     | 0.00   | 0     | 0    | x                     | 8 | 0        | TRUNK Q | 0     | 0.06   | 0     | 0    | x | 8 | 0        |  |  |
| TRUNK D               | 112   | 0.11   | 5.7   | 8    | x | 8 | 252      | TRUNK J | 0     | 0.00   | 0     | 0    | x                     | 8 | 0        | TRUNK R | 0     | 0.06   | 0     | 0    | x | 8 | 0        |  |  |
| TRUNK E               | 861   | 0.08   | 13.3  | 20   | x | 8 | 775      | TRUNK K | 0     | 0.00   | 0     | 0    | x                     | 8 | 0        | TRUNK S | 0     | 0.06   | 0     | 0    | x | 8 | 0        |  |  |
| TRUNK F               | 244   | 0.11   | 7.6   | 10   | x | 8 | 439      | TRUNK L | 0     | 0.00   | 0     | 0    | x                     | 8 | 0        | TRUNK T | 0     | 0.06   | 0     | 0    | x | 8 | 0        |  |  |

| RETURN AIR #       | 1    | 2    | 3    | 4    | 5    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | BR    |      |      |
|--------------------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| AIR VOLUME         | 330  | 155  | 360  | 130  | 130  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0    |
| PLENUM PRESSURE    | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15 | 0.15 |
| ACTUAL DUCT LGH.   | 15   | 55   | 55   | 63   | 60   | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 16   |      |
| EQUIVALENT LENGTH  | 145  | 205  | 200  | 205  | 165  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 185  |      |
| TOTAL EFFECTIVE LH | 160  | 260  | 255  | 268  | 225  | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 201  |      |
| ADJUSTED PRESSURE  | 0.09 | 0.06 | 0.06 | 0.06 | 0.07 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 0.07 |      |
| ROUND DUCT SIZE    | 9    | 7.5  | 10.3 | 7    | 6.8  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    |      |
| INLET GRILL SIZE   | 8    | 8    | 8    | 8    | 8    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    |      |
|                    | X    | X    | X    | X    | X    | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X    |      |
| INLET GRILL SIZE   | 30   | 14   | 30   | 14   | 14   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    |      |

|         |      |      |      |    |   |    |     |
|---------|------|------|------|----|---|----|-----|
| TRUNK W | 0    | 0.06 | 0    | 0  | x | 8  | 0   |
| TRUNK X | 1105 | 0.06 | 15.6 | 26 | x | 10 | 612 |
| TRUNK Y | 775  | 0.06 | 13.7 | 22 | x | 8  | 634 |
| TRUNK Z | 515  | 0.06 | 11.8 | 16 | x | 8  | 579 |
| DROP    | 1105 | 0.06 | 15.6 | 24 | x | 10 | 663 |

SITE NAME: VALES OF HUMBER SOUTH  
BUILDER: ROYAL PINE HOMES

OPT LAUN  
TYPE: 7001 - ELEV C

DATE: Jul-24

GFA: 5590 LO# 95346

**FURNACE 2**

HEATING CFM 925  
TOTAL HEAT LOSS 24,537  
AIR FLOW RATE CFM 37.7  
COOLING CFM 925  
TOTAL HEAT GAIN 29,213  
AIR FLOW RATE CFM 31.66

**FACTORY  
INSTALLED**

furnace pressure 0.6  
furnace filter 0  
a/c coil pressure 0.25  
available pressure for s/a & r/a 0.35

**FURNACE HEAT LOSS +  
HRV / ERV HEAT LOSS  
= 27542 BTUH**
**CARRIER**  
**59SC6A040M14--10**  
FAN SPEED LOW  
MEDLOW 545  
MEDIUM 770  
MEDIUM HIGH 925  
HIGH 0

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

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

TEMPERATURE RISE 39 °F

| RUN COUNT | 4th | 3rd | 2nd | 1st | Bas |
|-----------|-----|-----|-----|-----|-----|
| S/A       | 0   | 0   | 22  | 0   | 0   |
| R/A       | 0   | 0   | 7   | 0   | 0   |

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

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

| RUN #                     | 1    | 2    | 3    | 4    | 5    | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 15    | 16    | 17    | 18    | 19    | 20     | 21   | 22   |
|---------------------------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|------|------|
| ROOM NAME                 | PRI  | PRI  | PRI  | ENS  | ENS  | DRESS | BED-2 | BED-2 | ENS-2 | WIC-4 | BED-3 | BED-3 | ENS-3 | BED-4 | BED-4 | ENS-4 | BED-5 | BED-5 | SHARED | RETR | LAUN |
| RM LOSS MBH.              | 1.11 | 1.11 | 1.11 | 2.12 | 0.71 | 0.97  | 1.01  | 1.01  | 0.90  | 0.94  | 1.54  | 1.54  | 2.23  | 1.33  | 1.33  | 0.28  | 1.25  | 1.25  | 0.64   | 1.40 | 0.13 |
| CFM PER RUN HEAT          | 42   | 42   | 42   | 80   | 27   | 37    | 38    | 38    | 34    | 36    | 58    | 58    | 84    | 50    | 50    | 10    | 47    | 47    | 24     | 53   | 5    |
| RM GAIN MBH.              | 1.78 | 1.78 | 1.78 | 1.99 | 0.66 | 0.46  | 1.29  | 1.29  | 0.34  | 1.08  | 1.59  | 1.59  | 1.99  | 1.99  | 1.99  | 0.08  | 1.80  | 1.80  | 0.41   | 2.03 | 1.19 |
| CFM PER RUN COOLING       | 56   | 56   | 56   | 63   | 21   | 15    | 41    | 41    | 11    | 34    | 50    | 50    | 63    | 63    | 63    | 3     | 57    | 57    | 13     | 64   | 38   |
| ADJUSTED PRESSURE         | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17  | 0.17  | 0.17  | 0.17  | 0.17  | 0.17  | 0.17  | 0.16  | 0.17  | 0.17  | 0.17  | 0.17  | 0.17  | 0.17   | 0.17 | 0.17 |
| ACTUAL DUCT LGH.          | 84   | 69   | 63   | 90   | 85   | 85    | 43    | 38    | 33    | 41    | 37    | 42    | 49    | 64    | 58    | 39    | 94    | 88    | 80     | 92   | 62   |
| EQUIVALENT LENGTH         | 190  | 200  | 210  | 160  | 170  | 200   | 180   | 180   | 110   | 110   | 120   | 130   | 130   | 190   | 220   | 110   | 170   | 170   | 170    | 190  | 220  |
| TOTAL EFFECTIVE LENGTH    | 274  | 269  | 273  | 250  | 255  | 285   | 223   | 218   | 143   | 151   | 157   | 172   | 179   | 254   | 278   | 149   | 264   | 258   | 250    | 282  | 282  |
| ADJUSTED PRESSURE         | 0.06 | 0.06 | 0.06 | 0.07 | 0.07 | 0.06  | 0.08  | 0.08  | 0.12  | 0.11  | 0.11  | 0.1   | 0.09  | 0.07  | 0.06  | 0.12  | 0.07  | 0.07  | 0.07   | 0.06 | 0.06 |
| ROUND DUCT SIZE           | 5    | 5    | 5    | 6    | 4    | 5     | 4     | 4     | 4     | 4     | 5     | 5     | 5     | 5     | 6     | 4     | 5     | 5     | 4      | 6    | 4    |
| HEATING VELOCITY (ft/min) | 308  | 308  | 308  | 408  | 310  | 272   | 436   | 436   | 390   | 413   | 426   | 426   | 617   | 367   | 255   | 115   | 345   | 345   | 275    | 270  | 57   |
| COOLING VELOCITY (ft/min) | 411  | 411  | 411  | 321  | 241  | 110   | 470   | 470   | 126   | 390   | 367   | 367   | 463   | 463   | 321   | 34    | 419   | 419   | 149    | 326  | 436  |
| OUTLET GRILL SIZE         | 3X10 | 3X10 | 3X10 | 4X10 | 3X10 | 3X10  | 3X10  | 3X10  | 3X10  | 3X10  | 3X10  | 3X10  | 3X10  | 3X10  | 4X10  | 3X10  | 3X10  | 3X10  | 3X10   | 4X10 | 3X10 |
| TRUNK                     | A    | A    | A    | A    | A    | A     | B     | B     | B     | D     | D     | B     | B     | C     | C     | D     | C     | C     | C      | C    | C    |

| RUN #                     | 42   |
|---------------------------|------|
| ROOM NAME                 | HALL |
| RM LOSS MBH.              | 0.66 |
| CFM PER RUN HEAT          | 25   |
| RM GAIN MBH.              | 0.30 |
| CFM PER RUN COOLING       | 10   |
| ADJUSTED PRESSURE         | 0.17 |
| ACTUAL DUCT LGH.          | 54   |
| EQUIVALENT LENGTH         | 180  |
| TOTAL EFFECTIVE LENGTH    | 234  |
| ADJUSTED PRESSURE         | 0.07 |
| ROUND DUCT SIZE           | 4    |
| HEATING VELOCITY (ft/min) | 287  |
| COOLING VELOCITY (ft/min) | 115  |
| OUTLET GRILL SIZE         | 3X10 |
| TRUNK                     | C    |

| SUPPLY AIR TRUNK SIZE |        |       |      |          |   |   |     |  |  | RETURN 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               | 270    | 0.06  | 9.2  | 10       | x | 8 | 486 |  |  | TRUNK G               | 0      | 0.00  | 0    | 0        | x | 8 | 0 |  |  |
| TRUNK B               | 522    | 0.06  | 11.8 | 16       | x | 8 | 587 |  |  | TRUNK H               | 0      | 0.00  | 0    | 0        | x | 8 | 0 |  |  |
| TRUNK C               | 301    | 0.06  | 9.6  | 12       | x | 8 | 452 |  |  | TRUNK I               | 0      | 0.00  | 0    | 0        | x | 8 | 0 |  |  |
| TRUNK D               | 405    | 0.06  | 10.7 | 18       | x | 8 | 405 |  |  | 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 #       | 1    | 2    | 3    | 4    | 5    | 6    | 7    | BR    |       |       |       |       |       |       |       |       |       |       |       |
|--------------------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| AIR VOLUME         | 225  | 95   | 200  | 105  | 105  | 75   | 120  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| PLENUM PRESSURE    | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  |
| ACTUAL DUCT LGH.   | 46   | 42   | 54   | 66   | 89   | 60   | 53   | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
| EQUIVALENT LENGTH  | 175  | 165  | 245  | 205  | 210  | 215  | 205  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| TOTAL EFFECTIVE LH | 221  | 207  | 299  | 271  | 299  | 275  | 258  | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
| ADJUSTED PRESSURE  | 0.07 | 0.07 | 0.05 | 0.05 | 0.05 | 0.05 | 0.06 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 |
| ROUND DUCT SIZE    | 8.3  | 6    | 8.6  | 6.8  | 6.8  | 6    | 6.8  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| INLET GRILL SIZE   | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
|                    | X    | X    | X    | X    | X    | X    | X    | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     |
| INLET GRILL SIZE   | 24   | 14   | 30   | 14   | 14   | 14   | 14   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |

TYPE: 7001 - ELEV C  
SITE NAME: VALES OF HUMBER SOUTH

LO # 95346  
OPT LAUN

**RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY**

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

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

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

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

| TOTAL VENTILATION CAPACITY |                     | 9.32.3.3(1)      |
|----------------------------|---------------------|------------------|
| Basement + Master Bedroom  | <u>2</u> @ 21.2 cfm | <u>42.4</u> cfm  |
| Other Bedrooms             | <u>4</u> @ 10.6 cfm | <u>42.4</u> cfm  |
| Kitchen & Bathrooms        | <u>8</u> @ 10.6 cfm | <u>84.8</u> cfm  |
| Other Rooms                | <u>8</u> @ 10.6 cfm | <u>84.8</u> cfm  |
| Table 9.32.3.A.            | TOTAL               | <u>254.4</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>95.4</u> cfm |

| SUPPLEMENTAL VENTILATION CAPACITY |              | 9.32.3.5. |
|-----------------------------------|--------------|-----------|
| Total Ventilation Capacity        | <u>254.4</u> | cfm       |
| Less Principal Ventil. Capacity   | <u>150</u>   | cfm       |
| Required Supplemental Capacity    | <u>104.4</u> | cfm       |

| PRINCIPAL EXHAUST FAN CAPACITY |                                                  |
|--------------------------------|--------------------------------------------------|
| Model: VANEE V150H             | Location: BSMT                                   |
| <u>150.0</u> cfm               | <input checked="" type="checkbox"/> HVI Approved |

| PRINCIPAL EXHAUST HEAT LOSS CALCULATION |        |        |        |      |
|-----------------------------------------|--------|--------|--------|------|
| CFM                                     | ΔT °F  | FACTOR | % LOSS |      |
| 150.0 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   |
| ENS-2             | BY INSTALLING CONTRACTOR | 50                       | <input checked="" type="checkbox"/> | 3.5   |
| ENS-3             | BY INSTALLING CONTRACTOR | 50                       | <input checked="" type="checkbox"/> | 3.5   |
| ENS-4             | BY INSTALLING CONTRACTOR | 50                       | <input checked="" type="checkbox"/> | 3.5   |

| HEAT RECOVERY VENTILATOR        |                                                  | 9.32.3.11. |
|---------------------------------|--------------------------------------------------|------------|
| Model: VANEE V150H              | INSTALL 2 HRV / ERV's                            |            |
| <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 PINE 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:                                                                                                         | July-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

| CSA F280-12 Residential Heat Loss and Heat Gain Calculations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                   |                                                     |                                                                                                                                         |                                                           |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-------------------|--------------|------|------|----|-------|-------|------|----|-------|--------|------|----|-------|-------|---|---|---|--------|---|---|---|--------|--|--|--------------|--------|--|--|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--------------------------------|-------|--------------------------------|-------|-------------------------------|--|--|--|--|--|--------|---------|-------|-------|-------------|----|-----|----|----|-------------|----|----|---|----|
| Formula Sheet (For Air Leakage / Ventilation Calculation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                   |                                                     |                                                                                                                                         |                                                           |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| LO#: 95346                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   | Model: 7001 - ELEV C                                |                                                                                                                                         | Builder: ROYAL PINE HOMES                                 |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                   |                                                     |                                                                                                                                         | Date: 7/10/2024                                           |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| <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>2793</td> <td>10</td> <td>27930</td> </tr> <tr> <td>First</td> <td>2793</td> <td>11</td> <td>30723</td> </tr> <tr> <td>Second</td> <td>3336</td> <td>10</td> <td>33360</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>92,013.0 ft³</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>2605.5 m³</td> </tr> </tbody> </table> |                   |                                                     | Level                                                                                                                                   | Floor Area (ft²)                                          | Floor Height (ft) | Volume (ft³) | Bsmt | 2793 | 10 | 27930 | First | 2793 | 11 | 30723 | Second | 3336 | 10 | 33360 | Third | 0 | 9 | 0 | Fourth | 0 | 9 | 0 | Total: |  |  | 92,013.0 ft³ | Total: |  |  | 2605.5 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%;">0.241</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.078</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 | 0.241 | SUMMER NATURAL AIR CHANGE RATE | 0.078 | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2793              | 10                                                  | 27930                                                                                                                                   |                                                           |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| First                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2793              | 11                                                  | 30723                                                                                                                                   |                                                           |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 3336              | 10                                                  | 33360                                                                                                                                   |                                                           |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Third                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0                 | 9                                                   | 0                                                                                                                                       |                                                           |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Fourth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0                 | 9                                                   | 0                                                                                                                                       |                                                           |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Total:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   |                                                     | 92,013.0 ft³                                                                                                                            |                                                           |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Total:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   |                                                     | 2605.5 m³                                                                                                                               |                                                           |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| WINTER NATURAL AIR CHANGE RATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.241             |                                                     |                                                                                                                                         |                                                           |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| SUMMER NATURAL AIR CHANGE RATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.078             |                                                     |                                                                                                                                         |                                                           |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 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>0.241 x 723.76 x 41 °C x 1.2 = 8639 W</p> <p>= 29475 Btu/h</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                                                     | $HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ <p>= 0.078 x 723.76 x 6 °C x 1.2 = 416 W</p> <p>= 1421 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>                                                                                      |                                                           |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| $HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E) \times 2 \text{ HRV / ERV's}$ <p>300 CFM x 74 °F x 1.08 x 0.25 = 6010 Btu/h</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                   |                                                     | $HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>300 CFM x 11 °F x 1.08 x 0.25 = 891 Btu/h</p>                             |                                                           |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| <b>5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                   |                                                     |                                                                                                                                         |                                                           |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| $HL_{airr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                   |                                                     |                                                                                                                                         |                                                           |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Level Factor (LF) | HLairve Air Leakage + Ventilation Heat Loss (Btu/h) | Level Conductive Heat Loss: (HL <sub>clevel</sub> )                                                                                     | Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel) |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.5               | 29,475                                              | 12,566                                                                                                                                  | 1.173                                                     |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.3               |                                                     | 23,667                                                                                                                                  | 0.374                                                     |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.2               |                                                     | 17,542                                                                                                                                  | 0.336                                                     |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                   |                                                     |                                                                                                                                         |                                                           |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                   |                                                     |                                                                                                                                         | Michael O'Rourke<br>BCIN# 19669<br>                       |                   |              |      |      |    |       |       |      |    |       |        |      |    |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |

**HEAT LOSS AND GAIN SUMMARY SHEET**

|                             |                  |                                    |
|-----------------------------|------------------|------------------------------------|
| <b>MODEL:</b> 7001 - ELEV C | <b>OPT LAUN</b>  | <b>BUILDER:</b> ROYAL PINE HOMES   |
| <b>SFQT:</b> 5590           | <b>LO#</b> 95346 | <b>SITE:</b> VALES OF HUMBER SOUTH |

**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:                         | DETACHED        | # OF STORIES (+BASEMENT): | 3        |
| FRONT FACES:                        | EAST            | ASSUMED (Y/N):            | Y        |
| AIR CHANGES PER HOUR:               | 2.50            | ASSUMED (Y/N):            | Y        |
| AIR TIGHTNESS CATEGORY:             | TIGHT           | ASSUMED (Y/N):            | Y        |
| WIND EXPOSURE:                      | SHELTERED       | ASSUMED (Y/N):            | Y        |
| HOUSE VOLUME (ft³):                 | 92013.0         | ASSUMED (Y/N):            | Y        |
| INTERNAL SHADING:                   | BLINDS/CURTAINS | ASSUMED OCCUPANTS:        | 6        |
| INTERIOR LIGHTING LOAD (Btu/h/ft²): | 1.27            | DC BRUSHLESS MOTOR (Y/N): | Y        |
| FOUNDATION CONFIGURATION            | BCIN_1          | DEPTH BELOW GRADE:        | 7.0 ft   |
| LENGTH: 63.0 ft                     | WIDTH: 62.0 ft  | EXPOSED PERIMETER:        | 250.0 ft |

**2012 OBC - COMPLIANCE PACKAGE****Component****Compliance Package  
SB-12 PERFORMANCE****Nominal Min. Eff.**

|                                                                            |        |       |
|----------------------------------------------------------------------------|--------|-------|
| Ceiling with Attic Space Minimum RSI (R)-Value                             | 60     | 59.22 |
| Ceiling Without Attic Space Minimum RSI (R)-Value                          | 31     | 27.65 |
| Exposed Floor Minimum RSI (R)-Value                                        | 31     | 29.80 |
| Walls Above Grade Minimum RSI (R)-Value                                    | 22+1.5 | 21.40 |
| Basement Walls Minimum RSI (R)-Value                                       | 20     | 21.12 |
| Below Grade Slab Entire surface > 600 mm below grade Minimum RSI (R)-Value | -      | -     |
| Edge of Below Grade Slab ≤ 600 mm Below Grade Minimum RSI (R)-Value        | 10     | 10    |
| Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value             | 10     | 11.13 |
| Windows and Sliding Glass Doors Maximum U-Value                            | 1.6    | -     |
| Skylights Maximum U-Value                                                  | 2.6    | -     |
| Space Heating Equipment Minimum AFUE                                       | 0.96   | -     |
| HRV Minimum Efficiency                                                     | 75%    | -     |
| Domestic Hot Water Heater Minimum EF                                       | 0.9    | -     |

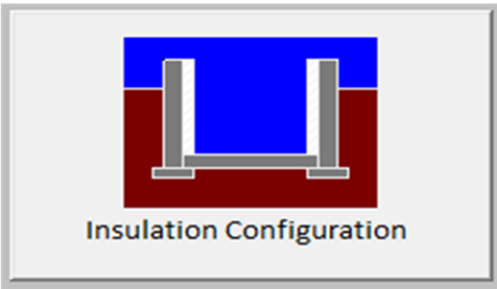
INDIVIDUAL BCIN: 19669

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):              | 19.2                                      | <br>Insulation Configuration |
| Floor Width (m):               | 18.9                                      |                                                                                                                 |
| Exposed Perimeter (m):         | 0.0                                       |                                                                                                                 |
| Wall Height (m):               | 3.0                                       |                                                                                                                 |
| Depth Below Grade (m):         | 2.13                                      |                                                                                                                 |
| Window Area (m <sup>2</sup> ): | 2.2                                       |                                                                                                                 |
| 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):          |                                           | 2619                                                                                                            |

TYPE: 7001 - ELEV C  
LO# 95346

OPT LAUN

# Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

| Weather Station Description       |                                |                        |    |    |
|-----------------------------------|--------------------------------|------------------------|----|----|
| Province:                         | Ontario                        |                        |    |    |
| Region:                           | Brampton                       |                        |    |    |
| Weather Station Location:         | Open flat terrain, grass       |                        |    |    |
| Anemometer height (m):            | 10                             |                        |    |    |
| Local Shielding                   |                                |                        |    |    |
| Building Site:                    | Suburban, forest               |                        |    |    |
| Walls:                            | Heavy                          |                        |    |    |
| Flue:                             | Heavy                          |                        |    |    |
| Highest Ceiling Height (m):       | 7.32                           |                        |    |    |
| Building Configuration            |                                |                        |    |    |
| Type:                             | Detached                       |                        |    |    |
| Number of Stories:                | Two                            |                        |    |    |
| Foundation:                       | Full                           |                        |    |    |
| House Volume (m <sup>3</sup> ):   | 2605.5                         |                        |    |    |
| Air Leakage/Ventilation           |                                |                        |    |    |
| Air Tightness Type:               | Energy Star Detached (2.5 ACH) |                        |    |    |
| Custom BDT Data:                  | ELA @ 10 Pa.                   | 2432.2 cm <sup>2</sup> |    |    |
|                                   | 2.50                           | ACH @ 50 Pa            |    |    |
| Mechanical Ventilation (L/s):     | Total Supply                   | Total Exhaust          |    |    |
|                                   | 70.8                           | 70.8                   |    |    |
| Flue Size                         |                                |                        |    |    |
| Flue #:                           | #1                             | #2                     | #3 | #4 |
| Diameter (mm):                    | 0                              | 0                      | 0  | 0  |
| Natural Infiltration Rates        |                                |                        |    |    |
| Heating Air Leakage Rate (ACH/H): | 0.241                          |                        |    |    |
| Cooling Air Leakage Rate (ACH/H): | 0.078                          |                        |    |    |

TYPE: 7001 - ELEV C  
LO# 95346

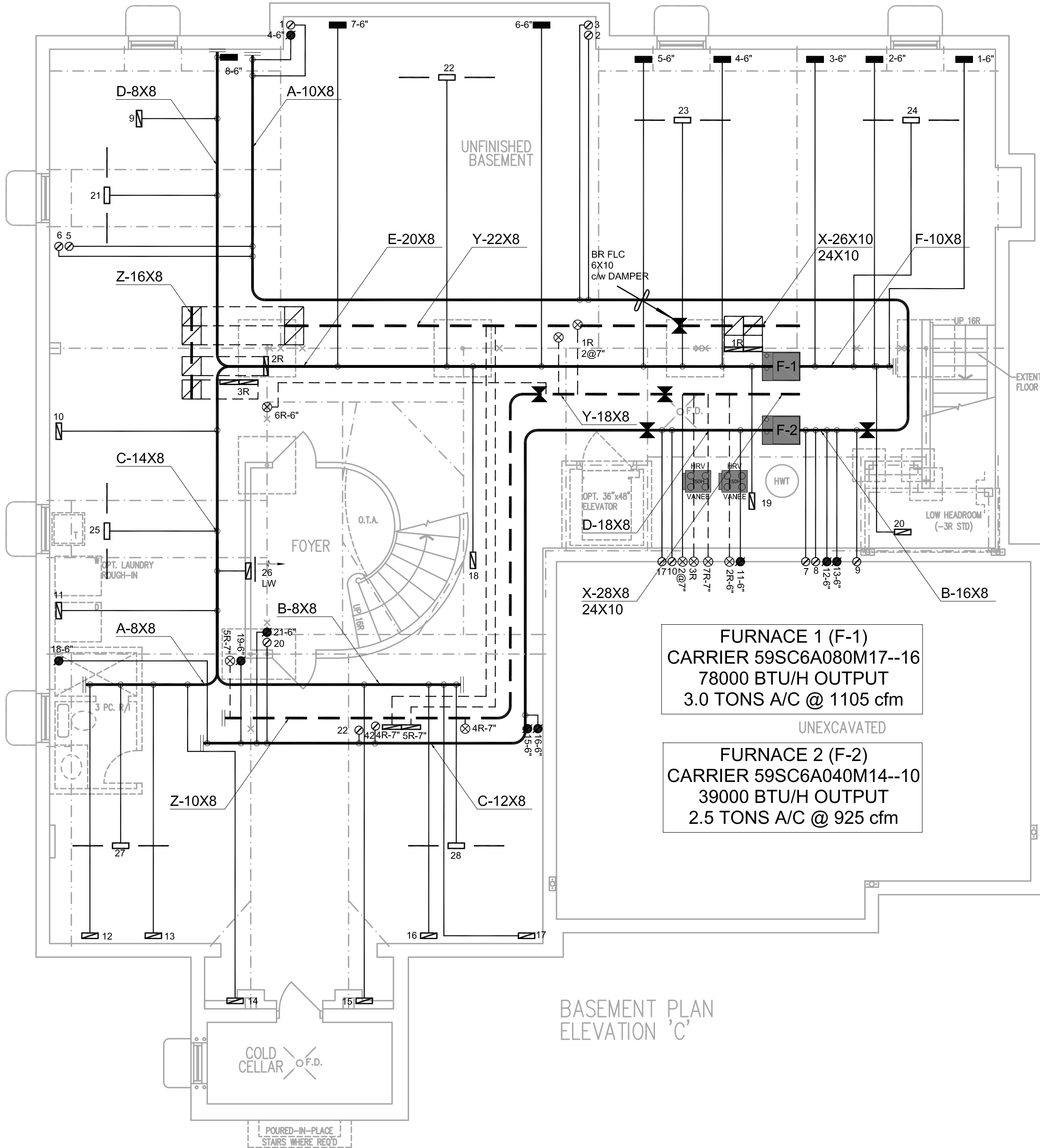
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| HVAC LEGEND |                                  |
|-------------|----------------------------------|
|             | SUPPLY AIR GRILLE                |
|             | SUPPLY AIR GRILLE 6" BOOT        |
|             | LINEAR BAR or LINEAR SLOT GRILLE |
|             | SUPPLY AIR BOOT ABOVE            |
|             | 6" SUPPLY AIR BOOT ABOVE         |
|             | SUPPLY AIR STACK                 |
|             | 6" SUPPLY AIR STACK              |
|             | 14X8 RETURN AIR GRILLE           |
|             | 30X8 RETURN AIR GRILLE           |
|             | FLOOR RETURN AIR GRILLE          |
|             | RETURN STACK ABOVE               |
|             | RETURN AIR STACK                 |
|             | REDUCER                          |
|             | SUPPLY DUCTWORK                  |
|             | RETURN DUCTWORK                  |
|             | FLEX DUCT                        |
|             | EXHAUST FAN                      |
|             | LINT TRAP by REVERSOMATIC        |
|             | DIRECT VENT                      |
|             | LOW WALL                         |
|             | HIGH WALL                        |
|             | CEILING                          |
|             | MOTORIZED ZONE DAMPER            |
|             | MOTORIZED DAMPER                 |
|             | EXHAUST PIPE                     |
|             | CONCENTRIC VENT KIT              |
|             | CONCENTRIC HRV or ERV VENT KIT   |
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|             | DOUBLE WALL BOX by REVERSOMATIC  |
|             | TRIPLE WALL BOX by REVERSOMATIC  |
|             | DRYER BOOSTER FAN                |

|     |                             |          |    |
|-----|-----------------------------|----------|----|
| 3   | UPDATED EQUIPMENT           | JUL/2024 | JW |
| 2   | REVISED TO PERFORMANCE PATH | APR/2022 | KB |
| 1   | ISSUED FOR PERMIT           | MAR/2022 | EG |
| No. | Revision                    | Date     | By |

SB-12 PERFORMANCE PACKAGE

I Michael O'Rourke have reviewed and take responsibility for the design work and am qualified under division C3.2.5 of the building code.

Michael O'Rourke BCIN # 15689  
HVAC Designs Ltd.

|     | S/A | R/A | FANS |
|-----|-----|-----|------|
| 2ND | 22  | 7   | 7    |
| 1ST | 20  | 5   | 4    |
| BAS | 8   | 1   | 0    |

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Client ROYAL PINE HOMES

Project Name VALES OF HUMBER SOUTH  
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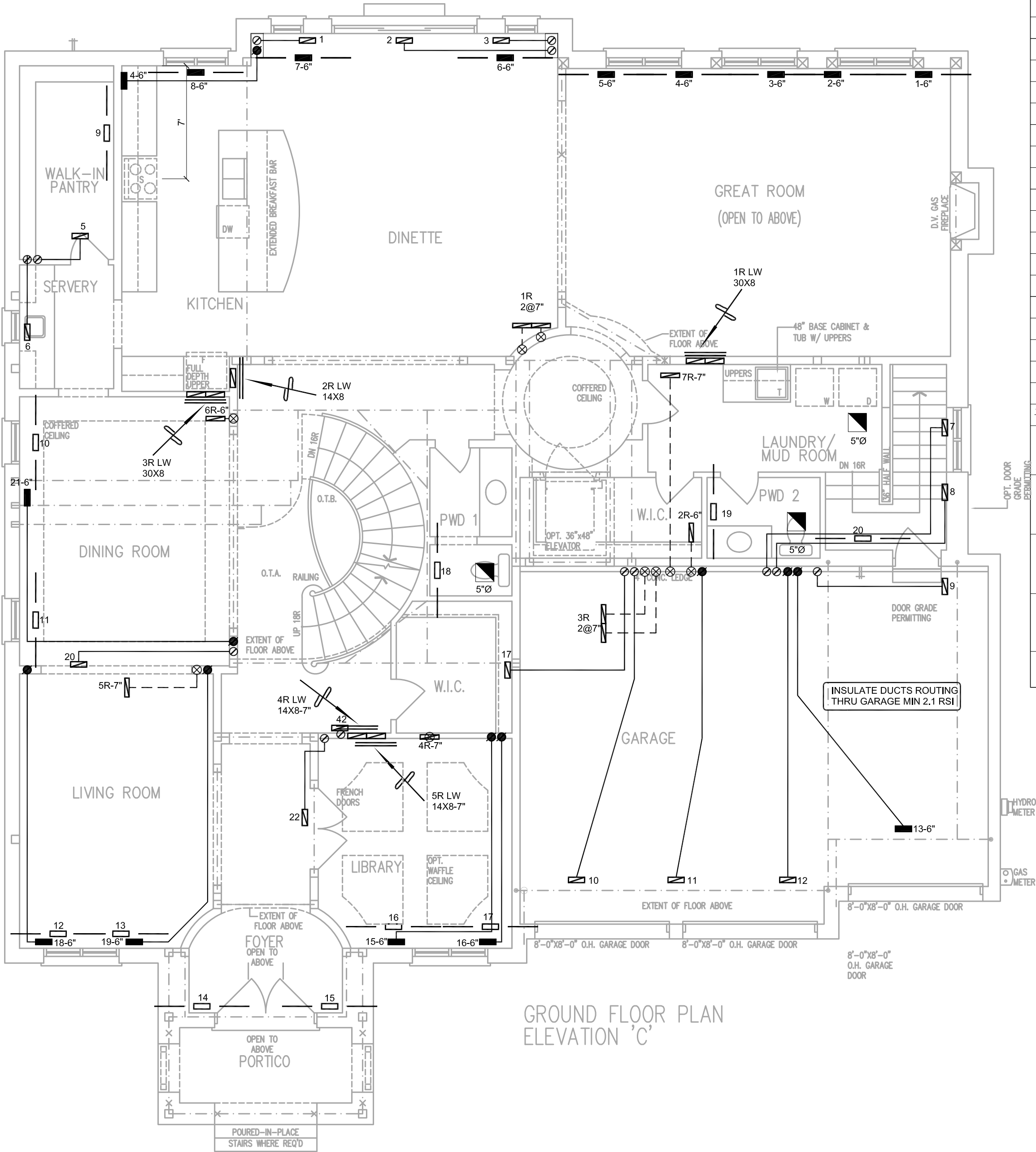
|             |             |                |
|-------------|-------------|----------------|
| Sheet Title | BASEMENT    | HEATING LAYOUT |
| Drawn By    | EG          | Checked By MO  |
| Scale       | 3/16"=1'-0" | Sheet No.      |
| Date        | MARCH 2022  | 1              |
| LO #        | 95346       | 3              |

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|             | CEILING                          |
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|     |                             |          |    |
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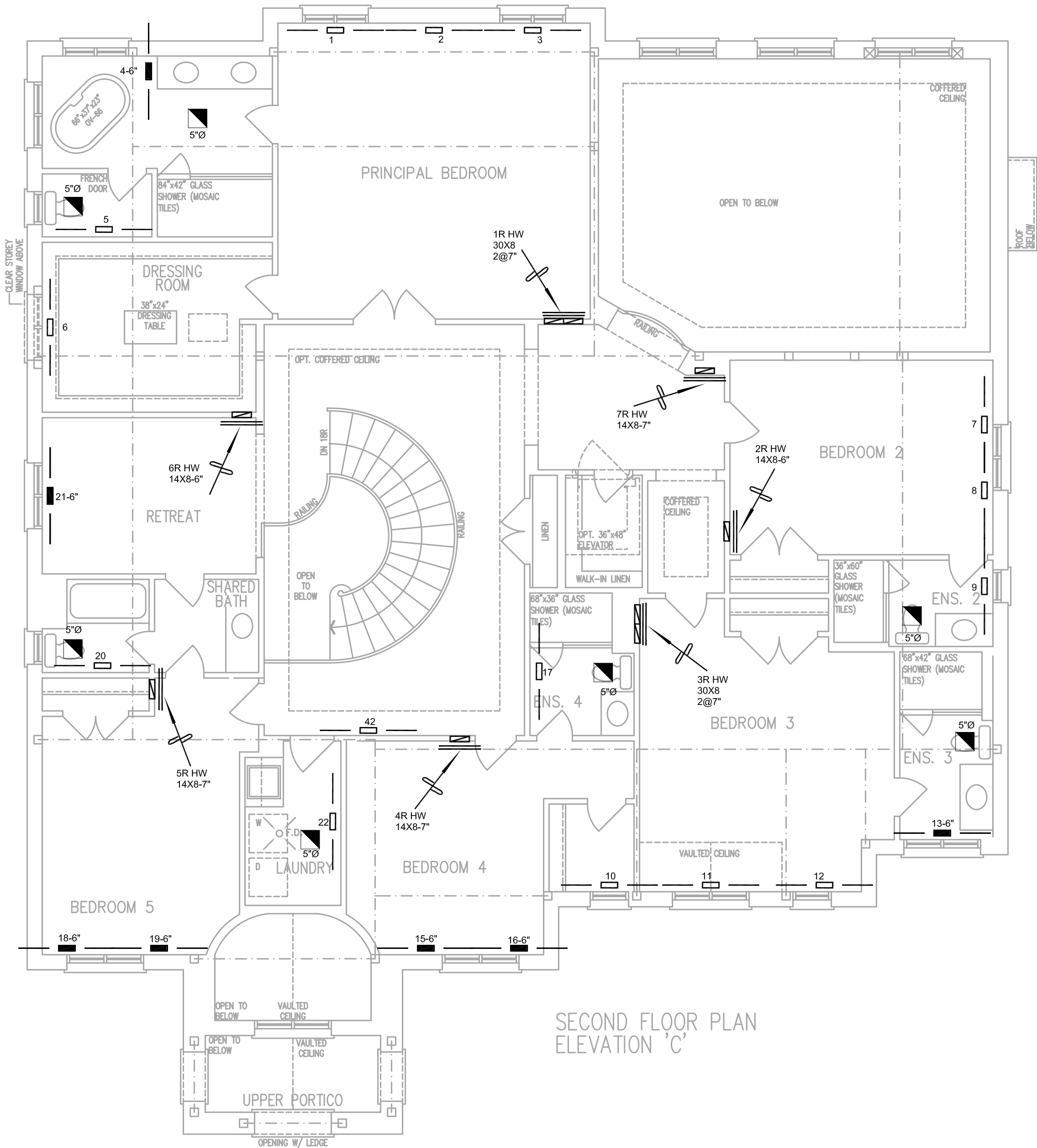
| Sheet Title       | FIRST FLOOR   | HEATING LAYOUT |
|-------------------|---------------|----------------|
| Drawn By EG       | Checked By MO |                |
| Scale 3/16"=1'-0" |               | Sheet No. 2    |
| Date MARCH 2022   |               |                |
| LO # 95346        |               | 3              |

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| Sheet Title       | SECOND FLOOR  | HEATING LAYOUT |
|-------------------|---------------|----------------|
| Drawn By EG       | Checked By MO |                |
| Scale 3/16"=1'-0" |               | Sheet No. 3    |
| Date MARCH 2022   |               |                |
| LO # 95346        |               | 3              |