

## 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>VAUGHAN (WOODBIDGE)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Postal code                         | Plan number/ other description                                                                    |                                      |
| <b>B. Individual who reviews and takes responsibility for design activities</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                     |                                                                                                   |                                      |
| Name<br><b>MICHAEL O'ROURKE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                     | Firm<br><b>HVAC DESIGNS LTD.</b>                                                                  |                                      |
| Street address<br><b>375 FINLEY AVE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                     | Unit no.<br><b>202</b>                                                                            | Lot/con.<br><b>N/A</b>               |
| Municipality<br><b>AJAX</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Postal code<br><b>L1S 2E2</b>       | Province<br><b>ONTARIO</b>                                                                        | E-mail<br><b>info@hvacdesigns.ca</b> |
| Telephone number<br><b>(905) 619-2300</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Fax number<br><b>(905) 619-2375</b> | 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><b>HEAT LOSS / GAIN CALCULATIONS</b><br><b>DUCT SIZING</b><br><b>RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY</b><br><b>RESIDENTIAL SYSTEM DESIGN per CSA-F280-12</b>                                                                                                                                                                                                                                                                                                                                                                |                                     | <b>Model:</b> 6001 - QUEENSLAND<br><br>OPT 2ND - ELEVATOR<br><br><b>Project:</b> PINE VALLEY PH 2 |                                      |
| <b>D. Declaration of Designer</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                     |                                                                                                   |                                      |
| I, <u><b>MICHAEL O'ROURKE</b></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><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><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.                                                                                                                                                                                                                                                                                                                                                                                                      |                                     |                                                                                                   |                                      |
| April 14, 2022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                     |               |                                      |
| Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                     | Signature of Designer                                                                             |                                      |

**NOTE:**

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

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

| SITE NAME: PINE VALLEY PH 2    |  |           |       |           | OPT 2ND - ELEVATOR      |           |      |           |      | DATE Apr-22 |      |           |      |           | WINTER NATURAL AIR CHANGE RATE 0.434 |      |      |      |      | HEAT LOSS ΔT °F. 76                  |     |   |   |   | CSA-F280-12         |  |  |  |  |                  |  |  |  |  |
|--------------------------------|--|-----------|-------|-----------|-------------------------|-----------|------|-----------|------|-------------|------|-----------|------|-----------|--------------------------------------|------|------|------|------|--------------------------------------|-----|---|---|---|---------------------|--|--|--|--|------------------|--|--|--|--|
| BUILDER: GOLD PARK HOMES       |  |           |       |           | TYPE: 6001 - QUEENSLAND |           |      |           |      | GFA: 5653   |      |           |      |           | LO# 96138                            |      |      |      |      | SUMMER NATURAL AIR CHANGE RATE 0.145 |     |   |   |   | HEAT GAIN ΔT °F. 13 |  |  |  |  | SB-12 PACKAGE A1 |  |  |  |  |
| ROOM USE                       |  | GREAT     |       | KIT       |                         | DIN       |      | LIBR      |      | FOY         |      | MUD       |      |           |                                      |      |      |      |      |                                      |     |   |   |   |                     |  |  |  |  |                  |  |  |  |  |
| EXP. WALL                      |  | 58        |       | 56        |                         | 25        |      | 35        |      | 38          |      | 29        |      |           |                                      |      |      |      |      |                                      |     |   |   |   |                     |  |  |  |  |                  |  |  |  |  |
| CLG. HT.                       |  | 11        |       | 11        |                         | 11        |      | 11        |      | 21          |      | 13        |      |           |                                      |      |      |      |      |                                      |     |   |   |   |                     |  |  |  |  |                  |  |  |  |  |
| FACTORS                        |  |           |       |           |                         |           |      |           |      |             |      |           |      |           |                                      |      |      |      |      |                                      |     |   |   |   |                     |  |  |  |  |                  |  |  |  |  |
| GRS.WALL AREA                  |  | LOSS GAIN |       | 638       |                         | 616       |      | 275       |      | 385         |      | 798       |      | 377       |                                      |      |      |      |      |                                      |     |   |   |   |                     |  |  |  |  |                  |  |  |  |  |
| GLAZING                        |  |           |       | LOSS GAIN |                         | LOSS GAIN |      | LOSS GAIN |      | LOSS GAIN   |      | LOSS GAIN |      | LOSS GAIN |                                      |      |      |      |      |                                      |     |   |   |   |                     |  |  |  |  |                  |  |  |  |  |
| NORTH                          |  | 21.3      | 16.0  | 26        | 553                     | 415       | 0    | 0         | 0    | 0           | 0    | 0         | 0    | 0         | 0                                    | 0    | 0    | 0    | 0    | 0                                    | 0   | 0 | 0 | 0 | 0                   |  |  |  |  |                  |  |  |  |  |
| EAST                           |  | 21.3      | 41.6  | 0         | 0                       | 0         | 0    | 0         | 0    | 0           | 58   | 1234      | 2410 | 80        | 1702                                 | 3324 | 0    | 0    | 0    | 0                                    | 0   | 0 | 0 | 0 | 0                   |  |  |  |  |                  |  |  |  |  |
| SOUTH                          |  | 21.3      | 24.9  | 0         | 0                       | 0         | 0    | 0         | 0    | 41          | 872  | 1021      | 0    | 0         | 0                                    | 0    | 0    | 0    | 0    | 0                                    | 0   | 0 | 0 | 0 | 0                   |  |  |  |  |                  |  |  |  |  |
| WEST                           |  | 21.3      | 41.6  | 78        | 1660                    | 3241      | 134  | 2852      | 5568 | 0           | 0    | 0         | 0    | 0         | 0                                    | 0    | 0    | 0    | 0    | 0                                    | 0   | 0 | 0 | 0 | 0                   |  |  |  |  |                  |  |  |  |  |
| SKYLT.                         |  | 37.2      | 101.5 | 0         | 0                       | 0         | 0    | 0         | 0    | 0           | 0    | 0         | 0    | 0         | 0                                    | 0    | 0    | 0    | 0    | 0                                    | 0   | 0 | 0 | 0 | 0                   |  |  |  |  |                  |  |  |  |  |
| DOORS                          |  | 25.2      | 4.3   | 0         | 0                       | 0         | 0    | 0         | 0    | 0           | 20   | 505       | 85   | 50        | 1262                                 | 213  | 20   | 505  | 85   |                                      |     |   |   |   |                     |  |  |  |  |                  |  |  |  |  |
| NET EXPOSED WALL               |  | 4.5       | 0.8   | 534       | 2383                    | 401       | 482  | 2151      | 362  | 234         | 1044 | 176       | 307  | 1370      | 231                                  | 668  | 2981 | 502  | 357  | 1593                                 | 268 |   |   |   |                     |  |  |  |  |                  |  |  |  |  |
| NET EXPOSED BSMT WALL ABOVE GR |  | 3.6       | 0.6   | 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   | 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       | 1.3   | 10        | 27                      | 13        | 0    | 0         | 0    | 0           | 0    | 0         | 10   | 27        | 13                                   | 204  | 561  | 257  | 0    | 0                                    | 0   | 0 | 0 | 0 | 0                   |  |  |  |  |                  |  |  |  |  |
| EXPOSED FLOOR                  |  | 2.6       | 0.4   | 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               |  |           |       | 4624      |                         | 5003      |      | 1917      |      | 3137        |      | 6507      |      | 2098      |                                      |      |      |      |      |                                      |     |   |   |   |                     |  |  |  |  |                  |  |  |  |  |
| SUB TOTAL HT GAIN              |  |           |       | 4070      |                         | 5930      |      | 1197      |      | 2738        |      | 4296      |      | 353       |                                      |      |      |      |      |                                      |     |   |   |   |                     |  |  |  |  |                  |  |  |  |  |
| LEVEL FACTOR / MULTIPLIER      |  | 0.30      | 0.63  |           |                         | 0.30      | 0.63 |           |      | 0.30        | 0.63 |           |      | 0.30      | 0.63                                 |      |      | 0.30 | 0.63 |                                      |     |   |   |   |                     |  |  |  |  |                  |  |  |  |  |
| AIR CHANGE HEAT LOSS           |  |           |       | 2912      |                         | 3151      |      | 1207      |      | 1976        |      | 4098      |      | 1321      |                                      |      |      |      |      |                                      |     |   |   |   |                     |  |  |  |  |                  |  |  |  |  |
| AIR CHANGE HEAT GAIN           |  |           |       | 378       |                         | 551       |      | 111       |      | 254         |      | 399       |      | 33        |                                      |      |      |      |      |                                      |     |   |   |   |                     |  |  |  |  |                  |  |  |  |  |
| DUCT LOSS                      |  |           |       | 0         |                         | 0         |      | 0         |      | 0           |      | 0         |      | 0         |                                      |      |      |      |      |                                      |     |   |   |   |                     |  |  |  |  |                  |  |  |  |  |
| DUCT GAIN                      |  |           |       | 0         |                         | 0         |      | 0         |      | 0           |      | 0         |      | 0         |                                      |      |      |      |      |                                      |     |   |   |   |                     |  |  |  |  |                  |  |  |  |  |
| HEAT GAIN PEOPLE               |  | 240       |       | 0         |                         | 0         |      | 0         |      | 0           |      | 0         |      | 0         |                                      |      |      |      |      |                                      |     |   |   |   |                     |  |  |  |  |                  |  |  |  |  |
| HEAT GAIN APPLIANCES/LIGHTS    |  |           |       | 1462      |                         | 1462      |      | 1462      |      | 1462        |      | 1462      |      | 0         |                                      |      |      |      |      |                                      |     |   |   |   |                     |  |  |  |  |                  |  |  |  |  |
| TOTAL HT LOSS BTU/H            |  |           |       | 7536      |                         | 8153      |      | 3124      |      | 5112        |      | 10605     |      | 3420      |                                      |      |      |      |      |                                      |     |   |   |   |                     |  |  |  |  |                  |  |  |  |  |
| TOTAL HT GAIN x 1.3 BTU/H      |  |           |       | 7684      |                         | 10326     |      | 3601      |      | 5792        |      | 6103      |      | 502       |                                      |      |      |      |      |                                      |     |   |   |   |                     |  |  |  |  |                  |  |  |  |  |

|                                |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |      |  |  |       |  |  |
|--------------------------------|-----------|-------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----|--|--|------|--|--|-------|--|--|
| ROOM USE                       |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | WOD |  |  | BAS  |  |  |       |  |  |
| EXP. WALL                      |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  | 66   |  |  | 242   |  |  |
| CLG. HT.                       |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  | 10   |  |  | 10    |  |  |
|                                | FACTORS   |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |      |  |  |       |  |  |
| GRS.WALL AREA                  | LOSS GAIN |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |      |  |  |       |  |  |
| GLAZING                        |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  | 660  |  |  | 2090  |  |  |
| NORTH                          | 21.3      | 16.0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  | LOSS |  |  | GAIN  |  |  |
| EAST                           | 21.3      | 41.6  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  | 0    |  |  | 0     |  |  |
| SOUTH                          | 21.3      | 24.9  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  | 0    |  |  | 0     |  |  |
| WEST                           | 21.3      | 41.6  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  | 0    |  |  | 0     |  |  |
| SKYLT.                         | 37.2      | 101.5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  | 10   |  |  | 213   |  |  |
| DOORS                          | 25.2      | 4.3   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  | 416  |  |  | 0     |  |  |
| NET EXPOSED WALL               | 4.5       | 0.8   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  | 0    |  |  | 0     |  |  |
| NET EXPOSED BSMT WALL ABOVE GR | 3.6       | 0.6   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  | 0    |  |  | 0     |  |  |
| EXPOSED CLG                    | 1.3       | 0.6   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  | 0    |  |  | 0     |  |  |
| NO ATTIC EXPOSED CLG           | 2.7       | 1.3   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  | 0    |  |  | 0     |  |  |
| EXPOSED FLOOR                  | 2.6       | 0.4   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  | 0    |  |  | 0     |  |  |
| BASEMENT/CRAWL HEAT LOSS       |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |      |  |  |       |  |  |
| SLAB ON GRADE HEAT LOSS        |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |      |  |  | 8416  |  |  |
| SUBTOTAL HT LOSS               |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |      |  |  | 0     |  |  |
| SUB TOTAL HT GAIN              |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |      |  |  | 2035  |  |  |
| LEVEL FACTOR / MULTIPLIER      |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |      |  |  | 722   |  |  |
| AIR CHANGE HEAT LOSS           |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |      |  |  | 0.50  |  |  |
| AIR CHANGE HEAT GAIN           |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |      |  |  | 2.00  |  |  |
| DUCT LOSS                      |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |      |  |  |       |  |  |
| DUCT GAIN                      |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |      |  |  | 24442 |  |  |
| HEAT GAIN PEOPLE               | 240       |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |      |  |  | 101   |  |  |
| HEAT GAIN APPLIANCES/LIGHTS    |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |      |  |  | 0     |  |  |
| TOTAL HT LOSS BTU/H            |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |      |  |  | 0     |  |  |
| TOTAL HT GAIN x 1.3 BTU/H      |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |      |  |  | 0     |  |  |
|                                |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |      |  |  | 2035  |  |  |
|                                |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |      |  |  | 34615 |  |  |
|                                |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |      |  |  | 939   |  |  |
|                                |           |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |      |  |  | 598   |  |  |

| SITE NAME: PINE VALLEY PH 2    |  |  |  |           |       |      |      |           |      | OPT 2ND - ELEVATOR      |     |           |      |     |      |           |      |      |      | DATE Apr-22 |      |      |     | WINTER NATURAL AIR CHANGE RATE 0.434 |      |     |      |                                      |     |      |      |           |      | HEAT LOSS AT °F. 76 |    |           |      | CSA-F280-12         |      |           |   |                  |      |   |      |      |   |   |
|--------------------------------|--|--|--|-----------|-------|------|------|-----------|------|-------------------------|-----|-----------|------|-----|------|-----------|------|------|------|-------------|------|------|-----|--------------------------------------|------|-----|------|--------------------------------------|-----|------|------|-----------|------|---------------------|----|-----------|------|---------------------|------|-----------|---|------------------|------|---|------|------|---|---|
| BUILDER: GOLD PARK HOMES       |  |  |  |           |       |      |      |           |      | TYPE: 6001 - QUEENSLAND |     |           |      |     |      |           |      |      |      | GFA: 5653   |      |      |     | LO# 96138                            |      |     |      | SUMMER NATURAL AIR CHANGE RATE 0.145 |     |      |      |           |      |                     |    |           |      | HEAT GAIN ΔT °F. 13 |      |           |   | SB-12 PACKAGE A1 |      |   |      |      |   |   |
| ROOM USE                       |  |  |  | MBR       |       |      |      | ENS       |      |                         |     | BED-2     |      |     |      | BED-3     |      |      |      | BED-4       |      |      |     | BED-5                                |      |     |      | ENS-2                                |     |      |      | ENS-3     |      |                     |    | ENS-4     |      |                     |      | ENS-5     |   |                  |      |   |      |      |   |   |
| EXP. WALL                      |  |  |  | 20        |       |      |      | 32        |      |                         |     | 18        |      |     |      | 28        |      |      |      | 47          |      |      |     | 16                                   |      |     |      | 6                                    |     |      |      | 19        |      |                     |    | 6         |      |                     |      | 0         |   |                  |      |   |      |      |   |   |
| CLG. HT.                       |  |  |  | 10        |       |      |      | 9         |      |                         |     | 9         |      |     |      | 11        |      |      |      | 10          |      |      |     | 9                                    |      |     |      | 9                                    |     |      |      | 9         |      |                     |    | 9         |      |                     |      | 9         |   |                  |      |   |      |      |   |   |
| FACTORS                        |  |  |  |           |       |      |      |           |      |                         |     |           |      |     |      |           |      |      |      |             |      |      |     |                                      |      |     |      |                                      |     |      |      |           |      |                     |    |           |      |                     |      |           |   |                  |      |   |      |      |   |   |
| GRS.WALL AREA                  |  |  |  | 200       |       |      |      | 288       |      |                         |     | 162       |      |     |      | 308       |      |      |      | 470         |      |      |     | 144                                  |      |     |      | 54                                   |     |      |      | 171       |      |                     |    | 54        |      |                     |      | 0         |   |                  |      |   |      |      |   |   |
| GLAZING                        |  |  |  | LOSS GAIN |       |      |      | LOSS GAIN |      |                         |     | LOSS GAIN |      |     |      | LOSS GAIN |      |      |      | LOSS GAIN   |      |      |     | LOSS GAIN                            |      |     |      | LOSS GAIN                            |     |      |      | LOSS GAIN |      |                     |    | LOSS GAIN |      |                     |      | LOSS GAIN |   |                  |      |   |      |      |   |   |
| NORTH                          |  |  |  | 21.3      | 16.0  | 0    | 0    | 0         | 0    | 0                       | 0   | 0         | 38   | 809 | 607  | 0         | 0    | 0    | 0    | 0           | 0    | 0    | 0   | 0                                    | 8    | 170 | 128  | 0                                    | 0   | 0    | 0    | 0         | 0    | 0                   | 0  | 0         | 0    | 0                   | 0    |           |   |                  |      |   |      |      |   |   |
| EAST                           |  |  |  | 21.3      | 41.6  | 0    | 0    | 0         | 0    | 0                       | 0   | 0         | 0    | 0   | 56   | 1192      | 2327 | 45   | 958  | 1870        | 0    | 0    | 0   | 0                                    | 0    | 0   | 0    | 12                                   | 255 | 499  | 0    | 0         | 0    | 0                   | 0  | 0         | 0    | 0                   | 0    | 0         |   |                  |      |   |      |      |   |   |
| SOUTH                          |  |  |  | 21.3      | 24.9  | 0    | 0    | 0         | 22   | 468                     | 548 | 0         | 0    | 0   | 0    | 0         | 0    | 0    | 0    | 0           | 0    | 19   | 404 | 473                                  | 0    | 0   | 0    | 0                                    | 0   | 0    | 8    | 170       | 199  | 0                   | 0  | 0         | 0    | 0                   | 0    | 0         | 0 | 0                | 0    |   |      |      |   |   |
| WEST                           |  |  |  | 21.3      | 41.6  | 42   | 894  | 1745      | 8    | 170                     | 332 | 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 | 0    |      |   |   |
| SKYLT.                         |  |  |  | 37.2      | 101.5 | 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                   | 0    | 0         | 0 | 0                | 0    | 0 | 0    |      |   |   |
| DOORS                          |  |  |  | 25.2      | 4.3   | 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                   | 0    | 0         | 0 | 0                | 0    | 0 | 0    | 0    |   |   |
| NET EXPOSED WALL               |  |  |  | 4.5       | 0.8   | 158  | 705  | 119       | 258  | 1151                    | 194 | 124       | 553  | 93  | 252  | 1125      | 189  | 425  | 1897 | 319         | 125  | 558  | 94  | 46                                   | 205  | 35  | 159  | 710                                  | 120 | 46   | 205  | 35        | 0    | 0                   | 0  | 0         | 0    | 0                   | 0    | 0         | 0 | 0                | 0    | 0 | 0    | 0    | 0 |   |
| NET EXPOSED BSMT WALL ABOVE GR |  |  |  | 3.6       | 0.6   | 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                   | 0    | 0         | 0 | 0                | 0    | 0 | 0    | 0    | 0 |   |
| EXPOSED CLG                    |  |  |  | 1.3       | 0.6   | 380  | 488  | 223       | 240  | 308                     | 141 | 438       | 562  | 257 | 291  | 373       | 171  | 373  | 479  | 219         | 232  | 298  | 136 | 66                                   | 85   | 39  | 84   | 108                                  | 49  | 84   | 108  | 49        | 72   | 92                  | 42 |           |      |                     |      |           |   |                  |      |   |      |      |   |   |
| NO ATTIC EXPOSED CLG           |  |  |  | 2.7       | 1.3   | 0    | 0    | 0         | 0    | 0                       | 0   | 0         | 0    | 0   | 75   | 206       | 94   | 30   | 82   | 38          | 0    | 0    | 0   | 0                                    | 0    | 0   | 0    | 0                                    | 0   | 0    | 0    | 0         | 0    | 0                   | 0  | 0         | 0    | 0                   | 0    | 0         | 0 | 0                | 0    | 0 | 0    | 0    |   |   |
| EXPOSED FLOOR                  |  |  |  | 2.6       | 0.4   | 0    | 0    | 0         | 0    | 0                       | 0   | 200       | 510  | 86  | 216  | 551       | 93   | 0    | 0    | 0           | 0    | 0    | 0   | 66                                   | 168  | 28  | 84   | 214                                  | 36  | 0    | 0    | 0         | 0    | 0                   | 0  | 0         | 0    | 0                   | 0    | 0         | 0 | 0                | 0    | 0 | 0    | 0    | 0 | 0 |
| BASEMENT/CRAWL HEAT LOSS       |  |  |  |           |       | 0    |      |           | 0    |                         |     | 0         |      |     | 0    |           |      | 0    |      |             | 0    |      | 0   |                                      |      | 0   |      |                                      | 0   |      |      | 0         |      |                     | 0  |           |      | 0                   |      |           | 0 |                  |      | 0 |      | 0    |   |   |
| SLAB ON GRADE HEAT LOSS        |  |  |  |           |       | 0    |      |           | 0    |                         |     | 0         |      |     | 0    |           |      | 0    |      |             | 0    |      | 0   |                                      |      | 0   |      |                                      | 0   |      |      | 0         |      |                     | 0  |           |      | 0                   |      |           | 0 |                  |      | 0 |      | 0    |   |   |
| SUBTOTAL HT LOSS               |  |  |  |           |       | 2087 |      |           | 2098 |                         |     | 2434      |      |     | 3447 |           |      | 3415 |      |             | 1260 |      |     | 629                                  |      |     | 1287 |                                      |     | 483  |      |           | 92   |                     |    |           |      |                     |      |           |   |                  |      |   |      |      |   |   |
| SUB TOTAL HT GAIN              |  |  |  |           |       | 2087 |      |           | 1215 |                         |     | 1044      |      |     | 2874 |           |      | 2446 |      |             | 703  |      |     | 229                                  |      |     | 704  |                                      |     | 283  |      |           | 42   |                     |    |           |      |                     |      |           |   |                  |      |   |      |      |   |   |
| LEVEL FACTOR / MULTIPLIER      |  |  |  | 0.20      | 0.46  |      |      |           | 0.20 | 0.46                    |     | 0.20      | 0.46 |     | 0.20 | 0.46      |      | 0.20 | 0.46 |             | 0.20 | 0.46 |     | 0.20                                 | 0.46 |     | 0.20 | 0.46                                 |     | 0.20 | 0.46 |           | 0.20 | 0.46                |    | 0.20      | 0.46 |                     | 0.20 | 0.46      |   | 0.20             | 0.46 |   | 0.20 | 0.46 |   |   |
| AIR CHANGE HEAT LOSS           |  |  |  |           |       | 967  |      |           | 972  |                         |     | 1128      |      |     | 1597 |           |      | 1583 |      |             | 584  |      |     | 291                                  |      |     | 596  |                                      |     | 224  |      |           | 43   |                     |    |           |      |                     |      |           |   |                  |      |   |      |      |   |   |
| AIR CHANGE HEAT GAIN           |  |  |  |           |       |      | 194  |           |      | 113                     |     |           | 97   |     |      | 267       |      |      | 227  |             |      | 65   |     |                                      | 21   |     |      | 65                                   |     |      | 26   |           |      | 4                   |    |           |      |                     |      |           |   |                  |      |   |      |      |   |   |
| DUCT LOSS                      |  |  |  |           |       | 0    |      |           | 0    |                         |     | 356       |      |     | 504  |           |      | 0    |      |             | 0    |      |     | 92                                   |      |     | 188  |                                      |     | 0    |      |           | 0    |                     |    |           |      |                     |      |           |   |                  |      |   |      |      |   |   |
| DUCT GAIN                      |  |  |  |           |       | 0    |      |           | 0    |                         |     | 284       |      |     | 484  |           |      | 0    |      |             | 0    |      |     | 25                                   |      |     | 77   |                                      |     | 0    |      |           | 0    |                     |    |           |      |                     |      |           |   |                  |      |   |      |      |   |   |
| HEAT GAIN PEOPLE               |  |  |  | 240       |       | 2    | 480  |           | 0    |                         | 1   | 240       |      | 1   | 240  |           | 1    | 240  |      | 1           | 240  |      | 0   |                                      | 0    |     | 0    |                                      | 0   |      | 0    |           | 0    |                     | 0  |           | 0    |                     | 0    |           | 0 |                  | 0    |   | 0    |      |   |   |
| HEAT GAIN APPLIANCES/LIGHTS    |  |  |  |           |       |      | 1462 |           | 0    |                         |     | 1462      |      |     | 1462 |           |      | 1462 |      |             | 1462 |      |     | 1462                                 |      |     | 0    |                                      | 0   |      | 0    |           | 0    |                     | 0  |           | 0    |                     | 0    |           | 0 |                  | 0    |   | 0    |      |   |   |
| TOTAL HT LOSS BTU/H            |  |  |  |           |       | 3053 |      |           | 3070 |                         |     | 3918      |      |     | 5548 |           |      | 4998 |      |             | 1844 |      |     | 1012                                 |      |     | 2072 |                                      |     | 707  |      |           | 135  |                     |    |           |      |                     |      |           |   |                  |      |   |      |      |   |   |
| TOTAL HT GAIN x 1.3 BTU/H      |  |  |  |           |       |      | 5490 |           |      | 1726                    |     |           | 4065 |     |      | 6927      |      |      | 5689 |             |      | 3212 |     |                                      | 359  |     |      | 1100                                 |     |      | 402  |           |      | 60                  |    |           |      |                     |      |           |   |                  |      |   |      |      |   |   |

| ROOM USE |  |  | LAUN |  |  | HALL |  |  | DRESS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | </ |
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|----------|--|--|------|--|--|------|--|--|-------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|

SITE NAME: PINE VALLEY PH 2  
BUILDER: GOLD PARK HOMES

OPT 2ND - ELEVATOR  
TYPE: 6001 - QUEENSLAND

DATE: Apr-22

GFA: 5653 LO# 96138

FURNACE 1

HEATING CFM 1170 COOLING CFM 1170  
TOTAL HEAT LOSS 74,599 TOTAL HEAT GAIN 35,546  
AIR FLOW RATE CFM 15.68 AIR FLOW RATE CFM 32.92

furnace pressure 0.6  
furnace filter 0.05  
a/c coil pressure 0.2  
available pressure for s/a & r/a 0.35

FURNACE HEAT LOSS +  
HRV / ERV HEAT LOSS  
= 77677 BTUH

\$LENNOX  
ML196UH090XE36C  
FAN SPEED 90  
LOW 0  
MEDLOW 0  
MEDIUM 0  
MEDIUM HIGH 1170  
HIGH 1300

AFUE = 96 %  
INPUT (BTU/H) = 88,000  
OUTPUT (BTU/H) = 85,600

DESIGN CFM = 1170  
CFM @ .6" E.S.P.

TEMPERATURE RISE 68 °F

| RUN COUNT | 4th | 3rd | 2nd | 1st | Bas |
|-----------|-----|-----|-----|-----|-----|
| S/A       | 0   | 0   | 0   | 16  | 8   |
| R/A       | 0   | 0   | 0   | 3   | 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     | 5     | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 21   | 22   | 23   | 24   |
|---------------------------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| ROOM NAME                 | GREAT | GREAT | GREAT | KIT  | KIT  | KIT  | KIT  | DIN  | DIN  | LIBR | LIBR | LIBR | FOY  | FOY  | FOY  | MUD  | BAS  | BAS  | BAS  | BAS  |
| RM LOSS MBH.              | 2.51  | 2.51  | 2.51  | 2.04 | 2.04 | 2.04 | 2.04 | 1.56 | 1.56 | 1.70 | 1.70 | 1.70 | 3.53 | 3.53 | 3.53 | 3.42 | 4.58 | 4.58 | 4.58 | 4.58 |
| CFM PER RUN HEAT          | 39    | 39    | 39    | 32   | 32   | 32   | 32   | 24   | 24   | 27   | 27   | 27   | 55   | 55   | 55   | 54   | 72   | 72   | 72   | 72   |
| RM GAIN MBH.              | 2.56  | 2.56  | 2.56  | 2.58 | 2.58 | 2.58 | 2.58 | 1.80 | 1.80 | 1.93 | 1.93 | 1.93 | 2.03 | 2.03 | 2.03 | 0.50 | 0.19 | 0.19 | 0.19 | 0.19 |
| CFM PER RUN COOLING       | 84    | 84    | 84    | 85   | 85   | 85   | 85   | 59   | 59   | 64   | 64   | 64   | 67   | 67   | 67   | 17   | 6    | 6    | 6    | 6    |
| ADJUSTED PRESSURE         | 0.16  | 0.16  | 0.16  | 0.16 | 0.16 | 0.16 | 0.16 | 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.          | 74    | 89    | 72    | 67   | 59   | 45   | 46   | 46   | 10   | 22   | 27   | 31   | 40   | 46   | 37   | 48   | 67   | 56   | 65   | 71   |
| EQUIVALENT LENGTH         | 140   | 130   | 170   | 160  | 170  | 170  | 110  | 120  | 150  | 150  | 110  | 120  | 140  | 110  | 100  | 150  | 110  | 120  | 140  | 140  |
| TOTAL EFFECTIVE LENGTH    | 214   | 219   | 242   | 227  | 229  | 215  | 156  | 166  | 160  | 172  | 137  | 151  | 180  | 156  | 137  | 198  | 177  | 176  | 205  | 211  |
| ADJUSTED PRESSURE         | 0.08  | 0.07  | 0.07  | 0.07 | 0.07 | 0.08 | 0.1  | 0.1  | 0.11 | 0.1  | 0.13 | 0.11 | 0.1  | 0.11 | 0.13 | 0.09 | 0.1  | 0.1  | 0.08 | 0.08 |
| ROUND DUCT SIZE           | 6     | 6     | 6     | 6    | 6    | 6    | 6    | 5    | 5    | 5    | 5    | 5    | 5    | 5    | 5    | 5    | 5    | 5    | 6    | 6    |
| HEATING VELOCITY (ft/min) | 199   | 199   | 199   | 163  | 163  | 163  | 163  | 176  | 176  | 198  | 198  | 198  | 404  | 404  | 404  | 396  | 529  | 529  | 367  | 367  |
| COOLING VELOCITY (ft/min) | 428   | 428   | 428   | 433  | 433  | 433  | 433  | 433  | 433  | 470  | 470  | 470  | 492  | 492  | 492  | 125  | 44   | 44   | 31   | 31   |
| OUTLET GRILL SIZE         | 4X10  | 4X10  | 4X10  | 4X10 | 4X10 | 4X10 | 4X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 4X10 | 4X10 |
| TRUNK                     | A     | A     | A     | A    | A    | B    | C    | C    | C    | E    | E    | E    | D    | D    | D    | C    | B    | B    | A    | A    |

| RUN #                     | 25   | 26   | 27   | 28   |
|---------------------------|------|------|------|------|
| ROOM NAME                 | BAS  | BAS  | BAS  | BAS  |
| RM LOSS MBH.              | 4.58 | 4.58 | 4.58 | 4.58 |
| CFM PER RUN HEAT          | 72   | 72   | 72   | 72   |
| RM GAIN MBH.              | 0.19 | 0.19 | 0.19 | 0.19 |
| CFM PER RUN COOLING       | 6    | 6    | 6    | 6    |
| ADJUSTED PRESSURE         | 0.17 | 0.17 | 0.17 | 0.17 |
| ACTUAL DUCT LGH.          | 39   | 44   | 23   | 41   |
| EQUIVALENT LENGTH         | 140  | 160  | 100  | 130  |
| TOTAL EFFECTIVE LENGTH    | 179  | 204  | 123  | 171  |
| ADJUSTED PRESSURE         | 0.1  | 0.08 | 0.14 | 0.1  |
| ROUND DUCT SIZE           | 5    | 5    | 5    | 5    |
| HEATING VELOCITY (ft/min) | 529  | 529  | 529  | 529  |
| COOLING VELOCITY (ft/min) | 44   | 44   | 44   | 44   |
| OUTLET GRILL SIZE         | 3X10 | 3X10 | 3X10 | 3X10 |
| TRUNK                     | C    | D    | E    | D    |

| 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               | 325    | 0.07  | 9.5  | 10       | x | 8        | 585   | TRUNK G | 0     | 0.00                  | 0        | 0 | x        | 8     | 0      | TRUNK O | 0    | 0.06     | 0 | 0        | x | 8 | 0 |
| TRUNK B               | 176    | 0.08  | 7.3  | 8        | x | 8        | 396   | TRUNK H | 0     | 0.00                  | 0        | 0 | x        | 8     | 0      | TRUNK P | 0    | 0.06     | 0 | 0        | x | 8 | 0 |
| TRUNK C               | 707    | 0.07  | 12.7 | 14       | x | 12       | 606   | TRUNK I | 0     | 0.00                  | 0        | 0 | x        | 8     | 0      | TRUNK Q | 0    | 0.06     | 0 | 0        | x | 8 | 0 |
| TRUNK D               | 309    | 0.08  | 9    | 10       | x | 8        | 556   | TRUNK J | 0     | 0.00                  | 0        | 0 | x        | 8     | 0      | TRUNK R | 0    | 0.06     | 0 | 0        | x | 8 | 0 |
| TRUNK E               | 462    | 0.08  | 10.5 | 14       | x | 8        | 594   | TRUNK K | 0     | 0.00                  | 0        | 0 | x        | 8     | 0      | TRUNK S | 0    | 0.06     | 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      | TRUNK T | 0    | 0.06     | 0 | 0        | x | 8 | 0 |

| RETURN AIR #       | 1    | 2    | 3    |       |       |       |       |       |       |       |       |       |       |       |       | BR   |         |      |      |      |    |   |    |     |
|--------------------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|---------|------|------|------|----|---|----|-----|
| AIR VOLUME         | 275  | 305  | 330  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 260  | TRUNK W | 330  | 0.06 | 9.9  | 12 | x | 8  | 495 |
| 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 | TRUNK X | 840  | 0.06 | 14.1 | 16 | x | 12 | 630 |
| ACTUAL DUCT LGH.   | 76   | 47   | 41   | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 19   | TRUNK Y | 580  | 0.06 | 12.3 | 12 | x | 10 | 696 |
| EQUIVALENT LENGTH  | 180  | 165  | 140  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 145  | TRUNK Z | 275  | 0.06 | 9.3  | 10 | x | 8  | 495 |
| TOTAL EFFECTIVE LH | 256  | 212  | 181  | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 164  | DROP    | 1170 | 0.06 | 16   | 24 | x | 12 | 585 |
| ADJUSTED PRESSURE  | 0.06 | 0.07 | 0.08 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 0.09 |         |      |      |      |    |   |    |     |
| ROUND DUCT SIZE    | 9.3  | 9.3  | 9.3  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 8.2  |         |      |      |      |    |   |    |     |
| INLET GRILL SIZE   | 8    | 8    | 8    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 8    |         |      |      |      |    |   |    |     |
|                    | X    | X    | X    | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X    |         |      |      |      |    |   |    |     |
| INLET GRILL SIZE   | 30   | 30   | 30   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 24   |         |      |      |      |    |   |    |     |

SITE NAME: PINE VALLEY PH 2  
BUILDER: GOLD PARK HOMES

OPT 2ND - ELEVATOR  
TYPE: 6001 - QUEENSLAND

DATE: Apr-22

GFA: 5653 LO# 96138

**FURNACE 2**

HEATING CFM 1110 COOLING CFM 1110  
TOTAL HEAT LOSS 32,015 TOTAL HEAT GAIN 36,552  
AIR FLOW RATE CFM 34.67 AIR FLOW RATE CFM 30.37

furnace pressure 0.6  
furnace filter 0.05  
a/c coil pressure 0.2  
available pressure for s/a & r/a 0.35

**FURNACE HEAT LOSS +  
HRV / ERV HEAT LOSS  
= 35093 BTUH**
**\$LENNOX**
**ML196UH045XE36B**
**FAN SPEED**

LOW 620

MEDLOW 685

MEDIUM 980

MEDIUM HIGH 1110

HIGH 0

AFUE = 96 %  
INPUT (BTU/H) = 44,000  
OUTPUT (BTU/H) = **42,800**

DESIGN CFM = **1110**  
CFM @ .6" E.S.P.

TEMPERATURE RISE 36 °F

| RUN COUNT | 4th | 3rd | 2nd | 1st | Bas |
|-----------|-----|-----|-----|-----|-----|
| S/A       | 0   | 0   | 23  | 0   | 0   |
| R/A       | 0   | 0   | 6   | 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    | 14    | 15    | 16    | 17    | 18    | 19    | 20   | 21   | 22    | 23    |
|---------------------------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|
| ROOM NAME                 | MBR  | MBR  | MBR  | ENS  | ENS  | BED-2 | BED-2 | ENS-2 | BED-3 | BED-3 | BED-3 | ENS-3 | BED-4 | BED-4 | BED-4 | ENS-5 | ENS-4 | BED-5 | BED-5 | LAUN | HALL | DRESS | DRESS |
| RM LOSS MBH.              | 1.02 | 1.02 | 1.02 | 2.30 | 0.77 | 1.96  | 1.96  | 1.01  | 1.85  | 1.85  | 1.85  | 2.07  | 1.67  | 1.67  | 1.67  | 0.14  | 0.71  | 0.92  | 0.92  | 0.16 | 1.48 | 2.01  | 2.01  |
| CFM PER RUN HEAT          | 35   | 35   | 35   | 80   | 27   | 68    | 68    | 35    | 64    | 64    | 64    | 72    | 58    | 58    | 58    | 5     | 25    | 32    | 32    | 5    | 51   | 70    | 70    |
| RM GAIN MBH.              | 1.83 | 1.83 | 1.83 | 1.29 | 0.43 | 2.03  | 2.03  | 0.36  | 2.31  | 2.31  | 2.31  | 1.10  | 1.90  | 1.90  | 1.90  | 0.06  | 0.40  | 1.61  | 1.61  | 1.97 | 3.54 | 1.01  | 1.01  |
| CFM PER RUN COOLING       | 56   | 56   | 56   | 39   | 13   | 62    | 62    | 11    | 70    | 70    | 70    | 33    | 58    | 58    | 58    | 2     | 12    | 49    | 49    | 60   | 107  | 31    | 31    |
| 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 | 0.15 | 0.17  | 0.17  |
| ACTUAL DUCT LGH.          | 67   | 72   | 83   | 75   | 69   | 85    | 95    | 102   | 79    | 85    | 91    | 86    | 37    | 30    | 42    | 32    | 24    | 28    | 67    | 82   | 34   | 91    | 90    |
| EQUIVALENT LENGTH         | 150  | 160  | 240  | 180  | 180  | 180   | 190   | 200   | 170   | 180   | 170   | 160   | 170   | 150   | 140   | 200   | 210   | 180   | 180   | 210  | 110  | 160   | 170   |
| TOTAL EFFECTIVE LENGTH    | 217  | 232  | 323  | 255  | 249  | 265   | 285   | 302   | 249   | 265   | 261   | 246   | 207   | 180   | 182   | 232   | 234   | 208   | 247   | 292  | 144  | 251   | 260   |
| ADJUSTED PRESSURE         | 0.08 | 0.07 | 0.05 | 0.07 | 0.07 | 0.06  | 0.06  | 0.06  | 0.07  | 0.06  | 0.07  | 0.07  | 0.08  | 0.1   | 0.09  | 0.07  | 0.07  | 0.08  | 0.07  | 0.06 | 0.11 | 0.07  | 0.07  |
| ROUND DUCT SIZE           | 6    | 6    | 6    | 6    | 4    | 6     | 6     | 5     | 6     | 6     | 6     | 6     | 5     | 5     | 5     | 4     | 4     | 5     | 5     | 6    | 6    | 6     | 6     |
| HEATING VELOCITY (ft/min) | 178  | 178  | 178  | 408  | 310  | 347   | 347   | 257   | 326   | 326   | 326   | 367   | 426   | 426   | 426   | 57    | 287   | 235   | 235   | 25   | 260  | 357   | 357   |
| COOLING VELOCITY (ft/min) | 286  | 286  | 286  | 199  | 149  | 316   | 316   | 81    | 357   | 357   | 357   | 168   | 426   | 426   | 426   | 23    | 138   | 360   | 360   | 306  | 546  | 158   | 158   |
| OUTLET GRILL SIZE         | 4X10 | 4X10 | 4X10 | 4X10 | 3X10 | 4X10  | 4X10  | 3X10  | 4X10  | 4X10  | 4X10  | 4X10  | 3X10  | 3X10  | 3X10  | 3X10  | 3X10  | 3X10  | 3X10  | 4X10 | 4X10 | 4X10  | 4X10  |
| TRUNK                     | B    | B    | A    | B    | B    | A     | A     | A     | C     | C     | C     | C     | D     | D     | D     | C     | C     | C     | B     | A    | D    | A     | A     |

| RUN # | ROOM NAME | RM LOSS MBH. | CFM PER RUN HEAT | RM GAIN MBH. | CFM PER RUN COOLING | ADJUSTED PRESSURE | ACTUAL DUCT LGH. | EQUIVALENT LENGTH | TOTAL EFFECTIVE LENGTH | ADJUSTED PRESSURE | ROUND DUCT SIZE | HEATING VELOCITY (ft/min) | COOLING VELOCITY (ft/min) | OUTLET GRILL SIZE | TRUNK |
|-------|-----------|--------------|------------------|--------------|---------------------|-------------------|------------------|-------------------|------------------------|-------------------|-----------------|---------------------------|---------------------------|-------------------|-------|
| 1     | MBR       | 1.02         | 35               | 1.83         | 56                  | 0.17              | 67               | 150               | 217                    | 0.08              | 6               | 178                       | 286                       | 4X10              | B     |
| 2     | MBR       | 1.02         | 35               | 1.83         | 56                  | 0.17              | 72               | 160               | 232                    | 0.07              | 6               | 178                       | 286                       | 4X10              | B     |
| 3     | MBR       | 1.02         | 35               | 1.83         | 56                  | 0.17              | 83               | 240               | 323                    | 0.05              | 6               | 178                       | 286                       | 4X10              | A     |
| 4     | ENS       | 2.30         | 80               | 1.29         | 39                  | 0.17              | 75               | 180               | 255                    | 0.07              | 6               | 408                       | 199                       | 4X10              | B     |
| 5     | ENS       | 0.77         | 27               | 0.43         | 13                  | 0.17              | 69               | 180               | 249                    | 0.07              | 4               | 310                       | 149                       | 3X10              | B     |
| 6     | BED-2     | 1.96         | 68               | 2.03         | 62                  | 0.17              | 85               | 180               | 265                    | 0.06              | 6               | 347                       | 316                       | 4X10              | A     |
| 7     | BED-2     | 1.96         | 68               | 2.03         | 62                  | 0.17              | 95               | 190               | 285                    | 0.06              | 6               | 347                       | 316                       | 4X10              | A     |
| 8     | ENS-2     | 1.01         | 35               | 0.36         | 11                  | 0.17              | 102              | 200               | 302                    | 0.06              | 5               | 257                       | 81                        | 3X10              | A     |
| 9     | BED-3     | 1.85         | 64               | 2.31         | 70                  | 0.17              | 79               | 170               | 249                    | 0.07              | 6               | 326                       | 357                       | 4X10              | C     |
| 10    | BED-3     | 1.85         | 64               | 2.31         | 70                  | 0.17              | 85               | 180               | 265                    | 0.06              | 6               | 326                       | 357                       | 4X10              | C     |
| 11    | BED-3     | 1.85         | 64               | 2.31         | 70                  | 0.17              | 91               | 170               | 261                    | 0.07              | 6               | 326                       | 357                       | 4X10              | C     |
| 12    | ENS-3     | 2.07         | 72               | 1.10         | 33                  | 0.17              | 86               | 160               | 246                    | 0.07              | 6               | 367                       | 168                       | 4X10              | C     |
| 13    | BED-4     | 1.67         | 58               | 1.90         | 58                  | 0.17              | 37               | 170               | 207                    | 0.08              | 5               | 426                       | 426                       | 3X10              | D     |
| 14    | BED-4     | 1.67         | 58               | 1.90         | 58                  | 0.17              | 30               | 150               | 180                    | 0.1               | 5               | 426                       | 426                       | 3X10              | D     |
| 15    | BED-4     | 1.67         | 58               | 1.90         | 58                  | 0.17              | 42               | 140               | 182                    | 0.09              | 5               | 426                       | 426                       | 3X10              | D     |
| 16    | ENS-5     | 0.14         | 5                | 0.06         | 2                   | 0.17              | 32               | 200               | 232                    | 0.07              | 4               | 57                        | 23                        | 3X10              | C     |
| 17    | ENS-4     | 0.71         | 25               | 0.40         | 12                  | 0.17              | 24               | 210               | 234                    | 0.07              | 4               | 287                       | 138                       | 3X10              | C     |
| 18    | BED-5     | 0.92         | 32               | 1.61         | 49                  | 0.17              | 28               | 180               | 208                    | 0.08              | 5               | 235                       | 360                       | 3X10              | C     |
| 19    | BED-5     | 0.92         | 32               | 1.61         | 49                  | 0.17              | 67               | 180               | 247                    | 0.07              | 5               | 235                       | 360                       | 3X10              | B     |
| 20    | LAUN      | 0.16         | 5                | 1.97         | 60                  | 0.17              | 82               | 210               | 292                    | 0.06              | 6               | 25                        | 306                       | 4X10              | A     |
| 21    | HALL      | 1.48         | 51               | 3.54         | 107                 | 0.15              | 34               | 110               | 144                    | 0.11              | 6               | 260                       | 546                       | 4X10              | D     |
| 22    | DRESS     | 2.01         | 70               | 1.01         | 31                  | 0.17              | 91               | 160               | 251                    | 0.07              | 6               | 357                       | 158                       | 4X10              | A     |
| 23    | DRESS     | 2.01         | 70               | 1.01         | 31                  | 0.17              | 90               | 170               | 260                    | 0.07              | 6               | 357                       | 158                       | 4X10              | A     |

| 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               | 351   | 0.05   | 10.7  | 10   | x | 10       | 505 | TRUNK G | 0      | 0.00  | 0    | 0 | x        | 8                     | 0     | TRUNK O | 0     | 0.05 | 0 | 0        | x | 8 | 0 |  |  |  |  |
| TRUNK B               | 560   | 0.05   | 12.7  | 14   | x | 10       | 576 | TRUNK H | 0      | 0.00  | 0    | 0 | x        | 8                     | 0     | TRUNK P | 0     | 0.05 | 0 | 0        | x | 8 | 0 |  |  |  |  |
| TRUNK C               | 886   | 0.05   | 15.1  | 18   | x | 12       | 591 | TRUNK I | 0      | 0.00  | 0    | 0 | x        | 8                     | 0     | TRUNK Q | 0     | 0.05 | 0 | 0        | x | 8 | 0 |  |  |  |  |
| TRUNK D               | 225   | 0.08   | 8     | 10   | x | 8        | 405 | TRUNK J | 0      | 0.00  | 0    | 0 | x        | 8                     | 0     | TRUNK R | 0     | 0.05 | 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 S | 0     | 0.05 | 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     | TRUNK T | 0     | 0.05 | 0 | 0        | x | 8 | 0 |  |  |  |  |
|                       |       |        |       |      |   |          |     |         |        |       |      |   |          |                       |       |         |       |      |   |          |   |   |   |  |  |  |  |
|                       |       |        |       |      |   |          |     |         |        |       |      |   |          |                       |       |         |       |      |   |          |   |   |   |  |  |  |  |

| RETURN AIR #       | 1    | 2    | 3    | 4    | 5    | 6    |       |       |       |       |       |       |       |       |       |       | BR |         |      |      |      |    |   |    |     |
|--------------------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|---------|------|------|------|----|---|----|-----|
| AIR VOLUME         | 230  | 115  | 260  | 130  | 115  | 260  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |    | TRUNK W | 390  | 0.05 | 11.1 | 14 | x | 8  | 501 |
| 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  |    | TRUNK X | 765  | 0.05 | 14.3 | 16 | x | 12 | 574 |
| ACTUAL DUCT LGH.   | 75   | 71   | 71   | 60   | 83   | 65   | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |    | TRUNK Y | 720  | 0.05 | 13.9 | 16 | x | 10 | 648 |
| EQUIVALENT LENGTH  | 230  | 215  | 195  | 185  | 225  | 190  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |    | TRUNK Z | 345  | 0.05 | 10.6 | 10 | x | 10 | 497 |
| TOTAL EFFECTIVE LH | 305  | 286  | 266  | 245  | 308  | 255  | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |    | DROP    | 1110 | 0.05 | 16.4 | 24 | x | 10 | 666 |
| ADJUSTED PRESSURE  | 0.05 | 0.05 | 0.06 | 0.06 | 0.05 | 0.06 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 |    |         |      |      |      |    |   |    |     |
| ROUND DUCT SIZE    | 9.1  | 7    | 9.1  | 7    | 7    | 9.1  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |    |         |      |      |      |    |   |    |     |
| INLET GRILL SIZE   | 8    | 8    | 8    | 8    | 8    | 8    | 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     |    |         |      |      |      |    |   |    |     |
| INLET GRILL SIZE   | 30   | 14   | 30   | 14   | 14   | 30   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |    |         |      |      |      |    |   |    |     |

TYPE: 6001 - QUEENSLAND  
SITE NAME: PINE VALLEY PH 2

LO # 96138  
OPT 2ND - ELEVATOR

**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>5</u> @ 10.6 cfm | <u>53.0</u> cfm  |
| Table 9.32.3.A.            | TOTAL               | <u>222.6</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>222.6</u> | cfm       |
| Less Principal Ventil. Capacity   | <u>150</u>   | cfm       |
| Required Supplemental Capacity    | <u>72.6</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                                     | $\Delta T$ °F | FACTOR | % LOSS |      |
| 150.0 CFM                               | X 76 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 @ 32 deg F ( 0 deg C) | <input checked="" type="checkbox"/> HVI Approved |

| LOCATION OF INSTALLATION |                   |
|--------------------------|-------------------|
| Lot:                     | Concession        |
| Township                 | Plan:             |
| Address                  |                   |
| Roll #                   | Building Permit # |

| BUILDER:        |        |
|-----------------|--------|
| GOLD PARK HOMES |        |
| Name:           |        |
| Address:        |        |
| City:           |        |
| Telephone #:    | Fax #: |

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

| DESIGNER CERTIFICATION                                                                                        |                         |
|---------------------------------------------------------------------------------------------------------------|-------------------------|
| I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code. |                         |
| Name:                                                                                                         | HVAC Designs Ltd.       |
| Signature:                                                                                                    | <i>Michael O'Rourke</i> |
| HRAI #                                                                                                        | 001820                  |
| Date:                                                                                                         | April-22                |

| CSA F280-12 Residential Heat Loss and Heat Gain Calculations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                          |                                                                                                                                         |                                                     |                                                           |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------|--------------|------|------|----|-------|-------|------|----|-------|--------|------|---|-------|-------|---|---|---|--------|---|---|---|--------|--|--|--------------|--------|--|--|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--------------------------------|-------|--------------------------------|-------|-------------------------------|--|--|--|--|--|--------|---------|-------|-------|-------------|----|-----|----|----|-------------|----|----|---|----|
| Formula Sheet (For Air Leakage / Ventilation Calculation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                                                                                                                                         |                                                     |                                                           |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| LO#: 96138                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Model: 6001 - QUEENSLAND | Builder: GOLD PARK HOMES                                                                                                                | Date: 4/14/2022                                     |                                                           |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| <b>Volume Calculation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          | <b>Air Change &amp; Delta T Data</b>                                                                                                    |                                                     |                                                           |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| <b>House Volume</b><br><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>2574</td><td>10</td><td>25740</td></tr> <tr><td>First</td><td>2574</td><td>11</td><td>28314</td></tr> <tr><td>Second</td><td>3208</td><td>9</td><td>28872</td></tr> <tr><td>Third</td><td>0</td><td>9</td><td>0</td></tr> <tr><td>Fourth</td><td>0</td><td>9</td><td>0</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>82,926.0 ft³</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>2348.2 m³</td></tr> </tbody> </table> |                          | Level                                                                                                                                   | Floor Area (ft²)                                    | Floor Height (ft)                                         | Volume (ft³) | Bsmt | 2574 | 10 | 25740 | First | 2574 | 11 | 28314 | Second | 3208 | 9 | 28872 | Third | 0 | 9 | 0 | Fourth | 0 | 9 | 0 | Total: |  |  | 82,926.0 ft³ | Total: |  |  | 2348.2 m³ | <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 30%;">0.434</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.145</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>-20</td> <td>42</td> <td>76</td> </tr> <tr> <td>Summer DTDc</td> <td>24</td> <td>31</td> <td>7</td> <td>13</td> </tr> </table> |  |  | WINTER NATURAL AIR CHANGE RATE | 0.434 | SUMMER NATURAL AIR CHANGE RATE | 0.145 | Design Temperature Difference |  |  |  |  |  | Tin °C | Tout °C | ΔT °C | ΔT °F | Winter DTDh | 22 | -20 | 42 | 76 | Summer DTDc | 24 | 31 | 7 | 13 |
| Level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Floor Area (ft²)         | Floor Height (ft)                                                                                                                       | Volume (ft³)                                        |                                                           |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Bsmt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2574                     | 10                                                                                                                                      | 25740                                               |                                                           |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| First                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2574                     | 11                                                                                                                                      | 28314                                               |                                                           |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 3208                     | 9                                                                                                                                       | 28872                                               |                                                           |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Third                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0                        | 9                                                                                                                                       | 0                                                   |                                                           |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Fourth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0                        | 9                                                                                                                                       | 0                                                   |                                                           |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Total:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                                                                                                                                         | 82,926.0 ft³                                        |                                                           |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Total:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                                                                                                                                         | 2348.2 m³                                           |                                                           |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| WINTER NATURAL AIR CHANGE RATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.434                    |                                                                                                                                         |                                                     |                                                           |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| SUMMER NATURAL AIR CHANGE RATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.145                    |                                                                                                                                         |                                                     |                                                           |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Design Temperature Difference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                          |                                                                                                                                         |                                                     |                                                           |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Tin °C                   | Tout °C                                                                                                                                 | ΔT °C                                               | ΔT °F                                                     |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Winter DTDh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 22                       | -20                                                                                                                                     | 42                                                  | 76                                                        |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Summer DTDc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 24                       | 31                                                                                                                                      | 7                                                   | 13                                                        |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| <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>0.434 x 652.28 x 42 °C x 1.2 = 14327 W</p> <p>= 48884 Btu/h</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          | $HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ <p>= 0.145 x 652.28 x 7 °C x 1.2 = 808 W</p> <p>= 2756 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 76 °F x 1.08 x 0.25 = 6156 Btu/h</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          | $HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>300 CFM x 13 °F x 1.08 x 0.25 = 1,037 Btu/h</p>                           |                                                     |                                                           |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| <b>5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                          |                                                                                                                                         |                                                     |                                                           |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| $HL_{airr} = Level \ Factor \times HL_{airbv} \times \{ (HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel}) \}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                          |                                                                                                                                         |                                                     |                                                           |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 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                      | 48,884                                                                                                                                  | 12,207                                              | 2.002                                                     |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.3                      |                                                                                                                                         | 23,285                                              | 0.630                                                     |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.2                      |                                                                                                                                         | 21,097                                              | 0.463                                                     |              |      |      |    |       |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 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> 6001 - QUEENSLAND | <b>OPT 2ND - ELEVATOR</b> | <b>BUILDER:</b> GOLD PARK HOMES |
| <b>SFQT:</b> 5653               | <b>LO#</b> 96138          | <b>SITE:</b> PINE VALLEY PH 2   |

**DESIGN ASSUMPTIONS**

|                      |    |                                |      |
|----------------------|----|--------------------------------|------|
| HEATING              | °F | COOLING                        | °F   |
| OUTDOOR DESIGN TEMP. | -4 | OUTDOOR DESIGN TEMP.           | 88   |
| INDOOR DESIGN TEMP.  | 72 | INDOOR DESIGN TEMP. (MAX 75°F) | 75   |
|                      |    | WINDOW SHGC                    | 0.50 |

**BUILDING DATA**

|                                     |                 |                           |          |
|-------------------------------------|-----------------|---------------------------|----------|
| ATTACHMENT:                         | DETACHED        | # OF STORIES (+BASEMENT): | 3        |
| FRONT FACES:                        | EAST            | ASSUMED (Y/N):            | Y        |
| AIR CHANGES PER HOUR:               | 3.57            | ASSUMED (Y/N):            | Y        |
| AIR TIGHTNESS CATEGORY:             | AVERAGE         | ASSUMED (Y/N):            | Y        |
| WIND EXPOSURE:                      | SHELTERED       | ASSUMED (Y/N):            | Y        |
| HOUSE VOLUME (ft³):                 | 82926.0         | ASSUMED (Y/N):            | Y        |
| INTERNAL SHADING:                   | BLINDS/CURTAINS | ASSUMED OCCUPANTS:        | 6        |
| INTERIOR LIGHTING LOAD (Btu/h/ft²): | 1.75            | DC BRUSHLESS MOTOR (Y/N): | Y        |
| FOUNDATION CONFIGURATION            | BCIN_1          | DEPTH BELOW GRADE:        | 7.0 ft   |
| LENGTH: 66.0 ft                     | WIDTH: 55.0 ft  | EXPOSED PERIMETER:        | 242.0 ft |

**2012 OBC - COMPLIANCE PACKAGE**

| Component                                                                  | Compliance Package A1 |           |
|----------------------------------------------------------------------------|-----------------------|-----------|
|                                                                            | Nominal               | Min. Eff. |
| Ceiling with Attic Space Minimum RSI (R)-Value                             | 60                    | 59.22     |
| Ceiling Without Attic Space Minimum RSI (R)-Value                          | 31                    | 27.65     |
| Exposed Floor Minimum RSI (R)-Value                                        | 31                    | 29.80     |
| Walls Above Grade Minimum RSI (R)-Value                                    | 22                    | 17.03     |
| Basement Walls Minimum RSI (R)-Value                                       | 20 ci                 | 21.12     |
| Below Grade Slab Entire surface > 600 mm below grade Minimum RSI (R)-Value | -                     | -         |
| Edge of Below Grade Slab ≤ 600 mm Below Grade Minimum RSI (R)-Value        | 10                    | 10        |
| Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value             | 10                    | 11.13     |
| Windows and Sliding Glass Doors Maximum U-Value                            | 0.28                  | -         |
| Skylights Maximum U-Value                                                  | 0.49                  | -         |
| Space Heating Equipment Minimum AFUE                                       | 0.96                  | -         |
| HRV Minimum Efficiency                                                     | 75%                   | -         |
| Domestic Hot Water Heater Minimum EF                                       | 0.8                   | -         |

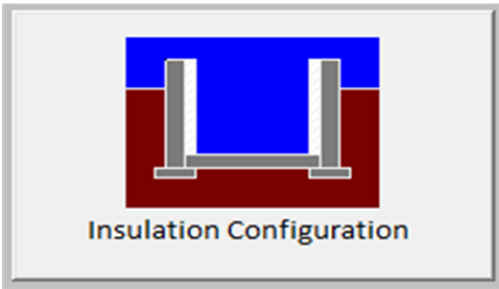
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



# Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

| Weather Station Description    |                                           |                                                                                                                 |
|--------------------------------|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Province:                      | Ontario                                   |                                                                                                                 |
| Region:                        | Vaughan (Woodbridge)                      |                                                                                                                 |
| Site Description               |                                           |                                                                                                                 |
| Soil Conductivity:             | Normal conductivity: dry sand, loam, clay |                                                                                                                 |
| Water Table:                   | Normal (7-10 m, 23-33 ft)                 |                                                                                                                 |
| Foundation Dimensions          |                                           |                                                                                                                 |
| Floor Length (m):              | 20.1                                      | <br>Insulation Configuration |
| Floor Width (m):               | 16.8                                      |                                                                                                                 |
| Exposed Perimeter (m):         | 0.0                                       |                                                                                                                 |
| Wall Height (m):               | 3.0                                       |                                                                                                                 |
| Depth Below Grade (m):         | 2.13                                      |                                                                                                                 |
| Window Area (m <sup>2</sup> ): | 1.2                                       |                                                                                                                 |
| Door Area (m <sup>2</sup> ):   | 3.7                                       |                                                                                                                 |
| Radiant Slab                   |                                           |                                                                                                                 |
| Heated Fraction of the Slab:   | 0                                         |                                                                                                                 |
| Fluid Temperature (°C):        | 33                                        |                                                                                                                 |
| Design Months                  |                                           |                                                                                                                 |
| Heating Month                  | 1                                         |                                                                                                                 |
| Foundation Loads               |                                           |                                                                                                                 |
| Heating Load (Watts):          |                                           | 2466                                                                                                            |

TYPE: 6001 - QUEENSLAND  
LO# 96138

OPT 2ND - ELEVATOR

# Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

| Weather Station Description       |                            |                        |    |    |
|-----------------------------------|----------------------------|------------------------|----|----|
| Province:                         | Ontario                    |                        |    |    |
| Region:                           | Vaughan (Woodbridge)       |                        |    |    |
| 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):       | 10.06                      |                        |    |    |
| Building Configuration            |                            |                        |    |    |
| Type:                             | Detached                   |                        |    |    |
| Number of Stories:                | Two                        |                        |    |    |
| Foundation:                       | Full                       |                        |    |    |
| House Volume (m <sup>3</sup> ):   | 2348.2                     |                        |    |    |
| Air Leakage/Ventilation           |                            |                        |    |    |
| Air Tightness Type:               | Present (1961-) (3.57 ACH) |                        |    |    |
| Custom BDT Data:                  | ELA @ 10 Pa.               | 3130.2 cm <sup>2</sup> |    |    |
|                                   | 3.57                       | 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): | 0.434                      |                        |    |    |
| Cooling Air Leakage Rate (ACH/H): | 0.145                      |                        |    |    |

TYPE: 6001 - QUEENSLAND  
LO# 96138

OPT 2ND - ELEVATOR

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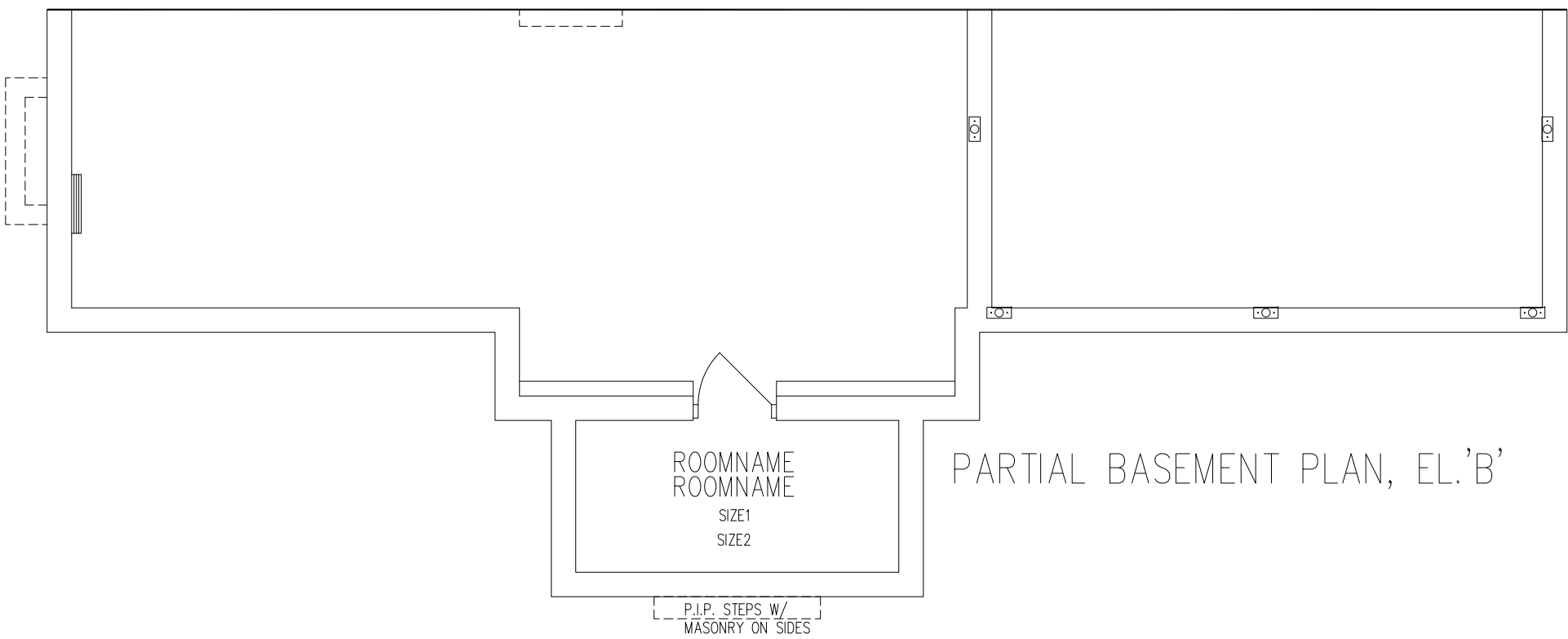
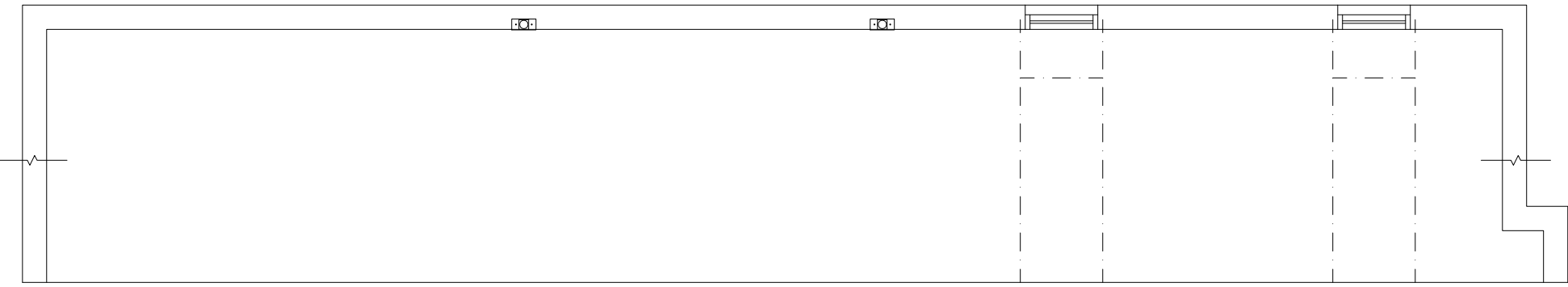
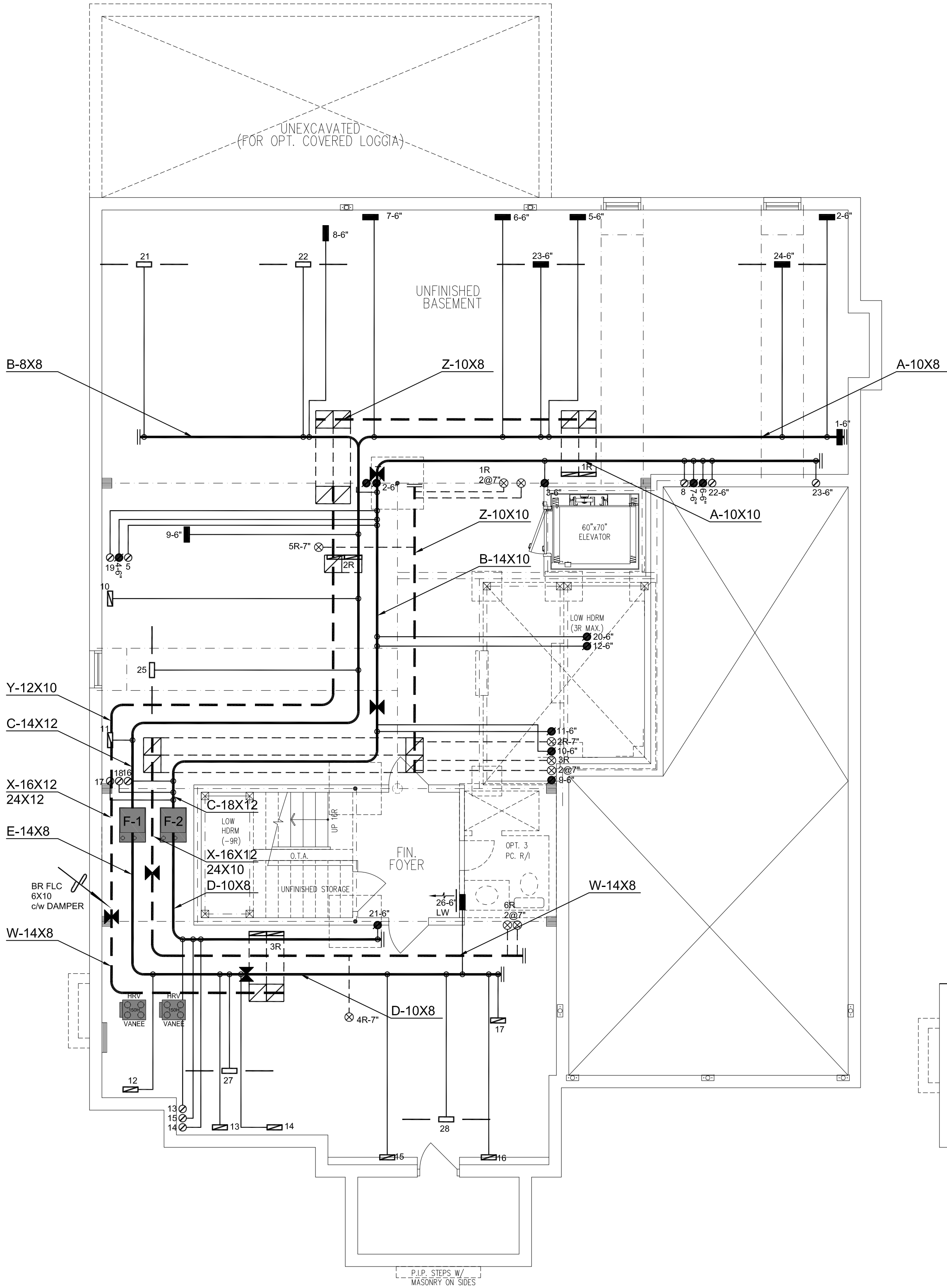
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ALL S/A DIFFUSERS "4x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A

FURNACE 1 (F-1)  
LENNOX ML196UH090XE36C  
85600 BTU/H OUTPUT  
3.0 TONS A/C @ 1170 cfm

FURNACE 2 (F-2)  
LENNOX ML196UH045XE36B  
42800 BTU/H OUTPUT  
3.0 TONS A/C @ 1110 cfm

|     | S/A | R/A | FANS |
|-----|-----|-----|------|
| 2ND | 23  | 6   | 7    |
| 1ST | 16  | 3   | 2    |
| BAS | 8   | 1   | 0    |



| HVAC LEGEND |                             |
|-------------|-----------------------------|
|             | 4X10 SUPPLY GRILLE          |
|             | 14X8 RETURN GRILLE          |
|             | 4X10 SUPPLY GRILLE FIB BOOT |
|             | 30X8 RETURN GRILLE          |
|             | SUPPLY DUCTWORK             |
|             | RETURN DUCTWORK             |
|             | EXHAUST FAN                 |
| LW          | LOW WALL                    |
| HW          | HIGH WALL                   |

UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE CANADIAN BUILTING CODE.

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SB-12 PACKAGE A1

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

Client: GOLDPARK HOMES  
Project Name: PINE VALLEY PH2  
VAUGHAN, ONTARIO  
6001 - QUEENSLAND  
OPT 2ND - ELEVATOR  
5653 SQFT

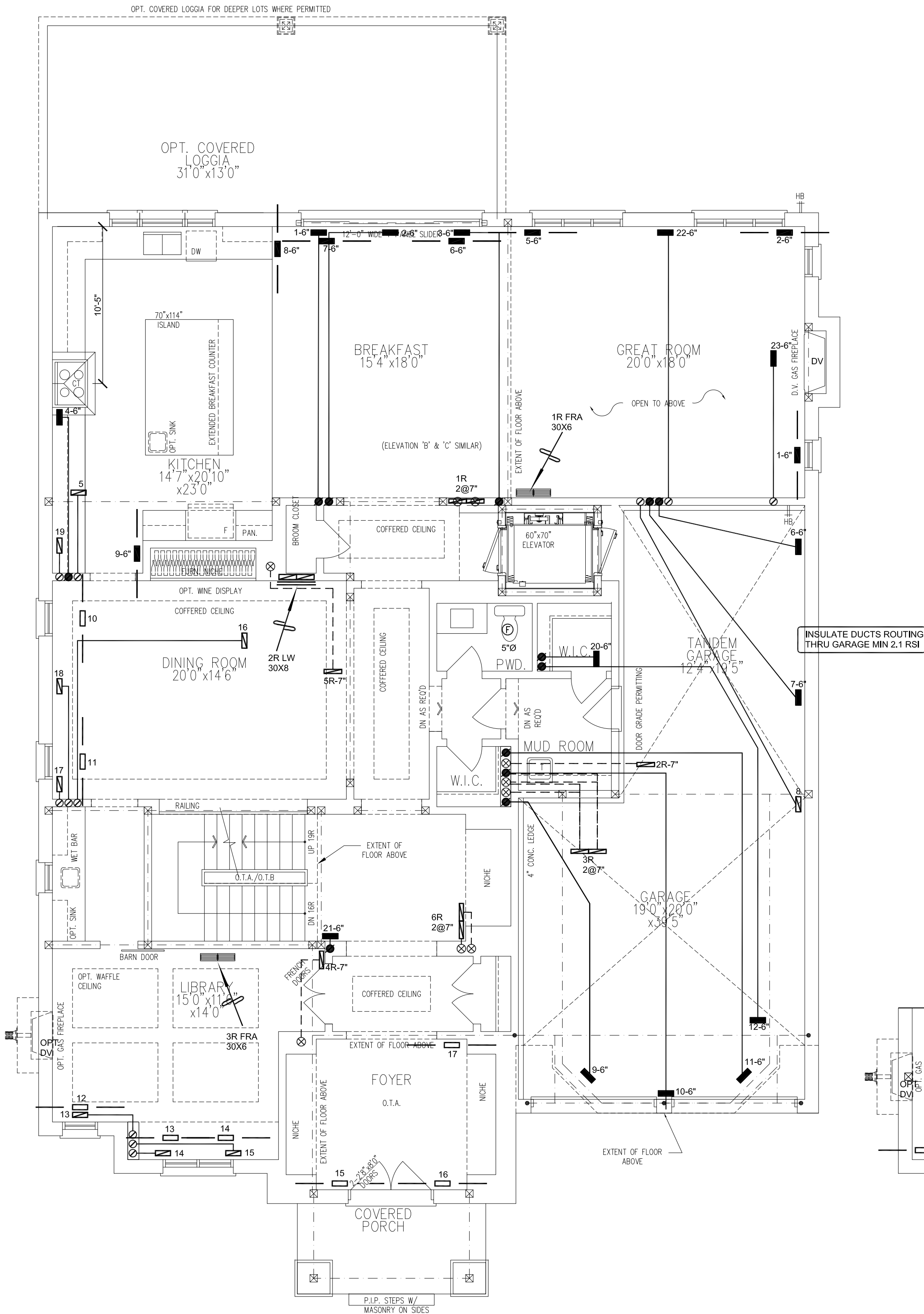
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Drawn By: EG  
Scale: 3/16"=1'-0"  
Date: APRIL 2022  
LO #: 96138  
Checked By: MO  
Sheet No: 1

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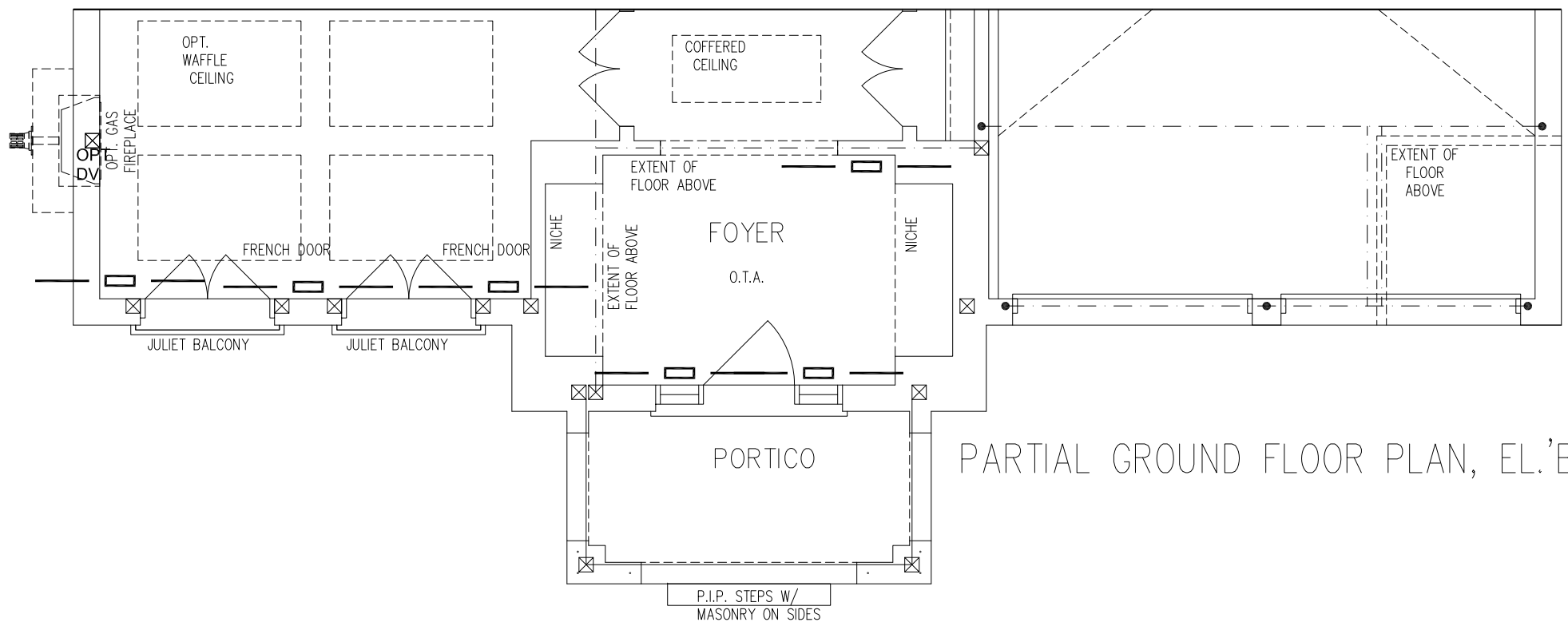
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|     | S/A | R/A | FANS |
|-----|-----|-----|------|
| 2ND | 23  | 6   | 7    |
| 1ST | 16  | 3   | 2    |
| BAS | 8   | 1   | 0    |



PARTIAL GROUND FLOOR PLAN W/ ELEVATOR, EL.'A'



PARTIAL GROUND FLOOR PLAN, EL.'B'

| HVAC LEGEND |                             |
|-------------|-----------------------------|
|             | 4X10 SUPPLY GRILLE          |
|             | 14X9 RETURN GRILLE          |
|             | 4X10 SUPPLY GRILLE F'D BOOT |
|             | 30X8 RETURN GRILLE          |
|             | SUPPLY DUCTWORK             |
|             | RETURN DUCTWORK             |
|             | EXHAUST FAN                 |
|             | LW LOW WALL                 |
|             | HW HIGH WALL                |

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Tel: 905.619.2300 - 905.420.5300 Fax 905.619.2375  
Email: info@hvacadesigns.ca  
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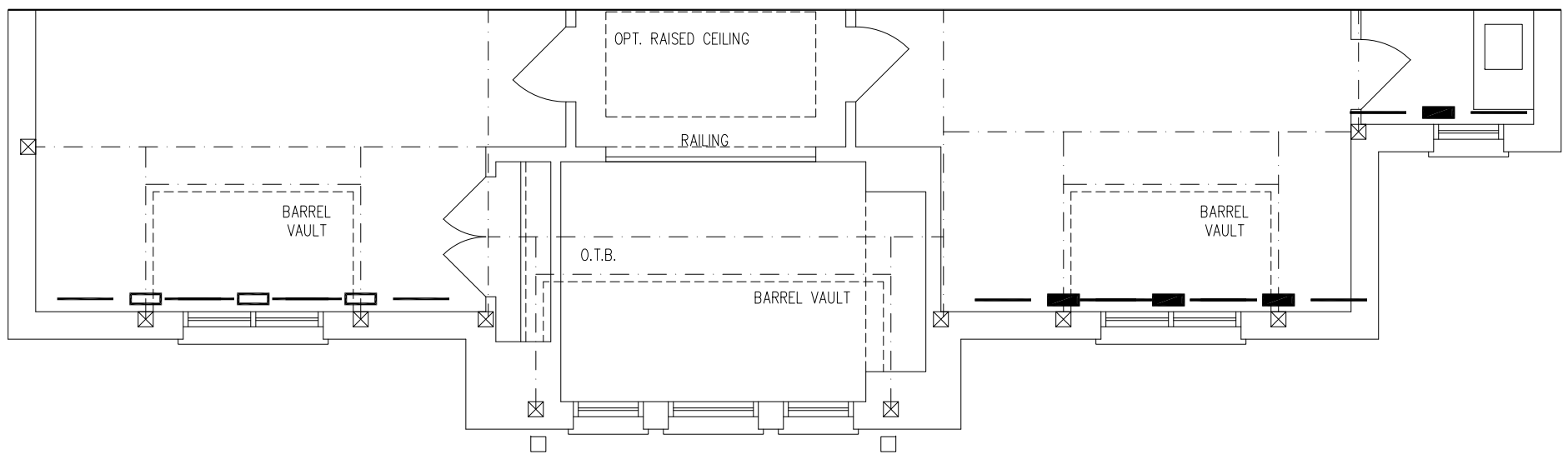
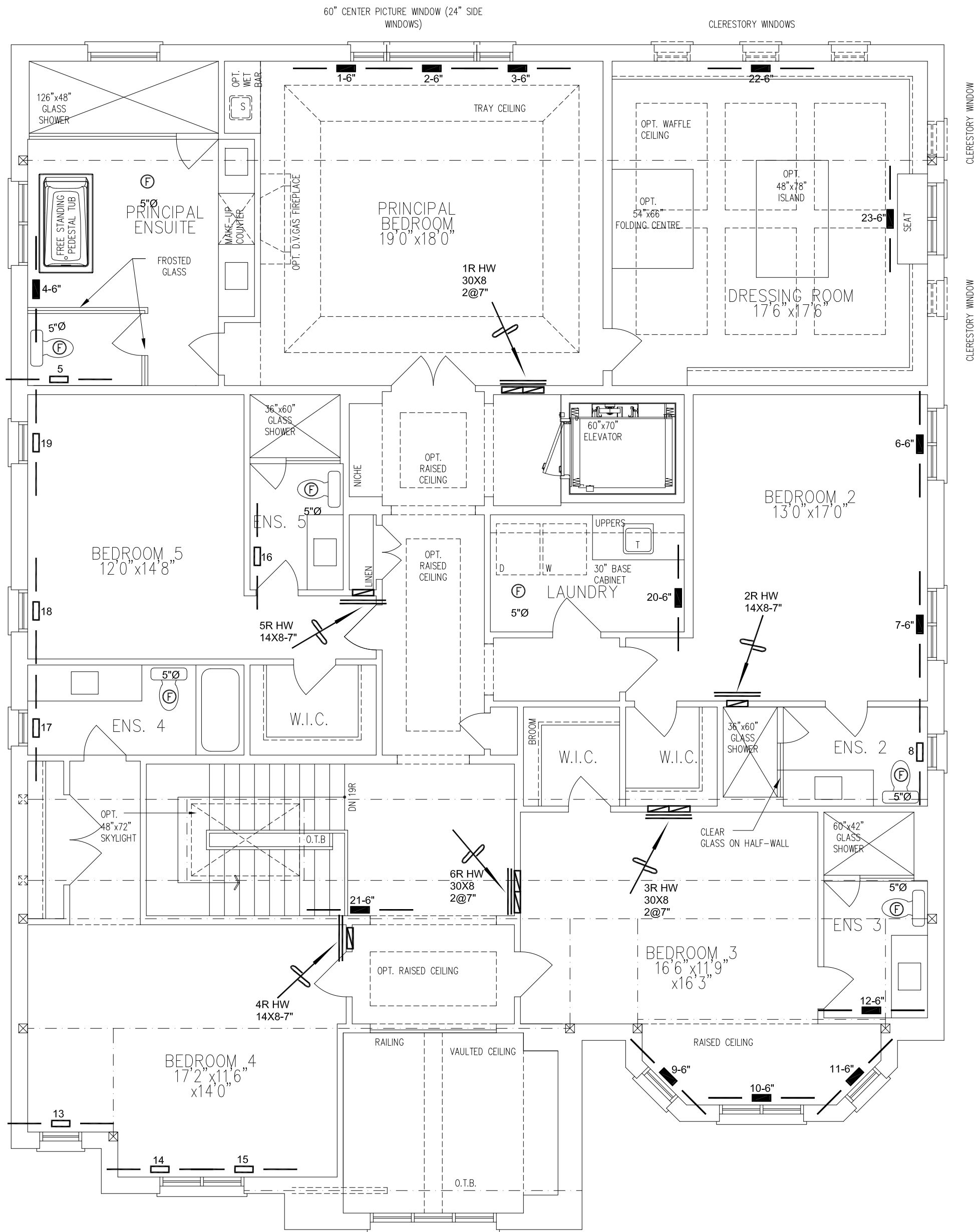
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|     | S/A | R/A | FANS |
|-----|-----|-----|------|
| 2ND | 23  | 6   | 7    |
| 1ST | 16  | 3   | 2    |
| BAS | 8   | 1   | 0    |



PARTIAL SECOND FLOOR PLAN, EL.B'

PARTIAL OPT. SECOND FLOOR PLAN W/ ELEVATOR, EL.'A'

| HVAC LEGEND |                             |
|-------------|-----------------------------|
|             | 4X10 SUPPLY GRILLE          |
|             | 14X9 RETURN GRILLE          |
|             | 4X10 SUPPLY GRILLE 6'Ø BOOT |
|             | 30X8 RETURN GRILLE          |
|             | SUPPLY DUCTWORK             |
|             | RETURN DUCTWORK             |
|             | EXHAUST FAN                 |
| LW          | LOW WALL                    |
| HW          | HIGH WALL                   |

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Client: GOLDPARK HOMES

Project Name: PINE VALLEY PH2 VAUGHAN, ONTARIO

6001 - QUEENSLAND

OPT 2ND - ELEVATOR

5653 SQFT

Sheet Title: SECOND FLOOR HVAC LAYOUT

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Scale: 3/16"=1'-0"

Date: APRIL 2022

LO # 96138

Checked By: MO

Sheet No.

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