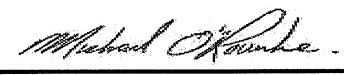


# Schedule 1: Designer Information

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

| A. Project Information  |                                     |  |  |
|---|-------------------------------------|--|--|
| Building number, street name  |                                     | Unit no.   | Lot/con.   |
| Municipality<br>VAUGHAN (WOODBIDGE)   | Postal code                         | Plan number/ other description   |  |
| B. Individual who reviews and takes responsibility for design activities  |                                     |  |  |
| 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>(     )   |  |
| C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]  |                                     |  |  |
| <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<br/>DUCT SIZING<br/>RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY<br/>RESIDENTIAL SYSTEM DESIGN per CSA-F280-12</b>  |                                     | <b>Model:</b> 5013 - ELEV B - RIVERVIEW<br><br>OPT 5 BED - OPT 5 BED - WO/LOFT<br><br><b>Project:</b> PINE VALLEY PH 2 |  |
| D. Declaration of Designer  |                                     |  |  |
| 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.  |                                     |  |  |
| May 5, 2022<br>_____<br>Date  |                                     | <br>_____<br>Signature of Designer |  |

NOTE:  
 1. 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.  
 2. 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.

SITE NAME: PINE VALLEY PH 2 BUILDER: GOLD PARK HOMES TYPE: 5013 - ELEV B - RIVERVIEW GFA: 4501 DATE May-22 LO# 96632 WINTER NATURAL AIR CHANGE RATE 0.340 SUMMER NATURAL AIR CHANGE RATE 0.114 HEAT LOSS AT °F. 76 HEAT GAIN AT °F. 13 CSA-F280-12 SB-12 PACKAGE A1

| ROOM USE                       | EXP. WALL CLG. HT. | GRS.WALL AREA GLAZING | FACTORS LOSS GAIN | ENS LOSS GAIN | WIC LOSS GAIN | BED-2 LOSS GAIN | BED-3 LOSS GAIN | BED-4 LOSS GAIN | ENS-3 LOSS GAIN | ENS-2 LOSS GAIN | BED-5 LOSS GAIN | ENS-5 LOSS GAIN | ENS-4 LOSS GAIN |
|--------------------------------|--------------------|-----------------------|-------------------|---------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| NORTH                          | 21.3               | 16.0                  | 0                 | 0             | 0             | 20              | 0               | 8               | 0               | 0               | 0               | 0               | 0               |
| EAST                           | 21.3               | 41.6                  | 0                 | 0             | 0             | 0               | 0               | 170             | 0               | 0               | 0               | 0               | 0               |
| SOUTH                          | 21.3               | 24.9                  | 0                 | 30            | 638           | 747             | 6               | 1488            | 0               | 0               | 0               | 0               | 0               |
| WEST                           | 21.3               | 41.6                  | 46                | 979           | 1911          | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0               |
| SKYLT.                         | 37.2               | 101.5                 | 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               |
| NET EXPOSED WALL               | 4.5                | 0.8                   | 287               | 114           | 509           | 86              | 33              | 326             | 1455            | 245             | 67              | 53              | 237             |
| NET EXPOSED BSMT WALL ABOVE GR | 3.6                | 0.6                   | 0                 | 0             | 0             | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0               |
| NO ATTIC EXPOSED CLG           | 2.7                | 1.3                   | 0                 | 0             | 0             | 0               | 26              | 71              | 33              | 35              | 96              | 44              | 0               |
| EXPOSED FLOOR                  | 2.6                | 0.4                   | 0                 | 0             | 0             | 0               | 204             | 520             | 88              | 0               | 0               | 0               | 0               |
| BASEMENT/CRAWL HEAT LOSS       |                    |                       | 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               |
| SUBTOTAL HT LOSS               |                    |                       | 2696              | 1476          | 282           | 1947            | 3413            | 3506            | 759             | 1282            | 352             | 611             | 836             |
| SUB TOTAL HT GAIN              |                    |                       | 0                 | 0             | 0             | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0               |
| LEVEL FACTOR / MULTIPLIER      |                    |                       | 0.20              | 0.35          | 0.20          | 0.35            | 0.20            | 0.35            | 0.20            | 0.35            | 0.20            | 0.35            | 0.20            |
| AIR CHANGE HEAT LOSS           |                    |                       | 935               | 512           | 68            | 47              | 234             | 1385            | 52              | 444             | 203             | 212             | 285             |
| AIR CHANGE HEAT GAIN           |                    |                       | 0                 | 0             | 0             | 0               | 0               | 0               | 205             | 173             | 0               | 0               | 0               |
| DUCT LOSS                      |                    |                       | 0                 | 0             | 0             | 0               | 0               | 0               | 81              | 0               | 0               | 0               | 0               |
| DUCT GAIN                      |                    |                       | 0                 | 0             | 0             | 0               | 0               | 0               | 0               | 0               | 0               | 0               | 0               |
| HEAT GAIN PEOPLE               |                    |                       | 480               | 0             | 0             | 0               | 500             | 0               | 0               | 0               | 0               | 0               | 0               |
| HEAT GAIN APPLIANCES/LIGHTS    |                    |                       | 1117              | 0             | 0             | 1               | 240             | 1               | 0               | 0               | 240             | 0               | 0               |
| TOTAL HT LOSS BTU/H            |                    |                       | 3631              | 1987          | 392           | 2884            | 4059            | 5378            | 1159            | 1898            | 790             | 823             | 1126            |
| TOTAL HT GAIN X 1.3 BTU/H      |                    |                       | 5509              | 1366          | 392           | 3371            | 4518            | 6635            | 488             | 664             | 2253            | 396             | 373             |

| ROOM USE                       | EXP. WALL CLG. HT. | GRS.WALL AREA GLAZING | FACTORS LOSS GAIN | DIN LOSS GAIN | KT/BF LOSS GAIN | OFF LOSS GAIN | LND LOSS GAIN | FOY LOSS GAIN | MUD LOSS GAIN | LOB LOSS GAIN | BAS LOSS GAIN |
|--------------------------------|--------------------|-----------------------|-------------------|---------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| NORTH                          | 21.3               | 16.0                  | 0                 | 0             | 0               | 0             | 0             | 0             | 0             | 0             | 0             |
| EAST                           | 21.3               | 41.6                  | 0                 | 0             | 0               | 48            | 0             | 0             | 0             | 0             | 0             |
| SOUTH                          | 21.3               | 24.9                  | 0                 | 28            | 596             | 697           | 0             | 0             | 0             | 0             | 0             |
| WEST                           | 21.3               | 41.6                  | 192               | 4086          | 7978            | 0             | 0             | 0             | 0             | 0             | 0             |
| SKYLT.                         | 37.2               | 101.5                 | 0                 | 0             | 0               | 0             | 0             | 0             | 0             | 0             | 0             |
| DOORS                          | 25.2               | 4.3                   | 0                 | 0             | 0               | 0             | 0             | 0             | 0             | 0             | 0             |
| NET EXPOSED WALL               | 4.5                | 0.8                   | 413               | 1843          | 310             | 324           | 1446          | 244           | 509           | 2272          | 383           |
| NET EXPOSED BSMT WALL ABOVE GR | 3.6                | 0.6                   | 0                 | 0             | 0               | 0             | 0             | 0             | 0             | 0             | 0             |
| NO ATTIC EXPOSED CLG           | 2.7                | 1.3                   | 0                 | 0             | 0               | 0             | 0             | 0             | 0             | 0             | 0             |
| EXPOSED FLOOR                  | 2.6                | 0.4                   | 0                 | 0             | 0               | 0             | 0             | 0             | 0             | 0             | 0             |
| BASEMENT/CRAWL HEAT LOSS       |                    |                       | 0                 | 0             | 0               | 0             | 0             | 0             | 0             | 0             | 0             |
| SLAB ON GRADE HEAT LOSS        |                    |                       | 0                 | 0             | 0               | 0             | 0             | 0             | 0             | 0             | 0             |
| SUBTOTAL HT LOSS               |                    |                       | 6438              | 8522          | 2042            | 2280          | 213           | 2075          | 2085          | 2702          | 10592         |
| SUB TOTAL HT GAIN              |                    |                       | 0                 | 0             | 0               | 0             | 0             | 0             | 0             | 0             | 0             |
| LEVEL FACTOR / MULTIPLIER      |                    |                       | 0.30              | 0.48          | 0.30            | 0.48          | 0.20          | 0.30          | 0.30          | 0.48          | 0.50          |
| AIR CHANGE HEAT LOSS           |                    |                       | 3080              | 977           | 1091            | 74            | 1299          | 993           | 997           | 1214          | 16083         |
| AIR CHANGE HEAT GAIN           |                    |                       | 0                 | 0             | 0               | 0             | 0             | 0             | 0             | 0             | 0             |
| DUCT LOSS                      |                    |                       | 0                 | 0             | 0               | 0             | 0             | 0             | 0             | 0             | 0             |
| DUCT GAIN                      |                    |                       | 0                 | 0             | 0               | 0             | 0             | 0             | 0             | 0             | 0             |
| HEAT GAIN PEOPLE               |                    |                       | 1117              | 0             | 0               | 0             | 0             | 0             | 0             | 0             | 0             |
| HEAT GAIN APPLIANCES/LIGHTS    |                    |                       | 1117              | 1117          | 1117            | 1117          | 1117          | 3068          | 3082          | 2702          | 26675         |
| TOTAL HT LOSS BTU/H            |                    |                       | 9519              | 3019          | 7763            | 3371          | 315           | 3068          | 488           | 1579          | 8003          |
| TOTAL HT GAIN X 1.3 BTU/H      |                    |                       | 12291             | 2759          | 9187            | 4518          | 1719          | 1804          | 488           | 1579          | 26675         |

TOTAL HEAT GAIN BTU/H: 65472 TONS: 5.46 LOSS DUE TO VENTILATION LOAD BTU/H: 6156 STRUCTURAL HEAT LOSS: 85221 TOTAL COMBINED HEAT LOSS BTU/H: 91377

*Michael O'Rourke*

SITE NAME: PINE VALLEY PH 2 OPT 5 BED - W/O LOFT TYPE: 5013 - ELEV B - RIVERVIEW DATE: May-22 FURNACE 1  
BUILDER: GOLD PARK HOMES LO# 96632

HEATING CFM 1110 COOLING CFM 1110  
TOTAL HEAT LOSS 59,197 TOTAL HEAT GAIN 34,547  
AIR FLOW RATE CFM 32.13

|           |     |     |     |     |     |
|-----------|-----|-----|-----|-----|-----|
| RUN COUNT | 4th | 3rd | 2nd | 1st | Bas |
| S/A       | 0   | 0   | 0   | 0   | 6   |
| R/A       | 0   | 0   | 0   | 2   | 1   |

FURNACE HEAT LOSS +  
HRV / ERV HEAT LOSS  
= 62275 BTUH

\$LENNOX  
ML196UH070XE36B  
FAN SPEED  
LOW 0  
MEDIUM 985  
HIGH 1110  
HIGH 1275

AFUE = 96 %  
INPUT (BTU/H) = 66,000  
OUTPUT (BTU/H) = 63,900

furnace pressure 0.6  
furnace filter 0.05  
a/c coil pressure 0.2  
available pressure for s/a & r/a 0.35  
plenium pressure s/a 0.18  
max s/a diff press. loss 0.03  
min adjusted pressure s/a 0.15  
r/a grille press. loss 0.02  
adjusted pressure r/a 0.15

DESIGN CFM = 1110  
CFM @ 6" E.S.P.  
TEMPERATURE RISE 53 °F

| ROOM NAME                | 25    | 26    | 27    | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35   | 36   | 20   | 21   | 22   | 23   | 24   |
|--------------------------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| ROOM NAME                | KT/BF | KT/BF | KT/BF | OFF  | OFF  | MUD  | BAS  | BAS  | BAS  | BAS  | BAS  | BAS  | FOY  | GRT  | GRT  | GRT  | DIN  |
| RM LOSS MBH              | 2.59  | 2.59  | 2.59  | 1.69 | 1.69 | 3.08 | 4.90 | 4.90 | 4.90 | 4.90 | 4.90 | 4.90 | 3.07 | 2.38 | 2.38 | 2.38 | 3.02 |
| CFM PER RUN HEAT         | 49    | 49    | 49    | 32   | 32   | 58   | 92   | 92   | 92   | 92   | 92   | 92   | 58   | 45   | 45   | 45   | 57   |
| RM GAIN MBH              | 3.06  | 3.06  | 3.06  | 2.26 | 2.26 | 0.49 | 0.42 | 0.42 | 0.42 | 0.42 | 0.42 | 0.42 | 58   | 107  | 107  | 107  | 89   |
| CFM PER RUN COOLING      | 98    | 98    | 98    | 73   | 73   | 16   | 13   | 13   | 13   | 13   | 13   | 13   | 47   | 56   | 56   | 56   | 38   |
| ADJUSTED PRESSURE        | 0.16  | 0.16  | 0.16  | 0.17 | 0.17 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.17 | 0.15 | 0.15 | 0.15 | 0.16 |
| ACTUAL DUCT LGH          | 34    | 39    | 31    | 65   | 60   | 21   | 51   | 37   | 32   | 16   | 15   | 49   | 100  | 110  | 150  | 130  | 140  |
| EQUIVALENT LENGTH        | 100   | 140   | 170   | 130  | 120  | 140  | 110  | 140  | 130  | 130  | 130  | 130  | 147  | 166  | 199  | 175  | 188  |
| TOTAL EFFECTIVE LENGTH   | 134   | 179   | 201   | 195  | 180  | 161  | 161  | 177  | 162  | 146  | 145  | 179  | 147  | 166  | 199  | 175  | 188  |
| ADJUSTED PRESSURE        | 0.12  | 0.09  | 0.08  | 0.09 | 0.1  | 0.11 | 0.1  | 0.09 | 0.1  | 0.11 | 0.11 | 0.09 | 0.12 | 0.09 | 0.08 | 0.09 | 0.08 |
| ROUND DUCT SIZE          | 6     | 6     | 6     | 5    | 5    | 5    | 6    | 6    | 6    | 6    | 6    | 6    | 4    | 6    | 6    | 6    | 6    |
| HEATING VELOCITY (f/min) | 250   | 250   | 250   | 235  | 235  | 426  | 469  | 469  | 469  | 469  | 469  | 469  | 665  | 229  | 229  | 229  | 419  |
| COOLING VELOCITY (f/min) | 500   | 500   | 500   | 536  | 536  | 117  | 66   | 66   | 66   | 66   | 66   | 66   | 665  | 546  | 546  | 546  | 653  |
| OUTLET GRILL SIZE        | 4X10  | 4X10  | 4X10  | 3X10 | 3X10 | 3X10 | 4X10 | 4X10 | 4X10 | 4X10 | 4X10 | 4X10 | 3X10 | 4X10 | 4X10 | 4X10 | 4X10 |
| TRUNK                    | E     | E     | E     | F    | F    | F    | D    | D    | E    | E    | F    | F    | F    | D    | D    | D    | D    |

| ROOM NAME                | 25    | 26    | 27    | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35   | 36   | 20   | 21   | 22   | 23   | 24   |
|--------------------------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| ROOM NAME                | KT/BF | KT/BF | KT/BF | OFF  | OFF  | MUD  | BAS  | BAS  | BAS  | BAS  | BAS  | BAS  | FOY  | GRT  | GRT  | GRT  | DIN  |
| RM LOSS MBH              | 2.59  | 2.59  | 2.59  | 1.69 | 1.69 | 3.08 | 4.90 | 4.90 | 4.90 | 4.90 | 4.90 | 4.90 | 3.07 | 2.38 | 2.38 | 2.38 | 3.02 |
| CFM PER RUN HEAT         | 49    | 49    | 49    | 32   | 32   | 58   | 92   | 92   | 92   | 92   | 92   | 92   | 58   | 45   | 45   | 45   | 57   |
| RM GAIN MBH              | 3.06  | 3.06  | 3.06  | 2.26 | 2.26 | 0.49 | 0.42 | 0.42 | 0.42 | 0.42 | 0.42 | 0.42 | 58   | 107  | 107  | 107  | 89   |
| CFM PER RUN COOLING      | 98    | 98    | 98    | 73   | 73   | 16   | 13   | 13   | 13   | 13   | 13   | 13   | 47   | 56   | 56   | 56   | 38   |
| ADJUSTED PRESSURE        | 0.16  | 0.16  | 0.16  | 0.17 | 0.17 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.17 | 0.15 | 0.15 | 0.15 | 0.16 |
| ACTUAL DUCT LGH          | 34    | 39    | 31    | 65   | 60   | 21   | 51   | 37   | 32   | 16   | 15   | 49   | 100  | 110  | 150  | 130  | 140  |
| EQUIVALENT LENGTH        | 100   | 140   | 170   | 130  | 120  | 140  | 110  | 140  | 130  | 130  | 130  | 130  | 147  | 166  | 199  | 175  | 188  |
| TOTAL EFFECTIVE LENGTH   | 134   | 179   | 201   | 195  | 180  | 161  | 161  | 177  | 162  | 146  | 145  | 179  | 147  | 166  | 199  | 175  | 188  |
| ADJUSTED PRESSURE        | 0.12  | 0.09  | 0.08  | 0.09 | 0.1  | 0.11 | 0.1  | 0.09 | 0.1  | 0.11 | 0.11 | 0.09 | 0.12 | 0.09 | 0.08 | 0.09 | 0.08 |
| ROUND DUCT SIZE          | 6     | 6     | 6     | 5    | 5    | 5    | 6    | 6    | 6    | 6    | 6    | 6    | 4    | 6    | 6    | 6    | 6    |
| HEATING VELOCITY (f/min) | 250   | 250   | 250   | 235  | 235  | 426  | 469  | 469  | 469  | 469  | 469  | 469  | 665  | 229  | 229  | 229  | 419  |
| COOLING VELOCITY (f/min) | 500   | 500   | 500   | 536  | 536  | 117  | 66   | 66   | 66   | 66   | 66   | 66   | 665  | 546  | 546  | 546  | 653  |
| OUTLET GRILL SIZE        | 4X10  | 4X10  | 4X10  | 3X10 | 3X10 | 3X10 | 4X10 | 4X10 | 4X10 | 4X10 | 4X10 | 4X10 | 3X10 | 4X10 | 4X10 | 4X10 | 4X10 |
| TRUNK                    | E     | E     | E     | F    | F    | F    | D    | D    | E    | E    | F    | F    | F    | D    | D    | D    | D    |

| TRUNK   | STATIC PRESS. | ROUND DUCT | RECT DUCT | VELOCITY (f/min) | TRUNK CFM | STATIC PRESS. | ROUND DUCT | RECT DUCT | VELOCITY (f/min) | TRUNK CFM | STATIC PRESS. | ROUND DUCT | RECT DUCT | VELOCITY (f/min) |
|---------|---------------|------------|-----------|------------------|-----------|---------------|------------|-----------|------------------|-----------|---------------|------------|-----------|------------------|
| TRUNK A | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                |
| TRUNK B | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                |
| TRUNK C | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                |
| TRUNK D | 0.08          | 9.6        | 14        | 8                | 468       | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                |
| TRUNK E | 0.08          | 12.2       | 20        | 8                | 626       | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                |
| TRUNK F | 0.09          | 9.8        | 12        | 8                | 632       | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                |
| TRUNK G | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                |
| TRUNK H | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                |
| TRUNK I | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                |
| TRUNK J | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                |
| TRUNK K | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                |
| TRUNK L | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                | 0         | 0.00          | 0          | 0         | 8                |
| TRUNK W | 0.07          | 10.4       | 18        | 8                | 415       | 0.07          | 10.4       | 18        | 8                | 415       | 0.07          | 10.4       | 18        | 8                |
| TRUNK X | 0.07          | 12.7       | 18        | 8                | 695       | 0.07          | 12.7       | 18        | 8                | 695       | 0.07          | 12.7       | 18        | 8                |
| TRUNK Y | 0.07          | 0          | 0         | 8                | 0         | 0.07          | 0          | 0         | 8                | 0         | 0.07          | 0          | 0         | 8                |
| TRUNK Z | 0.07          | 0          | 0         | 8                | 0         | 0.07          | 0          | 0         | 8                | 0         | 0.07          | 0          | 0         | 8                |
| DROP    | 0.07          | 15.1       | 24        | 10               | 1110      | 0.07          | 15.1       | 24        | 10               | 1110      | 0.07          | 15.1       | 24        | 10               |

| RETURN AIR # | TRUNK | STATIC PRESS. | ROUND DUCT | RECT DUCT | VELOCITY (f/min) | TRUNK CFM | STATIC PRESS. | ROUND DUCT | RECT DUCT | VELOCITY (f/min) |
|--------------|-------|---------------|------------|-----------|------------------|-----------|---------------|------------|-----------|------------------|
| BR           |       |               |            |           |                  |           |               |            |           |                  |
| 1            | 0.15  | 0.15          | 0          | 0         | 415              | 0.15      | 0.15          | 0          | 0         | 270              |
| 2            | 1     | 1             | 1          | 1         | 50               | 1         | 1             | 1          | 1         | 16               |
| 3            | 0     | 0             | 0          | 0         | 170              | 0         | 0             | 0          | 0         | 150              |
| 4            | 1     | 1             | 1          | 1         | 220              | 1         | 1             | 1          | 1         | 166              |
| 5            | 14.80 | 14.80         | 14.80      | 14.80     | 0.07             | 14.80     | 14.80         | 14.80      | 14.80     | 0.09             |
| 6            | 0     | 0             | 0          | 0         | 9.9              | 0         | 0             | 0          | 0         | 8.3              |
| 7            | 0     | 0             | 0          | 0         | 8                | 0         | 0             | 0          | 0         | 8                |
| 8            | X     | X             | X          | X         | X                | X         | X             | X          | X         | X                |
| 9            | 0     | 0             | 0          | 0         | 30               | 0         | 0             | 0          | 0         | 24               |

SITE NAME: PINE VALLEY PH 2 TYPE: 5013 - ELEV B - RIVERVIEW DATE: May-22 GFA: 4501 LO# 96632 FURNACE 2  
 BUILDER: GOLD PARK HOMES

HEATING CFM 980 COOLING CFM 980  
 TOTAL HEAT LOSS 26,024 TOTAL HEAT GAIN 30,407  
 AIR FLOW RATE CFM 37.66 AIR FLOW RATE CFM 32.23

FURNACE HEAT LOSS + HRV / ERV HEAT LOSS = 29102 BTUH  
 AFUE = 96 %  
 INPUT (BTU/H) = 44,000  
 OUTPUT (BTU/H) = 42,800

DESIGN CFM = 980  
 CFM @ .5" E.S.P.

TEMPERATURE RISE 40 °F

OPT 5 BED - OPT 5 BED - WO/LOFT  
 TYPE: 5013 - ELEV B - RIVERVIEW DATE: May-22

| ROOM NAME                 | 1    | 2    | 3    | 4    | 5    | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17   | 18 |
|---------------------------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|----|
| ROOM NAME                 | PBR  | PBR  | ENS  | ENS  | WIC  | ENS-5 | BED-2 | BED-2 | ENS-3 | BED-3 | ENS-4 | BED-4 | BED-4 | ENS-2 | BED-3 | BED-5 | LND  |    |
| RM LOSS MBH               | 1.82 | 1.82 | 0.99 | 0.99 | 0.88 | 0.82  | 1.44  | 1.44  | 2.25  | 1.35  | 1.13  | 1.79  | 1.79  | 1.90  | 1.35  | 0.79  | 0.32 |    |
| CFM PER RUN HEAT          | 68   | 68   | 37   | 37   | 33   | 31    | 54    | 54    | 85    | 51    | 42    | 68    | 68    | 71    | 51    | 30    | 12   |    |
| RM GAIN MBH               | 2.65 | 2.65 | 0.68 | 0.68 | 0.39 | 0.40  | 1.49  | 1.49  | 1.16  | 2.39  | 0.37  | 2.21  | 2.21  | 0.66  | 2.39  | 2.25  | 1.72 |    |
| CFM PER RUN COOLING       | 86   | 86   | 22   | 22   | 13   | 13    | 48    | 48    | 37    | 77    | 12    | 71    | 71    | 21    | 77    | 73    | 55   |    |
| ADJUSTED PRESSURE         | 0.16 | 0.16 | 0.17 | 0.17 | 0.17 | 0.17  | 0.17  | 0.17  | 0.16  | 0.17  | 0.17  | 0.17  | 0.17  | 0.17  | 0.17  | 0.17  | 0.17 |    |
| ACTUAL DUCT LGH           | 52   | 63   | 48   | 16   | 51   | 19    | 72    | 77    | 78    | 69    | 69    | 66    | 73    | 84    | 64    | 75    | 60   |    |
| EQUIVALENT LENGTH         | 190  | 180  | 255  | 130  | 245  | 120   | 170   | 180   | 200   | 190   | 180   | 190   | 190   | 190   | 180   | 160   | 130  |    |
| TOTAL EFFECTIVE LENGTH    | 242  | 243  | 303  | 303  | 296  | 139   | 242   | 257   | 278   | 259   | 249   | 256   | 243   | 274   | 244   | 235   | 190  |    |
| ADJUSTED PRESSURE         | 0.07 | 0.07 | 0.06 | 0.12 | 0.06 | 0.12  | 0.07  | 0.07  | 0.06  | 0.07  | 0.07  | 0.07  | 0.07  | 0.06  | 0.07  | 0.07  | 0.09 |    |
| ROUND DUCT SIZE           | 6    | 6    | 4    | 4    | 4    | 4     | 5     | 5     | 6     | 6     | 6     | 6     | 6     | 6     | 6     | 6     | 5    |    |
| HEATING VELOCITY (ft/min) | 347  | 347  | 424  | 424  | 379  | 356   | 396   | 396   | 433   | 260   | 214   | 347   | 347   | 362   | 260   | 153   | 88   |    |
| COOLING VELOCITY (ft/min) | 438  | 438  | 252  | 252  | 149  | 149   | 352   | 352   | 189   | 393   | 61    | 362   | 362   | 107   | 393   | 372   | 404  |    |
| OUTLET GRILL SIZE         | 4X10 | 4X10 | 3X10 | 3X10 | 3X10 | 3X10  | 3X10  | 3X10  | 4X10  | 4X10  | 4X10  | 4X10  | 4X10  | 4X10  | 4X10  | 4X10  | 3X10 |    |
| TRUNK                     | C    | C    | C    | C    | C    | C     | B     | B     | A     | A     | A     | A     | A     | B     | A     | A     | B    |    |

| ROOM NAME                 | 37    | 38    |
|---------------------------|-------|-------|
| ROOM NAME                 | BED-3 | BED-4 |
| RM LOSS MBH               | 1.35  | 1.79  |
| CFM PER RUN HEAT          | 51    | 68    |
| RM GAIN MBH               | 2.39  | 2.21  |
| CFM PER RUN COOLING       | 77    | 71    |
| ADJUSTED PRESSURE         | 0.17  | 0.17  |
| ACTUAL DUCT LGH           | 67    | 71    |
| EQUIVALENT LENGTH         | 190   | 170   |
| TOTAL EFFECTIVE LENGTH    | 257   | 241   |
| ADJUSTED PRESSURE         | 0.07  | 0.07  |
| ROUND DUCT SIZE           | 6     | 6     |
| HEATING VELOCITY (ft/min) | 260   | 347   |
| COOLING VELOCITY (ft/min) | 393   | 362   |
| OUTLET GRILL SIZE         | 4X10  | 4X10  |
| TRUNK                     | A     | A     |

| SUPPLY AIR TRUNK SIZE | TRUNK CFM | STATIC PRESS. | ROUND DUCT | RECT DUCT | VELOCITY (ft/min) | RETURN AIR TRUNK SIZE |               | RECT DUCT | VELOCITY (ft/min) |
|-----------------------|-----------|---------------|------------|-----------|-------------------|-----------------------|---------------|-----------|-------------------|
|                       |           |               |            |           |                   | TRUNK CFM             | STATIC PRESS. |           |                   |
| TRUNK A               | 514       | 0.06          | 11.7       | 18        | 8                 | TRUNK O               | 0             | 0.05      | 0                 |
| TRUNK B               | 705       | 0.06          | 13.2       | 22        | 8                 | TRUNK P               | 0             | 0.05      | 0                 |
| TRUNK C               | 979       | 0.06          | 15         | 26        | 8                 | TRUNK Q               | 0             | 0.05      | 0                 |
| TRUNK D               | 0         | 0.00          | 0          | 0         | 0                 | TRUNK R               | 0             | 0.05      | 0                 |
| TRUNK E               | 0         | 0.00          | 0          | 0         | 0                 | TRUNK S               | 0             | 0.05      | 0                 |
| TRUNK F               | 0         | 0.00          | 0          | 0         | 0                 | TRUNK T               | 0             | 0.05      | 0                 |
|                       |           |               |            |           |                   | TRUNK U               | 0             | 0.05      | 0                 |
|                       |           |               |            |           |                   | TRUNK V               | 0             | 0.05      | 0                 |
|                       |           |               |            |           |                   | TRUNK W               | 0             | 0.05      | 0                 |
|                       |           |               |            |           |                   | TRUNK X               | 825           | 0.05      | 8                 |
|                       |           |               |            |           |                   | TRUNK Y               | 450           | 0.05      | 8                 |
|                       |           |               |            |           |                   | TRUNK Z               | 155           | 0.05      | 8                 |
|                       |           |               |            |           |                   | DROP                  | 980           | 0.05      | 10                |
| RETURN AIR #          | 1         | 2             | 3          | 4         | 5                 | BR                    |               |           |                   |
| AIR VOLUME            | 155       | 260           | 115        | 115       | 335               | 0                     | 0             | 0         | 0                 |
| PLENUM PRESSURE       | 0.15      | 0.15          | 0.15       | 0.15      | 0.15              | 0.15                  | 0.15          | 0.15      | 0.15              |
| ACTUAL DUCT LGH       | 62        | 78            | 79         | 75        | 69                | 1                     | 1             | 1         | 1                 |
| EQUIVALENT LENGTH     | 170       | 235           | 195        | 245       | 230               | 0                     | 0             | 0         | 0                 |
| TOTAL EFFECTIVE LH    | 232       | 313           | 274        | 320       | 299               | 1                     | 1             | 1         | 1                 |
| ADJUSTED PRESSURE     | 0.06      | 0.05          | 0.05       | 0.05      | 0.05              | 14.80                 | 14.80         | 14.80     | 14.80             |
| ROUND DUCT SIZE       | 7.5       | 9.5           | 7          | 7         | 10.5              | 0                     | 0             | 0         | 0                 |
| INLET GRILL SIZE      | 8         | 8             | 8          | 8         | 8                 | 0                     | 0             | 0         | 0                 |
| INLET GRILL SIZE      | 14        | 30            | 14         | 14        | 30                | 0                     | 0             | 0         | 0                 |

*Michael Offenberg*

TYPE: 5013 - ELEV B - RIVERVIEW  
 SITE NAME: PINE VALLEY PH 2

LO # 96632  
 OPT 5 BED - OPT 5 BED - WO/LOFT

**RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY**

**COMBUSTION APPLIANCES** 9.32.3.1(1)

a)  Direct vent (sealed combustion) only

b)  Positive venting induced draft (except fireplaces)

c)  Natural draft, B-vent or induced draft gas fireplace

d)  Solid Fuel (including fireplaces)

e)  No Combustion Appliances

**HEATING SYSTEM**

Forced Air  Non Forced Air

Electric Space Heat

**HOUSE TYPE** 9.32.1(2)

I Type a) or b) appliance only, no solid fuel

II Type I except with solid fuel (including fireplaces)

III Any Type c) appliance

IV Type I, or II with electric space heat

Other: Type I, II or IV no forced air

**SYSTEM DESIGN OPTIONS** O.N.H.W.P.

1 Exhaust only/Forced Air System

2 HRV with Ducting/Forced Air System

3 HRV Simplified/connected to forced air system

4 HRV with Ducting/non forced air system

Part 6 Design

**TOTAL VENTILATION CAPACITY** 9.32.3.3(1)

|                           |       |            |       |     |
|---------------------------|-------|------------|-------|-----|
| Basement + Master Bedroom | 2     | @ 21.2 cfm | 42.4  | cfm |
| Other Bedrooms            | 4     | @ 10.6 cfm | 42.4  | cfm |
| Kitchen & Bathrooms       | 7     | @ 10.6 cfm | 74.2  | cfm |
| Other Rooms               | 4     | @ 10.6 cfm | 42.4  | cfm |
| Table 9.32.3.A.           | TOTAL |            | 201.4 | 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        |
| <b>TOTAL</b> |         | <b>95.4</b> | <b>cfm</b> |

**SUPPLEMENTAL VENTILATION CAPACITY** 9.32.3.5.

|                                 |       |     |
|---------------------------------|-------|-----|
| Total Ventilation Capacity      | 201.4 | cfm |
| Less Principal Ventil. Capacity | 150   | cfm |
| Required Supplemental Capacity  | 51.4  | cfm |

**PRINCIPAL EXHAUST FAN CAPACITY**

Model: VANEE V150H Location: BSMT

150.0 cfm  HVI Approved

**PRINCIPAL EXHAUST HEAT LOSS CALCULATION**

| CFM       |   | ΔT °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  | ✓   | 3.5   |
| ENS-2    | BY INSTALLING CONTRACTOR | 50  | ✓   | 3.5   |
| ENS-3    | BY INSTALLING CONTRACTOR | 50  | ✓   | 3.5   |
| ENS-4    | BY INSTALLING CONTRACTOR | 50  | ✓   | 3.5   |

**HEAT RECOVERY VENTILATOR** 9.32.3.11.

Model: VANEE V150H INSTALL 2 HRV / ERV's

150 cfm high 35 cfm low

75 % Sensible Efficiency  HVI Approved @ 32 deg F ( 0 deg C)

**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: *Michael O'Rourke*

HRAI # 001820

Date: May-22

| <b>CSA F280-12 Residential Heat Loss and Heat Gain Calculations</b><br>Formula Sheet (For Air Leakage / Ventilation Calculation)   |   |  |   |   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
|--|---|--|---|---|---|---|-----|--------|-------|--------|---|-----|-------|--------|---|-----|-------|--------|---|---|-------|---|---|---|-------|---|--|--|--|--|
| LO#: 96632   | Model: 5013 - ELEV B - RIVERVIEW<br>Builder: GOLD PARK HOMES  | Date: 2022-05-05   |   |   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| <b>Air Change &amp; Delta T Data</b>   |   |  |   |   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| <b>House Volume</b>  |   | WINTER NATURAL AIR CHANGE RATE      0.340<br>SUMMER NATURAL AIR CHANGE RATE      0.114   |   |   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| Level<br>Bsm't<br>First<br>Second<br>Third<br>Fourth<br>Total:<br>Total:   | Floor Area (ft <sup>2</sup> )<br>2122<br>2122<br>2778<br>0<br>0<br>Total:<br>Total:                                 | Floor Height (ft)<br>10<br>11<br>9<br>9<br>0<br>0<br>Total:<br>Total:  |   |   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
|  | Volume (ft <sup>3</sup> )<br>21220<br>23342<br>25002<br>0<br>0<br>69,564.0 ft <sup>3</sup><br>1969.8 m <sup>3</sup> | Design Temperature Difference<br>Tin °C      Tout °C      ΔT °C      ΔT °F<br>Winter DTDh      22      -20      42      76<br>Summer DTDc      24      31      7      13 |   |   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| <b>5.2.3.1 Heat Loss due to Air Leakage</b>  |   |  |   |   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| $HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$   |   |  |   |   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| 0.340  | x 547.18  | x 42 °C  | x 1.2   | = 9427 W  |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
|  |   |  |   | = 32167 Btu/h   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| <b>5.2.3.2 Heat Loss due to Mechanical Ventilation</b>   |   |  |   |   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| $HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$   |   |  |   |   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| 300 CFM  | x 76 °F   | x 1.08   | x 0.25  | = 6156 Btu/h  |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| <b>5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)</b>  |   |  |   |   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| $HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{aglevel} + HL_{bglevel})\}$   |   |  |   |   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>HLairbv / HLlevel</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.5</td> <td rowspan="5" style="text-align: center; vertical-align: middle;">32,167</td> <td>1.210</td> <td>13,293</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>0.478</td> <td>20,170</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>0.347</td> <td>18,554</td> </tr> <tr> <td>4</td> <td>0</td> <td>0.000</td> <td>0</td> </tr> <tr> <td>5</td> <td>0</td> <td>0.000</td> <td>0</td> </tr> </tbody> </table> | Level   | Level Factor (LF)  | HLairbv Air Leakage + Ventilation Heat Loss (Btu/h) | HLairbv / HLlevel   | Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel) | 1 | 0.5 | 32,167 | 1.210 | 13,293 | 2 | 0.3 | 0.478 | 20,170 | 3 | 0.2 | 0.347 | 18,554 | 4 | 0 | 0.000 | 0 | 5 | 0 | 0.000 | 0 |  |  |  |  |
| Level  | Level Factor (LF)   | HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)  | HLairbv / HLlevel                                   | Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel) |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| 1  | 0.5   | 32,167   | 1.210   | 13,293  |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| 2  | 0.3   |  | 0.478   | 20,170  |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| 3  | 0.2   |  | 0.347   | 18,554  |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| 4  | 0   |  | 0.000   | 0   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| 5  | 0   |  | 0.000   | 0   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| * HLairbv = Air leakage heat loss + ventilation heat loss<br>** For a balanced or supply only ventilation system HLairve = 0   |   |  |   |   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| <b>6.2.6 Sensible Gain due to Air Leakage</b>  |   |  |   |   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| $HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$   |   |  |   |   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
|  | 0.114   | x 547.18   | x 7 °C  | x 1.2   | = 534 W   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
|  |   |  |   |   | = 1821 Btu/h  |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| <b>6.2.7 Sensible heat gain due to Ventilation</b>   |   |  |   |   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| $HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$   |   |  |   |   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |
| 300 CFM  | x 13 °F   | x 1.08   | x 0.25  | = 1,037 Btu/h   |   |   |     |        |       |        |   |     |       |        |   |     |       |        |   |   |       |   |   |   |       |   |  |  |  |  |

Michael O'Rourke  
 BCIN# 19669

### HEAT LOSS AND GAIN SUMMARY SHEET

|   |                                 |                                 |
|---|---------------------------------|---------------------------------|
| <b>MODEL:</b> 5013 - ELEV B - RIVERVIEW | OPT 5 BED - OPT 5 BED - WO/LOFT | <b>BUILDER:</b> GOLD PARK HOMES |
| <b>SFQT:</b> 4501                       | <b>LO#</b> 96632                | <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

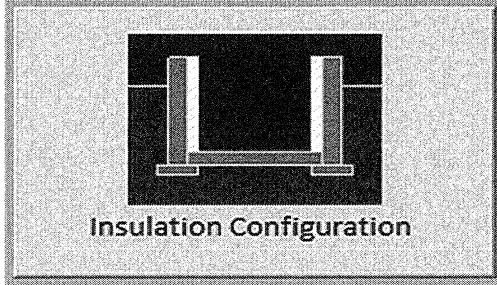
|                                     |                 |                           |          |
|-------------------------------------|-----------------|---------------------------|----------|
| ATTACHMENT:                         | DETACHED        | # OF STORIES (+BASEMENT): | 3        |
| FRONT FACES:                        | 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):                 | 69564.0         | 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: 70.0 ft                     | WIDTH: 43.0 ft  | EXPOSED PERIMETER:        | 226.0 ft |

| 2012 OBC - COMPLIANCE PACKAGE  |                          |           |
|--|--------------------------|-----------|
| Component  | Compliance Package<br>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):              | 21.3                                      |  <p style="text-align: center;">Insulation Configuration</p> |
| Floor Width (m):               | 13.1                                      |   |
| Exposed Perimeter (m):         | 0.0                                       |   |
| Wall Height (m):               | 3.0                                       |   |
| Depth Below Grade (m):         | 2.13                                      |   |
| Window Area (m <sup>2</sup> ): | 2.5                                       |   |
| Door Area (m <sup>2</sup> ):   | 0.0                                       |   |
| Radiant Slab                   |   |   |
| Heated Fraction of the Slab:   | 0   |   |
| Fluid Temperature (°C):        | 33  |   |
| Design Months                  |   |   |
| Heating Month                  | 1   |   |
| Foundation Loads               |   |   |
| Heating Load (Watts):          | <b>2345</b>                               |   |

TYPE: 5013 - ELEV B - RIVERVIEW  
 LO# 96632

OPT 5 BED - OPT 5 BED - WO/LOFT



# 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):              | 7.01                       |                        |    |    |
| Building Configuration                   |                            |                        |    |    |
| Type:                                    | Detached                   |                        |    |    |
| Number of Stories:                       | Two                        |                        |    |    |
| Foundation:                              | Full                       |                        |    |    |
| House Volume (m <sup>3</sup> ):          | 1969.8                     |                        |    |    |
| Air Leakage/Ventilation                  |                            |                        |    |    |
| Air Tightness Type:                      | Present (1961-) (3.57 ACH) |                        |    |    |
| Custom BDT Data:                         | ELA @ 10 Pa.               | 2625.8 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               |                            |                        |    |    |
| <b>Heating Air Leakage Rate (ACH/H):</b> | <b>0.340</b>               |                        |    |    |
| <b>Cooling Air Leakage Rate (ACH/H):</b> | <b>0.114</b>               |                        |    |    |

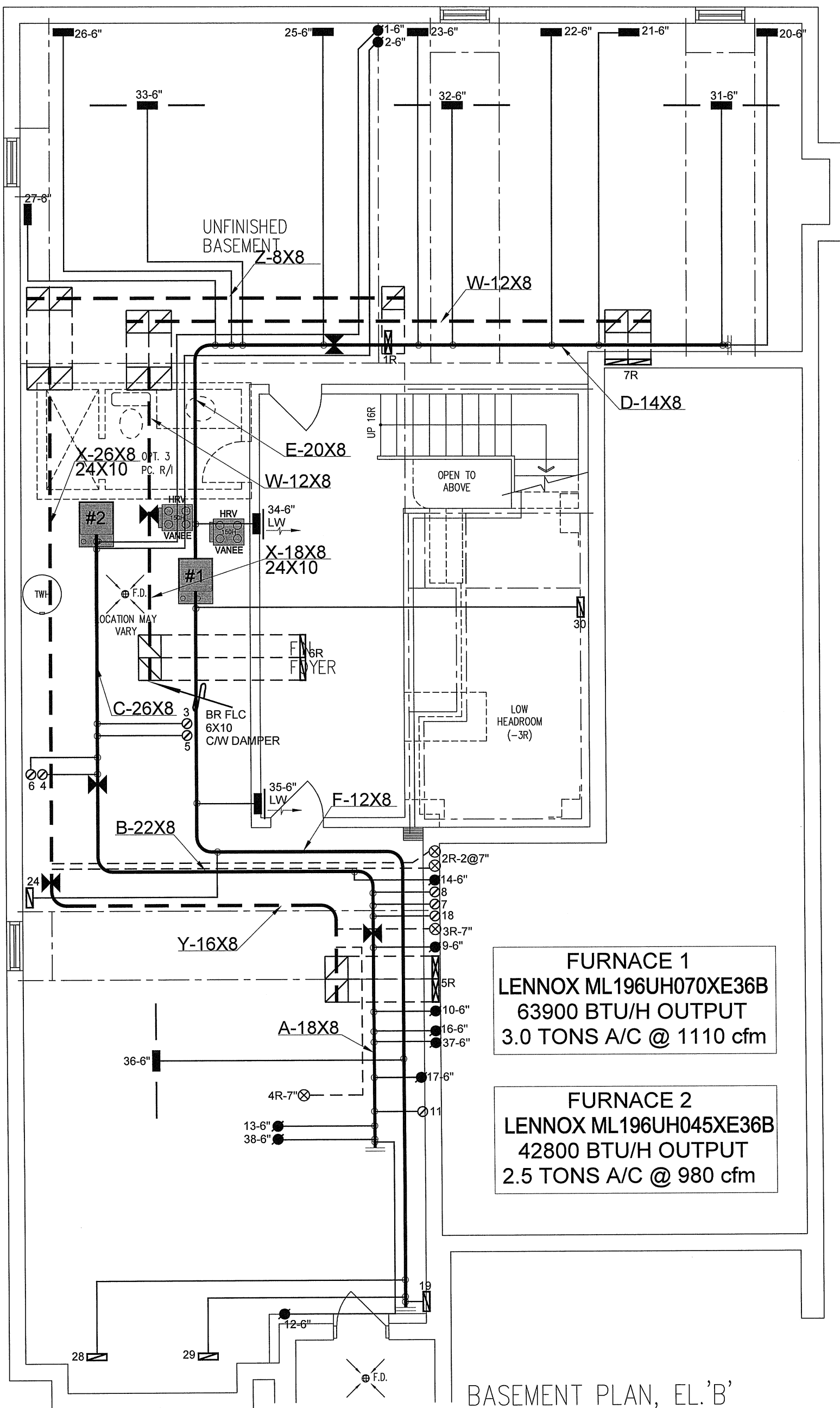
TYPE: 5013 - ELEV B - RIVERVIEW  
 LO# 96632

OPT 5 BED - OPT 5 BED - WO/LOFT

I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

*Michael O'Rourke*  
 Michael O'Rourke, BCIN# 19669  
 HVAC DESIGNS LTD.

**LOD**  
**WOD**  
**CSA-F280-12**  
**PACKAGE A1**



| HVAC LEGEND |                                 |
|-------------|---------------------------------|
| SYMBOL      | DESCRIPTION                     |
| □           | SUPPLY AIR GRILLE               |
| ○           | SUPPLY AIR GRILLE 6" BOOT       |
| ○           | SUPPLY AIR BOOT ABOVE           |
| ○           | 6" SUPPLY AIR STACK ABOVE       |
| ○           | SUPPLY AIR STACK FROM 2nd FLOOR |
| ○           | 6" SUPPLY AIR STACK 2nd FLOOR   |
| ○           | 14"x8" RETURN AIR GRILLE        |
| ○           | 30"x6" RETURN AIR GRILLE        |
| ○           | 30"x6" RETURN AIR GRILLE        |
| ○           | RETURN AIR STACK ABOVE          |
| ○           | RETURN AIR STACK 2nd FLOOR      |
| ○           | REDUCER                         |

| No. | Description |
|-----|-------------|
| 1.  |             |
| 2.  |             |
| 3.  |             |

| REVISIONS |             |
|-----------|-------------|
| No.       | Description |
| Date      |             |

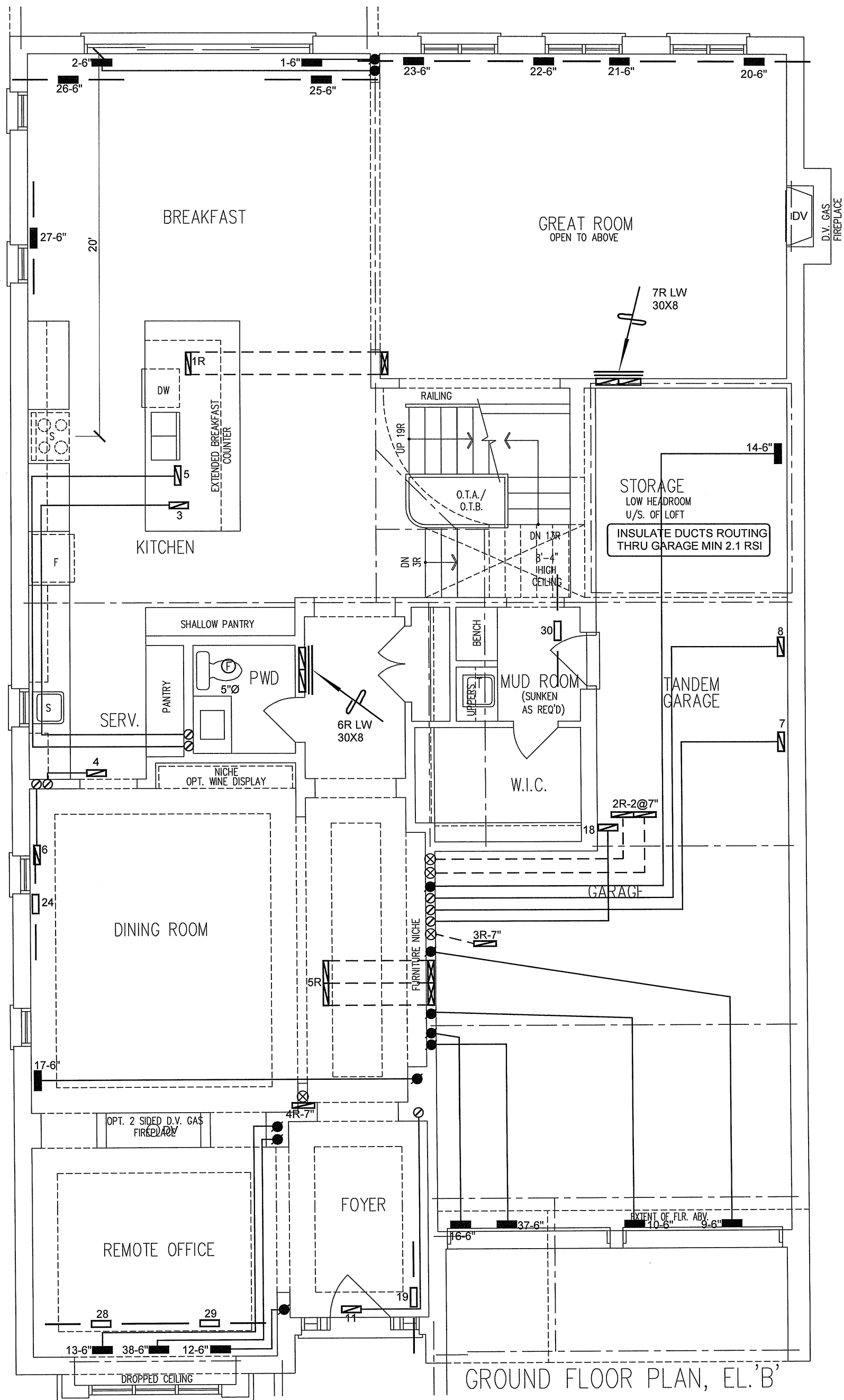
|              |   |
|--------------|---|
| Client       | GOLD PARK HOMES   |
| Project Name | PINE VALLEY PH 2<br>VAUGHAN, ONTARIO<br>WO/LOFT<br>RIVERVIEW - OPT 5 BED<br>5013 - ELEV B 4501 sqft |
| Sheet Title  | BASEMENT HEATING LAYOUT   |
| Date         | MAY/2022  |
| Scale        | 3/16" = 1'-0"   |
| BCIN#        | 19669   |
| LO#          | 96632   |



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

Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.

|     | S/A | R/A | FANS |
|-----|-----|-----|------|
| 2ND | 19  | 5   | 7    |
| 1ST | 12  | 2   | 2    |
| BAS | 6   | 1   | 0    |



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*Michael O'Rourke*  
 Michael O'Rourke, BCINF 19669  
 HVAC DESIGNS LTD.

**LOD**  
**WOD**  
**CSA-F280-12**  
**PACKAGE A1**

| HVAC LEGEND |                                 |
|-------------|---------------------------------|
| SYMBOL      | DESCRIPTION                     |
|             | SUPPLY AIR GRILLE               |
|             | SUPPLY AIR BOOT ABOVE           |
|             | SUPPLY AIR STACK FROM 2ND FLOOR |
|             | 6" SUPPLY AIR STACK 2ND FLOOR   |
|             | 14"x8" RETURN AIR GRILLE        |
|             | 30"x8" RETURN AIR GRILLE        |
|             | FRA - FLOOR RETURN AIR GRILLE   |
|             | RETURN AIR STACK ABOVE          |
|             | RETURN AIR STACK 2ND FLOOR      |
|             | REDUCER                         |

| REVISIONS |             |
|-----------|-------------|
| No.       | Description |
| 1.        |             |
| 2.        |             |
| 3.        |             |

|              |   |
|--------------|---|
| Client       | GOLD PARK HOMES   |
| Project Name | PINE VALLEY PH 2<br>VAUGHAN, ONTARIO<br>WO/LOFT<br>RIVERVIEW - OPT 5 BED<br>5013 - ELEV B 4501 sqft |
| Sheet Title  | FIRST FLOOR HEATING LAYOUT  |
| Date         | MAY/2022  |
| Scale        | 3/16" = 1'-0"   |
| BCIN#        | 19669   |
| LO#          | 96632   |



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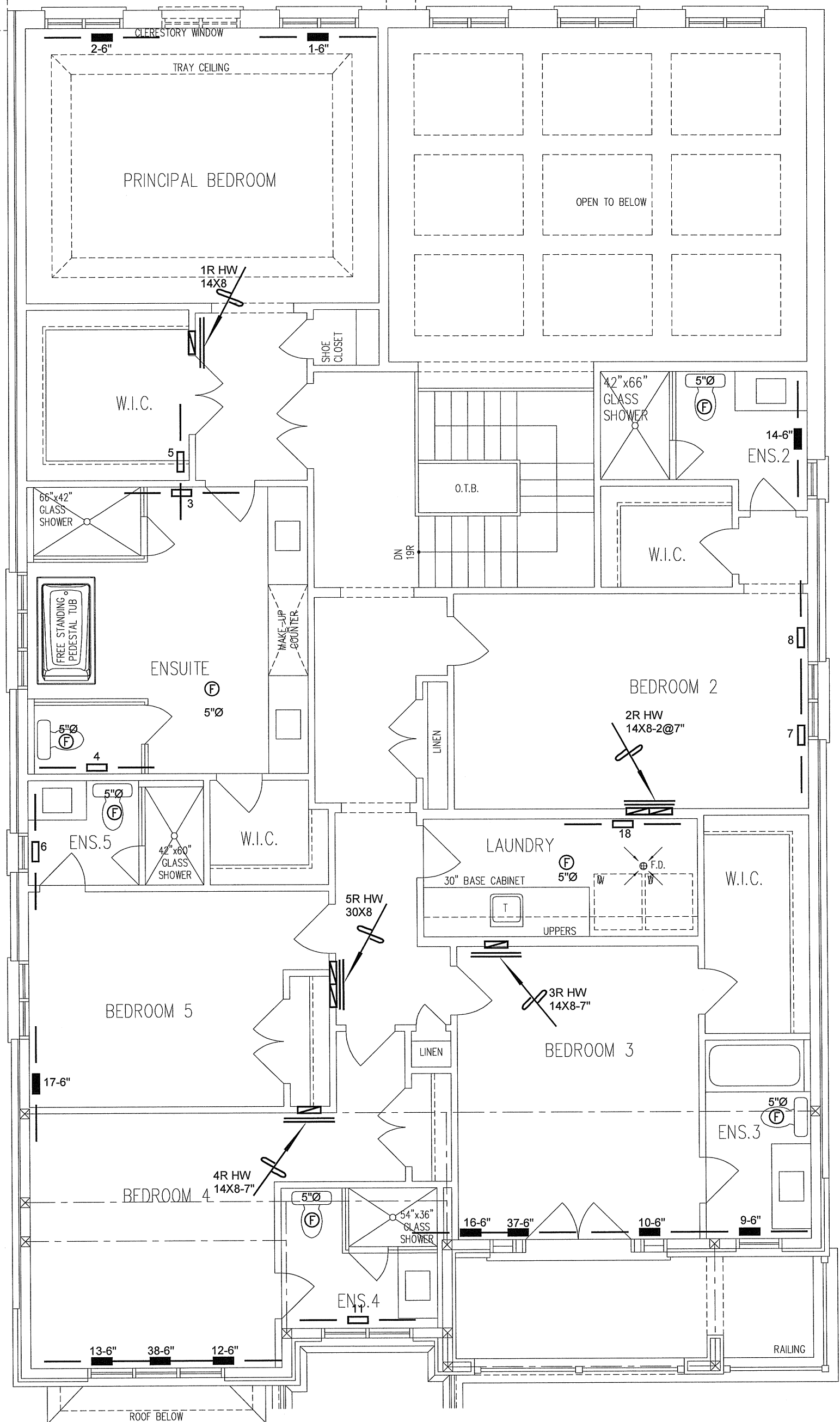
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*Michael O'Rourke*  
 Michael O'Rourke, BCIN# 19669  
 HVAC DESIGNS LTD.

**LOD**  
**WOD**  
**CSA-F280-12**  
**PACKAGE A1**

| HVAC LEGEND |                                 | REVISIONS |      |
|-------------|---------------------------------|-----------|------|
| SYMBOL      | DESCRIPTION                     | No.       | Date |
| [Symbol]    | SUPPLY AIR GRILLE               | 1.        |      |
| [Symbol]    | SUPPLY AIR GRILLE 6" BOOT       |           |      |
| [Symbol]    | SUPPLY AIR BOOT ABOVE           |           |      |
| [Symbol]    | SUPPLY AIR STACK FROM 2nd FLOOR |           |      |
| [Symbol]    | SUPPLY AIR STACK 2nd FLOOR      |           |      |
| [Symbol]    | 14"x8" RETURN AIR GRILLE        | 2.        |      |
| [Symbol]    | 30"x8" RETURN AIR GRILLE        |           |      |
| [Symbol]    | RETURN AIR STACK ABOVE          |           |      |
| [Symbol]    | RETURN AIR STACK 2nd FLOOR      |           |      |
| [Symbol]    | REDUCER                         |           |      |

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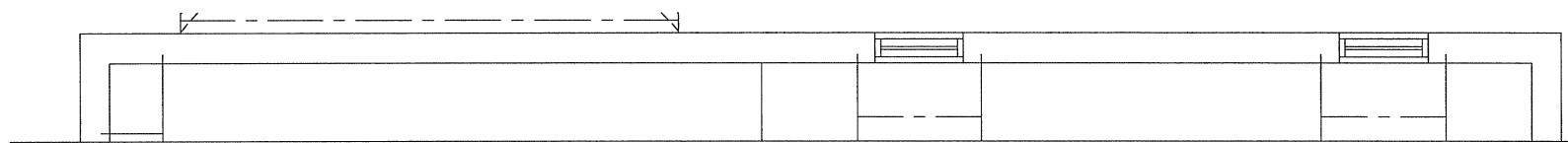


OPT. 5 BEDROOM SECOND FLOOR PLAN, W/O. LOFT, EL. 'B'

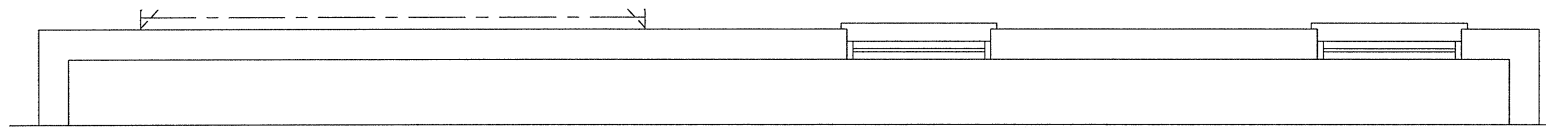
Client  
**GOLD PARK HOMES**  
 Project Name  
**PINE VALLEY PH 2**  
**VAUGHAN, ONTARIO**  
**WO/LOFT**  
**RIVERVIEW - OPT 5 BED**  
**5013 - ELEV B 4501 sqft**

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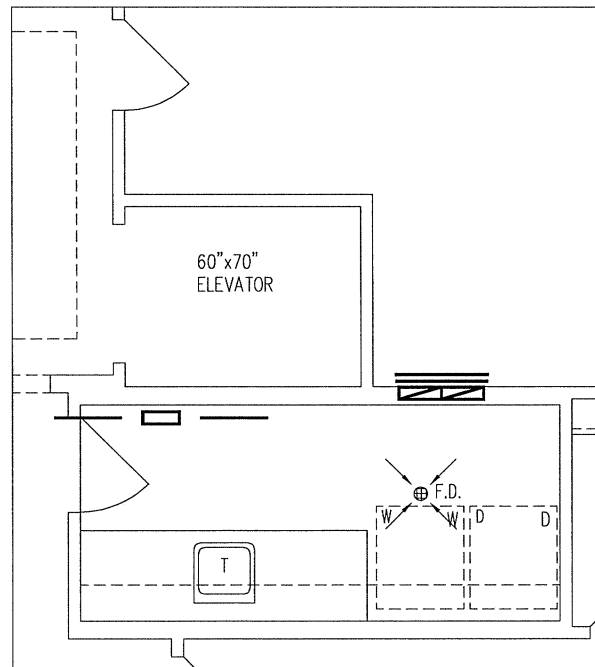
Sheet Title  
**SECOND FLOOR HEATING LAYOUT**  
 Date  
**MAY/2022**  
 Scale  
**3/16" = 1'-0"**  
 BCIN# 19669  
**LO# 96632**



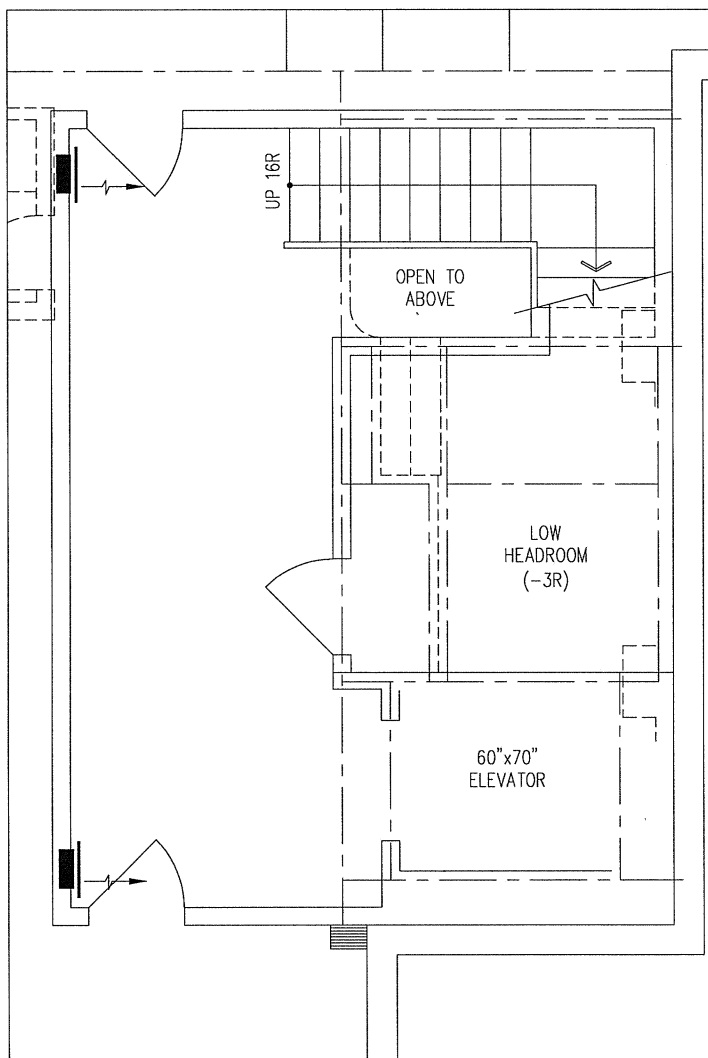
PART. BASEMENT PLAN ELEV. 'B' - W.O.D. COND.



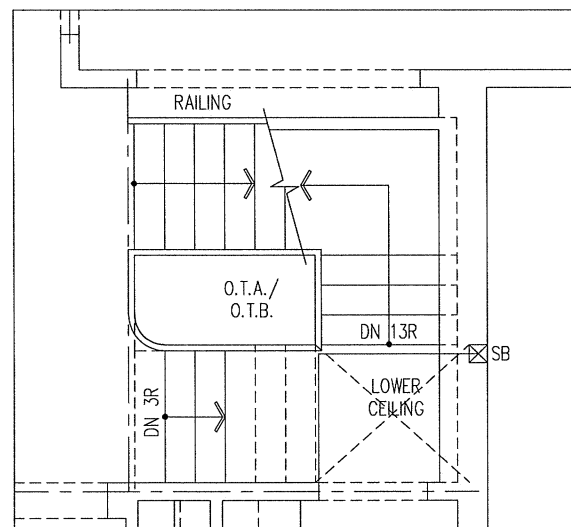
PART. BASEMENT PLAN ELEV. 'B' - L.O.D. COND.



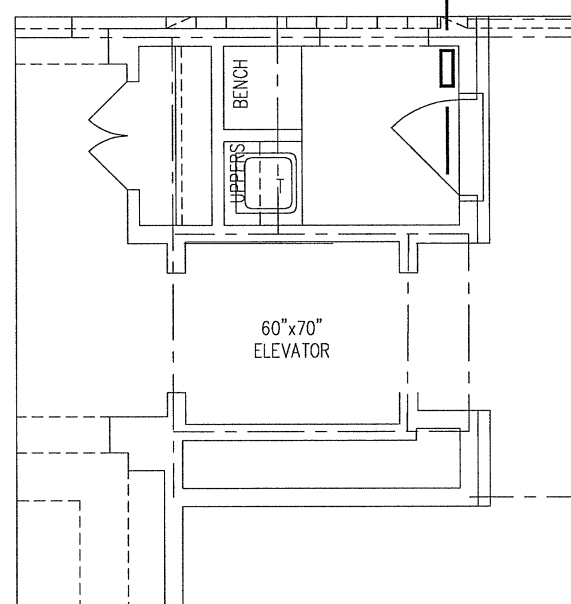
PART. OPT. 5 BEDROOM SECOND FLOOR PLAN, W/O. LOFT W/ ELEVATOR, EL. 'B'



PART BASEMENT FLOOR PLAN, W/ OPT. ELEVATOR, EL. 'B'



PART. GROUND FLOOR PLAN, W/ NO LOFT CONDITION, EL. 'B'



PART. GROUND FLOOR PLAN, W/ OPT. ELEVATOR, EL. 'B'

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*Michael O'Rourke*  
 Michael O'Rourke, BCIN# 19669  
 HVAC DESIGNS LTD.

**LOD**  
**WOD**  
**CSA-F280-12**  
**PACKAGE A1**

| HVAC LEGEND |                                    | REVISIONS |      |
|-------------|------------------------------------|-----------|------|
| SYMBOL      | DESCRIPTION                        | No.       | Date |
|             | 14x8" RETURN AIR GRILLE            | 1.        |      |
|             | 30x6" RETURN AIR GRILLE            |           |      |
|             | 6" SUPPLY AIR BOOT ABOVE           |           |      |
|             | 6" SUPPLY AIR STACK FROM 2ND FLOOR |           |      |
|             | 6" SUPPLY AIR STACK 2ND FLOOR      |           |      |
|             | 30x6" RETURN AIR GRILLE            |           |      |
|             | 14x8" RETURN AIR GRILLE            |           |      |
|             | RETURN AIR STACK ABOVE             |           |      |
|             | RETURN AIR STACK 2ND FLOOR         |           |      |
|             | REDUCER                            |           |      |

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Client  
**GOLD PARK HOMES**  
 Project Name  
**PINE VALLEY PH 2**  
**VAUGHAN, ONTARIO**  
**WO/LOFT**  
**RIVERVIEW - OPT 5 BED**  
**5013 - ELEV B 4501 sqft**

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Sheet Title  
**STRIP PLAN**  
**HEATING**  
**LAYOUT**  
 Date  
**MAY/2022**  
 Scale  
**3/16" = 1'-0"**  
 BCIN# 19669  
**LO# 96632**