

TRUE COPY  
OF PERMIT PLANS

Oct 30 2023

PER:

SITE NAME: ZADORRA ESTATES INC

BUILDER: GREENPARK HOMES

OPT 5 BED

TYPE: ROSE 6

GFA: 3175

DATE: Jul-23

LO# 101740

WINTER NATURAL AIR CHANGE RATE 0.342

SUMMER NATURAL AIR CHANGE RATE 0.094

HEAT LOSS ΔT °F. 74

HEAT GAIN ΔT °F. 11

CSA-F280-12

SB-12 PACKAGE A1

MHP 23030

| ROOM USE                       | EXP. WALL | CLG. HT. | MBR  | ENS  | WIC  | BED-2 | BED-3 | BED-4 | S-ENS | ENS-5 | BED-5 | ENS-4 | WIC-2 | HALL |
|--------------------------------|-----------|----------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|
|                                |           |          | 35   | 27   | 5    | 12    | 24    | 31    | 3     | 7     | 13    | 8     | 12    | 11   |
|                                |           |          | 9    | 9    | 9    | 9     | 9     | 9     | 9     | 9     | 9     | 9     | 10    | 9    |
| FACTORS                        |           |          |      |      |      |       |       |       |       |       |       |       |       |      |
| GRS.WALL AREA                  | LOSS      | GAIN     | 319  | 246  | 46   | 109   | 218   | 282   | 27    | 64    | 118   | 73    | 121   | 100  |
| GLAZING                        | LOSS      | GAIN     |      |      |      |       |       |       | LOSS  | GAIN  | LOSS  | GAIN  | LOSS  | GAIN |
| NORTH                          | 20.8      | 15.5     | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    |
| EAST                           | 20.8      | 41.0     | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    |
| SOUTH                          | 20.8      | 24.4     | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    |
| WEST                           | 20.8      | 41.0     | 22   | 457  | 903  | 26    | 540   | 1067  | 0     | 0     | 0     | 0     | 0     | 0    |
| SKYLT.                         | 36.4      | 100.7    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    |
| DOORS                          | 19.6      | 2.9      | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    |
| NET EXPOSED WALL               | 4.4       | 0.6      | 297  | 1292 | 192  | 220   | 957   | 142   | 46    | 198   | 29    | 93    | 406   | 60   |
| NET EXPOSED BSMT WALL ABOVE GR | 3.5       | 0.5      | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    |
| EXPOSED CLG                    | 1.3       | 0.6      | 350  | 439  | 195  | 202   | 253   | 113   | 50    | 63    | 28    | 141   | 177   | 79   |
| NO ATTIC EXPOSED CLG           | 2.7       | 1.2      | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    |
| EXPOSED FLOOR                  | 2.5       | 0.4      | 0    | 0    | 0    | 0     | 0     | 0     | 14    | 35    | 5     | 189   | 471   | 70   |
| BASEMENT/CRAWL HEAT LOSS       |           |          | 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    |
| SUBTOTAL HT LOSS               |           |          | 2187 |      | 1751 | 261   | 950   | 2381  | 460   | 468   | 1036  | 748   | 791   | 1193 |
| SUB TOTAL HT GAIN              |           |          |      | 1290 | 1322 | 57    | 391   | 2094  | 2186  | 106   | 241   | 571   | 626   | 630  |
| LEVEL FACTOR / MULTIPLIER      | 0.20      | 0.28     |      | 0.20 | 0.28 | 0.20  | 0.28  | 0.20  | 0.28  | 0.20  | 0.28  | 0.20  | 0.28  | 0.20 |
| AIR CHANGE HEAT LOSS           | 615       |          |      | 492  | 73   | 267   | 669   | 630   | 129   | 131   | 291   | 210   | 386   | 335  |
| AIR CHANGE HEAT GAIN           |           | 73       |      | 75   | 3    | 22    | 119   | 124   | 6     | 14    | 32    | 36    | 41    | 36   |
| DUCT LOSS                      |           | 0        |      | 0    | 0    | 122   | 305   | 287   | 59    | 0     | 0     | 96    | 0     | 153  |
| DUCT GAIN                      |           | 0        |      | 0    | 0    | 124   | 304   | 313   | 11    | 0     | 0     | 66    | 0     | 67   |
| HEAT GAIN PEOPLE               | 240       | 2        | 480  | 0    | 0    | 1     | 240   | 240   | 0     | 0     | 0     | 0     | 0     | 0    |
| HEAT GAIN APPLIANCES/LIGHTS    |           |          | 583  | 0    | 0    | 583   | 583   | 583   | 0     | 0     | 583   | 0     | 0     | 0    |
| TOTAL HT LOSS BTU/H            |           |          | 2802 |      | 2242 | 334   | 1339  | 3355  | 648   | 599   | 1327  | 1054  | 1177  | 1681 |
| TOTAL HT GAIN x 1.3 BTU/H      |           |          | 3153 |      | 1816 | 79    | 1768  | 4340  | 160   | 331   | 1542  | 946   | 996   | 953  |

| ROOM USE                       | EXP. WALL | CLG. HT. | DN/LV | H-OFF | KT/BF | FAM  | PWD  | FOY  | MUD  |      | WOD  | BAS   |
|--------------------------------|-----------|----------|-------|-------|-------|------|------|------|------|------|------|-------|
|                                |           |          | 21    | 24    | 40    | 31   | 11   | 35   | 5    |      | 41   | 178   |
|                                |           |          | 10    | 10    | 10    | 10   | 10   | 10   | 10   |      | 9    | 9     |
| FACTORS                        |           |          |       |       |       |      |      |      |      |      |      |       |
| GRS.WALL AREA                  | LOSS      | GAIN     | 212   | 242   | 404   | 313  | 111  | 354  | 51   |      | 349  | 1102  |
| GLAZING                        | LOSS      | GAIN     |       |       |       |      | LOSS | GAIN | LOSS | GAIN | LOSS | GAIN  |
| NORTH                          | 20.8      | 15.5     | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0     |
| EAST                           | 20.8      | 41.0     | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0     |
| SOUTH                          | 20.8      | 24.4     | 30    | 623   | 732   | 0    | 0    | 0    | 0    | 0    | 0    | 0     |
| WEST                           | 20.8      | 41.0     | 0     | 0     | 0     | 62   | 1288 | 2545 | 30   | 623  | 1231 | 146   |
| SKYLT.                         | 36.4      | 100.7    | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0     |
| DOORS                          | 19.6      | 2.9      | 0     | 0     | 0     | 0    | 0    | 0    | 22   | 431  | 64   | 61    |
| NET EXPOSED WALL               | 4.4       | 0.6      | 182   | 793   | 118   | 220  | 960  | 142  | 331  | 1442 | 214  | 183   |
| NET EXPOSED BSMT WALL ABOVE GR | 3.5       | 0.5      | 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     |
| NO ATTIC EXPOSED CLG           | 2.7       | 1.2      | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0     |
| EXPOSED FLOOR                  | 2.5       | 0.4      | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0     |
| BASEMENT/CRAWL HEAT LOSS       |           |          | 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     |
| SUBTOTAL HT LOSS               |           |          | 1417  |       | 1417  | 2959 | 1857 | 599  | 2236 | 540  | 864  | 7982  |
| SUB TOTAL HT GAIN              |           |          |       | 849   | 483   | 2929 | 1414 | 238  | 1167 | 80   | 128  | 421   |
| LEVEL FACTOR / MULTIPLIER      | 0.30      | 0.49     |       | 0.30  | 0.49  | 0.30 | 0.49 | 0.30 | 0.49 | 0.30 | 0.49 | 0.50  |
| AIR CHANGE HEAT LOSS           | 691       |          |       | 691   | 1443  | 906  | 292  | 1091 | 263  |      |      | 9607  |
| AIR CHANGE HEAT GAIN           |           | 48       |       | 27    | 166   | 80   | 14   | 66   | 5    |      |      | 31    |
| DUCT LOSS                      |           | 0        |       | 0     | 0     | 0    | 0    | 0    | 0    |      |      | 0     |
| DUCT GAIN                      |           | 0        |       | 0     | 0     | 0    | 0    | 0    | 0    |      |      | 0     |
| HEAT GAIN PEOPLE               | 240       | 0        | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0     |
| HEAT GAIN APPLIANCES/LIGHTS    |           |          | 583   | 583   | 583   | 583  | 583  | 0    | 0    | 0    | 0    | 583   |
| TOTAL HT LOSS BTU/H            |           |          | 2108  |       | 2109  | 4402 | 2763 | 891  | 3327 | 803  | 864  | 17589 |
| TOTAL HT GAIN x 1.3 BTU/H      |           |          | 1924  |       | 1420  | 4781 | 2700 | 327  | 1603 | 110  | 167  | 1346  |

TOTAL HEAT GAIN BTU/H:

35177

TONS: 2.93

LOSS DUE TO VENTILATION LOAD BTU/H: 1593

STRUCTURAL HEAT LOSS: 54575

TOTAL COMBINED HEAT LOSS BTU/H: 56168

Michael O'Rourke



LO # 101740  
OPT 5 BED

**RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY**

|                                                                                  |                    |
|----------------------------------------------------------------------------------|--------------------|
| <b>COMBUSTION APPLIANCES</b>                                                     | <b>9.32.3.1(1)</b> |
| 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                             |                    |

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

|                                                                                   |                  |
|-----------------------------------------------------------------------------------|------------------|
| <b>HOUSE TYPE</b>                                                                 | <b>9.32.1(2)</b> |
| <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                    |                  |

|                                                                                     |                   |
|-------------------------------------------------------------------------------------|-------------------|
| <b>SYSTEM DESIGN OPTIONS</b>                                                        | <b>O.N.H.W.P.</b> |
| <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                                              |                   |

|                                   |                       |
|-----------------------------------|-----------------------|
| <b>TOTAL VENTILATION CAPACITY</b> | <b>9.32.3.3(1)</b>    |
| Basement + Master Bedroom         | 2 @ 21.2 cfm 42.4 cfm |
| Other Bedrooms                    | 3 @ 10.6 cfm 31.8 cfm |
| Kitchen & Bathrooms               | 6 @ 10.6 cfm 63.6 cfm |
| Other Rooms                       | 6 @ 10.6 cfm 63.6 cfm |
| Table 9.32.3.A.                   | TOTAL 201.4 cfm       |

|                                                |                     |
|------------------------------------------------|---------------------|
| <b>PRINCIPAL VENTILATION CAPACITY REQUIRED</b> | <b>9.32.3.4.(1)</b> |
| 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>79.5 cfm</b>     |

|                                          |                  |
|------------------------------------------|------------------|
| <b>SUPPLEMENTAL VENTILATION CAPACITY</b> | <b>9.32.3.5.</b> |
| Total Ventilation Capacity               | 201.4 cfm        |
| Less Principal Ventil. Capacity          | 79.5 cfm         |
| Required Supplemental Capacity           | 121.9 cfm        |

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

|                                                                           |                                 |
|---------------------------------------------------------------------------|---------------------------------|
| <b>SUPPLEMENTAL FANS</b>                                                  | <b>BY INSTALLING CONTRACTOR</b> |
| Location Model cfm HVI Sones                                              |                                 |
| ENS BY INSTALLING CONTRACTOR 50 <input checked="" type="checkbox"/> 3.5   |                                 |
| S-ENS BY INSTALLING CONTRACTOR 50 <input checked="" type="checkbox"/> 3.5 |                                 |
| ENS-4 BY INSTALLING CONTRACTOR 50 <input checked="" type="checkbox"/> 3.5 |                                 |
| PWD BY INSTALLING CONTRACTOR 50 <input checked="" type="checkbox"/> 3.5   |                                 |

|                                                                                                 |                   |
|-------------------------------------------------------------------------------------------------|-------------------|
| <b>HEAT RECOVERY VENTILATOR</b>                                                                 | <b>9.32.3.11.</b> |
| Model: VANEE V150H                                                                              |                   |
| 150 cfm high 35 cfm low                                                                         |                   |
| 75 % Sensible Efficiency @ 32 deg F ( 0 deg C) <input checked="" type="checkbox"/> HVI Approved |                   |

|                                 |
|---------------------------------|
| <b>LOCATION OF INSTALLATION</b> |
| Lot: Concession                 |
| Township Plan:                  |
| Address                         |
| Roll # Building Permit #        |

|                     |                 |
|---------------------|-----------------|
| <b>BUILDER:</b>     | GREENPARK HOMES |
| Name:               |                 |
| Address:            |                 |
| City:               |                 |
| Telephone #: Fax #: |                 |

|                              |  |
|------------------------------|--|
| <b>INSTALLING CONTRACTOR</b> |  |
| Name:                        |  |
| Address:                     |  |
| City:                        |  |
| Telephone #: Fax #:          |  |

|                                                                                                               |
|---------------------------------------------------------------------------------------------------------------|
| <b>DESIGNER CERTIFICATION</b>                                                                                 |
| I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code. |
| Name: HVAC Designs Ltd.                                                                                       |
| Signature:               |
| HRAI # 001820                                                                                                 |
| Date: July-23                                                                                                 |

| CSA F280-12 Residential Heat Loss and Heat Gain Calculations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   |                                                     |                                                     |                                                           |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|--------------|------|-------|-------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------|----|---------|--------|-------|-------|---------|-------|--------|-------|---|--------|--------|-------|---|--------|---|-------|--------------|--------|---|-------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--------------------------------|--|-------|--------------------------------|--|-------|-------------------------------|--|--|--|--|--|--------|---------|-------|-------|-------------|----|-----|----|----|-------------|----|----|---|----|
| Formula Sheet (For Air Leakage / Ventilation Calculation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                   |                                                     |                                                     |                                                           |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| LO#: 101740                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                   | Model: ROSE 6                                       |                                                     | Builder: GREENPARK HOMES                                  |                                                                                                                                                                                         |                  | Date: 2023-07-06  |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| <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>1399</td> <td>9</td> <td>11891.5</td> </tr> <tr> <td>First</td> <td>1399</td> <td>10</td> <td>14129.9</td> </tr> <tr> <td>Second</td> <td>1789</td> <td>9</td> <td>16279.9</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>42,301.3 ft³</td> </tr> <tr> <td colspan="3" style="text-align: right;">Total:</td> <td>1197.8 m³</td> </tr> </tbody> </table>                                                                                                                                                                                                                                                                                |                   |                                                     |                                                     |                                                           | Level                                                                                                                                                                                   | Floor Area (ft²) | Floor Height (ft) | Volume (ft³) | Bsmt | 1399  | 9                 | 11891.5                                             | First                                               | 1399                                                      | 10 | 14129.9 | Second | 1789  | 9     | 16279.9 | Third | 0      | 9     | 0 | Fourth | 0      | 9     | 0 | Total: |   |       | 42,301.3 ft³ | Total: |   |       | 1197.8 m³ | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">WINTER NATURAL AIR CHANGE RATE</td> <td>0.342</td> </tr> <tr> <td colspan="2">SUMMER NATURAL AIR CHANGE RATE</td> <td>0.094</td> </tr> </table><br><table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="5">Design Temperature Difference</th> </tr> <tr> <th></th> <th>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> <th>ΔT °F</th> </tr> <tr> <td>Winter DTDh</td> <td>22</td> <td>-19</td> <td>41</td> <td>74</td> </tr> <tr> <td>Summer DTDc</td> <td>24</td> <td>30</td> <td>6</td> <td>11</td> </tr> </table> |  |  |  |  | WINTER NATURAL AIR CHANGE RATE |  | 0.342 | SUMMER NATURAL AIR CHANGE RATE |  | 0.094 | Design Temperature Difference |  |  |  |  |  | Tin °C | Tout °C | ΔT °C | ΔT °F | Winter DTDh | 22 | -19 | 41 | 74 | Summer DTDc | 24 | 30 | 6 | 11 |
| Level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Floor Area (ft²)  | Floor Height (ft)                                   | Volume (ft³)                                        |                                                           |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Bsmt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1399              | 9                                                   | 11891.5                                             |                                                           |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| First                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1399              | 10                                                  | 14129.9                                             |                                                           |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1789              | 9                                                   | 16279.9                                             |                                                           |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Third                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0                 | 9                                                   | 0                                                   |                                                           |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Fourth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0                 | 9                                                   | 0                                                   |                                                           |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Total:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                   |                                                     | 42,301.3 ft³                                        |                                                           |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Total:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                   |                                                     | 1197.8 m³                                           |                                                           |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| WINTER NATURAL AIR CHANGE RATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                   | 0.342                                               |                                                     |                                                           |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| SUMMER NATURAL AIR CHANGE RATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                   | 0.094                                               |                                                     |                                                           |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Design Temperature Difference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                   |                                                     |                                                     |                                                           |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Tin °C            | Tout °C                                             | ΔT °C                                               | ΔT °F                                                     |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Winter DTDh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 22                | -19                                                 | 41                                                  | 74                                                        |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Summer DTDc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 24                | 30                                                  | 6                                                   | 11                                                        |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| <b>5.2.3.1 Heat Loss due to Air Leakage</b><br>$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ <p>0.342 x 332.73 x 41 °C x 1.2 = 5631 W</p> <p>= 19214 Btu/h</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                                                     |                                                     |                                                           | <b>6.2.6 Sensible Gain due to Air Leakage</b><br>$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ <p>= 0.094 x 332.73 x 6 °C x 1.2 = 230 W</p> <p>= 783 Btu/h</p> |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| <b>5.2.3.2 Heat Loss due to Mechanical Ventilation</b><br>$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>80 CFM x 74 °F x 1.08 x 0.25 = 1593 Btu/h</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                   |                                                     |                                                     |                                                           | <b>6.2.7 Sensible heat Gain due to Ventilation</b><br>$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>80 CFM x 11 °F x 1.08 x 0.25 = 236 Btu/h</p>                        |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| <b>5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                   |                                                     |                                                     |                                                           |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| $HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HLairve Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HL<sub>clevel</sub>)</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.5</td> <td rowspan="5" style="text-align: center; vertical-align: middle;">19,214</td> <td>8,846</td> <td>1.086</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>11,815</td> <td>0.488</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>13,678</td> <td>0.281</td> </tr> <tr> <td>4</td> <td>0</td> <td>0</td> <td>0.000</td> </tr> <tr> <td>5</td> <td>0</td> <td>0</td> <td>0.000</td> </tr> </tbody> </table> <p>*HLairbv = Air leakage heat loss + ventilation heat loss<br/>         *For a balanced or supply only ventilation system HLairve = 0</p> |                   |                                                     |                                                     |                                                           |                                                                                                                                                                                         |                  |                   |              |      | 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     | 19,214 | 8,846 | 1.086 | 2       | 0.3   | 11,815 | 0.488 | 3 | 0.2    | 13,678 | 0.281 | 4 | 0      | 0 | 0.000 | 5            | 0      | 0 | 0.000 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| Level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Level Factor (LF) | HLairve Air Leakage + Ventilation Heat Loss (Btu/h) | Level Conductive Heat Loss: (HL <sub>clevel</sub> ) | Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel) |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.5               | 19,214                                              | 8,846                                               | 1.086                                                     |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.3               |                                                     | 11,815                                              | 0.488                                                     |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.2               |                                                     | 13,678                                              | 0.281                                                     |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0                 |                                                     | 0                                                   | 0.000                                                     |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0                 |                                                     | 0                                                   | 0.000                                                     |                                                                                                                                                                                         |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                   |                                                     |                                                     |                                                           | Michael O'Rourke<br>BCIN# 19669<br>                                                                |                  |                   |              |      |       |                   |                                                     |                                                     |                                                           |    |         |        |       |       |         |       |        |       |   |        |        |       |   |        |   |       |              |        |   |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |                                |  |       |                                |  |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |    |



375 Finley Ave. Suite 202 Ajax, ON L1S 2E2

TEL: 905-899-5500 FAX: 905-899-1575

Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

**MHP 23030**

## HEAT LOSS AND GAIN SUMMARY SHEET

**MODEL:** ROSE 6 **OPT 5 BED** **BUILDER:** GREENPARK HOMES  
**SFQT:** 3175 **LO#** 101740 **SITE:** ZADORRA ESTATES INC

### DESIGN ASSUMPTIONS

|                      |    |                                |      |
|----------------------|----|--------------------------------|------|
| HEATING              | °F | COOLING                        | °F   |
| OUTDOOR DESIGN TEMP. | -2 | OUTDOOR DESIGN TEMP.           | 86   |
| INDOOR DESIGN TEMP.  | 72 | INDOOR DESIGN TEMP. (MAX 75°F) | 75   |
|                      |    | WINDOW SHGC                    | 0.50 |

### 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 (ft <sup>3</sup> ):                 | 42301.3         | ASSUMED (Y/N):            | Y        |
| INTERNAL SHADING:                                | BLINDS/CURTAINS | ASSUMED OCCUPANTS:        | 5        |
| INTERIOR LIGHTING LOAD (Btu/h/ft <sup>2</sup> ): | 1.27            | DC BRUSHLESS MOTOR (Y/N): | Y        |
| FOUNDATION CONFIGURATION                         | BCIN_1          | DEPTH BELOW GRADE:        | 5.5 ft   |
| LENGTH: 58.0 ft                                  | WIDTH: 31.0 ft  | EXPOSED PERIMETER:        | 178.0 ft |

### 2012 OBC - COMPLIANCE PACKAGE

#### Component

#### Compliance Package A1

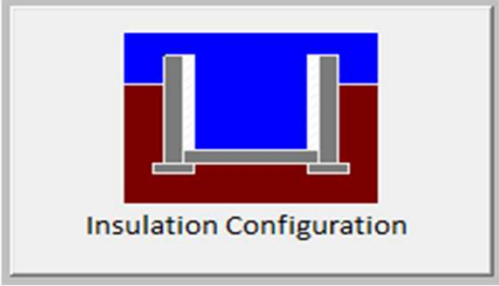
#### Nominal Min. Eff.

|                                                                            |       |       |
|----------------------------------------------------------------------------|-------|-------|
| 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                                       | 96%   | -     |
| HRV/ERV 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:                        | Oshawa                                    |                                                                                                                     |
| Site Description               |                                           |                                                                                                                     |
| Soil Conductivity:             | Normal conductivity: dry sand, loam, clay |                                                                                                                     |
| Water Table:                   | Normal (7-10 m, 23-33 ft)                 |                                                                                                                     |
| Foundation Dimensions          |                                           |                                                                                                                     |
| Floor Length (m):              | 17.7                                      |  <p>Insulation Configuration</p> |
| Floor Width (m):               | 9.4                                       |                                                                                                                     |
| Exposed Perimeter (m):         | 0.0                                       |                                                                                                                     |
| Wall Height (m):               | 2.6                                       |                                                                                                                     |
| Depth Below Grade (m):         | 1.68                                      |                                                                                                                     |
| Window Area (m <sup>2</sup> ): | 0.6                                       |                                                                                                                     |
| Door Area (m <sup>2</sup> ):   | 2.0                                       |                                                                                                                     |
| Radiant Slab                   |                                           |                                                                                                                     |
| Heated Fraction of the Slab:   | 0                                         |                                                                                                                     |
| Fluid Temperature (°C):        | 33                                        |                                                                                                                     |
| Design Months                  |                                           |                                                                                                                     |
| Heating Month                  | 1                                         |                                                                                                                     |
| Foundation Loads               |                                           |                                                                                                                     |
| Heating Load (Watts):          |                                           | 1759                                                                                                                |

TYPE: ROSE 6  
LO# 101740

OPT 5 BED

Michael O'Rourke BCIN #19669

*Michael O'Rourke*



**MHP 23030** HVA Design Ltd.  
375 Finley Ave, Suite 202  
Ajax ON, L1S 2E2  
905-619-2300

# Air Infiltration Residential Load Calculator

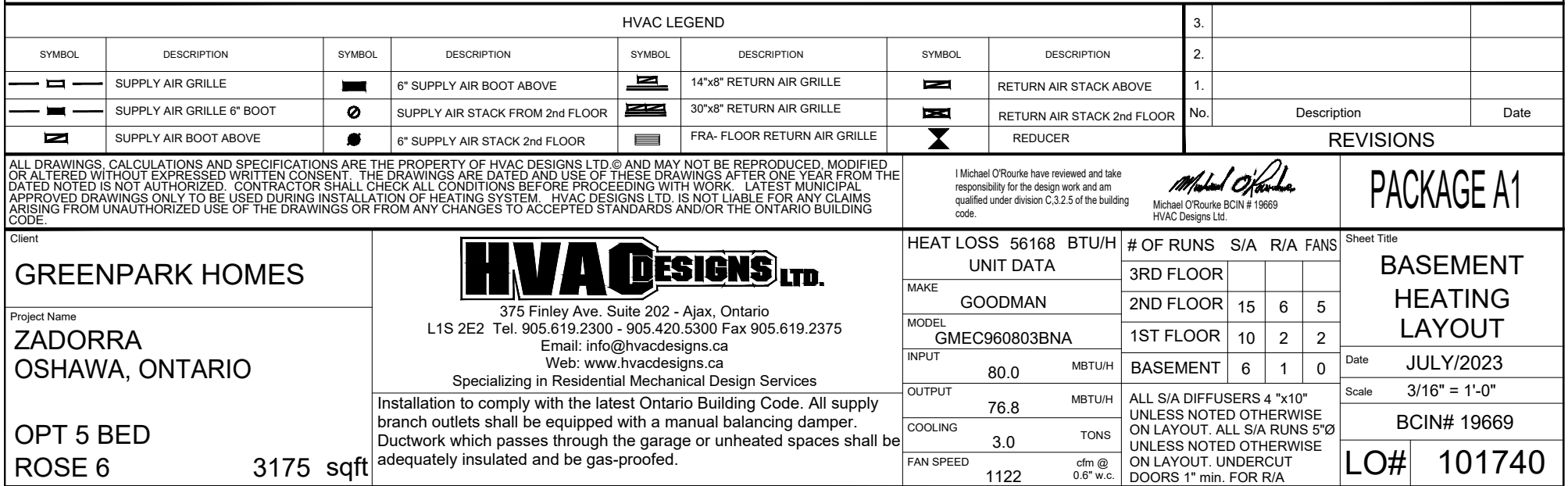
Supplemental tool for CAN/CSA-F280

| Weather Station Description       |                            |                        |    |    |
|-----------------------------------|----------------------------|------------------------|----|----|
| Province:                         | Ontario                    |                        |    |    |
| Region:                           | Oshawa                     |                        |    |    |
| 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):       | 7.68                       |                        |    |    |
| Building Configuration            |                            |                        |    |    |
| Type:                             | Detached                   |                        |    |    |
| Number of Stories:                | Two                        |                        |    |    |
| Foundation:                       | Full                       |                        |    |    |
| House Volume (m <sup>3</sup> ):   | 1197.8                     |                        |    |    |
| Air Leakage/Ventilation           |                            |                        |    |    |
| Air Tightness Type:               | Present (1961-) (3.57 ACH) |                        |    |    |
| Custom BDT Data:                  | ELA @ 10 Pa.               | 1596.8 cm <sup>2</sup> |    |    |
|                                   | 3.57                       | ACH @ 50 Pa            |    |    |
| Mechanical Ventilation (L/s):     | Total Supply               | Total Exhaust          |    |    |
|                                   | 37.5                       | 37.5                   |    |    |
| Flue Size                         |                            |                        |    |    |
| Flue #:                           | #1                         | #2                     | #3 | #4 |
| Diameter (mm):                    | 0                          | 0                      | 0  | 0  |
| Natural Infiltration Rates        |                            |                        |    |    |
| Heating Air Leakage Rate (ACH/H): | 0.342                      |                        |    |    |
| Cooling Air Leakage Rate (ACH/H): | 0.094                      |                        |    |    |

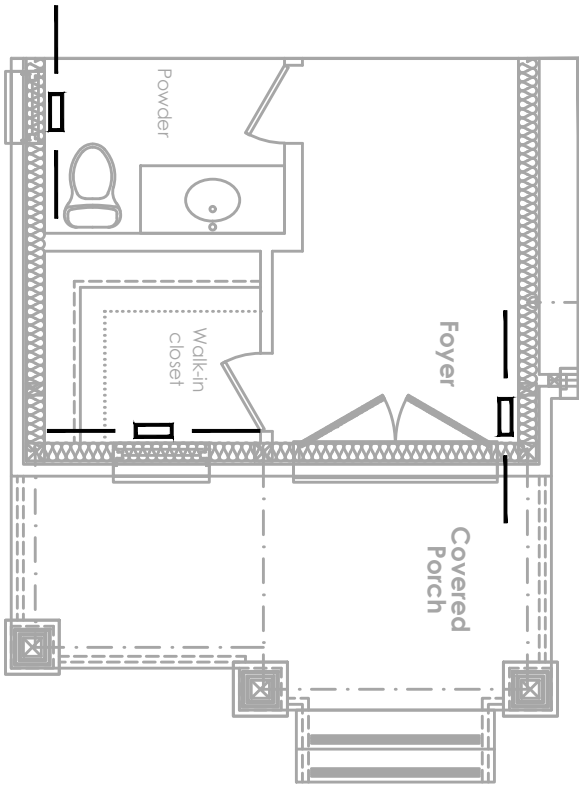
TYPE: ROSE 6  
LO# 101740

OPT 5 BED

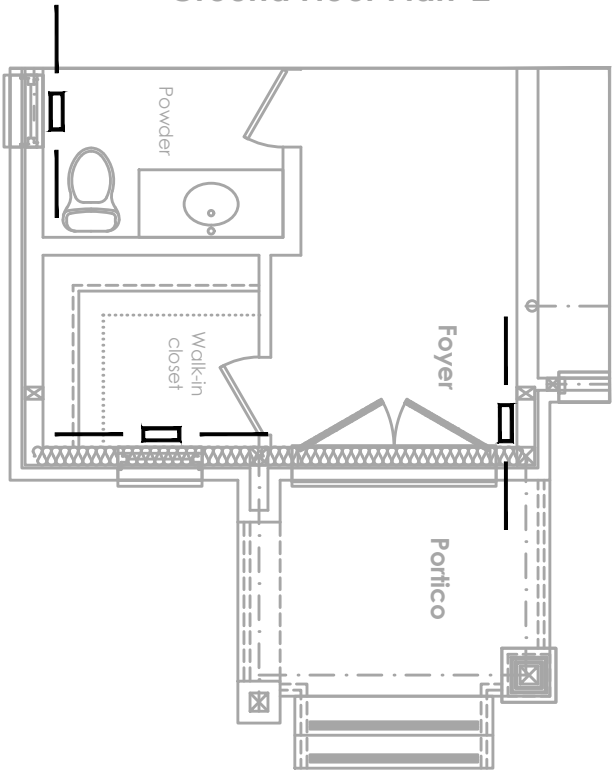
Michael O'Rourke BCIN# 19669



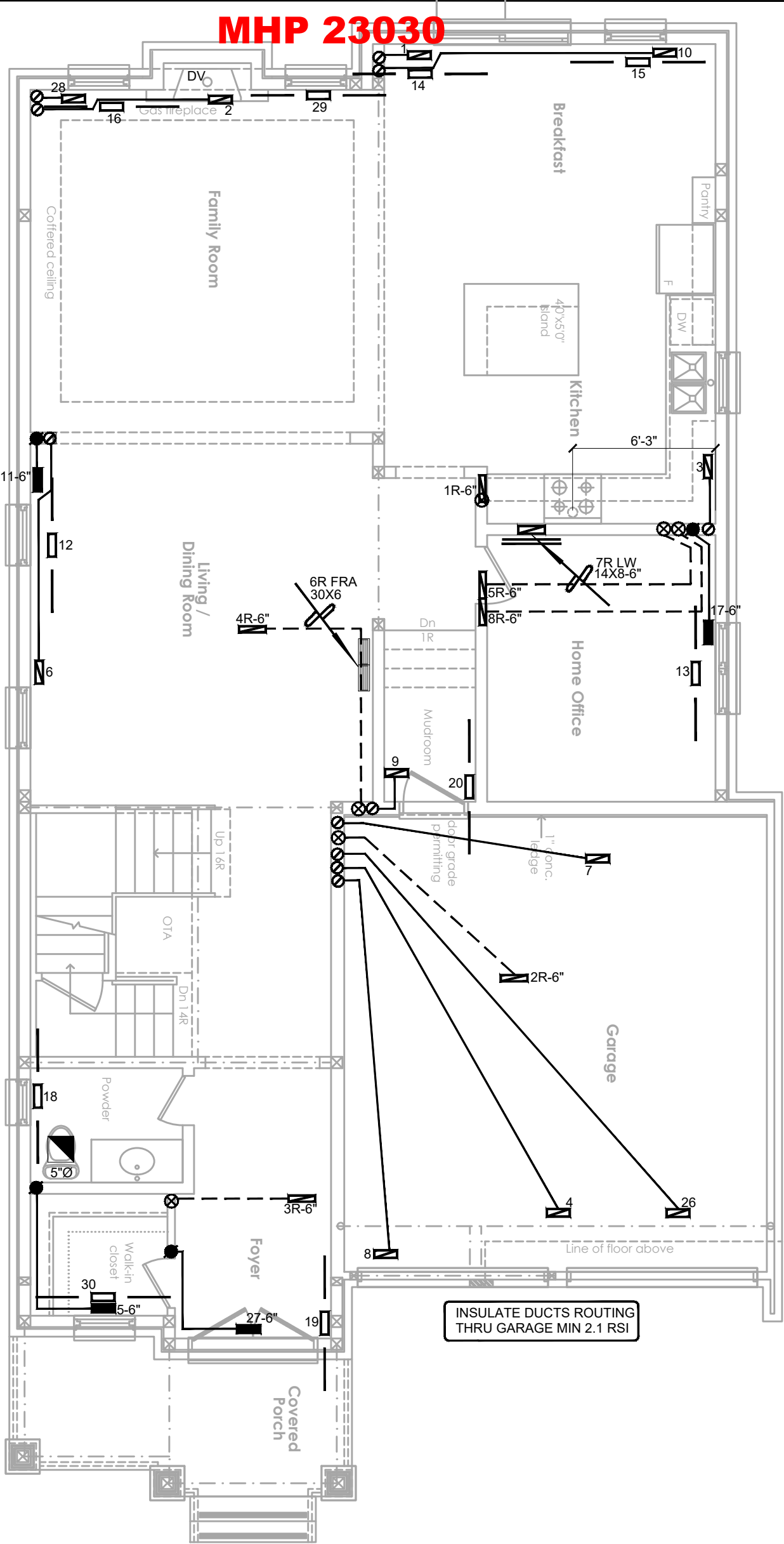
MHP 23030



Ground Floor Plan '2'

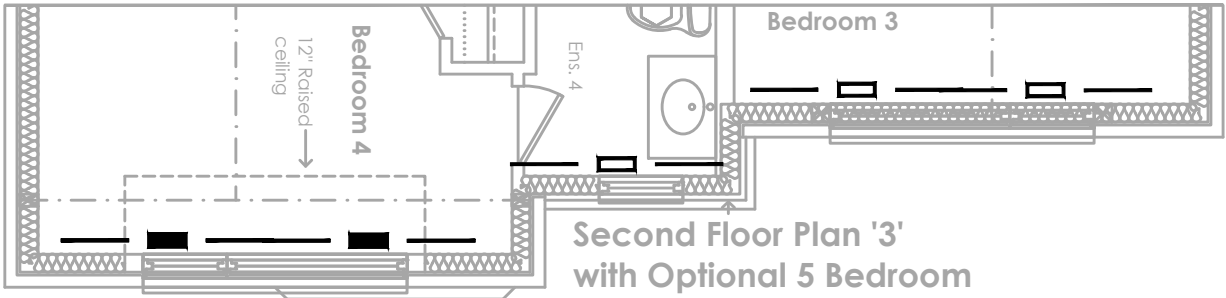
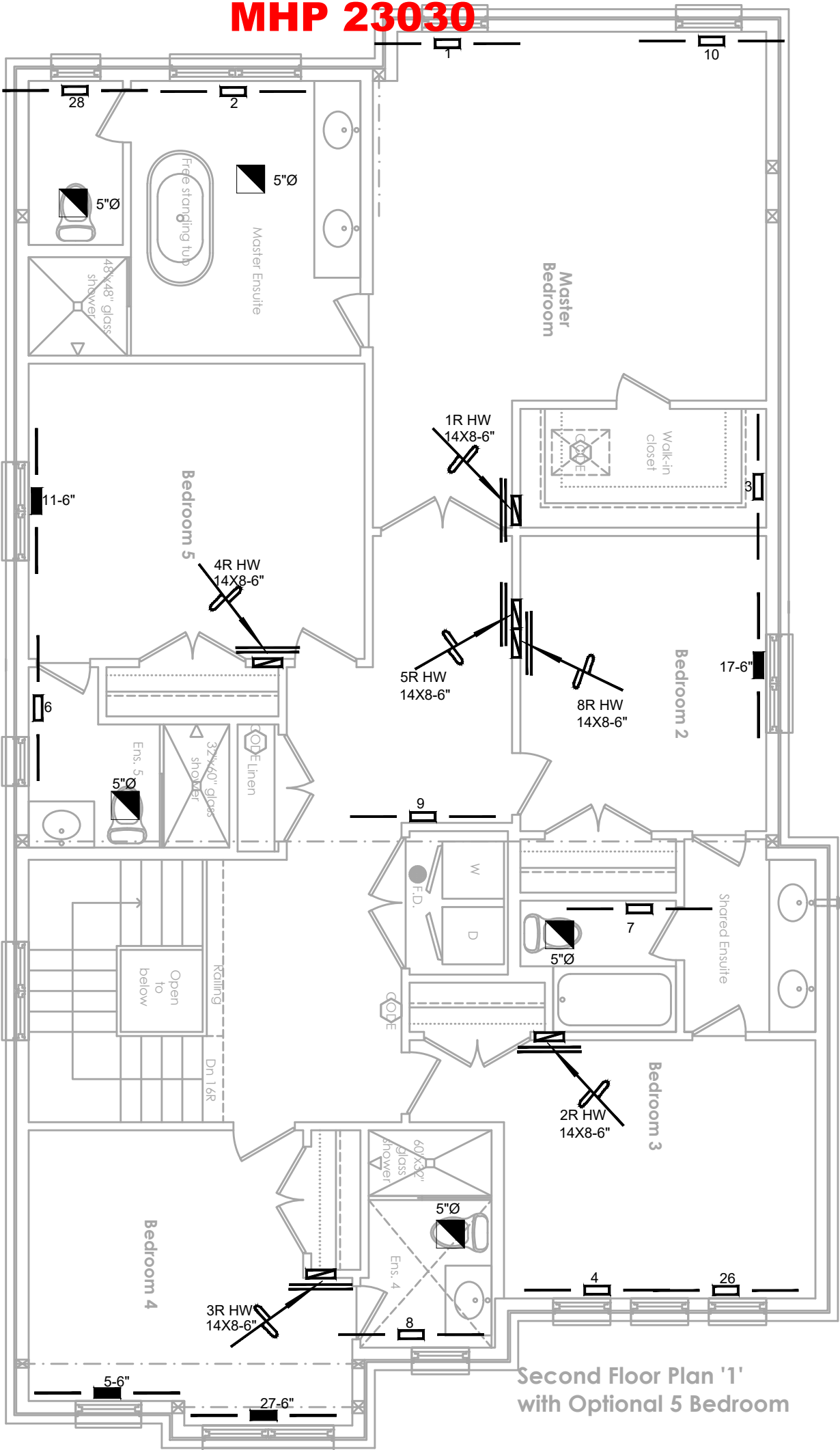
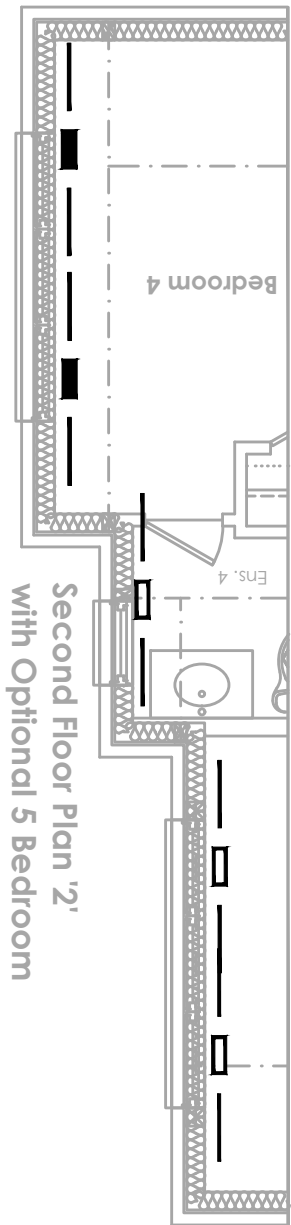


Ground Floor Plan '3'



Ground Floor Plan '1'

| HVAC LEGEND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                 |                                                                                     |                              |                                                                                                                                            |                            | 3.                                                                                                                                          |             |                                  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------------|--|
| SYMBOL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | DESCRIPTION               | SYMBOL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | DESCRIPTION                     | SYMBOL                                                                              | DESCRIPTION                  | SYMBOL                                                                                                                                     | DESCRIPTION                | 2.                                                                                                                                          |             |                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | SUPPLY AIR GRILLE         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 6" SUPPLY AIR BOOT ABOVE        |  | 14"x8" RETURN AIR GRILLE     |                                                       | RETURN AIR STACK ABOVE     | 1.                                                                                                                                          |             |                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | SUPPLY AIR GRILLE 6" BOOT |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SUPPLY AIR STACK FROM 2nd FLOOR |  | 30"x8" RETURN AIR GRILLE     |                                                       | RETURN AIR STACK 2nd FLOOR | No.                                                                                                                                         | Description | Date                             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | SUPPLY AIR BOOT ABOVE     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 6" SUPPLY AIR STACK 2nd FLOOR   |  | FRA- FLOOR RETURN AIR GRILLE |                                                       | REDUCER                    | REVISIONS                                                                                                                                   |             |                                  |  |
| ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE. |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                 |                                                                                     |                              | 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. |                            | <br>Michael O'Rourke BCIN # 19669<br>HVAC Designs Ltd. |             | PACKAGE A1                       |  |
| Client                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                           | <div><p>375 Finley Ave. Suite 202 - Ajax, Ontario<br/>L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375<br/>Email: info@hvacdsgns.ca<br/>Web: www.hvacdesigns.ca<br/>Specializing in Residential Mechanical Design Services</p><p>Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper.<br/>Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.</p></div> |                                 |                                                                                     |                              | <div></div>                                           |                            |                                                                                                                                             |             | Sheet Title                      |  |
| GREENPARK HOMES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                 |                                                                                     |                              |                                                                                                                                            |                            |                                                                                                                                             |             | FIRST FLOOR<br>HEATING<br>LAYOUT |  |
| Project Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                 |                                                                                     |                              |                                                                                                                                            |                            |                                                                                                                                             |             | Date                             |  |
| ZADORRA<br>OSHAWA, ONTARIO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                 |                                                                                     |                              |                                                                                                                                            |                            |                                                                                                                                             |             | JULY/2023                        |  |
| OPT 5 BED<br>ROSE 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                 |                                                                                     |                              |                                                                                                                                            |                            |                                                                                                                                             |             | Scale                            |  |
| 3175 sqft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                 |                                                                                     |                              | BCIN# 19669                                                                                                                                |                            | LO#                                                                                                                                         |             | 101740                           |  |



| HVAC LEGEND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                           |                                                                                     |                                 |                                                                                     |                              |                                                                                       |                            | 3.                                                                                                                                          |               |      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-------------------------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|
| SYMBOL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | DESCRIPTION               | SYMBOL                                                                              | DESCRIPTION                     | SYMBOL                                                                              | DESCRIPTION                  | SYMBOL                                                                                | DESCRIPTION                | 2.                                                                                                                                          |               |      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | SUPPLY AIR GRILLE         |  | 6" SUPPLY AIR BOOT ABOVE        |  | 14"x8" RETURN AIR GRILLE     |  | RETURN AIR STACK ABOVE     | 1.                                                                                                                                          |               |      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | SUPPLY AIR GRILLE 6" BOOT |  | SUPPLY AIR STACK FROM 2nd FLOOR |  | 30"x8" RETURN AIR GRILLE     |  | RETURN AIR STACK 2nd FLOOR | No.                                                                                                                                         | Description   | Date |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | SUPPLY AIR BOOT ABOVE     |  | 6" SUPPLY AIR STACK 2nd FLOOR   |  | FRA- FLOOR RETURN AIR GRILLE |  | REDUCER                    | REVISIONS                                                                                                                                   |               |      |
| ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE. |                           |                                                                                     |                                 |                                                                                     |                              |                                                                                       |                            | 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.  |               |      |
| Client                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                           |                                                                                     |                                 |                                                                                     |                              |                                                                                       |                            | <br>Michael O'Rourke BCIN # 19669<br>HVAC Designs Ltd. |               |      |
| Project Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                           |                                                                                     |                                 |                                                                                     |                              |                                                                                       |                            | PACKAGE A1                                                                                                                                  |               |      |
| GREENPARK HOMES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                           |                                                                                     |                                 |                                                                                     |                              |                                                                                       |                            | Sheet Title                                                                                                                                 |               |      |
| ZADORRA<br>OSHAWA, ONTARIO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                           |                                                                                     |                                 |                                                                                     |                              |                                                                                       |                            | SECOND FLOOR<br>HEATING<br>LAYOUT                                                                                                           |               |      |
| OPT 5 BED<br>ROSE 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                           |                                                                                     |                                 |                                                                                     |                              |                                                                                       |                            | Date                                                                                                                                        | JULY/2023     |      |
| 3175 sqft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                           |                                                                                     |                                 |                                                                                     |                              |                                                                                       |                            | Scale                                                                                                                                       | 3/16" = 1'-0" |      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                           |                                                                                     |                                 |                                                                                     |                              |                                                                                       |                            |                                                                                                                                             | BCIN# 19669   |      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                           |                                                                                     |                                 |                                                                                     |                              |                                                                                       |                            | LO#                                                                                                                                         | 101740        |      |