

## Garden 3 - Elevation 1

| SITE NAME: BARLASSINA          |           |          |         | OPT 4 BED      |      |       |       | DATE: Jan-23 |      |  |  | WINTER NATURAL AIR CHANGE RATE 0.335 |  |  |  | HEAT LOSS ΔT °F. 72 |  |  |  | CSA-F280-12      |  |  |  |
|--------------------------------|-----------|----------|---------|----------------|------|-------|-------|--------------|------|--|--|--------------------------------------|--|--|--|---------------------|--|--|--|------------------|--|--|--|
| BUILDER: GREENPARK HOMES       |           |          |         | TYPE: GARDEN 3 |      |       |       | GFA: 2415    |      |  |  | SUMMER NATURAL AIR CHANGE RATE 0.091 |  |  |  | HEAT GAIN ΔT °F. 9  |  |  |  | SB-12 PACKAGE A1 |  |  |  |
| ROOM USE                       | EXP. WALL | CLG. HT. | FACTORS | MBR            | ENS  | BED-2 | BED-3 | BED-4        | BATH |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
|                                |           |          |         | 46             | 23   | 33    | 34    | 13           | 12   |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
|                                |           |          |         | 9              | 9    | 9     | 9     | 9            | 9    |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| GRS.WALL AREA                  | LOSS      | GAIN     |         | 414            | 207  | 297   | 306   | 117          | 108  |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| GLAZING                        |           |          |         | LOSS           | GAIN | LOSS  | GAIN  | LOSS         | GAIN |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| NORTH                          | 20.3      | 14.4     |         | 0              | 0    | 0     | 0     | 0            | 0    |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| EAST                           | 20.3      | 38.7     |         | 0              | 0    | 0     | 0     | 0            | 0    |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| SOUTH                          | 20.3      | 22.9     |         | 0              | 0    | 0     | 0     | 0            | 0    |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| WEST                           | 20.3      | 38.7     |         | 20             | 405  | 775   | 14    | 284          | 542  |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| SKYLT.                         | 35.5      | 99.8     |         | 0              | 0    | 0     | 0     | 0            | 0    |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| DOORS                          | 19.1      | 2.4      |         | 0              | 0    | 0     | 0     | 0            | 0    |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| NET EXPOSED WALL               | 4.3       | 0.5      |         | 394            | 1675 | 213   | 193   | 821          | 104  |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| NET EXPOSED BSMT WALL ABOVE GR | 3.4       | 0.4      |         | 0              | 0    | 0     | 0     | 0            | 0    |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| EXPOSED CLG                    | 1.2       | 0.5      |         | 303            | 370  | 160   | 182   | 223          | 96   |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| NO ATTIC EXPOSED CLG           | 2.6       | 1.1      |         | 0              | 0    | 0     | 0     | 0            | 0    |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| EXPOSED FLOOR                  | 2.4       | 0.3      |         | 0              | 0    | 0     | 0     | 0            | 0    |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| BASEMENT/CRAWL HEAT LOSS       |           |          |         | 0              | 0    | 0     | 0     | 0            | 0    |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| SLAB ON GRADE HEAT LOSS        |           |          |         | 0              | 0    | 0     | 0     | 0            | 0    |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| SUBTOTAL HT LOSS               |           |          |         | 2451           |      | 1327  |       | 1028         | 831  |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| SUB TOTAL HT GAIN              |           |          |         |                | 1147 |       | 742   |              | 435  |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| LEVEL FACTOR / MULTIPLIER      |           |          |         | 0.20           | 0.25 | 0.20  | 0.25  | 0.20         | 0.25 |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| AIR CHANGE HEAT LOSS           |           |          |         | 618            |      | 334   |       | 259          | 209  |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| AIR CHANGE HEAT GAIN           |           |          |         |                | 62   | 40    |       | 28           | 24   |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| DUCT LOSS                      |           |          |         | 0              | 0    | 0     |       | 129          | 0    |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| DUCT GAIN                      |           |          |         |                | 0    | 0     |       |              | 0    |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| HEAT GAIN PEOPLE               | 240       |          |         | 2              | 480  | 0     |       | 1            | 240  |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| HEAT GAIN APPLIANCES/LIGHTS    |           |          |         |                | 494  | 0     |       |              | 494  |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| TOTAL HT LOSS BTU/H            |           |          |         | 3068           |      | 1661  |       | 1416         | 1041 |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |
| TOTAL HT GAIN x 1.3 BTU/H      |           |          |         |                | 2839 | 1018  |       | 3319         | 1830 |  |  |                                      |  |  |  |                     |  |  |  |                  |  |  |  |

| ROOM USE                       | EXP. WALL | CLG. HT. | FACTORS | LIV/DIN | K/F/B | LAUN | W/R  | FOY  | MUD  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------|-----------|----------|---------|---------|-------|------|------|------|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|                                |           |          |         | 32      | 77    | 6    | 6    | 33   | 22   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                |           |          |         | 10      | 10    | 9    | 10   | 11   | 11   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| GRS.WALL AREA                  | LOSS      | GAIN     |         | 320     | 770   | 54   | 60   | 363  | 242  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| GLAZING                        |           |          |         | LOSS    | GAIN  | LOSS | GAIN | LOSS | GAIN |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NORTH                          | 20.3      | 14.4     |         | 0       | 0     | 0    | 0    | 0    | 0    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| EAST                           | 20.3      | 38.7     |         | 0       | 0     | 0    | 0    | 0    | 0    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SOUTH                          | 20.3      | 22.9     |         | 28      | 568   | 641  | 7    | 142  | 160  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| WEST                           | 20.3      | 38.7     |         | 0       | 0     | 0    | 0    | 0    | 0    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SKYLT.                         | 35.5      | 99.8     |         | 0       | 0     | 0    | 0    | 0    | 0    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| DOORS                          | 19.1      | 2.4      |         | 0       | 0     | 0    | 0    | 0    | 0    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NET EXPOSED WALL               | 4.3       | 0.5      |         | 292     | 1241  | 158  | 661  | 2810 | 357  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NET EXPOSED BSMT WALL ABOVE GR | 3.4       | 0.4      |         | 0       | 0     | 0    | 0    | 0    | 0    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| EXPOSED CLG                    | 1.2       | 0.5      |         | 0       | 0     | 0    | 0    | 0    | 0    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NO ATTIC EXPOSED CLG           | 2.6       | 1.1      |         | 0       | 0     | 0    | 0    | 0    | 0    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| EXPOSED FLOOR                  | 2.4       | 0.3      |         | 0       | 0     | 0    | 0    | 0    | 0    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| BASEMENT/CRAWL HEAT LOSS       |           |          |         | 0       | 0     | 0    | 0    | 0    | 0    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SLAB ON GRADE HEAT LOSS        |           |          |         | 0       | 0     | 0    | 0    | 0    | 0    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SUBTOTAL HT LOSS               |           |          |         | 1809    |       | 4991 |      | 2279 | 1341 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SUB TOTAL HT GAIN              |           |          |         |         | 798   | 3228 |      | 1013 | 170  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| LEVEL FACTOR / MULTIPLIER      |           |          |         | 0.30    | 0.38  | 0.30 | 0.38 | 0.30 | 0.38 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| AIR CHANGE HEAT LOSS           |           |          |         | 687     |       | 1896 |      | 866  | 509  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| AIR CHANGE HEAT GAIN           |           |          |         |         | 43    | 176  |      | 55   | 9    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| DUCT LOSS                      |           |          |         | 0       | 0     | 0    |      | 0    | 0    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| DUCT GAIN                      |           |          |         |         | 0     | 0    |      | 0    | 0    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| HEAT GAIN PEOPLE               | 240       |          |         | 0       | 0     | 0    |      | 0    | 0    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| HEAT GAIN APPLIANCES/LIGHTS    |           |          |         |         | 494   | 494  |      | 0    | 494  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| TOTAL HT LOSS BTU/H            |           |          |         | 2496    |       | 6887 |      | 507  | 1850 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| TOTAL HT GAIN x 1.3 BTU/H      |           |          |         |         | 1737  | 5067 |      | 975  | 876  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

TOTAL HEAT GAIN BTU/H:

24926

TONS: 2.08

LOSS DUE TO VENTILATION LOAD BTU/H: 1554

STRUCTURAL HEAT LOSS: 43657

TOTAL COMBINED HEAT LOSS BTU/H: 45211

SITE NAME: BARLASSINA  
BUILDER: GREENPARK HOMES

OPT 4 BED  
TYPE: GARDEN 3

DATE: Jan-23

GFA: 2415 LO# 99995

HEATING CFM 928 COOLING CFM 928  
TOTAL HEAT LOSS 43,657 TOTAL HEAT GAIN 24,728  
AIR FLOW RATE CFM 21.26 AIR FLOW RATE CFM 37.53

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

#GOODMAN  
GMEC960603BNA 60  
FAN SPEED LOW  
MEDLOW  
MEDIUM 928  
MEDIUM HIGH 1017  
HIGH 1131

AFUE = 96 %  
INPUT (BTU/H) = 60,000  
OUTPUT (BTU/H) = 57,600

DESIGN CFM = 928  
CFM @ .6" E.S.P.

TEMPERATURE RISE 57 °F

| RUN COUNT | 4th | 3rd | 2nd | 1st | Bas |
|-----------|-----|-----|-----|-----|-----|
| S/A       | 0   | 0   | 11  | 7   | 4   |
| R/A       | 0   | 0   | 5   | 1   | 1   |

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

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

| RUN #                     | 1    | 2    | 4     | 5     | 6     | 7    | 8     | 9     | 10   | 11   | 13      | 14    | 15    | 16    | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   |
|---------------------------|------|------|-------|-------|-------|------|-------|-------|------|------|---------|-------|-------|-------|------|------|------|------|------|------|------|------|
| ROOM NAME                 | MBR  | ENS  | BED-2 | BED-3 | BED-4 | BATH | BED-2 | BED-3 | MBR  | BATH | LIV/DIN | K/F/B | K/F/B | K/F/B | LAUN | W/R  | FOY  | MUD  | BAS  | BAS  | BAS  | BAS  |
| RM LOSS MBH.              | 1.53 | 1.66 | 1.31  | 1.82  | 1.42  | 0.52 | 1.31  | 1.82  | 1.53 | 0.52 | 2.50    | 2.30  | 2.30  | 2.30  | 0.59 | 0.51 | 3.15 | 1.85 | 3.68 | 3.68 | 3.68 | 3.68 |
| CFM PER RUN HEAT          | 33   | 35   | 28    | 39    | 30    | 11   | 28    | 39    | 33   | 11   | 53      | 49    | 49    | 49    | 13   | 11   | 67   | 39   | 78   | 78   | 78   | 78   |
| RM GAIN MBH.              | 1.42 | 1.02 | 1.54  | 1.66  | 1.83  | 0.30 | 1.54  | 1.66  | 1.42 | 0.30 | 1.74    | 1.69  | 1.69  | 1.69  | 0.97 | 0.26 | 1.39 | 0.88 | 0.44 | 0.44 | 0.44 | 0.44 |
| CFM PER RUN COOLING       | 53   | 38   | 58    | 62    | 69    | 11   | 58    | 62    | 53   | 11   | 65      | 63    | 63    | 63    | 37   | 10   | 52   | 33   | 16   | 16   | 16   | 16   |
| ADJUSTED PRESSURE         | 0.17 | 0.17 | 0.17  | 0.17  | 0.17  | 0.17 | 0.17  | 0.17  | 0.17 | 0.17 | 0.17    | 0.17  | 0.17  | 0.17  | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| ACTUAL DUCT LGH.          | 30   | 53   | 64    | 70    | 40    | 36   | 70    | 77    | 40   | 63   | 29      | 38    | 27    | 31    | 57   | 48   | 63   | 51   | 35   | 25   | 33   | 47   |
| EQUIVALENT LENGTH         | 160  | 160  | 150   | 160   | 140   | 200  | 140   | 170   | 170  | 170  | 150     | 120   | 170   | 110   | 180  | 160  | 130  | 140  | 110  | 130  | 130  | 170  |
| TOTAL EFFECTIVE LENGTH    | 190  | 213  | 214   | 230   | 180   | 236  | 210   | 247   | 210  | 233  | 179     | 158   | 197   | 141   | 237  | 208  | 193  | 191  | 145  | 155  | 163  | 217  |
| ADJUSTED PRESSURE         | 0.09 | 0.08 | 0.08  | 0.07  | 0.1   | 0.07 | 0.08  | 0.07  | 0.08 | 0.07 | 0.1     | 0.11  | 0.09  | 0.12  | 0.07 | 0.08 | 0.09 | 0.09 | 0.12 | 0.11 | 0.11 | 0.08 |
| ROUND DUCT SIZE           | 5    | 4    | 5     | 6     | 6     | 4    | 5     | 6     | 5    | 4    | 5       | 5     | 5     | 5     | 5    | 4    | 5    | 4    | 6    | 6    | 6    | 6    |
| HEATING VELOCITY (ft/min) | 242  | 402  | 206   | 199   | 153   | 126  | 206   | 199   | 242  | 126  | 389     | 360   | 360   | 360   | 95   | 126  | 492  | 447  | 398  | 398  | 398  | 398  |
| COOLING VELOCITY (ft/min) | 389  | 436  | 426   | 316   | 352   | 126  | 426   | 316   | 389  | 126  | 477     | 463   | 463   | 463   | 272  | 115  | 382  | 379  | 82   | 82   | 82   | 82   |
| OUTLET GRILL SIZE         | 3X10 | 3X10 | 3X10  | 4X10  | 4X10  | 3X10 | 3X10  | 4X10  | 3X10 | 3X10 | 3X10    | 3X10  | 3X10  | 3X10  | 3X10 | 3X10 | 3X10 | 3X10 | 4X10 | 4X10 | 4X10 | 4X10 |
| TRUNK                     | D    | C    | A     | A     | C     | B    | A     | A     | D    | B    | B       | C     | D     | C     | B    | A    | A    | B    | C    | D    | B    | A    |

| RUN # | ROOM NAME | RM LOSS MBH. | CFM PER RUN HEAT | RM GAIN MBH. | CFM PER RUN COOLING | ADJUSTED PRESSURE | ACTUAL DUCT LGH. | EQUIVALENT LENGTH | TOTAL EFFECTIVE LENGTH | ADJUSTED PRESSURE | ROUND DUCT SIZE | HEATING VELOCITY (ft/min) | COOLING VELOCITY (ft/min) | OUTLET GRILL SIZE | TRUNK |
|-------|-----------|--------------|------------------|--------------|---------------------|-------------------|------------------|-------------------|------------------------|-------------------|-----------------|---------------------------|---------------------------|-------------------|-------|
| 1     | MBR       | 1.53         | 33               | 1.42         | 53                  | 0.17              | 30               | 160               | 190                    | 0.09              | 5               | 242                       | 389                       | 3X10              | D     |
| 2     | ENS       | 1.66         | 35               | 1.02         | 38                  | 0.17              | 53               | 160               | 213                    | 0.08              | 4               | 402                       | 436                       | 3X10              | C     |
| 4     | BED-2     | 1.31         | 28               | 1.54         | 58                  | 0.17              | 64               | 150               | 214                    | 0.08              | 5               | 206                       | 426                       | 3X10              | A     |
| 5     | BED-3     | 1.82         | 39               | 1.66         | 62                  | 0.17              | 70               | 160               | 230                    | 0.07              | 6               | 199                       | 316                       | 4X10              | A     |
| 6     | BED-4     | 1.42         | 30               | 1.83         | 69                  | 0.17              | 40               | 140               | 180                    | 0.1               | 6               | 153                       | 352                       | 4X10              | C     |
| 7     | BATH      | 0.52         | 11               | 0.30         | 11                  | 0.17              | 36               | 200               | 236                    | 0.07              | 4               | 126                       | 126                       | 3X10              | B     |
| 8     | BED-2     | 1.31         | 28               | 1.54         | 58                  | 0.17              | 70               | 140               | 210                    | 0.08              | 5               | 206                       | 426                       | 3X10              | A     |
| 9     | BED-3     | 1.82         | 39               | 1.66         | 62                  | 0.17              | 77               | 170               | 247                    | 0.07              | 6               | 199                       | 316                       | 4X10              | A     |
| 10    | MBR       | 1.53         | 33               | 1.42         | 53                  | 0.17              | 40               | 170               | 210                    | 0.08              | 5               | 242                       | 389                       | 3X10              | D     |
| 11    | BATH      | 0.52         | 11               | 0.30         | 11                  | 0.17              | 63               | 170               | 233                    | 0.07              | 4               | 126                       | 126                       | 3X10              | B     |
| 13    | LIV/DIN   | 2.50         | 53               | 1.74         | 65                  | 0.17              | 29               | 150               | 179                    | 0.1               | 5               | 389                       | 477                       | 3X10              | B     |
| 14    | K/F/B     | 2.30         | 49               | 1.69         | 63                  | 0.17              | 38               | 120               | 158                    | 0.11              | 5               | 360                       | 463                       | 3X10              | C     |
| 15    | K/F/B     | 2.30         | 49               | 1.69         | 63                  | 0.17              | 27               | 170               | 197                    | 0.09              | 5               | 360                       | 463                       | 3X10              | D     |
| 16    | K/F/B     | 2.30         | 49               | 1.69         | 63                  | 0.17              | 31               | 110               | 141                    | 0.12              | 5               | 360                       | 463                       | 3X10              | C     |
| 17    | LAUN      | 0.59         | 13               | 0.97         | 37                  | 0.17              | 57               | 180               | 237                    | 0.07              | 5               | 95                        | 272                       | 3X10              | B     |
| 18    | W/R       | 0.51         | 11               | 0.26         | 10                  | 0.17              | 48               | 160               | 208                    | 0.08              | 4               | 126                       | 115                       | 3X10              | A     |
| 19    | FOY       | 3.15         | 67               | 1.39         | 52                  | 0.17              | 63               | 130               | 193                    | 0.09              | 5               | 492                       | 382                       | 3X10              | A     |
| 20    | MUD       | 1.85         | 39               | 0.88         | 33                  | 0.17              | 51               | 140               | 191                    | 0.09              | 4               | 447                       | 379                       | 3X10              | B     |
| 21    | BAS       | 3.68         | 78               | 0.44         | 16                  | 0.17              | 35               | 110               | 145                    | 0.12              | 6               | 398                       | 82                        | 4X10              | C     |
| 22    | BAS       | 3.68         | 78               | 0.44         | 16                  | 0.17              | 25               | 130               | 155                    | 0.11              | 6               | 398                       | 82                        | 4X10              | D     |
| 23    | BAS       | 3.68         | 78               | 0.44         | 16                  | 0.17              | 33               | 130               | 163                    | 0.11              | 6               | 398                       | 82                        | 4X10              | B     |
| 24    | BAS       | 3.68         | 78               | 0.44         | 16                  | 0.17              | 47               | 170               | 217                    | 0.08              | 6               | 398                       | 82                        | 4X10              | A     |

| SUPPLY AIR TRUNK SIZE |              |                  |               |              |      |                      |       |              |                  |               |              |       |                      |       |      | RETURN AIR TRUNK SIZE |                  |               |              |    |                      |    |     |
|-----------------------|--------------|------------------|---------------|--------------|------|----------------------|-------|--------------|------------------|---------------|--------------|-------|----------------------|-------|------|-----------------------|------------------|---------------|--------------|----|----------------------|----|-----|
|                       | TRUNK<br>CFM | STATIC<br>PRESS. | ROUND<br>DUCT | RECT<br>DUCT |      | VELOCITY<br>(ft/min) |       | TRUNK<br>CFM | STATIC<br>PRESS. | ROUND<br>DUCT | RECT<br>DUCT |       | VELOCITY<br>(ft/min) |       |      | TRUNK<br>CFM          | STATIC<br>PRESS. | ROUND<br>DUCT | RECT<br>DUCT |    | VELOCITY<br>(ft/min) |    |     |
| TRUNK A               | 290          | 0.07             | 9.1           | 10           | x    | 8                    | 522   | TRUNK G      | 0                | 0.00          | 0            | 0     | x                    | 8     | 0    | TRUNK O               | 0                | 0.05          | 0            | 0  | x                    | 8  | 0   |
| TRUNK B               | 495          | 0.07             | 11.1          | 14           | x    | 8                    | 636   | TRUNK H      | 0                | 0.00          | 0            | 0     | x                    | 8     | 0    | TRUNK P               | 0                | 0.05          | 0            | 0  | x                    | 8  | 0   |
| TRUNK C               | 241          | 0.08             | 8.2           | 8            | x    | 8                    | 542   | TRUNK I      | 0                | 0.00          | 0            | 0     | x                    | 8     | 0    | TRUNK Q               | 0                | 0.05          | 0            | 0  | x                    | 8  | 0   |
| TRUNK D               | 434          | 0.08             | 10.3          | 12           | x    | 8                    | 651   | TRUNK J      | 0                | 0.00          | 0            | 0     | x                    | 8     | 0    | TRUNK R               | 0                | 0.05          | 0            | 0  | x                    | 8  | 0   |
| TRUNK E               | 0            | 0.00             | 0             | 0            | x    | 8                    | 0     | TRUNK K      | 0                | 0.00          | 0            | 0     | x                    | 8     | 0    | TRUNK S               | 0                | 0.05          | 0            | 0  | x                    | 8  | 0   |
| TRUNK F               | 0            | 0.00             | 0             | 0            | x    | 8                    | 0     | TRUNK L      | 0                | 0.00          | 0            | 0     | x                    | 8     | 0    | TRUNK T               | 0                | 0.05          | 0            | 0  | x                    | 8  | 0   |
|                       |              |                  |               |              |      |                      |       |              |                  |               |              |       |                      |       |      | TRUNK U               | 0                | 0.05          | 0            | 0  | x                    | 8  | 0   |
|                       |              |                  |               |              |      |                      |       |              |                  |               |              |       |                      |       |      | TRUNK V               | 0                | 0.05          | 0            | 0  | x                    | 8  | 0   |
|                       |              |                  |               |              |      |                      |       |              |                  |               |              |       |                      |       |      | TRUNK W               | 0                | 0.05          | 0            | 0  | x                    | 8  | 0   |
| RETURN AIR #          | 1            | 2                | 3             | 4            | 5    | 6                    |       |              |                  |               |              |       |                      |       | BR   | TRUNK X               | 928              | 0.05          | 15.3         | 28 | x                    | 8  | 597 |
| AIR VOLUME            | 115          | 80               | 80            | 95           | 320  | 82                   | 0     | 0            | 0                | 0             | 0            | 0     | 0                    | 0     |      | TRUNK Y               | 562              | 0.05          | 12.7         | 18 | x                    | 8  | 562 |
| PLENUM PRESSURE       | 0.15         | 0.15             | 0.15          | 0.15         | 0.15 | 0.15                 | 0.15  | 0.15         | 0.15             | 0.15          | 0.15         | 0.15  | 0.15                 | 0.15  |      | TRUNK Z               | 160              | 0.05          | 7.9          | 8  | x                    | 8  | 360 |
| ACTUAL DUCT LGH.      | 39           | 73               | 74            | 63           | 49   | 83                   | 1     | 1            | 1                | 1             | 1            | 1     | 1                    | 1     |      | DROP                  | 928              | 0.05          | 15.3         | 24 | x                    | 10 | 557 |
| EQUIVALENT LENGTH     | 155          | 225              | 230           | 200          | 200  | 215                  | 0     | 0            | 0                | 0             | 0            | 0     | 0                    | 0     |      |                       |                  |               |              |    |                      |    |     |
| TOTAL EFFECTIVE LH    | 194          | 298              | 304           | 263          | 249  | 298                  | 1     | 1            | 1                | 1             | 1            | 1     | 1                    | 1     |      |                       |                  |               |              |    |                      |    |     |
| ADJUSTED PRESSURE     | 0.08         | 0.05             | 0.05          | 0.06         | 0.06 | 0.05                 | 14.80 | 14.80        | 14.80            | 14.80         | 14.80        | 14.80 | 14.80                | 14.80 | 0.08 |                       |                  |               |              |    |                      |    |     |
| ROUND DUCT SIZE       | 6.2          | 6.1              | 6.1           | 6.2          | 9.8  | 6.2                  | 0     | 0            | 0                | 0             | 0            | 0     | 0                    | 0     |      |                       |                  |               |              |    |                      |    |     |
| INLET GRILL SIZE      | 8            | 8                | 8             | 8            | 8    | 8                    | 0     | 0            | 0                | 0             | 0            | 0     | 0                    | 0     |      |                       |                  |               |              |    |                      |    |     |
|                       | X            | X                | X             | X            | X    | X                    | X     | X            | X                | X             | X            | X     | X                    | X     |      |                       |                  |               |              |    |                      |    |     |
| INLET GRILL SIZE      | 14           | 14               | 14            | 14           | 30   | 14                   | 0     | 0            | 0                | 0             | 0            | 0     | 0                    | 0     |      |                       |                  |               |              |    |                      |    |     |

| RETURN AIR #       | 1    | 2    | 3    | 4    | 5    | 6    | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|--------------------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| AIR VOLUME         | 115  | 80   | 80   | 95   | 320  | 82   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| PLENUM PRESSURE    | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  |
| ACTUAL DUCT LGH.   | 39   | 73   | 74   | 63   | 49   | 83   | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
| EQUIVALENT LENGTH  | 155  | 225  | 230  | 200  | 200  | 215  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| TOTAL EFFECTIVE LH | 194  | 298  | 304  | 263  | 249  | 298  | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
| ADJUSTED PRESSURE  | 0.08 | 0.05 | 0.05 | 0.06 | 0.06 | 0.05 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 |
| ROUND DUCT SIZE    | 6.2  | 6.1  | 6.1  | 6.2  | 9.8  | 6.2  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| INLET GRILL SIZE   | 8    | 8    | 8    | 8    | 8    | 8    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
|                    | X    | X    | X    | X    | X    | X    | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     |
| INLET GRILL SIZE   | 14   | 14   | 14   | 14   | 30   | 14   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |

TYPE: GARDEN 3  
SITE NAME: BARLASSINA

LO # 99995  
OPT 4 BED

### RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

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

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

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

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

| TOTAL VENTILATION CAPACITY |                     | 9.32.3.3(1)      |
|----------------------------|---------------------|------------------|
| Basement + Master Bedroom  | <u>2</u> @ 21.2 cfm | <u>42.4</u> cfm  |
| Other Bedrooms             | <u>3</u> @ 10.6 cfm | <u>31.8</u> cfm  |
| Kitchen & Bathrooms        | <u>4</u> @ 10.6 cfm | <u>42.4</u> cfm  |
| Other Rooms                | <u>5</u> @ 10.6 cfm | <u>53.0</u> cfm  |
| Table 9.32.3.A.            | TOTAL               | <u>169.6</u> cfm |

| PRINCIPAL VENTILATION CAPACITY REQUIRED |      | 9.32.3.4.(1)    |
|-----------------------------------------|------|-----------------|
| 1 Bedroom                               | 31.8 | cfm             |
| 2 Bedroom                               | 47.7 | cfm             |
| 3 Bedroom                               | 63.6 | cfm             |
| 4 Bedroom                               | 79.5 | cfm             |
| 5 Bedroom                               | 95.4 | cfm             |
| TOTAL                                   |      | <u>79.5</u> cfm |

| SUPPLEMENTAL VENTILATION CAPACITY |              | 9.32.3.5. |
|-----------------------------------|--------------|-----------|
| Total Ventilation Capacity        | <u>169.6</u> | cfm       |
| Less Principal Ventil. Capacity   | <u>79.5</u>  | cfm       |
| Required Supplemental Capacity    | <u>90.1</u>  | cfm       |

| PRINCIPAL EXHAUST FAN CAPACITY |                                                  |
|--------------------------------|--------------------------------------------------|
| Model: VANEE V150H             | Location: BSMT                                   |
| <u>79.5</u> cfm                | <input checked="" type="checkbox"/> HVI Approved |

| PRINCIPAL EXHAUST HEAT LOSS CALCULATION |        |        |        |      |
|-----------------------------------------|--------|--------|--------|------|
| CFM                                     | ΔT °F  | FACTOR | % LOSS |      |
| 79.5 CFM                                | X 72 F | X 1.08 | X      | 0.25 |

| SUPPLEMENTAL FANS |                          | BY INSTALLING CONTRACTOR |                                     |       |
|-------------------|--------------------------|--------------------------|-------------------------------------|-------|
| Location          | Model                    | cfm                      | HVI                                 | Sones |
| ENS               | BY INSTALLING CONTRACTOR | 50                       | <input checked="" type="checkbox"/> | 3.5   |
| BATH              | BY INSTALLING CONTRACTOR | 50                       | <input checked="" type="checkbox"/> | 3.5   |
| W/R               | BY INSTALLING CONTRACTOR | 50                       | <input checked="" type="checkbox"/> | 3.5   |

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

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

| BUILDER: GREENPARK HOMES |        |
|--------------------------|--------|
| Name:                    |        |
| Address:                 |        |
| City:                    |        |
| Telephone #:             | Fax #: |

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

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

| CSA F280-12 Residential Heat Loss and Heat Gain Calculations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                   |                                                                                                                                                                                                                     |                                                        |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|----------------------------------------------------------------------------|--------------|------|------|---|------|-------|------|----|-------|--------|------|---|-------|-------|---|---|---|--------|---|---|---|--------|--|--|--------------|--------|--|--|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--------------------------------|-------|--------------------------------|-------|-------------------------------|--|--|--|--|--|--------|---------|-------|-------|-------------|----|-----|----|----|-------------|----|----|---|---|
| Formula Sheet (For Air Leakage / Ventilation Calculation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |                                                                                                                                                                                                                     |                                                        |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| LO#: 99995                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Model: GARDEN 3   | Builder: GREENPARK HOMES                                                                                                                                                                                            | Date: 1/18/2023                                        |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| <b>Volume Calculation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   | <b>Air Change &amp; Delta T Data</b>                                                                                                                                                                                |                                                        |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| <b>House Volume</b> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <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>1088</td><td>8</td><td>8704</td></tr> <tr><td>First</td><td>1088</td><td>10</td><td>10880</td></tr> <tr><td>Second</td><td>1327</td><td>9</td><td>11943</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>31,527.0 ft³</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>892.7 m³</td></tr> </tbody> </table> |                   | Level                                                                                                                                                                                                               | Floor Area (ft²)                                       | Floor Height (ft)                                                          | Volume (ft³) | Bsmt | 1088 | 8 | 8704 | First | 1088 | 10 | 10880 | Second | 1327 | 9 | 11943 | Third | 0 | 9 | 0 | Fourth | 0 | 9 | 0 | Total: |  |  | 31,527.0 ft³ | Total: |  |  | 892.7 m³ | <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 70%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 30%; text-align: center;">0.335</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td style="text-align: center;">0.091</td> </tr> </table><br><table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <tr> <th colspan="5" style="text-align: center;">Design Temperature Difference</th> </tr> <tr> <th></th> <th>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> <th>ΔT °F</th> </tr> <tr> <td>Winter DTDh</td> <td style="text-align: center;">22</td> <td style="text-align: center;">-18</td> <td style="text-align: center;">40</td> <td style="text-align: center;">72</td> </tr> <tr> <td>Summer DTDc</td> <td style="text-align: center;">24</td> <td style="text-align: center;">29</td> <td style="text-align: center;">5</td> <td style="text-align: center;">9</td> </tr> </table> |  |  | WINTER NATURAL AIR CHANGE RATE | 0.335 | SUMMER NATURAL AIR CHANGE RATE | 0.091 | Design Temperature Difference |  |  |  |  |  | Tin °C | Tout °C | ΔT °C | ΔT °F | Winter DTDh | 22 | -18 | 40 | 72 | Summer DTDc | 24 | 29 | 5 | 9 |
| Level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Floor Area (ft²)  | Floor Height (ft)                                                                                                                                                                                                   | Volume (ft³)                                           |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| Bsmt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1088              | 8                                                                                                                                                                                                                   | 8704                                                   |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| First                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1088              | 10                                                                                                                                                                                                                  | 10880                                                  |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| Second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1327              | 9                                                                                                                                                                                                                   | 11943                                                  |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| Third                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0                 | 9                                                                                                                                                                                                                   | 0                                                      |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| Fourth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0                 | 9                                                                                                                                                                                                                   | 0                                                      |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| Total:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                   |                                                                                                                                                                                                                     | 31,527.0 ft³                                           |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| Total:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                   |                                                                                                                                                                                                                     | 892.7 m³                                               |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| WINTER NATURAL AIR CHANGE RATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0.335             |                                                                                                                                                                                                                     |                                                        |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| SUMMER NATURAL AIR CHANGE RATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0.091             |                                                                                                                                                                                                                     |                                                        |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| Design Temperature Difference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                   |                                                                                                                                                                                                                     |                                                        |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Tin °C            | Tout °C                                                                                                                                                                                                             | ΔT °C                                                  | ΔT °F                                                                      |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| Winter DTDh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 22                | -18                                                                                                                                                                                                                 | 40                                                     | 72                                                                         |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| Summer DTDc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 24                | 29                                                                                                                                                                                                                  | 5                                                      | 9                                                                          |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| <b>5.2.3.1 Heat Loss due to Air Leakage</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                   | <b>6.2.6 Sensible Gain due to Air Leakage</b>                                                                                                                                                                       |                                                        |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| $HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ <p>0.335      x      247.98      x      40 °C      x      1.2      =      4004 W</p> <p style="text-align: right;">=      13661 Btu/h</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                   | $HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ <p>=      0.091      x      247.98      x      5 °C      x      1.2      =      139 W</p> <p style="text-align: right;">=      475 Btu/h</p> |                                                        |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| <b>5.2.3.2 Heat Loss due to Mechanical Ventilation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                   | <b>6.2.7 Sensible heat Gain due to Ventilation</b>                                                                                                                                                                  |                                                        |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| $HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>80 CFM      x      72 °F      x      1.08      x      0.25      =      1554 Btu/h</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   | $HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>80 CFM      x      9 °F      x      1.08      x      0.25      =      197 Btu/h</p>                                                                   |                                                        |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| <b>5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                   |                                                                                                                                                                                                                     |                                                        |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| $HL_{airr} = Level\ Factor \times HL_{airbv} \times \{ (HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel}) \}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                   |                                                                                                                                                                                                                     |                                                        |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| Level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Level Factor (LF) | HLairve Air Leakage +<br>Ventilation Heat Loss<br>(Btu/h)                                                                                                                                                           | Level Conductive Heat<br>Loss: (HL <sub>clevel</sub> ) | Air Leakage Heat Loss Multiplier (LF x<br>HLairbv / HL <sub>clevel</sub> ) |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.5               | 13,661                                                                                                                                                                                                              | 7,906                                                  | 0.864                                                                      |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.3               |                                                                                                                                                                                                                     | 10,787                                                 | 0.380                                                                      |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.2               |                                                                                                                                                                                                                     | 10,843                                                 | 0.252                                                                      |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0                 |                                                                                                                                                                                                                     | 0                                                      | 0.000                                                                      |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0                 |                                                                                                                                                                                                                     | 0                                                      | 0.000                                                                      |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
| <p>*HLairbv = Air leakage heat loss + ventilation heat loss</p> <p>*For a balanced or supply only ventilation system HLairve = 0</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                   |                                                                                                                                                                                                                     |                                                        |                                                                            |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   |                                                                                                                                                                                                                     |                                                        | Michael O'Rourke<br>BCIN# 19669<br>                                        |              |      |      |   |      |       |      |    |       |        |      |   |       |       |   |   |   |        |   |   |   |        |  |  |              |        |  |  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                |       |                                |       |                               |  |  |  |  |  |        |         |       |       |             |    |     |    |    |             |    |    |   |   |

**HEAT LOSS AND GAIN SUMMARY SHEET**

|                        |                  |                                 |
|------------------------|------------------|---------------------------------|
| <b>MODEL:</b> GARDEN 3 | <b>OPT 4 BED</b> | <b>BUILDER:</b> GREENPARK HOMES |
| <b>SFQT:</b> 2415      | <b>LO#</b> 99995 | <b>SITE:</b> BARLASSINA         |

**DESIGN ASSUMPTIONS**

|                      |    |                                |      |
|----------------------|----|--------------------------------|------|
| HEATING              | °F | COOLING                        | °F   |
| OUTDOOR DESIGN TEMP. | 0  | OUTDOOR DESIGN TEMP.           | 84   |
| 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> ):                 | 31527.0         | 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:        | 5.0 ft   |
| LENGTH: 57.0 ft                                  | WIDTH: 24.0 ft  | EXPOSED PERIMETER:        | 162.0 ft |

| 2012 OBC - COMPLIANCE PACKAGE                                              |  | Compliance Package A1 |           |
|----------------------------------------------------------------------------|--|-----------------------|-----------|
| Component                                                                  |  | Nominal               | Min. Eff. |
| Ceiling with Attic Space Minimum RSI (R)-Value                             |  | 60                    | 59.22     |
| Ceiling Without Attic Space Minimum RSI (R)-Value                          |  | 31                    | 27.65     |
| Exposed Floor Minimum RSI (R)-Value                                        |  | 31                    | 29.80     |
| Walls Above Grade Minimum RSI (R)-Value                                    |  | 22                    | 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                   | -         |

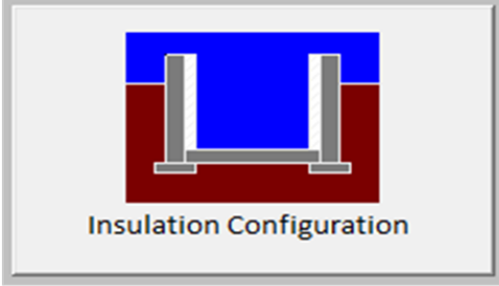
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



# Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

| Weather Station Description    |                                           |                                                                                                                 |
|--------------------------------|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Province:                      | Ontario                                   |                                                                                                                 |
| Region:                        | Cambridge                                 |                                                                                                                 |
| Site Description               |                                           |                                                                                                                 |
| Soil Conductivity:             | Normal conductivity: dry sand, loam, clay |                                                                                                                 |
| Water Table:                   | Normal (7-10 m, 23-33 ft)                 |                                                                                                                 |
| Foundation Dimensions          |                                           |                                                                                                                 |
| Floor Length (m):              | 17.4                                      | <br>Insulation Configuration |
| Floor Width (m):               | 7.3                                       |                                                                                                                 |
| Exposed Perimeter (m):         | 0.0                                       |                                                                                                                 |
| Wall Height (m):               | 2.4                                       |                                                                                                                 |
| Depth Below Grade (m):         | 1.52                                      |                                                                                                                 |
| Window Area (m <sup>2</sup> ): | 1.6                                       |                                                                                                                 |
| 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):          |                                           | 1515                                                                                                            |

TYPE: GARDEN 3  
LO# 99995

OPT 4 BED

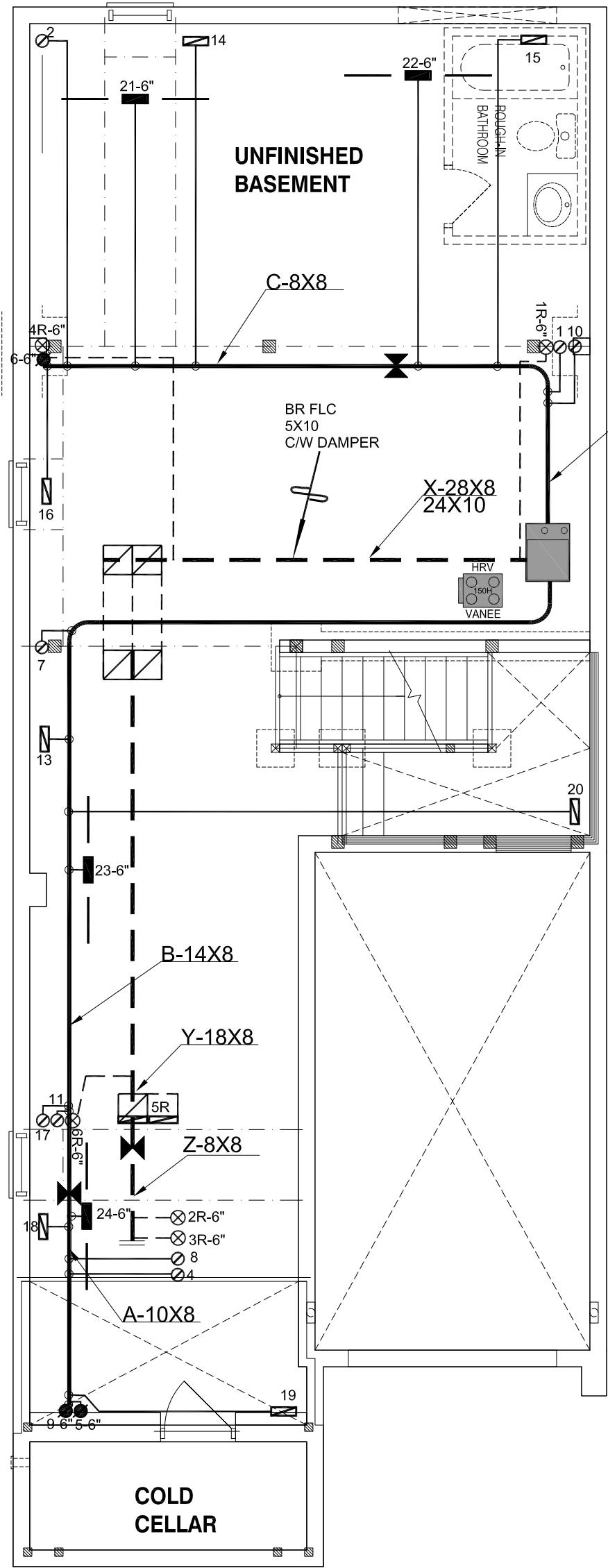
# Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

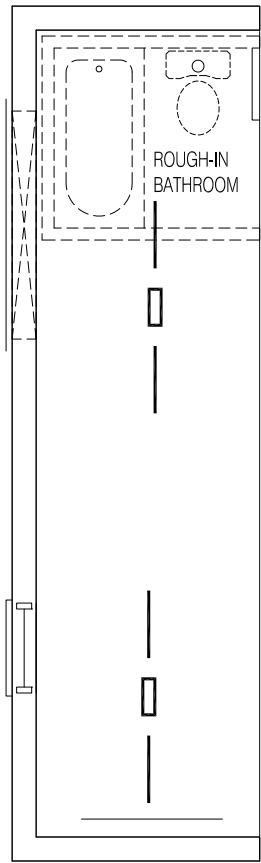
| Weather Station Description       |                            |                        |    |    |
|-----------------------------------|----------------------------|------------------------|----|----|
| Province:                         | Ontario                    |                        |    |    |
| Region:                           | Cambridge                  |                        |    |    |
| 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):       | 7.62                       |                        |    |    |
| Building Configuration            |                            |                        |    |    |
| Type:                             | Detached                   |                        |    |    |
| Number of Stories:                | Two                        |                        |    |    |
| Foundation:                       | Full                       |                        |    |    |
| House Volume (m <sup>3</sup> ):   | 892.7                      |                        |    |    |
| Air Leakage/Ventilation           |                            |                        |    |    |
| Air Tightness Type:               | Present (1961-) (3.57 ACH) |                        |    |    |
| Custom BDT Data:                  | ELA @ 10 Pa.               | 1190.1 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): | 0.335                      |                        |    |    |
| Cooling Air Leakage Rate (ACH/H): | 0.091                      |                        |    |    |

TYPE: GARDEN 3  
LO# 99995

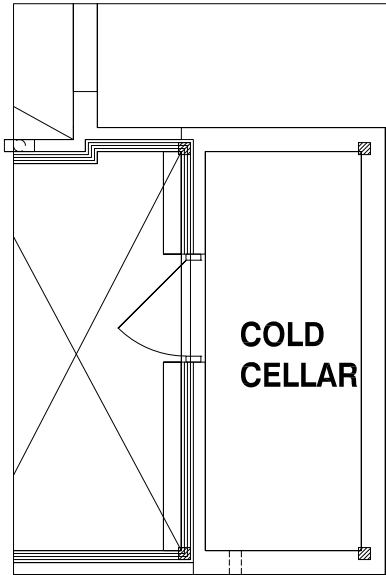
OPT 4 BED



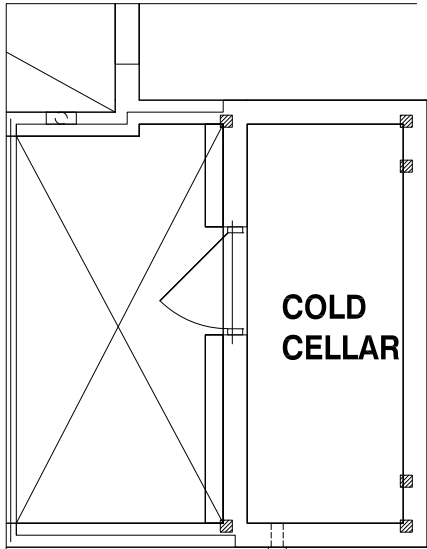
BASEMENT PLAN EL-1



PARTIAL BASEMENT LAYOUT  
FOR DECK CONDITION EL-1,2,3



BASEMENT PLAN EL-2



BASEMENT PLAN EL-3

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

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

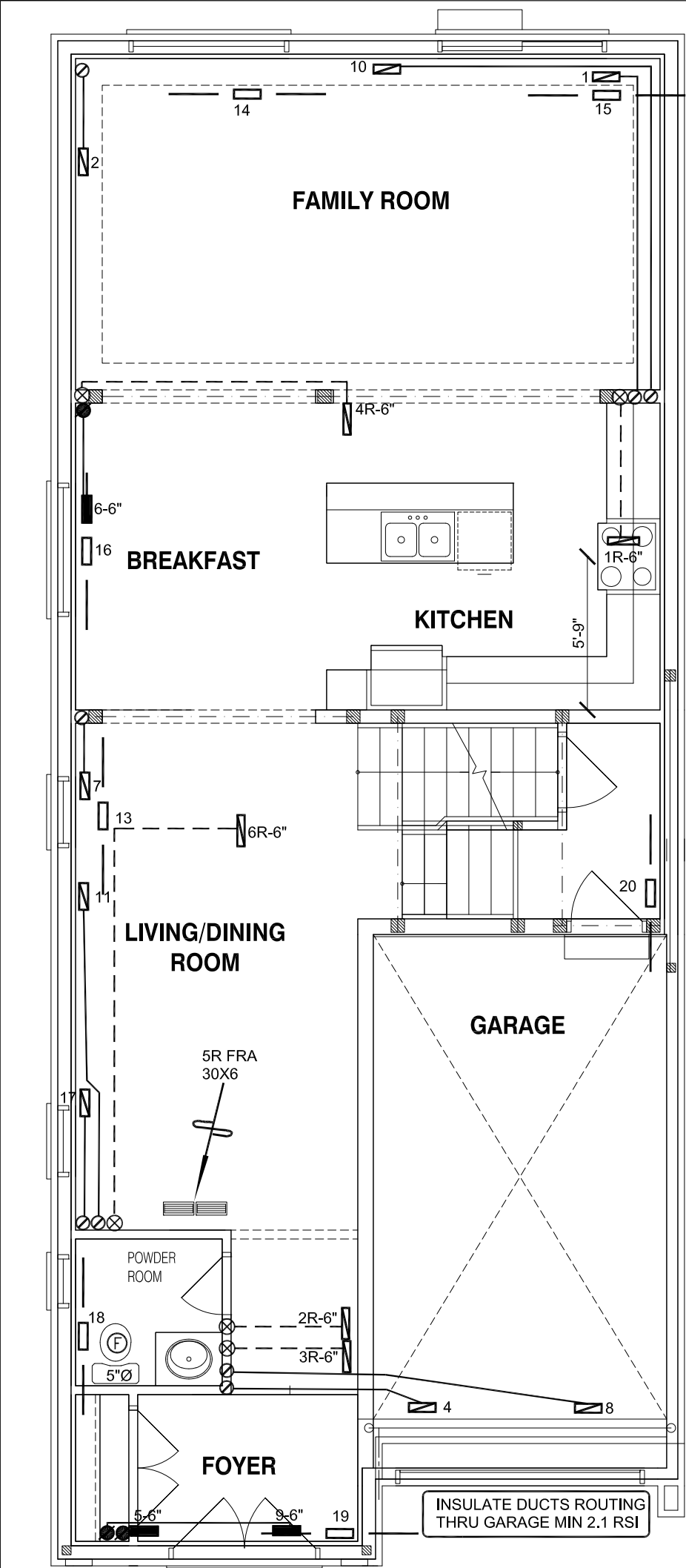
CSA-F280-12  
PACKAGE A1

| HVAC LEGEND |                           |        |                                 |        |                              |        |                            | 3.        |             |      |
|-------------|---------------------------|--------|---------------------------------|--------|------------------------------|--------|----------------------------|-----------|-------------|------|
| SYMBOL      | DESCRIPTION               | SYMBOL | DESCRIPTION                     | SYMBOL | DESCRIPTION                  | SYMBOL | DESCRIPTION                | 2.        |             |      |
|             | SUPPLY AIR GRILLE         |        | 6" SUPPLY AIR BOOT ABOVE        |        | 14"x8" RETURN AIR GRILLE     |        | RETURN AIR STACK ABOVE     | 1.        |             |      |
|             | SUPPLY AIR GRILLE 6" BOOT |        | SUPPLY AIR STACK FROM 2nd FLOOR |        | 30"x8" RETURN AIR GRILLE     |        | RETURN AIR STACK 2nd FLOOR | No.       | Description | Date |
|             | SUPPLY AIR BOOT ABOVE     |        | 6" SUPPLY AIR STACK 2nd FLOOR   |        | FRA- FLOOR RETURN AIR GRILLE |        | REDUCER                    | REVISIONS |             |      |

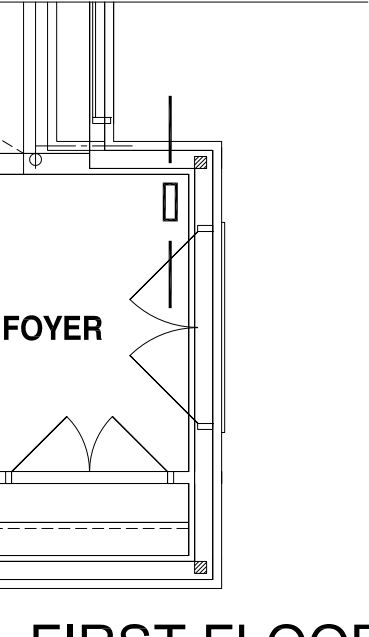
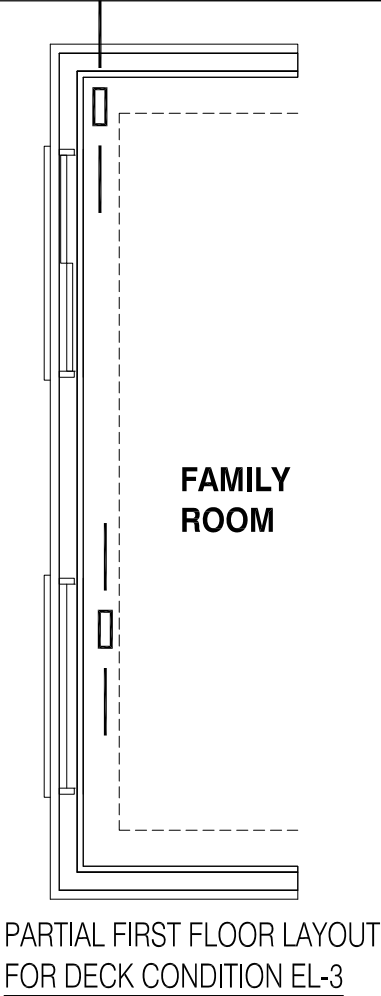
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|                                                                                                                                                     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                    |                                                                                                                                               |                        |    |             |   |                               |          |               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----|-------------|---|-------------------------------|----------|---------------|
| Client                                                                                                                                              |  | <div></div> <div>375 Finley Ave. Suite 202 - Ajax, Ontario<br/>L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375<br/>Email: info@hvacdesigns.ca<br/>Web: www.hvacdesigns.ca<br/>Specializing in Residential Mechanical Design Services</div> <div>Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.</div> | HEAT LOSS 45211 BTU/H<br>UNIT DATA |                                                                                                                                               | # OF RUNS S/A R/A FANS |    |             |   | Sheet Title                   |          |               |
| Project Name<br>GREENPARK HOMES<br><br>BARLASSINA<br>CAMBRIDGE, ONTARIO<br><br>Garden 3 - Elevation 1<br><br>OPT 4 BED<br>GARDEN 3<br><br>2415 sqft |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | MAKE<br>GOODMAN                    | 3RD FLOOR                                                                                                                                     |                        |    |             |   | BASEMENT<br>HEATING<br>LAYOUT |          |               |
|                                                                                                                                                     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | MODEL<br>GMEC960603BNA             | 2ND FLOOR                                                                                                                                     |                        | 11 | 5           | 3 |                               |          |               |
|                                                                                                                                                     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | INPUT<br>60 MBTU/H                 | 1ST FLOOR                                                                                                                                     |                        | 7  | 1           | 2 |                               |          |               |
|                                                                                                                                                     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | OUTPUT<br>57.6 MBTU/H              | BASEMENT                                                                                                                                      |                        | 4  | 1           | 0 | Date                          | JAN/2023 |               |
|                                                                                                                                                     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | COOLING<br>2.0 TONS                | ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A |                        |    |             |   |                               | Scale    | 3/16" = 1'-0" |
| FAN SPEED<br>928 cfm @ 0.6" w.c.                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                    |                                                                                                                                               |                        |    | BCIN# 19669 |   | LO#                           | 99995    |               |

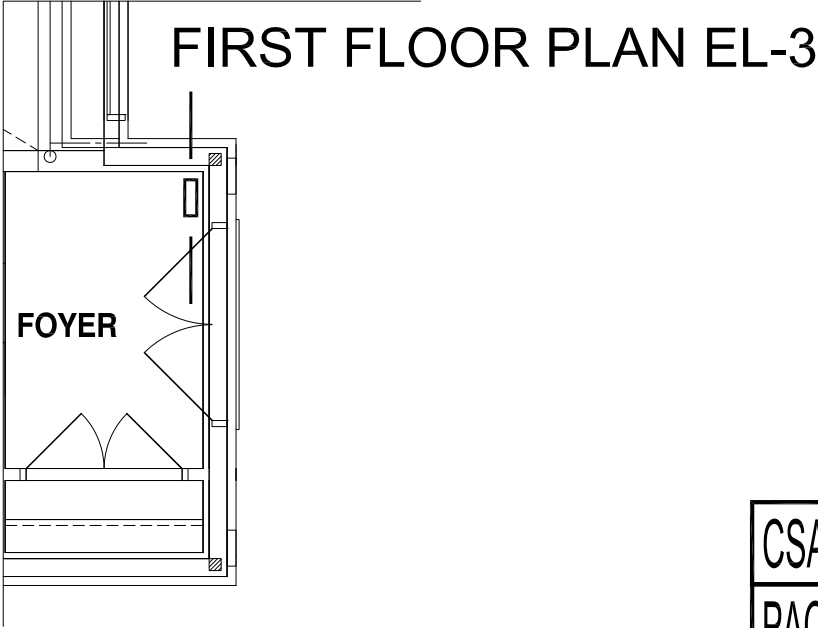
Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.



FIRST FLOOR PLAN EL-1



FIRST FLOOR PLAN EL-2



FIRST FLOOR PLAN EL-3

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

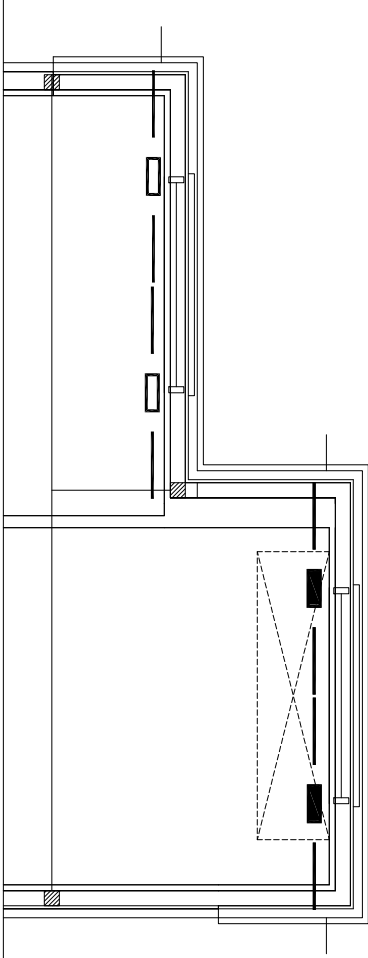
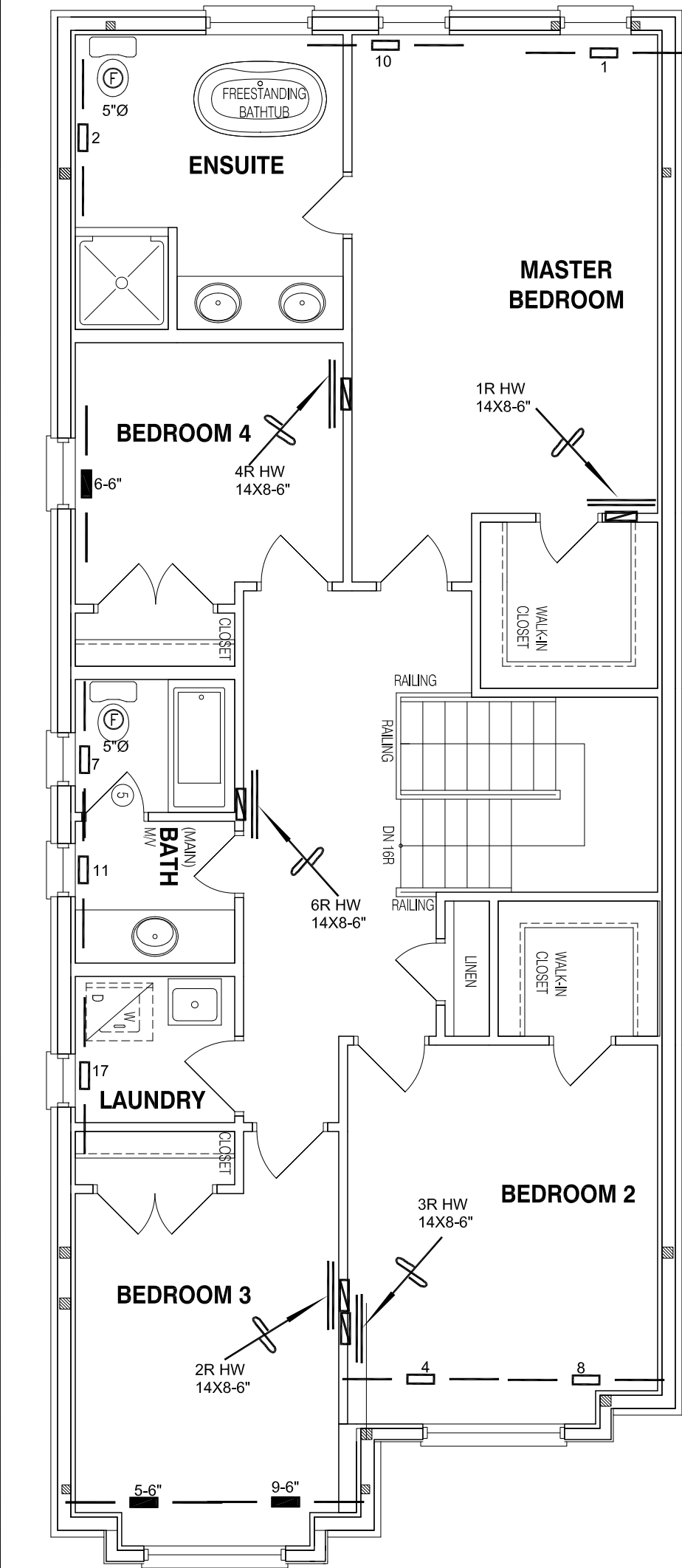
*Michael O'Rourke*  
Michael O'Rourke, BCIN# 19669  
HVAC DESIGNS LTD.

CSA-F280-12  
PACKAGE A1

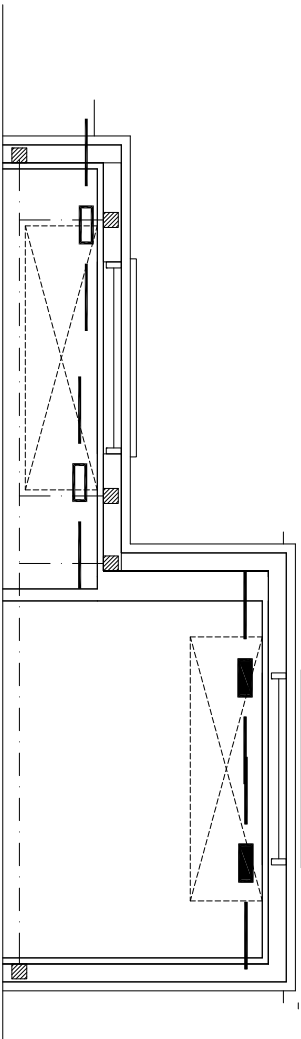
| HVAC LEGEND |                           |        |                                 |        |                              |        |                            | 3.        |             |      |
|-------------|---------------------------|--------|---------------------------------|--------|------------------------------|--------|----------------------------|-----------|-------------|------|
| SYMBOL      | DESCRIPTION               | SYMBOL | DESCRIPTION                     | SYMBOL | DESCRIPTION                  | SYMBOL | DESCRIPTION                | 2.        |             |      |
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|             | SUPPLY AIR GRILLE 6" BOOT |        | SUPPLY AIR STACK FROM 2nd FLOOR |        | 30"x8" RETURN AIR GRILLE     |        | RETURN AIR STACK 2nd FLOOR | No.       | Description | Date |
|             | SUPPLY AIR BOOT ABOVE     |        | 6" SUPPLY AIR STACK 2nd FLOOR   |        | FRA- FLOOR RETURN AIR GRILLE |        | REDUCER                    | REVISIONS |             |      |

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|                                  |  |                                                                                                                                                                                                                                                                                                                                          |                                  |               |
|----------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|---------------|
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| GREENPARK HOMES                  |  |                                                                                                                                                                                                                                                                                                                                          | FIRST FLOOR<br>HEATING<br>LAYOUT |               |
| Project Name                     |  | 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.                                                                               | Date                             | JAN/2023      |
| BARLASSINA<br>CAMBRIDGE, ONTARIO |  |                                                                                                                                                                                                                                                                                                                                          | Scale                            | 3/16" = 1'-0" |
| Garden 3 - Elevation 1           |  |                                                                                                                                                                                                                                                                                                                                          | BCIN# 19669                      |               |
| OPT 4 BED<br>GARDEN 3            |  |                                                                                                                                                                                                                                                                                                                                          | LO#                              | 99995         |
| 2415 sqft                        |  |                                                                                                                                                                                                                                                                                                                                          |                                  |               |



SECOND FLOOR PLAN EL-2



SECOND FLOOR PLAN EL-3

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

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

CSA-F280-12

PACKAGE A1

| HVAC LEGEND |                           |        |                                 |        |                              |        |                            | 3.        |             |      |
|-------------|---------------------------|--------|---------------------------------|--------|------------------------------|--------|----------------------------|-----------|-------------|------|
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|                               |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |               |
|-------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------|
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| GREENPARK HOMES               |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SECOND FLOOR HEATING LAYOUT |               |
| Project Name                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Date                        | JAN/2023      |
| BARLASSINA CAMBRIDGE, ONTARIO |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Scale                       | 3/16" = 1'-0" |
| Garden 3 - Elevation 1        |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | BCIN# 19669                 |               |
| OPT 4 BED GARDEN 3            |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | LO#                         | 99995         |
| 2415 sqft                     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |               |