

SITE NAME: RUSSEL GARDENS PHASE 3  
BUILDER: GREENPARK HOMES

LOT 268  
TYPE: MOUNTAINASH 5

GFA: 3291

DATE: Aug-20  
LO#: 87366

WINTER NATURAL AIR CHANGE RATE 0.343  
SUMMER NATURAL AIR CHANGE RATE 0.123

HEAT LOSS AT °F. 71  
HEAT GAIN AT °F. 13

CSA-F280-12  
SS-12 PACKAGE A1

| ROOM USE                       | EXP. WALL | CLG. HT. | MBR  | ENS  | WIC  | BED-2 | BED-3 | BED-4 | ENS-2 | FLEX | WIC-3 | S-ENS |
|--------------------------------|-----------|----------|------|------|------|-------|-------|-------|-------|------|-------|-------|
|                                |           |          | 33   | 30   | 7    | 27    | 37    | 12    | 6     | 11   | 6     | 6     |
|                                |           |          | 9    | 9    | 9    | 9     | 9     | 9     | 9     | 9    | 9     | 9     |
| FACTORS                        |           |          |      |      |      |       |       |       |       |      |       |       |
| GRS.WALL AREA                  | LOSS      | GAIN     | 297  | 270  | 63   | 243   | 333   | 108   | 54    | 99   | 45    | 64    |
| GLAZING                        | LOSS      | GAIN     | LOSS | GAIN | LOSS | GAIN  | LOSS  | GAIN  | LOSS  | GAIN | LOSS  | GAIN  |
| NORTH                          | 19.3      | 14.9     | 0    | 0    | 0    | 14    | 277   | 209   | 0     | 0    | 0     | 0     |
| EAST                           | 19.3      | 38.4     | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0    | 0     | 0     |
| SOUTH                          | 19.3      | 23.1     | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0    | 0     | 0     |
| WEST                           | 19.3      | 38.4     | 32   | 633  | 1228 | 14    | 277   | 537   | 0     | 0    | 0     | 0     |
| SKYLT.                         | 34.6      | 181.5    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0    | 0     | 0     |
| DOORS                          | 23.5      | 4.3      | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0    | 0     | 0     |
| NET EXPOSED WALL               | 4.1       | 0.8      | 265  | 1099 | 159  | 242   | 1003  | 182   | 63    | 281  | 47    | 182   |
| NET EXPOSED BSMT WALL ABOVE GR | 3.3       | 0.6      | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0    | 0     | 0     |
| EXPOSED CLG                    | 1.2       | 0.6      | 287  | 342  | 169  | 221   | 263   | 130   | 140   | 167  | 82    | 236   |
| NO ATTIC EXPOSED CLG           | 2.6       | 1.3      | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0    | 0     | 0     |
| EXPOSED FLOOR                  | 2.4       | 0.4      | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0    | 0     | 0     |
| BASEMENT/CRAWL HEAT LOSS       |           |          | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0    | 0     | 0     |
| SLAB ON GRADE HEAT LOSS        |           |          | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0    | 0     | 0     |
| SUBTOTAL HT LOSS               |           |          | 2673 |      | 1820 | 428   | 2854  | 2671  | 912   | 573  | 1086  | 419   |
| SUB TOTAL HT GAIN              |           |          |      | 1596 |      | 1058  | 130   | 2436  | 2743  | 545  | 460   | 239   |
| LEVEL FACTOR / MULTIPLIER      | 0.20      | 0.28     |      | 0.20 | 0.28 |       | 0.20  | 0.28  |       | 0.20 | 0.28  |       |
| AIR CHANGE HEAT LOSS           |           |          | 576  |      | 506  |       | 119   | 793   |       | 742  |       | 253   |
| AIR CHANGE HEAT GAIN           |           |          |      | 129  |      | 86    |       | 11    |       | 198  |       | 222   |
| DUCT LOSS                      |           |          | 0    |      | 0    |       | 0     | 365   |       | 0    |       | 0     |
| DUCT GAIN                      |           |          | 0    |      | 0    |       | 0     | 348   |       | 0    |       | 0     |
| HEAT GAIN PEOPLE               | 240       |          | 2    | 480  | 0    | 0     | 0     | 1     | 240   | 1    | 240   | 1     |
| HEAT GAIN APPLIANCES/LIGHTS    |           |          |      | 603  | 0    | 0     | 0     | 603   |       | 603  |       | 603   |
| TOTAL HT LOSS BTU/H            |           |          | 2649 |      | 2326 |       | 547   | 4011  |       | 3413 |       | 1166  |
| TOTAL HT GAIN x 1.3 BTU/H      |           |          | 3652 |      | 1488 |       | 182   | 4972  |       | 4951 |       | 1562  |

CITY OF HAMILTON  
Building Division  
2021-10-14 14:53

| ROOM USE                       | EXP. WALL | CLG. HT. | FAM  | L/D  | K/B  | L/H  | LND  | W/R  | FOY  | MUD  | WOD  | BAS  |
|--------------------------------|-----------|----------|------|------|------|------|------|------|------|------|------|------|
|                                |           |          | 36   | 30   | 37   | 15   | 12   | 18   | 18   | 12   | 46   | 180  |
|                                |           |          | 11   | 11   | 11   | 11   | 9    | 11   | 11   | 11   | 9    | 9    |
| FACTORS                        |           |          |      |      |      |      |      |      |      |      |      |      |
| GRS.WALL AREA                  | LOSS      | GAIN     | 382  | 318  | 392  | 201  | 108  | 191  | 191  | 348  | 414  | 1352 |
| GLAZING                        | LOSS      | GAIN     | LOSS | GAIN | LOSS | GAIN | LOSS | GAIN | LOSS | GAIN | LOSS | GAIN |
| NORTH                          | 19.3      | 14.9     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| EAST                           | 19.3      | 38.4     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| SOUTH                          | 19.3      | 23.1     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| WEST                           | 19.3      | 38.4     | 40   | 791  | 1536 | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| SKYLT.                         | 34.6      | 181.5    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| DOORS                          | 23.5      | 4.3      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| NET EXPOSED WALL               | 4.1       | 0.8      | 342  | 1416 | 257  | 273  | 1152 | 209  | 332  | 1377 | 250  | 188  |
| NET EXPOSED BSMT WALL ABOVE GR | 3.3       | 0.6      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| EXPOSED CLG                    | 1.2       | 0.6      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| NO ATTIC EXPOSED CLG           | 2.6       | 1.3      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| EXPOSED FLOOR                  | 2.4       | 0.4      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| BASEMENT/CRAWL HEAT LOSS       |           |          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| SLAB ON GRADE HEAT LOSS        |           |          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| SUBTOTAL HT LOSS               |           |          | 2207 |      | 1943 |      | 2563 | 1038 | 772  | 1135 | 1657 | 5510 |
| SUB TOTAL HT GAIN              |           |          |      | 1792 |      | 1134 | 2553 | 442  | 344  | 971  | 509  | 621  |
| LEVEL FACTOR / MULTIPLIER      | 0.30      | 0.48     |      | 0.30 | 0.48 |      | 0.30 | 0.48 |      | 0.30 | 0.48 |      |
| AIR CHANGE HEAT LOSS           |           |          | 1070 |      | 942  |      | 1243 | 503  |      | 214  |      | 550  |
| AIR CHANGE HEAT GAIN           |           |          |      | 145  |      | 92   |      | 207  |      | 36   |      | 28   |
| DUCT LOSS                      |           |          | 0    |      | 0    |      | 0    | 0    |      | 0    |      | 0    |
| DUCT GAIN                      |           |          | 0    |      | 0    |      | 0    | 0    |      | 0    |      | 0    |
| HEAT GAIN PEOPLE               | 240       |          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| HEAT GAIN APPLIANCES/LIGHTS    |           |          |      | 603  | 0    | 0    | 603  | 603  |      | 603  |      | 603  |
| TOTAL HT LOSS BTU/H            |           |          | 3277 |      | 2886 |      | 3806 | 1541 |      | 985  |      | 1685 |
| TOTAL HT GAIN x 1.3 BTU/H      |           |          | 3303 |      | 2378 |      | 4372 | 1406 |      | 1267 |      | 1366 |

THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE  
THESE DRAWINGS AND/OR SPECIFICATIONS HAVE BEEN REVIEWED BY  
DATE: FEB 23 2021  
FOR CHAIRMAN'S OFFICIAL

TOTAL HEAT GAIN BTU/H: 37033

TONS: 3.09

LOSS DUE TO VENTILATION LOAD BTU/H: 1515

STRUCTURAL HEAT LOSS: 54364

TOTAL COMBINED HEAT LOSS BTU/H: 55869

SITE NAME: RUSSEL GARDENS PHASE 3  
BUILDER: GREENPARK HOMES

LOT 268  
TYPE: MOUNTAINASH 5

DATE: Aug-20

GFA: 3291 LO# 87366

HEATING CFM 1131 COOLING CFM 1131  
TOTAL HEAT LOSS 54,354 TOTAL HEAT GAIN 36,758  
AIR FLOW RATE CFM 20.81 AIR FLOW RATE CFM 30.77

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

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

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

DESIGN CFM = 1131  
CFM @ 5" E.S.P.

TEMPERATURE RISE 47 °F

| RUN COUNT | 4th | 3rd | 2nd | 1st | Bas |
|-----------|-----|-----|-----|-----|-----|
| S/A       | 0   | 0   | 15  | 8   | 4   |
| R/A       | 0   | 0   | 6   | 2   | 1   |

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

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

| RUN #                     | 1    | 2    | 3    | 4     | 5     | 6     | 7     | 8    | 9     | 10   | 11    | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   |
|---------------------------|------|------|------|-------|-------|-------|-------|------|-------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| ROOM NAME                 | MBR  | ENS  | WIC  | BED-2 | BED-3 | BED-4 | ENS-2 | FLEX | WIC-3 | MBR  | S-ENS | FAM  | L/D  | K/B  | K/B  | L/H  | LND  | W/R  | FOY  | MUD  | BAS  | BAS  | BAS  | BAS  |
| RM LOSS MBH               | 1.32 | 1.16 | 0.55 | 2.01  | 1.71  | 1.17  | 0.81  | 1.53 | 0.66  | 1.32 | 0.54  | 3.28 | 2.89 | 1.90 | 1.90 | 1.54 | 0.99 | 1.88 | 2.46 | 2.30 | 4.44 | 4.44 | 4.44 | 4.44 |
| CFM PER RUN HEAT          | 28   | 24   | 11   | 42    | 36    | 24    | 17    | 32   | 14    | 28   | 11    | 68   | 60   | 40   | 40   | 32   | 21   | 35   | 51   | 48   | 92   | 92   | 92   | 92   |
| RM GAIN MBH               | 1.83 | 0.74 | 0.18 | 2.49  | 2.48  | 1.86  | 0.32  | 0.71 | 0.64  | 1.83 | 0.34  | 3.30 | 2.38 | 2.19 | 2.19 | 1.41 | 1.27 | 1.37 | 0.72 | 0.51 | 0.58 | 0.58 | 0.58 | 0.58 |
| CFM PER RUN COOLING       | 56   | 23   | 6    | 76    | 76    | 57    | 10    | 22   | 20    | 56   | 10    | 102  | 73   | 67   | 67   | 43   | 39   | 42   | 22   | 16   | 18   | 18   | 18   | 18   |
| ADJUSTED PRESSURE         | 0.17 | 0.17 | 0.17 | 0.17  | 0.17  | 0.17  | 0.17  | 0.17 | 0.17  | 0.17 | 0.17  | 0.16 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| ACTUAL DUCT LGH           | 37   | 56   | 39   | 59    | 56    | 34    | 34    | 51   | 45    | 39   | 22    | 10   | 40   | 31   | 27   | 20   | 33   | 41   | 44   | 38   | 19   | 5    | 31   | 31   |
| EQUIVALENT LENGTH         | 190  | 160  | 150  | 130   | 170   | 200   | 220   | 160  | 110   | 130  | 150   | 140  | 130  | 150  | 160  | 140  | 180  | 110  | 90   | 140  | 140  | 120  | 140  | 130  |
| TOTAL EFFECTIVE LENGTH    | 227  | 216  | 189  | 189   | 226   | 234   | 254   | 211  | 155   | 169  | 189   | 162  | 140  | 190  | 191  | 167  | 200  | 143  | 131  | 184  | 178  | 139  | 145  | 161  |
| ADJUSTED PRESSURE         | 0.08 | 0.08 | 0.09 | 0.09  | 0.08  | 0.07  | 0.07  | 0.08 | 0.11  | 0.1  | 0.09  | 0.1  | 0.12 | 0.09 | 0.09 | 0.1  | 0.09 | 0.12 | 0.13 | 0.09 | 0.09 | 0.12 | 0.11 | 0.1  |
| ROUND DUCT SIZE           | 5    | 4    | 4    | 6     | 6     | 5     | 4     | 4    | 4     | 5    | 4     | 6    | 5    | 5    | 5    | 4    | 4    | 4    | 4    | 5    | 6    | 6    | 6    | 6    |
| HEATING VELOCITY (ft/min) | 206  | 275  | 125  | 214   | 184   | 176   | 195   | 367  | 161   | 206  | 126   | 347  | 441  | 294  | 294  | 367  | 241  | 402  | 585  | 352  | 469  | 469  | 469  | 469  |
| COOLING VELOCITY (ft/min) | 411  | 264  | 69   | 388   | 388   | 419   | 115   | 252  | 229   | 411  | 115   | 520  | 536  | 492  | 492  | 493  | 447  | 482  | 252  | 117  | 92   | 92   | 92   | 92   |
| OUTLET GRILL SIZE         | 3X10 | 3X10 | 3X10 | 4X10  | 4X10  | 3X10  | 3X10  | 3X10 | 3X10  | 3X10 | 3X10  | 4X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 4X10 | 4X10 | 4X10 | 4X10 |
| TRUNK                     | B    | A    | D    | C     | C     | C     | C     | A    | D     | B    | D     | B    | D    | A    | A    | C    | B    | C    | C    | A    | A    | B    | D    | C    |

| RUN #                     | 25    | 26    | 27   |
|---------------------------|-------|-------|------|
| ROOM NAME                 | BED-2 | BED-3 | ENS  |
| RM LOSS MBH               | 2.01  | 1.71  | 1.16 |
| CFM PER RUN HEAT          | 42    | 36    | 24   |
| RM GAIN MBH               | 2.49  | 2.48  | 0.74 |
| CFM PER RUN COOLING       | 76    | 76    | 23   |
| ADJUSTED PRESSURE         | 0.17  | 0.17  | 0.17 |
| ACTUAL DUCT LGH           | 52    | 48    | 52   |
| EQUIVALENT LENGTH         | 120   | 170   | 130  |
| TOTAL EFFECTIVE LENGTH    | 172   | 218   | 182  |
| ADJUSTED PRESSURE         | 0.1   | 0.08  | 0.09 |
| ROUND DUCT SIZE           | 6     | 6     | 4    |
| HEATING VELOCITY (ft/min) | 214   | 184   | 275  |
| COOLING VELOCITY (ft/min) | 388   | 388   | 264  |
| OUTLET GRILL SIZE         | 4X10  | 4X10  | 3X10 |
| TRUNK                     | D     | C     | A    |

| SUPPLY AIR TRUNK SIZE |        |       |      |          |      |       |        |       |       |          |       |         |        | RETURN AIR TRUNK SIZE |       |          |       |       |        |       |      |          |      |       |        |
|-----------------------|--------|-------|------|----------|------|-------|--------|-------|-------|----------|-------|---------|--------|-----------------------|-------|----------|-------|-------|--------|-------|------|----------|------|-------|--------|
| TRUNK                 | STATIC | ROUND | RECT | VELOCITY |      | TRUNK | STATIC | ROUND | RECT  | VELOCITY |       | TRUNK   | STATIC | ROUND                 | RECT  | VELOCITY |       | TRUNK | STATIC | ROUND | RECT | VELOCITY |      | TRUNK | STATIC |
| CFM                   | PRESS. | DUCT  | DUCT | (ft/min) |      | CFM   | PRESS. | DUCT  | DUCT  | (ft/min) |       | CFM     | PRESS. | DUCT                  | DUCT  | (ft/min) |       | CFM   | PRESS. | DUCT  | DUCT | (ft/min) |      | CFM   | PRESS. |
| TRUNK A               | 300    | 0.08  | 8.9  | 10       | X    | 8     | 540    | 0     | 0.00  | 0        | 0     | TRUNK G | 0      | 0.00                  | 0     | 0        | X     | 8     | 0      | 0     | 0    | X        | 8    | 0     | 0      |
| TRUNK B               | 548    | 0.08  | 11.2 | 14       | X    | 8     | 705    | 0     | 0.00  | 0        | 0     | TRUNK H | 0      | 0.00                  | 0     | 0        | X     | 8     | 0      | 0     | 0    | X        | 8    | 0     | 0      |
| TRUNK C               | 323    | 0.07  | 9.5  | 10       | X    | 8     | 581    | 0     | 0.00  | 0        | 0     | TRUNK I | 0      | 0.00                  | 0     | 0        | X     | 8     | 0      | 0     | 0    | X        | 8    | 0     | 0      |
| TRUNK D               | 584    | 0.07  | 11.9 | 16       | X    | 8     | 657    | 0     | 0.00  | 0        | 0     | TRUNK J | 0      | 0.00                  | 0     | 0        | X     | 8     | 0      | 0     | 0    | X        | 8    | 0     | 0      |
| TRUNK E               | 0      | 0.00  | 0    | 0        | X    | 8     | 0      | 0     | 0.00  | 0        | 0     | TRUNK K | 0      | 0.00                  | 0     | 0        | X     | 8     | 0      | 0     | 0    | X        | 8    | 0     | 0      |
| TRUNK F               | 0      | 0.00  | 0    | 0        | X    | 8     | 0      | 0     | 0.00  | 0        | 0     | TRUNK L | 0      | 0.00                  | 0     | 0        | X     | 8     | 0      | 0     | 0    | X        | 8    | 0     | 0      |
| RETURN AIR #          | 1      | 2     | 3    | 4        | 5    | 6     | 7      | 8     | 0     | 0        | 0     | 0       | 0      | 0                     | 0     | 0        | 0     | BR    | 0      | 0     | 0    | 0        | 0    | 0     | 0      |
| AIR VOLUME            | 90     | 85    | 90   | 90       | 85   | 75    | 360    | 85    | 0     | 0        | 0     | 0       | 0      | 0                     | 0     | 0        | 0     | 171   | 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  | 0.15   |
| ACTUAL DUCT LGH       | 41     | 52    | 53   | 58       | 53   | 59    | 45     | 41    | 1     | 1        | 1     | 1       | 1      | 1                     | 1     | 1        | 1     | 15    | 1      | 1     | 1    | 1        | 1    | 1     | 1      |
| EQUIVALENT LENGTH     | 185    | 195   | 165  | 165      | 215  | 265   | 165    | 190   | 0     | 0        | 0     | 0       | 0      | 0                     | 0     | 0        | 0     | 150   | 0      | 0     | 0    | 0        | 0    | 0     | 0      |
| TOTAL EFFECTIVE LH    | 226    | 247   | 218  | 223      | 268  | 324   | 210    | 231   | 1     | 1        | 1     | 1       | 1      | 1                     | 1     | 1        | 1     | 165   | 0      | 0     | 0    | 0        | 0    | 0     | 0      |
| ADJUSTED PRESSURE     | 0.07   | 0.06  | 0.07 | 0.07     | 0.06 | 0.05  | 0.07   | 0.06  | 14.80 | 14.80    | 14.80 | 14.80   | 14.80  | 14.80                 | 14.80 | 14.80    | 14.80 | 0.09  | 0.09   | 0.09  | 0.09 | 0.09     | 0.09 | 0.09  | 0.09   |
| ROUND DUCT SIZE       | 5.9    | 6     | 5.9  | 5.9      | 6    | 6     | 9.9    | 6     | 0     | 0        | 0     | 0       | 0      | 0                     | 0     | 0        | 0     | 7     | 0      | 0     | 0    | 0        | 0    | 0     | 0      |
| INLET GRILL SIZE      | 8      | 8     | 8    | 8        | 8    | 8     | 8      | 8     | 0     | 0        | 0     | 0       | 0      | 0                     | 0     | 0        | 0     | 8     | 0      | 0     | 0    | 0        | 0    | 0     | 0      |
| INLET GRILL SIZE      | 14     | 14    | 14   | 14       | 14   | 14    | 30     | 14    | 0     | 0        | 0     | 0       | 0      | 0                     | 0     | 0        | 0     | 14    | 0      | 0     | 0    | 0        | 0    | 0     | 0      |

TYPE: MOUNTAINASH 5  
 SITE NAME: RUSSEL GARDENS PHASE 3

 LO # 87366  
 LOT 268

**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  | 2 @ 21.2 cfm | 42.4 cfm    |
| Other Bedrooms             | 3 @ 10.6 cfm | 31.8 cfm    |
| Kitchen & Bathrooms        | 5 @ 10.6 cfm | 53 cfm      |
| Other Rooms                | 7 @ 10.6 cfm | 74.2 cfm    |
| Table 9.32.3.A. TOTAL      |              | 201.4 cfm   |

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

| SUPPLEMENTAL VENTILATION CAPACITY |           | 9.32.3.6. |
|-----------------------------------|-----------|-----------|
| Total Ventilation Capacity        | 201.4 cfm |           |
| Less Principal Ventil. Capacity   | 79.5 cfm  |           |
| Required Supplemental Capacity    | 121.9 cfm |           |

| PRINCIPAL EXHAUST FAN CAPACITY                   |                |
|--------------------------------------------------|----------------|
| Model: VANEE 65H                                 | Location: BSMT |
| 79.5 cfm                                         | 3.0 sones      |
| <input checked="" type="checkbox"/> HVI Approved |                |

| PRINCIPAL EXHAUST HEAT LOSS CALCULATION |        |        |        |
|-----------------------------------------|--------|--------|--------|
| CFM                                     | ΔT °F  | FACTOR | % LOSS |
| 79.5 CFM                                | X 71 F | X 1.08 | X 0.25 |

| SUPPLEMENTAL FANS |             | PANASONIC |                                         |
|-------------------|-------------|-----------|-----------------------------------------|
| Location          | Model       | cfm       | HVI Sones                               |
| ENS               | FV-05-11VK1 | 50        | <input checked="" type="checkbox"/> 0.3 |
| ENS-2             | FV-05-11VK1 | 50        | <input checked="" type="checkbox"/> 0.3 |
| S-ENS             | FV-05-11VK1 | 50        | <input checked="" type="checkbox"/> 0.3 |
| WIR               | FV-05-11VK1 | 50        | <input checked="" type="checkbox"/> 0.3 |

| HEAT RECOVERY VENTILATOR                      |                                                  | 9.32.3.11. |
|-----------------------------------------------|--------------------------------------------------|------------|
| Model: VANEE 65H                              |                                                  |            |
| 155 cfm high                                  | 64 cfm low                                       |            |
| 75 % Sensible Efficiency @ 32 deg F (0 deg C) | <input checked="" type="checkbox"/> HVI Approved |            |

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

| BUILDER: 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:                                                                                                         | August-20               |

| CSA F280-12 Residential Heat Loss and Heat Gain Calculations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                                                                 |                                                                                                                                         |                                                                                     |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------|-------------------|-----------------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------------------------------|-------|-------|--------|-------|---------|--------|------|--------|-------|-------|-----|--------|-------|--------|---|---|-------|--------|---|---|--------------|--------|--|--|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------|-------|--------------------------------|-------|-------------------------------|--|--|--|--|--|--------------------|---------------------|-------|-------|-------------------------|----|-----|----|----|-------------------------|----|----|---|----|
| Formula Sheet (For Air Leakage / Ventilation Calculation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                      |                                                                 |                                                                                                                                         |                                                                                     |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| LO#: 87366                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Model: MOUNTAINASH 5 | Builder: GREENPARK HOMES                                        | Date: 28/08/2020                                                                                                                        |                                                                                     |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| <b>Volume Calculation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                      |                                                                 | <b>Air Change &amp; Delta T Data</b>                                                                                                    |                                                                                     |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| <b>House Volume</b><br><table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> </thead> <tbody> <tr><td>Bsmt</td><td>1459</td><td>9</td><td>13131</td></tr> <tr><td>First</td><td>1459</td><td>11</td><td>15465.4</td></tr> <tr><td>Second</td><td>1832</td><td>9</td><td>16488</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>45,084.4 ft³</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>1276.6 m³</td></tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                        |                      |                                                                 | Level                                                                                                                                   | Floor Area (ft²)                                                                    | Floor Height (ft) | Volume (ft³)      | Bsmt                                                            | 1459                                                | 9                                                                                   | 13131 | First | 1459   | 11    | 15465.4 | Second | 1832 | 9      | 16488 | Third | 0   | 9      | 0     | Fourth | 0 | 9 | 0     | Total: |   |   | 45,084.4 ft³ | Total: |  |  | 1276.6 m³ | <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:80%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width:20%;">0.343</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.123</td> </tr> </table><br><table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="5" style="text-align: center;">Design Temperature Difference</th> </tr> <tr> <th></th> <th>T<sub>in</sub> °C</th> <th>T<sub>out</sub> °C</th> <th>ΔT °C</th> <th>ΔT °F</th> </tr> <tr> <td>Winter DTD<sub>h</sub></td> <td>22</td> <td>-17</td> <td>39</td> <td>71</td> </tr> <tr> <td>Summer DTD<sub>c</sub></td> <td>24</td> <td>31</td> <td>7</td> <td>13</td> </tr> </table> |  | WINTER NATURAL AIR CHANGE RATE | 0.343 | SUMMER NATURAL AIR CHANGE RATE | 0.123 | Design Temperature Difference |  |  |  |  |  | T <sub>in</sub> °C | T <sub>out</sub> °C | ΔT °C | ΔT °F | Winter DTD <sub>h</sub> | 22 | -17 | 39 | 71 | Summer DTD <sub>c</sub> | 24 | 31 | 7 | 13 |
| Level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Floor Area (ft²)     | Floor Height (ft)                                               | Volume (ft³)                                                                                                                            |                                                                                     |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| Bsmt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1459                 | 9                                                               | 13131                                                                                                                                   |                                                                                     |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| First                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1459                 | 11                                                              | 15465.4                                                                                                                                 |                                                                                     |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| Second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1832                 | 9                                                               | 16488                                                                                                                                   |                                                                                     |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| Third                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0                    | 9                                                               | 0                                                                                                                                       |                                                                                     |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| Fourth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0                    | 9                                                               | 0                                                                                                                                       |                                                                                     |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| Total:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                                                                 | 45,084.4 ft³                                                                                                                            |                                                                                     |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| Total:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                                                                 | 1276.6 m³                                                                                                                               |                                                                                     |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| WINTER NATURAL AIR CHANGE RATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.343                |                                                                 |                                                                                                                                         |                                                                                     |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| SUMMER NATURAL AIR CHANGE RATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.123                |                                                                 |                                                                                                                                         |                                                                                     |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| Design Temperature Difference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                                                                 |                                                                                                                                         |                                                                                     |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | T <sub>in</sub> °C   | T <sub>out</sub> °C                                             | ΔT °C                                                                                                                                   | ΔT °F                                                                               |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| Winter DTD <sub>h</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 22                   | -17                                                             | 39                                                                                                                                      | 71                                                                                  |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| Summer DTD <sub>c</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 24                   | 31                                                              | 7                                                                                                                                       | 13                                                                                  |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| <b>5.2.3.1 Heat Loss due to Air Leakage</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                                                                 | <b>6.2.6 Sensible Gain due to Air Leakage</b>                                                                                           |                                                                                     |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| $HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ <p>0.343 x 354.62 x 39 °C x 1.2 = 5730 W</p> <p>= 19552 Btu/h</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |                                                                 | $HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ <p>= 0.123 x 354.62 x 7 °C x 1.2 = 372 W</p> <p>= 1269 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 71 °F x 1.08 x 0.25 = 1515 Btu/h</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                                                                 | $HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>80 CFM x 13 °F x 1.08 x 0.25 = 275 Btu/h</p>                              |                                                                                     |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| <b>5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                                                                 |                                                                                                                                         |                                                                                     |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| $HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$ <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HL<sub>airbv</sub> Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HL<sub>clevel</sub>)</th> <th>Air Leakage Heat Loss Multiplier (LF x HL<sub>airbv</sub> / HL<sub>clevel</sub>)</th> </tr> </thead> <tbody> <tr><td>1</td><td>0.5</td><td rowspan="5" style="text-align: center; vertical-align: middle;">19,552</td><td>7,992</td><td>1.223</td></tr> <tr><td>2</td><td>0.3</td><td>12,095</td><td>0.485</td></tr> <tr><td>3</td><td>0.2</td><td>14,078</td><td>0.278</td></tr> <tr><td>4</td><td>0</td><td>0</td><td>0.000</td></tr> <tr><td>5</td><td>0</td><td>0</td><td>0.000</td></tr> </tbody> </table> <p>*HL<sub>airbv</sub> = Air leakage heat loss + ventilation heat loss<br/> *For a balanced or supply only ventilation system HL<sub>airr</sub> = 0</p> |                      |                                                                 |                                                                                                                                         |                                                                                     | Level             | Level Factor (LF) | HL <sub>airbv</sub> Air Leakage + Ventilation Heat Loss (Btu/h) | Level Conductive Heat Loss: (HL <sub>clevel</sub> ) | Air Leakage Heat Loss Multiplier (LF x HL <sub>airbv</sub> / HL <sub>clevel</sub> ) | 1     | 0.5   | 19,552 | 7,992 | 1.223   | 2      | 0.3  | 12,095 | 0.485 | 3     | 0.2 | 14,078 | 0.278 | 4      | 0 | 0 | 0.000 | 5      | 0 | 0 | 0.000        |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| Level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Level Factor (LF)    | HL <sub>airbv</sub> Air Leakage + Ventilation Heat Loss (Btu/h) | Level Conductive Heat Loss: (HL <sub>clevel</sub> )                                                                                     | Air Leakage Heat Loss Multiplier (LF x HL <sub>airbv</sub> / HL <sub>clevel</sub> ) |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.5                  | 19,552                                                          | 7,992                                                                                                                                   | 1.223                                                                               |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.3                  |                                                                 | 12,095                                                                                                                                  | 0.485                                                                               |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.2                  |                                                                 | 14,078                                                                                                                                  | 0.278                                                                               |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0                    |                                                                 | 0                                                                                                                                       | 0.000                                                                               |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0                    |                                                                 | 0                                                                                                                                       | 0.000                                                                               |                   |                   |                                                                 |                                                     |                                                                                     |       |       |        |       |         |        |      |        |       |       |     |        |       |        |   |   |       |        |   |   |              |        |  |  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                |       |                                |       |                               |  |  |  |  |  |                    |                     |       |       |                         |    |     |    |    |                         |    |    |   |    |

**HEAT LOSS AND GAIN SUMMARY SHEET**

|                             |                  |                                     |
|-----------------------------|------------------|-------------------------------------|
| <b>MODEL:</b> MOUNTAINASH 5 | <b>LOT 268</b>   | <b>BUILDER:</b> GREENPARK HOMES     |
| <b>SFQT:</b> 3291           | <b>LO#</b> 87366 | <b>SITE:</b> RUSSEL GARDENS PHASE 3 |

**DESIGN ASSUMPTIONS**

|                      |           |                                |           |
|----------------------|-----------|--------------------------------|-----------|
| <b>HEATING</b>       | <b>°F</b> | <b>COOLING</b>                 | <b>°F</b> |
| OUTDOOR DESIGN TEMP. | 1         | OUTDOOR DESIGN TEMP.           | 88        |
| INDOOR DESIGN TEMP.  | 72        | INDOOR DESIGN TEMP. (MAX 75°F) | 75        |

**BUILDING DATA**

|                                            |                       |                                  |          |
|--------------------------------------------|-----------------------|----------------------------------|----------|
| <b>ATTACHMENT:</b>                         | DETACHED              | <b># OF STORIES (+BASEMENT):</b> | 3        |
| <b>FRONT FACES:</b>                        | EAST                  | <b>ASSUMED (Y/N):</b>            | Y        |
| <b>AIR CHANGES PER HOUR:</b>               | 3.57                  | <b>ASSUMED (Y/N):</b>            | Y        |
| <b>AIR TIGHTNESS CATEGORY:</b>             | AVERAGE               | <b>ASSUMED (Y/N):</b>            | Y        |
| <b>WIND EXPOSURE:</b>                      | SHELTERED             | <b>ASSUMED (Y/N):</b>            | Y        |
| <b>HOUSE VOLUME (ft³):</b>                 | 45084.4               | <b>ASSUMED (Y/N):</b>            | Y        |
| <b>INTERNAL SHADING:</b>                   | BLINDS/CURTAINS       | <b>ASSUMED OCCUPANTS:</b>        | 5        |
| <b>INTERIOR LIGHTING LOAD (Btu/h/ft²):</b> | 1.27                  | <b>DC BRUSHLESS MOTOR (Y/N):</b> | Y        |
| <b>FOUNDATION CONFIGURATION</b>            | BCIN_1                | <b>DEPTH BELOW GRADE:</b>        | 7.0 ft   |
| <b>LENGTH:</b> 54.0 ft                     | <b>WIDTH:</b> 36.0 ft | <b>EXPOSED PERIMETER:</b>        | 180.0 ft |

**2012 OBC - COMPLIANCE PACKAGE****Component****Compliance Package****A1****Nominal Min. Eff.**

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

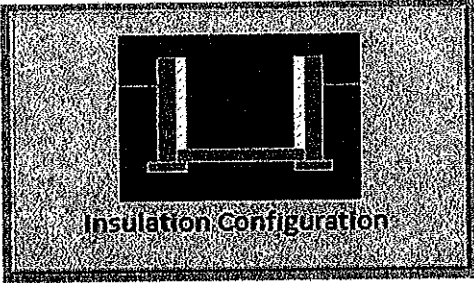
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



## Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

| Weather Station Description    |                                           |                                                                                                                 |
|--------------------------------|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Province:                      | Ontario                                   |                                                                                                                 |
| Region:                        | Hamilton                                  |                                                                                                                 |
| Site Description               |                                           |                                                                                                                 |
| Soil Conductivity:             | Normal conductivity: dry sand, loam, clay |                                                                                                                 |
| Water Table:                   | Normal (7-10 m, 23-33 ft)                 |                                                                                                                 |
| Foundation Dimensions          |                                           |                                                                                                                 |
| Floor Length (m):              | 16.5                                      | <br>Insulation Configuration |
| Floor Width (m):               | 11.0                                      |                                                                                                                 |
| Exposed Perimeter (m):         | 0.0                                       |                                                                                                                 |
| Wall Height (m):               | 2.7                                       |                                                                                                                 |
| Depth Below Grade (m):         | 2.13                                      |                                                                                                                 |
| Window Area (m <sup>2</sup> ): | 2.0                                       |                                                                                                                 |
| Door Area (m <sup>2</sup> ):   | 1.9                                       |                                                                                                                 |
| Radiant Slab                   |                                           |                                                                                                                 |
| Heated Fraction of the Slab:   | 0                                         |                                                                                                                 |
| Fluid Temperature (°C):        | 33                                        |                                                                                                                 |
| Design Months                  |                                           |                                                                                                                 |
| Heating Month                  | 1                                         |                                                                                                                 |
| Foundation Loads               |                                           |                                                                                                                 |
| Heating Load (Watts):          | 1556                                      |                                                                                                                 |

TYPE: MOUNTAINASH 5  
LO# 87366

LOT 268

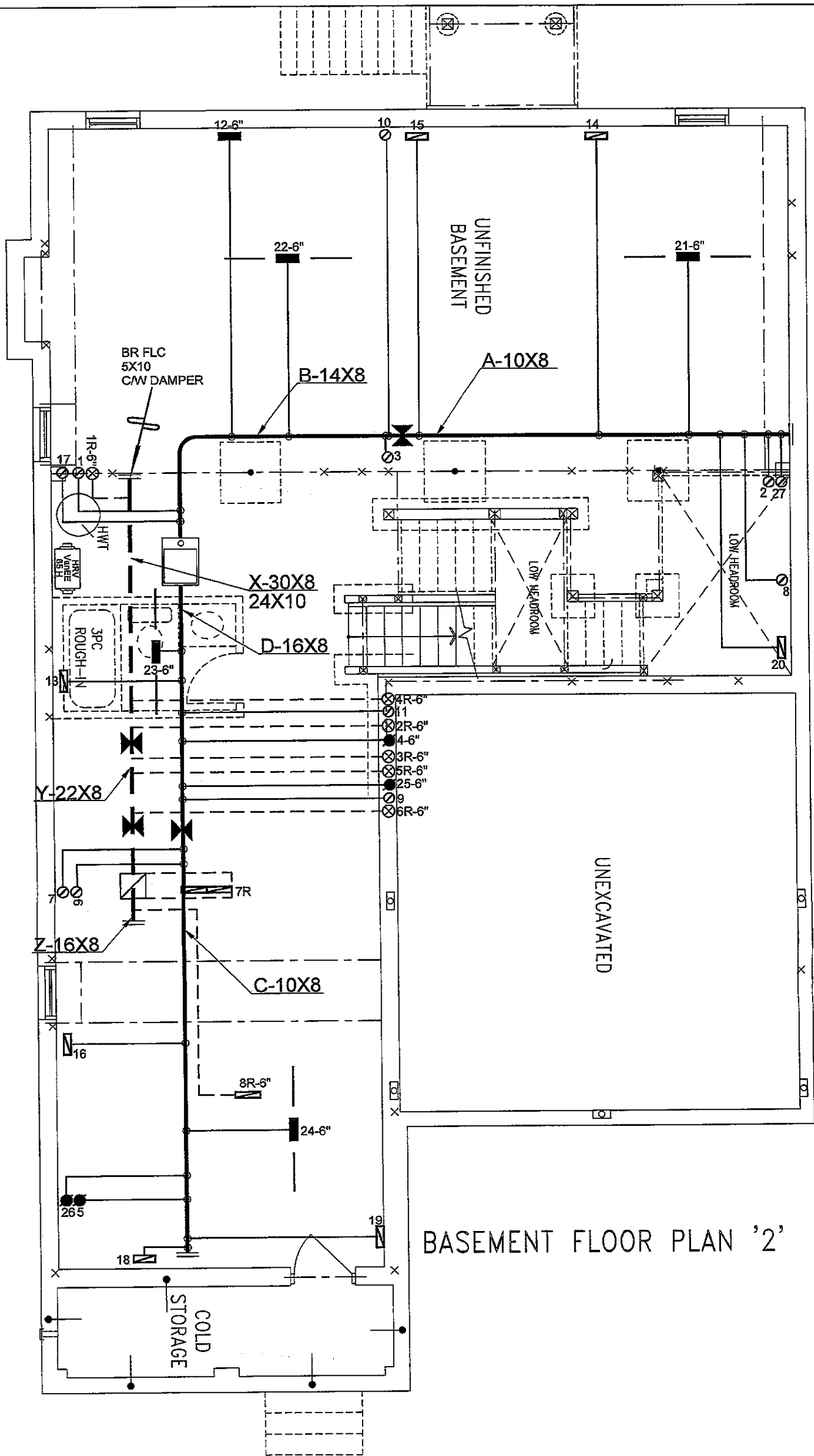
## Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

| Weather Station Description       |                            |                        |       |
|-----------------------------------|----------------------------|------------------------|-------|
| Province:                         | Ontario                    |                        |       |
| Region:                           | Hamilton                   |                        |       |
| 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):       | 7.80                       |                        |       |
| Building Configuration            |                            |                        |       |
| Type:                             | Detached                   |                        |       |
| Number of Stories:                | Two                        |                        |       |
| Foundation:                       | Full                       |                        |       |
| House Volume (m <sup>3</sup> ):   | 1276.6                     |                        |       |
| Air Leakage/Ventilation           |                            |                        |       |
| Air Tightness Type:               | Present (1961-) (3.57 ACH) |                        |       |
| Custom BDT Data:                  | ELA @ 10 Pa.               | 1701.8 cm <sup>2</sup> |       |
|                                   | 3.57                       | ACH @ 50 Pa            |       |
| Mechanical Ventilation (L/s):     | Total Supply               | Total Exhaust          |       |
|                                   | 37.5                       | 37.5                   |       |
| Flue Size                         |                            |                        |       |
| Flue #:                           | #1                         | #2                     | #3 #4 |
| Diameter (mm):                    | 0                          | 0                      | 0 0   |
| Natural Infiltration Rates        |                            |                        |       |
| Heating Air Leakage Rate (ACH/H): | 0.343                      |                        |       |
| Cooling Air Leakage Rate (ACH/H): | 0.123                      |                        |       |

TYPE: MOUNTAINASH 5  
LO# 87366

LOT 268



BASEMENT FLOOR PLAN '2'

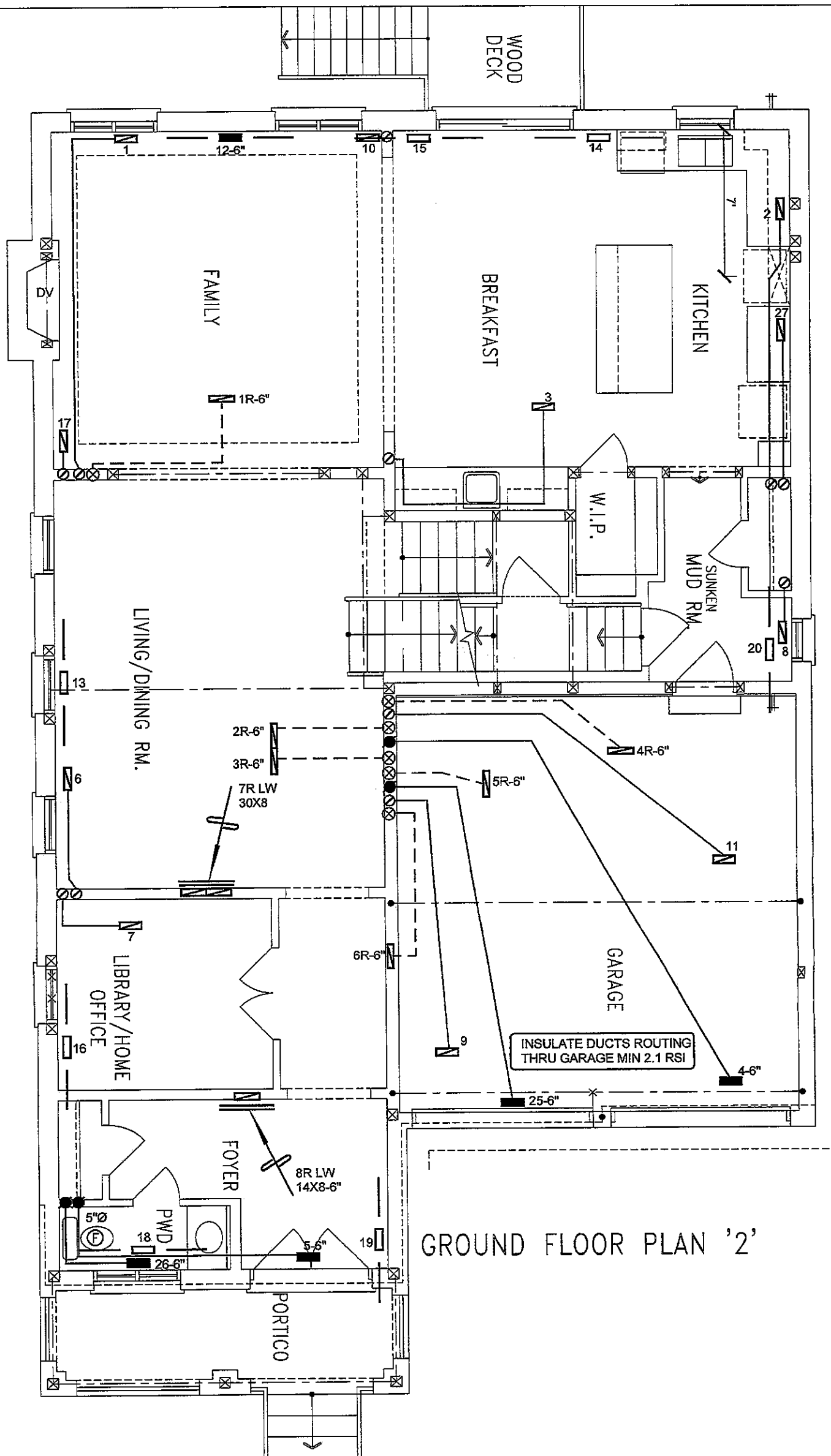
LOT 268  
CSA-F280-12  
PACKAGE A1

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.

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

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|                                                                     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                    |           |                                                                                                                                                              |    |   |   |                                                       |              |
|---------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----|---|---|-------------------------------------------------------|--------------|
| Client<br><b>GREENPARK HOMES</b>                                    |  | <div><p>375 Finley Ave. Suite 202 - Ajax, Ontario<br/>L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375<br/>Email: info@hvacdesigns.ca<br/>Web: www.hvacdesigns.ca<br/>Specializing in Residential Mechanical Design Services</p><p>Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper.<br/>Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.</p></div> | HEAT LOSS 55869 BTU/H<br>UNIT DATA |           | # OF RUNS S/A R/A FANS                                                                                                                                       |    |   |   | Sheet Title<br><b>BASEMENT<br/>HEATING<br/>LAYOUT</b> |              |
| Project Name<br><b>RUSSEL GARDENS PHASE 3<br/>HAMILTON, ONTARIO</b> |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MAKE<br><b>GOODMAN</b>             | 3RD FLOOR |                                                                                                                                                              |    |   |   | Date<br><b>AUG/2020</b>                               |              |
|                                                                     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MODEL<br><b>GMEC960603BNA</b>      | 2ND FLOOR |                                                                                                                                                              | 15 | 6 | 4 |                                                       |              |
|                                                                     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | INPUT<br><b>60</b>                 | 1ST FLOOR |                                                                                                                                                              | 8  | 2 | 3 |                                                       |              |
|                                                                     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | OUTPUT<br><b>57.6</b>              | BASEMENT  |                                                                                                                                                              | 4  | 1 | 0 |                                                       |              |
| LOT 268<br>MOUNTAINASH 5 3291 sqft                                  |  | COOLING<br><b>3.0</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | TONS                               |           | ALL S/A DIFFUSERS 4 "x10"<br>UNLESS NOTED OTHERWISE<br>ON LAYOUT. ALL S/A RUNS 5"Ø<br>UNLESS NOTED OTHERWISE<br>ON LAYOUT. UNDERCUT<br>DOORS 1" min. FOR R/A |    |   |   | Scale<br><b>3/16" = 1'-0"</b>                         | BCIN# 19669  |
|                                                                     |  | FAN SPEED<br><b>1131</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | cfm @<br>0.5" w.g.                 |           |                                                                                                                                                              |    |   |   | LO#                                                   | <b>87366</b> |



GROUND FLOOR PLAN '2'

LOT 268  
CSA-F280-12  
PACKAGE A1

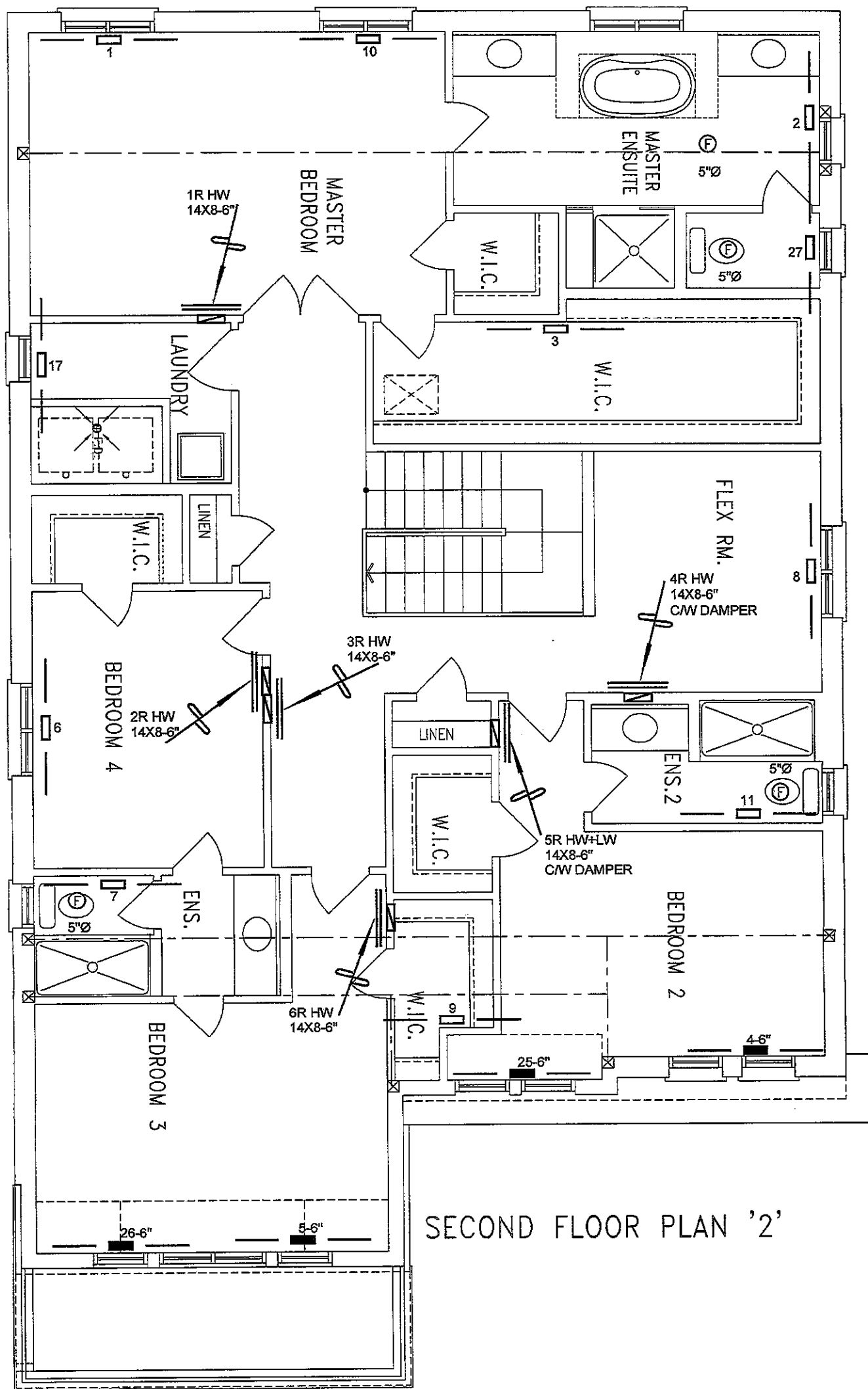
HVAC LEGEND

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

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

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|                                                                     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                          |  |
|---------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|--|
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| Project Name<br><b>RUSSEL GARDENS PHASE 3<br/>HAMILTON, ONTARIO</b> |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Date<br><b>AUG/2020</b>                                  |  |
| <b>LOT 268<br/>MOUNTAINASH 5 3291 sqft</b>                          |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Scale<br><b>3/16" = 1'-0"</b>                            |  |
|                                                                     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>BCIN# 19669</b>                                       |  |
|                                                                     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>LO# 87366</b>                                         |  |



SECOND FLOOR PLAN '2'

LOT 268  
CSA-F280-12  
PACKAGE A1

I MICHAEL OROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 32.5 OF THE BUILDING CODE.  
*Michael O'Rourke*  
Michael O'Rourke, BCIN# 19669  
HVAC DESIGNS LTD.

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

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|                                                             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                  |  |
|-------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--|
| Client<br>GREENPARK HOMES                                   |  | <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.<br/>Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.</div> | Sheet Title<br>SECOND FLOOR<br>HEATING<br>LAYOUT |  |
| Project Name<br>RUSSEL GARDENS PHASE 3<br>HAMILTON, ONTARIO |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Date<br>AUG/2020                                 |  |
| LOT 268<br>MOUNTAINASH 5 3291 sqft                          |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Scale<br>3/16" = 1'-0"                           |  |
|                                                             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | BCIN# 19669<br>LO# 87366                         |  |