

SITE NAME: LECCO RIDGE

BUILDER: GREENPARK HOMES

TYPE: IVY 12

GFA: 2404

DATE: Jan-17

LO# 71720

WINTER NATURAL AIR CHANGE RATE 0.268

SUMMER NATURAL AIR CHANGE RATE 0.090

HEAT LOSS ΔT °F. 72

HEAT GAIN ΔT °F. 14

CSA-F280-12

ENERGYSTAR

| ROOM USE | EXP. WALL | CLG. HT. | FACTORS | LOSS GAIN | MBR | ENS | BED-2 | BED-3 | BED-4 | BATH | | | | |
|--------------------------------|-----------|----------|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----|------|------|-----|
| | | | | | 33 | 10 | 13 | 30 | 14 | 12 | | | | |
| | | | | | 9 | 9 | 9 | 9 | 9 | 10 | | | | |
| GRS.WALL AREA | | | | | 297 | 90 | 117 | 270 | 126 | 120 | | | | |
| GLAZING | | | | | LOSS GAIN | LOSS GAIN | LOSS GAIN | LOSS GAIN | LOSS GAIN | LOSS GAIN | | | | |
| NORTH | 20.4 | 16.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EAST | 20.4 | 41.9 | 0 | 0 | 0 | 0 | 20 | 408 | 838 | 42 | 857 | 1760 | 0 | 0 |
| SOUTH | 20.4 | 25.3 | 30 | 612 | 758 | 0 | 0 | 0 | 30 | 612 | 758 | 33 | 673 | 834 |
| WEST | 20.4 | 41.9 | 30 | 612 | 1257 | 18 | 367 | 754 | 0 | 0 | 0 | 0 | 0 | 0 |
| SKYLT. | 35.7 | 102.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| DOORS | 24.1 | 4.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NET EXPOSED WALL | 3.1 | 0.6 | 237 | 727 | 141 | 72 | 221 | 43 | 97 | 298 | 58 | 198 | 607 | 117 |
| NET EXPOSED BSMT WALL ABOVE GR | 3.6 | 0.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EXPOSED CLG | 1.4 | 0.7 | 270 | 391 | 194 | 210 | 304 | 161 | 145 | 210 | 104 | 116 | 168 | 84 |
| NO ATTIC EXPOSED CLG | 2.3 | 1.2 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 47 | 23 | 40 | 93 | 46 |
| EXPOSED FLOOR | 2.3 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | 165 | 385 | 75 | 0 | 0 | 0 |
| BASEMENT/CRAWL HEAT LOSS | | | 0 | | | 0 | | | 0 | | | 0 | | |
| SLAB ON GRADE HEAT LOSS | | | 0 | | | 0 | | | 0 | | | 0 | | |
| SUBTOTAL HT LOSS | | | 2342 | | | 892 | | | 1348 | | | 2338 | | |
| SUB TOTAL HT GAIN | | | | 2350 | | 948 | | | 1098 | | | 2766 | | |
| LEVEL FACTOR / MULTIPLIER | 0.20 | 0.24 | | | 0.20 | 0.24 | 0.20 | 0.24 | 0.20 | 0.24 | | 0.20 | 0.24 | |
| AIR CHANGE HEAT LOSS | | | 560 | | | 213 | | | 322 | | | 569 | | |
| AIR CHANGE HEAT GAIN | | | | 169 | | 64 | | | 74 | | | 188 | | |
| DUCT LOSS | | | 0 | | | 0 | | | 167 | | | 0 | | |
| DUCT GAIN | | | 0 | | | 0 | | | 203 | | | 0 | | |
| HEAT GAIN PEOPLE | 240 | 2 | 480 | | 0 | 0 | | | 1 | 240 | | 1 | 240 | |
| HEAT GAIN APPLIANCES/LIGHTS | | | 614 | | 0 | 0 | | | 614 | | | 614 | | |
| TOTAL HT LOSS BTU/H | | | 2903 | | | 1106 | | | 1837 | | | 2897 | | |
| TOTAL HT GAIN x 1.3 BTU/H | | | 4684 | | | 1316 | | | 2897 | | | 4949 | | |

TOWN OF MILTON
PLANNING AND DEVELOPMENT
IVY 12F MODEL

BUILDING: REVIEWED
SCOTT SHERRIFFS APR 7, 2017
PLANS EXAMINER DATE

Neither the issuance of a permit nor carrying out of inspections by the Town of Milton relieves the owner from full responsibility for compliance with the provisions of the Ontario Building Code Act and the Ontario Building Code, both as amended, as well as other applicable statutes and regulations of the Province of Ontario, By-laws of the Region of Halton and Town of Milton

RECEIVED
TOWN OF MILTON
MAR 29, 2017
IVY 12F
BUILDING DIVISION

| ROOM USE | EXP. WALL | CLG. HT. | FACTORS | LOSS GAIN | OFFICE | KT/FM | DIN | LAUN | WR | FOY | MUD | | | | | | | | |
|--------------------------------|-----------|----------|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|------|-----|------|------|----|------|------|
| | | | | | 42 | 45 | 14 | 0 | 12 | 10 | 12 | | | | | | | | |
| | | | | | 10 | 10 | 10 | 9 | 10 | 10 | 10 | | | | | | | | |
| GRS.WALL AREA | | | | | 420 | 450 | 140 | 0 | 120 | 100 | 120 | | | | | | | | |
| GLAZING | | | | | LOSS GAIN | LOSS GAIN | LOSS GAIN | LOSS GAIN | LOSS GAIN | LOSS GAIN | LOSS GAIN | | | | | | | | |
| NORTH | 20.4 | 16.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EAST | 20.4 | 41.9 | 37 | 755 | 1551 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SOUTH | 20.4 | 25.3 | 37 | 755 | 935 | 37 | 755 | 935 | 31 | 632 | 783 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WEST | 20.4 | 41.9 | 0 | 0 | 0 | 52 | 1061 | 2179 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SKYLT. | 35.7 | 102.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| DOORS | 24.1 | 4.7 | 0 | 0 | 0 | 20 | 481 | 93 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NET EXPOSED WALL | 3.1 | 0.6 | 346 | 1061 | 205 | 341 | 1046 | 202 | 109 | 334 | 65 | 0 | 0 | 0 | 120 | 368 | 71 | 53 | 163 |
| NET EXPOSED BSMT WALL ABOVE GR | 3.6 | 0.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EXPOSED CLG | 1.4 | 0.7 | 8 | 12 | 6 | 8 | 12 | 6 | 0 | 0 | 0 | 154 | 223 | 111 | 0 | 0 | 0 | 0 | 0 |
| NO ATTIC EXPOSED CLG | 2.3 | 1.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EXPOSED FLOOR | 2.3 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 77 | 180 | 35 | 0 | 0 | 0 | 0 | 0 |
| BASEMENT/CRAWL HEAT LOSS | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | |
| SLAB ON GRADE HEAT LOSS | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | |
| SUBTOTAL HT LOSS | | | 2583 | | | 3365 | | | 967 | | | 403 | | | 368 | | | 1293 | |
| SUB TOTAL HT GAIN | | | | 2696 | | | | | 848 | | | 146 | | | 71 | | | 250 | |
| LEVEL FACTOR / MULTIPLIER | 0.30 | 0.36 | | | | 0.30 | 0.36 | | 0.30 | 0.36 | | 0.30 | 0.36 | | 0.30 | 0.36 | | 0.30 | 0.36 |
| AIR CHANGE HEAT LOSS | | | 941 | | | 1222 | | | 352 | | | 96 | | | 134 | | | 471 | |
| AIR CHANGE HEAT GAIN | | | | 183 | | 232 | | | 57 | | | 10 | | | 5 | | | 17 | |
| DUCT LOSS | | | 0 | | | 0 | | | 0 | | | 50 | | | 0 | | | 0 | |
| DUCT GAIN | | | 0 | | | 0 | | | 0 | | | 77 | | | 0 | | | 0 | |
| HEAT GAIN PEOPLE | 240 | 0 | 0 | | 0 | 1 | 240 | | 0 | | | 0 | | | 0 | | | 0 | |
| HEAT GAIN APPLIANCES/LIGHTS | | | 614 | | 0 | 614 | | | 614 | | | 614 | | | 0 | | | 614 | |
| TOTAL HT LOSS BTU/H | | | 3523 | | | 4576 | | | 1319 | | | 549 | | | 502 | | | 1764 | |
| TOTAL HT GAIN x 1.3 BTU/H | | | 4541 | | | 5850 | | | 1974 | | | 1100 | | | 99 | | | 347 | |

TOTAL HEAT GAIN BTU/H: 34732

TONS: 2.89

LOSS DUE TO VENTILATION LOAD BTU/H: 2286

STRUCTURAL HEAT LOSS: 37040

TOTAL COMBINED HEAT LOSS BTU/H: 39327

SITE NAME: LECCO RIDGE
BUILDER: GREENPARK HOMES

TYPE: IVY 12

DATE: Jan-17

GFA: 2404 LO# 71720

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 37,040 TOTAL HEAT GAIN 34,290
AIR FLOW RATE CFM 30.53 AIR FLOW RATE CFM 32.98

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

#AMANA
AMEC960603BNA 60
FAN SPEED LOW

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

| RUN COUNT | 4th | 3rd | 2nd | 1st | Bas |
|-----------|-----|-----|-----|-----|-----|
| S/A | 0 | 0 | 9 | 9 | 5 |
| R/A | 0 | 0 | 4 | 3 | 1 |

plenum pressure s/a 0.18
max s/a dif press. loss 0.02
min adjusted pressure s/a 0.16

r/a pressure 0.17
r/a grille press. Loss 0.02
adjusted pressure r/a 0.15

MEDLOW
MEDIUM
MEDIUM HIGH
HIGH 1131

DESIGN CFM = 1131
CFM @ .6" E.S.P.

All S/A diffusers 4"x10" unless noted otherwise on layout.
All S/A runs 5"Ø unless noted otherwise on layout.

TEMPERATURE RISE 47 °F

| RUN # | 1 | 2 | 4 | 5 | 6 | 7 | 8 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---------------------------|------|------|-------|-------|-------|------|-------|------|--------|--------|-------|-------|-------|------|------|------|------|------|------|------|------|------|
| ROOM NAME | MBR | ENS | BED-2 | BED-3 | BED-4 | BATH | BED-3 | MBR | OFFICE | OFFICE | KT/FM | KT/FM | KT/FM | DIN | LAUN | W/R | FOY | MUD | BAS | BAS | BAS | BAS |
| RM LOSS MBH. | 1.45 | 1.11 | 1.84 | 1.45 | 1.52 | 1.16 | 1.45 | 1.45 | 1.76 | 1.76 | 1.53 | 1.53 | 1.53 | 1.32 | 0.55 | 0.50 | 1.76 | 1.07 | 2.46 | 2.46 | 2.46 | 2.46 |
| CFM PER RUN HEAT | 44 | 34 | 56 | 44 | 46 | 36 | 44 | 44 | 54 | 54 | 47 | 47 | 47 | 40 | 17 | 15 | 54 | 33 | 75 | 75 | 75 | 75 |
| RM GAIN MBH. | 2.34 | 1.32 | 2.90 | 2.47 | 2.53 | 0.96 | 2.47 | 2.34 | 2.27 | 2.27 | 1.95 | 1.95 | 1.95 | 1.97 | 1.10 | 0.10 | 0.35 | 1.01 | 0.41 | 0.41 | 0.41 | 0.41 |
| CFM PER RUN COOLING | 77 | 43 | 96 | 82 | 83 | 32 | 82 | 77 | 75 | 75 | 64 | 64 | 64 | 65 | 36 | 3 | 11 | 33 | 13 | 13 | 13 | 13 |
| ADJUSTED PRESSURE | 0.17 | 0.17 | 0.16 | 0.16 | 0.16 | 0.17 | 0.16 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| ACTUAL DUCT LGH. | 43 | 46 | 45 | 51 | 27 | 35 | 51 | 40 | 27 | 35 | 28 | 36 | 38 | 20 | 34 | 23 | 17 | 13 | 32 | 28 | 18 | 15 |
| EQUIVALENT LENGTH | 130 | 155 | 155 | 170 | 210 | 140 | 180 | 120 | 110 | 110 | 140 | 120 | 130 | 130 | 175 | 100 | 110 | 180 | 130 | 90 | 120 | 110 |
| TOTAL EFFECTIVE LENGTH | 173 | 201 | 200 | 221 | 237 | 175 | 231 | 160 | 137 | 145 | 168 | 156 | 168 | 150 | 209 | 123 | 127 | 193 | 162 | 118 | 138 | 125 |
| ADJUSTED PRESSURE | 0.1 | 0.09 | 0.08 | 0.07 | 0.07 | 0.1 | 0.07 | 0.11 | 0.13 | 0.12 | 0.1 | 0.11 | 0.1 | 0.11 | 0.08 | 0.14 | 0.14 | 0.09 | 0.11 | 0.15 | 0.12 | 0.14 |
| ROUND DUCT SIZE | 5 | 4 | 6 | 6 | 6 | 4 | 6 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 |
| HEATING VELOCITY (ft/min) | 323 | 390 | 286 | 224 | 235 | 413 | 224 | 323 | 396 | 396 | 345 | 345 | 345 | 294 | 195 | 172 | 620 | 379 | 551 | 551 | 551 | 551 |
| COOLING VELOCITY (ft/min) | 565 | 493 | 489 | 418 | 423 | 367 | 418 | 565 | 551 | 551 | 470 | 470 | 470 | 477 | 413 | 34 | 126 | 379 | 95 | 95 | 95 | 95 |
| OUTLET GRILL SIZE | 3X10 | 3X10 | 4X10 | 4X10 | 4X10 | 3X10 | 4X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 |
| TRUNK | A | A | D | C | D | D | C | B | C | C | B | A | A | B | D | D | D | D | A | B | B | D |

RUN # 25
ROOM NAME BAS
RM LOSS MBH. 2.46
CFM PER RUN HEAT 75
RM GAIN MBH. 0.41
CFM PER RUN COOLING 13
ADJUSTED PRESSURE 0.17
ACTUAL DUCT LGH. 29
EQUIVALENT LENGTH 100
TOTAL EFFECTIVE LENGTH 129
ADJUSTED PRESSURE 0.13
ROUND DUCT SIZE 5
HEATING VELOCITY (ft/min) 551
COOLING VELOCITY (ft/min) 95
OUTLET GRILL SIZE 3X10
TRUNK C

RECEIVED
TOWN OF MILTON
MAR 29, 2017
IVY 12F
BUILDING DIVISION

| SUPPLY AIR TRUNK SIZE | | | | | | | | | | | | | | | | | RETURN AIR TRUNK SIZE | | | | | | |
|-----------------------|--------------|------------------|---------------|--------------|---|---|----------------------|---------|--------------|------------------|---------------|--------------|---|---|----------------------|--------------|-----------------------|---------------|--------------|----|---|----------------------|-----|
| | TRUNK CFM | STATIC PRESS. | ROUND DUCT | RECT DUCT | | | VELOCITY (ft/min) | | TRUNK CFM | STATIC PRESS. | ROUND DUCT | RECT DUCT | | | VELOCITY (ft/min) | TRUNK CFM | STATIC PRESS. | ROUND DUCT | RECT DUCT | | | VELOCITY (ft/min) | |
| TRUNK A | 247 | 0.09 | 8.1 | 8 | x | 8 | 556 | TRUNK G | 0 | 0.00 | 0 | 0 | x | 8 | 0 | TRUNK O | 0 | 0.06 | 0 | 0 | x | 8 | 0 |
| TRUNK B | 528 | 0.09 | 10.7 | 14 | x | 8 | 679 | TRUNK H | 0 | 0.00 | 0 | 0 | x | 8 | 0 | TRUNK P | 0 | 0.06 | 0 | 0 | x | 8 | 0 |
| TRUNK C | 271 | 0.07 | 8.9 | 10 | x | 8 | 488 | TRUNK I | 0 | 0.00 | 0 | 0 | x | 8 | 0 | TRUNK Q | 0 | 0.06 | 0 | 0 | x | 8 | 0 |
| TRUNK D | 603 | 0.07 | 12 | 16 | x | 8 | 678 | TRUNK J | 0 | 0.00 | 0 | 0 | x | 8 | 0 | TRUNK R | 0 | 0.06 | 0 | 0 | x | 8 | 0 |
| TRUNK E | 0 | 0.00 | 0 | 0 | x | 8 | 0 | TRUNK K | 0 | 0.00 | 0 | 0 | x | 8 | 0 | TRUNK S | 0 | 0.06 | 0 | 0 | x | 8 | 0 |
| TRUNK F | 0 | 0.00 | 0 | 0 | x | 8 | 0 | TRUNK L | 0 | 0.00 | 0 | 0 | x | 8 | 0 | TRUNK T | 0 | 0.06 | 0 | 0 | x | 8 | 0 |
| | | | | | | | | | | | | | | | | TRUNK U | 0 | 0.06 | 0 | 0 | x | 8 | 0 |
| | | | | | | | | | | | | | | | | TRUNK V | 0 | 0.06 | 0 | 0 | x | 8 | 0 |
| | | | | | | | | | | | | | | | | TRUNK W | 0 | 0.06 | 0 | 0 | x | 8 | 0 |
| | | | | | | | | | | | | | | | | TRUNK X | 826 | 0.06 | 14 | 22 | x | 8 | 676 |
| | | | | | | | | | | | | | | | | TRUNK Y | 305 | 0.06 | 9.7 | 12 | x | 8 | 458 |
| | | | | | | | | | | | | | | | | TRUNK Z | 430 | 0.06 | 11 | 14 | x | 8 | 553 |
| | | | | | | | | | | | | | | | | DROP | 1131 | 0.06 | 15.8 | 24 | x | 10 | 679 |

| | | | | | | | | | | | | | | | | |
|--------------------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| RETURN AIR # | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | | | | | BR |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| AIR VOLUME | 140 | 140 | 80 | 150 | 150 | 160 | 155 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 156 |
| 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 |
| ACTUAL DUCT LGH. | 44 | 42 | 51 | 50 | 27 | 24 | 31 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 14 |
| EQUIVALENT LENGTH | 185 | 225 | 185 | 150 | 230 | 135 | 145 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 135 |
| TOTAL EFFECTIVE LH | 229 | 267 | 236 | 200 | 257 | 159 | 176 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 149 |
| ADJUSTED PRESSURE | 0.06 | 0.06 | 0.06 | 0.07 | 0.06 | 0.09 | 0.08 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 14.80 | 0.10 |
| ROUND DUCT SIZE | 7.2 | 7.2 | 5.9 | 7.1 | 7.4 | 6.9 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6.6 |
| INLET GRILL SIZE | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| INLET GRILL SIZE | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |

TYPE: IVY 12
SITE NAME: LECCO RIDGE

LO # 71720

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

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

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

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

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

| TOTAL VENTILATION CAPACITY | | 9.32.3.3(1) |
|----------------------------|---------------------|------------------|
| Basement + Master Bedroom | <u>2</u> @ 21.2 cfm | <u>42.4</u> cfm |
| Other Bedrooms | <u>3</u> @ 10.6 cfm | <u>31.8</u> cfm |
| Kitchen & Bathrooms | <u>4</u> @ 10.6 cfm | <u>42.4</u> cfm |
| Other Rooms | <u>5</u> @ 10.6 cfm | <u>53.0</u> cfm |
| Table 9.32.3.A. | TOTAL | 169.6 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 |
| More than 5 - Part 6 | TOTAL | 79.5 cfm |

| SUPPLEMENTAL VENTILATION CAPACITY | | 9.32.3.5. |
|-----------------------------------|--------------|-----------|
| Total Ventilation Capacity | <u>169.6</u> | cfm |
| Less Principal Ventil. Capacity | <u>86</u> | cfm |
| Required Supplemental Capacity | <u>83.6</u> | cfm |

| PRINCIPAL EXHAUST FAN CAPACITY | | | |
|--|------------------|--------|--------|
| Model: | VANEE 40H+ | | |
| Location: | BSMT | | |
| <u>86.0</u> cfm | <u>3.0</u> sones | | |
| <input checked="" type="checkbox"/> HVI Approved | | | |
| PRINCIPAL EXHAUST HEAT LOSS CALCULATION | | | |
| CFM | ΔT °F | FACTOR | % LOSS |
| 86.0 CFM | X 72 F | X 1.08 | X 0.34 |

| SUPPLEMENTAL FANS | | NUTONE | HVI | Sones |
|-------------------|-----------|--------|-------------------------------------|-------|
| Location | Model | cfm | | |
| ENS | QTXEN050C | 50 | <input checked="" type="checkbox"/> | 0.3 |
| BATH | QTXEN050C | 50 | <input checked="" type="checkbox"/> | 0.3 |
| W/R | QTXEN050C | 50 | <input checked="" type="checkbox"/> | 0.3 |

| HEAT RECOVERY VENTILATOR | | 9.32.3.11. |
|---------------------------------|--|------------|
| Model: | VANEE 40H+ | |
| <u>86</u> cfm high | <u>37</u> cfm low | |
| <u>66</u> % Sensible Efficiency | <input checked="" type="checkbox"/> HVI Approved | |
| @ 32 deg F (0 deg C) | | |

| LOCATION OF INSTALLATION | |
|--------------------------|----|
| Lot: | C: |
| Township | PI |
| Address | |
| Roll # | |

RECEIVED
TOWN OF MILTON
MAR 29, 2017
IVY 12F
BUILDING DIVISION

| BUILDER: | | GR |
|--------------|--|----|
| Name: | | |
| Address: | | |
| City: | | |
| Telephone #: | | |

TOWN OF MILTON
PLANNING AND DEVELOPMENT
IVY 12F MODEL

BUILDING: REVIEWED
SCOTT SHERRIFFS **APR 7, 2017**
PLANS EXAMINER **DATE**

Neither the issuance of a permit nor carrying out of inspections by the Town of Milton relieves the owner from full responsibility for compliance with the provisions of the Ontario Building Code Act and the Ontario Building Code, both as amended, as well as other applicable statutes and regulations of the Province of Ontario, By-laws of the Region of Halton and Town of Milton

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

| DESIGNER CERTIFICATION | |
|---|-------------------------|
| I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code. | |
| Name: | HVAC Designs Ltd. |
| Signature: | <i>Michael O'Rourke</i> |
| HRAI # | 001820 |
| Date: | January-17 |

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** IVY 12**BUILDER:** GREENPARK HOMES**SFQT:** 2404**LO#** 71720**SITE:** LECCO RIDGE**DESIGN ASSUMPTIONS**

| | | | |
|----------------------|----|--------------------------------|----|
| HEATING | °F | COOLING | °F |
| OUTDOOR DESIGN TEMP. | 0 | OUTDOOR DESIGN TEMP. | 86 |
| INDOOR DESIGN TEMP. | 72 | INDOOR DESIGN TEMP. (MAX 75°F) | 72 |

BUILDING DATA

| | | | |
|-------------------------------------|-----------------|---------------------------|----------|
| ATTACHMENT: | ATTACHED | # OF STORIES (+BASEMENT): | 3 |
| FRONT FACES: | EAST | ASSUMED (Y/N): | Y |
| AIR CHANGES PER HOUR: | 3 | ASSUMED (Y/N): | Y |
| AIR TIGHTNESS CATEGORY: | TIGHT | ASSUMED (Y/N): | Y |
| WIND EXPOSURE: | SHELTERED | ASSUMED (Y/N): | Y |
| HOUSE VOLUME (ft³): | 32656.0 | ASSUMED (Y/N): | Y |
| INTERNAL SHADING: | BLINDS/CURTAINS | ASSUMED OCCUPANTS: | 5 |
| INTERIOR LIGHTING LOAD (Btu/h/ft²): | 1.75 | DC BRUSHLESS MOTOR (Y/N): | Y |
| FOUNDATION CONFIGURATION | BCIN_1 | DEPTH BELOW GRADE: | 6.0 ft |
| LENGTH: 55.0 ft | WIDTH: 26.0 ft | EXPOSED PERIMETER: | 134.0 ft |

| 2012 OBC - COMPLIANCE PACKAGE | | Compliance Package | |
|--|--|--------------------|--|
| Component | | ENERGYSTAR | |
| | | Nominal | |
| Ceiling with Attic Space Minimum RSI (R)-Value | | 50 | |
| Ceiling Without Attic Space Minimum RSI (R)-Value | | 31 | |
| Exposed Floor Minimum RSI (R)-Value | | 31 | |
| Walls Above Grade Minimum RSI (R)-Value | | 20+3.6 | |
| Basement Walls Minimum RSI (R)-Value | | 20 | |
| 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 | |
| Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value | | 10 | |
| Windows and Sliding Glass Doors Maximum U-Value | | ZONE 2 | |
| S Skylights Maximum U-Value | | ZONE 2 | |
| Space Heating Equipment Minimum AFUE | | 0.95 | |
| HRV Minimum Efficiency | | 65% | |
| Domestic Hot Water Heater Minimum EF | | 90% TE | |

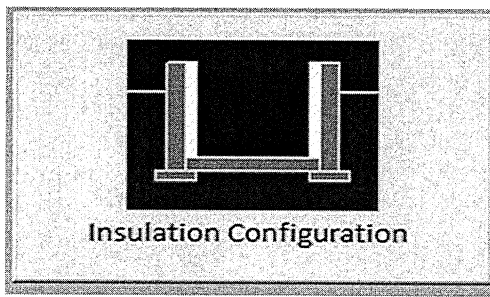


INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

| Weather Station Description | | |
|--------------------------------|---|---|
| Province: | Ontario | |
| Region: | Milton | |
| Site Description | | |
| Soil Conductivity: | Normal conductivity: dry sand, loam, clay | |
| Water Table: | Normal (7-10 m, 23-33 ft) | |
| Foundation Dimensions | | |
| Floor Length (m): | 16.8 |  Insulation Configuration |
| Floor Width (m): | 7.9 | |
| Exposed Perimeter (m): | 40.8 | |
| Wall Height (m): | 2.7 | |
| Depth Below Grade (m): | 1.83 | |
| Window Area (m ²): | 1.3 | |
| Door Area (m ²): | 1.9 | |
| Radiant Slab | | |
| Heated Fraction of the Slab: | 0 | |
| Fluid Temperature (°C): | 33 | |
| Design Months | | |
| Heating Month | 1 | |
| Foundation Loads | | |
| Heating Load (Watts): | | 1297 |

TYPE: IVY 12
LO# 71720RECEIVED
TOWN OF MILTON
MAR 29, 2017
IVY 12F
BUILDING DIVISION

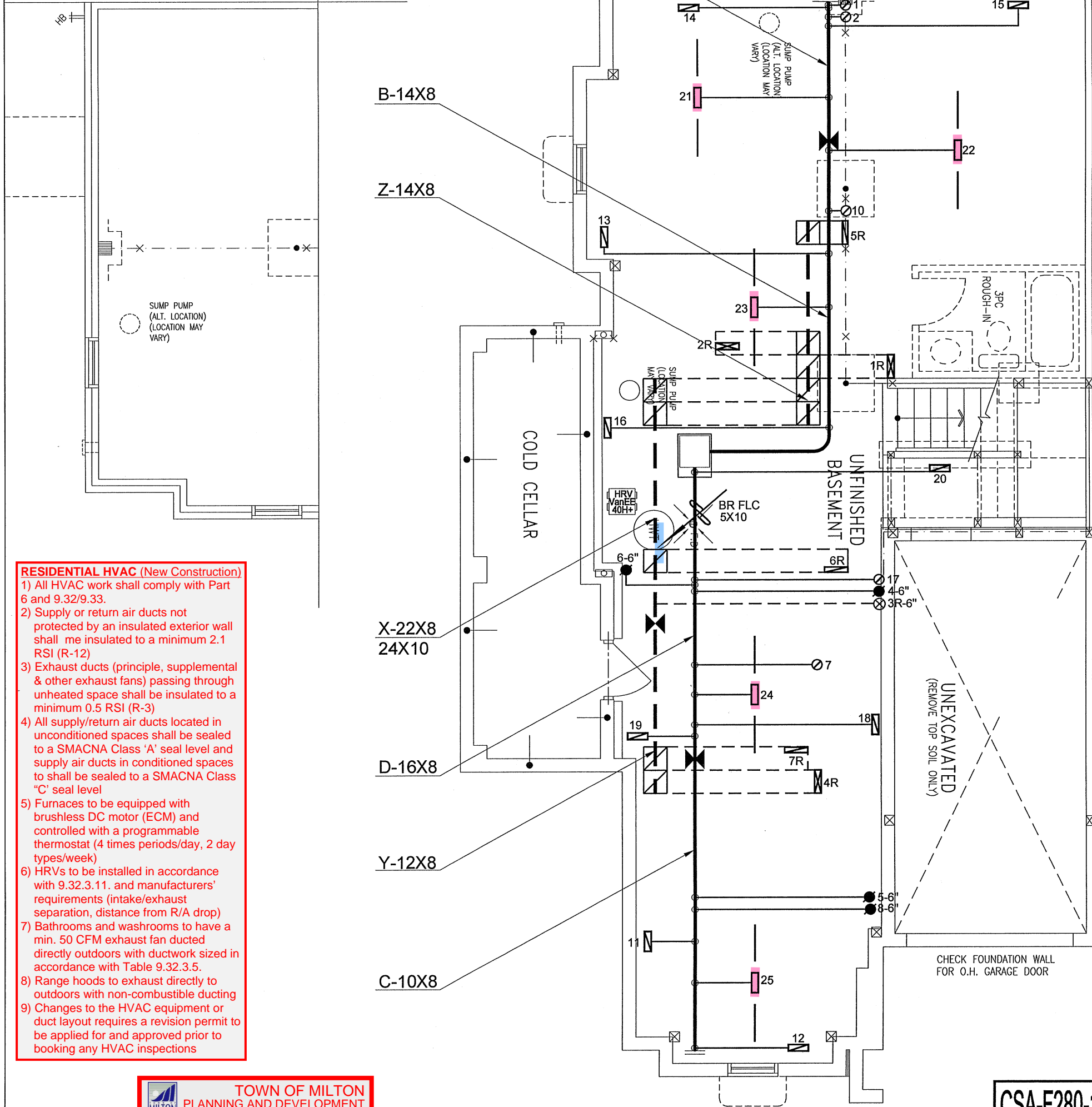
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

| Weather Station Description | | | | |
|-----------------------------------|--------------------------------|------------------------|----|----|
| Province: | Ontario | | | |
| Region: | Milton | | | |
| 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): | 6.71 | | | |
| Building Configuration | | | | |
| Type: | Semi | | | |
| Number of Stories: | Two | | | |
| Foundation: | Full | | | |
| House Volume (m ³): | 924.7 | | | |
| Air Leakage/Ventilation | | | | |
| Air Tightness Type: | Energy Star Attached (3.0 ACH) | | | |
| Custom BDT Data: | ELA @ 10 Pa. | 1035.9 cm ² | | |
| | 3.00 | ACH @ 50 Pa | | |
| Mechanical Ventilation (L/s): | Total Supply | Total Exhaust | | |
| | 40.6 | 40.6 | | |
| Flue Size | | | | |
| Flue #: | #1 | #2 | #3 | #4 |
| Diameter (mm): | 0 | 0 | 0 | 0 |
| Natural Infiltration Rates | | | | |
| Heating Air Leakage Rate (ACH/H): | 0.268 | | | |
| Cooling Air Leakage Rate (ACH/H): | 0.090 | | | |

TYPE: IVY 12
LO# 71720RECEIVED
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MAR 29, 2017
IVY 12F
BUILDING DIVISION

PART. BASEMENT PLAN ELEV. 1
W.O.D CONDITION (7R MAX.)



- RESIDENTIAL HVAC (New Construction)**
- 1) All HVAC work shall comply with Part 6 and 9.32/9.33.
 - 2) Supply or return air ducts not protected by an insulated exterior wall shall be insulated to a minimum 2.1 RSI (R-12)
 - 3) Exhaust ducts (principle, supplemental & other exhaust fans) passing through unheated space shall be insulated to a minimum 0.5 RSI (R-3)
 - 4) All supply/return air ducts located in unconditioned spaces shall be sealed to a SMACNA Class 'A' seal level and supply air ducts in conditioned spaces to shall be sealed to a SMACNA Class 'C' seal level
 - 5) Furnaces to be equipped with brushless DC motor (ECM) and controlled with a programmable thermostat (4 times periods/day, 2 day types/week)
 - 6) HRV's to be installed in accordance with 9.32.3.11. and manufacturers' requirements (intake/exhaust separation, distance from R/A drop)
 - 7) Bathrooms and washrooms to have a min. 50 CFM exhaust fan ducted directly outdoors with ductwork sized in accordance with Table 9.32.3.5.
 - 8) Range hoods to exhaust directly to outdoors with non-combustible ducting
 - 9) Changes to the HVAC equipment or duct layout requires a revision permit to be applied for and approved prior to booking any HVAC inspections




TOWN OF MILTON
PLANNING AND DEVELOPMENT
IVY 12F MODEL

BUILDING: REVIEWED
SCOTT SHERRIFFS **APR 7, 2017**
PLANS EXAMINER **DATE**

Neither the issuance of a permit nor carrying out of inspections by the Town of Milton relieves the owner from full responsibility for compliance with the provisions of the Ontario Building Code Act and the Ontario Building Code, both as amended, as well as other applicable statutes and regulations of the Province of Ontario, By-laws of the Region of Halton and Town of Milton













RECEIVED
TOWN OF MILTON
MAR 29, 2017
IVY 12F
BUILDING DIVISION

CSA-F280-12



ENERGY STAR

BASEMENT PLAN

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

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Client

GREENPARK HOMES

Project Name

LECCO RIDGE
MILTON, ONTARIO

IVY 12 2404 sqft



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

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

HEAT LOSS 39327 BTU/H
UNIT DATA

MAKE AMANA

MODEL AMEC960603BNA-60

INPUT 60 MBTU/H

OUTPUT 57.6 MBTU/H

COOLING 3.0 TONS

FAN SPEED 1131 cfm @ 0.6" w.c.

| # OF RUNS | S/A | R/A | FANS |
|-----------|-----|-----|------|
| 3RD FLOOR | | | |
| 2ND FLOOR | 9 | 4 | 3 |
| 1ST FLOOR | 9 | 3 | 2 |
| BASEMENT | 5 | 1 | 0 |

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

Sheet Title

BASEMENT HEATING LAYOUT

Date JAN/2017

Scale 3/16" = 1'-0"

BCIN# 19669

LO# 71720



TOWN OF MILTON

PLANNING AND DEVELOPMENT

IVY 12F MODEL

BUILDING: REVIEWED

SCOTT SHERRIFFS

APR 7, 2017

PLANS EXAMINER

DATE

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

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

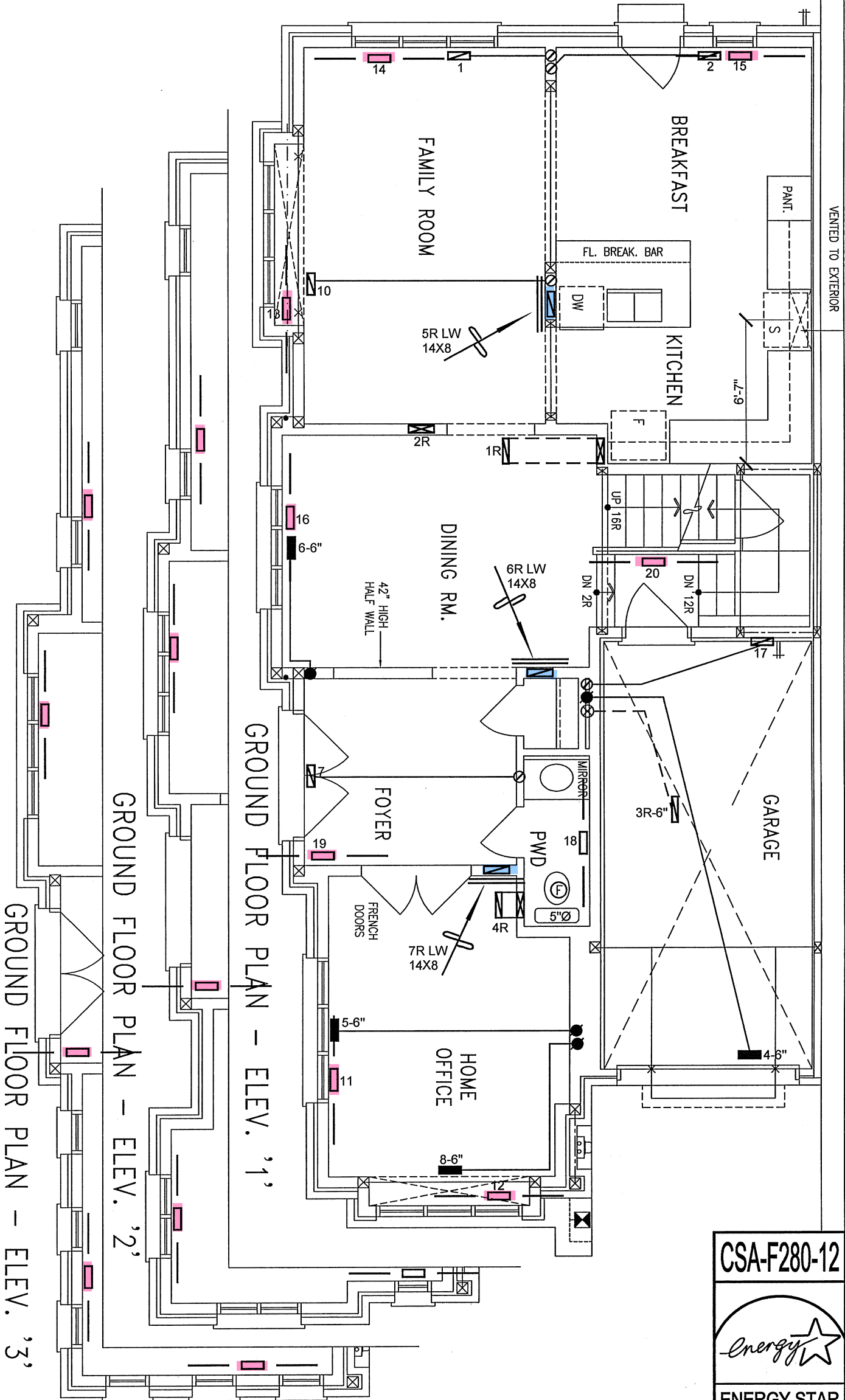
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TOWN OF MILTON


MAR 29, 2017

IVY 12F

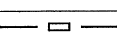



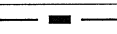







BUILDING DIVISION



CSA-F280-12



ENERGY STAR

| HVAC LEGEND | | | | | | | | 3. | | |
|--|---------------------------|---|---------------------------------|---|------------------------------|---|----------------------------|-----------|-------------|------|
| SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION | 2. | | |
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Client

GREENPARK HOMES

Project Name

LECCO RIDGE
MILTON, ONTARIO

IVY 12

2404 sqft



375 Finley Ave. Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
Email: info@hvacdsgns.ca
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Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.

Sheet Title

FIRST FLOOR
HEATING
LAYOUT

Date

JAN/2017

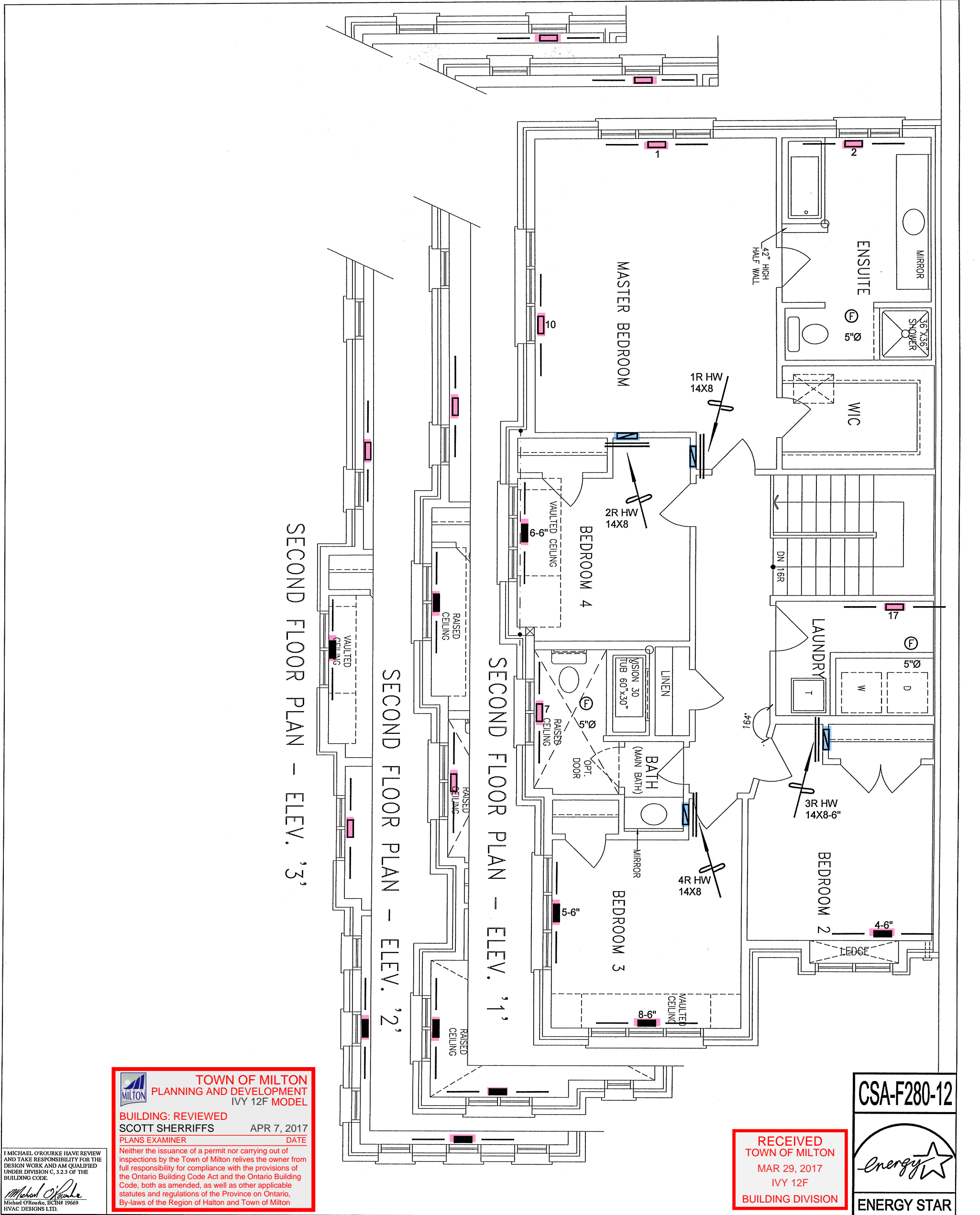
Scale


3/16" = 1'-0"

BCIN# 19669

LO#

71720






TOWN OF MILTON
PLANNING AND DEVELOPMENT
IVY 12F MODEL

BUILDING: REVIEWED
SCOTT SHERRIFFS
PLANS EXAMINER

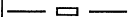











APR 7, 2017
DATE

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CSA-F280-12



ENERGY STAR


| HVAC LEGEND | | | | | | | | 3. | | |
|--|---------------------------|---|---------------------------------|---|------------------------------|---|----------------------------|-----------|-------------|------|
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Client
GREENPARK HOMES

Project Name
**LECCO RIDGE
MILTON, ONTARIO**

IVY 122404 sqft



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Sheet Title
**SECOND FLOOR
HEATING
LAYOUT**

Date
JAN/2017

Scale
3/16" = 1'-0"

BCIN# 19669

LO#71720