


Schedule 1: Designer Information

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

| | | | | |
|---|------------------------------|--|-----------------------------|----------|
| A. Project Information | | | | |
| Building number, street name | | | Unit no. | Lot/con. |
| Municipality BRAMPTON | Postal code | Plan number/ other description | | |
| B. Individual who reviews and takes responsibility for design activities | | | | |
| Name MICHAEL O'ROURKE | | Firm HVAC DESIGNS LTD | | |
| Street address 375 FINLEY AVE | | Unit no. 202 | Lot/con. N/A | |
| Municipality AJAX | Postal code L1S 2E2 | Province ONTARIO | E-mail info@hvacdsgns.ca | |
| Telephone number (905) 619-2300 | Fax number (905) 619-2375 | Cell number () | | |
| C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C] | | | | |
| <input type="checkbox"/> House <input type="checkbox"/> Small Buildings <input type="checkbox"/> Large Buildings <input type="checkbox"/> Complex Buildings | | | | |
| <input checked="" type="checkbox"/> HVAC – House <input type="checkbox"/> Building Services <input type="checkbox"/> Detection, Lighting and Power <input type="checkbox"/> Fire Protection | | | | |
| <input type="checkbox"/> Building Structural <input type="checkbox"/> Plumbing – House <input type="checkbox"/> Plumbing – All Buildings <input type="checkbox"/> On-site Sewage Systems | | | | |
| Description of designer's work HEAT LOSS / GAIN CALCULATIONS DUCT SIZING RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL SYSTEM DESIGN per CSA-F280-12 | | Model: 2004 Project: SUMMER RIDGE ESTATES | | |
| D. Declaration of Designer | | | | |
| I, <u>MICHAEL O'ROURKE</u> declare that (choose one as appropriate): (print name) | | | | |
| <input type="checkbox"/> I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories. Individual BCIN: _____ Firm BCIN: _____ | | | | |
| <input checked="" type="checkbox"/> I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5. of Division C, of the Building Code. Individual BCIN: <u>19669</u> Basis for exemption from registration and qualification: <u>O.B.C SENTENCE 3.2.4.1 (4)</u> | | | | |
| <input type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification: _____ | | | | |
| I certify that: | | | | |
| 1. The information contained in this schedule is true to the best of my knowledge. | | | | |
| 2. I have submitted this application with the knowledge and consent of the firm. | | | | |
| April 22, 2024 | |  | | |
| Date | | Signature of Designer | | |

NOTE:

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d) of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
- Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of authorization, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

Application for a Permit Construct or Demolish – Effective January 1, 2015

| SITE NAME: SUMMER RIDGE ESTATES | | | | DATE: Apr-24 | | | | WINTER NATURAL AIR CHANGE RATE 0.282 | | | | HEAT LOSS AT °F. 74 | | | | CSA-F280-12 | | | |
|---------------------------------|--|--|--|--------------|--|--|--|--------------------------------------|--|--|--|---------------------|--|--|--|--------------------------------------|--|--|--|
| BUILDER: ROYAL PIE HOMES | | | | TYPE: 2004 | | | | GFA: 1949 | | | | LO# 104858 | | | | SUMMER NATURAL AIR CHANGE RATE 0.088 | | | |
| | | | | | | | | | | | | | | | | | | | |
| ROOM USE | | | | MBR | | | | ENS | | | | BED-2 | | | | BED-3 | | | |
| EXP. WALL | | | | 41 | | | | 20 | | | | 10 | | | | 26 | | | |
| CLG. HT. | | | | 9 | | | | 9 | | | | 9 | | | | 9 | | | |
| FACTORS | | | | | | | | | | | | | | | | | | | |
| GRS.WALL AREA | | | | 369 | | | | 180 | | | | 90 | | | | 234 | | | |
| GLAZING | | | | LOSS GAIN | | | | LOSS GAIN | | | | LOSS GAIN | | | | LOSS GAIN | | | |
| NORTH | | | | 20.8 12.8 | | | | 0 0 0 | | | | 0 0 0 | | | | 0 0 0 | | | |
| EAST | | | | 20.8 32.9 | | | | 0 0 0 | | | | 26 540 856 | | | | 35 727 1152 | | | |
| SOUTH | | | | 20.8 19.8 | | | | 17 353 337 | | | | 0 0 0 | | | | 0 0 0 | | | |
| WEST | | | | 20.8 32.9 | | | | 30 623 987 | | | | 0 0 0 | | | | 0 0 0 | | | |
| SKYLT. | | | | 34.1 132.1 | | | | 0 0 0 | | | | 0 0 0 | | | | 0 0 0 | | | |
| DOORS | | | | 19.6 2.9 | | | | 0 0 0 | | | | 0 0 0 | | | | 0 0 0 | | | |
| NET EXPOSED WALL | | | | 3.5 0.5 | | | | 322 1116 166 | | | | 64 222 33 | | | | 199 690 102 | | | |
| NET EXPOSED BSMT WALL ABOVE GR | | | | 3.5 0.5 | | | | 0 0 0 | | | | 0 0 0 | | | | 0 0 0 | | | |
| EXPOSED CLG | | | | 1.3 0.6 | | | | 327 410 182 | | | | 117 147 65 | | | | 198 248 110 | | | |
| NO ATTIC EXPOSED CLG | | | | 2.7 1.2 | | | | 0 0 0 | | | | 0 0 0 | | | | 18 48 21 | | | |
| EXPOSED FLOOR | | | | 2.5 0.4 | | | | 0 0 0 | | | | 4 10 1 | | | | 0 0 0 | | | |
| BASEMENT/CRAWL HEAT LOSS | | | | | | | | 0 | | | | 0 | | | | 0 | | | |
| SLAB ON GRADE HEAT LOSS | | | | | | | | 0 | | | | 0 | | | | 0 | | | |
| SUBTOTAL HT LOSS | | | | | | | | 2503 | | | | 1058 | | | | 1699 | | | |
| SUB TOTAL HT GAIN | | | | | | | | 1672 | | | | 468 | | | | 101 | | | |
| LEVEL FACTOR / MULTIPLIER | | | | 0.20 0.32 | | | | 0.20 0.32 | | | | 0.20 0.32 | | | | 0.20 0.32 | | | |
| AIR CHANGE HEAT LOSS | | | | | | | | 801 | | | | 338 | | | | 32 | | | |
| AIR CHANGE HEAT GAIN | | | | | | | | 127 | | | | 35 | | | | 3 | | | |
| DUCT LOSS | | | | | | | | 0 | | | | 140 | | | | 0 | | | |
| DUCT GAIN | | | | | | | | 0 | | | | 50 | | | | 0 | | | |
| HEAT GAIN PEOPLE | | | | 240 | | | | 2 | | | | 480 | | | | 0 | | | |
| HEAT GAIN APPLIANCES/LIGHTS | | | | | | | | | | | | 920 | | | | 0 | | | |
| TOTAL HT LOSS BTU/H | | | | | | | | 3303 | | | | 1536 | | | | 134 | | | |
| TOTAL HT GAIN x 1.3 BTU/H | | | | | | | | 4159 | | | | 720 | | | | 63 | | | |

| ROOM USE | | | | DIN | | | | G/K | | | | LAND | | | | LND | | | | W/R | | | | FOY | | | | LD/MD | | | | | | | | | | | | | | | | BAS | | | |
|--------------------------------|--|--|--|-----------|-------|------|------|-----------|------|------|------|-----------|------|----|------|-----------|----|------|------|-----------|------|------|-----|-----------|------|-----|---|-----------|---|---|---|-----------|---|---|---|-----------|---|---|---|-----------|--|--|--|-----------|--|--|--|
| EXP. WALL | | | | 12 | | | | 24 | | | | 16 | | | | 0 | | | | 6 | | | | 20 | | | | 20 | | | | | | | | | | | | | | | | 109 | | | |
| CLG. HT. | | | | 10 | | | | 10 | | | | 10 | | | | 9 | | | | 10 | | | | 10 | | | | 10 | | | | | | | | | | | | | | | | 9 | | | |
| FACTORS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GRS.WALL AREA | | | | 120 | | | | 240 | | | | 160 | | | | 0 | | | | 60 | | | | 200 | | | | 200 | | | | | | | | | | | | | | | | 654 | | | |
| GLAZING | | | | LOSS GAIN | | | | LOSS GAIN | | | | LOSS GAIN | | | | LOSS GAIN | | | | LOSS GAIN | | | | LOSS GAIN | | | | LOSS GAIN | | | | LOSS GAIN | | | | LOSS GAIN | | | | LOSS GAIN | | | | LOSS GAIN | | | |
| NORTH | | | | 20.8 | 12.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | |
| EAST | | | | 20.8 | 32.9 | 37 | 769 | 1218 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 104 | 165 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | |
| SOUTH | | | | 20.8 | 19.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 166 | 159 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | |
| WEST | | | | 20.8 | 32.9 | 0 | 0 | 0 | 33 | 686 | 1086 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | |
| SKYLT. | | | | 34.1 | 132.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | |
| DOORS | | | | 19.6 | 2.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 705 | 104 | 60 | 1175 | 174 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | |
| NET EXPOSED WALL | | | | 3.5 | 0.5 | 83 | 288 | 43 | 207 | 718 | 106 | 160 | 555 | 82 | 0 | 0 | 0 | 52 | 180 | 27 | 159 | 551 | 82 | 140 | 485 | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | |
| NET EXPOSED BSMT WALL ABOVE GR | | | | 3.5 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | |
| EXPOSED CLG | | | | 1.3 | 0.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | 69 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | |
| NO ATTIC EXPOSED CLG | | | | 2.7 | 1.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | |
| EXPOSED FLOOR | | | | 2.5 | 0.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | |
| BASEMENT/CRAWL HEAT LOSS | | | | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| SLAB ON GRADE HEAT LOSS | | | | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| SUBTOTAL HT LOSS | | | | | | 1056 | | | 1403 | | | 555 | | | 69 | | | 347 | | | 1360 | | | 1660 | | | | | | | | | | | | | | | | | | | | | | | |
| SUB TOTAL HT GAIN | | | | | | | 1260 | | | 1192 | | | 82 | | | 31 | | | 185 | | | 351 | | | 246 | | | | | | | | | | | | | | | | | | | | | | |
| LEVEL FACTOR / MULTIPLIER | | | | 0.30 | 0.48 | | | | 0.30 | 0.48 | | 0.30 | 0.48 | | 0.20 | 0.32 | | 0.30 | 0.48 | | 0.30 | 0.48 | | 0.30 | 0.48 | | | | | | | | | | | | | | | | | | | | | | |
| AIR CHANGE HEAT LOSS | | | | | | 512 | | | 680 | | | 269 | | | 22 | | | 168 | | | 659 | | | 804 | | | | | | | | | | | | | | | | | | | | | | | |
| AIR CHANGE HEAT GAIN | | | | | | 96 | | | 90 | | | 6 | | | 2 | | | 14 | | | 27 | | | 19 | | | | | | | | | | | | | | | | | | | | | | | |
| DUCT LOSS | | | | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| DUCT GAIN | | | | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| HEAT GAIN PEOPLE | | | | 240 | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| HEAT GAIN APPLIANCES/LIGHTS | | | | | | 920 | | | 920 | | | 0 | | | 920 | | | 0 | | | 0 | | | 920 | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL HT LOSS BTU/H | | | | | | 1568 | | | 2083 | | | 823 | | | 91 | | | 514 | | | 2019 | | | 2464 | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL HT GAIN x 1.3 BTU/H | | | | | | 2959 | | | 2864 | | | 115 | | | 1239 | | | 259 | | | 491 | | | 1540 | | | | | | | | | | | | | | | | | | | | | | | |

SITE NAME: SUMMER RIDGE ESTATES
BUILDER: ROYAL PIE HOMES

TYPE: 2004

DATE: Apr-24

GFA: 1949

LO# 104858

HEATING CFM 770 COOLING CFM 770
TOTAL HEAT LOSS 28,779 TOTAL HEAT GAIN 23,187
AIR FLOW RATE CFM 26.76 AIR FLOW RATE CFM 33.21

furnace pressure 0.6
furnace filter 0.00
a/c coil pressure 0.26
available pressure for s/a & r/a 0.34

FACTORY INSTALLED

59SC6A040M14--10 CARRIER

AFUE = 96 %
INPUT (BTU/H) = 40,000
OUTPUT (BTU/H) = 39,000

| RUN COUNT | 4th | 3rd | 2nd | 1st | Bas |
|-----------|-----|-----|-----|-----|-----|
| S/A | 0 | 0 | 9 | 6 | 3 |
| R/A | 0 | 0 | 4 | 2 | 1 |

plenum pressure s/a 0.18 r/a pressure 0.16
max s/a dif press. loss 0.02 r/a grille press. Loss 0.02
min adjusted pressure s/a 0.16 adjusted pressure r/a 0.14

FAN SPEED 40
LOW 0
MEDLOW 545
MEDIUM 770
MEDIUM HIGH 925
HIGH 0

DESIGN CFM = 770
CFM @ .6" E.S.P.

TEMPERATURE RISE 47 °F

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 | 10 | 13 | 15 | 16 | 17 | 18 | 19 | 21 | 22 | 23 | 24 |
|---------------------------|------|------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|-------|
| ROOM NAME | MBR | ENS | BED-2 | BED-2 | BED-3 | BED-3 | BATH | MBR | DIN | G/K | LAND | LND | W/R | FOY | BAS | BAS | BAS | LD/MD |
| RM LOSS MBH. | 1.65 | 1.54 | 0.67 | 0.67 | 1.12 | 1.12 | 0.13 | 1.65 | 1.57 | 2.08 | 0.82 | 0.09 | 0.51 | 2.02 | 3.56 | 3.56 | 3.56 | 2.46 |
| CFM PER RUN HEAT | 44 | 41 | 18 | 18 | 30 | 30 | 4 | 44 | 42 | 56 | 22 | 2 | 14 | 54 | 95 | 95 | 95 | 66 |
| RM GAIN MBH. | 2.08 | 0.72 | 1.45 | 1.45 | 1.72 | 1.72 | 0.06 | 2.08 | 2.96 | 2.86 | 0.12 | 1.24 | 0.26 | 0.49 | 0.81 | 0.81 | 0.81 | 1.54 |
| CFM PER RUN COOLING | 69 | 24 | 48 | 48 | 57 | 57 | 2 | 69 | 98 | 95 | 4 | 41 | 9 | 16 | 27 | 27 | 27 | 51 |
| ADJUSTED PRESSURE | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.16 | 0.16 | 0.17 | 0.17 | 0.17 | 0.17 | 0.16 | 0.16 | 0.16 | 0.17 |
| ACTUAL DUCT LGH. | 62 | 75 | 46 | 29 | 23 | 19 | 27 | 68 | 28 | 47 | 32 | 62 | 37 | 13 | 41 | 22 | 10 | 56 |
| EQUIVALENT LENGTH | 190 | 210 | 210 | 170 | 180 | 200 | 160 | 200 | 140 | 140 | 130 | 150 | 120 | 130 | 170 | 140 | 120 | 150 |
| TOTAL EFFECTIVE LENGTH | 252 | 285 | 256 | 199 | 203 | 219 | 187 | 268 | 168 | 187 | 162 | 212 | 157 | 143 | 211 | 162 | 130 | 206 |
| ADJUSTED PRESSURE | 0.07 | 0.06 | 0.07 | 0.08 | 0.08 | 0.08 | 0.09 | 0.06 | 0.09 | 0.08 | 0.1 | 0.08 | 0.11 | 0.12 | 0.07 | 0.1 | 0.12 | 0.08 |
| ROUND DUCT SIZE | 6 | 5 | 5 | 5 | 5 | 5 | 4 | 6 | 6 | 6 | 4 | 5 | 4 | 5 | 6 | 6 | 6 | 5 |
| HEATING VELOCITY (ft/min) | 224 | 301 | 132 | 132 | 220 | 220 | 46 | 224 | 214 | 286 | 252 | 15 | 161 | 396 | 484 | 484 | 484 | 485 |
| COOLING VELOCITY (ft/min) | 352 | 176 | 352 | 352 | 419 | 419 | 23 | 352 | 500 | 484 | 46 | 301 | 103 | 117 | 138 | 138 | 138 | 374 |
| OUTLET GRILL SIZE | 4X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 3X10 | 4X10 | 4X10 | 4X10 | 3X10 | 3X10 | 3X10 | 3X10 | 4X10 | 4X10 | 4X10 | 3X10 |
| TRUNK | A | A | B | C | C | C | B | A | C | A | B | B | B | C | A | B | C | A |

| RUN # | ROOM NAME | RM LOSS MBH. | CFM PER RUN HEAT | RM GAIN MBH. | CFM PER RUN COOLING | ADJUSTED PRESSURE | ACTUAL DUCT LGH. | EQUIVALENT LENGTH | TOTAL EFFECTIVE LENGTH | ADJUSTED PRESSURE | ROUND DUCT SIZE | HEATING VELOCITY (ft/min) | COOLING VELOCITY (ft/min) | OUTLET GRILL SIZE | TRUNK |
|-------|-----------|--------------|------------------|--------------|---------------------|-------------------|------------------|-------------------|------------------------|-------------------|-----------------|---------------------------|---------------------------|-------------------|-------|
| 1 | MBR | 1.65 | 44 | 2.08 | 69 | 0.17 | 62 | 190 | 252 | 0.07 | 6 | 224 | 352 | 4X10 | A |
| 2 | ENS | 1.54 | 41 | 0.72 | 24 | 0.17 | 75 | 210 | 285 | 0.06 | 5 | 301 | 176 | 3X10 | A |
| 3 | BED-2 | 0.67 | 18 | 1.45 | 48 | 0.17 | 46 | 210 | 256 | 0.07 | 5 | 132 | 352 | 3X10 | B |
| 4 | BED-2 | 0.67 | 18 | 1.45 | 48 | 0.17 | 29 | 170 | 199 | 0.08 | 5 | 132 | 352 | 3X10 | C |
| 5 | BED-3 | 1.12 | 30 | 1.72 | 57 | 0.17 | 23 | 180 | 203 | 0.08 | 5 | 220 | 419 | 3X10 | C |
| 6 | BED-3 | 1.12 | 30 | 1.72 | 57 | 0.17 | 19 | 200 | 219 | 0.08 | 5 | 220 | 419 | 3X10 | C |
| 7 | BATH | 0.13 | 4 | 0.06 | 2 | 0.17 | 27 | 160 | 187 | 0.09 | 4 | 46 | 23 | 3X10 | B |
| 10 | MBR | 1.65 | 44 | 2.08 | 69 | 0.17 | 68 | 200 | 268 | 0.06 | 6 | 224 | 352 | 4X10 | A |
| 13 | DIN | 1.57 | 42 | 2.96 | 98 | 0.16 | 28 | 140 | 168 | 0.09 | 6 | 214 | 500 | 4X10 | C |
| 15 | G/K | 2.08 | 56 | 2.86 | 95 | 0.16 | 47 | 140 | 187 | 0.08 | 6 | 286 | 484 | 4X10 | A |
| 16 | LAND | 0.82 | 22 | 0.12 | 4 | 0.17 | 32 | 130 | 162 | 0.1 | 4 | 252 | 46 | 3X10 | B |
| 17 | LND | 0.09 | 2 | 1.24 | 41 | 0.17 | 62 | 150 | 212 | 0.08 | 5 | 15 | 301 | 3X10 | B |
| 18 | W/R | 0.51 | 14 | 0.26 | 9 | 0.17 | 37 | 120 | 157 | 0.11 | 4 | 161 | 103 | 3X10 | B |
| 19 | FOY | 2.02 | 54 | 0.49 | 16 | 0.17 | 13 | 130 | 143 | 0.12 | 5 | 396 | 117 | 3X10 | C |
| 21 | BAS | 3.56 | 95 | 0.81 | 27 | 0.16 | 41 | 170 | 211 | 0.07 | 6 | 484 | 138 | 4X10 | A |
| 22 | BAS | 3.56 | 95 | 0.81 | 27 | 0.16 | 22 | 140 | 162 | 0.1 | 6 | 484 | 138 | 4X10 | B |
| 23 | BAS | 3.56 | 95 | 0.81 | 27 | 0.16 | 10 | 120 | 130 | 0.12 | 6 | 484 | 138 | 4X10 | C |
| 24 | LD/MD | 2.46 | 66 | 1.54 | 51 | 0.17 | 56 | 150 | 206 | 0.08 | 5 | 485 | 374 | 3X10 | A |

| SUPPLY AIR TRUNK SIZE | | | | | | | | | | | | | | | RETURN AIR TRUNK SIZE | | | | | | | | | | | | | | |
|-----------------------|-----|-------|--------|-------|------|---|--|--|----------|---------|---|-------|--------|-------|-----------------------|---|--|--|----------|--|--|--|--|--|--|--|--|--|--|
| | | TRUNK | STATIC | ROUND | RECT | | | | VELOCITY | | | TRUNK | STATIC | ROUND | RECT | | | | VELOCITY | | | | | | | | | | |
| | | CFM | PRESS. | DUCT | DUCT | | | | (ft/min) | | | CFM | PRESS. | DUCT | DUCT | | | | (ft/min) | | | | | | | | | | |
| TRUNK A | 346 | 0.06 | 10.1 | 12 | x | 8 | | | 519 | TRUNK G | 0 | 0.00 | 0 | 0 | x | 8 | | | 0 | | | | | | | | | | |
| TRUNK B | 501 | 0.06 | 11.6 | 16 | x | 8 | | | 564 | TRUNK H | 0 | 0.00 | 0 | 0 | x | 8 | | | 0 | | | | | | | | | | |
| TRUNK C | 770 | 0.06 | 13.7 | 22 | x | 8 | | | 630 | TRUNK I | 0 | 0.00 | 0 | 0 | x | 8 | | | 0 | | | | | | | | | | |
| TRUNK D | 0 | 0.00 | 0 | 0 | x | 8 | | | 0 | TRUNK J | 0 | 0.00 | 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 F | 0 | 0.00 | 0 | 0 | x | 8 | | | 0 | TRUNK L | 0 | 0.00 | 0 | 0 | x | 8 | | | 0 | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-----|--|------|------|------|----|----|-----|-----|
| RETURN AIR # | 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | BR | TRUNK W TRUNK X TRUNK Y TRUNK Z DROP | 0 | 0.05 | 0 | 0 | x | 8 | 0 |
| FLOOR | 2 | 2 | 2 | 2 | 1 | 1 | | | | | | | | | | | B | | 770 | 0.05 | 14.3 | 24 | x | 8 | 578 |
| AIR VOLUME | 75 | 95 | 95 | 85 | 145 | 140 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 135 | 310 | | 0.05 | 10.2 | 12 | x | 8 | 465 | |
| PLENUM PRESSURE | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0 | | 0.05 | 0 | 0 | x | 8 | 0 | |
| ACTUAL DUCT LGH. | 75 | 40 | 43 | 61 | 26 | 52 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 14 | 770 | | 0.05 | 14.3 | 24 | x | 10 | 462 | |
| EQUIVALENT LENGTH | 215 | 175 | 215 | 175 | 200 | 200 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 135 | | | | | | | | | |
| TOTAL EFFECTIVE LH | 290 | 215 | 258 | 236 | 226 | 252 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 149 | | | | | | | | | |
| ADJUSTED PRESSURE | 0.05 | 0.07 | 0.06 | 0.06 | 0.06 | 0.06 | 14.32 | 14.32 | 14.32 | 14.32 | 14.32 | 14.32 | 14.32 | 14.32 | 14.32 | 0.10 | | | | | | | | | |
| ROUND DUCT SIZE | 6 | 6 | 6 | 6 | 7.3 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | | | | | | | | | |
| INLET GRILL SIZE | 8 | 8 | 8 | 8 | 8 | 8 | 0 | 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | | | | | | | | | |

TYPE: 2004
SITE NAME: SUMMER RIDGE ESTATES

LO # 104858

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>2</u> @ 10.6 cfm | <u>21.2</u> cfm |
| Kitchen & Bathrooms | <u>4</u> @ 10.6 cfm | <u>42.4</u> cfm |
| Other Rooms | <u>3</u> @ 10.6 cfm | <u>31.8</u> cfm |
| Table 9.32.3.A. | TOTAL | <u>137.8</u> cfm |

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

| SUPPLEMENTAL VENTILATION CAPACITY | | 9.32.3.5. |
|-----------------------------------|--------------|-----------|
| Total Ventilation Capacity | <u>137.8</u> | cfm |
| Less Principal Ventil. Capacity | <u>63.6</u> | cfm |
| Required Supplemental Capacity | <u>74.2</u> | cfm |

| PRINCIPAL EXHAUST FAN CAPACITY | |
|--------------------------------|--|
| Model: VANEE V150H | Location: BSMT |
| <u>63.6</u> cfm | <input checked="" type="checkbox"/> HVI Approved |

| PRINCIPAL EXHAUST HEAT LOSS CALCULATION | | | | |
|---|---------------|--------|--------|------|
| CFM | ΔT °F | FACTOR | % LOSS | |
| 63.6 CFM | X 74 F | X 1.08 | X | 0.25 |

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

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

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

| BUILDER: ROYAL PIE 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: | April-24 |

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

Michael O'Rourke

| CSA F280-12 Residential Heat Loss and Heat Gain Calculations | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------------------|---|--|---|---|--------------|-------------------|---|---|---|-------|-----|--------|-------|--------|-----|-----|-------|-------|---|-----|-------|--------|---|---|---|--------|---|---|--------------|--------|--|--|----------|--|--|--|--------------------------------|-------|--------------------------------|-------|-------------------------------|--|--|--|--|--|--------|---------|-------|-------|-------------|----|-----|----|----|-------------|----|----|---|----|
| Formula Sheet (For Air Leakage / Ventilation Calculation) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LO#: 104858 | | Model: 2004 | | Builder: ROYAL PIE HOMES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Date: 2024-04-22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Volume Calculation | | | Air Change & Delta T Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| House Volume <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>981</td> <td>9</td> <td>8829</td> </tr> <tr> <td>First</td> <td>981</td> <td>10</td> <td>9810</td> </tr> <tr> <td>Second</td> <td>982</td> <td>9</td> <td>8838</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="2" style="text-align: right;">Total:</td> <td></td> <td>27,477.0 ft³</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>778.1 m³</td> </tr> </tbody> </table> | | | Level | Floor Area (ft²) | Floor Height (ft) | Volume (ft³) | Bsmt | 981 | 9 | 8829 | First | 981 | 10 | 9810 | Second | 982 | 9 | 8838 | Third | 0 | 9 | 0 | Fourth | 0 | 9 | 0 | Total: | | | 27,477.0 ft³ | Total: | | | 778.1 m³ | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 30%;">0.282</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.088</td> </tr> </table> <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>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> <th>ΔT °F</th> </tr> <tr> <td>Winter DTDh</td> <td>22</td> <td>-19</td> <td>41</td> <td>74</td> </tr> <tr> <td>Summer DTDc</td> <td>24</td> <td>30</td> <td>6</td> <td>11</td> </tr> </table> | | | WINTER NATURAL AIR CHANGE RATE | 0.282 | SUMMER NATURAL AIR CHANGE RATE | 0.088 | Design Temperature Difference | | | | | | Tin °C | Tout °C | ΔT °C | ΔT °F | Winter DTDh | 22 | -19 | 41 | 74 | Summer DTDc | 24 | 30 | 6 | 11 |
| Level | Floor Area (ft²) | Floor Height (ft) | Volume (ft³) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bsmt | 981 | 9 | 8829 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| First | 981 | 10 | 9810 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Second | 982 | 9 | 8838 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Third | 0 | 9 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fourth | 0 | 9 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total: | | | 27,477.0 ft³ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total: | | | 778.1 m³ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WINTER NATURAL AIR CHANGE RATE | 0.282 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SUMMER NATURAL AIR CHANGE RATE | 0.088 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Design Temperature Difference | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Tin °C | Tout °C | ΔT °C | ΔT °F | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Winter DTDh | 22 | -19 | 41 | 74 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Summer DTDc | 24 | 30 | 6 | 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.2.3.1 Heat Loss due to Air Leakage | | | 6.2.6 Sensible Gain due to Air Leakage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| $HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ <p>0.282 x 216.13 x 41 °C x 1.2 = 3019 W</p> <p>= 10302 Btu/h</p> | | | $HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ <p>= 0.088 x 216.13 x 6 °C x 1.2 = 140 W</p> <p>= 478 Btu/h</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.2.3.2 Heat Loss due to Mechanical Ventilation | | | 6.2.7 Sensible heat Gain due to Ventilation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| $HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>64 CFM x 74 °F x 1.08 x 0.25 = 1274 Btu/h</p> | | | $HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>64 CFM x 11 °F x 1.08 x 0.25 = 189 Btu/h</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| $HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HLairve Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HL_{clevel})</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.5</td> <td rowspan="5" style="text-align: center; vertical-align: middle;">10,302</td> <td>5,517</td> <td>0.934</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>6,381</td> <td>0.484</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>6,439</td> <td>0.320</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> | | | | | | Level | Level Factor (LF) | HLairve Air Leakage + Ventilation Heat Loss (Btu/h) | Level Conductive Heat Loss: (HL _{clevel}) | Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel) | 1 | 0.5 | 10,302 | 5,517 | 0.934 | 2 | 0.3 | 6,381 | 0.484 | 3 | 0.2 | 6,439 | 0.320 | 4 | 0 | 0 | 0.000 | 5 | 0 | 0 | 0.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | Level Factor (LF) | HLairve Air Leakage + Ventilation Heat Loss (Btu/h) | Level Conductive Heat Loss: (HL _{clevel}) | Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 0.5 | 10,302 | 5,517 | 0.934 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 0.3 | | 6,381 | 0.484 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 0.2 | | 6,439 | 0.320 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 0 | | 0 | 0.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 0 | | 0 | 0.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>*HLairbv = Air leakage heat loss + ventilation heat loss</p> <p>*For a balanced or supply only ventilation system HLairve = 0</p> | | | | | <p>Michael O'Rourke BCIN# 19669</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

HEAT LOSS AND GAIN SUMMARY SHEET

| | |
|--------------------|-----------------------------------|
| MODEL: 2004 | BUILDER: ROYAL PIE HOMES |
| SFQT: 1949 | SITE: SUMMER RIDGE ESTATES |
| LO# 104858 | |

DESIGN ASSUMPTIONS

| | | | |
|----------------------|----|--------------------------------|------|
| HEATING | °F | COOLING | °F |
| OUTDOOR DESIGN TEMP. | -2 | OUTDOOR DESIGN TEMP. | 86 |
| INDOOR DESIGN TEMP. | 72 | INDOOR DESIGN TEMP. (MAX 75°F) | 75 |
| | | WINDOW SHGC | 0.60 |

BUILDING DATA

| | | | |
|--|-----------------|---------------------------|----------|
| ATTACHMENT: | ATTACHED | # OF STORIES (+BASEMENT): | 3 |
| FRONT FACES: | EAST | ASSUMED (Y/N): | Y |
| AIR CHANGES PER HOUR: | 3.00 | ASSUMED (Y/N): | Y |
| AIR TIGHTNESS CATEGORY: | TIGHT | ASSUMED (Y/N): | Y |
| WIND EXPOSURE: | SHELTERED | ASSUMED (Y/N): | Y |
| HOUSE VOLUME (ft ³): | 27477.0 | ASSUMED (Y/N): | Y |
| INTERNAL SHADING: | BLINDS/CURTAINS | ASSUMED OCCUPANTS: | 4 |
| INTERIOR LIGHTING LOAD (Btu/h/ft ²): | 2.50 | DC BRUSHLESS MOTOR (Y/N): | Y |
| FOUNDATION CONFIGURATION | BCIN_1 | DEPTH BELOW GRADE: | 6.0 ft |
| LENGTH: 54.0 ft | WIDTH: 21.0 ft | EXPOSED PERIMETER: | 109.0 ft |

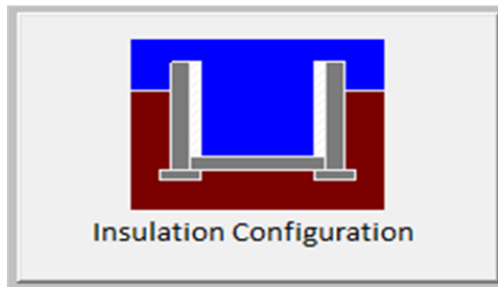
| 2012 OBC - COMPLIANCE PACKAGE | | Compliance Package PERFORMANCE | |
|--|--|--------------------------------|-----------|
| Component | | Nominal | Min. Eff. |
| Ceiling with Attic Space Minimum RSI (R)-Value | | 60 | 59.22 |
| Ceiling Without Attic Space Minimum RSI (R)-Value | | 31 | 27.65 |
| Exposed Floor Minimum RSI (R)-Value | | 31 | 29.80 |
| Walls Above Grade Minimum RSI (R)-Value | | 22+1.5 | 21.40 |
| Basement Walls Minimum RSI (R)-Value | | 20 | 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 | | 1.6 | - |
| Skylights Maximum U-Value | | 2.6 | - |
| Space Heating Equipment Minimum AFUE | | 96% | - |
| HRV/ERV Minimum Efficiency | | 75% | - |
| Domestic Hot Water Heater Minimum EF | | 0.9 | - |

INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

| Weather Station Description | | |
|--------------------------------|---|---|
| Province: | Ontario | |
| Region: | Brampton | |
| 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 |  Insulation Configuration |
| Floor Width (m): | 6.4 | |
| Exposed Perimeter (m): | 33.2 | |
| Wall Height (m): | 2.7 | |
| Depth Below Grade (m): | 1.83 | |
| Window Area (m ²): | 1.9 | |
| 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): | | 1043 |

TYPE: 2004
LO# 104858

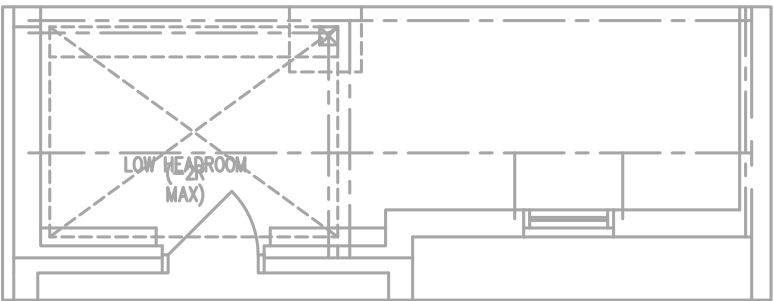
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

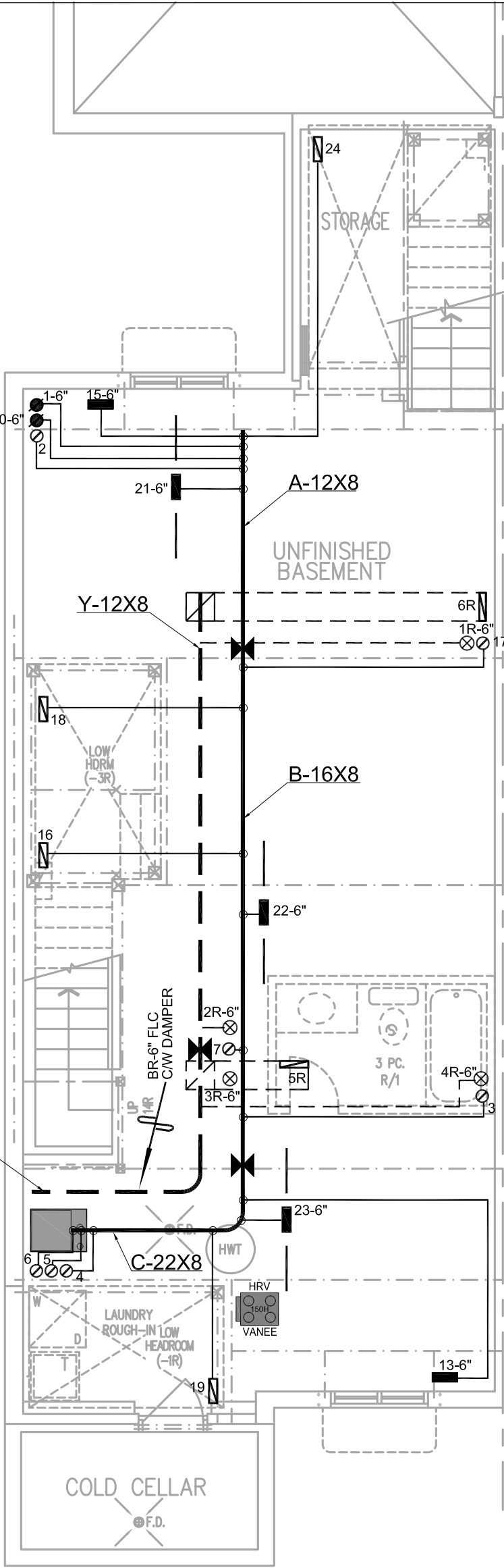
| Weather Station Description | | | | |
|-----------------------------------|--------------------------|-----------------------|----|----|
| Province: | Ontario | | | |
| Region: | Brampton | | | |
| Weather Station Location: | Open flat terrain, grass | | | |
| Anemometer height (m): | 10 | | | |
| 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): | 778.1 | | | |
| Air Leakage/Ventilation | | | | |
| Air Tightness Type: | Attached (3.0 ACH) | | | |
| Custom BDT Data: | ELA @ 10 Pa. | 871.6 cm ² | | |
| | 3.00 | ACH @ 50 Pa | | |
| Mechanical Ventilation (L/s): | Total Supply | Total Exhaust | | |
| | 30.0 | 30.0 | | |
| Flue Size | | | | |
| Flue #: | #1 | #2 | #3 | #4 |
| Diameter (mm): | 0 | 0 | 0 | 0 |
| Natural Infiltration Rates | | | | |
| Heating Air Leakage Rate (ACH/H): | 0.282 | | | |
| Cooling Air Leakage Rate (ACH/H): | 0.088 | | | |

TYPE: 2004

LO# 104858

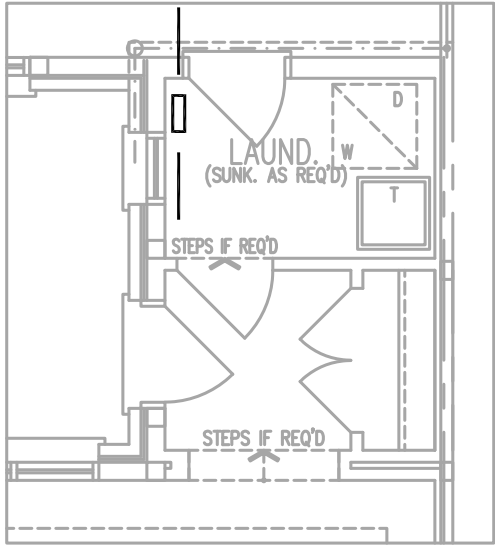


PART. BASEMENT
PLAN, ELEV. 'B'

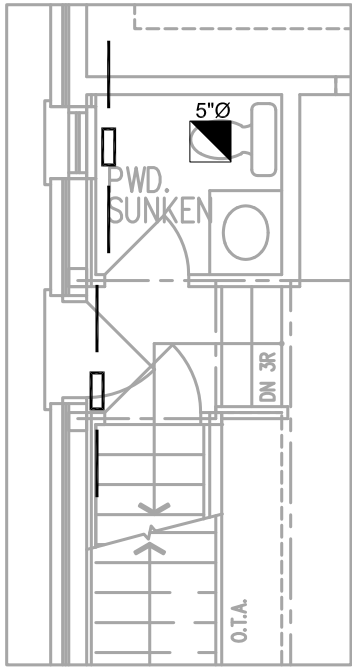


BASEMENT PLAN,
ELEV. 'A'

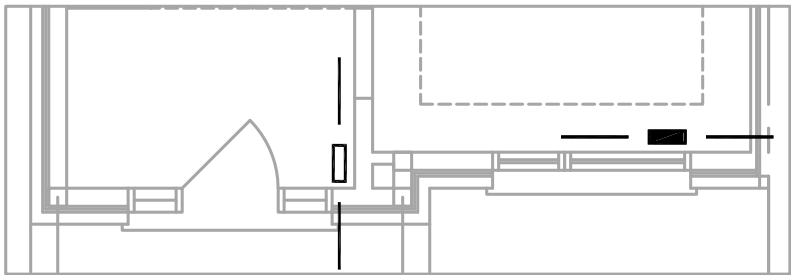
| HVAC LEGEND | | | | | | | | 3. | | | |
|--|---------------------------|---|---------------------------------|-------------------------------|------------------------------|---|----------------------------|--|-------------|-------------|--|
| SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION | 2. | | | |
| | SUPPLY AIR GRILLE | | 6" SUPPLY AIR BOOT ABOVE | | 14"x8" RETURN AIR GRILLE | | RETURN AIR STACK ABOVE | 1. | | | |
| | SUPPLY AIR GRILLE 6" BOOT | | SUPPLY AIR STACK FROM 2nd FLOOR | | 30"x8" RETURN AIR GRILLE | | RETURN AIR STACK 2nd FLOOR | No. | Description | Date | |
| | SUPPLY AIR BOOT ABOVE | | 6" SUPPLY AIR STACK 2nd FLOOR | | FRA- FLOOR RETURN AIR GRILLE | | REDUCER | REVISIONS | | | |
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| Client | | <div></div> <div>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services</div> | | | | HEAT LOSS 30053 BTU/H | | # OF RUNS S/A R/A FANS | | Sheet Title | |
| ROYAL PINE HOMES | | | | | | UNIT DATA | | 3RD FLOOR | | BASEMENT | |
| Project Name | | | | | | CARRIER | | 2ND FLOOR | | HEATING | |
| SUMMER RIDGE ESTATES | | | | | | MODEL | | 1ST FLOOR | | LAYOUT | |
| BRAMPTON, ONTARIO | | | | | | 59SC6A040M14--10 | | BASEMENT | | Date | |
| 2004 | | 1949 sqft | | 40 MBTU/H | | 3 1 0 | | APR/2024 | | | |
| | | 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. | | OUTPUT 39 MBTU/H | | ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A | | Scale 3/16" = 1'-0" | | | |
| | | | | COOLING 2.0 TONS | | | | BCIN# 19669 | | | |
| | | | | FAN SPEED 770 cfm @ 0.6" w.c. | | | | LO# 104858 | | | |



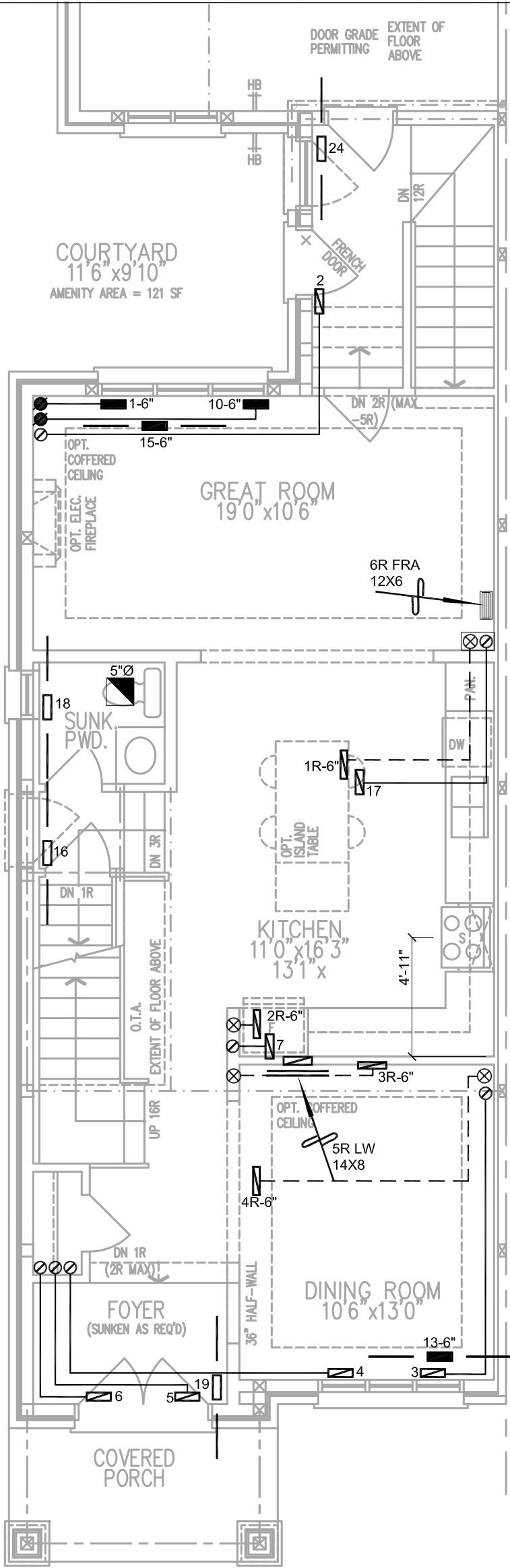
PART. GROUND FLOOR PLAN
W/ OPT. LAUNDRY, ELEV. 'A'
(ELEV. 'B' SIMILAR)



PART. GROUND FLOOR PLAN
W/ OPT. DOOR, ELEV. 'A'
(ELEV. 'B' SIMILAR)

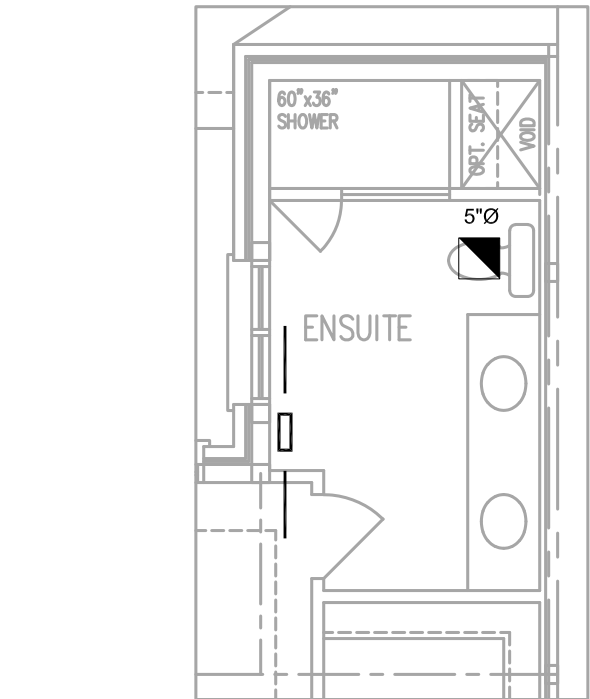


PART. GROUND FLOOR
PLAN, ELEV. 'B'

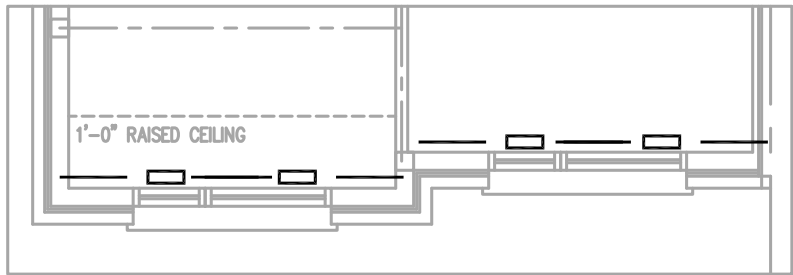


GROUND FLOOR PLAN,
ELEV. 'A'

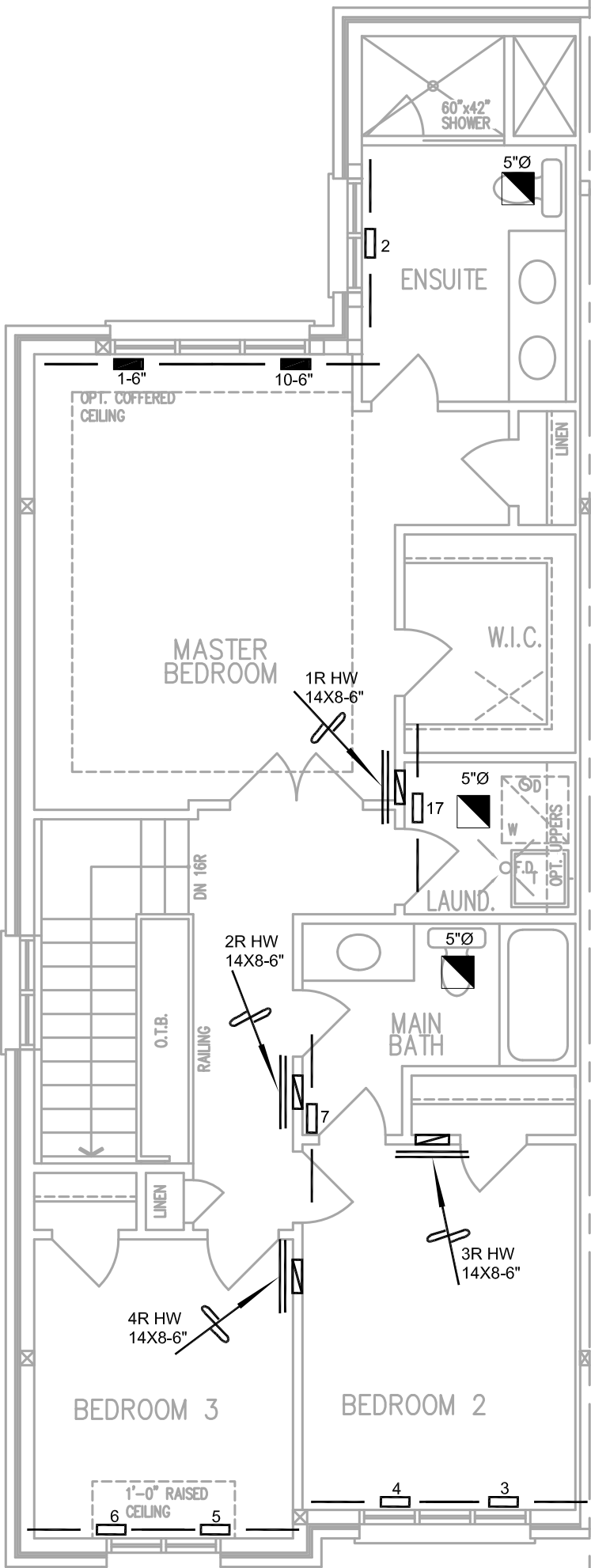
| HVAC LEGEND | | | | | | | | 3. | | |
|--|---------------------------|---|---------------------------------|--------|------------------------------|--|----------------------------|--|-------------|-------------|
| SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION | 2. | | |
| | SUPPLY AIR GRILLE | | 6" SUPPLY AIR BOOT ABOVE | | 14"x8" RETURN AIR GRILLE | | RETURN AIR STACK ABOVE | 1. | | |
| | SUPPLY AIR GRILLE 6" BOOT | | SUPPLY AIR STACK FROM 2nd FLOOR | | 30"x8" RETURN AIR GRILLE | | RETURN AIR STACK 2nd FLOOR | No. | Description | Date |
| | SUPPLY AIR BOOT ABOVE | | 6" SUPPLY AIR STACK 2nd FLOOR | | FRA- FLOOR RETURN AIR GRILLE | | REDUCER | REVISIONS | | |
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| Client | | <div></div> <div>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdsgns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services</div> <div>Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.</div> | | | | <div></div> | | Sheet Title | | |
| FIRST FLOOR HEATING LAYOUT | | | | | | | | | | |
| Date APR/2024 | | | | | | | | | | |
| Project Name | | | | | | Scale 3/16" = 1'-0" | | BCIN# 19669 | | |
| SUMMER RIDGE ESTATES BRAMPTON, ONTARIO | | | | | | | | LO# | 104858 | |
| 2004 | | 1949 sqft | | | | | | | | |



OPT. SECOND FLOOR ENSUITE



PART SECOND FLOOR
PLAN, ELEV. 'B'



SECOND FLOOR PLAN,
ELEV. 'A'

| HVAC LEGEND | | | | | | | | 3. | | |
|---|---------------------------|--|---------------------------------|--------|------------------------------|---|----------------------------|-------------|-------------|------|
| SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION | 2. | | |
| | SUPPLY AIR GRILLE | | 6" SUPPLY AIR BOOT ABOVE | | 14"x8" RETURN AIR GRILLE | | RETURN AIR STACK ABOVE | 1. | | |
| | SUPPLY AIR GRILLE 6" BOOT | | SUPPLY AIR STACK FROM 2nd FLOOR | | 30"x8" RETURN AIR GRILLE | | RETURN AIR STACK 2nd FLOOR | No. | Description | Date |
| | SUPPLY AIR BOOT ABOVE | | 6" SUPPLY AIR STACK 2nd FLOOR | | FRA- FLOOR RETURN AIR GRILLE | | REDUCER | REVISIONS | | |
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| Client | | <div> 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services</div> <div>Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.</div> | | | | Sheet Title | | | | |
| Project Name | | | | | | SECOND FLOOR HEATING LAYOUT | | | | |
| SUMMER RIDGE ESTATES BRAMPTON, ONTARIO | | | | | | Date APR/2024 | | | | |
| 2004 | | 1949 sqft | | | | Scale 3/16" = 1'-0" | | | | |
| | | | | | | BCIN# 19669 | | | | |
| | | | | | | LO# | | 104858 | | |