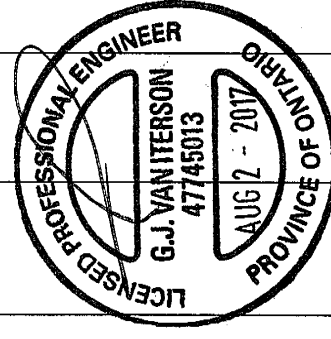


SITE NAME: RUSSEL GARDEN  
BUILDER: GERENPARK HOMES  
TYPE: DEWBERRY 2E  
DATE: Jul-17  
LOF 75065  
GFA: 2598  
WINTER NATURAL AIR CHANGE RATE 0.488  
SUMMER NATURAL AIR CHANGE RATE 0.165  
HEAT LOSS AT °F. 71  
HEAT GAIN AT °F. 16  
CSA-F280-12  
SB-12 PACKAGE A4

| ROOM USE                       | MBR       | ENS       | WIC       | BED-2     | BED-3     | BED-4     | BATH      |  |  |
|--------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--|--|
| EXP. WALL                      | 14        | 19        | 9         | 31        | 24        | 10        | 0         |  |  |
| CLG. HT.                       | 10        | 9         | 9         | 9         | 9         | 9         | 9         |  |  |
| FACTORS                        |           |           |           |           |           |           |           |  |  |
| GRS.WALL AREA                  | 133       | 171       | 81        | 279       | 216       | 90        | 0         |  |  |
| GLAZING                        | LOSS GAIN | LOSS GAIN | LOSS GAIN | LOSS GAIN | LOSS GAIN | LOSS GAIN | LOSS GAIN |  |  |
| NORTH                          | 0         | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| EAST                           | 0         | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| SOUTH                          | 0         | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| WEST                           | 0         | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| SKYLT.                         | 0         | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| DOORS                          | 0         | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| NET EXPOSED WALL               | 3.3       | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| NET EXPOSED BSMT WALL ABOVE GR | 3.3       | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| NO ATTIC EXPOSED CLG           | 1.2       | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| EXPOSED FLOOR                  | 2.6       | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| BASEMENT/CRAWL HEAT LOSS       | 2.4       | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| SLAB ON GRADE HEAT LOSS        | 0         | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| SUBTOTAL HT LOSS               | 1195      | 1198      | 364       | 1665      | 1452      | 726       | 93        |  |  |
| SUB TOTAL HT GAIN              | 1488      | 1283      | 112       | 1590      | 756       | 587       | 50        |  |  |
| LEVEL FACTOR / MULTIPLIER      | 0.10      | 0.29      | 0.10      | 0.29      | 0.10      | 0.29      | 0.10      |  |  |
| AIR CHANGE HEAT LOSS           | 349       | 350       | 106       | 487       | 424       | 212       | 27        |  |  |
| AIR CHANGE HEAT GAIN           | 177       | 153       | 13        | 189       | 90        | 70        | 6         |  |  |
| DUCT LOSS                      | 0         | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| DUCT GAIN                      | 0         | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| HEAT GAIN PEOPLE               | 2         | 0         | 0         | 1         | 1         | 1         | 0         |  |  |
| HEAT GAIN APPLIANCES/LIGHTS    | 626       | 0         | 0         | 626       | 626       | 626       | 0         |  |  |
| TOTAL HT LOSS BTU/H            | 1544      | 1549      | 470       | 2151      | 1876      | 938       | 120       |  |  |
| TOTAL HT GAIN x 1.3 BTU/H      | 3603      | 1867      | 162       | 3439      | 2229      | 1981      | 72        |  |  |

| ROOM USE                       | LVDN      | KIT       | GRT       | WIC-2     | WIR       | FOY       | BAS       |  |  |
|--------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--|--|
| EXP. WALL                      | 43        | 47        | 45        | 6         | 6         | 34        | 109       |  |  |
| CLG. HT.                       | 10        | 10        | 10        | 10        | 10        | 11        | 9         |  |  |
| FACTORS                        |           |           |           |           |           |           |           |  |  |
| GRS.WALL AREA                  | 430       | 470       | 450       | 60        | 60        | 374       | 736       |  |  |
| GLAZING                        | LOSS GAIN | LOSS GAIN | LOSS GAIN | LOSS GAIN | LOSS GAIN | LOSS GAIN | LOSS GAIN |  |  |
| NORTH                          | 0         | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| EAST                           | 0         | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| SOUTH                          | 0         | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| WEST                           | 0         | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| SKYLT.                         | 0         | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| DOORS                          | 0         | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| NET EXPOSED WALL               | 3.3       | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| NET EXPOSED BSMT WALL ABOVE GR | 3.3       | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| NO ATTIC EXPOSED CLG           | 1.2       | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| EXPOSED FLOOR                  | 2.6       | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| BASEMENT/CRAWL HEAT LOSS       | 2.4       | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| SLAB ON GRADE HEAT LOSS        | 0         | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| SUBTOTAL HT LOSS               | 3381      | 2794      | 2768      | 379       | 379       | 2542      | 3195      |  |  |
| SUB TOTAL HT GAIN              | 3883      | 3110      | 2385      | 319       | 319       | 797       | 5191      |  |  |
| LEVEL FACTOR / MULTIPLIER      | 0.20      | 0.63      | 0.30      | 0.97      | 0.30      | 0.97      | 0.40      |  |  |
| AIR CHANGE HEAT LOSS           | 2142      | 1770      | 2677      | 367       | 367       | 2458      | 7824      |  |  |
| AIR CHANGE HEAT GAIN           | 462       | 370       | 284       | 38        | 38        | 95        | 92        |  |  |
| DUCT LOSS                      | 552       | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| DUCT GAIN                      | 497       | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| HEAT GAIN PEOPLE               | 0         | 0         | 0         | 0         | 0         | 0         | 0         |  |  |
| HEAT GAIN APPLIANCES/LIGHTS    | 626       | 626       | 626       | 626       | 626       | 626       | 626       |  |  |
| TOTAL HT LOSS BTU/H            | 6075      | 4564      | 5445      | 746       | 746       | 5000      | 13014     |  |  |
| TOTAL HT GAIN x 1.3 BTU/H      | 7109      | 5338      | 4285      | 465       | 465       | 1159      | 1533      |  |  |



TOTAL HEAT GAIN BTU/H: 34699 TONS: 2.89  
TOTAL HEAT LOSS: 44238  
TOTAL COMBINED HEAT LOSS BTU/H: 46888  
STRUCTURAL HEAT LOSS: 44238  
LOSS DUE TO VENTILATION LOAD BTU/H: 2650  
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.  
MICHAEL O'ROURKE  
INDIVIDUAL BCIN: 19669

[illegible]

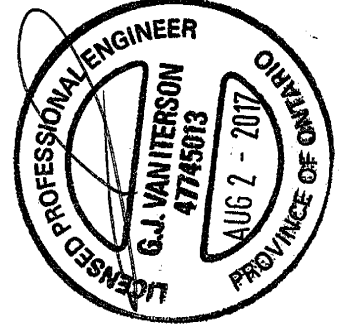
| FLOOR | ROOM NAME               | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 2    | 2    | 1    | 1    | 1    | 1    | BAS   |
|-------|-------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
|       | MBR                     | 1.54 | 1.55 | 0.47 | 2.15 | 1.88 | 0.94 | 0.12 | 0.00 | 0.00 | 4.56 | 0.00 | 0.00 | 5.00 | 13.01 |
|       | RM LOSS MBH.            | 0.7  | 0.7  | 0.2  | 1.0  | 0.9  | 0.4  | 0.1  | 0.0  | 0.0  | 2.1  | 0.0  | 0.0  | 2.3  | 6.1   |
|       | # of RUNS red'd HEATING | 3.60 | 1.87 | 0.16 | 3.44 | 2.23 | 1.98 | 0.07 | 0.00 | 0.00 | 5.34 | 0.00 | 0.00 | 1.16 | 1.93  |
|       | RM GAIN MBH.            | 2.5  | 1.3  | 0.1  | 2.4  | 1.5  | 1.4  | 0.1  | 0.0  | 0.0  | 3.7  | 0.0  | 0.0  | 0.8  | 1.3   |
|       | # of RUNS red'd COOLING | 2.0  | 1.0  | 0.1  | 2.0  | 1.0  | 1.0  | 1.0  | 0.0  | 4.9  | 3.0  | 0.3  | 0.3  | 0.0  | 0.0   |
|       | # of OUTLETS INSTALLED  | 2.0  | 1.0  | 1.0  | 1.0  | 1.0  | 1.0  | 1.0  | 3.0  | 4.0  | 3.0  | 1.0  | 1.0  | 3.0  | 7.0   |

[illegible]

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.



TYPE: DEWBERRY 2E  
SITE NAME: RUSSEL GARDEN

LO # 75065

**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>5</u> @ 10.6 cfm <u>53</u> cfm   |             |
| Other Rooms                | <u>5</u> @ 10.6 cfm <u>53.0</u> cfm |             |
| Table 9.32.3.A.            | TOTAL <u>180.2</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                                   | 79.5 cfm |              |

| SUPPLEMENTAL VENTILATION CAPACITY |                  | 9.32.3.5. |
|-----------------------------------|------------------|-----------|
| Total Ventilation Capacity        | <u>180.2</u> cfm |           |
| Less Principal Ventil. Capacity   | <u>139</u> cfm   |           |
| Required Supplemental Capacity    | <u>41.2</u> cfm  |           |

| PRINCIPAL EXHAUST FAN CAPACITY |                                                                   |
|--------------------------------|-------------------------------------------------------------------|
| Model: VANEE 60H-V+            | Location: BSMT                                                    |
| <u>139.0</u> cfm               | <u>3.0</u> sones <input checked="" type="checkbox"/> HVI Approved |

| PRINCIPAL EXHAUST HEAT LOSS CALCULATION |               |
|-----------------------------------------|---------------|
| CFM                                     | $\Delta T$ °F |
| 139.0 CFM                               | 71 F          |
| X                                       | X             |
| FACTOR                                  | % LOSS        |
| 1.08                                    | X             |
|                                         | 0.25          |

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

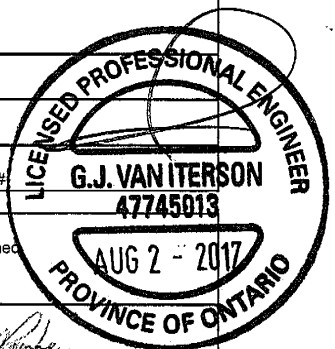
| HEAT RECOVERY VENTILATOR        |                                                  | 9.32.3.11. |
|---------------------------------|--------------------------------------------------|------------|
| Model: VANEE 60H-V+             |                                                  |            |
| <u>139</u> cfm high             | <u>50</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:        |        |
|-----------------|--------|
| GERENPARK 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:                                                                                                         | July-17                 |





**INTERGRATED COMBO HEATING SYSTEM  
EQUIPMENT SELECTION SUMMARY AND APPLICATION FORM**  
THIS FORM SHALL BE COMPLETED IN FULL AND SUMMITTED WITH PERMIT APPLICATION

DATE: July-17

BCIN# 19669

PROJECT LOCATION RUSSEL GARDEN

BUILDER: GERENPARK HOMES

MODEL: DEWBERRY 2E

0

SYSTEM DESIGNER

PRINT NAME

Micahel O'Rourke

HRAI Certificate Number

001820

COMPANY NAME

**SECTION I****Building heating load summary**

Total Calculated Heat Loss

48474

btu/r

Heat Loss Calculation Attached



Total Design Load (Heat Loss + 10%)

53321

btu/h

(see HVAC drawings)

**SECTION II****Domestic hot water demand summary**

Total Calculated Hot Water Demand

0 US/gal.

Hot Water Demand Calculation Attached



Demand load includes fixtures listed in schedule A

**SECTION III****Equipment selction summary**

Water Heater

GSW

Air Handler

Air Max

Make &amp; Model #

6G5076NVC-02

Make &amp; Model #

MaxAir 100e

Input

76,000

Btu/H

Coil rating

53,500

Btu/H @

130 °F

Storage capacity

50

US/gal.

HRAI HWT/Coil sizing form attached



Recovery

90%

**NOTICE TO APPLICATION/ OWNER Re: System operation and limitations**

The system described on this form has been designed to accommodate the specific domestic hot water and comfort heating demands of this building at the time of application as specified in schedule A. Any additional demands (such as adding a washroom) placed on the combo system must be evaluated to determine if the system is capable of supplying the additional load. Additional demands that have not been properly evaluated can have a severe effect on the proper operation of the system.

**Schedule A**

Proposed number of occupants

4

# of shower heads

0

# of bathrooms

4

High demand fixtures

No



Yes



If yes - list

I hereby acknowledge I have read and understand the above notice concerning the limitations of the combo system and acknowledge the information. I have provided on this form is accurate to the best of my understanding.

Signature of Applicant

Also print name

Michael O'Rourke

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

BCIN# 19669

MODEL: DEWBERRY 2E

Table 2

|                      | A                  |          | X | B             | =     | C           |
|----------------------|--------------------|----------|---|---------------|-------|-------------|
| Activity             | Avg. Hot Water per |          |   | Times used in |       | Liters Used |
|                      | Isage (liters)     |          |   | Peak Hour     |       | Peak Hour   |
|                      | Hi-Flow            | Low-Flow |   |               |       |             |
|                      | (Old)              | (New)    |   |               |       |             |
| Shower ~ 5 min       | 54                 | 15       | X |               | =     | 0           |
| ~ 10 min             | 110                | 27       | X | 0             | =     | 0           |
| ~ 15 min             | 160                | 40       | X |               | =     | 0           |
| Reg. Bath ~ 1/2 full | 76                 |          | X |               | =     | 0           |
| Whirlpool ~ sm.      | *                  |          | X |               | =     |             |
| ~ Med.               | *                  |          | X |               | =     |             |
| ~ Lge.               | *                  |          | X |               | =     |             |
| Personal Use         | 10                 |          | X | 0             | =     | 0           |
| Shampooing Hair      | 15                 |          | X | 0             | =     | 0           |
| Clothes Washing      |                    |          |   |               |       |             |
| ~ Hot / Warm         | 121                |          | X |               | =     | 0           |
| ~ Warm / Warm        | 90                 |          | X |               | =     | 0           |
| ~ Warm / Cold        | 60                 |          | X |               | =     | 0           |
| ~ Cold / Cold        | Nil                |          | X |               | =     |             |
| Hand Dishwashing     | 15                 |          | X |               | =     | 0           |
| Automatic            |                    |          |   |               |       |             |
| Dishwasher           | 53                 |          | X |               | =     | 0           |
| Food Preparation     | 19                 |          | X |               | =     | 0           |
|                      |                    |          |   | Total         | =     | 0           |
|                      |                    |          |   | Total         | usgal | 0           |

\* Special sizing consideration are required; consult whirlpool manufacturer's specifications.

#### 4.2.2 Space Heating Requirements

The maximum available energy for space heating is equal to the effective water heater output (**EWHO**). For proper system operation, the water heater should have an effective output that is at least 20% greater than the air handler output.

To determine the effective water heater output:

$$\text{EWHO} = (\text{Burner input}) \times (\text{Recovery Efficiency}) = 68,400$$

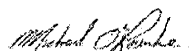
therefore:

$$\text{Energy Available for Space Heating} = \frac{\text{EWHO}}{1.2} = 57,000$$

$$\text{Burner Input required for Space Heating} = \frac{\text{Air Handler Output} \times 1.2}{\text{Recovery Efficiency}}$$

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




LOCATE CENTER OF OUTLET  
min 8" FROM WALLS

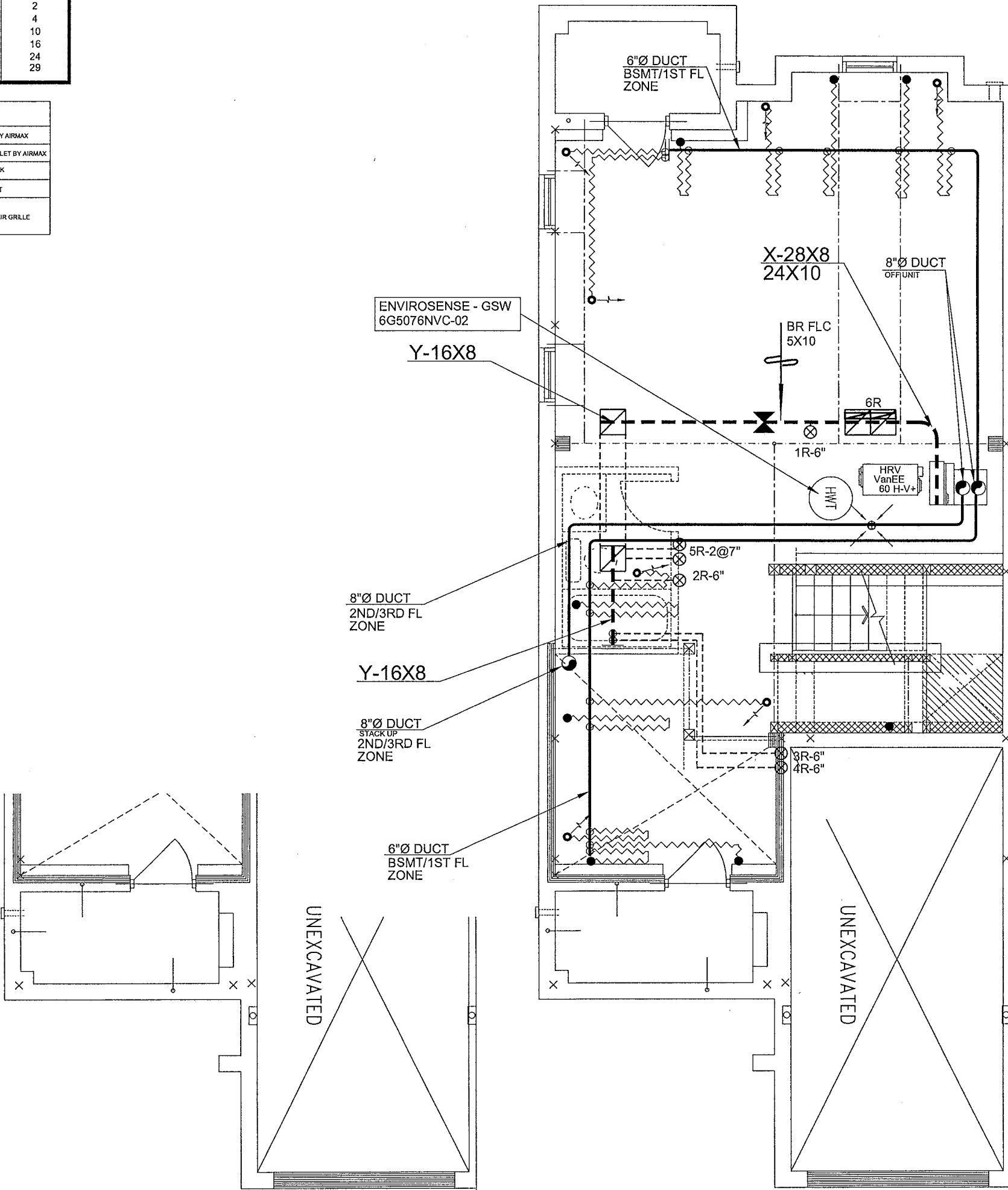
PACKAGE A4  
CSA-F280-12

MAXIMUM ALLOWABLE  
TRUNK DUCT LENGTH

| DUCT SIZE | MAXIMUM LENGTH | NO. OF TAKE OFFS |
|-----------|----------------|------------------|
| 4"        | 20'            | 2                |
| 5"        | 30'            | 4                |
| 6"        | 50'            | 10               |
| 7"        | 60'            | 16               |
| 8"        | 70'            | 24               |
| 10"       | 100'           | 29               |

HVAC LEGEND

|  |                       |
|--|-----------------------|
|  | OUTLET BY AIRMAX      |
|  | DUAL OUTLET BY AIRMAX |
|  | DUCTWORK              |
|  | FLEX DUCT             |
|  | RETURN AIR GRILLE     |



BASEMENT PLAN ELEVATION '1'

BASEMENT PLAN ELEVATION '2'

- INSTALLATION TO COMPLY WITH THE LATEST EDITIONS OF THE ONTARIO BUILDING CODE AND AIRMAX DESIGN AND INSTALLATION MANUALS
- VENT HOT WATER TANK OR BOILER TO MANUFACTURERS SPECS & ALL LOCAL CODES
- COMBUSTION AIR INTAKE (INSTALL per ALL LOCAL CODES)
- MAXIMUM TEMPERATURE of HOT WATER SUPPLIED TO PLUMBING FIXTURES SHALL NOT EXCEED 120°F or 49°C
- CONTRACTOR SHALL SEAL SUPPLY DUCT JOINTS AND GORES WITH AN APPROVED SEALANT

UNIT EQUIPMENT SUMMARY

| UNIT        | HEAT LOSS | REQUIRED HEAT LOSS (HEAT LOSS + 10%) | AIR HANDLER MODEL (AIRMAX) | HEAT OUTPUT (BTU/H @ TEMP) | HEAT SOURCE (HOT WATER TANK/ BOILER) | HEAT SOURCE INPUT (BTU/H) | HEAT GAIN LOAD (BTU/H) | A/C SLAB COIL (MODEL) c/w TX VALVE | A/C CONDENSER SIZE (TONS) |
|-------------|-----------|--------------------------------------|----------------------------|----------------------------|--------------------------------------|---------------------------|------------------------|------------------------------------|---------------------------|
| DEWBERRY 2E | 48,474    | 53,321                               | MAXAIR-100e P2-2 ZONE      | 53,500 @ 130°F             | GSW 6G5076NVC-02                     | 76,000                    | 35,386                 | MA36-100                           | 3.0                       |

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Client  
**GREENPARK HOMES**

Project Name  
**RUSSEL GARDENS  
HAMILTON, ONTARIO**

**DEWBERRY 2E 2598 sqft**

**HVACDESIGNS LTD.**

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.

**LICENSED PROFESSIONAL ENGINEER**  
**G.J. VAN NERSON**  
**47745013**  
**AUG 2 - 2017**  
**PROVINCE OF ONTARIO**

Sheet Title  
**BASEMENT  
HEATING  
LAYOUT**

Date  
JULY/2017

Scale  
3/16" = 1'-0"

BCIN# 19669

LO# 75065

LOCATE CENTER OF OUTLET  
min 8" FROM WALLS



MAXIMUM ALLOWABLE  
TRUNK DUCT LENGTH

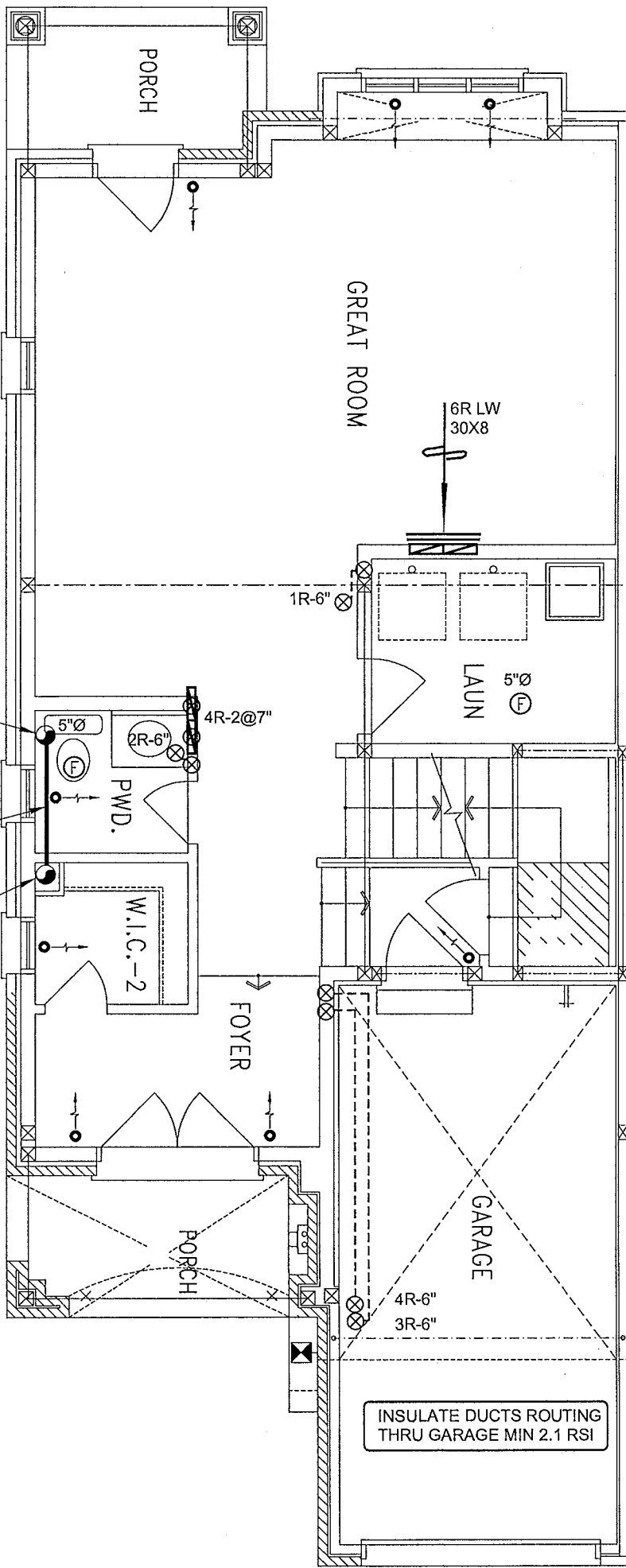
| DUCT SIZE | MAXIMUM LENGTH | NO. OF TAKE OFFS |
|-----------|----------------|------------------|
| 4"        | 20'            | 2                |
| 5"        | 30'            | 4                |
| 6"        | 50'            | 10               |
| 7"        | 60'            | 16               |
| 8"        | 70'            | 24               |
| 10"       | 100'           | 29               |

HVAC LEGEND

|  |                       |
|--|-----------------------|
|  | OUTLET BY AIRMAX      |
|  | DUAL OUTLET BY AIRMAX |
|  | DUCTWORK              |
|  | FLEX DUCT             |
|  | RETURN AIR GRILLE     |

PACKAGE A4  
CSA-F280-12

ENTRY LEVEL PLAN ELEVATION '1'

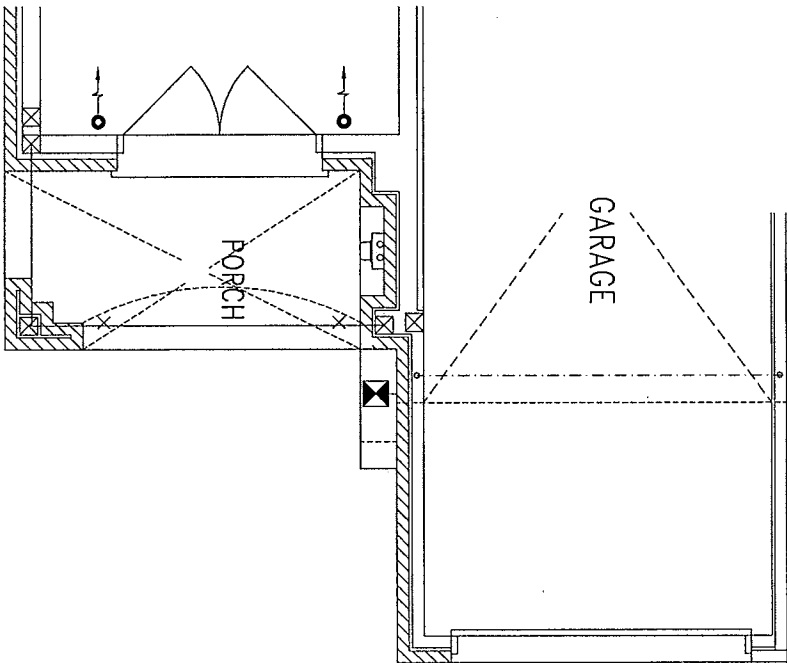


8"Ø DUCT  
STACK UP  
2ND/3RD FL  
ZONE

8"Ø DUCT

8"Ø DUCT  
STACK DN  
2ND/3RD FL  
ZONE

ENTRY LEVEL PLAN ELEVATION '2'



- INSTALLATION TO COMPLY WITH THE LATEST EDITIONS OF THE ONTARIO BUILDING CODE AND AIRMAX DESIGN AND INSTALLATION MANUALS
- VENT HOT WATER TANK OR BOILER TO MANUFACTURERS SPECS & ALL LOCAL CODES
- COMBUSTION AIR INTAKE (INSTALL per ALL LOCAL CODES)
- MAXIMUM TEMPERATURE of HOT WATER SUPPLIED TO PLUMBING FIXTURES SHALL NOT EXCEED 120°F or 49°C
- CONTRACTOR SHALL SEAL SUPPLY DUCT JOINTS AND GORES WITH AN APPROVED SEALANT

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Client  
**GREENPARK HOMES**

Project Name  
**RUSSEL GARDENS  
HAMILTON, ONTARIO**

**DEWBERRY 2E 2598 sqft**

**HVACDESIGNS LTD.**

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

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  
JULY/2017

Scale  
3/16" = 1'-0"

BCIN# 19669

LO# 75065

CSA-F280-12

| DUCT SIZE | MAXIMUM LENGTH | NO. OF TAKE OFFS |
|-----------|----------------|------------------|
| 4"        | 20'            | 2                |
| 5"        | 30'            | 4                |
| 6"        | 50'            | 10               |
| 7"        | 60'            | 16               |
| 8"        | 70'            | 24               |
| 10"       | 100'           | 29               |

### HVAC LEGEND

|                                                                                   |                       |
|-----------------------------------------------------------------------------------|-----------------------|
|  | OUTLET BY AIRMAX      |
|  | DUAL OUTLET BY AIRMAX |
|  | DUCTWORK              |
|  | FLEX DUCT             |
|  | RETURN AIR GRILLE     |

6"Ø DUCT

8"Ø DUCT  
STACK DN  
2ND/3RD FL  
ZONE

MAIN FLOOR PLAN ELEVATION '1'

LIVING/DINING

MAIN FLOOR PLAN ELEVATION '2'

- i. INSTALLATION TO COMPLY WITH THE LATEST EDITIONS OF THE ONTARIO BUILDING CODE AND AIRMAX DESIGN AND INSTALLATION MANUALS
- ii. VENT HOT WATER TANK OR BOILER TO MANUFACTURERS' SPECS & ALL LOCAL CODES
- iii. COMBUSTION AIR INTAKE (INSTALL per ALL LOCAL CODES)
- iv. MAXIMUM TEMPERATURE of HOT WATER SUPPLIED TO PLUMBING FIXTURES SHALL NOT EXCEED 120°F or 49°C
- v. CONTRACTOR SHALL SEAL SUPPLY DUCT JOINTS AND GORES WITH AN APPROVED SEALANT

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Client

# GREENPARK HOMES

Project Name

RUSSEL GARDENS  
HAMILTON, ONTARIO

DEWBERRY 2E

2598 sqft

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Sheet Title

## SECOND FLOOR HEATING LAYOUT

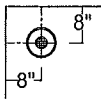
Date JULY/2017

Scale  $3/16" = 1'-0"$

BCIN# 19669

|     |       |
|-----|-------|
| LO# | 75065 |
|-----|-------|

LOCATE CENTER OF OUTLET  
min 8" FROM WALLS



PACKAGE A4  
CSA-F280-12

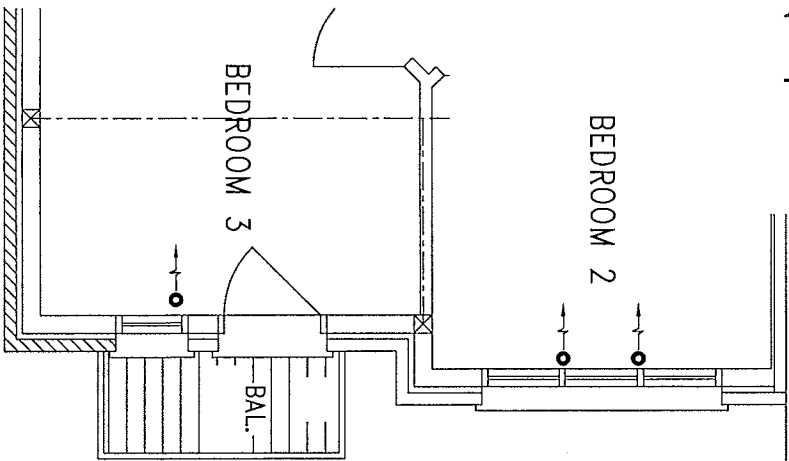
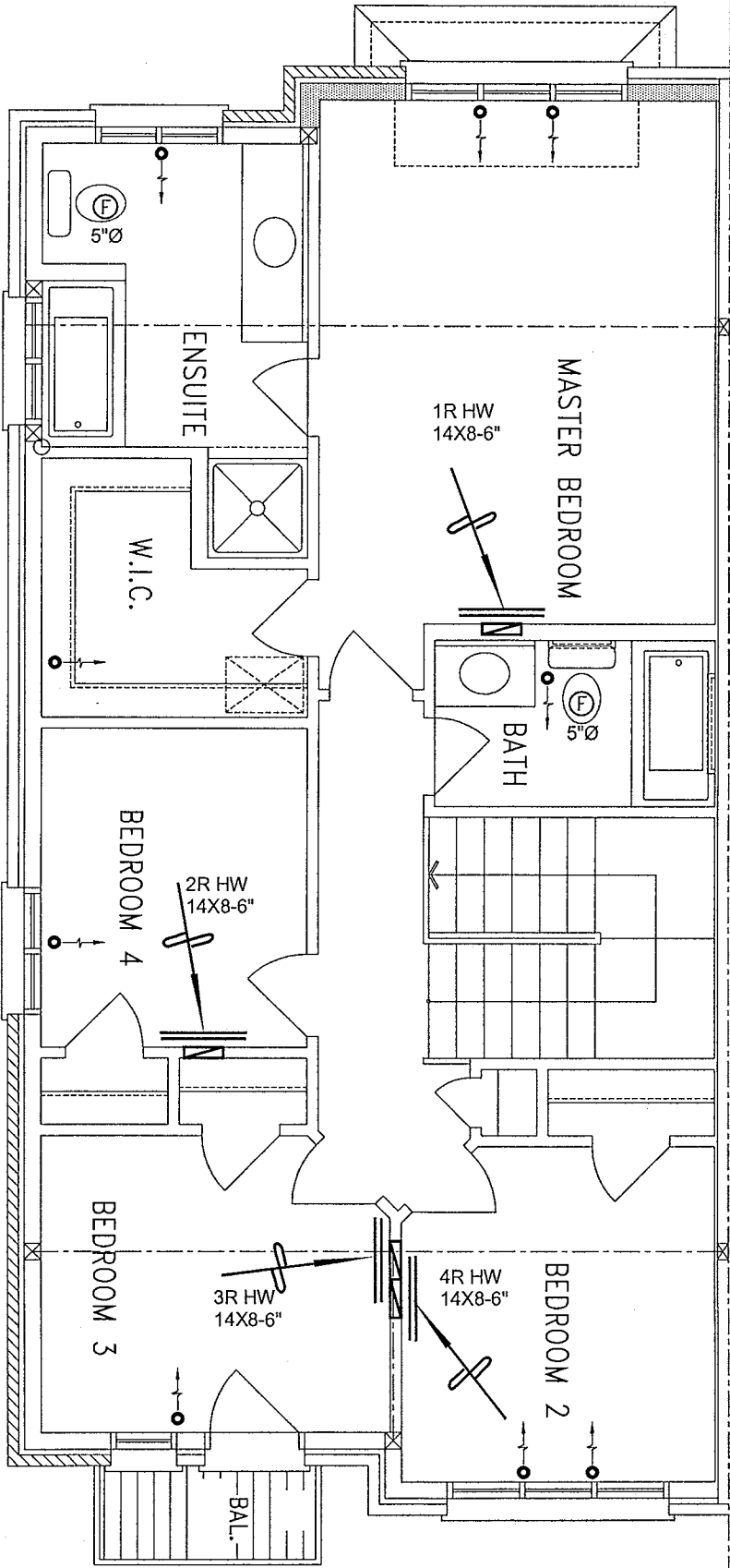
MAXIMUM ALLOWABLE  
TRUNK DUCT LENGTH

| DUCT SIZE | MAXIMUM LENGTH | NO. OF TAKE OFFS |
|-----------|----------------|------------------|
| 4"        | 20'            | 2                |
| 5"        | 30'            | 4                |
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HVAC LEGEND

|  |                       |
|--|-----------------------|
|  | OUTLET BY AIRMAX      |
|  | DUAL OUTLET BY AIRMAX |
|  | DUCTWORK              |
|  | FLEX DUCT             |
|  | RETURN AIR GRILLE     |

UPPER FLOOR PLAN ELEVATION '1'  
STANDARD 4-BED



UPPER FLOOR PLAN ELEVATION '2'  
STANDARD 4-BED

- i. INSTALLATION TO COMPLY WITH THE LATEST EDITIONS OF THE ONTARIO BUILDING CODE AND AIRMAX DESIGN AND INSTALLATION MANUALS
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Client  
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**PROFESSIONAL ENGINEER**  
**G.J. VAN ITTERSON**  
**47745013**  
**AUG 2 - 2017**  
**PROVINCE OF ONTARIO**

Sheet Title  
**THIRD FLOOR  
HEATING  
LAYOUT**

Date  
**JULY/2017**

Scale  
**3/16" = 1'-0"**

BCIN# 19669

LO# **75065**