

SITE NAME: RUSSEL GARDENS LOT 712-3 GFA: 2012 DATE: Dec-17 WINTER NATURAL AIR CHANGE RATE 0.409 HEAT LOSS AT °F 71 CSAF280-12
BUILDER: GREENPARK HOMES TYPE: HIGHGROVE 4 LOW# 77194 SUMMER NATURAL AIR CHANGE RATE 0.146 HEAT GAIN AT °F 14 SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	GRS.WALL AREA	FACTORS	MBR	ENS	WAC	BED-2	BED-3	BATH	FOY	MUD	WOD	BAS
EXP. WALL	16	9	144	LOSS GAIN	0	81	0	90	295	0	164	144	234	720
CLG. HT.	9	9	0	LOSS GAIN	0	9	0	9	10	0	11	12	9	9
GRS.WALL AREA	144	0	0	LOSS GAIN	0	81	0	90	295	0	164	144	234	720
GLAZING	0	0	0	LOSS GAIN	0	0	0	0	0	0	0	0	0	0
NORTH	19.8	16.3	0	0	0	0	0	0	0	0	0	0	0	0
EAST	19.8	41.8	30	593	1265	13	257	544	0	0	0	0	0	0
SOUTH	19.8	25.2	0	0	0	0	0	0	0	0	0	0	0	0
WEST	19.8	41.8	0	0	0	0	0	0	0	0	0	0	0	0
SKYLT.	34.6	102.0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	23.5	4.6	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.1	0.8	114	473	92	68	282	55	0	0	0	0	0	0
NET EXPOSED BMT WALL ABOVE GR	3.3	0.7	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.2	0.6	320	381	193	99	118	60	176	210	106	168	200	102
NO ATTIC EXPOSED CLG	2.6	1.3	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.4	0.5	0	0	0	65	154	30	20	47	9	0	0	0
BASEMENT CRAWL HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUB TOTAL HT LOSS	1447	811	1541	689	0.20	0.45	0.20	0.45	0.20	0.45	0.20	0.45	0.20	0.45
SUB TOTAL HT GAIN	0.20	0.45	0.20	0.45	0.20	0.45	0.20	0.45	0.20	0.45	0.20	0.45	0.20	0.45
LEVEL FACTOR / MULTIPLE	654	366	194	87	83	27	8	138	253	13	0	0	0	0
AIR CHANGE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR CHANGE HEAT GAIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DUCT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DUCT GAIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240	0	480	0	0	0	0	1	240	1	240	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	617	0	617	0	0	0	0	617	617	0	0	0	0	0
TOTAL HT LOSS BTU/H	2101	1295	3681	1109	292	108	1973	2987	3424	617	291	149	768	10825
TOTAL HT GAIN x 1.3 BTU/H	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ROOM USE	EXP. WALL	CLG. HT.	GRS.WALL AREA	FACTORS	MBR	ENS	WAC	BED-2	BED-3	BATH	FOY	MUD	WOD	BAS
EXP. WALL	16	9	144	LOSS GAIN	0	81	0	90	295	0	164	144	234	720
CLG. HT.	9	9	0	LOSS GAIN	0	9	0	9	10	0	11	12	9	9
GRS.WALL AREA	144	0	0	LOSS GAIN	0	81	0	90	295	0	164	144	234	720
GLAZING	0	0	0	LOSS GAIN	0	0	0	0	0	0	0	0	0	0
NORTH	19.8	16.3	0	0	0	0	0	0	0	0	0	0	0	0
EAST	19.8	41.8	30	593	1265	13	257	544	0	0	0	0	0	0
SOUTH	19.8	25.2	0	0	0	0	0	0	0	0	0	0	0	0
WEST	19.8	41.8	0	0	0	0	0	0	0	0	0	0	0	0
SKYLT.	34.6	102.0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	23.5	4.6	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.1	0.8	114	473	92	68	282	55	0	0	0	0	0	0
NET EXPOSED BMT WALL ABOVE GR	3.3	0.7	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.2	0.6	320	381	193	99	118	60	176	210	106	168	200	102
NO ATTIC EXPOSED CLG	2.6	1.3	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.4	0.5	0	0	0	65	154	30	20	47	9	0	0	0
BASEMENT CRAWL HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUB TOTAL HT LOSS	1557	1367	3998	1557	0.30	0.49	0.30	0.49	0.20	0.45	0.30	0.49	0.20	0.45
SUB TOTAL HT GAIN	0.30	0.49	0.30	0.49	0.30	0.49	0.30	0.49	0.20	0.45	0.30	0.49	0.20	0.45
LEVEL FACTOR / MULTIPLE	770	770	2299	603	83	27	8	138	253	13	0	0	0	0
AIR CHANGE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR CHANGE HEAT GAIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DUCT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DUCT GAIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240	0	480	0	0	0	0	1	240	1	240	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	617	0	617	0	0	0	0	617	617	0	0	0	0	0
TOTAL HT LOSS BTU/H	2327	2803	6653	2327	6849	6653	292	1973	3424	617	291	149	768	10825
TOTAL HT GAIN x 1.3 BTU/H	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TOTAL HEAT GAIN BTU/H: 24870 TONS: 2.07 LOSS DUE TO VENTILATION LOAD BTU/H: 2650 STRUCTURAL HEAT LOSS: 33970 TOTAL COMBINED HEAT LOSS BTU/H: 36620
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'BRIEN

**SITE NAME: RUSSEL GARDENS
BUILDER: GREENPARK HOMES**

LOT 212-3
TYPE: HIGHGROVE 4

DATE: Dec-17 GFA: 2012 LO# 77194

HEATING CFM	890	COOLING CFM	890
TOTAL HEAT LOSS	33,970	TOTAL HEAT GAIN	24,353
AIR FLOW RATE CFM	26.2	AIR FLOW RATE CFM	36.55

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

#GOODMAN
GMEC960402BNA 40
FAN SPEED
LOW
MEDIUM
HIGH

AFUE = 96 %
INPUT (BTU/H) = 40,000
OUTPUT (BTU/H) = 38,400
DESIGN CFM = 890
CFM @ 6" E.S.P.

plenum pressure s/a	0.18
max s/a diff press. loss	0.02
r/a grille press. loss	0.15
adjusted pressure r/a	0.15

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

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

RUN #	ROOM NAME	1	2	3	4	5	6	7	8	10	13	14	15	16	17	19	20	21	22	23	24
1	MBR	1.05	1.30	0.99	1.71	1.05	0.29	0.99	1.71	1.05	2.33	2.32	2.32	2.32	2.32	1.96	1.47	2.90	2.90	2.90	2.90
2	RM LOSS MBH	28	34	26	45	28	8	8	45	28	61	61	61	61	61	51	38	76	76	76	76
3	CFM PER RUN HEAT	1.84	1.11	1.49	2.24	1.84	0.15	1.49	2.24	1.84	2.80	2.22	2.22	2.22	2.22	0.38	0.28	0.19	0.19	0.19	0.19
4	RM GAIN MBH	67	41	55	82	67	5	5	82	67	102	81	81	81	36	14	10	7	7	7	7
5	CFM PER RUN COOLING	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.16	0.17	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17
6	ADJUSTED PRESSURE	43	48	36	50	56	51	51	64	34	39	37	26	20	40	31	14	26	15	11	30
7	EQUIVALENT LENGTH	150	140	190	130	180	140	130	190	120	150	160	150	110	160	130	130	140	150	140	140
8	TOTAL EFFECTIVE LENGTH	193	188	226	180	236	196	181	254	154	189	197	176	130	200	161	144	166	165	151	170
9	ADJUSTED PRESSURE	0.09	0.09	0.08	0.1	0.07	0.09	0.1	0.06	0.11	0.09	0.08	0.09	0.12	0.09	0.11	0.12	0.1	0.1	0.11	0.1
10	ROUND DUCT SIZE	5	4	4	6	5	4	4	6	5	6	5	5	5	4	4	5	5	5	5	5
11	HEATING VELOCITY (ft/min)	206	390	92	298	229	191	92	229	206	311	448	448	448	92	585	436	558	558	558	558
12	COOLING VELOCITY (ft/min)	492	470	46	631	418	404	57	418	492	520	595	595	595	413	161	115	51	51	51	51
13	OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
14	TRUNK	C	C	B	A	C	B	B	A	C	A	C	C	C	B	A	B	C	C	B	A

ROOM NAME	TRUNK	CFM	VELOCITY (ft/min)	RECT	ROUND	STATIC PRESS.	TRUNK	CFM	VELOCITY (ft/min)	RECT	ROUND	STATIC PRESS.	TRUNK	CFM	VELOCITY (ft/min)	RECT	ROUND	STATIC PRESS.	TRUNK	CFM	VELOCITY (ft/min)
RM LOSS MBH	278	0.06	8	0	0	0.00	0	0.06	8	0	0	0.00	0	0.06	8	0	0	0.06	0	0.06	8
CFM PER RUN HEAT	468	0.06	8	0	0	0.00	0	0.06	8	0	0	0.00	0	0.06	8	0	0	0.06	0	0.06	8
RM GAIN MBH	425	0.08	8	0	0	0.00	0	0.08	8	0	0	0.00	0	0.08	8	0	0	0.08	0	0.08	8
CFM PER RUN COOLING	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0
ADJUSTED PRESSURE	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0
EQUIVALENT LENGTH	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0
TOTAL EFFECTIVE LENGTH	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0
ADJUSTED PRESSURE	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0
ROUND DUCT SIZE	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0
HEATING VELOCITY (ft/min)	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0
COOLING VELOCITY (ft/min)	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0
OUTLET GRILL SIZE	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0
TRUNK	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0

ROOM NAME	TRUNK	CFM	VELOCITY (ft/min)	RECT	ROUND	STATIC PRESS.	TRUNK	CFM	VELOCITY (ft/min)	RECT	ROUND	STATIC PRESS.	TRUNK	CFM	VELOCITY (ft/min)	RECT	ROUND	STATIC PRESS.	TRUNK	CFM	VELOCITY (ft/min)
RM LOSS MBH	278	0.06	8	0	0	0.00	0	0.06	8	0	0	0.00	0	0.06	8	0	0	0.06	0	0.06	8
CFM PER RUN HEAT	468	0.06	8	0	0	0.00	0	0.06	8	0	0	0.00	0	0.06	8	0	0	0.06	0	0.06	8
RM GAIN MBH	425	0.08	8	0	0	0.00	0	0.08	8	0	0	0.00	0	0.08	8	0	0	0.08	0	0.08	8
CFM PER RUN COOLING	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0
ADJUSTED PRESSURE	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0
EQUIVALENT LENGTH	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0
TOTAL EFFECTIVE LENGTH	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0
ADJUSTED PRESSURE	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0
ROUND DUCT SIZE	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0
HEATING VELOCITY (ft/min)	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0
COOLING VELOCITY (ft/min)	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0
OUTLET GRILL SIZE	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0
TRUNK	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0	0	0	0.00	0	0.00	0

TYPE: HIGHGROVE 4
SITE NAME: RUSSEL GARDENS

LO # 77194
LOT 212-3

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES		9.32.3.1(1)
a)	☒ Direct vent (sealed combustion) only	
b)	☐ Positive venting induced draft (except fireplaces)	
c)	☐ Natural draft, B-vent or induced draft gas fireplace	
d)	☐ Solid Fuel (including fireplaces)	
e)	☐ No Combustion Appliances	

HEATING SYSTEM	
☒ Forced Air	☐ Non Forced Air
☐ Electric Space Heat	

HOUSE TYPE		9.32.1(2)
☒ I	Type a) or b) appliance only, no solid fuel	
☐ II	Type I except with solid fuel (including fireplaces)	
☐ III	Any Type c) appliance	
☐ IV	Type I, or II with electric space heat	
☐	Other: Type I, II or IV no forced air	

SYSTEM DESIGN OPTIONS		O.N.H.W.P.
☐ 1	Exhaust only/Forced Air System	
☐ 2	HRV with Ducting/Forced Air System	
☒ 3	HRV Simplified/connected to forced air system	
☐ 4	HRV with Ducting/non forced air system	
☐	Part 6 Design	

TOTAL VENTILATION CAPACITY		9.32.3.3(1)
Basement + Master Bedroom	2 @ 21.2 cfm	42.4 cfm
Other Bedrooms	2 @ 10.6 cfm	21.2 cfm
Kitchen & Bathrooms	4 @ 10.6 cfm	42.4 cfm
Other Rooms	4 @ 10.6 cfm	42.4 cfm
Table 9.32.3.A.	TOTAL	148.4 cfm

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

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	148.4	cfm
Less Principal Ventil. Capacity	139	cfm
Required Supplemental Capacity	9.4	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	VANEE 60H-V+ Location: BSMT
139.0 cfm	3.0 sones ☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
139.0 CFM	71 F	X 1.08	X	0.25

SUPPLEMENTAL FANS		NUTONE	
Location	Model	cfm	HVI Sones
ENS	QTXEN050C	50	☒ 0.3
BATH	QTXEN050C	50	☒ 0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE 60H-V+	
139 cfm high	50 cfm low	
75 % Sensible Efficiency	☒ HVI Approved	
@ 32 deg F (0 deg C)		

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

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

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

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

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: HIGHGROVE 4	LOT 212-3	BUILDER: GREENPARK HOMES
SFQT: 2012	LO# 77194	SITE: RUSSEL GARDENS

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	1	OUTDOOR DESIGN TEMP.	88
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	74

BUILDING DATA

ATTACHMENT:	ATTACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	WEST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	4.55	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft ³):	27128.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 52.0 ft	WIDTH: 21.0 ft	EXPOSED PERIMETER:	94.0 ft

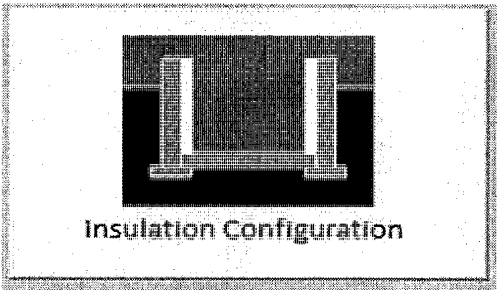
2012 OBC - COMPLIANCE PACKAGE		
Component	Compliance Package A1	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 ci	21.12
Below Grade Slab Entire surface > 600 mm below grade Minimum RSI (R)-Value	-	-
Edge of Below Grade Slab ≤ 600 mm Below Grade Minimum RSI (R)-Value	10	10
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value	10	11.13
Windows and Sliding Glass Doors Maximum U-Value	0.28	-
Skylights Maximum U-Value	0.49	-
Space Heating Equipment Minimum AFUE	0.96	-
HRV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.8	-

INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Hamilton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	15.8	 Insulation Configuration
Floor Width (m):	6.4	
Exposed Perimeter (m):	28.7	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	1.4	
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):		857

TYPE: HIGHGROVE 4
LO# 77194

LOT 212-3

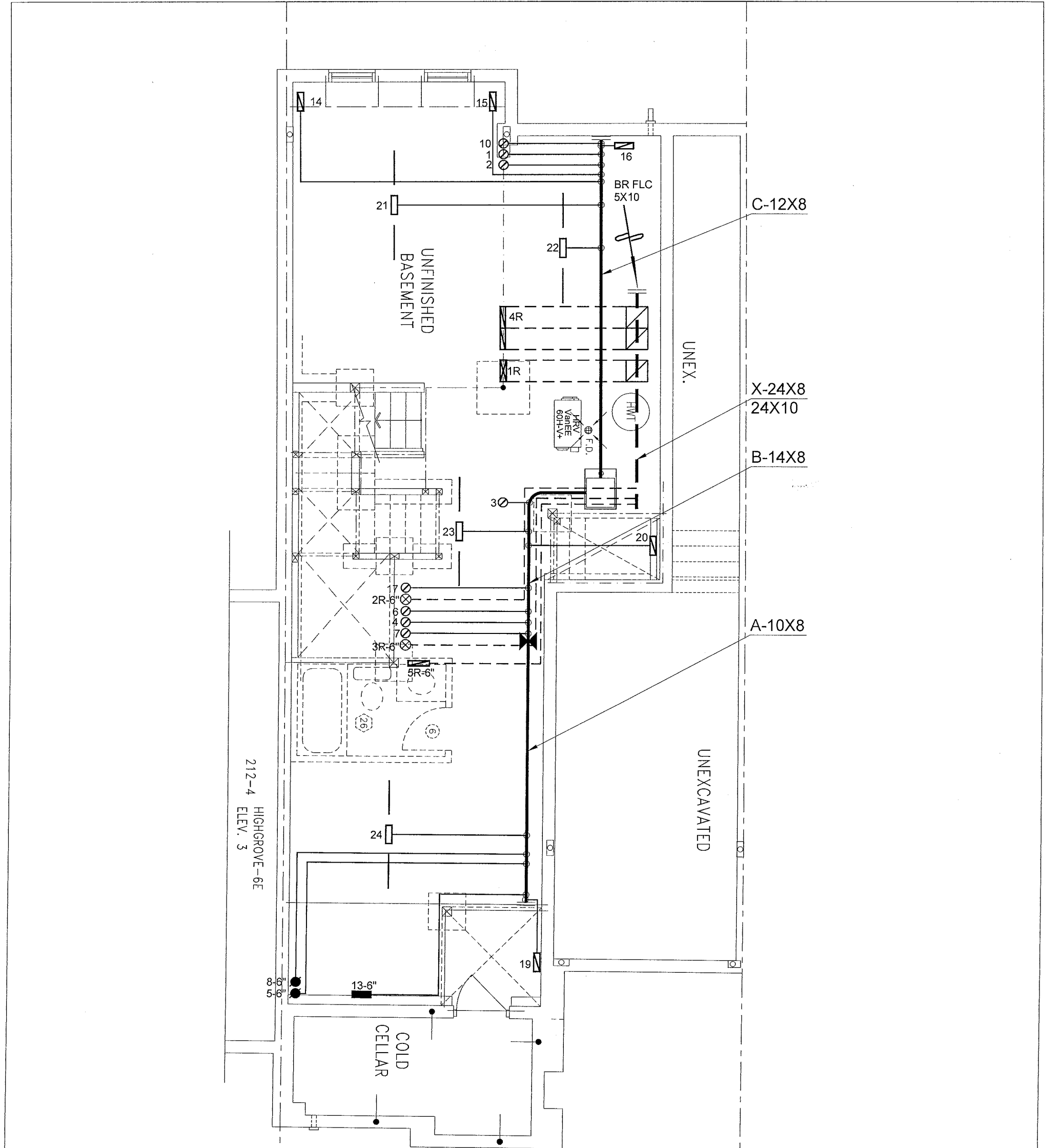
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Hamilton			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	6.71			
Building Configuration				
Type:	Semi			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	768.2			
Air Leakage/Ventilation				
Air Tightness Type:	Average (1946-1960) (4.55 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1305.1 cm ²		
	4.55	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	65.6	65.6		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.409			
Cooling Air Leakage Rate (ACH/H):	0.146			

TYPE: HIGHGROVE 4
LO# 77194

LOT 212-3



I MICHAEL O'Rourke HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C. 12.5 OF THE BUILDING CODE.

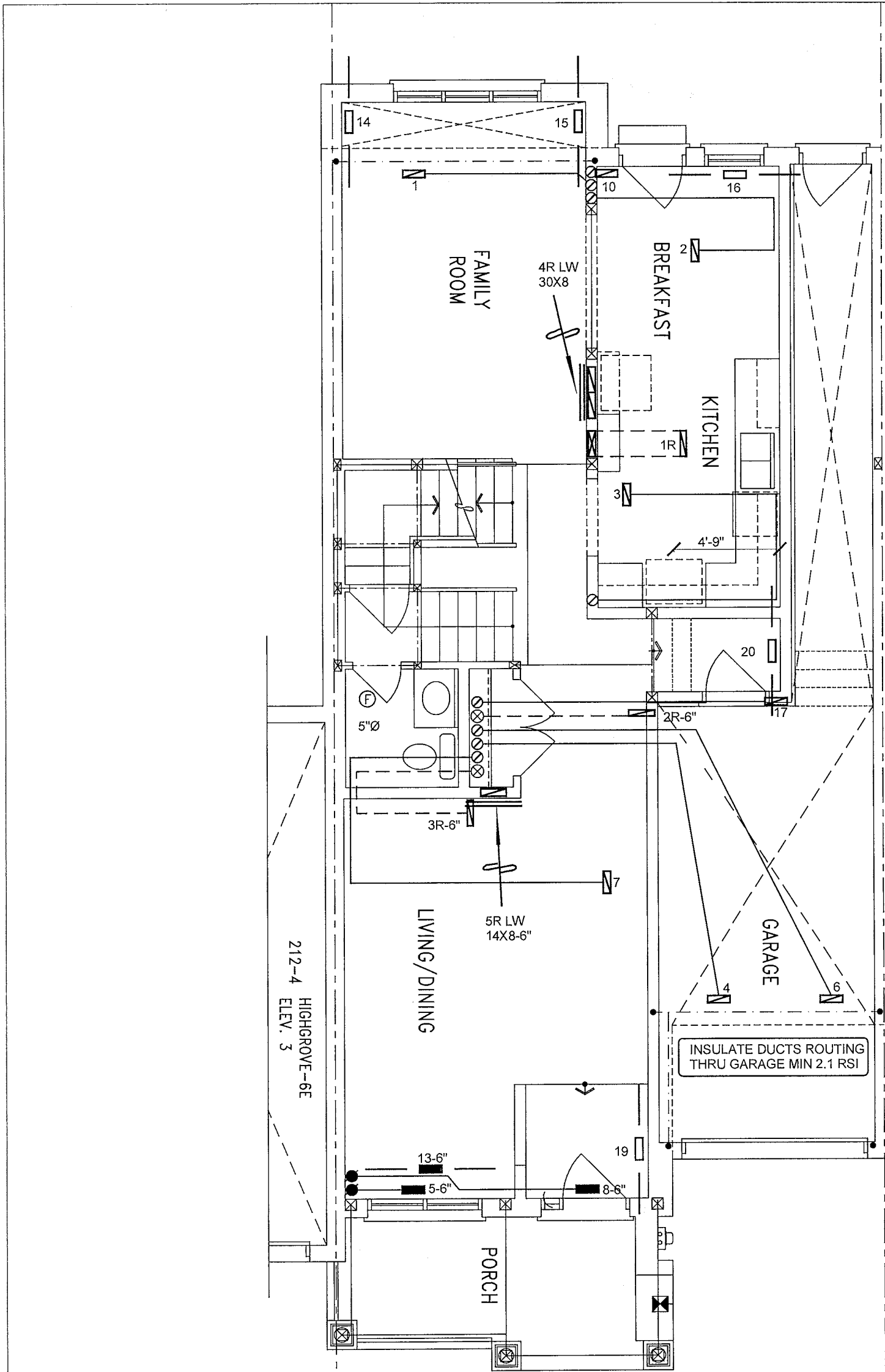
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

LOT 212-3
CSA-F280-12
PACKAGE A1

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

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Client		HVACDESIGNS LTD. 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 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 36620 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS				Sheet Title	
GREENPARK HOMES			MAKE GOODMAN		3RD FLOOR				BASEMENT HEATING LAYOUT	
Project Name			MODEL GMEC9806402BNA		2ND FLOOR				Date	
RUSSEL GARDENS HAMILTON, ONTARIO			INPUT 40 MBTU/H		1ST FLOOR				DEC/2017	
LOT 212-3			OUTPUT 38.4 MBTU/H		BASEMENT				Scale	
HIGHGROVE 4			COOLING 2.0 TONS		ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A				3/16" = 1'-0"	
2012 sqft			FAN SPEED 890 cfm @ 0.6" w.c.						BCIN# 19669	
									LO# 77194	



GROUND FLOOR PLAN ELEV. '3'
LOT 212-3

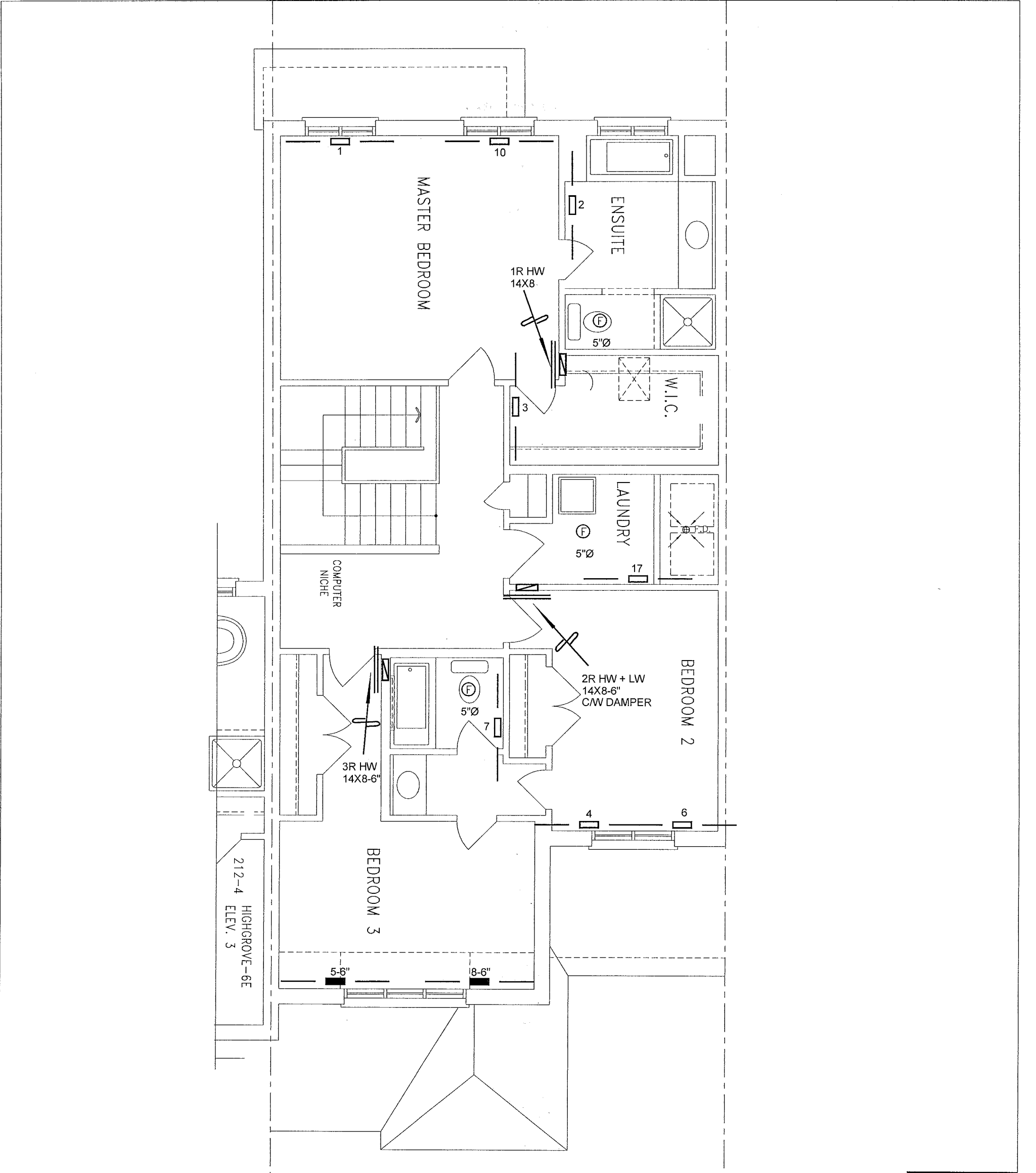
LOT 212-3
CSA-F280-12
PACKAGE A1

I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C. 3.2.3 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	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		 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 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	
Project Name RUSSEL GARDENS HAMILTON, ONTARIO			Date DEC/2017	
LOT 212-3 HIGHGROVE 4 2012 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO# 77194	



SECOND FLOOR PLAN ELEV. '3'
LOT 212-3

LOT 212-3
CSA-F280-12
PACKAGE A1

I, MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C.3.2.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	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		 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 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 SECOND FLOOR HEATING LAYOUT	
Project Name RUSSEL GARDENS HAMILTON, ONTARIO			Date DEC/2017	
LOT 212-3 HIGHGROVE 4 2012 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO# 77194	