

SITE NAME: RUSSEL GARDENS										DATE: Jul-17				WINTER NATURAL AIR CHANGE RATE 0.409				HEAT LOSS AT °F. 71		CSA-F280-12											
BUILDER: GREENPARK HOMES										TYPE: HIGHGROVE 5ES				GFA: 2264		LO# 75029		SUMMER NATURAL AIR CHANGE RATE 0.150				HEAT GAIN AT °F. 15		SB-12 PACKAGE A1							
ROOM USE				MBR				ENS				WIC				BED-2				BED-3				BED-4				BATH			
EXP. WALL				15				21				7				10				34				14				6			
CLG. HT.				9				9				9				9				9				9				9			
FACTORS																															
GRS.WALL AREA		LOSS GAIN		135				189				63				90				306				126				54			
GLAZING				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN			
NORTH		19.8	16.5	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	
EAST		19.8	42.1	0	0	0	0	0	0	0	0	0	0	0	0	30	593	1263	40	791	1684	0	0	0	0	0	0	0	0	0	
SOUTH		19.8	25.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	217	280	21	415	535	7	138	178				
WEST		19.8	42.1	31	613	1305		13	257	547		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SKYLT.		34.6	102.5	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	
DOORS		23.5	4.9	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	
NET EXPOSED WALL		4.1	0.9	104	431	90		176	730	153		63	261	55	60	249	52	255	1057	222	105	435	91	47	195	41					
NET EXPOSED BSMT WALL ABOVE GR		3.3	0.7	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		1.2	0.6	285	340	177		110	131	68		70	83	43	154	184	96	216	258	134	210	250	130	90	107	56					
NO ATTIC EXPOSED CLG		2.6	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	102	53	0	0	0	0	0	0	0	0	0	0	
EXPOSED FLOOR		2.4	0.5	0	0	0	0	0	0	0	0	0	0	0	154	365	76	20	47	10	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				1384				1118				345				1390				2472				1101				441			
SUB TOTAL HT GAIN				1573				769				98				1488				2384				756				275			
LEVEL FACTOR / MULTIPLIER		0.20	0.37			0.20	0.37			0.20	0.37			0.20	0.37			0.20	0.37			0.20	0.37			0.20	0.37				
AIR CHANGE HEAT LOSS				506				409				126				508				904				403				161			
AIR CHANGE HEAT GAIN				180				88				11				171				273				87				32			
DUCT LOSS				0				0				0				190				338				0				0			
DUCT GAIN				0				0				0				250				349				0				0			
HEAT GAIN PEOPLE		240		2		480		0		0		0		1		240		1		240		1		240		0		0			
HEAT GAIN APPLIANCES/LIGHTS				598				0				0				598				598				598				0			
TOTAL HT LOSS BTU/H				1890				1527				471				2089				3714				1503				602			
TOTAL HT GAIN x 1.3 BTU/H				3680				1114				142				3569				4997				2185				398			

ROOM USE				LV/DN		KT/FM		LAUN		PWD		FOY				WOD		BAS	
EXP. WALL				60		50		0		8		14				31		130	
CLG. HT.				10		10		9		10		11				9		9	
FACTORS																			
GRS.WALL AREA	LOSS GAIN			600		500		0		80		154				279		966	
GLAZING				LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN				LOSS GAIN		LOSS GAIN	
NORTH	19.8 16.5			0 0 0		0 0 0		0 0 0		0 0 0		0 0 0				7 138 116		7 138 116	
EAST	19.8 42.1			29 573 1221		0 0 0		0 0 0		0 0 0		0 0 0				0 0 0		0 0 0	
SOUTH	19.8 25.5			33 652 840		11 217 280		0 0 0		8 158 204		0 0 0				0 0 0		0 0 0	
WEST	19.8 42.1			0 0 0		87 1720 3664		0 0 0		0 0 0		0 0 0				0 0 0		0 0 0	
SKYLT.	34.6 102.5			0 0 0		0 0 0		0 0 0		0 0 0		0 0 0				0 0 0		0 0 0	
DOORS	23.5 4.9			20 469 98		0 0 0		0 0 0		0 0 0		25 586 123				0 0 0		20 469 98	
NET EXPOSED WALL	4.1 0.9			518 2147 450		402 1667 349		0 0 0		72 298 63		129 535 112				0 0 0		0 0 0	
NET EXPOSED BSMT WALL ABOVE GR	3.3 0.7			0 0 0		0 0 0		0 0 0		0 0 0		0 0 0				179 598 125		204 682 143	
EXPOSED CLG	1.2 0.6			0 0 0		0 0 0		176 210 109		0 0 0		0 0 0				0 0 0		0 0 0	
NO ATTIC EXPOSED CLG	2.6 1.3			0 0 0		0 0 0		0 0 0		0 0 0		0 0 0				0 0 0		0 0 0	
EXPOSED FLOOR	2.4 0.5			0 0 0		0 0 0		88 208 44		0 0 0		0 0 0				0 0 0		0 0 0	
BASEMENT/CRAWL HEAT LOSS				0		0		0		0		0				0		4186	
SLAB ON GRADE HEAT LOSS				0		0		0		0		0				0		0	
SUBTOTAL HT LOSS				3842		3604		418		457		1121				737		5475	
SUB TOTAL HT GAIN				2610		4293		153		266		235				241		357	
LEVEL FACTOR / MULTIPLIER	0.30 0.53			0.30 0.53		0.30 0.53		0.20 0.37		0.30 0.53		0.30 0.53						0.50 1.28	
AIR CHANGE HEAT LOSS				2025		1899		153		241		591						7925	
AIR CHANGE HEAT GAIN				299		492		18		31		27						69	
DUCT LOSS				0		0		57		0		0						0	
DUCT GAIN				0		0		77		0		0						0	
HEAT GAIN PEOPLE	240			0		0		0		0		0				0		0	
HEAT GAIN APPLIANCES/LIGHTS				598		598		598		598		0				0		0	
TOTAL HT LOSS BTU/H				5867		5503		628		697		1712				737		13401	
TOTAL HT GAIN x 1.3 BTU/H				4559		6998		1099		386		341				314		553	

TOTAL HEAT GAIN BTU/H: 30891

TONS: 2.57

LOSS DUE TO VENTILATION LOAD BTU/H: 2650

STRUCTURAL HEAT LOSS: 40339

TOTAL COMBINED HEAT LOSS BTU/H: 42989

SITE NAME: RUSSEL GARDENS
BUILDER: GREENPARK HOMES

TYPE: HIGHGROVE 5ES

DATE: Jul-17

GFA: 2264 LO# 75029

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 40,339 TOTAL HEAT GAIN 30,335
AIR FLOW RATE CFM 28.04 AIR FLOW RATE CFM 37.28

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

#GOODMAN
GMEC960603BNA 60

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

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	11	7	5
R/A	0	0	4	2	1

plenium pressure s/a 0.18
max s/a dif press. loss 0.02
min adjusted pressure s/a 0.16
r/a pressure 0.17
r/a grille press. Loss 0.02
adjusted pressure r/a 0.15

LOW
MEDLOW
MEDIUM
MEDIUM HIGH
HIGH 1131
DESIGN CFM = 1131
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	8	9	10	12	13	14	15	16	17	18	19	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-2	BED-3	MBR	LV/DN	LV/DN	KT/FM	KT/FM	KT/FM	LAUN	PWD	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH.	0.94	1.53	0.47	1.04	1.86	1.50	0.60	1.04	1.86	0.94	2.93	2.93	1.83	1.83	1.83	0.63	0.70	1.71	2.83	2.83	2.83	2.83
CFM PER RUN HEAT	26	43	13	29	52	42	17	29	52	26	82	82	51	51	51	18	20	48	79	79	79	79
RM GAIN MBH.	1.84	1.11	0.14	1.78	2.50	2.18	0.40	1.78	2.50	1.84	2.28	2.28	2.33	2.33	2.33	1.10	0.39	0.34	0.17	0.17	0.17	0.17
CFM PER RUN COOLING	69	42	5	67	93	81	15	67	93	69	85	85	87	87	87	41	14	13	6	6	6	6
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.16	0.17	0.16	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	42	46	36	46	47	22	28	52	43	51	18	27	24	33	40	37	8	32	22	29	11	10
EQUIVALENT LENGTH	140	170	160	120	140	150	140	130	170	160	140	90	120	130	140	130	120	140	140	80	90	130
TOTAL EFFECTIVE LENGTH	182	216	196	166	187	172	168	182	213	211	158	117	144	163	180	167	128	172	162	109	101	140
ADJUSTED PRESSURE	0.09	0.08	0.09	0.1	0.09	0.09	0.1	0.09	0.08	0.08	0.1	0.14	0.11	0.1	0.09	0.1	0.13	0.1	0.11	0.16	0.17	0.12
ROUND DUCT SIZE	5	4	4	5	6	5	4	5	6	5	5	5	5	5	5	4	4	4	5	5	5	5
HEATING VELOCITY (ft/min)	191	493	149	213	265	308	195	213	265	191	602	602	374	374	374	207	229	551	580	580	580	580
COOLING VELOCITY (ft/min)	507	482	57	492	474	595	172	492	474	507	624	624	639	639	639	470	161	149	44	44	44	44
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	A	B	D	C	B	D	D	C	A	C	C	A	A	A	D	D	C	A	B	B	D

RUN #	25
ROOM NAME	BAS
RM LOSS MBH.	2.83
CFM PER RUN HEAT	79
RM GAIN MBH.	0.17
CFM PER RUN COOLING	6
ADJUSTED PRESSURE	0.17
ACTUAL DUCT LGH.	21
EQUIVALENT LENGTH	130
TOTAL EFFECTIVE LENGTH	151
ADJUSTED PRESSURE	0.11
ROUND DUCT SIZE	5
HEATING VELOCITY (ft/min)	580
COOLING VELOCITY (ft/min)	44
OUTLET GRILL SIZE	3X10
TRUNK	C

SUPPLY AIR TRUNK SIZE														RETURN AIR TRUNK SIZE									
	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)		TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)		TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)
TRUNK A	327	0.08	9.2	10	x	8	589	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.06	0	0	x	8	0
TRUNK B	540	0.08	11.1	14	x	8	694	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.06	0	0	x	8	0
TRUNK C	395	0.08	9.9	12	x	8	593	TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.06	0	0	x	8	0
TRUNK D	587	0.08	11.5	16	x	8	660	TRUNK J	0	0.00	0	0	x	8	0	TRUNK R	0	0.06	0	0	x	8	0
TRUNK E	0	0.00	0	0	x	8	0	TRUNK K	0	0.00	0	0	x	8	0	TRUNK S	0	0.06	0	0	x	8	0
TRUNK F	0	0.00	0	0	x	8	0	TRUNK L	0	0.00	0	0	x	8	0	TRUNK T	0	0.06	0	0	x	8	0

RETURN AIR #	1	2	3	4	5	6										BR
AIR VOLUME	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	186
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	47	52	43	40	22	24	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	175	145	165	160	155	150	0	0	0	0	0	0	0	0	0	215
TOTAL EFFECTIVE LH	222	197	208	200	177	174	1	1	1	1	1	1	1	1	1	229
ADJUSTED PRESSURE	0.07	0.08	0.07	0.07	0.08	0.09	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.06
ROUND DUCT SIZE	6.6	5.6	5.8	7.5	8.9	7.2	0	0	0	0	0	0	0	0	0	8
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	30	14	0	0	0	0	0	0	0	0	0	24

TYPE: HIGHGROVE 5ES
SITE NAME: RUSSEL GARDENS

LO # 75029

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	<u>2</u> @ 21.2 cfm	<u>42.4</u> cfm
Other Bedrooms	<u>3</u> @ 10.6 cfm	<u>31.8</u> cfm
Kitchen & Bathrooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Other Rooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Table 9.32.3.A.	TOTAL	<u>159.0</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>159</u>	cfm
Less Principal Ventil. Capacity	<u>139</u>	cfm
Required Supplemental Capacity	<u>20.0</u>	cfm

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

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
139.0 CFM	X 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
PWD	QTXEN050C	50	☒	0.3

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 @ 32 deg F (0 deg C)	☒ HVI Approved	

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

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

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

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

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: HIGHGROVE 5ES	BUILDER: GREENPARK HOMES
SFQT: 2264	SITE: RUSSEL GARDENS
LO# 75029	

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	1	OUTDOOR DESIGN TEMP.	88
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	73

BUILDING DATA

ATTACHMENT:	ATTACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	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):	30676.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
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: 51.0 ft	WIDTH: 26.0 ft	EXPOSED PERIMETER:	130.0 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	-

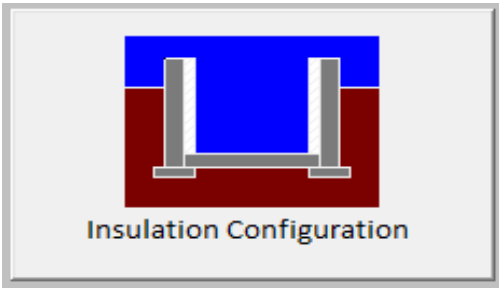
INDIVIDUAL BCIN: 19669

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):	15.5	 Insulation Configuration
Floor Width (m):	7.9	
Exposed Perimeter (m):	39.6	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	1.3	
Door Area (m ²):	1.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1226

TYPE: HIGHGROVE 5ES
LO# 75029

Air Infiltration Residential Load Calculator

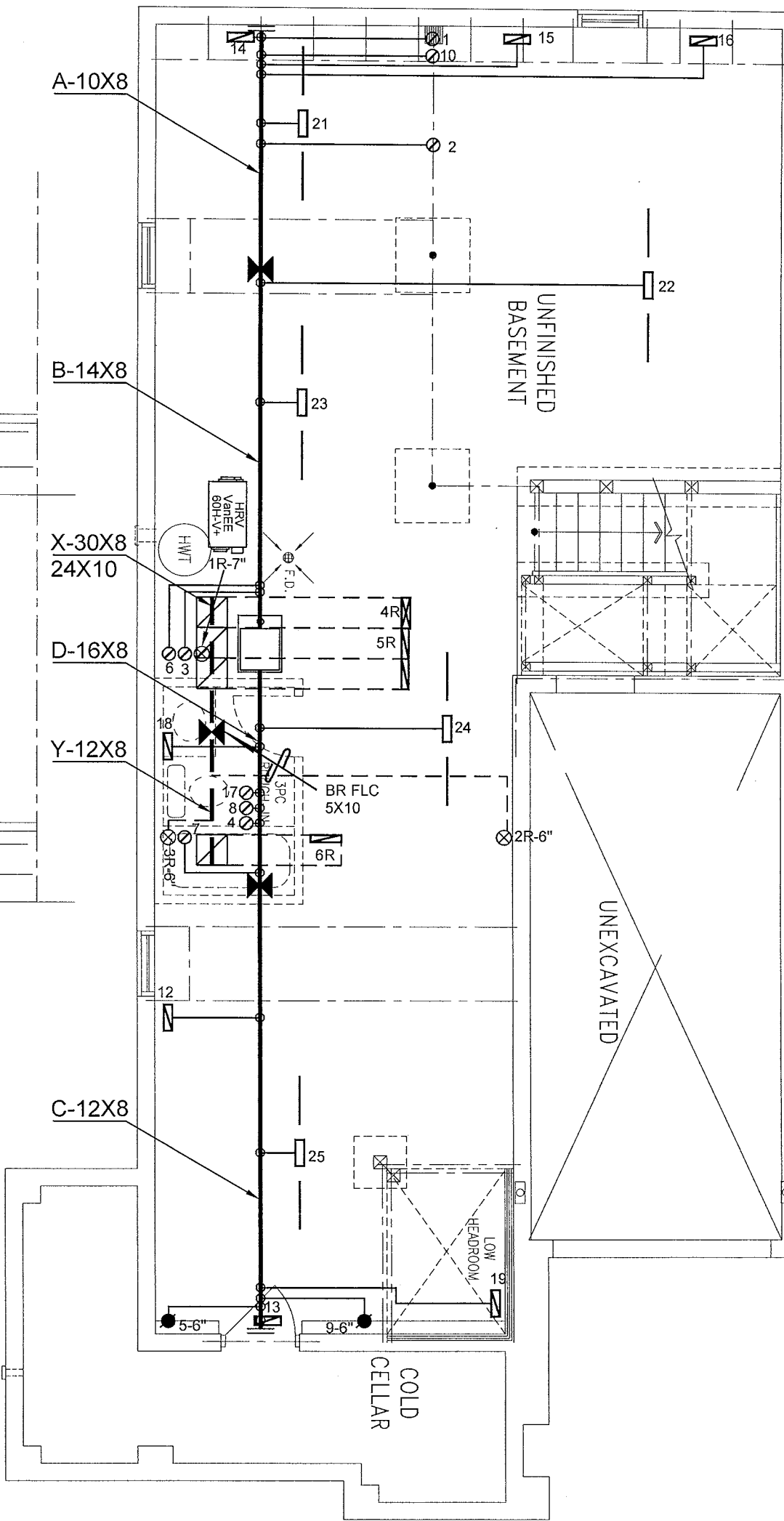
Supplemental tool for CAN/CSA-F280

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):	868.6			
Air Leakage/Ventilation				
Air Tightness Type:	Average (1946-1960) (4.55 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1475.8 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):	0.150			

TYPE: HIGHGROVE 5ES
LO# 75029

PART. BASEMENT
PLAN W.O.D
CONDITION (4R TO
7R MAX.)

PART. BASEMENT
PLAN W.O.D
CONDITION (8R OR
MORE)



BASEMENT PLAN-ELEV. '1' B200/Unit 5

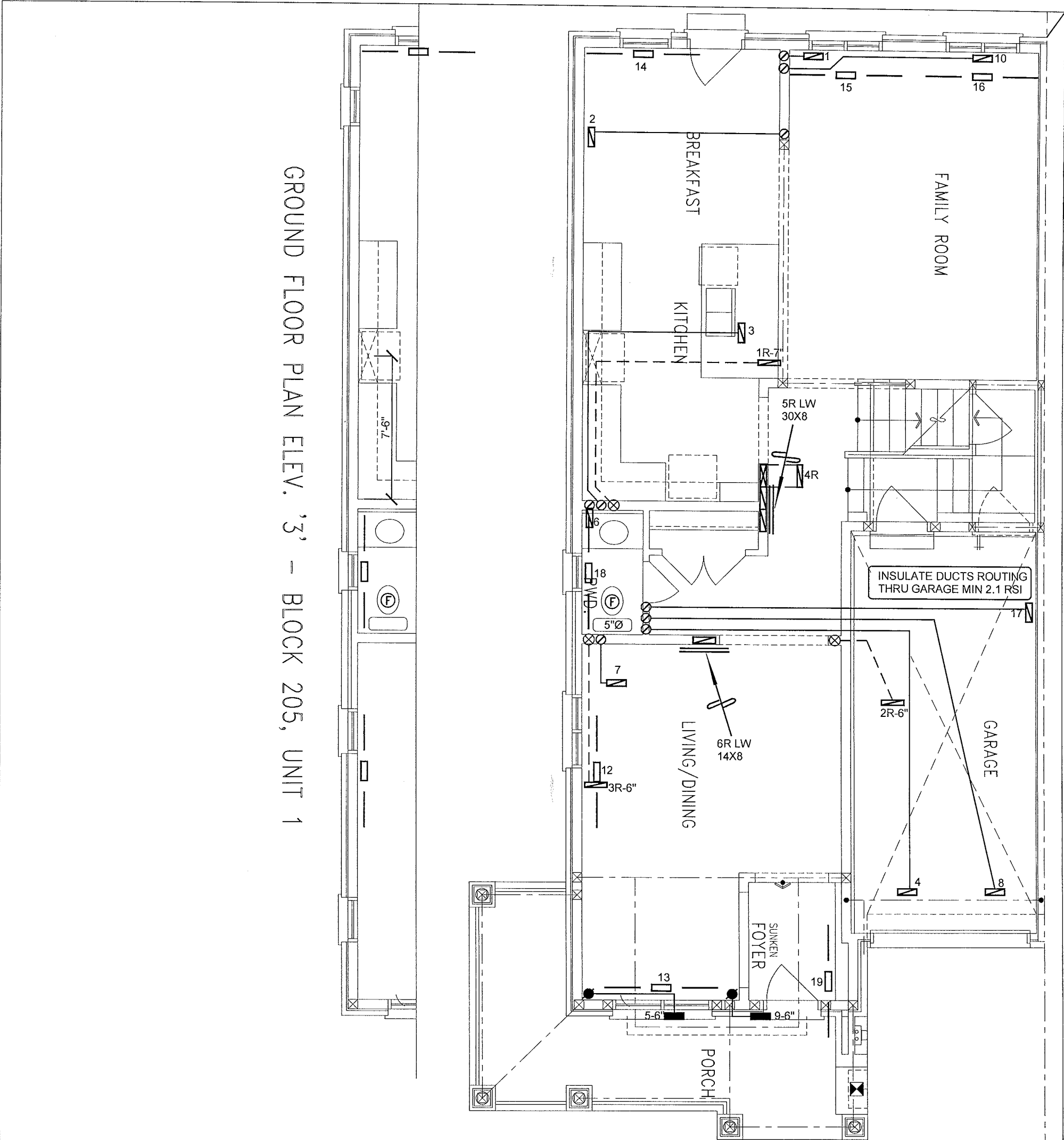
I MICHAEL O'Rourke HAVE REVIEW
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C, 3.2.5 OF THE
BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

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 42989 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 GMEC960603BNA	2ND FLOOR		11	4	3		
RUSSEL GARDENS HAMILTON, ONTARIO		INPUT 60 MBTU/H	1ST FLOOR		7	2	2		
		OUTPUT 57.6 MBTU/H	BASEMENT		5	1	0	Date	JULY/2017
		COOLING 2.5 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					Scale	3/16" = 1'-0"
		FAN SPEED 1131 cfm @ 0.6" w.c.						BCIN# 19669	
								LO# 75029	



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.

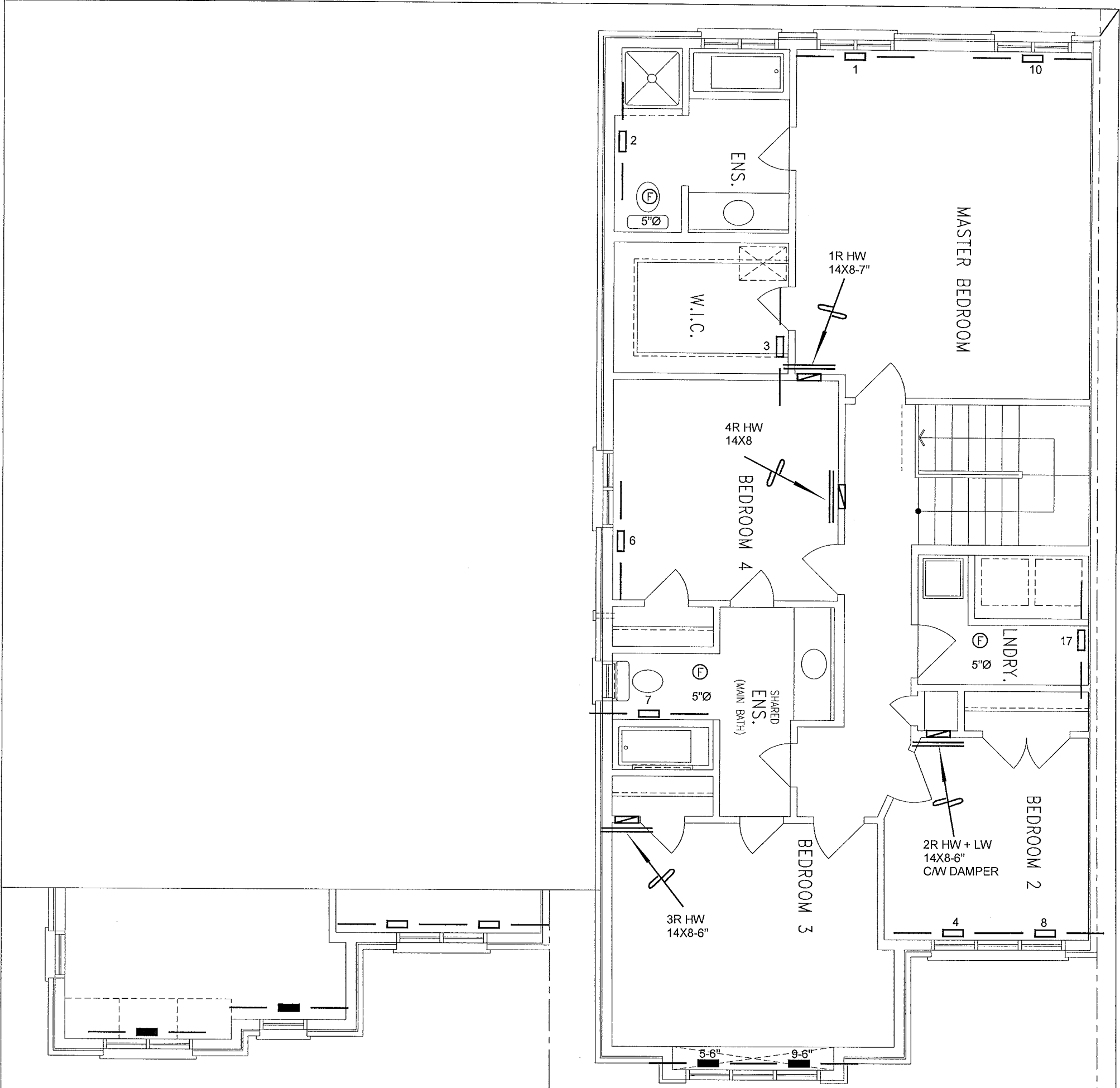
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	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

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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	Sheet Title FIRST FLOOR HEATING LAYOUT	
Project Name RUSSEL GARDENS HAMILTON, ONTARIO			Date JULY/2017	
HIGHGROVE 5ES 2264 sqft		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.	Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO#	75029



SECOND FLOOR PLAN-ELEV. 1 B200/Unit 5

SECOND FLOOR PLAN ELEV. '3' - BLOCK 205, UNIT 1

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

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

CSA-F280-12
PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
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	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

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GREENPARK HOMES		SECOND FLOOR HEATING LAYOUT
Project Name		Date JULY/2017
RUSSEL GARDENS HAMILTON, ONTARIO		Scale 3/16" = 1'-0"
HIGHGROVE 5ES 2264 sqft		BCIN# 19669
		LO# 75029