HVAC DESIGNS LTD.

375 Finley Ave. Suite 202 Ajax, ON L1S 2E2
Tel: 905.619.2300 Fax: 905.619.2375
Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

SITE NAME: RUSSEL GARDENS | LOT 218-4 | DATE: Dec-17 | WINTER NATURAL AIR CHANGE RATE 0.409 | HEAT LOSS ΔT°F. 71 | CSA-F280-12
BUILDER: GREENPARK HOMES | TYPE: HIGHGROVE 4 | GFA: 2012 | LO# 77193 | SUMMER NATURAL AIR CHANGE RATE 0.146 | HEAT GAIN ΔT°F. 14 | SB-12 PACKAGE A1

ROOM USE			MBR			ENS			WIC			BED-2			BED-3				BATH								
EXP. WALL			24			9			0			10			37				0								
CLG. HT.			9			9			9			9			10				9								
	FACTORS																										
GRS.WALL AREA	LOSS	GAIN	216			81			0			90			352				0								
GLAZING				LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN			LOSS	GAIN						
NORTH	19.8	16.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0						
EAST	19.8	41.8	30	593	1255	13	257	544	0	0	0	0	0	0	0	0	0		0	0	0						
SOUTH	19.8	25.2	0	0	0	0	0	0	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	21	415	878	42	830	1757		0	0	0						
SKYLT.	34.6	102.0	0	0	0	0	0	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	0	0	0		0	0	0						
NET EXPOSED WALL	4.1	0.8	186	771	151	68	282	55	0	0	0	69	286	56	310	1283	251		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		0	0	0						
EXPOSED CLG	1.2	0.6	320	381	193	99	118	60	84	100	51	150	179	91	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	16	41	21		0	0	0						
EXPOSED FLOOR	2.4	0.5	0	0	0	65	154	30	35	83	16	150	355	69	20	47	9		0	0	0						
BASEMENT/CRAWL HEAT LOSS				0			0			0			0			0				0							
SLAB ON GRADE HEAT LOSS				0			0			0			0			0				0							
SUBTOTAL HT LOSS				1746			811			183			1235			2411				200							
SUB TOTAL HT GAIN					1599			689			67			1095			2144				102						
LEVEL FACTOR / MULTIPLIER			0.20	0.41		0.20	0.41		0.20	0.41		0.20	0.41		0.20	0.41			0.20	0.41							
AIR CHANGE HEAT LOSS				723			336			76			512			999				83							
AIR CHANGE HEAT GAIN					199			86			8			136			266				13						
DUCT LOSS				0			115			26			175			341				0							
DUCT GAIN					0			77			8			209			327				0						
HEAT GAIN PEOPLE	240		2		480	0		0	0		0	1		240	1		240		0		0						
HEAT GAIN APPLIANCES/LIGHTS					617			0			0			617			617				0						
TOTAL HT LOSS BTU/H				2469			1261			285			1922			3751				283							
TOTAL HT GAIN x 1.3 BTU/H					3763			1107			108			2985			4672				148						

ROOM USE				LV/DN			KT/FM				LAUN			FOY			MUD				WOD			BAS		
EXP. WALL				33			67				0			14			12				26			94		
CLG. HT.				10			10				9			11			12				9			9		
	FACTORS																									
GRS.WALL AREA	LOSS	GAIN		330			570				0			154			144				234			720		
GLAZING				LOSS	GAIN		LOSS	GAIN			LOSS	GAIN		LOSS	GAIN		LOSS	GAIN			LOSS	GAIN		LOSS	GAIN	
NORTH	19.8	16.3		0	0	0	0	0			0	0		0	0	0	0	0		15	297	244	0	0	0
EAST	19.8	41.8		0	0	0	80	1581	3347		0	0		0	0	0	0	0		0	0	0	0	0	0
SOUTH	19.8	25.2		0	0	0	0	0	0		0	0		0	0	0	0	0		0	0	0	0	0	0
WEST	19.8	41.8		30	593	1255	0	0	0		0	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	0		0	0	0	0	0	0
DOORS	23.5	4.6		0	0	0	0	0	0		0	0		35	821	160	20	469	92	0	0	0	20	469	92
NET EXPOSED WALL	4.1	0.8		300	1244	243	490	2031	397		0	0		119	493	96	124	514	100	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	141	471	92	125	421	82
EXPOSED CLG	1.2	0.6		0	0	0	0	0	0		84	100	51	0	0	0	0	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.6	1.3		0	0	0	65	166	84		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		35	83	16	0	0	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS					0			0				0			0			0						2926	
SLAB ON GRADE HEAT LOSS					0			0				0			0			0			0				
SUBTOTAL HT LOSS					1837			3779				183			1314			983			768			3816	
SUB TOTAL HT GAIN						1498			3828				67			257			192			336			174
LEVEL FACTOR / MULTIPLIER				0.30	0.53		0.30	0.53			0.20	0.41		0.30	0.53		0.30	0.53					0.50	1.53	
AIR CHANGE HEAT LOSS					976			2008				76			698			522						7009	
AIR CHANGE HEAT GAIN						186			475				8			32			24						63
DUCT LOSS					0			0				26			0			0						0	
DUCT GAIN						0			0				69			0			0						0
HEAT GAIN PEOPLE	240			0		0	0		0		0		0	0		0	0		0	0		0	0		0
HEAT GAIN APPLIANCES/LIGHTS						617			617				617			0			0			0			0
TOTAL HT LOSS BTU/H					2813			5787				285			2013			1506			768			10825	
TOTAL HT GAIN x 1.3 BTU/H						2991			6396				990			375			281			437			309

TOTAL HEAT GAIN BTU/H: 25080 TONS: 2.09 LOSS DUE TO VENTILATION LOAD BTU/H: 2650 STRUCTURAL HEAT LOSS: 33966 TOTAL COMBINED HEAT LOSS BTU/H: 36616

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 MICHAEL O'ROURKE

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SITE NAME: RUSSEL GARDENS
BUILDER: GREENPARK HOMES

LOT 218-4
TYPE: HIGHGROVE 4

DATE: Dec-17

GFA: 2012 LO# 77193

HEATING CFM	890	COOLING CFM	890
TOTAL HEAT LOSS	33,966	TOTAL HEAT GAIN	24,562
AIR FLOW RATE CFM	26.2	AIR FLOW RATE CFM	36.24

furnace pressure	0.6
furnace filter	0.05
a/c coil pressure	0.2
available pressure for s/a & r/a	0.35
plenum pressure s/a	0.18
max s/a dif press. loss	0.03
min adjusted pressure s/a	0.15

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

#GOODMAN
GMEC960402BNA 40

FAN SPEED	
LOW	
MEDLOW	
MEDIUM	
MEDIUM HIGH	
HIGH	890

AFUE = 96 %
INPUT (BTU/H) = 40,000
OUTPUT (BTU/H) = 38,400

DESIGN CFM = 890
CFM @ .6 " E.S.P.

TEMPERATURE RISE 40 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	10	6	4
R/A	0	0	3	2	1

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	10	13	14	15	16	17	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-2	BATH	BED-3	MBR	LV/DN	KT/FM	KT/FM	KT/FM	LAUN	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.23	1.26	0.28	0.96	1.88	0.96	0.28	1.88	1.23	2.81	1.93	1.93	1.93	0.28	2.01	1.51	2.90	2.90	2.90	2.90
CFM PER RUN HEAT	32	33	7	25	49	25	7	49	32	74	51	51	51	7	53	39	76	76	76	76
RM GAIN MBH.	1.88	1.11	0.11	1.49	2.34	1.49	0.15	2.34	1.88	2.99	2.13	2.13	2.13	0.99	0.38	0.28	0.19	0.19	0.19	0.19
CFM PER RUN COOLING	68	40	4	54	85	54	5	85	68	108	77	77	77	36	14	10	7	7	7	7
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.16	0.17	0.15	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	43	48	36	50	56	56	51	64	34	39	37	26	20	40	31	14	26	15	11	30
EQUIVALENT LENGTH	150	140	190	130	180	140	130	190	120	150	160	150	110	160	130	130	140	150	140	140
TOTAL EFFECTIVE LENGTH	193	188	226	180	236	196	181	254	154	189	197	176	130	200	161	144	166	165	151	170
ADJUSTED PRESSURE	0.09	0.09	0.08	0.1	0.07	0.09	0.1	0.06	0.11	0.08	0.09	0.1	0.13	0.09	0.11	0.12	0.1	0.1	0.11	0.1
ROUND DUCT SIZE	5	4	4	4	6	5	4	6	5	6	5	5	5	4	4	4	5	5	5	5
HEATING VELOCITY (ft/min)	235	379	80	287	250	184	80	250	235	377	374	374	374	80	608	447	558	558	558	558
COOLING VELOCITY (ft/min)	499	459	46	620	433	396	57	433	499	551	565	565	565	413	161	115	51	51	51	51
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	C	C	B	B	A	B	B	A	C	A	C	C	C	B	A	B	C	C	B	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	

SUPPLY 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 A	301	0.06	9.6	10	x	8	542	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	487	0.06	11.5	16	x	8	548	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	402	0.09	9.7	12	x	8	603	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											BR
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AIR VOLUME	155	85	95	320	85	0	0	0	0	0	0	0	0	0	0	150
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.	45	54	60	29	32	1	1	1	1	1	1	1	1	1	1	22
EQUIVALENT LENGTH	195	175	155	235	185	0	0	0	0	0	0	0	0	0	0	240
TOTAL EFFECTIVE LH	240	229	215	264	217	1	1	1	1	1	1	1	1	1	1	262
ADJUSTED PRESSURE	0.06	0.06	0.07	0.06	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.06
ROUND DUCT SIZE	7.5	6	6	9.8	5.8	0	0	0	0	0	0	0	0	0	0	7.4
INLET GRILL SIZE	8	8	8	8	8	0	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	30	14	0	0	0	0	0	0	0	0	0	0	14

RETURN AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)
TRUNK O	0	0.06	0	0	x	8	0
TRUNK P	0	0.06	0	0	x	8	0
TRUNK Q	0	0.06	0	0	x	8	0
TRUNK R	0	0.06	0	0	x	8	0
TRUNK S	0	0.06	0	0	x	8	0
TRUNK T	0	0.06	0	0	x	8	0
TRUNK U	0	0.06	0	0	x	8	0
TRUNK V	0	0.06	0	0	x	8	0
TRUNK W	0	0.06	0	0	x	8	0
TRUNK X	890	0.06	14.4	24	x	8	668
TRUNK Y	0	0.06	0	0	x	8	0
TRUNK Z	0	0.06	0	0	x	8	0
DROP	890	0.06	14.4	24	x	10	534

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[signature] INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

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TYPE: HIGHGROVE 4 LO # 77193
SITE NAME: RUSSEL GARDENS LOT 218-4

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	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

HEAT RECOVERY VENTILATOR 9.32.3.11.

Model: VANEE 60H-V+

139 cfm high 50 cfm low

75 % 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: Michael O'Rourke

HRAI # 001820

Date: December-17

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

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HEAT LOSS AND GAIN SUMMARY SHEET

MODEL:	HIGHGROVE 4		LOT 218-4	**BUILDER:**	GREENPARK HOMES
SFQT:	2012	LO#	77193	**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	-

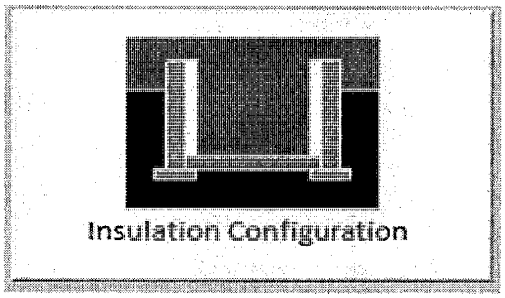
INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE

Michael O'Rourke

HVAC Designs Ltd.
375 Finley Ave, Suite 202
Ajax ON, L1S 2E2
905-619-2300

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 dand, 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 LOT 218-4
LO# 77193

HVAC Designs Ltd.
375 Finley Ave, Suite 202
Ajax ON, L1S 2E2
905-619-2300

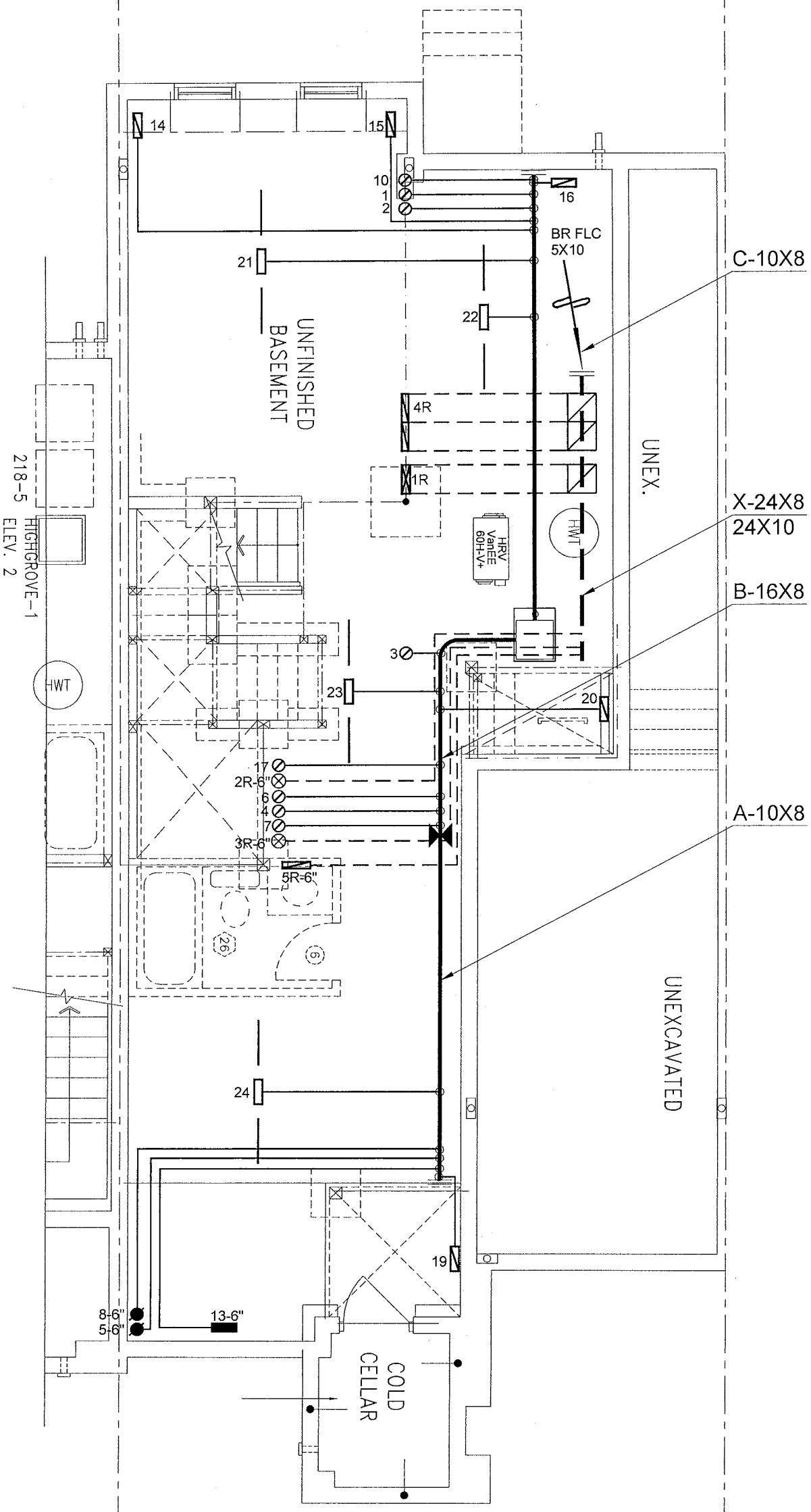
Air Infiltration Residential Load Calculator

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 LOT 218-4

LO# 77193



BASEMENT PLAN ELEV. '2'
LOT 218-4

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, BCIN# 19669
HVAC DESIGNS LTD.

LOT 218-4
CSA-F280-12
PACKAGE A1

HVAC LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
—▭—	SUPPLY AIR GRILLE	▬	6" SUPPLY AIR BOOT ABOVE	▱	14"x8" RETURN AIR GRILLE	▱	RETURN AIR STACK ABOVE
—▬—	SUPPLY AIR GRILLE 6" BOOT	⊘	SUPPLY AIR STACK FROM 2nd FLOOR	▱	30"x8" RETURN AIR GRILLE	⊠	RETURN AIR STACK 2nd FLOOR
▱	SUPPLY AIR BOOT ABOVE	●	6" SUPPLY AIR STACK 2nd FLOOR	▤	FRA- FLOOR RETURN AIR GRILLE	⧗	REDUCER

No.	Description	Date
3.		
2.		
1.		

REVISIONS

Client
GREENPARK HOMES

Project Name
RUSSEL GARDENS
HAMILTON, ONTARIO

LOT 218-4
HIGHGROVE 4 2012 sqft

HVAC DESIGNS 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.

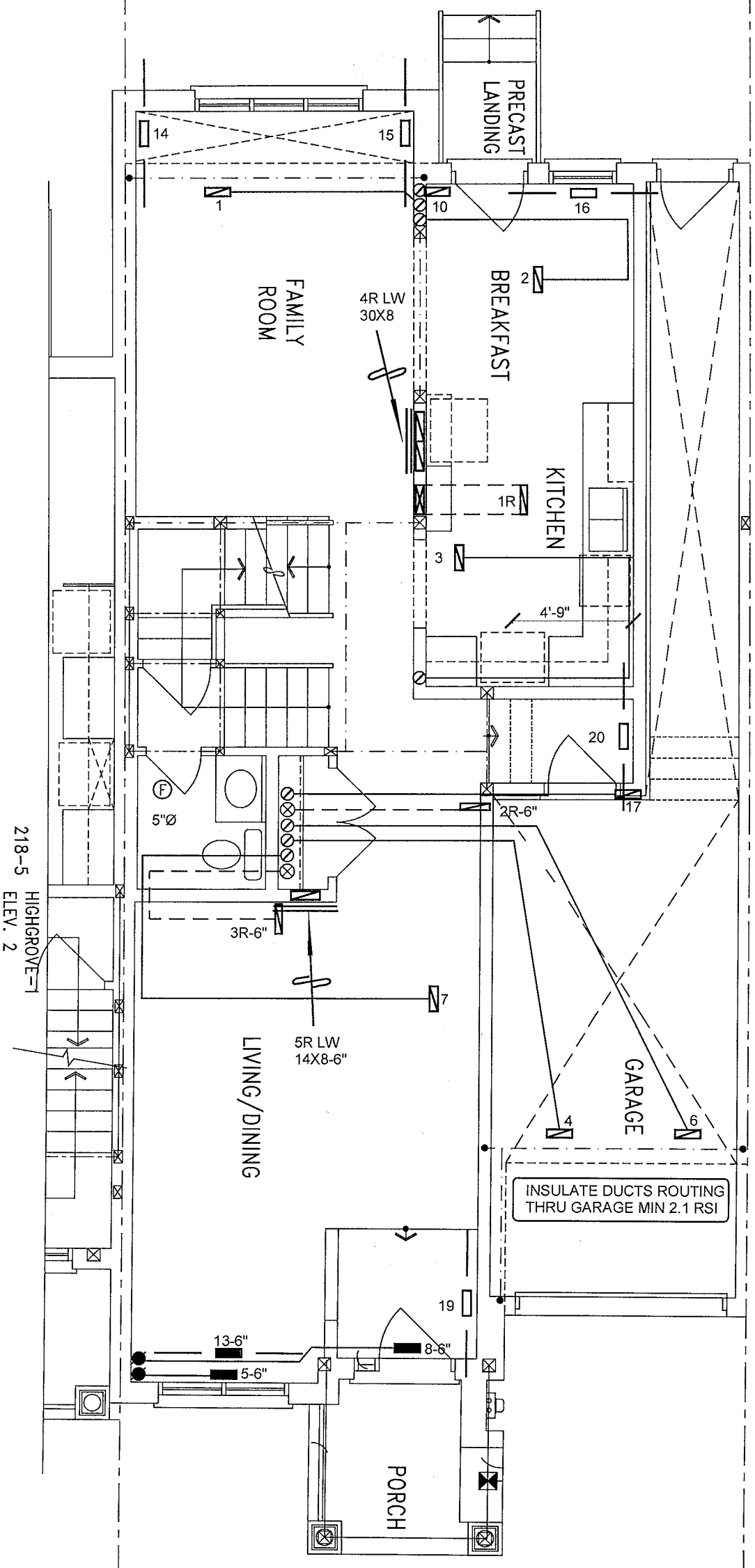
HEAT LOSS 36616 BTU/H		
UNIT DATA		
MAKE	GOODMAN	
MODEL	GMEC9806402BNA	
INPUT	40	MBTU/H
OUTPUT	38.4	MBTU/H
COOLING	2.0	TONS
FAN SPEED	890	cfm @ 0.6" w.c.

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	10	3	3
1ST FLOOR	6	2	2
BASEMENT	4	1	0

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

Sheet Title
BASEMENT HEATING LAYOUT

Date DEC/2017
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 77193



GROUND FLOOR PLAN ELEV. '2'
LOT 218-4

LOT 218-4
CSA-F280-12
PACKAGE A1

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Michael ORourke, BCIN# 19669
HVAC DESIGNS LTD

HVAC LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER

No.	Description	Date
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REVISIONS

Client
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LOT 218-4
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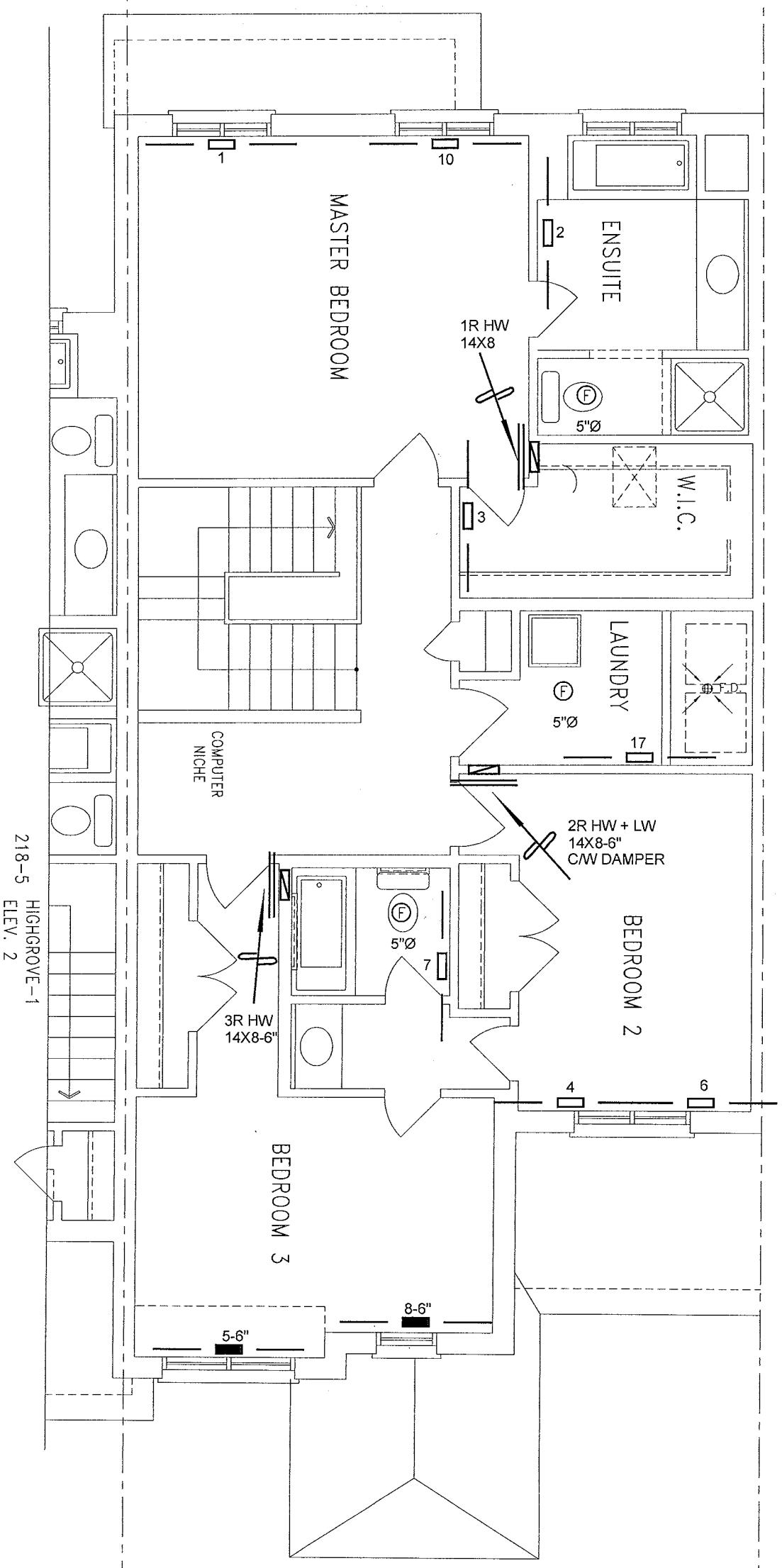
Sheet Title
FIRST FLOOR HEATING LAYOUT

Date DEC/2017
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 77193



SECOND FLOOR PLAN ELEV. '2'
LOT 218-4

LOT 218-4
CSA-F280-12
PACKAGE A1

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

HVAC LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
—▭—	SUPPLY AIR GRILLE	▬	6" SUPPLY AIR BOOT ABOVE	▱	14"x8" RETURN AIR GRILLE	▱	RETURN AIR STACK ABOVE
—▬—	SUPPLY AIR GRILLE 6" BOOT	⊘	SUPPLY AIR STACK FROM 2nd FLOOR	▱	30"x8" RETURN AIR GRILLE	⊠	RETURN AIR STACK 2nd FLOOR
▱	SUPPLY AIR BOOT ABOVE	●	6" SUPPLY AIR STACK 2nd FLOOR	▤	FRA- FLOOR RETURN AIR GRILLE	⧗	REDUCER

No.	Description	Date
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1.		

REVISIONS

Client
GREENPARK HOMES

Project Name
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HAMILTON, ONTARIO

LOT 218-4
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Sheet Title
SECOND FLOOR HEATING LAYOUT

Date DEC/2017
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 77193