

SITE NAME: RUSSEL GARDENS PHASE 3										LOT 191				DATE: Dec-20		WINTER NATURAL AIR CHANGE RATE 0.310								HEAT LOSS AT °F. 71		CSA-F280-12			
BUILDER: GREENPARK HOMES										TYPE: MOUNTAINASH 4				GFA: 3185		LO# 88510		SUMMER NATURAL AIR CHANGE RATE 0.111								HEAT GAIN AT °F. 13		SB-12 PACKAGE A1	
ROOM USE		MBR		ENS		FLEX		BED-2		BED-3		BED-4		ENS-3		BED-5		S-ENS											
EXP. WALL		43		22		44		13		12		11		10		11		21											
CLG. HT.		9		9		9		9		9		9		9		9		9											
FACTORS		387		198		395		117		108		99		90		99		189											
GRS.WALL AREA		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN											
GLAZING		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN											
NORTH		19.8	16.0	0	0	0	0	0	0	16	316	256	0	0	0	0	0	0	0	0	0	0	0						
EAST		19.8	41.6	0	0	0	0	63	1245	2618	0	0	44	870	1828	0	0	0	0	0	11	217	457						
SOUTH		19.8	24.9	0	0	7	138	174	0	0	0	0	0	0	0	13	257	324	7	138	174	13	257	324					
WEST		19.8	41.6	32	633	1330	14	277	582	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
SKYL.T.		34.6	101.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DOORS		23.5	4.3	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	0.8	355	1472	267	177	734	133	333	1380	250	101	419	76	64	265	48	86	357	65	178	738	134					
NET EXPOSED BSMT WALL ABOVE GR		3.3	0.6	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	316	377	186	120	143	71	189	225	111	260	310	153	142	169	33	200	238	118	150	179	88					
NO ATTIC EXPOSED CLG		2.6	1.3	0	0	0	0	0	0	30	77	38	0	0	0	20	51	25	0	0	0	0	0	0					
EXPOSED FLOOR		2.4	0.4	0	0	0	0	0	0	20	47	9	69	163	30	216	512	93	0	0	0	0	0	0					
BASEMENT/CRAWL HEAT LOSS				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							
SUBTOTAL HT LOSS				2481		1292		2975		1208		1867		852		661		784				1255							
SUB TOTAL HT GAIN					1782		960		3025		514		2078		506		325		472				676						
LEVEL FACTOR / MULTIPLIER			0.20	0.25		0.20	0.25		0.20	0.25		0.20	0.25		0.20	0.25		0.20	0.25		0.20	0.25							
AIR CHANGE HEAT LOSS				516		321		738		300		463		211		164		195				311							
AIR CHANGE HEAT GAIN					136		73		229		39		157		38		25		36				51						
DUCT LOSS				0		0		371		151		233		0		0		0				157							
DUCT GAIN				0		0		374		128		296		0		0		0				73							
HEAT GAIN PEOPLE		240		2	480	0	0	0	1	240	1	240	1	240	1	240	0	1	240	0		0							
HEAT GAIN APPLIANCES/LIGHTS					486	0		486		486		486		486		486		486				0							
TOTAL HT LOSS BTU/H				3097		1613		4085		1659		2564		1063		825		978				1722							
TOTAL HT GAIN x 1.3 BTU/H					3748		1342		5349		1828		4234		1651		454		1604				1040						

ROOM USE			FAM		L/D		K/B		L/H		LND		W/R		FOY						WUB		BAS			
EXP. WALL			34		24		37		18		9		26		42						27		149			
CLG. HT.			10		10		10		10		9		11		10						9		9			
FACTORS																										
GRS.WALL AREA	LOSS	GAIN	348		240		370		180		0		286		420		CITY OF HAMILTON		243		894					
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	Building Division	LOSS	GAIN	LOSS	GAIN					
NORTH	19.8	16.0	8	158	128	0	0	0	0	0	0	0	0	0	7	138	112	0	0	0	5	99	80			
EAST	19.8	41.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	138	291			
SOUTH	19.8	24.9	0	0	0	33	652	822	0	0	0	12	237	299	0	0	0	0	0	0	10	198	249			
WEST	19.8	41.6	40	791	1662	0	0	0	60	1186	2493	0	0	0	0	0	0	0	0	0	0	0	0	0		
SKYL.T.	34.6	101.5	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	4.3	0	0	0	0	0	0	12	281	51	0	0	0	0	0	0	0	0	0	0	0	0	0		
NET EXPOSED WALL	4.1	0.8	292	1211	219	207	858	156	258	1236	224	168	696	126	9	0	0	259	1074	195	20	469	85	20	469	85
NET EXPOSED BSMT WALL ABOVE GR	3.3	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	374	1550	281	223	924	168	0	0	
EXPOSED CLG	1.2	0.6	0	0	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	2.6	1.3	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	2.4	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	
BASEMENT/CRAWL HEAT LOSS																										
SLAB ON GRADE HEAT LOSS																										
SUBTOTAL HT LOSS				2159			1510			2703		934		57		1681						240				
SUB TOTAL HT GAIN					2009			977			2768		425		43		392					1634				
LEVEL FACTOR / MULTIPLIER			0.30	0.43		0.30	0.43		0.30	0.43		0.30	0.43		0.20	0.25		0.30	0.43							
AIR CHANGE HEAT LOSS				921			651			1166		403		22					725							
AIR CHANGE HEAT GAIN					152			74			210		32		3		30									
DUCT LOSS				0			0			0		0		0		0										
DUCT GAIN				0			0			0		0		0		0										
HEAT GAIN PEOPLE	240		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
HEAT GAIN APPLIANCES/LIGHTS				486			486			486		486		486		486										
TOTAL HT LOSS BTU/H				3091			2162			3869		1336		109		2406			3763			1634				
TOTAL HT GAIN x 1.3 BTU/H				3441			1998			4503		1226		691		548			667			328				

21-105863

Permit No.

THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE

THE OWNER AND/OR CONTRACTOR SHALL COMPLY WITH THE ONTARIO BUILDING CODE AND ALL OTHER APPLICABLE LAW

These drawings and/or specifications have been reviewed by

FOR CHIEF BUILDING OFFICIAL

DATE

TOTAL HEAT GAIN BTU/H: 37003 TONS: 3.08 LOSS DUE TO VENTILATION LOAD BTU/H: 1819 STRUCTURAL HEAT LOSS: 51566 TOTAL COMBINED HEAT LOSS BTU/H: 53385

Michael O'Rourke

SITE NAME: RUSSEL GARDENS PHASE 3
BUILDER: GREENPARK HOMES

LOT 191
TYPE: MOUNTAINASH 4

DATE: Dec-20

GFA: 3185 LO# 88610

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 51,566 TOTAL HEAT GAIN 36,673
AIR FLOW RATE CFM 21.93 AIR FLOW RATE CFM 30.84

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

#GOODMAN
GMCC960603BNA
FAN SPEED 60
LOW
MEDLOW
MEDIUM 928
MEDIUM HIGH 1017
HIGH 1131

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

DESIGN CFM = 1131
CFM @ .6" E.S.P.

TEMPERATURE RISE 47 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	14	7	4
R/A	0	0	6	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	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	ENS	MBR	FLEX	BED-2	BED-3	BED-4	ENS-3	FLEX	BED-3	MBR	S-ENS	FAM	L/D	K/B	K/B	L/H	BED-5	W/R	FOY	LND	BAS	BAS	BAS	BAS
RM LOSS MBH	1.61	1.55	2.04	1.66	1.28	1.06	0.83	2.04	1.28	1.55	0.86	3.09	2.16	1.93	1.93	1.34	0.98	2.41	3.76	0.11	4.31	4.31	4.31	4.31
CFM PER RUN HEAT	35	34	45	36	28	23	18	45	28	34	19	68	47	42	42	29	21	53	83	2	94	94	94	94
RM GAIN MBH	1.34	1.87	2.67	1.83	2.12	1.65	0.45	2.67	2.12	1.87	0.52	3.44	2.00	2.25	2.25	1.23	1.60	0.55	0.67	0.69	0.59	0.59	0.59	0.59
CFM PER RUN COOLING	41	58	82	56	65	51	14	82	65	58	16	106	62	69	69	38	49	17	21	21	18	18	18	18
ADJUSTED PRESSURE	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	27	67	51	56	61	46	49	58	49	40	56	25	38	44	40	23	47	48	48	34	39	24	41	41
EQUIVALENT LENGTH	130	150	160	140	100	210	200	130	190	100	130	130	140	120	120	140	160	130	110	160	120	100	130	130
TOTAL EFFECTIVE LENGTH	157	217	211	196	161	256	249	188	239	140	186	156	165	158	164	180	183	177	158	208	154	139	154	171
ADJUSTED PRESSURE	0.11	0.08	0.08	0.09	0.11	0.07	0.07	0.09	0.07	0.12	0.09	0.1	0.1	0.11	0.1	0.1	0.09	0.1	0.1	0.08	0.11	0.12	0.11	0.09
ROUND DUCT SIZE	4	5	6	6	5	5	4	6	5	5	4	6	6	5	5	5	6	5	6	4	6	6	6	6
HEATING VELOCITY (ft/min)	402	250	229	184	206	169	207	229	206	250	218	347	240	308	308	213	107	389	423	23	479	479	479	479
COOLING VELOCITY (ft/min)	470	426	418	286	477	374	161	418	477	426	184	540	316	507	507	279	250	125	107	241	92	92	92	92
OUTLET GRILL SIZE	3X10	3X10	4X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	4X10	3X10	4X10	3X10	4X10	4X10	4X10	4X10
TRUNK	C	A	D	A	E	D	D	D	D	C	E	C	E	B	B	D	C	A	D	A	B	C	E	D

RUN #	25
ROOM NAME	S-ENS
RM LOSS MBH	0.86
CFM PER RUN HEAT	19
RM GAIN MBH	0.52
CFM PER RUN COOLING	16
ADJUSTED PRESSURE	0.17
ACTUAL DUCT LGH.	51
EQUIVALENT LENGTH	140
TOTAL EFFECTIVE LENGTH	191
ADJUSTED PRESSURE	0.09
ROUND DUCT SIZE	4
HEATING VELOCITY (ft/min)	218
COOLING VELOCITY (ft/min)	184
OUTLET GRILL SIZE	3X10
TRUNK	E

SUPPLY AIR TRUNK SIZE														RETURN AIR TRUNK SIZE													
	TRUNK	STATIC	ROUND	RECT			VELOCITY		TRUNK	STATIC	ROUND	RECT		VELOCITY		TRUNK	STATIC	ROUND	RECT			VELOCITY					
	CFM	PRESS.	DUCT	DUCT			(ft/min)		CFM	PRESS.	DUCT	DUCT		(ft/min)		CFM	PRESS.	DUCT	DUCT			(ft/min)					
TRUNK A	125	0.08	6.4	8	X	8	281		TRUNK G	0	0.00	0	0	X	8	0	TRUNK C	0	0.05	0	0	X	8	0			
TRUNK B	178	0.10	6.9	8	X	8	401		TRUNK H	0	0.00	0	0	X	8	0	TRUNK F	0	0.05	0	0	X	8	0			
TRUNK C	555	0.08	11.2	16	X	8	624		TRUNK I	0	0.00	0	0	X	8	0	TRUNK Q	0	0.05	0	0	X	8	0			
TRUNK D	365	0.07	9.9	12	X	8	548		TRUNK J	0	0.00	0	0	X	8	0	TRUNK R	0	0.05	0	0	X	8	0			
TRUNK E	572	0.07	11.8	16	X	8	644		TRUNK K	0	0.00	0	0	X	8	0	TRUNK S	0	0.05	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	0.05	0	0	X	8	0			
																TRUNK U	0	0.05	0	0	X	8	0				
																TRUNK V	0	0.05	0	0	X	8	0				
																TRUNK W	0	0.05	0	0	X	8	0				
																TRUNK X	876	0.05	15	26	X	8	606				
																TRUNK Y	435	0.05	11.6	16	X	8	489				
																TRUNK Z	255	0.05	9.5	10	X	8	459				
																DROP	1131	0.05	16.5	24	X	10	679				

RETURN AIR #	1	2	3	4	5	6	7	8							BR
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR VOLUME	85	95	95	85	75	280	155	85	0	0	0	0	0	0	176
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
ACTUAL DUCT LGH.	51	42	57	53	63	26	26	48	1	1	1	1	1	1	15
EQUIVALENT LENGTH	205	165	155	205	210	185	190	155	0	0	0	0	0	0	185
TOTAL EFFECTIVE LH	256	207	212	258	273	211	216	203	1	1	1	1	1	1	200
ADJUSTED PRESSURE	0.06	0.07	0.07	0.06	0.05	0.07	0.07	0.07	14.80	14.80	14.80	14.80	14.80	14.80	0.07
ROUND DUCT SIZE	6	6	6	6	6	9	7.2	5.8	0	0	0	0	0	0	7.6
INLET GRILL SIZE	8	8	8	8	8	8	8	8	0	0	0	0	0	0	8
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	30	14	14	0	0	0	0	0	0	24

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
AIR VOLUME	85	95	95	85	75	280	155	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	51	42	57	53	63	26	26	48	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	205	165	155	205	210	185	190	155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE L.H	256	207	212	258	273	211	216	203	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.06	0.07	0.07	0.06	0.05	0.07	0.07	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE	6	6	6	6	6	9	7.2	5.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	30	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: MOUNTAINASH 4
SITE NAME: RUSSEL GARDENS PHASE 3

LO # 88610
LOT 191

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)

Room	Count	@	Capacity (cfm)	Total (cfm)
Basement + Master Bedroom	2	@ 21.2 cfm	42.4	cfm
Other Bedrooms	4	@ 10.6 cfm	42.4	cfm
Kitchen & Bathrooms	5	@ 10.6 cfm	53	cfm
Other Rooms	8	@ 10.6 cfm	84.8	cfm
Table 9.32.3.A.		TOTAL	222.6	cfm

PRINCIPAL VENTILATION CAPACITY REQUIRED 9.32.3.4.(1)

Room	Capacity (cfm)
1 Bedroom	31.8
2 Bedroom	47.7
3 Bedroom	63.6
4 Bedroom	79.5
5 Bedroom	95.4
TOTAL	95.4 cfm

SUPPLEMENTAL VENTILATION CAPACITY 9.32.3.6.

Total Ventilation Capacity	222.6	cfm
Less Principal Ventil. Capacity	95.4	cfm
Required Supplemental Capacity	127.2	cfm

PRINCIPAL EXHAUST FAN CAPACITY

Model: VANE 65H Location: BSMT

95.4 cfm 3.0 sones ☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

CFM	ΔT °F	FACTOR	% LOSS
95.4 CFM	71 F	1.08	0.25

SUPPLEMENTAL FANS PANASONIC

Location	Model	cfm	HVI	Sones
ENS	FV-05-11VK1	50	☒	0.3
ENS-3	FV-05-11VK1	50	☒	0.3
S-ENS	FV-05-11VK1	50	☒	0.3
W/R	FV-05-11VK1	50	☒	0.3

HEAT RECOVERY VENTILATOR 9.32.3.11.

Model: VANE 65H

155 cfm high 64 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-20

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																							
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																							
LO#: 88610		Model: MOUNTAINASH 4		Builder: GREENPARK HOMES		Date: 14/12/2020																																																																	
Volume Calculation					Air Change & Delta T Data																																																																		
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$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.310 x 335.86 x 39 °C x 1.2 = 4895 W = 16701 Btu/h					$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.111 x 335.86 x 7 °C x 1.2 = 318 W = 1084 Btu/h																																																																		
5.2.3.2 Heat Loss due to Mechanical Ventilation					6.2.7 Sensible heat Gain due to Ventilation																																																																		
$HL_{pairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 95 CFM x 71 °F x 1.08 x 0.25 = 1819 Btu/h					$HL_{pairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 95 CFM x 13 °F x 1.08 x 0.25 = 330 Btu/h																																																																		
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																																							
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*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0																																																																							

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL:	MOUNTAINASH 4	LOT	191	BUILDER:	GREENPARK HOMES
SFQT:	3185	LO#	88610	SITE:	RUSSEL GARDENS PHASE 3

DESIGN ASSUMPTIONS

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

BUILDING DATA

ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.57	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	42699.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH:	52.0 ft	WIDTH:	36.0 ft
		EXPOSED PERIMETER:	149.0 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	-

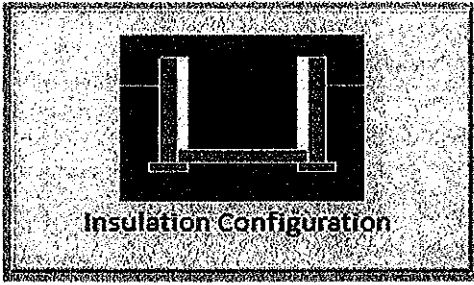
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

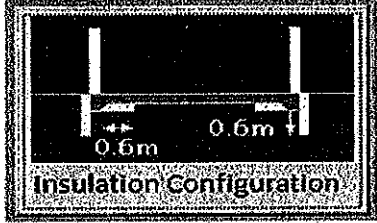
Weather Station Description		
Province:	Ontario	
Region:	Hamilton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	15.8	 Insulation Configuration
Floor Width (m):	11.0	
Exposed Perimeter (m):	45.4	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	2.0	
Door Area (m ²):	3.7	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1419

TYPE: MOUNTAINASH 4
LO# 88610

LOT 191

Residential Slab on Grade 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		
Length (m):	1.8	
Width (m):	4.6	
Exposed Perimeter (m):	8.2	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		70

TYPE: MOUNTAINASH 4
LO# 88610

LOT 191

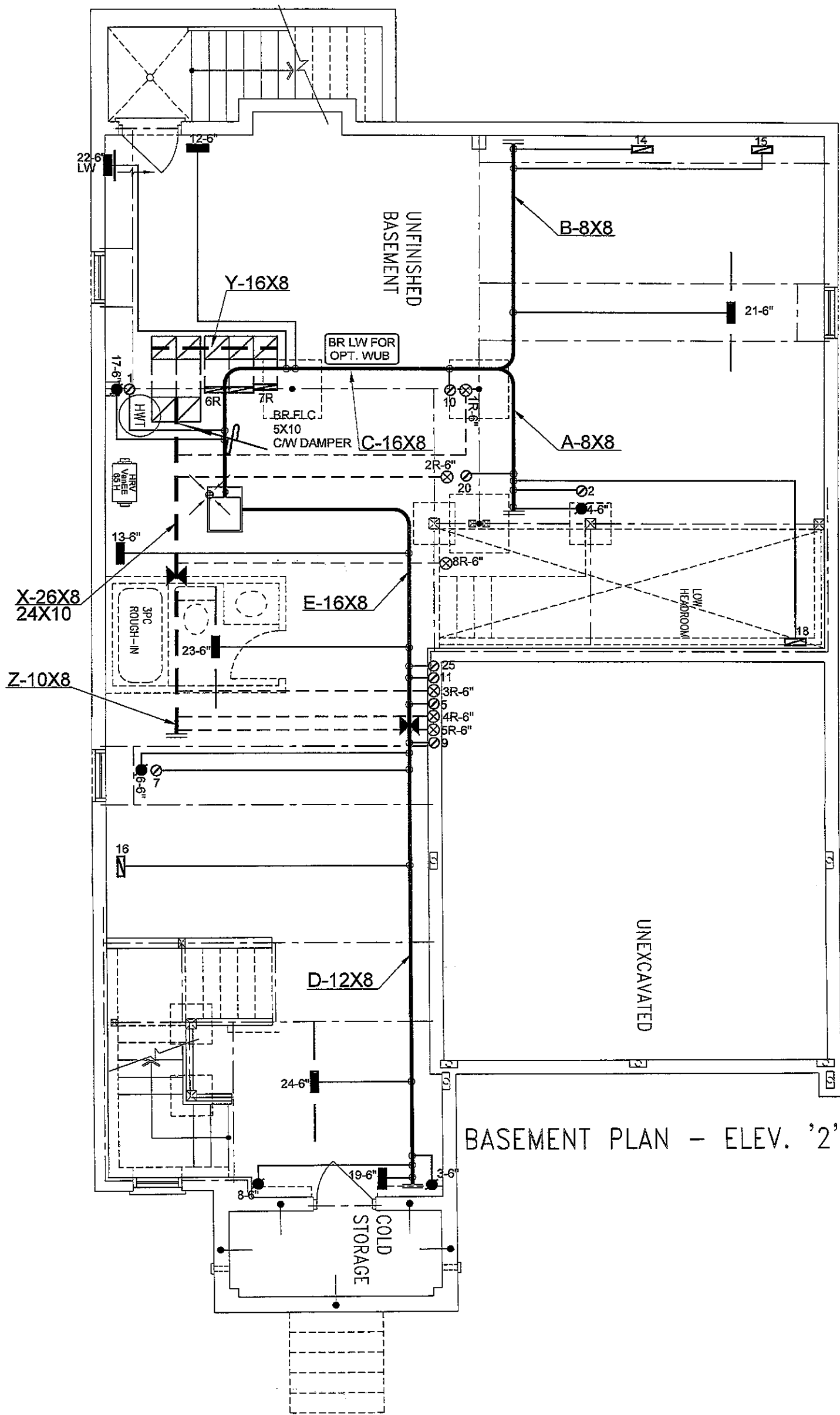
Air Infiltration Residential Load Calculator

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:	Detached		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m ³):	1209.1		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	1611.8 cm ²	
	3.57	ACH @ 50 Pa	
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust	
	45.0	45.0	
Flue Size			
Flue #:	#1	#2	#3 #4
Diameter (mm):	0	0	0 0
Natural Infiltration Rates			
Heating Air Leakage Rate (ACH/H):	0.310		
Cooling Air Leakage Rate (ACH/H):	0.111		

TYPE: MOUNTAINASH 4
LO# 88610

LOT 191



BASEMENT PLAN - ELEV. '2'

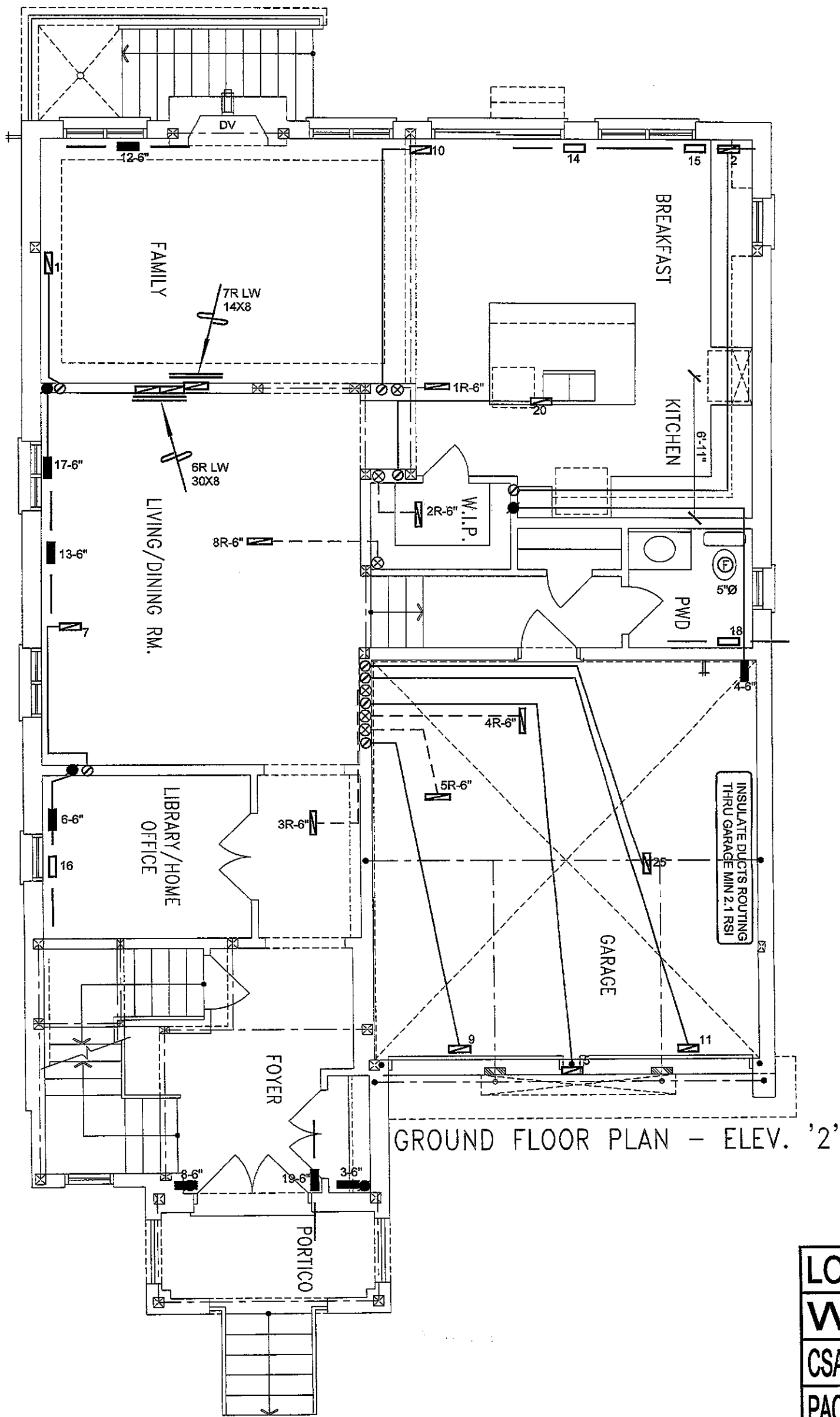
LOT 191
WUB
CSA-F280-12
PACKAGE A1

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
	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

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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 53385 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title		
GREENPARK HOMES		MAKE GOODMAN	MODEL GMCE960603BNA	INPUT 60 MBTU/H	OUTPUT 57.6 MBTU/H	COOLING 3.0 TONS	FAN SPEED 1131 cfm @ 0.5" w.c.	3RD FLOOR 2ND FLOOR 1ST FLOOR BASEMENT	BASEMENT HEATING LAYOUT
Project Name								Date DEC/2020	
RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO								Scale 3/16" = 1'-0"	
LOT 191								BCIN# 19669	
MOUNTAINASH 4 3185 sqft								LO# 88610	



GROUND FLOOR PLAN - ELEV. '2'

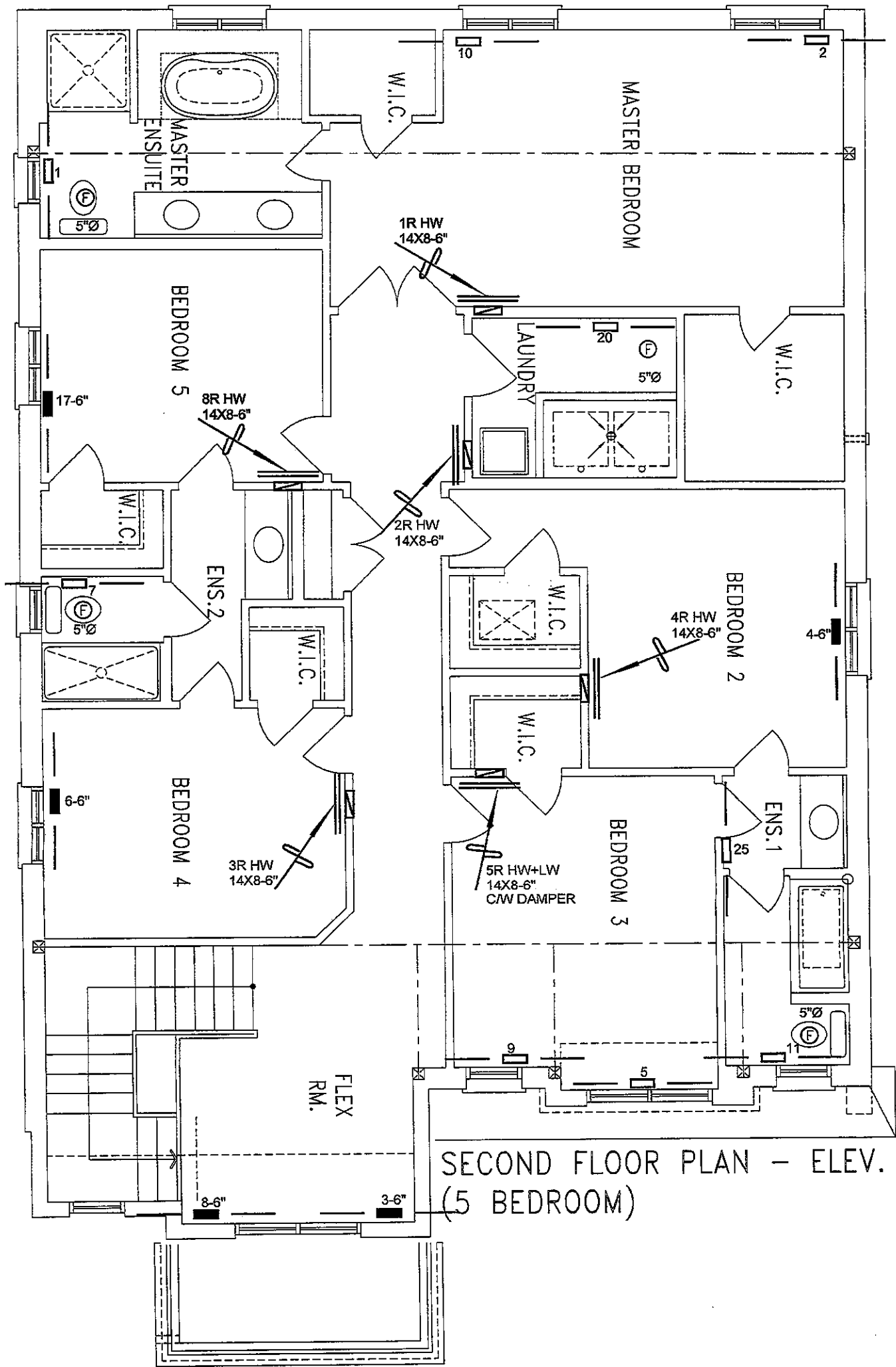
LOT 191
WUB
CSA-F280-12
PACKAGE A1

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
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER		Date
								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 PHASE 3 HAMILTON, ONTARIO			Date DEC/2020	
LOT 191 MOUNTAINASH 4 3185 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO# 88610	



SECOND FLOOR PLAN – ELEV. '2'
(5 BEDROOM)

LOT 191
WUB
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									
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	No.	Description
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	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	2.	
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	1.	
								REVISIONS	
								No.	Description
								Date	

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Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			Date DEC/2020	
LOT 191 MOUNTAINASH 4 3185 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO# 88610	