

SITE NAME: RUSSEL GARDENS PHASE 3				LOT 300				DATE: Dec-20				WINTER NATURAL AIR CHANGE RATE 0.310				HEAT LOSS AT °F. 71				CSA-F280-12							
BUILDER: GREENPARK HOMES				TYPE: VALLEYCREEK 4				GFA: 2793				LO# 88600				SUMMER NATURAL AIR CHANGE RATE 0.111				HEAT GAIN AT °F. 13				SB-12 PACKAGE A1			
ROOM USE				MBR		ENS		BED-2		BED-3		BED-4		S-BATH				ENS-4									
EXP. WALL				41		30		11		28		39		6				7									
CLG. HT.				9		9		9		9		9		9				9									
GRS.WALL AREA		LOSS GAIN		369		270		99		252		351		54				63									
GLAZING				LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN				LOSS GAIN									
NORTH		19.8	16.0	0	0	0	9	178	144	16	316	256	0	0	0	0	0	0	0	0	0	0	0				
EAST		19.8	41.6	0	0	0	0	0	0	0	0	24	474	597	34	672	1413	0	0	0	12	237	499				
SOUTH		19.8	24.9	16	316	398	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
WEST		19.8	41.6	36	712	1499	16	316	685	0	0	0	0	0	0	0	0	0	0	0	0	0					
SKYLT.		34.6	101.5	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					
NET EXPOSED WALL		4.1	0.8	317	1314	238	245	1015	184	83	344	62	228	945	171	317	1314	238	47	195	35	81	211				
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					
EXPOSED CLG		1.2	0.6	363	433	213	220	262	129	207	247	122	214	255	126	220	262	129	119	142	70	76	89				
NO ATTIC EXPOSED CLG		2.6	1.3	0	0	0	0	0	0	0	0	0	40	102	50	0	0	0	0	0	0	0					
EXPOSED FLOOR		2.4	0.4	0	0	0	0	0	0	0	0	0	214	507	92	0	0	0	86	204	37	75	178				
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				2775		1772		907		2182		2351		679		716		613									
SUB TOTAL HT GAIN				2346		1122		440		1386		1831		254		613											
LEVEL FACTOR / MULTIPLIER		0.20	0.24		0.20	0.24		0.20	0.24		0.20	0.24		0.20	0.24		0.20	0.24									
AIR CHANGE HEAT LOSS		679		434		222		534		575		166		175													
AIR CHANGE HEAT GAIN				174		83		33		103		136		19		46											
DUCT LOSS		0		0		0		0		272		0		85		89											
DUCT GAIN				0		0		0		254		0		27		66											
HEAT GAIN PEOPLE		240		2	480	0	0	1	240	1	240	1	240	0	0	0	0	0	0	0	0	0					
HEAT GAIN APPLIANCES/LIGHTS				806		0		806		806		806		0		0											
TOTAL HT LOSS BTU/H		3454		2206		1129		2587		2926		930		980		942											
TOTAL HT GAIN x 1.3 BTU/H		4948		1567		1974		3625		3916		390		942													

ROOM USE			LV/DN		LIB		BF/KT		FAM		LAUN		W/R		FOY		MUD				WUB		BAS	
EXP. WALL			39		20		35		37		9		4		30		9				25		181	
CLG. HT.			10		10		10		10		9		10		11		11				9		9	
GRS.WALL AREA	FACTORS		390		200		350		370		81		40		330		99				225		906	
GLAZING	LOSS GAIN		LOSS GAIN		LOSS GAIN		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	18	356	288	0	0	0	0	0	0	0	0	0	0	0	0	0	6	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	0	0	0	0
SOUTH	19.8	24.9	26	514	647	0	0	0	0	0	0	3	158	199	8	158	199	0	0	0	0	5	99	124
WEST	19.8	41.6	0	0	0	0	0	0	70	1384	2909	40	791	1662	0	0	0	0	0	0	0	0	0	0
SKYLT.	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.1	0.8	354	1509	274	182	765	137	280	1161	210	330	1368	248	73	303	55	32	133	24	283	1173	213	79
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	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
NO ATTIC EXPOSED CLG	2.6	1.3	0	0	0	0	0	0	0	0	0	16	41	20	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
BASEMENT/CRAWL HEAT LOSS																								
SLAB ON GRADE HEAT LOSS																								
SUBTOTAL HT LOSS																								
SUB TOTAL HT GAIN																								
LEVEL FACTOR / MULTIPLIER	0.30	0.39				0.30	0.39		0.30	0.39		0.30	0.39		0.30	0.39		0.30	0.39				0.50	0.84
AIR CHANGE HEAT LOSS																								
AIR CHANGE HEAT GAIN																								
DUCT LOSS																								
DUCT GAIN																								
HEAT GAIN PEOPLE	240																							
HEAT GAIN APPLIANCES/LIGHTS																								
TOTAL HT LOSS BTU/H																								
TOTAL HT GAIN x 1.3 BTU/H																								

CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department

FEB 10 2021

RECEIVED

DATE

DATE

TOTAL HEAT GAIN BTU/H:

35799

TONS: 2.98

LOSS DUE TO VENTILATION LOAD BTU/H: 1515

STRUCTURAL HEAT LOSS: 47043

TOTAL COMBINED HEAT LOSS BTU/H: 48558

Michael O'Rourke

SITE NAME: RUSSEL GARDENS PHASE 3
BUILDER: GREENPARK HOMES

LOT 300
TYPE: VALLEYCREEK 4

DATE: Dec-20

GFA: 2793 LO# 88600

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 47,043 TOTAL HEAT GAIN 35,524
AIR FLOW RATE CFM 24.04 AIR FLOW RATE CFM 31.84

furnace pressure 0.5
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35

#GOODMAN
GM6C960603BNA 60
FAN SPEED 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	12	8	4
R/A	0	0	4	3	1

All S/A diffusers 4"x10" unless noted otherwise on layout.
All S/A runs 5'0" 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	MBR	ENS	BED-3	BED-2	BED-3	BED-4	S-BATH	S-BATH	BED-4	MBR	ENS-4	LV/DN	LIB	BF/KT	BF/KT	FAM	LAUN	W/R	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.73	2.21	1.49	1.13	1.49	1.46	0.46	0.46	1.46	1.73	0.98	2.81	1.54	1.77	1.77	3.06	0.74	0.40	3.17	1.11	4.01	4.01	4.01	4.01
CFM PER RUN HEAT	42	53	36	27	36	35	11	11	35	42	24	68	37	43	43	74	18	10	76	27	96	96	96	96
RM GAIN MBH	2.47	1.57	1.81	1.97	1.81	1.96	0.20	0.20	1.96	2.47	0.94	2.33	1.64	2.70	2.70	3.74	1.50	0.31	0.58	0.20	0.61	0.61	0.61	0.61
CFM PER RUN COOLING	79	50	58	63	58	62	6	6	62	79	30	74	52	86	86	119	48	10	18	6	20	20	20	20
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.15	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	48	44	46	30	42	51	32	36	44	33	34	35	18	25	32	28	31	33	40	13	24	43	16	36
EQUIVALENT LENGTH	180	120	140	160	130	150	160	150	130	140	120	150	150	120	140	130	200	160	120	190	100	90	150	130
TOTAL EFFECTIVE LENGTH	228	164	186	190	172	201	192	186	174	173	154	185	168	145	172	158	231	193	160	203	124	133	166	166
ADJUSTED PRESSURE	0.08	0.1	0.09	0.09	0.1	0.09	0.09	0.09	0.1	0.1	0.11	0.09	0.1	0.11	0.09	0.1	0.07	0.09	0.11	0.08	0.13	0.12	0.1	0.1
ROUND DUCT SIZE	6	5	5	6	5	5	4	4	5	6	4	6	5	6	6	6	5	4	5	4	6	6	6	6
HEATING VELOCITY (ft/min)	214	389	264	138	264	257	126	126	257	214	275	347	272	219	219	377	132	115	558	310	489	489	489	489
COOLING VELOCITY (ft/min)	403	367	426	321	426	455	69	69	455	403	344	377	382	438	438	607	352	115	132	69	102	102	102	102
OUTLET GRILL SIZE	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	A	A	D	B	D	C	D	D	C	A	D	C	B	A	A	A	D	C	C	D	B	B	D	C

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
1	MBR	1.73	42	2.47	79	0.17	48	180	228	0.08	6	214	403	4X10	A
2	ENS	2.21	53	1.57	50	0.17	44	120	164	0.1	5	389	367	3X10	A
3	BED-3	1.49	36	1.81	58	0.17	46	140	186	0.09	5	264	426	3X10	D
4	BED-2	1.13	27	1.97	63	0.17	30	160	190	0.09	6	138	321	4X10	B
5	BED-3	1.49	36	1.81	58	0.17	42	130	172	0.1	5	264	426	3X10	D
6	BED-4	1.46	35	1.96	62	0.17	51	150	201	0.09	5	257	455	3X10	C
7	S-BATH	0.46	11	0.20	6	0.17	32	160	192	0.09	4	126	69	3X10	D
8	S-BATH	0.46	11	0.20	6	0.17	36	150	186	0.09	4	126	69	3X10	D
9	BED-4	1.46	35	1.96	62	0.17	44	130	174	0.1	5	257	455	3X10	C
10	MBR	1.73	42	2.47	79	0.17	33	140	173	0.1	6	214	403	4X10	A
11	ENS-4	0.98	24	0.94	30	0.17	34	120	154	0.11	4	275	344	3X10	D
12	LV/DN	2.81	68	2.33	74	0.17	35	150	185	0.11	6	347	377	4X10	C
13	LIB	1.54	37	1.64	52	0.17	18	150	168	0.1	5	272	382	3X10	B
14	BF/KT	1.77	43	2.70	86	0.17	25	120	145	0.11	6	219	438	4X10	A
15	BF/KT	1.77	43	2.70	86	0.17	32	140	172	0.09	6	219	438	4X10	A
16	FAM	3.06	74	3.74	119	0.15	28	130	158	0.1	6	377	607	4X10	A
17	LAUN	0.74	18	1.50	48	0.17	31	200	231	0.07	5	132	352	3X10	D
18	W/R	0.40	10	0.31	18	0.17	33	160	193	0.09	4	115	115	3X10	C
19	FOY	3.17	76	0.58	18	0.17	40	120	160	0.11	5	558	132	3X10	C
20	MUD	1.11	27	0.20	6	0.17	13	190	203	0.08	4	310	69	3X10	D
21	BAS	4.01	96	0.61	20	0.16	24	100	124	0.13	6	489	102	4X10	B
22	BAS	4.01	96	0.61	20	0.16	43	90	133	0.12	6	489	102	4X10	B
23	BAS	4.01	96	0.61	20	0.16	16	150	166	0.1	6	489	102	4X10	D
24	BAS	4.01	96	0.61	20	0.16	36	130	166	0.1	6	489	102	4X10	C

SUPPLY AIR TRUNK SIZE	TRUNK	STATIC	ROUND	RECT	VELOCITY	TRUNK	STATIC	ROUND	RECT	VELOCITY	RETURN AIR TRUNK SIZE	TRUNK	STATIC	ROUND	RECT	VELOCITY
	CFM	PRESS.	DUCT	DUCT	(ft/min)		CFM	PRESS.	DUCT	DUCT		CFM	PRESS.	DUCT	DUCT	(ft/min)
TRUNK A	297	0.08	8.9	14	382	TRUNK G	0	0.00	0	0	TRUNK O	0	0.06	0	0	8
TRUNK B	553	0.08	11.2	18	553	TRUNK H	0	0.00	0	0	TRUNK P	0	0.06	0	0	8
TRUNK C	320	0.09	8.9	10	576	TRUNK I	0	0.00	0	0	TRUNK Q	0	0.06	0	0	8
TRUNK D	579	0.07	11.8	16	651	TRUNK J	0	0.00	0	0	TRUNK R	0	0.06	0	0	8
TRUNK E	0	0.00	0	0	0	TRUNK K	0	0.00	0	0	TRUNK S	0	0.06	0	0	8
TRUNK F	0	0.00	0	0	0	TRUNK L	0	0.00	0	0	TRUNK T	0	0.06	0	0	8

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	120	185	105	290	105	105	95	0	0	0	0	0	0	0	0	0	126	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	39	38	51	30	18	22	45	1	1	1	1	1	1	1	1	1	17	0	0	0	0	0	0	0
EQUIVALENT LENGTH	215	145	135	150	175	175	175	0	0	0	0	0	0	0	0	0	220	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	254	183	186	180	193	197	220	1	1	1	1	1	1	1	1	1	237	0	0	0	0	0	0	0
ADJUSTED PRESSURE	0.06	0.08	0.08	0.08	0.08	0.08	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
ROUND DUCT SIZE	6.8	7.5	6	8.8	6	6	6	0	0	0	0	0	0	0	0	0	6.9	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	6	8	8	0	0	0	0	0	0	0	0	0	8	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	30	12	14	14	0	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0

TYPE: VALLEYCREEK 4
SITE NAME: RUSSEL GARDENS PHASE 3

LO # 88600
LOT 300

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	3 @ 10.6 cfm	31.8 cfm
Kitchen & Bathrooms	5 @ 10.6 cfm	53 cfm
Other Rooms	6 @ 10.6 cfm	63.6 cfm
Table 9.32.3.A.	TOTAL	190.8 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	190.8	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	111.3	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANE 65H	Location: BSMT
79.5 cfm	3.0 sones ☒ HVI Approved

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

SUPPLEMENTAL FANS		PANASONIC		
Location	Model	cfm	HVI	Sones
ENS	FV-05-11VK1	50	☒	0.3
S-BATH	FV-05-11VK1	50	☒	0.3
ENS-4	FV-05-11VK1	50	☒	0.3
WR	FV-05-11VK1	50	☒	0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANE 65H		
165	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:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	December-20

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 88600	Model: VALLEYCREEK 4	Builder: GREENPARK HOMES	Date: 14/12/2020																																																									
Volume Calculation			Air Change & Delta T Data																																																									
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5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.310 x 294.86 x 39 °C x 1.2 = 4297 W = 14662 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ 0.111 x 294.86 x 7 °C x 1.2 = 279 W = 952 Btu/h																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 71 °F x 1.08 x 0.25 = 1515 Btu/h			$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 13 °F x 1.08 x 0.25 = 275 Btu/h																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																												
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agcleve} + HL_{bgcleve})\}$																																																												
Level	Level Factor (LF)	HL _{airbv} Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{level})	Air Leakage Heat Loss Multiplier (LF x HL _{airbv} / HL _{level})																																																								
1	0.5	14,662	8,716	0.841																																																								
2	0.3		11,240	0.391																																																								
3	0.2		11,979	0.245																																																								
4	0		0	0.000																																																								
5	0		0	0.000																																																								
*HL_{airbv} = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HL_{airve} = 0																																																												

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: VALLEYCREEK 4	LOT 300	BUILDER: GREENPARK HOMES
SFQT: 2793	LO# 88600	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):	37487.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	2.00	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 54.0 ft	WIDTH: 34.0 ft	EXPOSED PERIMETER:	151.0 ft

2012 OBC - COMPLIANCE PACKAGE		Compliance Package A1	
Component		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 cl	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	-

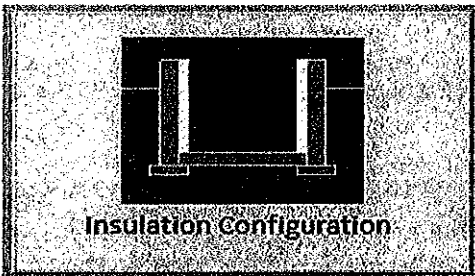
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

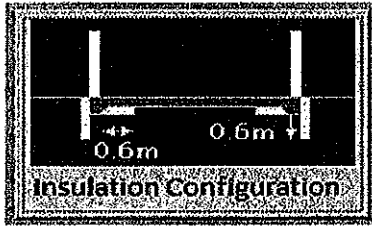
Weather Station Description		
Province:	Ontario	
Region:	Hamilton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	16.5	 Insulation Configuration
Floor Width (m):	10.4	
Exposed Perimeter (m):	46.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	1.4	
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):		1442

TYPE: VALLEYCREEK 4
LO# 88600

LOT 300

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):	1.5	 Insulation Configuration
Width (m):	4.6	
Exposed Perimeter (m):	7.6	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		64

TYPE: VALLEYCREEK 4
LO# 88600

LOT 300

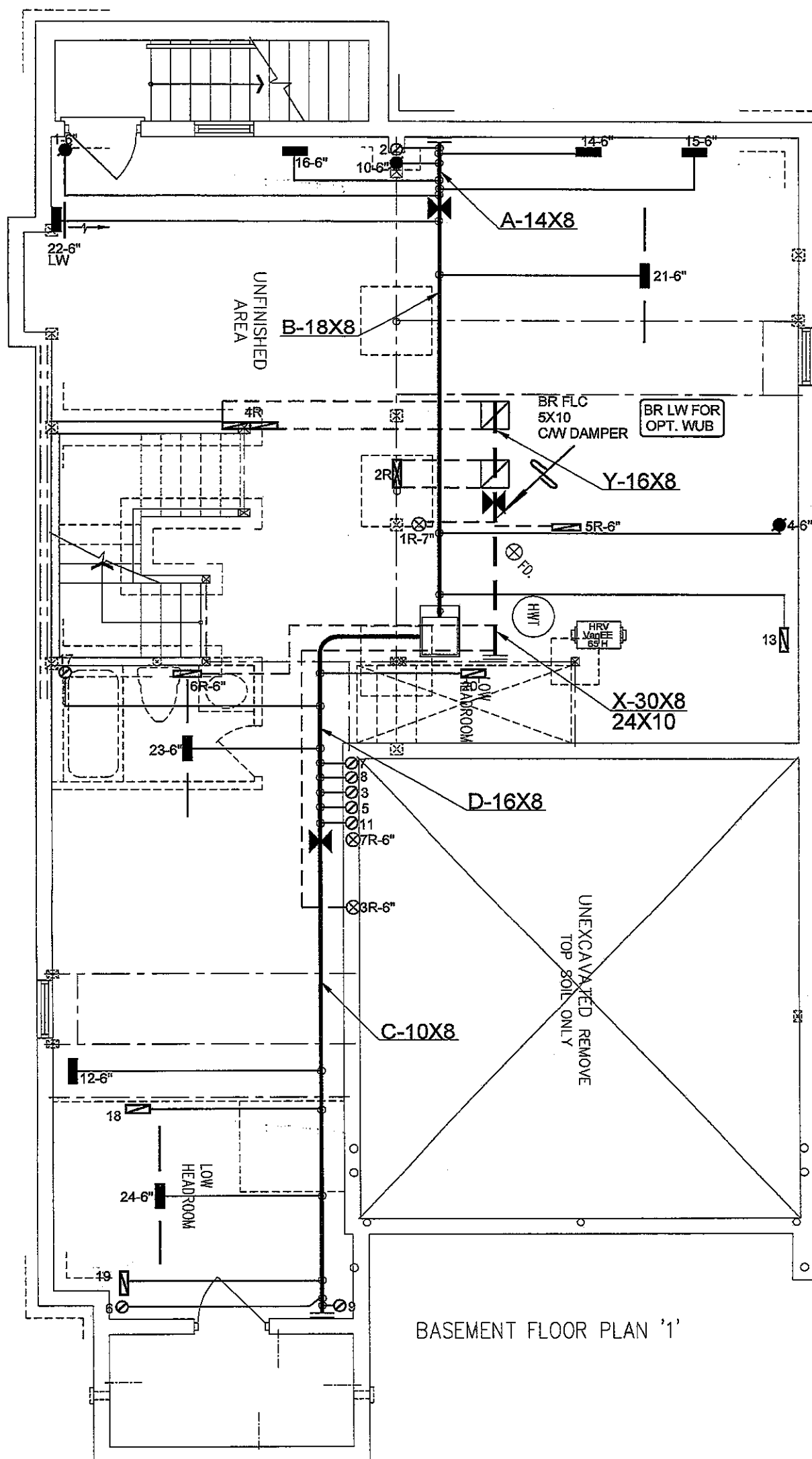
Air Infiltration Residential Load Calculator

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):	1061.5		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	1415.0 cm ²	
	3.57	ACH @ 50 Pa	
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust	
	37.5	37.5	
Flue Size			
Flue #:	#1	#2	#3
Diameter (mm):	0	0	0
	#4	0	
Natural Infiltration Rates			
Heating Air Leakage Rate (ACH/H):	0.310		
Cooling Air Leakage Rate (ACH/H):	0.111		

TYPE: VALLEYCREEK 4
LO# 88600

LOT 300



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

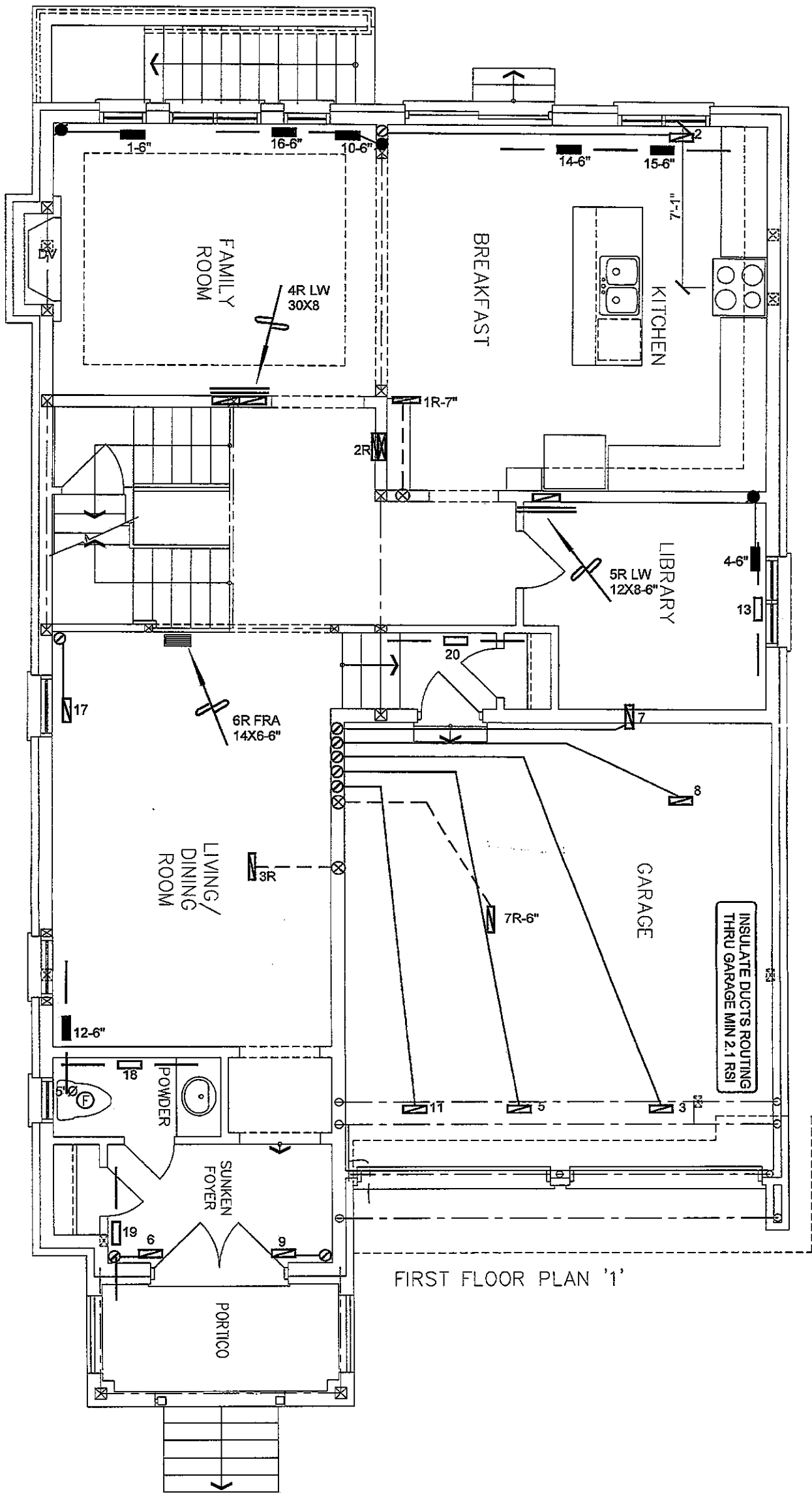
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

LOT 300
WUB
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"x6" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x6" 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	HVACDESIGNSLTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacadesigns.ca Web: www.hvacadesigns.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 48558 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	12	4	3	
RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO		INPUT 60 MBTU/H		1ST FLOOR	8	3	2	
LOT 300		OUTPUT 57.6 MBTU/H		BASEMENT	4	1	0	Date
VALLEYCREEK 4 2793 sqft	COOLING 3.0 TONS		ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5" UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A				Scale	3/16" = 1'-0"
	FAN SPEED 1131 cfm @ 0.5" w.c.						BCIN# 19669	
							LO#	88600



FIRST FLOOR PLAN '1'

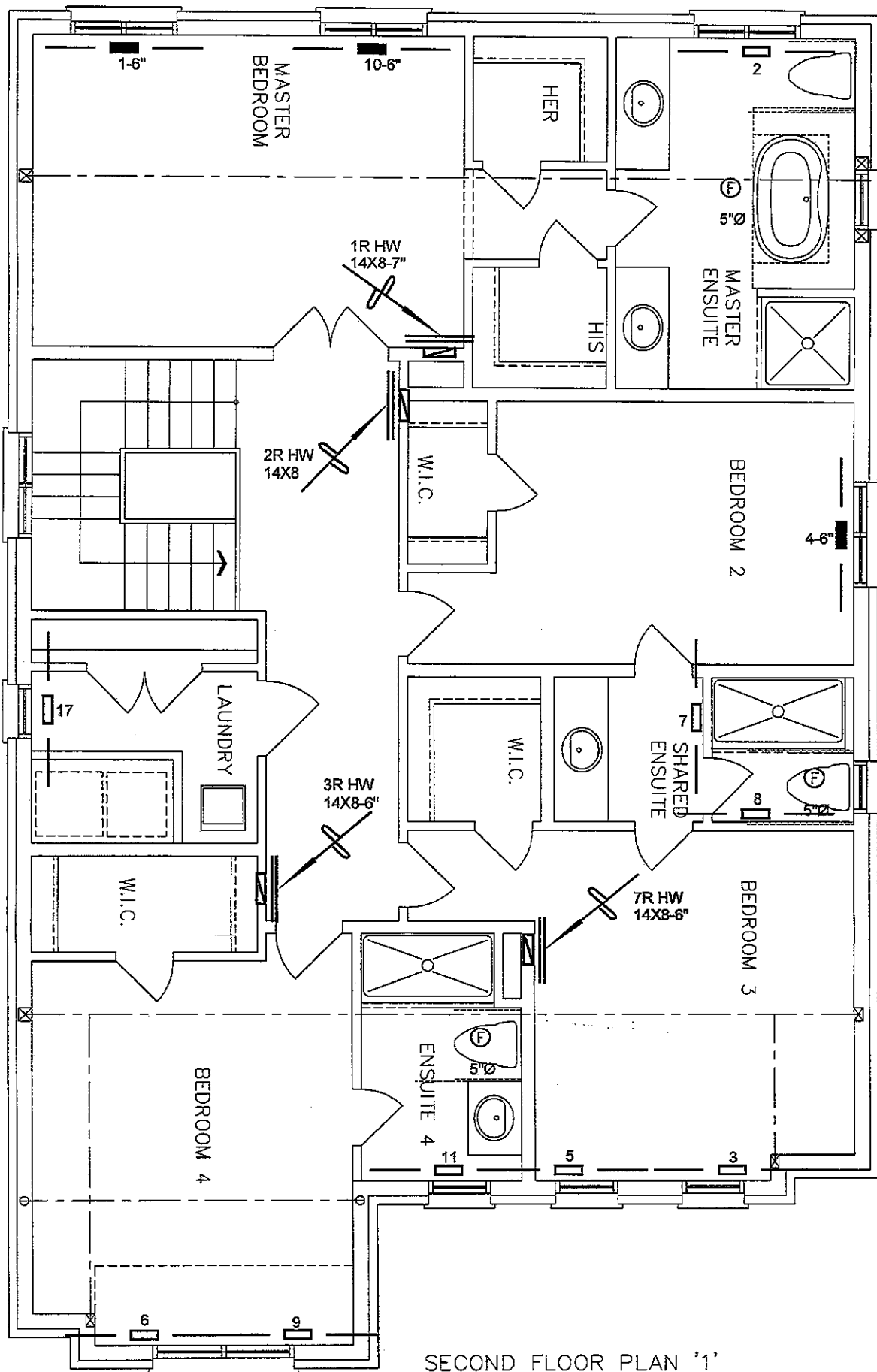
LOT 300
WUB
CSA-F280-12
PACKAGE A1

I MICHAEL O'Rourke HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 32.5 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		8" 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 PHASE 3 HAMILTON, ONTARIO			Date DEC/2020	
LOT 300 VALLEYCREEK 4 2793 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO#	88600



SECOND FLOOR PLAN '1'

LOT 300
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	Date
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

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Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			Date DEC/2020	
LOT 300 VALLEYCREEK 4 2793 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO#	88600