

CITY OF HAMILTON
Planning & Development Division

FEB 10 2021

REC'D SP- LOSS GAIN
REF TO DATE
DATE

MUD	9	11	REC'D 89	LOSS GAIN	0	DATE	0
			REC'D TO	0	DATE	0	0
			0	0	0	0	0
			0	0	0	0	5
			0	0	0	0	0

TOTAL COMBINED HEAT LOSS BTU/H: 48535

SITE NAME: RUSSEL GARDENS PHASE 3
BUILDER: GREENPARK HOMES

LOT 306
TYPE: VALLEYCREEK 4

DATE: Dec-20

GFA: 2804 LO# 88602

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 47,120 TOTAL HEAT GAIN 35,579
AIR FLOW RATE CFM 24 AIR FLOW RATE CFM 31.79

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
FAN SPEED LOW
MEDLOW 928
MEDIUM 1017
MEDIUM 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"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	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	WR	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.73	2.21	1.50	1.13	1.50	1.46	0.47	0.47	1.46	1.73	0.88	2.82	1.55	1.77	1.77	3.04	0.75	0.43	3.17	1.11	4.02	4.02	4.02	4.02
CFM PER RUN HEAT	41	53	36	27	36	35	11	11	35	41	24	68	37	43	43	73	18	10	76	27	97	97	97	97
RM GAIN MBH	2.48	1.57	1.82	1.98	1.82	1.96	0.20	0.20	1.96	2.48	0.94	2.34	1.65	2.71	2.71	3.74	1.50	0.32	0.58	0.20	0.62	0.62	0.62	0.62
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	0.16	0.16	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)	209	389	264	138	264	257	126	126	257	275	347	272	219	219	219	372	132	115	558	310	495	495	495	495
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 #	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	WR	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.73	2.21	1.50	1.13	1.50	1.46	0.47	0.47	1.46	1.73	0.88	2.82	1.55	1.77	1.77	3.04	0.75	0.43	3.17	1.11	4.02	4.02	4.02	4.02
CFM PER RUN HEAT	41	53	36	27	36	35	11	11	35	41	24	68	37	43	43	73	18	10	76	27	97	97	97	97
RM GAIN MBH.	2.48	1.57	1.82	1.98	1.82	1.96	0.20	0.20	1.96	2.48	0.94	2.34	1.65	2.71	2.71	3.74	1.50	0.32	0.58	0.20	0.62	0.62	0.62	0.62
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	0.16	0.16	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	16
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	150
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)	209	389	264	138	264	257	126	126	257	275	347	272	219	219	219	372	132	115	558	310	495	495	495	495
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	D

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	294	0.08	8.9	14	378	TRUNK G	0	0.00	0	0
TRUNK B	552	0.08	11.2	18	552	TRUNK H	0	0.00	0	0
TRUNK C	321	0.09	8.9	10	578	TRUNK I	0	0.00	0	0
TRUNK D	581	0.07	11.8	16	654	TRUNK J	0	0.00	0	0
TRUNK E	0	0.00	0	0	0	TRUNK K	0	0.00	0	0
TRUNK F	0	0.00	0	0	0	TRUNK L	0	0.00	0	0

RETURN AIR #	1	2	3	4	5	6	7											BR								
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		TRUNK W	0	0.06	0	0	x	8	0
AIR VOLUME	120	185	105	290	105	105	95	0	0	0	0	0	0	0	0	0	0		TRUNK X	1131	0.06	15.8	30	x	8	679
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		TRUNK Y	475	0.06	11.4	16	x	8	534
ACTUAL DUCT LGH	39	38	51	30	18	22	45	1	1	1	1	1	1	1	1	1	1		TRUNK Z	0	0.06	0	0	x	8	0
EQUIVALENT LENGTH	215	145	135	150	175	175	175	0	0	0	0	0	0	0	0	0	0		DROP	1131	0.06	15.8	24	x	10	679
TOTAL EFFECTIVE LH	254	183	186	180	193	197	220	1	1	1	1	1	1	1	1	1	1									
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	14.80									
ROUND DUCT SIZE	6.8	7.5	6	8.8	6	6	6	0	0	0	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	0									
	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	0									

TYPE: VALLEYCREEK 4
SITE NAME: RUSSEL GARDENS PHASE 3

LO # 88602
LOT 306

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 9.32.3.6.	
Total Ventilation Capacity	190.8 cfm
Less Principal Ventil. Capacity	79.5 cfm
Required Supplemental Capacity	111.3 cfm

PRINCIPAL EXHAUST FAN CAPACITY				
Model:	VANEE 65H	Location:	BSMT	
79.5	cfm	3.0	sones	☒ HVI Approved
PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
79.5 CFM	X 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
W/R	FV-05-11VK1	50	☒	0.3

HEAT RECOVERY VENTILATOR 9.32.3.11.			
Model:	VANEE 65H		
155	cfm high	64	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-20

Formula Sheet (For Air Leakage / Ventilation Calculation)

Date: 14/12/2020

Air Change & Delta T Data

Level	Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)
Bsmt	1237	9	11133
First	1237	10	12370
Second	1577	9	14193
Third	0	9	0
Fourth	0	9	0
		Total:	37,696.0 ft ³
		Total:	1067.4 m ³

	Design Temperature Difference			
	T _{in} °C	T _{out} °C	ΔT °C	ΔT °F
Winter DTDh	22	-17	39	71
Summer DTDc	24	31	7	13

6.2.6 Sensible Gain due to Air Leakage

$$HG_{salb} = LR_{atrc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$$

$$= \frac{0.111}{\text{}} \times \frac{296.51}{\text{}} \times \frac{7^\circ\text{C}}{\text{}} \times \frac{1.2}{\text{}} = \boxed{280 \text{ W}}$$

$$= \boxed{957 \text{ Btu/h}}$$

6.2.7 Sensible heat Gain due to Ventilation

$$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$$

80 CFM	x	13 °F	x	1.08	x	0.25	=	275 Btu/h
--------	---	-------	---	------	---	------	---	-----------

$$HL_{airr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{aacr} + HL_{bacr}) \div (HL_{aaclevel} + HL_{baclevel})\}$$

Level	Level Factor (LF)	HLaive Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{level})	Air Leakage Heat Loss Multiplier (LF x HLaive / HL _{level})
1	0.5	14,744	8,716	0.846
2	0.3		11,235	0.394
3	0.2		11,979	0.246
4	0		0	0.000
5	0		0	0.000

*For a balanced or supply only ventilation system $HL_{airve} = 0$

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: VALLEYCREEK 4	LOT 306	BUILDER: GREENPARK HOMES
SFQT: 2804	LO# 88602	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):	37696.0	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

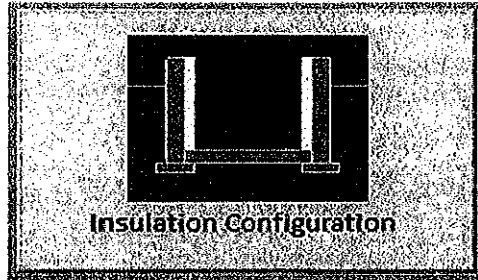
Component	Compliance Package A1	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 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	-
Skyllights 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

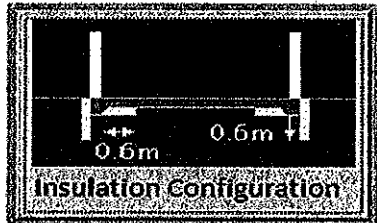
Weather Station Description		
Province:	Ontario	
Region:	Hamilton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	16.5	 Insulation Configuration
Floor Width (m):	10.4	
Exposed Perimeter (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# 88602

LOT 306

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	
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# 88602

LOT 306

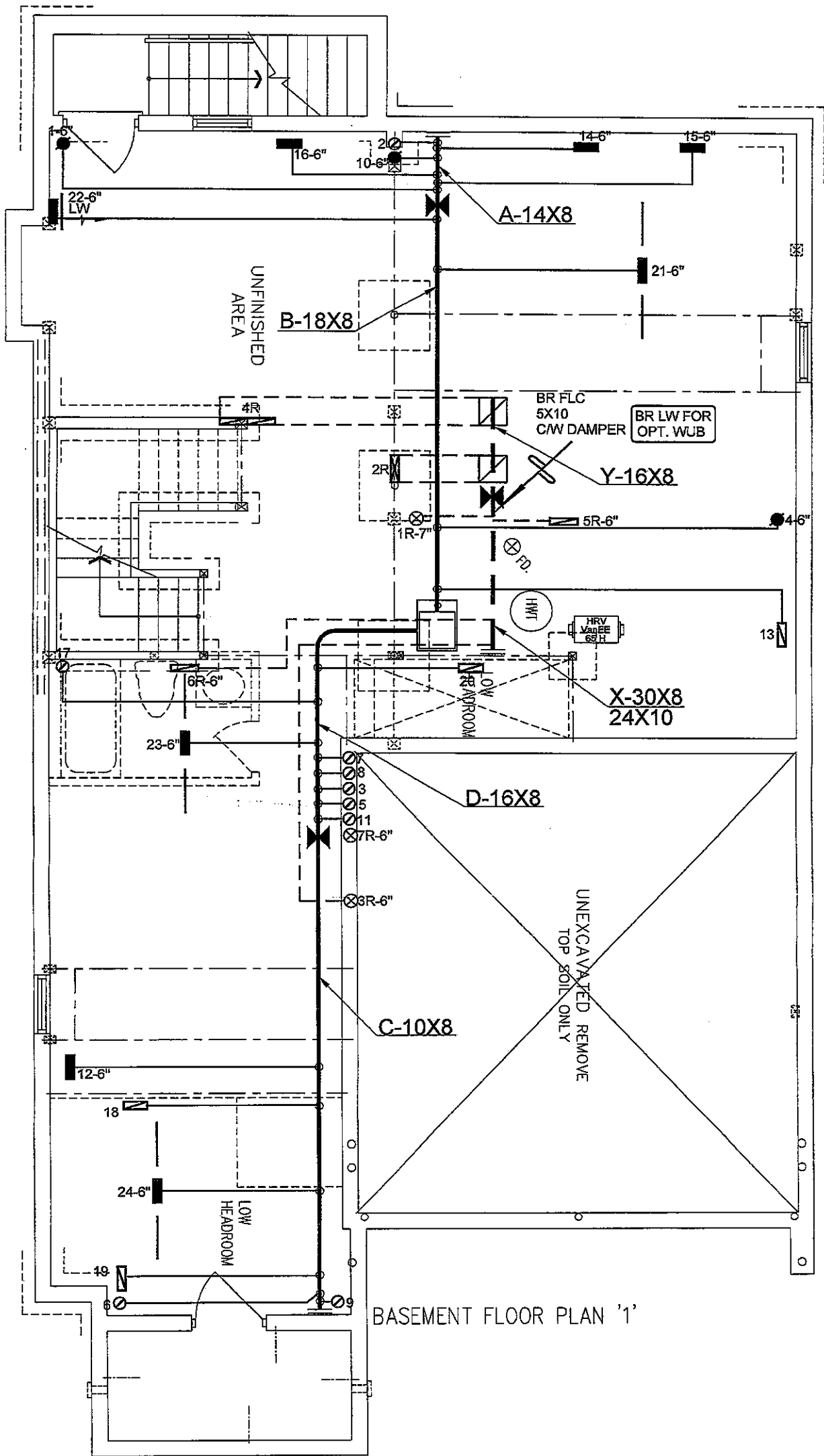
Air Infiltration Residential Load Calculator

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):	1067.4			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1422.9 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	#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: VALLEYCREEK 4
LO# 88602

LOT 306



BASEMENT FLOOR PLAN '1'

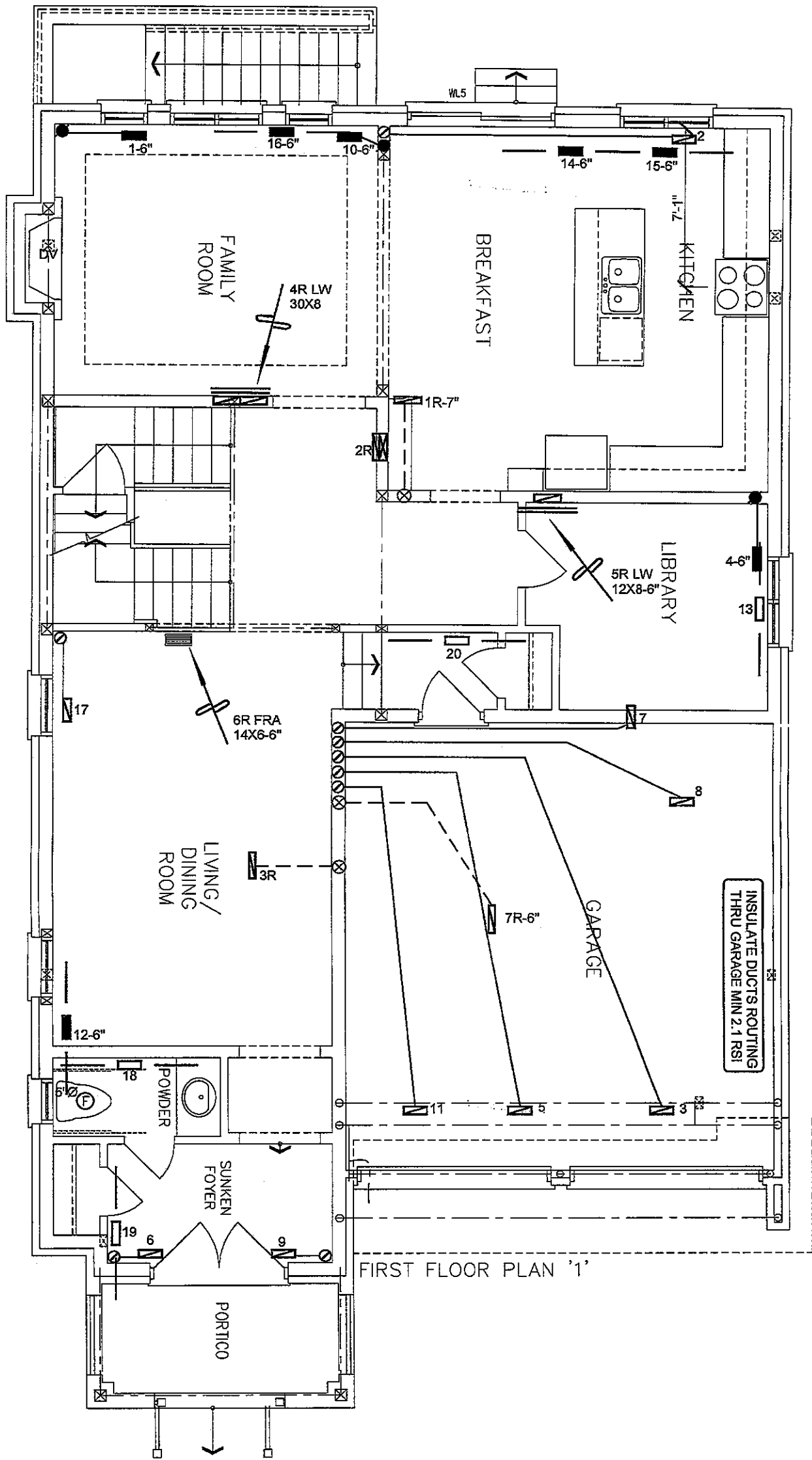
LOT 306
WUB
CSA-F280-12
PACKAGE A1

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	

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD. AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

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.	HEAT LOSS 48635 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title BASEMENT HEATING LAYOUT	
		MAKE GOODMAN			3RD FLOOR			
Model GMEC960603BNA				2ND FLOOR	12	4	3	Date DEC/2020
INPUT 60 MBTU/H				1ST FLOOR	8	3	2	
OUTPUT 57.6 MBTU/H				BASEMENT	4	1	0	Scale 3/16" = 1'-0"
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				BCIN# 19669
FAN SPEED 1131 cfm @ 0.6" w.c.							LO# 88602	
Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO								
LOT 306 VALLEYCREEK 4 2804 sqft								



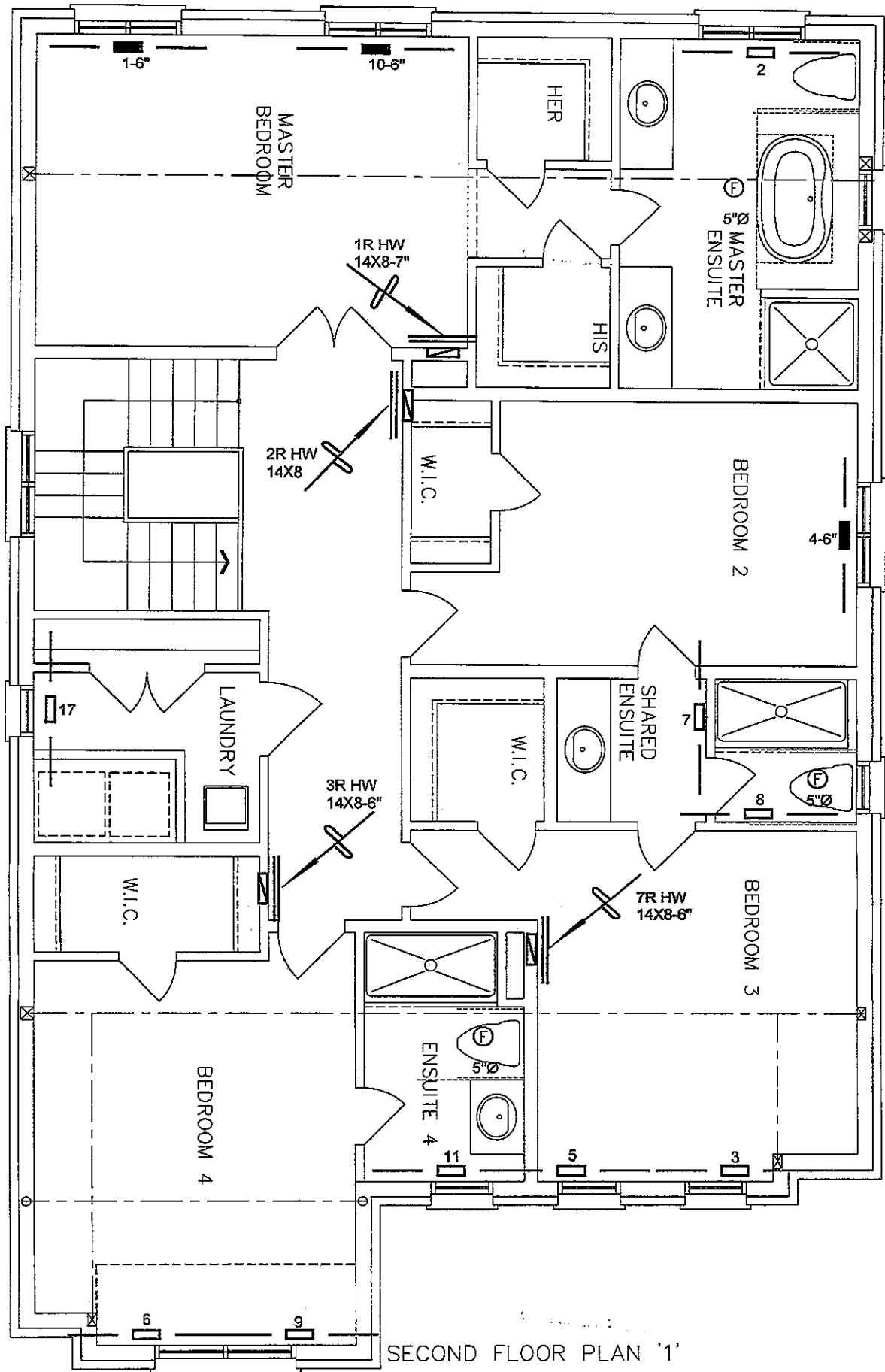
LOT 306
WUB
CSA-F280-12
PACKAGE A1

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		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"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		

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

Client GREENPARK HOMES		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.	Sheet Title FIRST FLOOR HEATING LAYOUT	
Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			Date DEC/2020	
LOT 306 VALLEYCREEK 4 2804 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO# 88602	



LOT 306
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, 3.2.3 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BSCM 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		8" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

Client GREENPARK HOMES		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.	Sheet Title SECOND FLOOR HEATING LAYOUT	
Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			Date DEC/2020	
LOT 306 VALLEYCREEK 4 2804 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO#	88602