

SITE NAME: RUSSELL GARDENS PH 4				WUB				DATE: Oct-21				WINTER NATURAL AIR CHANGE RATE 0.310				HEAT LOSS AT °F. 71				CSA-F280-12			
BUILDER: GREENPARK HOMES				TYPE: VALLEYCREEK 4A				LO# 93028				SUMMER NATURAL AIR CHANGE RATE 0.111				HEAT GAIN AT °F. 13				SB-12 PACKAGE A1			
ROOM USE				MBR				BED-2				BED-3				S-BATH				ENS-4			
EXP. WALL				41				11				28				6				7			
CLG. HT.				9				9				9				9				9			
GRS.WALL AREA	LOSS	GAIN		369				99				252				54				63			
GLAZING	LOSS	GAIN		270				16	316	256		0	0	0		7	138	112		0	0	0	
NORTH	19.8	16.0	0	0	0			0	0	0		0	0	0		0	0	0		0	0	0	
EAST	19.8	41.6	0	0	0			0	0	0		46	909	1911		0	0	0		16	316	665	
SOUTH	19.8	24.9	16	316	398			0	0	0		0	0	0		0	0	0		0	0	0	
WEST	19.8	41.6	36	712	1496			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	
DOORS	23.5	4.3	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			83	344	62		206	854	155		310	1285	233		47	195	36	
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	
EXPOSED CLG	1.2	0.6	363	433	213			207	247	122		214	255	126		190	227	112		75	89	44	
NO ATTIC EXPOSED CLG	2.6	1.3	0	0	0			0	0	0		0	0	0		70	179	88		0	0	0	
EXPOSED FLOOR	2.4	0.4	0	0	0			0	0	0		214	507	92		0	0	0		75	178	32	
BASEMENT/CRAWL HEAT LOSS								0	0	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	0	0	
SUBTOTAL HT LOSS				2775				907				2525				2501				778			
SUB TOTAL HT GAIN					2346				440			2254					254				776		
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				653				214				595				589				183			
AIR CHANGE HEAT GAIN					174				33			170					19				58		
DUCT LOSS				0				0				312				0							
DUCT GAIN				0				0				0				0							
HEAT GAIN PEOPLE	240		2		480			1		240		1		240		1		240				83	
HEAT GAIN APPLIANCES/LIGHTS					788					788				788				788				0	
TOTAL HT LOSS BTU/H				3428				1121				3432				3090				1058			
TOTAL HT GAIN x 1.3 BTU/H				4925				1951				4979				4320				1193			

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								20		156						
CLG. HT.			10		10		10		10		9		10		10		10								9		9						
GRS.WALL AREA	FACTORS		390		200		350		370		81		40		300		90								180		936						
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	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	0	0	0	0	0	0	0	0				
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	0	0	3	69	48				
SOUTH	19.8	24.9	29	573	722	0	0	0	0	0	0	0	8	158	199	8	158	199	0	0	0	0	0	0	0	0	0	0	0	0			
WEST	19.8	41.6	0	0	0	0	0	0	52	1028	2161	23	455	956	0	0	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	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	0	0	0	0	0	0			
NET EXPOSED WALL	4.1	0.8	361	1497	271	182	755	137	298	1235	224	347	1439	261	73	303	55	32	133	24	253	1049	190	70	290	53	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	0	0	0	0	0	0	0	0	160	663	120	0	0	0		
EXPOSED CLG	1.2	0.6	0	0	0	0	0	0	0	0	0	16	19	9	115	137	68	0	0	0	0	0	0	0	0	0	0	0	488	1564	284		
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	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	0	0	0	0	0	0		
BASEMENT/CRAWL HEAT LOSS																																	
SLAB ON GRADE HEAT LOSS																																	
SUBTOTAL HT LOSS				2070			1110			2263			1912			598			291			2107			759								
SUB TOTAL HT GAIN					993			424			2385			1226			322			223			838			138							
LEVEL FACTOR / MULTIPLIER	0.30	0.42				0.30	0.42			0.30	0.42		0.30	0.42		0.20	0.24		0.30	0.42		0.30	0.42		0.30	0.42			205			491	
AIR CHANGE HEAT LOSS				872			468			963			805			141			122			887			320								
AIR CHANGE HEAT GAIN					74			32			177			91			24			17			62			10							
DUCT LOSS				0			0			0			0			0			0			0			0								52
DUCT GAIN				0			0			0			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	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS					788		788			788			788			788			0			0			0			0	0	0	0	0	0
TOTAL HT LOSS BTU/H				2942			1578			3216			2718			739			413			2994			1079								
TOTAL HT GAIN x 1.3 BTU/H				2412			1618			4355			2737			1474			312			1170			192								

TOTAL HEAT GAIN BTU/H: 34843 TONS: 2.90 LOSS DUE TO VENTILATION LOAD BTU/H: 1515 STRUCTURAL HEAT LOSS: 46873 TOTAL COMBINED HEAT LOSS BTU/H: 48389

TYPE: VALLEYCREEK 4A
SITE NAME: RUSSELL GARDENS PH 4

LO # 93028
WUB

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 V150H 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	1.08	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: VANE V150H
150 cfm high 35 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: *Michael O'Rourke*
HRAI # 001820
Date: October-21

CSA F280-12 Residential Heat Loss and Heat Gain Calculations
Formula Sheet (For Air Leakage / Ventilation Calculation)

LO#: 93028

Model: VALLEYCREEK 4A

Builder: GREENPARK HOMES

Date: 2021-10-19

Volume Calculation
Air Change & Delta T Data
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1236	9	11124
First	1236	10	12360
Second	1583	9	14247
Third	0	9	0
Fourth	0	9	0
Total:			37,731.0 ft³
Total:			1068.4 m³

WINTER NATURAL AIR CHANGE RATE	0.310
SUMMER NATURAL AIR CHANGE RATE	0.111

Design Temperature Difference

	Tin °C	Tout °C	ΔT °C	ΔT °F
Winter DTDh	22	-17	39	71
Summer DTDc	24	31	7	13

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 296.78 x 39 °C x 1.2 = 4325 W

= 14757 Btu/h

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

= 0.111 x 296.78 x 7 °C x 1.2 = 281 W

= 958 Btu/h

5.2.3.2 Heat Loss due to Mechanical Ventilation
6.2.7 Sensible heat Gain due to Ventilation

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

80 CFM x 71 °F x 1.08 x 0.25 = 1515 Btu/h

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

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)

$$HL_{airr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agcleve} + HL_{bgcleve})\}$$

Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{cleve})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HL _{cleve})
1	0.5	14,757	8,576	0.860
2	0.3		10,513	0.421
3	0.2		12,535	0.235
4	0		0	0.000
5	0		0	0.000

*HLairbv = Air leakage heat loss + ventilation heat loss

*For a balanced or supply only ventilation system HLairv = 0

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: VALLEYCREEK 4A	WUB	BUILDER: GREENPARK HOMES
SFQT: 2819	LO# 93028	SITE: RUSSELL GARDENS PH 4

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):	37731.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.75	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:	156.0 ft

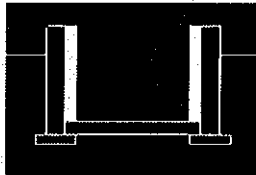
2012 OBC - COMPLIANCE PACKAGE		Compliance Package A1	
Component		Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value		60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value		31	27.65
Exposed Floor Minimum RSI (R)-Value		31	29.80
Walls Above Grade Minimum RSI (R)-Value		22	17.03
Basement Walls Minimum RSI (R)-Value		20 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

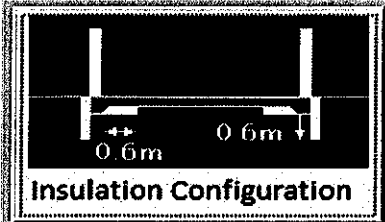
Weather Station Description		
Province:	Ontario	
Region:	Hamilton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	16.5	 Insulation Configuration
Floor Width (m):	10.4	
Exposed Perimeter (m):	47.5	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	0.6	
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):		1499

TYPE: VALLEYCREEK 4A
LO# 93028

WUB

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):	6.1	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		51

TYPE: VALLEYCREEK 4A
LO# 93028

WUB

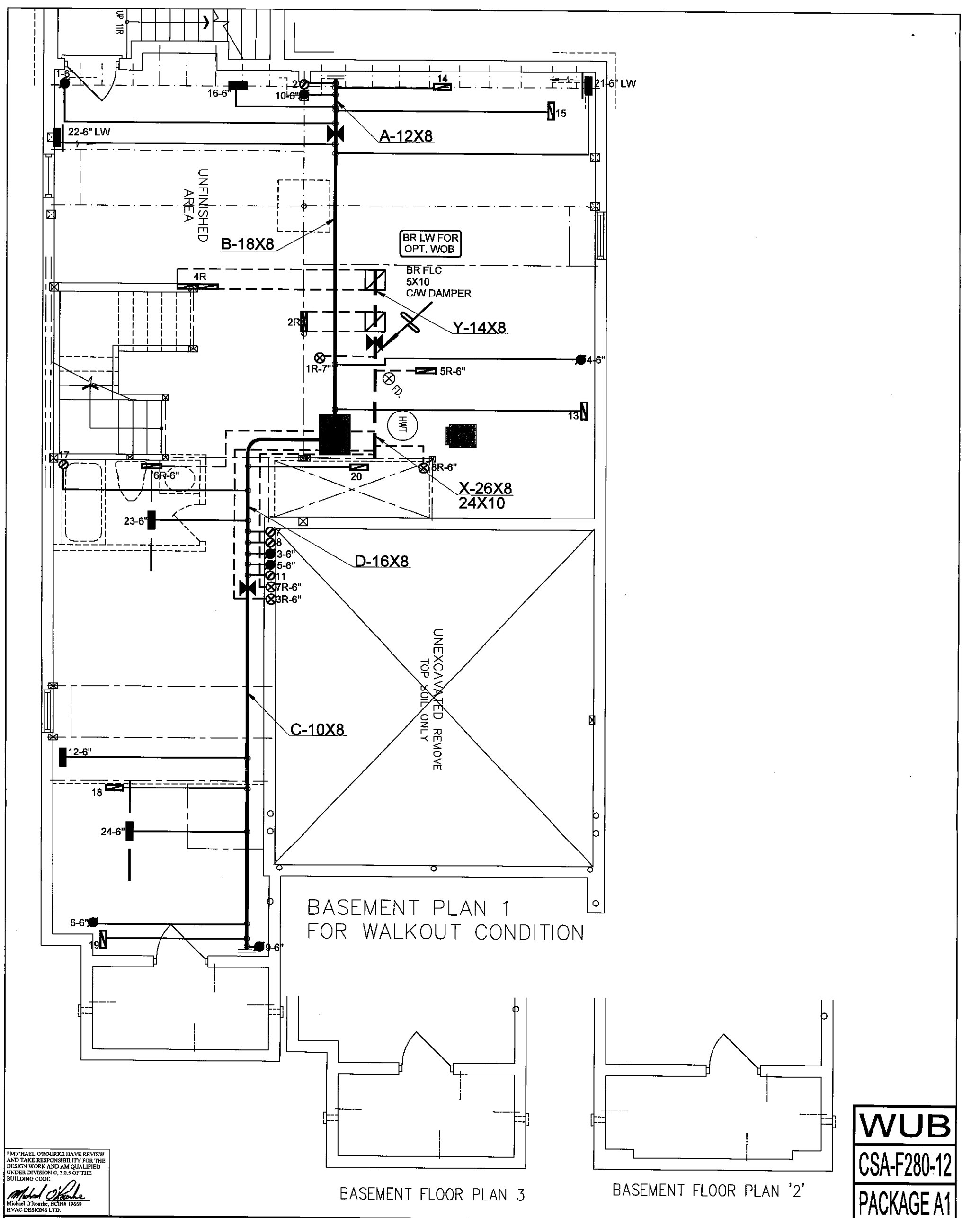
Air Infiltration Residential Load Calculator

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):	1068.4		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	1424.2 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 4A
LO# 93028

WUB



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, B.C.M. 19669
HVAC DESIGNS LTD.

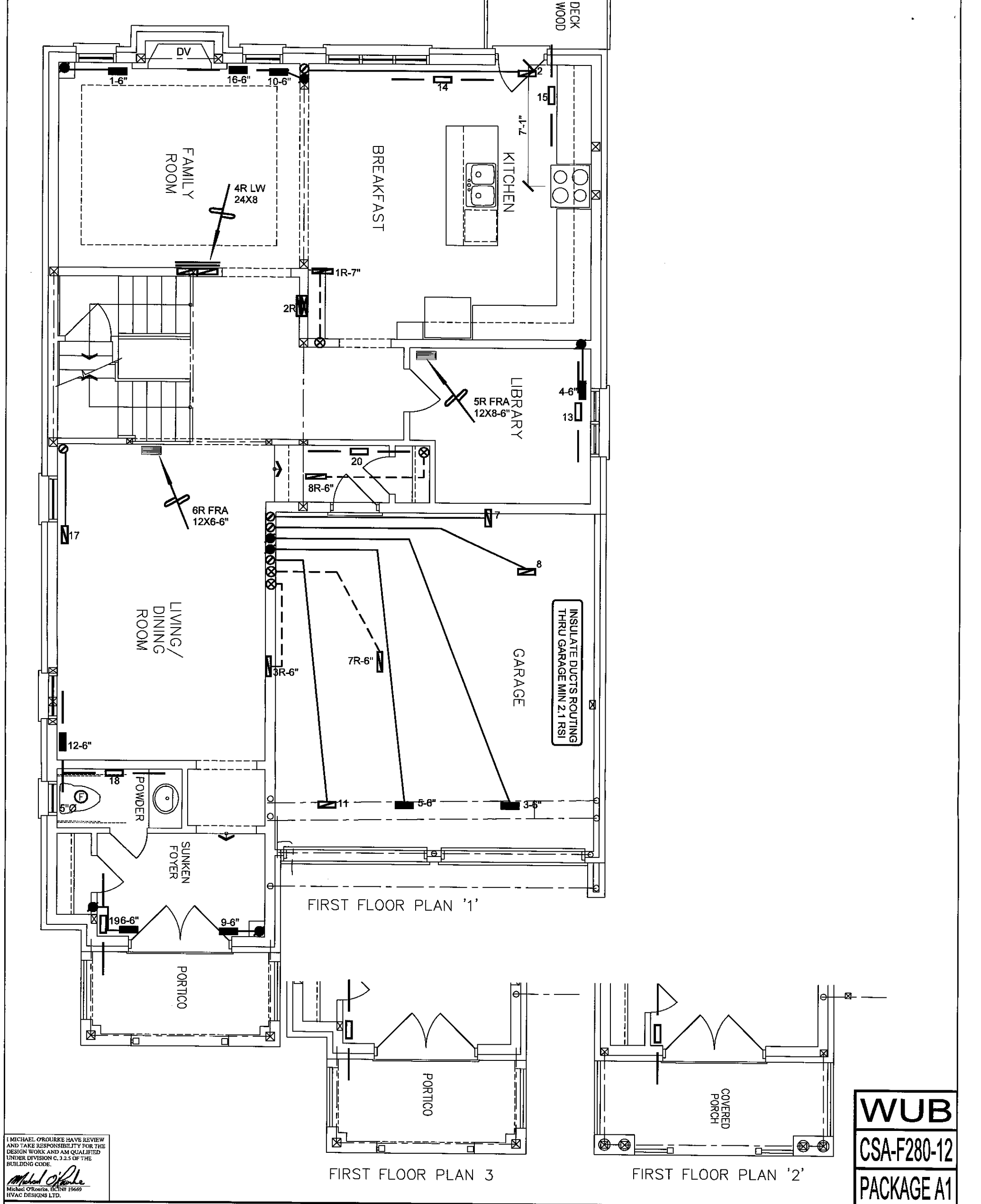
BASEMENT PLAN 1
FOR WALKOUT CONDITION

BASEMENT FLOOR PLAN 3

BASEMENT FLOOR PLAN '2'

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"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		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdsgns.ca Web: www.hvacdsgns.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 48389 BTU/H		# OF RUNS S/A R/A FANS			Sheet Title BASEMENT HEATING LAYOUT	
GREENPARK HOMES						UNIT DATA		3RD FLOOR				
Project Name		MAKE		GOODMAN		2ND FLOOR			12	5	3	
RUSSEL GARDENS PH 4		MODEL		GMEC960603BNA		1ST FLOOR			8	3	2	
HAMILTON, ONTARIO		INPUT		60 MBTU/H		BASEMENT			4	1	0	
WUB		OUTPUT		57.6 MBTU/H		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						
VALLEYCREEK 4A 2819 sqft		COOLING		3.0 TONS								
		FAN SPEED		1131 cfm @ 0.5" w.c.								
						Date OCT/2021						
						Scale 3/16" = 1'-0"						
						BCIN# 19669						
						LO#		93028				



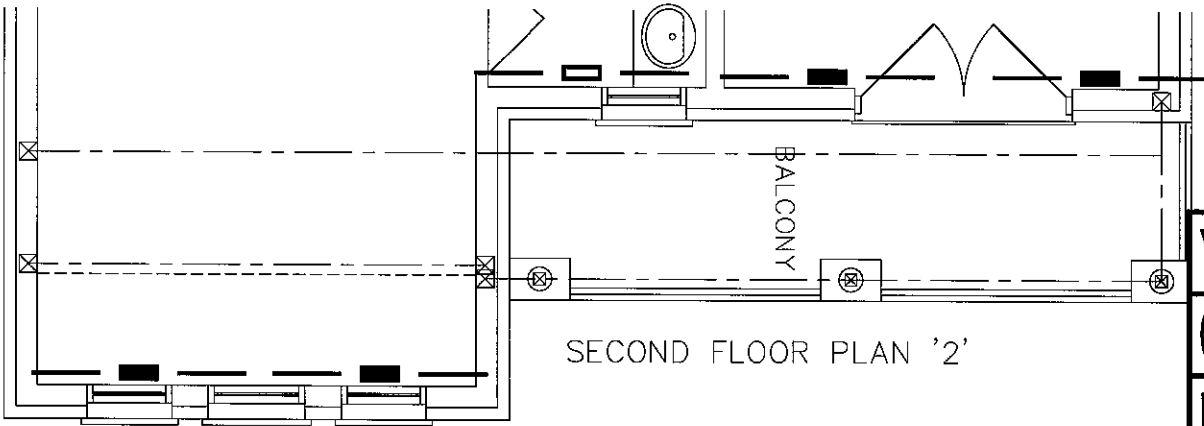
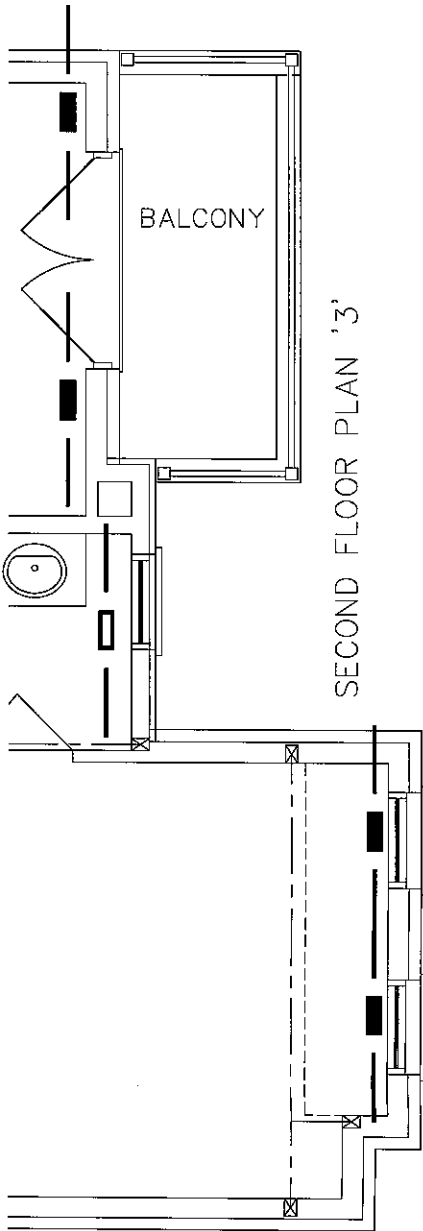
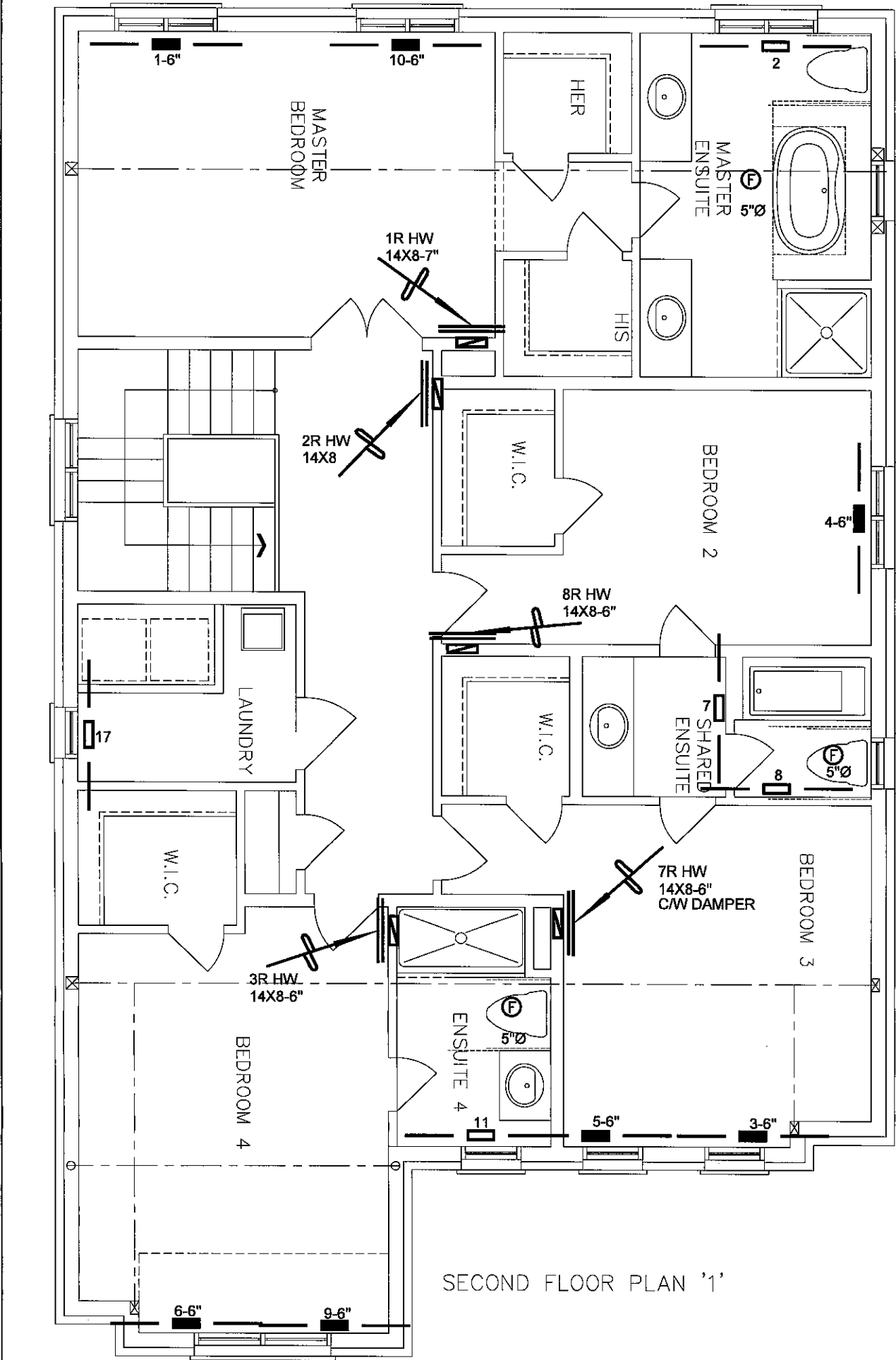
I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C.3.2.5 OF THE BUILDING CODE.

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

HVAC LEGEND								3.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	2.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	1.		
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	No.	Description	Date
								REVISIONS		

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Client		 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	
GREENPARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	OCT/2021
RUSSEL GARDENS PH 4 HAMILTON, ONTARIO			Scale	3/16" = 1'-0"
WUB VALLEYCREEK 4A 2819 sqft			BCIN# 19669	
			LO#	93028



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.

WUB
CSA-F280-12
PACKAGE A1

HVAC LEGEND								3.	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	2.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	1.	
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	No.	Description
								Date	
								REVISIONS	

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GREENPARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	OCT/2021
RUSSEL GARDENS PH 4 HAMILTON, ONTARIO			Scale	3/16" = 1'-0"
WUB VALLEYCREEK 4A 2819 sqft			BCIN# 19669	
			LO#	93028