

SITE NAME: RESSEL GARDENS PHASE 3				LOT 553				DATE: Jul-21				WINTER NATURAL AIR CHANGE RATE 0.319				HEAT LOSS AT °F. 71				CSA-F280-12			
BUILDER: GREENPARK HOMES				TYPE: VALLEYCREEK 5A				LO# 91975				SUMMER NATURAL AIR CHANGE RATE 0.114				HEAT GAIN AT °F. 13				SB-12 PACKAGE A1			
ROOM USE		MBR	ENS	WIC	BED-2	BED-3	BED-4	S-ENS	WIC-4							ENS-4							
EXP. WALL		35	28	17	12	29	36	6	7							6							
CLG. HT.		9	9	9	9	9	9	9	9							9							
FACTORS																							
GRS.WALL AREA	LOSS GAIN	315	252	153	108	261	324	54	63							54							
GLAZING	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	15 297 240	0 0 0	15 297 240	0 0 0	0 0 0	7 136 112	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							0 0 0							
SOUTH	19.8 24.9	0 0 0	0 0 0	19 376 473	0 0 0	0 0 0	44 870 1828	0 0 0	13 257 540							0 0 0							
WEST	19.8 41.6	35 692 1464	15 297 623	0 0 0	0 0 0	0 0 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 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							
NET EXPOSED WALL	4.1 0.8	280 1161 210	222 920 167	134 556 101	93 386 70	217 900 163	280 1161 210	47 195 35	50 207 38							47 195 35							
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 0							0 0 0							
EXPOSED CLG	1.2 0.6	309 368 182	197 235 116	229 273 135	213 254 125	274 327 161	212 253 125	124 148 73	39 46 23							57 68 33							
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							
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							
BASEMENT/CRAWL HEAT LOSS		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							
SUBTOTAL HT LOSS		2221	1748	1204	936	2745	2283	687	603							401							
SUB TOTAL HT GAIN		1846	1148	708	435	2270	2163	257	617							243							
LEVEL FACTOR / MULTIPLIER	0.20 0.25	545	429	296	230	674	561	168	148							98							
AIR CHANGE HEAT LOSS																							
AIR CHANGE HEAT GAIN		141	88	54	33	173	166	20	47							19							
DUCT LOSS		0	0	0	0	0	0	0	0							0							
DUCT GAIN		0	0	0	0	0	0	0	0							0							
HEAT GAIN PEOPLE	240	2	480	0	0	1	240	0	0							0							
HEAT GAIN APPLIANCES/LIGHTS		712	0	0	0	712	712	0	0							0							
TOTAL HT LOSS BTU/H		2766	2177	1500	1166	3761	2844	941	826							500							
TOTAL HT GAIN x 1.3 BTU/H		4133	1603	991	1845	4855	4264	396	950							340							

ROOM USE		FAM	DIN	KT/BF	LJB	LAUN	W/R	FOY															
EXP. WALL		34	12	36	19	26	3	30															
CLG. HT.		11	11	11	11	12	12	12															
FACTORS																							
GRS.WALL AREA	LOSS GAIN	374	132	396	209	312	36	360															
GLAZING	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	0 0 0	0 0 0	7 138 112	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															
SOUTH	19.8 24.9	0 0 0	17 336 423	0 0 0	12 237 299	0 0 0	7 138 174	0 0 0															
WEST	19.8 41.6	29 573 1205	0 0 0	66 1305 2742	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 0 0															
DOORS	23.5 4.3	0 0 0	0 0 0	0 0 0	0 0 0	20 469 85	0 0 0	40 938 170															
NET EXPOSED WALL	4.1 0.8	345 1430 269	115 477 86	330 1368 248	197 817 148	285 1182 214	29 120 22	320 1327 241															
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															
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															
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															
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															
BASEMENT/CRAWL HEAT LOSS		0	0	0	0	0	0	0															
SLAB ON GRADE HEAT LOSS		0	0	0	0	0	0	0															
SUBTOTAL HT LOSS		2004	813	2673	1054	1789	259	2265															
SUB TOTAL HT GAIN		1464	510	2890	447	411	196	411															
LEVEL FACTOR / MULTIPLIER	0.30 0.44	872	354	1163	459	779	113	986															
AIR CHANGE HEAT LOSS																							
AIR CHANGE HEAT GAIN		112	39	229	34	31	15	31															
DUCT LOSS		0	0	0	0	0	0	0															
DUCT GAIN		0	0	0	0	0	0	0															
HEAT GAIN PEOPLE	240	0	0	0	0	0	0	0															
HEAT GAIN APPLIANCES/LIGHTS		712	712	712	712	712	712	712															
TOTAL HT LOSS BTU/H		2876	1167	3836	1813	2566	371	3261															
TOTAL HT GAIN x 1.3 BTU/H		2974	1638	5110	1550	1500	274	575															

TOTAL HEAT GAIN BTU/H:

35401

TONS: 2.95

LOSS DUE TO VENTILATION LOAD BTU/H: 1615

STRUCTURAL HEAT LOSS: 48485

TOTAL COMBINED HEAT LOSS BTU/H: 50001

SITE NAME: RESSEL GARDENS PHASE 3
BUILDER: GREENPARK HOMES

LOT 553
TYPE: VALLEYCREEK 5A

DATE: Jul-21

GFA: 2834 LO# 91975

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 48,485 TOTAL HEAT GAIN 35,126
AIR FLOW RATE CFM 23.33 AIR FLOW RATE CFM 32.2

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

#GOODMAN
GMEC980603BNA 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 @ .5" E.S.P.

TEMPERATURE RISE 47 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	14	8	4
R/A	0	0	4	2	1

All S/A diffusers 4"x10" unless noted otherwise on layout.
All S/A runs 5'Ø unless noted otherwise on layout.

plenum pressure s/a 0.18 r/a pressure 0.17
max s/a dif press. loss 0.02 r/a grille press. Loss 0.02
min adjusted pressure s/a 0.16 adjusted pressure r/a 0.15

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	WIC	BED-2	BED-3	BED-4	S-ENS	WIC-4	BED-3	MBR	ENS-4	FAM	DIN	KT/BF	KT/BF	LIB	LAUN	W/R	FOY	BED-4	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.38	1.09	1.50	1.17	1.88	1.42	0.47	0.83	1.88	1.38	0.50	2.88	1.17	1.92	1.92	1.51	2.57	0.37	3.25	1.42	4.11	4.11	4.11	4.11
CFM PER RUN HEAT	32	25	35	27	44	33	11	19	44	32	12	67	27	45	45	35	60	9	76	33	96	96	96	96
RM GAIN MBH.	2.07	0.80	0.99	1.85	2.43	2.13	0.20	0.95	2.43	2.07	0.34	2.97	1.64	2.55	2.55	1.55	1.50	0.27	0.57	2.13	0.53	0.53	0.53	0.53
CFM PER RUN COOLING	67	26	32	59	78	89	6	31	78	67	11	96	53	82	82	50	48	9	19	69	17	17	17	17
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	50	36	31	27	44	58	36	39	49	36	44	27	19	26	32	37	20	37	44	47	28	19	13	34
EQUIVALENT LENGTH	190	150	170	130	130	160	150	120	140	120	200	130	130	120	140	150	130	150	120	130	90	100	160	140
TOTAL EFFECTIVE LENGTH	240	186	201	157	174	218	186	159	189	156	244	157	149	146	172	187	150	187	164	177	118	119	173	174
ADJUSTED PRESSURE	0.07	0.09	0.09	0.11	0.1	0.08	0.09	0.11	0.09	0.11	0.07	0.1	0.12	0.11	0.09	0.09	0.11	0.09	0.1	0.14	0.14	0.09	0.09	0.09
ROUND DUCT SIZE	6	4	4	6	5	6	4	4	5	6	4	6	5	6	6	6	5	4	5	6	6	6	6	6
HEATING VELOCITY (f/min)	163	287	402	138	323	168	126	218	323	163	138	342	198	229	229	178	441	103	558	168	489	489	489	489
COOLING VELOCITY (f/min)	342	298	367	301	573	352	69	356	573	342	126	489	389	418	418	255	352	103	352	87	87	87	87	87
OUTLET GRILL SIZE	4X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10	3X10	4X10	3X10	4X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10
TRUNK	A	A	D	B	D	C	D	D	D	A	C	A	B	A	A	C	B	C	C	C	B	B	D	C

RUN #	25	26
ROOM NAME	ENS	S-ENS
RM LOSS MBH.	1.09	0.47
CFM PER RUN HEAT	25	11
RM GAIN MBH.	0.80	0.20
CFM PER RUN COOLING	26	6
ADJUSTED PRESSURE	0.17	0.17
ACTUAL DUCT LGH.	58	32
EQUIVALENT LENGTH	190	180
TOTAL EFFECTIVE LENGTH	248	212
ADJUSTED PRESSURE	0.07	0.08
ROUND DUCT SIZE	4	4
HEATING VELOCITY (f/min)	287	126
COOLING VELOCITY (f/min)	298	69
OUTLET GRILL SIZE	3X10	3X10
TRUNK	A	D

SUPPLY AIR TRUNK SIZE

TRUNK	STATIC	ROUND	RECT	VELOCITY
CFM	PRESS.	DUCT	DUCT	(f/min)
TRUNK A	271	0.07	8.9	12
TRUNK B	577	0.07	11.8	16
TRUNK C	294	0.07	9.2	10
TRUNK D	554	0.07	11.6	16
TRUNK E	0	0.00	0	0
TRUNK F	0	0.00	0	0

TRUNK	STATIC	ROUND	RECT	VELOCITY
CFM	PRESS.	DUCT	DUCT	(f/min)
TRUNK G	0	0.00	0	0
TRUNK H	0	0.00	0	0
TRUNK I	0	0.00	0	0
TRUNK J	0	0.00	0	0
TRUNK K	0	0.00	0	0
TRUNK L	0	0.00	0	0

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	175	180	85	75	190	240	0	0	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.	38	36	53	57	25	40	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	150	135	185	225	145	230	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	188	171	238	282	170	270	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.08	0.09	0.06	0.05	0.09	0.06	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	14.80	14.80
ROUND DUCT SIZE	7.3	7.2	6	6	7.3	9.2	0	0	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	0	0	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

TRUNK V	0	0.05	0	0	x	8	0
TRUNK W	0	0.05	0	0	x	8	0
TRUNK X	1131	0.05	16.5	32	x	8	636
TRUNK Y	365	0.05	10.8	14	x	8	469
TRUNK Z	400	0.05	11.2	14	x	8	514
DROP	1131	0.05	16.5	24	x	10	679

TYPE: VALLEYCREEK 5A
SITE NAME: RESSEL GARDENS PHASE 3

LO # 91975
LOT 553

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	5 @ 10.6 cfm	53.0 cfm
Table 9.32.3.A.	TOTAL	180.2 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	180.2	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	100.7	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	71 F	1.08	X	0.25

SUPPLEMENTAL FANS		PANASONIC		
Location	Model	cfm	HVI	Sones
ENS	FV-05-11VK1	50	☒	0.3
S-ENS	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:	July-21

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

LO#: 91975

Model: VALLEYCREEK 5A

Builder: GREENPARK HOMES

Date: 2021-07-28

Volume Calculation
Air Change & Delta T Data
House Volume

Level	Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)
Bsmt	1232	9	11088
First	1232	11	13552
Second	1602	9	14418
Third	0	9	0
Fourth	0	9	0
Total:			39,058.0 ft ³
Total:			1106.0 m ³

WINTER NATURAL AIR CHANGE RATE	0.319
SUMMER NATURAL AIR CHANGE RATE	0.114

Design Temperature Difference

	T _{in} °C	T _{out} °C	ΔT °C	ΔT °F
Winter DTD _h	22	-17	39	71
Summer DTD _c	24	31	7	13

5.2.3.1 Heat Loss due to Air Leakage
6.2.6 Sensible Gain due to Air Leakage

$$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$$

$$0.319 \times 307.22 \times 39^\circ\text{C} \times 1.2 = 4616 \text{ W}$$

$$= 15749 \text{ Btu/h}$$

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

$$0.114 \times 307.22 \times 7^\circ\text{C} \times 1.2 = 300 \text{ W}$$

$$= 1022 \text{ Btu/h}$$

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

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

$$80 \text{ CFM} \times 71^\circ\text{F} \times 1.08 \times 0.25 = 1515 \text{ Btu/h}$$

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

$$80 \text{ CFM} \times 13^\circ\text{F} \times 1.08 \times 0.25 = 275 \text{ Btu/h}$$

5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)

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

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	15,749	8,549	0.921
2	0.3		10,855	0.435
3	0.2		12,829	0.246
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_{airv} = 0

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: VALLEYCREEK 5A	LOT 553	BUILDER: GREENPARK HOMES
SFQT: 2834	LO# 91975	SITE: RESSEL 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):	39058.0	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: 57.0 ft	WIDTH: 33.0 ft	EXPOSED PERIMETER:	180.0 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	-

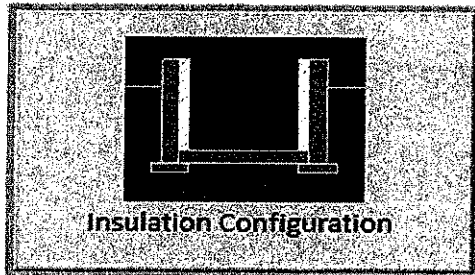
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

Michael O'Rourke

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):	17.4	 Insulation Configuration
Floor Width (m):	10.1	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	1.5	
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):	1746	

TYPE: VALLEYCREEK 5A
LO# 91975

LOT 553

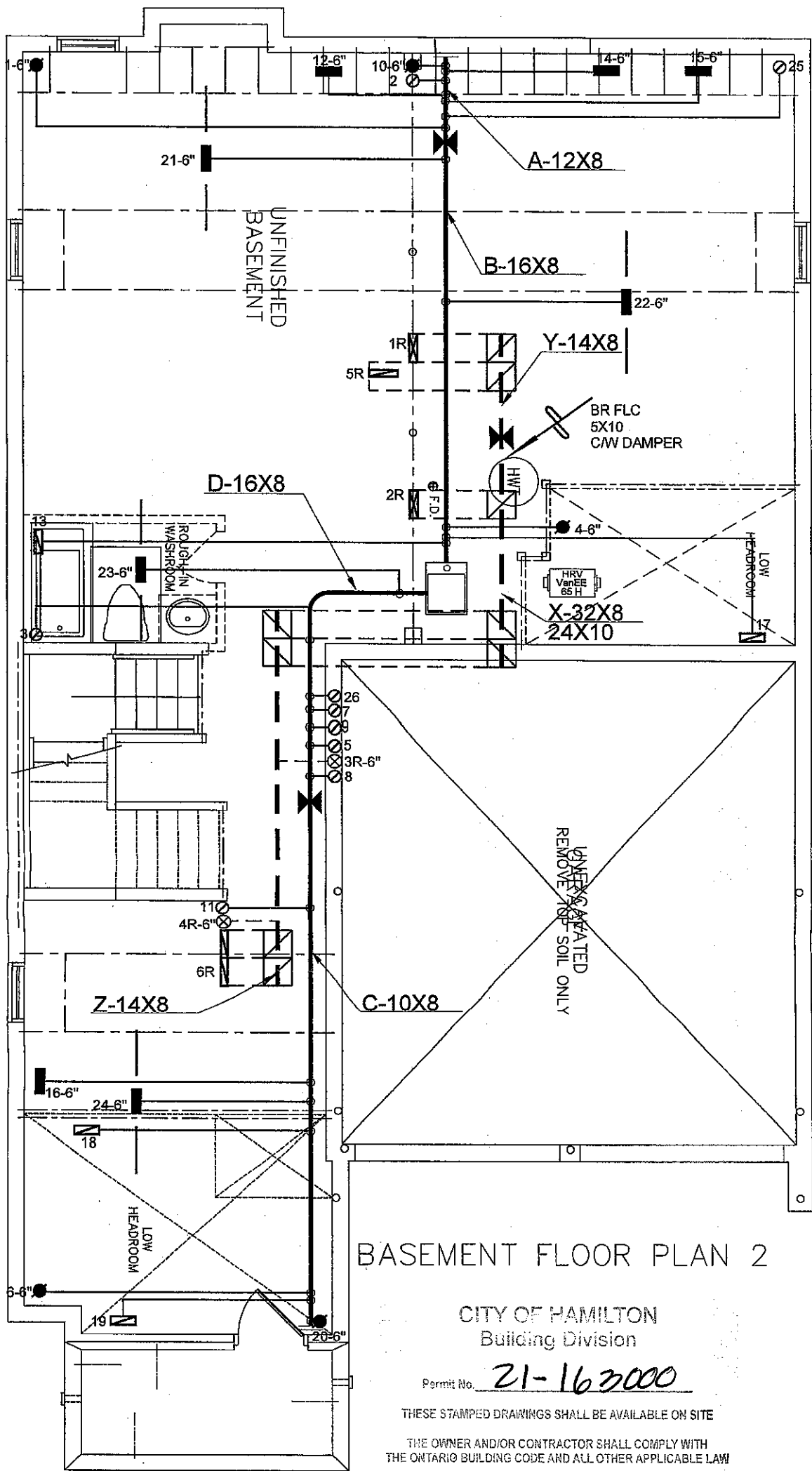
Air Infiltration Residential Load Calculator

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):	7.01		
Building Configuration			
Type:	Detached		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m ³):	1106.0		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	1474.3 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):	0.319		
Cooling Air Leakage Rate (ACH/H):	0.114		

TYPE: VALLEYCREEK 5A
LO# 91975

LOT 553



BASEMENT FLOOR PLAN 2

CITY OF HAMILTON
Building Division

Permit No. 21-163000

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

[Signature]

APR 08 2022

FOR CHIEF BUILDING OFFICIAL

DATE

FOR JDL

CSA-F280-12

LOT 553

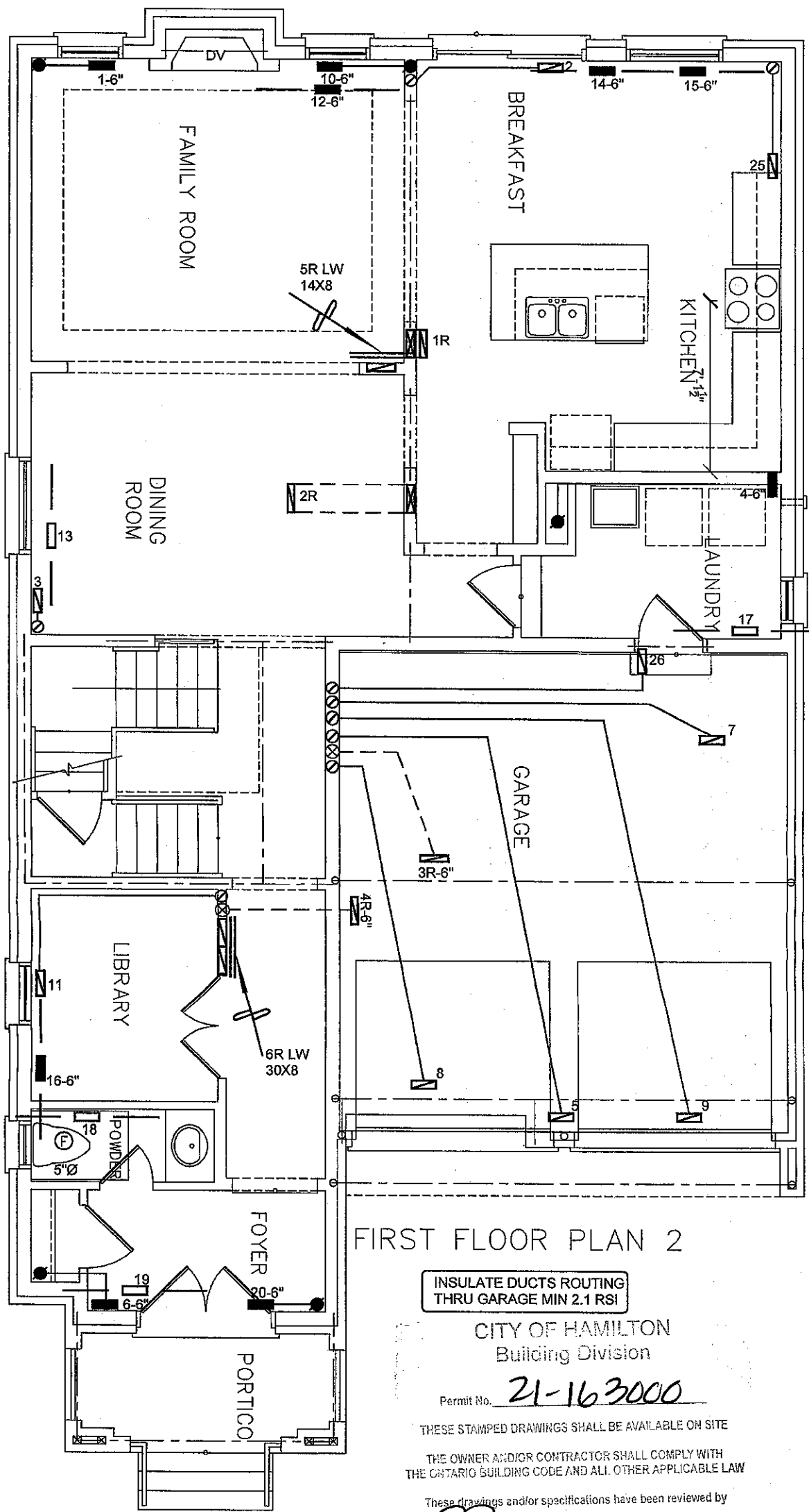
PACKAGE A1

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.
[Signature]
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	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 50001 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	14	4	4	
RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO		INPUT 60 MBTU/H		1ST FLOOR	8	2	2	Date JULY/2021
LOT 553 VALLEYCREEK 5 2834 sqft		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"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A				BCIN# 19669
		FAN SPEED 1131 cfm @ 0.6" w.c.						LO# 91975



FIRST FLOOR PLAN 2

INSULATE DUCTS ROUTING
THRU GARAGE MIN 2.1 RSI

CITY OF HAMILTON
Building Division

Permit No. 21-163000

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

[Signature]

APR 08 2022

CSA-F280-12

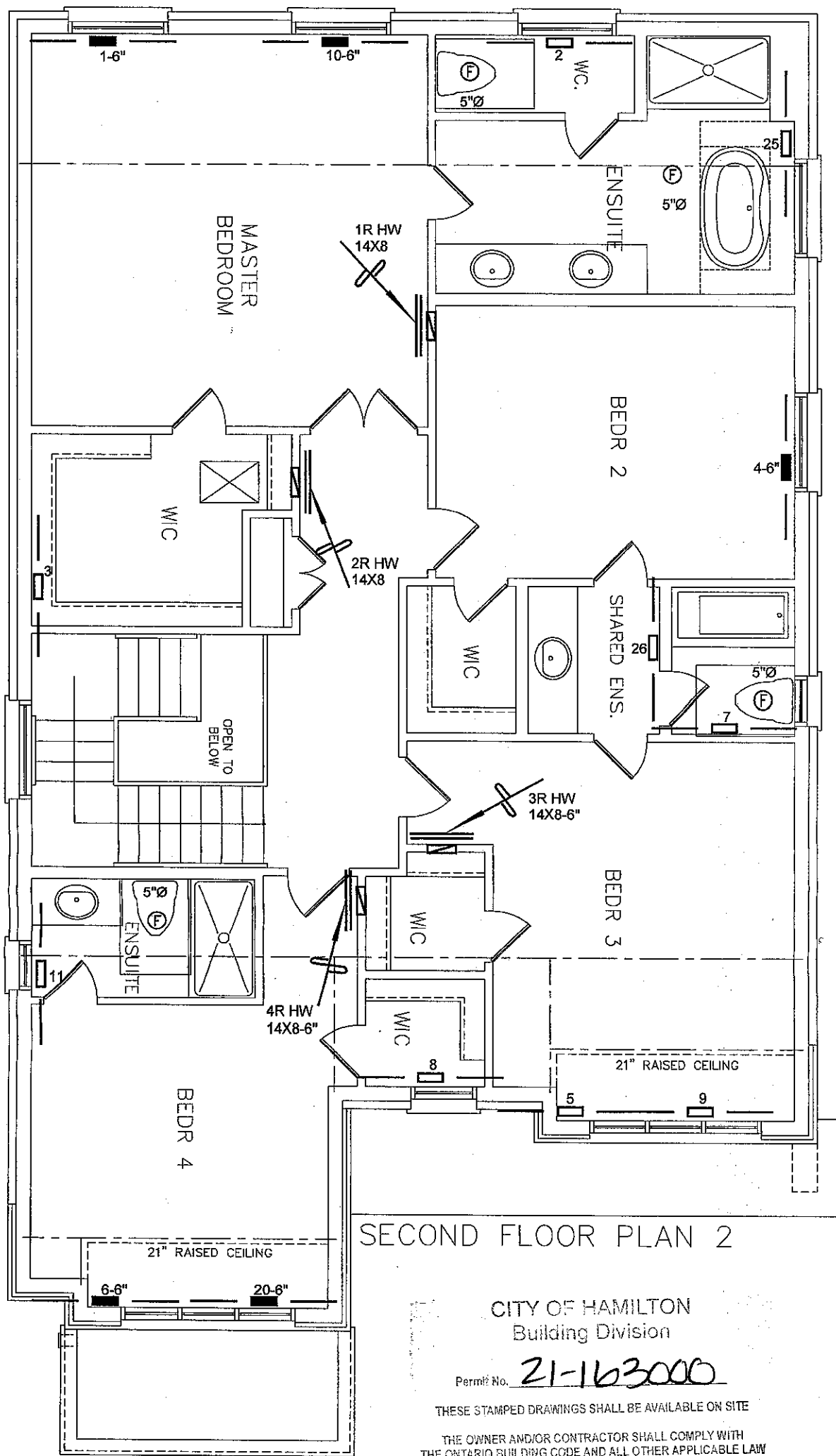
LOT 553 PACKAGE A1

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

HVAC LEGEND						FOR CHIEF BUILDING OFFICIAL		DATE		3.	
SYMBOL	DESCRIPTION	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		30"x8" RETURN AIR GRILLE		1.
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER			No.	Description
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR							Date	

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@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.	Sheet Title FIRST FLOOR HEATING LAYOUT	
Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			Date JULY/2021	Scale 3/16" = 1'-0"
LOT 553 VALLEYCREEK 5 2834 sqft			BCIN# 19669	
			LO#	91975



SECOND FLOOR PLAN 2

CITY OF HAMILTON
Building Division

Permit No. **21-163000**

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

[Signature]
FOR CHIEF BUILDING OFFICIAL

DATE
APR 08 2022

CSA-F280-12

LOT 553

PACKAGE A1

I MICHAEL O'BROUKE HAVE REVIEWED
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C.32.5 OF THE
BUILDING CODE.
[Signature]
Michael O'Brooke, 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

3.		
2.		
1.		
No.	Description	Date
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
Project Name
**RUSSEL GARDENS PHASE 3
HAMILTON, ONTARIO**
**LOT 553
VALLEYCREEK 5 2834 sqft**

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**
Date **JULY/2021**
Scale **3/16" = 1'-0"**
BCIN# 19669
LO# **91975**