

SITE NAME: TRINAR HALL HOMES
BUILDER: GREENPARK HOMES

For Lot 25

TYPE: BRENTWOOD 1

GFA: 2602

DATE: Feb-19

LO# 81517

WINTER NATURAL AIR CHANGE RATE 0.247

SUMMER NATURAL AIR CHANGE RATE 0.069

HEAT LOSS AT °F. 81

HEAT GAIN AT °F. 11

CSA-F280-12

ENERGYSTAR

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LOSS	GAIN	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH					
						31	26	8	26	36	23	10					
						9	9	9	9	9	9	9					
GRS.WALL AREA	LOSS	GAIN				279	234	72	234	324	207	90					
GLAZING	LOSS	GAIN				LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN				
NORTH	20.4	15.1	0	0	0	0	0	0	0	0	0	10	204	151			
EAST	20.4	40.7	0	0	0	0	0	0	26	529	1059	0	0	0			
SOUTH	20.4	24.1	0	0	0	10	204	241	0	0	0	32	651	770	0	0	0
WEST	20.4	40.7	23	468	937	16	326	651	0	0	0	0	0	0	0	0	0
SKYLT.	34.2	99.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	27.0	3.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	3.9	0.5	256	988	133	208	802	108	72	278	38	208	802	108	292	1126	152
NET EXPOSED BSMT WALL ABOVE GR	3.9	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.4	0.6	240	330	134	169	232	94	104	143	58	168	231	94	208	285	116
NO ATTIC EXPOSED CLG	2.9	1.2	0	0	0	0	0	0	0	0	0	65	191	77	0	0	0
EXPOSED FLOOR	2.7	0.4	0	0	0	0	0	0	188	514	69	75	205	28	0	0	0
BASEMENT/CRAWL HEAT LOSS			0			0			0			0			0		
SLAB ON GRADE HEAT LOSS			0			0			0			0			0		
SUBTOTAL HT LOSS			1786			1564		421	2164		2460	1766		677			
SUB TOTAL HT GAIN				1204			1095	96		1366		1676		1040			260
LEVEL FACTOR / MULTIPLIER			0.20	0.23		0.20	0.23	0.20	0.23	0.20	0.23	0.20	0.23		0.20	0.23	
AIR CHANGE HEAT LOSS			418			366		98		507		575		413		159	
AIR CHANGE HEAT GAIN				78			71	6		89		109		68			17
DUCT LOSS			0			0		0		267		304		0		0	
DUCT GAIN				0			0	0		223		256		0		0	
HEAT GAIN PEOPLE	240		2		480	0		0	1		240	1		240	0		0
HEAT GAIN APPLIANCES/LIGHTS					533		0	0		533		533		533			0
TOTAL HT LOSS BTU/H					2204		1930	519		2938		3339		2180		836	
TOTAL HT GAIN x 1.3 BTU/H					2984		1516	132		3186		3659		2445		360	

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LOSS	GAIN	DIN	KIT	FAM	LAUN	W/R	FOY						WOD	BAS
						13	41	34	21	21	37						38	166
						10	10	10	10	10	10						9	9
GRS.WALL AREA	LOSS	GAIN				130	410	340	210	210	370						342	1110
GLAZING	LOSS	GAIN				LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN				LOSS	GAIN
NORTH	20.4	15.1	29	590	439	0	0	0	10	204	151	0	0	0	0	0	0	0
EAST	20.4	40.7	0	0	0	0	0	0	0	0	0	6	122	244			4	81
SOUTH	20.4	24.1	0	0	0	0	0	0	0	0	0	11	224	265	0	0	0	0
WEST	20.4	40.7	0	0	0	6	122	244	15	305	611	0	0	0	0	0	8	163
SKYLT.	34.2	99.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	193
DOORS	27.0	3.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	3.9	0.5	101	390	53	364	1404	190	325	1254	169	180	694	94	199	768	104	324
NET EXPOSED BSMT WALL ABOVE GR	3.9	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.4	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.9	1.2	0	0	0	0	0	0	10	29	12	0	0	0	0	0	0	0
EXPOSED FLOOR	2.7	0.4	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			
SLAB ON GRADE HEAT LOSS			0			0			0			0			0			
SUBTOTAL HT LOSS			980			2608		1588	1439		992	2154		559			1077	7860
SUB TOTAL HT GAIN				492			580	792		318		368		559			601	499
LEVEL FACTOR / MULTIPLIER			0.30	0.38		0.30	0.38	0.30	0.38	0.30	0.38	0.30	0.38		0.30	0.38	0.50	0.71
AIR CHANGE HEAT LOSS			371			987		601		544		375		528				6342
AIR CHANGE HEAT GAIN				32			38	52		21		24		36				71
DUCT LOSS			0			0		0		0		0		0			0	0
DUCT GAIN				0			0	0		0		0		0			0	0
HEAT GAIN PEOPLE	240		0		0	0		0	0		0	0		0	0		0	0
HEAT GAIN APPLIANCES/LIGHTS					533		533	533		533		533		533			0	533
TOTAL HT LOSS BTU/H					1350		3595	2189		1983		1367		3382			1077	14202
TOTAL HT GAIN x 1.3 BTU/H					1374		1497	1790		1134		510		775			781	1422



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Discipline	Reviewer	BCIN	Date
Building Code	H. Authier	43236	2021-02-24
Sewage System			
Zoning			

TOTAL HEAT GAIN BTU/H:

23804

TONS: 1.98

LOSS DUE TO VENTILATION LOAD BTU/H: 1747

STRUCTURAL HEAT LOSS: 43090

TOTAL COMBINED HEAT LOSS BTU/H: 44837

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For Lot 25

TYPE: BRENTWOOD 1

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GFA: 2602

LO# 81517

HEATING CFM	1131	COOLING CFM	1131
TOTAL HEAT LOSS	43,090	TOTAL HEAT GAIN	23,568
AIR FLOW RATE CFM	26.25	AIR FLOW RATE CFM	47.99

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

#GOODMAN

FAN SPEED

LOW

MEDLOW
MEDIUM

MEDIUM HIGH

HIGH 1131

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

DESIGN CFM = $\frac{1131}{\text{CFM @ .6" E.S.P.}}$

TEMPERATURE RISE 47 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	11	7	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.

RUN #	1	2	3	4	5	6	7	8	9	10	11	12		14	15	16	17	18	19		21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-2	BED-3	MBR	BED-4	DIN		KIT	KIT	FAM	LAUN	W/R	FOY		BAS	BAS	BAS	BAS
RM LOSS MBH.	1.10	1.93	0.52	1.47	1.67	1.09	0.84	1.47	1.67	1.10	1.09	1.35		1.80	1.80	2.19	1.98	1.37	3.38		3.82	3.82	3.82	3.82
CFM PER RUN HEAT	29	51	14	39	44	29	22	39	44	29	29	35		47	47	57	52	36	89		100	100	100	100
RM GAIN MBH.	1.49	1.52	0.13	1.59	1.83	1.22	0.36	1.59	1.83	1.49	1.22	1.37		0.75	0.75	1.79	1.13	0.51	0.77		0.55	0.55	0.55	0.55
CFM PER RUN COOLING	72	73	6	76	88	59	17	76	88	72	59	66		36	36	86	54	24	37		26	26	26	26
ADJUSTED PRESSURE	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	0.16	0.17	0.17	0.16		0.16	0.16	0.16	0.15
ACTUAL DUCT LGH.	47	44	46	57	58	40	37	66	68	65	38	44		61	42	50	30	48	46		43	40	18	46
EQUIVALENT LENGTH	150	160	160	190	190	190	190	190	200	180	190	180		170	170	170	170	190	190		190	190	210	190
TOTAL EFFECTIVE LENGTH	197	204	206	247	248	230	227	256	268	245	228	224		231	212	220	200	238	236		233	230	228	236
ADJUSTED PRESSURE	0.09	0.08	0.08	0.07	0.07	0.07	0.08	0.07	0.06	0.07	0.08	0.08		0.07	0.08	0.07	0.09	0.07	0.07		0.07	0.07	0.07	0.07
ROUND DUCT SIZE	6	5	4	6	6	5	4	6	6	6	5	6		5	5	6	5	4	6		6	6	6	6
HEATING VELOCITY (ft/min)	148	374	161	199	224	213	252	199	224	148	213	178		345	345	291	382	413	454		510	510	510	510
COOLING VELOCITY (ft/min)	367	536	69	388	449	433	195	388	449	367	433	337		264	264	438	396	275	189		133	133	133	133
OUTLET GRILL SIZE	4X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	4X10	4X10	3X10	4X10		3X10	3X10	4X10	3X10	3X10	4X10		4X10	4X10	4X10	4X10
TRUNK	D	D	D	B	B	D	B	A	A	D	D	D		C	C	C	B	A	A		C	C	D	A

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



 **Town of East Gwillimbury**
Building Standards Branch BCIN #16487

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Discipline	Reviewer	BCIN	Date
Building Code	H. Authier	43236	2021-02-24
Sewage System			
Zoning			

SUPPLY AIR TRUNK SIZE															RETURN 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 CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)			
TRUNK A	308	0.06	9.7	12	x	8	462		TRUNK G	0	0.00	0	0	x	8	0			x	8	0			
TRUNK B	465	0.06	11.3	16	x	8	523		TRUNK H	0	0.00	0	0	x	8	0			x	8	0			
TRUNK C	351	0.07	9.8	12	x	8	527		TRUNK I	0	0.00	0	0	x	8	0			x	8	0			
TRUNK D	465	0.06	11.3	16	x	8	523		TRUNK J	0	0.00	0	0	x	8	0			x	8	0			
TRUNK E	1131	0.06	15.8	28	x	8	727		TRUNK K	0	0.00	0	0	x	8	0			x	8	0			
TRUNK F	0	0.00	0	0	x	8	0		TRUNK L	0	0.00	0	0	x	8	0			x	8	0			

RETURN AIR #	1	2	3	4	5	6									BR						
AIR VOLUME	135	135	95	95	175	305	0	0	0	0	0	0	0	0	0	0	0	0	0	0	191
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
ACTUAL DUCT LGH.	56	54	62	50	47	27	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	265	225	135	175	160	185	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180
TOTAL EFFECTIVE LH	321	279	197	225	207	212	1	1	1	1	1	1	1	1	1	1	1	1	1	1	194
ADJUSTED PRESSURE	0.05	0.05	0.08	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	0.08
ROUND DUCT SIZE	7.5	7.5	5.8	6	7.5	9.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7.5
INLET GRILL SIZE	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14

TRUNK O	0	0.05	0	0	x	8	0		TRUNK O	0	0.05	0	0	x	8	0			x	8	0
TRUNK P	0	0.05	0	0	x	8	0		TRUNK P	0	0.05	0	0	x	8	0			x	8	0
TRUNK Q	0	0.05	0	0	x	8	0		TRUNK Q	0	0.05	0	0	x	8	0			x	8	0
TRUNK R	0	0.05	0	0	x	8	0		TRUNK R	0	0.05	0	0	x	8	0			x	8	0
TRUNK S	0	0.05	0	0	x	8	0		TRUNK S	0	0.05	0	0	x	8	0			x	8	0
TRUNK T	0	0.05	0	0	x	8	0		TRUNK T	0	0.05	0	0	x	8	0			x	8	0
TRUNK U	0	0.05	0	0	x	8	0		TRUNK U	0	0.05	0	0	x	8	0			x	8	0
TRUNK V	0	0.05	0	0	x	8	0		TRUNK V	0	0.05	0	0	x	8	0			x	8	0
TRUNK W	0	0.05	0	0	x	8	0		TRUNK W	0	0.05	0	0	x	8	0			x	8	0
TRUNK X	1131	0.05	16.5	32	x	8	636		TRUNK X	1131	0.05	16.5	32	x	8	636			x	8	636
TRUNK Y	750	0.05	14.2	24	x	8	563		TRUNK Y	750	0.05	14.2	24	x	8	563			x	8	563
TRUNK Z	175	0.05	8.2	8	x	8	394		TRUNK Z	175	0.05	8.2	8	x	8	394			x	8	394
DROP	1131	0.05	16.5	24	x	10	679		DROP	1131	0.05	16.5	24	x	10	679			x	10	679

TYPE: BRENTWOOD 1
SITE NAME: TRINAR HALL HOMES

LO # 81517

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES		9.32.3.1(1)
a)	<input checked="" type="checkbox"/> Direct vent (sealed combustion) only	
b)	<input type="checkbox"/> Positive venting induced draft (except fireplaces)	
c)	<input type="checkbox"/> Natural draft, B-vent or induced draft gas fireplace	
d)	<input type="checkbox"/> Solid Fuel (including fireplaces)	
e)	<input type="checkbox"/> No Combustion Appliances	

HEATING SYSTEM	
<input checked="" type="checkbox"/> Forced Air	<input type="checkbox"/> Non Forced Air
<input type="checkbox"/> Electric Space Heat	

HOUSE TYPE		9.32.1(2)
<input checked="" type="checkbox"/> I	Type a) or b) appliance only, no solid fuel	
<input type="checkbox"/> II	Type I except with solid fuel (including fireplaces)	
<input type="checkbox"/> III	Any Type c) appliance	
<input type="checkbox"/> IV	Type I, or II with electric space heat	
<input type="checkbox"/>	Other: Type I, II or IV no forced air	

SYSTEM DESIGN OPTIONS		O.N.H.W.P.
<input type="checkbox"/> 1	Exhaust only/Forced Air System	
<input type="checkbox"/> 2	HRV with Ducting/Forced Air System	
<input checked="" type="checkbox"/> 3	HRV Simplified/connected to forced air system	
<input type="checkbox"/> 4	HRV with Ducting/non forced air system	
<input type="checkbox"/>	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	4 @ 10.6 cfm	42.4 cfm
Other Rooms	4 @ 10.6 cfm	42.4 cfm
Table 9.32.3.A. TOTAL		159.0 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	159	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	79.5	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANE 65H	Location: BSMT
79.5 cfm	3.0 sones
<input checked="" type="checkbox"/> HVI Approved	

PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
79.5 CFM	X 81 F	X 1.08	X 0.25

SUPPLEMENTAL FANS		PANASONIC	
Location	Model	cfm	HVI Sones
ENS	FV-05-11VK1	50	<input checked="" type="checkbox"/> 0.3
BATH	FV-05-11VK1	50	<input checked="" type="checkbox"/> 0.3
W/R	FV-05-11VK1	50	<input checked="" type="checkbox"/> 0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANE 65H		
155 cfm high	64 cfm low	
75 % Sensible Efficiency	<input checked="" type="checkbox"/> 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	



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INSTALLING CONTRACTOR	
Name:	
Address:	
City:	
Telephone #:	Fax #:

Discipline	Reviewer	BCIN	Date
Building Code	H. Authier	43236	2021-02-24
Sewage System			
Zoning			

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:	February-19

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 81517	Model: BRENTWOOD 1	Builder: GREENPARK HOMES	Date: 2/21/2019																																																									
Volume Calculation			Air Change & Delta T Data																																																									
House Volume <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> </thead> <tbody> <tr><td>Bsmt</td><td>1178</td><td>9</td><td>10602</td></tr> <tr><td>First</td><td>1178</td><td>10</td><td>11780</td></tr> <tr><td>Second</td><td>1424</td><td>9</td><td>12816</td></tr> <tr><td>Third</td><td>0</td><td>9</td><td>0</td></tr> <tr><td>Fourth</td><td>0</td><td>9</td><td>0</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>35,198.0 ft³</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>996.7 m³</td></tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1178	9	10602	First	1178	10	11780	Second	1424	9	12816	Third	0	9	0	Fourth	0	9	0	Total:			35,198.0 ft³	Total:			996.7 m³	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 20%;">0.247</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.069</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="5" style="text-align: center;">Design Temperature Difference</th> </tr> <tr> <th></th> <th>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> <th>ΔT °F</th> </tr> <tr> <td>Winter DTDh</td> <td>22</td> <td>-23</td> <td>45</td> <td>81</td> </tr> <tr> <td>Summer DTDc</td> <td>24</td> <td>30</td> <td>6</td> <td>11</td> </tr> </table>		WINTER NATURAL AIR CHANGE RATE	0.247	SUMMER NATURAL AIR CHANGE RATE	0.069	Design Temperature Difference						Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-23	45	81	Summer DTDc	24	30	6	11
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5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ <p>0.247 x 276.86 x 45 °C x 1.2 = 3718 W</p> <p>= 12685 Btu/h</p>			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ <p>= 0.069 x 276.86 x 6 °C x 1.2 = 140 W</p> <p>= 477 Btu/h</p>																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>80 CFM x 81 °F x 1.08 x 0.25 = 1747 Btu/h</p>			$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>80 CFM x 11 °F x 1.08 x 0.25 = 236 Btu/h</p>																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																												
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																												
Level	Level Factor (LF)	HLairve Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)																																																								
1	0.5	12,685	8,936	0.710																																																								
2	0.3		10,060	0.378																																																								
3	0.2		10,838	0.234																																																								
4	0		0	0.000																																																								
5	0		0	0.000																																																								
<p>*HLairbv = Air leakage heat loss + ventilation heat loss</p> <p>*For a balanced or supply only ventilation system HLairve = 0</p>																																																												



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Discipline	Reviewer	BCIN	Date
Building Code	H. Authier	43236	2021-02-24
Sewage System			
Zoning			

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: BRENTWOOD 1

BUILDER: GREENPARK HOMES

SFQT: 2602

LO# 81517

SITE: TRINAR HALL HOMES

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-9	OUTDOOR DESIGN TEMP.	86
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:	2.50	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	TIGHT	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	35198.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
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: 55.0 ft	WIDTH: 28.0 ft	EXPOSED PERIMETER:	166.0 ft



2012 OBC - COMPLIANCE PACKAGE

Component

Ceiling with Attic Space Minimum RSI (R)-Value
 Ceiling Without Attic Space Minimum RSI (R)-Value
 Exposed Floor Minimum RSI (R)-Value
 Walls Above Grade Minimum RSI (R)-Value
 Basement Walls Minimum RSI (R)-Value
 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
 Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value
 Windows and Sliding Glass Doors Maximum U-Value
 Skylights Maximum U-Value
 Space Heating Equipment Minimum AFUE
 HRV Minimum Efficiency
 Domestic Hot Water Heater Minimum EF

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Sewage System			
Zoning			

Compliance Package ENERGYSTAR

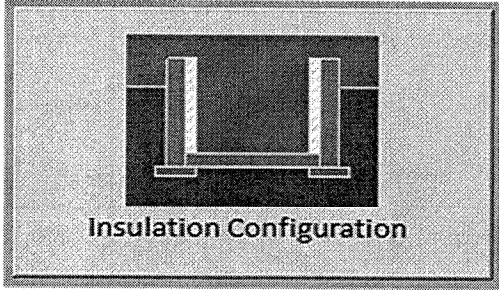
Nominal	Min. Eff.
60	59.20
31	27.70
31	29.80
R22+R5	21.10
20	21.12
-	-
10	10
10	11.13
ZONE 2	-
ZONE 2	-
0.96	-
75%	-
0.9	-

INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Bradford	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	16.8	 <p>Insulation Configuration</p>
Floor Width (m):	8.5	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	2.2	
Door Area (m ²):	0.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):	1718	



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TYPE: BRENTWOOD 1
LO# 81517

Discipline	Reviewer	BCIN	Date
Building Code	H. Authier	43236	2021-02-24
Sewage System			
Zoning			

Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

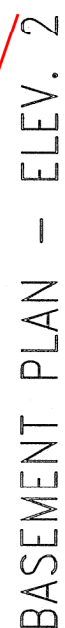
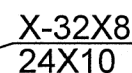
Weather Station Description			
Province:	Ontario		
Region:	Bradford		
Weather Station Location:	Open flat terrain, grass		
Anemometer height (m):	10		
Local Shielding			
Building Site:	Suburban, forest		
Walls:	Heavy		
Flue:	Heavy		
Highest Ceiling Height (m):	7.62		
Building Configuration			
Type:	Detached		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m ³):	996.7		
Air Leakage/Ventilation			
Air Tightness Type:	Energy Star Detached (2.5 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	930.4 cm ²	
	2.50	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
Natural Infiltration Rates			
Heating Air Leakage Rate (ACH/H):	0.247		
Cooling Air Leakage Rate (ACH/H):	0.069		

TYPE: BRENTWOOD 1
LO# 81517



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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, BCIN# 19669
HVAC DESIGNS LTD.

BASEMENT PLAN - ELEV. 1

CSA-F280-12



ENERGY STAR

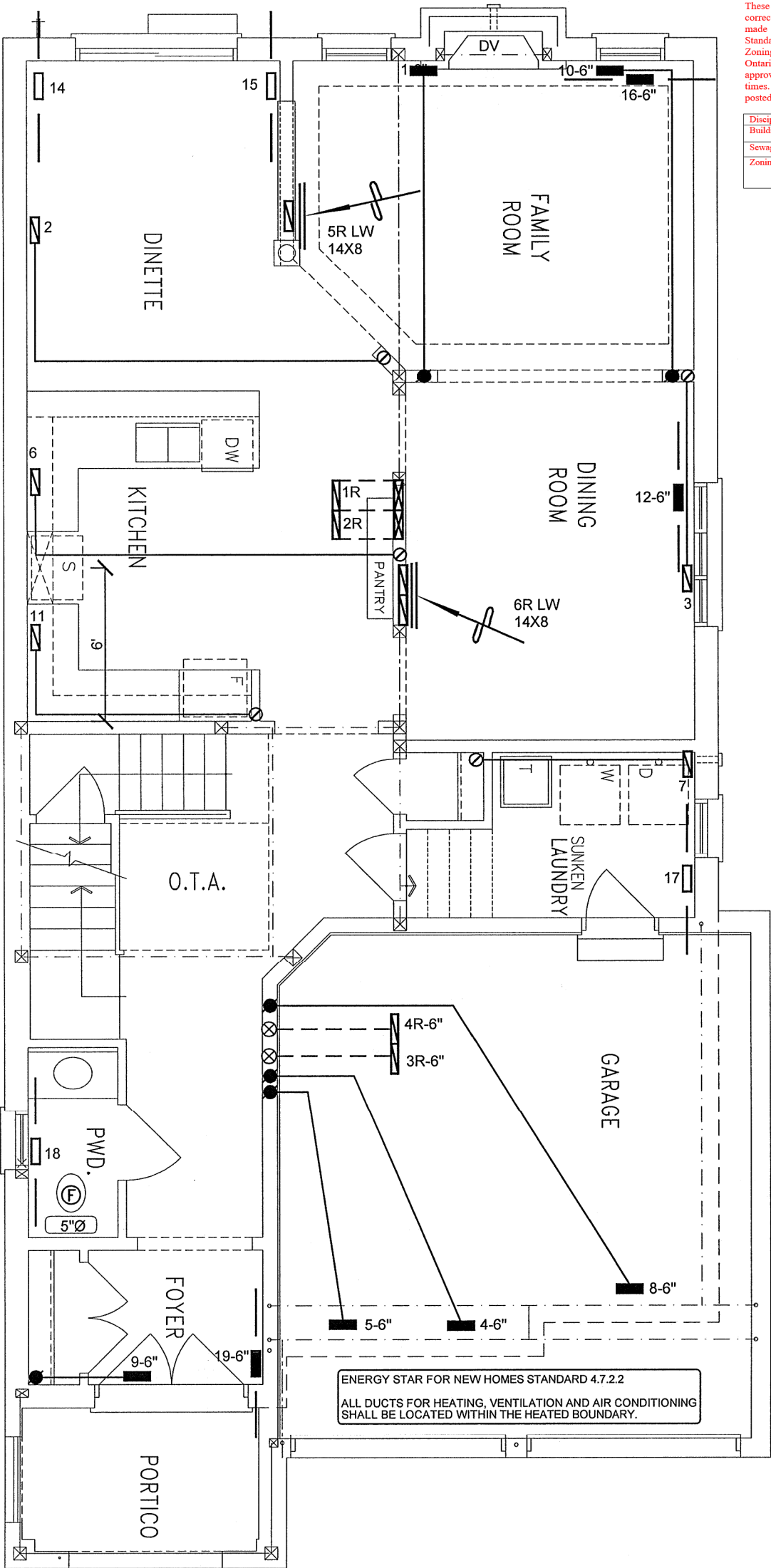
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR 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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Client	GREENPARK HOMES	<div><div><div>HVACDESIGNSLTD.</div><div>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</div></div><div>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.</div></div>	HEAT LOSS 44837 BTU/H UNIT DATA	# OF RUNS	S/A	R/A	FANS	Sheet Title BASEMENT HEATING LAYOUT	
Project Name	TRINAR HALL HOMES EAST GWILLIMBURY, ONT.		MAKE GOODMAN	3RD FLOOR					Date FEB/2019
			MODEL GMEC960603BNA	2ND FLOOR	11	4	2		Scale 3/16" = 1'-0"
			INPUT 60 MBTU/H	1ST FLOOR	7	2	2		BCIN# 19669
			OUTPUT 57.6 MBTU/H	BASEMENT	4	1	0		LO# 81517
		COOLING 2.0 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						
		FAN SPEED 1131 cfm @ 0.6" w.c.							

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Discipline	Reviewer	BCIN	Date
Building Code	H. Authier	43236	2021-02-24
Sewage System			
Zoning			

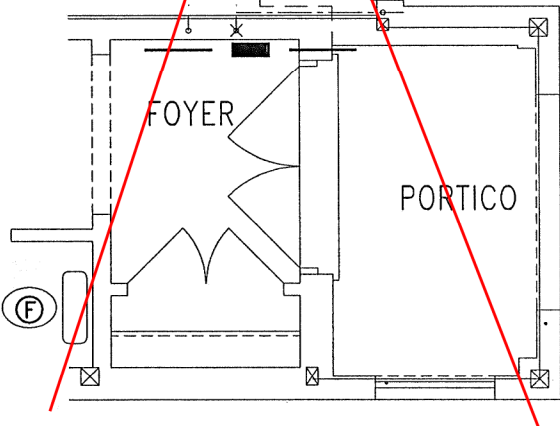


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Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

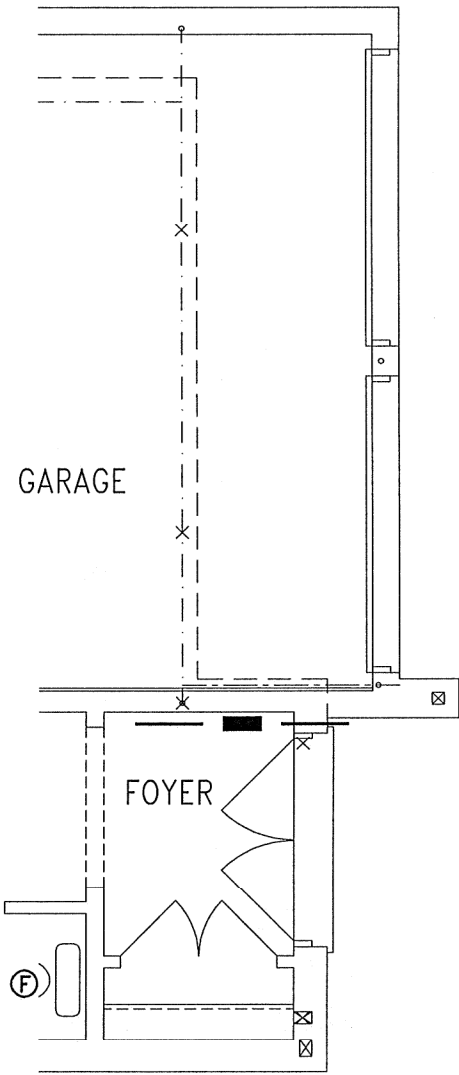
GROUND FLOOR PLAN - ELEV. 1

GARAGE



GROUND FLOOR PLAN - ELEV. 2

GARAGE



GROUND FLOOR PLAN - ELEV. 3

CSA-F280-12

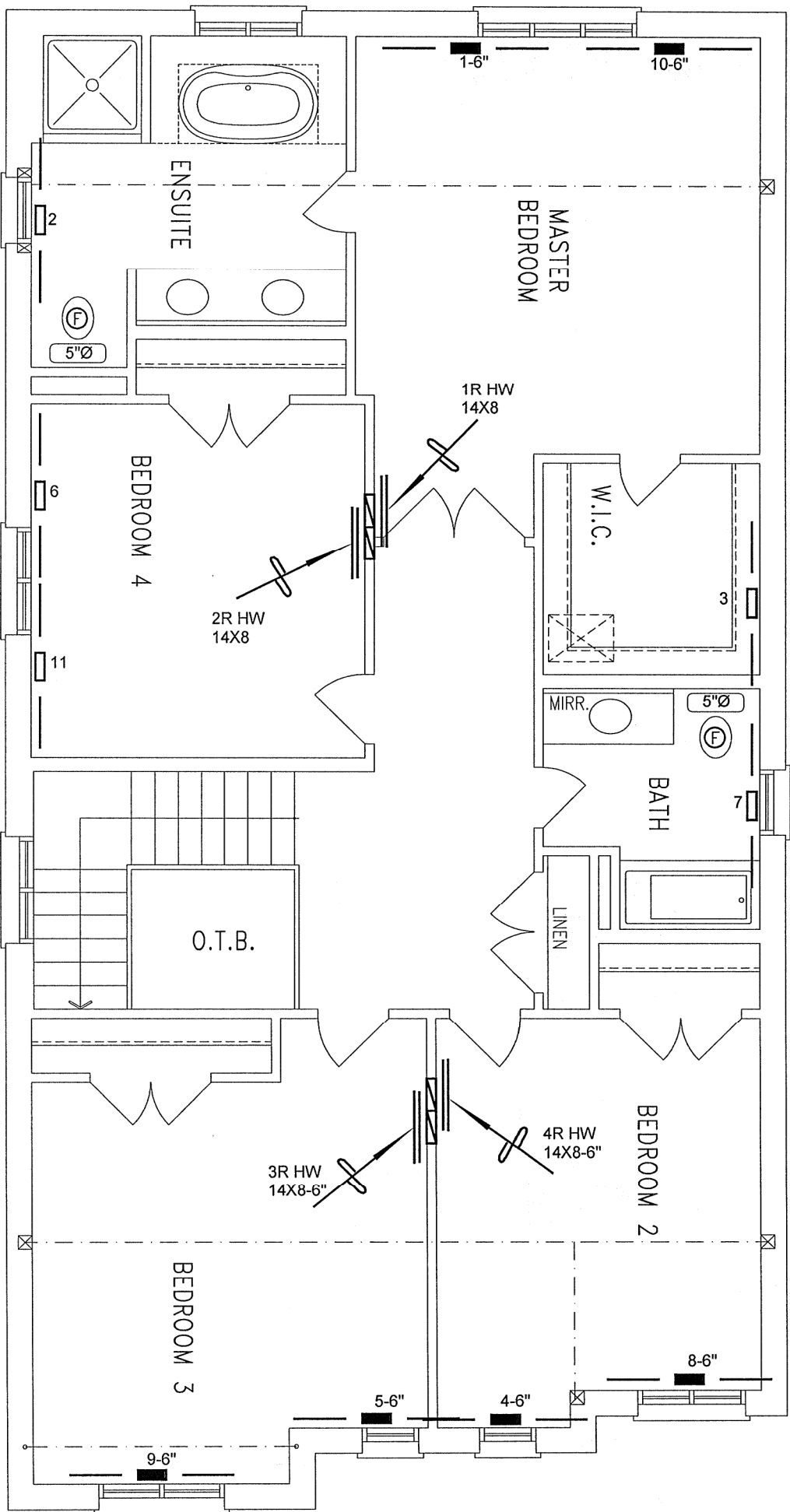


ENERGY STAR

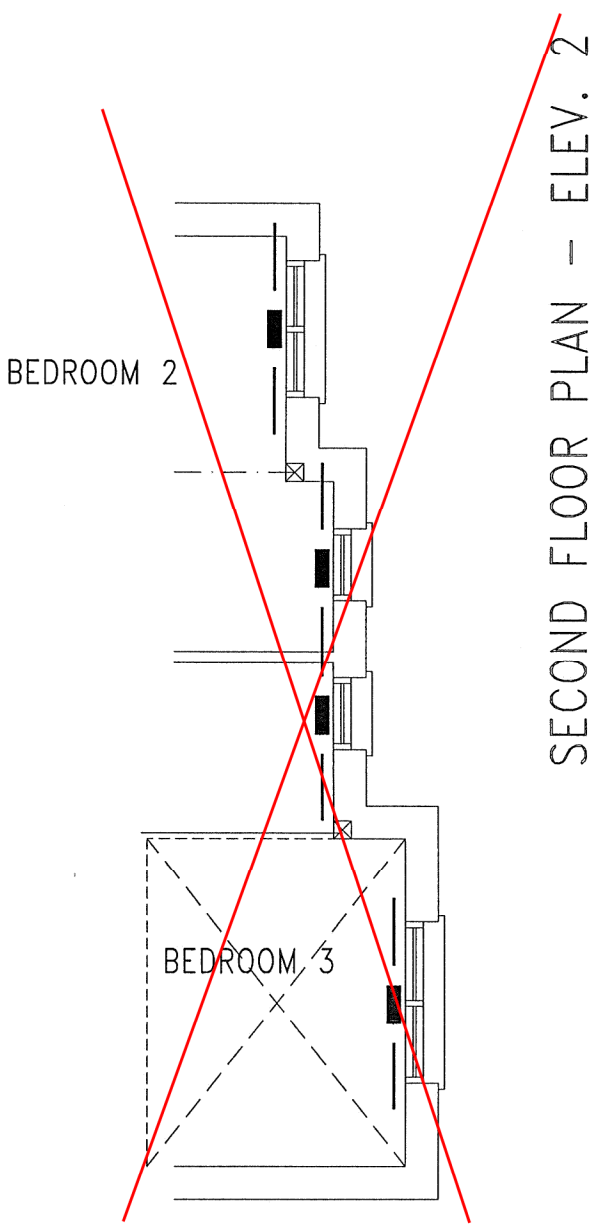
HVAC LEGEND								3.		
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	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

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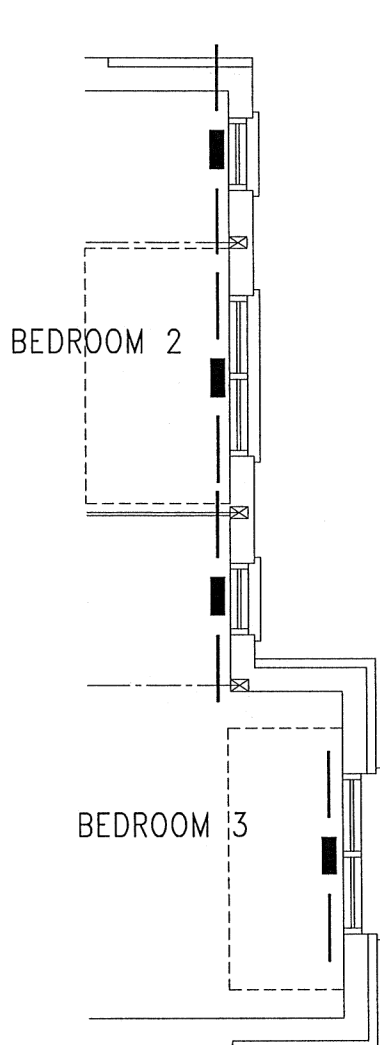
Client GREENPARK HOMES		<div><p>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services</p></div>	Sheet Title FIRST FLOOR HEATING LAYOUT	
Project Name TRINAR HALL HOMES EAST GWILLIMBURY, ONT.			Date FEB/2019	Scale 3/16" = 1'-0"
For Lot 25 BRENTWOOD 1 2602 sqft		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.	BCIN# 19669	
			LO#	81517



SECOND FLOOR PLAN – ELEV. 1

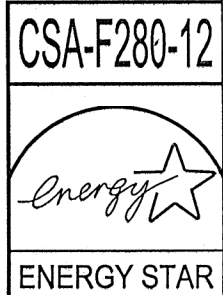


SECOND FLOOR PLAN – ELEV. 2



SECOND FLOOR PLAN – ELEV. 3

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



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Client
GREENPARK HOMES

Project Name
**TRINAR HALL HOMES
EAST GWILLIMBURY, ONT.**

**For Lot 25
BRENTWOOD 1 2602 sqft**

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L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
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Specializing in Residential Mechanical Design Services

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Discipline	Reviewer	BCIN	Date
Building Code	H. Authier	43236	2021-02-24
Sewage System			
Zoning			

Sheet Title	
SECOND FLOOR HEATING LAYOUT	
Date	FEB/2019
Scale	3/16" = 1'-0"
BCIN# 19669	
LO#	81517