HVAC DESIGNS LTD.

375 Finley Ave. Suite 202 Ajax, ON L1S 2E2
Tel: 905.619.2300 Fax: 905.619.2375
Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

SITE NAME: LECCO RIDGE | DATE: Jan-17 | WINTER NATURAL AIR CHANGE RATE 0.250 | HEAT LOSS ΔT °F. 72 | CSA-F280-12
BUILDER: GREENPARK HOMES | TYPE: IVY 11 | GFA: 2256 | LO# 71719 | SUMMER NATURAL AIR CHANGE RATE 0.076 | HEAT GAIN ΔT °F. 14 | ENERGYSTAR

ROOM USE			MBR			ENS			WIC			BED-2			BED-3			BED-4			BATH		
EXP. WALL			32			9			0			11			34			21			10		
CLG. HT.			9			9			9			9			10			9			9		
	FACTORS																						
GRS.WALL AREA	LOSS	GAIN	282			79			0			97			340			185			88		
GLAZING				LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN
NORTH	20.4	15.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	20.4	40.7	0	0	0	0	0	0	0	0	0	40	816	1629	23	469	936	0	0	0	0	0	0
SOUTH	20.4	24.5	36	734	883	0	0	0	0	0	0	0	0	0	18	367	442	36	734	883	11	224	270
WEST	20.4	40.7	22	449	896	16	326	651	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SKYLT.	35.7	102.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	24.1	4.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	3.1	0.6	224	686	129	63	194	36	0	0	0	57	174	33	299	917	172	149	456	86	77	236	44
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.4	0.7	252	365	179	126	182	90	63	91	45	132	191	94	96	139	68	269	390	192	104	151	74
NO ATTIC EXPOSED CLG	2.3	1.1	0	0	0	0	0	0	0	0	0	0	0	0	24	56	28	27	63	31	0	0	0
EXPOSED FLOOR	2.3	0.4	0	0	0	0	0	0	0	0	0	132	308	58	0	0	0	12	28	5	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				2234			703			91			1490			1949			1672			611	
SUB TOTAL HT GAIN					2087			778			45			1813			1646			1197			388
LEVEL FACTOR / MULTIPLIER			0.20	0.22		0.20	0.22		0.20	0.22		0.20	0.22		0.20	0.22		0.20	0.22		0.20	0.22	
AIR CHANGE HEAT LOSS				501			158			20			334			437			375			137	
AIR CHANGE HEAT GAIN					126			47			3			109			99			72			23
DUCT LOSS				0			0			0			182			0			205			0	
DUCT GAIN					0			0			0			263			0			198			0
HEAT GAIN PEOPLE	240		2		480	0		0	0		0	1		240	1		240	1		240	0		0
HEAT GAIN APPLIANCES/LIGHTS					472			0			0			472			472			472			0
TOTAL HT LOSS BTU/H				2735			860			112			2006			2386			2251			748	
TOTAL HT GAIN x 1.3 BTU/H					4115			1072			62			3767			3195			2833			535

ROOM USE			OFF			DIN			KT/FM				LAUN			W/R			FOY			MUD				WOD			BAS		
EXP. WALL			36			31			40				0			4			11			6				23			134		
CLG. HT.			10			10			10				9			11			10			11				9			9		
	FACTORS																														
GRS.WALL AREA	LOSS	GAIN	360			310			400				0			44			110			66				202			1049		
GLAZING				LOSS	GAIN		LOSS	GAIN		LOSS	GAIN			LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN
NORTH	20.4	15.9	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0		10	204	159	4	82	63
EAST	20.4	40.7	32	653	1303	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	20.4	24.5	25	510	613	50	1020	1227	42	857	1031		0	0	0	0	0	0	6	122	147	0	0	0		0	0	0	0	0	0
WEST	20.4	40.7	0	0	0	0	0	0	71	1449	2891		0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
SKYLT.	35.7	102.0	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	24.1	4.5	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	40	962	181	20	481	90		0	0	0	20	481	90
NET EXPOSED WALL	3.1	0.6	303	930	175	260	798	150	287	880	165		0	0	0	44	135	25	64	196	37	46	141	27		0	0	0	0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.7	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0		128	463	87	130	471	88
EXPOSED CLG	1.4	0.7	0	0	0	0	0	0	0	0	0		72	104	51	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.3	1.1	16	37	18	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	2.3	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						3934		
SLAB ON GRADE HEAT LOSS				0			0			0				0			0			0			0				0				
SUBTOTAL HT LOSS				2130			1818			3186				104			135			1281			622				667			4968		
SUB TOTAL HT GAIN					2109			1377			4087				51			25			365			117					246			242
LEVEL FACTOR / MULTIPLIER			0.30	0.32		0.30	0.32		0.30	0.32			0.20	0.22		0.30	0.32		0.30	0.32		0.30	0.32						0.50	0.88	
AIR CHANGE HEAT LOSS				692			590			1035				23			44			416			202							4964		
AIR CHANGE HEAT GAIN					127			83			247				3			2			22			7								29
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		0	0		0		0		0	0		0
HEAT GAIN APPLIANCES/LIGHTS					472			472			472				472			0			0			0					0			472
TOTAL HT LOSS BTU/H				2821			2408			4220				128			179			1697			824				667			9931		
TOTAL HT GAIN x 1.3 BTU/H					3521			2511			6247				684			35			503			161					319			966

TOTAL HEAT GAIN BTU/H: 30955 | TONS: 2.58 | LOSS DUE TO VENTILATION LOAD BTU/H: 2286 | STRUCTURAL HEAT LOSS: 33974 | TOTAL COMBINED HEAT LOSS BTU/H: 36261

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

TOWN OF MILTON
PLANNING AND DEVELOPMENT
IVY 11F MODEL
BUILDING: REVIEWED
SCOTT SHERRIFFS APR 7, 2017
PLANS EXAMINER DATE
Neither the issuance of a permit nor carrying out of inspections by the Town of Milton relives the owner from full responsibility for compliance with the provisions of the Ontario Building Code Act and the Ontario Building Code, both as amended, as well as other applicable statutes and regulations of the Province on Ontario, By-laws of the Region of Halton and Town of Milton

RECEIVED
TOWN OF MILTON
MAR 29, 2017
JUNIPER 11F
BUILDING DIVISION

HVAC DESIGNS LTD.

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SITE NAME: LECCO RIDGE
BUILDER: GREENPARK HOMES | TYPE: IVY 11 | DATE: Jan-17 | GFA: 2256 | LO# 71719

HEATING CFM	890	COOLING CFM	890	furnace pressure	0.6
TOTAL HEAT LOSS	33,974	TOTAL HEAT GAIN	30,525	furnace filter	0.05
AIR FLOW RATE CFM	26.2	AIR FLOW RATE CFM	29.16	a/c coil pressure	0.2
				available pressure for s/a & r/a	0.35

#AMANA
AMEC960402BNA 40

AFUE = 96 %
INPUT (BTU/H) = 40,000
OUTPUT (BTU/H) = 38,400

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	9	8	4
R/A	0	0	4	2	1

plenum pressure s/a	0.18	r/a pressure	0.17
max s/a dif press. loss	0.03	r/a grille press. Loss	0.02
min adjusted pressure s/a	0.15	adjusted pressure r/a	0.15

FAN SPEED	
LOW	
MEDLOW	
MEDIUM	
MEDIUM HIGH	
HIGH	890

DESIGN CFM = 890
CFM @ .6 " E.S.P.

TEMPERATURE RISE 40 °F

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	6	7	8	9	10	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-4	BATH	BED-2	BED-3	MBR	OFF	DIN	KT/FM	KT/FM	KT/FM	LAUN	W/R	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.37	0.86	0.11	2.25	0.75	2.01	2.39	1.37	2.82	2.41	1.41	1.41	1.41	0.13	0.18	1.70	0.82	2.65	2.65	2.65	2.65
CFM PER RUN HEAT	36	23	3	59	20	53	63	36	74	63	37	37	37	3	5	44	22	69	69	69	69
RM GAIN MBH.	2.06	1.07	0.06	2.83	0.54	3.77	3.19	2.06	3.52	2.51	2.08	2.08	2.08	0.68	0.03	0.50	0.16	0.32	0.32	0.32	0.32
CFM PER RUN COOLING	60	31	2	83	16	110	93	60	103	73	61	61	61	20	1	15	5	9	9	9	9
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.17	0.15	0.16	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	23	57	20	20	64	50	52	16	53	10	40	13	32	48	26	44	34	26	16	45	27
EQUIVALENT LENGTH	140	180	150	130	170	170	130	140	150	130	150	150	170	130	130	190	150	140	130	160	180
TOTAL EFFECTIVE LENGTH	163	237	170	150	234	220	182	156	203	140	190	163	202	178	156	234	184	166	146	205	207
ADJUSTED PRESSURE	0.11	0.07	0.1	0.11	0.07	0.07	0.09	0.11	0.08	0.12	0.09	0.11	0.09	0.1	0.11	0.07	0.09	0.1	0.12	0.08	0.08
ROUND DUCT SIZE	5	4	4	5	4	6	6	5	6	5	5	5	5	4	4	5	4	5	5	5	5
HEATING VELOCITY (ft/min)	264	264	34	433	229	270	321	264	377	463	272	272	272	34	57	323	252	507	507	507	507
COOLING VELOCITY (ft/min)	441	356	23	609	184	561	474	441	525	536	448	448	448	229	11	110	57	66	66	66	66
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	C	B	B	D	A	B	A	D	A	D	B	D	C	B	B	A	B	C	C	A	B

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	

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	270	0.07	8.9	10	x	8	486	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	215	0.07	8.2	8	x	8	484	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	696	0.07	12.7	18	x	8	696	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	195	0.11	7	6	x	8	585	TRUNK J	0	0.00	0	0	x	8	0
TRUNK E	0	0.00	0	0	x	8	0	TRUNK K	0	0.00	0	0	x	8	0
TRUNK F	0	0.00	0	0	x	8	0	TRUNK L	0	0.00	0	0	x	8	0

RETURN AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)
TRUNK O	0	0.06	0	0	x	8	0
TRUNK P	0	0.06	0	0	x	8	0
TRUNK Q	0	0.06	0	0	x	8	0
TRUNK R	0	0.06	0	0	x	8	0
TRUNK S	0	0.06	0	0	x	8	0
TRUNK T	0	0.06	0	0	x	8	0
TRUNK U	0	0.06	0	0	x	8	0
TRUNK V	0	0.06	0	0	x	8	0
TRUNK W	0	0.06	0	0	x	8	0
TRUNK X	890	0.06	14.4	24	x	8	668
TRUNK Y	240	0.06	8.8	10	x	8	432
TRUNK Z	0	0.06	0	0	x	8	0
DROP	890	0.06	14.4	24	x	10	534

RETURN AIR #	1	2	3	4	5	6										BR
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AIR VOLUME	135	135	85	85	175	155	0	0	0	0	0	0	0	0	0	120
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
ACTUAL DUCT LGH.	18	12	50	62	18	45	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	175	215	215	190	135	185	0	0	0	0	0	0	0	0	0	135
TOTAL EFFECTIVE LH	193	227	265	252	153	230	1	1	1	1	1	1	1	1	1	149
ADJUSTED PRESSURE	0.08	0.07	0.06	0.06	0.10	0.06	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.10
ROUND DUCT SIZE	6.6	6.8	6	6	6.9	7.5	0	0	0	0	0	0	0	0	0	6
INLET GRILL SIZE	8	8	8	8	8	8	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
INLET GRILL SIZE	14	14	14	14	14	14	0	0	0	0	0	0	0	0	0	14

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TYPE: IVY 11 LO # 71719
SITE NAME: LECCO RIDGE

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	4	@ 10.6 cfm	42.4	cfm
Other Rooms	5	@ 10.6 cfm	53.0	cfm
Table 9.32.3.A.		TOTAL	169.6	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
More than 5 - Part 6	**TOTAL**	**79.5**	**cfm**

SUPPLEMENTAL VENTILATION CAPACITY 9.32.3.5.

Total Ventilation Capacity	169.6	cfm
Less Principal Ventil. Capacity	86	cfm
Required Supplemental Capacity	83.6	cfm

PRINCIPAL EXHAUST FAN CAPACITY

Model: VANEE 40H+ Location: BSMT

86.0 cfm 3.0 sones [✓] HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

CFM		ΔT °F		FACTOR		% LOSS
86.0 CFM	X	72 F	X	1.08	X	0.34

SUPPLEMENTAL FANS

Location	Model	cfm	HVI	Sones
ENS	QTXEN050C	50	✓	0.3
BATH	QTXEN050C	50	✓	0.3
W/R	QTXEN050C	50	✓	0.3

NUTONE

HEAT RECOVERY VENTILATOR 9.32.3.11.

Model: VANEE 40H+

86 cfm high 37 cfm low

66 % Sensible Efficiency @ 32 deg F (0 deg C) [✓] HVI Approved

LOCATION OF INSTALLATION

Lot: C

Township P

Address

Roll #

RECEIVED
TOWN OF MILTON
MAR 29, 2017
JUNIPER 11F
BUILDING DIVISION

TOWN OF MILTON
PLANNING AND DEVELOPMENT
IVY 11F MODEL
BUILDING: REVIEWED
SCOTT SHERRIFFS APR 7, 2017
PLANS EXAMINER DATE
Neither the issuance of a permit nor carrying out of inspections by the Town of Milton relives the owner from full responsibility for compliance with the provisions of the Ontario Building Code Act and the Ontario Building Code, both as amended, as well as other applicable statutes and regulations of the Province on Ontario, By-laws of the Region of Halton and Town of Milton

BUILDER: GF

Name:

Address:

City:

Telephone #:

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: January-17

I REVIEW AND TAKE RESPONIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

INDIVIDUAL BCIN: 19669 Michael O'Rourke MICHAEL O'ROURKE

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HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: IVY 11 **BUILDER:** GREENPARK HOMES
SFQT: 2256 **LO#** 71719 **SITE:** LECCO RIDGE

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	0	OUTDOOR DESIGN TEMP.	86
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	72.4

BUILDING DATA

ATTACHMENT:	ATTACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	TIGHT	ASSUMED (Y/N):	Y
WIND EXPOSURE:	UNSHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft^3):	30715.6	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft^2):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.8 ft
LENGTH: 57.0 ft	WIDTH: 25.0 ft	EXPOSED PERIMETER:	134.0 ft

2012 OBC - COMPLIANCE PACKAGE Component	Compliance Package ENERGYSTAR Nominal	
Ceiling with Attic Space Minimum RSI (R)-Value	50	
Ceiling Without Attic Space Minimum RSI (R)-Value	31	
Exposed Floor Minimum RSI (R)-Value	31	
Walls Above Grade Minimum RSI (R)-Value	20+3.6	
Basement Walls Minimum RSI (R)-Value	20	
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	
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value	10	
Windows and Sliding Glass Doors Maximum U-Value	ZONE 2	
Skylights Maximum U-Value	ZONE 2	
Space Heating Equipment Minimum AFUE	0.95	
HRV Minimum Efficiency	65%	
Domestic Hot Water Heater Minimum EF	90% TE	

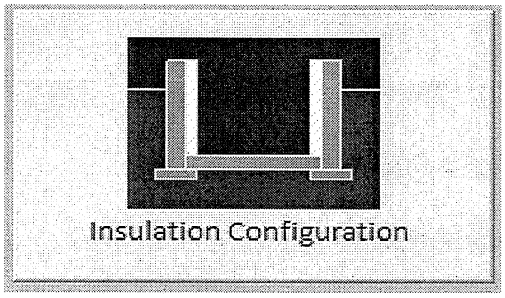
INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE

HVAC Designs Ltd.
375 Finley Ave, Suite 202
Ajax ON, L1S 2E2
905-619-2300

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description	
Province:	Ontario
Region:	Milton
Site Description	
Soil Conductivity:	Normal conductivity: dry dand, loam, clay
Water Table:	Normal (7-10 m, 23-33 ft)

Foundation Dimensions		
Floor Length (m):	**17.4**	 Insulation Configuration
Floor Width (m):	**7.6**	
Exposed Perimeter (m):	**40.8**	
Wall Height (m):	**2.7**	
Depth Below Grade (m):	**2.07**	
Window Area (m^2):	**1.3**	
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):	**1153**	

TYPE: IVY 11
LO# 71719

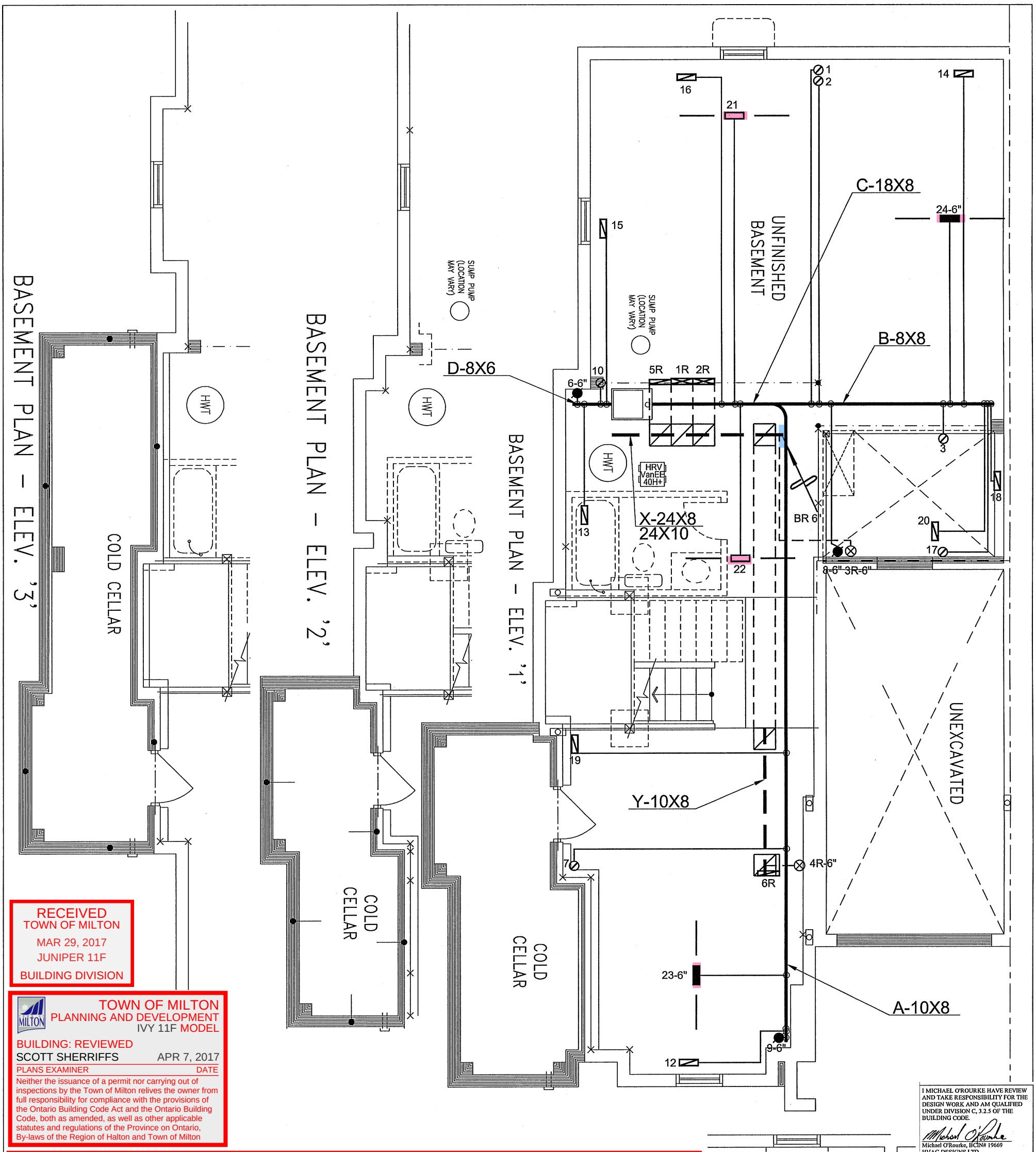
HVAC Designs Ltd.
375 Finley Ave, Suite 202
Ajax ON, L1S 2E2
905-619-2300

Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description	
Province:	Ontario
Region:	Milton
Weather Station Location:	Open flat terrain, grass
Anemometer height (m):	10
Local Shielding	
Building Site:	Suburban, forest
Walls:	Very heavy
Flue:	Heavy
Highest Ceiling Height (m):	6.34
Building Configuration	
Type:	Semi
Number of Stories:	Two
Foundation:	Full
House Volume (m^3):	869.8
Air Leakage/Ventilation	
Air Tightness Type:	Energy Star Attached (3.0 ACH)
Custom BDT Data:	ELA @ 10 Pa. 974.3 cm^2
	3.00 ACH @ 50 Pa
Mechanical Ventilation (L/s):	Total Supply 40.6 / Total Exhaust 40.6
Flue Size	
Flue #:	#1 #2 #3 #4
Diameter (mm):	0 0 0 0
Natural Infiltration Rates	
Heating Air Leakage Rate (ACH/H):	**0.250**
Cooling Air Leakage Rate (ACH/H):	**0.076**

TYPE: IVY 11
LO# 71719



RECEIVED
TOWN OF MILTON
MAR 29, 2017
JUNIPER 11F
BUILDING DIVISION

TOWN OF MILTON
PLANNING AND DEVELOPMENT
IVY 11F MODEL
BUILDING: REVIEWED
SCOTT SHERRIFFS APR 7, 2017
PLANS EXAMINER DATE
Neither the issuance of a permit nor carrying out of inspections by the Town of Milton relives the owner from full responsibility for compliance with the provisions of the Ontario Building Code Act and the Ontario Building Code, both as amended, as well as other applicable statutes and regulations of the Province on Ontario, By-laws of the Region of Halton and Town of Milton

RESIDENTIAL HVAC (New Construction)

1) All HVAC work shall comply with Part 6 and 9.32/9.33.
2) Supply or return air ducts not protected by an insulated exterior wall shall me insulated to a minimum 2.1 RSI (R-12)
3) Exhaust ducts (principle, supplemental & other exhaust fans) passing through unheated space shall be insulated to a minimum 0.5 RSI (R-3)
4) All supply/return air ducts located in unconditioned spaces shall be sealed to a SMACNA Class 'A' seal level and supply air ducts in conditioned spaces to shall be sealed to a SMACNA Class "C' seal level
5) Furnaces to be equipped with brushless DC motor (ECM) and controlled with a programmable thermostat (4 times periods/day, 2 day types/week)
6) HRVs to be installed in accordance with 9.32.3.11. and manufacturers' requirements (intake/exhaust separation, distance from R/A drop)
7) Bathrooms and washrooms to have a min. 50 CFM exhaust fan ducted directly outdoors with ductwork sized in accordance with Table 9.32.3.5.
8) Range hoods to exhaust directly to outdoors with non-combustible ducting
9) Changes to the HVAC equipment or duct layout requires a revision permit to be applied for and approved prior to booking any HVAC inspections

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, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12

ENERGY STAR

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

No.	Description	Date
3.		
2.		
1.		

REVISIONS

Client
GREENPARK HOMES

Project Name
LECCO RIDGE
MILTON, ONTARIO

IVY 11 2256 sqft

HVAC DESIGNS 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
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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.

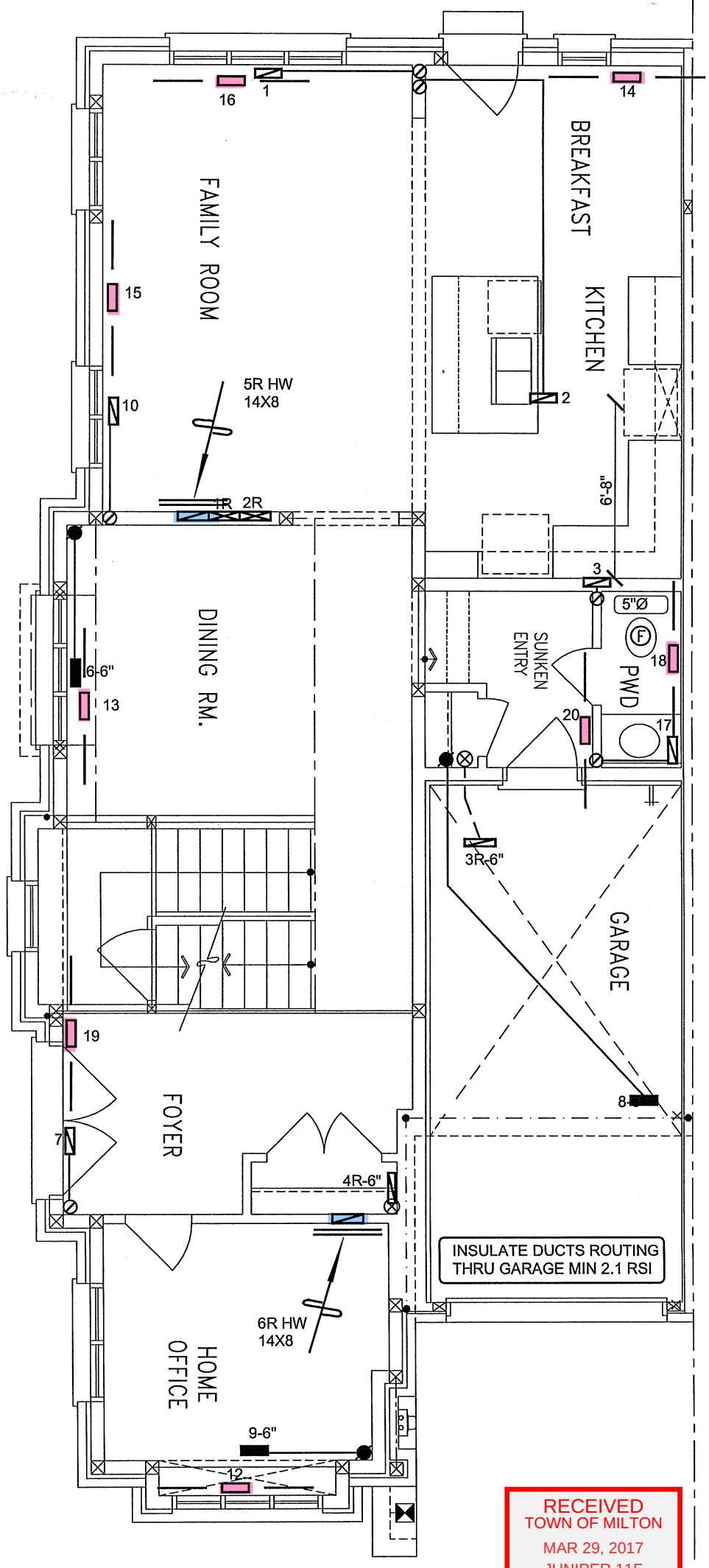
HEAT LOSS 36261 BTU/H	
UNIT DATA	
MAKE	AMANA
MODEL	AMEC960402BNA-40
INPUT	40 MBTU/H
OUTPUT	38.4 MBTU/H
COOLING	2.5 TONS
FAN SPEED	890 cfm @ 0.6" w.c.

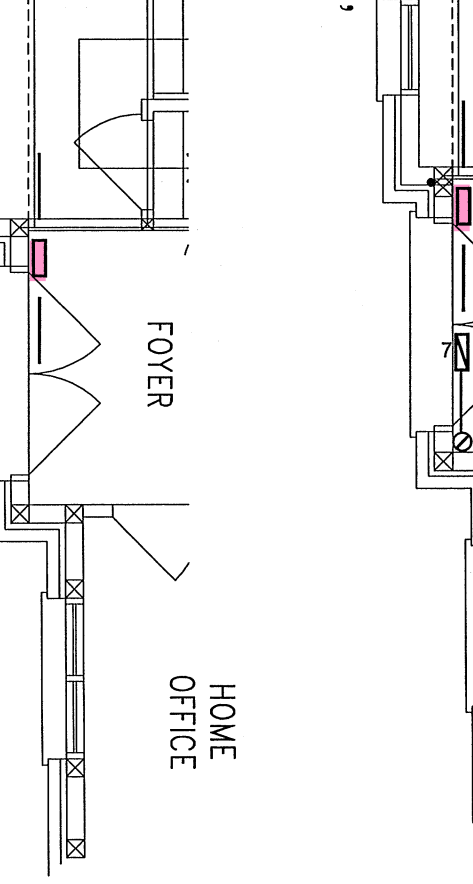
# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	9	4	3
1ST FLOOR	8	2	2
BASEMENT	4	1	0

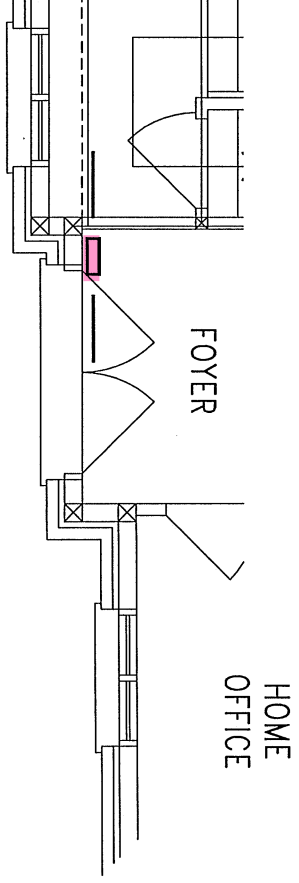
ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A

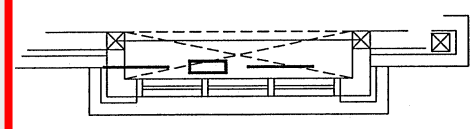
Sheet Title
BASEMENT HEATING LAYOUT

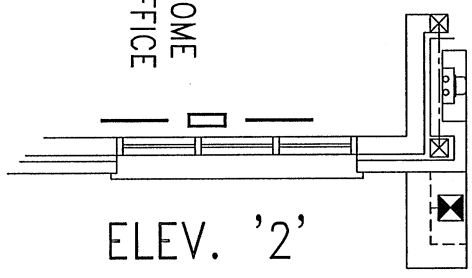
Date JAN/2017
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 71719











RECEIVED
TOWN OF MILTON
MAR 29, 2017
JUNIPER 11F
BUILDING DIVISION

TOWN OF MILTON
PLANNING AND DEVELOPMENT
IVY 11F MODEL
BUILDING: REVIEWED
SCOTT SHERRIFFS APR 7, 2017
PLANS EXAMINER DATE
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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, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
ENERGY STAR

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

No.	Description	Date
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REVISIONS

Client
GREENPARK HOMES

Project Name
LECCO RIDGE
MILTON, ONTARIO

IVY 11 2256 sqft

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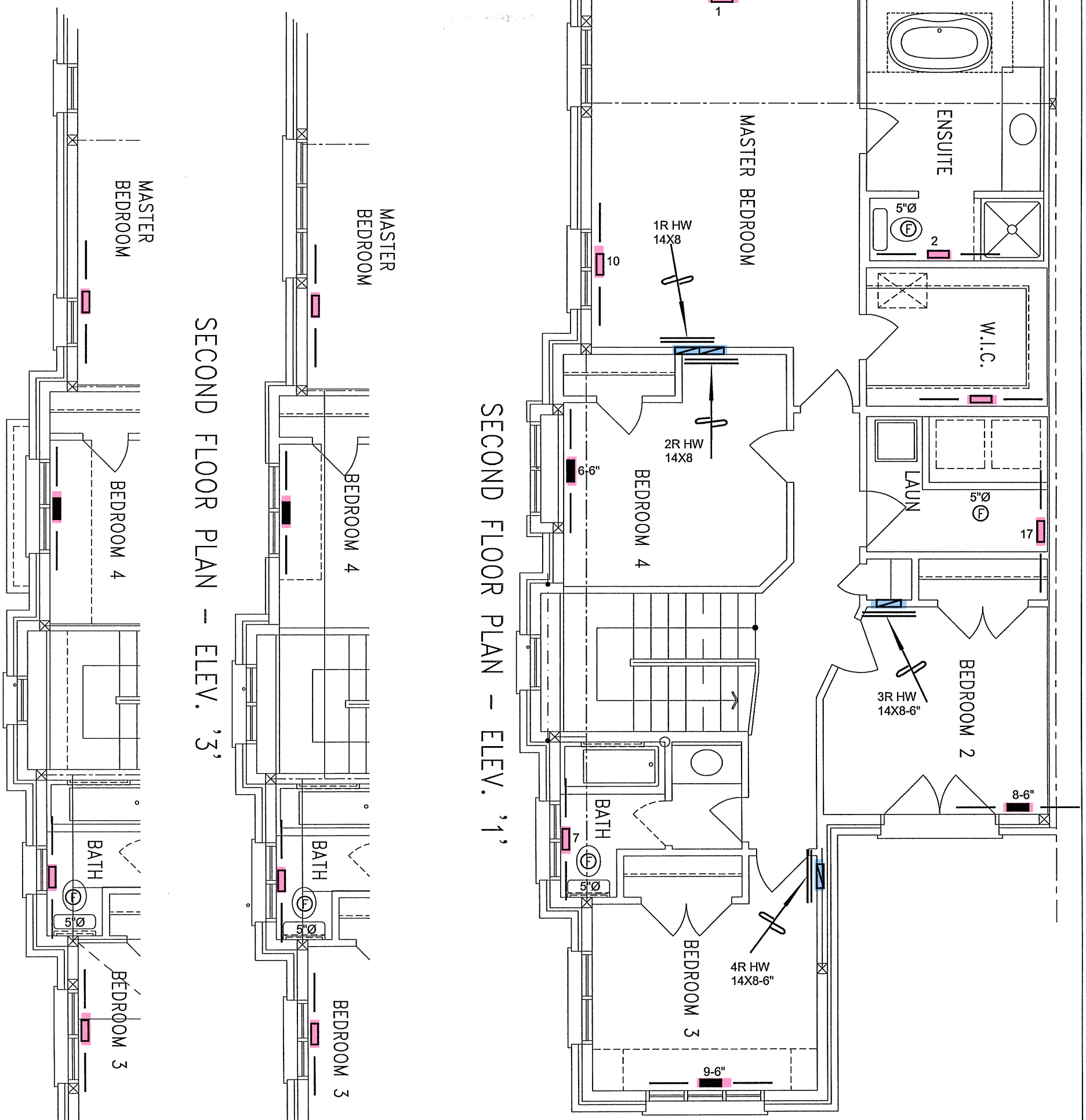
Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.

Sheet Title
FIRST FLOOR HEATING LAYOUT

Date JAN/2017
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 71719



TOWN OF MILTON
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IVY 11F MODEL
BUILDING: REVIEWED
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Client
GREENPARK HOMES

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IVY 11 2256 sqft

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Sheet Title
SECOND FLOOR HEATING LAYOUT

Date JAN/2017
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 71719