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: Dec-16 | WINTER NATURAL AIR CHANGE RATE 0.307 | HEAT LOSS ΔT °F. 72 | CSA-F280-12
BUILDER: GREENPARK HOMES | TYPE: JUNIPER 2 | GFA: 2710 | LO# 71347 | SUMMER NATURAL AIR CHANGE RATE 0.105 | HEAT GAIN ΔT °F. 14 | ENERGYSTAR

ROOM USE			MBR			ENS			WIC			BED-2			BED-3			BED-4			BATH			HALL			ENS-2		
EXP. WALL			41			25			12			15			39			14			9			10			9		
CLG. HT.			10			9			9			10			10			9			9			9			9		
	FACTORS																												
GRS.WALL AREA	LOSS	GAIN	410			225			108			150			390			126			81			90			81		
GLAZING				LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN
NORTH	17.9	15.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	375	333	7	125	111
EAST	17.9	41.4	0	0	0	0	0	0	12	214	497	45	803	1864	59	1053	2444	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	17.9	24.8	0	0	0	8	143	198	0	0	0	0	0	0	0	0	0	16	286	396	7	125	173	0	0	0	0	0	0
WEST	17.9	41.4	36	643	1491	16	286	663	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SKYLT.	30.6	101.2	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	4.7	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	2.6	0.5	374	979	189	201	526	102	96	251	49	105	275	53	331	866	167	110	288	56	74	194	37	69	181	35	74	194	37
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	1.4	0.7	400	551	274	156	215	107	36	50	25	160	220	110	271	373	186	169	233	116	81	112	55	175	241	120	63	87	43
NO ATTIC EXPOSED CLG	2.2	1.1	0	0	0	0	0	0	0	0	0	48	108	54	66	148	74	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.2	0.4	0	0	0	0	0	0	36	79	15	208	456	88	0	0	0	0	0	0	0	0	0	57	125	24	63	138	27
BASEMENT/CRAWL HEAT LOSS			0			0			0			0			0			0			0			0			0		
SLAB ON GRADE HEAT LOSS			0			0			0			0			0			0			0			0			0		
SUBTOTAL HT LOSS			2172			1169			594			1862			2441			806			430			922			544		
SUB TOTAL HT GAIN					1954			1069			586			2168			2871			568			266			512			218
LEVEL FACTOR / MULTIPLIER			0.20	0.26		0.20	0.26		0.20	0.26		0.20	0.26		0.20	0.26		0.20	0.26		0.20	0.26		0.20	0.26		0.20	0.26	
AIR CHANGE HEAT LOSS				572			308			156			490			643			212			113			243			143	
AIR CHANGE HEAT GAIN					140			77			42			156			206			41			19			37			16
DUCT LOSS				0			0			75			235			0			0			0			116			69	
DUCT GAIN					0			0			63			318			0			0			0			55			23
HEAT GAIN PEOPLE	240		2		480	0		0	0		0	1		240	1		240	1		240	0		0	0		0	0		0
HEAT GAIN APPLIANCES/LIGHTS					619			0			0			619			619			619			0			0			0
TOTAL HT LOSS BTU/H				2744			1477			825			2588			3084			1019			543		1281			755		
TOTAL HT GAIN x 1.3 BTU/H					4152			1490			897			4552			5116			1907			371			784			334

ROOM USE			OFF			DIN			KT/FM			LAUN			W/R			FOY			WOD			BAS		
EXP. WALL			25			24			73			30			7			22			58			170		
CLG. HT.			11			10			10			12			11			11			9			9		
	FACTORS																									
GRS.WALL AREA	LOSS	GAIN	275			240			730			360			77			242			522			1194		
GLAZING				LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN
NORTH	17.9	15.8	10	179	158	0	0	0	0	0	0	7	125	111	0	0	0	0	0	0	16	286	253	10	179	158
EAST	17.9	41.4	30	536	1243	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	17.9	24.8	0	0	0	22	393	545	0	0	0	0	0	0	7	125	173	0	0	0	0	0	0	0	0	0
WEST	17.9	41.4	0	0	0	0	0	0	123	2196	5095	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SKYLT.	30.6	101.2	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	4.7	0	0	0	0	0	0	0	0	0	20	481	93	0	0	0	45	1082	209	0	0	0	20	481	93
NET EXPOSED WALL	2.6	0.5	235	615	119	218	570	110	607	1588	307	333	871	168	70	183	35	197	515	100	0	0	0	0	0	0
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	332	1108	214	336	1122	217
EXPOSED CLG	1.4	0.7	0	0	0	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	2.2	1.1	0	0	0	0	0	0	10	22	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.2	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
BASEMENT/CRAWL HEAT LOSS			0			0			0			0			0			0						5663		
SLAB ON GRADE HEAT LOSS			0			0			0			0			0			0			0					
SUBTOTAL HT LOSS			1329			963			3806			1477			308			1598			1394			7444		
SUB TOTAL HT GAIN					1520			655			5413			372			209			309			468			468
LEVEL FACTOR / MULTIPLIER			0.30	0.46		0.30	0.46		0.30	0.46		0.30	0.46		0.30	0.46		0.30	0.46					0.50	0.81	
AIR CHANGE HEAT LOSS				606			439			1735			673			140			728						7203		
AIR CHANGE HEAT GAIN					109			47			389			27			15			22						67
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		0	0		0	0		0	0		0	0		0
HEAT GAIN APPLIANCES/LIGHTS					619			619			619			619			0			0			0			0
TOTAL HT LOSS BTU/H				1935			1402			5541			2151			449			2326		1394			14647		
TOTAL HT GAIN x 1.3 BTU/H					2922			1717			8347			1323			291			431			608			696

RECEIVED
TOWN OF MILTON
MAR 29, 2017
JUNIPER 2
BUILDING DIVISION

TOWN OF MILTON
PLANNING AND DEVELOPMENT
JUNIPER 2 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

TOTAL HEAT GAIN BTU/H: 36394 TONS: 3.03 LOSS DUE TO VENTILATION LOAD BTU/H: 2354 STRUCTURAL HEAT LOSS: 44161 TOTAL COMBINED HEAT LOSS BTU/H: 46514

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

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SITE NAME: LECCO RIDGE
BUILDER: GREENPARK HOMES

TYPE: JUNIPER 2 DATE: Dec-16 GFA: 2710 LO# 71347

HEATING CFM	1131	COOLING CFM	1131
TOTAL HEAT LOSS	44,161	TOTAL HEAT GAIN	35,939
AIR FLOW RATE CFM	25.61	AIR FLOW RATE CFM	31.47

furnace pressure	0.6
furnace filter	0.05
a/c coil pressure	0.2
available pressure for s/a & r/a	0.35
plenum pressure s/a	0.18
max s/a dif press. loss	0.02
min adjusted pressure s/a	0.16
r/a pressure	0.17
r/a grille press. Loss	0.02
adjusted pressure r/a	0.15

#AMANA
AMEC960603BNA 60
FAN SPEED
LOW
MEDLOW
MEDIUM
MEDIUM HIGH
HIGH 1131

AFUE = 96.0 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = **57,600**

DESIGN CFM = **1131**
CFM @ .6 " E.S.P.

TEMPERATURE RISE 47 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	8	4
R/A	0	0	4	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	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-2	HALL	MBR	ENS-2	OFF	DIN	KT/FM	KT/FM	KT/FM	LAUN	W/R	FOY	BED-3	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.37	1.48	0.83	1.29	1.54	1.02	0.54	1.29	1.28	1.37	0.76	1.93	1.40	1.85	1.85	1.85	2.15	0.45	2.33	1.54	4.01	4.01	4.01	4.01
CFM PER RUN HEAT	35	38	21	33	39	26	14	33	33	35	19	50	36	47	47	47	55	11	60	39	103	103	103	103
RM GAIN MBH.	2.08	1.49	0.90	2.28	2.56	1.91	0.37	2.28	0.78	2.08	0.33	2.92	1.72	2.78	2.78	2.78	1.32	0.29	0.43	2.56	0.33	0.33	0.33	0.33
CFM PER RUN COOLING	65	47	28	72	81	60	12	72	25	65	11	92	54	88	88	88	42	9	14	81	10	10	10	10
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.16	0.16	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	57	28	51	43	41	18	26	49	49	69	43	26	8	40	32	48	37	17	35	43	37	41	15	25
EQUIVALENT LENGTH	170	200	150	130	180	180	170	140	200	180	160	110	100	170	110	190	130	140	110	140	110	100	80	120
TOTAL EFFECTIVE LENGTH	227	228	201	173	221	198	196	189	249	249	203	136	108	210	142	238	167	157	145	183	147	141	95	145
ADJUSTED PRESSURE	0.08	0.08	0.09	0.1	0.07	0.09	0.09	0.09	0.07	0.07	0.08	0.12	0.16	0.08	0.11	0.07	0.1	0.11	0.12	0.09	0.11	0.11	0.17	0.11
ROUND DUCT SIZE	5	4	4	5	**6**	5	4	5	4	5	4	5	4	**6**	5	**6**	4	4	4	5	**6**	**6**	**6**	**6**
HEATING VELOCITY (ft/min)	257	436	241	242	199	191	161	242	379	257	218	367	413	240	345	240	631	126	688	286	525	525	525	525
COOLING VELOCITY (ft/min)	477	539	321	529	413	441	138	529	287	477	126	675	620	449	646	449	482	103	161	595	51	51	51	51
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	A	B	D	D	C	B	C	D	D	A	D	C	D	A	A	A	B	C	C	C	B	B	D	C

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	

RECEIVED
TOWN OF MILTON
MAR 29, 2017
JUNIPER 2
BUILDING DIVISION

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	211	0.07	8.1	8	x	8	475	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	536	0.07	11.5	16	x	8	603	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	316	0.07	9.4	10	x	8	569	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	594	0.07	11.9	18	x	8	594	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	1046	0.06	15.3	28	x	8	672
TRUNK Y	0	0.06	0	0	x	8	0
TRUNK Z	0	0.06	0	0	x	8	0
DROP	1131	0.06	15.8	24	x	10	679

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	85	85	165	185	345	85	0	0	0	0	0	0	0	0	0	181
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.	48	45	45	36	19	31	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	180	165	155	160	135	175	0	0	0	0	0	0	0	0	0	145
TOTAL EFFECTIVE LH	228	210	200	196	154	206	1	1	1	1	1	1	1	1	1	159
ADJUSTED PRESSURE	0.06	0.07	0.07	0.08	0.10	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.09
ROUND DUCT SIZE	6	5.8	7.4	7.5	8.9	5.8	0	0	0	0	0	0	0	0	0	7.2
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	30	14	0	0	0	0	0	0	0	0	0	14

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

HVAC DESIGNS LTD.

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Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

TYPE: JUNIPER 2 LO # 71347
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	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
More than 5 - Part 6	TOTAL	79.5	cfm

SUPPLEMENTAL VENTILATION CAPACITY 9.32.3.5.

Total Ventilation Capacity	180.2	cfm
Less Principal Ventil. Capacity	86	cfm
Required Supplemental Capacity	94.2	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	0.35

SUPPLEMENTAL FANS

Location	Model	NUTONE cfm	HVI	Sones
ENS	QTXEN050C	50	✓	0.3
BATH	QTXEN050C	50	✓	0.3
ENS-2	QTXEN050C	50	✓	0.3
W/R	QTXEN050C	50	✓	0.3

HEAT RECOVERY VENTILATOR 9.32.3.11.

Model: VANEE 40H+

86 cfm high 37 cfm low

65 % 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 2
BUILDING DIVISION

BUILDER: GF

Name:

Address:

City:

Telephone #:

TOWN OF MILTON
PLANNING AND DEVELOPMENT
JUNIPER 2 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

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: December-16

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: JUNIPER 2 **BUILDER:** GREENPARK HOMES
SFQT: 2710 **LO#** 71347 **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

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 (ft^3):	36270.0	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:	6.0 ft
LENGTH: 47.0 ft	WIDTH: 38.0 ft	EXPOSED PERIMETER:	170.0 ft

2012 OBC - COMPLIANCE PACKAGE

Component	Compliance Package ENERGYSTAR
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 + 5
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

RECEIVED
TOWN OF MILTON
MAR 29, 2017
JUNIPER 2
BUILDING DIVISION

INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE

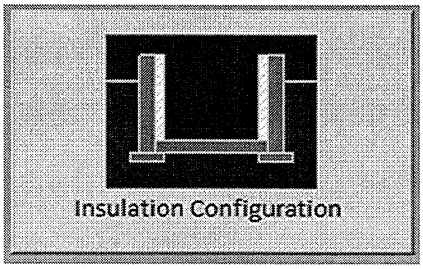
Michael O'Rourke

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):	**14.3**	 Insulation Configuration
Floor Width (m):	**11.6**	
Exposed Perimeter (m):	**0.0**	
Wall Height (m):	**2.7**	
Depth Below Grade (m):	**1.8**	
Window Area (m^2):	**2.4**	
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):	**1659**	

TYPE: JUNIPER 2
LO# 71347

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TOWN OF MILTON
MAR 29, 2017
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BUILDING DIVISION

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:	Heavy
Flue:	Heavy
Highest Ceiling Height (m):	6.71
Building Configuration	
Type:	Detached
Number of Stories:	Two
Foundation:	Full
House Volume (m^3):	1027.1
Air Leakage/Ventilation	
Air Tightness Type:	Present (1961-) (3.57 ACH)
Custom BDT Data:	ELA @ 10 Pa. 1369.1 cm^2
	3.57 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):	**0.307**
Cooling Air Leakage Rate (ACH/H):	**0.105**

TYPE: JUNIPER 2
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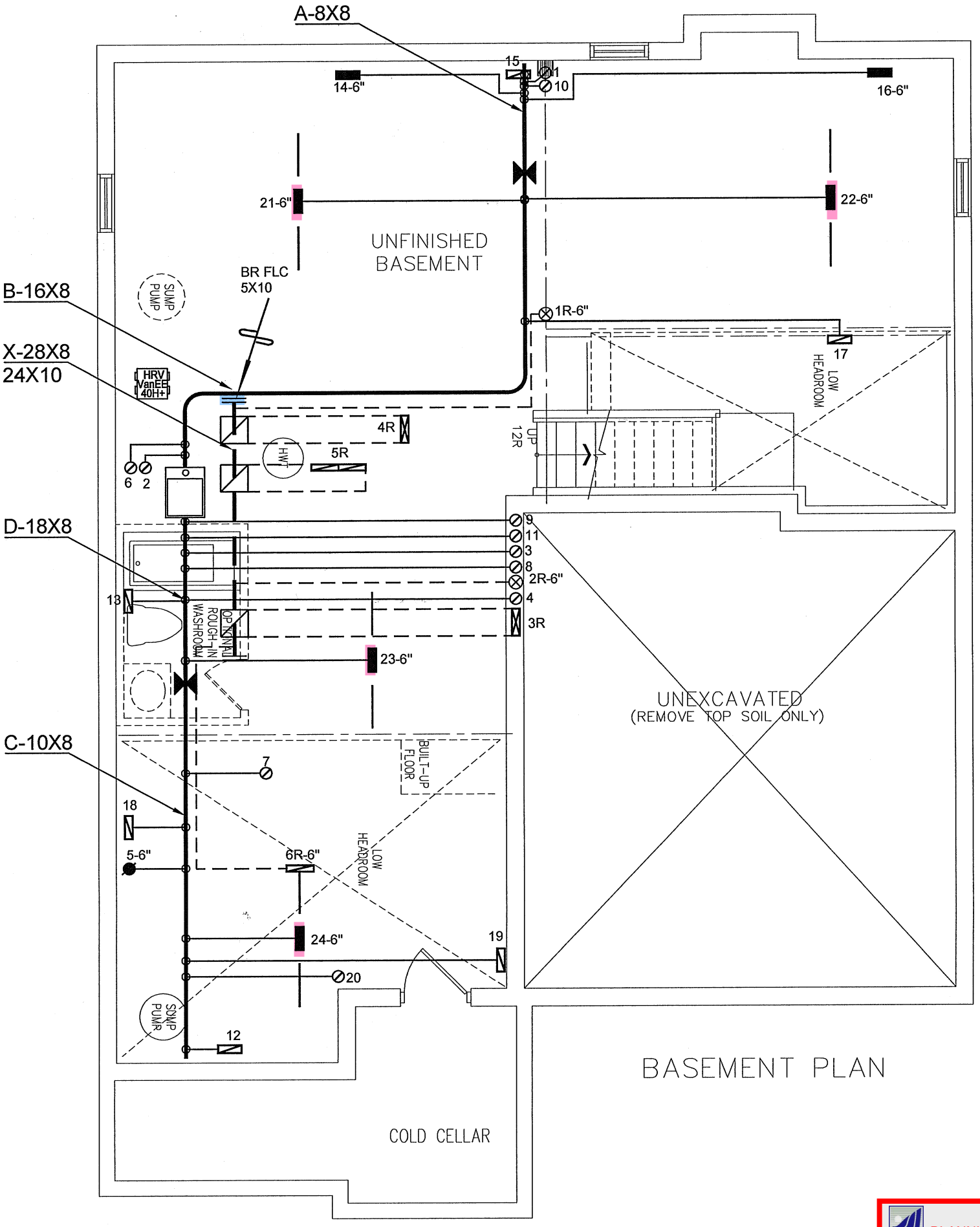

BASEMENT PLAN

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

TOWN OF MILTON
PLANNING AND DEVELOPMENT
JUNIPER 2 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

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.

RECEIVED
TOWN OF MILTON
MAR 29, 2017
JUNIPER 2
BUILDING DIVISION

CSA-F280-12
ENERGY STAR

HVAC LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE
	FLOOR 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

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Client
GREENPARK HOMES

Project Name
LECCO RIDGE
MILTON, ONTARIO

JUNIPER 2 — 2710 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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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 46514 BTU/H

UNIT DATA

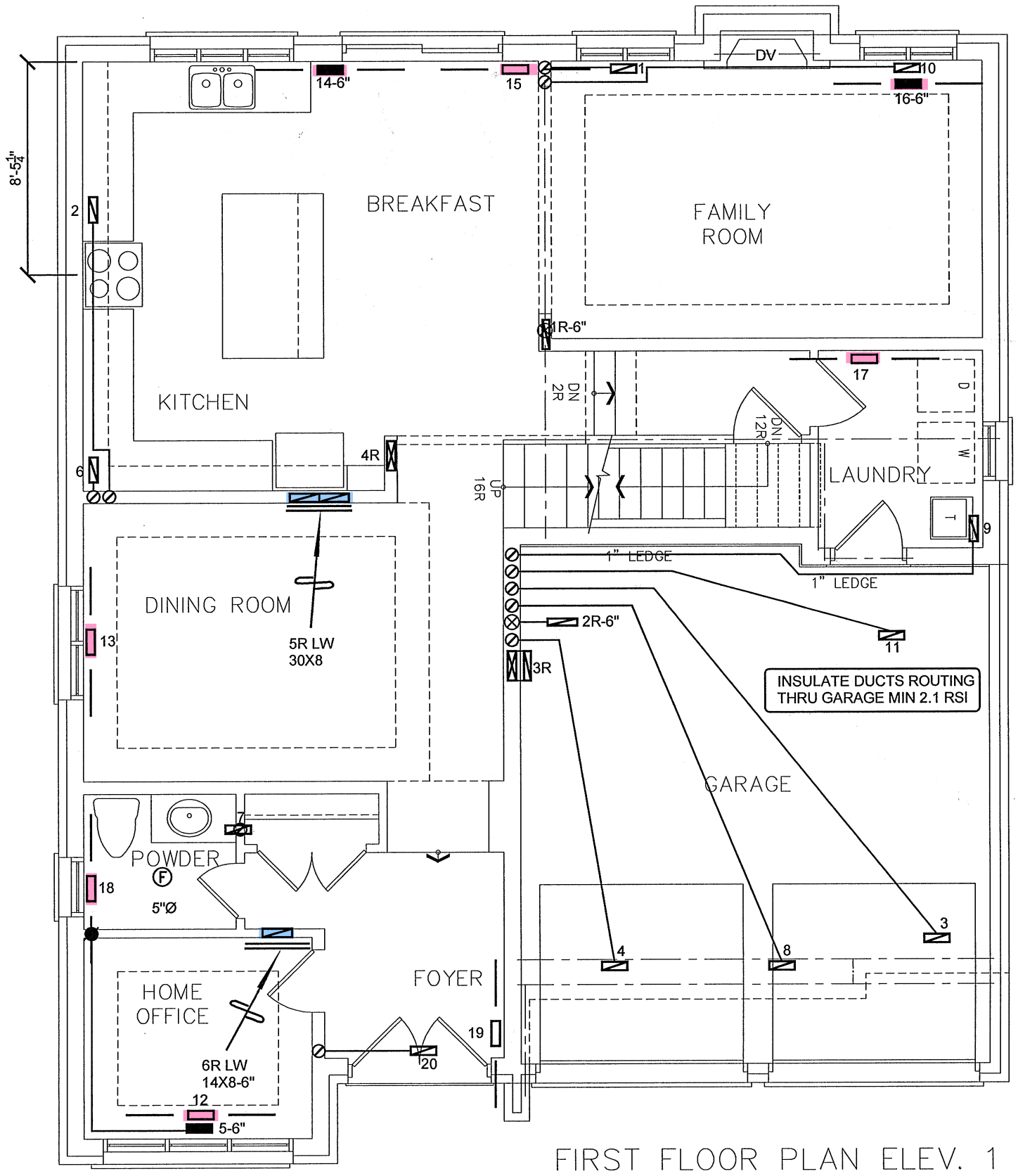
MAKE	AMANA	
MODEL	AMEC960603BNA	
INPUT	60	MBTU/H
OUTPUT	57.6	MBTU/H
COOLING	3.0	TONS
FAN SPEED	1131	cfm @ 0.6" w.c.

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	12	4	3
1ST FLOOR	8	2	2
BASEMENT	4	1	0

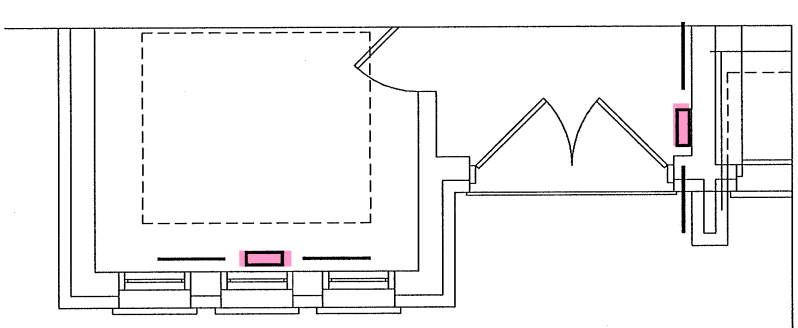
ALL S/A DIFFUSERS 4"x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A

Sheet Title
BASEMENT HEATING LAYOUT

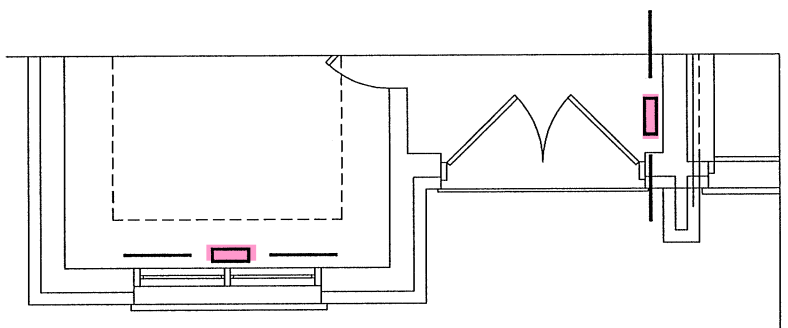
Date DEC/2016
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 71347



FIRST FLOOR PLAN ELEV. 1



FIRST FLOOR PLAN ELEV. 2



FIRST FLOOR PLAN ELEV. 3

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Project Name
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JUNIPER 2 2710 sqft

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TOWN OF MILTON
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JUNIPER 2 MODEL
BUILDING: REVIEWED
SCOTT SHERRIFFS APR 7, 2017
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Sheet Title
FIRST FLOOR HEATING LAYOUT

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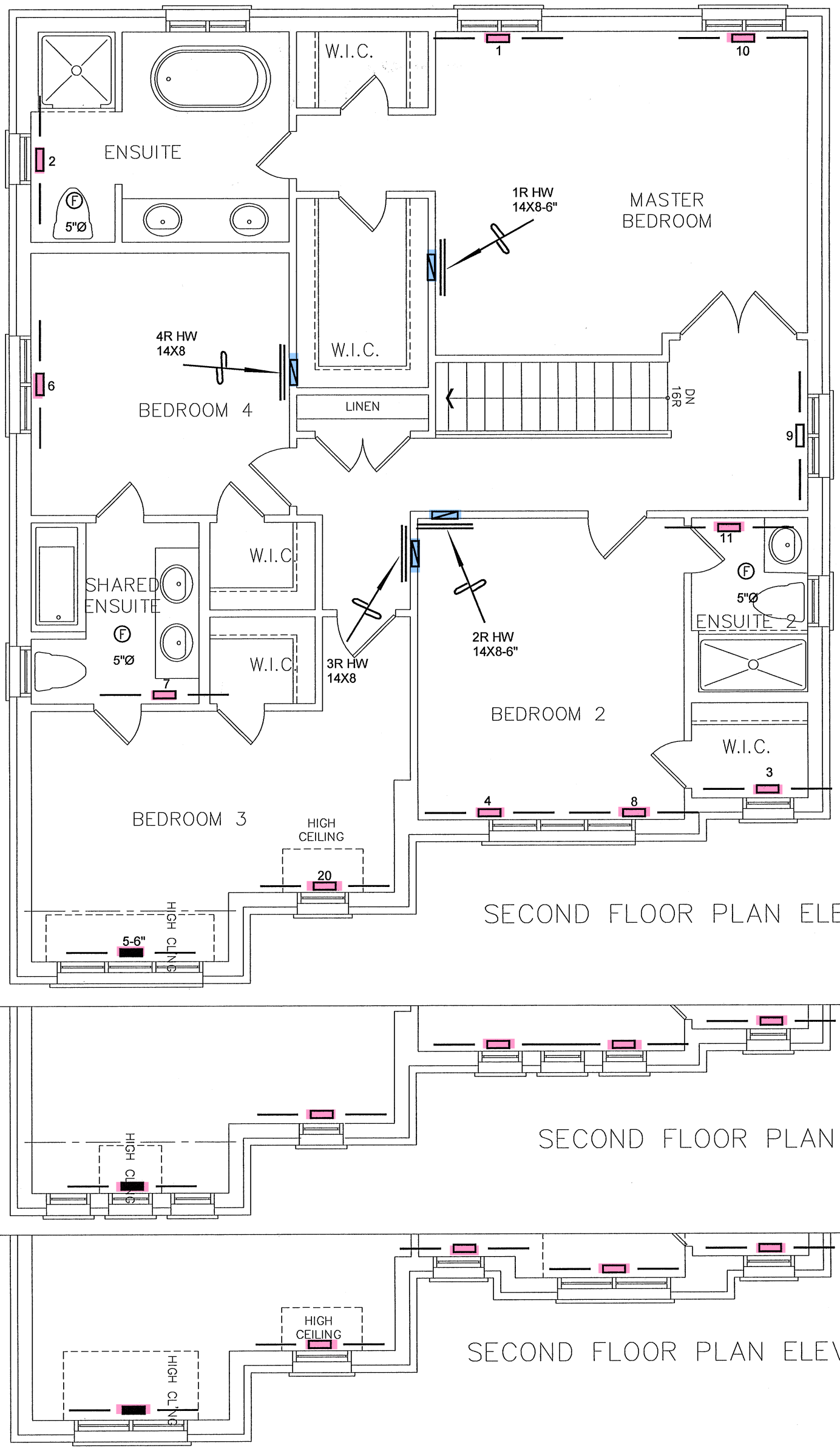
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 71347



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Sheet Title
SECOND FLOOR HEATING LAYOUT

Date	DEC/2016
Scale	3/16" = 1'-0"
BCIN# 19669	
LO#	71347