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: SECONDO LOT 12 DATE: Oct-18 WINTER NATURAL AIR CHANGE RATE 0.267 HEAT LOSS ΔT °F. 81 CSA-F280-12
BUILDER: GREENPARK HOMES TYPE: GLENWAY 12A GFA: 2958 LO# 80562 SUMMER NATURAL AIR CHANGE RATE 0.083 HEAT GAIN ΔT °F. 14 ENERGY STAR

ROOM USE			MBR			ENS				BED-2			BED-3			BED-4			BATH			ALC				ENS-4			B-BATH			LAUN		
EXP. WALL			36			28				15			23			15			23			23				12			9			12		
CLG. HT.			9			9				9			10			9			9			9				9			9			9		
	FACTORS																																	
GRS.WALL AREA	LOSS	GAIN	324			252				135			230			135			207			207				108			54			72		
GLAZING			LOSS		GAIN	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		9	183	143	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0
EAST	20.4	41.5	0	0	0	0	0	0		0	0	0	44	895	1825	0	0	0	10	204	415	0	0	0		0	0	0	0	0	0	0	0	0
SOUTH	20.4	24.8	0	0	0	17	346	422		0	0	0	0	0	0	36	733	893	0	0	0	21	427	521		23	468	571	0	0	0	0	0	0
WEST	20.4	41.5	36	733	1493	16	326	663		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0
SKYLT.	34.2	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	0	0	0
DOORS	27.0	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	0	0	0
NET EXPOSED WALL	3.8	0.6	288	1082	186	219	823	142		126	474	81	186	699	120	99	372	64	197	740	127	186	699	120		85	319	55	0	0	0	0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.9	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	27	104	18	36	139	24
EXPOSED CLG	1.6	0.7	353	567	251	226	363	160		240	385	170	204	327	145	143	229	101	90	144	64	49	79	35		99	159	70	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	4.0	1.8	0	0	0	0	0	0		0	0	0	30	119	53	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	3.3	0.6	0	0	0	0	0	0		10	33	6	225	745	128	10	33	6	90	298	51	10	33	6		0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0			0				0			0			0			0			0				0			132			176		
SLAB ON GRADE HEAT LOSS			0			0				0			0			0			0			0				0			0			0		
SUBTOTAL HT LOSS			2381			1857				1075			2786			1367			1386			1238				946			236			315		
SUB TOTAL HT GAIN					1930			1387				400			2270			1065			657			682			696			18			24
LEVEL FACTOR / MULTIPLIER			0.20	0.25		0.20	0.25			0.20	0.25		0.20	0.25		0.20	0.25		0.20	0.25		0.20	0.25			0.20	0.25		0.50	0.89		0.50	0.89	
AIR CHANGE HEAT LOSS				585			456				264			684			336			340			304				232			210			281		
AIR CHANGE HEAT GAIN					118			86				24			139			66			40			42			42			1			1
DUCT LOSS				0			0				134			347			170			173			154			0			0			0		
DUCT GAIN					0			0				122			321			193			70			128			0			0			0	
HEAT GAIN PEOPLE	240		2		480	0		0		1		240	1		240	1		240	0		0	0		0		0		0	0		0	0		0
HEAT GAIN APPLIANCES/LIGHTS					560			0				560			560			560			0			560			0			0			560
TOTAL HT LOSS BTU/H				2966			2313				1473			3817			1873			1899			1696			1179			447			596		
TOTAL HT GAIN x 1.3 BTU/H					4013			1914				1752			4589			2759			997			1835			960			25			761

ROOM USE			LV/DN			KT/FM			OFF			FOY			MUD			WOB			BAS		
EXP. WALL			30			70			24			18			30			54			119		
CLG. HT.			10			10			19			10			11			9			9		
	FACTORS																						
GRS.WALL AREA	LOSS	GAIN	300			700			456			180			330			486			714		
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	41.5	0	0	0	0	0	0	63	1282	2612	0	0	0	0	0	0	0	0	0	5	102	207
SOUTH	20.4	24.8	62	1262	1539	28	570	695	40	814	993	24	488	596	0	0	0	0	0	0	10	204	248
WEST	20.4	41.5	0	0	0	96	1954	3981	0	0	0	0	0	0	0	0	0	34	692	1410	0	0	0
SKYLT.	34.2	101.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	27.0	4.7	0	0	0	0	0	0	0	0	0	21	568	98	20	541	93	20	541	93	20	541	93
NET EXPOSED WALL	3.8	0.6	238	894	164	576	2165	372	353	1327	228	135	507	87	310	1165	200	432	1624	279	0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.9	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	357	1376	237
EXPOSED CLG	1.6	0.7	0	0	0	0	0	0	168	270	119	0	0	0	0	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	4.0	1.8	0	0	0	0	0	0	0	0	0	73	289	128	16	69	26	0	0	0	0	0	0
EXPOSED FLOOR	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
BASEMENT/CRAWL HEAT LOSS				0			0			0			0			0						2541	
SLAB ON GRADE HEAT LOSS				0			0			0			0			0							
SUBTOTAL HT LOSS				2156			4688			3692			1853			1765			812				
SUB TOTAL HT GAIN					1692			5048			3952			908			320			3669			4763	
LEVEL FACTOR / MULTIPLIER			0.30	0.34		0.30	0.34		0.30	0.34										1782			785
AIR CHANGE HEAT LOSS				731			1590			1253		0.30	0.34		0.30	0.34					0.50	0.89	
AIR CHANGE HEAT GAIN					103			308			241		629			599						7512	
DUCT LOSS				0			0			0				55			20						157
DUCT GAIN					0			0			0		0			0						0	
HEAT GAIN PEOPLE	240		0		0	0		0	0		0			0			0						0
HEAT GAIN APPLIANCES/LIGHTS					560			560			560	0		0	0		0	0		0	0		0
TOTAL HT LOSS BTU/H				2888			6279			4945			2482			2364			4481			12276	
TOTAL HT GAIN x 1.3 BTU/H					3062			7691			6180			1253			441			2317			1952

TOTAL HEAT GAIN BTU/H: 43085 TONS: 3.59 LOSS DUE TO VENTILATION LOAD BTU/H: 3407 STRUCTURAL HEAT LOSS: 53973 TOTAL COMBINED HEAT LOSS BTU/H: 57380

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.

Michael O'Rourke

INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

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SITE NAME: SECONDO
BUILDER: GREENPARK HOMES

LOT 12
TYPE: GLENWAY 12A

DATE: Oct-18

GFA: 2958 LO# 80562

HEATING CFM	1504	COOLING CFM	1504
TOTAL HEAT LOSS	53.973	TOTAL HEAT GAIN	42.499
AIR FLOW RATE CFM	27.87	AIR FLOW RATE CFM	35.39

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	0.03
min adjusted pressure s/a	0.15
r/a pressure	0.17
r/a grille press. Loss	0.02
adjusted pressure r/a	0.15

#*GOODMAN
GMEC960804CNA 80

AFUE = 96 %
INPUT (BTU/H) = 80,000
OUTPUT (BTU/H) = 76,800

FAN SPEED	
LOW	
MEDLOW	
MEDIUM	
MEDIUM HIGH	1504
HIGH	1615

DESIGN CFM = 1504 CFM @ .6 " E.S.P.

TEMPERATURE RISE 47 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	10	10	6
R/A	0	0	5	3	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	4	5	6	7	8	9	10	11	12	13	14	15	16	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	BED-2	BED-3	BED-4	BATH	ALC	BED-3	MBR	ENS-4	LV/DN	KT/FM	KT/FM	KT/FM	OFF	MUD	FOY	KT/FM	BAS	B-BATH	BAS	BAS
RM LOSS MBH.	1.48	2.31	1.47	1.91	1.87	1.90	1.70	1.91	1.48	1.18	1.44	1.57	1.57	1.57	2.47	2.36	2.48	1.57	4.19	0.45	4.19	4.19
CFM PER RUN HEAT	41	64	41	53	52	53	47	53	41	33	40	44	44	44	69	66	69	44	117	12	117	117
RM GAIN MBH.	2.01	1.91	1.75	2.29	2.76	1.00	1.84	2.29	2.01	0.96	1.53	1.92	1.92	1.92	3.09	0.44	1.25	1.92	1.07	0.02	1.07	1.07
CFM PER RUN COOLING	71	68	62	81	98	35	65	81	71	34	54	68	68	68	109	16	44	68	38	1	38	38
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.15	0.17	0.17	0.17	0.15	0.17	0.15	0.15
ACTUAL DUCT LGH.	27	34	57	50	40	57	44	53	33	48	24	30	21	16	53	14	43	26	55	19	29	47
EQUIVALENT LENGTH	120	130	170	140	200	180	130	150	200	200	190	130	120	120	120	120	150	140	160	120	170	120
TOTAL EFFECTIVE LENGTH	147	164	227	190	240	237	174	203	233	248	214	160	141	136	173	134	193	166	215	139	199	167
ADJUSTED PRESSURE	0.12	0.1	0.08	0.09	0.07	0.07	0.1	0.08	0.07	0.07	0.08	0.11	0.12	0.13	0.09	0.13	0.09	0.1	0.07	0.12	0.08	0.09
ROUND DUCT SIZE	5	5	5	5	6	5	5	5	5	4	5	5	5	5	6	5	5	5	6	4	6	6
HEATING VELOCITY (ft/min)	301	470	301	389	265	389	345	389	301	379	294	323	323	323	352	485	507	323	597	138	597	597
COOLING VELOCITY (ft/min)	521	499	455	595	500	257	477	595	521	390	396	499	499	499	556	117	323	499	194	11	194	194
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	4X10	3X10	4X10	4X10
TRUNK	A	B	C	E	F	E	E	E	A	E	F	B	B	A	D	C	D	A	B	A	F	D

RUN #	25	26	27	28
ROOM NAME	OFF	LV/DN	LAUN	BAS
RM LOSS MBH.	2.47	1.44	0.60	4.19
CFM PER RUN HEAT	69	40	17	117
RM GAIN MBH.	3.09	1.53	0.76	1.07
CFM PER RUN COOLING	109	54	27	38
ADJUSTED PRESSURE	0.15	0.17	0.17	0.15
ACTUAL DUCT LGH.	45	27	20	32
EQUIVALENT LENGTH	120	170	180	150
TOTAL EFFECTIVE LENGTH	165	197	200	182
ADJUSTED PRESSURE	0.09	0.09	0.09	0.08
ROUND DUCT SIZE	6	5	4	6
HEATING VELOCITY (ft/min)	352	294	195	597
COOLING VELOCITY (ft/min)	556	396	310	194
OUTLET GRILL SIZE	4X10	3X10	3X10	4X10
TRUNK	D	F	C	A

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	299	0.07	9.2	10	x	8	538	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	269	0.07	8.9	10	x	8	484	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	692	0.07	12.6	18	x	8	692	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	324	0.09	8.9	10	x	8	583	TRUNK J	0	0.00	0	0	x	8	0
TRUNK E	563	0.07	11.7	16	x	8	633	TRUNK K	0	0.00	0	0	x	8	0
TRUNK F	812	0.07	13.4	20	x	8	731	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	0.05	0	0	x	8	0
TRUNK P	0	0.05	0	0	x	8	0
TRUNK Q	0	0.05	0	0	x	8	0
TRUNK R	0	0.05	0	0	x	8	0
TRUNK S	0	0.05	0	0	x	8	0
TRUNK T	0	0.05	0	0	x	8	0
TRUNK U	0	0.05	0	0	x	8	0
TRUNK V	0	0.05	0	0	x	8	0
TRUNK W	0	0.05	0	0	x	8	0
TRUNK X	1504	0.05	18.4	32	x	10	677
TRUNK Y	565	0.05	12.7	18	x	8	565
TRUNK Z	610	0.05	13.1	20	x	8	549
DROP	1504	0.05	18.4	24	x	14	645

RETURN AIR #	1	2	3	4	5	6	7	8								BR
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AIR VOLUME	125	115	115	130	300	265	135	115	0	0	0	0	0	0	0	204
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.	40	70	63	66	28	29	53	64	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	225	255	255	195	205	210	220	255	0	0	0	0	0	0	0	185
TOTAL EFFECTIVE LH	265	325	318	261	233	239	273	319	1	1	1	1	1	1	1	199
ADJUSTED PRESSURE	0.06	0.05	0.05	0.06	0.06	0.06	0.05	0.05	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.07
ROUND DUCT SIZE	6.9	7	7	7	9.6	9.2	7.5	7	0	0	0	0	0	0	0	8
INLET GRILL SIZE	8	8	8	8	8	8	8	8	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	30	14	14	0	0	0	0	0	0	0	24

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Michael O'Rourke

INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

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TYPE: GLENWAY 12A
SITE NAME: SECONDO

LO # 80562
LOT 12

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	6	@ 10.6 cfm	63.6	cfm
Other Rooms	6	@ 10.6 cfm	63.6	cfm
Table 9.32.3.A.		TOTAL	201.4	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	201.4	cfm
Less Principal Ventil. Capacity	155	cfm
Required Supplemental Capacity	46.4	cfm

PRINCIPAL EXHAUST FAN CAPACITY

Model: VANEE 65H Location: BSMT

155.0 cfm 3.0 sones [✓] HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

CFM		ΔT °F		FACTOR		% LOSS
155.0 CFM	X	81 F	X	1.08	X	0.25

SUPPLEMENTAL FANS

Location	Model	NUTONE cfm	HVI	Sones
ENS	QTXEN050C	50	✓	0.3
BATH	QTXEN050C	50	✓	0.3
ENS-4	QTXEN050C	50	✓	0.3
LAUN	QTXEN050C	50	✓	0.3

HEAT RECOVERY VENTILATOR — 9.32.3.11.

Model: VANEE 65H

155 cfm high 64 cfm low

75 % Sensible Efficiency @ 32 deg F (0 deg C) [✓] HVI Approved

LOCATION OF INSTALLATION

Lot: Concession

Township Plan:

Address

Roll # Building Permit #

BUILDER: GREENPARK HOMES

Name:

Address:

City:

Telephone #: Fax #:

INSTALLING CONTRACTOR

Name:

Address:

City:

Telephone #: Fax #:

DESIGNER CERTIFICATION

I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.

Name: HVAC Designs Ltd.

Signature: Michael O'Rourke.

HRAI # 001820

Date: October-18

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:	GLENWAY 12A		LOT 12	**BUILDER:**	GREENPARK HOMES
SFQT:	2958	**LO#**	80562	**SITE:**	SECONDO

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-9	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:	2.50	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	TIGHT	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft^3):	41132.0	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: 59.0 ft	WIDTH: 38.0 ft	EXPOSED PERIMETER:	140.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	54.0 ft

2012 OBC - COMPLIANCE PACKAGE **Component**	**Compliance Package ENERGYSTAR**	
	Nominal	**Min. Eff.**
Ceiling with Attic Space Minimum RSI (R)-Value	50	50.72
Ceiling Without Attic Space Minimum RSI (R)-Value	31	20.54
Exposed Floor Minimum RSI (R)-Value	31	24.58
Walls Above Grade Minimum RSI (R)-Value	20 + 5	21.66
Basement Walls Minimum RSI (R)-Value	20	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	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

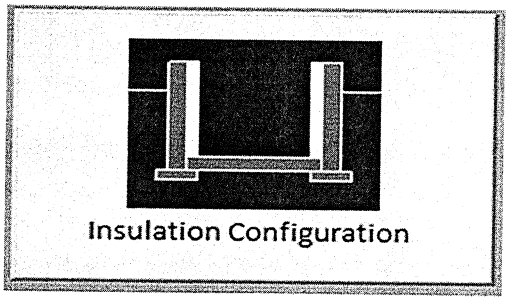
HVAC Designs Ltd.
375 Finley Ave, Suite 202
Ajax ON, L1S 2E2
905-619-2300

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

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

Foundation Dimensions		
Floor Length (m):	5.5	
Floor Width (m):	11.6	
Exposed Perimeter (m):	42.7	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.58	
Window Area (m^2):	1.4	
Door Area (m^2):	1.9	


Insulation Configuration

Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):	**835**	

TYPE: GLENWAY 12A LOT 12
LO# 80562

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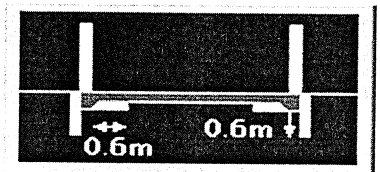
Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Bradford	
Site Description		
Soil Conductivity:	Normal conductivity: dry dand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Length (m):	**2.4**	 Insulation Configuration
Width (m):	**11.6**	
Exposed Perimeter (m):	**16.5**	
Radiant Slab		
Heated Fraction of the Slab:	**0**	
Fluid Temperature (°C):	**33**	
Design Months		
Heating Month	**1**	
Results		
Heating Load (Watts):	**238**	

TYPE: GLENWAY 12A LOT 12
LO# 80562

HVAC Designs Ltd.
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Ajax ON, L1S 2E2
905-619-2300

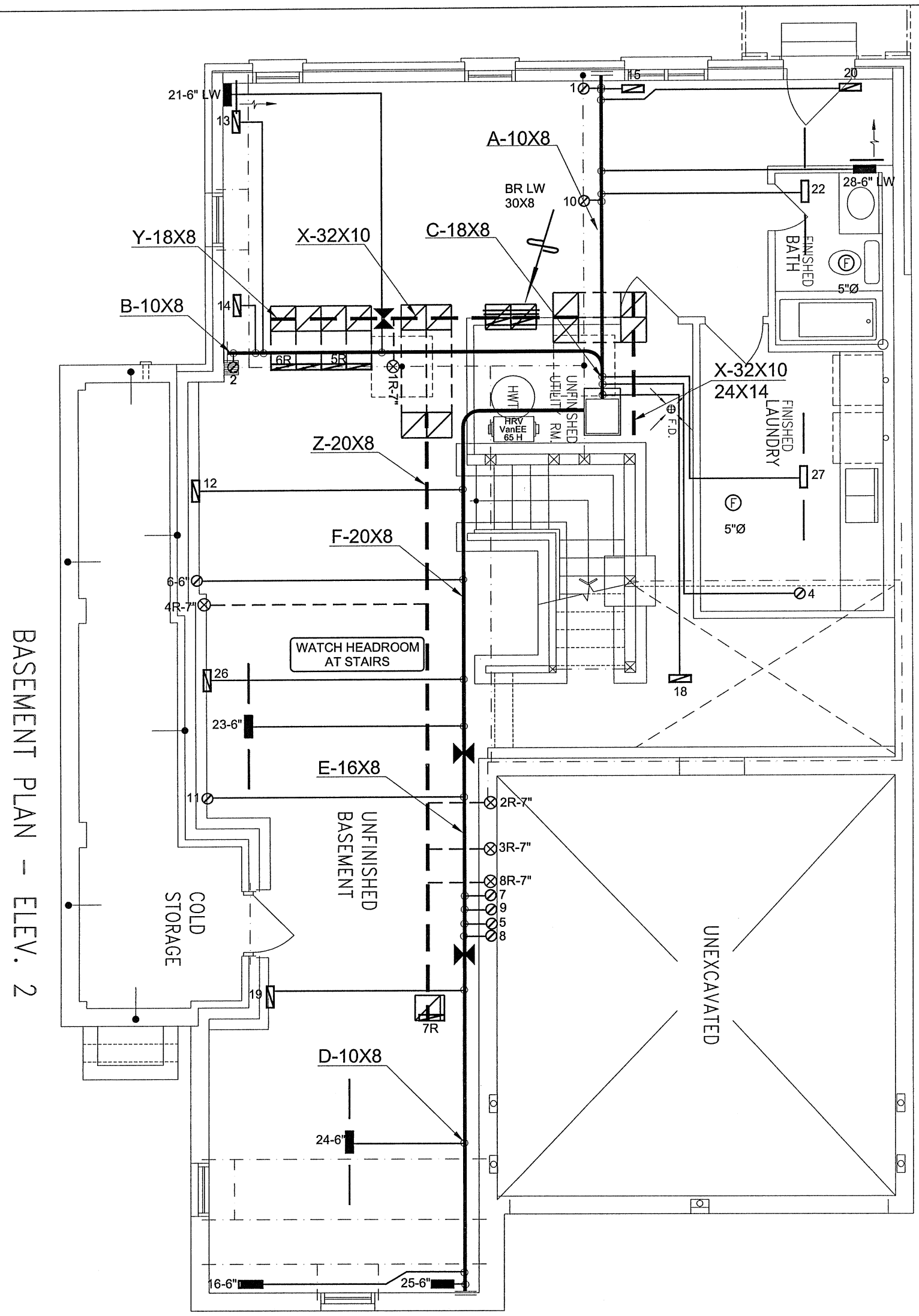
Air Infiltration Residential Load Calculator

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):	8.53
Building Configuration	
Type:	Detached
Number of Stories:	Two
Foundation:	Full
House Volume (m^3):	1164.7
Air Leakage/Ventilation	
Air Tightness Type:	Energy Star Detached (2.5 ACH)
Custom BDT Data:	ELA @ 10 Pa. 1087.3 cm^2
	2.50 ACH @ 50 Pa
Mechanical Ventilation (L/s):	Total Supply 73.2 / Total Exhaust 73.2
Flue Size	
Flue #:	#1 #2 #3 #4
Diameter (mm):	0 0 0 0
Natural Infiltration Rates	
Heating Air Leakage Rate (ACH/H):	**0.267**
Cooling Air Leakage Rate (ACH/H):	**0.083**

TYPE: GLENWAY 12A LOT 12

LO# 80562



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.

ENERGY STAR

LOT 12 | **CSA-F280-12**

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
SECONDO
EAST GWILLIMBURY, ONTARIO

LOT 12
GLENWAY 12A 2958 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
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.

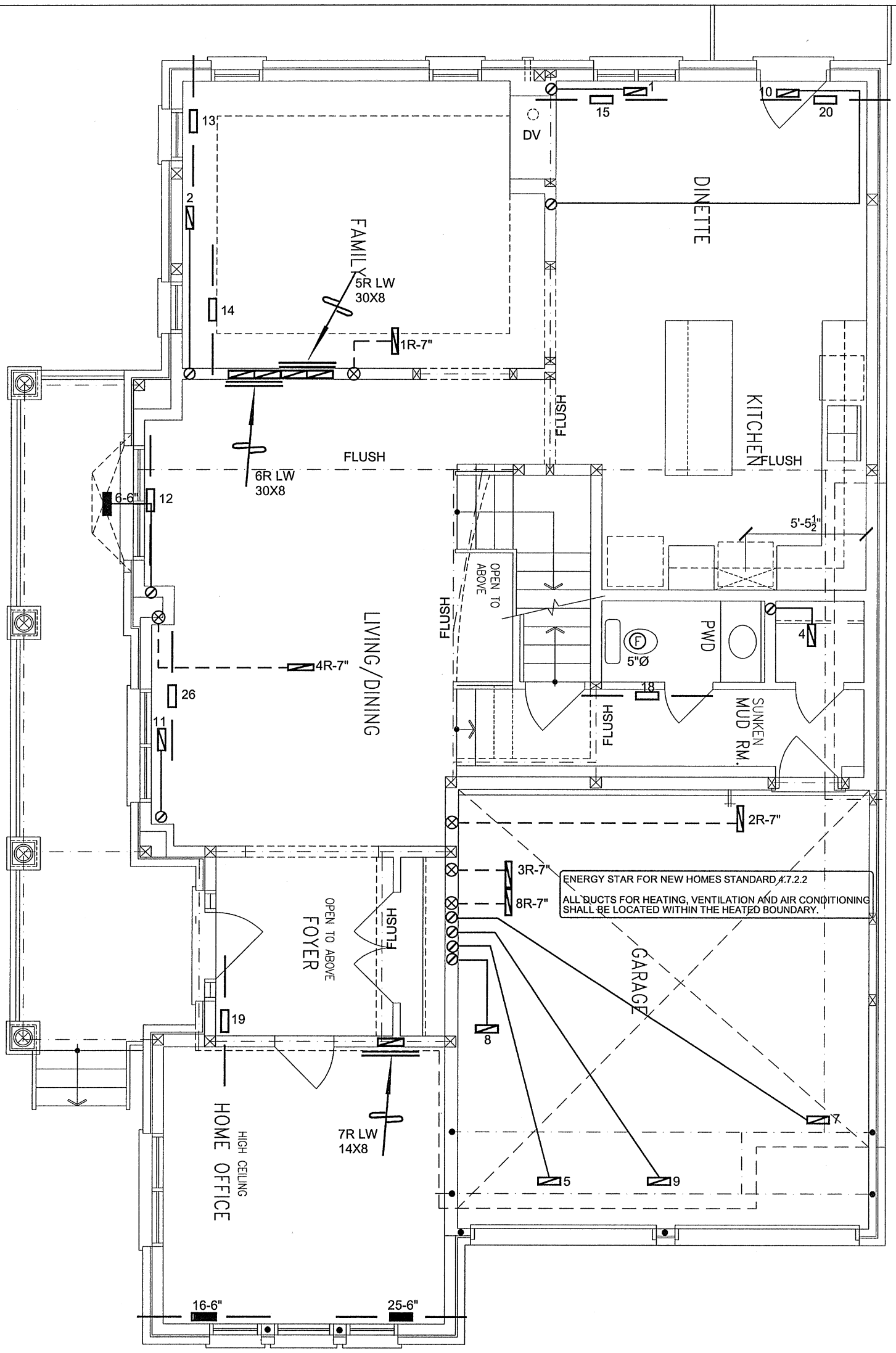
HEAT LOSS 57380 BTU/H	
UNIT DATA	
MAKE	GOODMAN
MODEL	GMEC960804CNA
INPUT	80 MBTU/H
OUTPUT	76.8 MBTU/H
COOLING	3.5 TONS
FAN SPEED	1504 cfm @ 0.6" w.c.

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	10	5	3
1ST FLOOR	10	3	3
BASEMENT	6	1	2

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 OCT/2018
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 80562



GROUND FLOOR PLAN – ELEV. 2

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ENERGY STAR

LOT 12 | **CSA-F280-12**

HVAC LEGEND

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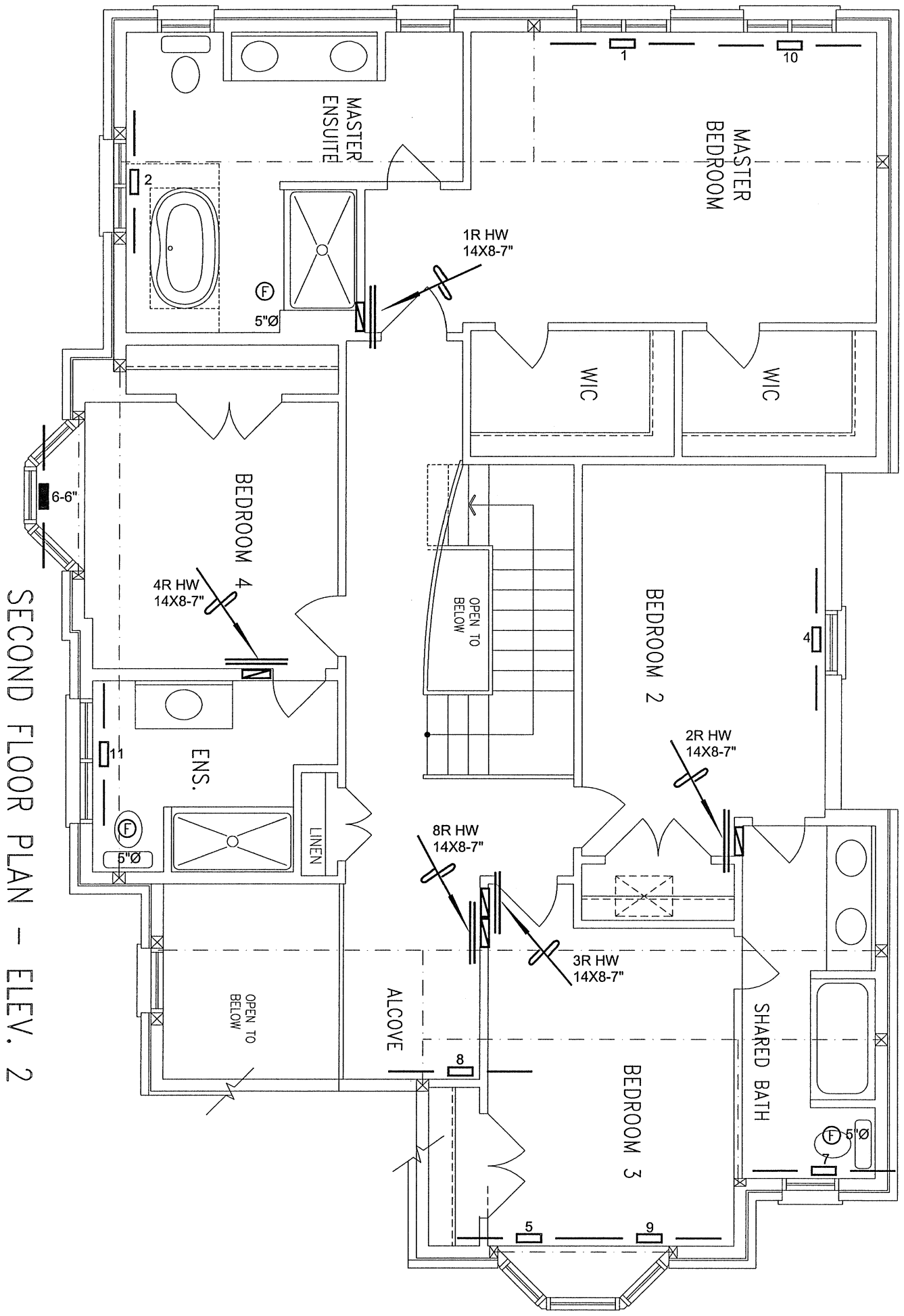
Sheet Title
FIRST FLOOR HEATING LAYOUT

Date OCT/2018
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 80562



SECOND FLOOR PLAN – ELEV. 2

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ENERGY STAR

LOT 12 | **CSA-F280-12**

HVAC LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
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SECOND FLOOR HEATING LAYOUT

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