

SITE NAME: MINNISALE HOMES CORP			LOT 2			DATE: Oct-18			WINTER NATURAL AIR CHANGE RATE 0.325			HEAT LOSS AT °F. 74			CSA-F280-12													
BUILDER: GREENPARK HOMES			TYPE: GRANDBROOKE 2			GFA: 3089			LO# 80390			SUMMER NATURAL AIR CHANGE RATE 0.115			HEAT GAIN AT °F. 14			SB-12 PACKAGE A1										
ROOM USE			MBR		ENS		WIC		BED-2		BED-3		BED-4		ENS-2		WIC-2		ENS-3		ENS-4		WIC-3					
EXP. WALL			33		25		11		27		35		24		10		8		8		8		0					
CLG. HT.			9		9		9		11		11		9		9		9		9		9		9					
FACTORS																												
GRS.WALL AREA			297		225		99		297		385		216		90		72		72		72		0					
GLAZING			LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN					
NORTH			20.8	16.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
EAST			20.8	41.9	0	0	0	0	0	0	0	0	44	914	1843	40	831	1676	0	0	0	0	0	0				
SOUTH			20.8	25.2	0	0	0	0	0	0	0	0	0	0	0	32	665	808	0	0	0	9	187	227				
WEST			20.8	41.9	32	665	1340	14	291	588	0	0	0	0	0	0	0	0	0	0	0	9	187	227				
SKYLT.			36.4	102.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
DOORS			24.7	4.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
NET EXPOSED WALL			4.4	0.8	265	1155	218	211	919	173	99	431	81	253	1102	208	345	1503	284	184	802	151	90	392	74			
NET EXPOSED BSMT WALL ABOVE GR			3.5	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
EXPOSED CLG			1.3	0.6	272	341	165	144	180	88	143	179	87	139	174	84	172	216	105	312	391	190	120	150	73			
NO ATTIC EXPOSED CLG			2.7	1.3	0	0	0	0	0	0	0	0	0	29	78	38	54	145	70	0	0	0	0	0	0			
EXPOSED FLOOR			2.5	0.5	40	100	19	0	0	0	0	0	0	225	580	105	80	199	38	0	0	0	40	100	19			
BASEMENT/CRAWL HEAT LOSS								0	0	0									0	0								
SLAB ON GRADE HEAT LOSS								0	0	0									0	0								
SUBTOTAL HT LOSS					2280		1391		611		2829		2894		1867		642		473		532		672		142			
SUB TOTAL HT GAIN						1742		847		168		2279		2172		1148		147		107		313		332		42		
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
AIR CHANGE HEAT LOSS					573		352		155		717		733		471		137		120		135		145		36			
AIR CHANGE HEAT GAIN						195		95		19		255		244		129		16		12		35		37		5		
DUCT LOSS					283		0		0		355		363		0		0		59		0		0		18			
DUCT GAIN						328		0		0		364		352		0		0		12		0		0		5		
HEAT GAIN PEOPLE			240	2		480	0	0	0	0	1	240	1	240	1	240	0	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS						866		0		0		866		866		866		866		0		0		0		0		0
TOTAL HT LOSS BTU/H					2116		1743		765		3900		3990		2328		680		653		686		717		196			
TOTAL HT GAIN x 1.3 BTU/H					4696		1225		243		5206		5035		3098		212		170		452		481		68			

ROOM USE		LIV/DIN	FAM	KIT	LAUN	FOY	MUD	WUB	BAS
EXP. WALL		32	46	34	7	59	25	24	192
CLG. HT.		10	10	10	10	11	12	9	9
FACTORS									
GRS.WALL AREA		320	460	340	70	649	300	216	1152
GLAZING		LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN
NORTH		20.8 16.3	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
EAST		20.8 41.9	0 0 0	0 0 0	0 0 0	7 145 293	0 0 0	0 0 0	0 0 0
SOUTH		20.8 25.2	46 956 1161	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	10 208 262
WEST		20.8 41.9	0 0 0	42 873 1759	0 0 0	0 0 0	0 0 0	0 0 0	6 104 209
SKYLT.		36.4 102.1	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
DOORS		24.7 4.7	0 0 0	24 592 112	0 0 0	40 986 186	20 493 93	40 986 186	0 0 0
NET EXPOSED WALL		4.4 0.8	274 1194 225	418 1821 344	316 1377 260	70 305 58	602 2623 495	280 1223 239	194 854 161
NET EXPOSED BMT WALL ABOVE GR		3.5 0.7	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	576 2024 382
EXPOSED CLG		1.3 0.6	0 0 0	0 0 0	0 0 0	91 114 55	0 0 0	0 0 0	0 0 0
NO ATTIC EXPOSED CLG		2.7 1.3	0 0 0	10 27 13	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
EXPOSED FLOOR		2.5 0.5	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	6484
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	210
SUBTOTAL HT LOSS			2150	2721	1968	419	3754	1713	1557
SUB TOTAL HT GAIN			1386	2116	371	113	974	323	254
LEVEL FACTOR / MULTIPLIER		0.30 0.42	0.30 0.42	0.30 0.42	0.30 0.42	0.30 0.42	0.30 0.42	0.30 0.42	0.50 0.79
AIR CHANGE HEAT LOSS			905	1146	829	176	1581	722	8933
AIR CHANGE HEAT GAIN			156	237	42	13	109	36	144
DUCT LOSS			0	0	0	0	0	0	0
DUCT GAIN			0	0	0	0	0	0	0
HEAT GAIN PEOPLE		240	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS			866	866	866	866	866	866	866
TOTAL HT LOSS BTU/H			3055	3867	2798	596	5336	2434	1767
TOTAL HT GAIN x 1.3 BTU/H			3129	4185	1662	1269	1408	467	330

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
NOV 27 2018
ATTACHED NOTES ARE PART
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TOTAL HEAT GAIN BTU/H: 36584 TONS: 3.05 LOSS DUE TO VENTILATION LOAD BTU/H: 3105 STRUCTURAL HEAT LOSS: 57344 TOTAL COMBINED HEAT LOSS BTU/H: 60449

Michael O'Rourke

SITE NAME: MINNISALE HOMES CORP
BUILDER: GREENPARK HOMES

LOT 2
TYPE: GRANDBROOKE 2

DATE: Oct-18

GFA: 3089 LO# 80390

HEATING CFM 1122 COOLING CFM 1122
TOTAL HEAT LOSS 57,344 TOTAL HEAT GAIN 36,009
AIR FLOW RATE CFM 19.57 AIR FLOW RATE CFM 31.16

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

#GOODMAN
GMEC960803BNA 80
FAN SPEED LOW
MEDLOW
MEDIUM
MEDIUM HIGH
HIGH 1122

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

DESIGN CFM = 1122
CFM @ 6" E.S.P.

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	14	7	4
R/A	0	0	5	2	1

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

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	16	17	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-2	WIC-2	ENS-3	MBR	ENS-4	LIV/DIN	FAM	KIT	FAM	LAUN	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.56	1.74	0.77	1.95	1.99	2.33	0.68	0.65	0.67	1.56	0.72	3.05	1.93	2.80	1.93	0.60	5.34	2.43	5.13	5.13	5.13	5.13
CFM PER RUN HEAT	30	34	15	38	39	46	13	13	13	30	14	60	38	55	38	12	104	48	100	100	100	100
RM GAIN MBH	2.35	1.23	0.24	2.60	2.52	3.10	0.21	0.17	0.45	2.35	0.48	3.13	2.09	1.66	2.09	1.29	1.41	0.47	0.75	0.75	0.75	0.75
CFM PER RUN COOLING	73	38	8	81	78	97	7	5	14	73	15	98	65	52	65	40	44	15	23	23	23	23
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.16	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	61	59	75	46	54	67	16	46	38	55	56	25	48	39	38	32	36	10	38	51	24	31
EQUIVALENT LENGTH	160	160	140	170	160	160	140	200	180	160	130	80	130	110	170	150	120	200	140	130	90	150
TOTAL EFFECTIVE LENGTH	221	219	215	216	214	227	156	246	218	215	186	105	178	149	208	182	156	210	178	181	114	181
ADJUSTED PRESSURE	0.08	0.08	0.08	0.08	0.08	0.07	0.11	0.07	0.08	0.08	0.09	0.15	0.1	0.12	0.08	0.09	0.1	0.08	0.09	0.09	0.14	0.09
ROUND DUCT SIZE	5	4	4	5	5	6	4	4	5	4	6	5	5	5	5	4	6	4	6	6	6	6
HEATING VELOCITY (ft/min)	220	390	172	279	286	235	149	149	149	220	161	306	279	404	279	138	530	551	510	510	510	510
COOLING VELOCITY (ft/min)	536	436	92	595	573	495	80	57	161	536	172	500	477	382	477	459	224	172	117	117	117	117
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	4X10	4X10	4X10
TRUNK	B	A	A	E	D	A	C	E	E	B	A	C	A	B	A	C	D	E	B	A	C	E

RUN #	25	26	27
ROOM NAME	BED-2	BED-3	WIC-3
RM LOSS MBH	1.95	1.98	0.20
CFM PER RUN HEAT	38	39	4
RM GAIN MBH	2.60	2.52	0.07
CFM PER RUN COOLING	81	78	2
ADJUSTED PRESSURE	0.16	0.17	0.17
ACTUAL DUCT LGH	49	58	34
EQUIVALENT LENGTH	170	200	220
TOTAL EFFECTIVE LENGTH	219	258	254
ADJUSTED PRESSURE	0.07	0.07	0.07
ROUND DUCT SIZE	5	5	4
HEATING VELOCITY (ft/min)	279	286	46
COOLING VELOCITY (ft/min)	595	573	23
OUTLET GRILL SIZE	3X10	3X10	3X10
TRUNK	E	D	E

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SUPPLY AIR TRUNK SIZE																	RETURN AIR TRUNK SIZE									
	TRUNK	STATIC	ROUND	RECT			VELOCITY		TRUNK	STATIC	ROUND	RECT			VELOCITY		TRUNK	STATIC	ROUND	RECT			VELOCITY			
	CFM	PRESS.	DUCT	DUCT			(FPM)		CFM	PRESS.	DUCT	DUCT			(FPM)		CFM	PRESS.	DUCT	DUCT			(FPM)			
TRUNK A	285	0.07	9.1	10	X	8	513		TRUNK G	0	0.00	0	0	X	8	0	TRUNK O	0	0.06	0	0	X	8	0		
TRUNK B	215	0.08	7.9	8	X	8	484		TRUNK H	0	0.00	0	0	X	8	0	TRUNK P	0	0.06	0	0	X	8	0		
TRUNK C	685	0.07	12.6	18	X	8	685		TRUNK I	0	0.00	0	0	X	8	0	TRUNK Q	0	0.06	0	0	X	8	0		
TRUNK D	182	0.07	7.7	8	X	8	410		TRUNK J	0	0.00	0	0	X	8	0	TRUNK R	0	0.06	0	0	X	8	0		
TRUNK E	436	0.07	10.6	14	X	8	561		TRUNK K	0	0.00	0	0	X	8	0	TRUNK S	0	0.06	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	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		
RETURN AIR #	1	2	3	4	5	6	7								BR		TRUNK X	952	0.06	14.8	30	X	8	571		
AIR VOLUME	85	85	85	85	290	180	145	0	0	0	0	0	0	0	0	167		TRUNK Y	375	0.06	10.4	12	X	8	563	
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		TRUNK Z	0	0.06	0	0	X	8	0	
ACTUAL DUCT LGH.	76	52	49	34	47	12	35	1	1	1	1	1	1	1	1	14		DROP	1122	0.06	15.7	24	X	10	673	
EQUIVALENT LENGTH	190	135	120	140	185	135	175	0	0	0	0	0	0	0	0	135										
TOTAL EFFECTIVE LH	268	187	169	174	232	147	210	1	1	1	1	1	1	1	1	149										
ADJUSTED PRESSURE	0.06	0.08	0.09	0.09	0.06	0.10	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.10										
ROUND DUCT SIZE	6	5.6	5.4	5.4	9.5	7	7	0	0	0	0	0	0	0	0	6.8										
INLET GRILL SIZE	8	8	8	8	8	8	8	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	14	0	0	0	0	0	0	0	0	14										

RETURN AIR #	1	2	3	4	5	6	7																		BR
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AIR VOLUME	85	85	85	85	290	180	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	167
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH	76	52	49	34	47	12	35	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	190	135	120	140	185	135	175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135
TOTAL EFFECTIVE LH	266	187	169	174	232	147	210	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	145
ADJUSTED PRESSURE	0.06	0.08	0.09	0.09	0.06	0.10	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	14.80	14.80	14.80	0.10
ROUND DUCT SIZE	6	5.6	5.4	5.4	9.5	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.8
INLET GRILL SIZE	8	8	8	8	8	8	8	0	0	0	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	X	X	X	X
INLET GRILL SIZE	14	14	14	14	30	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14

TYPE: GRANDBROOKE 2
 SITE NAME: MINNISALE HOMES CORP

 LO # 80390
 LOT 2

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/on 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	4	@ 10.6 cfm	42.4	cfm
Table 9.32.3.A.		TOTAL	180.2	cfm

PRINCIPAL VENTILATION CAPACITY REQUIRED 9.32.3.4.(1)			
1	Bedroom	31.8	cfm
2	Bedroom	47.7	cfm
3	Bedroom	63.6	cfm
4	Bedroom	79.5	cfm
5	Bedroom	95.4	cfm
TOTAL		79.5	cfm

SUPPLEMENTAL VENTILATION CAPACITY 9.32.3.5.		
Total Ventilation Capacity	180.2	cfm
Less Principal Ventil. Capacity	155	cfm
Required Supplemental Capacity	25.2	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	74 F	X	1.08	X
					0.25

SUPPLEMENTAL FANS NUTONE					
Location	Model	cfm	HVI	Sones	
ENS	QTXEN050C	50	☒	0.3	
ENS-2	QTXEN050C	50	☒	0.3	
ENS-4	QTXEN050C	50	☒	0.3	
PWD	QTXEN050C	50	☒	0.3	

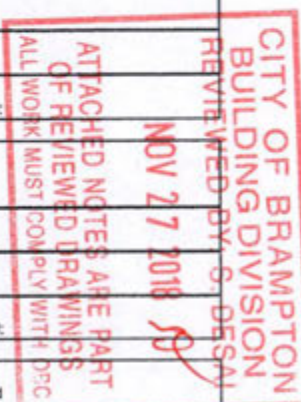
HEAT RECOVERY VENTILATOR 9.32.3.11.			
Model:	VANEE 65H		
155	cfm high	64	cfm low
75	% Sensible Efficiency	☒	HVI Approved
@ 32 deg F (0 deg C)			

LOCATION OF INSTALLATION	
Lot:	Concession
Township	Plan:
Address	
Roll #	Building Permit #

BUILDER: GREENPARK HOMES	
Name:	
Address:	
City:	
Telephone #:	Fax #:

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

DESIGNER CERTIFICATION	
I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.	
Name:	HVAC Designs Ltd.
Signature:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	October-16

 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: 19069 *Michael O'Rourke* MICHAEL O'ROURKE


HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: GRANDBROOKE 2	LOT 2	BUILDER: GREENPARK HOMES
SFQT: 3089	LO# 80390	SITE: MINNISALE HOMES CORP

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-2	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 (ft³):	41450.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.75	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 70.0 ft	WIDTH: 26.0 ft	EXPOSED PERIMETER:	192.0 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	

**Compliance Package
A1**

Nominal	Min. Eff.
60	59.22
31	27.65
31	29.80
22	17.03
20 ci	21.12
-	-
10	10
10	11.13
0.28	-
0.49	-
0.96	-
75%	-
0.8	-

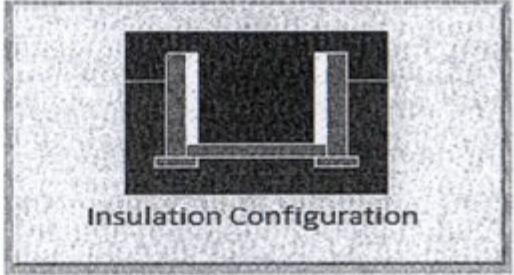
INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE

Michael O'Rourke

ATTACHED NOTES ARE PART
OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH OBC
NOV 27 2018
CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI

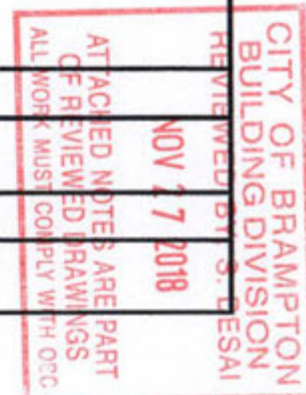
Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	21.3	 Insulation Configuration
Floor Width (m):	7.9	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	1.4	
Door Area (m ²):	5.6	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):	1900	

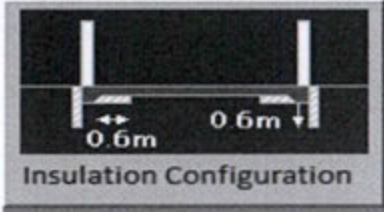
 TYPE: GRANDBROOKE 2
 LO# 80390

LOT 2



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Length (m):	1.5	 Insulation Configuration
Width (m):	4.3	
Exposed Perimeter (m):	7.3	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		62

TYPE: GRANDBROOKE 2
LO# 80390

LOT 2



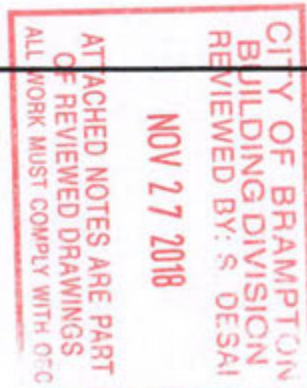
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Brampton			
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):	1173.7			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1564.6 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	73.2	73.2		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.325			
Cooling Air Leakage Rate (ACH/H):	0.115			

TYPE: GRANDBROOKE 2
LO# 80390

LOT 2



SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14" RETURN AIR GRILLE		RETURN AIR STACK ABOVE
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR STACK FROM 2ND FLOOR		30" RETURN AIR GRILLE		RETURN AIR STACK 2ND FLOOR
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2ND FLOOR		REDUCER		

CSA-F280-12
PACKAGE A1
LOT 2

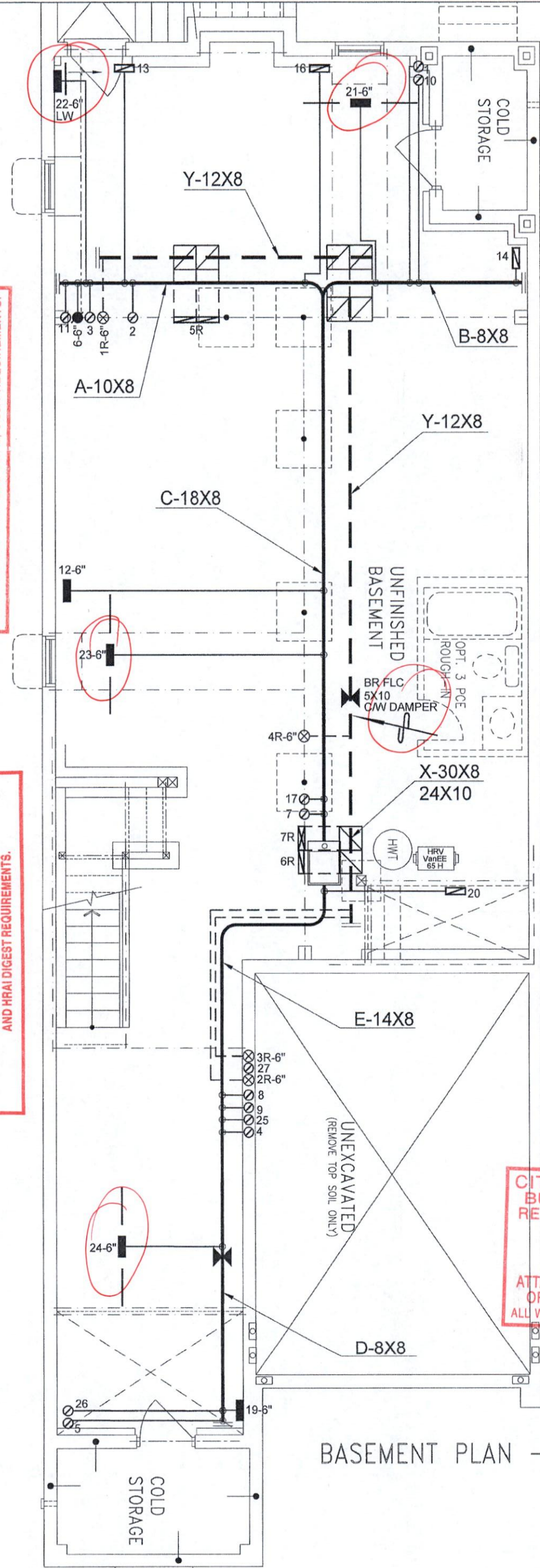
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INSTALLATION OF **HVAC EQUIP.**
SHALL CONFORM TO MANUFACTURER'S SPECIFICATIONS
AND MANUALS

THE INSTALLATION OF CARBON MONOXIDE DETECTOR(S)
SHALL COMPLY WITH OBC DIV. B, 9.33.4 REQUIREMENTS.

MECHANICAL VENTILATION SHALL BE PROVIDED IN
CONFORMANCE WITH OBC DIV. B, 9.32.3 REQUIREMENTS.

A HEAT RECOVERY VENTILATOR SHALL BE INSTALLED IN
COMPLIANCE WITH OBC DIV. B, 6.2.1.6, 9.32.3.6(3), 9.32.3.11
AND HRAI DIGEST REQUIREMENTS.



BASEMENT PLAN - ELEV. 3

INSTALLATION OF KITCHEN EXHAUST DUCT LARGER THAN 6" dia SHALL BE PRECEDED BY APPLICATION FOR REVISION OF DESIGN PER OBC PART 6 REQUIREMENTS. EXHAUST FAN SHALL DISCHARGE DIRECTLY TO OUTSIDE. CLOTHES DRYER EXHAUST SYSTEM SHALL COMPLY WITH OBC DIV B 9.32.1.2, 9.32.1.3 & 9.32.3 REQ'S. BALANCE THE RETURN AIRFLOW ON THE UPPER FLOOR TO MATCH THE SUPPLY. WHEN HRV IS USED AS PRINCIPAL EXHAUST FAN, THE CONTROLLER SHALL BE WIRED TO THE HRV UNIT AND INTERCONNECTED TO THE FURNACE FAN. THE FURNACE BLOWER MUST BE IN OPERATION WHEN THE HRV IS IN OPERATION. INSTALL ADDITIONAL SIA REGISTER AS REQUIRED IN ORDER TO ENSURE MIN 72degf - OBC DIV B 9.33.3.1(1). THE DOOR TO ANY ROOM WITHOUT RETURN AIR GRILLE. ENSURE RETURN AIR INTAKE SHALL BE CONNECTED TO THE MAIN R/A DUCT AT A HORIZONTAL DISTANCE OF MIN 6FT FROM THE CASING OF THE UNIT (HRAI DIGEST).

ENSURE THAT MIN THERMAL PERFORMANCE OF BLDG ENVELOPE AND EQUIPMENT SHALL CONFORM TO OBC S8-12, 3.1.1.2 TABLES REQUIREMENTS. FURNACE SHALL BE EQUIPPED WITH BRUSHLESS DIRECT CURRENT MOTOR OBC DIV B 12.3.1.5. SEAL ALL DUCTWORK WITHIN UNCONDITIONED SPACE OR OUTDOORS PER OBC DIV B6.2.4.3(11) REQUIREMENTS. SEAL ALL SUPPLY DUCTS LOCATED IN CONDITIONED SPACE IN COMPLIANCE WITH OBC DIV B6.2.4.3(12) REQUIREMENTS. SEPARATE ANY INTAKES FROM BUILDING ENVELOPE PENETRATIONS THAT ARE POTENTIAL SOURCES OF CONTAMINANTS (GAS VENTS, OIL FILL PIPES, etc. BY MIN 900mm (2FT 11IN) - OBC Div B 9.32.3.12.

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
NOV 27 2018
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Client
GREENPARK HOMES
Project Name
**MINNISALE HOMES CORP.
BRAMPTON, ONTARIO**
LOT 2
GRANDBROOKE 2 3070 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 60449 BTU/H UNIT DATA	# OF RUNS S/A R/A FANS
MAKE GOODMAN	3RD FLOOR
MODEL GMEC960803BNA	2ND FLOOR 14 5 5
INPUT 80 MBTUH	1ST FLOOR 7 2 2
OUTPUT 76.8 MBTUH	BASEMENT 4 1 0
COOLING 3.0 TONS	ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5" UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A
FAN SPEED 1122 cfm @ 0.6" w.c.	

Sheet Title BASEMENT HEATING LAYOUT
Date OCT/2018
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 80390

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	3.
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14" RETN AIR GRILLE		RETN AIR STACK ABOVE	2.
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2ND FLOOR		30" RETN AIR GRILLE		RETN AIR STACK 2ND FLOOR	1.
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2ND FLOOR		FRA FLOOR RETURN AIR GRILLE		REDUCER	No.
HVAC LEGEND								REVISIONS
								Description
								Date

CSA-F280-12
PACKAGE A1
LOT 2

Client
GREENPARK HOMES

Project Name
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BRAMPTON, ONTARIO**

LOT 2
GRANDBROOKE 2 3070 sqft

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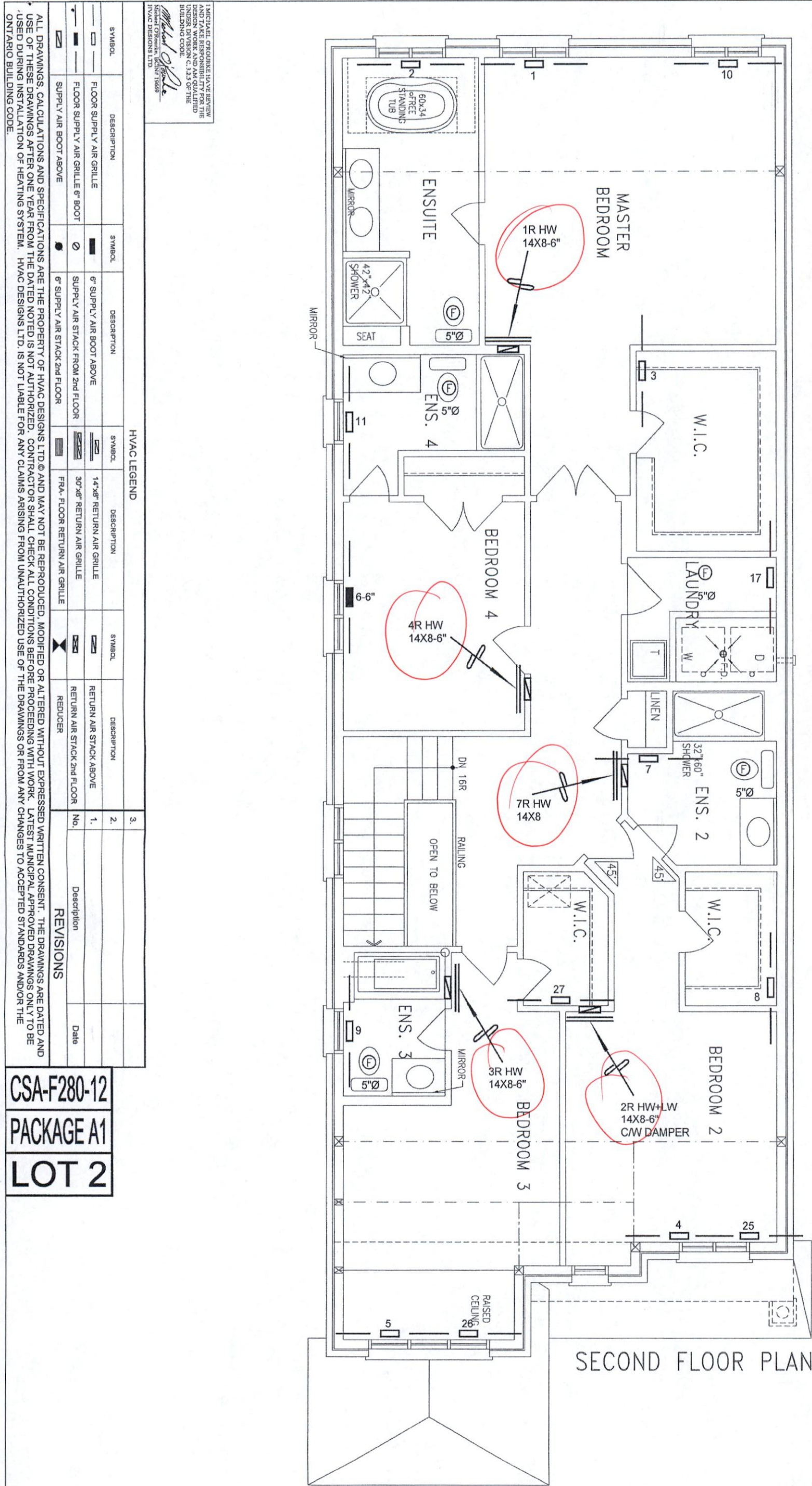
Sheet Title
**SECOND FLOOR
HEATING
LAYOUT**

Date
OCT/2018

Scale
3/16" = 1'-0"

BCIN# 19669

LO# 80390



SECOND FLOOR PLAN - ELEV. '3'

THE INSTALLATION OF CARBON MONOXIDE DETECTOR(S)
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CONFORMANCE WITH OBC DIV. B, 9.32.3 REQUIREMENTS.

CITY OF BRAMPTON
BUILDING DIVISION
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