Schedule 1: Designer Information

Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

A. Project Information

Building number, street name		Unit no.	Lot/con.
Municipality BRAMPTON	**Postal code**	**Plan number/ other description**	

B. Individual who reviews and takes responsibility for design activities

Name		Firm	
MICHAEL O'ROURKE		**HVAC DESIGNS LTD.**	
Street address **375 FINLEY AVE**		**Unit no.** **202**	**Lot/con.** **N/A**
Municipality **AJAX**	**Postal code** **L1S 2E2**	**Province** **ONTARIO**	**E-mail** **info@hvacdesigns.ca**
Telephone number **(905) 619-2300**	**Fax number** **(905) 619-2375**		**Cell number** ( )

C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]

☐ House	☒ HVAC – House	☐ Building Structural
☐ Small Buildings	☐ Building Services	☐ Plumbing – House
☐ Large Buildings	☐ Detection, Lighting and Power	☐ Plumbing – All Buildings
☐ Complex Buildings	☐ Fire Protection	☐ On-site Sewage Systems

Description of designer's work
HEAT LOSS / GAIN CALCULATIONS
DUCT SIZING
RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY
RESIDENTIAL SYSTEM DESIGN per CSA-F280-12

Model: YORK 1

Project: DEGREY DRIVE

D. Declaration of Designer

I MICHAEL O'ROURKE declare that (choose one as appropriate):
(print name)

☐ I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4.of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories.

Individual BCIN: _____

Firm BCIN: _____

☑ I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5.of Division C, of the Building Code.

Individual BCIN: 19669
Basis for exemption from registration and qualification: O.B.C SENTENCE 3.2.4.1 (4)

☐ The design work is exempt from the registration and qualification requirements of the Building Code.

Basis for exemption from registration and qualification: _____

I certify that:

1. The information contained in this schedule is true to the best of my knowledge.
2. I have submitted this application with the knowledge and consent of the firm.

April 18, 2017
Date

Signature of Designer

NOTE:

1. For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d).of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.

2. Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of authorization, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

HVAC DESIGNS LTD.

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

SITE NAME: DEGREY DRIVE | DATE: Apr-17 | WINTER NATURAL AIR CHANGE RATE 0.345 | HEAT LOSS ΔT °F. 74 | CSA-F280-12
BUILDER: GREENYORK HOMES | TYPE: YORK 1 | GFA: 3566 | LO# 73718 | SUMMER NATURAL AIR CHANGE RATE 0.122 | HEAT GAIN ΔT °F. 14 | SB-12 PACKAGE A1

ROOM USE			MBR			ENS			WIC			BED-2			BED-3			BED-4			BATH						ENS-3					
EXP. WALL			50			12			10			15			14			30			23						16					
CLG. HT.			12			10			10			10			10			10			10						10					
	FACTORS																															
GRS.WALL AREA	LOSS	GAIN	600			120			100			160			140			300			230						160					
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	19	395	310	0	0	0	0	0	0	0	0	0				11	229	179			
EAST	20.8	41.9	0	0	0	0	0	0	0	0	0	0	0	0	27	561	1131	31	644	1299	16	332	670				0	0	0			
SOUTH	20.8	25.2	0	0	0	23	478	580	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0			
WEST	20.8	41.9	40	831	1676	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0			
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				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	0				0	0	0			
NET EXPOSED WALL	4.4	0.8	560	2440	460	97	423	80	100	436	82	131	571	108	113	492	93	269	1172	221	214	932	176				149	649	122			
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	0				0	0	0			
EXPOSED CLG	1.3	0.6	391	490	238	264	331	160	220	276	134	300	376	182	200	251	122	221	277	134	112	140	68				135	169	82			
NO ATTIC EXPOSED CLG	2.7	1.3	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	2.5	0.5	0	0	0	0	0	0	0	0	0	70	174	33	200	498	94	0	0	0	112	279	53				0	0	0			
BASEMENT/CRAWL HEAT LOSS				0			0			0			0			0			0			0					0					
SLAB ON GRADE HEAT LOSS				0			0			0			0			0			0			0					0					
SUBTOTAL HT LOSS				3761			1231			711			1516			1802			2093			1684					1047					
SUB TOTAL HT GAIN					2374			821			216			633			1439			1654			967						384			
LEVEL FACTOR / MULTIPLIER			0.20	0.35		0.20	0.35		0.20	0.35		0.20	0.35		0.20	0.35		0.20	0.35		0.20	0.35					0.20	0.35				
AIR CHANGE HEAT LOSS				1318			432			249			531			632			734			590					367					
AIR CHANGE HEAT GAIN					231			80			21			62			140			161			94						37			
DUCT LOSS				0			0			0			205			243			0			227					0					
DUCT GAIN					0			0			0			161			249			0			106						0			
HEAT GAIN PEOPLE	240		2		480	0		0	0		0	1		240	1		240	1		240	0		0				0		0			
HEAT GAIN APPLIANCES/LIGHTS					674			0			0			674			674			674			0						0			
TOTAL HT LOSS BTU/H				5079			1663			961			2252			2677			2827			2502					1414					
TOTAL HT GAIN x 1.3 BTU/H					4886			1171			308			2300			3565			3547			1517						648			

ROOM USE			DIN			OFF			KIT			FAM			LN/MD			W/R			FOY						WUB			BAS		
EXP. WALL			31			27			50			35			26			6			20						28			194		
CLG. HT.			11			11			11			13			13			11			11						9			9		
	FACTORS																															
GRS.WALL AREA	LOSS	GAIN	341			297			550			455			338			66			220						252			1164		
GLAZING			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	9	187	147	0	0	0	0	0	0				0	0	0	12	249	196
EAST	20.8	41.9	0	0	0	53	1101	2220	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0	0	0	0
SOUTH	20.8	25.2	30	623	757	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0	0	0	0
WEST	20.8	41.9	0	0	0	0	0	0	72	1496	3016	100	2078	4189	0	0	0	0	0	0	0	0	0				0	0	0	0	0	0
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				0	0	0	0	0	0
DOORS	24.7	4.7	0	0	0	0	0	0	0	0	0	0	0	0	20	493	93	0	0	0	40	986	186				20	493	93	20	493	93
NET EXPOSED WALL	4.4	0.8	311	1355	256	244	1063	201	478	2083	393	355	1547	292	309	1346	254	66	288	54	180	784	148				232	1011	191	0	0	0
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	0				0	0	0	582	2045	386
EXPOSED CLG	1.3	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
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0	0	304	816	396	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				0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS				0			0			0			0			0			0			0								6825		
SLAB ON GRADE HEAT LOSS				0			0			0			0			0			0			0					0					
SUBTOTAL HT LOSS				1978			2164			3579			4440			2026			288			1770					1504			9612		
SUB TOTAL HT GAIN					1013			2421			3409			4876			494			64			334						284			675
LEVEL FACTOR / MULTIPLIER			0.30	0.45		0.30	0.45		0.30	0.45		0.30	0.45		0.30	0.45		0.30	0.45		0.30	0.45								0.50	1.09		
AIR CHANGE HEAT LOSS				886			970			1603			1989			908			129			793									12131		
AIR CHANGE HEAT GAIN					99			236			332			475			48			5			33										93
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					674			674			674			674			674			0			0						0			674
TOTAL HT LOSS BTU/H				2865			3134			5182			6430			2934			416			2664					1504			21744		
TOTAL HT GAIN x 1.3 BTU/H					2320			4329			5739			7833			1580			77			477						369			1874

TOTAL HEAT GAIN BTU/H: 42966 | TONS: 3.58 | LOSS DUE TO VENTILATION LOAD BTU/H: 2785 | STRUCTURAL HEAT LOSS: 66145 | TOTAL COMBINED HEAT LOSS BTU/H: 68930

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

HVAC DESIGNS LTD.

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SITE NAME: DEGREY DRIVE
BUILDER: GREENYORK HOMES

TYPE: YORK 1

DATE: Apr-17

GFA: 3556 LO# 73718

HEATING CFM	1370	COOLING CFM	1370	furnace pressure	0.6
TOTAL HEAT LOSS	66,145	TOTAL HEAT GAIN	42,441	furnace filter	0.05
AIR FLOW RATE CFM	20.71	AIR FLOW RATE CFM	32.28	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

#CARRIER
59SP5A-80-16 80

FAN SPEED	
LOW	0
MEDLOW	975
MEDIUM	1200
MEDIUM HIGH	1370
HIGH	1540

AFUE = 97 %
INPUT (BTU/H) = 80,000
OUTPUT (BTU/H) = 78,000
DESIGN CFM = 1370
CFM @ .6" E.S.P.
TEMPERATURE RISE 53 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	11	10	6
R/A	0	0	4	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	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	BATH	BED-3	MBR	ENS-3	OFF	OFF	KIT	KIT	FAM	LN/MD	W/R	FOY	FAM	DIN	BAS	BAS	BAS
RM LOSS MBH.	2.54	1.66	0.96	2.25	1.34	2.83	1.25	1.25	1.34	2.54	1.41	1.57	1.57	2.59	2.59	3.21	2.93	0.42	2.56	3.21	2.86	3.87	3.87	3.87
CFM PER RUN HEAT	53	34	20	47	28	59	26	26	28	53	29	32	32	54	54	67	61	9	53	67	59	80	80	80
RM GAIN MBH.	2.44	1.17	0.31	2.30	1.78	3.55	0.76	0.76	1.78	2.44	0.55	2.16	2.16	2.87	2.87	3.92	1.58	0.08	0.48	3.92	2.32	0.37	0.37	0.37
CFM PER RUN COOLING	79	38	10	74	58	115	24	24	58	79	18	70	70	93	93	126	51	2	15	126	75	12	12	12
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.15	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.15	0.17	0.17	0.17	0.15	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	37	31	28	79	51	50	63	60	58	51	51	27	32	29	43	46	56	44	43	57	11	48	56	25
EQUIVALENT LENGTH	180	190	130	150	140	140	130	160	120	140	160	110	120	140	90	130	90	130	120	100	150	110	150	120
TOTAL EFFECTIVE LENGTH	217	221	158	229	191	190	193	220	178	191	211	137	152	169	133	176	146	174	163	157	161	158	206	145
ADJUSTED PRESSURE	0.08	0.08	0.11	0.08	0.09	0.08	0.09	0.08	0.1	0.09	0.08	0.13	0.11	0.1	0.12	0.09	0.12	0.1	0.11	0.1	0.11	0.11	0.08	0.12
ROUND DUCT SIZE	5	4	4	5	5	6	4	4	5	5	4	5	5	5	5	6	4	4	4	6	5	5	5	5
HEATING VELOCITY (ft/min)	389	390	229	345	206	301	298	298	206	389	333	235	235	396	396	342	700	103	608	342	433	587	587	587
COOLING VELOCITY (ft/min)	580	436	115	543	426	586	275	275	426	580	207	514	514	683	683	642	585	23	172	642	551	88	88	88
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10
TRUNK	D	D	D	B	B	A	B	B	B	D	A	A	A	D	D	C	C	C	A	C	B	C	C	D

RUN #	25	26	27
ROOM NAME	BAS	BAS	BAS
RM LOSS MBH.	3.87	3.87	3.87
CFM PER RUN HEAT	80	80	80
RM GAIN MBH.	0.37	0.37	0.37
CFM PER RUN COOLING	12	12	12
ADJUSTED PRESSURE	0.17	0.17	0.17
ACTUAL DUCT LGH.	15	28	30
EQUIVALENT LENGTH	160	170	140
TOTAL EFFECTIVE LENGTH	175	198	170
ADJUSTED PRESSURE	0.1	0.09	0.1
ROUND DUCT SIZE	5	5	5
HEATING VELOCITY (ft/min)	587	587	587
COOLING VELOCITY (ft/min)	88	88	88
OUTLET GRILL SIZE	3X10	3X10	3X10
TRUNK	D	B	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	285	0.08	8.8	10	x	8	513	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	579	0.08	11.4	16	x	8	651	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	364	0.08	9.6	10	x	8	655	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	792	0.08	12.8	20	x	8	713	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	1370	0.06	17	28	x	10	705
TRUNK Y	525	0.06	11.8	16	x	8	591
TRUNK Z	455	0.06	11.2	14	x	8	585
DROP	1370	0.06	17	24	x	12	685

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	
AIR VOLUME	155	85	85	175	300	180	180	0	0	0	0	0	0	0	0	210
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.	47	69	70	50	43	19	31	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	185	150	150	150	190	145	145	0	0	0	0	0	0	0	0	135
TOTAL EFFECTIVE LH	232	219	220	200	233	164	176	1	1	1	1	1	1	1	1	149
ADJUSTED PRESSURE	0.06	0.07	0.07	0.07	0.06	0.09	0.08	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.10
ROUND DUCT SIZE	7.5	5.8	5.8	7.5	9.6	7.2	7.4	0	0	0	0	0	0	0	0	7.4
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

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

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

TYPE: YORK 1 LO # 73718
SITE NAME: DEGREY DRIVE

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	139	cfm
Required Supplemental Capacity	41.2	cfm

PRINCIPAL EXHAUST FAN CAPACITY

Model: VANEE 60H-V+ Location: BSMT

139.0 cfm 3.0 sones [✓] HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

CFM		ΔT °F		FACTOR		% LOSS
139.0 CFM	X	74 F	X	1.08	X	0.25

SUPPLEMENTAL FANS NUTONE

Location	Model	cfm	HVI	Sones
ENS	QTXEN050C	50	✓	0.3
BATH	QTXEN050C	50	✓	0.3
ENS-3	QTXEN050C	50	✓	0.3
W/R	QTXEN050C	50	✓	0.3

HEAT RECOVERY VENTILATOR 9.32.3.11.

Model: VANEE 60H-V+

139 cfm high 50 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: GREENYORK 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: April-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

HVAC DESIGNS LTD.
375 Finley Ave. Suite 202 Ajax, ON L1S 2E2
Tel: 905.619.2300 Fax: 905.619.2375
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HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: YORK 1 **BUILDER:** GREENYORK HOMES
SFQT: 3556 **LO#** 73718 **SITE:** DEGREY DRIVE

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 (ft^3):	53040.0	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: 55.0 ft	WIDTH: 42.0 ft	EXPOSED PERIMETER:	194.0 ft

2012 OBC - COMPLIANCE PACKAGE Component	Compliance Package A1	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.8
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 ci	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	0.28	-
Skylights Maximum U-Value	0.49	-
Space Heating Equipment Minimum AFUE	0.96	-
HRV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.8	-

INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE

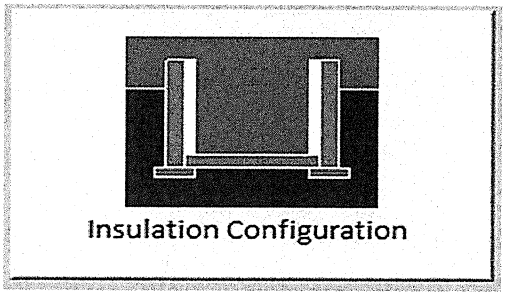
HVAC Designs Ltd.
375 Finley Ave, Suite 202
Ajax ON, L1S 2E2
905-619-2300

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

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

Foundation Dimensions		
Floor Length (m):	**16.8**	
Floor Width (m):	**12.8**	
Exposed Perimeter (m):	**0.0**	
Wall Height (m):	**2.7**	
Depth Below Grade (m):	**1.83**	
Window Area (m^2):	**1.1**	
Door Area (m^2):	**3.7**	


Insulation Configuration

Radiant Slab		
Heated Fraction of the Slab:	**0**	
Fluid Temperature (°C):	**33**	
Design Months		
Heating Month	**1**	
Foundation Loads		
Heating Load (Watts):	**2000**	

TYPE: YORK 1
LO# 73718

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

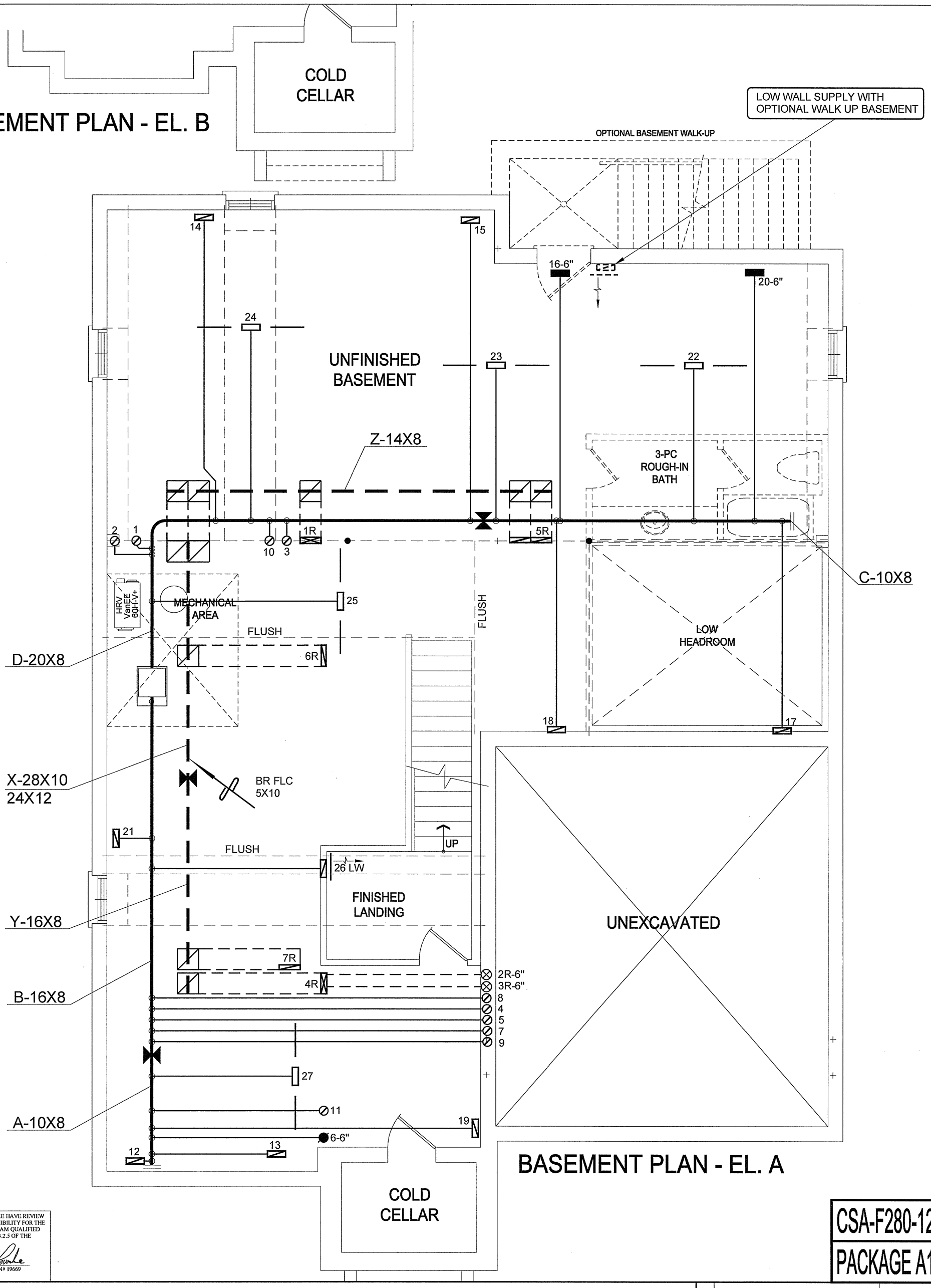
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	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):	7.32	
Building Configuration		
Type:	Detached	
Number of Stories:	Two	
Foundation:	Full	
House Volume (m^3):	1501.9	
Air Leakage/Ventilation		
Air Tightness Type:	Present (1961-) (3.57 ACH)	
Custom BDT Data:	ELA @ 10 Pa.	2002.1 cm^2
	3.57	ACH @ 50 Pa
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust
	65.6	65.6
Flue Size		
Flue #:	#1 #2 #3 #4	
Diameter (mm):	0 0 0 0	
Natural Infiltration Rates		
Heating Air Leakage Rate (ACH/H):	**0.345**	
Cooling Air Leakage Rate (ACH/H):	**0.122**	

TYPE: YORK 1
LO# 73718

BASEMENT PLAN - EL. B



BASEMENT PLAN - EL. A

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

PACKAGE A1

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

Client

ARIA COMFORT SYSTEMS

Project Name

GREENYORK HOMES
DEGREY DRIVE
BRAMPTON, ONTARIO

YORK 1 3556 sqft

HVAC DESIGNS LTD.
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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 68930 BTU/H		
UNIT DATA		
MAKE	CARRIER	
MODEL	59SP5A-80-16	
INPUT	80	MBTU/H
OUTPUT	78	MBTU/H
COOLING	3.5	TONS
FAN SPEED	1370	cfm @ 0.5" w.c.

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	11	4	3
1ST FLOOR	10	3	2
BASEMENT	6	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

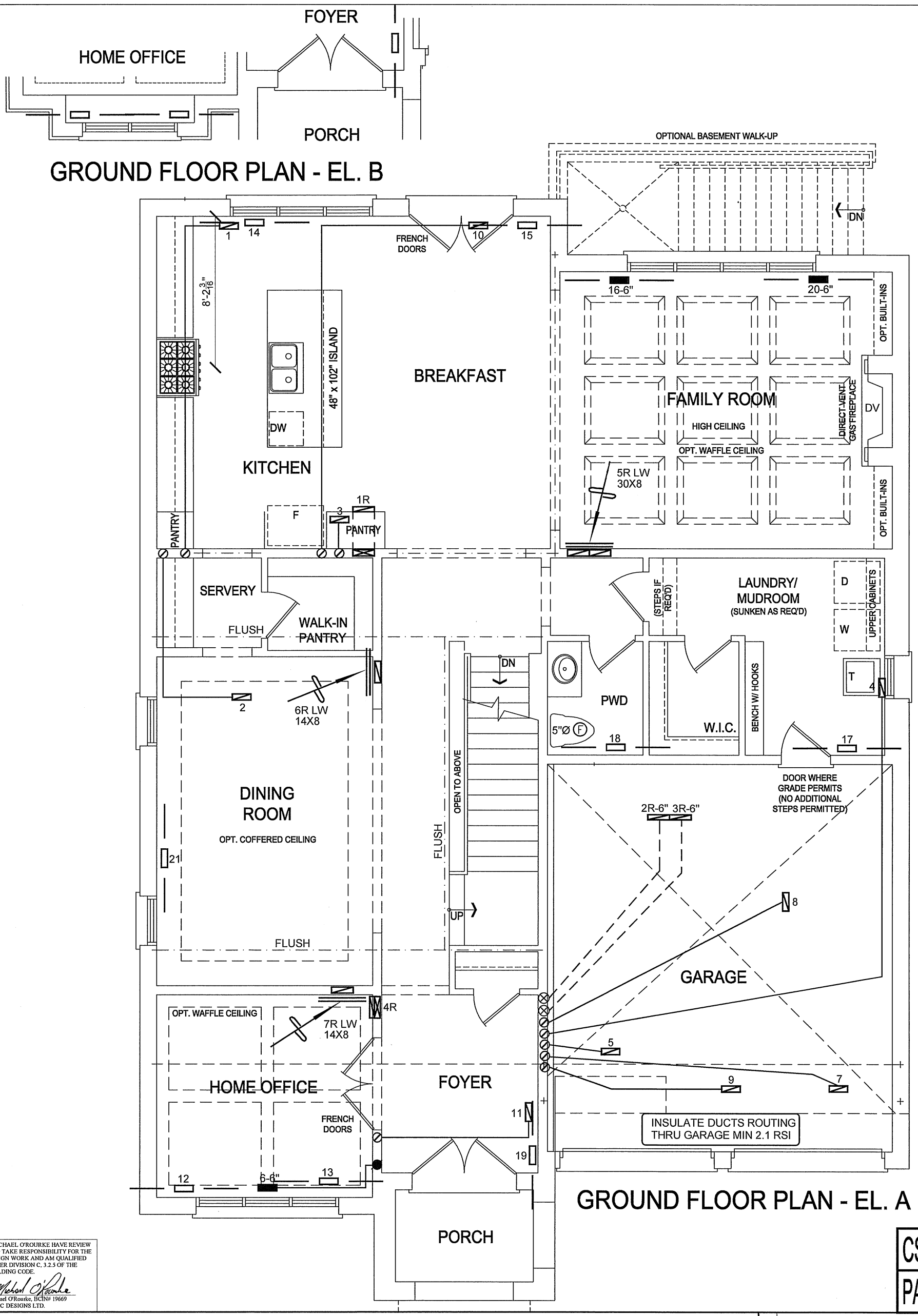
BASEMENT HEATING LAYOUT

Date APR/2017

Scale 3/16" = 1'-0"

BCIN# 19669

LO# 73718



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PACKAGE A1

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— ▬ —	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

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REVISIONS

Client
ARIA COMFORT SYSTEMS

Project Name
GREENYORK HOMES
DEGREY DRIVE
BRAMPTON, ONTARIO

YORK 1 3556 sqft

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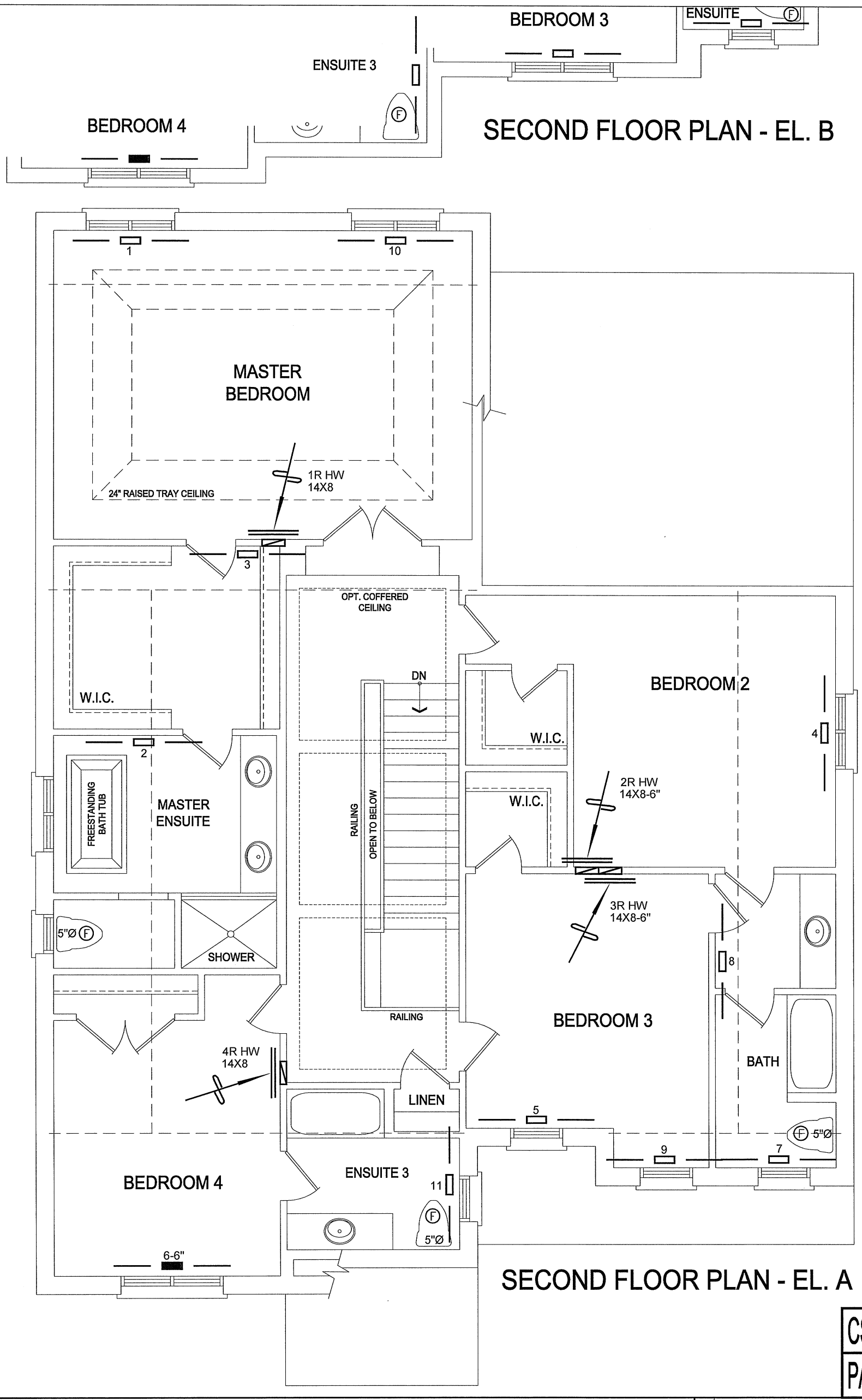
Sheet Title
FIRST FLOOR HEATING LAYOUT

Date APR/2017
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 73718



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CSA-F280-12

PACKAGE A1

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	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER

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REVISIONS

Client
ARIA COMFORT SYSTEMS

Project Name
GREENYORK HOMES
DEGREY DRIVE
BRAMPTON, ONTARIO

YORK 1 3556 sqft

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Sheet Title
SECOND FLOOR HEATING LAYOUT

Date APR/2017

Scale 3/16" = 1'-0"

BCIN# 19669

LO# 73718