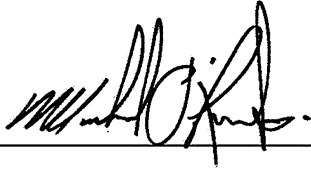


Schedule 1: Designer Information

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 KLEINBURG	Postal code	Plan number/ other description	
B. Individual who reviews and takes responsibility for design activities			
Name MICHAEL O'ROURKE		Firm 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 ☐ Small Buildings ☐ Large Buildings ☐ Complex Buildings ☒ HVAC – House ☐ Building Services ☐ Detection, Lighting and Power ☐ Fire Protection ☐ Building Structural ☐ Plumbing – House ☐ Plumbing – All Buildings ☐ 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: 25-10 – OPT 2 ND & GROUND – WOB Project: HUNTINGTON & NASHVILLE	
D. Declaration of Designer			
I, <u>MICHAEL O'ROURKE</u> 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: <u>19669</u> Basis for exemption from registration and qualification: <u>O.B.C SENTENCE 3.2.4.1 (4)</u> ☐ 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.			
<u>November 3, 2016</u> Date		 Signature of Designer	

NOTE:

- 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.
- 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.

SITE NAME: HUNTINGTON & NASHVILLE
BUILDER: GOLD PARK HOMES
OPT 2ND FL & GROUND
DATE: Nov-16
LO# 70654
GFA: 2119
WINTER NATURAL AIR CHANGE RATE 0.322
HEAT LOSS AT °F. 76
HEAT GAIN AT °F. 16
CSA-F280-12
SB-12 PACKAGE J

ROOM USE	EXP. WALL	CLG. HT.	ENR	WIC	BED-2	BED-3	BED-4	BATH	WOB	WIR	FOY	WOB	BAS
GRS.WALL AREA	39	10	34	7	25	189	188	108	28	10	50	9	164
GLAZING	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST	0	0	0	0	0	0	0	0	0	0	0	0	0
SKYLT.	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	360	1244	289	63	218	173	184	102	184	636	132	102	352
NET EXPOSED BSMT WALL ABOVE GR	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	324	482	245	49	74	37	160	228	113	135	205	102	82
NO A T T I C EXPOSED CLG	2.5	0.8	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	324	794	165	15	37	8	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0
SUB TOTAL HT LOSS	3253	1958	2142	292	1422	969	1262	599	644	0.20	0.24	0.20	0.24
LEVEL FACTORY / MUL TIPLIER	0.20	0.24	0.20	0.24	0.20	0.24	0.20	0.24	0.20	0.24	0.20	0.24	0.20
AIR CHANGE HEAT LOSS	767	173	505	69	335	280	297	141	141	57	74	30	276
AIR CHANGE HEAT GAIN	402	326	285	0	0	0	0	0	0	0	0	0	0
DUCT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0
DUCT GAIN	2	480	0	0	1	240	1	240	0	0	0	0	0
HEAT GAIN PEOPLE	648	0	0	0	648	648	1569	814	648	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	4422	4661	2912	381	1757	1488	1569	814	2067	0	0	0	0
TOTAL HT LOSS BTU/H													
TOTAL HT GAIN x 1.3 BTU/H													

ROOM USE	EXP. WALL	CLG. HT.	ENR	WIC	BED-2	BED-3	BED-4	BATH	WOB	WIR	FOY	WOB	BAS
GRS.WALL AREA	39	10	34	7	25	189	188	108	28	10	50	9	164
GLAZING	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST	0	0	0	0	0	0	0	0	0	0	0	0	0
SKYLT.	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	360	1244	289	63	218	173	184	102	184	636	132	102	352
NET EXPOSED BSMT WALL ABOVE GR	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	324	482	245	49	74	37	160	228	113	135	205	102	82
NO A T T I C EXPOSED CLG	2.5	0.8	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	324	794	165	15	37	8	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS	3253	1958	2142	292	1422	969	1262	599	644	0.20	0.24	0.20	0.24
SUB TOTAL HT GAIN	0.20	0.24	0.20	0.24	0.20	0.24	0.20	0.24	0.20	0.24	0.20	0.24	0.20
LEVEL FACTORY / MUL TIPLIER	0.20	0.24	0.20	0.24	0.20	0.24	0.20	0.24	0.20	0.24	0.20	0.24	0.20
AIR CHANGE HEAT LOSS	767	173	505	69	335	280	297	141	141	57	74	30	276
AIR CHANGE HEAT GAIN	402	326	285	0	0	0	0	0	0	0	0	0	0
DUCT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0
DUCT GAIN	2	480	0	0	1	240	1	240	0	0	0	0	0
HEAT GAIN PEOPLE	648	0	0	0	648	648	1569	814	648	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	4422	4661	2912	381	1757	1488	1569	814	2067	0	0	0	0
TOTAL HT LOSS BTU/H													
TOTAL HT GAIN x 1.3 BTU/H													

TOTAL HEAT GAIN BTU/H: 29191 TONS: 2.43 LOSS DUE TO VENTILATION LOAD BTU/H: 2612 STRUCTURAL HEAT LOSS: 45364 TOTAL COMBINED HEAT LOSS BTU/H: 47976

SITE NAME: HUNTINGTON & NASHVILLE
BUILDING: GOLD PARK HOMES

OPT 2ND FL & GROUND
TYPE: 25-10 WOB

GFA: 2119 LO# 70854

DATE: Nov-16

HEATING CFM 995 COOLING CFM 995
TOTAL HEAT LOSS 45,364 TOTAL HEAT GAIN 28,648
AIR FLOW RATE CFM 2193 AIR FLOW RATE CFM 34,73

EL195UH070XE36B .LENNOX
FAN SPEED 70
AFUE = 95.0 %
INPUT (BTU/H) = 66,000
OUTPUT (BTU/H) = 63,000

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	9	6	5
R/A	0	0	3	1	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	13	14	15	16	17	18	19	21	22	23	24
ROOM NAME	BED-2	BED-3	BED-4	ENS	MBR	MBR	BATH	WIC	KT/FM	KT/FM	KT/FM	KT/FM	LAUN	W/R	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH	1.76	1.47	1.56	2.91	2.21	2.21	0.81	0.36	2.08	2.08	2.08	2.08	0.54	0.48	4.66	3.61	3.61	3.61	3.61
CFM PER RUN HEAT	39	32	34	64	48	48	18	8	46	46	46	46	12	10	102	79	79	79	79
RM GAIN MBH	2.53	2.45	2.07	2.41	2.33	2.33	0.43	0.12	2.05	2.05	2.05	2.05	1.19	0.10	1.47	0.60	0.60	0.60	0.60
CFM PER RUN COOLING	88	85	72	84	81	81	15	4	71	71	71	71	41	4	51	21	21	21	21
ADJUSTED PRESSURE	0.16	0.16	0.17	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH	56	55	28	48	50	47	33	33	21	37	32	22	34	18	38	49	22	20	36
EQUIVALENT LENGTH	140	140	180	110	180	170	160	190	180	140	160	150	220	190	140	160	150	190	150
TOTAL EFFECTIVE LENGTH	196	195	208	158	230	217	193	223	201	177	192	172	254	208	178	209	172	210	186
ADJUSTED PRESSURE	0.08	0.08	0.08	0.1	0.07	0.07	0.09	0.08	0.09	0.1	0.09	0.1	0.07	0.08	0.09	0.08	0.1	0.08	0.09
ROUND DUCT SIZE	6	6	5	5	6	6	4	4	5	5	5	5	4	4	6	5	5	5	5
HEATING VELOCITY (ft/min)	199	163	250	470	245	245	207	92	338	338	338	338	138	115	520	580	580	580	580
COOLING VELOCITY (ft/min)	449	433	529	617	413	413	172	46	521	521	521	521	470	46	260	154	154	154	154
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10
TRUNK	A	A	B	C	C	C	B	C	B	A	A	B	C	C	C	A	B	B	C

RUN #	25
ROOM NAME	BAS
RM LOSS MBH	3.61
CFM PER RUN HEAT	79
RM GAIN MBH	0.60
CFM PER RUN COOLING	21
ADJUSTED PRESSURE	0.17
ACTUAL DUCT LGH	49
EQUIVALENT LENGTH	170
TOTAL EFFECTIVE LENGTH	219
ADJUSTED PRESSURE	0.08
ROUND DUCT SIZE	5
HEATING VELOCITY (ft/min)	580
COOLING VELOCITY (ft/min)	154
OUTLET GRILL SIZE	3X10
TRUNK	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	321	0.08	9.2	10	8	TRUNK G	0	0.00	0	0
TRUNK B	623	0.08	11.7	16	8	TRUNK H	0	0.00	0	0
TRUNK C	371	0.07	10	12	8	TRUNK I	0	0.00	0	0
TRUNK D	0	0.00	0	0	0	TRUNK J	0	0.00	0	0
TRUNK E	0	0.00	0	0	0	TRUNK K	0	0.00	0	0
TRUNK F	0	0.00	0	0	0	TRUNK L	0	0.00	0	0

RETURN AIR #	1	2	3	5
AIR VOLUME	140	140	140	395
PLENUM PRESSURE	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH	34	51	51	24
EQUIVALENT LENGTH	145	175	135	215
TOTAL EFFECTIVE LH	179	218	186	239
ADJUSTED PRESSURE	0.08	0.07	0.08	0.06
ROUND DUCT SIZE	6.7	6.9	6.7	10.6
INLET GRILL SIZE	8	8	8	8
INLET GRILL SIZE	X	X	X	X
INLET GRILL SIZE	14	14	14	30

RETURN AIR TRUNK SIZE	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK O	0	0.06	0	0	0
TRUNK P	0	0.06	0	0	0
TRUNK Q	0	0.06	0	0	0
TRUNK R	0	0.06	0	0	0
TRUNK S	0	0.06	0	0	0
TRUNK T	0	0.06	0	0	0
TRUNK U	0	0.06	0	0	0
TRUNK V	0	0.06	0	0	0
TRUNK W	0	0.06	0	0	0
TRUNK X	995	0.06	15	26	689
TRUNK Y	0	0.06	0	0	0
TRUNK Z	0	0.06	0	0	0
DROP	995	0.06	15	24	597

TYPE: 25-10 WOB
SITE NAME: HUNTINGTON & NASHVILLE

LO # 70654
OPT 2ND FL & GROUND

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	<u>2</u> @ 21.2 cfm	<u>42.4</u> cfm
Other Bedrooms	<u>3</u> @ 10.6 cfm	<u>31.8</u> cfm
Kitchen & Bathrooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Other Rooms	<u>3</u> @ 10.6 cfm	<u>31.8</u> cfm
Table 9.32.3.A.	TOTAL	<u>148.4</u> 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	<u>148.4</u>	cfm
Less Principal Ventil. Capacity	<u>86</u>	cfm
Required Supplemental Capacity	<u>62.4</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE 40H+	Location: BSMT
<u>86.0</u> cfm	<u>3.0</u> sones
☒	HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
86.0 CFM	X 76 F	X 1.08	X 0.37

SUPPLEMENTAL FANS		NUTONE	HVI	Sones
Location	Model	cfm		
ENS	QTXEN050C	50	☒	0.3
BATH	QTXEN050C	50	☒	0.3
W/R	QTXEN050C	50	☒	0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE 40H+		
<u>86</u> cfm high	<u>37</u> cfm low	
<u>63</u> % Sensible Efficiency	☒	HVI Approved
@ 32 deg F (0 deg C)		

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

BUILDER:	
GOLD PARK 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:	November-16

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 25-10 WOB	OPT 2ND FL & GROUND	BUILDER: GOLD PARK HOMES
SFQT: 2119	LO# 70654	SITE: HUNTINGTON & NASHVILLE

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-4	OUTDOOR DESIGN TEMP.	88
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	72

BUILDING DATA

ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	WEST	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):	28517.3	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 63.0 ft	WIDTH: 19.0 ft	EXPOSED PERIMETER:	135.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	29.0 ft

2012 OBC - COMPLIANCE PACKAGE

Component	Compliance Package
	J
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	22
Basement Walls Minimum RSI (R)-Value	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
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value	10
Windows and Sliding Glass Doors Maximum U-Value	1.8
Skylights Maximum U-Value	2.8
Space Heating Equipment Minimum AFUE	0.94
HRV Minimum Efficiency	60%
Domestic Hot Water Heater Minimum EF	0.67

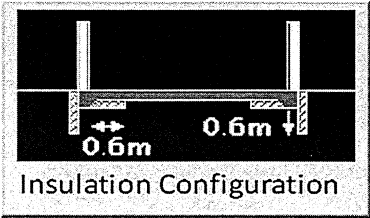
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Slab on Grade Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

	Weather Station Description		
?	Province:	Ontario	▼
	Region:	Vaughan (Woodbridge)	▼
	Site Description		
?	Soil Conductivity:	Normal conductivity: dry sand, loam, clay	▼
	Water Table:	Normal (7-10 m, 23-33 Ft)	▼
	Floor Dimensions		
?	Length (m):	1.5	
	Width (m):	5.8	
	Exposed Perimeter (m):	8.8	
	Radiant Slab		
?	Heated Fraction of the Slab:	0	
	Fluid Temperature (°C):	33	
	Design Month		
	Heating Month	1	
?	Results		
	Heating Load (Watts):	61	

14.6

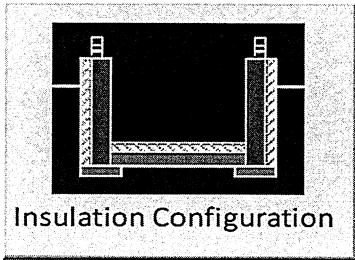
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario ▼			
Region:	Vaughan (Woodbridge) ▼			
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):	674.5			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (ACH=3.57) ▼			
Custom BDT Data:	ELA @ 10 Pa. ▼ 716.42 cm ² 3.57 ACH @ 50 Pa			
Mechanical Ventilation (L/s):	Total Supply:		Total Exhaust:	
	0		0	
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Change Rate (ACH/H):		0.322		
Cooling Air Change Rate (ACH/H):		0.098		

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

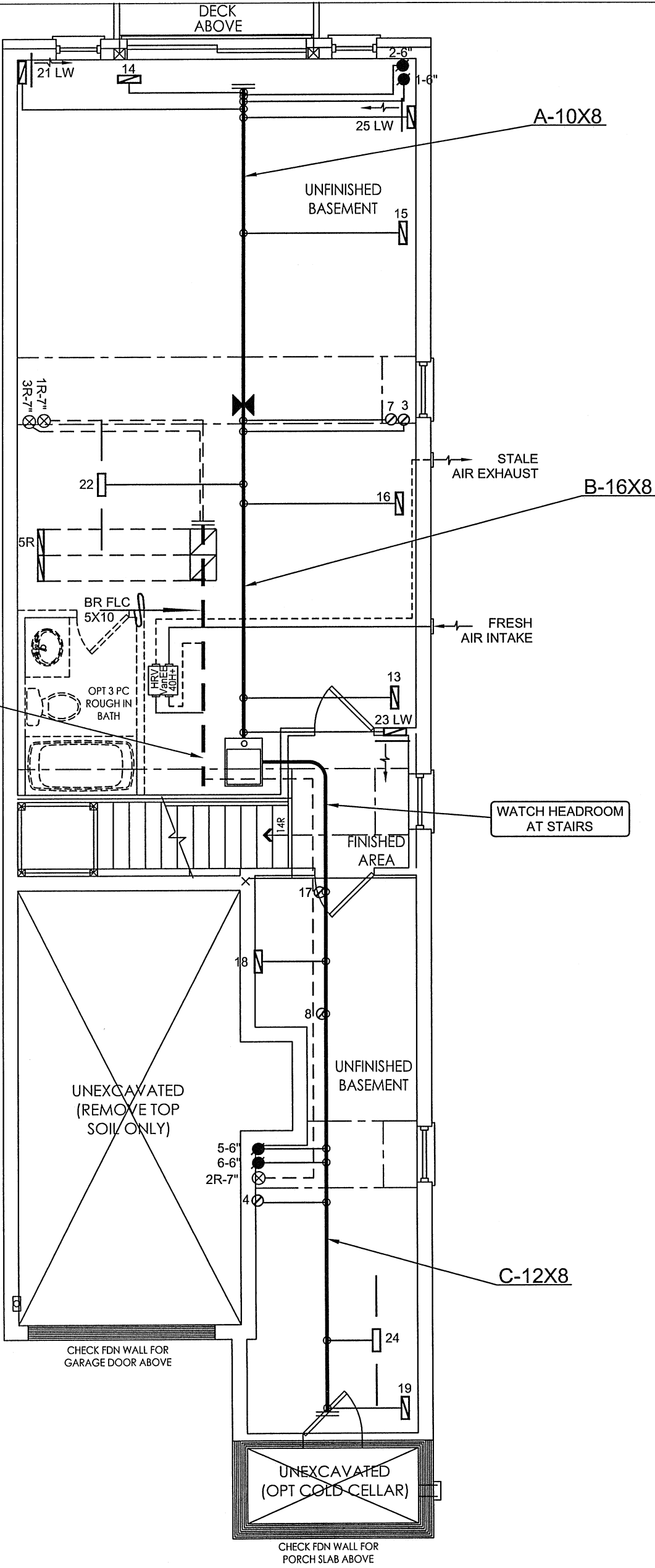
Weather Station Description		
Province:	Ontario	▼
Region:	Vaughan (Woodbridge)	▼
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	▼
Water Table:	Normal (7-10 m, 23-33 Ft)	▼
Foundation Dimensions		
Floor Length (m):	19.2	 Insulation Configuration
Floor Width (m):	5.8	
Exposed Perimeter (m):	41.1	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.8	
Window Area (m ²):	7.8	
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):	1661	

50

2.6 127.2

133.1

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																									
Formula Sheet (For Air Leakage / Ventilation Calculation)																																									
LO#: 70654		Model: 25-10 WOB		Builder: GOLD PARK HOMES		OPT 2ND FL & G		Date: 11/3/2016																																	
Volume Calculation																																									
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6.2.6 Sensible Gain due to Air Leakage																																									
$HG_{satb} = LR_{aire} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																									
$= 0.098 \times 224.31 \times 9^\circ\text{C} \times 1.2 = 232 \text{ W}$																																									
$= 12486 \text{ Btu/h}$																																									
6.2.7 Sensible heat Gain due to Ventilation																																									
$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																									
$86 \text{ CFM} \times 76^\circ\text{F} \times 1.08 \times 0.37 = 2612 \text{ Btu/h}$																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																									
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*HLairv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairv = 0																																									



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.

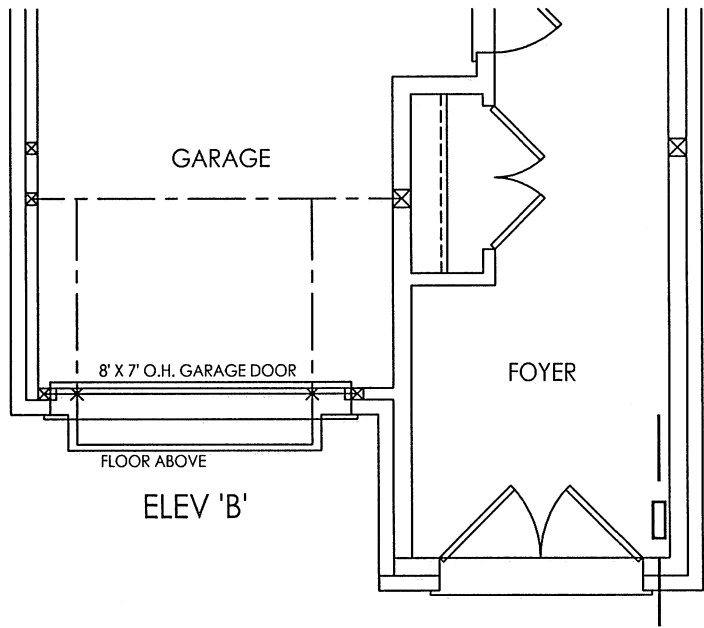
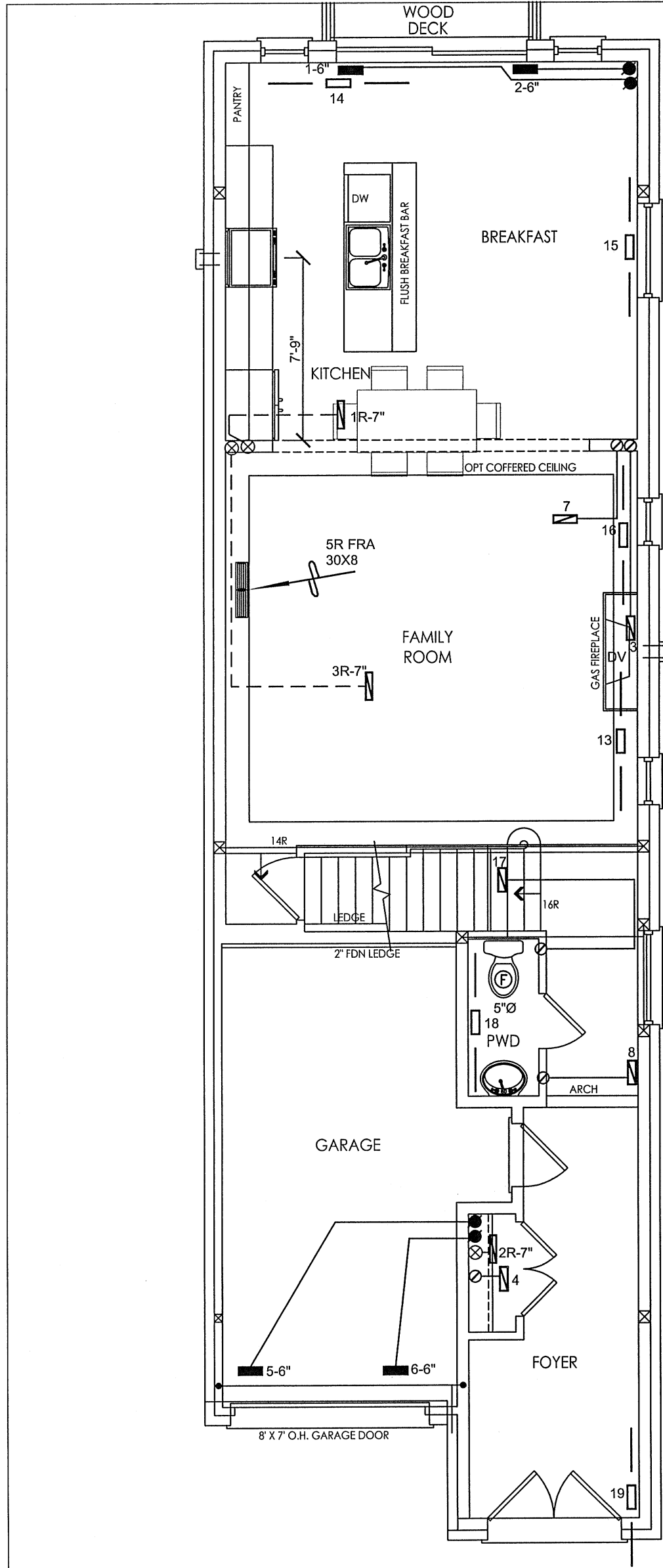
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

WOB
CSA-F280-12
PACKAGE J

HVAC LEGEND						3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE	1.		
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE	No.	Description	Date
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE	REVISIONS		
					REDUCER			

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Client	HVACDESIGNS 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 47976 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title	
GOLD PARK HOMES		MAKE LENNOX	MODEL EL195UH070XE36B-70	3RD FLOOR				BASEMENT HEATING LAYOUT
Project Name		INPUT 66 MBTU/H	OUTPUT 63 MBTU/H	2ND FLOOR	9	3	3	
HUNTINGTON & NASHVILLE KLEINBURG, ONTARIO		COOLING 2.5 TONS	FAN SPEED 995 cfm @ 0.6" w.c.	1ST FLOOR	6	2	2	
OPT 2ND FL & GROUND 25-10 WOB 2119 sqft				BASEMENT	5	1	0	Date NOV/2016
			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				Scale 3/16" = 1'-0"	
							BCIN# 19669	
							LO#	70654



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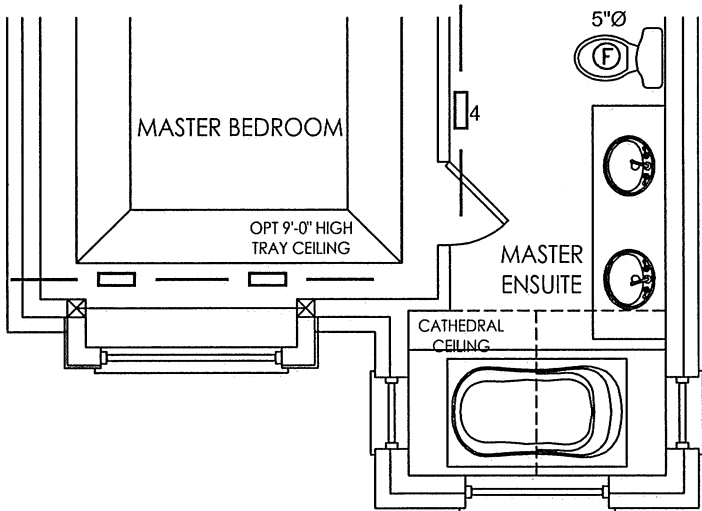
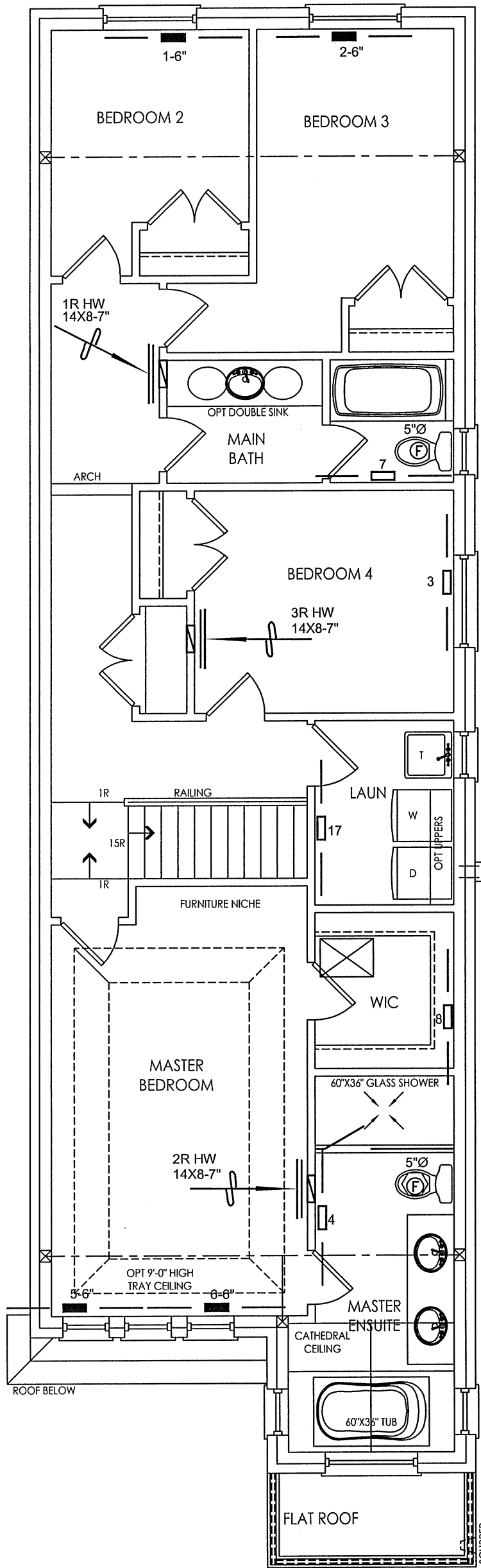
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								Date
								REVISIONS

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GOLD PARK HOMES				FIRST FLOOR HEATING LAYOUT
Project Name				Date NOV/2016
HUNTINGTON & NASHVILLE KLEINBURG, ONTARIO				Scale 3/16" = 1'-0"
OPT 2ND FL & GROUND 25-10 WOB 2119 sqft				BCIN# 19669
				LO# 70654



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Project Name HUNTINGTON & NASHVILLE KLEINBURG, ONTARIO			Date NOV/2016	
OPT 2ND FL & GROUND 25-10 WOB 2119 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO# 70654	