



Energy Efficiency Design Summary: Prescriptive Method

(Building Code Part 9, Residential)

This form is used by a designer to demonstrate that the energy efficiency design of a house complies with the building code using the prescriptive method described in Subsection 3.1.1. of SB-12. This form is applicable where the ratio of Gross area of windows/sidelights/skylights/glazing in doors and sliding glass doors to the gross area of peripheral walls is not more than 22%.

Application No:	For use by Principal Authority
	Model/Certification Number

A. Project Information

Building number, street name	920 OMAGAKI WAY
Municipality	GLOUCESTER
Postal code	4M-1618
Reg. Plan number/ other description	4M-1618
Unit number	269
Lot/Lot#	269

MAY 04 2022

Building Code Reviewed

B. Prescriptive Compliance [Indicate the building code compliance package being employed in this house design]

SB-12 Prescriptive (input design package): Package: A1 Table: 3.1.1.2.A (IP)

C. Project Design Conditions

Climatic Zone (SB-1):	Heating Equipment Efficiency	Space Heating Fuel Source
☒ Zone 1 (< 5000 degree days)	☒ ≥ 92% AFUE	☒ Gas ☐ Propane ☐ Solid Fuel
☐ Zone 2 (≥ 5000 degree days)	☐ ≥ 84% < 92% AFUE	☐ Oil ☐ Electric ☐ Earth Energy
Ratio of Windows, Skylights & Glass (W, S & G) to Wall Area	Other Building Characteristics	
Area of walls = _____ m ² or 3410 ft ²	☐ Log/Post&Beam ☐ ICF Above Grade ☐ ICF Basement	
Area of W, S & G = _____ m ² or 328.60 ft ²	☐ Slab-on-ground ☐ Walkout Basement	
	☐ Air Conditioning ☐ Combo Unit	
	☐ Air Sourced Heat Pump (ASHP)	
	☐ Ground Sourced Heat Pump (GSHP)	
	W, S & G % = 9.6%	
	Utilize window averaging: ☐ Yes ☒ No	

D. Building Specifications [provide values and ratings of the energy efficiency components proposed]

Energy Efficiency Substitutions			
☐ ICF (3.1.1.2.(5) & (6) / 3.1.1.3.(5) & (6))			
☐ Combined space heating and domestic water heating systems (3.1.1.2.(7) / 3.1.1.3.(7))			
☐ Airtightness substitution(s)			
Airtightness test required (Refer to Design Guide Attached)		Permitted Substitution:	
☐ Table 3.1.1.4.B Required: _____		Permitted Substitution: _____	
☐ Table 3.1.1.4.C Required: _____		Permitted Substitution: _____	
Required:		Permitted Substitution:	
Building Component	Minimum RSI / R values or Maximum U-Value⁽¹⁾	Building Component	Efficiency Ratings
Thermal Insulation	Nominal Effective	Windows & Doors	Provide U-Value⁽¹⁾ or ER rating
Ceiling with Attic Space	R60	Windows/Sliding Glass Doors	25
Ceiling without Attic Space	R31	Skylights/Glazed Roofs	0.49
Exposed Floor	R31	Mechanicals	
Walls Above Grade	R22	Heating Equip. (AFUE)	96%
Basement Walls		HRV Efficiency (SRE% at 0° C)	75%
Slab (all >600mm below grade)	--	DHW Heater (EF)	0.8
Slab (edge only ≤600mm below grade)	10	DWHR (CSA B55.1 (min. 42% efficiency))	# Showers _____
Slab (all ≤600mm below grade, or heated)	10	Combined Heating System	No

(1) U value to be provided in either W/(m².K) or Btu/(h.ft².F) but not both.

E. Designer(s) [name(s) & BCIN(s), if applicable, of person(s) providing information herein to substantiate that design meets the building code]

Qualified Designer Declaration of designer to have reviewed and take responsibility for the design work.		
Name	BCIN	Signature
Sandy Pollock	33536	
		Sandy Pollock 2021.10.14 07:08:58 -04'00'

Mechanical Design Report

Low rise residential



Location of Installation	Address 920 OMAGAKI WAY	House Builder PHOENIX
	Application Number	House Model (if applicable) 43-10 MADISON 5BED
Installing Contractor	Name HARDING MECHANICAL	City of Ottawa Building Services Branch MAX 04 2022 Building Code Reviewed Signature
	Address 2210 CAVANMORE RD	
	City OTTAWA	
	Postal Code KOA 1LO	
	Telephone Number 613-831-2257	Fax Number 613-831-9011

SYSTEM DESIGN PARAMETERS

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 fireplace d) ☐ Solid Fuel (including fireplaces) e) ☐ No Combustion Appliances	Heating System ☒ Forced Air ☐ Non-Forced Air (Other -) ☐ Electric Space Heat ☐ Radiant Floor Heat (attach pipe details) ☐ Geothermal (attach loop, pipe & well details) ☐ High Velocity Residential (attach duct details)
House Type 9.32.3.1.(2) ☒ I Type a) or b) appliances only, no solid fuel ☐ II Type I except with solid fuel (including fireplace) ☐ III Any Type c) appliance = Part 6 Design ☐ IV Electric space heat ☐ Other: No forced air = Option 4	Ventilation System ☐ CAN/CSA-F326 ☐ HRV - Exhaust Ducts / Forced Air System ☒ HRV - Simplified Connection to Forced Air System ☐ HRV - Full Ducting / Not Coupled to Forced Air System ☐ Part 6 Design (Other -)

EQUIPMENT DESIGN REQUIREMENTS

Total Ventilation Capacity 9.32.3.3.(1)	TOTAL		
Master Bedroom 1 x 10 L/s = 10 L/s			
Unfinished Basement 1 x 10 L/s = 10			
Other Habitable Rooms 13 x 5 L/s = 65			85 T.V.C.
Principal Ventilation Capacity 9.32.3.4.(1)			
Master Bedroom 1 x 15 L/s = 15			
Other Bedrooms 4 x 7.5 L/s = 30			45 P.V.C.
Required Supplemental Ventilation Capacity (T.V.C. less P.V.C.) =		40	

Furnace size: GMEC960603BNA 60,000 BTU'S KJ

Air conditioner size: GSX16030 2.5 TON KJ (If provided / applicable)

Heating / Cooling Equipment sized according to heat loss/gain calculations of CAN/CSA F280: Yes

Geothermal Equipment designed according to CAN/CSA-C448.2: No

Hydronic Equipment designed according to CAN/CSA-B214: No

Duct (and pipe) schematic attached including sizes, runs and material used: Yes

VENTILATION EQUIPMENT

Heat Recovery Ventilator

Model: CLEAN COMFORT VH30100RNC HRV

85 L/s High 42.5 L/s Low

Exhaust Fans

	Location	Model	L/s	Sones	Principal or Supplemental
1	PDRM	DX90	45	2.5	PRINCIPAL
2	ENSUITE	EC50	25	3.	SUPPLEMENTAL
3	BATH1	EC50	25	3.	SUPPLEMENTAL
4	BATH 2	EC50	25	3.	SUPPLEMENTAL

EQUIPMENT EFFICIENCIES (Please also refer to Energy Efficiency Design Summary)

Heating system:

Cooling system (if applicable):

Water heater:

HRV: 75 % sensible efficiency at 0 degrees:
60 % sensible efficiency at -25 degrees:

DESIGNER CERTIFICATION

I hereby certify that this ventilation system has been designed in accordance with the 2012 Ontario Building Code.

Name: LINDA MCPARLAN

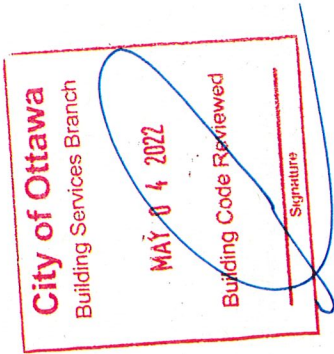
Signature: *Linda McParlan*

Company Name: HARDING MECHANICAL

Date: JAN 6/22

BCIN 24379

HRAI # 6080



1/76-1"

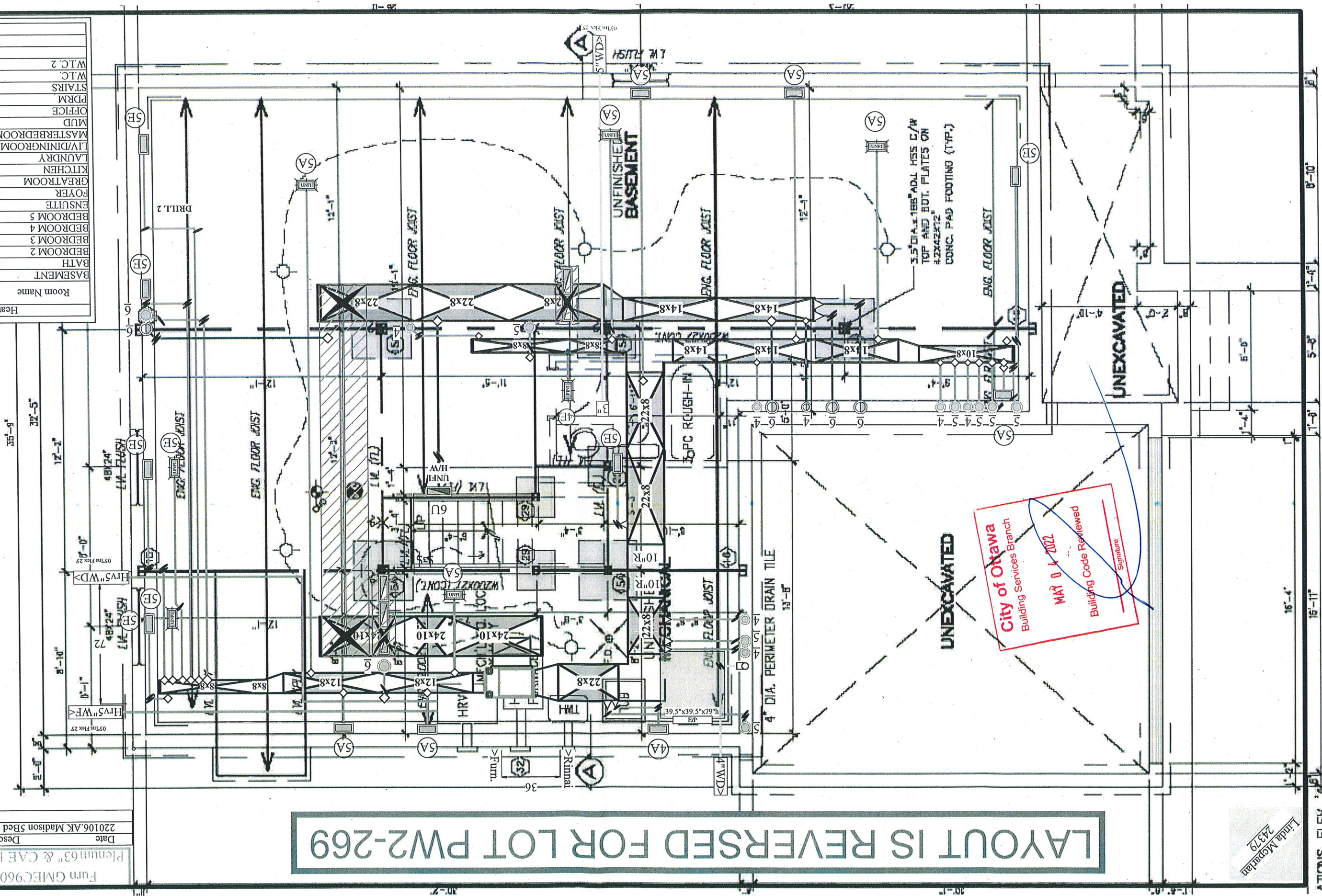
1" = 1" (Full Size)

REPHOTOGRAPH BEFORE
INSTALLMENTS OF
XRAY/PHENIX WHICH
ON OF THE WORK,
INSTRUCTION ONLY
USED.
THIS PROVIDED.

Furn GMEC960603BNA
Plenum 63" & CAE 10"x23 1/4" x5"

Date
Description
220106.AK Madison 5Bed

Room Name		Htg blu	Clg cm	Htg blu
BASEMENT	283	63	0	0
BATH	25	20	0	0
BEDROOM 2	76	43	0	0
BEDROOM 3	56	47	0	0
BEDROOM 4	61	49	0	0
BEDROOM 5	42	34	0	0
ENSUITE	32	19	0	0
FOYER	52	31	0	0
GREATROOM	119	142	0	0
KITCHEN	86	337	0	0
LAUNDRY	13	8	0	0
LIV/DININGROOM	109	89	0	0
MASTERBEDROOM	121	74	0	0
MUD	23	4	0	0
OFFICE	27	15	0	0
PDRM	25	15	0	0
STAIRS	3	2	0	0
W.I.C.	5	3	0	0
W.I.C. 2	9	3	0	0
		1167	999	0



LAYOUT IS REVERSED FOR LOT PW2-269

City of Ottawa
Building Services Branch
MAY 01 2022
Building Code Reviewer
Signature

Linda Mcpartlan
24379

I AM INSTRUMENTED OF
ME DER/PHENIX WHICH
VECTION OF THE NORM.
CONSTRUCTION ONLY
ISSUED.

VERSIONS PROVIDED

Description	Bed

Room Name		Htg cfm	Clg cfm	Htg btu
Heat Loss				
BASEMENT		283	63	0
BATH		25	20	0
BEDROOM 2		76	43	0
BEDROOM 3		56	47	0
BEDROOM 4		61	49	0
BEDROOM 5		42	34	0
ENSUITE		32	19	0
FOYER		52	31	0
GREATROOM		119	142	0
KITCHEN		86	337	0
LAUNDRY		13	8	0
LIV/DININGROOM		109	89	0
MASTERBEDROOM		121	74	0
MUD		23	4	0
OFFICE		27	15	0
PDRM		25	15	0
STAIRS		5	4	0
W.C.		3	2	0
W.C. 2		9	3	0
				0
				0

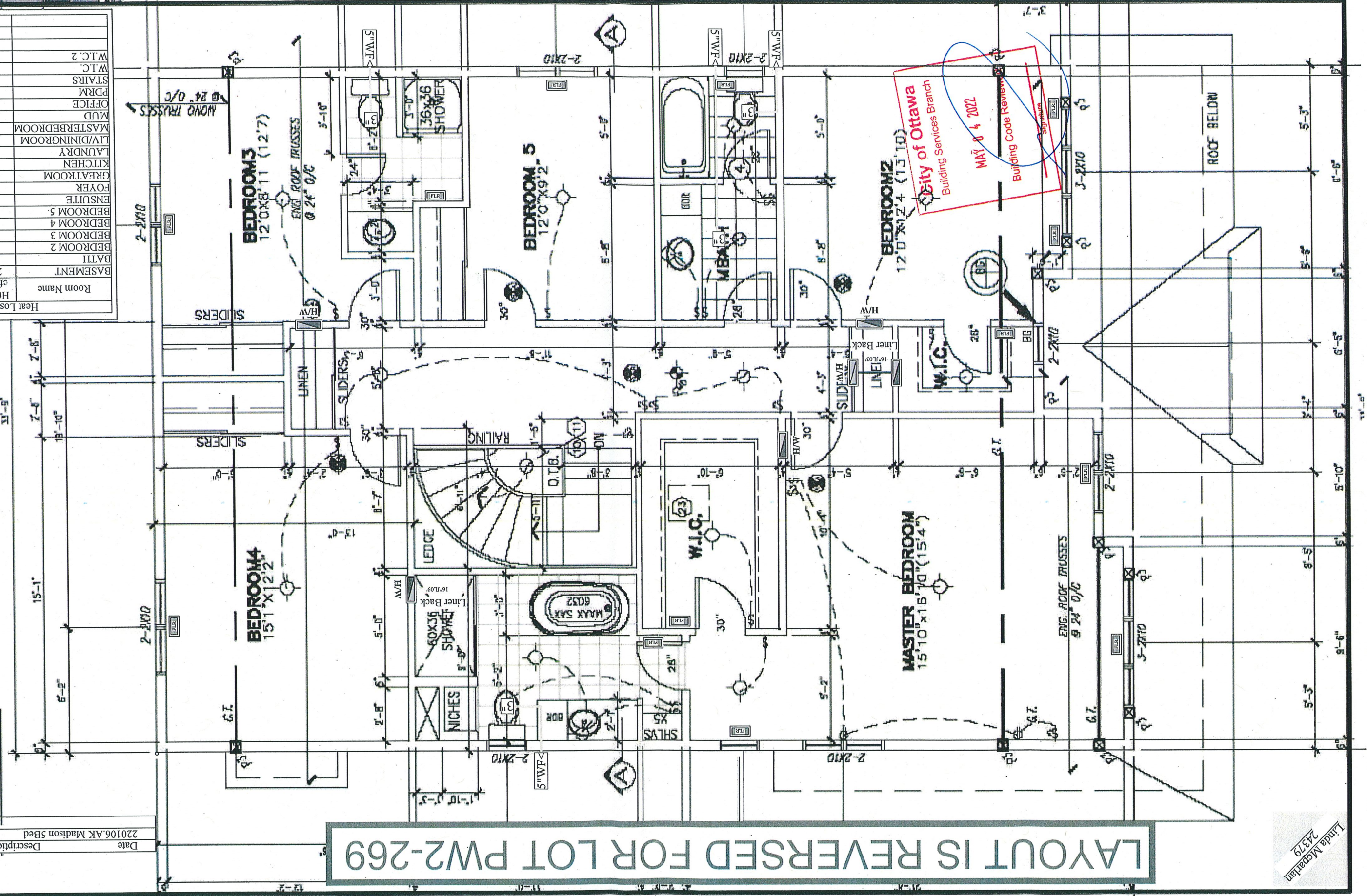
LAYOUT IS REVERSED FOR LOT PW2-269

Linda Mcpartlan
24379

TO DOR/PHENIX BEFORE
WE ARE INSTRUMENTS OF
THE CORP/PHENIX WHICH
AFFIRMATION OF THE WORK
CONSTRUCTION ONLY
EN ISSUED.
DIMENSIONS PROVIDED

220106.AK Madison 5Bed
Date
Description

Room Name	Htg blu	Clg clm	Htg blu
BASEMENT	283	63	0
BATH	25	20	0
BEDROOM 2	76	43	0
BEDROOM 3	56	47	0
BEDROOM 4	61	49	0
BEDROOM 5	42	34	0
ENSUITE	32	19	0
FOYER	52	31	0
GREATROOM	119	142	0
KITCHEN	86	337	0
LAUNDRY	13	8	0
LIV/DININGROOM	109	89	0
MASTERBEDROOM	121	74	0
MUD	23	4	0
OFFICE	27	15	0
PDRM	25	15	0
STAIRS	5	4	0
W.C.	3	2	0
W.C. 2	9	3	0
	1167	999	0



Linda Mcpartlan
24379



Kollaard Associates Engineers

210 Prescott Street
P.O. Box 189
Kemptville, Ontario K0G 1J0

Civil • Geotechnical •
Structural • Environmental •
Hydrogeology •

(613) 860-0923

FAX: (613) 258-0475

January 25, 2022

Kollaard File # 220022 – LOT269

Phoenix Homes
18A Bentley Avenue
Ottawa, Ontario
K2E 6T8

Attn: Sandy Pollock
Tel: 613-723-9227 x 165
Email: spollock@phoenixhomes.ca



Re: Proposed Single Family Dwelling, Lot # 269 Omagaki Way, Pathways, City of Ottawa, Kollaard Associates File # 220022

With regard to structural issues only, Kollaard Associates has reviewed the following drawings:

- Phoenix Homes, Lot # 269 Pathways, Pages # 1 to 8, Dated 25/01/2022
- Grandor Lumber Inc., Roof Truss Layout, Madison "A", Dated 16/12/2020
- Velcan Forest Products, 2nd Floor Joist Layout, PWY2-269, Dated 01/21/2022
- Velcan Forest Products, 1st Floor Joist Layout, PWY2-269, Dated 01/21/2022

Kollaard Associates offers the following comments:

Second Floor Plan – Pages # 4:

1. It is the opinion of Kollaard Associates that the proposed lintels and supporting posts shown on Phoenix Homes Pages # 4 are adequate.
2. Posts supporting girders may consist of built up 2x6 posts as indicated on Phoenix Homes Pages # 4 and are laterally supported by plywood or OSB sheathing (i.e. posts form part of sheathed exterior walls unless noted).
3. Truss design is by others.

Ground Floor Plan – Pages # 3:

4. It is the opinion of Kollaard Associates that the proposed lintels, beams and supporting posts shown on Phoenix Homes Pages # 4 are adequate
5. Ramset a 2x6 to the top flange of all steel beams to attach the above framing, floor joists and flush LVL beams.
6. Truss design is by others.
7. Floor joist design and flush LVL beams within the floor structure are by the manufacturer.



Professional Engineers
Ontario

Authorized by the Association of Professional Engineers
of Ontario to offer professional engineering services.

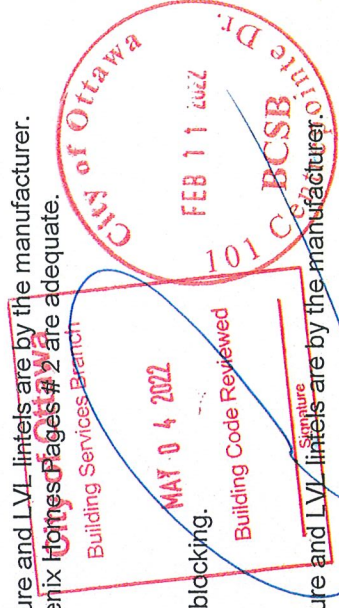
Basement Plan – Pages # 2:

8. It is the opinion of Kollaard Associates that the proposed steel beams steel posts shown on Phoenix Homes Pages # 2 are adequate.
9. The front porch slab reinforcement described on Phoenix Homes Pages # 1 is adequate.
10. The foundation walls at the bottom of the window openings that exceed 47¼" in width (or the sum of the widths of the window openings exceed 25% of the length of the wall) are considered to be laterally unsupported as per 2012 OBC 9.15.4.3. The reinforcement around the window openings noted on Phoenix Homes Sheets # 2 are adequate.
11. The remaining proposed foundation walls conform to 2012 OBC Table 9.15.4.2.A. ensuring that the grade difference between the basement slab and the exterior grade (including the garage slab) does not exceed 7'-6½" for the full height 7'-10" foundation walls.
12. The proposed strip footings and interior pad footings shown on Phoenix Homes Page # 2 and noted on Phoenix Homes Page # 1 are adequate.
13. The details for the rear bracket supporting the landing are designed and approved by others (Estructura Inc. Dwg. # SK-1, Stamp Date: December 6, 2019).

14. Floor joist design, flush LVL beams within the floor structure and LVL lintels are by the manufacturer. The posts supporting the flush LVL lintels shown on Phoenix Homes Pages # 2 are adequate.

General Notes:

15. All gravity loads to be carried to foundation through solid blocking.
16. Truss design is by others.
17. Floor joist design, flush LVL beams within the floor structure and LVL lintels are by the manufacturer.
18. The self supporting stairs are to be designed by the stair manufacturer.
19. All dimension lumber, except non-load bearing 8 ft 2x6 studs to be No.2 grade SPF or better.
20. Non-load bearing 8 ft 2x6 studs to be No.3 or Stud grade SPF or better.
21. All guards to be as per OBC SB-7, unless otherwise mentioned and designed by others.
22. All brick lintels to be as per OBC Table 9.20.5.2.B.
23. Unless otherwise noted, LVL to be 1.8E 3000Fb LVL (Canadian Limit States bending strength of at least 39.5 MPa) with 1¾" nominal width or better.
24. Pemco Steel adjustable posts are designed and approved by the manufacturer. The adjustable steel posts are designed for a maximum allowable load of 106.8 kN at a maximum height of 9'-3".
25. All 3" x 3" x 3/16" HSS posts c/w 6" x 6" x 3/8" top and bottom bearing plates.
26. The assumed soil bearing resistance of 125 kPa is to be verified prior to construction.

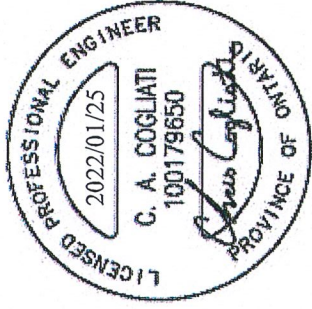




27. Note that the truss manufacturer/floor joist supplier has sized the flush LVL beams and girder trusses shown on the building drawings. The comments provided by Kollaard Associates in this report are based in part on the design indicated in the truss and floor layouts. If a different truss and/or floor layout is used in construction, comments made in this report may no longer be valid. Provide Kollaard Associates with the full truss package prior to construction.
28. Comments provided in this report are made in consideration of Part 9 and Part 4 (where applicable) of the 2012 OBC as amended.
29. This report constitutes a review of the structural information indicated on the building plans cited in this report for the client indicated above.

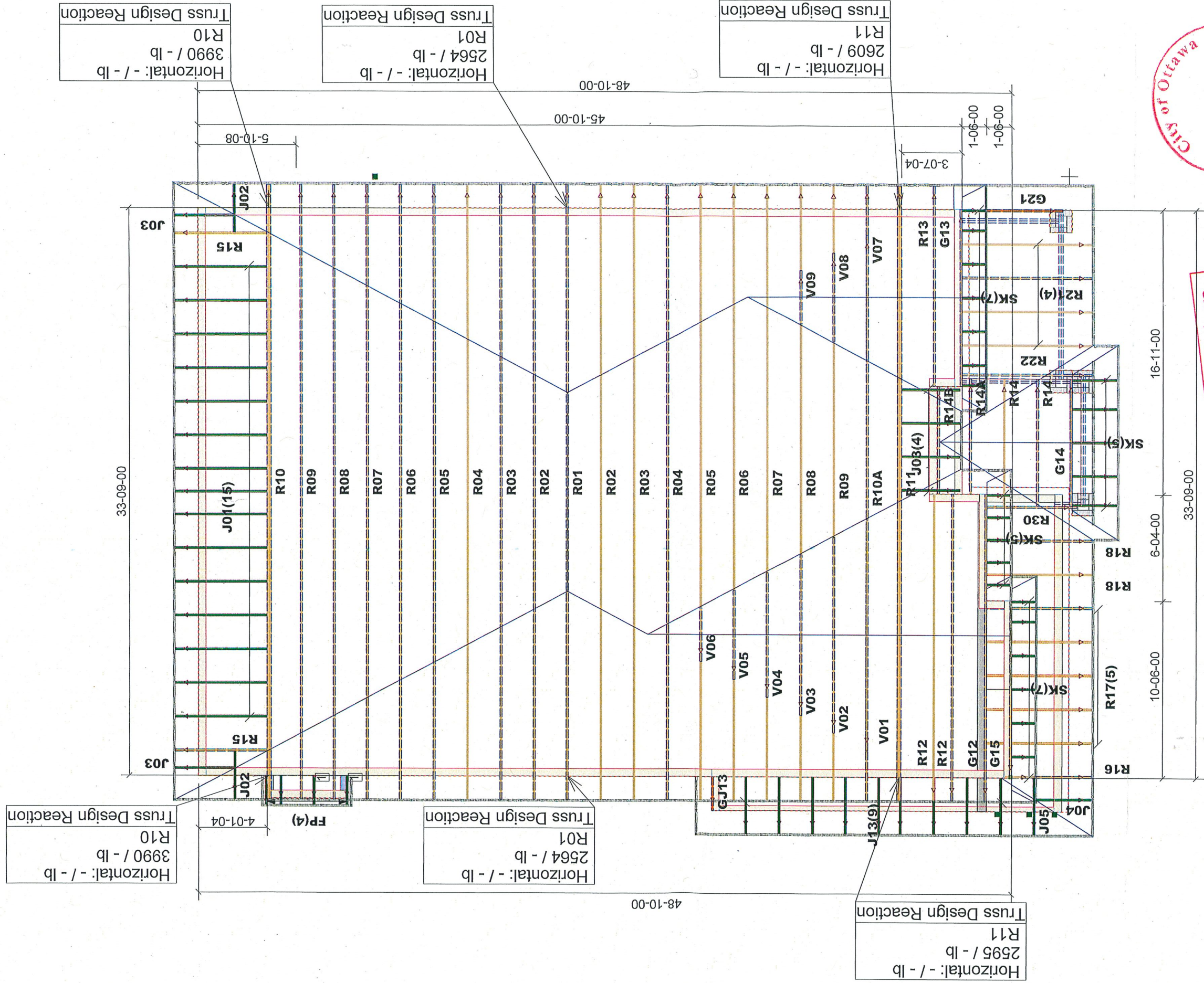
We trust this letter provides sufficient information for your present purposes. If you have any questions concerning this letter please do not hesitate to contact our office.

Sincerely,
Kollaard Associates Inc.



Christopher Cogliati, P.Eng.





TYPICAL OTTAWA DESIGN LOADS.

Member	Load Type	PT 9	PT 4
Top Chord	Snow	37.1	50
	Dead	5	5-10
Bot Chord	Live	0	10
	Dead	7	7

TYPICAL SPACING = 24.0 IN C/C

THIS DESIGN COMPLIES WITH:

- PART 4 OR 9 OF OBC 2012 Reg. 332/12 (2019 Amendment)
- CSA 086-09
- CCMC ACCEPTANCE 11996-L, 0319-L, 13270-L
- TPIC 2014
- (REFER TO INDIVIDUAL TRUSS DRAWINGS FOR SPECIFIC LOADS & SPACING)

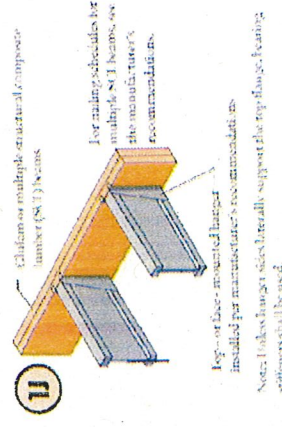
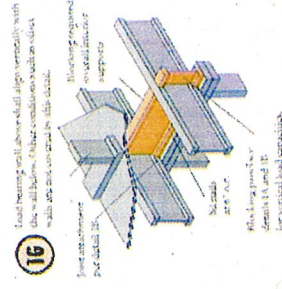
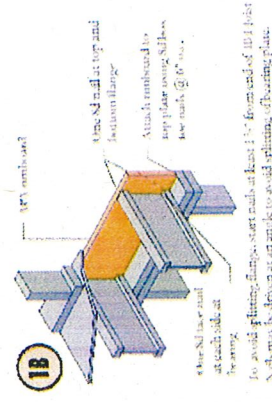
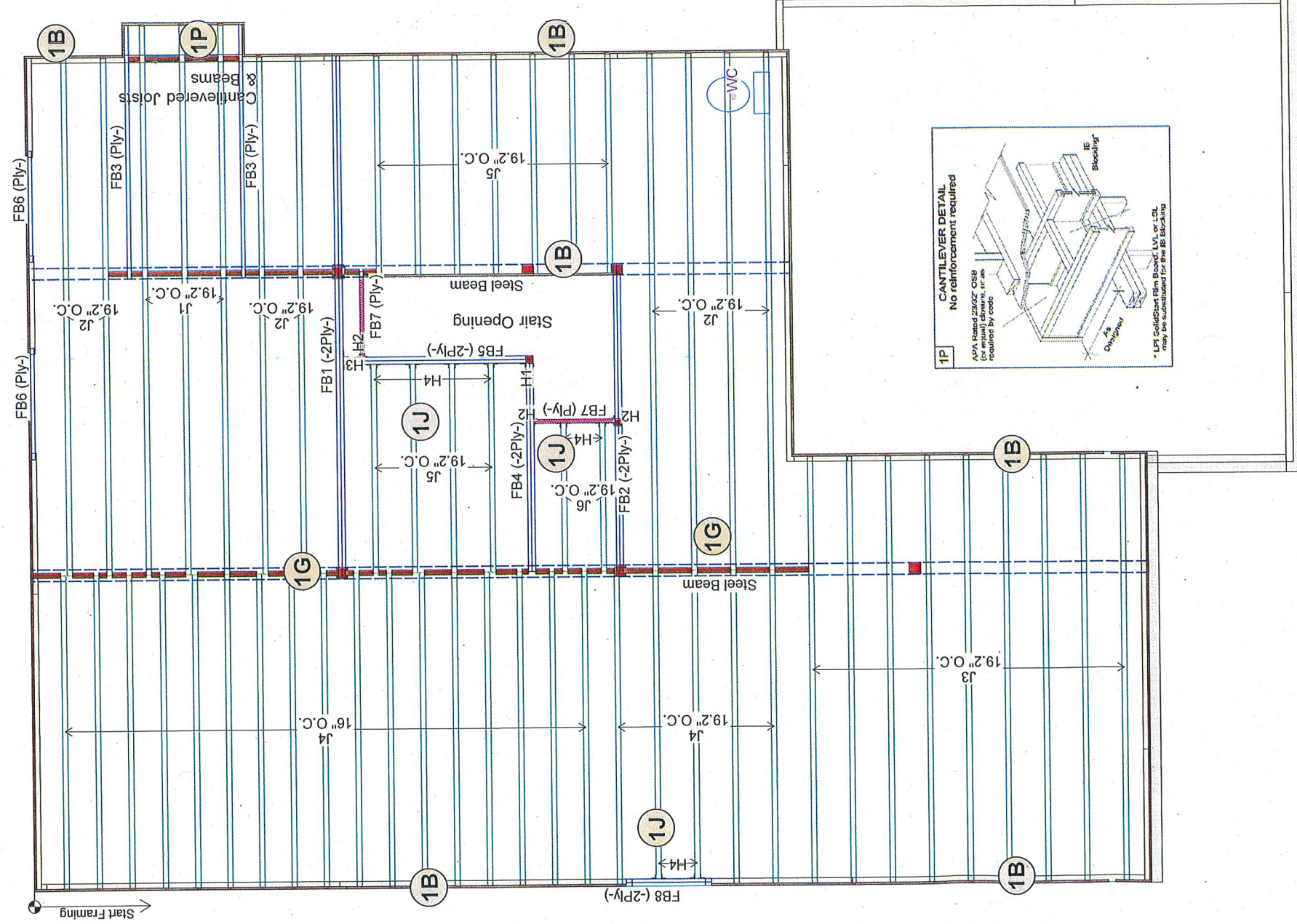
HURRICANE AND SEISMIC TIES:

- ANY TIES SPECIFIED ON THIS LAYOUT FOR UPLIFT OR SEISMIC CONNECTIONS MUST BE REVIEWED AND APPROVED BY THE BUILDING DESIGNER/ENGINEER, AS STATED IN THE TPIC 2014. THE TRANSFER OF THESE LOADS TO THE ENTIRE STRUCTURE BELOW HAS NOT BEEN ANALYZED.



JOB: PHOENIX HOMES
MADISON "A"
PMADA-4

DATE: 16/12/2020



Products				
PlotID	Length	Product	Piles	Net Qty
J1	24' 0"	9 1/2 IB400	1	3
J2	22' 0"	9 1/2 IB400	1	8
J3	18' 0"	9 1/2 IB400	1	9
J4	14' 0"	9 1/2 IB400	1	22
J5	10' 0"	9 1/2 IB400	1	11
J6	6' 0"	9 1/2 IB400	1	2
FB1 (-2Ply-)	22' 0"	1 3/4" x 9 1/2" (1.8E 3000)	WestFraser LVL	2
FB2 (-2Ply-)	14' 0"	1 3/4" x 9 1/2" (1.8E 3000)	WestFraser LVL	2
FB3 (Ply-)	12' 0"	1 3/4" x 9 1/2" (1.8E 3000)	WestFraser LVL	1
FB4 (-2Ply-)	10' 0"	1 3/4" x 9 1/2" (1.8E 3000)	WestFraser LVL	2
FB5 (-2Ply-)	8' 0"	1 3/4" x 9 1/2" (1.8E 3000)	WestFraser LVL	2
FB6 (Ply-)	6' 0"	1 3/4" x 9 1/2" (1.8E 3000)	WestFraser LVL	1
FB7 (Ply-)	4' 0"	1 3/4" x 9 1/2" (1.8E 3000)	WestFraser LVL	1
FB8 (-2Ply-)	4' 0"	1 3/4" x 9 1/2" (1.8E 3000)	WestFraser LVL	2
R1	12' 0"	1 1/8" x 9 1/2" APA Rim Board	1	14
bxx1	37' 0"	9 1/2 IB400	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	1	USP	HD410IF
H2	3	USP	HUS179
H3	1	USP	THD410
H4	8		IHFL25925

Design Assumptions	
Building Code:	IBC 2012 (2019 Amendment)
Floor Loads:	40,000 lb/ft² Live Load
	25,000 lb/ft² Dead Load
Building Type	Residential - HSB (NBCC Part 9)
Deflection Criteria:	
Floor Joist:	L/360,000 Live & L/240,000 Total
Floor Beams:	L/360,000 Live & L/240,000 Total
Blocking:	None
Subfloor:	3/4" OSB
Ceiling:	None
Additional Load:	None

Additional Load: none

City of Ottawa

Building Services Branch

MAY 04 2022

Building Code Reviewed

1274

PHOENIX HOMES

PWY2-269

Pathways

Ottawa, ON.

Utawa, Ont. Projects/Beams It is the responsibility of the project engineer to ensure the overall stability of the structure.	
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All product names are trademarks of their respective owners.

PHOENIX HOMES

Elevation A Standard

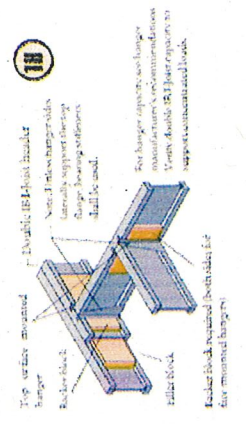
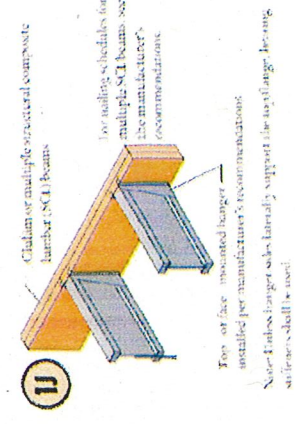
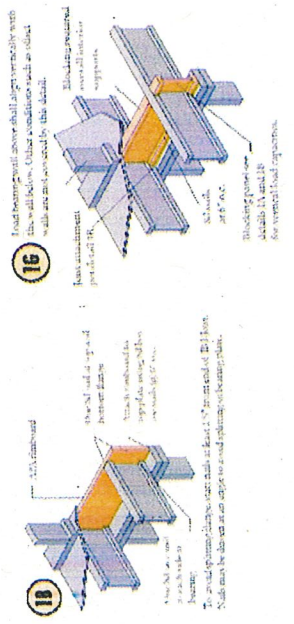
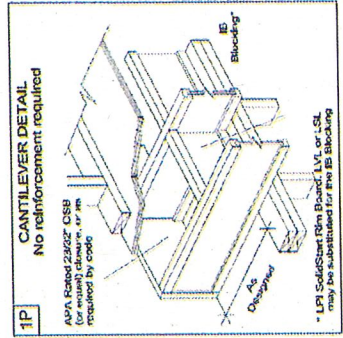
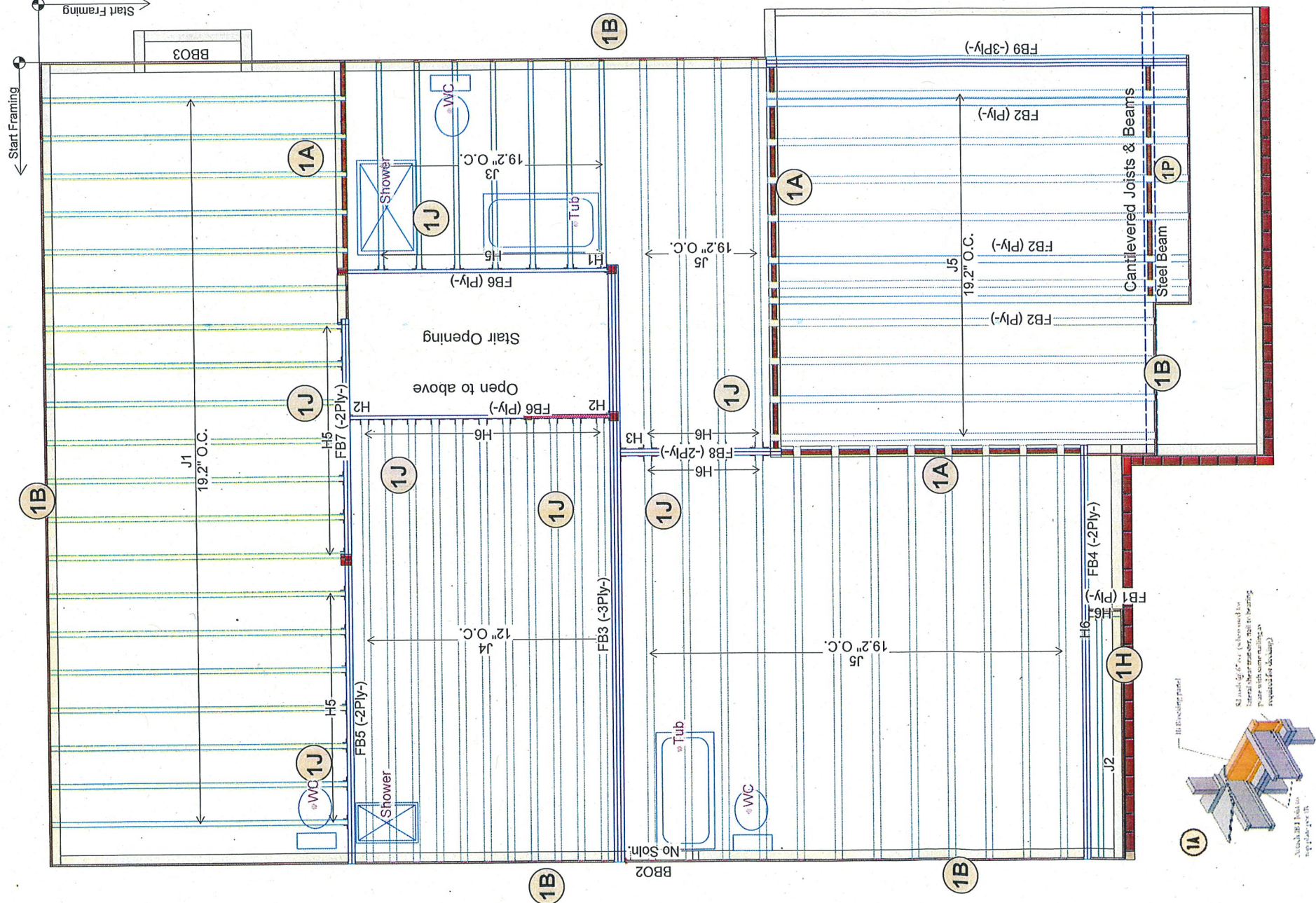
VELCAN
FOREST PRODUCTS
(905) 571-2477

Project #:

V26726

Page 1

1/21/2022



Products				Connector Summary	
PlotID	Length	Product	Plies	Qty	Product
J1	14' 0"	9 1/2 IB400	1	1	USP
J2	12' 0"	9 1/2 IB400	1	2	USP
J3	10' 0"	9 1/2 IB400	1	1	USP
J4	20' 0"	9 1/2 IB800	1	21	IHFL25925
J5	18' 0"	9 1/2 IB800	1	21	IHFL35925
FB1 (Ply-)	2' 0"	9 1/2 IB400	1		
FB2 (Ply-)	18' 0"	9 1/2 IB800	1		
FB3 (-3Ply-)	26' 0"	1 3/4" x 9 1/2" (1.8E 3000) WestFraser LVL	3		
FB4 (-2Ply-)	18' 0"	1 3/4" x 9 1/2" (1.8E 3000) WestFraser LVL	2		
FB5 (-2Ply-)	14' 0"	1 3/4" x 9 1/2" (1.8E 3000) WestFraser LVL	2		
FB6 (Ply-)	12' 0"	1 3/4" x 9 1/2" (1.8E 3000) WestFraser LVL	1		
FB7 (-2Ply-)	12' 0"	1 3/4" x 9 1/2" (1.8E 3000) WestFraser LVL	2		
FB8 (-2Ply-)	8' 0"	1 3/4" x 9 1/2" (1.8E 3000) WestFraser LVL	2		
FB9 (-3Ply-)	18' 0"	1 3/4" x 11 7/8" (1.8E 3000) WestFraser LVL	3		
R1	12' 0"	1 1/8" x 9 1/2" APA Rim Board	1		
bxx1	39' 0"	9 1/2 IB400	1		

Design Assumptions	
Building Code:	OBC 2012 (2019 Amendment)
Floor Loads:	40,000 lb/ft² Live Load 25,000 lb/ft² Dead Load
Building Type	Residential - HSB (NBCC Part 9)
Deflection Criteria:	
Floor Joist:	L/360,000 Live & L/240,000 Total
Floor Beams:	L/360,000 Live & L/240,000 Total
Blocking:	None
Subfloor:	3/4" OSB
Ceiling:	1/2" Gypsum
Additional Load:	None

City of Ottawa
Building Services Branch
MAY 04 2022
Building Code Reviewed
Signature

1512

PHOENIX HOMES

PWY2-269

Pathways

Ottawa, ON.

Second Floor Framing

Elevation A

Standard

VELCAN
FOREST PRODUCTS
(905) 571-2477

Project # :
V26726
Page 2