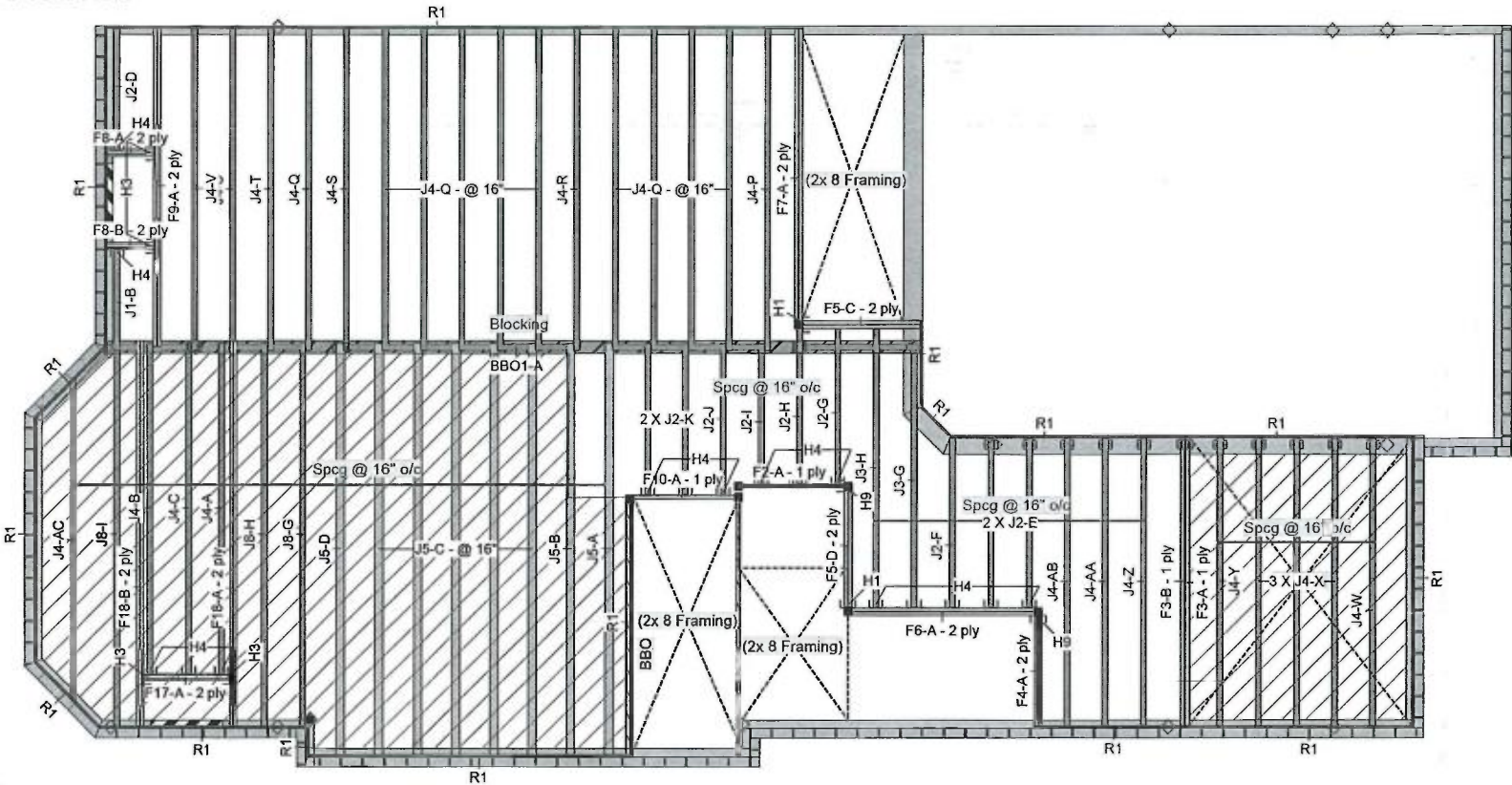


Ground Floor



Engineered floor joists shall be installed in accordance with the supplier's layout and specifications forming part of the permit drawings.

Legend

Load from Above

Wall

Wall Opening

Norbord Rimboard Plus 1.125 X 9.5

NJ 9.5

NJ40U 9.5

NJH 9.5

Forex 2.0E-3000Fb LVL 1.75 X 9.5

1. OBC 2012 O.Reg 332/12 as amended
2. Nascor CCMC - 13535-R
3. LVL CCMC -14056-R
4. CAN/CSA-O86-09
5. CCMC -12787-R APA PR-L310(C)

THIS CERTIFICATION IS TO CONFIRM THAT:

1. THE LOADS USED IN THE CALCULATION OF THE ATTACHED APPROVED COMPONENTS CONFORM TO THE FLOOR ASSEMBLY SHOWN ON THIS LAYOUT.

2. THE FLOOR JOISTS COMPLY WITH THE NASCOR SPAN TABLE FOR THE LOADS AND SPACING SHOWN ON THIS LAYOUT.

THE FLOOR SYSTEM MUST BE ASSEMBLED IN ACCORDANCE TO THE NASCOR SPECIFIER GUIDE. MULTI-PLY MEMBERS MUST BE ATTACHED TOGETHER AS PER THE INCLUDED MULTIPLE MEMBER CONNECTION DETAIL.

ALL OTHER COMPONENTS AND STRUCTURAL ELEMENTS SUPPORTING THE FLOOR SYSTEM SUCH AS BEAMS, WALLS, COLUMNS AND FOUNDATION WALLS AND FOOTINGS INCLUDING ANCHORAGE OF COMPONENTS AND BRACING FOR LATERAL STABILITY ARE THE RESPONSIBILITY OF OTHERS.



REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

Ground Floor LVL/LSL (Flush)							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F3	Forex 2.0E-3000Fb LVL	1.75	9.5			2	12-0-0
F7	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	12-0-0
F6	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	8-0-0
F5	Forex 2.0E-3000Fb LVL	1.75	9.5	2	2	4	6-0-0
F10	Forex 2.0E-3000Fb LVL	1.75	9.5			1	6-0-0
F4	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	4-0-0
F2	Forex 2.0E-3000Fb LVL	1.75	9.5			1	4-0-0

I Joist (Flush)							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F18	NJ	1.5	9.5	2	2	4	14-0-0
F9	NJ	1.5	9.5	1	2	2	12-0-0
F17	NJ	1.5	9.5	1	2	2	4-0-0
F8	NJ	1.5	9.5	2	2	4	2-0-0
J5	NJ40U	3.5	9.5			8	16-0-0
J8	NJH	2.5	9.5			3	14-0-0
J4	NJH	2.5	9.5			28	12-0-0
J3	NJH	2.5	9.5			2	10-0-0
J2	NJH	2.5	9.5			10	6-0-0
J1	NJH	2.5	9.5			1	4-0-0

Rim Board							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			11	12

Blocking							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK1	NJH	2.5	9.5	Lin Ft		Varies	17-0-0

Hanger							
				Beam/Girder		Supported Member	
Label	Pcs	Description	Skew	Slope	fasteners	fasteners	
H1	2	HUC410 (Min)			14 16d	6 10d	
H3	4	LT2-159			4 10dx1 1/2	2 10dx1 1/2	
H4	16	LT259			4 10dx1 1/2	2 10dx1 1/2	
H9	2	HUCQ1.81/9-SDS					

NOTES:

1. Framers to verify dimensions on the architectural drawings.

2. Double joist only require filler/backer ply when supporting another member using a face-mounted hanger.

3. Install 2x4 blocking @ 24" o/c under parallel non-load bearing walls.

4. Install single-ply flush window header along inside face of rimboard/rimjoist.

5. Refer to Nascor specifier guide for installation works.

6. Squash blocks recommended to be installed at end bearing on all first level joists which support loading from above exceeding two levels floor or roof.

7. Load transfer blocks to be installed under all point loads.

8. It shall be the framer's responsibility that floor joists and beams are fastened as per the hanger manufacturer's standards.

Refer to Multiple Member Connection Detail to ply to ply nailing or bolting requirements.

Rim parallel to joists: 1-1/8" rimboard with 2"x 4" block (1/16" longer than rim depth @ 16" o/c). All other components and structural elements supporting the floor system such as beams, walls, columns, and foundation walls and footings including anchorage of components and bracing for lateral stability are the responsibility of Others.

Hatch area represents ceramic tiled floor with an additional dead load of 5 PSF

The framing shown on this layout may deviate from the architectural and structural drawings. Project Engineer to review and approve the deviation prior to construction.

ARCHITECTURAL DRAWINGS:

REGION DESIGN INC.
8700 Dufferin St., Concord, ON
Date: May 2018
Project No:
Model: Hemlock 5-5C

NASCOR

Layout Name

HEMLOCK 5-1 & 5-2

Design Method

LSD

Description

MINNISALE HOMES
BRAMPTON, ONT.

Created

June 26, 2018

Builder

GREENPARK

Sales Rep

RM

Designer

RCO

Shipping

Project

Builder's Project

Kott Lumber Company

14 Anderson Blvd

Stouffville, Ontario

Canada

L4A 7X4

905-642-4400

Job Path

S:\CUSTOMERS\GREENPARK

\MINNISALE HOMES\MODELS

\HEMLOCK 5\HEMLOCK 5-1\FLOOR

\REV\F-HEMLOCK 5-1 & 5-2 ENGG

Ground Floor

Design Method

LSD

Building Code

NBCC 2010 / OBC

2012

Floor

Loads

Live

40

Dead

15

Deflection Joist

LL Span 1/

480

TL Span 1/

360

LL Cant 2L/

480

TL Cant 2L/

360

Deflection Girder

LL Span 1/

360

TL Span 1/

240

LL Cant 2L/

480

TL Cant 2L/

360

Decking

Deck

SPF Plywood

Thickness

3/4"

Fastener

Nailed & Glued

Vibration



All work shall conform to the Ontario Building Code O. Reg. 332/12 as amended



Second Floor							
LVL/LSL (Flush)							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F1	Forex 2.0E-3000Fb LVL	1.75	9.5	1	3	3	12-0-0
F13	Forex 2.0E-3000Fb LVL	1.75	9.5	2	2	4	10-0-0
F5	Forex 2.0E-3000Fb LVL	1.75	9.5	2	2	4	6-0-0

Joist (Flush)							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
J6	NJ60U	3.5	9.5			28	16-0-0
J8	NJH	2.5	9.5			7	14-0-0
J4	NJH	2.5	9.5			22	12-0-0
J3	NJH	2.5	9.5			8	10-0-0
J2	NJH	2.5	9.5			4	6-0-0
J1	NJH	2.5	9.5			1	4-0-0
J7	NJH	2.5	9.5			1	2-0-0

Rim Board							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			11	12

Hanger					Beam/Girder	Supported Member
Label	Pcs	Description	Skew	Slope	fasteners	fasteners
H4	14	LT259			4 10dx1 1/2	2 10dx1 1/2
H7	3	HGUS410			46 16d	16 16d
H8	1	LT259				

NOTES:

1. Framer to verify dimensions on the architectural drawings.
2. Double joist only require filler/backer ply when supporting another member using a face-mounted hanger.
3. Install 2x4 blocking @ 24" o/c under parallel non-load bearing walls.
4. Install single-ply flush window header along inside face of rimboard/rimjoist.
5. Refer to Nascor specifier guide for installation works.
6. Squash blocks recommended to be installed at end bearing on all first level joists which support loading from above exceeding two levels floor or roof.
7. Load transfer blocks to be installed under all point loads.
8. It shall be the framer's responsibility that floor joists and beams are fastened as per the hanger manufacturer's standards.

Refer to Multiple Member Connection Detail to ply to ply nailing or bolting requirements.

Rim parallel to joists: 1-1/8" rimboard with 2"x 4" block (1/16" longer than rim depth @ 16" o/c). All other components and structural elements supporting the floor system such as beams, walls, columns, and foundation walls and footings including anchorage of components and bracing for lateral stability are the responsibility of Others.

Hatch area represents ceramic tiled floor with an additional dead load of 5 PSF

The framing shown on this layout may deviate from the architectural and structural drawings. Project Engineer to review and approve the deviation prior to construction.

ARCHITECTURAL DRAWINGS:

REGION DESIGN INC.
8700 Dufferin St., Concord, ON
Date: May 2018
Project No:
Model: Hemlock 5-5C

NASCOR

Layout Name
HEMLOCK 5-1 & 5-2

Design Method
LSD

Description
MINNISALE HOMES
BRAMPTON, ONT.

Created
June 26, 2018

Builder
GREENPARK

Sales Rep	
RM	

Designer
RCO

Shipping
Project

Builder's Project

Kott Lumber Company

14 Anderson Blvd
Stouffville, Ontario
Canada
L4A 7X4
905-642-4400

Job Path
S:\CUSTOMERS\GREENPARK
MINNISALE HOMES\MODELS
HEMLOCK 5\HEMLOCK 5-1\FLOOR
REV\HEMLOCK 5-1.isl

Second Floor

Design Method	LSD
Building Code	NBCC 2010 / OBC 2012

Floor

Loads	
Live	40
Dead	15

Deflection Joist

LL Span L/	480
TL Span L/	360
LL Cant 2L/	480
TL Cant 2L/	360
Deflection Girder	
LL Span L/	360
TL Span L/	240
LL Cant 2L/	480
TL Cant 2L/	360

Deck	SPF Plywood
Thickness	5/8"
Fastener	Nailed & Glued
Vibration	
Ceiling:	Gypsum 1/2"

THIS CERTIFICATION IS TO CONFIRM THAT:

1. THE LOADS USED IN THE CALCULATION OF THE ATTACHED APPROVED COMPONENTS CONFORM TO THE FLOOR ASSEMBLY SHOWN ON THIS LAYOUT.
2. THE FLOOR JOISTS COMPLY WITH THE NASCOR SPAN TABLE FOR THE LOADS AND SPACING SHOWN ON THIS LAYOUT.

THE FLOOR SYSTEM MUST BE ASSEMBLED IN ACCORDANCE TO THE NASCOR SPECIFIER GUIDE. MULTI-PLY MEMBERS MUST BE ATTACHED TOGETHER AS PER THE INCLUDED MULTIPLE MEMBER CONNECTION DETAIL.

ALL OTHER COMPONENTS AND STRUCTURAL ELEMENTS SUPPORTING THE FLOOR SYSTEM SUCH AS BEAMS, WALLS, COLUMNS AND FOUNDATION WALLS AND FOOTINGS INCLUDING ANCHORAGE OF COMPONENTS AND BRACING FOR LATERAL STABILITY ARE THE RESPONSIBILITY OF OTHERS.



REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

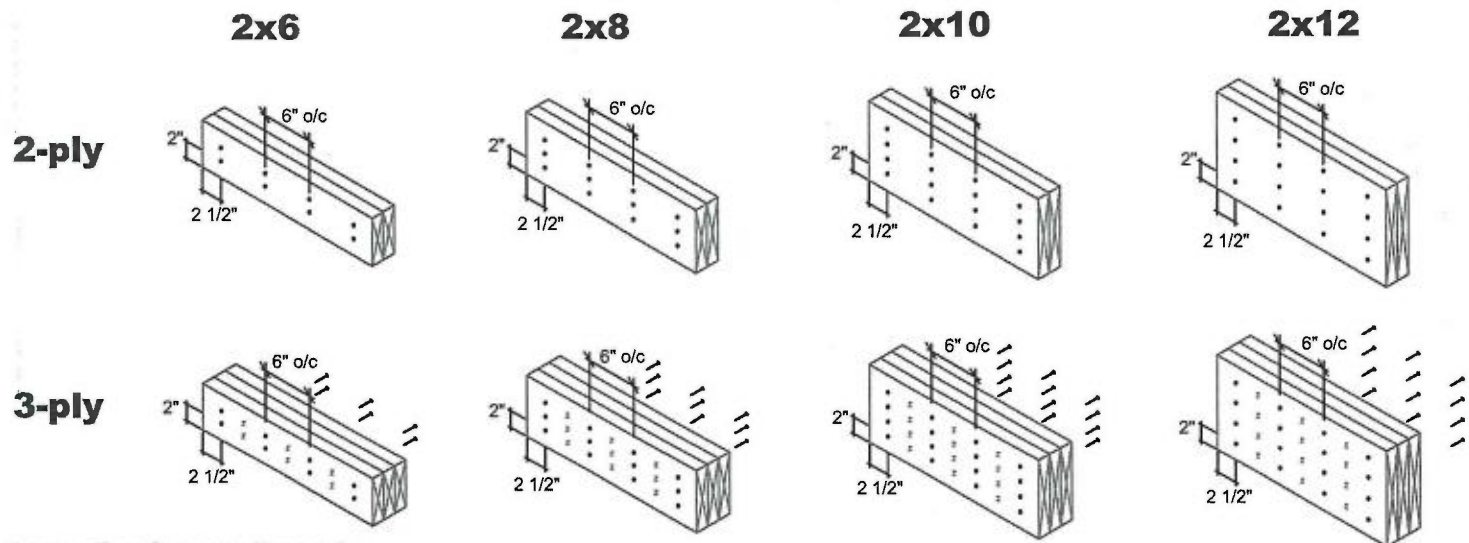
**PASS THRU FRAMING SQUASH
BLOCK IS REQUIRED AT ALL
POINT LOADS OVER BEARINGS.**

**READ ALL NOTES ON THIS PAGE AND ON
ENGINEERING NOTE PAGE ENP-2. THIS
NOTE PAGE IS AN INTEGRAL PART OF THIS
CALCULATION SUMMARY PAGE AS IT
CONTAINS SPECIFICATIONS AND CRITERIA
USED IN THE DESIGN OF THIS COMPONENT.**

MULTIPLE MEMBER CONNECTIONS

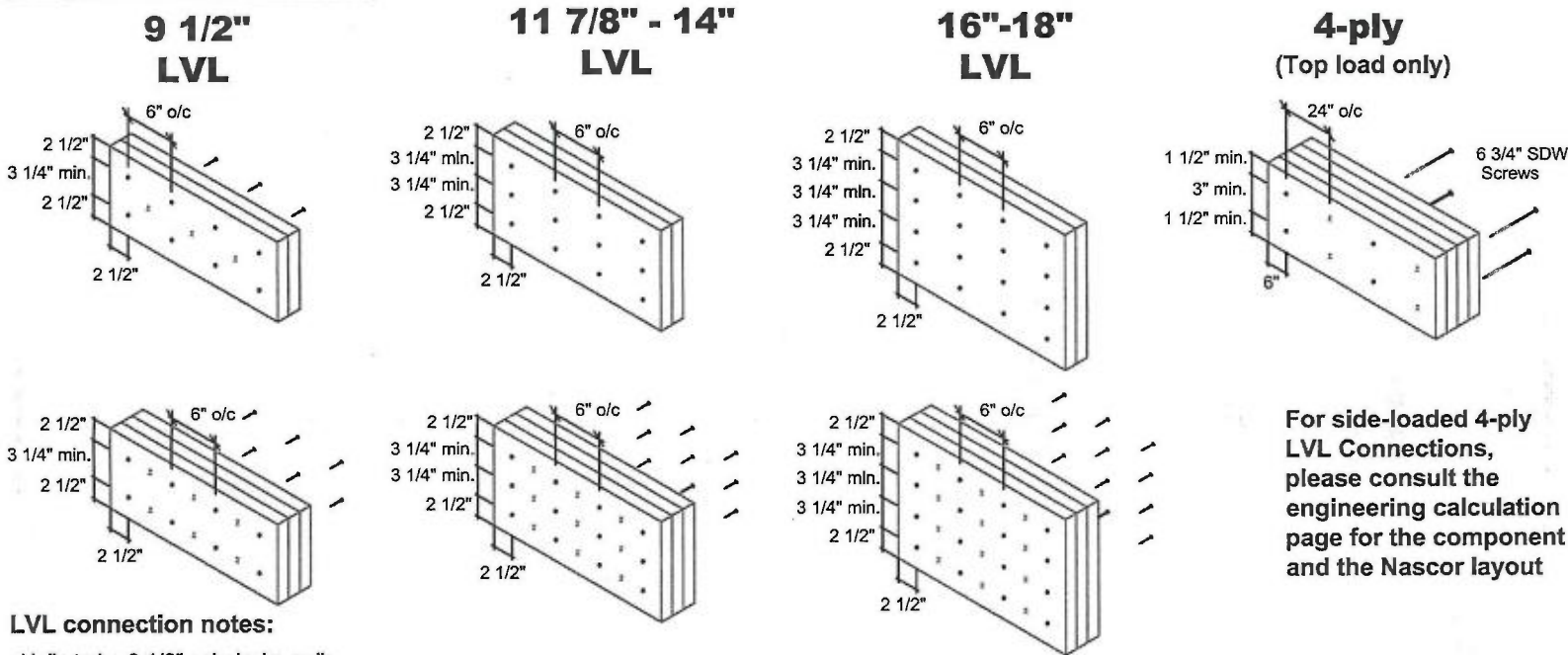
GREENPARK-MINNISALE HOMES-
MODEL HEMLOCK 5-1 & 5-2 - LOT 11/L

Conventional Connections (for uniform distributed loads)



Conventional connection notes:
-Nails to be 3" 10d spiral wire nails.
-Nails to be located a minimum of 2" from the top and bottom of the member. Start all nails a minimum of 2 1/2" in from ends.
-Number of rows and spacing as per details shown, unless noted otherwise.
- "X" represents nail driven from the opposite side.

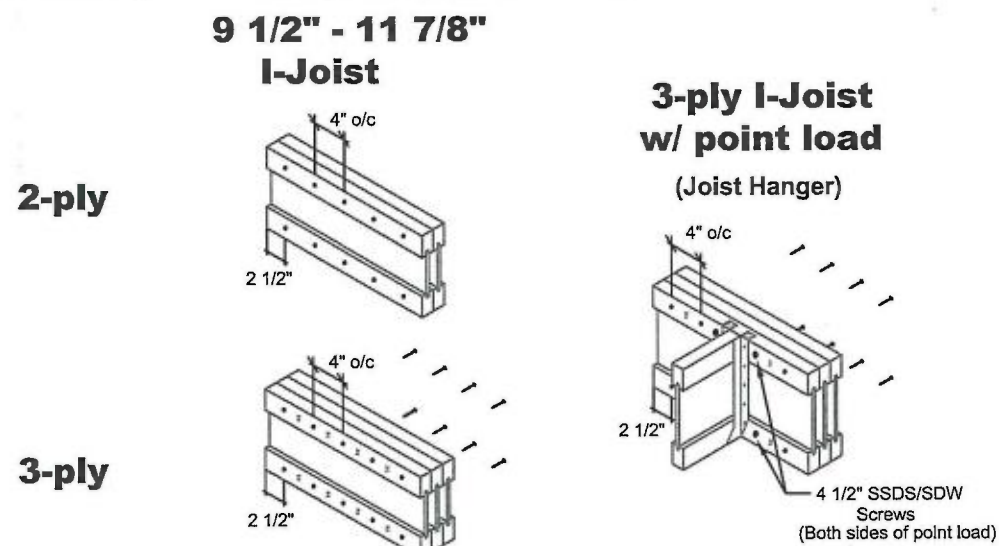
LVL Connections (for uniform distributed loads)



LVL connection notes:
-Nails to be 3 1/2" spiral wire nails.
-Nails to be located a minimum of 2 1/2" from the top and bottom of the member. Start all nails a minimum of 2 1/2" in from ends.
-Minimum 3 1/4" spacing between rows.
-Number of rows and spacing as per details shown, unless noted otherwise.
- "X" represents nail or screw driven from the opposite side.

For side-loaded 4-ply LVL Connections, please consult the engineering calculation page for the component and the Nascor layout

Vertical I-Joist Connections (for uniform distributed loads)



Vertical I-Joist connection notes:
-Nails to be 3" spiral wire nails.
-Nails to be located at centre of top and bottom flanges. Start all nails a minimum of 2 1/2" in from ends.
-Number of rows and spacing as per details shown, unless noted otherwise.
- "X" represents nail driven from the opposite side.



**MULTI-PLY
CONNECTION
DETAILS**

Date: November 30, 2016
Scale: NTS

KOTT
3228 Moodie Drive
Ottawa, ON
K2H 7V1
Ph: 613-838-2775
Fx: 613-838-4751

Engineering Note Page (ENP-2)GREENPARK-MINNISALE HOMES-
MODEL HEMLOCK 5-1 & 5-2

REVISION 2009-10-09

LOT 114

Please read all notes prior to installation of the component**DESIGN INFORMATION**

This building component is certified as an individual component for the loads and conditions shown on the calculation and drawing page.

The responsibility of the undersigned engineer is only limited to the calculation of this building component for the loads and conditions shown on this drawing.

The responsibility of the undersigned is limited to the verification of the structural capacity of the NASCOR floor joists and LVL beams based on placement as shown on the layout. The loads applied are limited to the gravity effects of the specified loads. The structural integrity of the building and the effect of wind, uplift, seismic, lateral or other forces, calculation of adequate support and anchorage of components, as well as the dimensions and design loads used to calculate components are the responsibility of the overall building designer.

Floor joists and OSB rim board are designed to carry uniformly distributed loads only. Point loads should be transferred through the floor cavity with squash blocks. Structural elements such as walls, posts, connectors, and squash blocks are the responsibility of the overall building designer.

The undersigned engineer disclaims any responsibility for damages as a result of being furnished faulty or incorrect information, specifications and/or designs.

Installation of NASCOR joists is to be carried out in accordance with the current edition of the manufacturer's approved literature available at <http://www.nascor.ca>.

CODE

This building component is designed in accordance with the National Building Code of Canada, the Ontario Building Code, CCMC and Canadian Standards Association guidelines.

COMPONENT

1. The building component used in construction must be the same as indicated on the drawings.
2. The building component must be installed and assembled as per specification shown on the drawing and in accordance with the manufacturer's assembly and installation.
3. Members consisting of multiple plies must be connected as per the document "Multi-ply Connection Details".
4. Pass-thru squash block framing is required at all point loads over bearings.

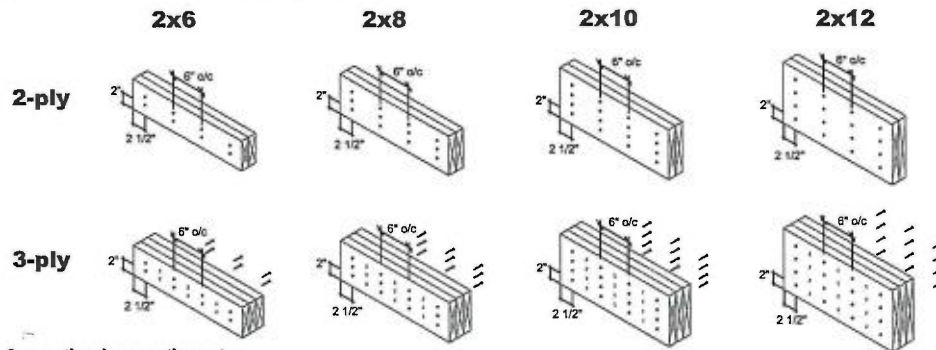
HANDLING AND INSTALLATION

Do not drill any hole, cut or notch a certified building component without a written pre-authorization.

MULTIPLE MEMBER CONNECTIONS

GREENPARK-MINNISALE HOMES-
MODEL HEMLOCK 5-1 & 5-2

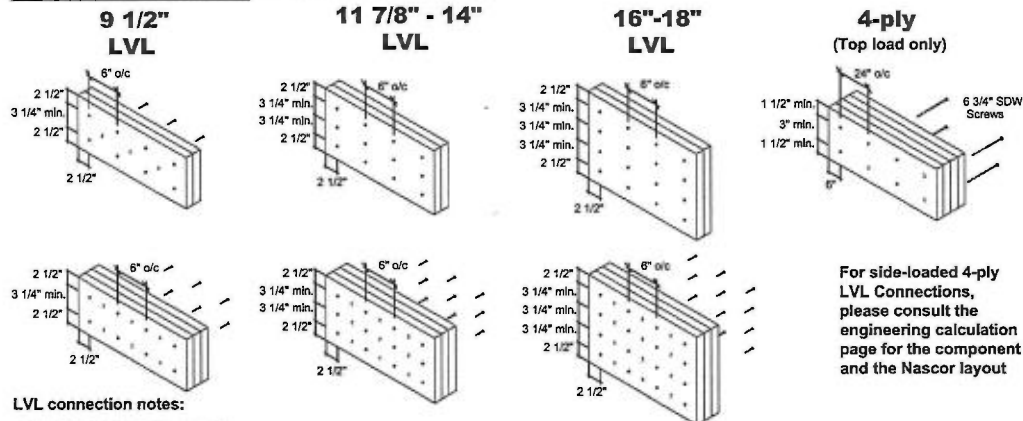
Conventional Connections (for uniform distributed loads)



Conventional connection notes:

- Nails to be 3" 10d spiral wire nails.
- Nails to be located a minimum of 2" from the top and bottom of the member. Start all nails a minimum of 2 1/2" in from ends.
- Number of rows and spacing as per details shown, unless noted otherwise.
- "X" represents nail driven from the opposite side.

LVL Connections (for uniform distributed loads)

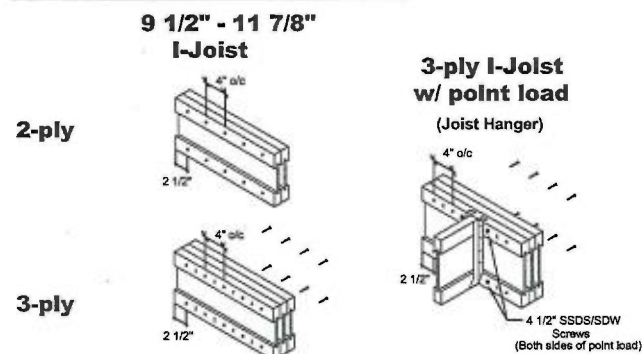


LVL connection notes:

- Nails to be 3 1/2" spiral wire nails.
- Nails to be located a minimum of 2 1/2" from the top and bottom of the member. Start all nails a minimum of 2 1/2" in from ends.
- Minimum 3 1/4" spacing between rows.
- Number of rows and spacing as per details shown, unless noted otherwise.
- "X" represents nail or screw driven from the opposite side.

For side-loaded 4-ply LVL Connections, please consult the engineering calculation page for the component and the Nascor layout

Vertical I-Joist Connections (for uniform distributed loads)



Vertical I-Joist connection notes:

- Nails to be 3" spiral wire nails.
- Nails to be located at centre of top and bottom flanges. Start all nails a minimum of 2 1/2" in from ends.
- Number of rows and spacing as per details shown, unless noted otherwise.
- "X" represents nail driven from the opposite side.

MULTI-PLY
CONNECTION
DETAILS

Date: November 30, 2016

Scale: NTS

KOTT

KOTT
3228 Moodle Drive
Ottawa, ON
K2H 7V1
Ph: 613-838-2775
Fx: 613-838-4751



isDesign™

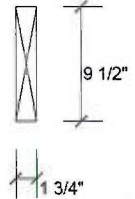
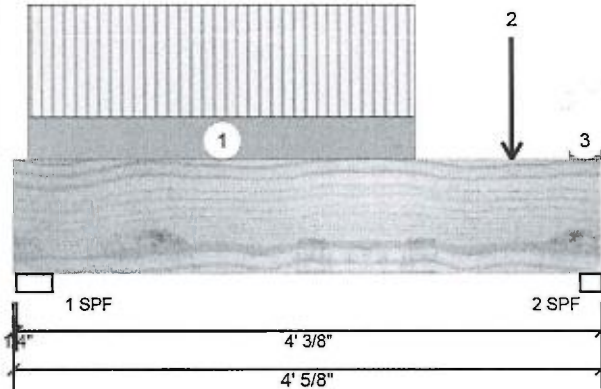
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5-1
 Project #:

Page 1 of 1

F10-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

Level: Ground Floor

**Member Information**

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	197	81	0	0
2	203	83	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.000"	12%	102 / 296	397 _L	1.25D+1.5L
2 - SPF	1.750"	22%	104 / 305	409 _L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	369 ft-lb	2' 1/2"	11362 ft-lb	0.033 (3%)	1.25D+1.5L	_L
Unbraced	369 ft-lb	2' 1/2"	9055 ft-lb	0.041 (4%)	1.25D+1.5L	_L
Shear	560 lb	3' 2 1/8"	4638 lb	0.121 (12%)	1.25D+1.5L	_L
Perm Defl in.	0.001 (L/34817)	2' 5/8"	0.127 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.003 (L/14269)	2' 5/8"	0.127 (L/360)	0.030 (3%)	L	LL
TL Defl inch	0.005 (L/10121)	2' 5/8"	0.191 (L/240)	0.020 (2%)	D+L	LL
LL Cant	-0.000 (2L/14762)	Lt Cant	0.200 (2L/480)	0.000 (0%)	L	LL
TL Cant	-0.000 (2L/10472)	Lt Cant	0.300 (2L/360)	0.000 (0%)	D+L	LL

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.

**Design Notes**

- Girders are designed to be supported on the bottom edge only.
- Top braced at bearings.
- Bottom braced at bearings.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-1-5 to 2-9-5		Far Face	38 PLF	102 PLF	0 PLF	0 PLF	
2	Point	3-5-5		Far Face	47 lb	127 lb	0 lb	0 lb	J2
3	Tie-In	3-10-0 to 4-0-10	(Span)0-4-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				4 PLF				

Notes

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

- Dry service conditions, unless noted otherwise
- LVL not to be treated with fire retardant or corrosive chemicals

chemicals**Handling & Installation**

- LVL beams must not be cut or drilled
- Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
- Damaged Beams must not be used
- Design assumes top edge is laterally restrained
- Provide lateral support at bearing points to avoid lateral displacement and rotation

- For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400



This design is valid until 7/10/2021





isDesign™

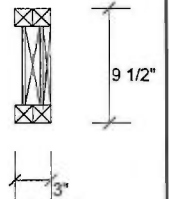
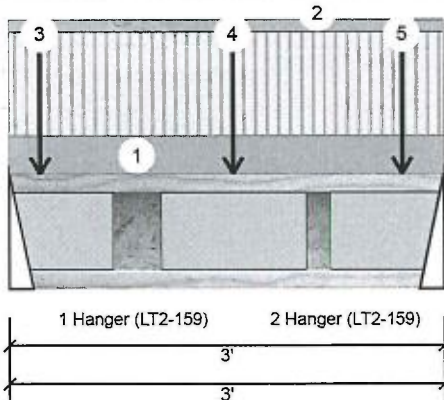
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5-1
 Project #:

Page 1 of 1

F17-A NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	384	190	0	0
2	374	186	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - Hanger	2.000"	31% 237 / 576	813 L	1.25D+1.5L
2 - Hanger	2.000"	31% 233 / 561	794 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	549 ft-lb	1'6 9/16"	7340 ft-lb	0.075 (7%)	1.25D+1.5L	L
Unbraced	549 ft-lb	1'6 9/16"	4678 ft-lb	0.117 (12%)	1.25D+1.5L	L
Shear	805 lb	1 1/4"	3080 lb	0.262 (26%)	1.25D+1.5L	L
Perm Defl in. (L/17400)	0.002	1'6 9/16"	0.093 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch	0.004 (L/8629)	1'6 9/16"	0.093 (L/360)	0.040 (4%)	L	L
TL Defl inch	0.006 (L/5768)	1'6 9/16"	0.140 (L/240)	0.040 (4%)	D+L	L

Design Notes

- 1 Fill all hanger nailing holes.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Multiple plies must be fastened together as per manufacturer's details.
- 4 Top loads must be supported equally by all plies.
- 5 Top flange braced at bearings.
- 6 Bottom flange braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON
 ENGINEERING NOTE PAGE ENP-2. THIS
 NOTE PAGE IS AN INTEGRAL PART OF THIS
 CALCULATION SUMMARY PAGE AS IT
 CONTAINS SPECIFICATIONS AND CRITERIA
 USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER
 CONNECTION DETAIL FOR PLY TO PLY
 NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH
 BLOCK IS REQUIRED AT ALL
 POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 3-0-0	(Span)1-8-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 3-0-0		Top	4 PLF	0 PLF	0 PLF	0 PLF	
3	Point	0-2-9		Far Face	94 lb	190 lb	0 lb	0 lb	J4
4	Point	1-6-9		Far Face	141 lb	284 lb	0 lb	0 lb	J4
5	Point	2-8-9		Far Face	90 lb	179 lb	0 lb	0 lb	J4

Notes

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. Ljoist not to be treated with fire retardant or corrosive chemicals

chemicals

Handling & Installation

1. Ljoist flanges must not be cut or drilled
2. Refer to latest copy of the Ljoist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Ljoists must not be used
4. Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. Web stiffeners for point load as shown Minimum point load bearing length= 3.5 inches
7. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Nascor by Kott

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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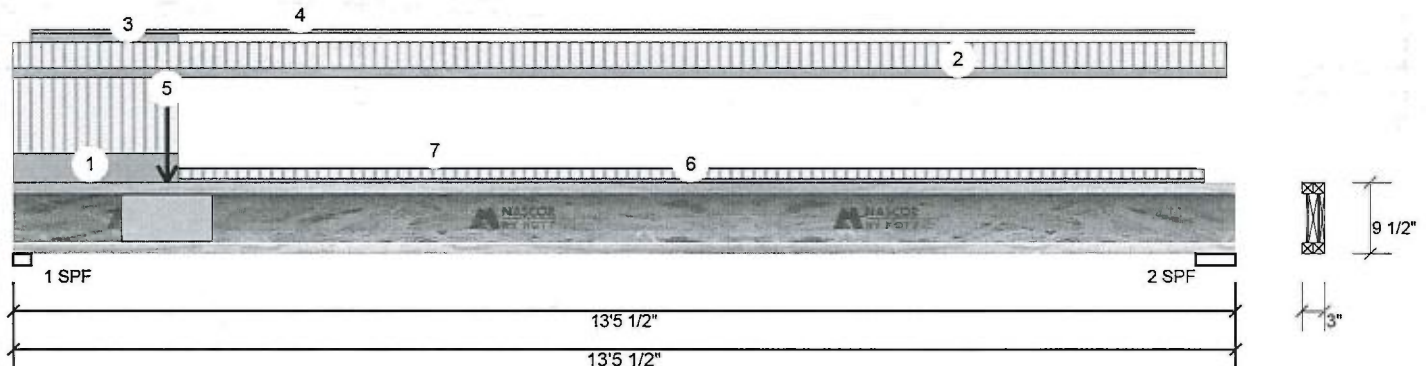
Client: GREENPARK
Project:
Address:

Date: 8/14/2018
Designer: RCO
Job Name: HEMLOCK 5-1
Project #:

Page 1 of 1

F18-A NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	624	311	0	0
2	252	126	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	49%	388 / 937	1325 L	1.25D+1.5L
2 - SPF	5.250"	17%	158 / 378	536 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2141 ft-lb	4'10 7/8"	7340 ft-lb	0.292 (29%)	1.25D+1.5L	L
Unbraced	2141 ft-lb	4'10 7/8"	2170 ft-lb	0.987 (99%)	1.25D+1.5L	L
Shear	1302 lb	1 5/8"	3080 lb	0.423 (42%)	1.25D+1.5L	L
Perm Defl in.	0.061 (L/2552)	6'2 3/8"	0.432 (L/360)	0.140 (14%)	D	Uniform
LL Defl inch	0.121 (L/1286)	6'2 5/16"	0.432 (L/360)	0.280 (28%)	L	L
TL Defl inch	0.182 (L/855)	6'2 5/16"	0.647 (L/240)	0.280 (28%)	D+L	L

Design Notes

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top flange must be laterally braced at a maximum of 4'6" o.c.
- Bottom flange braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON
ENGINEERING NOTE PAGE ENP-2. THIS
NOTE PAGE IS AN INTEGRAL PART OF THIS
CALCULATION SUMMARY PAGE AS IT
CONTAINS SPECIFICATIONS AND CRITERIA
USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER
CONNECTION DETAIL FOR PLY TO PLY
NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH
BLOCK IS REQUIRED AT ALL
POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-9-14	(Span)3-3-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 13-4-6	(Span)1-1-1 to 1-1-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-2-6 to 1-9-14		Top	8 PLF	0 PLF	0 PLF	0 PLF	
4	Part. Uniform	0-2-6 to 13-0-4		Top	3 PLF	0 PLF	0 PLF	0 PLF	
5	Point	1-8-6		Far Face	186 lb	374 lb	0 lb	0 lb	F17
6	Tie-In	1-9-14 to 13-1-6	(Span)0-4-15 to 0-4-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
7	Part. Uniform	1-9-14 to 13-0-4		Top	1 PLF	0 PLF	0 PLF	0 PLF	

Notes

- Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.
- Lumber**
- Dry service conditions, unless noted otherwise
 - Uolst not to be treated with fire retardant or corrosive chemicals

chemicals

Handling & Installation

- Uolst flanges must not be cut or drilled
- Refer to latest copy of the Uolst product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
- Damaged Uolsts must not be used
- Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

- Provide lateral support at bearing points to avoid lateral displacement and rotation
- Web stiffeners for point load as shown Minimum point load bearing length= 3.5 inches
- For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Nascor by Kott

Kott Lumber Company
14 Anderson Blvd, Ontario
Canada
L4A 7X4
905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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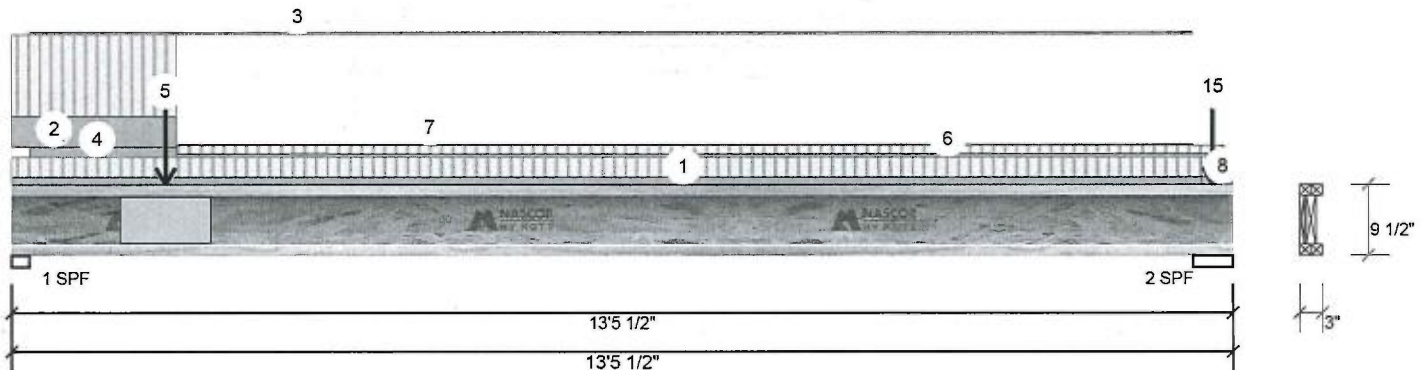
Client: GREENPARK
Project:
Address:

Date: 8/14/2018
Designer: RCO
Job Name: HEMLOCK 5-1
Project #:

Page 1 of 2

F18-B NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Unfactored Reactions UNPATTERNED lb (Uplift)

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Brg	Live	Dead	Snow	Wind
1	586	290	0	0
2	300	161	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	46%	363 / 879	1242 L	1.25D+1.5L
2 - SPF	5.250"	21%	201 / 450	651 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1860 ft-lb	4'3 7/16"	7340 ft-lb	0.253 (25%)	1.25D+1.5L	L
Unbraced	1860 ft-lb	4'3 7/16"	1875 ft-lb	0.992 (99%)	1.25D+1.5L	L
Shear	1220 lb	1 5/8"	3080 lb	0.396 (40%)	1.25D+1.5L	L
Perm Defl in.	0.052 (L/2989)	6'1 5/16"	0.432 (L/360)	0.120 (12%)	D	Uniform
LL Defl inch	0.104 (L/1501)	6'1 3/16"	0.432 (L/360)	0.240 (24%)	L	L
TL Defl inch	0.156 (L/999)	6'1 1/4"	0.647 (L/240)	0.240 (24%)	D+L	L

Design Notes

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top flange must be laterally braced at a maximum of 4'10" o.c.
- Bottom flange braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 13-1-6	(Span)0-9-7 to 0-9-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 1-9-14	(Span)3-3-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-2-6 to 13-0-4		Top	2 PLF	0 PLF	0 PLF	0 PLF	
4	Part. Uniform	0-2-6 to 1-9-14		Top	8 PLF	0 PLF	0 PLF	0 PLF	
5	Point	1-8-6		Near Face	190 lb	384 lb	0 lb	0 lb	F17
6	Tie-In	1-9-14 to 13-4-6	(Span)0-4-1 to 0-4-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	

Continued on page 2...

Notes

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

- Dry service conditions, unless noted otherwise
- LJoist not to be treated with fire retardant or corrosive chemicals

chemicals

Handling & Installation

- LJoist flanges must not be cut or drilled
- Refer to latest copy of the LJoist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/installation details
- Damaged LJoists must not be used
- Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

- Provide lateral support at bearing points to avoid lateral displacement and rotation
- Web stiffeners for point load as shown Minimum point load bearing length=3.5 inches
- For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Nascor by Kott

Kott Lumber Company
14 Anderson Blvd, Ontario
Canada
L4A 7X4
905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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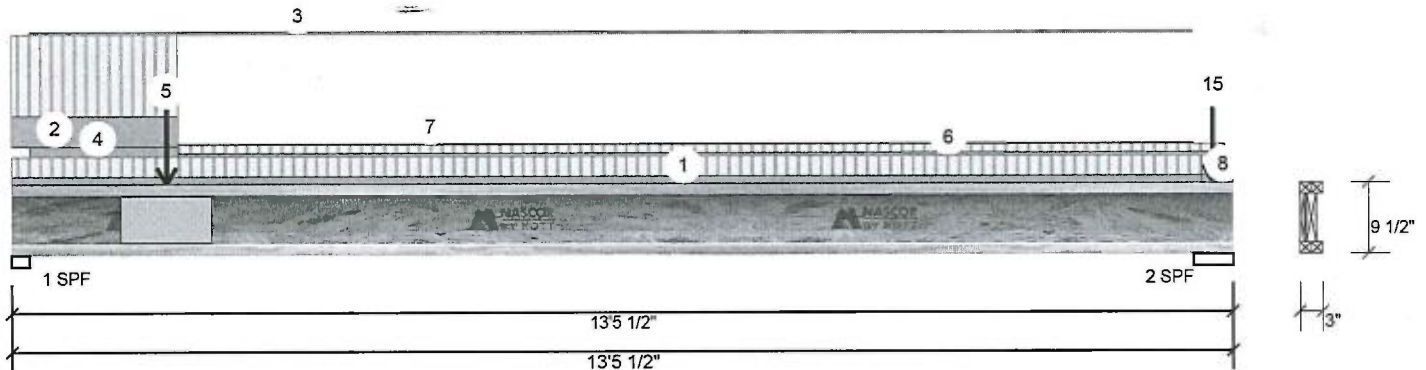
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5-1
 Project #:

Page 2 of 2

F18-B NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
7	Part. Uniform	1-9-14 to 13-0-4		Top	1 PLF	0 PLF	0 PLF	0 PLF	
8	Tie-In	13-1-6 to 13-5-8	(Span)0-9-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
10	Point	13-2-14		Top	7 lb	16 lb	0 lb	0 lb	J8
11	Point	13-2-14		Top	8 lb	20 lb	0 lb	0 lb	J4
12	Point	13-2-14		Top	7 lb	0 lb	0 lb	0 lb	Wall Self Weight
13	Point	13-2-14		Top	12 lb	26 lb	0 lb	0 lb	J8
14	Point	13-2-14		Top	12 lb	32 lb	0 lb	0 lb	J4
15	Point	13-2-14		Top	12 lb	0 lb	0 lb	0 lb	Wall Self Weight

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REFER TO MULTIPLE MEMBER TO MEMBER
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 NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH
 BLOCK IS REQUIRED AT ALL
 POINT LOADS OVER BEARINGS.



Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. Ljoist not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. Ljoist flanges must not be cut or drilled
2. Refer to latest copy of the Ljoist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Ljoists must not be used
4. Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. Web stiffeners for point load as shown Minimum point load bearing length= 3.5 inches
7. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Nascor by Kott

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400



This design is valid until 7/10/2021





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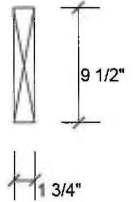
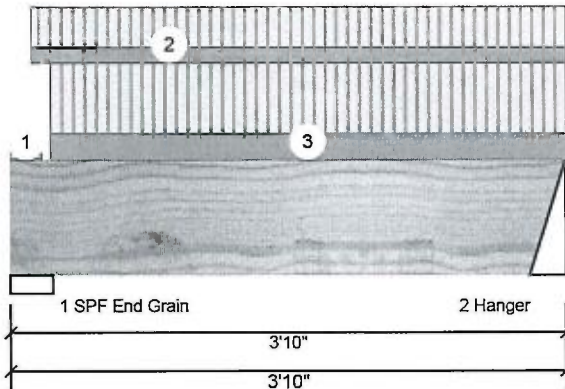
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5-1
 Project #:

Page 1 of 1

F2-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

Level: Ground Floor

**Member Information****Unfactored Reactions UNPATTERNED lb (Uplift)**

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Brg	Live	Dead	Snow	Wind
1	285	116	0	0
2	315	127	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	13%	145 / 428	573	L	1.25D+1.5L
2 - Hanger	3.000"	16%	158 / 472	630	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	485 ft-lb	1'11 1/4"	11362 ft-lb	0.043 (4%)	1.25D+1.5L	L
Unbraced	485 ft-lb	1'11 1/4"	9518 ft-lb	0.051 (5%)	1.25D+1.5L	L
Shear	470 lb	1' 1/4"	4638 lb	0.101 (10%)	1.25D+1.5L	L
Perm Defl in. (L/27437)	0.001	1'11 5/16"	0.114 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch (L/11043)	0.004	1'11 5/16"	0.114 (L/360)	0.030 (3%)	L	L
TL Defl inch (L/7874)	0.005	1'11 5/16"	0.171 (L/240)	0.030 (3%)	D+L	L

Design Notes

- 1 Fill all hanger nailing holes.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Top braced at bearings.
- 4 Bottom braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-2-10	(Span)0-4-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-1-12 to 3-10-0		Top	23 PLF	60 PLF	0 PLF	0 PLF	
3	Part. Uniform	0-3-5 to 3-10-0		Far Face	40 PLF	106 PLF	0 PLF	0 PLF	
	Self Weight				4 PLF				

Notes

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

chemicals**Handling & Installation**

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400



This design is valid until 7/10/2021





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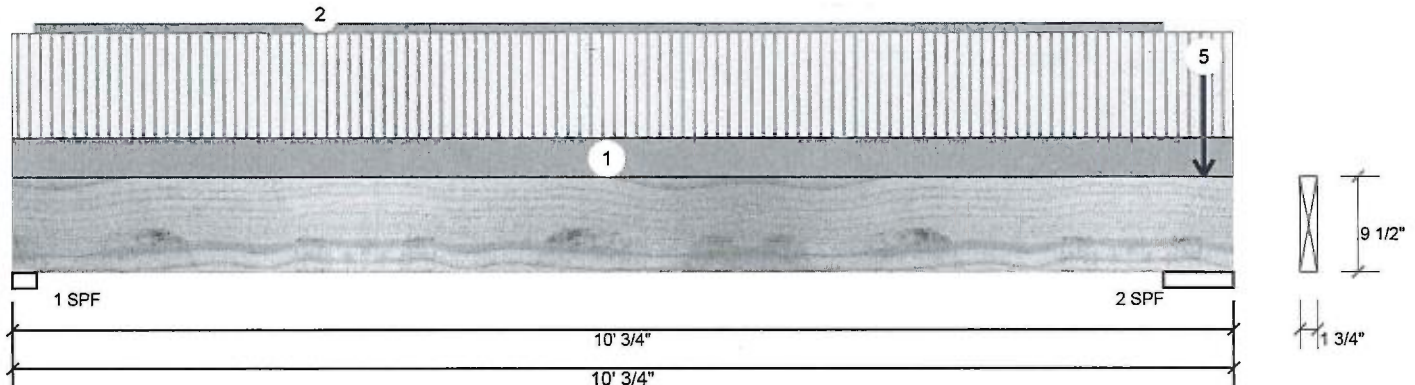
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5-1
 Project #:

Page 1 of 1

F3-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	109	69	0	0
2	276	158	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - SPF	2.375"	10%	86 / 164	250 L 1.25D+1.5L
2 - SPF	6.875"	8%	198 / 414	612 L 1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	574 ft-lb	4'10 1/8"	11362 ft-lb	0.050 (5%)	1.25D+1.5L	L
Unbraced	574 ft-lb	4'10 1/8"	3959 ft-lb	0.145 (14%)	1.25D+1.5L	L
Shear	203 lb	8'9 1/8"	4638 lb	0.044 (4%)	1.25D+1.5L	L
Perm Defl in.	0.011 (L/10085)	4'10 1/8"	0.314 (L/360)	0.040 (4%)	D	Uniform
LL Defl inch	0.018 (L/6374)	4'10 1/8"	0.314 (L/360)	0.060 (6%)	L	L
TL Defl inch	0.029 (L/3906)	4'10 1/8"	0.471 (L/240)	0.060 (6%)	D+L	L

Design Notes

- 1 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 4.5.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Top braced at bearings.
- 4 Bottom braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 10-0-12	(Span)1-1-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-2-5 to 9-5-14		Top	2 PLF	0 PLF	0 PLF	0 PLF	
3	Point	9-9-14		Top	23 lb	63 lb	0 lb	0 lb	J3
4	Point	9-9-14		Top	36 lb	95 lb	0 lb	0 lb	J6
5	Point	9-9-14		Top	26 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Self Weight				4 PLF				

Notes

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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Client: GREENPARK

Project:

Address:

Date: 8/14/2018

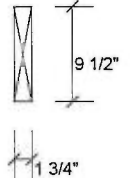
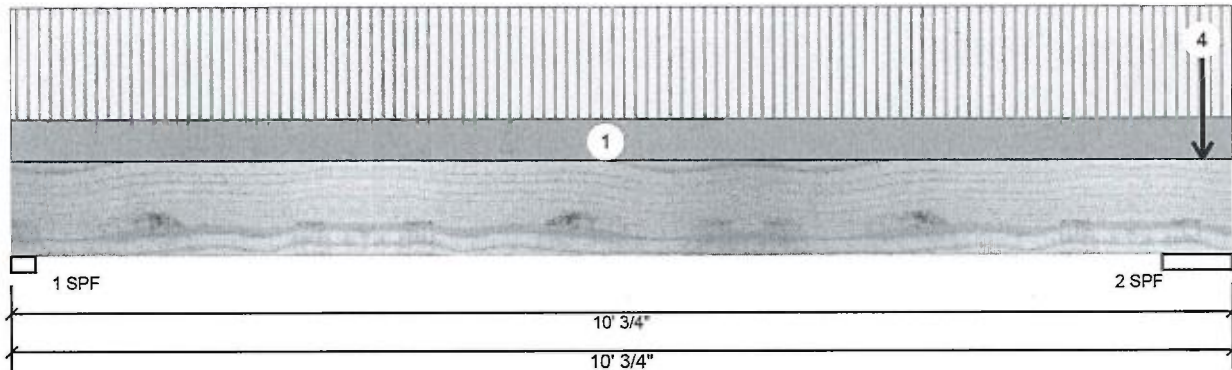
Designer: RCO

Job Name: HEMLOCK 5-1

Project #:

Page 1 of 1

F3-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	133	68	0	0
2	330	174	0	0

Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	11%	85 / 199	284	L	1.25D+1.5L
2 - SPF	6.875"	10%	218 / 495	713	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	651 ft-lb	4'10 1/8"	11362 ft-lb	0.057 (6%)	1.25D+1.5L	L
Unbraced	651 ft-lb	4'10 1/8"	3959 ft-lb	0.164 (16%)	1.25D+1.5L	L
Shear	230 lb	11 1/8"	4638 lb	0.050 (5%)	1.25D+1.5L	L
Perm Defl in.	0.011 (L/10231)	4'10 1/8"	0.314 (L/360)	0.040 (4%)	D	Uniform
LL Defl inch	0.021 (L/5259)	4'10 1/8"	0.314 (L/360)	0.070 (7%)	L	L
TL Defl inch	0.033 (L/3474)	4'10 1/8"	0.471 (L/240)	0.070 (7%)	D+L	L

Design Notes

- 1 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 4.5.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Top braced at bearings.
- 4 Bottom braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 10-0-12	(Span)1-4-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	9-9-14		Top	28 lb	74 lb	0 lb	0 lb	J3
3	Point	9-9-14		Top	42 lb	113 lb	0 lb	0 lb	J6
4	Point	9-9-14		Top	31 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Self Weight				4 PLF				

Notes

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or preservative

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

Kott Lumber Company
14 Anderson Blvd, Ontario
Canada
L4A 7X4
905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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Client: GREENPARK

Project:

Address:

Date: 8/14/2018

Designer: RCO

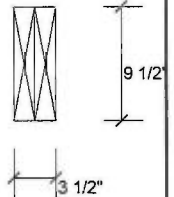
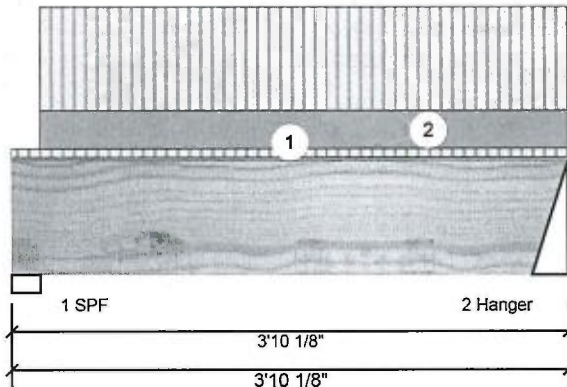
Job Name: HEMLOCK 5-1

Project #:

Page 1 of 1

F4-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Piles:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	446	182	0	0
2	507	205	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - SPF	2.375"	18%	227 / 669	896 L 1.25D+1.5L
2 - Hanger	3.000"	13%	256 / 760	1017 L 1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	808 ft-lb	1'10 3/4"	22724 ft-lb	0.036 (4%)	1.25D+1.5L	L
Unbraced	808 ft-lb	1'10 3/4"	22724 ft-lb	0.036 (4%)	1.25D+1.5L	L
Shear	506 lb	11 1/8"	9277 lb	0.055 (5%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/32707)	1'10 13/16"	0.117 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.003 (L/13223)	1'10 13/16"	0.117 (L/360)	0.030 (3%)	L	L
TL Defl inch	0.004 (L/9416)	1'10 13/16"	0.176 (L/240)	0.030 (3%)	D+L	L

Design Notes

- 1 Fill all hanger nailing holes.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Multiple plies must be fastened together as per manufacturer's details.
- 4 Top loads must be supported equally by all plies.
- 5 Top braced at bearings.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on full section width.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 3-10-2	(Span)1-0-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-2-6 to 3-10-2		Top	90 PLF	240 PLF	0 PLF	0 PLF	
	Self Weight				8 PLF				

Notes

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

Kott Lumber Company
14 Anderson Blvd, Ontario
Canada
L4A 7X4
905-642-4400



This design is valid until 7/10/2021





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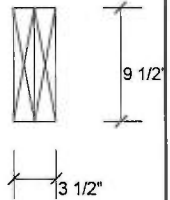
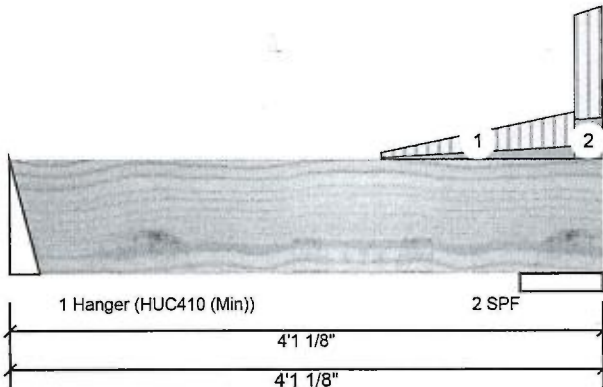
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5-1
 Project #:

Page 1 of 1

F5-C Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	1	15	0	0
2	26	27	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - Hanger	2.500"	0%	20 / 0	Uniform 1.4D
2 - SPF	6.875"	1%	34 / 40	73 L 1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	17 ft-lb	1'11"	14770 ft-lb	0.001 (0%)	1.4D	Uniform
Unbraced	17 ft-lb	1'11"	14770 ft-lb	0.001 (0%)	1.4D	Uniform
Shear	10 lb	11 1/4"	6030 lb	0.002 (0%)	1.4D	Uniform
Perm Defl in.	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
LL Defl inch	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
TL Defl inch	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		

Design Notes

- 1 Fill all hanger nailing holes.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Multiple plies must be fastened together as per manufacturer's details.
- 4 Top loads must be supported equally by all plies.
- 5 Top braced at bearings.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on full section width.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	2-6-13 to 3-10-13	(Span)0-1-12 to 1-0-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	3-10-13 to 4-1-2	(Span)3-0-11 to 3-3-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				8 PLF				

Notes

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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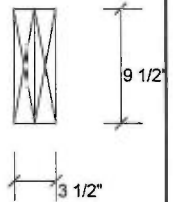
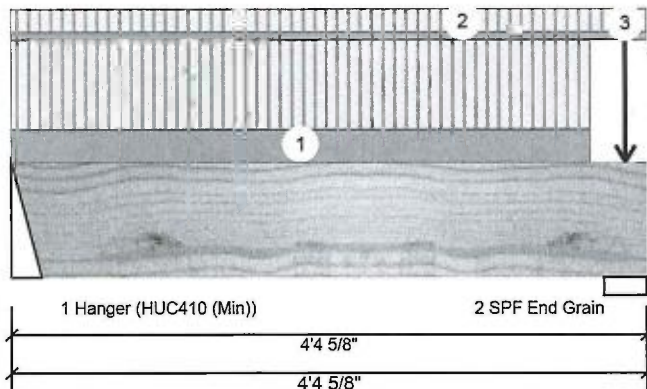
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5-1
 Project #:

Page 1 of 1

F5-D Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Unfactored Reactions UNPATTERNED 1b (Uplift)

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Brg	Live	Dead	Snow	Wind
1	206	94	0	0
2	500	213	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.500"	7%	117 / 309	426 L	1.25D+1.5L
2 - SPF End Grain	3.500"	11%	267 / 750	1017 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	398 ft-lb	2'1 13/16"	22724 ft-lb	0.017 (2%)	1.25D+1.5L	L
Unbraced	398 ft-lb	2'1 13/16"	22724 ft-lb	0.017 (2%)	1.25D+1.5L	L
Shear	241 lb	3'4 3/8"	9277 lb	0.026 (3%)	1.25D+1.5L	L
Perm Defl in. (L/59539)	0.001	2'1 3/4"	0.134 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch (L/27068)	0.002	2'1 3/4"	0.134 (L/360)	0.010 (1%)	L	L
TL Defl inch (L/18608)	0.003	2'1 3/4"	0.200 (L/240)	0.010 (1%)	D+L	L

Design Notes

- 1 Fill all hanger nailing holes.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Multiple plies must be fastened together as per manufacturer's details.
- 4 Top loads must be supported equally by all plies.
- 5 Top braced at bearings.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on full section width.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 4-0-0	(Span)3-10-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 4-4-10	(Span)0-11-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	4-2-14		Far Face	127 lb	315 lb	0 lb	0 lb	F2
	Self Weight				8 PLF				

Notes

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400



This design is valid until 7/10/2021





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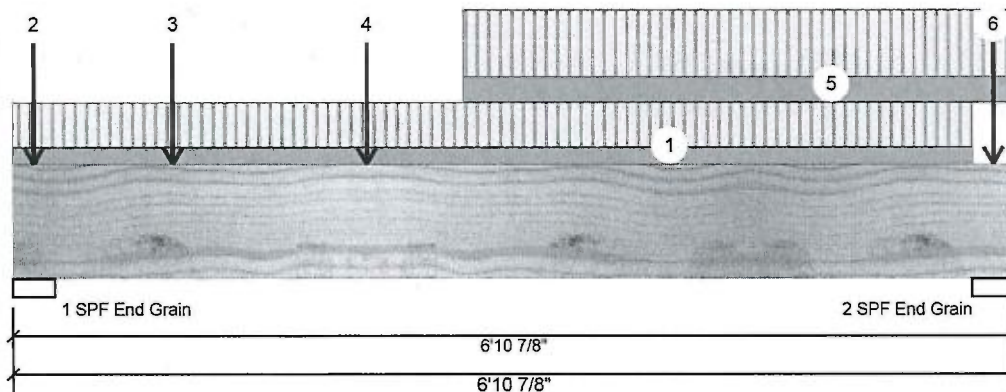
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5-1
 Project #:

Page 1 of 1

F6-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Unfactored Reactions UNPATTERNED lb (Uplift)

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Brg	Live	Dead	Snow	Wind
1	901	381	0	0
2	1169	481	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	20%	476 / 1352	1829 L	1.25D+1.5L
2 - SPF End Grain	3.500"	26%	601 / 1753	2354 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2139 ft-lb	3'4 3/8"	22724 ft-lb	0.094 (9%)	1.25D+1.5L	L
Unbraced	2139 ft-lb	3'4 3/8"	21903 ft-lb	0.098 (10%)	1.25D+1.5L	L
Shear	1419 lb	1' 1/4"	9277 lb	0.153 (15%)	1.25D+1.5L	L
Perm Defl in.	0.008 (L/9522)	3'5 1/16"	0.215 (L/360)	0.040 (4%)	D	Uniform
LL Defl inch	0.020 (L/3932)	3'5"	0.215 (L/360)	0.090 (9%)	L	L
TL Defl inch	0.028 (L/2783)	3'5 1/16"	0.322 (L/240)	0.090 (9%)	D+L	L

Design Notes

- 1 Girders are designed to be supported on the bottom edge only.
- 2 Multiple plies must be fastened together as per manufacturer's details.
- 3 Top loads must be supported equally by all plies.
- 4 Top braced at bearings.
- 5 Bottom braced at bearings.
- 6 Lateral slenderness ratio based on full section width.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-in	0-0-0 to 6-7-6	(Span)3-10-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-1-12		Far Face	94 lb	206 lb	0 lb	0 lb	F5
3	Point	1-1-5		Far Face	86 lb	230 lb	0 lb	0 lb	J3
4	Point	2-5-5		Far Face	66 lb	177 lb	0 lb	0 lb	J3
5	Part. Uniform	3-1-5 to 6-10-14		Far Face	44 PLF	116 PLF	0 PLF	0 PLF	
6	Point	6-9-2		Near Face	205 lb	507 lb	0 lb	0 lb	F4
	Self Weight				8 PLF				

Notes

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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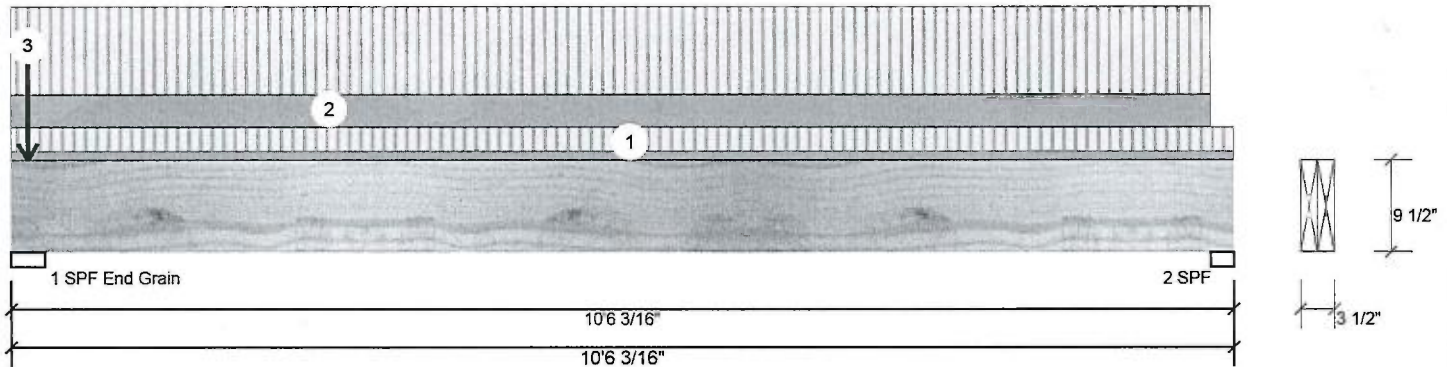
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5-1
 Project #:

Page 1 of 1

F7-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Unfactored Reactions UNPATTERNED lb (Uplift)

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Brg	Live	Dead	Snow	Wind
1	535	256	0	0
2	509	231	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	12%	320 / 803	1123 L	1.25D+1.5L
End Grain					
2 - SPF	2.375"	21%	288 / 764	1052 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2676 ft-lb	5'3 5/8"	22724 ft-lb	0.118 (12%)	1.25D+1.5L	L
Unbraced	2676 ft-lb	5'3 5/8"	20689 ft-lb	0.129 (13%)	1.25D+1.5L	L
Shear	890 lb	9'7 1/16"	9277 lb	0.096 (10%)	1.25D+1.5L	L
Perm Defl in.	0.024 (L/5139)	5'3 11/16"	0.338 (L/360)	0.070 (7%)	D	Uniform
LL Defl inch	0.053 (L/2316)	5'3 11/16"	0.338 (L/360)	0.160 (16%)	L	
TL Defl inch	0.076 (L/1597)	5'3 11/16"	0.508 (L/240)	0.150 (15%)	D+L	L

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2, THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



Design Notes

- 1 Girders are designed to be supported on the bottom edge only.
- 2 Multiple plies must be fastened together as per manufacturer's details.
- 3 Top loads must be supported equally by all plies.
- 4 Top braced at bearings.
- 5 Bottom braced at bearings.
- 6 Lateral slenderness ratio based on full section width.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 10-6-3	(Span)1-0-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 10-3-13	(Span)3-11-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	0-1-12		Near Face	15 lb	1 lb	0 lb	0 lb	F5
	Self Weight				8 PLF				

Notes

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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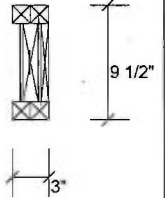
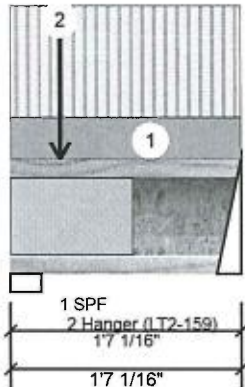
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5-1
 Project #:

Page 1 of 1

F8-A NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Piles:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	116	219	72	0
2	61	52	12	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.563"	19%	273 / 211	484 L	1.25D+1.5L +0.5S
2 - Hanger	2.000"	7%	65 / 91	156 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	71 ft-lb	4 1/8"	5505 ft-lb	0.013 (1%)	1.25D+1.5S	L
Unbraced	71 ft-lb	4 1/8"	5261 ft-lb	0.014 (1%)	1.25D+1.5S	L
Shear	377 lb	1 13/16"	2310 lb	0.163 (16%)	1.25D+1.5S	L
Perm Defl in.	0.000 (L/35252)	4 1/8"	0.044 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.000 (L/49439)	7 1/4"	0.044 (L/360)	0.010 (1%)	L+0.5S	L
TL Defl inch	0.001 (L/21305)	4 13/16"	0.067 (L/240)	0.010 (1%)	D+L+0.5S	L

Design Notes

- 1 Fill all hanger nailing holes.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Multiple plies must be fastened together as per manufacturer's details.
- 4 Top loads must be supported equally by all plies.
- 5 Top flange braced at bearings.
- 6 Bottom flange braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-7-1	(Span)3-3-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-4-2		Far Face	232 lb	74 lb	84 lb	0 lb	J2

Notes

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. Ljoist not to be treated with fire retardant or corrosive chemicals

chemicals

Handling & Installation

1. Ljoist flanges must not be cut or drilled
2. Refer to latest copy of the Ljoist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Ljoists must not be used
4. Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. Web stiffeners for point load as shown Minimum point load bearing length>= 3.5 inches
7. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Nascor by Kott

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400



This design is valid until 7/10/2021





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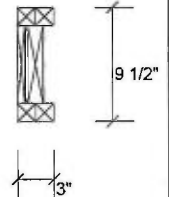
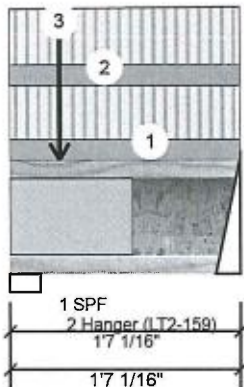
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5-1
 Project #:

Page 1 of 1

F8-B NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	158	199	57	0
2	111	65	10	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - SPF	2.563"	19%	249 / 266	515 L 1.25D+1.5L +0.5S
2 - Hanger	2.000"	10%	81 / 171	252 L 1.25D+1.5L +0.5S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	97 ft-lb	7 1/2"	7340 ft-lb	0.013 (1%)	1.25D+1.5L +0.5S	L
Unbraced	97 ft-lb	7 1/2"	6913 ft-lb	0.014 (1%)	1.25D+1.5L +0.5S	L
Shear	476 lb	1 13/16"	3080 lb	0.154 (15%)	1.25D+1.5L +0.5S	L
Perm Defl in. (L/39739)	0.000	5"	0.044 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch (L/34789)	0.000	8 3/4"	0.044 (L/360)	0.010 (1%)	L+0.5S	L
TL Defl inch (L/19110)	0.001	7 9/16"	0.067 (L/240)	0.010 (1%)	D+L+0.5S	L

Design Notes

- 1 Fill all hanger nailing holes.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Multiple plies must be fastened together as per manufacturer's details.
- 4 Top loads must be supported equally by all plies.
- 5 Top flange braced at bearings.
- 6 Bottom flange braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-7-1	(Span)3-3-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 1-7-1	(Span)3-3-14 to 3-5-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	0-4-2		Near Face	185 lb	59 lb	67 lb	0 lb	J1

Notes

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. Ljoist not to be treated with fire retardant or corrosive chemicals

chemicals

Handling & Installation

1. Ljoist flanges must not be cut or drilled
2. Refer to latest copy of the Ljoist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Ljoists must not be used
4. Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. Web stiffeners for point load as shown Minimum point load bearing length >= 3.5 inches
7. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Nascor by Kott

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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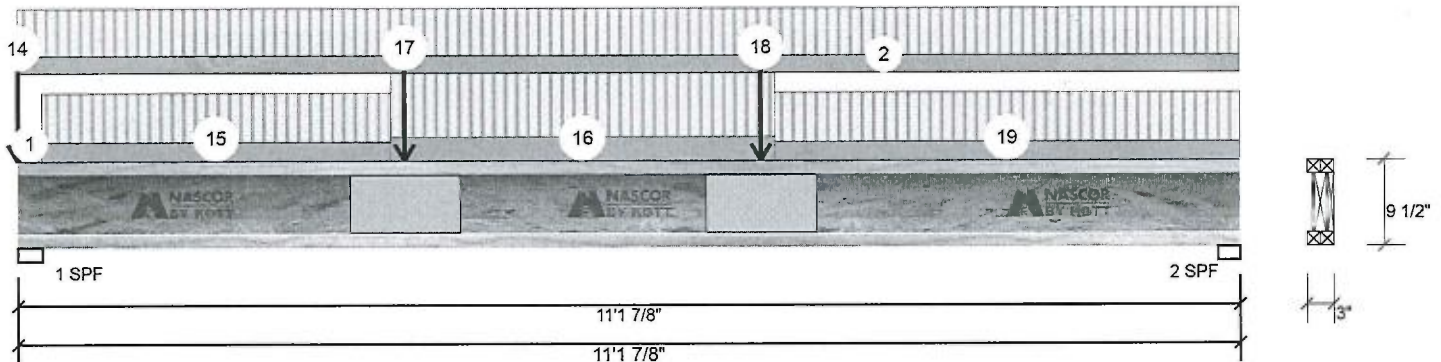
Client: GREENPARK
Project:
Address:

Date: 8/14/2018
Designer: RCO
Job Name: HEMLOCK 5-1
Project #:

Page 1 of 2

F9-A NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	685	342	12	0
2	381	168	10	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - SPF	2.625"	53%	427 / 1034	1461 L
2 - SPF	2.375"	29%	210 / 577	787 L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2443 ft-lb	5'5 1/16"	7340 ft-lb	0.333 (33%)	1.25D+1.5L	L
Unbraced	2443 ft-lb	5'5 1/16"	2477 ft-lb	0.986 (99%)	1.25D+1.5L	L
Shear	835 lb	1 7/8"	3080 lb	0.271 (27%)	1.25D+1.5L	L
Perm Defl in.	0.046 (L/2807)	5'6 1/2"	0.362 (L/360)	0.130 (13%)	D	Uniform
LL Defl inch	0.102 (L/1272)	5'6 1/4"	0.362 (L/360)	0.280 (28%)	L+0.5S	L
TL Defl inch	0.149 (L/875)	5'6 3/8"	0.543 (L/240)	0.270 (27%)	D+L+0.5S	L

Design Notes

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top flange must be laterally braced at a maximum of 4'3" o.c.
- Bottom flange braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-2-10	(Span)0-7-0 to 0-7-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 11-1-14	(Span)1-3-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	0-0-0		Top	7 lb	15 lb	0 lb	0 lb	J8
4	Point	0-0-0		Top	1 lb	2 lb	0 lb	0 lb	J8
5	Point	0-0-0		Top	6 lb	17 lb	0 lb	0 lb	J4

Continued on page 2...

Notes

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

- Dry service conditions, unless noted otherwise
- Lioist not to be treated with fire retardant or corrosive chemicals

chemicals

Handling & Installation

- Lioist flanges must not be cut or drilled
- Refer to latest copy of the Lioist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
- Damaged Lioists must not be used
- Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

- Provide lateral support at bearing points to avoid lateral displacement and rotation
- Web stiffeners for point load as shown Minimum point load bearing length >= 3.5 inches
- For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Nascor by Kott

Kott Lumber Company
14 Anderson Blvd, Ontario
Canada
L4A 7X4
905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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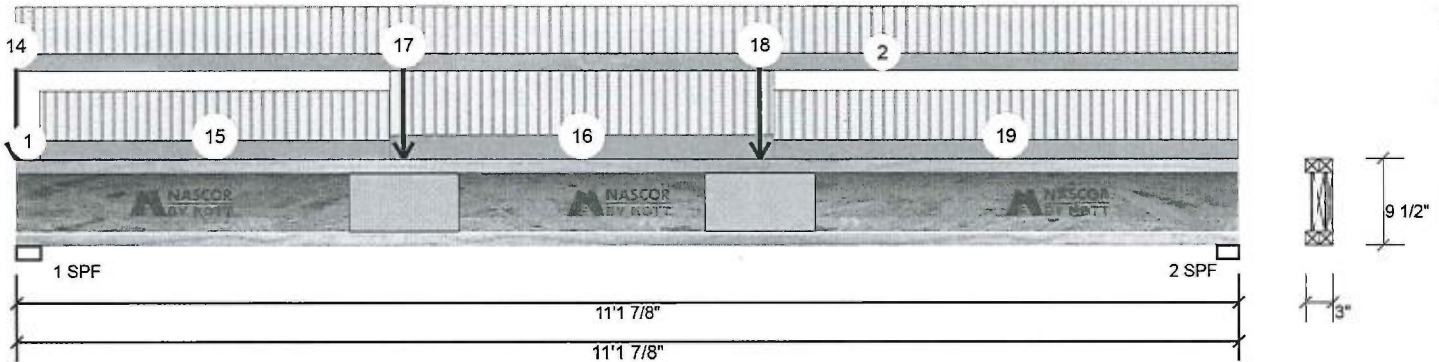
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5-1
 Project #:

Page 2 of 2

F9-A NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Point	0-0-0		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
7	Point	0-0-0		Top	37 lb	83 lb	0 lb	0 lb	J8
8	Point	0-0-0		Top	14 lb	30 lb	0 lb	0 lb	J8
9	Point	0-0-0		Top	35 lb	93 lb	0 lb	0 lb	J4
10	Point	0-0-0		Top	33 lb	0 lb	0 lb	0 lb	Wall Self Weight
12	Point	0-0-0		Top	7 lb	16 lb	0 lb	0 lb	J8
13	Point	0-0-0		Top	8 lb	20 lb	0 lb	0 lb	J4
14	Point	0-0-0		Top	7 lb	0 lb	0 lb	0 lb	Wall Self Weight
15	Tie-In	0-2-10 to 3-5-0	(Span)1-4-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
16	Tie-In	3-5-0 to 6-11-0	(Span)1-9-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
17	Point	3-6-8		Far Face	65 lb	111 lb	10 lb	0 lb	F8
18	Point	6-9-8		Far Face	52 lb				
19	Tie-In	6-11-0 to 11-1-14	(Span)1-4-7	Top	15 PSF				

READ ALL NOTES ON THIS PAGE AND ON
 ENGINEERING NOTE PAGE ENP-2. THIS
 NOTE PAGE IS AN INTEGRAL PART OF THIS
 CALCULATION SUMMARY PAGE AS IT
 CONTAINS SPECIFICATIONS AND CRITERIA
 USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER
 CONNECTION DETAIL FOR PLY TO PLY
 NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH
 BLOCK IS REQUIRED AT ALL
 POINT LOADS OVER BEARINGS.



Notes

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. Ljoist not to be treated with fire retardant or corrosive chemicals

chemicals

Handling & Installation

1. Ljoist flanges must not be cut or drilled
2. Refer to latest copy of the Ljoist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Ljoists must not be used
4. Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. Web stiffeners for point load as shown Minimum point load bearing length >= 3.5 inches
7. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Nascor by Kott

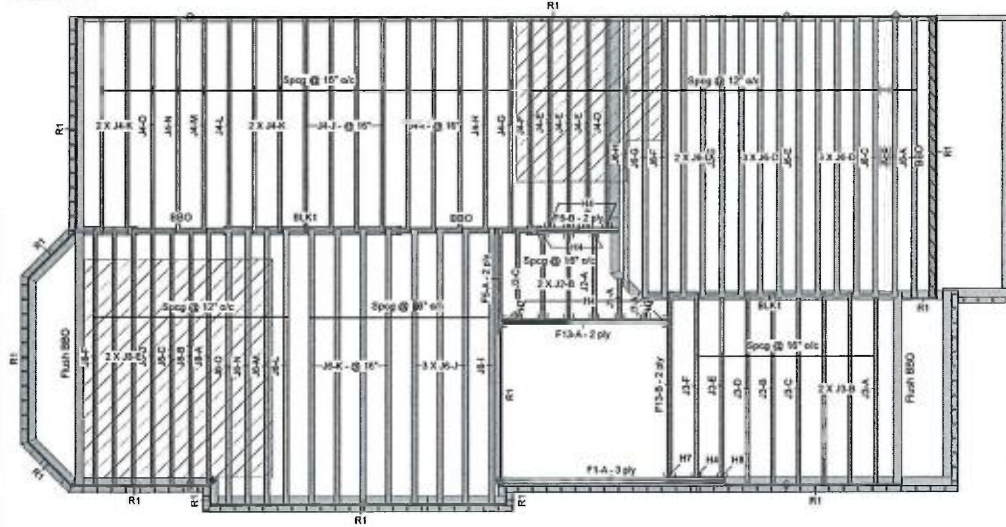
Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021



Second Floor



Legend

	Load from Above
	Wall
	Norbord Rimboard Plus 1.125 X 9.5
	NJ60U 9.5
	NJH 9.5
	Forex 2.0E-3000Fb LVL 1.75 X 9.5

- OBC 2012 O.Reg 332/12 as amended
- Nascor CCMC - 13535-R
- LVL CCMC - 14056-R
- CAN/CSA-C86-09
- CCMC - 12787-R/AF/PR-L310(C)

THIS CERTIFICATION IS TO CONFIRM THAT:

1. THE LOADS USED IN THE CALCULATION OF THE ATTACHED APPROVED COMPONENTS CONFORM TO THE FLOOR ASSEMBLY SHOWN ON THIS LAYOUT.

2. THE FLOOR JOISTS COMPLY WITH THE NASCOR SPAN TABLE FOR THE LOADS AND SPACING SHOWN ON THIS LAYOUT.

THE FLOOR SYSTEM MUST BE ASSEMBLED IN ACCORDANCE TO THE NASCOR SPECIFIER GUIDE. MULTI-PLY MEMBERS MUST BE ATTACHED TOGETHER AS PER THE INCLUDED MULTIPLE MEMBER CONNECTION DETAIL.

ALL OTHER COMPONENTS AND STRUCTURAL ELEMENTS SUPPORTING THE FLOOR SYSTEM SUCH AS BEAMS, WALLS, COLUMNS AND FOUNDATION WALLS AND FOOTINGS INCLUDING ANCHORAGE OF COMPONENTS AND BRACING FOR LATERAL STABILITY ARE THE RESPONSIBILITY OF OTHERS.



REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

Second Floor
LVL/SL (Flush)

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
F1	Forex 2.0E-3000Fb LVL	1.75	9.5	1	3	3	12-0-0
F13	Forex 2.0E-3000Fb LVL	1.75	9.5	2	2	4	10-0-0
F5	Forex 2.0E-3000Fb LVL	1.75	9.5	2	2	4	6-0-0

Joist (Flush)

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
J6	NJ60U	3.5	9.5			28	16-0-0
J8	NJH	2.5	9.5			7	14-0-0
J4	NJH	2.5	9.5			22	12-0-0
J3	NJH	2.5	9.5			8	10-0-0
J2	NJH	2.5	9.5			4	6-0-0
J1	NJH	2.5	9.5			1	4-0-0
J7	NJH	2.5	9.5			1	2-0-0

Rim Board

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			11	12

Hanger

Label	Pcs	Description	Skew	Slope	fasteners	Supported Member	fasteners
H4	14	LT259			4 10dx1 1/2	2 10dx1 1/2	
H7	3	HGUS410			46 16d	16 16d	
H8	1	LT259					

NOTES:

- Framer to verify dimensions on the architectural drawings.
- Double joist only require filer/backer ply when supporting another member using a face-mounted hanger.
- Install 2x4 blocking @ 24" o/c under parallel non-load bearing walls.
- Install single-ply flush window header along inside face of rimboard/rimjoist.
- Refer to Nascor specifier guide for installation works.
- Squash blocks recommended to be installed at end bearing on all first level joists which support loading from above exceeding two levels floor or roof.
- Load transfer blocks to be installed under all point loads.
- It shall be the framer's responsibility that floor joists and beams are fastened as per the hanger manufacturer's standards.

Refer to Multiple Member Connection Detail to ply to ply nailing or bolting requirements.

Rim parallel to joists: 1-1/8" rimboard with 2"x 4" block (1/16" longer than rim depth @ 16" o/c). All other components and structural elements supporting the floor system such as beams, walls, columns, and foundation walls and footings including anchorage of components and bracing for lateral stability are the responsibility of Others.

Hatch area represents ceramic tiled floor with an additional dead load of 5 PSF.

The framing shown on this layout may deviate from the architectural and structural drawings. Project Engineer to review and approve the deviation prior to construction.

ARCHITECTURAL DRAWINGS:

REGION DESIGN INC.
8700 Dufferin St. Concord, ON
Date: May 2018
Project No:
Model: Hemlock 5-5C



Layout Name
HEMLOCK 5-1 & 5-2

Design Method
LSD

Description
MINNISALE HOMES
BRAMPTON, ONT

Created
June 26, 2018

Builder
GREENPARK

Sales Rep
RM

Designer
RCO

Shipping
Project

Builder's Project
Kott Lumber Company

14 Anderson Blvd
Stouffville, Ontario
Canada
L4A 7X4
905-642-4400

Job Path
S/CUSTOMERS/GREENPARK
MINNISALE HOMES/MODELS
HEMLOCK 5-1/FLOOR
REVHEMLOCK 5-1.rvt

Second Floor

Design Method LSD
Building Code NBCC 2010 / OBC 2012

Floor
Loads

Live 40
Dead 15

Deflection Joist
LL Span L/ 480

TL Span L/ 360

LL Cant 2L/ 480

TL Cant 2L/ 360

Deflection Girder
LL Span L/ 360

TL Span L/ 240

LL Cant 2L/ 480

TL Cant 2L/ 360

Decking
Deck SPF Plywood

Thickness 5/8"

Fastener Nailed & Glued

Vibration

Ceiling Gypsum 1/2"





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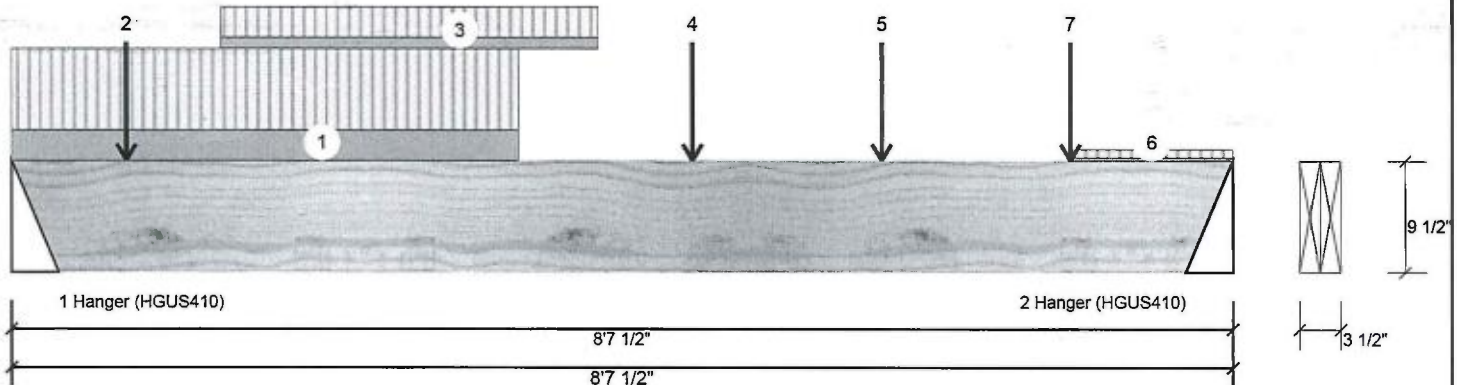
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5-1
 Project #:

Page 1 of 2

F13-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Second Floor



Member Information

Unfactored Reactions UNPATTERNED lb (Uplift)

Type:	Girder	Application:	Floor (Residential)
Ply:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Brg	Live	Dead	Snow	Wind
1	1031	419	0	0
2	406	184	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	4.000"	20%	524 / 1547	2071	L	1.25D+1.5L
2 - Hanger	4.000"	8%	231 / 608	839	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2859 ft-lb	3'2 3/4"	22724 ft-lb	0.126 (13%)	1.25D+1.5L	L
Unbraced	2859 ft-lb	3'2 3/4"	21433 ft-lb	0.133 (13%)	1.25D+1.5L	L
Shear	1559 lb	1' 3/4"	9277 lb	0.168 (17%)	1.25D+1.5L	L
Perm Defl in.	0.015 (L/6456)	3'11 3/4"	0.269 (L/360)	0.060 (6%)	D	Uniform
LL Defl inch	0.036 (L/2715)	3'11 1/4"	0.269 (L/360)	0.130 (13%)	L	L
TL Defl inch	0.051 (L/1911)	3'11 3/8"	0.404 (L/240)	0.130 (13%)	D+L	L

Design Notes

- 1 Fill all hanger nailing holes.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Multiple plies must be fastened together as per manufacturer's details.
- 4 Top loads must be supported equally by all plies.
- 5 Top braced at bearings.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on full section width.

READ ALL NOTES ON THIS PAGE AND ON
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 NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH
 BLOCK IS REQUIRED AT ALL
 POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 3-7-0		Top	90 PLF	240 PLF	0 PLF	0 PLF	
2	Point	0-9-12		Far Face	40 lb	106 lb	0 lb	0 lb	J2
3	Part. Uniform	1-5-12 to 4-1-12		Far Face	33 PLF	89 PLF	0 PLF	0 PLF	
4	Point	4-9-12		Far Face	46 lb	123 lb	0 lb	0 lb	J2
5	Point	6-1-12		Far Face	20 lb	53 lb	0 lb	0 lb	J1
6	Tie-In	7-5-12 to 8-7-8	(Span)1-2-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	

Continued on page 2...

Notes

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Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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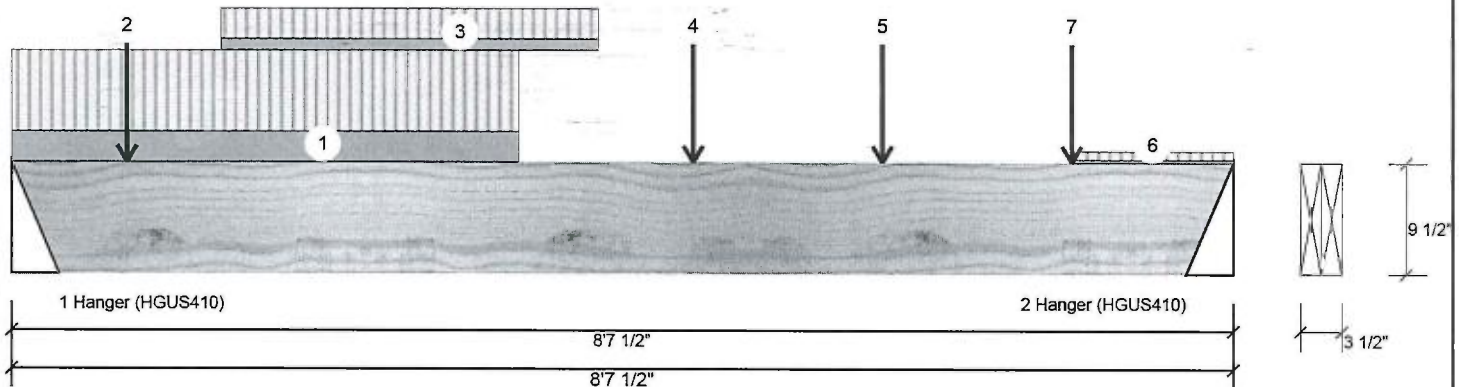
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5-1
 Project #:

Page 2 of 2

F13-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
7	Point	7-5-12		Far Face	11 lb	30 lb	0 lb	0 lb	J7
	Self Weight				8 PLF				

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Lumber

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chemicals

Handling & Installation

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2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
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Kott Lumber Company
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 L4A 7X4
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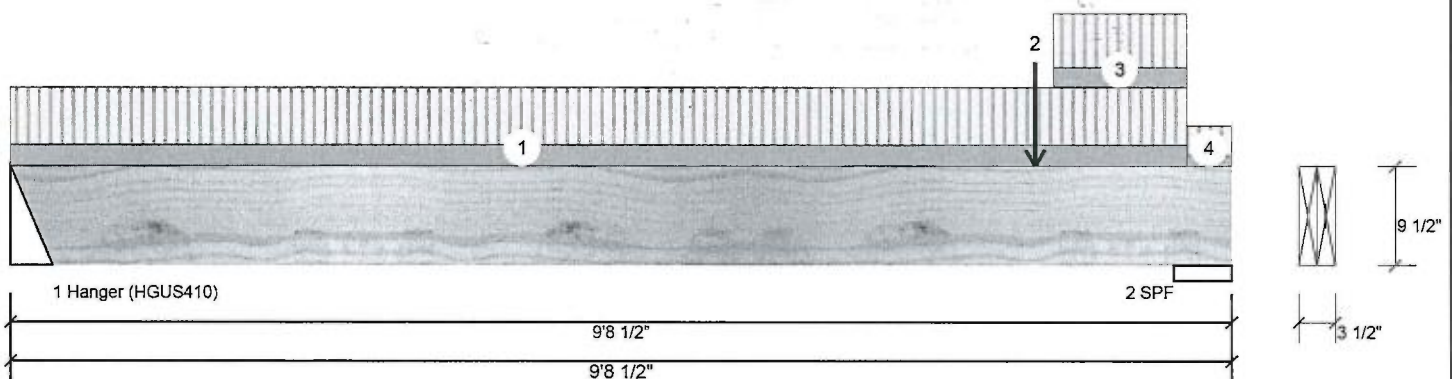
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5-1
 Project #:

Page 1 of 1

F13-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Second Floor



Member Information

Unfactored Reactions UNPATTERNED lb (Uplift)

Type:	Girder	Application:	Floor (Residential)
Piles:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Brg	Live	Dead	Snow	Wind
1	186	110	0	0
2	510	256	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	4.000"	4%	138 / 279	416 L	1.25D+1.5L
2 - SPF	5.500"	9%	321 / 765	1086 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1251 ft-lb	6'6 7/16"	22724 ft-lb	0.055 (6%)	1.25D+1.5L	L
Unbraced	1251 ft-lb	6'6 7/16"	21109 ft-lb	0.059 (6%)	1.25D+1.5L	L
Shear	977 lb	8'6 1/4"	9277 lb	0.105 (11%)	1.25D+1.5L	L
Perm Defl in.	0.010 (L/10574)	5'1 3/8"	0.301 (L/360)	0.030 (3%)	D	Uniform
LL Defl inch	0.019 (L/5813)	5'2 5/16"	0.301 (L/360)	0.060 (6%)	L	L
TL Defl inch	0.029 (L/3751)	5'2"	0.452 (L/240)	0.060 (6%)	D+L	L

Design Notes

- 1 Fill all hanger nailing holes.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Multiple plies must be fastened together as per manufacturer's details.
- 4 Top loads must be supported equally by all plies.
- 5 Top braced at bearings.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on full section width.

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REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 9-4-4	(Span)1-4-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	8-1-12		Far Face	184 lb	406 lb	0 lb	0 lb	F13
3	Tie-In	8-3-8 to 9-4-4	(Span)1-3-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Tie-In	9-4-4 to 9-8-8	(Span)0-8-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				8 PLF				

Notes

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Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

Kott Lumber Company
 14 Anderson Blvd, Ontario
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 L4A 7X4
 905-642-4400

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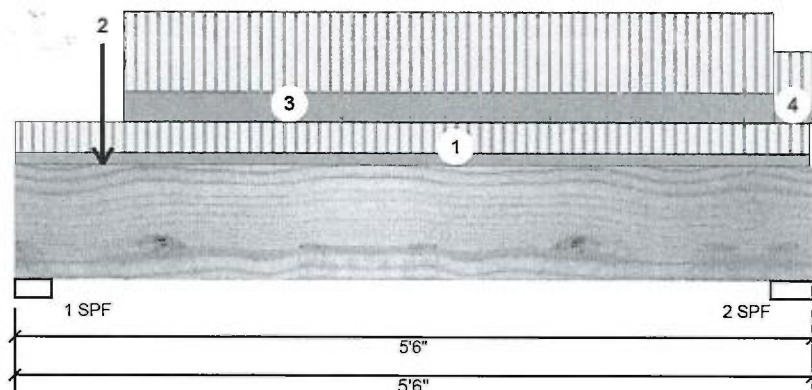
Client: GREENPARK
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 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5-1
 Project #:

Page 1 of 1

F5-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Second Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	1005	428	0	0
2	156	82	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.000"	32%	534 / 1508	2043 L	1.25D+1.5L
2 - SPF	3.500"	4%	103 / 234	337 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	847 ft-lb	7 1/4"	22724 ft-lb	0.037 (4%)	1.25D+1.5L	L
Unbraced	847 ft-lb	7 1/4"	22724 ft-lb	0.037 (4%)	1.25D+1.5L	L
Shear	2010 lb	11 3/4"	9277 lb	0.217 (22%)	1.25D+1.5L	L
Perm Defl in.	0.002 (L/29945)	2'3 3/4"	0.169 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.004 (L/14030)	2'2 3/4"	0.169 (L/360)	0.030 (3%)	L	L
TL Defl inch	0.006 (L/9556)	2'3 1/8"	0.254 (L/240)	0.030 (3%)	D+L	L

Design Notes

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top braced at bearings.
- Bottom braced at bearings.
- Lateral slenderness ratio based on full section width.

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PASS THRU FRAMING SQUASH
 BLOCK IS REQUIRED AT ALL
 POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 5-5-12	(Span)0-4-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-7-4		Near Face	419 lb	1031 lb	0 lb	0 lb	F13
3	Tie-In	0-9-0 to 5-2-12	(Span)0-11-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Tie-In	5-2-12 to 5-6-0	(Span)0-7-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				8 PLF				

Notes

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Lumber

- Dry service conditions, unless noted otherwise
- LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

- LVL beams must not be cut or drilled
- Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
- Damaged Beams must not be used
- Design assumes top edge is laterally restrained
- Provide lateral support at bearing points to avoid lateral displacement and rotation

- For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

Kott Lumber Company
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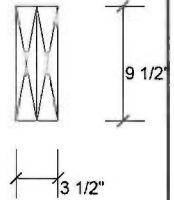
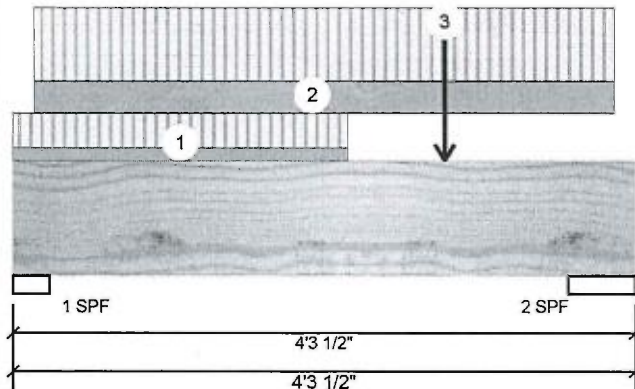
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F5-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Second Floor



Member Information

Unfactored Reactions UNPATTERNED lb (Uplift)

Type:	Girder	Application:	Floor (Residential)
Piles:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Brg	Live	Dead	Snow	Wind
1	625	276	0	0
2	625	280	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.000"	20%	345 / 937	1282 L	1.25D+1.5L
2 - SPF	5.500"	11%	350 / 937	1287 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1130 ft-lb	2' 7/16"	22724 ft-lb	0.050 (5%)	1.25D+1.5L	L
Unbraced	1130 ft-lb	2' 7/16"	22724 ft-lb	0.050 (5%)	1.25D+1.5L	L
Shear	1323 lb	3' 1 1/4"	9277 lb	0.143 (14%)	1.25D+1.5L	L
Perm Defl in.	0.002 (L/21697)	2' 7/16"	0.124 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch	0.005 (L/9576)	2' 7/16"	0.124 (L/360)	0.040 (4%)	L	L
TL Defl inch	0.007 (L/6644)	2' 7/16"	0.185 (L/240)	0.040 (4%)	D+L	L

Design Notes

- Girders are designed to be supported on the bottom edge only.
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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 2-3-12		Near Face	39 PLF	103 PLF	0 PLF	0 PLF	
2	Part. Uniform	0-1-12 to 4-1-12		Far Face	96 PLF	220 PLF	0 PLF	0 PLF	
3	Point	2-11-12		Near Face	49 lb	131 lb	0 lb	0 lb	J2
	Self Weight				8 PLF				

Notes

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Lumber

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