

**Engineering Note Page (ENP-2)**

REVISION 2009-10-09

**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.

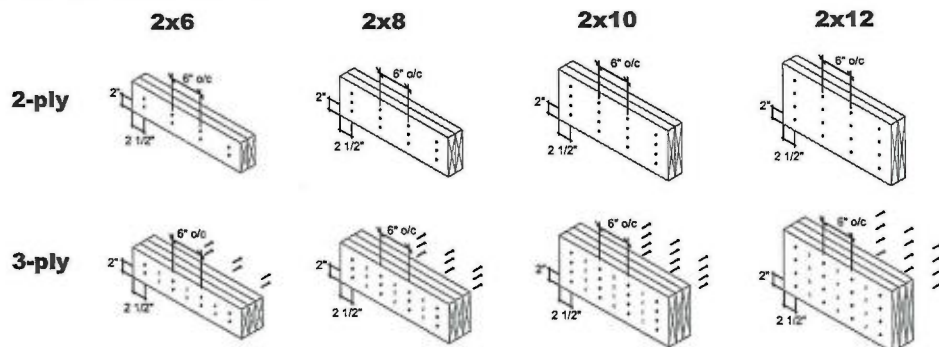
**HANDLING AND INSTALLATION**

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



# MULTIPLE MEMBER CONNECTIONS

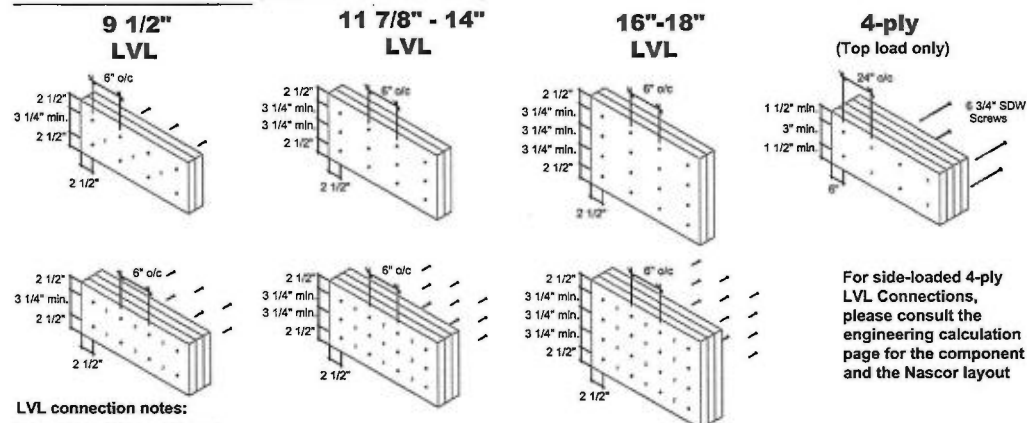
## Conventional Connections (for uniform distributed loads)



### 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)

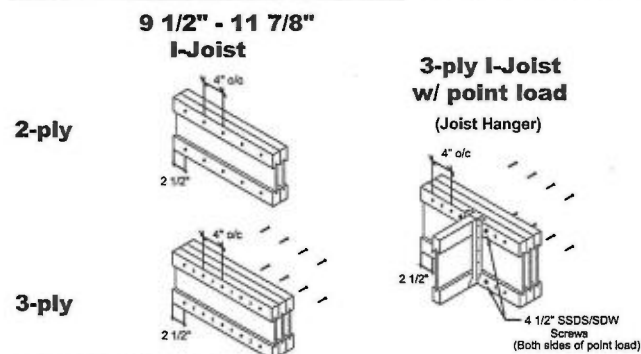


### LVL connection notes:

- 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, 2018

Drawn: NTS

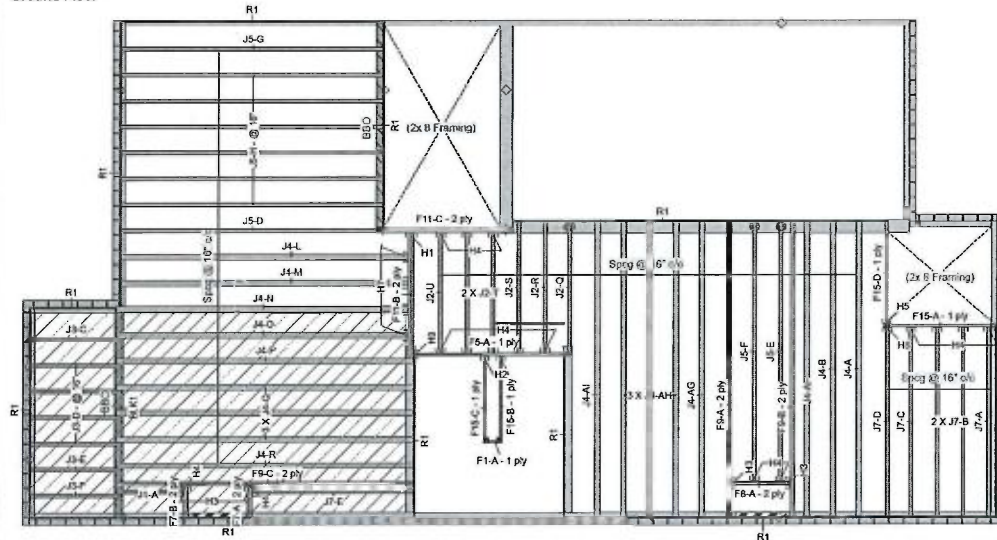
# KOTT

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

# KOTT



## Ground Floor



WHERE FOUNDATION WALLS MUST BE  
LATERALLY SUPPORTED AND NO  
DETAIL IS PROVIDED BY THE  
BUILDING DESIGNER, SEE DETAIL U3  
IN THE NASCOR SPECIFIER GUIDE

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.



August 17, 2018

## Legend

	Load from Above
	Wall
	Wall Opening
	Norbord Rimboard Plus 1.125 X 9.5
	NJ 9.5
	NJ60U 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)

Ground Floor  
(LVL/SL (Flush))

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
F5	Forex 2.0E-3000Fb LVL	1.75	9.5			1	10-0-0
F11	Forex 2.0E-3000Fb LVL	1.75	9.5	2	2	4	6-0-0
F15	Forex 2.0E-3000Fb LVL	1.75	9.5			4	6-0-0
F1	Forex 2.0E-3000Fb LVL	1.75	9.5			1	2-0-0

## Joist (Flush)

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
F5	NJ	1.5	9.5	3	2	6	16-0-0
F8	NJ	1.5	9.5	1	2	2	4-0-0
F7	NJ	1.5	9.5	2	2	4	2-0-0
J4	NJ60U	3.5	9.5			17	16-0-0
J5	NJH	2.5	9.5			10	14-0-0
J7	NJH	2.5	9.5			6	10-0-0
J2	NJH	2.5	9.5			6	8-0-0
J3	NJH	2.5	9.5			7	6-0-0
J1	NJH	2.5	9.5			1	4-0-0

## Rim Board

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

## Blocking

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
BLK1	NJH	2.5	9.5	1 in Ft		Varies	8-0-0

## Hanger

Label	Pcs	Description	Skew	Slope	fasteners	Supported Member
H1	1	HGUS410			46 16d	16 16d
H2	2	HUS1.81/10			30 16d	10 16d
H3	4	LT2-159			4 10d x 1 1/2	2 10d x 1 1/2
H4	16	LT259			4 10d x 1 1/2	2 10d x 1 1/2
H5	1	L90				
H7	4	LT359			4 10d	2 10d x 1 1/2
H8	1	LT259				
H9	1	HUCQ1.81/9-SDS				

## NOTES:

1. Framers to verify dimensions on the architectural drawings.
2. Double joist only require fillerbacker 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:

VA3 DESIGN  
255 Consumers Rd., Suite 120, Toronto, ON  
Date: Rev.5; July 23, 2018  
Project No: 18012  
Model: Hemlock 3

**NASCOR**

Layout Name

HEMLOCK 3-2

Design Method

LSO

Description

MINNISALE HOMES CORP.  
BRAMPTON, ONT.

Revised

August 13, 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

D:\Users\jochavito\WORK FROM  
HOME\GREENPARK\MINNISALE  
HOMES\HEMLOCK 3\HEMLOCK 3-2  
FLOOR\REV-F-HEMLOCK 3-2 ENG

Ground Floor

Design Method

LSO

Building Code

NBCC 2010 / OBC

2012

Floor

Live

Dead

Deflection Joist

LL Span L/

TL Span L/

LL Cant 2L/

TL Cant 2L/

Deflection Girder

LL Span L/

TL Span L/

LL Cant 2L/

TL Cant 2L/

Decking

Deck

Thickness

Fastener

Vibration

SPF Plywood

3/4"

Nailed & Glued





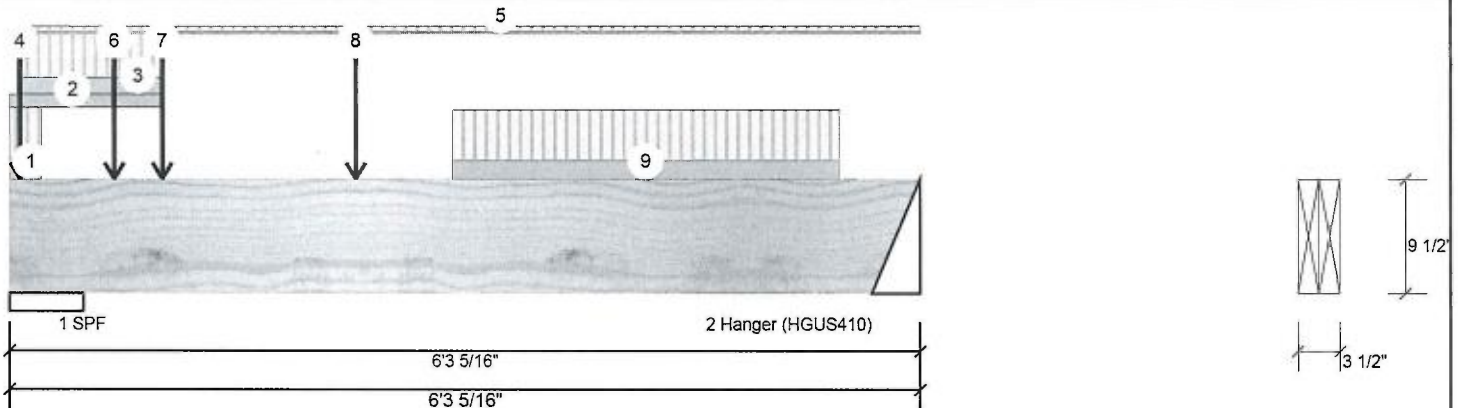
isDesign™

Client: GREENPARK  
 Project:  
 Address:

Date: 8/13/2018  
 Designer: RCO  
 Job Name: HEMLOCK 3-2  
 Project #:

Page 1 of 2

**F11-B 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	3682	1598	0	0
2	916	382	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	6.078"	57%	1997 / 5523	7520 L	1.25D+1.5L
2 - Hanger	4.000"	18%	477 / 1374	1851 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3105 ft-lb	2'4 5/8"	22724 ft-lb	0.137 (14%)	1.25D+1.5L	L
Unbraced	3105 ft-lb	2'4 5/8"	22724 ft-lb	0.137 (14%)	1.25D+1.5L	L
Shear	3100 lb	1'2 13/16"	9277 lb	0.334 (33%)	1.25D+1.5L	L
Perm Defl in.	0.010 (L/6979)	3' 7/8"	0.185 (L/360)	0.050 (5%)	D	Uniform
LL Defl inch	0.023 (L/2958)	3'1 3/16"	0.185 (L/360)	0.120 (12%)	L	L
TL Defl inch	0.032 (L/2078)	3'1 3/16"	0.278 (L/240)	0.120 (12%)	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 Fill all hanger nailing holes.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Multiple plies must be fastened together as per manufacturer's details.
- 5 Top plies must be supported equally by all plies.
- 6 Top braced at bearings.
- 7 Bottom braced at bearings.
- 8 Lateral slenderness ratio based on full section width.



August 17, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 0-2-10		Top	123 PLF	296 PLF	0 PLF	0 PLF	J4
2	Part. Uniform	0-0-0 to 1-0-10		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
3	Part. Uniform	0-0-10 to 1-0-10		Top	97 PLF	250 PLF	0 PLF	0 PLF	J4
4	Point	0-0-14		Near Face	350 lb	893 lb	0 lb	0 lb	F5

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

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

## chemicals

## Handling &amp; 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-1318

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

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

This design is





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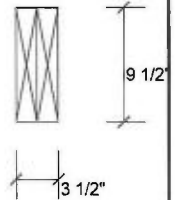
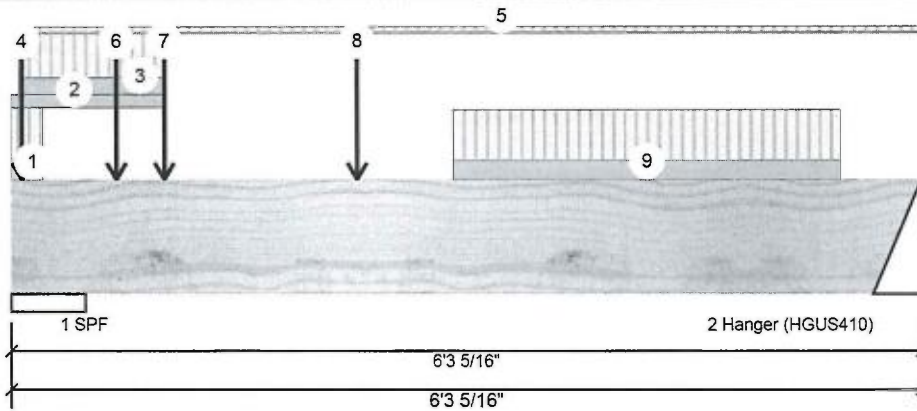
Client: GREENPARK  
 Project:  
 Address:

Date: 8/13/2018  
 Designer: RCO  
 Job Name: HEMLOCK 3-2  
 Project #:

Page 2 of 2

**F11-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED**

Level: Ground Floor



Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Tie-In	0-1-12 to 6-3-5	(Span)1-6-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
6	Point	0-8-11		Top	659 lb	1641 lb	0 lb	0 lb	F4 F4 F3 F3
7	Point	1-0-10		Far Face	191 lb	392 lb	0 lb	0 lb	J4
8	Point	2-4-10		Far Face	161 lb	391 lb	0 lb	0 lb	J4
9	Part. Uniform Self Weight	3-0-10 to 5-8-10		Far Face	110 PLF 8 PLF	293 PLF	0 PLF	0 PLF	

Pass-Thru Framing Squash Block is required at all point loads over bearings

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

**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. 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

This design is valid until 7/10/2021

**Manufacturer Info**

Forex  
 APA: PR-L318

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

**NASCOR**






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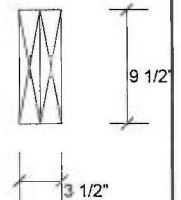
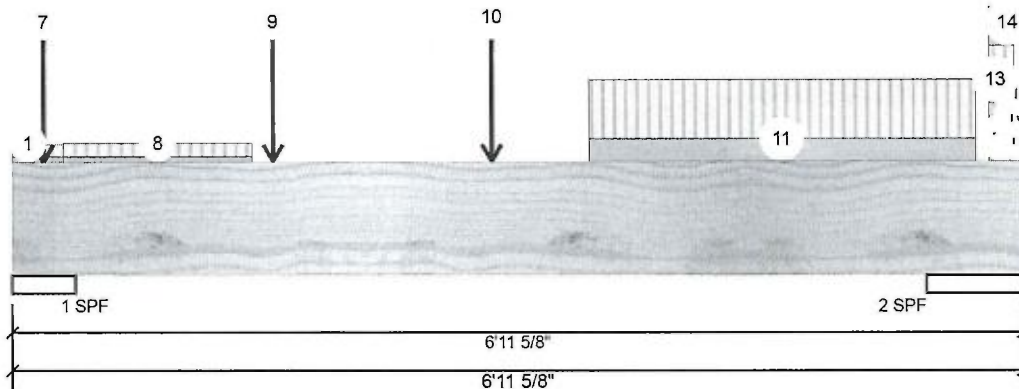
Client: GREENPARK  
 Project:  
 Address:

Date: 8/13/2018  
 Designer: RCO  
 Job Name: HEMLOCK 3-2  
 Project #:

Page 1 of 2

**F11-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	1875	848	0	0
2	609	282	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.250"	34%	1060 / 2812	3872	L	1.25D+1.5L
2 - SPF	8.000"	7%	353 / 914	1267	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2490 ft-lb	1'9 5/8"	22724 ft-lb	0.110 (11%)	1.25D+1.5L	L
Unbraced	2490 ft-lb	1'9 5/8"	22015 ft-lb	0.113 (11%)	1.25D+1.5L	L
Shear	1931 lb	1'2"	9277 lb	0.208 (21%)	1.25D+1.5L	L
Perm Defl in.	0.008 (L/8960)	3'1 3/8"	0.200 (L/360)	0.040 (4%)	D	Uniform
LL Defl inch	0.019 (L/3866)	3'1 7/16"	0.200 (L/360)	0.090 (9%)	L	L
TL Defl inch	0.027 (L/2701)	3'1 7/16"	0.299 (L/240)	0.090 (9%)	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 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.



August 17, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-4-4	(Span)1-3-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-2-10		Top	17 lb	46 lb	0 lb	0 lb	J5
3	Point	0-2-10		Top	6 lb	13 lb	0 lb	0 lb	J2
4	Point	0-2-10		Top	20 lb	0 lb	0 lb	0 lb	Wall Self Weight
5	Point	0-2-10		Top	401 lb	922 lb	0 lb	0 lb	F11 F11

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**

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

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

This design

**NASCOR**





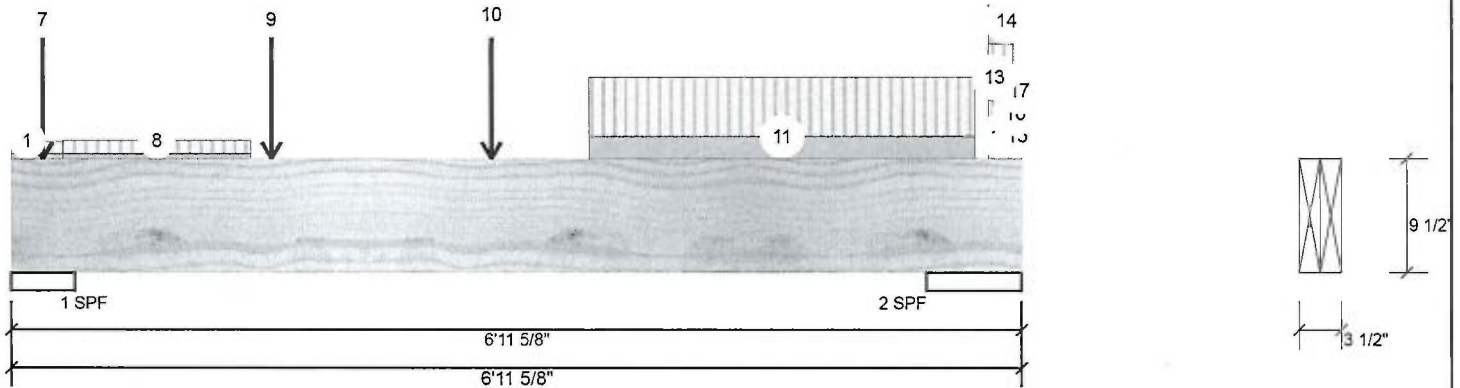

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Client: GREENPARK  
 Project:  
 Address:

Date: 8/13/2018  
 Designer: RCO  
 Job Name: HEMLOCK 3-2  
 Project #:

Page 2 of 2

**F11-C Forex 2.0E-3000Fb LVL 1.750" X 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	0-2-10		Top	4 lb	8 lb	0 lb	0 lb	J2
7	Point	0-2-10		Top	13 lb	0 lb	0 lb	0 lb	Wall Self Weight
8	Tie-In	0-4-4 to 1-7-14	(Span)1-4-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
9	Point	1-9-10		Near Face	382 lb	916 lb	0 lb	0 lb	F11
10	Point	3-3-12		Near Face	65 lb	174 lb	0 lb	0 lb	J2
11	Part. Uniform	3-11-12 to 6-7-12		Near Face	46 PLF	123 PLF	0 PLF	0 PLF	
12	Part. Uniform	6-8-14 to 6-10-15		Top	37 PLF	84 PLF	0 PLF	0 PLF	J2
13	Part. Uniform	6-8-14 to 6-10-15		Top	36 PLF	82 PLF	0 PLF	0 PLF	J2
14	Part. Uniform	6-8-14 to 6-10-15		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
15	Part. Uniform	6-10-15 to 6-11-10		Top	14 PLF	33 PLF	0 PLF	0 PLF	J2
16	Part. Uniform	6-10-15 to 6-11-10		Top	14 PLF	32 PLF	0 PLF	0 PLF	J2
17	Part. Uniform	6-10-15 to 6-11-10		Top	31 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
	Self Weight				8 PLF				

Pass-Thru Framing Squash Block is required at all point loads over bearings

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

**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

**NASCOR**

This design is valid until 7/10/2021





isDesign™

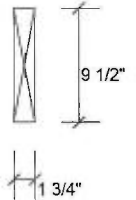
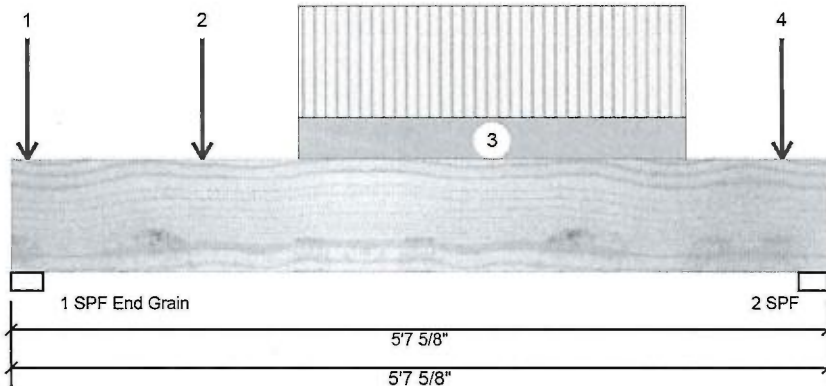
Client: GREENPARK  
Project:  
Address:

Date: 8/13/2018  
Designer: RCO  
Job Name: HEMLOCK 3-2  
Project #:

Page 1 of 1

**F15-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	665	273	2	0
2	516	599	56	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	2.625"	39%	342 / 999	1341	L	1.25D+1.5L +0.5S
2 - SPF	2.375"	61%	749 / 802	1551	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1343 ft-lb	2'10 1/2"	11362 ft-lb	0.118 (12%)	1.25D+1.5L +0.5S	L
Unbraced	1343 ft-lb	2'10 1/2"	6976 ft-lb	0.193 (19%)	1.25D+1.5L +0.5S	L
Shear	1547 lb	4'8 1/2"	4638 lb	0.333 (33%)	1.25D+1.5L +0.5S	L
Perm Defl in.	0.008 (L/7849)	2'10 7/8"	0.178 (L/360)	0.050 (5%)	D	Uniform
LL Defl inch	0.018 (L/3587)	2'9 15/16"	0.178 (L/360)	0.100 (10%)	L+0.5S	L
TL Defl inch	0.026 (L/2462)	2'10 3/16"	0.267 (L/240)	0.100 (10%)	D+L+0.5S	L

**Design Notes**

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



August 17, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Point	0-1-6		Near Face	97 lb	259 lb	0 lb	0 lb	J7
2	Point	1-3-14		Near Face	92 lb	245 lb	0 lb	0 lb	J7
3	Part. Uniform	1-11-14 to 4-7-14		Near Face	72 PLF	193 PLF	0 PLF	0 PLF	
4	Point	5-3-14		Near Face	470 lb	163 lb	58 lb	0 lb	J7
	Self Weight				4 PLF				

Pass-Thru Framing Squash Block is required at all point loads over bearings

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

**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

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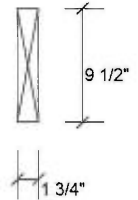
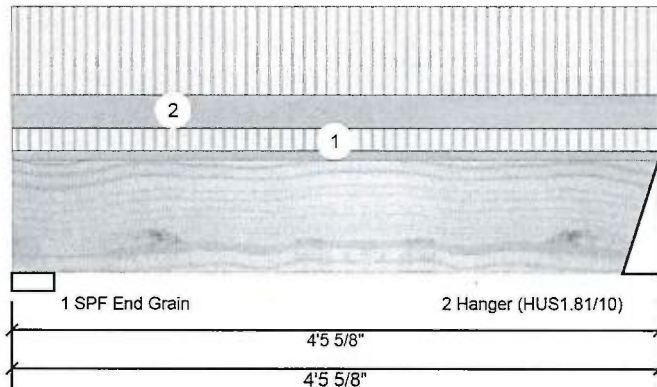
Client: GREENPARK  
 Project:  
 Address:

Date: 8/13/2018  
 Designer: RCO  
 Job Name: HEMLOCK 3-2  
 Project #:

Page 1 of 1

**F15-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	183	77	0	0
2	179	76	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	8%	96 / 274	371 L 1.25D+1.5L
2 - Hanger	3.000"	9%	95 / 269	364 L 1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	337 ft-lb	2'3 1/16"	11362 ft-lb	0.030 (3%)	1.25D+1.5L	L
Unbraced	337 ft-lb	2'3 1/16"	8769 ft-lb	0.038 (4%)	1.25D+1.5L	L
Shear	203 lb	1' 1/4"	4638 lb	0.044 (4%)	1.25D+1.5L	L
Perm Defl in. (L/36948)	0.001	2'3 1/16"	0.135 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch (L/15591)	0.003	2'3 1/16"	0.135 (L/360)	0.020 (2%)	L	L
TL Defl inch (L/10965)	0.004	2'3 1/16"	0.203 (L/240)	0.020 (2%)	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.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 4-5-10	(Span)0-9-14	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 4-5-10	(Span)3-2-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				4 PLF				

Pass-Thru Framing Squash Block is required at all point loads over bearings

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



August 17, 2018

**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 1318

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

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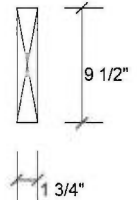
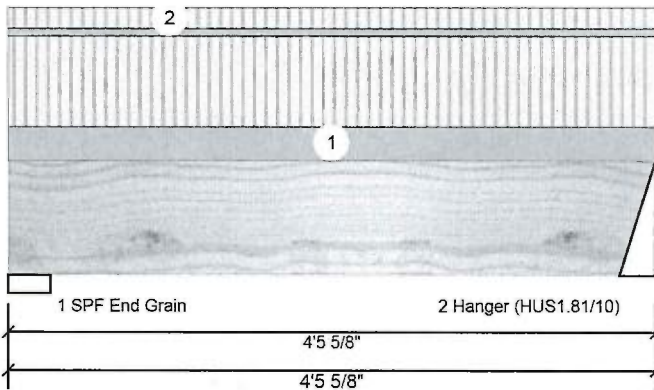
Client: GREENPARK  
Project:  
Address:

Date: 8/13/2018  
Designer: RCO  
Job Name: HEMLOCK 3-2  
Project #:

Page 1 of 1

F15-C Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

Level: Ground Floor



## Member Information

Type: Girder  
Plies: 1  
Moisture Condition: Dry  
Deflection LL: 360  
Deflection TL: 240  
Importance: Normal  
General Load  
Floor Live: 40 PSF  
Dead: 15 PSF

Application: Floor (Residential)  
Design Method: LSD  
Building Code: NBCC 2010 / OBC 2012  
Load Sharing: No  
Deck: Not Checked  
Vibration: Not Checked

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	198	83	0	0
2	195	81	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	9%	104 / 298	401 L		1.25D+1.5L
2 - Hanger	3.000"	10%	102 / 292	394 L		1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	365 ft-lb	2'3 1/16"	11362 ft-lb	0.032 (3%)	1.25D+1.5L	L
Unbraced	365 ft-lb	2'3 1/16"	8769 ft-lb	0.042 (4%)	1.25D+1.5L	L
Shear	220 lb	1' 1/4"	4638 lb	0.047 (5%)	1.25D+1.5L	L
Perm Defl in. (L/34346)	0.001	2'3 1/16"	0.135 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch (L/14366)	0.003	2'3 1/16"	0.135 (L/360)	0.030 (3%)	L	L
TL Defl inch (L/10129)	0.005	2'3 1/16"	0.203 (L/240)	0.020 (2%)	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.



August 17, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 4-5-10	(Span)3-6-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 4-5-10	(Span)0-9-14	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				4 PLF				

Pass-Thru Framing Squash Block is required at all point loads over bearings

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

## 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 &amp; 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  
ADA-PR-1318

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

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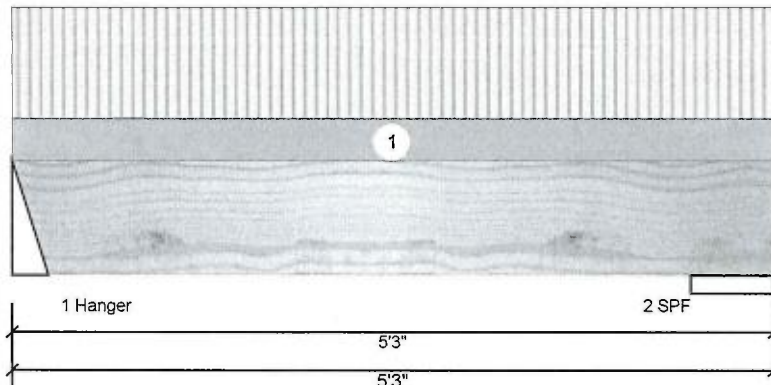
Client: GREENPARK  
 Project:  
 Address:

Date: 8/13/2018  
 Designer: RCO  
 Job Name: HEMLOCK 3-2  
 Project #:

Page 1 of 1

**F15-D Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED**

Level: Ground Floor

**Member Information**

Type: Girder  
 Plies: 1  
 Moisture Condition: Dry  
 Deflection LL: 360  
 Deflection TL: 240  
 Importance: Normal  
 General Load  
 Floor Live: 40 PSF  
 Dead: 15 PSF

Application: Floor (Residential)  
 Design Method: LSD  
 Building Code: NBCC 2010 / OBC 2012  
 Load Sharing: No  
 Deck: Not Checked  
 Vibration: Not Checked

**Unfactored Reactions UNPATTERNED lb (Uplift)**

Brg	Live	Dead	Snow	Wind
1	70	36	0	0
2	79	40	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	3.000"	4%	44 / 105	149	L	1.25D+1.5L
2 - SPF	6.875"	2%	50 / 118	169	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	157 ft-lb	2'5 9/16"	11362 ft-lb	0.014 (1%)	1.25D+1.5L	L
Unbraced	157 ft-lb	2'5 9/16"	8088 ft-lb	0.019 (2%)	1.25D+1.5L	L
Shear	90 lb	11 3/4"	4638 lb	0.019 (2%)	1.25D+1.5L	L
Perm Defl in. (L/66907)	0.001	2'5 9/16"	0.152 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch (L/34092)	0.002	2'5 9/16"	0.152 (L/360)	0.010 (1%)	L	L
TL Defl inch (L/22584)	0.002	2'5 9/16"	0.228 (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 Top braced at bearings.
- 4 Bottom braced at bearings.



August 17, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 5-3-0	(Span)1-5-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				4 PLF				

Pass-Thru Framing Squash Block is required at all point loads over bearings

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

**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

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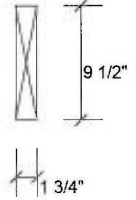
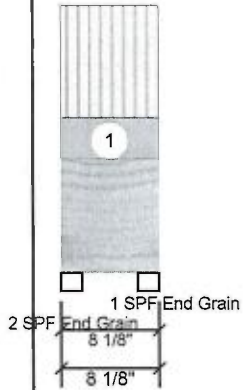
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 Project:  
 Address:

Date: 8/13/2018  
 Designer: RCO  
 Job Name: HEMLOCK 3-2  
 Project #:

Page 1 of 1

**F1-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED** Level: Ground Floor



## Member Information

Type:	Girder	Application:	Floor (Residential)
Piles:	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	25	11	0	0
2	25	11	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	1.750"	2%	13 / 37	51 L		1.25D+1.5L
2 - SPF End Grain	1.750"	2%	13 / 37	51 L		1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5 ft-lb	4 1/16"	11362 ft-lb	0.000 (0%)	1.25D+1.5L	L
Unbraced	5 ft-lb	4 1/16"	11362 ft-lb	0.000 (0%)	1.25D+1.5L	L
Shear	40 lb	-(2 3/8")	4638 lb	0.009 (1%)	1.25D+1.5L	L
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

- 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
1	Tie-In	0-0-0 to 0-8-2	(Span)3-8-7	Top	15 PSF	40 PSF	0 PSF	0 PSF
	Self Weight				4 PLF			



August 17, 2018

Pass-Thru Framing Squash Block is required at all point loads over bearings

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

## 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

## Handling &amp; 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-PS 1318

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

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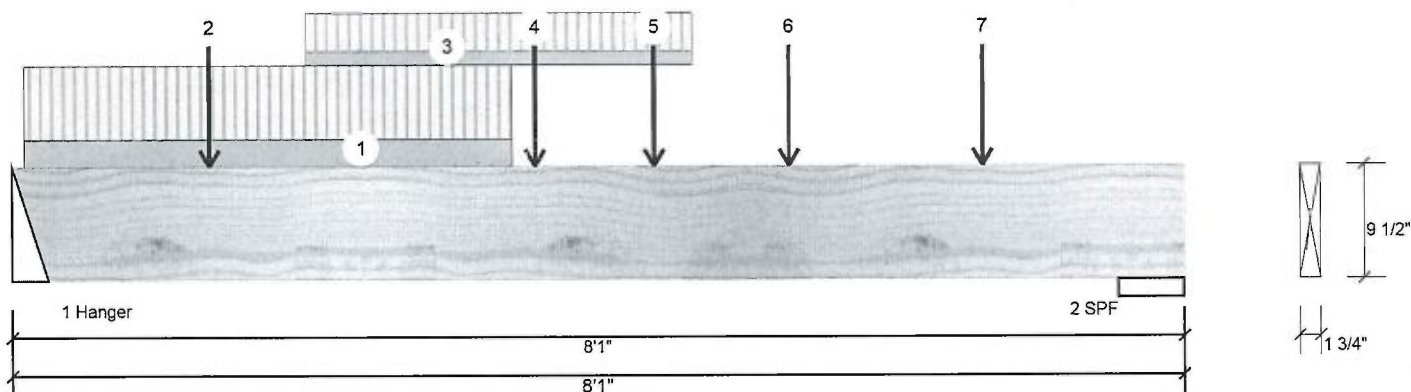
Client: GREENPARK  
 Project:  
 Address:

Date: 8/13/2018  
 Designer: RCO  
 Job Name: HEMLOCK 3-2  
 Project #:

Page 1 of 1

**F5-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	1339	525	0	0
2	1160	459	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - Hanger	3.000"	68% 656 / 2008	2664 L	1.25D+1.5L
2 - SPF	5.500"	39% 574 / 1741	2315 L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5089 ft-lb	3'7 3/8"	11362 ft-lb	0.448 (45%)	1.25D+1.5L	L
Unbraced	5089 ft-lb	3'7 3/8"	5098 ft-lb	0.998 (100%)	1.25D+1.5L	L
Shear	2309 lb	6'10 3/4"	4638 lb	0.498 (50%)	1.25D+1.5L	L
Perm Defl in.	0.047 (L/1899)	3'10 3/4"	0.250 (L/360)	0.190 (19%)	D	Uniform
LL Defl inch	0.120 (L/751)	3'10 5/8"	0.250 (L/360)	0.480 (48%)	L	L
TL Defl inch	0.167 (L/538)	3'10 5/8"	0.375 (L/240)	0.450 (45%)	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 must be laterally braced at a maximum of 7'3 3/4" o.c.
- 4 Bottom braced at bearings.



August 17, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-1-0 to 3-5-8		Top	90 PLF	240 PLF	0 PLF	0 PLF	
2	Point	1-4-6		Far Face	65 lb	174 lb	0 lb	0 lb	J2
3	Part. Uniform	2-0-6 to 4-8-6		Far Face	46 PLF	123 PLF	0 PLF	0 PLF	
4	Point	3-7-6		Near Face	81 lb	195 lb	0 lb	0 lb	F15
5	Point	4-5-4		Near Face	76 lb	179 lb	0 lb	0 lb	J2
6	Point	5-4-6		Far Face	155 lb	413 lb	0 lb	0 lb	J2
7	Point	6-8-6		Far Face	150 lb	400 lb	0 lb	0 lb	J2
	Self Weight				4 PLF				

Pass-Through Framing Squash Block is required at all point loads over bearings

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

**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

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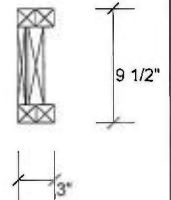
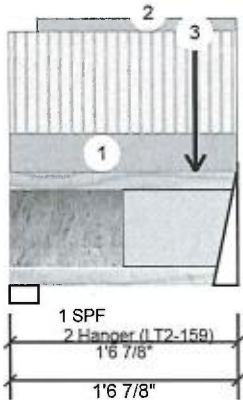
Client: GREENPARK  
 Project:  
 Address:

Date: 8/13/2018  
 Designer: RCO  
 Job Name: HEMLOCK 3-2  
 Project #:

Page 1 of 1

**F7-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	71	34	0	0
2	172	85	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	6%	42 / 107	149	L	1.25D+1.5L
2 - Hanger	2.000"	14%	106 / 258	363	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	64 ft-lb	1'1 3/16"	7340 ft-lb	0.009 (1%)	1.25D+1.5L	L
Unbraced	64 ft-lb	1'1 3/16"	6912 ft-lb	0.009 (1%)	1.25D+1.5L	L
Shear	349 lb	1'5 5/8"	3080 lb	0.113 (11%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
LL Defl inch	0.000 (L/45568)	1' 5/8"	0.044 (L/360)	0.010 (1%)	L	L
TL Defl inch	0.001 (L/30524)	1' 9/16"	0.067 (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 flange braced at bearings.
- 6 Bottom flange braced at bearings.



August 17, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-6-14	(Span)3-3-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-2-6 to 1-6-14		Top	8 PLF	0 PLF	0 PLF	0 PLF	
3	Point	1-3-7		Near Face	69 lb	141 lb	0 lb		Pass-Through Framing Squash Block is required at all point loads over bearings

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

## 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

## Handling &amp; 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/installation 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
7. For flat roofs ponding

## Manufacturer Info

Nascor by Kott

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

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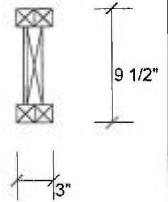
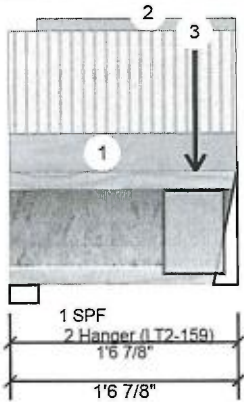
Client: GREENPARK  
 Project:  
 Address:

Date: 8/13/2018  
 Designer: RCO  
 Job Name: HEMLOCK 3-2  
 Project #:

Page 1 of 1

**F7-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	60	28	0	0
2	98	48	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	5%	35 / 90	125	L	1.25D+1.5L
2 - Hanger	2.000"	8%	60 / 148	208	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	42 ft-lb	11"	7340 ft-lb	0.006 (1%)	1.25D+1.5L	L
Unbraced	42 ft-lb	11"	6912 ft-lb	0.006 (1%)	1.25D+1.5L	L
Shear	194 lb	1'5 5/8"	3080 lb	0.063 (6%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
LL Defl inch	0.000 (L/67719)	10 7/8"	0.044 (L/360)	0.010 (1%)	L	L
TL Defl inch	0.000 (L/45357)	10 7/8"	0.067 (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 flange braced at bearings.
- 6 Bottom flange braced at bearings.



August 17, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-6-14	(Span)3-3-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-2-6 to 1-6-14		Top	8 PLF	0 PLF	0 PLF	0 PLF	
3	Point	1-3-7		Far Face	27 lb	56 lb	0 lb		Pass-Through Framing Squash Block is required at all point loads over bearings

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

**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/direction 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
7. For flat roofs ponding

**Manufacturer Info**

Nascor by Kott

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

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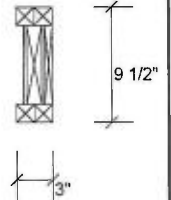
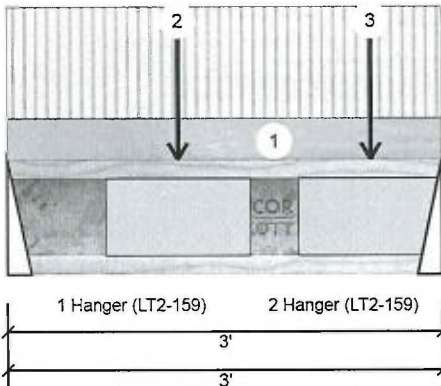
Client: GREENPARK  
Project:  
Address:

Date: 8/13/2018  
Designer: RCO  
Job Name: HEMLOCK 3-2  
Project #:

Page 1 of 1

**F8-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	295	111	0	0
2	398	149	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	22% 138 / 442	581 L		1.25D+1.5L
2 - Hanger	2.000"	30% 187 / 597	783 L		1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	576 ft-lb	1'2 1/8"	7340 ft-lb	0.078 (8%)	1.25D+1.5L	L
Unbraced	576 ft-lb	1'2 1/8"	4678 ft-lb	0.123 (12%)	1.25D+1.5L	L
Shear	776 lb	2'10 3/4"	3080 lb	0.252 (25%)	1.25D+1.5L	L
Perm Defl in. (L/20392)	0.002	1'2 1/8"	0.093 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch (L/7661)	0.004	1'2 1/8"	0.093 (L/360)	0.050 (5%)	L	L
TL Defl inch (L/5569)	0.006	1'2 1/8"	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.



August 17, 2018

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	Point	1-2-2		Far Face	127 lb	338 lb	0 lb	0 lb	J5
3	Point	2-6-2		Far Face	94 lb	250 lb	0 lb	0 lb	J5

Pass-Thru Framing Squash Block is required at all point loads over bearings

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

## 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. Joist not to be treated with fire retardant or corrosive chemicals

## chemicals

## Handling &amp; Installation

1. Joist flanges must not be cut or drilled
2. Refer to latest copy of the Joist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Joists 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

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This design

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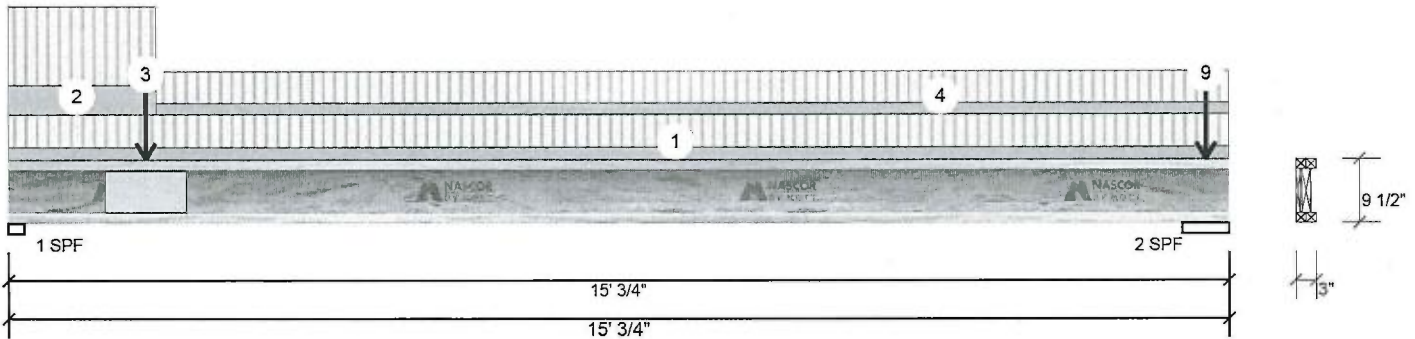
Client: GREENPARK  
 Project:  
 Address:

Date: 8/13/2018  
 Designer: RCO  
 Job Name: HEMLOCK 3-2  
 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	722	271	0	0
2	1030	495	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	53%	339 / 1083	1422	L	1.25D+1.5L
2 - SPF	6.875"	70%	619 / 1546	2164	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3260 ft-lb	6'8 1/16"	7340 ft-lb	0.444 (44%)	1.25D+1.5L	L
Unbraced	3260 ft-lb	6'8 1/16"	3269 ft-lb	0.997 (100%)	1.25D+1.5L	L
Shear	1397 lb	1 5/8"	3080 lb	0.454 (45%)	1.25D+1.5L	L
Perm Defl in.	0.091 (L/1892)	7'1 11/16"	0.481 (L/360)	0.190 (19%)	D	Uniform
LL Defl inch	0.244 (L/710)	7'1 11/16"	0.481 (L/360)	0.510 (51%)	L	
TL Defl inch	0.335 (L/516)	7'1 11/16"	0.721 (L/240)	0.460 (46%)	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 3'8" o.c.
- Bottom flange braced at bearings.



August 17, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 15-0-12	(Span)1-4-6	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	Point	1-8-6		Near Face	111 lb	295 lb	0 lb	0 lb	F8
4	Tie-In	1-9-14 to 15-0-12	(Span)1-3-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
5	Point	14-9-6		Top	19 lb	49 lb	0 lb	0 lb	J4
6	Point	14-9-6		Top	118 lb	314 lb	0 lb	0 lb	J4
7	Point	14-9-6		Top	12 lb	32 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
- Ljoist not to be treated with fire retardant or corrosive chemicals

## chemicals

## Handling &amp; 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/erection 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 ponding

## Manufacturer Info

Nascor by Kott

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

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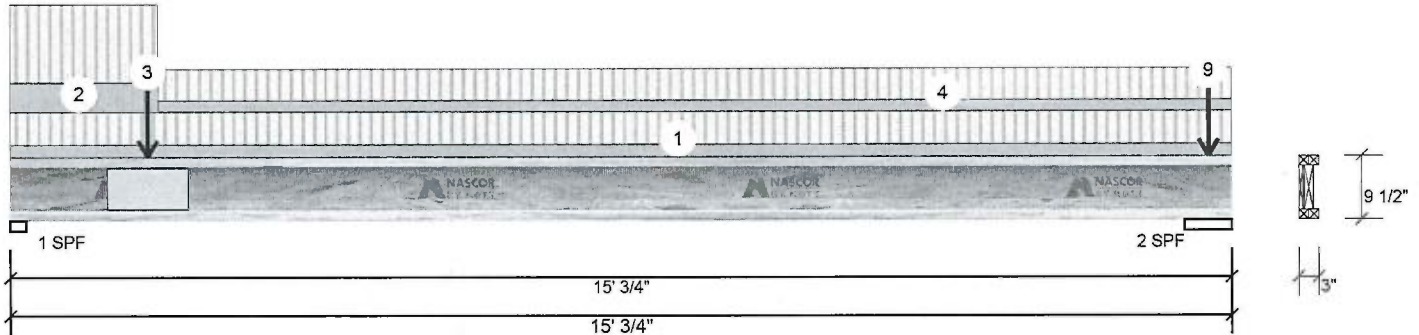
Client: GREENPARK  
 Project:  
 Address:

Date: 8/13/2018  
 Designer: RCO  
 Job Name: HEMLOCK 3-2  
 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
8	Point	14-9-6		Top	71 lb	188 lb	0 lb	0 lb	J2
9	Point	14-9-6		Top	107 lb	0 lb	0 lb	0 lb	Wall Self Weight

Pass-Thru Framing Squash Block is required at all point loads over bearings

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

**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/installation 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

This design is valid until 7/10/2021

**Manufacturer Info**

Nascor by Kott

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

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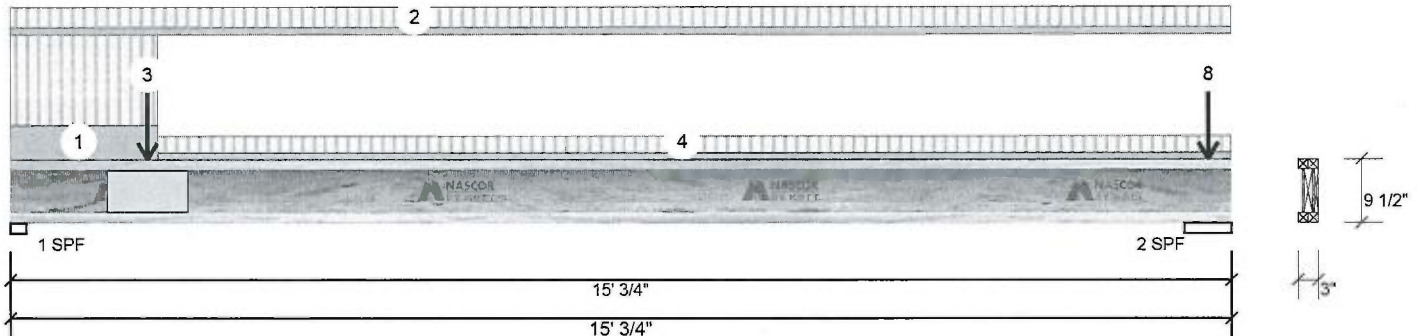
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Project:  
Address:

Date: 8/13/2018  
Designer: RCO  
Job Name: HEMLOCK 3-2  
Project #:

Page 1 of 1

F9-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	642	240	0	0
2	373	276	69	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - SPF	2.375"	47%	300 / 962	1263 L 1.25D+1.5L
2 - SPF	6.875"	31%	345 / 594	940 L 1.25D+1.5L +0.5S

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2136 ft-lb	5'6 3/8"	7340 ft-lb	0.291 (29%)	1.25D+1.5L	L
Unbraced	2136 ft-lb	5'6 3/8"	2138 ft-lb	0.999 (100%)	1.25D+1.5L	L
Shear	1242 lb	1 5/8"	3080 lb	0.403 (40%)	1.25D+1.5L	L
Perm Defl in.	0.060 (L/2896)	6'10 13/16"	0.481 (L/360)	0.120 (12%)	D	Uniform
LL Defl inch	0.159 (L/1086)	6'10 13/16"	0.481 (L/360)	0.330 (33%)	L+0.5S	L
TL Defl inch	0.219 (L/790)	6'10 13/16"	0.721 (L/240)	0.300 (30%)	D+L+0.5S	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 flange must be laterally braced at a maximum of 4'6" o.c.
- 5 Bottom flange braced at bearings.



August 17, 2018

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 15-0-12	(Span)0-8-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	1-8-6		Far Face	149 lb	398 lb	0 lb	0 lb	F8
4	Tie-In	1-9-14 to 15-0-12	(Span)0-7-6	Top	15 PSF	40 PSF	0 PSF	0 PSF	Passing Framing Squash Block is required at all point loads over bearings
5	Point	14-9-6		Top	30 lb	0 lb	69 lb	0 lb	Refer to Multiple Member Connection Detail for ply nailing or bolting requirements
6	Point	14-9-6		Top	53 lb	0 lb	0 lb	0 lb	Refer to Multiple Member Connection Detail for ply nailing or bolting requirements
7	Point	14-9-6		Top	45 lb	119 lb	0 lb	0 lb	Refer to Multiple Member Connection Detail for ply nailing or bolting requirements
8	Point	14-9-6		Top	53 lb	0 lb	0 lb	0 lb	Refer to Multiple Member Connection Detail for ply nailing or bolting requirements

## 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

## Handling &amp; 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/installation 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 ponding

## Manufacturer Info

Nascor by Kott

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This design is valid







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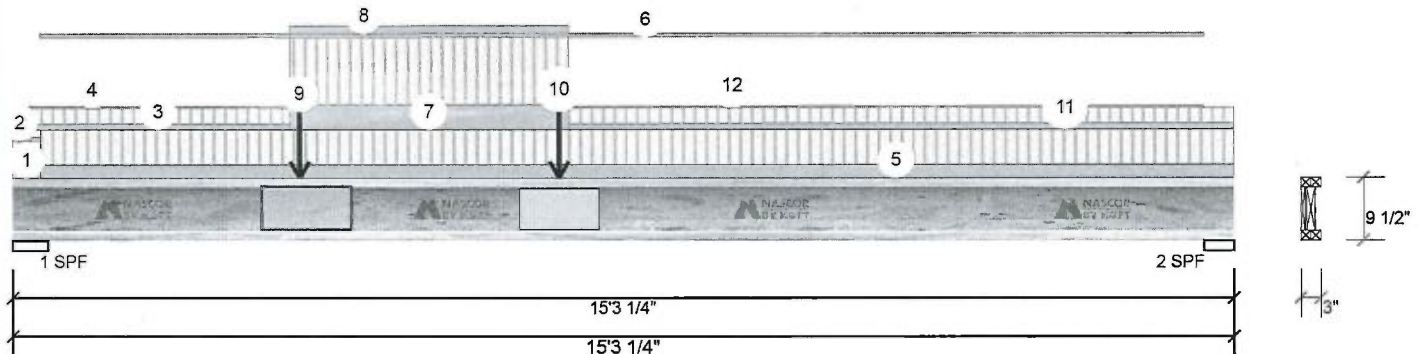
Client: GREENPARK  
 Project:  
 Address:

Date: 8/13/2018  
 Designer: RCO  
 Job Name: HEMLOCK 3-2  
 Project #:

Page 1 of 2

F9-C 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	437	214	0	0
2	331	161	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.250"	30%	267 / 655	923	L	1.25D+1.5L
2 - SPF	4.375"	23%	201 / 497	699	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3691 ft-lb	6'10 1/8"	7340 ft-lb	0.503 (50%)	1.25D+1.5L	L
Unbraced	3691 ft-lb	6'10 1/8"	3712 ft-lb	0.995 (99%)	1.25D+1.5L	L
Shear	906 lb	4 1/2"	3080 lb	0.294 (29%)	1.25D+1.5L	L
Perm Defl in.	0.117 (L/1501)	7'3 7/16"	0.486 (L/360)	0.240 (24%)	D	Uniform
LL Defl inch	0.238 (L/735)	7'3 7/16"	0.486 (L/360)	0.490 (49%)	L	L
TL Defl inch	0.355 (L/493)	7'3 7/16"	0.730 (L/240)	0.490 (49%)	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 flange must be laterally braced at a maximum of 3'4" o.c.
- 5 Bottom flange braced at bearings.



August 17, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-4-2	(Span)0-8-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 0-4-2		Top	2 PLF	0 PLF	0 PLF	0 PLF	
3	Tie-In	0-1-2 to 3-5-10	(Span)0-4-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Part. Uniform	0-1-2 to 3-5-10		Top	1 PLF	0 PLF	0 PLF	0 PLF	
5	Tie-In	0-4-2 to 15-3-4	(Span)0-11-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
6	Part. Uniform	0-4-2 to 14-10-13		Top	2 PLF	0 PLF	0 PLF	0 PLF	
7	Tie-In	3-5-10 to 6-11-10	(Span)1-8-15	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

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

## Handling &amp; Installation

1. Lual flanges must not be cut or drilled
2. Refer to latest copy of the Lual product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Luals 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

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

This design

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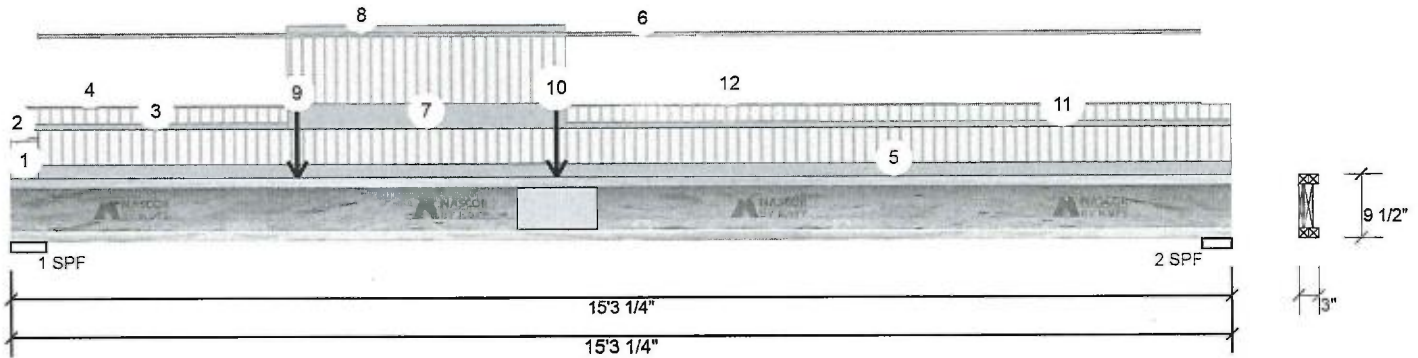
Client: GREENPARK  
 Project:  
 Address:

Date: 8/13/2018  
 Designer: RCO  
 Job Name: HEMLOCK 3-2  
 Project #:

Page 2 of 2

F9-C 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
8	Part. Uniform	3-5-10 to 6-11-10		Top	4 PLF	0 PLF	0 PLF	0 PLF	
9	Point	3-7-2		Near Face	48 lb	98 lb	0 lb	0 lb	F7
10	Point	6-10-2		Near Face	85 lb	172 lb	0 lb	0 lb	F7
11	Tie-In	6-11-10 to 15-3-4	(Span)0-4-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
12	Part. Uniform	6-11-10 to 14-10-13		Top	1 PLF	0 PLF	0 PLF	0 PLF	

Pass-Thru Framing Squash Block is required at all point loads over bearings

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

**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

This design is valid until 7/10/2021

**Manufacturer Info**

Nascor by Kott

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

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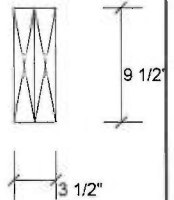
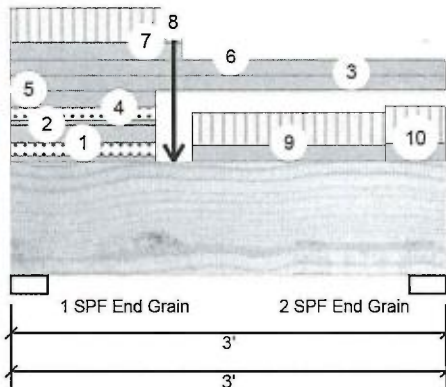
Client: GREENPARK  
 Project:  
 Address:

Date: 8/13/2018  
 Designer: RCO  
 Job Name: HEMLOCK 3-2 (WOD)  
 Project #:

Page 1 of 2

FH3-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	129	495	167	0
2	131	320	69	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	15%	619 / 251	870 L 1.25D+1.5S
2 - SPF End Grain	3.000"	10%	400 / 196	597 L 1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	565 ft-lb	1'1 1/2"	16588 ft-lb	0.034 (3%)	1.25D+1.5S	L
Unbraced	565 ft-lb	1'1 1/2"	16588 ft-lb	0.034 (3%)	1.25D+1.5S	L
Shear	550 lb	11 3/4"	6772 lb	0.081 (8%)	1.25D+1.5S	L
Perm Defl in. (L/18231)	0.002	1'1 13/16"	0.088 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch (L/38904)	0.001	1'1 1/2"	0.088 (L/360)	0.010 (1%)	S+0.5L	L
TL Defl inch (L/12418)	0.003	1'1 1/2"	0.131 (L/240)	0.020 (2%)	D+S+0.5L	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.



August 17, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 1-0-0		Top	14 PLF	0 PLF	34 PLF	0 PLF	
2	Part. Uniform	0-0-0 to 1-0-0		Top	44 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
3	Part. Uniform	0-0-0 to 3-0-0		Top	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
4	Part. Uniform	0-0-0 to 1-0-0		Near Face	14 PLF	0 PLF	34 PLF	0 PLF	
5	Part. Uniform	0-0-0 to 1-0-0		Near Face	44 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight

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
- LVL not to be treated with fire retardant or corrosive chemicals

## Handling &amp; 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

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

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

This design

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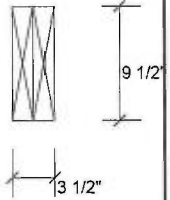
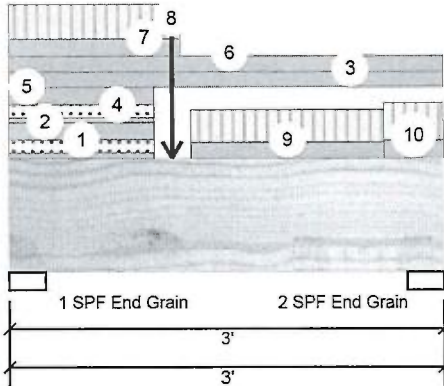
Client: GREENPARK  
 Project:  
 Address:

Date: 8/13/2018  
 Designer: RCO  
 Job Name: HEMLOCK 3-2 (WOD)  
 Project #:

Page 2 of 2

FH3-A Forex 2.0E-3000Fb LVL 1.750" X 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	Part. Uniform	0-0-0 to 3-0-0		Near Face	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
7	Part. Uniform	0-0-0 to 1-2-3		Near Face	43 PLF	90 PLF	0 PLF	0 PLF	J3
8	Point	1-1-8		Top	312 lb	0 lb	168 lb	0 lb	Header Column Header Column
9	Part. Uniform	1-3-1 to 2-7-1		Near Face	41 PLF	85 PLF	0 PLF	0 PLF	J3
10	Part. Uniform	2-7-1 to 3-0-0		Near Face	46 PLF	97 PLF	0 PLF	0 PLF	J3
	Self Weight				8 PLF				

Pass-Thru Framing Squash Block is required at all point loads over bearings

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

## 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 &amp; Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacture'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

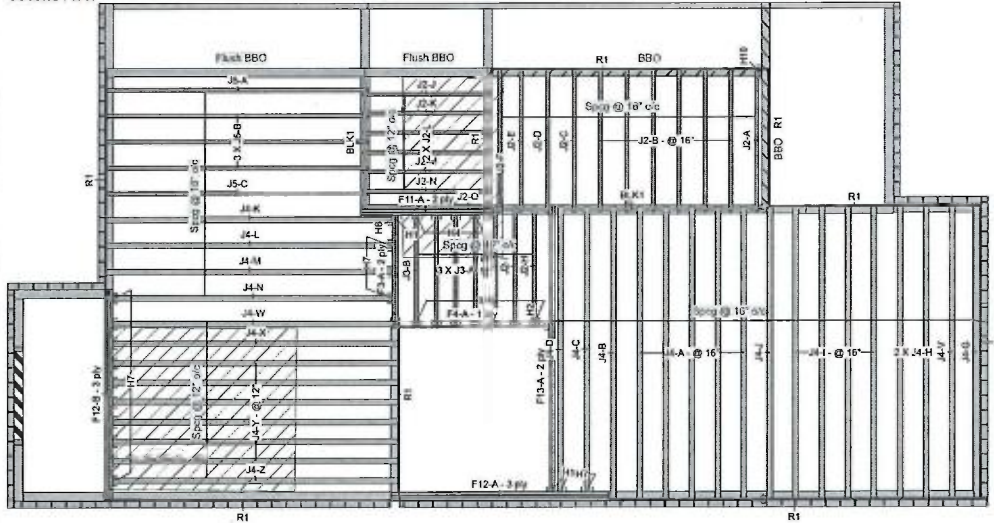
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 Canada  
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 905-642-4400

**NASCOR**

This design is valid until 7/10/2021



## Second Floor



## 4 BEDROOM OPTION

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.



## Legend

	Load from Above
	Wall
	Wall Opening
	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-O86-09
- CCMC - 12787-R APA PR-1310(C)

Second Floor  
LVL/SL (Flush)

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
F13	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	16-0-0
F12	Forex 2.0E-3000Fb LVL	1.75	9.5	2	3	6	12-0-0
F11	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	8-0-0
F4	Forex 2.0E-3000Fb LVL	1.75	9.5			1	8-0-0
F3	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	6-0-0

## Joist (Flush)

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
J4	NJ60U	3.5	9.5			30	16-0-0
J5	NJH	2.5	9.5			5	14-0-0
J2	NJH	2.5	9.5			21	8-0-0
J3	NJH	2.5	9.5			4	6-0-0

## Rim Board

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			9	12

## Blocking

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
BLK1	NJH	2.5	9.5			Varies	13-0-0

## Hanger

Label	Pcs	Description	Skew	Slope	fasteners	Supported Member
H1	2	HGUS410			46 16d	16 16d
H2	1	HUS1.81/10			30 16d	10 16d
H4	11	LT259			4 10dx1 1/2	2 10dx1 1/2
H6	1	LT359			4 10d	2 10dx1 1/2
H7	15	LT359			4 10d	2 10dx1 1/2
H10	1	Unknown Hanger				

## NOTES:

- Framer to verify dimensions on the architectural drawings.
- Double joist only require filenbacker 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:

VA3 DESIGN  
 255 Consumers Rd., Suite 120, Toronto, ON  
 Date: May 24, 2018  
 Project No: 18012  
 Model: Hemlock 3



Layout Name  
HEMLOCK 3-2  
 Design Method  
LSD  
 Description  
MINNISALE HOMES CORP.  
BRAMPTON, ONT.

Created  
June 25, 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  
 D:\Users\vochavito\WORK FROM HOME\GREENPARK\MINNISALE HOMES\HEMLOCK 3\HEMLOCK 3-2\FLOOR\REV5 BED OPT\HEMLOCK

## Second Floor

Design Method LSD

Building Code NBCC 2010 / OBC 2012

Floor

Live 40

Dead 15

Deflection Joist

LL Span 1/ 480

TL Span 1/ 360

LL Cant 2/ 480

TL Cant 2/ 360

Deflection Girder

LL Span 1/ 360

TL Span 1/ 240

LL Cant 2/ 480

TL Cant 2/ 360

Decking

Deck SPF Plywood

Thickness 5/8"

Fastener Nailed & Glued

Vibration

Ceiling Gypsum 1/2"





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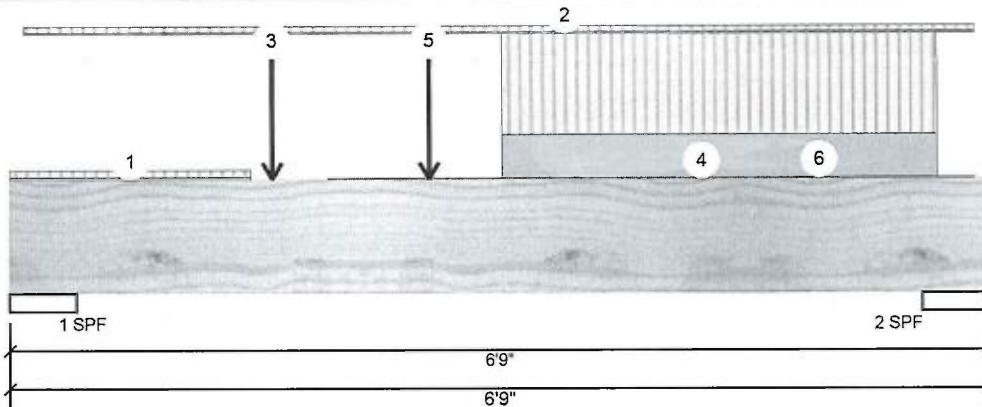
Client: GREENPARK  
Project:  
Address:

Date: 8/13/2018  
Designer: RCO  
Job Name: HEMLOCK 3-2  
Project #:

Page 1 of 1

F11-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Second 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	922	401	0	0
2	554	262	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	16%	502 / 1383	1884 L	1.25D+1.5L
2 - SPF	5.500"	10%	327 / 832	1159 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2614 ft-lb	1'9 3/4"	22724 ft-lb	0.115 (12%)	1.25D+1.5L	L
Unbraced	2614 ft-lb	1'9 3/4"	22023 ft-lb	0.119 (12%)	1.25D+1.5L	L
Shear	2025 lb	1'2 1/4"	9277 lb	0.218 (22%)	1.25D+1.5L	L
Perm Defl in.	0.008 (L/8434)	3' 11/16"	0.199 (L/360)	0.040 (4%)	D	Uniform
LL Defl inch	0.019 (L/3742)	3' 1/16"	0.199 (L/360)	0.100 (10%)	L	L
TL Defl inch	0.028 (L/2592)	3' 1/4"	0.298 (L/240)	0.090 (9%)	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.



August 17, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-8-0	(Span)0-4-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-1-4 to 6-7-14	(Span)0-3-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	1-9-12		Near Face	388 lb	972 lb	0 lb	0 lb	F3
4	Part. Uniform	2-2-6 to 6-7-14		Top	1 PLF	0 PLF	0 PLF	0 PLF	Pass thru Framing Squash Block is required at all point loads over bearings
5	Point	2-10-12		Near Face	53 lb	117 lb	0 lb	0 lb	
6	Part. Uniform	3-4-12 to 6-4-12		Near Face	49 PLF	112 PLF	0 PLF	0 PLF	Refer to Multiple Member Connection Detail for ply to ply nailing or bolting requirements
	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

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

## Handling &amp; 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

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

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

This design is valid

**NASCOR**







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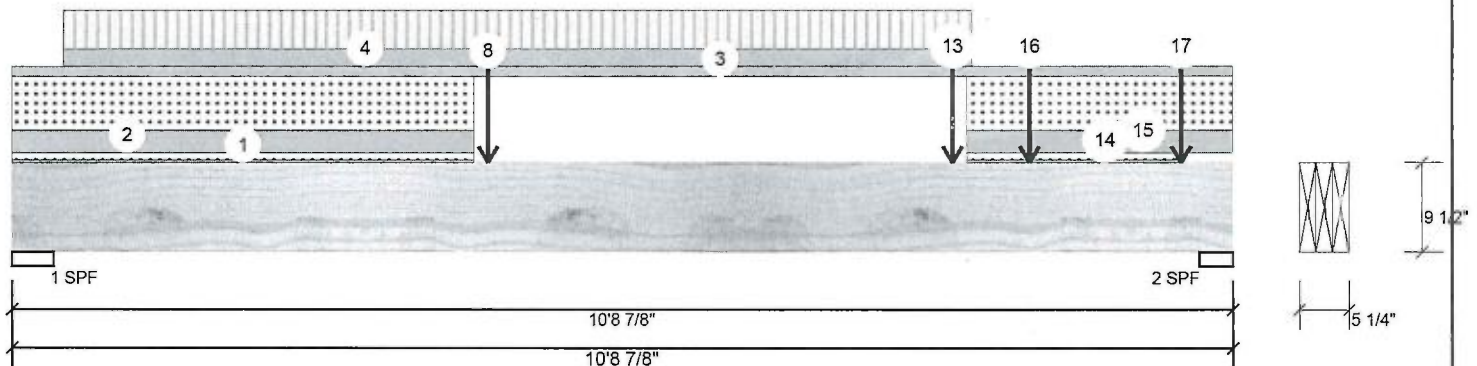
Client: GREENPARK  
 Project:  
 Address:

Date: 8/13/2018  
 Designer: RCO  
 Job Name: HEMLOCK 3-2  
 Project #:

Page 1 of 2

**F12-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" 3-Ply - PASSED**

Level: Second Floor


**Member Information**

Type:	Girder	Application:	Floor (Residential)
Plies:	3	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	Yes
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	1427	2224	2465	0
2	1595	2230	2408	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.375"	51%	2779 / 4411	7191	L	1.25D+1.5S +0.5L
2 - SPF	3.500"	64%	2788 / 4409	7197	L	1.25D+1.5S +0.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	16700 ft-lb	4'2 3/8"	35449 ft-lb	0.471 (47%)	1.25D+1.5S +0.5L	L
Unbraced	16700 ft-lb	4'2 3/8"	35449 ft-lb	0.471 (47%)	1.25D+1.5S +0.5L	L
Shear	6381 lb	9'8 5/8"	13915 lb	0.459 (46%)	1.25D+1.5S +0.5L	L
Perm Defl in.	0.144 (L/848)	5'4"	0.340 (L/360)	0.420 (42%)	D	Uniform
LL Defl inch	0.200 (L/614)	5'3 3/8"	0.340 (L/360)	0.590 (59%)	S+0.5L	L
TL Defl inch	0.344 (L/356)	5'3 5/8"	0.510 (L/240)	0.670 (67%)	D+S+0.5L	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.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 4-0-14		Top	23 PLF	0 PLF	53 PLF	0 PLF	
2	Part. Uniform	0-0-0 to 4-0-14		Top	173 PLF	0 PLF	403 PLF	0 PLF	
3	Part. Uniform	0-0-0 to 10-8-14		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
4	Part. Uniform	0-5-7 to 8-5-7		Near Face	133 PLF	288 PLF	0 PLF	0 PLF	
8	Point	4-2-6		Top	442 lb	0 lb	988 lb	0 lb	Header Column

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**  
 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

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

This design

**NASCOR**







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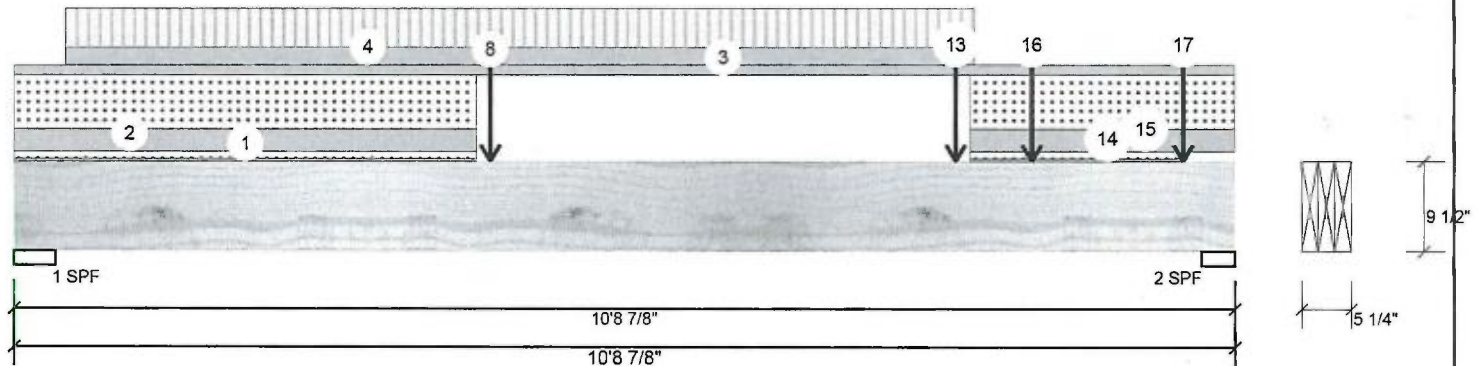
Client: GREENPARK  
 Project:  
 Address:

Date: 8/13/2018  
 Designer: RCO  
 Job Name: HEMLOCK 3-2  
 Project #:

Page 2 of 2

**F12-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" 3-Ply - PASSED**

Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
13	Point	8-3-6		Top	442 lb	0 lb	988 lb	0 lb	Header Column
14	Part. Uniform	8-4-14 to 10-3-6		Top	23 PLF	0 PLF	53 PLF	0 PLF	
15	Part. Uniform	8-4-14 to 10-8-14		Top	173 PLF	0 PLF	403 PLF	0 PLF	
16	Point	8-11-7		Near Face	136 lb	336 lb	0 lb	0 lb	J4
17	Point	10-3-7		Near Face	143 lb	382 lb	0 lb	0 lb	J4
	Self Weight				11 PLF				

Pass-Thru Framing Squash Block is required at all point loads over bearings

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

**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

**NASCOR**

This design is valid until 7/10/2021





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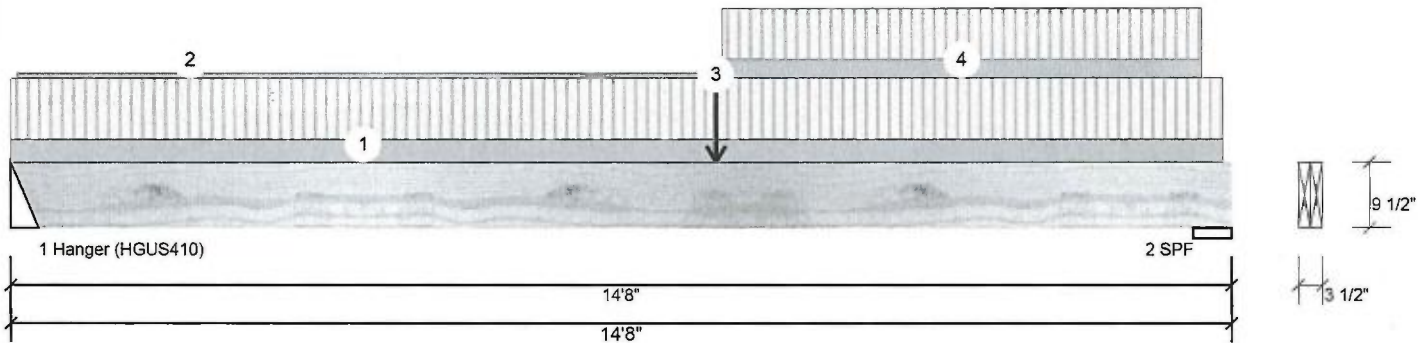
Client: GREENPARK  
 Project:  
 Address:

Date: 8/13/2018  
 Designer: RCO  
 Job Name: HEMLOCK 3-2  
 Project #:

Page 1 of 1

**F13-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	422	234	0	0
2	585	292	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	4.000"	9%	292 / 632	925 L	1.25D+1.5L
2 - SPF	5.500"	10%	365 / 877	1242 L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5610 ft-lb	8'5 3/4"	22724 ft-lb	0.247 (25%)	1.25D+1.5L	L
Unbraced	5610 ft-lb	8'5 3/4"	18853 ft-lb	0.298 (30%)	1.25D+1.5L	L
Shear	1154 lb	13'5 3/4"	9277 lb	0.124 (12%)	1.25D+1.5L	L
Perm Defl in.	0.083 (L/2020)	7'7 1/8"	0.467 (L/360)	0.180 (18%)	D	Uniform
LL Defl inch	0.168 (L/999)	7'8 1/8"	0.467 (L/360)	0.360 (36%)	L	L
TL Defl inch	0.251 (L/668)	7'7 13/16"	0.700 (L/240)	0.360 (36%)	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.



August 17, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 14-6-12	(Span)1-1-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-1-0 to 8-3-11		Top	2 PLF	0 PLF	0 PLF	0 PLF	
3	Point	8-5-12		Far Face	239 lb	583 lb	0 lb	0 lb	F4
4	Tie-In	8-6-10 to 14-3-12	(Span)0-10-14	Top	15 PSF	40 PSF	0 PSF	0 PSF	Pass-Thru Framing Squash Block is required at all point loads over bearings
	Self Weight				8 PLF				Refer to Multiple Member Connection Detail for ply to ply nailing or bolting requirements

**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

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This design

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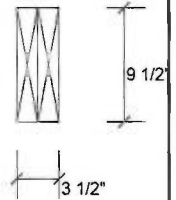
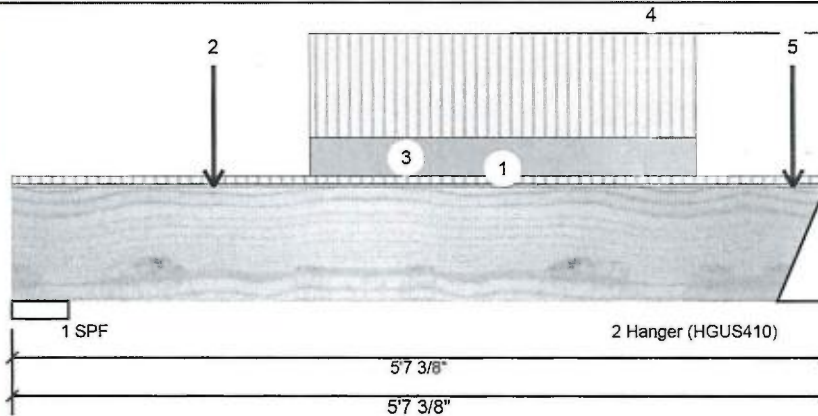
Client: GREENPARK  
 Project:  
 Address:

Date: 8/13/2018  
 Designer: RCO  
 Job Name: HEMLOCK 3-2  
 Project #:

Page 1 of 1

**F3-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	663	271	0	0
2	972	388	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.651"	13%	338 / 995	1333 L	1.25D+1.5L
2 - Hanger	4.000"	19%	484 / 1458	1942 L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1881 ft-lb	2'9 13/16"	22724 ft-lb	0.083 (8%)	1.25D+1.5L	L
Unbraced	1881 ft-lb	2'9 13/16"	22724 ft-lb	0.083 (8%)	1.25D+1.5L	L
Shear	1373 lb	1'1 3/8"	9277 lb	0.148 (15%)	1.25D+1.5L	L
Perm Defl in. (L/12746)	0.005	2'9 7/8"	0.167 (L/360)	0.030 (3%)	D	Uniform
LL Defl inch	0.012 (L/5124)	2'9 7/8"	0.167 (L/360)	0.070 (7%)	L	L
TL Defl inch	0.016 (L/3655)	2'9 7/8"	0.251 (L/240)	0.070 (7%)	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.



August 17, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 5-7-6	(Span)1-1-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	1-4-11		Far Face	143 lb	382 lb	0 lb	0 lb	J4
3	Part. Uniform	2-0-11 to 4-8-11		Far Face	109 PLF	290 PLF	0 PLF	0 PLF	Pass Thru Framing Squash Block is required at all point loads over bearings
4	Part. Uniform	3-5-5 to 5-7-6		Top	1 PLF	0 PLF	0 PLF	0 PLF	
5	Point	5-4-11		Far Face	134 lb	358 lb	0 lb	0 lb	Refer to Multiple Member Connection Detail for ply to ply nailing or bolting requirements
	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

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This design

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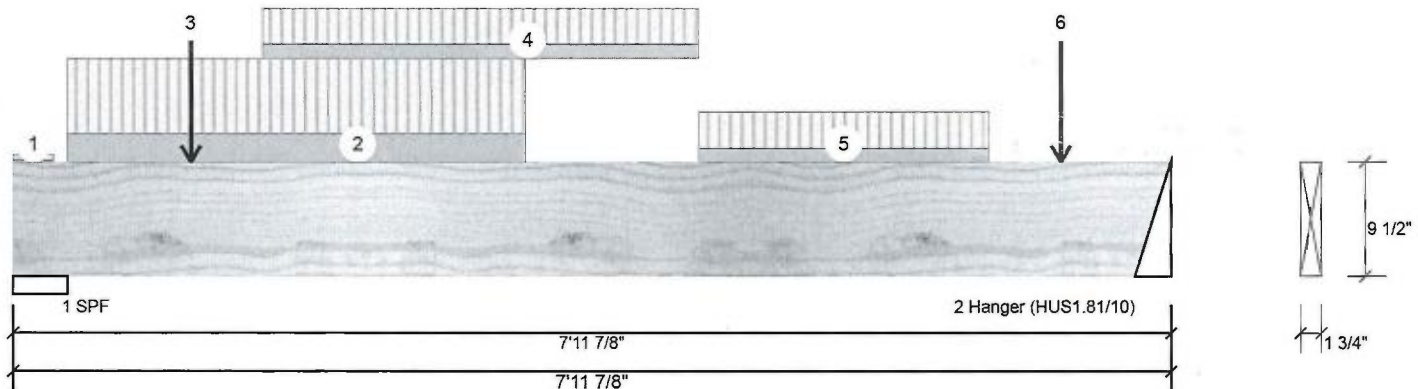
Client: GREENPARK  
Project:  
Address:

Date: 8/13/2018  
Designer: RCO  
Job Name: HEMLOCK 3-2  
Project #:

Page 1 of 1

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

Level: Second Floor


**Member Information**

Type:	Girder	Application:	Floor (Residential)
Piles:	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	978	389	0	0
2	583	239	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.500"	40%	486 / 1467	1953	L	1.25D+1.5L
2 - Hanger	3.000"	30%	298 / 874	1172	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3003 ft-lb	3'2 15/16"	11362 ft-lb	0.264 (26%)	1.25D+1.5L	L
Unbraced	3003 ft-lb	3'2 15/16"	4978 ft-lb	0.603 (60%)	1.25D+1.5L	L
Shear	1594 lb	1'1 1/4"	4638 lb	0.344 (34%)	1.25D+1.5L	L
Perm Defl in.	0.028 (L/3259)	3'9 3/4"	0.250 (L/360)	0.110 (11%)	D	Uniform
LL Defl inch	0.069 (L/1310)	3'9 9/16"	0.250 (L/360)	0.270 (27%)	L	L
TL Defl inch	0.096 (L/934)	3'9 5/8"	0.374 (L/240)	0.260 (26%)	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.



August 17, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-3-6	(Span)0-10-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-4-8 to 3-6-8		Top	90 PLF	240 PLF	0 PLF	0 PLF	
3	Point	1-2-12		Far Face	46 lb	117 lb	0 lb	0 lb	J3
4	Part. Uniform	1-8-12 to 4-8-12		Far Face	44 PLF	112 PLF	0 PLF	0 PLF	
5	Part. Uniform	4-8-12 to 6-8-12		Far Face	45 PLF	116 PLF	0 PLF	0 PLF	
6	Point	7-2-12		Far Face	42 lb	111 lb	0 lb	0 lb	
	Self Weight				4 PLF				

Pass-Thru Framing Squash Block is required at all point loads over bearings

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

**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

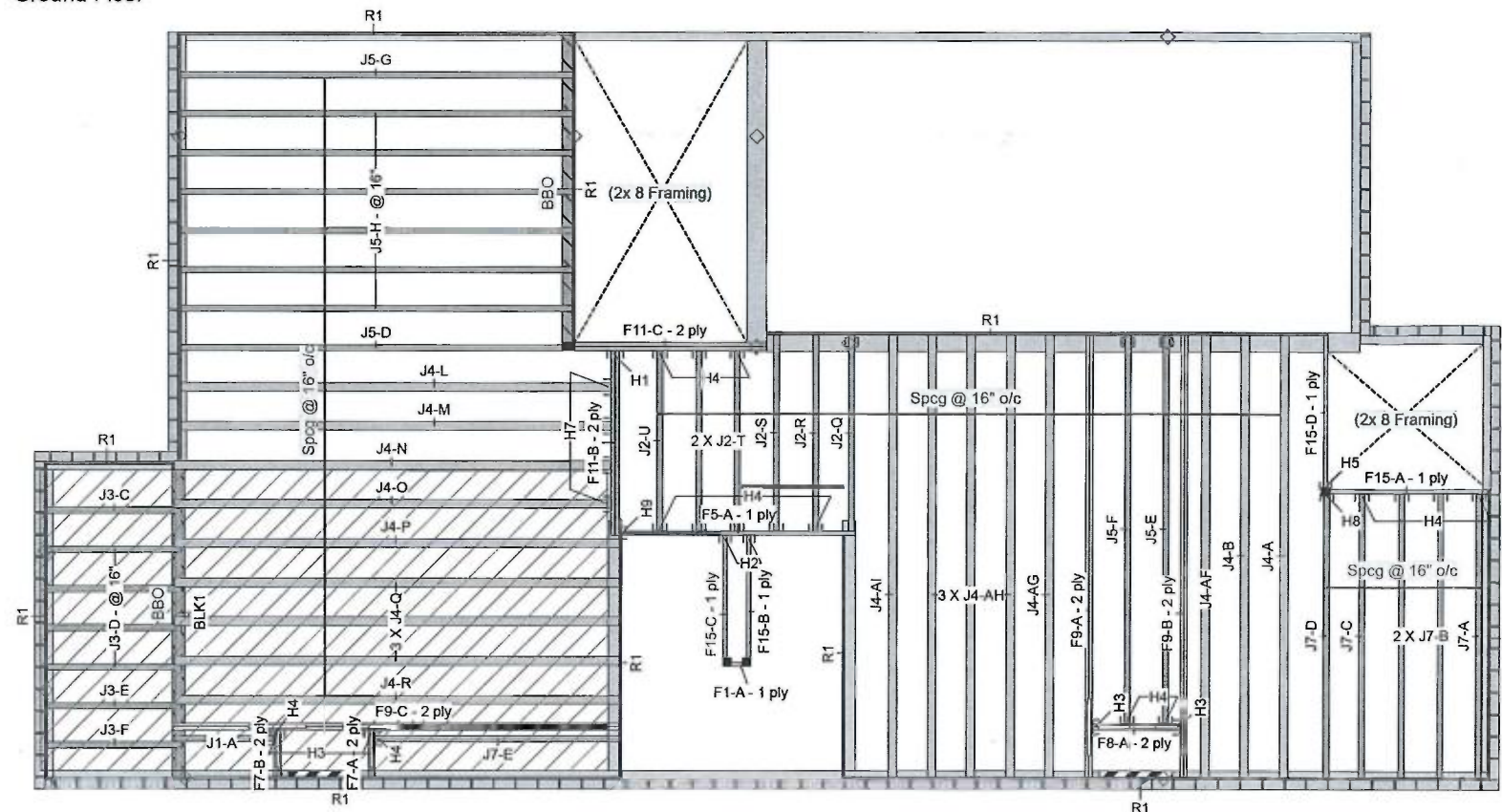
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This design

**NASCOR**




Ground Floor



WHERE FOUNDATION WALLS MUST BE  
LATERALLY SUPPORTED AND NO  
DETAIL IS PROVIDED BY THE  
BUILDING DESIGNER, SEE DETAIL U3  
IN THE NASCOR SPECIFIER GUIDE

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.

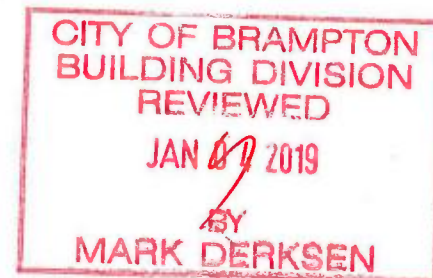
The floor system must be assembled in accordance to the Nascor Specifier Guide. Multi-ply members must be attached together as per the included multiple member connection detail. All other components and structural elements supporting the floor system such as beams, walls, columns and foundation walls and footings including anchorage of components and bracing for lateral stability are the responsibility of others.

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

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



August 17, 2018



## Legend

	Load from Above
	Wall
	Wall Opening
	Norbord Rimboard Plus 1.125 X 9.5
	NJ 9.5
	NJ60U 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)

Ground Floor  
LVL/LSL (Flush)

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F5	Forex 2.0E-3000Fb LVL	1.75	9.5			1	10-0-0
F11	Forex 2.0E-3000Fb LVL	1.75	9.5	2	2	4	8-0-0
F15	Forex 2.0E-3000Fb LVL	1.75	9.5			4	6-0-0
F1	Forex 2.0E-3000Fb LVL	1.75	9.5			1	2-0-0

## Joist (Flush)

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F9	NJ	1.5	9.5	3	2	6	16-0-0
F8	NJ	1.5	9.5	1	2	2	4-0-0
F7	NJ	1.5	9.5	2	2	4	2-0-0
J4	NJ60U	3.5	9.5			17	16-0-0
J5	NJH	2.5	9.5			10	14-0-0
J7	NJH	2.5	9.5			6	10-0-0
J2	NJH	2.5	9.5			6	8-0-0
J3	NJH	2.5	9.5			7	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			12	12

## Blocking

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK1	NJH	2.5	9.5	LinFt		Varies	8-0-0

## Hanger

		Beam/Girder		Supported Member	
Label	Pcs	Description	Skew	Slope	fasteners
H1	1	HGUS410			46 16d
H2	2	HUS1.81/10			30 16d
H3	4	LT2-159			4 10dx1 1/2
H4	16	LT259			4 10dx1 1/2
H5	1	L90			
H7	4	LT359			4 10d
H8	1	LT259			
H9	1	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 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:

VA3 DESIGN  
255 Consumers Rd., Suite 120, Toronto, ON  
Date: Rev.5; July 23, 2018  
Project No: 18012  
Model: Hemlock 3

NASCOR

Layout Name

HEMLOCK 3-2

Design Method

LSD

Description

MINNISALE HOMES CORP.  
BRAMPTON, ONT.

Revised

August 13, 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

D:\Users\rochavillo\WORK FROM  
HOME\GREENPARK\MINNISALE  
HOMES\HEMLOCK 3\HEMLOCK 3-2  
FLOOR\REV\F-HEMLOCK 3-2 ENG

Ground 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

3/4"

Fastener

Nailed &amp; Glued

Vibration

Lot 37L

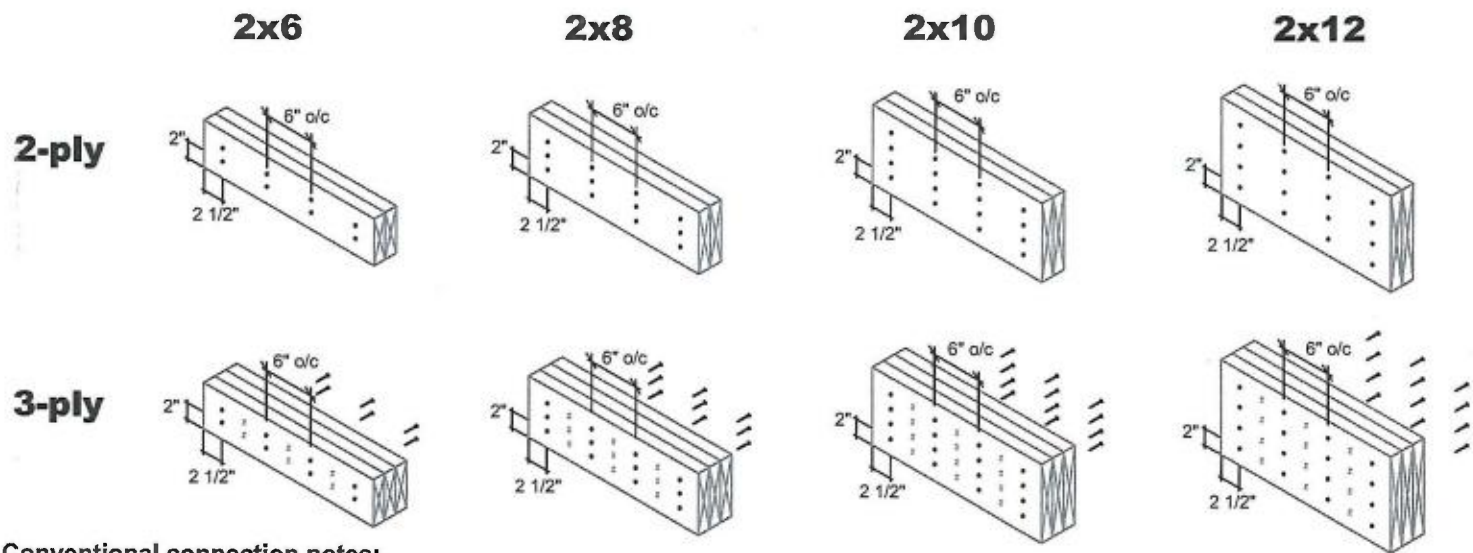


[illegible]



# MULTIPLE MEMBER CONNECTIONS

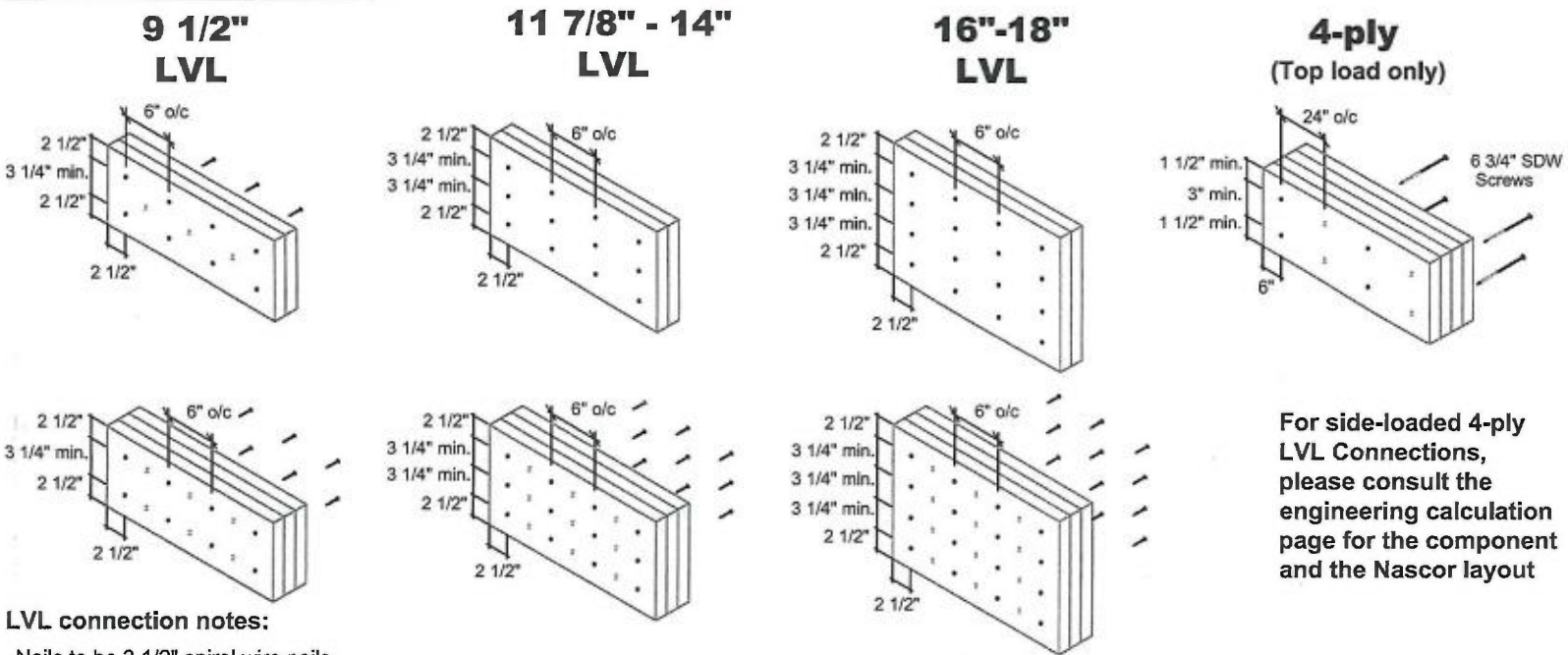
## Conventional Connections (for uniform distributed loads)



**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.

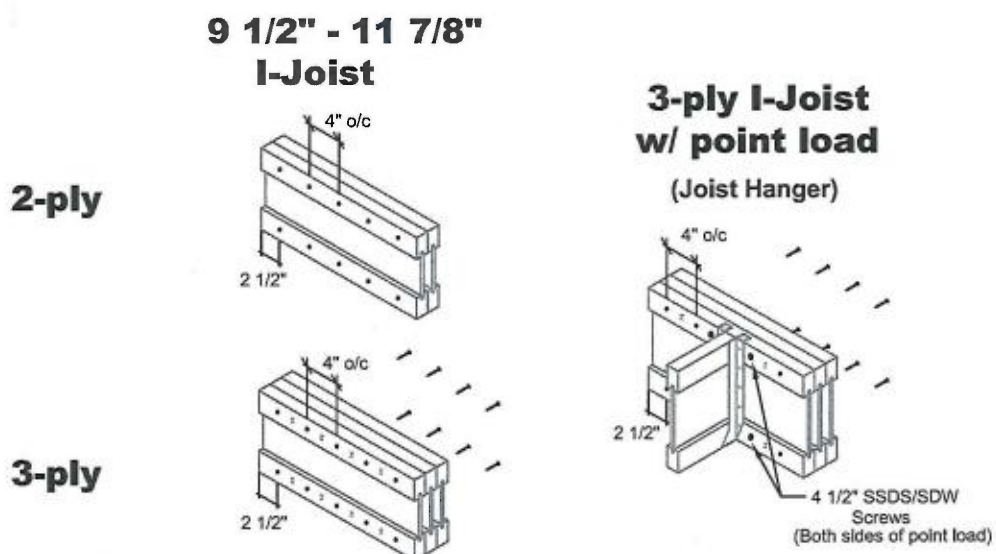
## LVL Connections (for uniform distributed loads)



**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.

## 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.