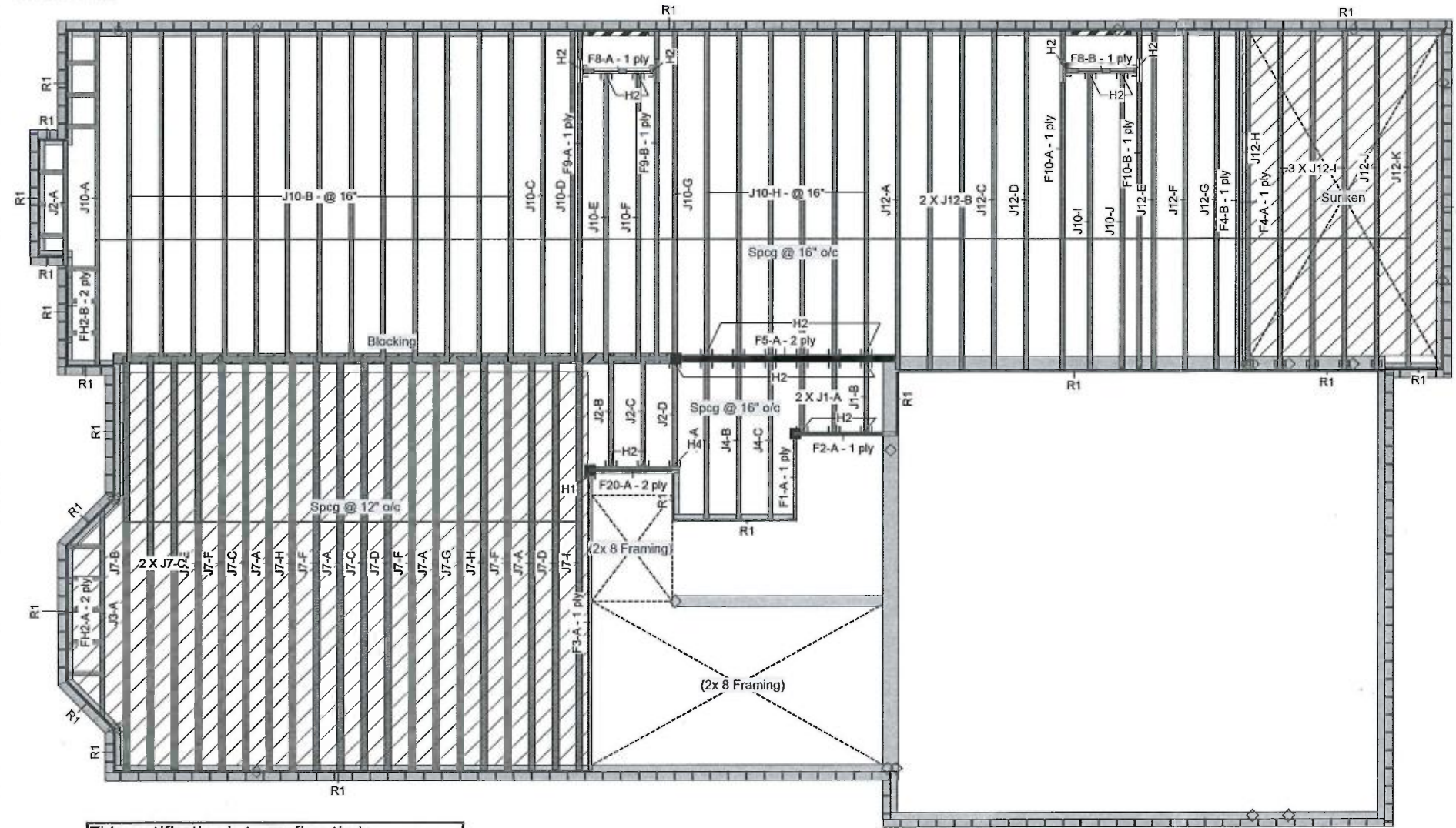


## Ground Floor



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.



January 14, 2019

## ARCHITECTURAL DRAWINGS:

REGION DESIGN INC.  
8700 Dufferin St., Concord, ON  
Date: Oct 2018  
Project No:  
Model: Millwood 5-015

## Legend

	Load from Above
	Wall
	Wall Opening
	Norbord Rimboard Plus 1.125 X 11.875
	LPI 20Plus 11.875
	NJ40U 11.875
	Forex 2.0E-3000Fb LVL 1.75 X 11.875

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
F4	Forex 2.0E-3000Fb LVL	1.75	11.875			2	16-0-0
F3	Forex 2.0E-3000Fb LVL	1.75	11.875			1	14-0-0
F5	Forex 2.0E-3000Fb LVL	1.75	11.875	1	2	2	10-0-0
F2	Forex 2.0E-3000Fb LVL	1.75	11.875			1	6-0-0
FH2	Forex 2.0E-3000Fb LVL	1.75	11.875	2	2	4	4-0-0
F20	Forex 2.0E-3000Fb LVL	1.75	11.875	1	2	2	4-0-0
F1	Forex 2.0E-3000Fb LVL	1.75	11.875			1	4-0-0

## Joist (Flush)

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F10	LPI 20Plus	2.5	11.875			2	16-0-0
F9	LPI 20Plus	2.5	11.875			2	14-0-0
F8	LPI 20Plus	2.5	11.875			2	4-0-0
J12	LPI 20Plus	2.5	11.875			14	16-0-0
J10	LPI 20Plus	2.5	11.875			27	14-0-0
J3	LPI 20Plus	2.5	11.875			1	10-0-0
J4	LPI 20Plus	2.5	11.875			3	8-0-0
J2	LPI 20Plus	2.5	11.875			4	6-0-0
J1	LPI 20Plus	2.5	11.875			3	4-0-0
J7	NJ40U	3.5	11.875			20	18-0-0

## Rim Board

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 11.875	1.125	11.875			14	12

## Blocking

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK1	LPI 20 Plus	2.5	11.875	LinFt		Varies	28-0-0

## Hanger

		Beam/Girder		Supported Member	
Label	Pcs	Description	Skew	Slope	fasteners
H1	1	LS90			
H2	26	LT251188			4 10dx1 1/2
H4	1	LT251188			2 10dx1 1/2

## NOTES:

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

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

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

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

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

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.

NASCOR

## Layout Name

LOT 15 (MILLWOOD 5)

## Design Method

LSD

## Description

MINNISALE HOMES  
BRAMPTON, ONT.

## Revised

January 09, 2019

## 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\LOT 15 (MILLWOOD 5) \FLOOR-FLOT 15 (MILLWOOD 5)

## 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

## RECEIVED

JAN 16 2019

Building Division

18-411393-000-00RR

KOTT



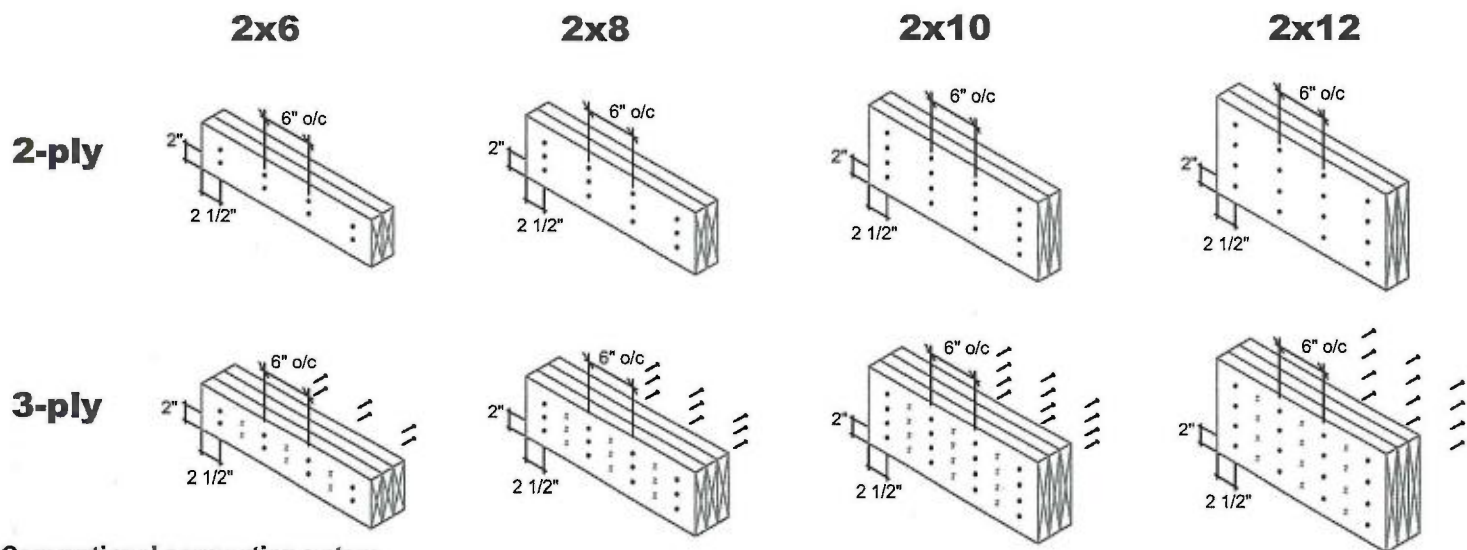




# MULTIPLE MEMBER CONNECTIONS

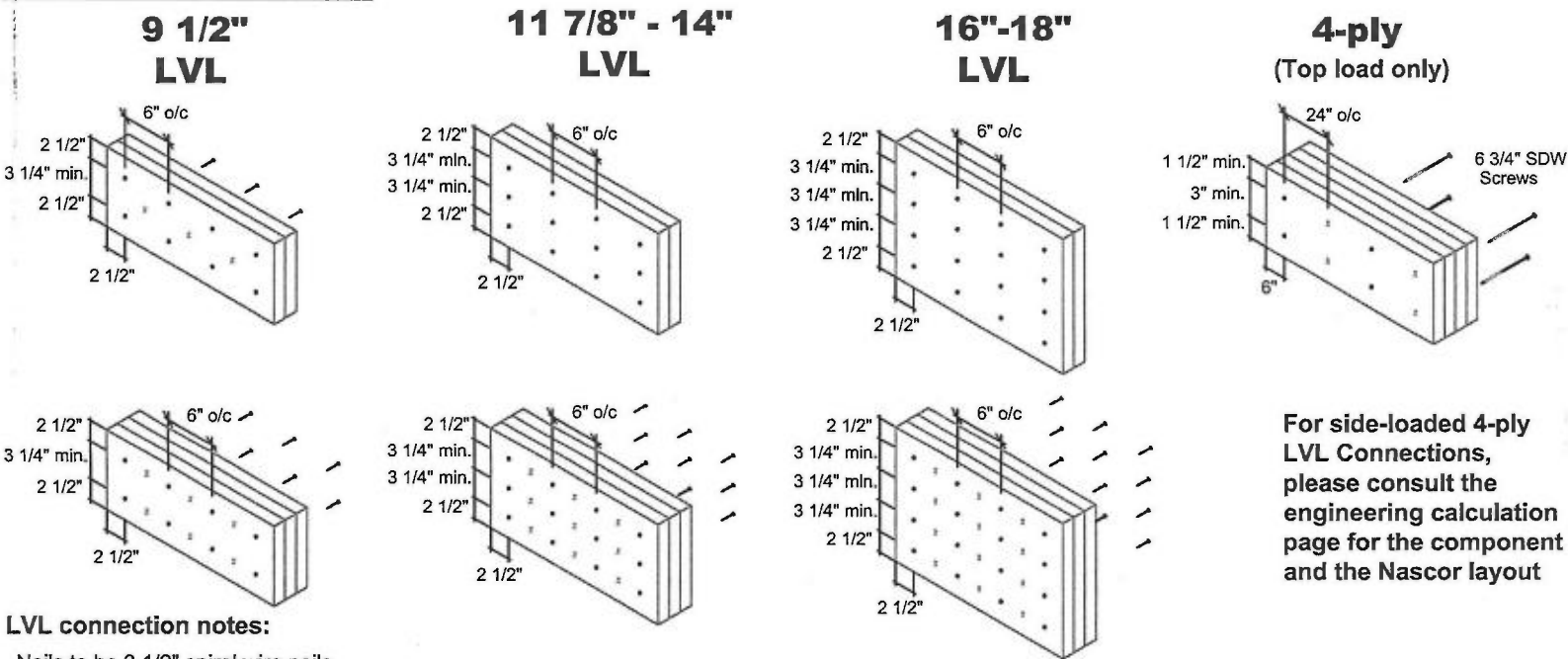
GREENPARK-MINNISALE HOMES-  
MODEL MILLWOOD 5-1 & 5-2- **LOT 15**

## Conventional Connections (for uniform distributed loads)



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

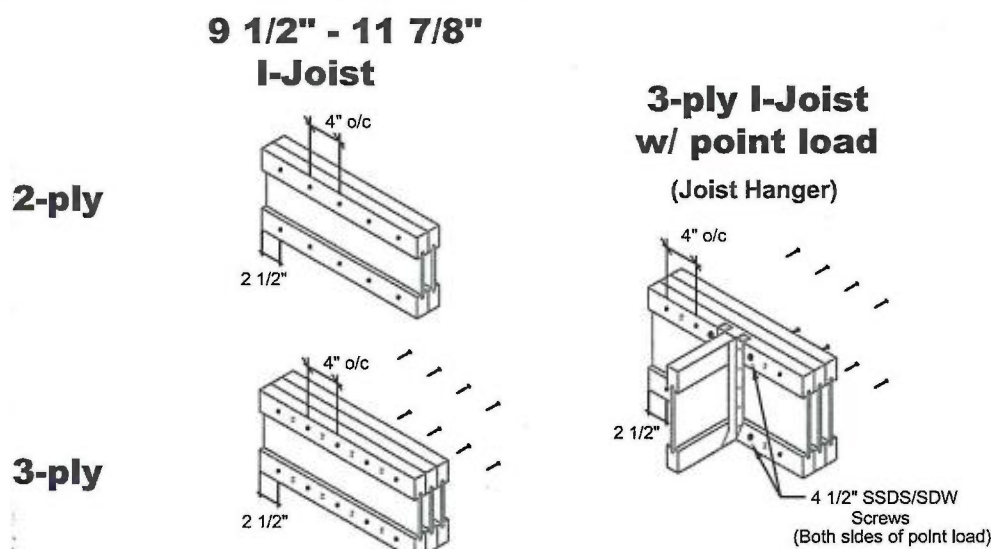
## LVL Connections (for uniform distributed loads)



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

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

## Vertical I-Joist Connections (for uniform distributed loads)



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

MULTI-PLY  
CONNECTION  
DETAILS

Date: November 30, 2016  
Scale: NTS



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

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

REVISION 2018-10-17

MILL WOOD 5-015

**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 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 transfer blocks. Structural elements such as walls, posts, connectors, and transfer 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 floor joists is to be carried out in accordance with the current edition of the manufacturer's literature available at <http://www.kottgroup.com>.

**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**

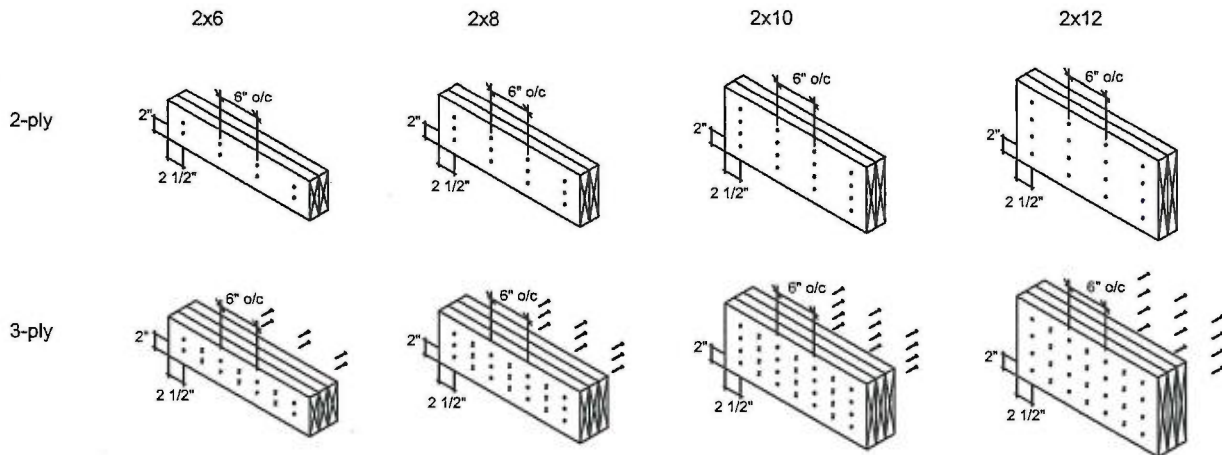
1. The building component used in construction must be the same as indicated on the drawings.
2. The building component must be installed and assembled as per specification shown on the drawing and in accordance with the manufacturer's assembly and installation.
3. Members consisting of multiple plies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



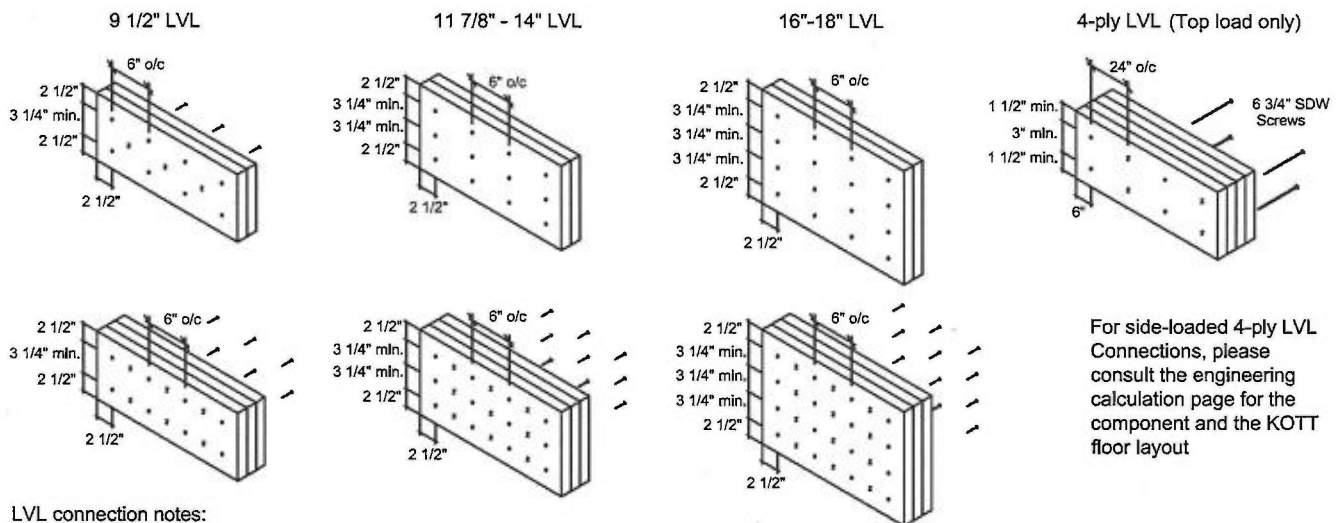
## Conventional Connections



### Conventional connection notes:

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

## LVL Connections



### LVL connection notes:

- LVL ply width is 1-3/4"
- Nails to be 3 1/2" common wire nails.
- Nails to be located 2 1/2" min. from the top and bottom of the member. Start all nails 2 1/2" min. 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 KOTT floor layout

## Multiple Member Connections

All connections are for uniformly distributed loads.

For multi-ply connections of I-joists, refer to Manufacturer's Installation Guide



KOTT Inc.  
3228 Moodie Drive  
Ottawa, ON  
K2H 7V1  
613-838-2775





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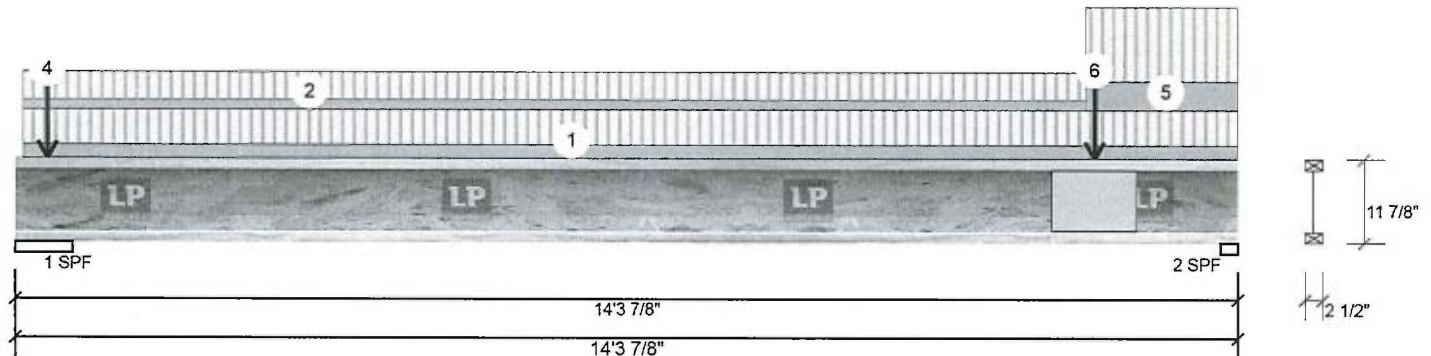
Client: GREENPARK  
 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 1 of 2

**F10-A LPI 20Plus 11.875" - PASSED**

Level: Ground Floor

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

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

Brg	Live	Dead	Snow	Wind
1	803	415	0	0
2	701	263	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	8.000"	94%	519 / 1205	1724	L	1.25D+1.5L
2 - SPF	2.375"	84%	329 / 1052	1380	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2952 ft-lb	8'1 1/4"	6250 ft-lb	0.472 (47%)	1.25D+1.5L	L
Shear	1355 lb	14'2 1/4"	2345 lb	0.578 (58%)	1.25D+1.5L	L
Perm Defl in.	0.070 (L/2319)	7'7 5/8"	0.453 (L/360)	0.160 (16%)	D	Uniform
LL Defl inch	0.187 (L/870)	7'7 5/8"	0.453 (L/360)	0.410 (41%)	L	L
TL Defl inch	0.258 (L/632)	7'7 5/8"	0.679 (L/240)	0.380 (38%)	D+L	L

**Design Notes**

- 1 Provide restraint at supports to ensure lateral stability.
- 2 Applied loads over end bearings and loads exceeding 250 lbs over intermediate bearings must be transferred directly to the support by rim board, blocking, squash blocks, or other device.
- 3 Dead Load Deflection: Instant = 0.070", Long Term = 0.105"
- 4 See manufacture installation guide note E4 for installation details
- 5 Girders are designed to be supported on the bottom edge only.
- 6 Top flange must be laterally braced at a maximum of 6'1" o.c.
- 7 Bottom flange braced at bearings.



January 14, 2019

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-1-2 to 14-3-14	(Span)1-6-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-1-2 to 12-6-8	(Span)1-1-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	0-4-8		Top	148 lb	376 lb	0 lb	0 lb	J12
	Bearing Length	0-1-8							
4	Point	0-4-8		Top	107 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-1-8							

Continued on page 2...

**Notes**

This component analysis is based on the loads, geometry and other conditions as entered by the user and listed in this report. The user is responsible to ensure the accuracy of the input and the applicability to the actual conditions of the structure for which this component is intended. This analysis is valid only for the product listed.

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**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 until 10/31/2020

**Manufacturer Info**

Louisiana-Pacific Corp  
 414 Union Street, Suite 2000  
 Nashville, TN 37219  
 (888) 820-0325  
 www.lpcorp.com  
 CCMC: 12412-R APA: PR-L238C

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

**NASCOR**



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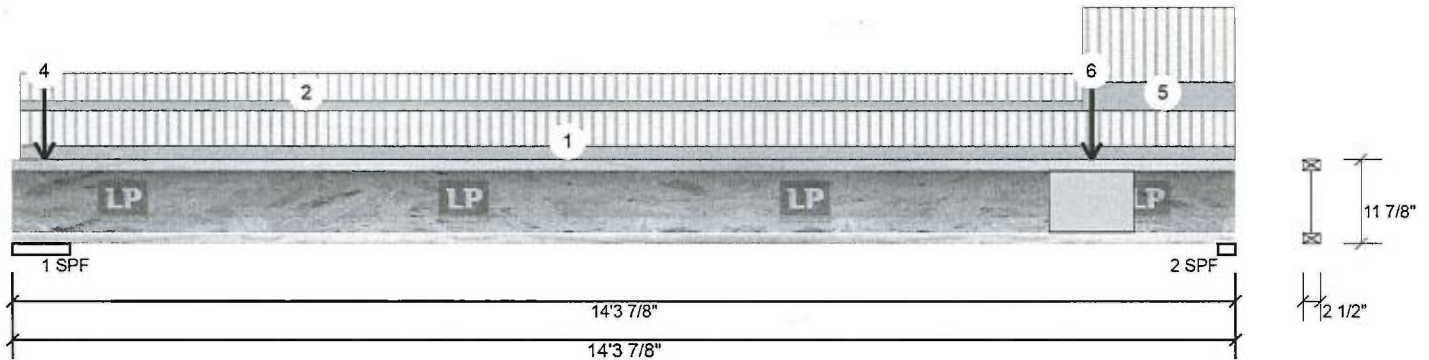
Client: GREENPARK  
 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 2 of 2

**F10-A LPI 20Plus 11.875" - PASSED**

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Tie-In	12-6-8 to 14-3-14	(Span)3-2-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
6	Point	12-7-12		Near Face	111 lb	296 lb	0 lb	0 lb	F8

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**

This component analysis is based on the loads, geometry and other conditions as entered by the user and listed in this report. The user is responsible to ensure the accuracy of the input and the applicability to the actual conditions of the structure for which this component is intended. This analysis is valid only for the product listed.

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 Canada  
 L4A 7X4  
 905-642-4400

**NASCOR**

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 10/31/2020







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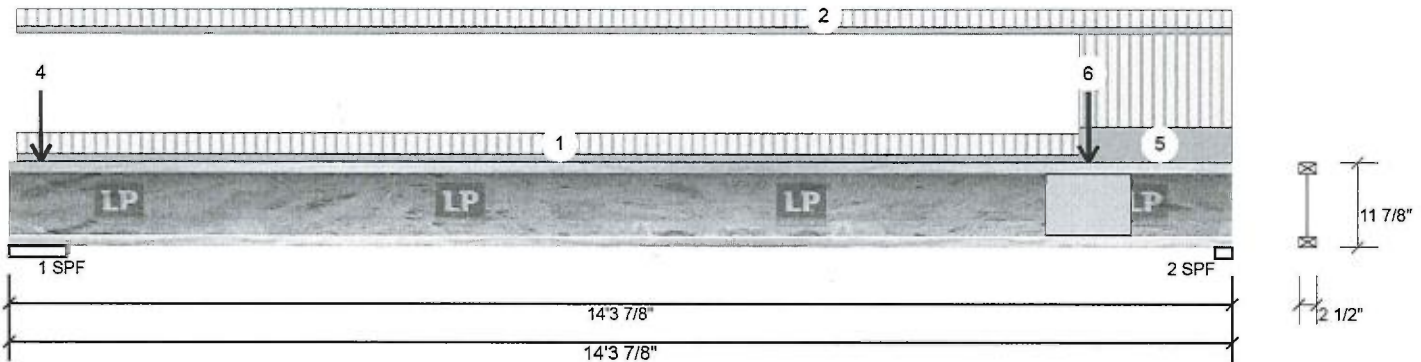
Client: GREENPARK  
 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 1 of 2

F10-B LPI 20Plus 11.875" - PASSED

Level: Ground Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	428	213	0	0
2	583	219	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	8.000"	50%	266 / 642	908 L	1.25D+1.5L
2 - SPF	2.375"	70%	273 / 874	1148 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1891 ft-lb	9'1 1/8"	6250 ft-lb	0.303 (30%)	1.25D+1.5L	L
Shear	1127 lb	14'2 1/4"	2345 lb	0.481 (48%)	1.25D+1.5L	L
Perm Defl in.	0.045 (L/3636)	7'10 7/16"	0.453 (L/360)	0.100 (10%)	D	Uniform
LL Defl inch	0.120 (L/1363)	7'10 7/16"	0.453 (L/360)	0.260 (26%)	L	
TL Defl inch	0.164 (L/991)	7'10 7/16"	0.679 (L/240)	0.240 (24%)	D+L	L

## Design Notes

- 1 Provide restraint at supports to ensure lateral stability.
- 2 Applied loads over end bearings and loads exceeding 250 lbs over intermediate bearings must be transferred directly to the support by rim board, blocking, squash blocks, or other device.
- 3 Dead Load Deflection: Instant = 0.045", Long Term = 0.067"
- 4 See manufacture installation guide note E4 for installation details
- 5 Girders are designed to be supported on the bottom edge only.
- 6 Top flange must be laterally braced at a maximum of 7'6" o.c.
- 7 Bottom flange braced at bearings.



January 14, 2019

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-1-2 to 12-6-8	(Span)0-8-11	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-1-2 to 14-3-14	(Span)0-7-5	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	0-4-8		Top	70 lb	188 lb	0 lb	0 lb	J12
	Bearing Length	0-1-8							
4	Point	0-4-8		Top	53 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-1-8							

Continued on page 2...

## Notes

This component analysis is based on the loads, geometry and other conditions as entered by the user and listed in this report. The user is responsible to ensure the accuracy of the input and the applicability to the actual conditions of the structure for which this component is intended. This analysis is valid only for the product listed.

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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 until 10/31/2020

## Manufacturer Info

Louisiana-Pacific Corp  
 414 Union Street, Suite 2000  
 Nashville, TN 37219  
 (888) 820-0325  
 www.lpcorp.com  
 CCMC: 12412-R APA: PR-L238C

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

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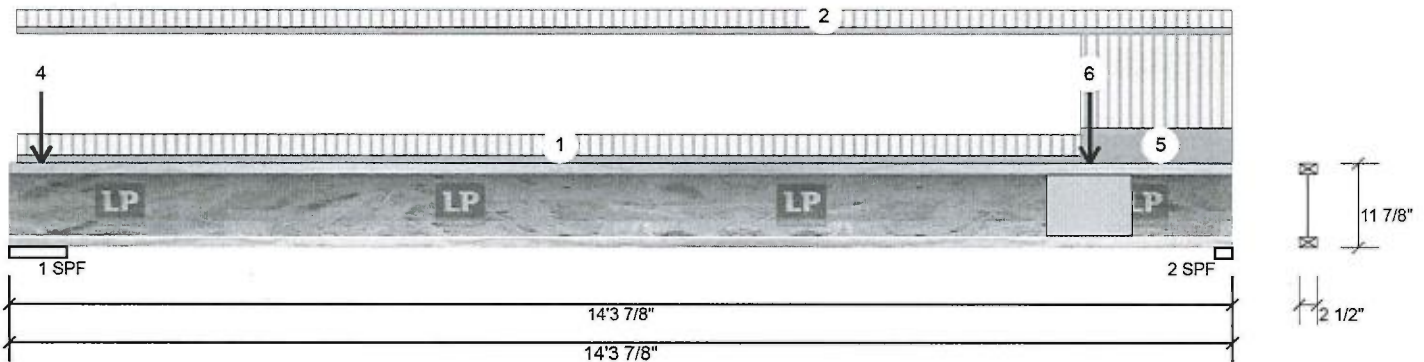
Client: GREENPARK  
 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 2 of 2

**F10-B LPI 20Plus 11.875" - PASSED**

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Tie-In	12-6-8 to 14-3-14	(Span)3-2-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
6	Point	12-7-12		Far Face	133 lb	355 lb	0 lb	0 lb	F8

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**

This component analysis is based on the loads, geometry and other conditions as entered by the user and listed in this report. The user is responsible to ensure the accuracy of the input and the applicability to the actual conditions of the structure for which this component is intended. This analysis is valid only for the product listed.

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This design is valid until  
 10/31/2020

**Manufacturer Info**

Louisiana-Pacific Corp  
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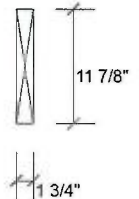
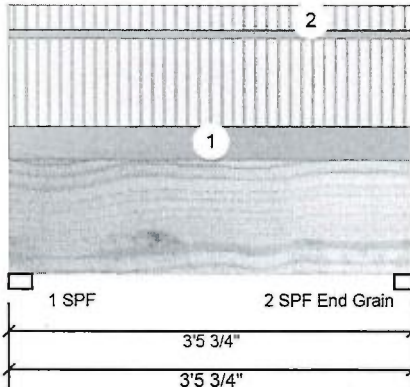
Client: GREENPARK  
 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 1 of 1

**F1-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" - PASSED**

Level: Ground Floor

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

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

Brg	Live	Dead	Snow	Wind
1	173	73	0	0
2	169	71	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - SPF	2.375"	14%	92 / 259	351 L 1.25D+1.5L
2 - SPF	1.875"	14%	89 / 253	343 L 1.25D+1.5L
End Grain				

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	263 ft-lb	1'9 1/8"	17130 ft-lb	0.015 (2%)	1.25D+1.5L	L
Unbraced	263 ft-lb	1'9 1/8"	13199 ft-lb	0.020 (2%)	1.25D+1.5L	L
Shear	127 lb	1'1 1/2"	5798 lb	0.022 (2%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
LL Defl inch	0.001 (L/31868)	1'9 1/8"	0.108 (L/360)	0.010 (1%)	L	L
TL Defl inch	0.002 (L/22387)	1'9 1/8"	0.162 (L/240)	0.010 (1%)	D+L	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.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 3-5-12	(Span)3-10-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 3-5-12	(Span)1-0-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				5 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



January 14, 2019

**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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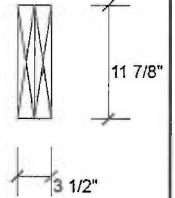
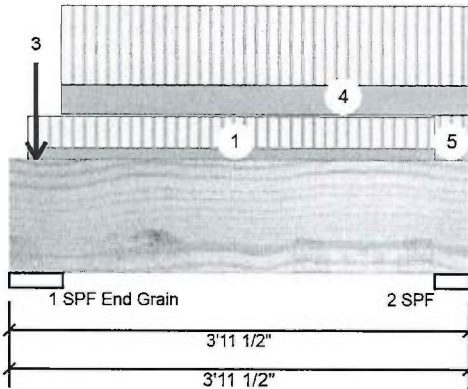
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Client: GREENPARK  
 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 1 of 2

**F20-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED** Level: Ground Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	2635	1104	0	0
2	270	119	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - SPF End Grain	5.500"	56% 1380 / 3952	5332 L	1.25D+1.5L
2 - SPF	3.500"	7% 148 / 405	553 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	404 ft-lb	2' 3/4"	34261 ft-lb	0.012 (1%)	1.25D+1.5L	L
Unbraced	404 ft-lb	2' 3/4"	34261 ft-lb	0.012 (1%)	1.25D+1.5L	L
Shear	396 lb	1'4 5/8"	11596 lb	0.034 (3%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
LL Defl inch	0.001 (L/42098)	2' 13/16"	0.111 (L/360)	0.010 (1%)	L	L
TL Defl inch	0.001 (L/29228)	2' 13/16"	0.167 (L/240)	0.010 (1%)	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.



January 14, 2019

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-1-14 to 3-8-0		Top	15 PLF	40 PLF	0 PLF	0 PLF	
2	Point	0-2-12		Top	1 lb	0 lb	0 lb	0 lb	Wall Self Weight
3	Point	0-2-12		Top	993 lb	2393 lb	0 lb	0 lb	BBO5 BBO5
4	Part. Uniform	0-5-5 to 3-11-8		Far Face	38 PLF	102 PLF	0 PLF	0 PLF	

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-L318

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

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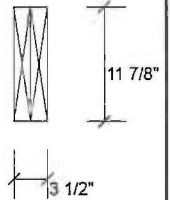
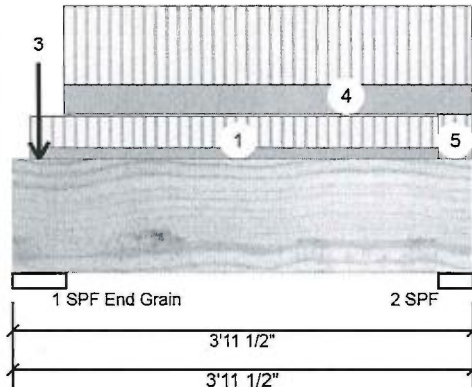
Client: GREENPARK  
 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 2 of 2

**F20-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 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	3-8-0 to 3-11-8	(Span)2-1-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				10 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

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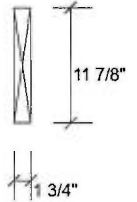
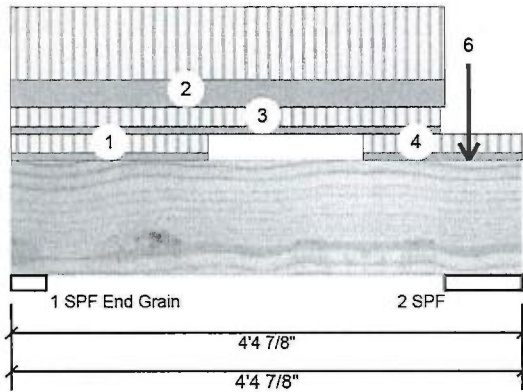
Client: GREENPARK  
 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 1 of 1

**F2-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" - PASSED**

Level: Ground Floor

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

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

Brg	Live	Dead	Snow	Wind
1	708	275	0	0
2	1119	558	0	0

**Bearings and Factored Reactions**

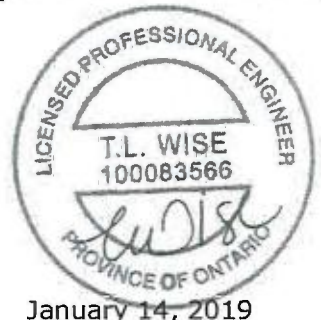
Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.625"	30%	344 / 1062	1406 L	1.25D+1.5L
2 - SPF	8.000"	28%	698 / 1678	2376 L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1044 ft-lb	1'11 11/16"	17130 ft-lb	0.061 (6%)	1.25D+1.5L	L
Unbraced	1044 ft-lb	1'11 11/16"	12407 ft-lb	0.084 (8%)	1.25D+1.5L	L
Shear	631 lb	2'9 3/4"	5798 lb	0.109 (11%)	1.25D+1.5L	L
Perm Defl in.	0.002 (L/20391)	1'11 15/16"	0.119 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch	0.005 (L/7939)	1'11 15/16"	0.119 (L/360)	0.050 (5%)	L	L
TL Defl inch	0.007 (L/5714)	1'11 15/16"	0.178 (L/240)	0.040 (4%)	D+L	L

**Design Notes**

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



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-8-7	(Span)3-2-0 to 3-2-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 3-8-14		Top	90 PLF	240 PLF	0 PLF	0 PLF	
3	Part. Uniform	0-0-0 to 3-8-7		Far Face	24 PLF	64 PLF	0 PLF	0 PLF	
4	Tie-In	3-0-7 to 4-4-14	(Span)3-2-0 to 3-2-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	Pass Thru Framing Squash Block is required at all point loads over bearings
5	Point	3-11-6		Top	187 lb	498 lb	0 lb	0 lb	Refer to Multiple Member Connection Detail for nailing or bolting requirements
6	Point	3-11-6		Top	127 lb	0 lb	0 lb	0 lb	
	Self Weight				5 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

**Handing & 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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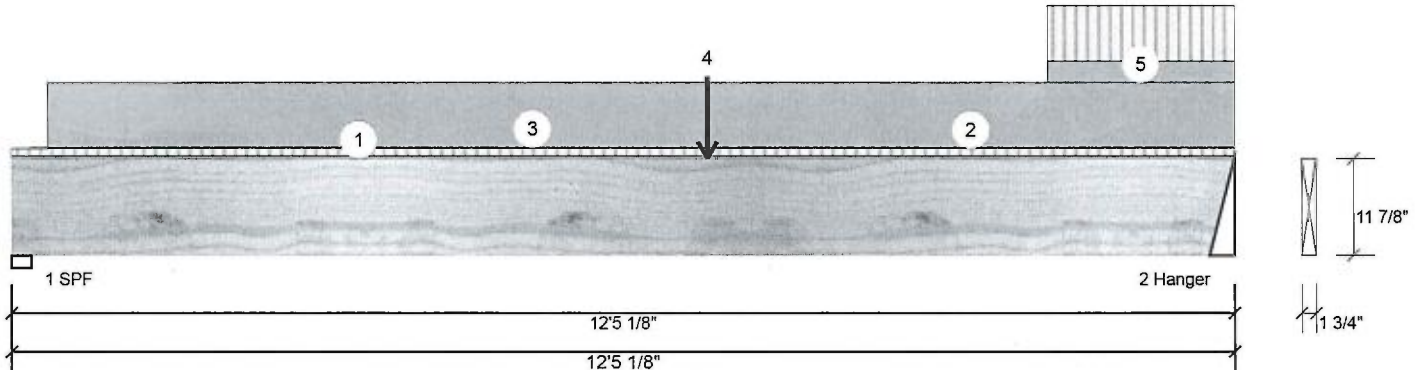
Client: GREENPARK  
 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 1 of 1

**F3-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" - PASSED**

Level: Ground Floor


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

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

Brg	Live	Dead	Snow	Wind
1	182	583	0	0
2	338	680	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	49%	817 / 0	817 Uniform	1.4D
2 - Hanger	3.000"	43%	850 / 507	1357 L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4073 ft-lb	7' 7/8"	13876 ft-lb	0.294 (29%)	1.25D+1.5L	L
Unbraced	4073 ft-lb	7' 7/8"	4076 ft-lb	0.999 (100%)	1.25D+1.5L	L
Shear	1048 lb	11'3"	4696 lb	0.223 (22%)	1.25D+1.5L	L
Perm Defl in.	0.118 (L/1236)	6'3 7/16"	0.403 (L/360)	0.290 (29%)	D	Uniform
LL Defl inch	0.052 (L/2769)	6'7 3/4"	0.403 (L/360)	0.130 (13%)	L	L
TL Defl inch	0.170 (L/855)	6'4 3/4"	0.605 (L/240)	0.280 (28%)	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 11' 3/8" o.c.
- 4 Bottom braced at bearings.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 12-5-2	(Span)0-5-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-2-4 to 12-5-2		Top	1 PLF	0 PLF	0 PLF	0 PLF	
3	Part. Uniform	0-4-6 to 12-5-2		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
4	Point	7-0-14		Top	135 lb	274 lb	0 lb	0 lb	BBO4 BBO4
5	Tie-In	10-6-4 to 12-5-2	(Span)3-5-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	Pass thru Framing Squash Block is required at all point loads over bearings
	Self Weight				5 PLF				

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



January 14, 2019

**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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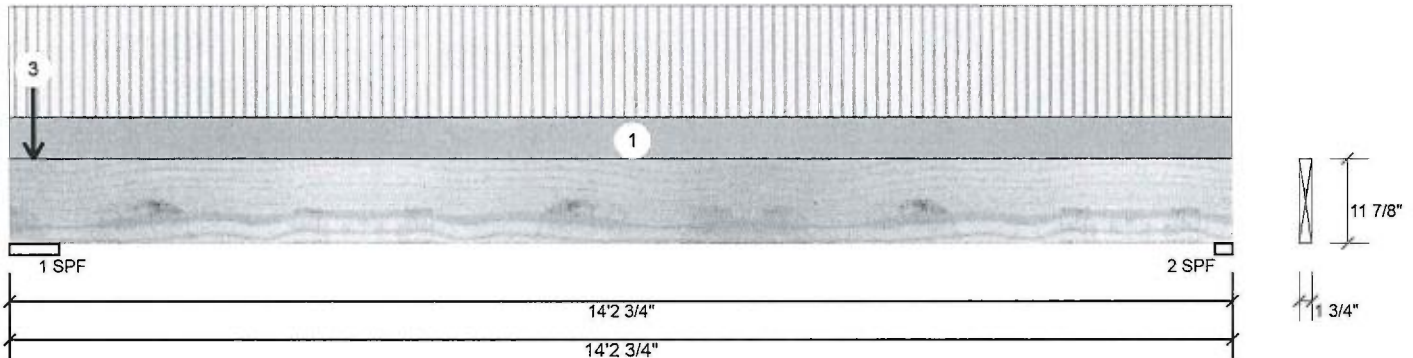
Client: GREENPARK  
 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 1 of 1

**F4-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" - PASSED**

Level: Ground Floor


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

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

Brg	Live	Dead	Snow	Wind
1	108	94	0	0
2	41	48	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	6.875"	4%	118 / 163	280	L	1.25D+1.5L
2 - SPF	2.375"	5%	61 / 62	122	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	407 ft-lb	7'3 5/8"	17130 ft-lb	0.024 (2%)	1.25D+1.5L	L
Unbraced	407 ft-lb	7'3 5/8"	3310 ft-lb	0.123 (12%)	1.25D+1.5L	L
Shear	102 lb	13'1 1/4"	5798 lb	0.018 (2%)	1.25D+1.5L	L
Perm Defl in.	0.012 (L/13751)	7'3 11/16"	0.453 (L/360)	0.030 (3%)	D	Uniform
LL Defl inch	0.010 (L/16186)	7'3 11/16"	0.453 (L/360)	0.020 (2%)	L	L
TL Defl inch	0.022 (L/7435)	7'3 11/16"	0.679 (L/240)	0.030 (3%)	D+L	L

**Design Notes**

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



January 14, 2019

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 14-2-12	(Span)0-3-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-3-6		Top	24 lb	65 lb	0 lb	0 lb	J12
3	Point	0-3-6		Top	19 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Self Weight				5 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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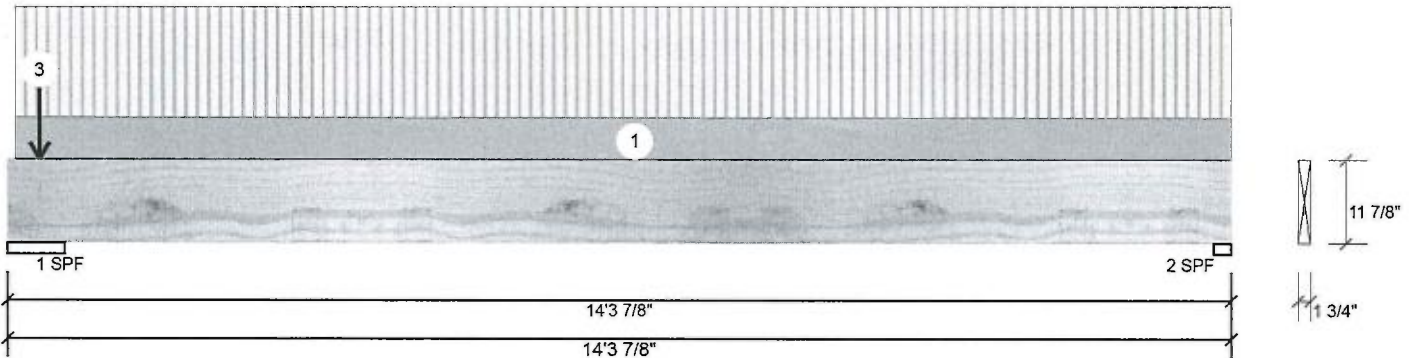
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 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 1 of 1

**F4-B Forex 2.0E-3000Fb LVL 1.750" X 11.875" - PASSED**

Level: Ground Floor

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

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

Brg	Live	Dead	Snow	Wind
1	260	171	0	0
2	121	78	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	8.000"	7%	214 / 390	604	L	1.25D+1.5L
2 - SPF	2.375"	11%	98 / 181	278	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	927 ft-lb	7'4 3/4"	17130 ft-lb	0.054 (5%)	1.25D+1.5L	L
Unbraced	927 ft-lb	7'4 3/4"	3310 ft-lb	0.280 (28%)	1.25D+1.5L	L
Shear	233 lb	13'2 3/8"	5798 lb	0.040 (4%)	1.25D+1.5L	L
Perm Defl in.	0.019 (L/8515)	7'4 13/16"	0.453 (L/360)	0.040 (4%)	D	Uniform
LL Defl inch	0.030 (L/5524)	7'4 13/16"	0.453 (L/360)	0.070 (7%)	L	L
TL Defl inch	0.049 (L/3351)	7'4 13/16"	0.679 (L/240)	0.070 (7%)	D+L	L

**Design Notes**

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-1-2 to 14-3-14	(Span)0-10-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-4-8		Top	50 lb	133 lb	0 lb	0 lb	J12
3	Point	0-4-8		Top	38 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Self Weight				5 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



January 14, 2019

**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.

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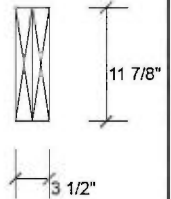
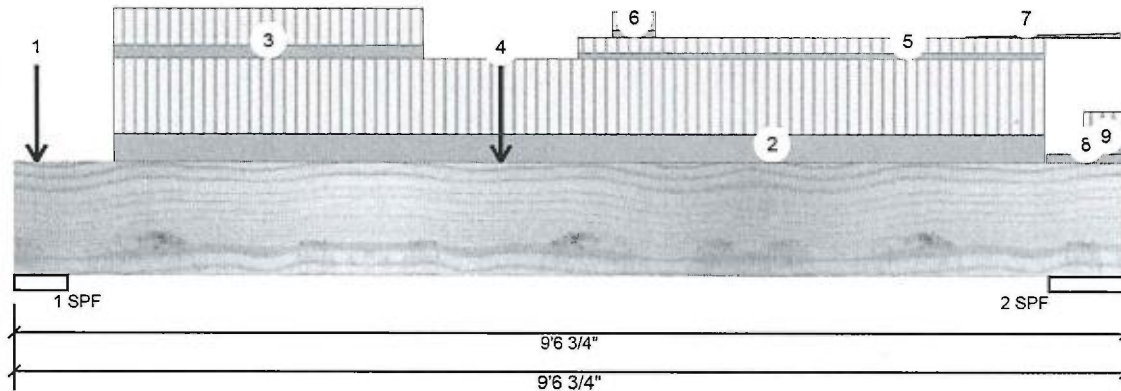
Client: GREENPARK  
 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 1 of 2

**F5-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED**

Level: Ground Floor


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

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

Brg	Live	Dead	Snow	Wind
1	1586	642	0	0
2	1516	640	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	27%	802 / 2378	3181 L	1.25D+1.5L
2 - SPF	8.000"	18%	800 / 2274	3074 L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	6798 ft-lb	4'4 13/16"	34261 ft-lb	0.198 (20%)	1.25D+1.5L	L
Unbraced	6798 ft-lb	4'4 13/16"	30850 ft-lb	0.220 (22%)	1.25D+1.5L	L
Shear	3101 lb	1'4 5/8"	11596 lb	0.267 (27%)	1.25D+1.5L	L
Perm Defl in.	0.022 (L/4644)	4'7 1/2"	0.285 (L/360)	0.080 (8%)	D	Uniform
LL Defl inch	0.055 (L/1870)	4'7 7/16"	0.285 (L/360)	0.190 (19%)	L	L
TL Defl inch	0.077 (L/1333)	4'7 7/16"	0.428 (L/240)	0.180 (18%)	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.



January 14, 2019

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Point	0-2-5		Near Face	43 lb	114 lb	0 lb	0 lb	J2
2	Part. Uniform	0-10-5 to 8-10-5		Far Face	102 PLF	271 PLF	0 PLF	0 PLF	
3	Part. Uniform	0-10-5 to 3-6-5		Near Face	49 PLF	130 PLF	0 PLF	0 PLF	
4	Point	4-2-5		Near Face	63 lb	167 lb	0 lb	0 lb	J4
5	Part. Uniform	4-10-5 to 8-10-5		Near Face	22 PLF	58 PLF	0 PLF	0 PLF	

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 & Installation**

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

- For flat roofs provide proper drainage to prevent ponding

**Manufacturer Info**

Forex  
 APA: PR-L318

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

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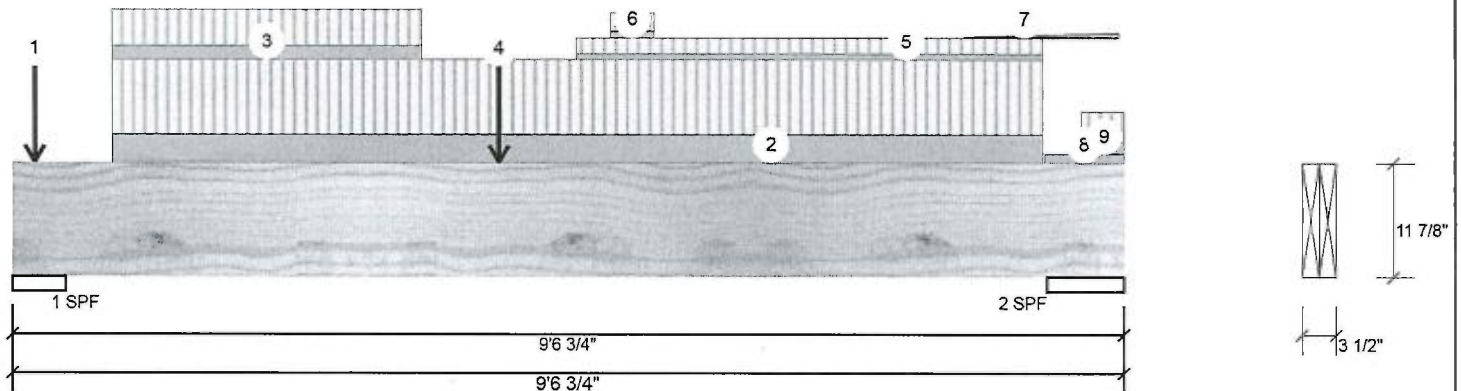
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 Project:  
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Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 2 of 2

**F5-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED**

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Tie-In	5-1-14 to 5-6-5	(Span)3-2-0 to 3-2-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
7	Tie-In	8-2-5 to 9-6-3	(Span)0-1-12 to 0-7-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
8	Part. Uniform	8-10-8 to 9-6-12		Top	31 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
9	Part. Uniform	9-2-5 to 9-6-12		Top	44 PLF	110 PLF	0 PLF	0 PLF	J12
	Self Weight				10 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

**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 is valid until 7/10/2021







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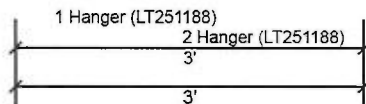
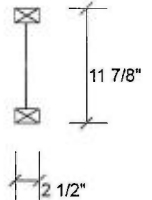
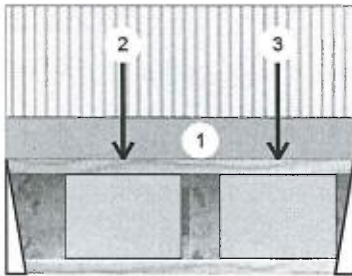
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 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 1 of 1

**F8-A LPI 20Plus 11.875" - PASSED**

Level: Ground Floor


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

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

Brg	Live	Dead	Snow	Wind
1	299	112	0	0
2	346	130	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - Hanger	2.000"	37% 140 / 448	588 L	1.25D+1.5L
2 - Hanger	2.000"	43% 162 / 519	681 L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	496 ft-lb	1' 1/16"	6250 ft-lb	0.079 (8%)	1.25D+1.5L	L
Shear	674 lb	2'10 3/4"	2345 lb	0.287 (29%)	1.25D+1.5L	L
Perm Defl in.	0.002 (L/16094)	1' 15/16"	0.093 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch	0.006 (L/6034)	1' 7/8"	0.093 (L/360)	0.060 (6%)	L	L
TL Defl inch	0.008 (L/4389)	1' 15/16"	0.140 (L/240)	0.050 (5%)	D+L	L

**Design Notes**

- 1 Provide restraint at supports to ensure lateral stability.
- 2 Dead Load Deflection: Instant = 0.002", Long Term = 0.003"
- 3 Fill all hanger nailing holes.
- 4 See manufacture installation guide note E4 for installation details
- 5 Girders are designed to be supported on the bottom edge only.
- 6 Top flange braced at bearings.
- 7 Bottom flange braced at bearings.



January 14, 2019

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 3-0-0	(Span)1-8-11	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	1-0-1		Near Face	109 lb	291 lb	0 lb	0 lb	J10
3	Point	2-4-1		Near Face	94 lb	250 lb	0 lb	0 lb	J10

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**

This component analysis is based on the loads, geometry and other conditions as entered by the user and listed in this report. The user is responsible to ensure the accuracy of the input and the applicability to the actual conditions of the structure for which this component is intended. This analysis is valid only for the product listed.

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This design is valid until 10/31/2020

**Manufacturer Info**

Louisiana-Pacific Corp  
 414 Union Street, Suite 2000  
 Nashville, TN 37219  
 (888) 820-0325  
 www.lpcorp.com  
 CCMC: 12412-R APA: PR-L238C

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

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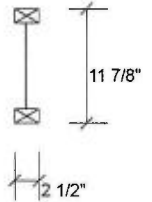
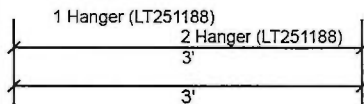
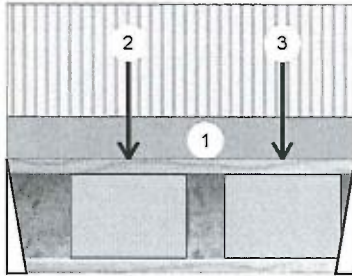
Client: GREENPARK  
 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 1 of 1

**F8-B LPI 20Plus 11.875" - PASSED**

Level: Ground Floor

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

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

Brg	Live	Dead	Snow	Wind
1	296	111	0	0
2	355	133	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - Hanger	2.000"	37% 138 / 443	582 L	1.25D+1.5L
2 - Hanger	2.000"	44% 166 / 532	699 L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	512 ft-lb	1' 9/16"	6250 ft-lb	0.082 (8%)	1.25D+1.5L	L
Shear	692 lb	2'10 3/4"	2345 lb	0.295 (29%)	1.25D+1.5L	L
Perm Defl in.	0.002 (L/15614)	1' 9/16"	0.093 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch	0.006 (L/5851)	1' 9/16"	0.093 (L/360)	0.060 (6%)	L	L
TL Defl inch	0.008 (L/4256)	1' 9/16"	0.140 (L/240)	0.060 (6%)	D+L	L

**Design Notes**

- 1 Provide restraint at supports to ensure lateral stability.
- 2 Dead Load Deflection: Instant = 0.002", Long Term = 0.003"
- 3 Fill all hanger nailing holes.
- 4 See manufacture installation guide note E4 for installation details
- 5 Girders are designed to be supported on the bottom edge only.
- 6 Top flange braced at bearings.
- 7 Bottom flange braced at bearings.



January 14, 2019

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 3-0-0	(Span)1-8-11	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	1-0-9		Near Face	112 lb	299 lb	0 lb	0 lb	J10
3	Point	2-4-9		Near Face	93 lb	248 lb	0 lb	0 lb	J10

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**

This component analysis is based on the loads, geometry and other conditions as entered by the user and listed in this report. The user is responsible to ensure the accuracy of the input and the applicability to the actual conditions of the structure for which this component is intended. This analysis is valid only for the product listed.

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**Manufacturer Info**

Louisiana-Pacific Corp  
 414 Union Street, Suite 2000  
 Nashville, TN 37219  
 (888) 820-0325  
 www.lpcorp.com  
 CCMC: 12412-R APA: PR-L238C

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Designer: RCO

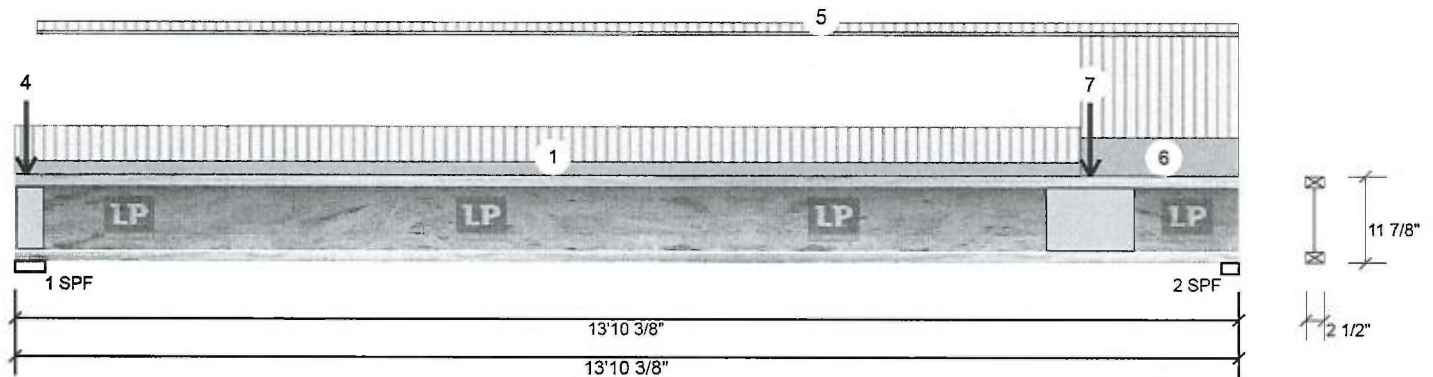
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Page 1 of 2

**F9-A LPI 20Plus 11.875" - PASSED**

Level: Ground Floor

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

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		

Brg	Live	Dead	Snow	Wind
1	930	446	0	0
2	530	198	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.125"	83%	558 / 1396	1954 L	1.25D+1.5L
2 - SPF	2.375"	64%	248 / 794	1043 L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1822 ft-lb	8'4 3/8"	6250 ft-lb	0.292 (29%)	1.25D+1.5L	L
Shear	1024 lb	13'8 3/4"	2345 lb	0.437 (44%)	1.25D+1.5L	L
Perm Defl in.	0.043 (L/3786)	7'4 15/16"	0.448 (L/360)	0.100 (10%)	D	Uniform
LL Defl inch	0.114 (L/1419)	7'4 15/16"	0.448 (L/360)	0.250 (25%)	L	L
TL Defl inch	0.156 (L/1032)	7'4 15/16"	0.672 (L/240)	0.230 (23%)	D+L	L

**Design Notes**

- 1 Provide restraint at supports to ensure lateral stability.
- 2 Applied loads over end bearings and loads exceeding 250 lbs over intermediate bearings must be transferred directly to the support by rim board, blocking, squash blocks, or other device.
- 3 Dead Load Deflection: Instant = 0.043", Long Term = 0.064"
- 4 See manufacture installation guide note E4 for installation details
- 5 Girders are designed to be supported on the bottom edge only.
- 6 Top flange must be laterally braced at a maximum of 7'7" o.c.
- 7 Bottom flange braced at bearings.
- 8 Web stiffeners required at Bearing 1.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 12-1-0	(Span)1-1-5	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-1-8		Top	300 lb	661 lb	0 lb	0 lb	BBO5 BBO5
	Bearing Length	0-1-8							
3	Point	0-1-8		Top	13 lb	34 lb	0 lb	0 lb	J8
	Bearing Length	0-1-8							

Continued on page 2...

**Notes**

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**Manufacturer Info**

Louisiana-Pacific Corp  
414 Union Street, Suite 2000  
Nashville, TN 37219  
(888) 820-0325  
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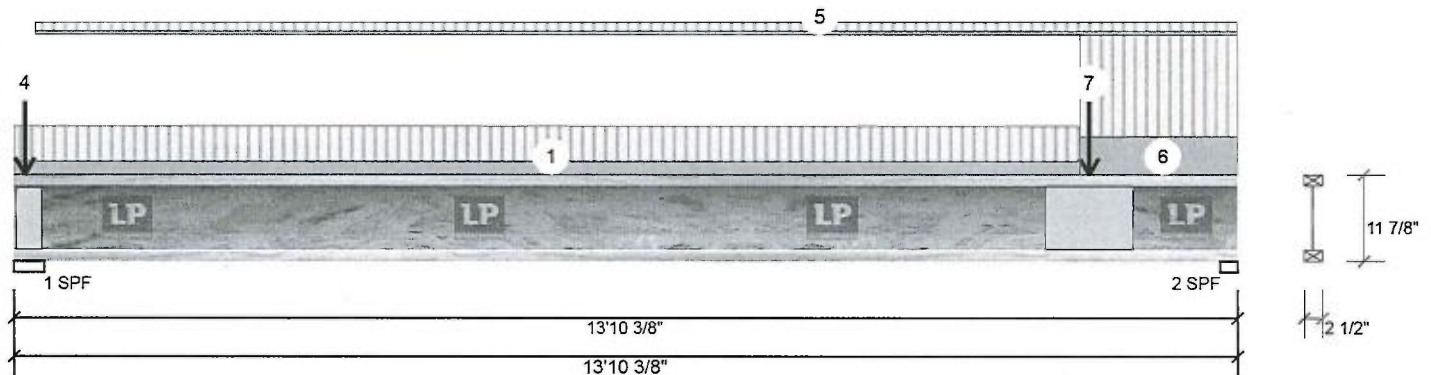
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 Project:  
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Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 2 of 2

**F9-A LPI 20Plus 11.875" - PASSED**

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
4	Point	0-1-8		Top	45 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-1-8							
5	Tie-In	0-3-0 to 13-10-6	(Span)0-3-11	Top	15 PSF	40 PSF	0 PSF	0 PSF	
6	Tie-In	12-1-0 to 13-10-6	(Span)3-2-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
7	Point	12-2-4		Near Face	112 lb	299 lb	0 lb	0 lb	F8

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**

This component analysis is based on the loads, geometry and other conditions as entered by the user and listed in this report. The user is responsible to ensure the accuracy of the input and the applicability to the actual conditions of the structure for which this component is intended. This analysis is valid only for the product listed.

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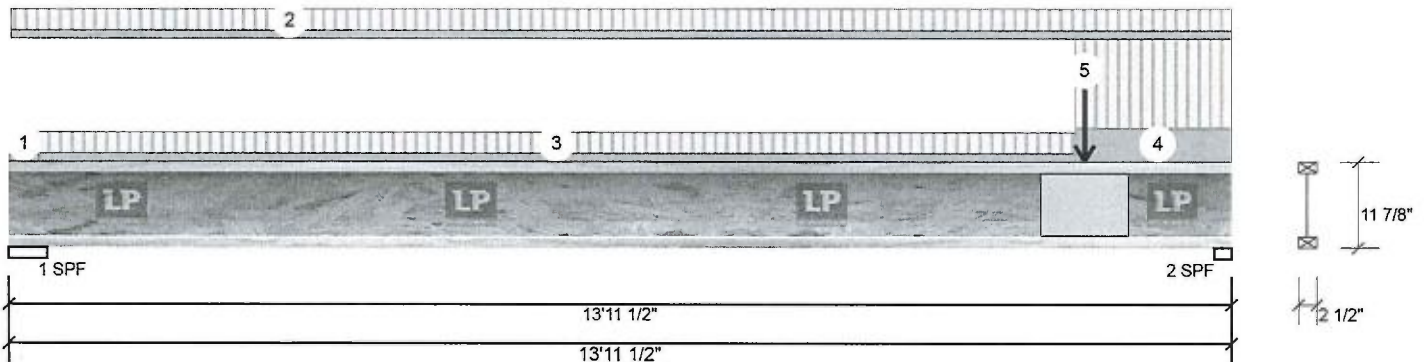
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 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 1 of 1

**F9-B LPI 20Plus 11.875" - PASSED**

Level: Ground Floor


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

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

Brg	Live	Dead	Snow	Wind
1	262	98	0	0
2	600	225	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - SPF	5.250"	28%	123 / 392	515 L 1.25D+1.5L
2 - SPF	2.375"	72%	281 / 900	1181 L 1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2026 ft-lb	8'6 9/16"	6250 ft-lb	0.324 (32%)	1.25D+1.5L	L
Shear	1160 lb	13'9 7/8"	2345 lb	0.495 (49%)	1.25D+1.5L	L
Perm Defl in.	0.047 (L/3405)	7'6 1/4"	0.448 (L/360)	0.110 (11%)	D	Uniform
LL Defl inch	0.126 (L/1278)	7'6 1/4"	0.448 (L/360)	0.280 (28%)	L	L
TL Defl inch	0.174 (L/929)	7'6 1/4"	0.672 (L/240)	0.260 (26%)	D+L	L

**Design Notes**

- 1 Provide restraint at supports to ensure lateral stability.
- 2 Dead Load Deflection: Instant = 0.047", Long Term = 0.071"
- 3 See manufacture installation guide note E4 for installation details
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top flange must be laterally braced at a maximum of 7'3" o.c.
- 6 Bottom flange braced at bearings.



January 14, 2019

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-4-2	(Span)0-6-11	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-6 to 13-11-8	(Span)0-9-5	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	0-4-2 to 12-2-2	(Span)0-9-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Tie-In	12-2-2 to 13-11-8	(Span)3-2-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
5	Point	12-3-6		Far Face	130 lb	346 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**

This component analysis is based on the loads, geometry and other conditions as entered by the user and listed in this report. The user is responsible to ensure the accuracy of the input and the applicability to the actual conditions of the structure for which this component is intended. This analysis is valid only for the product listed.

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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 until  
 10/31/2020

**Manufacturer Info**

Louisiana-Pacific Corp  
 414 Union Street, Suite 2000  
 Nashville, TN 37219  
 (888) 820-0325  
 www.lpcorp.com  
 CCMC: 12412-R APA: PR-L238C

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

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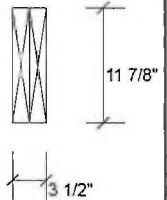
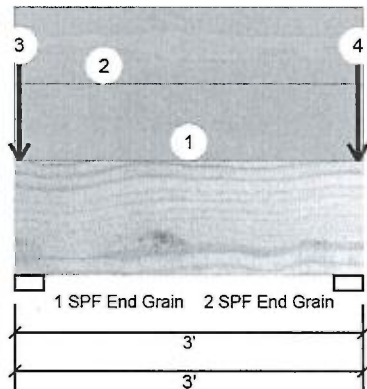

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Client: GREENPARK  
 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 1 of 1

**FH2-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED** Level: Ground Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	0	159	0	0
2	0	159	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	4%	223 / 0	223	Uniform	1.4D
2 - SPF End Grain	3.000"	4%	223 / 0	223	Uniform	1.4D

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	108 ft-lb	1'6"	22269 ft-lb	0.005 (0%)	1.4D	Uniform
Unbraced	108 ft-lb	1'6"	22269 ft-lb	0.005 (0%)	1.4D	Uniform
Shear	96 lb	1'9 7/8"	7537 lb	0.013 (1%)	1.4D	Uniform
Perm Defl in.	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
LL Defl inch	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
TL Defl inch	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		

## Design Notes

- 1 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.



January 14, 2019

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 3-0-0		Top	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
2	Part. Uniform	0-0-0 to 3-0-0		Near Face	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
3	Point	0-0-8		Top	25 lb	0 lb	0 lb	0 lb	Pass Thru Framing Squash Block is required at all point loads over bearings
4	Point	2-11-8		Top	25 lb	0 lb	0 lb	0 lb	Header Column Header
	Self Weight				10 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 &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-L318

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

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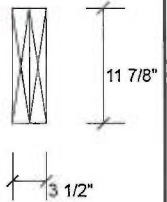
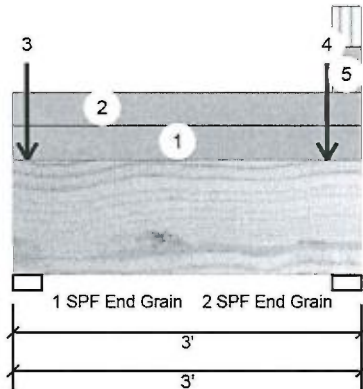
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 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 1 of 2

FH2-B Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED Level: Ground Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	0	158	0	0
2	12	170	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	4%	222 / 0	222 Uniform	1.4D
2 - SPF End Grain	3.000"	5%	238 / 0	238 Uniform	1.4D

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	110 ft-lb	1'6 1/8"	22269 ft-lb	0.005 (0%)	1.4D	Uniform
Unbraced	110 ft-lb	1'6 1/8"	22269 ft-lb	0.005 (0%)	1.4D	Uniform
Shear	102 lb	1'2 1/8"	7537 lb	0.014 (1%)	1.4D	Uniform
Perm Defl in.	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
LL Defl inch	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
TL Defl inch	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		

## Design Notes

- 1 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.



January 14, 2019

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 3-0-0		Top	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
2	Part. Uniform	0-0-0 to 3-0-0		Near Face	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
3	Point	0-1-8		Top	23 lb	0 lb	0 lb	0 lb	Header Column Header Column
4	Point	2-8-8		Top	23 lb	0 lb	0 lb	0 lb	Header Column 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

## 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-L318

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

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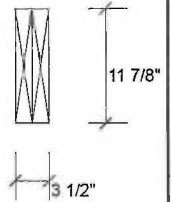
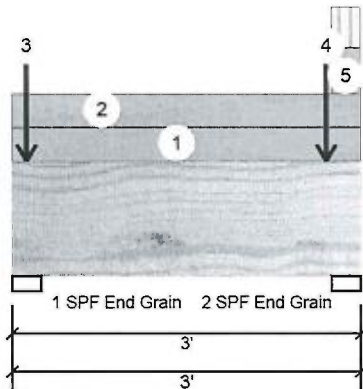
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 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 2 of 2

**FH2-B Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED** Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Part. Uniform	2-9-0 to 3-0-0		Near Face	55 PLF	48 PLF	0 PLF	0 PLF	J2
	Self Weight				10 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

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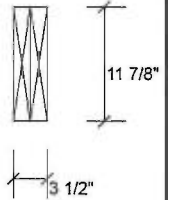
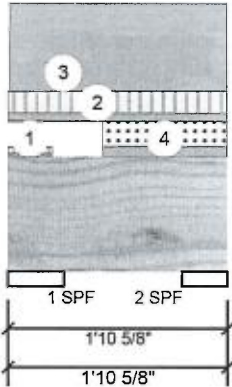
Client: GREENPARK  
 Project:  
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Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 1 of 1

**F14-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED**

Level: Second Floor


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

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

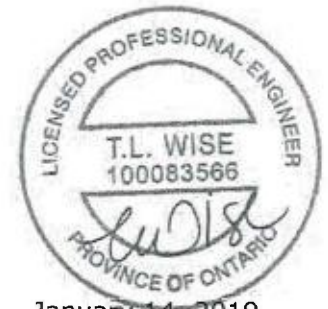
Brg	Live	Dead	Snow	Wind
1	22	98	6	0
2	18	95	19	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - SPF	5.750"	2%	122 / 33	155 L
2 - SPF	4.625"	2%	119 / 37	156 L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	27 ft-lb	1' 1/16"	23297 ft-lb	0.001 (0%)	1.25D+1.5S	L
Unbraced	27 ft-lb	1' 1/16"	23297 ft-lb	0.001 (0%)	1.25D+1.5S	L
Shear	71 lb	1' 4 7/8"	7885 lb	0.009 (1%)	1.25D+1.5S	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%)		



January 14, 2019

**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.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-4-8	(Span)0-4-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 1-10-10	(Span)0-11-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	Pass thru Framing Squash Block is required at all point loads over bearings
3	Part. Uniform	0-0-4 to 1-10-10		Top	80 PLF	0 PLF	0 PLF	0 PLF	0 PLF Wall Self Weight
4	Part. Uniform	0-9-12 to 1-10-10		Top	10 PLF	0 PLF	23 PLF	0 PLF	Refer to Multiple Member Connection Detail for ply to ply nailing or bolting requirements
	Self Weight				10 PLF				

**Notes**

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

**Lumber**

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

**chemicals**
**Handling & Installation**

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

- For flat roofs provide proper drainage to prevent ponding

**Manufacturer Info**

Forex  
 APA: PR-L318

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

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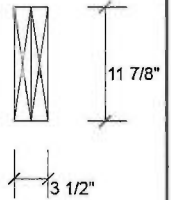
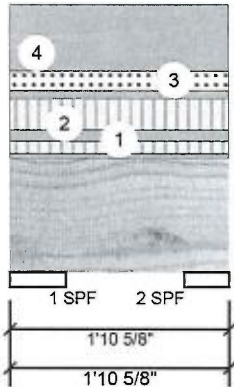

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 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 1 of 1

**F14-B Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED** Level: Second Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	52	118	23	0
2	47	107	21	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.750"	2%	148 / 34	182 L	1.25D+1.5S
2 - SPF	4.625"	3%	134 / 31	164 L	1.25D+1.5S

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	30 ft-lb	11 7/8"	22269 ft-lb	0.001 (0%)	1.25D+1.5S	L
Unbraced	30 ft-lb	11 7/8"	22269 ft-lb	0.001 (0%)	1.25D+1.5S	L
Shear	76 lb	6 7/8"	7537 lb	0.010 (1%)	1.25D+1.5S	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

- 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.



January 14, 2019

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-10-10	(Span)0-8-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 1-10-10	(Span)1-11-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-0-0 to 1-10-10		Top	10 PLF	0 PLF	23 PLF	0 PLF	
4	Part. Uniform	0-0-0 to 1-10-10		Top	80 PLF	0 PLF	0 PLF	0 PLF	
	Self Weight				10 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 &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-L318

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

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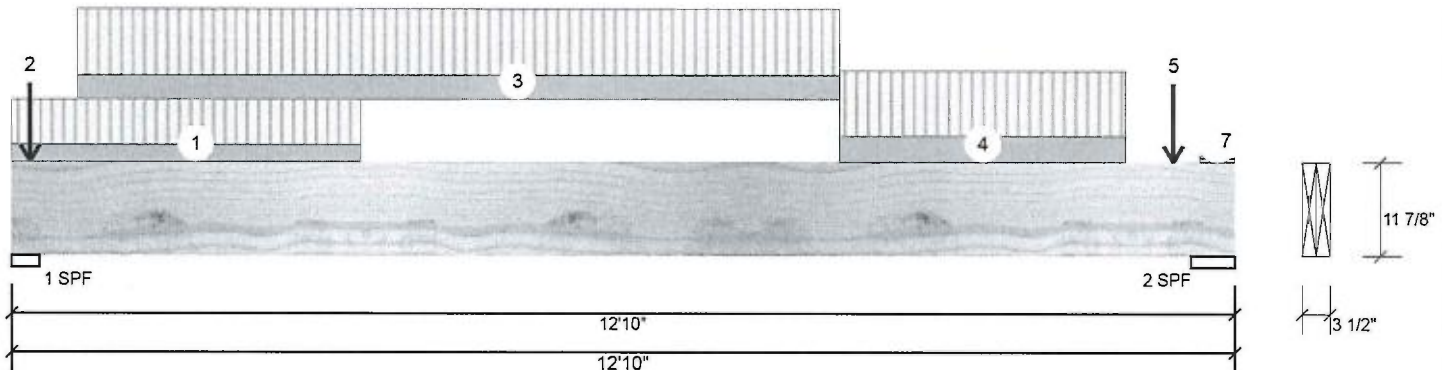
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Client: GREENPARK  
 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 1 of 2

**F15-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED** Level: Second Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	2725	1090	0	0
2	2272	945	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	72%	1363 / 4088	5450	L	1.25D+1.5L
2 - SPF	5.500"	39%	1181 / 3408	4589	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	14298 ft-lb	6' 3/16"	34261 ft-lb	0.417 (42%)	1.25D+1.5L	L
Unbraced	14298 ft-lb	6' 3/16"	27327 ft-lb	0.523 (52%)	1.25D+1.5L	L
Shear	4742 lb	11'5 3/8"	11596 lb	0.409 (41%)	1.25D+1.5L	L
Perm Defl in.	0.088 (L/1661)	6'3"	0.407 (L/360)	0.220 (22%)	D	Uniform
LL Defl inch	0.217 (L/674)	6'2 3/4"	0.407 (L/360)	0.530 (53%)	L	L
TL Defl inch	0.306 (L/479)	6'2 13/16"	0.610 (L/240)	0.500 (50%)	D+L	L

## Design Notes

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



January 14, 2019

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 3-8-0		Top	90 PLF	240 PLF	0 PLF	0 PLF	
2	Point	0-2-5		Far Face	5 lb	14 lb	0 lb	0 lb	J8
3	Part. Uniform	0-8-5 to 8-8-5		Far Face	130 PLF	345 PLF	0 PLF	0 PLF	
4	Part. Uniform	8-8-5 to 11-8-5		Far Face	138 PLF	345 PLF	0 PLF	0 PLF	
5	Point	12-2-5		Far Face	120 lb	298 lb	0 lb	0 lb	J8
6	Tie-In	12-5-10 to 12-10-0	(Span)0-8-9	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. 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-L318

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

This design

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.

**NASCOR**





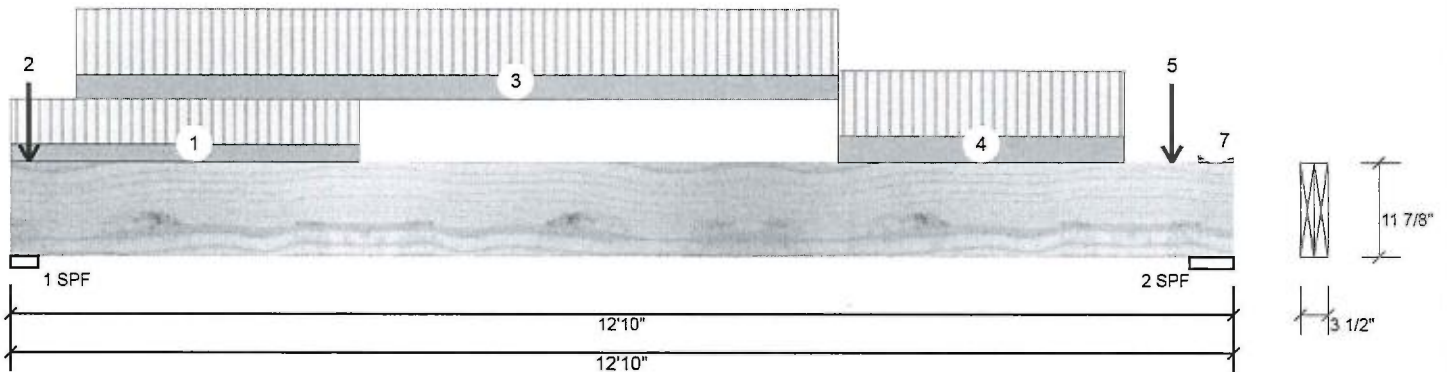
isDesign™

Client: GREENPARK  
 Project:  
 Address:

Date: 1/9/2019  
 Designer: RCO  
 Job Name: LOT 15 (MILLWOOD 5)  
 Project #:

Page 2 of 2

**F15-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED** Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
7	Tie-In	12-5-10 to 12-10-0	(Span)0-7-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				10 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**

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**Lumber**

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**Manufacturer Info**

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**NASCOR**

This design is valid until 7/10/2021