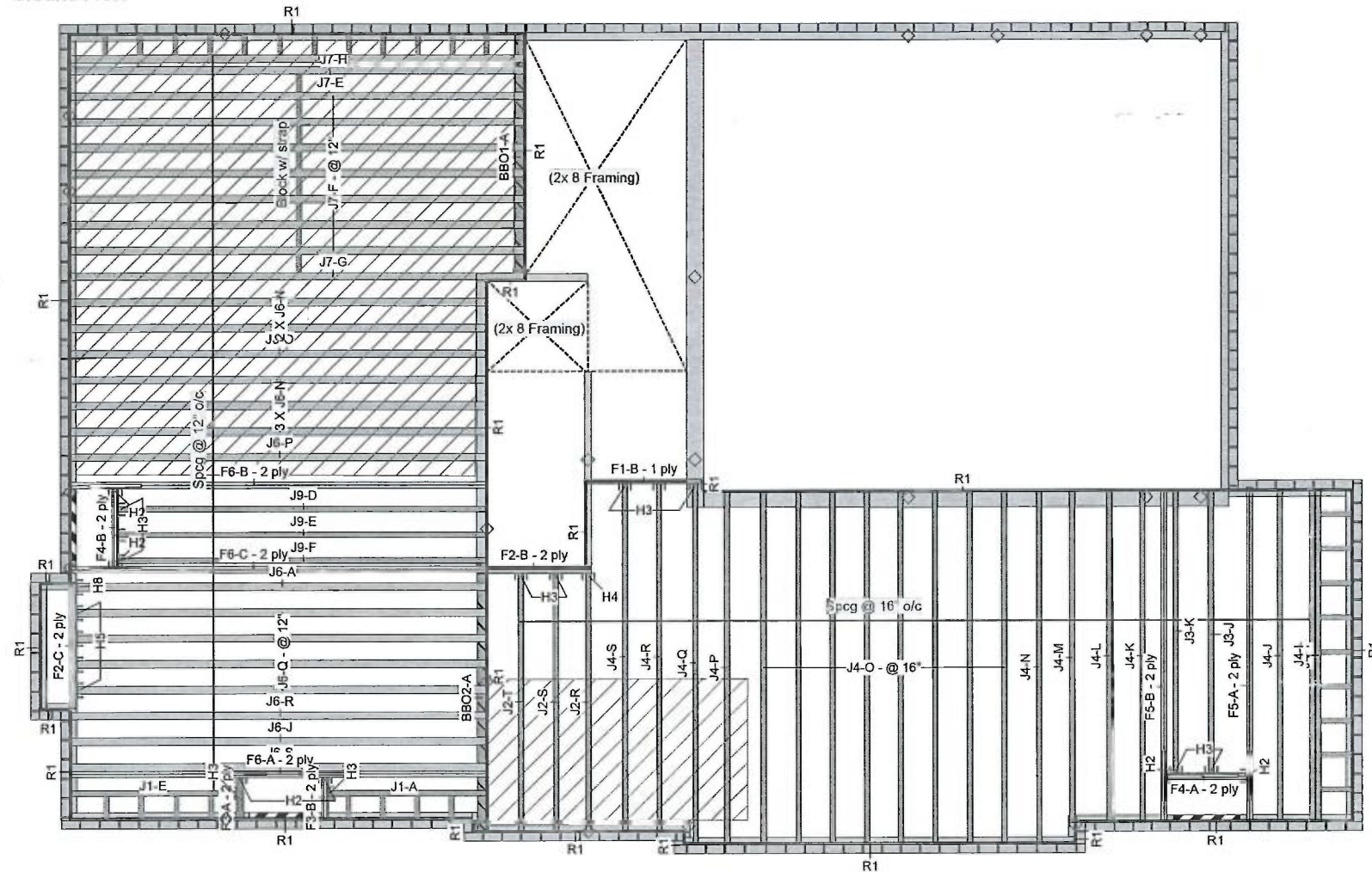


## Ground Floor



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.



August 21, 2018

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



## 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
F2	Forex 2.0E-3000Fb LVL	1.75	9.5	2	2	4	6-0-0
F1	Forex 2.0E-3000Fb LVL	1.75	9.5			1	6-0-0

## Joist (Flush)

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F6	NJ	1.5	9.5	3	2	6	16-0-0
F5	NJ	1.5	9.5	2	2	4	14-0-0
F4	NJ	1.5	9.5	2	2	4	4-0-0
F3	NJ	1.5	9.5	2	2	4	2-0-0
J7	NJ60U	3.5	9.5			10	18-0-0
J6	NJ60U	3.5	9.5			15	16-0-0
J9	NJH	2.5	9.5			3	16-0-0
J4	NJH	2.5	9.5			19	14-0-0
J3	NJH	2.5	9.5			2	12-0-0
J2	NJH	2.5	9.5			3	10-0-0
J1	NJH	2.5	9.5			2	8-0-0

## Rim Board

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			15	12

## Blocking

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK1	NJH	2.5	9.5	LinFt		Varies	33-0-0

## Hanger

		Beam/Girder		Supported Member	
Label	Pcs	Description	Skew	Slope	fasteners
H2	6	LT2-159			4 10dx1 1/2
H3	12	LT259			4 10dx1 1/2
H4	1	LT259			2 10dx1 1/2
H5	4	LT359			4 10d
H8	1	LT359			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.

## ARCHITECTURAL DRAWINGS:

REGION DESIGN INC.  
8700 Dufferin St., Concord, ON  
Date: Rev.2: July 2018  
Project No: 17-04-19  
Model: Millwood 12

**NASCOR**

## Layout Name

MILLWOOD 12-2

## Design Method

LSO

## Description

MINNISALE HOMES  
BRAMPTON, ONT.

## Created

June 28, 2018

## Builder

GREENPARK

## Sales Rep

RM

## Designer

RCO

## Shipping

## Project

## Builder's Project

**Kott Lumber Company**  
14 Anderson Blvd  
Stouffville, Ontario  
Canada

L4A 7X4

905-642-4400

## Job Path

S:\CUSTOMERS\GREENPARK  
MINNISALE HOMES\MODELS  
MILLWOOD 12\MILLWOOD12-2  
FLOOR\REV\MILLWOOD 12-2.isl

## Ground Floor

## Design Method

LSO

## 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 & Glued

## Vibration

Strapping 1"x4", 1 Row at Midspan

LOT 21

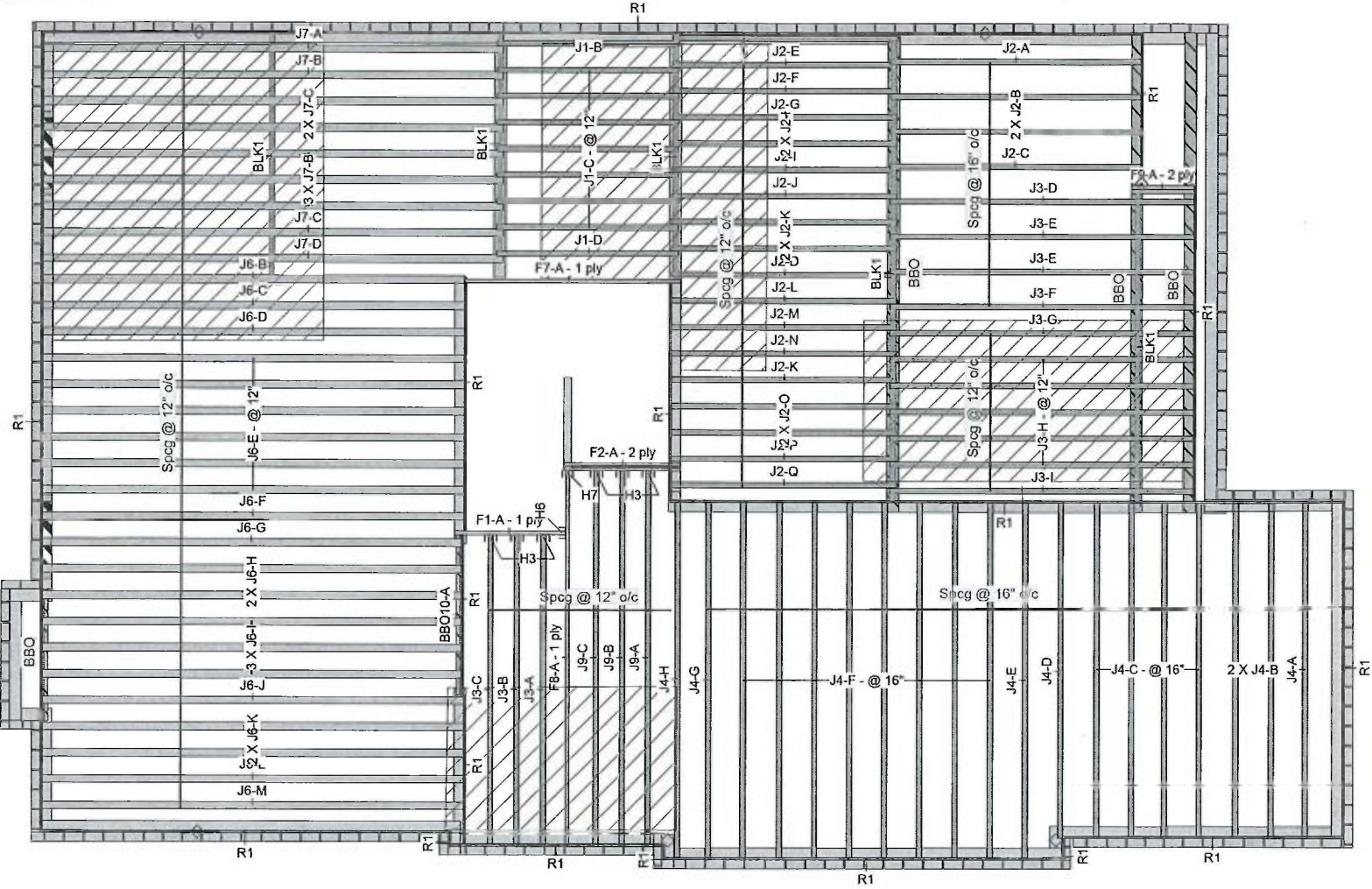
18-411 396 0000 0000

Floor Joist

**KOTT**



Second 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.



August 21, 2018

Legend

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

Second Floor  
LVL/LSL (Flush)

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F8	Forex 2.0E-3000Fb LVL	1.75	9.5			1	16-0-0
F7	Forex 2.0E-3000Fb LVL	1.75	9.5			1	10-0-0
F2	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	6-0-0
F1	Forex 2.0E-3000Fb LVL	1.75	9.5			1	6-0-0
F9	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	4-0-0

LVL/LSL (Dropped)

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BBO10	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	8-0-0

I Joist (Flush)

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
J7	NJ60U	3.5	9.5			9	18-0-0
J6	NJ60U	3.5	9.5			21	16-0-0
J9	NJH	2.5	9.5			3	16-0-0
J4	NJH	2.5	9.5			19	14-0-0
J3	NJH	2.5	9.5			14	12-0-0
J2	NJH	2.5	9.5			22	10-0-0
J1	NJH	2.5	9.5			9	8-0-0

Rim Board

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			18	12

Blocking

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK1	NJH	2.5	9.5	LinFl		Varies	38-0-0

Hanger

Label	Pcs	Description	Skew	Slope	fasteners	Supported Member
H3	6	LT259			4 10dx1 1/2	2 10dx1 1/2
H6	1	HUS1.81/10			30 16d	10 16d
H7	1	HUCQ1.81/9				

NOTES: SDS

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

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

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

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

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

ARCHITECTURAL DRAWINGS:

REGION DESIGN INC.  
8700 Dufferin St., Concord, ON  
Date: Rev.2: July 2018  
Project No: 17-04-19  
Model: Millwood 12

NASCOR

Layout Name  
MILLWOOD 12-2  
Design Method  
LSD  
Description  
MINNISALE HOMES  
BRAMPTON, ONT.  
Created  
June 28, 2018  
Builder  
GREENPARK  
Sales Rep  
RM  
Designer  
RCO  
Shipping  
Project  
Builder's Project

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

Job Path  
S:\CUSTOMERS\GREENPARK  
MINNISALE HOMES\MODELS  
MILLWOOD 12\MILLWOOD12-2  
FLOOR\REV\MILLWOOD 12-2.isl

Second Floor  
Design Method LSD  
Building Code NBCC 2010 / OBC 2012

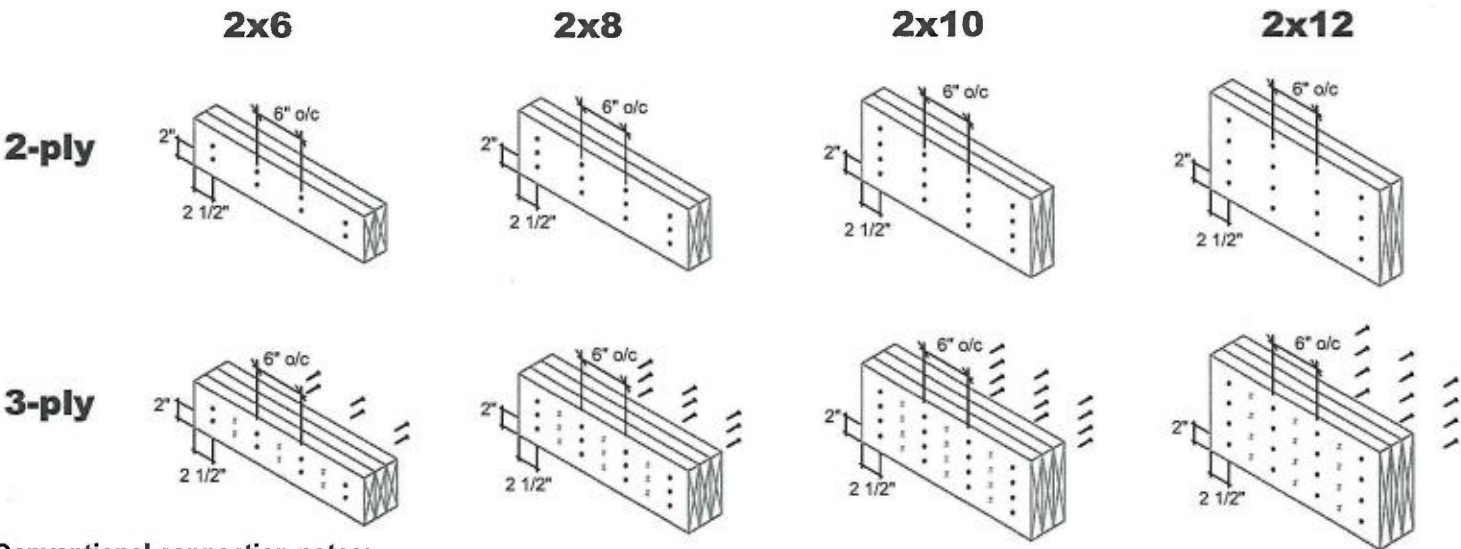
Floor  
Loads  
Live 40  
Dead 15  
Deflection Joist  
LL Span L/ 480  
TL Span L/ 360  
LL Cant 2L/ 480  
TL Cant 2L/ 360  
Deflection Girder  
LL Span L/ 360  
TL Span L/ 240  
LL Cant 2L/ 480  
TL Cant 2L/ 360  
Decking  
Deck SPF Plywood  
Thickness 5/8"  
Fastener Nailed & Glued  
Vibration  
Ceiling Gypsum 1/2"

LOT 21



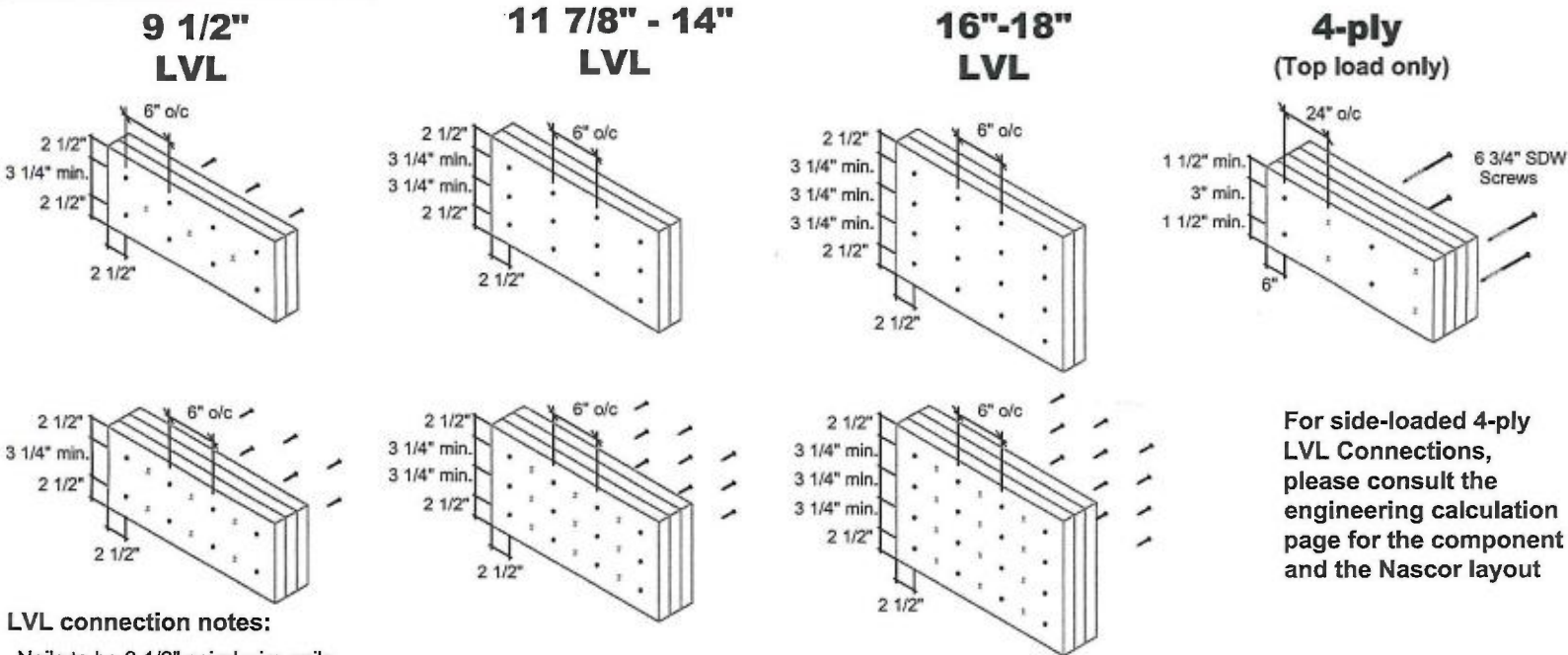
# MULTIPLE MEMBER CONNECTIONS

## 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.

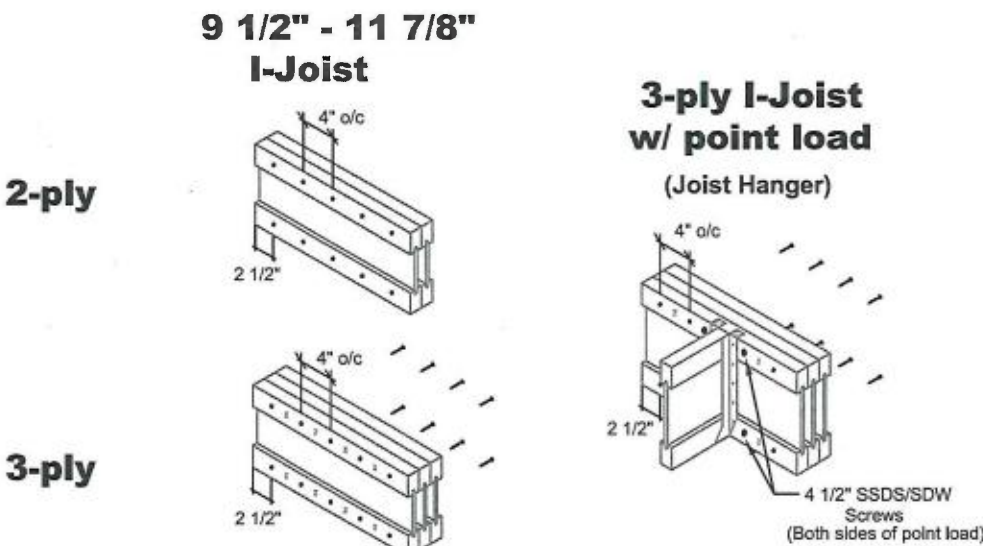
## LVL Connections (for uniform distributed loads)



**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.

**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.

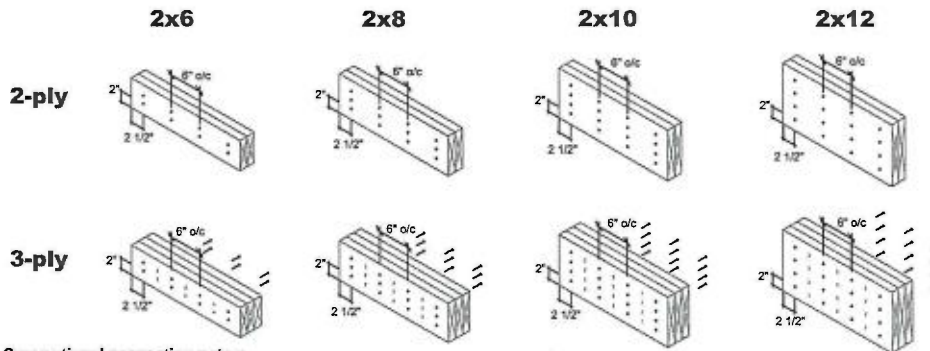
**HANDLING AND INSTALLATION**

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



# MULTIPLE MEMBER CONNECTIONS

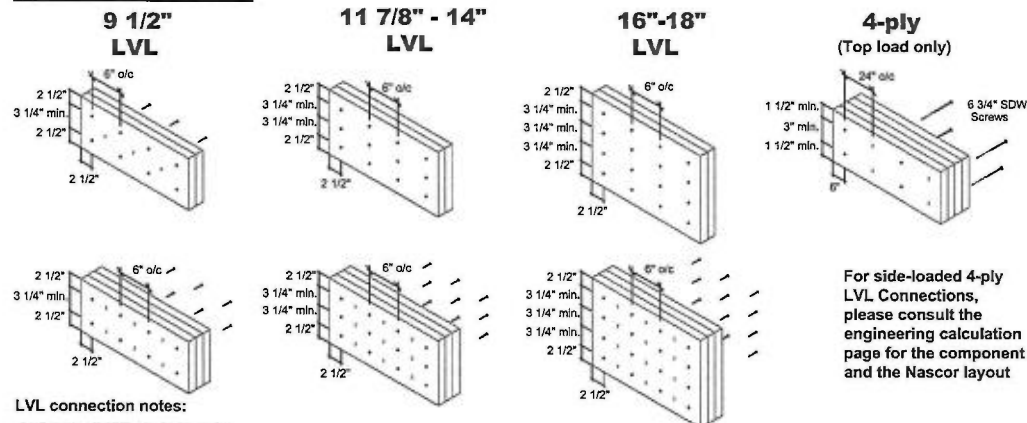
## Conventional Connections (for uniform distributed loads)



### 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.

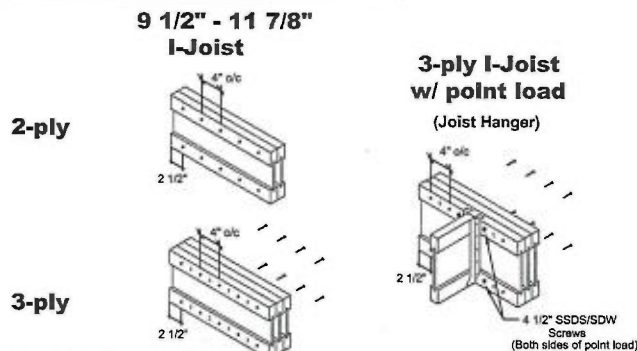
## LVL Connections (for uniform distributed loads)



### 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.

## 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 10, 2015

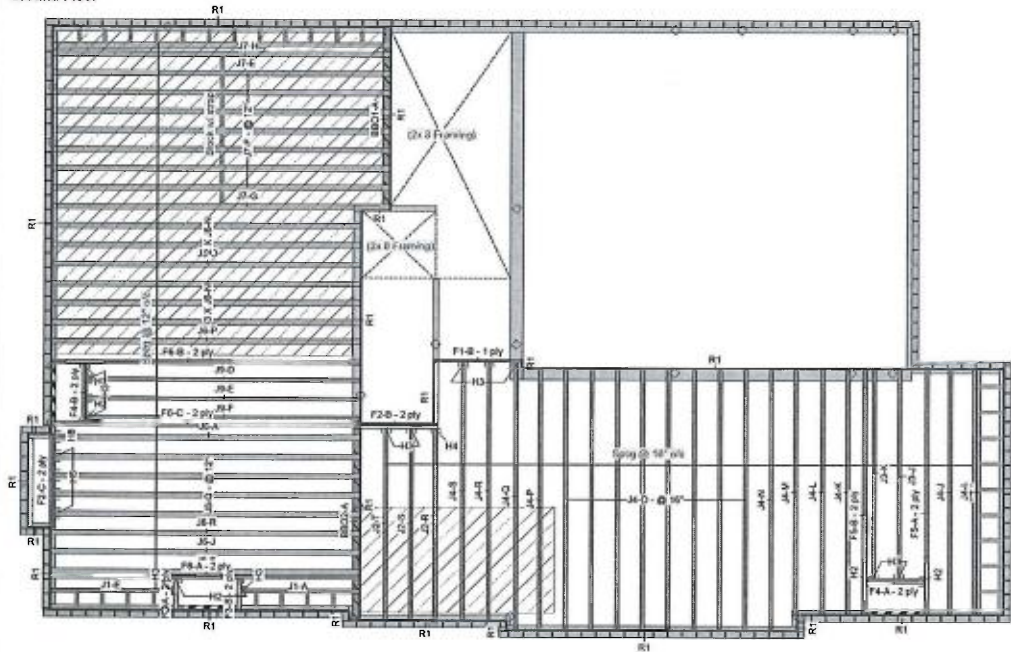
Drawn: NTS

**KOTT**

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

**KOTT**

## 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.



August 21, 2018

## Legend

	Load from Above
	Wall
	Wall Opening
	Norbord Rimboard Plus 1.125 X 9.5
	NU 9.5
	NU60U 9.5
	NUH 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-4310(C)

Ground Floor LVL/LSL (Flush)							
Label	Description	Width	Depth	Qty	Piles	Pcs	Length
F2	Forex 2.0E-3000Fb LVL	1.75	9.5	2	2	4	6-0-0
F1	Forex 2.0E-3000Fb LVL	1.75	9.5			1	6-0-0

Joist (Flush)							
Label	Description	Width	Depth	Qty	Piles	Pcs	Length
F6	NJ	1.5	9.5	3	2	6	16-0-0
F5	NJ	1.5	9.5	2	2	4	14-0-0
F4	NJ	1.5	9.5	2	2	4	14-0-0
F3	NJ	1.5	9.5	2	2	4	14-0-0
J7	NJ60U	3.5	9.5			10	18-0-0
J6	NJ60U	3.5	9.5			15	16-0-0
J9	NJH	2.5	9.5			3	16-0-0
J4	NJH	2.5	9.5			19	14-0-0
J3	NJH	2.5	9.5			2	12-0-0
J2	NJH	2.5	9.5			3	10-0-0
J1	NJH	2.5	9.5			2	8-0-0

Rim Board							
Label	Description	Width	Depth	Qty	Piles	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			15	12

Blocking							
Label	Description	Width	Depth	Qty	Piles	Pcs	Length
BLK1	NJH	2.5	9.5	LinFt		Varies	33-0-0

Hanger							
Label	Pcs	Description	Skew	Slope	fasteners	Supported Member	
H2	6	LT2-159			4 10dx1 1/2	2 10dx1 1/2	
H3	12	LT259			4 10dx1 1/2	2 10dx1 1/2	
H4	1	LT259					
H5	4	LT359			4 10d	2 10dx1 1/2	
H8	1	LT359					

## NOTES:

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

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

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

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

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

## ARCHITECTURAL DRAWINGS:

REGION DESIGN INC.  
8700 Dufferin St. Concord, ON  
Date: Rev.2, July 2018  
Project No: 17-04-19  
Model: Millwood 12

# NASCOR

Layout Name

MILLWOOD 12-2

Design Method

LSD

Description

MINNISALE HOMES

BRAMPTON, ONT.

Created

June 28, 2018

Builder

GREENPARK

Sales Rep

RM

Designer

RCO

Shipping

Project

Builder's Project

Kott Lumber Company

14 Anderson Blvd

Stouffville, Ontario

Canada

L4A 7X4

905-842-4400

Job Path

S:\CUSTOMERS\GREENPARK

\MINNISALE HOMES\MODELS

MILLWOOD 12\MILLWOOD12-2

VFLOORREV\MILLWOOD 12-2.JIF

Ground Floor

Design Method

LSD

Building Code

NBCC 2010 / OBC

2012

Floor

Loads

Live

Dead

Deflection Joist

LL Span L/

LL Span L/

LL Cant 2L/

LL Cant 2L/

Deflection Girder

LL Span L/

TL Span L/

LL Cant 2L/

TL Cant 2L/

Decking

Deck

Thickness

SPF Plywood

Fastener

3/4"

Vibration

Nailed &amp; Glued

Strapping

1"x4", 1 Row at Midspan



isDesign™

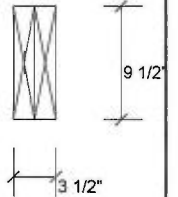
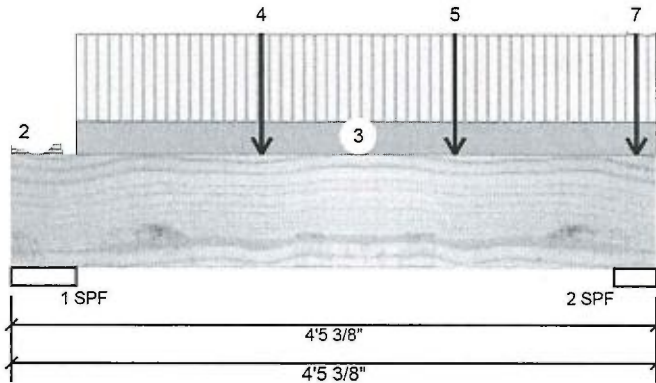
Client: GREENPARK  
 Project:  
 Address:

Date: 8/20/2018  
 Designer: RCO  
 Job Name: MILLWOOD 12-1  
 Project #:

Page 2 of 2

F2-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
7	Point	4-3-12		Near Face	110 lb	262 lb	0 lb	0 lb	J2
	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 & 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: 8/20/2018

Designer: RCO

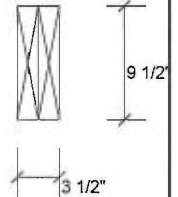
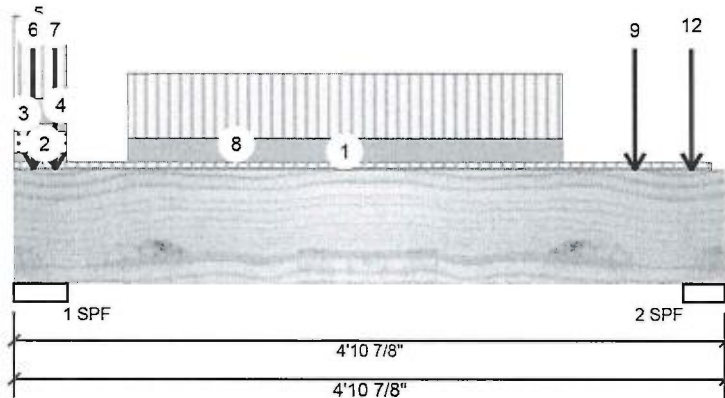
Job Name: MILLWOOD 12-1

Project #:

Page 1 of 2

F2-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	1718	1856	1869	0
2	1517	1171	682	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.375"	64%	2320 / 3663	5982 L	1.25D+1.5S +0.5L
2 - SPF	3.500"	54%	1464 / 2617	4081 L	1.25D+1.5L +0.5S

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1576 ft-lb	2'6 3/16"	22724 ft-lb	0.069 (7%)	1.25D+1.5L +0.5S	L
Unbraced	1576 ft-lb	2'6 3/16"	22724 ft-lb	0.069 (7%)	1.25D+1.5L +0.5S	L
Shear	1686 lb	3'10 5/8"	9277 lb	0.182 (18%)	1.25D+1.5L +0.5S	L
Perm Defl in.	0.003 (L/16135)	2'6 1/16"	0.146 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch	0.008 (L/6442)	2'6 1/16"	0.146 (L/360)	0.060 (6%)	L+0.5S	L
TL Defl inch	0.011 (L/4604)	2'6 1/16"	0.219 (L/240)	0.050 (5%)	D+L+0.5S	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 21, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 4-9-12	(Span)1-3-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 0-4-6		Top	44 PLF	0 PLF	102 PLF	0 PLF	
3	Part. Uniform	0-0-0 to 0-4-6		Top	40 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

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

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: 8/20/2018

Designer: RCO

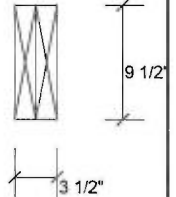
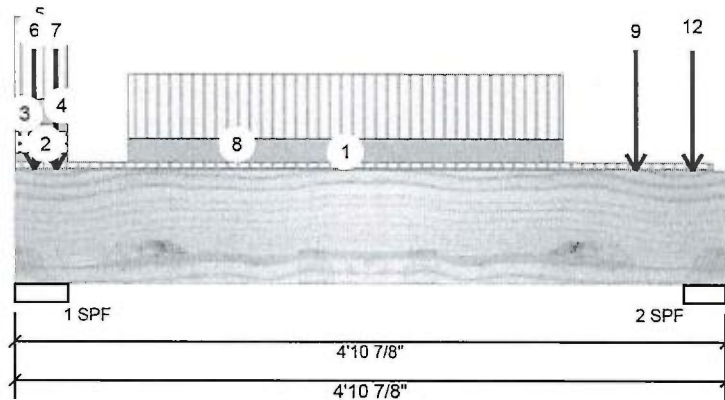
Job Name: MILLWOOD 12-1

Project #:

Page 2 of 2

F2-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
4	Part. Uniform	0-0-0 to 0-4-6		Top	120 PLF	319 PLF	0 PLF	0 PLF	J6
5	Part. Uniform	0-0-0 to 0-4-6		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
6	Point	0-1-10		Top	1341 lb	640 lb	1810 lb	0 lb	BBO3 BBO3
7	Point	0-3-7		Near Face	166 lb	360 lb	22 lb	0 lb	J6
8	Part. Uniform	0-9-7 to 3-9-7		Near Face	117 PLF	311 PLF	0 PLF	0 PLF	
9	Point	4-3-7		Near Face	121 lb	324 lb	0 lb	0 lb	J6
10	Point	4-8-2		Top	19 lb	0 lb	0 lb	0 lb	Wall Self Weight
11	Point	4-8-2		Top	824 lb	740 lb	682 lb	0 lb	BBO3 BBO3
12	Point	4-8-2		Top	18 lb	0 lb	0 lb	0 lb	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

## 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

**NASCOR**

This design is valid until 7/10/2021



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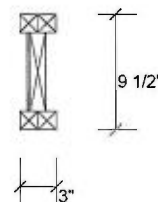
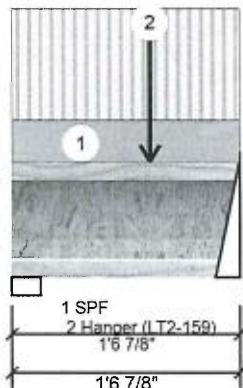
Client: GREENPARK  
 Project:  
 Address:

Date: 8/20/2018  
 Designer: RCO  
 Job Name: MILLWOOD 12-1  
 Project #:

Page 1 of 1

**F3-A NJ 9.500" 2-Ply - PASSED**

Level: Ground Floor


**Member Information**

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

**Unfactored Reactions UNPATTERNED lb (Uplift)**

Brg	Live	Dead	Snow	Wind
1	95	35	0	0
2	118	44	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	7%	44 / 142	186 L	1.25D+1.5L
2 - Hanger	2.000"	9%	55 / 176	231 L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	95 ft-lb	11 7/16"	7340 ft-lb	0.013 (1%)	1.25D+1.5L	L
Unbraced	95 ft-lb	11 7/16"	6912 ft-lb	0.014 (1%)	1.25D+1.5L	L
Shear	218 lb	1'5 5/8"	3080 lb	0.071 (7%)	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/28471)	11 7/16"	0.044 (L/360)	0.010 (1%)	L	L
TL Defl inch	0.001 (L/20731)	11 7/16"	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 21, 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	Point	0-11-7		Far Face	41 lb	110 lb	0 lb	0 lb J1	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

**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 ponding

**Manufacturer Info**

Nascor by Kott

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

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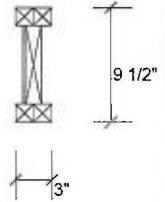
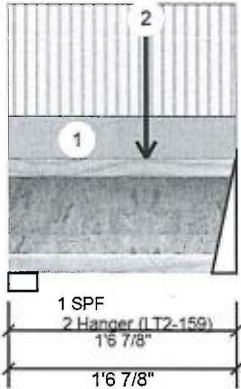
Client: GREENPARK  
 Project:  
 Address:

Date: 8/20/2018  
 Designer: RCO  
 Job Name: MILLWOOD 12-1  
 Project #:

Page 1 of 1

**F3-B NJ 9.500" 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	92	35	0	0
2	114	43	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	7%	43 / 139	182	L	1.25D+1.5L
2 - Hanger	2.000"	9%	53 / 171	224	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	92 ft-lb	11 7/16"	7340 ft-lb	0.012 (1%)	1.25D+1.5L	L
Unbraced	92 ft-lb	11 7/16"	6912 ft-lb	0.013 (1%)	1.25D+1.5L	L
Shear	211 lb	1'5 5/8"	3080 lb	0.068 (7%)	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/29622)	11 7/16"	0.044 (L/360)	0.010 (1%)	L	L
TL Defl inch	0.001 (L/21543)	11 7/16"	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 21, 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	Point	0-11-7		Near Face	39 lb	104 lb	0 lb	0 lb	J1 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

**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 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 is valid

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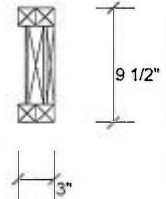
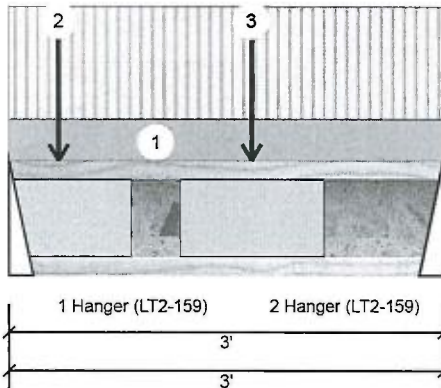
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 Project:  
 Address:

Date: 8/20/2018  
 Designer: RCO  
 Job Name: MILLWOOD 12-1  
 Project #:

Page 1 of 1

**F4-A NJ 9.500" 2-Ply - PASSED**

Level: Ground Floor


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

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

Brg	Live	Dead	Snow	Wind
1	358	134	0	0
2	236	88	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	27%	167 / 536	704 L	1.25D+1.5L
2 - Hanger	2.000"	18%	110 / 354	465 L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	506 ft-lb	1'8 1/8"	7340 ft-lb	0.069 (7%)	1.25D+1.5L	L
Unbraced	506 ft-lb	1'8 1/8"	4678 ft-lb	0.108 (11%)	1.25D+1.5L	L
Shear	697 lb	1 1/4"	3080 lb	0.226 (23%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/23286)	1'8 1/8"	0.093 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch	0.004 (L/8709)	1'8 1/8"	0.093 (L/360)	0.040 (4%)	L	L
TL Defl inch	0.005 (L/6339)	1'8 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 21, 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	0-4-2		Far Face	72 lb	192 lb	0 lb	0 lb	J3
3	Point	1-8-2		Far Face	111 lb	297 lb	0 lb	0 lb	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**
**Handling & 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 ponding

**Manufacturer Info**

Nascor by Kott

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

This design is

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**NASCOR**







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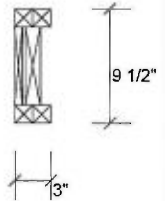
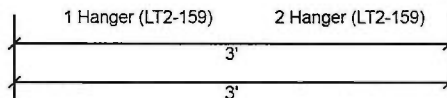
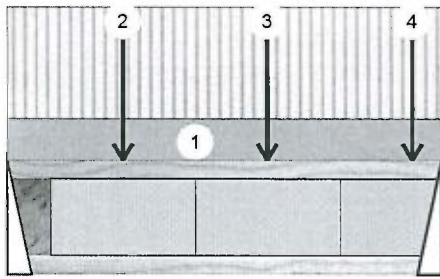
Client: GREENPARK  
Project:  
Address:

Date: 8/20/2018  
Designer: RCO  
Job Name: MILLWOOD 12-1  
Project #:

Page 1 of 1

F4-B NJ 9.500" 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	370	139	0	0
2	466	175	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	28%	173 / 555	729 L	1.25D+1.5L
2 - Hanger	2.000"	35%	218 / 700	918 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	596 ft-lb	1'9 9/16"	7340 ft-lb	0.081 (8%)	1.25D+1.5L	L
Unbraced	596 ft-lb	1'9 9/16"	4678 ft-lb	0.127 (13%)	1.25D+1.5L	L
Shear	911 lb	2'10 3/4"	3080 lb	0.296 (30%)	1.25D+1.5L	L
Perm Defl in. (L/19334)	0.002	1'8 15/16"	0.093 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch	0.005 (L/7254)	1'8 7/8"	0.093 (L/360)	0.050 (5%)	L	L
TL Defl inch	0.006 (L/5275)	1'8 7/8"	0.140 (L/240)	0.050 (5%)	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 21, 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	0-9-9		Near Face	100 lb	268 lb	0 lb	0 lb	J9
3	Point	1-9-9		Near Face	105 lb	279 lb	0 lb		Pass thru Framing Squash Block is required at all point loads over bearings
4	Point	2-9-9		Near Face	69 lb	185 lb	0 lb		

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. Lioist not to be treated with fire retardant or corrosive chemicals

## chemicals

## Handling &amp; Installation

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

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

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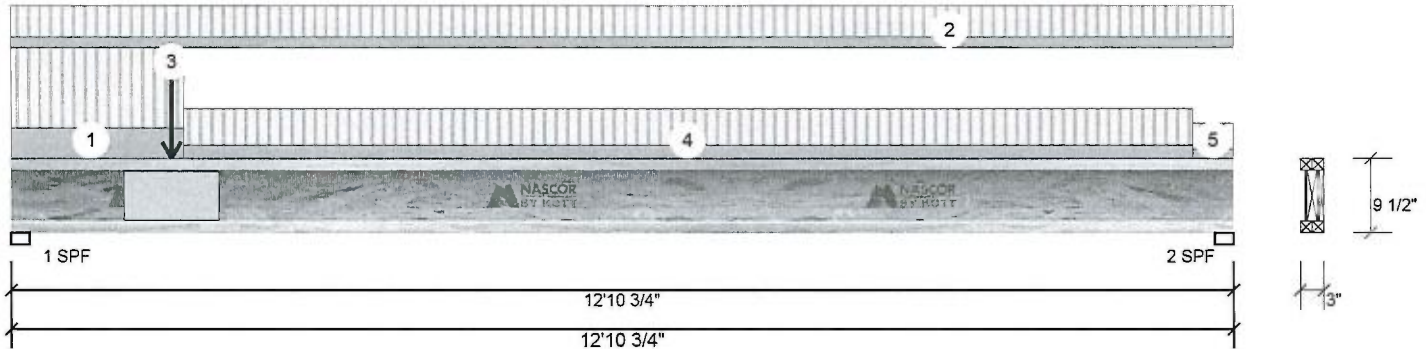
Client: GREENPARK  
 Project:  
 Address:

Date: 8/20/2018  
 Designer: RCO  
 Job Name: MILLWOOD 12-1  
 Project #:

Page 1 of 1

**F5-A NJ 9.500" 2-Ply - PASSED**

Level: Ground Floor


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

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

Brg	Live	Dead	Snow	Wind
1	612	229	0	0
2	374	140	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	45%	286 / 918	1205	L	1.25D+1.5L
2 - SPF	2.375"	27%	175 / 560	735	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2525 ft-lb	5'9 7/8"	7340 ft-lb	0.344 (34%)	1.25D+1.5L	L
Unbraced	2525 ft-lb	5'9 7/8"	2551 ft-lb	0.990 (99%)	1.25D+1.5L	L
Shear	1181 lb	1 5/8"	3080 lb	0.383 (38%)	1.25D+1.5L	L
Perm Defl in.	0.055 (L/2734)	6'3 1/16"	0.421 (L/360)	0.130 (13%)	D	Uniform
LL Defl inch	0.148 (L/1024)	6'3 1/16"	0.421 (L/360)	0.350 (35%)	L	L
TL Defl inch	0.203 (L/745)	6'3 1/16"	0.631 (L/240)	0.320 (32%)	D+L	L

**Design Notes**

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top flange must be laterally braced at a maximum of 4'2" o.c.
- Bottom flange braced at bearings.



August 21, 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 12-10-12	(Span)1-2-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	1-8-6		Far Face	88 lb	236 lb	0 lb	0 lb	F4
4	Tie-In	1-9-14 to 12-5-10	(Span)1-5-6	Top	15 PSF	40 PSF	0 PSF	0 PSF	
5	Tie-In	12-5-10 to 12-10-12	(Span)1-0-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	

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

**Handling & Installation**

- Ljoist flanges must not be cut or drilled
- Refer to latest copy of the Ljoist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/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

This design is

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Client: GREENPARK

Project:

Address:

Date: 8/20/2018

Designer: RCO

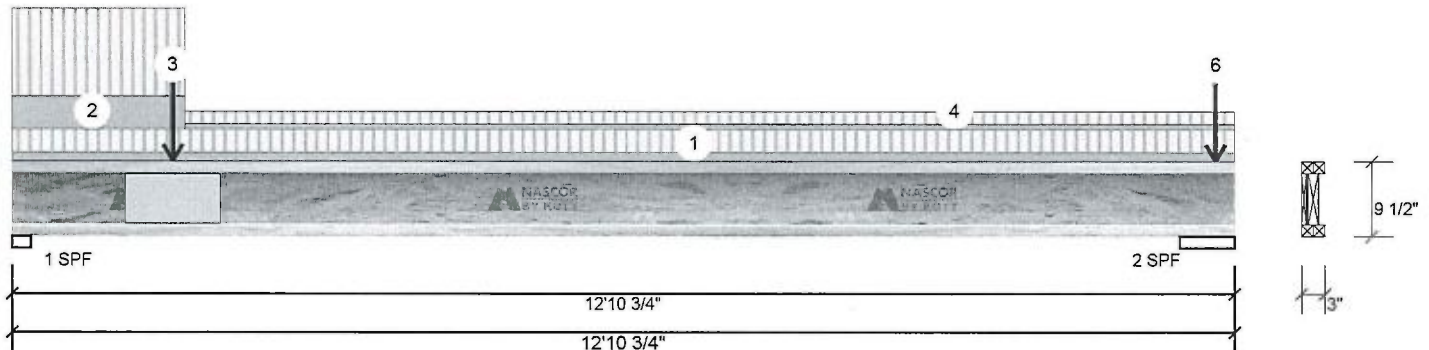
Job Name: MILLWOOD 12-1

Project #:

Page 1 of 1

**F5-B NJ 9.500" 2-Ply - PASSED**

Level: Ground Floor

**Member Information**

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

**Unfactored Reactions UNPATTERNED lb (Uplift)**

Brg	Live	Dead	Snow	Wind
1	574	215	0	0
2	400	203	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	42%	269 / 861	1130	L	1.25D+1.5L
2 - SPF	6.875"	28%	254 / 600	854	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1713 ft-lb	4'3 11/16"	7340 ft-lb	0.233 (23%)	1.25D+1.5L	L
Unbraced	1713 ft-lb	4'3 11/16"	1720 ft-lb	0.996 (100%)	1.25D+1.5L	L
Shear	1108 lb	1 5/8"	3080 lb	0.360 (36%)	1.25D+1.5L	L
Perm Defl in.	0.035 (L/4184)	5'9 11/16"	0.408 (L/360)	0.090 (9%)	D	Uniform
LL Defl inch	0.094 (L/1568)	5'9 11/16"	0.408 (L/360)	0.230 (23%)	L	L
TL Defl inch	0.129 (L/1141)	5'9 11/16"	0.612 (L/240)	0.210 (21%)	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 5' o.c.
- Bottom flange braced at bearings.



August 21, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 12-10-12	(Span)0-10-6	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	134 lb	358 lb	0 lb	0 lb	F4
4	Tie-In	1-9-14 to 12-10-12	(Span)0-5-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	Pass thru Framing Squash Block is required at all point loads over bearings
5	Point	12-8-6		Top	64 lb	171 lb	0 lb	0 lb	J4
6	Point	12-8-6		Top	53 lb	0 lb	0 lb	0 lb	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**

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

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

- LJoist flanges must not be cut or drilled
- Refer to latest copy of the LJoist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/irrection 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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**NASCOR**





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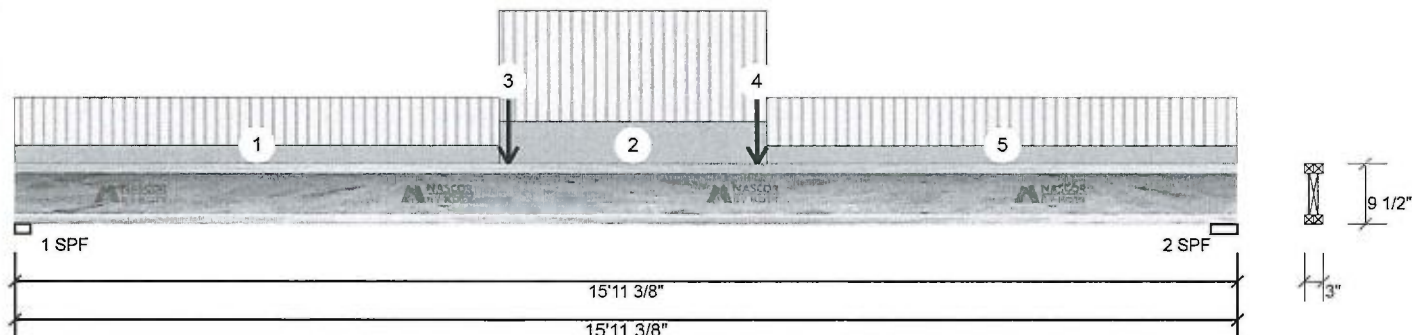
Client: GREENPARK  
Project:  
Address:

Date: 8/20/2018  
Designer: RCO  
Job Name: MILLWOOD 12-1  
Project #:

Page 1 of 1

F6-A NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	266	100	0	0
2	274	103	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	19%	125 / 399	523 L	1.25D+1.5L
2 - SPF	4.125"	18%	128 / 411	539 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2762 ft-lb	7'10 5/16"	7340 ft-lb	0.376 (38%)	1.25D+1.5L	L
Unbraced	2762 ft-lb	7'10 5/16"	2786 ft-lb	0.991 (99%)	1.25D+1.5L	L
Shear	531 lb	15'8"	3080 lb	0.172 (17%)	1.25D+1.5L	L
Perm Defl in.	0.083 (L/2235)	7'11 1/16"	0.518 (L/360)	0.160 (16%)	D	Uniform
LL Defl inch	0.222 (L/838)	7'11"	0.518 (L/360)	0.430 (43%)	L	L
TL Defl inch	0.306 (L/610)	7'11 1/16"	0.777 (L/240)	0.390 (39%)	D+L	L

## Design Notes

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



August 21, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 6-3-14	(Span)0-8-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	6-3-14 to 9-9-14	(Span)1-8-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	6-5-6		Near Face	44 lb	118 lb	0 lb	0 lb	F3
4	Point	9-8-6		Near Face	43 lb	114 lb	0 lb	0 lb	F3
5	Tie-In	9-9-14 to 15-11-6	(Span)0-8-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	

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

## chemicals

## Handling &amp; Installation

- Joist flanges must not be cut or drilled
- 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
- Damaged Joists 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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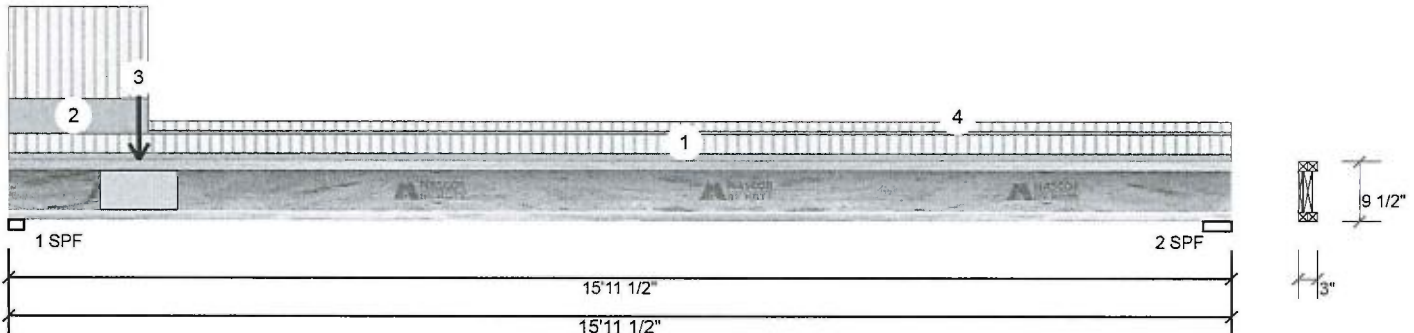
Client: GREENPARK  
 Project:  
 Address:

Date: 8/20/2018  
 Designer: RCO  
 Job Name: MILLWOOD 12-1  
 Project #:

Page 1 of 1

F6-B NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	678	255	0	0
2	214	80	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	50%	318 / 1017	1335 L	1.25D+1.5L
2 - SPF	4.375"	14%	100 / 320	420 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2119 ft-lb	5'3 3/8"	7340 ft-lb	0.289 (29%)	1.25D+1.5L	L
Unbraced	2119 ft-lb	5'3 3/8"	2138 ft-lb	0.991 (99%)	1.25D+1.5L	L
Shear	1315 lb	1 5/8"	3080 lb	0.427 (43%)	1.25D+1.5L	L
Perm Defl in.	0.067 (L/2766)	7'4"	0.517 (L/360)	0.130 (13%)	D	Uniform
LL Defl inch	0.179 (L/1038)	7'4"	0.517 (L/360)	0.350 (35%)	L	L
TL Defl inch	0.247 (L/755)	7'4"	0.776 (L/240)	0.320 (32%)	D+L	L

## Design Notes

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



August 21, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 15-11-8	(Span)0-8-1	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	175 lb	466 lb	0 lb	0 lb	F4
4	Tie-In	1-9-14 to 15-11-8	(Span)0-3-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	

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
- Ljoist not to be treated with fire retardant or corrosive 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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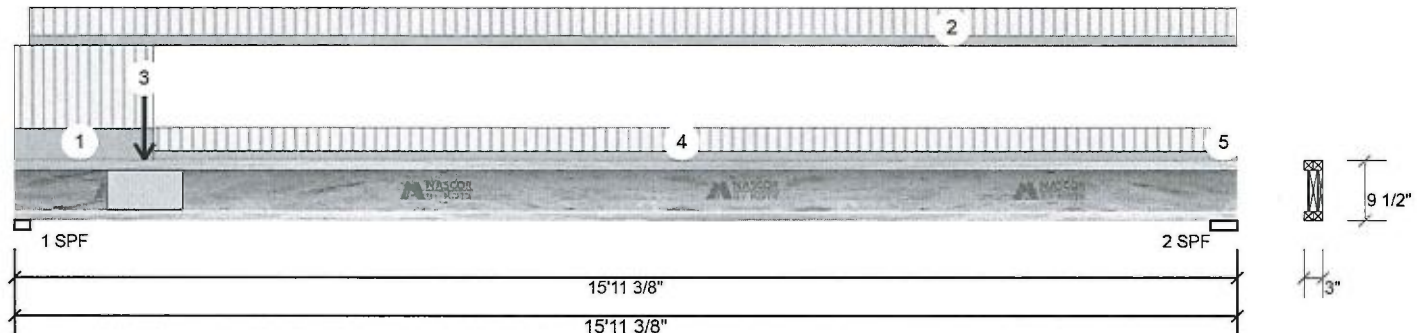
Client: GREENPARK  
 Project:  
 Address:

Date: 8/20/2018  
 Designer: RCO  
 Job Name: MILLWOOD 12-1  
 Project #:

Page 1 of 1

F6-C NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



## Member Information

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

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	725	272	0	0
2	361	135	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	53%	340 / 1088	1428	L	1.25D+1.5L
2 - SPF	4.125"	23%	169 / 541	711	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3051 ft-lb	6'10 3/8"	7340 ft-lb	0.416 (42%)	1.25D+1.5L	L
Unbraced	3051 ft-lb	6'10 3/8"	3085 ft-lb	0.989 (99%)	1.25D+1.5L	L
Shear	1411 lb	1 5/8"	3080 lb	0.458 (46%)	1.25D+1.5L	L
Perm Defl in.	0.099 (L/1889)	7'7 5/16"	0.518 (L/360)	0.190 (19%)	D	Uniform
LL Defl inch	0.263 (L/709)	7'7 5/16"	0.518 (L/360)	0.510 (51%)	L	L
TL Defl inch	0.362 (L/515)	7'7 5/16"	0.777 (L/240)	0.470 (47%)	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 3'9" o.c.
- 5 Bottom flange braced at bearings.



August 21, 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	0-2-6 to 15-11-6	(Span)1-0-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	1-8-6		Far Face	139 lb	370 lb	0 lb	0 lb	F4
4	Tie-In	1-9-14 to 15-7-4	(Span)0-11-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
5	Tie-In	15-7-4 to 15-11-6	(Span)0-6-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	

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

## 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 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 is valid

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Client: GREENPARK

Project:

Address:

Date: 8/20/2018

Designer: RCO

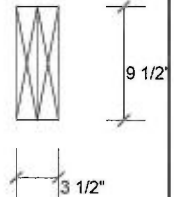
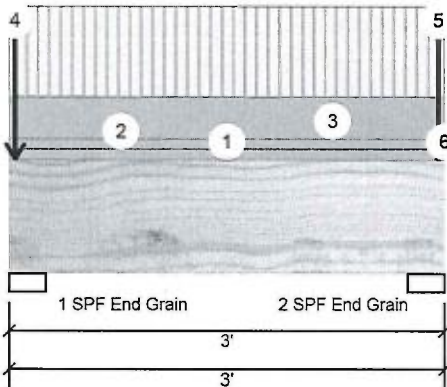
Job Name: MILLWOOD 12-1 (WOD)

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****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	1075	839	127	0
2	1075	839	127	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	35%	1049 / 1676	2725	L	1.25D+1.5L +0.5S
2 - SPF End Grain	3.000"	35%	1049 / 1676	2725	L	1.25D+1.5L +0.5S

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	721 ft-lb	1'6"	22724 ft-lb	0.032 (3%)	1.25D+1.5L	L
Unbraced	721 ft-lb	1'6"	22724 ft-lb	0.032 (3%)	1.25D+1.5L	L
Shear	1051 lb	2' 1/4"	9277 lb	0.113 (11%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/24450)	1'6"	0.088 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.002 (L/17678)	1'6"	0.088 (L/360)	0.020 (2%)	L+0.5S	L
TL Defl inch	0.003 (L/10260)	1'6"	0.131 (L/240)	0.020 (2%)	D+L+0.5S	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 21, 2018

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	Part. Uniform	0-0-0 to 3-0-0		Near Face	164 PLF	348 PLF	0 PLF	0 PLF	J7

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

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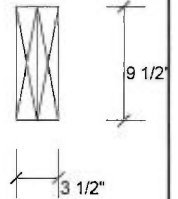
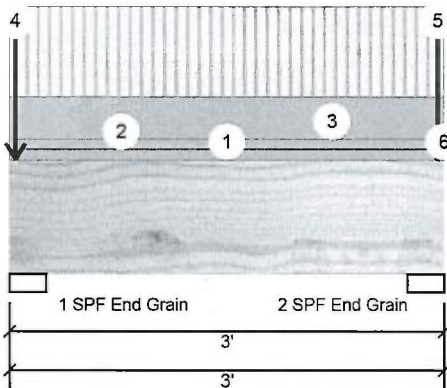
Client: GREENPARK  
 Project:  
 Address:

Date: 8/20/2018  
 Designer: RCO  
 Job Name: MILLWOOD 12-1 (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
4	Point	0-0-8		Top	462 lb	553 lb	127 lb	0 lb	Header Column Header Column
5	Point	2-11-8		Top	462 lb	553 lb	127 lb	0 lb	Header Column Header Column
6	Part. Uniform Self Weight	3-0-0 to 3-0-0		Near Face	80 PLF 8 PLF	0 PLF	0 PLF	0 PLF	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 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

**Manufacturer Info**

Forex  
 APA: PR-L318

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

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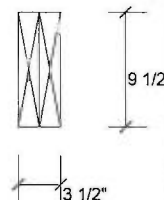
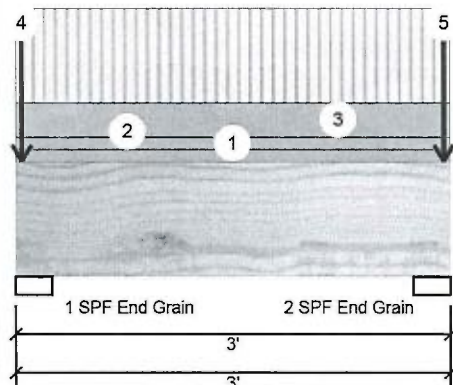
Client: GREENPARK  
 Project:  
 Address:

Date: 8/20/2018  
 Designer: RCO  
 Job Name: MILLWOOD 12-1 (WOD)  
 Project #:

Page 1 of 2

**FH3-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED**

Level: Ground Floor


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

Type:	Girder	Application:	Floor (Residential)
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	980	704	127	0
2	980	704	127	0

**Bearings and Factored Reactions**

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	31%	881 / 1533	2413	L	1.25D+1.5L +0.5S
2 - SPF End Grain	3.000"	31%	881 / 1533	2413	L	1.25D+1.5L +0.5S

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	628 ft-lb	1'6"	22724 ft-lb	0.028 (3%)	1.25D+1.5L	L
Unbraced	628 ft-lb	1'6"	22724 ft-lb	0.028 (3%)	1.25D+1.5L	L
Shear	910 lb	11 3/4"	9277 lb	0.098 (10%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/29920)	1'6"	0.088 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.002 (L/19530)	1'6"	0.088 (L/360)	0.020 (2%)	L+0.5S	L
TL Defl inch	0.003 (L/11817)	1'6"	0.131 (L/240)	0.020 (2%)	D+L+0.5S	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.



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	Part. Uniform	0-0-0 to 3-0-0		Near Face	118 PLF	315 PLF	0 PLF	0 PLF	J6

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

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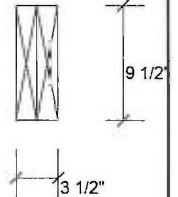
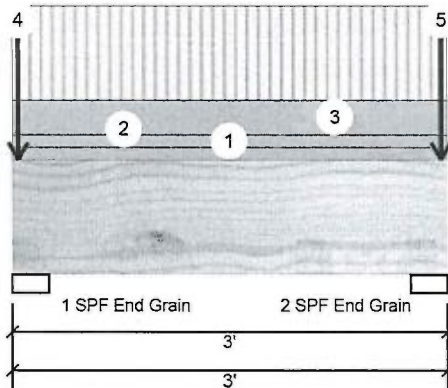
Client: GREENPARK  
 Project:  
 Address:

Date: 8/20/2018  
 Designer: RCO  
 Job Name: MILLWOOD 12-1 (WOD)  
 Project #:

Page 2 of 2

FH3-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
4	Point	0-0-8		Top	396 lb	507 lb	127 lb	0 lb	Header Column Header Column
5	Point	2-11-8		Top	396 lb	507 lb	127 lb	0 lb	Header Column Header Column
	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 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

**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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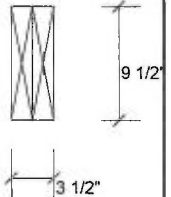
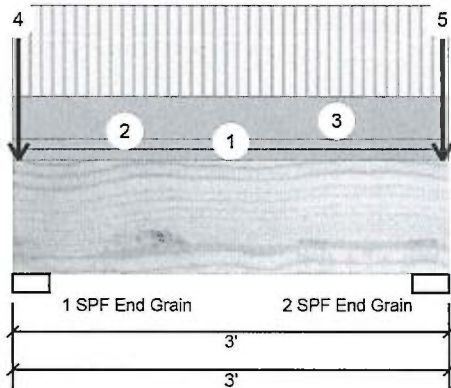
Client: GREENPARK  
 Project:  
 Address:

Date: 8/20/2018  
 Designer: RCO  
 Job Name: MILLWOOD 12-2 (WOD)  
 Project #:

Page 1 of 2

FH2-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	1075	827	127	0
2	1075	827	127	0

## Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	35%	1034 / 1676	2710	L	1.25D+1.5L +0.5S
2 - SPF End Grain	3.000"	35%	1034 / 1676	2710	L	1.25D+1.5L +0.5S

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	721 ft-lb	1'6"	22724 ft-lb	0.032 (3%)	1.25D+1.5L	L
Unbraced	721 ft-lb	1'6"	22724 ft-lb	0.032 (3%)	1.25D+1.5L	L
Shear	1051 lb	2' 1/4"	9277 lb	0.113 (11%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/24450)	1'6"	0.088 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.002 (L/17678)	1'6"	0.088 (L/360)	0.020 (2%)	L+0.5S	L
TL Defl inch	0.003 (L/10260)	1'6"	0.131 (L/240)	0.020 (2%)	D+L+0.5S	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 21, 2018

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	Part. Uniform	0-0-0 to 3-0-0		Near Face	164 PLF	348 PLF	0 PLF	0 PLF	J7

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 &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: 8/20/2018

Designer: RCO

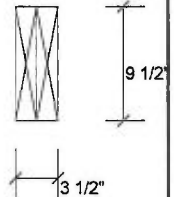
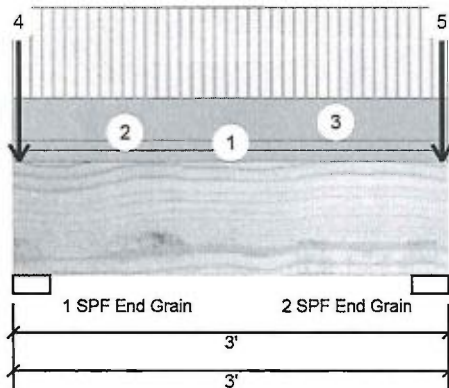
Job Name: MILLWOOD 12-2 (WOD)

Project #:

Page 2 of 2

FH2-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
4	Point	0-0-8		Top	450 lb	553 lb	127 lb	0 lb	Header Column Header Column
5	Point	2-11-8		Top	450 lb	553 lb	127 lb	0 lb	Header Column Header Column
	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

**NASCOR**

This design is valid until 7/10/2021





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Client: GREENPARK

Project:

Address:

Date: 8/20/2018

Designer: RCO

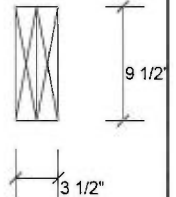
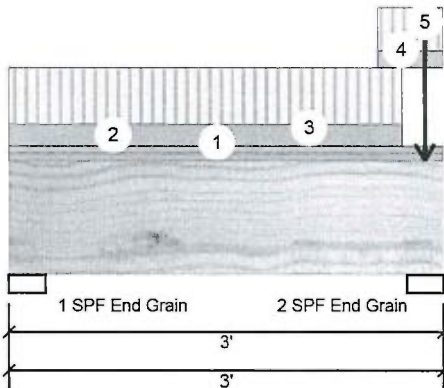
Job Name: MILLWOOD 12-2 (WOD)

Project #:

Page 1 of 2

FH2-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	471	308	0	0
2	987	698	127	0

## Bearings and Factored Reactions

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	630 ft-lb	1'6 1/16"	22724 ft-lb	0.028 (3%)	1.25D+1.5L	L
Unbraced	630 ft-lb	1'6 1/16"	22724 ft-lb	0.028 (3%)	1.25D+1.5L	L
Shear	971 lb	11 3/4"	9277 lb	0.105 (10%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/29818)	1'6 1/16"	0.088 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.002 (L/19455)	1'6 1/16"	0.088 (L/360)	0.020 (2%)	L+0.5S	L
TL Defl inch	0.003 (L/11773)	1'6 1/16"	0.131 (L/240)	0.020 (2%)	D+L+0.5S	L

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	14%	385 / 706	1091	L	1.25D+1.5L
2 - SPF End Grain	3.000"	31%	872 / 1544	2416	L	1.25D+1.5L +0.5S



August 21, 2018

## 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.

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	Part. Uniform	0-0-0 to 2-8-9		Near Face	117 PLF	312 PLF	0 PLF	0 PLF	J6

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 &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

**NASCOR**

This design is valid until 7/10/2021



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Client: GREENPARK

Project:

Address:

Date: 8/20/2018

Designer: RCO

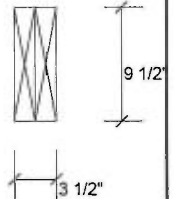
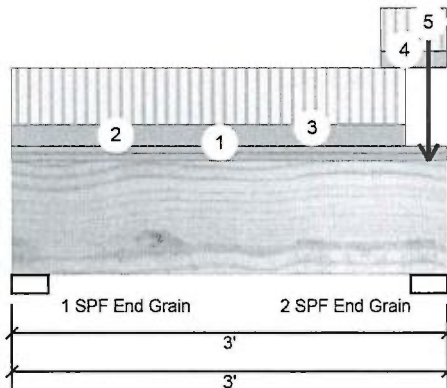
Job Name: MILLWOOD 12-2 (WOD)

Project #:

Page 2 of 2

FH2-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
4	Part. Uniform	2-6-9 to 3-0-0		Near Face	93 PLF	234 PLF	0 PLF	0 PLF	J6
5	Point	2-10-8		Top	383 lb	505 lb	127 lb	0 lb	Header Column Header Column
	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  
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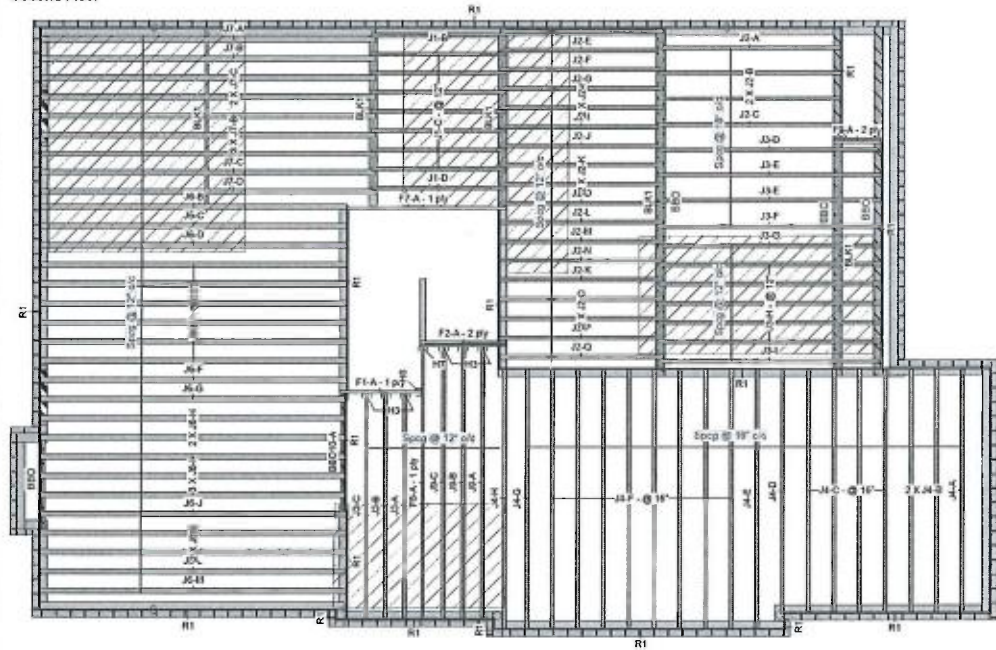
**NASCOR**



This design is valid until 7/10/2021



## Second 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.



August 21, 2018

## Legend



1. OBC 2012 O.Reg 332/12 as amended
2. Nascor CCMC - 13535-R
3. LVL CCMC - 14036-R
4. CAN/CSA-O86-09
5. CCMC -12787-R APA PR-L310(C)

Second Floor  
(LVL/LSL (Flush))

Label	Description	Width	Depth	Qty	Pieces	Pcs	Length
F8	Forex 2.0E-3000Fb LVL	1.75	9.5			1	16-0-0
F7	Forex 2.0E-3000Fb LVL	1.75	9.5			1	10-0-0
F2	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	6-0-0
F1	Forex 2.0E-3000Fb LVL	1.75	9.5			1	6-0-0
F9	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	4-0-0

## LVL/LSL (Dropped)

Label	Description	Width	Depth	Qty	Pieces	Pcs	Length
BBO10	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	8-0-0

## Joist (Flush)

Label	Description	Width	Depth	Qty	Pieces	Pcs	Length
J7	NJ60U	3.5	9.5			9	18-0-0
J6	NJ60U	3.5	9.5			21	16-0-0
J9	NJH	2.5	9.5			3	16-0-0
J4	NJH	2.5	9.5			19	14-0-0
J3	NJH	2.5	9.5			14	12-0-0
J2	NJH	2.5	9.5			22	10-0-0
J1	NJH	2.5	9.5			0	8-0-0

## Rim Board

Label	Description	Width	Depth	Qty	Pieces	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			18	12

## Blocking

Label	Description	Width	Depth	Qty	Pieces	Pcs	Length
BLK1	NJH	2.5	9.5	LinFt		Varies	38-0-0

## Hanger

Label	Pcs	Description	Skew	Slope	fasteners	fasteners
H3	6	LT259			4 10dx1 1/2	2 10dx1 1/2
H6	1	HUS1 81/10			30 16d	10 16d
H7	1	HUS1 81/10				

## NOTES:

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

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

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

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

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

## ARCHITECTURAL DRAWINGS:

REGION DESIGN INC  
8700 Dufferin St., Concord, ON  
Date: Rev.2-July 2018  
Project No: 17-04-19  
Model: Millwood 12

NASCOR

Layout Name

MILLWOOD 12-2

Design Method

LSD

Description

MINNISALE HOMES

BRAMPTON, ONT.

Created

June 28, 2018

Builder

GREENPARK

Sales Rep

RM

Designer

RCO

Shipping

Project

Builder's Project

Kott Lumber Company

14 Anderson Blvd

Stouffville, Ontario

Canada

L4A 7M4

905-842-4400

Job Path

S:\CUSTOMERS\GREENPARK

MINNISALE HOMES\MODELS

MILLWOOD 12\MILLWOOD12-2

FLOOR\REV\MILLWOOD 12-2.rvt

Second Floor

Design Method

LSD

Building Code

NBCC 2010 / OBC

2012

Floor

Loads

Live

40

Dead

15

Deflection Joist

LL Span 1/

480

TL Span 1/

360

LL Cant 2L/

480

TL Cant 2L/

360

Deflection Girder

LL Span 1/

360

TL Span 1/

240

LL Cant 2L/

480

TL Cant 2L/

360

Decking

Deck

SPF Plywood

Thickness

5/8"

Fastener

Nailed &amp; Glued

Vibration

Ceiling:

Gypsum 1/2"



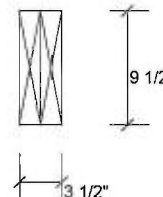
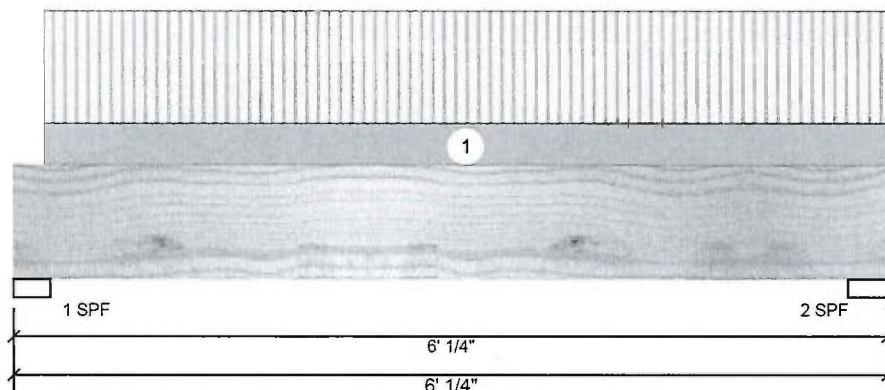
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Client: GREENPARK  
 Project:  
 Address:

Date: 8/20/2018  
 Designer: RCO  
 Job Name: MILLWOOD 12-1  
 Project #:

Page 1 of 1

**BBO10-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED** Level: Second Floor

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

Type:	Girder	Application:	Floor (Residential)
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	908	363	0	0
2	985	392	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.000"	28%	454 / 1363	1816 L	1.25D+1.5L
2 - SPF	3.250"	28%	489 / 1477	1967 L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2575 ft-lb	3'	22724 ft-lb	0.113 (11%)	1.25D+1.5L	L
Unbraced	2575 ft-lb	3'	22099 ft-lb	0.117 (12%)	1.25D+1.5L	L
Shear	1316 lb	11 3/4"	9277 lb	0.142 (14%)	1.25D+1.5L	L
Perm Defl in.	0.008 (L/8866)	3'	0.188 (L/360)	0.040 (4%)	D	Uniform
LL Defl inch	0.019 (L/3525)	3'	0.188 (L/360)	0.100 (10%)	L	L
TL Defl inch	0.027 (L/2522)	3'	0.281 (L/240)	0.100 (10%)	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 21, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-2-9 to 6-0-4		Top	122 PLF	326 PLF	0 PLF	0 PLF	
	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**

- 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

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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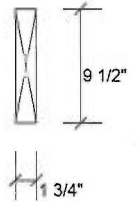
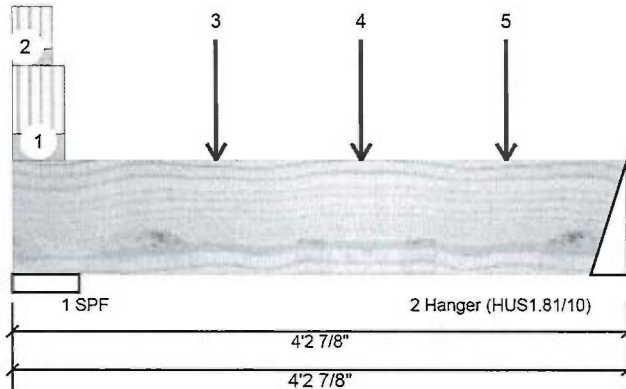
Client: GREENPARK  
 Project:  
 Address:

Date: 8/20/2018  
 Designer: RCO  
 Job Name: MILLWOOD 12-1  
 Project #:

Page 1 of 1

**F1-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED**

Level: Second 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	323	136	0	0
2	371	155	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	11%	170 / 485	655	L	1.25D+1.5L
2 - Hanger	3.000"	19%	193 / 557	750	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	793 ft-lb	2'4 7/8"	11362 ft-lb	0.070 (7%)	1.25D+1.5L	L
Unbraced	793 ft-lb	2'4 7/8"	9250 ft-lb	0.086 (9%)	1.25D+1.5L	L
Shear	745 lb	3'3 1/8"	4638 lb	0.161 (16%)	1.25D+1.5L	L
Perm Defl in.	0.003 (L/16865)	2'4 7/8"	0.122 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch	0.006 (L/6943)	2'4 7/8"	0.122 (L/360)	0.050 (5%)	L	L
TL Defl inch	0.009 (L/4918)	2'4 7/8"	0.183 (L/240)	0.050 (5%)	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 0-4-6	(Span)0-7-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-3-6	(Span)0-4-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	1-4-14		Near Face	96 lb	243 lb	0 lb	0 lb	J3
4	Point	2-4-14		Near Face	90 lb	228 lb	0 lb	0 lb	J3
5	Point	3-4-14		Near Face	86 lb	217 lb	0 lb	0 lb	J3
	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 21, 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

**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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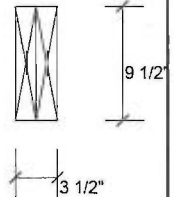
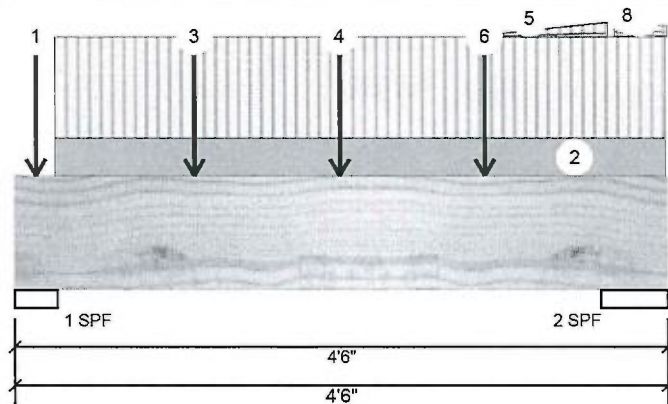
Client: GREENPARK  
 Project:  
 Address:

Date: 8/20/2018  
 Designer: RCO  
 Job Name: MILLWOOD 12-1  
 Project #:

Page 1 of 2

**F2-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED**

Level: Second Floor


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

Type:	Girder	Application:	Floor (Residential)
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	1581	661	0	0
2	1014	404	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	42%	826 / 2371	3197	L	1.25D+1.5L
2 - SPF	5.500"	17%	506 / 1521	2026	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1973 ft-lb	2'2 7/8"	22724 ft-lb	0.087 (9%)	1.25D+1.5L	L
Unbraced	1973 ft-lb	2'2 7/8"	22724 ft-lb	0.087 (9%)	1.25D+1.5L	L
Shear	1424 lb	3'3 3/4"	9277 lb	0.153 (15%)	1.25D+1.5L	L
Perm Defl in.	0.003 (L/13554)	2'2 15/16"	0.129 (L/360)	0.030 (3%)	D	Uniform
LL Defl inch	0.009 (L/5394)	2'2 15/16"	0.129 (L/360)	0.070 (7%)	L	L
TL Defl inch	0.012 (L/3859)	2'2 15/16"	0.194 (L/240)	0.060 (6%)	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 21, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Point	0-1-12		Near Face	313 lb	715 lb	0 lb	0 lb	F8
2	Part. Uniform	0-3-5 to 4-5-13		Top	90 PLF	240 PLF	0 PLF	0 PLF	
3	Point	1-2-14		Near Face	114 lb	290 lb	0 lb	0 lb	J9
4	Point	2-2-14		Near Face	108 lb	277 lb	0 lb	0 lb	J9
5	Tie-In	3-2-14 to 4-1-1	(Span)0-1-12 to 1-3-6	Top	15 PSF	40 PSF	0 PSF	0 PSF	

Continued on page 2...

**Notes**

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

**Lumber**

- Dry service conditions, unless noted otherwise
- 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

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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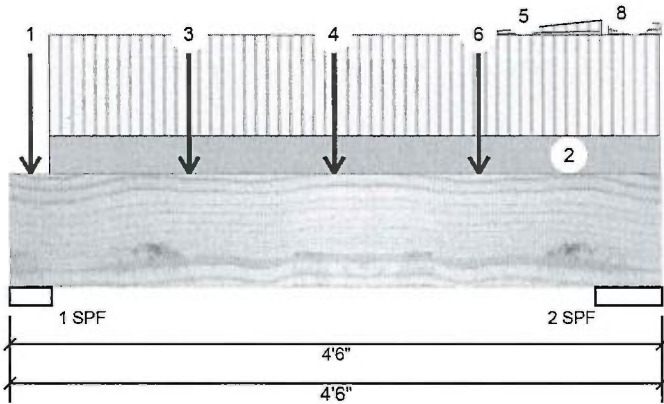
Client: GREENPARK  
 Project:  
 Address:

Date: 8/20/2018  
 Designer: RCO  
 Job Name: MILLWOOD 12-1  
 Project #:

Page 2 of 2

F2-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Point	3-2-14		Near Face	110 lb	283 lb	0 lb	0 lb	J9
7	Tie-In	4-1-10 to 4-6-0	(Span)0-3-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
8	Tie-In	4-1-10 to 4-6-0	(Span)0-8-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	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 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:

Address:

Date: 8/20/2018

Designer: RCO

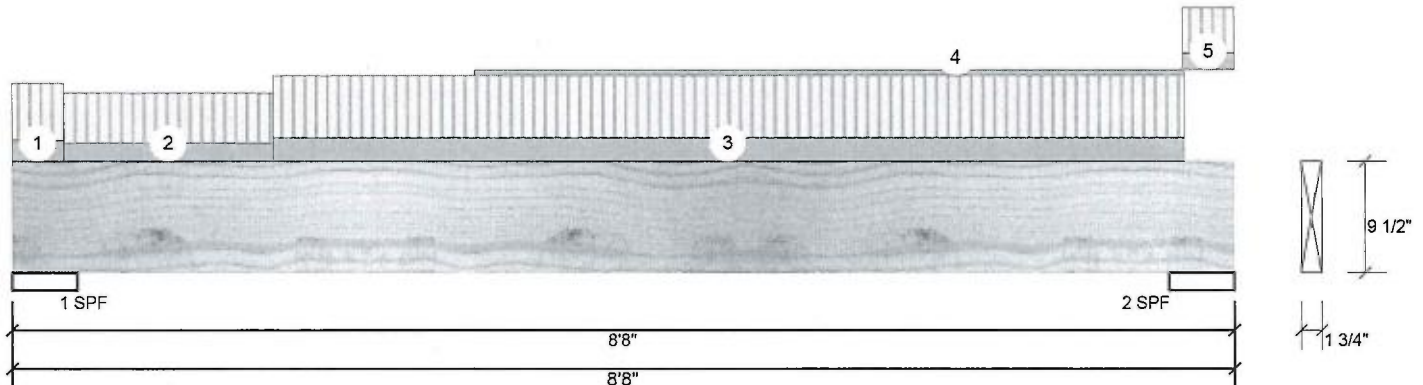
Job Name: MILLWOOD 12-1

Project #:

Page 1 of 1

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

Level: Second 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	84	51	0	0
2	88	56	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	3%	64 / 127	191 L	1.25D+1.5L
2 - SPF	5.500"	3%	71 / 132	203 L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	366 ft-lb	4'4 5/8"	11362 ft-lb	0.032 (3%)	1.25D+1.5L	L
Unbraced	366 ft-lb	4'4 5/8"	4734 ft-lb	0.077 (8%)	1.25D+1.5L	L
Shear	150 lb	7'5 3/4"	4638 lb	0.032 (3%)	1.25D+1.5L	L
Perm Defl in.	0.005 (L/18245)	4'4 3/8"	0.263 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch	0.008 (L/11470)	4'4 1/8"	0.263 (L/360)	0.030 (3%)	L	L
TL Defl inch	0.013 (L/7043)	4'4 1/4"	0.394 (L/240)	0.030 (3%)	D+L	L

**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 0-4-6	(Span)0-11-7	Top	15 PSF	40 PSF	0 PSF	0 PSF
2	Tie-In	0-4-6 to 1-10-4	(Span)0-10-1	Top	15 PSF	40 PSF	0 PSF	0 PSF
3	Tie-In	1-10-4 to 8-3-12	(Span)1-0-9	Top	15 PSF	40 PSF	0 PSF	0 PSF
4	Part. Uniform	3-3-7 to 8-3-12		Top	2 PLF	0 PLF	0 PLF	0 PLF
5	Tie-In	8-3-10 to 8-8-0	(Span)0-8-15	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 21, 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**

- 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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This design is valid

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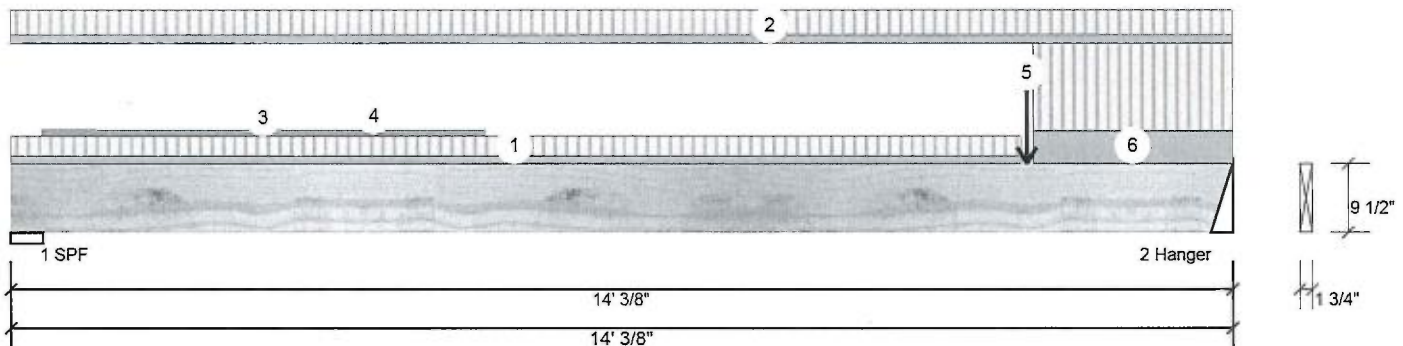
Client: GREENPARK  
 Project:  
 Address:

Date: 8/20/2018  
 Designer: RCO  
 Job Name: MILLWOOD 12-1  
 Project #:

Page 1 of 1

**F8-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED**

Level: Second 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	352	182	0	0
2	715	313	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.375"	16%	228 / 528	755 L	1.25D+1.5L
2 - Hanger	3.000"	38%	391 / 1072	1463 L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3003 ft-lb	8'8"	11362 ft-lb	0.264 (26%)	1.25D+1.5L	L
Unbraced	3003 ft-lb	8'8"	3005 ft-lb	0.999 (100%)	1.25D+1.5L	L
Shear	1266 lb	13' 5/8"	4638 lb	0.273 (27%)	1.25D+1.5L	L
Perm Defl in.	0.096 (L/1694)	7'4 1/4"	0.451 (L/360)	0.210 (21%)	D	Uniform
LL Defl inch	0.203 (L/801)	7'5 1/2"	0.451 (L/360)	0.450 (45%)	L	L
TL Defl inch	0.299 (L/544)	7'5 1/8"	0.677 (L/240)	0.440 (44%)	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 12'4 7/8" o.c.
- 4 Bottom braced at bearings.



August 21, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 11-7-2	(Span) 0-10-14	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 14-0-6	(Span) 1-1-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-4-5 to 5-5-8		Top	2 PLF	0 PLF	0 PLF	0 PLF	
4	Part. Uniform	0-4-5 to 5-5-8		Top	3 PLF	0 PLF	0 PLF	0 PLF	
5	Point	11-8-0		Far Face	155 lb	371 lb	0 lb	0 lb	Pass thru Framing Squash Block is required at all point loads over bearings
6	Tie-In	11-8-14 to 14-0-6	(Span) 3-10-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	Refer to Multiple Member Connection Detail for ply to ply nailing or bolting requirements
	Self Weight				4 PLF				

**Notes**

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

**Lumber**

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

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

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

6. For flat roofs provide proper drainage to prevent ponding

**Manufacturer Info**

Forex  
 APA: PR-L318

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

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: 8/20/2018

Designer: RCO

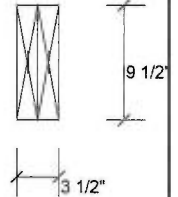
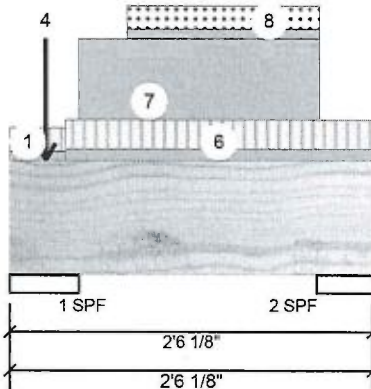
Job Name: MILLWOOD 12-1

Project #:

Page 1 of 2

**F9-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED**

Level: Second Floor

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

Type:	Girder	Application:	Floor (Residential)
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	36	129	15	0
2	36	98	18	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.750"	2%	161 / 54	215 L	1.25D+1.5L
2 - SPF	4.625"	2%	123 / 53	176 L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	65 ft-lb	1'3 3/4"	14770 ft-lb	0.004 (0%)	1.25D+1.5S	L
Unbraced	65 ft-lb	1'3 3/4"	14770 ft-lb	0.004 (0%)	1.25D+1.5S	L
Shear	18 lb	1'2 1/2"	6030 lb	0.003 (0%)	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 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 21, 2018

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-4-10	(Span)1-2-5	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-3-0		Top	1 lb	0 lb	3 lb	0 lb	
3	Point	0-3-0		Top	18 lb	0 lb	0 lb	0 lb	Wall Self Weight
4	Point	0-3-0		Top	15 lb	0 lb	0 lb	0 lb	Wall Self Weight
6	Tie-In	0-4-10 to 2-6-2	(Span)1-5-11	Top	15 PSF	40 PSF	0 PSF	0 PSF	

Continued on page 2...

**Notes**

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**Lumber**

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

**Handling & Installation**

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

6. For flat roofs provide proper drainage to prevent ponding.

**Manufacturer Info**

Forex  
APA: PR-L318

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

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This des





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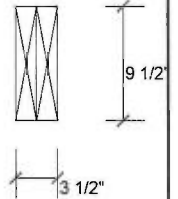
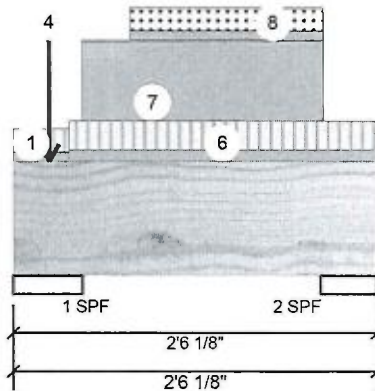
Client: GREENPARK  
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Page 2 of 2

**F9-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED**

Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
7	Part. Uniform	0-5-12 to 2-1-12		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
8	Part. Uniform	0-9-12 to 2-1-12		Top	10 PLF	0 PLF	23 PLF	0 PLF	
	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**

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This design is valid until 7/10/2021