

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:

VA3 DESIGN
255 CONSUMERS ROAD, TORONTO, ON
Date: 5/15/18
Project No: 18012
Address: GRANDBROOKE 2, BRAMPTON, ON

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

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

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



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.

Ground Floor LVL/LSL							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F5	Forex 2.0E-3000Fb LVL	1.75	9.5			2	12-0-0
F7	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	12-0-0
F4	Forex 2.0E-3000Fb LVL	1.75	9.5			3	10-0-0
F20	Forex 2.0E-3000Fb LVL	1.75	9.5	1	3	3	8-0-0
F3	Forex 2.0E-3000Fb LVL	1.75	9.5			2	6-0-0
F8	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	6-0-0
F2	Forex 2.0E-3000Fb LVL	1.75	9.5			1	4-0-0
Joist							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F6	NJ	1.5	9.5	5	2	10	14-0-0
F19	NJ	1.5	9.5	2	2	4	4-0-0
F18	NJ	1.5	9.5	2	2	4	2-0-0
J8	NJ40U	3.5	9.5			24	14-0-0
J11	NJ40U	3.5	9.5			4	12-0-0
J6	NJ40U	3.5	9.5			3	8-0-0
J13	NJ60U	3.5	9.5			1	14-0-0
J5	NJ60U	3.5	9.5			1	12-0-0
J12	NJH	2.5	9.5			34	12-0-0
J4	NJH	2.5	9.5			4	10-0-0
J7	NJH	2.5	9.5			3	8-0-0
J2	NJH	2.5	9.5			4	6-0-0
J1	NJH	2.5	9.5			3	4-0-0
Rim Board							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			16	12
Hanger							
Label	Pcs	Description	Skew	Slope	fasteners	Supported Member	
H1	3	LF179			10 10d	1 #8x1 1/4WS	
H2	1	HUCQ1.81/9-SDS1.75					
H3	1	Unknown Hanger					
H4	14	LT259			4 10dx1 1/2	2 10dx1 1/2	
H5	15	MIT49.5			4 10dx1 1/2	4 10dx1 1/2	
H7	1	HUC410 (Min)			14 16d	6 10d	
H9	6	LT2-159			4 10dx1 1/2	2 10dx1 1/2	
Blocking							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK2	NJ	1.5	9.5	LinFt		Varies	2-0-0
BLK2	NJ40U	3.5	9.5	LinFt		Varies	14-0-0
BLK1	NJ60U	3.5	9.5	LinFt		Varies	1-0-0
BLK1	NJH	2.5	9.5	LinFt		Varies	21-0-0
BLK2	NJH	2.5	9.5	LinFt		Varies	5-0-0



Layout Name
GRANDBROOKE 2-3

Design Method
LSD

Description

Created
June 07, 2018

Builder

Sales Rep

Designer
J O

Shipping

Project

Builder's Project

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

Ground Floor
Design Method
Building Code

LSD
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 OSB

Thickness 3/4"

Fastener Nailed & Glued

Vibration

Ceiling: Gypsum 1/2"



Legend	
PS	Point Load Support
Load from Above	
Wall	
Norbord Rimboard Plus 1.125 X 9.5	
NJ 9.5	
NJ40U 9.5	
NJ60U 9.5	
NJH 9.5	
Forex 2.0E-3000Fb LVL 1.75 X 9.5	
1.5 X 7.25 (Dropped)	
1.5 X 9.5 (Dropped)	
5.25 X 9.5 (Dropped)	

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

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



18-33126100000R2 Floor 1016710

NASCOR

Layout Name	GRANDBROOKE 2-3
Design Method	LSD
Description	
Created	June 07, 2018
Builder	
Sales Rep	
Designer	J O
Shipping	
Project	
Builder's Project	Kott Lumber Company
	14 Anderson Blvd Stouffville, Ontario Canada L4A 7X4 905-642-4400

Second Floor	LSD
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	OSB
Thickness	5/8"
Fastener	Nailed & Glued
Vibration	
Ceiling:	Gypsum 1/2"

Legend	
PS	Point Load Support
◊	Load from Above
	Wall
	Wall Opening
	Norbord Rimboard Plus 1.125 X 9.5
	NJ60U 9.5
	NJH 9.5
	Forex 2.0E-3000Fb LVL 1.75 X 9.5
	Forex 2.0E-3000Fb LVL 1.75 X 11.875
	0 X 0 (Dropped)
	5.75 X 9.5 (Dropped)

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							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F12	Forex 2.0E-3000Fb LVL	1.75	9.5	1	3	3	14-0-0
F7	Forex 2.0E-3000Fb LVL	1.75	9.5	2	2	4	12-0-0
F10	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	10-0-0
F9	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	8-0-0
F8	Forex 2.0E-3000Fb LVL	1.75	9.5	2	2	4	6-0-0
F3	Forex 2.0E-3000Fb LVL	1.75	9.5			2	6-0-0
F1	Forex 2.0E-3000Fb LVL	1.75	9.5			1	2-0-0
F11	Forex 2.0E-3000Fb LVL	1.75	11.875	1	3	3	16-0-0
Joist							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
J10	NJ60U	3.5	9.5			13	16-0-0
J3	NJ60U	3.5	9.5			1	8-0-0
J9	NJH	2.5	9.5			40	14-0-0
J12	NJH	2.5	9.5			31	12-0-0
J4	NJH	2.5	9.5			14	10-0-0
J7	NJH	2.5	9.5			7	8-0-0
J1	NJH	2.5	9.5			1	4-0-0
Rim Board							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			16	12
Blocking							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK1	NJ60U	3.5	9.5	LinFt		Varies	15-0-0
BLK1	NJH	2.5	9.5	LinFt		Varies	51-0-0
Hanger							
				Beam/Girder		Supported Member	
Label	Pcs	Description	Skew	Slope	fasteners	fasteners	
H3	1	Unknown Hanger					
H4	39	LT259			4 10dx1 1/2	2 10dx1 1/2	
H5	1	MIT49.5			4 10dx1 1/2	4 10dx1 1/2	
H6	1	LF359			10 10d	2 #8x1 1/4WS	
H7	1	HUC410 (Min)			14 16d	6 10d	
H8	1	HGUS410			46 16d	16 16d	

NOTES:

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6. Squash blocks recommended to be installed at end bearing on all first level joists which support loading from above exceeding two levels floor or roof.
7. Load transfer blocks to be installed under all point loads.
8. It shall be the framer's responsibility that floor joists and beams are fastened as per the hanger manufacturer's standards.

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

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

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

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

ARCHITECTURAL DRAWINGS:

VA3 DESIGN
255 CONSUMERS ROAD, TORONTO, ON
Date: 5/15/18
Project No: 18012
Address: GRANDBROOKE 2, BRAMPTON, ON

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

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

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



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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.

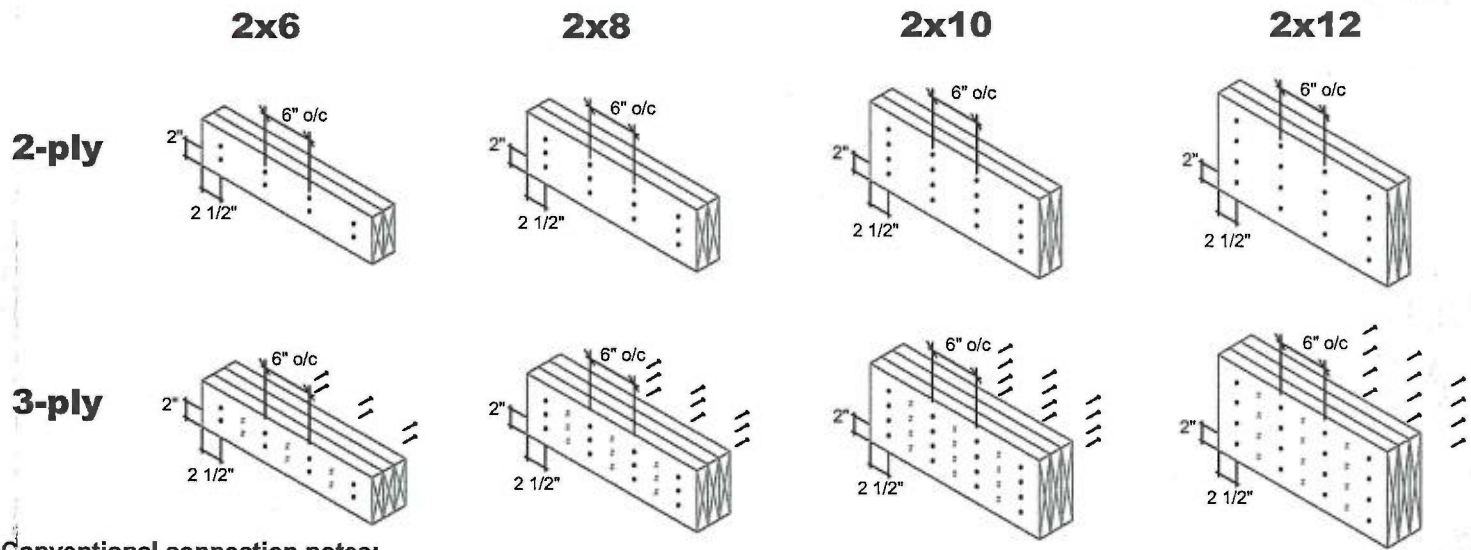
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LOT 002

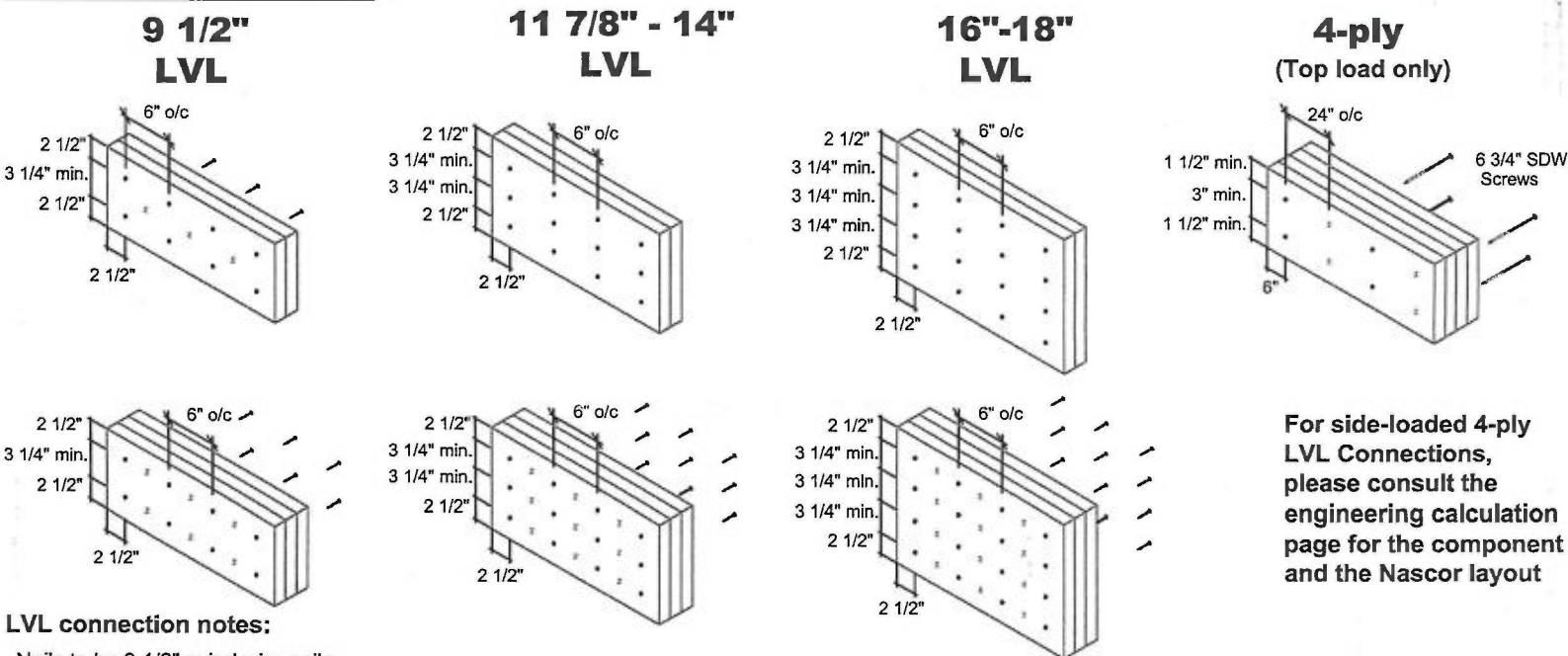
MULTIPLE MEMBER CONNECTIONS

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.

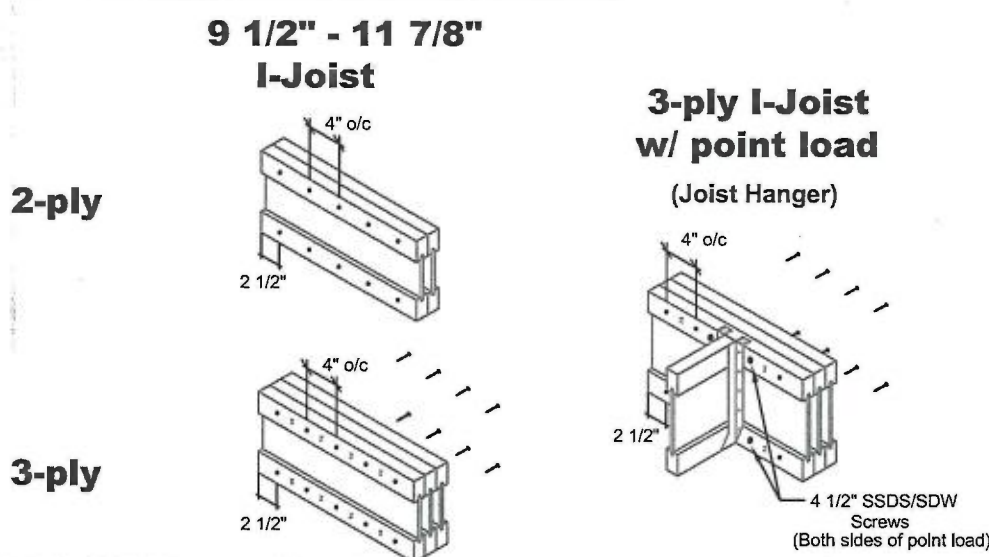
LVL Connections (for uniform distributed loads)



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.

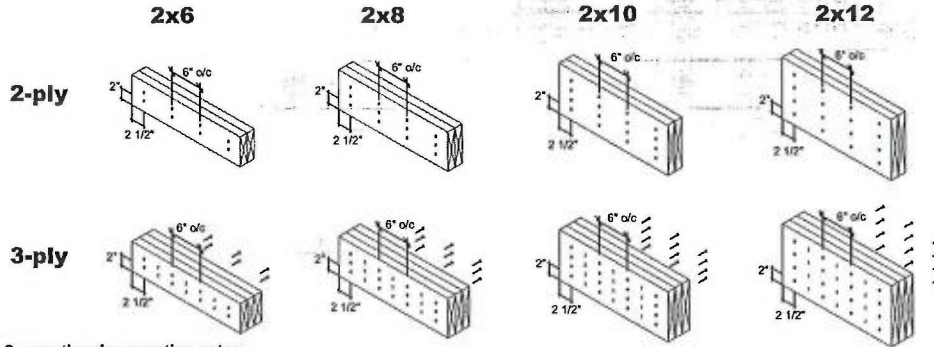
HANDLING AND INSTALLATION

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



MULTIPLE MEMBER CONNECTIONS

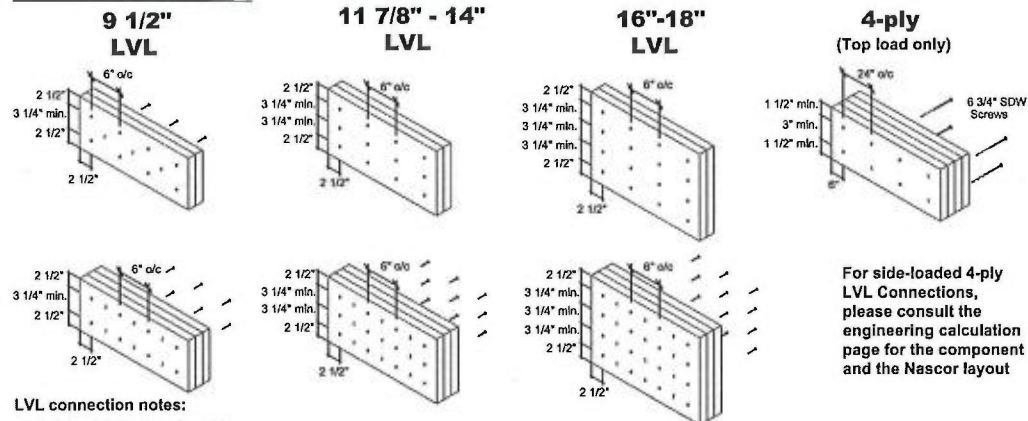
Conventional Connections (for uniform distributed loads)



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.
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LVL Connections (for uniform distributed loads)

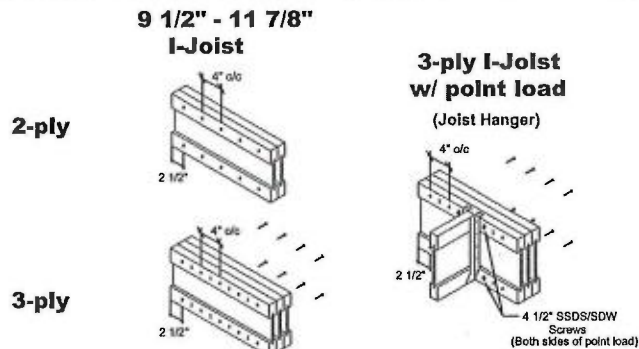


LVL connection notes:

- 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.
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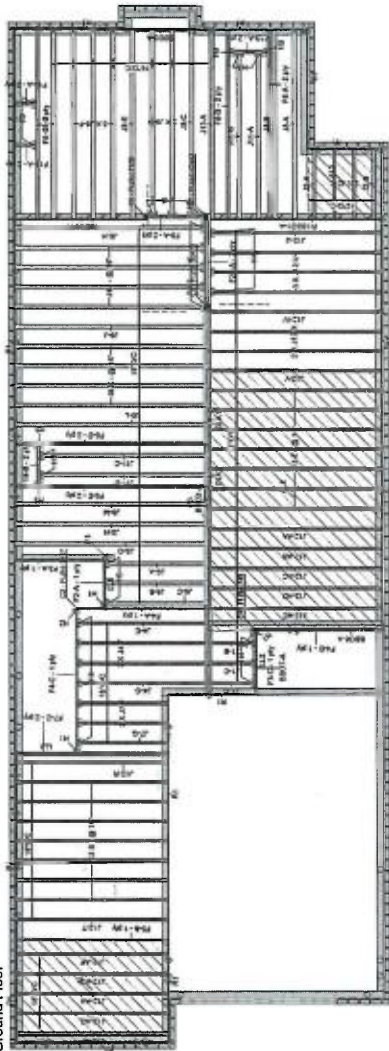
MULTI-PLY
CONNECTION
DETAILS

Date: November 30, 2016

Scale: NTS

KOTT

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



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

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ARCHITECTURAL DRAWINGS:

VA3 DESIGN
255 CONSUMERS ROAD, TORONTO, ON
Date: 5/15/18
Project No: 18012
Address: GRANDBROOKE 2, BRAMPTON, ON

Ground Floor

LVL/LSL

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
F5	Forex 2.0E-3000Fb LVL	1.75	9.5			2	12-0-0
F7	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	12-0-0
F4	Forex 2.0E-3000Fb LVL	1.75	9.5			3	10-0-0
F20	Forex 2.0E-3000Fb LVL	1.75	9.5	1	3	3	8-0-0
F3	Forex 2.0E-3000Fb LVL	1.75	9.5			2	6-0-0
F8	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	6-0-0
F2	Forex 2.0E-3000Fb LVL	1.75	9.5			1	4-0-0

I Joist

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
F6	NJ	1.5	9.5	5	2	10	14-0-0
F19	NJ	1.5	9.5	2	2	4	4-0-0
F10	NJ	1.5	9.5	2	2	4	2-0-0
J8	NJ40U	3.5	9.5			24	14-0-0
J11	NJ40U	3.5	9.5			4	12-0-0
J6	NJ40U	3.5	9.5			3	8-0-0
J13	NJ60U	3.5	9.5			1	14-0-0
J5	NJ60U	3.5	9.5			1	12-0-0
J12	NJH	2.5	9.5			34	12-0-0
J4	NJH	2.5	9.5			4	10-0-0
J7	NJH	2.5	9.5			3	8-0-0
J2	NJH	2.5	9.5			4	6-0-0
J1	NJH	2.5	9.5			3	4-0-0

Rim Board

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
R1	Norford Rimboard Plus 1.125 X 9.5	1.125	9.5			16	12

Hanger

Label	Pcs	Description	Skew	Slope	fasteners	Supported Member	fasteners
H1	3	LF179			10 10d	1#8x1 1/4WS	
H2	1	HUCQ1.819-SDS1.75					
H3	1	Unknown Hanger					
H4	14	LT259			4 10dx1 1/2	2 10dx1 1/2	
H5	15	MIT49.5			4 10dx1 1/2	4 10dx1 1/2	
H7	1	HUC410 (Min)			14 16d	6 10d	
H9	6	LT2-159			4 10dx1 1/2	2 10dx1 1/2	

Blocking

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
BLK2	NJ	1.5	9.5	LinFt		Varies	2-0-0
BLK2	NJ40U	3.5	9.5	LinFt		Varies	14-0-0
BLK1	NJ60U	3.5	9.5	LinFt		Varies	1-0-0
BLK1	NJH	2.5	9.5	LinFt		Varies	21-0-0
BLK2	NJH	2.5	9.5	LinFt		Varies	



Layout Name
GRANDBROOKE 2-3

Design Method
LSD

Description

Created
June 07, 2018

Builder

Sales Rep

Designer
J O

Shipping

Project

Builder's Project

Kott Lumber Company

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

Ground Floor

Design Method
Building Code

NBCC 2010 / OBC
2012

Floor

Loads

Live

Dead

Deflection Joist

LL Span L/

TL Span L/

LL Cant 2L/

TL Cant 2L/

Deflection Girder

LL Span L/

TL Span L/

LL Cant 2L/

TL Cant 2L/

Decking

Deck

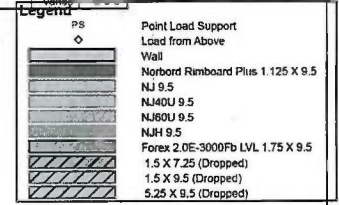
Thickness

Fastener

Vibration

Coiling

Gypsum 1/2"



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)





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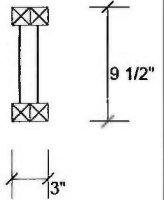
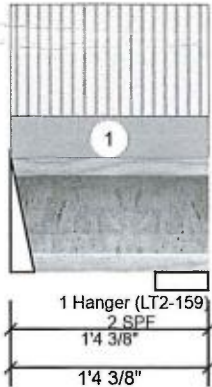
 Client:
 Project:
 Address:

 Date: 8/10/2018
 Designer: J O
 Job Name: GRANDBROOKE 2-3
 Project #:

Page 1 of 1

F18-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	32	12	0	0
2	43	16	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	2%	15 / 48	63 L	1.25D+1.5L
2 - SPF	4.375"	3%	20 / 64	84 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	12 ft-lb	7"	7340 ft-lb	0.002 (0%)	1.25D+1.5L	L
Unbraced	12 ft-lb	7"	7175 ft-lb	0.002 (0%)	1.25D+1.5L	L
Shear	52 lb	1 1/4"	3080 lb	0.017 (2%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
LL Defl inch	0.000 (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%)		

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

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

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



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.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-4-6	(Span)2-8-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	

Notes

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

Lumber

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

chemicals

Handling & Installation

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

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

Manufacturer Info

Nascor by Kott

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

This design is valid until 7/10/2021





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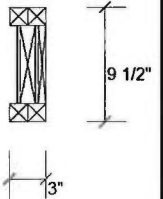
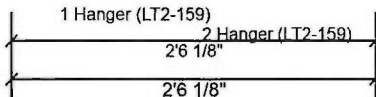
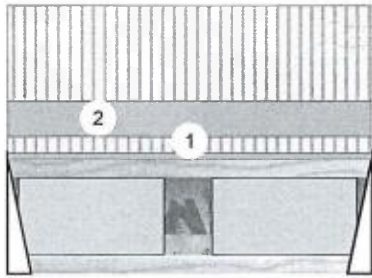
Client:
Project:
Address:

Date: 8/10/2018
Designer: J O
Job Name: GRANDBROOKE 2-3
Project #:

Page 1 of 1

F19-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	262	99	0	0
2	262	99	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	20%	123 / 393	516 L	1.25D+1.5L
2 - Hanger	2.000"	20%	123 / 393	516 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	273 ft-lb	1'3 1/16"	7340 ft-lb	0.037 (4%)	1.25D+1.5L	L
Unbraced	273 ft-lb	1'3 1/16"	5563 ft-lb	0.049 (5%)	1.25D+1.5L	L
Shear	474 lb	1 1/4"	3080 lb	0.154 (15%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/37709)	1'3 1/16"	0.077 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.002 (L/14186)	1'3 1/16"	0.077 (L/360)	0.030 (3%)	L	L
TL Defl inch	0.003 (L/10308)	1'3 1/16"	0.115 (L/240)	0.020 (2%)	D+L	L

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

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

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



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.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 2-6-2	(Span)1-6-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 2-6-2		Far Face	67 PLF	178 PLF	0 PLF	0 PLF	

Notes

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

Lumber

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

chemicals

Handling & Installation

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

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

Manufacturer Info

Nascor by Kott

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



This design is valid until 7/10/2021





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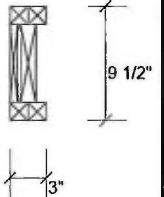
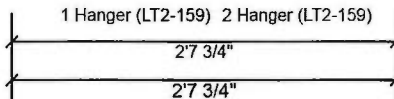
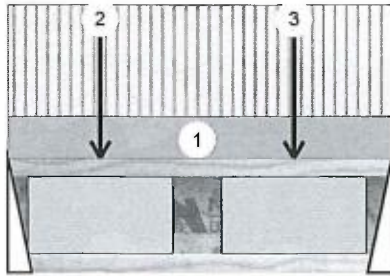
 Client:
 Project:
 Address:

 Date: 8/10/2018
 Designer: J O
 Job Name: GRANDBROOKE 2-3
 Project #:

Page 1 of 1

F19-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	282	106	0	0
2	277	104	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	21%	132 / 423	556 L	1.25D+1.5L
2 - Hanger	2.000"	21%	130 / 416	545 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	306 ft-lb	1'5 11/16"	7340 ft-lb	0.042 (4%)	1.25D+1.5L	L
Unbraced	306 ft-lb	1'5 11/16"	5321 ft-lb	0.057 (6%)	1.25D+1.5L	L
Shear	550 lb	1 1/4"	3080 lb	0.178 (18%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/33872)	1'4 3/8"	0.081 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.002 (L/12685)	1'4 3/8"	0.081 (L/360)	0.030 (3%)	L	L
TL Defl inch	0.003 (L/9229)	1'4 3/8"	0.122 (L/240)	0.030 (3%)	D+L	L

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

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

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



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.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 2-7-12	(Span)1-6-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-7-11		Near Face	89 lb	237 lb	0 lb	0 lb	J11
3	Point	1-11-11		Near Face	90 lb	241 lb	0 lb	0 lb	J11

Notes

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

Lumber

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

chemicals

Handling & Installation

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

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

This design is valid until 7/10/2021

Manufacturer Info

Nascor by Kott

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

KOTT NASCOR





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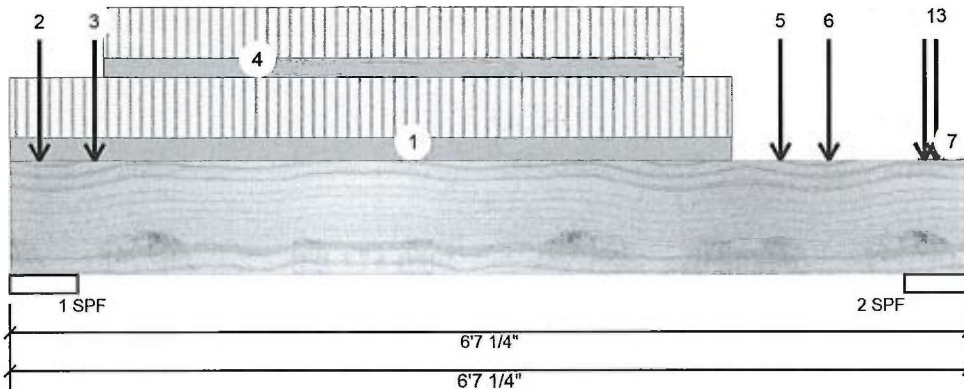
 Client:
 Project:
 Address:

 Date: 8/10/2018
 Designer: J O
 Job Name: GRANDBROOKE 2-3
 Project #:

Page 1 of 2

F20-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 3-Ply - PASSED

Level: Ground Floor



Member Information

Unfactored Reactions UNPATTERNED lb (Uplift)

Type:	Girder	Application:	Floor (Residential)
Plies:	3	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	Yes
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Brg	Live	Dead	Snow	Wind
1	6340	2651	0	0
2	4697	2104	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.638"	79%	3314 / 9510	12823 L	1.25D+1.5L
2 - SPF	5.250"	57%	2630 / 7045	9675 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4314 ft-lb	3'2 3/8"	35449 ft-lb	0.122 (12%)	1.25D+1.5L	L
Unbraced	4314 ft-lb	3'2 3/8"	35449 ft-lb	0.122 (12%)	1.25D+1.5L	L
Shear	3272 lb	5'5 1/4"	13915 lb	0.235 (24%)	1.25D+1.5L	L
Perm Defl in.	0.009 (L/7684)	3'3 3/16"	0.194 (L/360)	0.050 (5%)	D	Uniform
LL Defl inch	0.023 (L/3089)	3'3 3/16"	0.194 (L/360)	0.120 (12%)	L	L
TL Defl inch	0.032 (L/2203)	3'3 3/16"	0.291 (L/240)	0.110 (11%)	D+L	L

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

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

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



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 4-11-12		Far Face	101 PLF	268 PLF	0 PLF	0 PLF	
2	Point	0-2-8		Top	1507 lb	3568 lb	0 lb	0 lb	F11 F11
3	Point	0-7-0		Top	568 lb	1338 lb	0 lb	0 lb	F8 F8
4	Part. Uniform	0-7-12 to 4-7-12		Near Face	85 PLF	226 PLF	0 PLF	0 PLF	
5	Point	5-3-12		Near Face	95 lb	252 lb	0 lb	0 lb	J12

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


This design is valid until 7/10/2021





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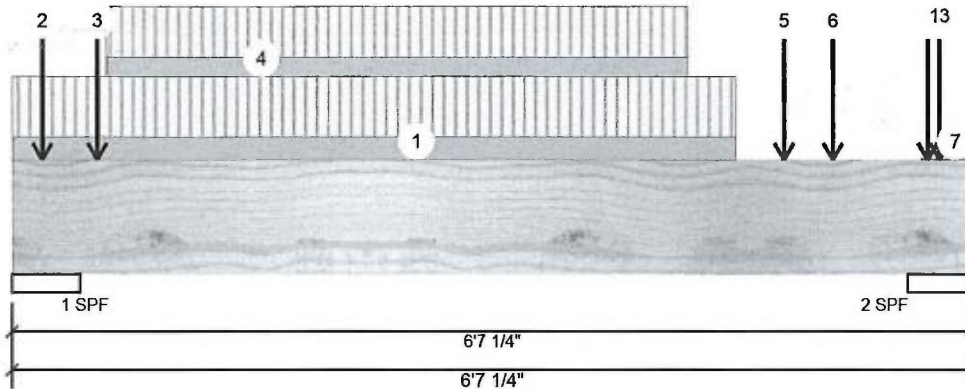
 Client:
 Project:
 Address:

 Date: 8/10/2018
 Designer: J O
 Job Name: GRANDBROOKE 2-3
 Project #:

Page 2 of 2

F20-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 3-Ply - PASSED

Level: Ground Floor



5 1/4"

Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Point	5-7-12		Far Face	94 lb	250 lb	0 lb	0 lb	J8
7	Tie-In	6-3-2 to 6-7-4	(Span)0-3-14	Top	15 PSF	40 PSF	0 PSF	0 PSF	
8	Point	6-3-10		Top	0 lb	1 lb	0 lb	0 lb	J9
9	Point	6-3-10		Top	1 lb	0 lb	0 lb	0 lb	Wall Self Weight
10	Point	6-3-10		Top	1023 lb	2456 lb	0 lb	0 lb	F7 F7
11	Point	6-3-10		Top	12 lb	31 lb	0 lb	0 lb	J9
12	Point	6-3-10		Top	21 lb	0 lb	0 lb	0 lb	Wall Self Weight
13	Point	6-4-10		Far Face	515 lb	900 lb	0 lb	0 lb	F8
	Self Weight				11 PLF				

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

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

Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

 Forex
 APA: PR-L318

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

This design is valid until 7/10/2021





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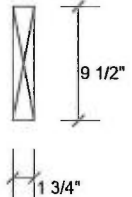
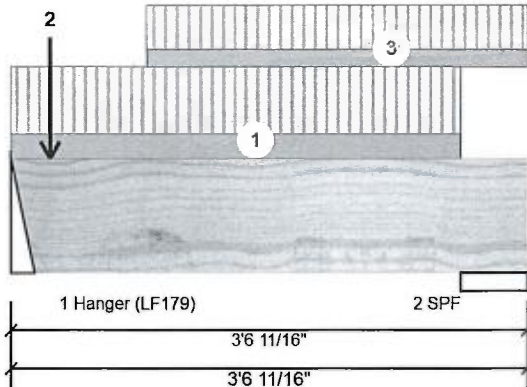
Client:
Project:
Address:

Date: 8/10/2018
Designer: J O
Job Name: GRANDBROOKE 2-3
Project #:

Page 1 of 1

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

Level: Ground Floor

**Member Information**

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

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	565	219	0	0
2	568	222	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	43%	273 / 848	1121 L	1.25D+1.5L
2 - SPF	5.500"	19%	277 / 852	1129 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	783 ft-lb	1'7 15/16"	11362 ft-lb	0.069 (7%)	1.25D+1.5L	L
Unbraced	783 ft-lb	1'7 15/16"	9885 ft-lb	0.079 (8%)	1.25D+1.5L	L
Shear	965 lb	10 3/4"	4638 lb	0.208 (21%)	1.25D+1.5L	L
Perm Defl in. (L/17593)	0.002	1'7 13/16"	0.102 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch	0.005 (L/6829)	1'7 13/16"	0.102 (L/360)	0.050 (5%)	L	L
TL Defl inch	0.007 (L/4920)	1'7 13/16"	0.153 (L/240)	0.050 (5%)	D+L	L

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

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

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

**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	Part. Uniform	0-0-0 to 3-1-3		Top	79 PLF	210 PLF	0 PLF	0 PLF	
2	Point	0-3-5		Near Face	43 lb	116 lb	0 lb	0 lb	J6
3	Part. Uniform	0-11-5 to 3-6-11		Near Face	53 PLF	140 PLF	0 PLF	0 PLF	
	Self Weight				4 PLF				

Notes

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

Lumber

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

chemicals**Handling & Installation**

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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



This design is valid until 7/10/2021





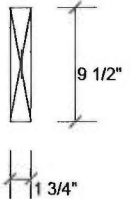
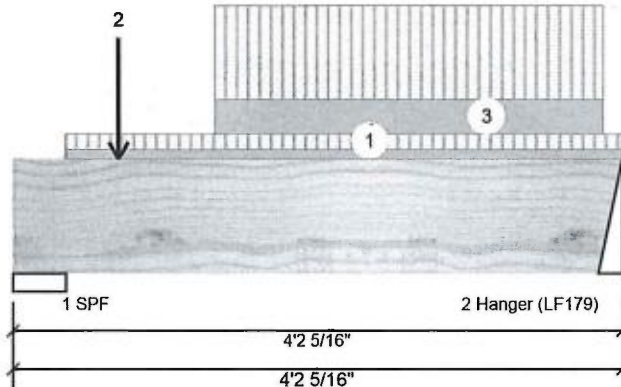
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Client:
Project:
Address:

Date: 8/10/2018
Designer: J O
Job Name: GRANDBROOKE 2-3
Project #:

Page 1 of 1

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



Member Information

Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	135	63	0	0
2	131	62	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.375"	6%	78 / 202	280	L	1.25D+1.5L
2 - Hanger	2.000"	11%	77 / 197	274	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	256 ft-lb	2'2 3/4"	11362 ft-lb	0.023 (2%)	1.25D+1.5L	L
Unbraced	256 ft-lb	2'2 3/4"	9094 ft-lb	0.028 (3%)	1.25D+1.5L	L
Shear	350 lb	1'1 1/8"	4638 lb	0.076 (8%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/46123)	2'2 9/16"	0.126 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.002 (L/21407)	2'2 9/16"	0.126 (L/360)	0.020 (2%)	L	L
TL Defl inch	0.003 (L/14621)	2'2 9/16"	0.189 (L/240)	0.020 (2%)	D+L	L

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

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

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



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	Part. Uniform	0-4-6 to 4-2-5		Top	6 PLF	10 PLF	0 PLF	0 PLF	
2	Point	0-8-12		Far Face	24 lb	65 lb	0 lb	0 lb	J1
3	Part. Uniform	1-4-12 to 4-0-12		Far Face	23 PLF	61 PLF	0 PLF	0 PLF	
	Self Weight				4 PLF				

Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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

KOTT NASCOR

This design is valid until 7/10/2021





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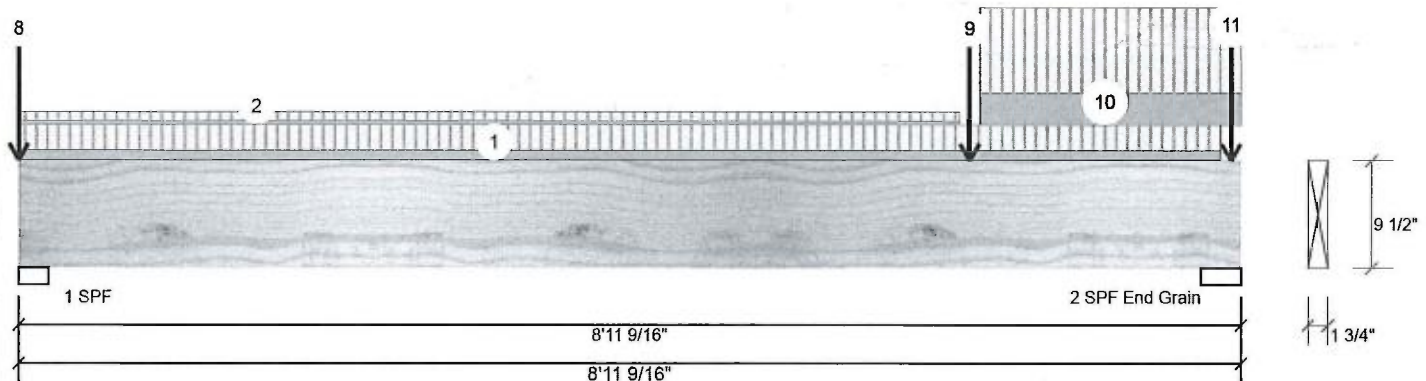
Client:
Project:
Address:

Date: 8/10/2018
Designer: J O
Job Name: GRANDBROOKE 2-3
Project #:

Page 1 of 2

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

Level: Ground Floor



Member Information

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

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	335	168	0	0
2	1760	702	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.625"	25%	210 / 502	712	L	1.25D+1.5L
2 - SPF	3.500"	77%	877 / 2640	3517	L	1.25D+1.5L
End Grain						

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2038 ft-lb	6'11 11/16"	11362 ft-lb	0.179 (18%)	1.25D+1.5L	L
Unbraced	2038 ft-lb	6'11 11/16"	4345 ft-lb	0.469 (47%)	1.25D+1.5L	L
Shear	1173 lb	7'11 5/16"	4638 lb	0.253 (25%)	1.25D+1.5L	L
Perm Defl in.	0.022 (L/4715)	4'11 1/8"	0.286 (L/360)	0.080 (8%)	D	Uniform
LL Defl inch	0.052 (L/1996)	4'11 3/4"	0.286 (L/360)	0.180 (18%)	L	L
TL Defl inch	0.073 (L/1402)	4'11 9/16"	0.429 (L/240)	0.170 (17%)	D+L	L

Design Notes

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

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

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

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



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 8-9-13	(Span) 0-11-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 6-10-13	(Span) 0-4-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	0-0-0		Top	0 lb	1 lb	0 lb	0 lb	J12
6	Point	0-0-0		Top	25 lb	58 lb	0 lb	0 lb	J12
7	Point	0-0-0		Top	12 lb	32 lb	0 lb	0 lb	J7
8	Point	0-0-0		Top	21 lb	0 lb	0 lb	0 lb	Wall Self Weight
9	Point	6-11-11		Near Face	219 lb	565 lb	0 lb	0 lb	F2

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



This design is valid until 7/10/2021





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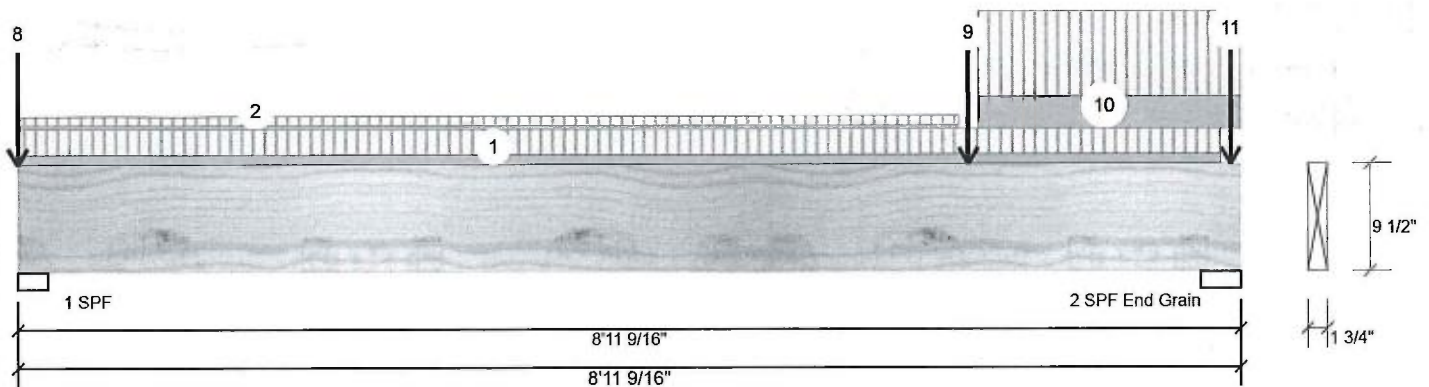
Client:
Project:
Address:

Date: 8/10/2018
Designer: J O
Job Name: GRANDBROOKE 2-3
Project #:

Page 2 of 2

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

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
10	Tie-In	7-0-9 to 8-11-9	(Span)3-2-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
11	Point	8-10-11		Far Face	429 lb	1093 lb	0 lb	0 lb	F4
	Self Weight				4 PLF				

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

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

Notes

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

Lumber

1. Dry service conditions, unless noted otherwise
2. 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

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

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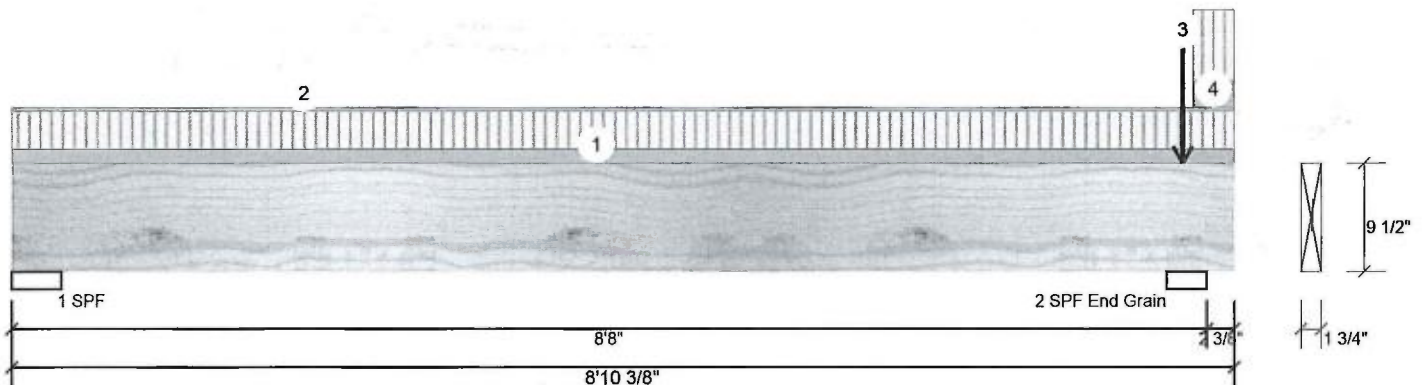
 Client:
 Project:
 Address:

 Date: 8/10/2018
 Designer: J O
 Job Name: GRANDBROOKE 2-3
 Project #:

Page 1 of 2

F4-B Forex 2.0E-3000Fb LVL 2x4x9.500" - PASSED

Level: Ground Floor



Member Information

Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	41	36	0	0
2	177	101	0	0

Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.375"	2%	46 / 61	106	L	1.25D+1.5L
2 - SPF	3.500"	9%	126 / 266	392	LL	1.25D+1.5L
End Grain						

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-1 ft-lb	8'8"	11362 ft-lb	0.000 (0%)	1.25D+1.5L	LL
Unbraced	-1 ft-lb	8'8"	11362 ft-lb	0.000 (0%)	1.25D+1.5L	LL
Pos Moment	204 ft-lb	4'4 7/8"	11362 ft-lb	0.018 (2%)	1.25D+1.5L	L
Unbraced	204 ft-lb	4'4 7/8"	4539 ft-lb	0.045 (4%)	1.25D+1.5L	L
Shear	80 lb	7'8 3/4"	4638 lb	0.017 (2%)	1.25D+1.5L	LL
Perm Defl in.	0.004 (L/25516)	4'4 7/8"	0.274 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.004 (L/22840)	4'4 15/16"	0.274 (L/360)	0.020 (2%)	L	L
TL Defl inch	0.008 (L/12052)	4'4 7/8"	0.411 (L/240)	0.020 (2%)	D+L	L
LL Cant	-0.000 (2L/16310)	Rt Cant	0.200 (2L/480)	0.001 (0%)	L	L
TL Cant	-0.001 (2L/8647)	Rt Cant	0.300 (2L/360)	0.002 (0%)	D+L	L

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

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

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



Design Notes

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

Notes

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

Lumber

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

chemicals

Handling & Installation

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

- For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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



This design is valid until 7/10/2021





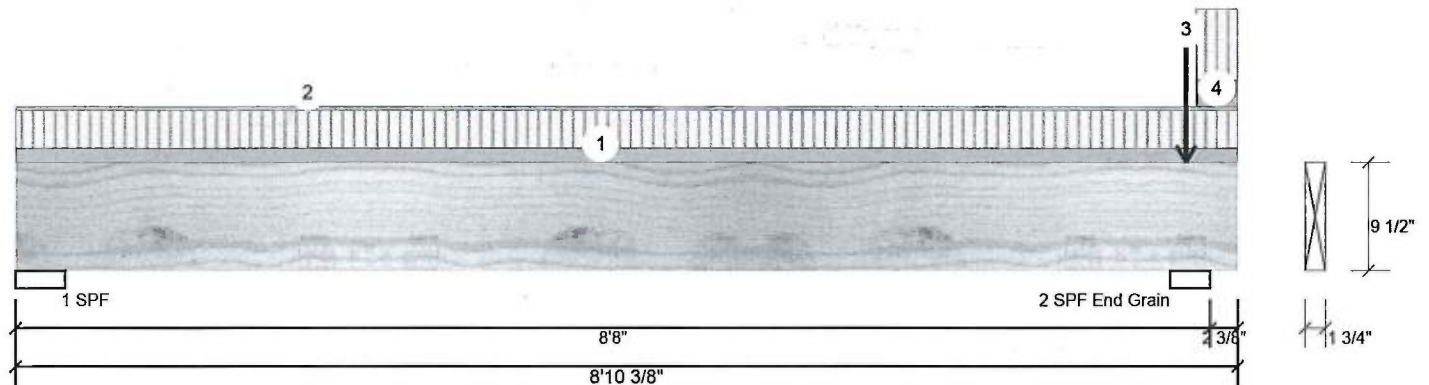
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Client:
Project:
Address:

Date: 8/10/2018
Designer: J O
Job Name: GRANDBROOKE 2-3
Project #:

Page 2 of 2

F4-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED AND APPROVED



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 8-10-6	(Span)0-5-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 8-10-6		Top	1 PLF	0 PLF	0 PLF	0 PLF	
3	Point	8-5-14		Far Face	62 lb	131 lb	0 lb	0 lb	F3
4	Tie-In	8-6-12 to 8-10-6	(Span)0-10-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				4 PLF				

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

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

Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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

KOTT NASCOR

This design is valid until 7/10/2021





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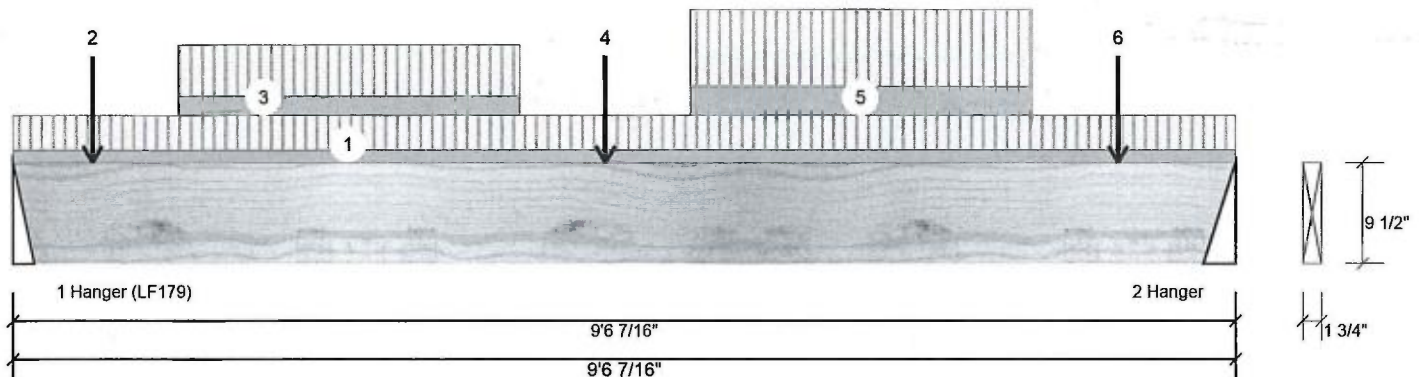
 Client:
 Project:
 Address:

 Date: 8/10/2018
 Designer: J O
 Job Name: GRANDBROOKE 2-3
 Project #:

Page 1 of 1

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

Level: Ground Floor



Member Information

Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	981	386	0	0
2	1093	429	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	75%	483 / 1471	1954 L	1.25D+1.5L
2 - Hanger	3.000"	56%	536 / 1640	2176 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4946 ft-lb	4'7 7/16"	11362 ft-lb	0.435 (44%)	1.25D+1.5L	L
Unbraced	4946 ft-lb	4'7 7/16"	4950 ft-lb	0.999 (100%)	1.25D+1.5L	L
Shear	2021 lb	8'6 11/16"	4638 lb	0.436 (44%)	1.25D+1.5L	L
Perm Defl in.	0.066 (L/1688)	4'8 15/16"	0.308 (L/360)	0.210 (21%)	D	Uniform
LL Defl inch	0.167 (L/662)	4'9"	0.308 (L/360)	0.540 (54%)	L	L
TL Defl inch	0.233 (L/476)	4'9"	0.462 (L/240)	0.500 (50%)	D+L	L

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

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

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



Design Notes

- 1 Fill all hanger nailing holes.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Top must be laterally braced at a maximum of 7'6 3/8" o.c.
- 4 Bottom braced at bearings.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 9-6-7	(Span)3-10-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-7-7		Near Face	46 lb	123 lb	0 lb	0 lb	J7
3	Part. Uniform	1-3-7 to 3-11-7		Near Face	44 PLF	117 PLF	0 PLF	0 PLF	
4	Point	4-7-7		Near Face	86 lb	229 lb	0 lb	0 lb	J4
5	Part. Uniform	5-3-7 to 7-11-7		Near Face	66 PLF	175 PLF	0 PLF	0 PLF	
6	Point	8-7-7		Near Face	76 lb	203 lb	0 lb	0 lb	J4
	Self Weight				4 PLF				

Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

 Forex
 APA: PR-L318

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

This design is valid until 7/10/2021





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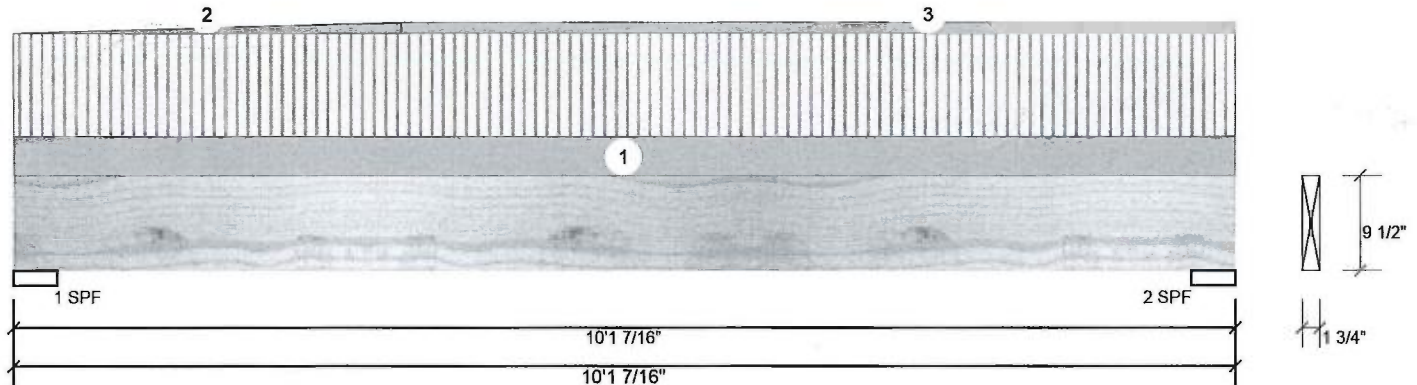
 Client:
 Project:
 Address:

 Date: 8/10/2018
 Designer: J O
 Job Name: GRANDBROOKE 2-3
 Project #:

Page 1 of 1

F5-B Forex 2.0E-3000Fb-LVL 1.750" X 9.500" - PASSED

Level: Ground Floor



Member Information

Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	96	63	0	0
2	96	65	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.375"	5%	78 / 145	223 L	1.25D+1.5L
2 - SPF	4.375"	5%	82 / 145	226 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	505 ft-lb	5' 13/16"	11362 ft-lb	0.044 (4%)	1.25D+1.5L	L
Unbraced	505 ft-lb	5' 13/16"	3917 ft-lb	0.129 (13%)	1.25D+1.5L	L
Shear	177 lb	9' 5/16"	4638 lb	0.038 (4%)	1.25D+1.5L	L
Perm Defl in.	0.010 (L/10910)	5' 13/16"	0.317 (L/360)	0.030 (3%)	D	Uniform
LL Defl inch	0.016 (L/7344)	5' 3/4"	0.317 (L/360)	0.050 (5%)	L	L
TL Defl inch	0.026 (L/4389)	5' 13/16"	0.476 (L/240)	0.050 (5%)	D+L	L

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

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

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



Design Notes

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 10-1-7	(Span)0-11-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tapered Start	0-0-0		Top	0 PLF	0 PLF	0 PLF	0 PLF	
	End	3-2-11			2 PLF	0 PLF	0 PLF	0 PLF	
3	Part. Uniform	3-2-11 to 10-1-7		Top	2 PLF	0 PLF	0 PLF	0 PLF	
	Self Weight				4 PLF				

Notes

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

Lumber

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

chemicals

Handling & Installation

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

- For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

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



This design is valid until 7/10/2021





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Client:

Project:

Address:

Date: 8/10/2018

Designer: J O

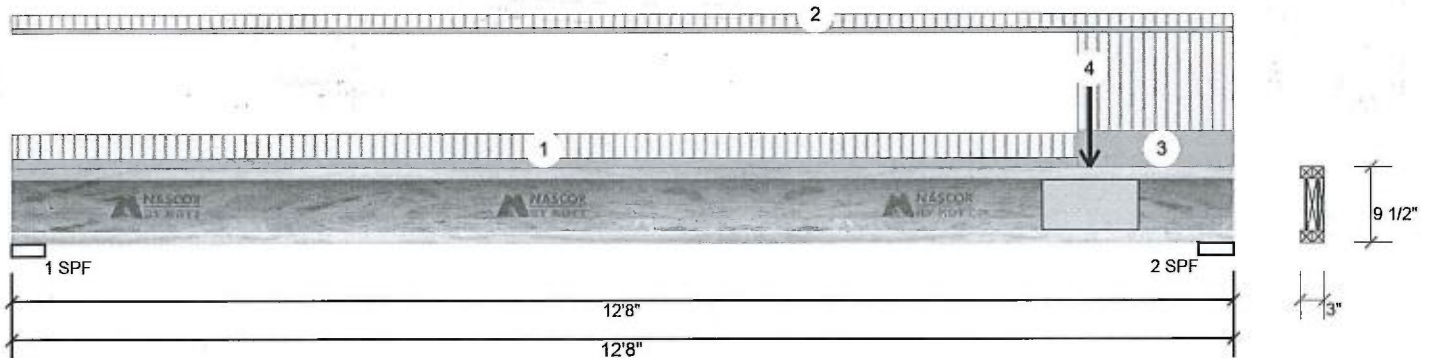
Job Name: GRANDBROOKE 2-3

Project #:

Page 1 of 1

F6-A NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

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

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	166	62	0	0
2	437	165	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.125"	11%	78 / 249	326 L	1.25D+1.5L
2 - SPF	4.375"	28%	206 / 656	862 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1158 ft-lb	7'7 13/16"	7340 ft-lb	0.158 (16%)	1.25D+1.5L	L
Unbraced	1158 ft-lb	7'7 13/16"	1165 ft-lb	0.994 (99%)	1.25D+1.5L	L
Shear	824 lb	12'4 3/8"	3080 lb	0.268 (27%)	1.25D+1.5L	L
Perm Defl in.	0.024 (L/6152)	6'8 3/16"	0.403 (L/360)	0.060 (6%)	D	Uniform
LL Defl inch	0.063 (L/2312)	6'8 1/8"	0.403 (L/360)	0.160 (16%)	L	L
TL Defl inch	0.086 (L/1681)	6'8 1/8"	0.604 (L/240)	0.140 (14%)	D+L	L

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

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

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



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 5'10" o.c.
- 5 Bottom flange braced at bearings.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 11-0-10	(Span)0-8-6	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 12-8-0	(Span)0-4-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	11-0-10 to 12-8-0	(Span)2-9-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Point	11-2-2		Far Face	99 lb	262 lb	0 lb	0 lb	F19

Notes

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

Lumber

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

chemicals

Handling & Installation

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

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

Manufacturer Info

Nascor by Kott

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



This design is valid until 7/10/2021





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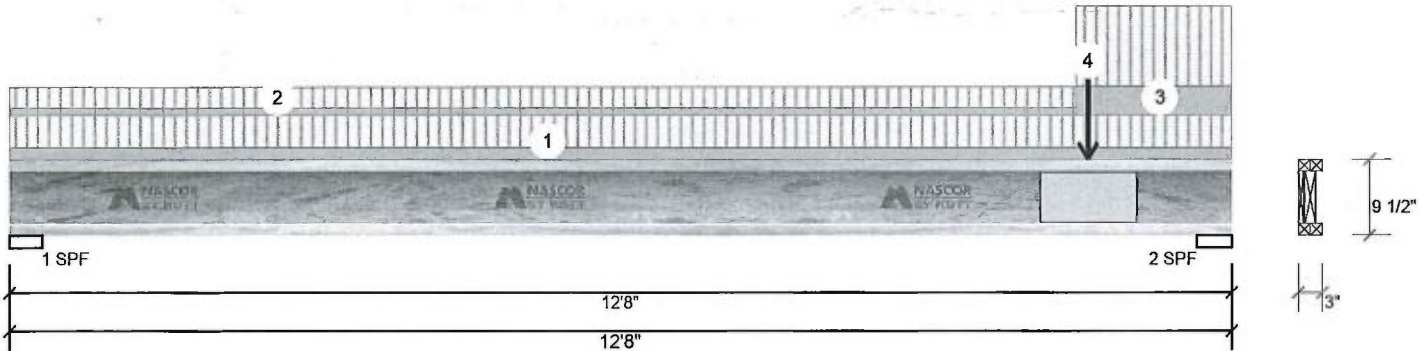
 Client:
 Project:
 Address:

 Date: 8/10/2018
 Designer: J O
 Job Name: GRANDBROOKE 2-3
 Project #:

Page 1 of 1

F6-B NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

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

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	260	98	0	0
2	532	200	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.125"	17%	122 / 391	513 L	1.25D+1.5L
2 - SPF	4.375"	34%	250 / 797	1047 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1681 ft-lb	7'1 1/4"	7340 ft-lb	0.229 (23%)	1.25D+1.5L	L
Unbraced	1681 ft-lb	7'1 1/4"	1695 ft-lb	0.992 (99%)	1.25D+1.5L	L
Shear	1001 lb	12'4 3/8"	3080 lb	0.325 (33%)	1.25D+1.5L	L
Perm Defl in.	0.034 (L/4232)	6'6 13/16"	0.403 (L/360)	0.090 (9%)	D	Uniform
LL Defl inch	0.091 (L/1590)	6'6 3/4"	0.403 (L/360)	0.230 (23%)	L	L
TL Defl inch	0.125 (L/1156)	6'6 3/4"	0.604 (L/240)	0.210 (21%)	D+L	L

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

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

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



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.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 12-8-0	(Span)1-1-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 11-0-10	(Span)0-8-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	11-0-10 to 12-8-0	(Span)2-9-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Point	11-2-2		Near Face	99 lb	262 lb	0 lb	0 lb	F19

Notes

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

Lumber

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

chemicals

Handling & Installation

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

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

Manufacturer Info

Nascor by Kott

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



This design is valid until 7/10/2021





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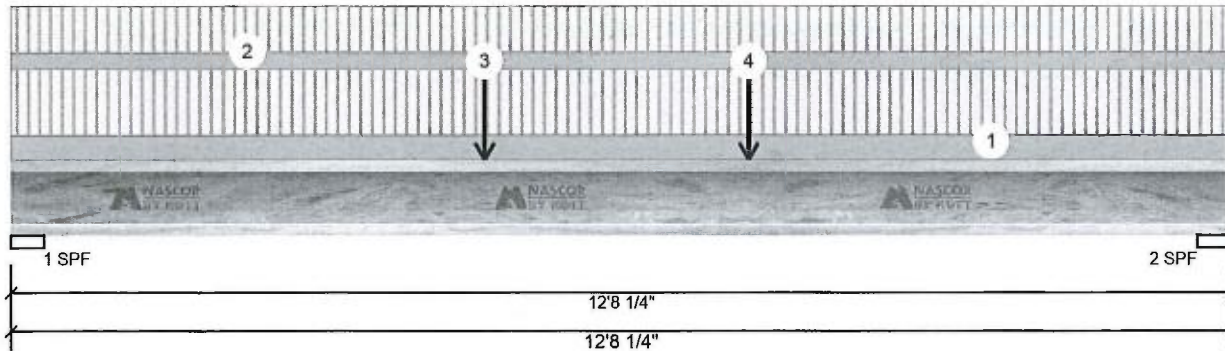
 Client:
 Project:
 Address:

 Date: 8/10/2018
 Designer: J O
 Job Name: GRANDBROOKE 2-3
 Project #:

Page 1 of 1

F6-C NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

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

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	363	136	0	0
2	363	136	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.125"	23%	170 / 544	714 L	1.25D+1.5L
2 - SPF	4.375"	23%	170 / 545	716 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2177 ft-lb	6'4 1/16"	7340 ft-lb	0.297 (30%)	1.25D+1.5L	L
Unbraced	2177 ft-lb	6'4 1/16"	2202 ft-lb	0.989 (99%)	1.25D+1.5L	L
Shear	685 lb	3 3/8"	3080 lb	0.222 (22%)	1.25D+1.5L	L
Perm Defl in.	0.043 (L/3356)	6'4"	0.404 (L/360)	0.110 (11%)	D	Uniform
LL Defl inch	0.115 (L/1259)	6'4"	0.404 (L/360)	0.290 (29%)	L	L
TL Defl inch	0.159 (L/915)	6'4"	0.605 (L/240)	0.260 (26%)	D+L	L

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

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

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



Design Notes

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 12-8-4	(Span)1-6-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 12-8-4	(Span)1-0-14	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	4-11-2		Far Face	12 lb	32 lb	0 lb	0 lb	F18
4	Point	7-8-1		Far Face	12 lb	32 lb	0 lb	0 lb	F18

Notes

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

Lumber

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

chemicals

Handling & Installation

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

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

Manufacturer Info

Nascor by Kott

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

KOTT NASCOR

This design is valid until 7/10/2021





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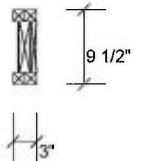
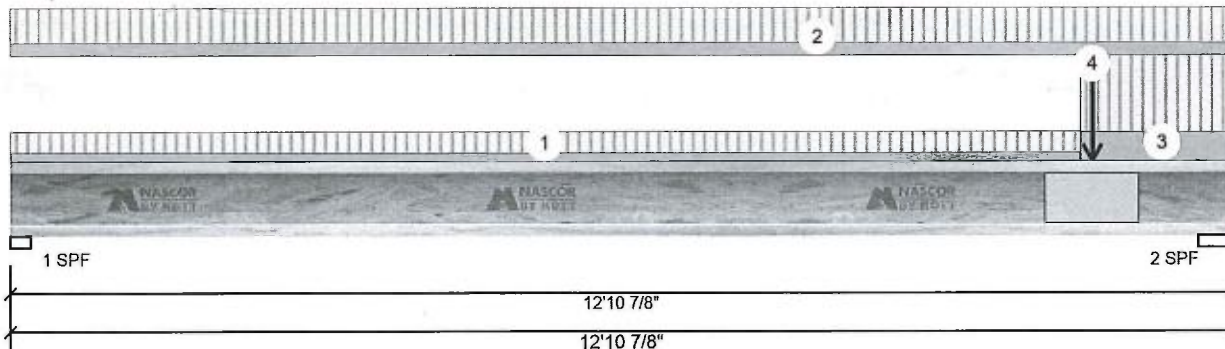
Client:
Project:
Address:

Date: 8/10/2018
Designer: J O
Job Name: GRANDBROOKE 2-3
Project #:

Page 1 of 1

F6-D 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	295	111	0	0
2	587	220	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.625"	21%	138 / 443	581 L	1.25D+1.5L
2 - SPF	4.375"	38%	275 / 881	1156 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1969 ft-lb	7'1"	7340 ft-lb	0.268 (27%)	1.25D+1.5L	L
Unbraced	1969 ft-lb	7'1"	1987 ft-lb	0.991 (99%)	1.25D+1.5L	L
Shear	1107 lb	12'7 1/4"	3080 lb	0.359 (36%)	1.25D+1.5L	L
Perm Defl in.	0.042 (L/3535)	6'7 3/16"	0.415 (L/360)	0.100 (10%)	D	Uniform
LL Defl inch	0.113 (L/1326)	6'7 3/16"	0.415 (L/360)	0.270 (27%)	L	L
TL Defl inch	0.155 (L/964)	6'7 3/16"	0.622 (L/240)	0.250 (25%)	D+L	L

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

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

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



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 4'8" o.c.
- Bottom flange braced at bearings.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 11-3-8	(Span)0-9-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 12-10-14	(Span)1-3-6	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	11-3-8 to 12-10-14	(Span)2-10-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Point	11-5-0		Far Face	104 lb	277 lb	0 lb	0 lb	F19

Notes

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

Lumber

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

chemicals

Handling & Installation

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

Manufacturer Info

Nascor by Kott

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



This design is valid until 7/10/2021





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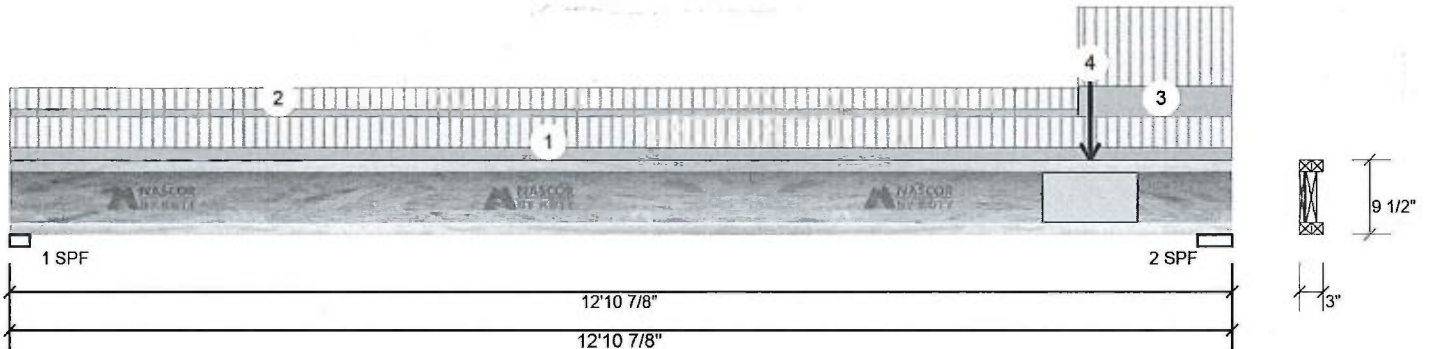
 Client:
 Project:
 Address:

 Date: 8/10/2018
 Designer: J O
 Job Name: GRANDBROOKE 2-3
 Project #:

Page 1 of 1

F6-E 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	274	103	0	0
2	571	214	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.625"	20%	129 / 412	540 L	1.25D+1.5L
2 - SPF	4.375"	37%	268 / 857	1125 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1851 ft-lb	7'1 15/16"	7340 ft-lb	0.252 (25%)	1.25D+1.5L	L
Unbraced	1851 ft-lb	7'1 15/16"	1875 ft-lb	0.987 (99%)	1.25D+1.5L	L
Shear	1077 lb	12'7 1/4"	3080 lb	0.350 (35%)	1.25D+1.5L	L
Perm Defl in.	0.040 (L/3757)	6'7 7/16"	0.415 (L/360)	0.100 (10%)	D	Uniform
LL Defl inch	0.106 (L/1409)	6'7 7/16"	0.415 (L/360)	0.260 (26%)	L	L
TL Defl inch	0.146 (L/1025)	6'7 7/16"	0.622 (L/240)	0.230 (23%)	D+L	L

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

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

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



Design Notes

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 12-10-14	(Span)1-1-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 11-3-8	(Span)0-9-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	11-3-8 to 12-10-14	(Span)2-10-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Point	11-5-0		Near Face	106 lb	282 lb	0 lb	0 lb	F19

Notes

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

Lumber

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

chemicals

Handling & Installation

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

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

Manufacturer Info

Nascor by Kott

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



This design is valid until 7/10/2021





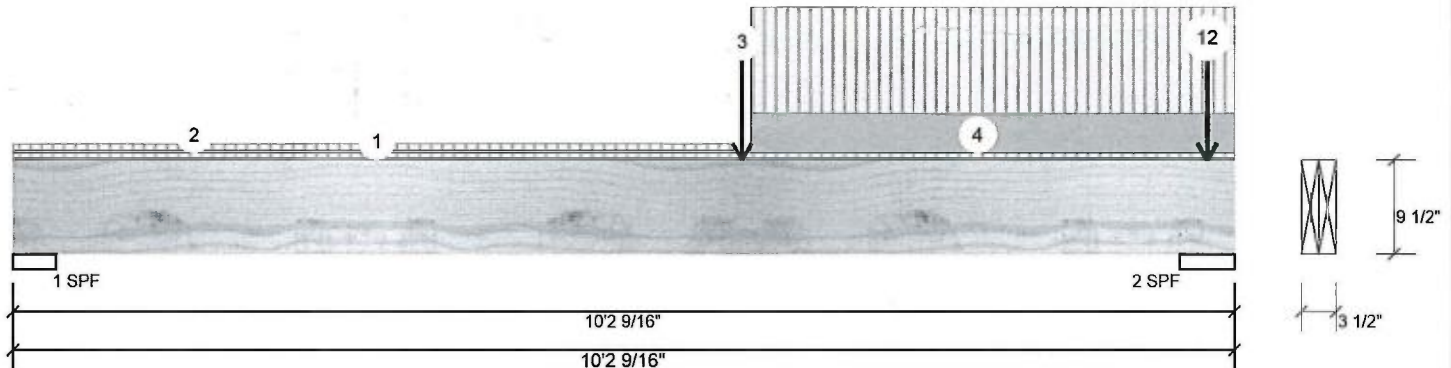
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 Client:
 Project:
 Address:

 Date: 8/10/2018
 Designer: J O
 Job Name: GRANDBROOKE 2-3
 Project #:

Page 1 of 2

F7-C 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	673	298	0	0
2	1529	691	69	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.375"	15%	373 / 1010	1382 L	1.25D+1.5L
2 - SPF	5.500"	27%	864 / 2327	3191 L	1.25D+1.5L +0.5S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	6869 ft-lb	6'1 1/4"	22724 ft-lb	0.302 (30%)	1.25D+1.5L	L
Unbraced	6869 ft-lb	6'1 1/4"	20936 ft-lb	0.328 (33%)	1.25D+1.5L	L
Shear	2387 lb	9' 5/16"	9277 lb	0.257 (26%)	1.25D+1.5L	L
Perm Defl in.	0.043 (L/2640)	5'6 5/16"	0.317 (L/360)	0.140 (14%)	D	Uniform
LL Defl inch	0.104 (L/1098)	5'6 3/4"	0.317 (L/360)	0.330 (33%)	L+0.5S	L
TL Defl inch	0.147 (L/776)	5'6 5/8"	0.476 (L/240)	0.310 (31%)	D+L+0.5S	L

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

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

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



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	Tie-In	0-0-0 to 10-2-9	(Span)0-6-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 6-0-6	(Span)0-9-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	6-1-4		Near Face	386 lb	981 lb	0 lb	0 lb	F4
4	Part. Uniform	6-2-2 to 10-2-9		Top	90 PLF	240 PLF	0 PLF	0 PLF	
5	Point	9-11-13		Top	9 lb	0 lb	22 lb	0 lb	

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

This design is valid until 7/10/2021





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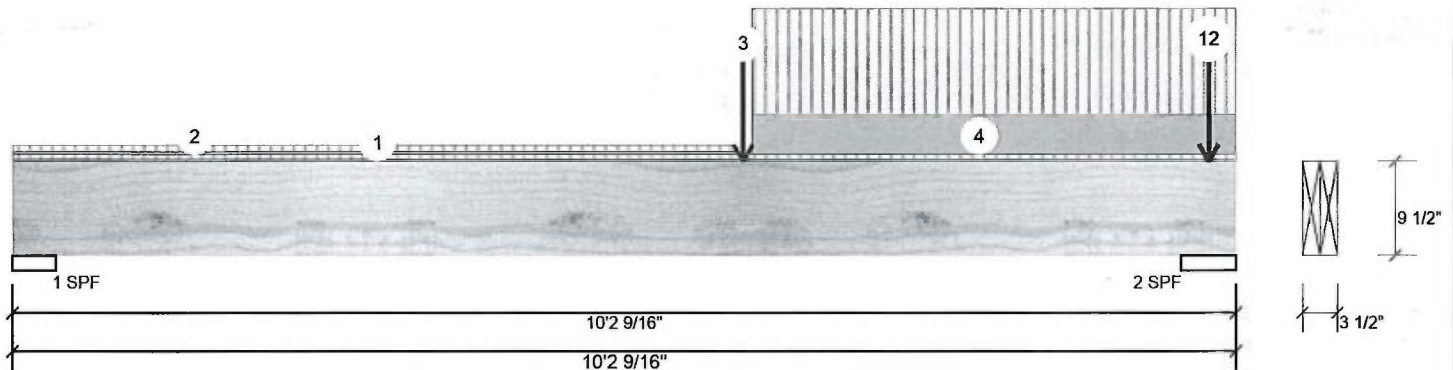
Client:
Project:
Address:

Date: 8/10/2018
Designer: J O
Job Name: GRANDBROOKE 2-3
Project #:

Page 2 of 2

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

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Point	9-11-13		Top	6 lb	14 lb	0 lb	0 lb	J4
7	Point	9-11-13		Top	5 lb	0 lb	0 lb	0 lb	Wall Self Weight
8	Point	9-11-13		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
9	Point	9-11-13		Top	20 lb	0 lb	47 lb	0 lb	
10	Point	9-11-13		Top	14 lb	30 lb	0 lb	0 lb	J4
11	Point	9-11-13		Top	12 lb	0 lb	0 lb	0 lb	Wall Self Weight
12	Point	9-11-13		Top	12 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Self Weight				8 PLF				

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

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

Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 7/10/2021

Manufacturer Info

Forex
APA: PR-L318



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





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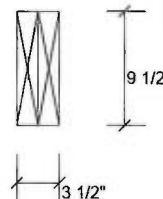
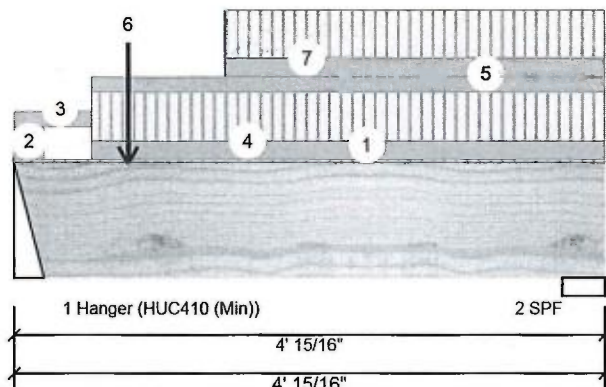
Client:
Project:
Address:

Date: 8/10/2018
Designer: J O
Job Name: GRANDBROOKE 2-3
Project #:

Page 1 of 2

F8-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	900	515	0	0
2	1086	592	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.500"	31%	644 / 1350	1994 L	1.25D+1.5L
2 - SPF	3.500"	31%	740 / 1629	2369 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1935 ft-lb	2' 1/8"	22724 ft-lb	0.085 (9%)	1.25D+1.5L	L
Unbraced	1935 ft-lb	2' 1/8"	22724 ft-lb	0.085 (9%)	1.25D+1.5L	L
Shear	2005 lb	11 1/4"	9277 lb	0.216 (22%)	1.25D+1.5L	L
Perm Defl in.	0.004 (L/10899)	2'	0.123 (L/360)	0.030 (3%)	D	Uniform
LL Defl inch	0.007 (L/5958)	2' 1/16"	0.123 (L/360)	0.060 (6%)	L	L
TL Defl inch	0.012 (L/3852)	2'	0.185 (L/240)	0.060 (6%)	D+L	L

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

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

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



Design Notes

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 4-0-15	(Span)0-8-14	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 0-2-8		Top	46 PLF	123 PLF	0 PLF	0 PLF	J9
3	Part. Uniform	0-0-0 to 0-6-7		Top	82 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
4	Part. Uniform	0-6-7 to 4-0-15		Top	96 PLF	257 PLF	0 PLF	0 PLF	J9
5	Part. Uniform	0-6-7 to 4-0-15		Top	82 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 & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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



This design is valid until 7/10/2021





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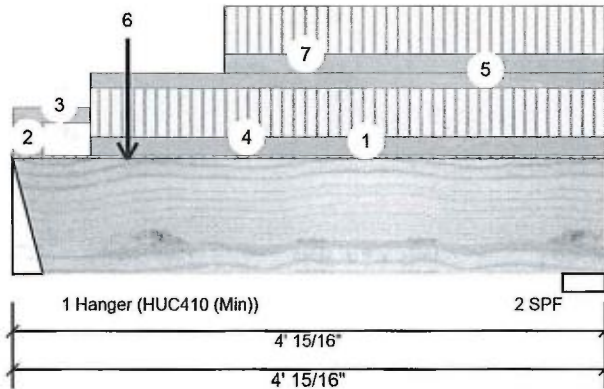
Client:
Project:
Address:

Date: 8/10/2018
Designer: J O
Job Name: GRANDBROOKE 2-3
Project #:

Page 2 of 2

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

Level: Ground Floor



Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Point	0-9-8		Near Face	122 lb	326 lb	0 lb	0 lb	J8
7	Part. Uniform Self Weight	1-5-8 to 4-0-15		Near Face	95 PLF 8 PLF	254 PLF	0 PLF	0 PLF	

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

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

Notes

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

Lumber

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

chemicals**Handling & Installation**

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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

KOTT NASCOR

This design is valid until 7/10/2021



NASCORLayout Name
GRANDBROOKE 2-3Design Method
LSD

Description

Created
June 07, 2018

Builder

Sales Rep

Designer
J.O.

Shipping

Project

Builder's Project

Kott Lumber Company

14 Anderson Blvd

Stouffville, Ontario

Canada

L4A 7X4

905-642-4400

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 OSB

Thickness 5/8"

Fastener Nailed & Glued

Vibration

Ceiling: Gypsum 1/2"

Legend

PS

Point Load Support

Load from Above

Wall

Wall Opening

Norbord Rimboard Plus 1.125 X 9.5

NJ60U 9.5

NJH 9.5

Forex 2.0E-3000Fb LVL 1.75 X 9.5

Forex 2.0E-3000Fb LVL 1.75 X 11.875

0 X 0 (Dropped)

5.75 X 9.5 (Dropped)

1. OBC 2012 O.Reg 332/12 as amended

2. Nascor CCMC - 13535-R

3. LVL CCMC-14056-R

4. CAN/CSA-C86-09

5. CCMC -12787-R APA PR-L310(C)

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:

VA3 DESIGN
255 CONSUMERS ROAD, TORONTO, ON
Date: 5/15/18
Project No: 18012
Address: GRANDBROOKE 2, BRAMPTON, ON

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

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

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

**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.

KOTT

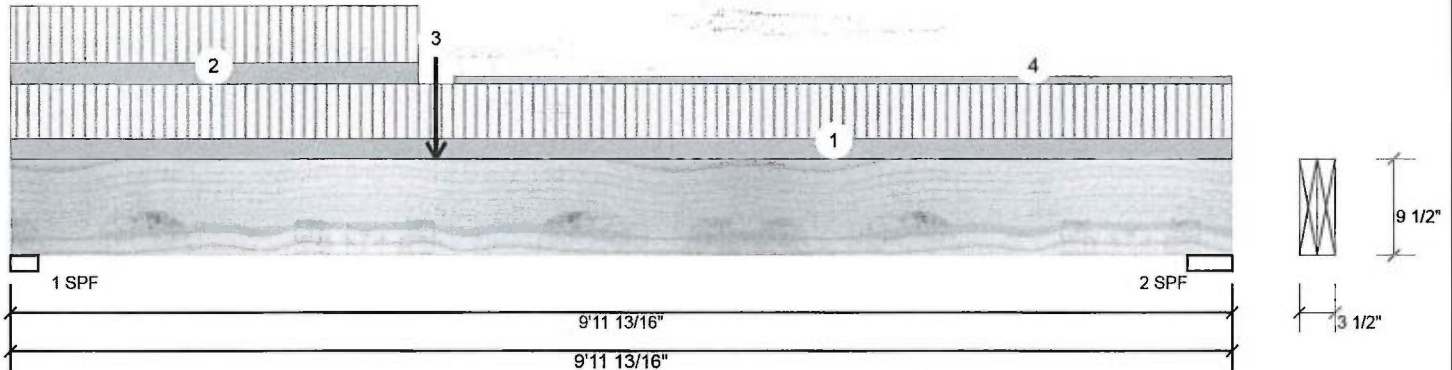


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 Client:
 Project:
 Address:

 Date: 8/10/2018
 Designer: J O
 Job Name: GRANDBROOKE 2-3
 Project #:

Page 1 of 1

F10-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply PASSED Level: Second Floor


Member Information

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

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	605	295	0	0
2	353	198	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - SPF	2.750"	22%	369 / 907	1276 L 1.25D+1.5L
2 - SPF	4.375"	8%	247 / 530	777 L 1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3656 ft-lb	3'5 3/4"	22724 ft-lb	0.161 (16%)	1.25D+1.5L	L
Unbraced	3656 ft-lb	3'5 3/4"	20936 ft-lb	0.175 (17%)	1.25D+1.5L	L
Shear	1185 lb	11 1/2"	9277 lb	0.128 (13%)	1.25D+1.5L	L
Perm Defl in.	0.026 (L/4434)	4'6 1/8"	0.317 (L/360)	0.080 (8%)	D	Uniform
LL Defl inch	0.052 (L/2202)	4'5 3/16"	0.317 (L/360)	0.160 (16%)	L	L
TL Defl inch	0.078 (L/1471)	4'5 1/2"	0.476 (L/240)	0.160 (16%)	D+L	L

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

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

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



Design Notes

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 9-11-13	(Span)1-0-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 3-4-0	(Span)1-1-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	3-5-12		Near Face	291 lb	672 lb	0 lb	0 lb	F7
4	Part. Uniform	3-7-9 to 9-11-13		Top	3 PLF	0 PLF	0 PLF	0 PLF	
	Self Weight				8 PLF				

Notes

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

Lumber

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

chemicals

Handling & Installation

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

- For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

 Forex
 APA: PR-L318

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


This design is valid until 7/10/2021





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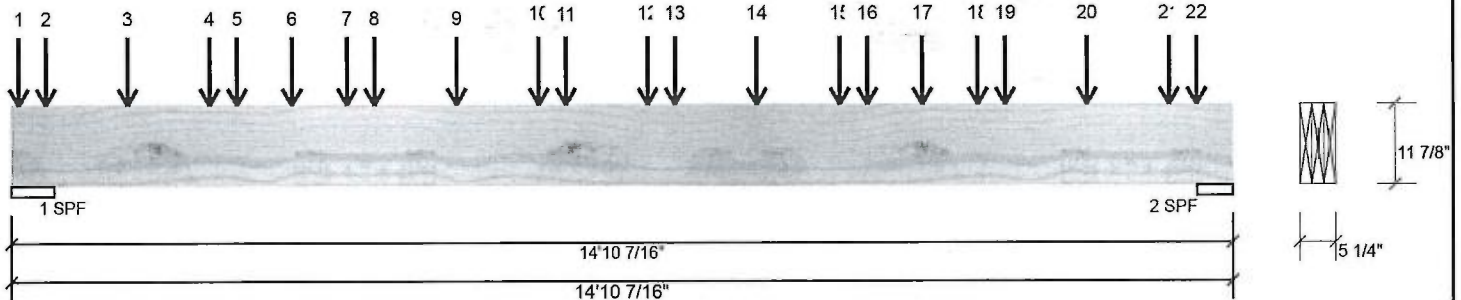
Client:
Project:
Address:

Date: 8/10/2018
Designer: J O
Job Name: GRANDBROOKE 2-3
Project #:

Page 1 of 2

F11-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 3-Ply - PASSED

Level: Second Floor



Member Information

Unfactored Reactions UNPATTERNED lb (Uplift)

Type:	Girder	Application:	Floor (Residential)
Plies:	3	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	Yes
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Brg	Live	Dead	Snow	Wind
1	3510	1498	0	0
2	3568	1507	0	0

Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	6.313"	35%	1873 / 5265	7138	L	1.25D+1.5L
2 - SPF	5.188"	43%	1884 / 5352	7235	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	24212 ft-lb	7'9 1/16"	53447 ft-lb	0.453 (45%)	1.25D+1.5L	L
Unbraced	24212 ft-lb	7'9 1/16"	50392 ft-lb	0.480 (48%)	1.25D+1.5L	L
Shear	6521 lb	1'5 7/16"	17394 lb	0.375 (37%)	1.25D+1.5L	L
Perm Defl in.	0.131 (L/1286)	7'5 3/4"	0.468 (L/360)	0.280 (28%)	D	Uniform
LL Defl inch	0.311 (L/541)	7'5 15/16"	0.468 (L/360)	0.670 (67%)	L	L
TL Defl inch	0.442 (L/381)	7'5 7/8"	0.702 (L/240)	0.630 (63%)	D+L	L

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

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

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



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	Point	0-1-1		Top	63 lb	167 lb	0 lb	0 lb	J9
2	Point	0-5-1		Top	49 lb	112 lb	0 lb	0 lb	J12
3	Point	1-5-1		Top	228 lb	572 lb	0 lb	0 lb	J12 J9
4	Point	2-5-1		Top	100 lb	230 lb	0 lb	0 lb	J12
5	Point	2-9-1		Top	128 lb	342 lb	0 lb	0 lb	J9

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



This design is valid until 7/10/2021





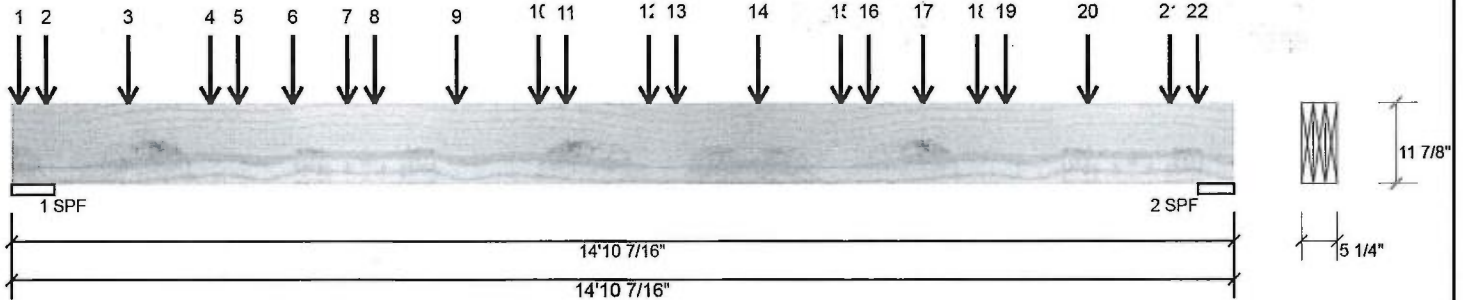
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 Client:
 Project:
 Address:

 Date: 8/10/2018
 Designer: J O
 Job Name: GRANDBROOKE 2-3
 Project #:

Page 2 of 2

F11-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 3-Ply - PASSED Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Point	3-5-1		Top	100 lb	230 lb	0 lb	0 lb	J12
7	Point	4-1-1		Top	128 lb	342 lb	0 lb	0 lb	J9
8	Point	4-5-1		Top	99 lb	230 lb	0 lb	0 lb	J12
9	Point	5-5-1		Top	228 lb	572 lb	0 lb	0 lb	J9 J12
10	Point	6-5-1		Top	117 lb	268 lb	0 lb	0 lb	J12
11	Point	6-9-1		Top	128 lb	342 lb	0 lb	0 lb	J9
12	Point	7-9-1		Top	118 lb	307 lb	0 lb	0 lb	J12
13	Point	8-1-1		Top	112 lb	299 lb	0 lb	0 lb	J9
14	Point	9-1-1		Top	211 lb	563 lb	0 lb	0 lb	J9 J12
15	Point	10-1-1		Top	97 lb	256 lb	0 lb	0 lb	J9
16	Point	10-5-1		Top	115 lb	307 lb	0 lb	0 lb	J12
17	Point	11-1-1		Top	98 lb	256 lb	0 lb	0 lb	J9
18	Point	11-9-1		Top	115 lb	307 lb	0 lb	0 lb	J12
19	Point	12-1-1		Top	105 lb	256 lb	0 lb	0 lb	J9
20	Point	13-1-1		Top	228 lb	563 lb	0 lb	0 lb	J12 J9
21	Point	14-1-1		Top	112 lb	253 lb	0 lb	0 lb	J9
22	Point	14-5-1		Top	114 lb	304 lb	0 lb	0 lb	J12
Self Weight					14 PLF				

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

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

Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

 Forex
 APA: PR-L318

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


This design is valid until 7/10/2021





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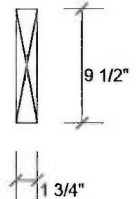
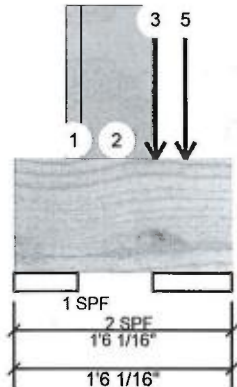
 Client:
 Project:
 Address:

 Date: 8/10/2018
 Designer: J O
 Job Name: GRANDBROOKE 2-3
 Project #:

Page 1 of 1

F1-A Forex 2.0E-3000Fb LVL 2x11.75" 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	0	30	0	0
2	394	468	431	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.375"	1%	41 / 0	41 Uniform	1.4D
2 - SPF	6.500"	20%	585 / 844	1428 L	1.25D+1.5S +0.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	6 ft-lb	8 7/16"	7385 ft-lb	0.001 (0%)	1.4D	Uniform
Unbraced	6 ft-lb	8 7/16"	7385 ft-lb	0.001 (0%)	1.4D	Uniform
Shear	38 lb	2 13/16"	3015 lb	0.013 (1%)	1.4D	Uniform
Perm Defl in.	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
LL Defl inch	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
TL Defl inch	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		

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

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

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



Design Notes

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-4-6 to 0-5-10		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
2	Part. Uniform	0-5-10 to 0-11-8		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
3	Point	0-11-13		Far Face	440 lb	394 lb	428 lb	0 lb	J3
4	Point	1-2-4		Top	1 lb	0 lb	3 lb	0 lb	
5	Point	1-2-4		Top	3 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Self Weight				4 PLF				

Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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



This design is valid until 7/10/2021



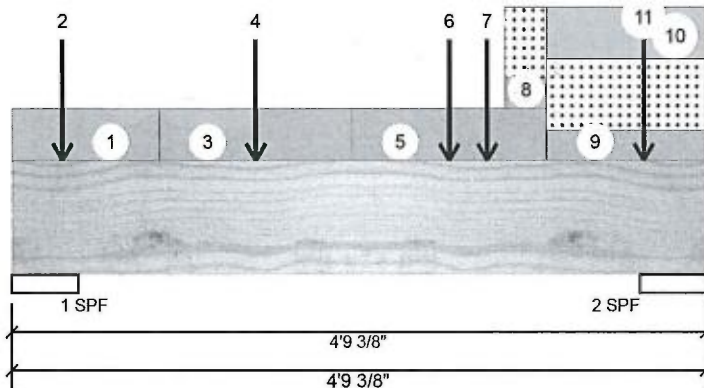


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 Client:
 Project:
 Address:

 Date: 8/10/2018
 Designer: J O
 Job Name: GRANDBROOKE 2-3
 Project #:

Page 1 of 2

F3-B 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)
Ply:	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	452	377	87	0
2	429	448	244	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	20%	471 / 721	1192 L	1.25D+1.5L +0.5S
2 - SPF	5.500"	22%	560 / 766	1326 L	1.25D+1.5L +0.5S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1321 ft-lb	3' 3/16"	11362 ft-lb	0.116 (12%)	1.25D+1.5L +0.5S	L
Unbraced	1321 ft-lb	3' 3/16"	8845 ft-lb	0.149 (15%)	1.25D+1.5L +0.5S	L
Shear	972 lb	3' 7 1/8"	4638 lb	0.210 (21%)	1.25D+1.5L +0.5S	L
Perm Defl in.	0.008 (L/6321)	2' 6 7/16"	0.133 (L/360)	0.060 (6%)	D	Uniform
LL Defl inch	0.010 (L/4823)	2' 6 1/8"	0.133 (L/360)	0.070 (7%)	L+0.5S	L
TL Defl inch	0.018 (L/2736)	2' 6 5/16"	0.200 (L/240)	0.090 (9%)	D+L+0.5S	L

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

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

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

**Design Notes**

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 1-0-4		Top	24 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
2	Point	0-4-4		Far Face	65 lb	111 lb	0 lb	0 lb	J9
3	Part. Uniform	1-0-4 to 2-4-4		Top	24 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
4	Point	1-8-4		Far Face	199 lb	334 lb	0 lb	0 lb	J9
5	Part. Uniform	2-4-4 to 3-8-4		Top	24 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
6	Point	3-0-4		Far Face	290 lb	334 lb	184 lb	0 lb	J9
7	Point	3-3-5		Top	35 lb	0 lb	71 lb	0 lb	Header Column

Continued on page 2...

Notes

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

Lumber

- 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

KOTT NASCOR

This design is valid until 7/10/2021





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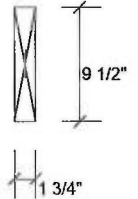
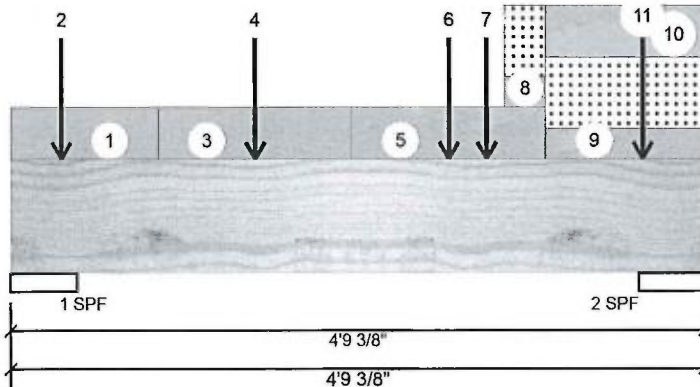
Client:
Project:
Address:

Date: 8/10/2018
Designer: J O
Job Name: GRANDBROOKE 2-3
Project #:

Page 2 of 2

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

Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
8	Tapered Start	3-4-13		Top	14 PLF	0 PLF	33 PLF	0 PLF	
	End	3-8-4			14 PLF	0 PLF	33 PLF	0 PLF	
9	Tapered Start	3-8-4		Top	14 PLF	0 PLF	33 PLF	0 PLF	
	End	4-9-6			14 PLF	0 PLF	33 PLF	0 PLF	
10	Part. Uniform	3-8-4 to 4-9-6		Top	24 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
11	Point	4-4-4		Far Face	84 lb	102 lb	30 lb	0 lb	J9
	Self Weight				4 PLF				

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

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

Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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

KOTT NASCOR

This design is valid until 7/10/2021





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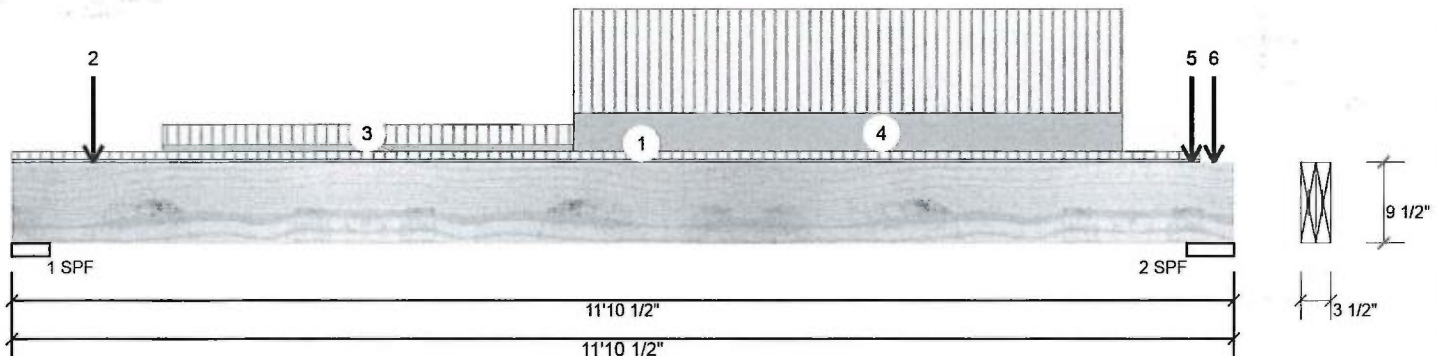
 Client:
 Project:
 Address:

 Date: 8/10/2018
 Designer: J O
 Job Name: GRANDBROOKE 2-3
 Project #:

Page 1 of 1

F7-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	686	304	0	0
2	2456	1023	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.375"	15%	380 / 1029	1409 L	1.25D+1.5L
2 - SPF	5.500"	42%	1279 / 3684	4964 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5826 ft-lb	6'9 1/16"	22724 ft-lb	0.256 (26%)	1.25D+1.5L	L
Unbraced	5826 ft-lb	6'9 1/16"	20256 ft-lb	0.288 (29%)	1.25D+1.5L	L
Shear	2093 lb	10'8 1/4"	9277 lb	0.226 (23%)	1.25D+1.5L	L
Perm Defl in.	0.056 (L/2399)	6'1 15/16"	0.373 (L/360)	0.150 (15%)	D	Uniform
LL Defl inch	0.133 (L/1008)	6'2 1/4"	0.373 (L/360)	0.360 (36%)	L	L
TL Defl inch	0.189 (L/710)	6'2 3/16"	0.559 (L/240)	0.340 (34%)	D+L	L

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

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

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



Design Notes

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 11-6-7	(Span) 0-10-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-9-8		Near Face	19 lb	51 lb	0 lb	0 lb	J9
3	Part. Uniform	1-5-8 to 5-5-8		Near Face	18 PLF	47 PLF	0 PLF	0 PLF	
4	Part. Uniform	5-5-8 to 10-9-8		Near Face	93 PLF	247 PLF	0 PLF	0 PLF	
5	Point	11-5-8		Near Face	62 lb	165 lb	0 lb	0 lb	J9
6	Point	11-8-3		Far Face	509 lb	1211 lb	0 lb	0 lb	F8
	Self Weight				8 PLF				

Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

 Forex
 APA: PR-L318

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


This design is valid until 7/10/2021





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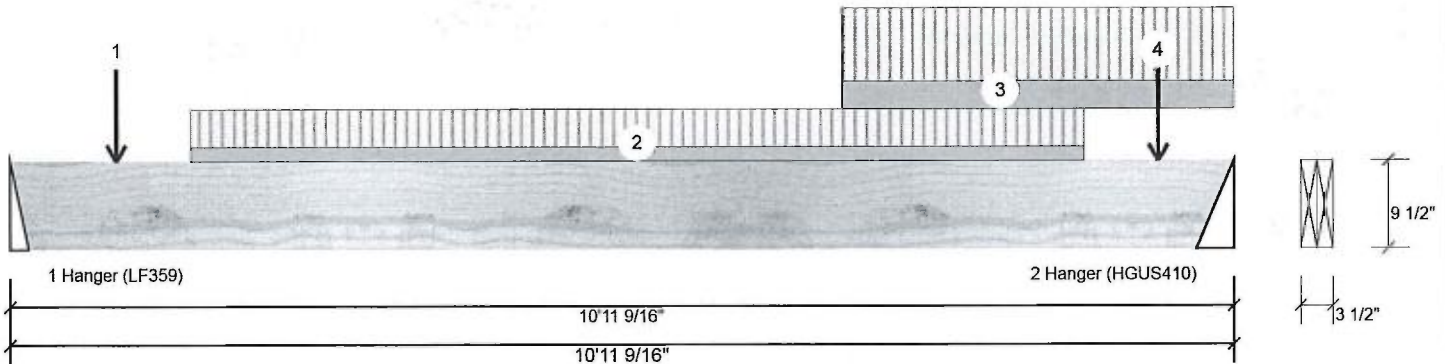
 Client:
 Project:
 Address:

 Date: 8/10/2018
 Designer: J O
 Job Name: GRANDBROOKE 2-3
 Project #:

Page 1 of 1

F7-B Forex 2.0E-3000Fb LVL 1.7500" 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	672	291	0	0
2	1374	555	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	26%	364 / 1007	1371 L	1.25D+1.5L
2 - Hanger	4.000"	27%	694 / 2062	2756 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4806 ft-lb	6'4 5/16"	22724 ft-lb	0.211 (21%)	1.25D+1.5L	L
Unbraced	4806 ft-lb	6'4 5/16"	20509 ft-lb	0.234 (23%)	1.25D+1.5L	L
Shear	2244 lb	9'10 13/16"	9277 lb	0.242 (24%)	1.25D+1.5L	L
Perm Defl in.	0.044 (L/2912)	5'7 3/8"	0.353 (L/360)	0.120 (12%)	D	Uniform
LL Defl inch	0.105 (L/1214)	5'7 3/4"	0.353 (L/360)	0.300 (30%)	L	L
TL Defl inch	0.148 (L/857)	5'7 5/8"	0.530 (L/240)	0.280 (28%)	D+L	L

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

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

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



Design Notes

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Point	0-11-8		Near Face	30 lb	80 lb	0 lb	0 lb	J1
2	Part. Uniform	1-7-8 to 9-7-8		Near Face	46 PLF	124 PLF	0 PLF	0 PLF	
3	Part. Uniform	7-5-9 to 10-11-9		Top	90 PLF	240 PLF	0 PLF	0 PLF	
4	Point	10-3-8		Near Face	50 lb	134 lb	0 lb	0 lb	J7
	Self Weight				8 PLF				

Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

 Forex
 APA: PR-L318

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

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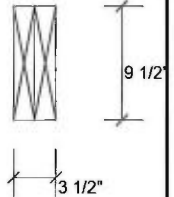
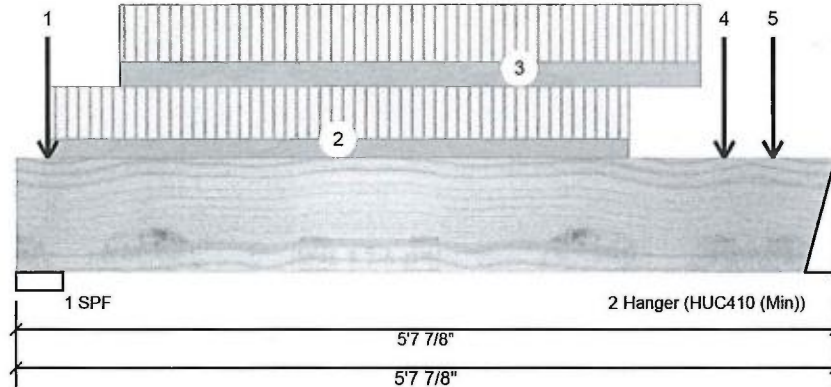
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 Project:
 Address:

 Date: 8/10/2018
 Designer: J O
 Job Name: GRANDBROOKE 2-3
 Project #:

Page 1 of 1

F8-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED Level: Second Floor



Member Information

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

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	1338	568	0	0
2	1211	509	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.893"	32%	710 / 2006	2716 L	1.25D+1.5L
2 - Hanger	2.500"	38%	637 / 1817	2454 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3255 ft-lb	2'10 1/2"	22724 ft-lb	0.143 (14%)	1.25D+1.5L	L
Unbraced	3255 ft-lb	2'10 1/2"	22724 ft-lb	0.143 (14%)	1.25D+1.5L	L
Shear	2965 lb	4'8 5/8"	9277 lb	0.320 (32%)	1.25D+1.5L	L
Perm Defl in.	0.009 (L/6980)	2'10 5/8"	0.175 (L/360)	0.050 (5%)	D	Uniform
LL Defl inch	0.021 (L/2937)	2'10 5/8"	0.175 (L/360)	0.120 (12%)	L	L
TL Defl inch	0.030 (L/2067)	2'10 5/8"	0.262 (L/240)	0.120 (12%)	D+L	L

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

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

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



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 braced at bearings.
- 5 Bottom braced at bearings.
- 6 Lateral slenderness ratio based on full section width.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Point	0-2-11		Far Face	86 lb	194 lb	0 lb	0 lb	J9
2	Part. Uniform	0-2-11 to 4-2-11		Near Face	85 PLF	227 PLF	0 PLF	0 PLF	
3	Part. Uniform	0-8-11 to 4-8-11		Far Face	109 PLF	252 PLF	0 PLF	0 PLF	
4	Point	4-10-11		Near Face	95 lb	254 lb	0 lb	0 lb	J12
5	Point	5-2-11		Far Face	77 lb	185 lb	0 lb	0 lb	J9
	Self Weight				8 PLF				

Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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



This design is valid until 7/10/2021





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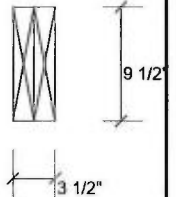
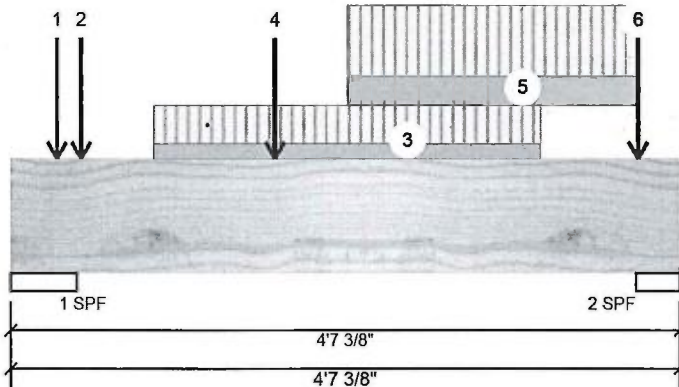
Client:
Project:
Address:

Date: 8/10/2018
Designer: J O
Job Name: GRANDBROOKE 2-3
Project #:

Page 1 of 1

F8-C 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	759	311	0	0
2	704	296	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	13%	389 / 1139	1527 L	1.25D+1.5L
2 - SPF	3.694"	18%	370 / 1056	1426 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1323 ft-lb	2'4 11/16"	22724 ft-lb	0.058 (6%)	1.25D+1.5L	L
Unbraced	1323 ft-lb	2'4 11/16"	22724 ft-lb	0.058 (6%)	1.25D+1.5L	L
Shear	1812 lb	1'2 1/4"	9277 lb	0.195 (20%)	1.25D+1.5L	L
Perm Defl in.	0.002 (L/19163)	2'4 11/16"	0.132 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch	0.006 (L/8009)	2'4 5/8"	0.132 (L/360)	0.040 (4%)	L	L
TL Defl inch	0.008 (L/5649)	2'4 5/8"	0.199 (L/240)	0.040 (4%)	D+L	L

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

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

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



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 braced at bearings.
- Bottom braced at bearings.
- Lateral slenderness ratio based on full section width.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Point	0-3-14		Far Face	3 lb	8 lb	0 lb	0 lb	J7
2	Point	0-5-14		Near Face	113 lb	301 lb	0 lb	0 lb	J12
3	Part. Uniform	0-11-14 to 3-7-14		Far Face	46 PLF	123 PLF	0 PLF	0 PLF	
4	Point	1-9-14		Near Face	104 lb	264 lb	0 lb	0 lb	J12
5	Part. Uniform	2-3-14 to 4-3-14		Near Face	94 PLF	226 PLF	0 PLF	0 PLF	
6	Point	4-3-14		Far Face	41 lb	110 lb	0 lb	0 lb	J7
	Self Weight				8 PLF				

Notes

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

Lumber

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

chemicals

Handling & Installation

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

- For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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



This design is valid until 7/10/2021





isDesign™

Client:

Project:

Address:

Date: 8/10/2018

Designer: J O

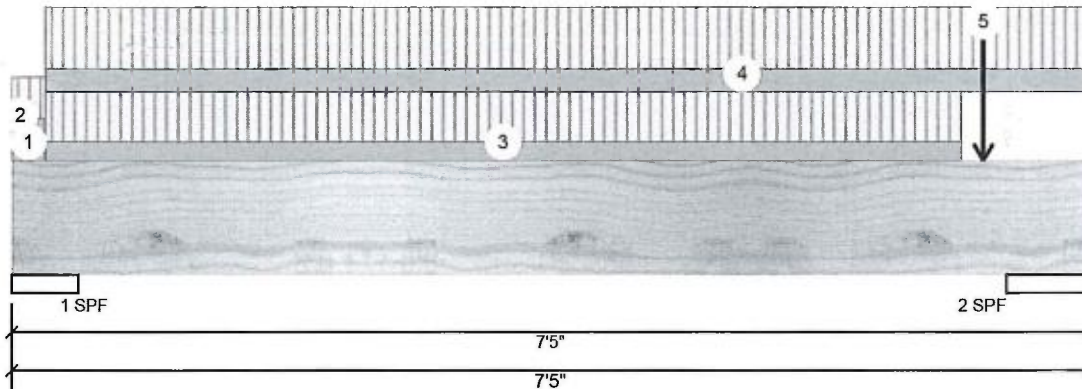
Job Name: GRANDBROOKE 2-3

Project #:

Page 1 of 1

F9-A Forex 2x0E-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	176	95	0	0
2	1452	612	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	3%	119 / 264	383 L	1.25D+1.5L
2 - SPF	6.955"	20%	764 / 2178	2942 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	785 ft-lb	4'9 5/16"	22724 ft-lb	0.035 (3%)	1.25D+1.5L	L
Unbraced	785 ft-lb	4'9 5/16"	21888 ft-lb	0.036 (4%)	1.25D+1.5L	L
Shear	2864 lb	6'1 5/16"	9277 lb	0.309 (31%)	1.25D+1.5L	L
Perm Defl in.	0.003 (L/22626)	3'10 15/16"	0.217 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch	0.007 (L/11233)	3'11 3/4"	0.217 (L/360)	0.030 (3%)	L	L
TL Defl inch	0.010 (L/7507)	3'11 1/2"	0.325 (L/240)	0.030 (3%)	D+L	L

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

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

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



Design Notes

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-2-12	(Span)0-3-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-2-12	(Span)0-8-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	0-2-12 to 6-6-7	(Span)0-9-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Tie-In	0-2-12 to 7-5-0	(Span)1-0-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
5	Point	6-8-3		Far Face	555 lb	1374 lb	0 lb	0 lb	F7
	Self Weight				8 PLF				

Notes

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

Lumber

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

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

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Canada
L4A 7X4
905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021

