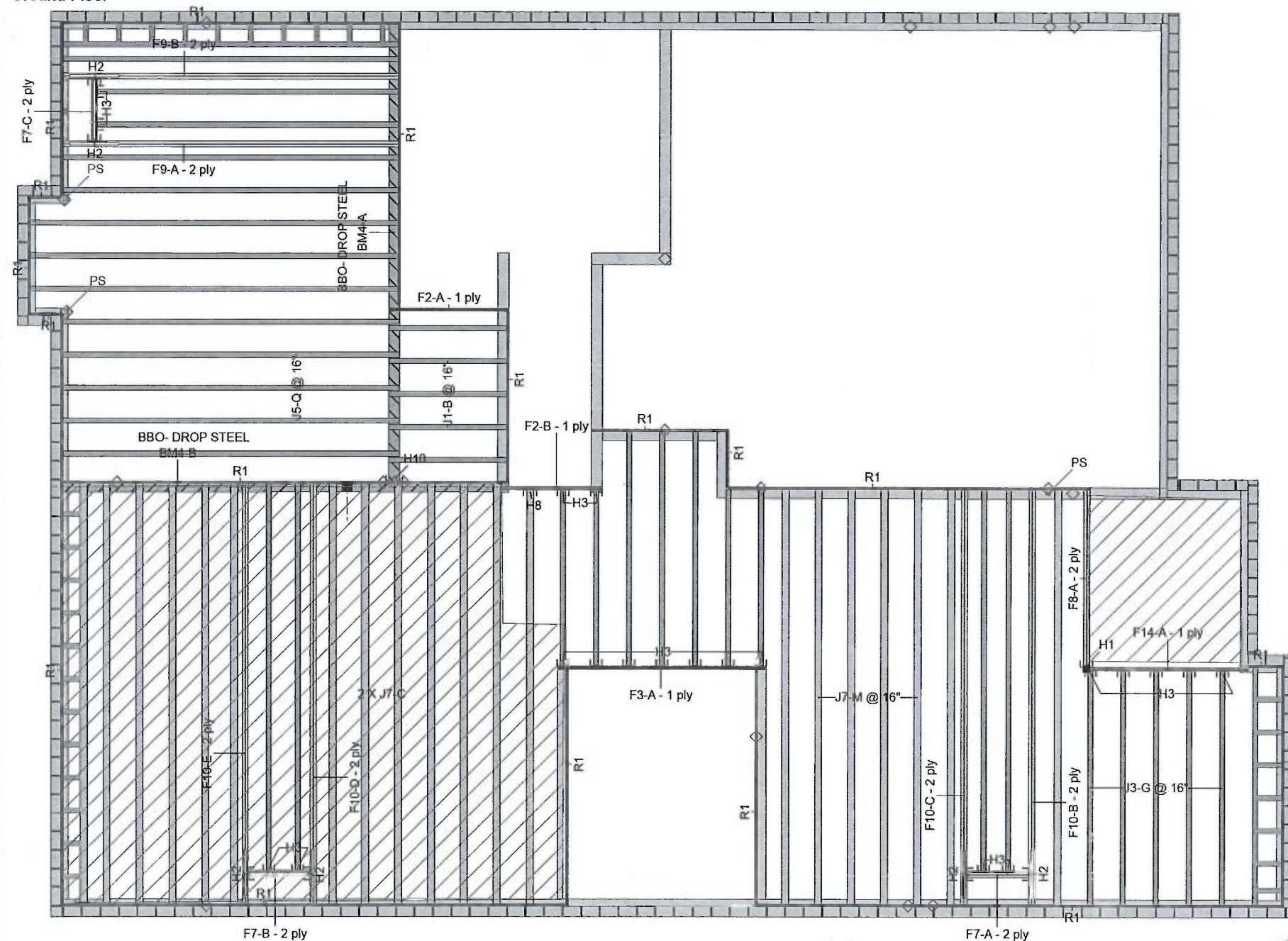


## Ground Floor



## Architectural Drawing Info

REGION DESIGN INC  
8700 DUFFERIN ST.  
CONCORD, ON L4K 4S6

Project # 17-04-07  
Model: SANDSTONE 2A  
Date: JULY, 2018

JOISTS SPACING 16" O/C  
UNLESS  
NOTED OTHERWISE

- OBC 2012 O.Reg 332/12 as amended
  - Nascor CCMC - 13535-R
  - LVL CCMC -12904-R
  - CAN/CSA-O86-09
  - CCMC -12787-R APA PR-L310(C)
- Version 18.40.162 Powered by iStruct™

## 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.

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

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

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

Ground Floor  
LVL/LSL

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F3	Forex 2.0E-3000Fb LVL	1.75	11.875			1	10-0-0
F14	Forex 2.0E-3000Fb LVL	1.75	11.875			1	8-0-0
F2	Forex 2.0E-3000Fb LVL	1.75	11.875			2	6-0-0

## I Joist

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F10	NJ	1.5	11.875	4	2	8	18-0-0
F9	NJ	1.5	11.875	2	2	4	14-0-0
F8	NJ	1.5	11.875	1	2	2	8-0-0
F7	NJ	1.5	11.875	3	2	6	4-0-0
J7	NJ60U	3.5	11.875			20	18-0-0
J6	NJH	2.5	11.875			7	16-0-0
J5	NJH	2.5	11.875			11	14-0-0
J3	NJH	2.5	11.875			9	10-0-0
J2	NJH	2.5	11.875			4	8-0-0
J1	NJH	2.5	11.875			5	6-0-0

## Rim Board

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 11.875	1.125	11.875			16	12

## Blocking

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK1	NJH	2.5	11.875	Lin Ft		Varies	23-0-0

## Hanger

Label	Pcs	Description	Skew	Slope	fasteners	Supported Member
H1	1	HUC210-2 (Min)			14 10dx1 1/2	6 10d
H2	6	LT2-151188			4 10d	2 10dx1 1/2
H3	20	LT251188			4 10d	2 10dx1 1/2
H8	1	LT351188			4 10d	2 10dx1 1/2
H10	1	Unknown Hanger				

## NOTES:

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

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

Rim parallel to joists: 1-1/8" rimboard with 2"x4" 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 drawings. Project Engineer to review and approve the deviation prior to construction.

## Legend

PS	Point Load Support
◇	Load from Above
Wall	Wall
Norbord Rimboard Plus 1.125 X 11.875	Norbord Rimboard Plus 1.125 X 11.875
NJ 11.875	NJ 11.875
NJ60U 11.875	NJ60U 11.875
NJH 11.875	NJH 11.875
Forex 2.0E-3000Fb LVL 1.75 X 11.875	Forex 2.0E-3000Fb LVL 1.75 X 11.875
5.25 X 10.25 (Dropped)	5.25 X 10.25 (Dropped)

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

NASCOR

## Layout Name

SANDSTONE 2A EL-2

## Design Method

LSD

## Description

GREENPARK HOMES  
MINISALE, BRAMPTON, ON

## Created

June 29, 2018

## Builder

Sales Rep

RM

## Designer

SB

## Shipping

## Project

## Builder's Project

Kott Lumber Company  
14 Anderson Blvd  
Stouffville, Ontario  
CanadaL4A 7X4  
905-642-4400

## Ground Floor

## Design Method

LSD  
Building Code NBCC 2010 / OBC  
2012

## Floor

Loads

Live 40

Dead 15

## Deflection Joist

LL Span L/ 480

TL Span L/ 360

LL Cant 2L/ 480

TL Cant 2L/ 360

## Deflection Girder

LL Span L/ 360

TL Span L/ 240

LL Cant 2L/ 480

TL Cant 2L/ 360

## Decking

Deck OSB

Thickness 3/4"

Fastener Nailed &amp; Glued

## Vibration

Lot 25

CITY OF BRAMPTON  
BUILDING DIVISION  
REVIEWED

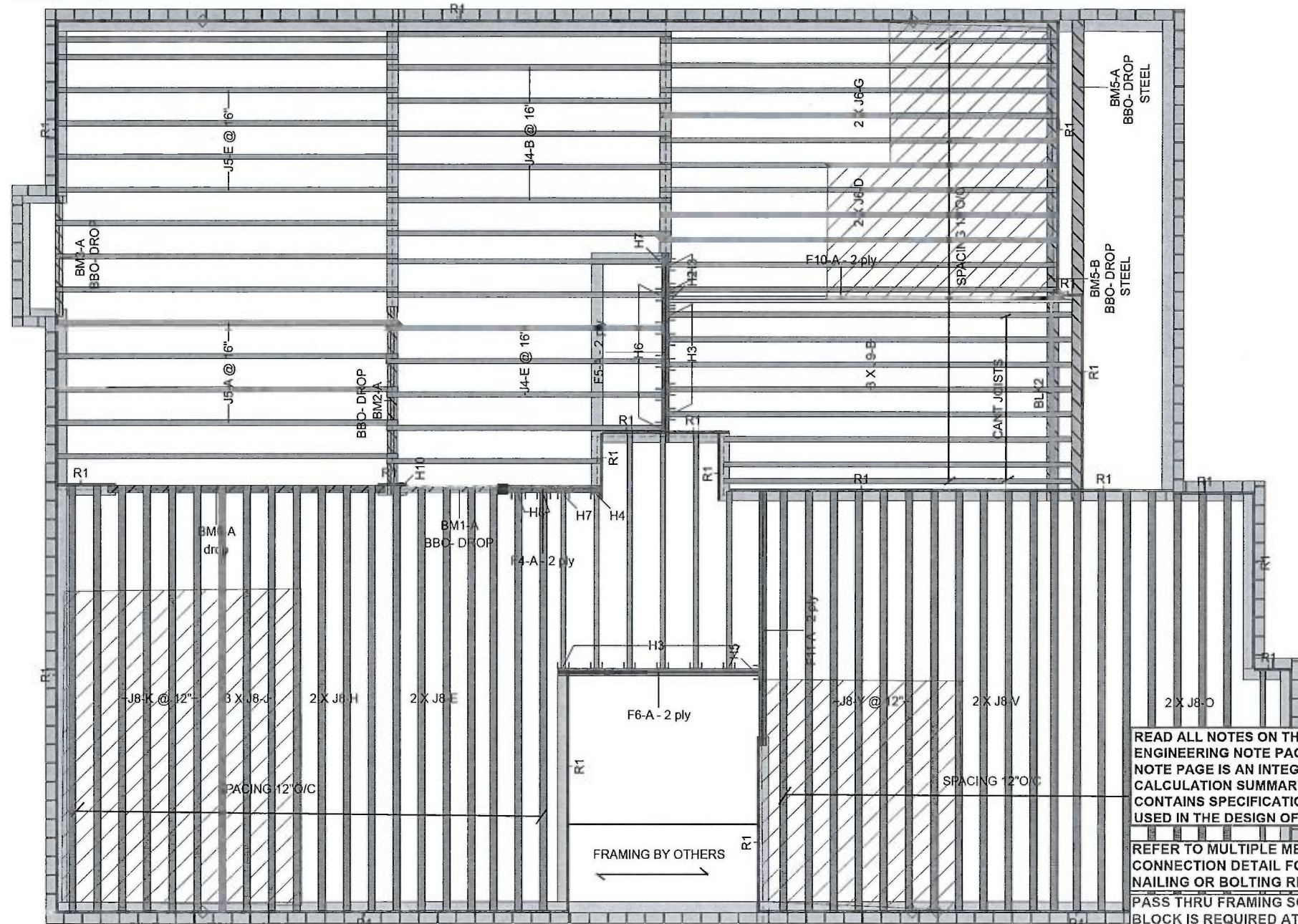
JAN 23 2019

BY  
MARK DERKSEN

KOTT



## Second Floor



## Legend

PS	Point Load Support
◇	Load from Above
Wall	Wall
Norbord Rimboard Plus 1.125 X 11.875	Norbord Rimboard Plus 1.125 X 11.875
NJ 11.875	NJ 11.875
NJH 11.875	NJH 11.875
Forex 2.0E-3000Fb LVL 1.75 X 9.5 (Dropped)	Forex 2.0E-3000Fb LVL 1.75 X 9.5 (Dropped)
Forex 2.0E-3000Fb LVL 1.75 X 11.875 (Dropped)	Forex 2.0E-3000Fb LVL 1.75 X 11.875 (Dropped)
1.5 X 9.5 (Dropped)	1.5 X 9.5 (Dropped)
1.75 X 9.5 (Dropped)	1.75 X 9.5 (Dropped)
5.75 X 10.25 (Dropped)	5.75 X 10.25 (Dropped)

- OBC 2012 O.Reg 332/12 as amended
- Nascor CCMC - 13535-R
- LVL CCMC - 12904-R
- CAN/CSA-O86-09
- CCMC - 12787-R APA PR-L310(C)

Version 18.40.162 Powered by iStruct™

This layout is to be used as an installation guide. It is meant to be used in conjunction with the architectural and structural drawings, not to replace them

## OPTIONAL 5BEDROOM

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

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

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS. PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.

Second Floor  
LVL/LSL (Flush)

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F11	Forex 2.0E-3000Fb LVL	1.75	11.875	1	2	2	12-0-0
F6	Forex 2.0E-3000Fb LVL	1.75	11.875	1	2	2	10-0-0
F5	Forex 2.0E-3000Fb LVL	1.75	11.875	1	2	2	8-0-0
F4	Forex 2.0E-3000Fb LVL	1.75	11.875	1	2	2	6-0-0

## LVL/LSL (Dropped)

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BM6	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	12-0-0

## Joist (Flush)

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F10	NJ	1.5	11.875	1	2	2	18-0-0
J8	NJ40U	3.5	11.875			39	18-0-0
J9	NJH	2.5	11.875			5	18-0-0
J6	NJH	2.5	11.875			11	16-0-0
J5	NJH	2.5	11.875			17	14-0-0
J4	NJH	2.5	11.875			13	12-0-0
J3	NJH	2.5	11.875			5	10-0-0
J2	NJH	2.5	11.875			3	8-0-0

## Rim Board

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 11.875	1.125	11.875			17	12

## Blocking

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK2	NJ	1.5	11.875	LinFt		Varies	1-0-0
BLK2	NJH	2.5	11.875	LinFt		Varies	6-0-0

## Hanger

		Beam/Girder		Supported Member	
Label	Pcs	Description	Skew	Slope	fasteners
H2	1	LT2-151188			4 10d
H3	13	LT251188			4 10d
H4	1	HUC312			16 16d
H5	1	HGUS410			46 16d
H6	5	HU310			14 16d
H7	2	LF2511			12 10d
H8	2	LT351188			4 10d
H10	1	Unknown			2 10dx1 1/2

Dimensions on the architectural drawings. Require filler/backer ply when supporting another ceiling-mounted hanger. g @ 24" o/c under parallel non-loadbearing walls. Flush window header along inside face of rimboard/rimjoist. See specifier guide for installation details. 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"x4" 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 drawings. Project Engineer to review and approve the deviation prior to construction.

JOISTS SPACING 16"O/C UNLESS NOTED OTHERWISE

NASCOR

Layout Name  
SANDSTON 2A EL-2Design Method  
LSDDescription  
GREENPARK HOMES  
MINISALE, BRAMPTON, ONCreated  
June 29, 2018

Builder

Sales Rep  
RMDesigner  
SB

Shipping

Project

Builder's Project

Kott Lumber Company

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

## Second 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

Ceiling:

Architectural Drawing Info

REGION DESIGN INC

8700 DUFFERIN ST.

CONCORD, ON L4K 4S6

Project # 17-04-07

Model: SANDSTON 2A

Date: JULY, 2018

LOT 25

KOTT

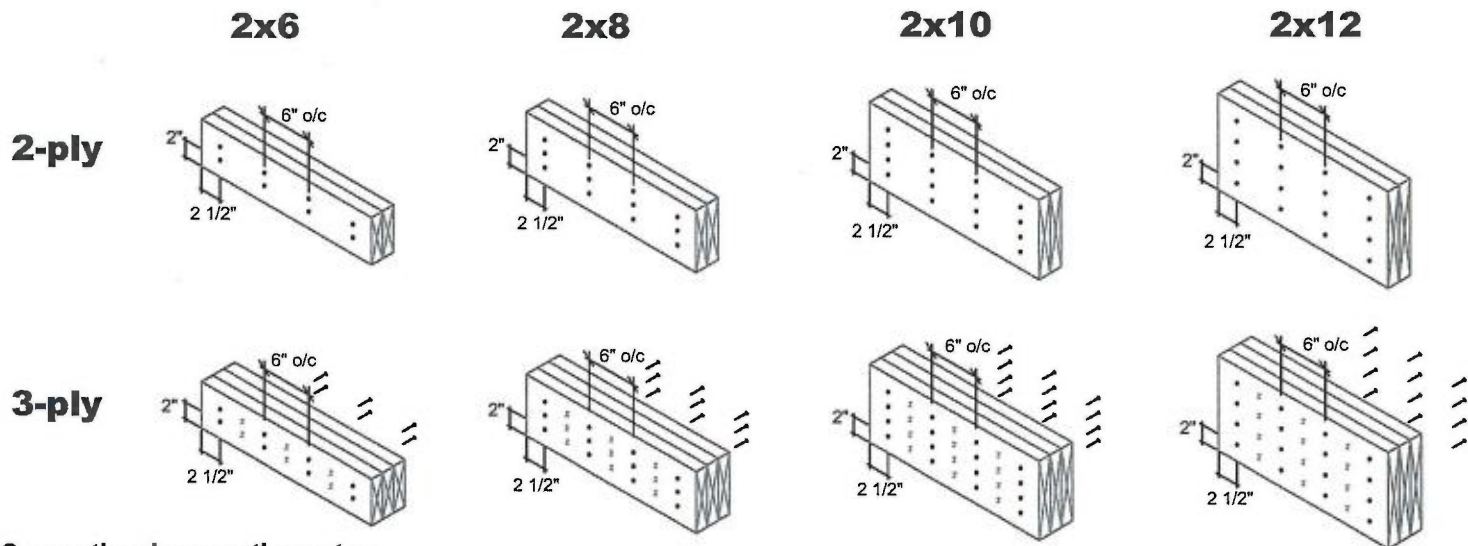


# MULTIPLE MEMBER CONNECTIONS

GREENPARK HOMES-MINISALE-  
SANDSTONE 2A EL 2-BRAMPTON-ON

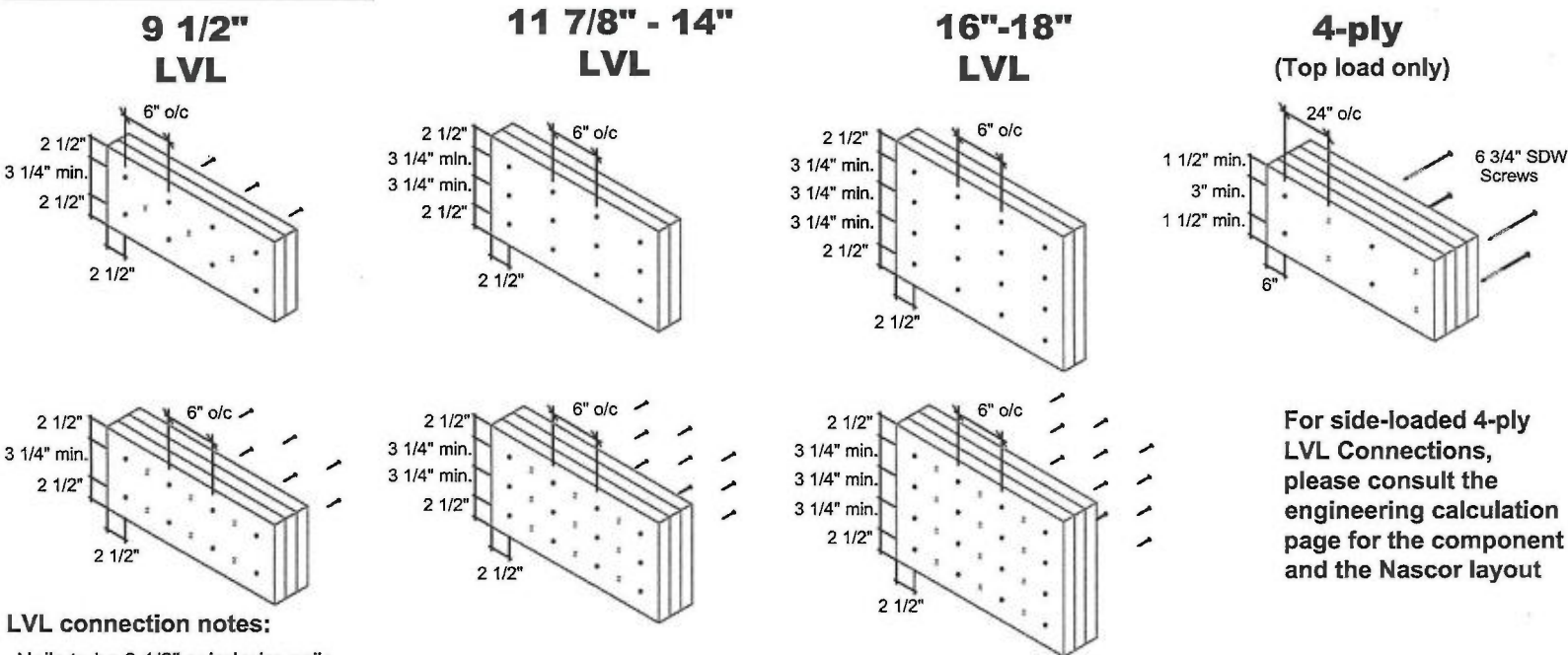
LOT 25

## Conventional Connections (for uniform distributed loads)



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

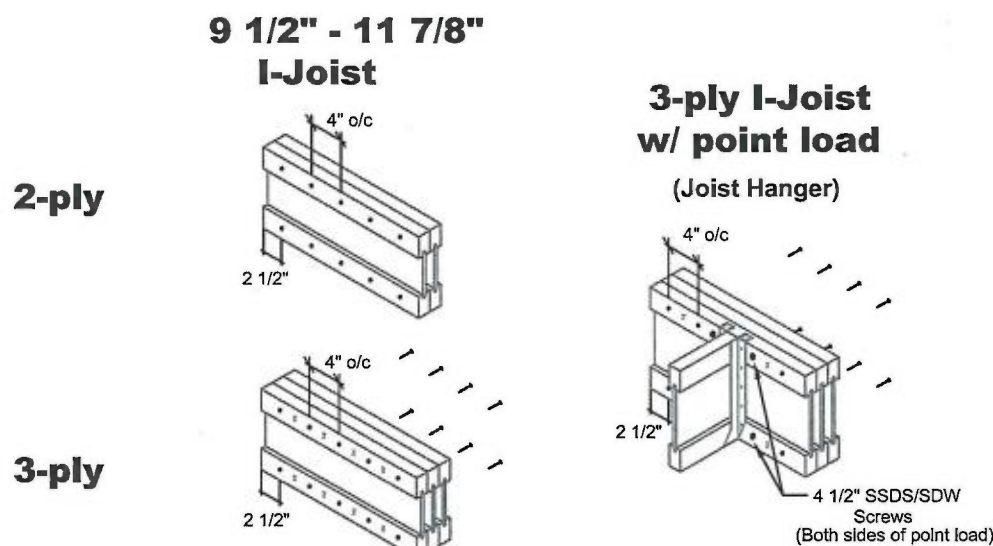
## LVL Connections (for uniform distributed loads)



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

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

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



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

MULTI-PLY  
CONNECTION  
DETAILS

Date: November 30, 2016  
Scale: NTS



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

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

REVISION 2009-10-09

GREENPARK HOMES-MINISALE-  
SANDSTONE 2A EL 2-BRAMPTON-ON

Lot 25

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

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

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

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

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

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

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

**CODE**

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

**COMPONENT**

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

**HANDLING AND INSTALLATION**

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

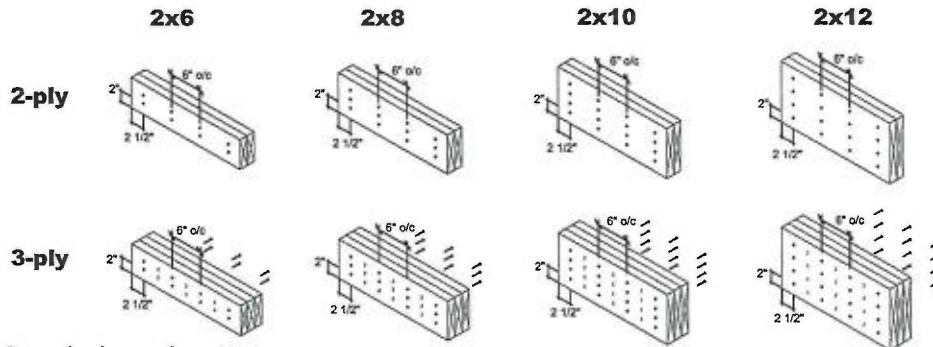




# MULTIPLE MEMBER CONNECTIONS

GREENPARK HOMES-MINISALE-  
SANDSTONE 2A EL 2-BRAMPTON-ON

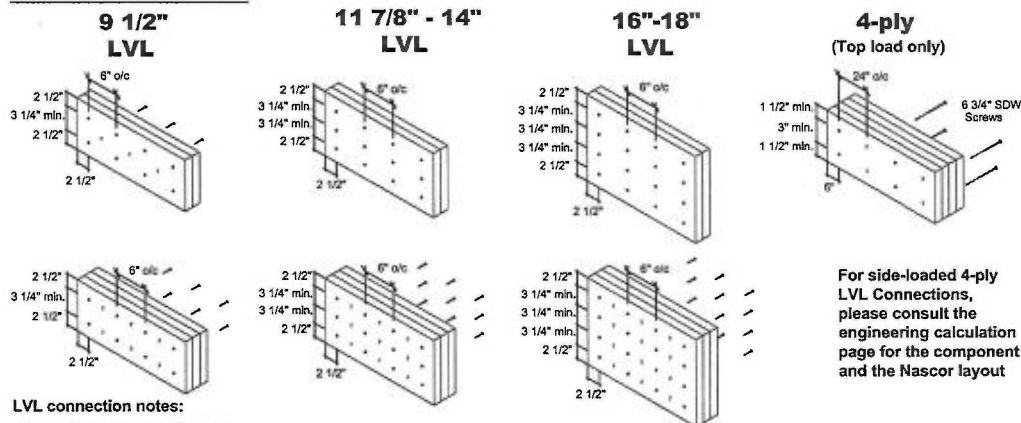
## Conventional Connections (for uniform distributed loads)



### Conventional connection notes:

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

## LVL Connections (for uniform distributed loads)

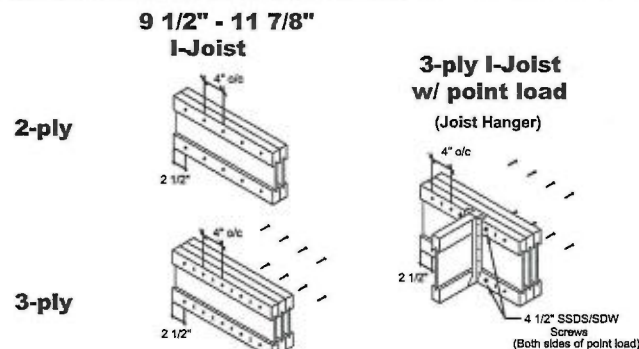


### LVL connection notes:

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

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

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



### Vertical I-Joist connection notes:

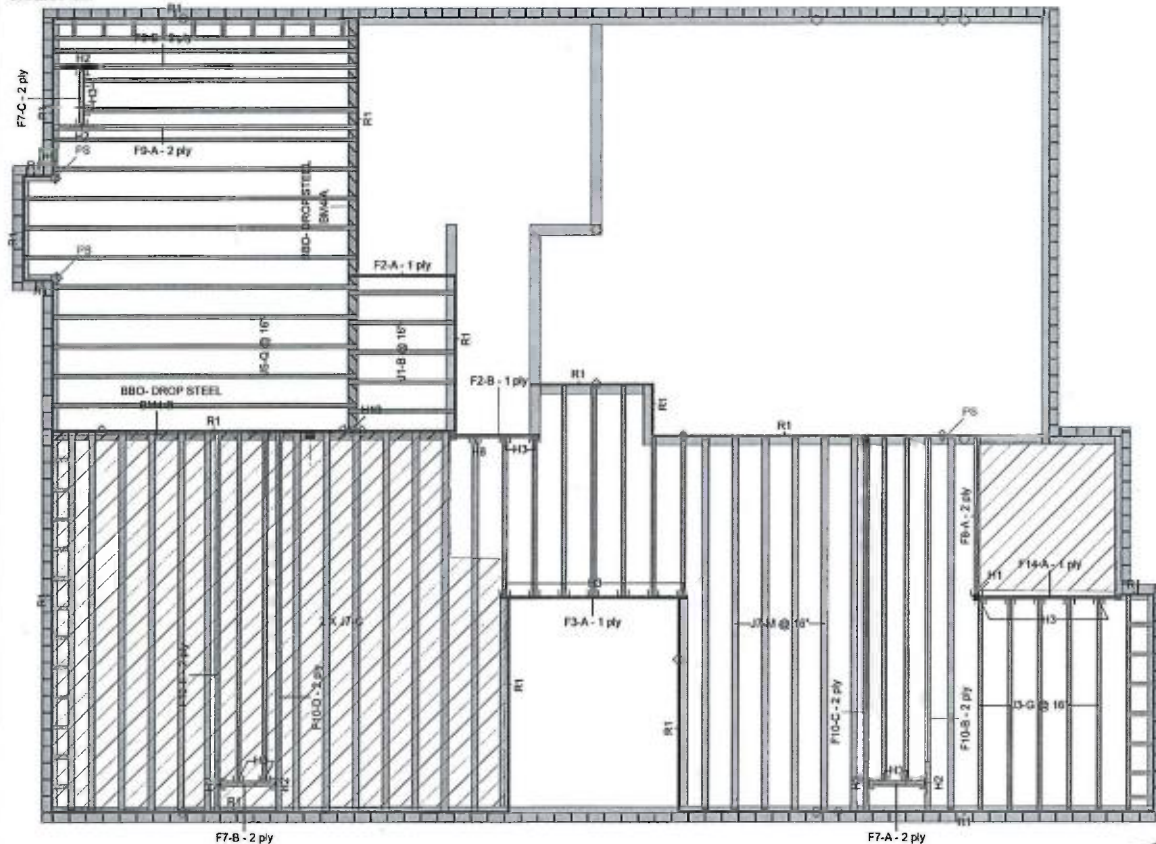
- Nails to be 3" spiral wire nails.
- Nails to be located at centre of top and bottom flanges. Start all nails a minimum of 2 1/2" in from ends.
- Number of rows and spacing as per details shown, unless noted otherwise.
- "X" represents nail driven from the opposite side.

MULTI-PLY  
CONNECTION  
DETAILS

Date: November 06, 2016  
Scale: NTS

**KOTT**

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



## Architectural Drawing Info

REGION DESIGN INC  
8700 DUFFERIN ST.  
CONCORD, ON L4K 4S6

Project # 17-04-07  
Model: SANDSTONE 2A  
Date: JULY, 2018

JOISTS SPACING 16" O/C  
UNLESS  
NOTED OTHERWISE

1. OBC 2012 O.Reg 332/12 as amended
2. Nascor CCMC - 13535-R
3. LVL CCMC - 12904-R
4. CAN/CSA-Q36-09
5. CCMC-12787-R APA PR-L310(C)

Version 18.04.162 Powered by iStructur

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

**NASCOR**

Layout Name

SANDSTON 2A EL-2

Design Method

LSO

Description

GREENPARK HOMES

MINISALE, BRAMPTON ON

Created

June 29, 2018

Builder

Sales Rep

RM

Designer

SB

Shipping

Project

Builder's Project

Kott Lumber Company

14 Anderson Blvd

Stouffville, Ontario

Canada

L4A 7X4

905-642-4400

Ground Floor

Design Method

LSO

Building Code

NBCC 2010 / OBC

2012

Floor

Loads

Dead

Deflection Joist

LL Span 1/

TL Span 1/

LL Cant 2L/

TL Cant 2L/

Deflection Girder

LL Span 1/

TL Span 1/

LL Cant 2L/

TL Cant 2L/

Decking

Deck

Thickness

3/4"

Fastener

Nailed & Glued

Vibration

## Ground Floor

## LVL/LSL

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
F3	Forex 2.0E-3000Fb LVL	1.75	11.875			1	10-0-0
F14	Forex 2.0E-3000Fb LVL	1.75	11.875			1	8-0-0
F2	Forex 2.0E-3000Fb LVL	1.75	11.875			2	6-0-0

## Joist

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
F10	NJ	1.5	11.875	4	2	8	18-0-0
F9	NJ	1.5	11.875	2	2	4	14-0-0
F8	NJ	1.5	11.875	1	2	2	8-0-0
F7	NJ	1.5	11.875	3	2	6	4-0-0
J7	NJ60U	3.5	11.875			20	18-0-0
J6	NJH	2.5	11.875			7	16-0-0
J5	NJH	2.5	11.875			11	14-0-0
J3	NJH	2.5	11.875			9	10-0-0
J2	NJH	2.5	11.875			4	8-0-0
J1	NJH	2.5	11.875			5	8-0-0

## Rim Board

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 11.875	1.125	11.875			16	12

## Blocking

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
BLK1	NJH	2.5	11.875	Lin Ft		Varies	23-0-0

## Hanger

Label	Pcs	Description	Skew	Slope	fasteners	fasteners
H1	1	HUC210-2 (Min)			14 10dx1 1/2	6 10d
H2	6	LT2-151188			4 10d	2 10dx1 1/2
H3	20	LT251188			4 10d	2 10dx1 1/2
H8	1	LT351188			4 10d	2 10dx1 1/2
H10	1	Unknown Hanger				

## 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-loadbearing walls.
4. Install single ply flush window header along inside face of rimboard/rimjoist.
5. Refer to Nascor specifier guide for installation details.
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"x4" 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 drawings. Project Engineer to review and approve the deviation prior to construction.

## Legend

PS	Point Load Support
○	Load from Above
■	Wall
■	Norbord Rimboard Plus 1.125 X 11.875
■	NJ 11.875
■	NJ60U 11.875
■	NJH 11.875
■	Forex 2.0E-3000Fb LVL 1.75 X 11.875
■	5.25 X 10.25 (Dropped)

**KOTT**





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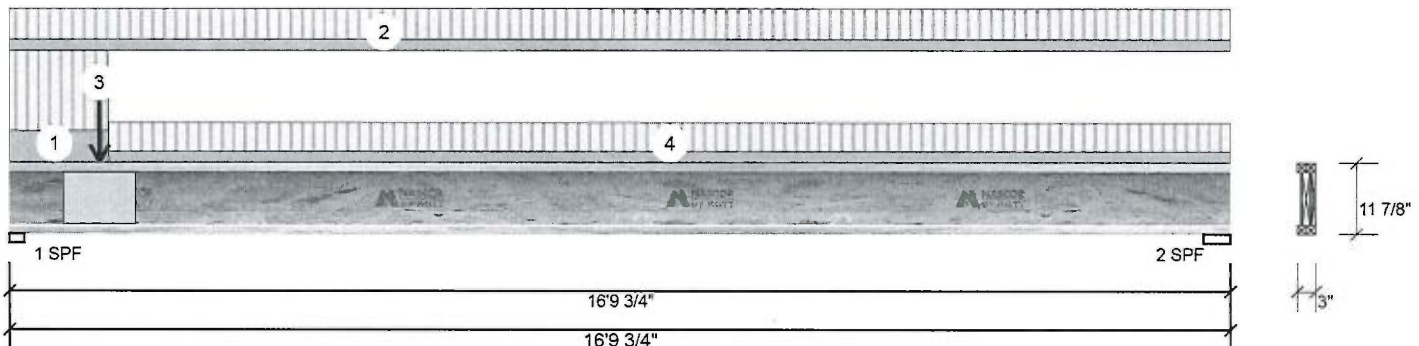
 Client:  
 Project:  
 Address:

 Date: 8/14/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2  
 Project #:

Page 1 of 1

**F10-B NJ 11.875" 2-Ply - PASSED**

Level: Ground Floor

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

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

Brg	Live	Dead	Snow	Wind
1	663	248	0	0
2	362	136	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	46%	310 / 994	1304 L	1.25D+1.5L
2 - SPF	4.375"	21%	169 / 543	712 L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3007 ft-lb	7'9 1/4"	9020 ft-lb	0.333 (33%)	1.25D+1.5L	L
Unbraced	3007 ft-lb	7'9 1/4"	3044 ft-lb	0.988 (99%)	1.25D+1.5L	L
Shear	1284 lb	1 5/8"	3400 lb	0.378 (38%)	1.25D+1.5L	L
Perm Defl in.	0.061 (L/3211)	8'1 11/16"	0.546 (L/360)	0.110 (11%)	D	Uniform
LL Defl inch	0.163 (L/1203)	8'1 11/16"	0.546 (L/360)	0.300 (30%)	L	L
TL Defl inch	0.224 (L/875)	8'1 11/16"	0.819 (L/240)	0.270 (27%)	D+L	L

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

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

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

**Design Notes**

- 1 Girders are designed to be supported on the bottom edge only.
- 2 Multiple plies must be fastened together as per manufacturer's details.
- 3 Top loads must be supported equally by all plies.
- 4 Top flange must be laterally braced at a maximum of 4'3" 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 1-4-6	(Span)2-9-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 16-9-12	(Span)1-0-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	1-2-14		Far Face	113 lb	303 lb	0 lb	0 lb	F7
4	Tie-In	1-4-6 to 16-9-12	(Span)0-11-8	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. Joist not to be treated with fire retardant or corrosive chemicals

**Handling & Installation**

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

5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. Web stiffeners for point load as shown Minimum point load bearing length= 3.5 inches
7. For flat roofs provide 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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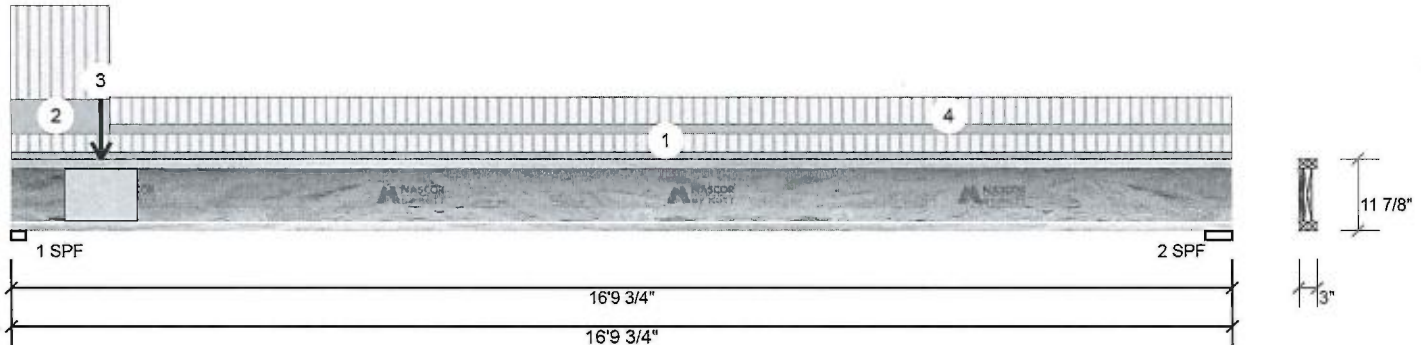
 Client:  
 Project:  
 Address:

 Date: 8/14/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2  
 Project #:

Page 1 of 1

F10-C NJ 11.875" 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	584	219	0	0
2	251	94	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	40%	274 / 876	1150 L	1.25D+1.5L
2 - SPF	4.375"	14%	118 / 376	493 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2173 ft-lb	7'4 15/16"	9020 ft-lb	0.241 (24%)	1.25D+1.5L	L
Unbraced	2173 ft-lb	7'4 15/16"	2175 ft-lb	0.999 (100%)	1.25D+1.5L	L
Shear	1133 lb	1 5/8"	3400 lb	0.333 (33%)	1.25D+1.5L	L
Perm Defl in.	0.044 (L/4417)	8' 9/16"	0.546 (L/360)	0.080 (8%)	D	Uniform
LL Defl inch	0.119 (L/1657)	8' 9/16"	0.546 (L/360)	0.220 (22%)	L	L
TL Defl inch	0.163 (L/1205)	8' 9/16"	0.819 (L/240)	0.200 (20%)	D+L	L

## Design Notes

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top flange must be laterally braced at a maximum of 4'11" o.c.
- Bottom flange braced at bearings.

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

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

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



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 16-9-12	(Span)0-6-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 1-4-6	(Span)2-9-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	1-2-14		Near Face	125 lb	333 lb	0 lb	0 lb	F7
4	Tie-In	1-4-6 to 16-9-12	(Span)0-9-8	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

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

## chemicals

## Handling &amp; Installation

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

- Provide lateral support at bearing points to avoid lateral displacement and rotation
- Web stiffeners for point load as shown Minimum point load bearing length  $\geq 3.5$  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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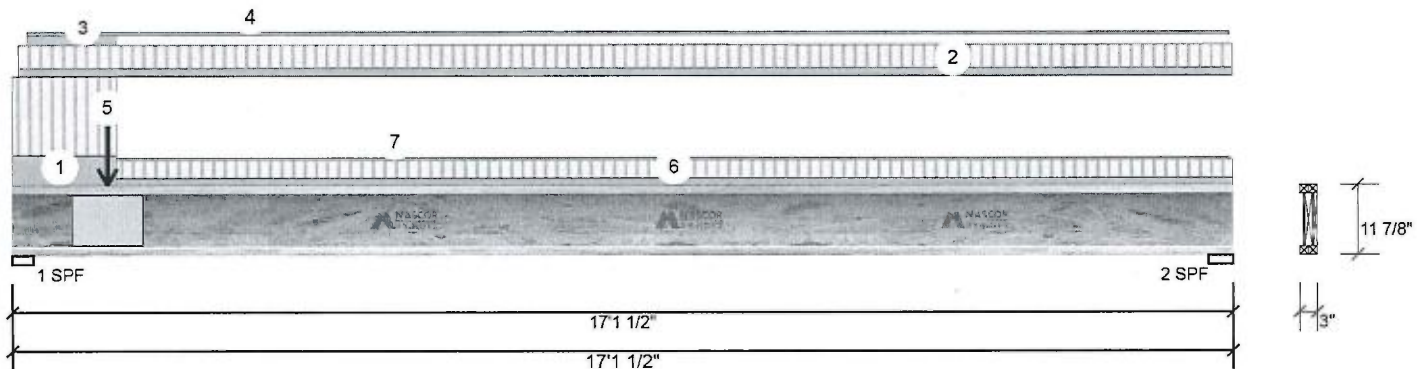
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 Project:  
 Address:

 Date: 8/14/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2  
 Project #:

Page 1 of 1

F10-D NJ 11.875" 2-Ply - PASSED

Level: Ground Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	643	326	0	0
2	270	139	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	42%	407 / 965	1371 L	1.25D+1.5L
2 - SPF	4.125"	17%	173 / 404	578 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2589 ft-lb	7'7 3/8"	9020 ft-lb	0.287 (29%)	1.25D+1.5L	L
Unbraced	2589 ft-lb	7'7 3/8"	2628 ft-lb	0.985 (99%)	1.25D+1.5L	L
Shear	1342 lb	2 3/4"	3400 lb	0.395 (39%)	1.25D+1.5L	L
Perm Defl in.	0.069 (L/2907)	8'3 1/16"	0.554 (L/360)	0.120 (12%)	D	Uniform
LL Defl inch	0.133 (L/1494)	8'3 1/16"	0.554 (L/360)	0.240 (24%)	L	L
TL Defl inch	0.202 (L/987)	8'3 1/16"	0.831 (L/240)	0.240 (24%)	D+L	L

## Design Notes

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

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

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

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



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-5-8	(Span)2-9-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-1-2 to 17-1-8	(Span)0-9-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-2-10 to 1-5-8		Top	7 PLF	0 PLF	0 PLF	0 PLF	
4	Part. Uniform	0-2-11 to 17-1-1		Top	2 PLF	0 PLF	0 PLF	0 PLF	
5	Point	1-4-0		Far Face	186 lb	367 lb	0 lb	0 lb	F7
6	Tie-In	1-5-8 to 17-1-8	(Span)0-7-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
7	Part. Uniform	1-5-8 to 17-1-0		Top	2 PLF	0 PLF	0 PLF	0 PLF	

## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

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

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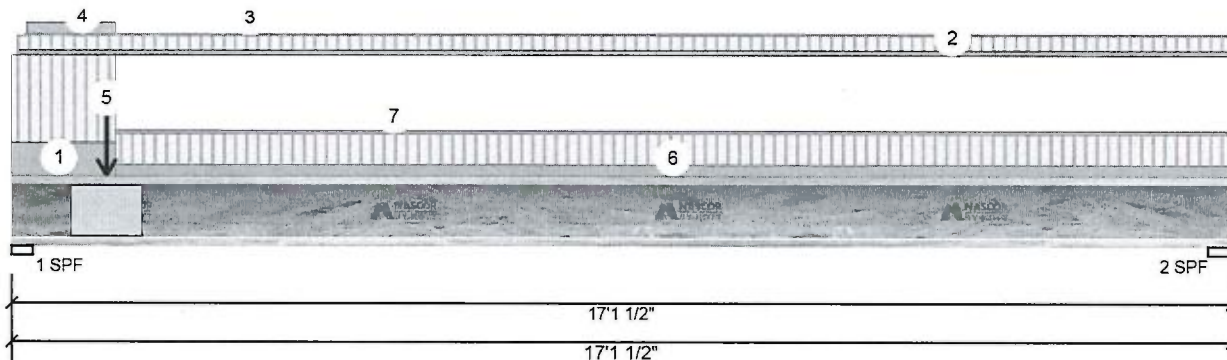
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 Project:  
 Address:

 Date: 8/14/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2  
 Project #:

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F10-E NJ 11.875" 2-Ply - PASSED

Level: Ground Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	575	281	0	0
2	265	128	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	38%	352 / 863	1215 L	1.25D+1.5L
2 - SPF	4.125"	16%	160 / 398	557 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2457 ft-lb	7'9 1/16"	9020 ft-lb	0.272 (27%)	1.25D+1.5L	L
Unbraced	2457 ft-lb	7'9 1/16"	2478 ft-lb	0.991 (99%)	1.25D+1.5L	L
Shear	1187 lb	2 3/4"	3400 lb	0.349 (35%)	1.25D+1.5L	L
Perm Defl in.	0.062 (L/3202)	8'3 7/16"	0.554 (L/360)	0.110 (11%)	D	Uniform
LL Defl inch	0.129 (L/1550)	8'3 1/2"	0.554 (L/360)	0.230 (23%)	L	L
TL Defl inch	0.191 (L/1044)	8'3 1/2"	0.831 (L/240)	0.230 (23%)	D+L	L

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

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

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



## Design Notes

- 1 Girders are designed to be supported on the bottom edge only.
- 2 Multiple plies must be fastened together as per manufacturer's details.
- 3 Top loads must be supported equally by all plies.
- 4 Top flange must be laterally braced at a maximum of 4'8" 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 1-5-8	(Span)2-9-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-1-2 to 17-1-8	(Span)0-5-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-2-6 to 17-0-12		Top	1 PLF	0 PLF	0 PLF	0 PLF	
4	Part. Uniform	0-2-8 to 1-5-8		Top	7 PLF	0 PLF	0 PLF	0 PLF	
5	Point	1-4-0		Near Face	151 lb	304 lb	0 lb	0 lb	F7
6	Tie-In	1-5-8 to 17-1-8	(Span)0-11-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
7	Part. Uniform	1-5-8 to 17-0-12		Top	2 PLF	0 PLF	0 PLF	0 PLF	

## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

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

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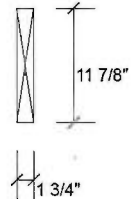
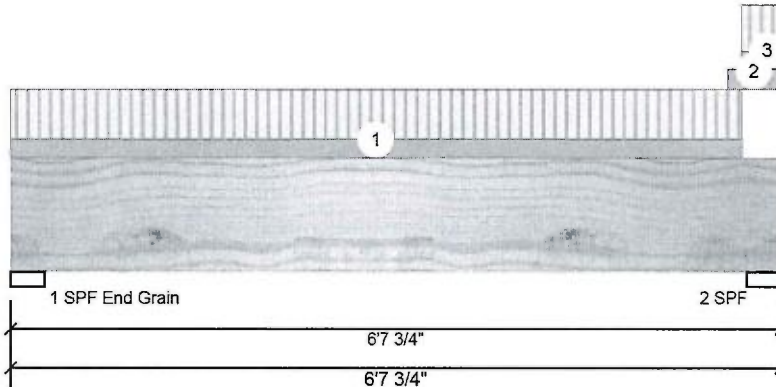
 Client:  
 Project:  
 Address:

 Date: 8/14/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2  
 Project #:

Page 1 of 1

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

Level: Ground Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	665	265	0	0
2	659	299	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	29%	332 / 997	1329 L	1.25D+1.5L
End Grain					
2 - SPF	3.500"	36%	374 / 988	1363 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1914 ft-lb	3'3 7/8"	17130 ft-lb	0.112 (11%)	1.25D+1.5L	L
Unbraced	1914 ft-lb	3'3 7/8"	7267 ft-lb	0.263 (26%)	1.25D+1.5L	L
Shear	1230 lb	5'5 1/8"	5798 lb	0.212 (21%)	1.25D+1.5L	L
Perm Defl in.	0.008 (L/9867)	3'3 7/8"	0.206 (L/360)	0.040 (4%)	D	Uniform
LL Defl inch	0.019 (L/3947)	3'3 7/8"	0.206 (L/360)	0.090 (9%)	L	L
TL Defl inch	0.026 (L/2819)	3'3 7/8"	0.309 (L/240)	0.090 (9%)	D+L	L

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

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

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



## Design Notes

- 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	Wind	Comments
1	Part. Uniform	0-0-0 to 6-3-12		Near Face	75 PLF	200 PLF	0 PLF	0 PLF
2	Part. Uniform	6-2-4 to 6-7-12		Top	80 PLF	0 PLF	0 PLF	0 PLF
3	Part. Uniform	6-3-12 to 6-7-12		Top	69 PLF	183 PLF	0 PLF	0 PLF
	Self Weight				5 PLF			J3

## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

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

- For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

 Forex  
 APA: 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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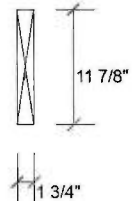
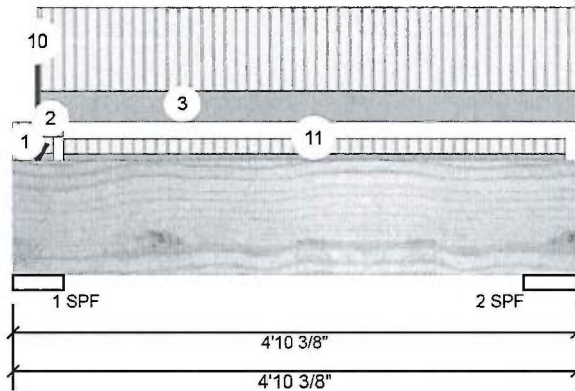
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Project:  
Address:

Date: 8/14/2018  
Designer: SB  
Job Name: SANDSTON 2A EL-2  
Project #:

Page 1 of 2

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

Level: Ground Floor

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

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

Brg	Live	Dead	Snow	Wind
1	1812	813	0	0
2	231	98	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.250"	82%	1016 / 2719	3735 L	1.25D+1.5L
2 - SPF	5.500"	8%	123 / 346	469 L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	405 ft-lb	2'5 1/16"	17130 ft-lb	0.024 (2%)	1.25D+1.5L	L
Unbraced	405 ft-lb	2'5 1/16"	10983 ft-lb	0.037 (4%)	1.25D+1.5L	L
Shear	204 lb	1'4 3/8"	5798 lb	0.035 (4%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/49514)	2'5 1/8"	0.136 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.002 (L/21048)	2'5 1/8"	0.136 (L/360)	0.020 (2%)	L	L
TL Defl inch	0.003 (L/14770)	2'5 1/8"	0.205 (L/240)	0.020 (2%)	D+L	L

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

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

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

**Design Notes**

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-4-4	(Span)0-9-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-5-4	(Span)0-6-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-2-10 to 4-10-6		Top	30 PLF	80 PLF	0 PLF	0 PLF	
4	Point	0-2-10		Top	647 lb	1491 lb	0 lb	0 lb	BM2 BM2
5	Point	0-2-10		Top	11 lb	29 lb	0 lb	0 lb	J5
6	Point	0-2-10		Top	17 lb	46 lb	0 lb	0 lb	J4

Continued on page 2...

**Notes**

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

**Lumber**

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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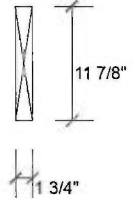
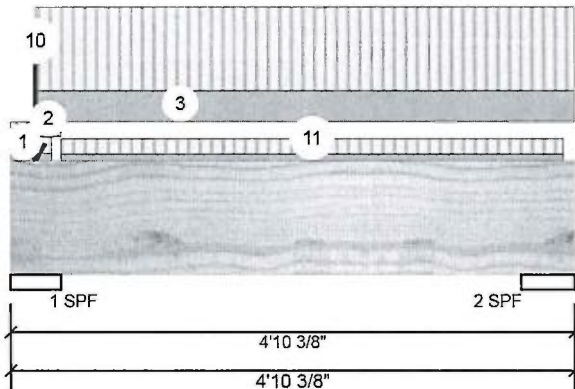
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Project:  
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Date: 8/14/2018  
Designer: SB  
Job Name: SANDSTON 2A EL-2  
Project #:

Page 2 of 2

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

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
7	Point	0-2-10		Top	28 lb	0 lb	0 lb	0 lb	Wall Self Weight
8	Point	0-2-10		Top	7 lb	19 lb	0 lb	0 lb	J5
9	Point	0-2-10		Top	4 lb	11 lb	0 lb	0 lb	J4
10	Point	0-2-10		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
11	Tie-In	0-5-4 to 4-9-4	(Span)0-9-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				5 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 Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

**Lumber**

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

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

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

6. For flat roofs provide proper drainage to prevent ponding

**Manufacturer Info**

Forex  
APA: PR-L318

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

**KOTT NASCOR**

This design is valid until 7/10/2021





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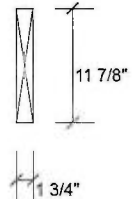
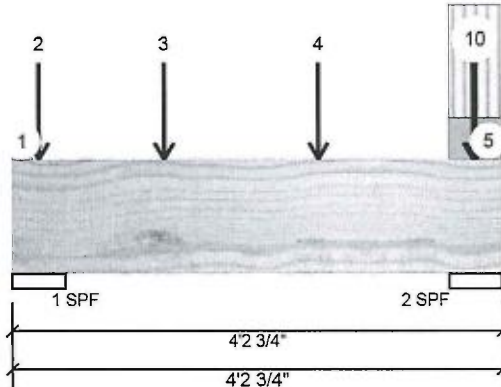
 Client:  
 Project:  
 Address:

 Date: 8/14/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2  
 Project #:

Page 1 of 2

## F2-B Forex 2.0E-3000Fb LVL 1.750" X 11.875" - 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	1677	714	0	0
2	968	498	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	60%	892 / 2515	3407 L	1.25D+1.5L
2 - SPF	5.500"	35%	623 / 1452	2075 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	748 ft-lb	1'3 3/4"	17130 ft-lb	0.044 (4%)	1.25D+1.5L	L
Unbraced	748 ft-lb	1'3 3/4"	12732 ft-lb	0.059 (6%)	1.25D+1.5L	L
Shear	813 lb	1'4 5/8"	5798 lb	0.140 (14%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/28388)	1'9"	0.115 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.003 (L/12395)	1'9 5/16"	0.115 (L/360)	0.030 (3%)	L	L
TL Defl inch	0.005 (L/8628)	1'9 3/16"	0.172 (L/240)	0.030 (3%)	D+L	L

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

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

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



## Design Notes

- 1 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	0-0-0 to 0-2-1		Top	1 PLF	0 PLF	0 PLF	0 PLF	
2	Point	0-2-12		Top	535 lb	1278 lb	0 lb	0 lb	C2
3	Point	1-3-12		Near Face	196 lb	454 lb	0 lb	0 lb	J7
4	Point	2-7-12		Near Face	72 lb	190 lb	0 lb	0 lb	J2
5	Tie-In	3-9-4 to 4-2-12	(Span)2-3-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
6	Point	3-11-12		Near Face	50 lb	121 lb	0 lb	0 lb	J2

Continued on page 2...

## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

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

6. For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

 Forex  
 APA: PR-L318

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


This design is valid until 7/10/2021







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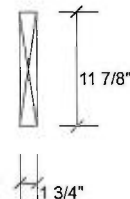
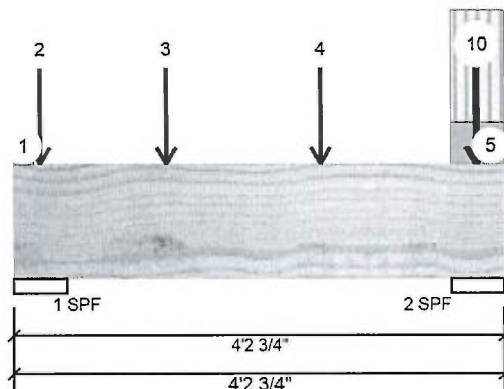
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Project:  
Address:

Date: 8/14/2018  
Designer: SB  
Job Name: SANDSTON 2A EL-2  
Project #:

Page 2 of 2

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

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
7	Point	4-0-0		Top	187 lb	448 lb	0 lb	0 lb	F4 F4
8	Point	4-0-0		Top	41 lb	109 lb	0 lb	0 lb	J3
9	Point	4-0-0		Top	9 lb	23 lb	0 lb	0 lb	J2
10	Point	4-0-0		Top	94 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Self Weight				5 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 &amp; Installation

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

6. For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

Forex  
APA: PR-L318

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

**KOTT NASCOR**

This design is valid until 7/10/2021





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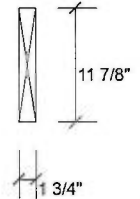
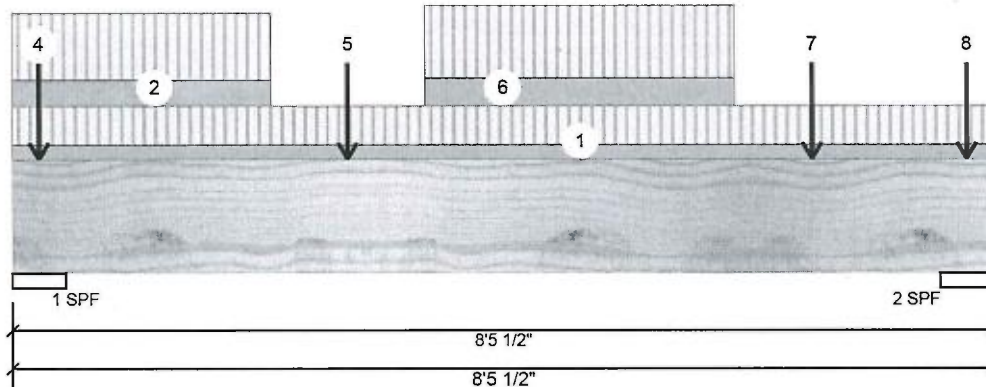
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Date: 8/14/2018  
Designer: SB  
Job Name: SANDSTON 2A EL-2  
Project #:

Page 1 of 2

**F3-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" - 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	2137	870	0	0
2	1147	455	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	72%	1087 / 3205	4293	L	1.25D+1.5L
2 - SPF	5.500"	39%	568 / 1721	2289	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4044 ft-lb	4'2 7/16"	17130 ft-lb	0.236 (24%)	1.25D+1.5L	L
Unbraced	4044 ft-lb	4'2 7/16"	5865 ft-lb	0.690 (69%)	1.25D+1.5L	L
Shear	2022 lb	7' 7/8"	5798 lb	0.349 (35%)	1.25D+1.5L	L
Perm Defl in.	0.022 (L/4218)	4'2 9/16"	0.256 (L/360)	0.090 (9%)	D	Uniform
LL Defl inch	0.055 (L/1672)	4'2 9/16"	0.256 (L/360)	0.220 (22%)	L	L
TL Defl inch	0.077 (L/1197)	4'2 9/16"	0.383 (L/240)	0.200 (20%)	D+L	L

**Design Notes**

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

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

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

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



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 8-5-8		Top	38 PLF	100 PLF	0 PLF	0 PLF	
2	Part. Uniform	0-0-0 to 2-2-12		Far Face	66 PLF	170 PLF	0 PLF	0 PLF	
3	Point	0-2-12		Top	1 lb	0 lb	0 lb	0 lb	Wall Self Weight
4	Point	0-2-12		Top	407 lb	978 lb	0 lb	0 lb	F6 F6
5	Point	2-10-12		Far Face	90 lb	241 lb	0 lb	0 lb	J3
6	Part. Uniform	3-6-12 to 6-2-12		Far Face	70 PLF	185 PLF	0 PLF	0 PLF	
7	Point	6-10-12		Far Face	70 lb	185 lb	0 lb	0 lb	J2

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

5. 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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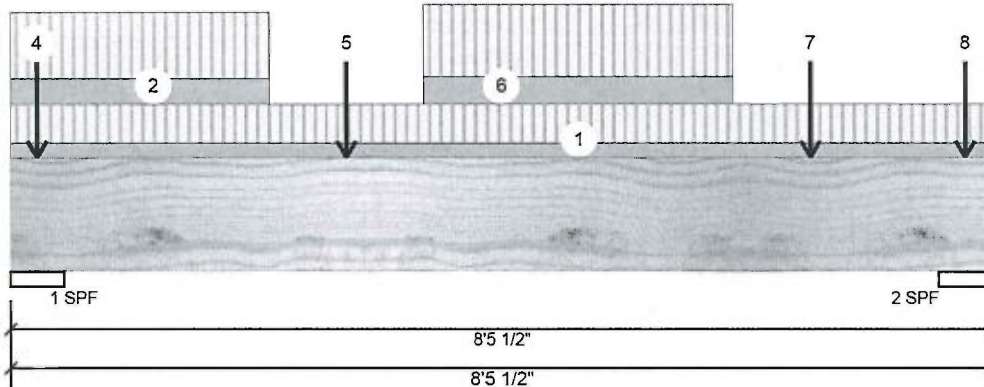
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 Project:  
 Address:

 Date: 8/14/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2  
 Project #:

Page 2 of 2

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

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
8	Point	8-2-12		Far Face	61 lb	162 lb	0 lb	0 lb	J2
	Self Weight				5 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

5. For flat roofs provide proper drainage to prevent ponding

**Manufacturer Info**

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

**KOTT NASCOR**

This design is valid until 7/10/2021





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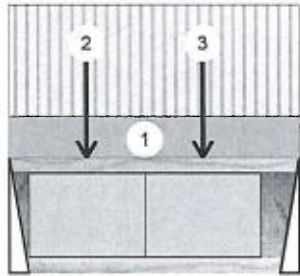
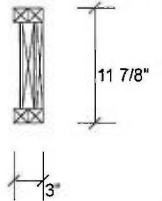
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 Project:  
 Address:

 Date: 8/14/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2  
 Project #:

Page 1 of 1

F7-A NJ 11.875" 2-Ply - PASSED

Level: Ground Floor


 1 Hanger (LT2-151188)  
 2 Hanger (LT2-151188)  
 2'6"  
 2'6"


## Member Information

## Unfactored Reactions UNPATTERNED 1b (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	333	125	0	0
2	303	113	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - Hanger	2.000"	24%	156 / 500	656 L 1.25D+1.5L
2 - Hanger	2.000"	22%	142 / 455	596 L 1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	418 ft-lb	1'8"	9020 ft-lb	0.046 (5%)	1.25D+1.5L	L
Unbraced	418 ft-lb	1'8"	6861 ft-lb	0.061 (6%)	1.25D+1.5L	L
Shear	650 lb	1 1/4"	3400 lb	0.191 (19%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/33964)	1'6 3/16"	0.076 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.002 (L/12714)	1'6 3/16"	0.076 (L/360)	0.030 (3%)	L	L
TL Defl inch	0.003 (L/9251)	1'6 3/16"	0.115 (L/240)	0.030 (3%)	D+L	L

## Design Notes

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

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

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

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



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 2-6-0	(Span)1-3-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-8-0		Far Face	102 lb	273 lb	0 lb	0 lb	J6
3	Point	1-8-0		Far Face	112 lb	299 lb	0 lb	0 lb	J6

## 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 &amp; Installation

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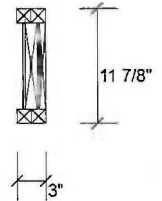
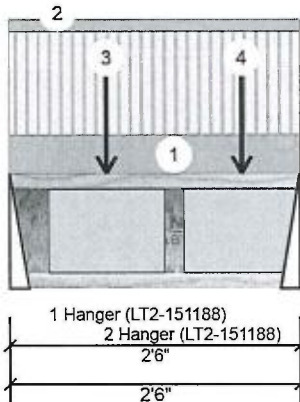
 Client:  
 Project:  
 Address:

 Date: 8/14/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2  
 Project #:

Page 1 of 1

F7-B NJ 11.875" 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	304	151	0	0
2	367	186	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	24%	189 / 457	645	L	1.25D+1.5L
2 - Hanger	2.000"	29%	232 / 550	782	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	452 ft-lb	10"	9020 ft-lb	0.050 (5%)	1.25D+1.5L	L
Unbraced	452 ft-lb	10"	6861 ft-lb	0.066 (7%)	1.25D+1.5L	L
Shear	777 lb	2'4 3/4"	3400 lb	0.228 (23%)	1.25D+1.5L	L
Perm Defl in. (L/25792)	0.001	10 1/16"	0.076 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch (L/12802)	0.002	10 1/16"	0.076 (L/360)	0.030 (3%)	L	L
TL Defl inch (L/8555)	0.003	10 1/16"	0.115 (L/240)	0.030 (3%)	D+L	L

## Design Notes

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

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

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

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



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 2-6-0	(Span)1-3-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 2-6-0		Top	3 PLF	0 PLF	0 PLF	0 PLF	
3	Point	0-10-0		Far Face	162 lb	329 lb	0 lb	0 lb	J6
4	Point	2-0-0		Far Face	143 lb	278 lb	0 lb	0 lb	J6

## 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 &amp; Installation

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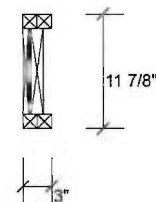
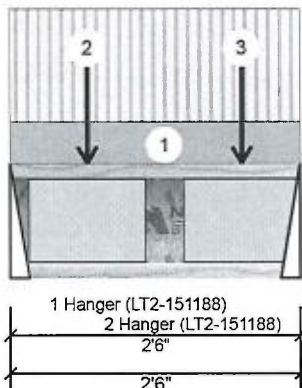
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 Project:  
 Address:

 Date: 8/14/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2  
 Project #:

Page 1 of 1

F7-C NJ 11.875" 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	265	99	0	0
2	288	108	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - Hanger	2.000"	19%	124 / 398	522 L 1.25D+1.5L
2 - Hanger	2.000"	21%	135 / 432	567 L 1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	281 ft-lb	7 15/16"	9020 ft-lb	0.031 (3%)	1.25D+1.5L	L
Unbraced	281 ft-lb	7 15/16"	6861 ft-lb	0.041 (4%)	1.25D+1.5L	L
Shear	562 lb	2'4 3/4"	3400 lb	0.165 (17%)	1.25D+1.5L	L
Perm Defl in. (L/50498)	0.001	11 3/4"	0.076 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch (L/18899)	0.001	11 3/4"	0.076 (L/360)	0.020 (2%)	L	L
TL Defl inch (L/13752)	0.002	11 3/4"	0.115 (L/240)	0.020 (2%)	D+L	L

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

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

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



## Design Notes

- 1 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 2-6-0	(Span)1-3-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-7-15		Near Face	95 lb	254 lb	0 lb	0 lb	J5
3	Point	1-11-15		Near Face	88 lb	235 lb	0 lb	0 lb	J5

## 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 &amp; Installation

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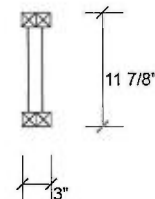
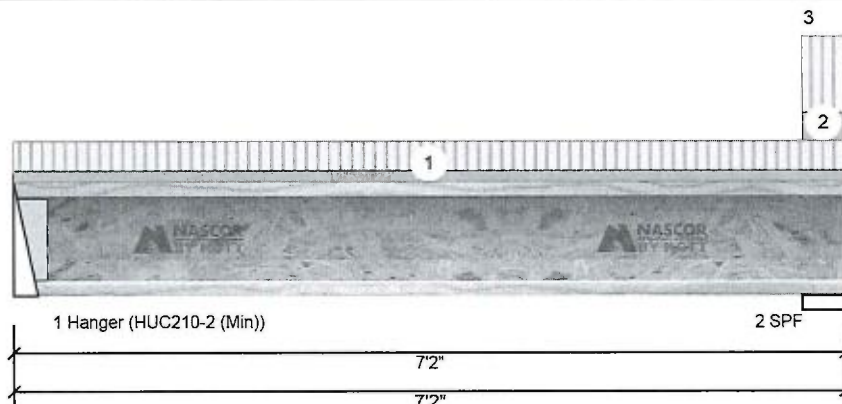
 Client:  
 Project:  
 Address:

 Date: 8/14/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2  
 Project #:

Page 1 of 1

F8-A NJ 11.875" 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	82	31	0	0
2	107	41	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.500"	6%	38 / 123	161 L	1.25D+1.5L
2 - SPF	4.375"	6%	51 / 161	212 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	259 ft-lb	3'6 1/16"	9020 ft-lb	0.029 (3%)	1.25D+1.5L	L
Unbraced	259 ft-lb	3'6 1/16"	1010 ft-lb	0.256 (26%)	1.25D+1.5L	L
Shear	162 lb	6'10 3/8"	3400 lb	0.048 (5%)	1.25D+1.5L	L
Perm Defl in. (L/66000)	0.001	3'6 1/8"	0.224 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch (L/24754)	0.003	3'6 1/8"	0.224 (L/360)	0.010 (1%)	L	L
TL Defl inch (L/18002)	0.004	3'6 1/8"	0.336 (L/240)	0.010 (1%)	D+L	L

## Design Notes

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

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

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

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



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

## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

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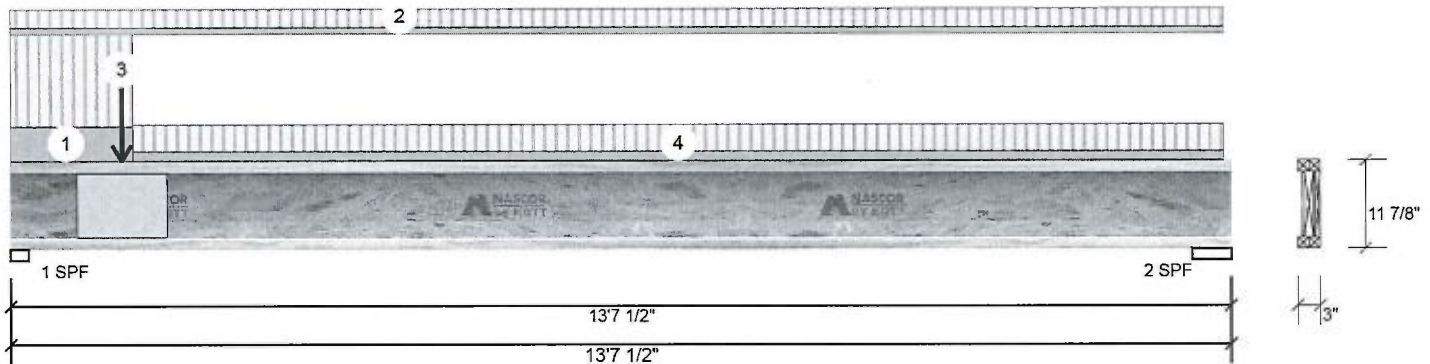
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 Project:  
 Address:

 Date: 8/14/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2  
 Project #:

Page 1 of 1

F9-A NJ 11.875" 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	472	177	0	0
2	207	78	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	33%	221 / 709	930	L	1.25D+1.5L
2 - SPF	5.250"	12%	97 / 311	408	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1468 ft-lb	5'9 1/4"	9020 ft-lb	0.163 (16%)	1.25D+1.5L	L
Unbraced	1468 ft-lb	5'9 1/4"	1470 ft-lb	0.998 (100%)	1.25D+1.5L	L
Shear	912 lb	1 5/8"	3400 lb	0.268 (27%)	1.25D+1.5L	L
Perm Defl in.	0.020 (L/7818)	6'4 13/16"	0.437 (L/360)	0.050 (5%)	D	Uniform
LL Defl inch	0.054 (L/2929)	6'4 13/16"	0.437 (L/360)	0.120 (12%)	L	L
TL Defl inch	0.074 (L/2131)	6'4 13/16"	0.656 (L/240)	0.110 (11%)	D+L	L

## Design Notes

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

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

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

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



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-4-6	(Span)2-9-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 13-6-8	(Span)0-6-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	1-2-14		Far Face	99 lb	265 lb	0 lb	0 lb	F7
4	Tie-In	1-4-6 to 13-6-8	(Span)0-9-7	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

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

## chemicals

## Handling &amp; Installation

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

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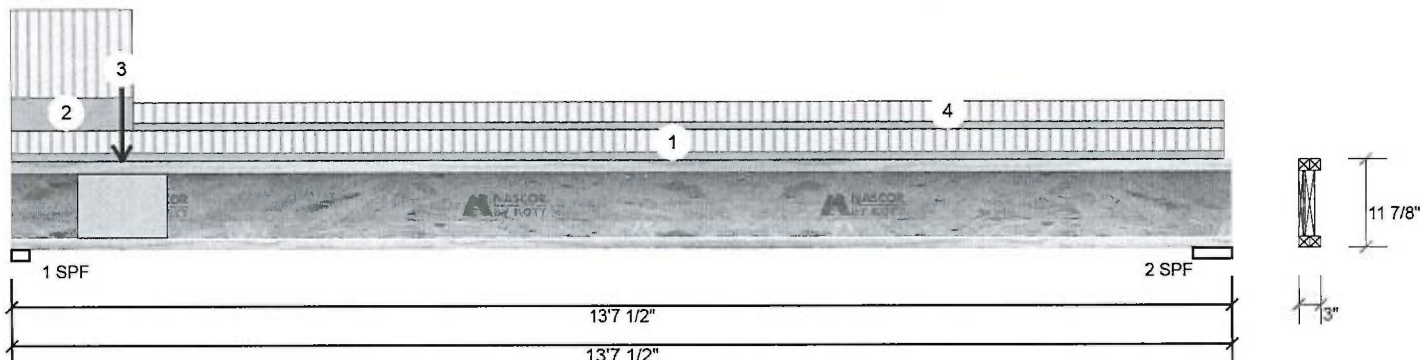
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 Project:  
 Address:

 Date: 8/14/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2  
 Project #:

Page 1 of 1

F9-B NJ 11.875" 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	498	187	0	0
2	209	78	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	34%	233 / 747	980 L	1.25D+1.5L
2 - SPF	5.250"	12%	98 / 314	412 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1500 ft-lb	5'8 5/16"	9020 ft-lb	0.166 (17%)	1.25D+1.5L	L
Unbraced	1500 ft-lb	5'8 5/16"	1511 ft-lb	0.993 (99%)	1.25D+1.5L	L
Shear	961 lb	1 5/8"	3400 lb	0.283 (28%)	1.25D+1.5L	L
Perm Defl in.	0.021 (L/7646)	6'4 5/8"	0.437 (L/360)	0.050 (5%)	D	Uniform
LL Defl inch	0.055 (L/2867)	6'4 5/8"	0.437 (L/360)	0.130 (13%)	L	L
TL Defl inch	0.075 (L/2085)	6'4 5/8"	0.656 (L/240)	0.120 (12%)	D+L	L

## Design Notes

- 1 Girders are designed to be supported on the bottom edge only.
- 2 Multiple plies must be fastened together as per manufacturer's details.
- 3 Top loads must be supported equally by all plies.
- 4 Top flange must be laterally braced at a maximum of 5'9" o.c.
- 5 Bottom flange braced at bearings.

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

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

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



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 13-6-8	(Span)0-8-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 1-4-6	(Span)2-9-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	1-2-14		Near Face	108 lb	288 lb	0 lb	0 lb	F7
4	Tie-In	1-4-6 to 13-6-8	(Span)0-7-9	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. Joist not to be treated with fire retardant or corrosive chemicals

## chemicals

## Handling &amp; Installation

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

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

## Manufacturer Info

Nascor by Kott

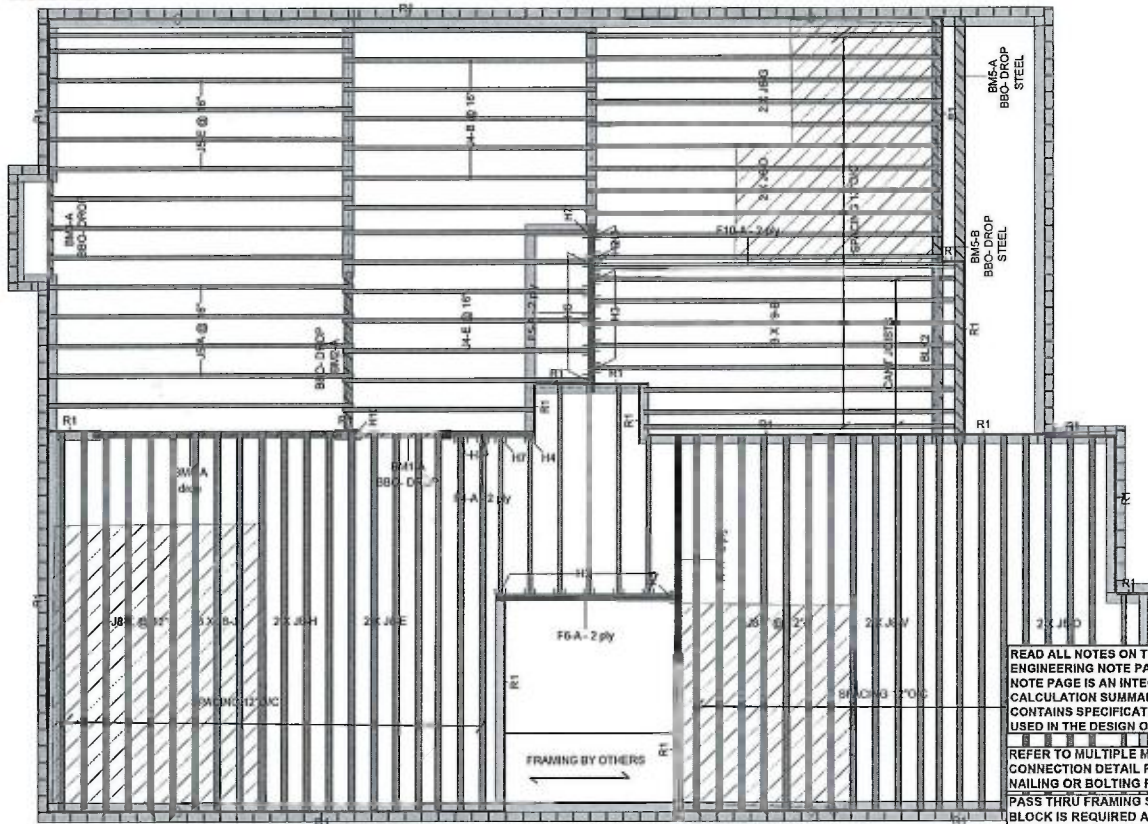
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 14 Anderson Blvd, Ontario  
 Canada  
 L4A 7X4  
 905-642-4400



This design is valid until 7/10/2021



## Second Floor



Legend	
PS	Point Load Support
Load from Above	
Wall	
Norbord Rimboard Plus 1.125 X 11.875	
NJ 11.875	
NJ40U 11.875	
NJH 11.875	
Forex 2.0E-3000Fb LVL 1.75 X 9.5	
(Dropped)	
Forex 2.0E-3000Fb LVL 1.75 X 11.875	
(Dropped)	
1.5 X 9.5 (Dropped)	
1.75 X 9.5 (Dropped)	
5.75 X 10.25 (Dropped)	

1. OBC 2012 O.Reg 332/12 as amended
2. Nascor CCMC - 13035-R
3. LVL CCMC -12904-R
4. CAN/CSA-O86-09
5. CCMC -12787-R APA PR-L310(C)

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This layout is to be used as an installation guide. It is meant to be used in conjunction with the architectural and structural drawings, not to replace them

## OPTIONAL 5BEDROOM

## 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.

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

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

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

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

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

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

Second Floor  
LVL/LSL (Flush)

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
F11	Forex 2.0E-3000Fb LVL	1.75	11.875	1	2	2	12-0-0
F6	Forex 2.0E-3000Fb LVL	1.75	11.875	1	2	2	10-0-0
F5	Forex 2.0E-3000Fb LVL	1.75	11.875	1	2	2	8-0-0
F4	Forex 2.0E-3000Fb LVL	1.75	11.875	1	2	2	6-0-0

## LVL/LSL (Dropped)

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
BM5	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	12-0-0

## Joist (Flush)

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
F10	NJ	1.5	11.875	1	2	2	16-0-0
J8	NJ40U	3.5	11.875			39	18-0-0
J9	NJH	2.5	11.875			5	18-0-0
J6	NJH	2.5	11.875			11	18-0-0
J5	NJH	2.5	11.875			17	14-0-0
J4	NJH	2.5	11.875			13	12-0-0
J3	NJH	2.5	11.875			5	10-0-0
J2	NJH	2.5	11.875			3	8-0-0

## Rim Board

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 11.875	1.125	11.875			17	12

## Blocking

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
BLK2	NJ	1.5	11.875	LnFt		Varies	1-0-0
BLK2	NJH	2.5	11.875	LnFt		Varies	6-0-0

## Hanger

Label	Pcs	Description	Skew	Slope	fasteners	fasteners
H2	1	LT2-151188			4 10d	2 10dX1 1/2
H3	13	LT251188			4 10d	2 10dX1 1/2
H4	1	HUC312			16 16d	6 10dX1 1/2
H5	1	HGUS410			46 16d	16 16d
H6	5	HU310			14 16d	6 10dX1 1/2
H7	2	LF2511			12 10d	1 #8X1 1/4WS
H8	2	LT351188			4 10d	2 10dX1 1/2
H10	1	Unknown				

Aug 20, 2018

mensions on the architectural drawings. require fillerboard ply when supporting another joist-mounted hanger. g @ 24" o/c under parallel non-loadbearing walls. ush window header along inside face of rimboard/rimjoist. sealer guide for installation details. 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"x4" block (11/16" 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 drawings. Project Engineer to review and approve the deviation prior to construction.

JOISTS SPACING 16" O/C UNLESS NOTED OTHERWISE

NASCOR

Layout Name  
SANDSTON 2A EL-2Design Method  
LSDDescription  
GREENPARK HOMES  
MINISALE BRAMPTON ONCreated  
June 29, 2018

Builder

Sales Rep

RM

Designer

SB

Shipping

Project

Builder's Project

Kott Lumber Company

14 Anderson Blvd

Stouffville, Ontario

Canada

L4A 7X4

905-642-4400

Second 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

Ceiling:

Architectural Drawing Info

REGION DESIGN INC

8700 DUFFERIN ST

CONCORD, ON L4K 4S6

Project # 17-04-07

Model: SANDSTON 2A

Date: JULY, 2018

KOTT





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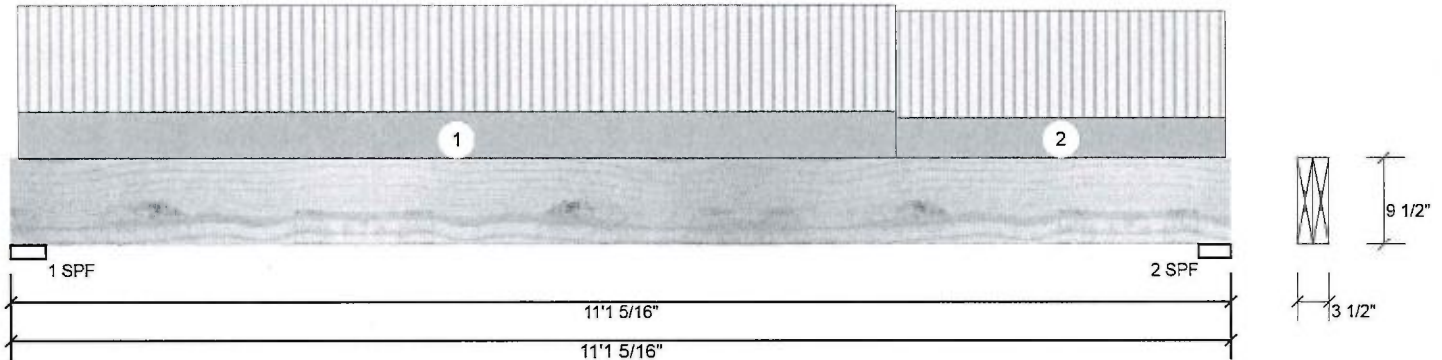
 Client:  
 Project:  
 Address:

 Date: 8/14/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2  
 Project #:

Page 1 of 1

**BM6-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	1870	838	0	0
2	1870	795	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.838"	47%	1048 / 2805	3853 L	1.25D+1.5L
2 - SPF	3.500"	50%	994 / 2805	3799 L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	9860 ft-lb	5'6 11/16"	22724 ft-lb	0.434 (43%)	1.25D+1.5L	L
Unbraced	9860 ft-lb	5'6 11/16"	20494 ft-lb	0.481 (48%)	1.25D+1.5L	L
Shear	3165 lb	1' 9/16"	9277 lb	0.341 (34%)	1.25D+1.5L	L
Perm Defl in.	0.094 (L/1361)	5'6 11/16"	0.354 (L/360)	0.260 (26%)	D	Uniform
LL Defl inch	0.212 (L/603)	5'6 7/8"	0.354 (L/360)	0.600 (60%)	L	L
TL Defl inch	0.305 (L/418)	5'6 13/16"	0.531 (L/240)	0.570 (57%)	D+L	L

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

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

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

**Design Notes**

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-13 to 8-0-13		Top	146 PLF	340 PLF	0 PLF	0 PLF	
2	Part. Uniform	8-0-13 to 11-0-13		Top	127 PLF	340 PLF	0 PLF	0 PLF	
	Self Weight				8 PLF				

**Notes**

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

**Lumber**

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

**Handling & Installation**

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

5. 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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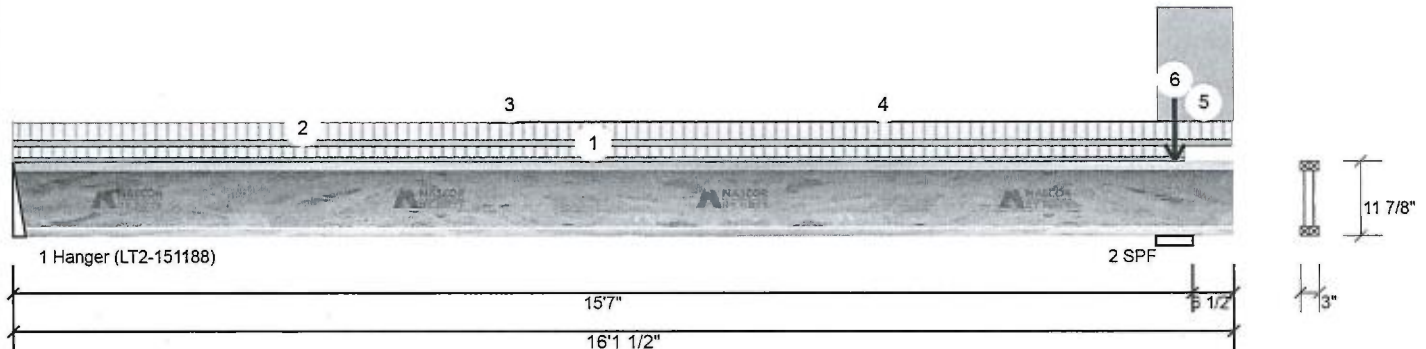
 Client:  
 Project:  
 Address:

 Date: 8/14/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2  
 Project #:

Page 1 of 2

F10-A NJ 11.875" 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	152	58	0 (-1)	0
2	182	236	95	0

## Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	11%	72 / 229	301	L	1.25D+1.5L
2 - SPF	5.750"	18%	295 / 320	615	LL	1.25D+1.5L +0.5S

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-62 ft-lb	15'7"	6765 ft-lb	0.009 (1%)	1.25D+1.5S	L
Unbraced	-62 ft-lb	15'7"	6700 ft-lb	0.009 (1%)	1.25D+1.5S	L
Pos Moment	1121 ft-lb	7'7 7/16"	9020 ft-lb	0.124 (12%)	1.25D+1.5L	L
Unbraced	1121 ft-lb	7'7 7/16"	1131 ft-lb	0.991 (99%)	1.25D+1.5L	L
Shear	306 lb	15'7"	2550 lb	0.120 (12%)	1.25D+1.5S	L
Perm Defl in.	0.019 (L/9336)	7'7 5/16"	0.502 (L/360)	0.040 (4%)	D	Uniform
LL Defl inch	0.051 (L/3533)	7'7 11/16"	0.502 (L/360)	0.100 (10%)	L	L
TL Defl inch	0.071 (L/2563)	7'7 1/2"	0.753 (L/240)	0.090 (9%)	D+L	L
LL Cant	-0.005 (2L/2439)	Rt Cant	0.200 (2L/480)	0.027 (3%)	L	L
TL Cant	-0.007 (2L/1861)	Rt Cant	0.300 (2L/360)	0.023 (2%)	D+L	L

## Design Notes

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

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

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

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



## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

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

5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. Web stiffeners for point load as shown Minimum point load bearing length= 3.5 inches
7. For flat roofs provide 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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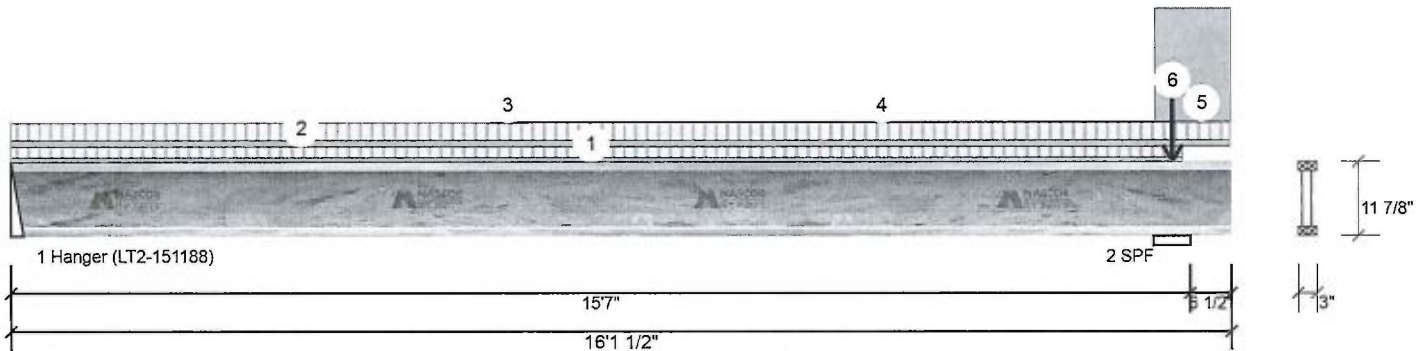
Client:  
Project:  
Address:

Date: 8/14/2018  
Designer: SB  
Job Name: SANDSTON 2A EL-2  
Project #:

Page 2 of 2

F10-A NJ 11.875" 2-Ply - PASSED

Level: Second Floor



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 15-5-14	(Span)0-4-11	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 16-1-4	(Span)0-7-5	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tapered Start	6-3-9		Top	0 PLF	0 PLF	0 PLF	0 PLF	
	End	6-10-3			1 PLF	0 PLF	0 PLF	0 PLF	
4	Part. Uniform	6-10-3 to 15-4-9		Top	1 PLF	0 PLF	0 PLF	0 PLF	
5	Part. Uniform	15-1-8 to 16-1-8		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
6	Point	15-4-4		Top	86 lb	17 lb	94 lb	0 lb	F1 F1

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

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

## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

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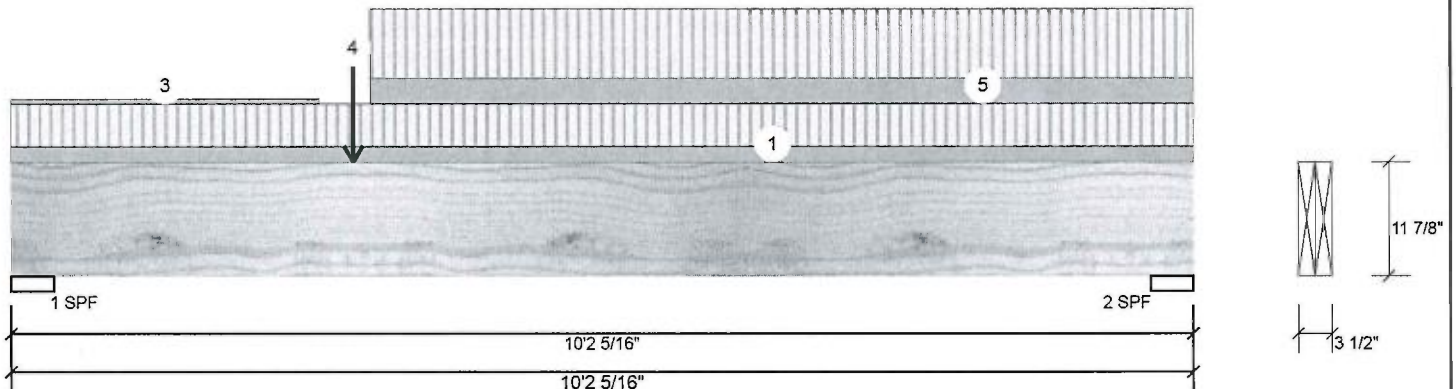
 Client:  
 Project:  
 Address:

 Date: 8/14/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2  
 Project #:

Page 1 of 1

**F11-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 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	613	311	0	0
2	387	205	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.438"	14%	389 / 920	1309 L	1.25D+1.5L
2 - SPF	4.375"	9%	256 / 580	836 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3259 ft-lb	2'11 7/16"	34261 ft-lb	0.095 (10%)	1.25D+1.5L	L
Unbraced	3259 ft-lb	2'11 7/16"	29988 ft-lb	0.109 (11%)	1.25D+1.5L	L
Shear	1248 lb	1'3 9/16"	11596 lb	0.108 (11%)	1.25D+1.5L	L
Perm Defl in.	0.013 (L/8621)	4'7 15/16"	0.319 (L/360)	0.040 (4%)	D	Uniform
LL Defl inch	0.027 (L/4293)	4'7 1/4"	0.319 (L/360)	0.080 (8%)	L	L
TL Defl inch	0.040 (L/2866)	4'7 7/16"	0.479 (L/240)	0.080 (8%)	D+L	L

## Design Notes

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

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

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

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



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 10-2-5	(Span)0-10-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-0-0 to 2-7-15		Top	2 PLF	0 PLF	0 PLF	0 PLF	
4	Point	2-11-7		Far Face	279 lb	641 lb	0 lb	0 lb	F6
5	Tie-In	3-1-3 to 10-2-5	(Span)1-4-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				10 PLF				

## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

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

6. For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

 Forex  
 APA: PR-L318

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

**KOTT NASCOR**

This design is valid until 7/10/2021







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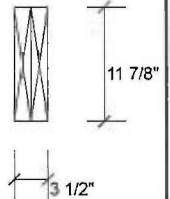
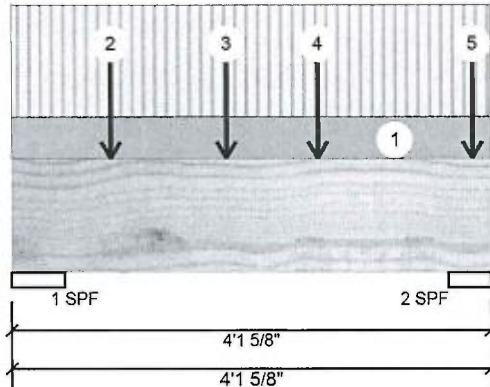
 Client:  
 Project:  
 Address:

 Date: 8/14/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2  
 Project #:

Page 1 of 1

F4-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED

Level: Second Floor



## Member Information

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

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	562	231	0	0
2	448	187	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	10%	289 / 843	1132	L	1.25D+1.5L
2 - SPF	4.375"	10%	234 / 673	907	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	908 ft-lb	1'10 1/4"	34261 ft-lb	0.026 (3%)	1.25D+1.5L	L
Unbraced	908 ft-lb	1'10 1/4"	34261 ft-lb	0.026 (3%)	1.25D+1.5L	L
Shear	1054 lb	1'4 5/8"	11596 lb	0.091 (9%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/47319)	1'10 1/4"	0.115 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.002 (L/19246)	1'10 1/4"	0.115 (L/360)	0.020 (2%)	L	L
TL Defl inch	0.003 (L/13681)	1'10 1/4"	0.172 (L/240)	0.020 (2%)	D+L	L

## Design Notes

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

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

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

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



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 4-1-10	(Span)1-1-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-10-4		Near Face	124 lb	331 lb	0 lb	0 lb	J8
3	Point	1-10-4		Near Face	115 lb	306 lb	0 lb	0 lb	J8
4	Point	2-7-12		Near Face	56 lb	150 lb	0 lb	0 lb	J2
5	Point	3-11-12		Near Face	49 lb	131 lb	0 lb	0 lb	J2
	Self Weight				10 PLF				

## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

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

- For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

 Forex  
 APA: 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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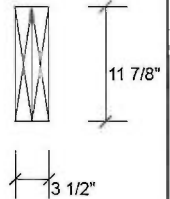
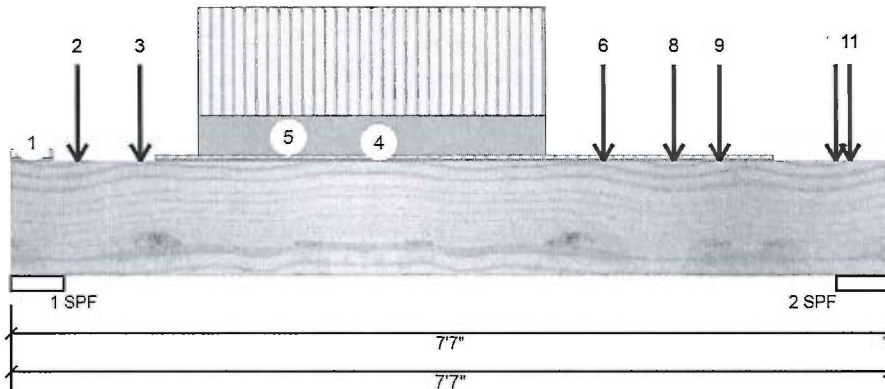
 Client:  
 Project:  
 Address:

 Date: 8/14/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2  
 Project #:

Page 1 of 2

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

Level: Second Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	961 (-73)	371	0 (0)	0
2	1185 (-32)	486	0 (-1)	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	16%	464 / 1442	1905 L	1.25D+1.5L
2 - SPF	5.500"	20%	608 / 1777	2385 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3461 ft-lb	3'9 1/2"	34261 ft-lb	0.101 (10%)	1.25D+1.5L	L
Unbraced	3461 ft-lb	3'9 1/2"	32115 ft-lb	0.108 (11%)	1.25D+1.5L	L
Shear	2341 lb	6'2 3/8"	11596 lb	0.202 (20%)	1.25D+1.5L	L
Perm Defl in.	0.008 (L/10507)	3'9 5/8"	0.226 (L/360)	0.030 (3%)	D	Uniform
LL Defl inch	0.020 (L/4160)	3'9 9/16"	0.226 (L/360)	0.090 (9%)	L	L
TL Defl inch	0.027 (L/2980)	3'9 9/16"	0.340 (L/240)	0.080 (8%)	D+L	L

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

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

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



## Design Notes

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-4-6	(Span)1-2-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-6-15		Far Face	-17 lb	-46 lb	0 lb	0 lb	J4
3	Point	1-1-7		Near Face	110 lb	292 lb	0 lb	0 lb	J9
4	Part. Uniform	1-2-15 to 6-6-15		Far Face	-4 PLF	-11 PLF	0 PLF	0 PLF	
5	Part. Uniform	1-7-7 to 4-7-7		Near Face	114 PLF	305 PLF	0 PLF	0 PLF	
6	Point	5-1-7		Near Face	92 lb	245 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

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

## Handling &amp; Installation

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

6. For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

Forex  
APA: PR-L318

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



This design is valid until 7/10/2021







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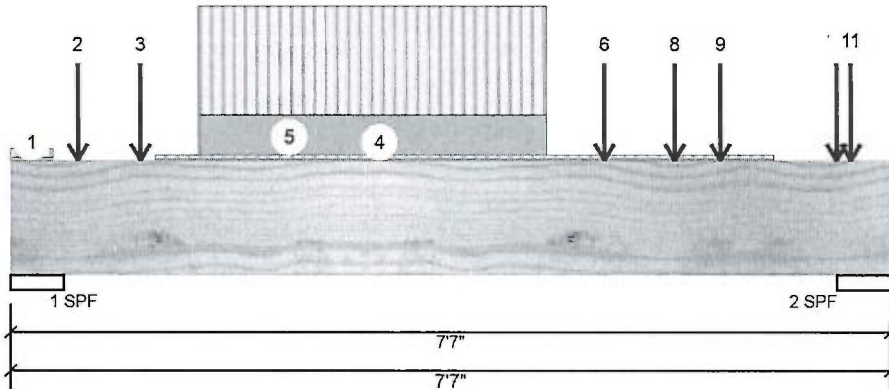
Client:  
Project:  
Address:

Date: 8/14/2018  
Designer: SB  
Job Name: SANDSTON 2A EL-2  
Project #:

Page 2 of 2

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

Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
7	Point	5-8-12		Near Face	58 lb	152 lb	0 lb	0 lb	F10
8	Point	5-8-12		Near Face	0 lb	0 lb	-1 lb	0 lb	F10
9	Point	6-1-7		Near Face	88 lb	213 lb	0 lb	0 lb	J6
10	Point	7-1-7		Near Face	125 lb	305 lb	0 lb	0 lb	J6
11	Point	7-2-15		Far Face	5 lb	15 lb	0 lb	0 lb	J4
	Self Weight				10 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 Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

**Lumber**

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

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

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

6. For flat roofs provide proper drainage to prevent ponding

**Manufacturer Info**

Forex  
APA: PR-L318

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

**KOTT NASCOR**

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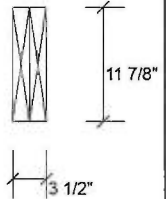
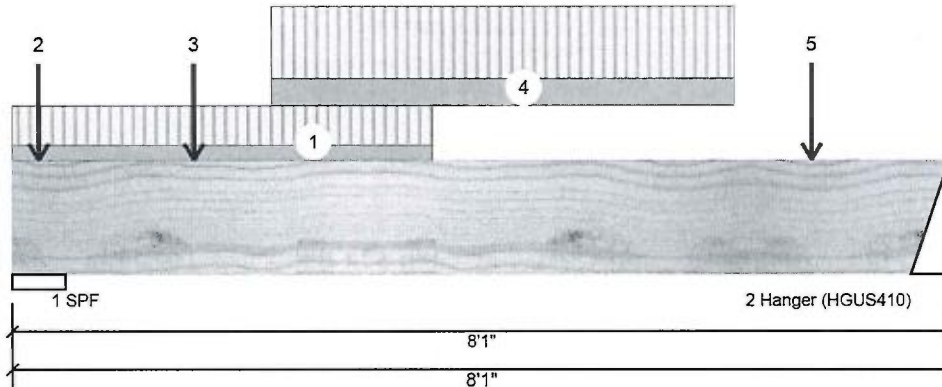
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 Date: 8/14/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2  
 Project #:

Page 1 of 1

F6-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED

Level: Second Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	978	407	0	0
2	641	279	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	17%	509 / 1467	1976 L	1.25D+1.5L
2 - Hanger	4.000"	13%	348 / 962	1311 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2960 ft-lb	3'9 1/16"	34261 ft-lb	0.086 (9%)	1.25D+1.5L	L
Unbraced	2960 ft-lb	3'9 1/16"	31702 ft-lb	0.093 (9%)	1.25D+1.5L	L
Shear	1391 lb	1'4 5/8"	11596 lb	0.120 (12%)	1.25D+1.5L	L
Perm Defl in.	0.008 (L/11274)	4' 1/16"	0.247 (L/360)	0.030 (3%)	D	Uniform
LL Defl inch	0.019 (L/4745)	3'11 7/8"	0.247 (L/360)	0.080 (8%)	L	L
TL Defl inch	0.027 (L/3340)	3'11 15/16"	0.371 (L/240)	0.070 (7%)	D+L	L

## Design Notes

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

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

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

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



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 3-7-8		Top	38 PLF	100 PLF	0 PLF	0 PLF	
2	Point	0-2-12		Far Face	56 lb	150 lb	0 lb	0 lb	J2
3	Point	1-6-12		Far Face	70 lb	187 lb	0 lb	0 lb	J2
4	Part. Uniform	2-2-12 to 6-2-12		Far Face	69 PLF	184 PLF	0 PLF	0 PLF	
5	Point	6-10-12		Far Face	69 lb	184 lb	0 lb	0 lb	J2
	Self Weight				10 PLF				

## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

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

6. For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

 Forex  
 APA: PR-L318

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

This design is valid until 7/10/2021







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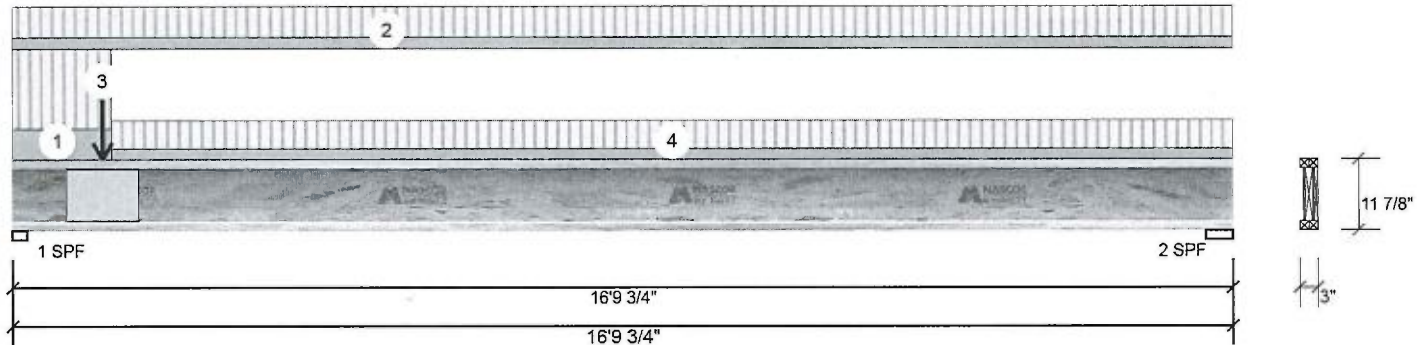
 Client:  
 Project:  
 Address:

 Date: 8/15/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2 WOD CONDITION  
 Project #:

Page 1 of 1

F10-B NJ 11.875" 2-Ply - PASSED

Level: Ground Floor



## Member Information

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

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	663	248	0	0
2	362	136	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	46%	310 / 994	1304	L	1.25D+1.5L
2 - SPF	4.375"	21%	169 / 543	712	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3007 ft-lb	7'9 1/4"	9020 ft-lb	0.333 (33%)	1.25D+1.5L	L
Unbraced	3007 ft-lb	7'9 1/4"	3044 ft-lb	0.988 (99%)	1.25D+1.5L	L
Shear	1284 lb	1 5/8"	3400 lb	0.378 (38%)	1.25D+1.5L	L
Perm Defl in.	0.061 (L/3211)	8'1 11/16"	0.546 (L/360)	0.110 (11%)	D	Uniform
LL Defl inch	0.163 (L/1203)	8'1 11/16"	0.546 (L/360)	0.300 (30%)	L	L
TL Defl inch	0.224 (L/875)	8'1 11/16"	0.819 (L/240)	0.270 (27%)	D+L	L

## Design Notes

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

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

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

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



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-4-6	(Span)2-9-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 16-9-12	(Span)1-0-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	1-2-14		Far Face	113 lb	303 lb	0 lb	0 lb	F7
4	Tie-In	1-4-6 to 16-9-12	(Span)0-11-8	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

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

## Handling &amp; Installation

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

- Provide lateral support at bearing points to avoid lateral displacement and rotation
- Web stiffeners for point load as shown Minimum point load bearing length >= 3.5 inches
- For flat roofs provide 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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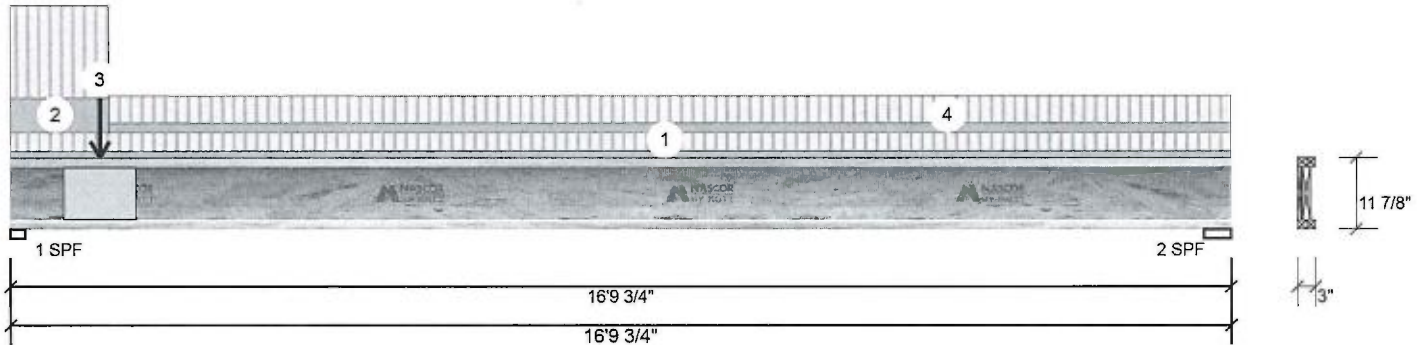
Client:  
Project:  
Address:

Date: 8/15/2018  
Designer: SB  
Job Name: SANDSTON 2A EL-2 WOD CONDITION  
Project #:

Page 1 of 1

**F10-C NJ 11.875" 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 Ib (Uplift)

Brg	Live	Dead	Snow	Wind
1	584	219	0	0
2	251	94	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap.	React D/Lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	40%	274 / 876	1150	L	1.25D+1.5L
2 - SPF	4.375"	14%	118 / 376	493	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2173 ft-lb	7'4 15/16"	9020 ft-lb	0.241 (24%)	1.25D+1.5L	L
Unbraced	2173 ft-lb	7'4 15/16"	2175 ft-lb	0.999 (100%)	1.25D+1.5L	L
Shear	1133 lb	1 5/8"	3400 lb	0.333 (33%)	1.25D+1.5L	L
Perm Defl in.	0.044 (L/4417)	8' 9/16"	0.546 (L/360)	0.080 (8%)	D	Uniform
LL Defl inch	0.119 (L/1657)	8' 9/16"	0.546 (L/360)	0.220 (22%)	L	L
TL Defl inch	0.163 (L/1205)	8' 9/16"	0.819 (L/240)	0.200 (20%)	D+L	L

## Design Notes

- 1 Girders are designed to be supported on the bottom edge only.
- 2 Multiple plies must be fastened together as per manufacturer's details.
- 3 Top loads must be supported equally by all plies.
- 4 Top flange must be laterally braced at a maximum of 4'11" o.c.
- 5 Bottom flange braced at bearings.

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

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

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



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 16-9-12	(Span)0-6-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 1-4-6	(Span)2-9-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	1-2-14		Near Face	125 lb	333 lb	0 lb	0 lb	F7
4	Tie-In	1-4-6 to 16-9-12	(Span)0-9-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	

## Notes

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

**Lumber**

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

## chemicals

## Handling & Installation

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

5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. Web stiffeners for point load as shown Minimum point load bearing length  $\geq 3.5$  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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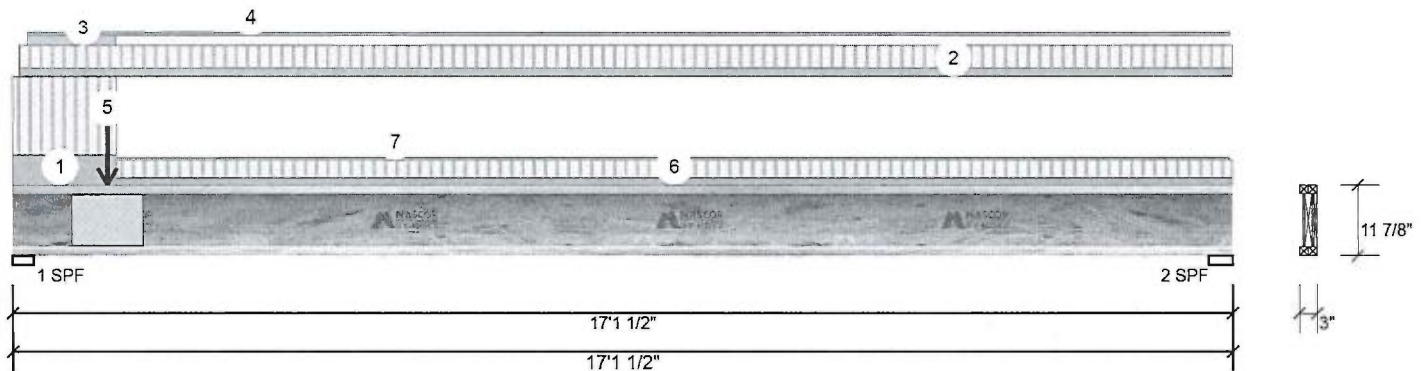
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 Project:  
 Address:

 Date: 8/15/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2 WOD CONDITION  
 Project #:

Page 1 of 1

F10-D NJ 11.875" 2-Ply - PASSED

Level: Ground Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	643	326	0	0
2	270	139	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	42%	407 / 965	1371 L	1.25D+1.5L
2 - SPF	4.125"	17%	173 / 404	578 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2589 ft-lb	7'7 3/8"	9020 ft-lb	0.287 (29%)	1.25D+1.5L	L
Unbraced	2589 ft-lb	7'7 3/8"	2628 ft-lb	0.985 (99%)	1.25D+1.5L	L
Shear	1342 lb	2 3/4"	3400 lb	0.395 (39%)	1.25D+1.5L	L
Perm Defl in.	0.069 (L/2907)	8'3 1/16"	0.554 (L/360)	0.120 (12%)	D	Uniform
LL Defl inch	0.133 (L/1494)	8'3 1/16"	0.554 (L/360)	0.240 (24%)	L	L
TL Defl inch	0.202 (L/987)	8'3 1/16"	0.831 (L/240)	0.240 (24%)	D+L	L

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

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

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



## Design Notes

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-5-8	(Span)2-9-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-1-2 to 17-1-8	(Span)0-9-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-2-10 to 1-5-8		Top	7 PLF	0 PLF	0 PLF	0 PLF	
4	Part. Uniform	0-2-11 to 17-1-1		Top	2 PLF	0 PLF	0 PLF	0 PLF	
5	Point	1-4-0		Far Face	186 lb	367 lb	0 lb	0 lb	F7
6	Tie-In	1-5-8 to 17-1-8	(Span)0-7-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
7	Part. Uniform	1-5-8 to 17-1-0		Top	2 PLF	0 PLF	0 PLF	0 PLF	

## Notes

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

## Lumber

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

## Handling &amp; Installation

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

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

## Manufacturer Info

Nascor by Kott

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



This design is valid until 7/10/2021





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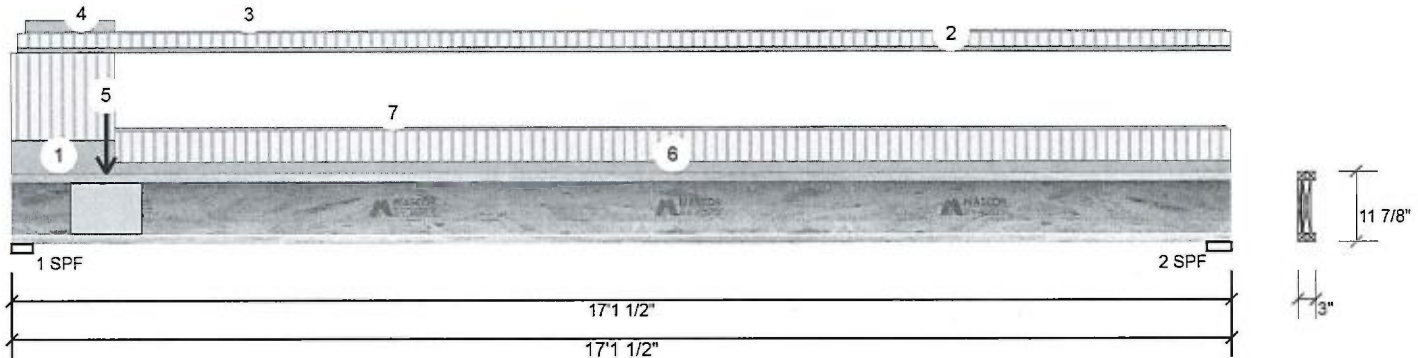
Client:  
Project:  
Address:

Date: 8/15/2018  
Designer: SB  
Job Name: SANDSTON 2A EL-2 WOD CONDITION  
Project #:

Page 1 of 1

F10-E NJ 11.875" 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	575	281	0	0
2	265	128	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	38%	352 / 863	1215	L	1.25D+1.5L
2 - SPF	4.125"	16%	160 / 398	557	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2457 ft-lb	7'9 1/16"	9020 ft-lb	0.272 (27%)	1.25D+1.5L	L
Unbraced	2457 ft-lb	7'9 1/16"	2478 ft-lb	0.991 (99%)	1.25D+1.5L	L
Shear	1187 lb	2 3/4"	3400 lb	0.349 (35%)	1.25D+1.5L	L
Perm Defl in.	0.062 (L/3202)	8'3 7/16"	0.554 (L/360)	0.110 (11%)	D	Uniform
LL Defl inch	0.129 (L/1550)	8'3 1/2"	0.554 (L/360)	0.230 (23%)	L	L
TL Defl inch	0.191 (L/1044)	8'3 1/2"	0.831 (L/240)	0.230 (23%)	D+L	L

## Design Notes

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top flange must be laterally braced at a maximum of 4'8" o.c.
- Bottom flange braced at bearings.

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

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

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



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-5-8	(Span)2-9-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-1-2 to 17-1-8	(Span)0-5-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-2-6 to 17-0-12		Top	1 PLF	0 PLF	0 PLF	0 PLF	
4	Part. Uniform	0-2-8 to 1-5-8		Top	7 PLF	0 PLF	0 PLF	0 PLF	
5	Point	1-4-0		Near Face	151 lb	304 lb	0 lb	0 lb	F7
6	Tie-In	1-5-8 to 17-1-8	(Span)0-11-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
7	Part. Uniform	1-5-8 to 17-0-12		Top	2 PLF	0 PLF	0 PLF	0 PLF	

## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

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

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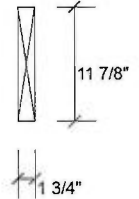
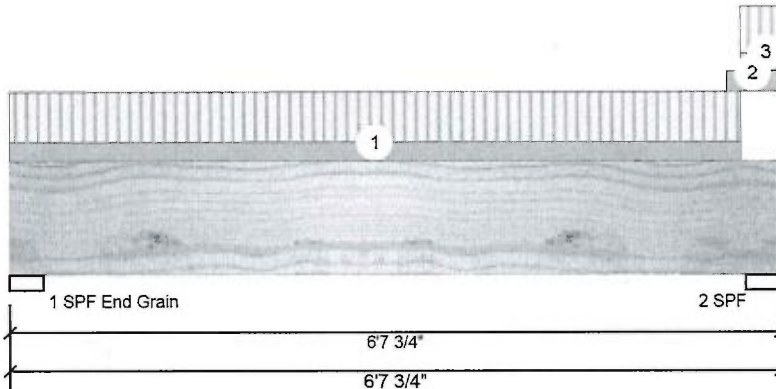
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 Project:  
 Address:

 Date: 8/15/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2 WOD CONDITION  
 Project #:

Page 1 of 1

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

Level: Ground Floor



## Member Information

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

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	665	265	0	0
2	659	299	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	29%	332 / 997	1329 L	1.25D+1.5L
2 - SPF	3.500"	36%	374 / 988	1363 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1914 ft-lb	3'3 7/8"	17130 ft-lb	0.112 (11%)	1.25D+1.5L	L
Unbraced	1914 ft-lb	3'3 7/8"	7267 ft-lb	0.263 (26%)	1.25D+1.5L	L
Shear	1230 lb	5'5 1/8"	5798 lb	0.212 (21%)	1.25D+1.5L	L
Perm Defl in.	0.008 (L/9867)	3'3 7/8"	0.206 (L/360)	0.040 (4%)	D	Uniform
LL Defl inch	0.019 (L/3947)	3'3 7/8"	0.206 (L/360)	0.090 (9%)	L	L
TL Defl inch	0.026 (L/2819)	3'3 7/8"	0.309 (L/240)	0.090 (9%)	D+L	L

## Design Notes

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

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

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

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



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 6-3-12		Near Face	75 PLF	200 PLF	0 PLF	0 PLF	
2	Part. Uniform	6-2-4 to 6-7-12		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
3	Part. Uniform	6-3-12 to 6-7-12		Top	69 PLF	183 PLF	0 PLF	0 PLF	J3
	Self Weight				5 PLF				

## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

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

- For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

 Forex  
 APA: 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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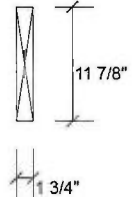
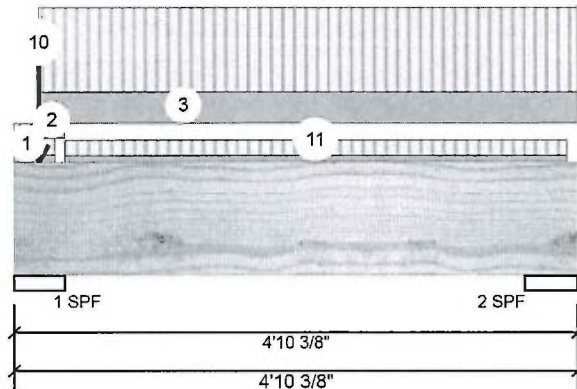
 Client:  
 Project:  
 Address:

 Date: 8/15/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2 WOD CONDITION  
 Project #:

Page 1 of 2

F2-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" - 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	1809	813	0	0
2	231	98	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.250"	82%	1016 / 2714	3730 L	1.25D+1.5L
2 - SPF	5.500"	8%	123 / 346	469 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	405 ft-lb	2'5 1/16"	17130 ft-lb	0.024 (2%)	1.25D+1.5L	L
Unbraced	405 ft-lb	2'5 1/16"	10983 ft-lb	0.037 (4%)	1.25D+1.5L	L
Shear	204 lb	1'4 3/8"	5798 lb	0.035 (4%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/49514)	2'5 1/8"	0.136 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.002 (L/21048)	2'5 1/8"	0.136 (L/360)	0.020 (2%)	L	L
TL Defl inch	0.003 (L/14770)	2'5 1/8"	0.205 (L/240)	0.020 (2%)	D+L	L

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

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

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



## Design Notes

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-4-4	(Span)0-9-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-5-4	(Span)0-6-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-2-10 to 4-10-6		Top	30 PLF	80 PLF	0 PLF	0 PLF	
4	Point	0-2-10		Top	647 lb	1489 lb	0 lb	0 lb	BM2 BM2
5	Point	0-2-10		Top	11 lb	28 lb	0 lb	0 lb	J5
6	Point	0-2-10		Top	17 lb	46 lb	0 lb	0 lb	J4

Continued on page 2...

## Notes

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

## Lumber

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

## Handling &amp; Installation

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

6. For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

 Forex  
 APA: PR-L318

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

This design is valid until 7/10/2021







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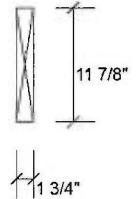
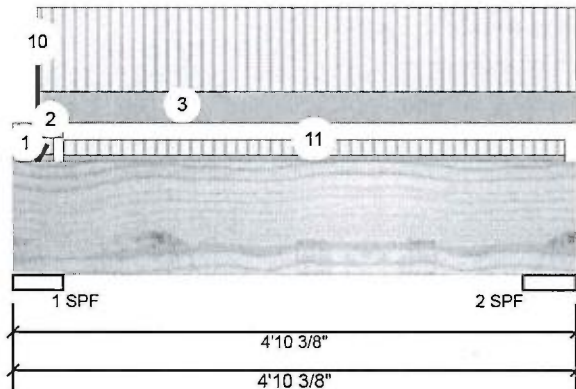
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 Project:  
 Address:

 Date: 8/15/2018  
 Designer: SB  
 Job Name: SANDSTON 3A EL-2 WOD CONDITION  
 Project #:

Page 2 of 2

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

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
7	Point	0-2-10		Top	28 lb	0 lb	0 lb	0 lb	Wall Self Weight
8	Point	0-2-10		Top	7 lb	19 lb	0 lb	0 lb	J5
9	Point	0-2-10		Top	4 lb	11 lb	0 lb	0 lb	J4
10	Point	0-2-10		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
11	Tie-In	0-5-4 to 4-9-4	(Span)0-9-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				5 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**

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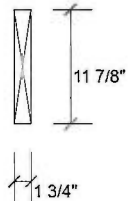
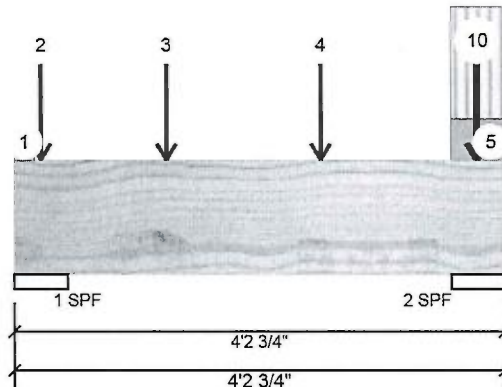
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 Project:  
 Address:

 Date: 8/15/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2 WOD CONDITION  
 Project #:

Page 1 of 2

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

Level: Ground Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	1677	714	0	0
2	968	498	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	60%	892 / 2515	3407	L	1.25D+1.5L
2 - SPF	5.500"	35%	623 / 1452	2075	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	748 ft-lb	1'3 3/4"	17130 ft-lb	0.044 (4%)	1.25D+1.5L	L
Unbraced	748 ft-lb	1'3 3/4"	12732 ft-lb	0.059 (6%)	1.25D+1.5L	L
Shear	813 lb	1'4 5/8"	5798 lb	0.140 (14%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/28388)	1'9"	0.115 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.003 (L/12395)	1'9 5/16"	0.115 (L/360)	0.030 (3%)	L	L
TL Defl inch	0.005 (L/8628)	1'9 3/16"	0.172 (L/240)	0.030 (3%)	D+L	L

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

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

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



## Design Notes

- 1 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	0-0-0 to 0-2-1		Top	1 PLF	0 PLF	0 PLF	0 PLF	
2	Point	0-2-12		Top	535 lb	1278 lb	0 lb	0 lb	C2
3	Point	1-3-12		Near Face	196 lb	454 lb	0 lb	0 lb	J7
4	Point	2-7-12		Near Face	72 lb	190 lb	0 lb	0 lb	J2
5	Tie-In	3-9-4 to 4-2-12	(Span)2-3-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
6	Point	3-11-12		Near Face	50 lb	121 lb	0 lb	0 lb	J2

Continued on page 2...

## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

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

6. For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

 Forex  
 APA: PR-L318

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

This design is valid until 7/10/2021







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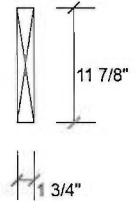
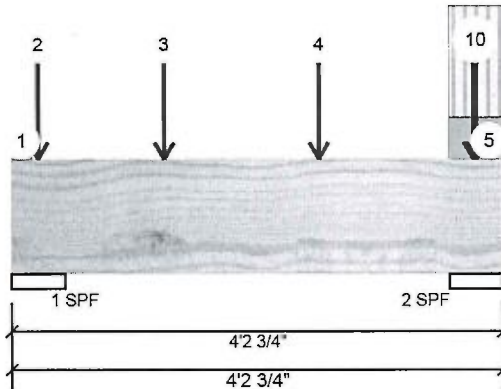
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Project #:

Page 2 of 2

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

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
7	Point	4-0-0		Top	187 lb	448 lb	0 lb	0 lb	F4 F4
8	Point	4-0-0		Top	41 lb	109 lb	0 lb	0 lb	J3
9	Point	4-0-0		Top	9 lb	23 lb	0 lb	0 lb	J2
10	Point	4-0-0		Top	94 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Self Weight				5 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 Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

**Lumber**

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

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

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

6. For flat roofs provide proper drainage to prevent ponding

**Manufacturer Info**

Forex  
APA: PR-L318

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

**KOTT NASCOR**

This design is valid until 7/10/2021





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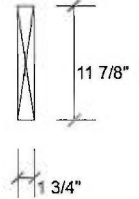
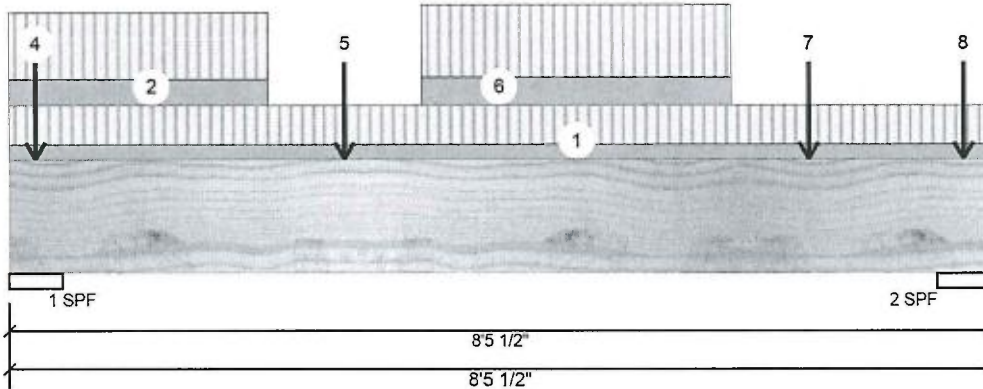
 Client:  
 Project:  
 Address:

 Date: 8/15/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2 WOD CONDITION  
 Project #:

Page 1 of 2

**F3-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" - 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	2137	870	0	0
2	1147	455	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	72% 1087 / 3205	4293	L	1.25D+1.5L
2 - SPF	5.500"	39% 568 / 1721	2289	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4044 ft-lb	4'2 7/16"	17130 ft-lb	0.236 (24%)	1.25D+1.5L	L
Unbraced	4044 ft-lb	4'2 7/16"	5865 ft-lb	0.690 (69%)	1.25D+1.5L	L
Shear	2022 lb	7' 7/8"	5798 lb	0.349 (35%)	1.25D+1.5L	L
Perm Defl in.	0.022 (L/4218)	4'2 9/16"	0.256 (L/360)	0.090 (9%)	D	Uniform
LL Defl inch	0.055 (L/1672)	4'2 9/16"	0.256 (L/360)	0.220 (22%)	L	L
TL Defl inch	0.077 (L/1197)	4'2 9/16"	0.383 (L/240)	0.200 (20%)	D+L	L

**Design Notes**

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

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

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

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



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 8-5-8		Top	38 PLF	100 PLF	0 PLF	0 PLF	
2	Part. Uniform	0-0-0 to 2-2-12		Far Face	66 PLF	170 PLF	0 PLF	0 PLF	
3	Point	0-2-12		Top	1 lb	0 lb	0 lb	0 lb	Wall Self Weight
4	Point	0-2-12		Top	407 lb	978 lb	0 lb	0 lb	F6 F6
5	Point	2-10-12		Far Face	90 lb	241 lb	0 lb	0 lb	J3
6	Part. Uniform	3-6-12 to 6-2-12		Far Face	70 PLF	185 PLF	0 PLF	0 PLF	
7	Point	6-10-12		Far Face	70 lb	185 lb	0 lb	0 lb	J2

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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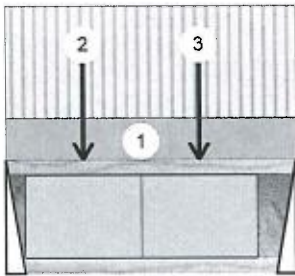
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Project:  
Address:

Date: 8/15/2018  
Designer: SB  
Job Name: SANDSTON 2A EL-2 WOD CONDITION  
Project #:

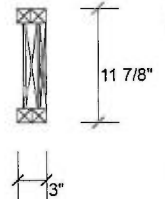
Page 1 of 1

F7-A NJ 11.875" 2-Ply - PASSED

Level: Ground Floor



1 Hanger (LT2-151188)  
2 Hanger (LT2-151188)  
2'6"  
2'6"



## 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	333	125	0	0
2	303	113	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	24%	156 / 500	656 L	1.25D+1.5L
2 - Hanger	2.000"	22%	142 / 455	596 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	418 ft-lb	1'8"	9020 ft-lb	0.046 (5%)	1.25D+1.5L	L
Unbraced	418 ft-lb	1'8"	6861 ft-lb	0.061 (6%)	1.25D+1.5L	L
Shear	650 lb	1 1/4"	3400 lb	0.191 (19%)	1.25D+1.5L	L
Perm Defl in. (L/33964)	0.001	1'6 3/16"	0.076 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch (L/12714)	0.002	1'6 3/16"	0.076 (L/360)	0.030 (3%)	L	L
TL Defl inch	0.003 (L/9251)	1'6 3/16"	0.115 (L/240)	0.030 (3%)	D+L	L

## Design Notes

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

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

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

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



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 2-6-0	(Span)1-3-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-8-0		Far Face	102 lb	273 lb	0 lb	0 lb	J6
3	Point	1-8-0		Far Face	112 lb	299 lb	0 lb	0 lb	J6

## 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 &amp; Installation

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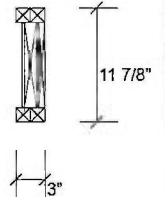
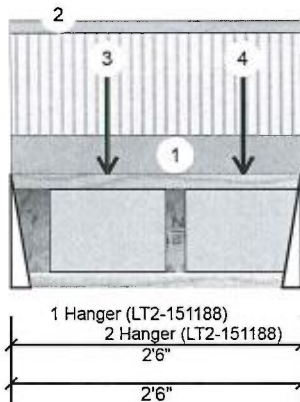
 Client:  
 Project:  
 Address:

 Date: 8/15/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2 WOD CONDITION  
 Project #:

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F7-B NJ 11.875" 2-Ply - PASSED

Level: Ground Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	304	151	0	0
2	367	186	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	24%	189 / 457	645 L	1.25D+1.5L
2 - Hanger	2.000"	29%	232 / 550	782 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	452 ft-lb	10"	9020 ft-lb	0.050 (5%)	1.25D+1.5L	L
Unbraced	452 ft-lb	10"	6861 ft-lb	0.066 (7%)	1.25D+1.5L	L
Shear	777 lb	2'4 3/4"	3400 lb	0.228 (23%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/25792)	10 1/16"	0.076 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.002 (L/12802)	10 1/16"	0.076 (L/360)	0.030 (3%)	L	L
TL Defl inch	0.003 (L/8555)	10 1/16"	0.115 (L/240)	0.030 (3%)	D+L	L

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

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

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



## Design Notes

- 1 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 2-6-0	(Span)1-3-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 2-6-0		Top	3 PLF	0 PLF	0 PLF	0 PLF	
3	Point	0-10-0		Far Face	162 lb	329 lb	0 lb	0 lb	J6
4	Point	2-0-0		Far Face	143 lb	278 lb	0 lb	0 lb	J6

## Notes

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

## Lumber

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

## Handling &amp; Installation

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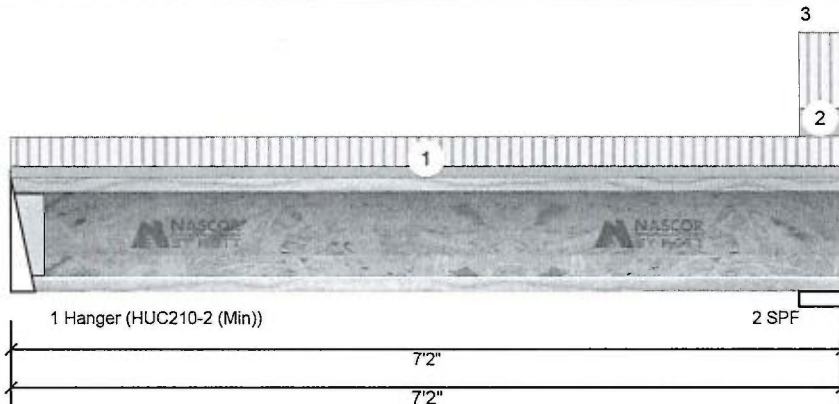
 Client:  
 Project:  
 Address:

 Date: 8/15/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2 WOD CONDITION  
 Project #:

Page 1 of 1

F8-A NJ 11.875" 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	82	31	0	0
2	107	41	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.500"	6%	38 / 123	161	L	1.25D+1.5L
2 - SPF	4.375"	6%	51 / 161	212	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	259 ft-lb	3'6 1/16"	9020 ft-lb	0.029 (3%)	1.25D+1.5L	L
Unbraced	259 ft-lb	3'6 1/16"	1010 ft-lb	0.256 (26%)	1.25D+1.5L	L
Shear	162 lb	6'10 3/8"	3400 lb	0.048 (5%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/66000)	3'6 1/8"	0.224 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.003 (L/24754)	3'6 1/8"	0.224 (L/360)	0.010 (1%)	L	L
TL Defl inch	0.004 (L/18002)	3'6 1/8"	0.336 (L/240)	0.010 (1%)	D+L	L

## Design Notes

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

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

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

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



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

## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

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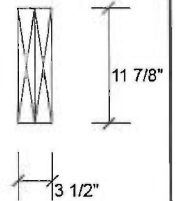
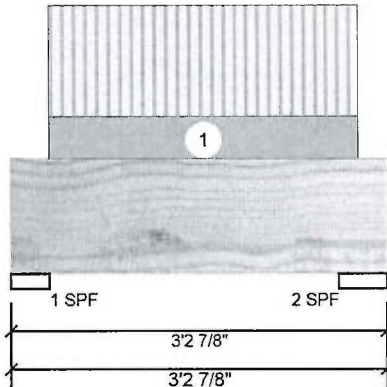
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Project:  
Address:

Date: 8/15/2018  
Designer: SB  
Job Name: SANDSTON 2A EL-2 WOD CONDITION  
Project #:

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F9-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED

Level: Ground Floor



## Member Information

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

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	330	139	0	0
2	372	156	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.954"	8%	174 / 495	668	L	1.25D+1.5L
2 - SPF	4.938"	7%	195 / 557	752	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	456 ft-lb	1'6 15/16"	34261 ft-lb	0.013 (1%)	1.25D+1.5L	L
Unbraced	456 ft-lb	1'6 15/16"	34261 ft-lb	0.013 (1%)	1.25D+1.5L	L
Shear	684 lb	1'3 1/16"	11596 lb	0.059 (6%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
LL Defl inch	0.001 (L/34463)	1'7"	0.087 (L/360)	0.010 (1%)	L	L
TL Defl inch	0.001 (L/24395)	1'7"	0.131 (L/240)	0.010 (1%)	D+L	L

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

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

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



## Design Notes

- 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	Part. Uniform	0-3-15 to 2-11-15		Near Face	99 PLF	263 PLF	0 PLF	0 PLF	
	Self Weight				10 PLF				

## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

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

- For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

Forex  
APA: 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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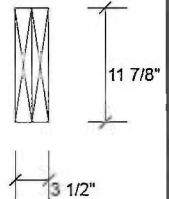
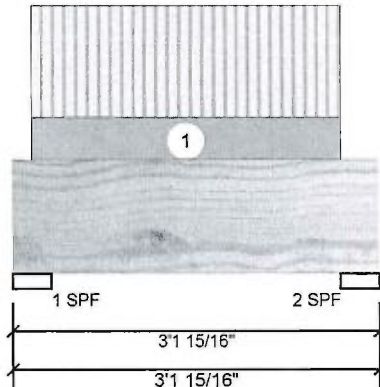
 Client:  
 Project:  
 Address:

 Date: 8/15/2018  
 Designer: SB  
 Job Name: SANDSTON 2A EL-2 WOD CONDITION  
 Project #:

Page 1 of 1

F9-B Forex 2.0E-3000Fb LVL 1.750" X 11.875" 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 1b (Uplift)

Brg	Live	Dead	Snow	Wind
1	373	156	0	0
2	328	139	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.000"	9%	194 / 560	754	L	1.25D+1.5L
2 - SPF	4.000"	8%	173 / 492	665	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	454 ft-lb	1'6 15/16"	34261 ft-lb	0.013 (1%)	1.25D+1.5L	L
Unbraced	454 ft-lb	1'6 15/16"	34261 ft-lb	0.013 (1%)	1.25D+1.5L	L
Shear	683 lb	1'10 13/16"	11596 lb	0.059 (6%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
LL Defl inch	0.001 (L/34556)	1'6 15/16"	0.087 (L/360)	0.010 (1%)	L	L
TL Defl inch	0.001 (L/24462)	1'6 15/16"	0.131 (L/240)	0.010 (1%)	D+L	L

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

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

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



## Design Notes

- 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	Part. Uniform Self Weight	0-1-15 to 2-9-15		Near Face	99 PLF 10 PLF	263 PLF	0 PLF	0 PLF	

## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

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

- For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

 Forex  
 APA: PR-L318

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


This design is valid until 7/10/2021

