

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

REVISION 2009-10-09

GREENPARK HOMES-MINISALE-  
MILLWOOD 3 EL 2-BRAMPTON-ON**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**

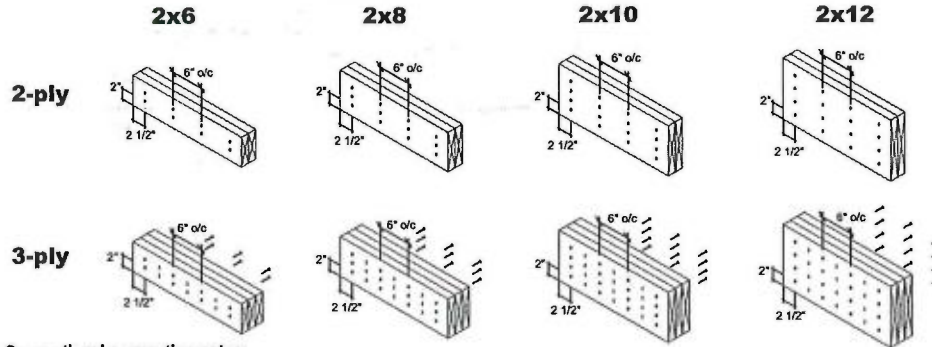
Do not drill any hole, cut or notch a certified building component without a written pre-authorization.



# MULTIPLE MEMBER CONNECTIONS

GREENPARK HOMES-MINISALE-  
MILLWOOD 3 EL 2-BRAMPTON-ON

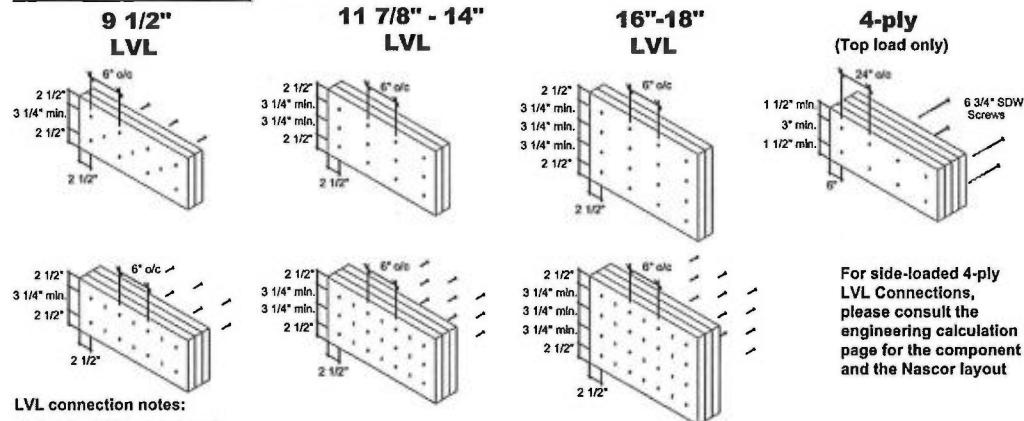
## Conventional Connections (for uniform distributed loads)



### 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)

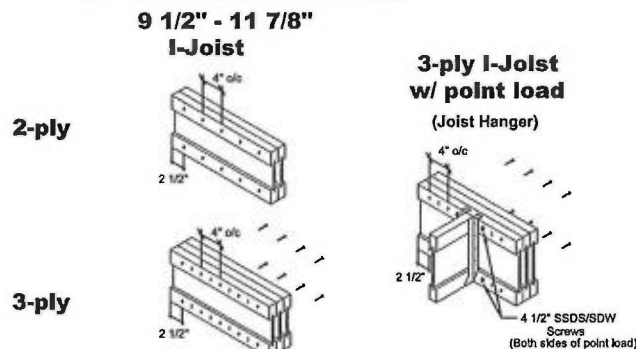


### LVL connection notes:

- 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 30, 2016  
Scale: NTS

# KOTT

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





Label	Description	Width	Depth	Qty	Piles	Pcs	Length
F11	Forex 2.0E-3000Fb LVL	1.75	9.5	1	4	4	14-0-0
F8	Forex 2.0E-3000Fb LVL	1.75	9.5	2	3	6	12-0-0
F4	Forex 2.0E-3000Fb LVL	1.75	9.5	2	2	4	12-0-0
F9	Forex 2.0E-3000Fb LVL	1.75	9.5	2	2	4	10-0-0
F7	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	8-0-0
F15	Forex 2.0E-3000Fb LVL	1.75	9.5			1	8-0-0
F14	Forex 2.0E-3000Fb LVL	1.75	9.5			2	4-0-0

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
J13	NJ	2.5	9.5	2	2	4	12-0-0
J2	NJH	2.5	9.5			22	14-0-0
J11	NJH	2.5	9.5			38	12-0-0
J4	NJH	2.5	9.5			13	10-0-0
J3	NJH	2.5	9.5			10	8-0-0
J8	NJH	2.5	9.5			2	6-0-0
J7	NJH	2.5	9.5			2	4-0-0
J1	NJH	2.5	9.5			1	2-0-0

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			13	12

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
BLK1	NJH	2.5	9.5			Varies	39-0-0

Label	Pcs	Description	Skew	Slope	fasteners	Supported Member
H3	1	HGUS5.50/10...	Right			
H4	1	HGUS5.50/10...	Left			
H5	7	SUR2.56/8 (Min)	Right		14 16d	2 10dx1 1/2
H6	3	LT259			4 10d	2 10dx1 1/2
H8	1	HGUS410			46 16d	16 16d
H9	2	LSSUI25-R	Var	Var	9 10d	7 10dx1 1/2
H11	1	LSSUI25-L	Var	Var	9 10d	7 10dx1 1/2
H15	1	HUS1.81/10			30 16d	10 16d

**NOTES:**

1. Framer to verify dimensions on the architectural drawings.
2. Double joist only require filler/backer ply when supporting another member using a face-mounted hanger.
3. Install 2x4 blocking @ 24" o/c under parallel non-loadbearing walls.
4. Install single-ply flush window header along inside face of rimboard/nimjoist
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.

**JOISTS SPACING 16" O/C UNLESS NOTED OTHERWISE**

Architectural Drawing Info  
V43 DESIGN  
255 CONSUMERS ROAD  
TORONTO, ON M2J 1R4

Project # 18012  
Model: Millwood 3  
Date: JUN 29, 2018 REV 4

**Legend**

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

**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.**



**Layout Name**  
MILLWOOD 3 EL-2

**Design Method**  
LSD

**Description**  
GREENPARK HOMES  
MINISALE, BRAMPTON, ON

**Created**  
June 27, 2018

**Builder**  
Kott Lumber Company

**Sales Rep**  
RM

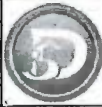
**Designer**  
SB

**Shipping**  
Project

**Builder's Project**  
Kott Lumber Company  
14 Anderson Blvd  
Stouffville, Ontario  
Canada  
L4A 7X4  
905-642-4400

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
H3	1	HGUS5.50/10...	Right				
H4	1	HGUS5.50/10...	Left				
H5	7	SUR2.56/8 (Min)	Right			14 16d	2 10dx1 1/2
H6	3	LT259				4 10d	2 10dx1 1/2
H8	1	HGUS410				46 16d	16 16d
H9	2	LSSUI25-R	Var	Var		9 10d	7 10dx1 1/2
H11	1	LSSUI25-L	Var	Var		9 10d	7 10dx1 1/2
H15	1	HUS1.81/10				30 16d	10 16d





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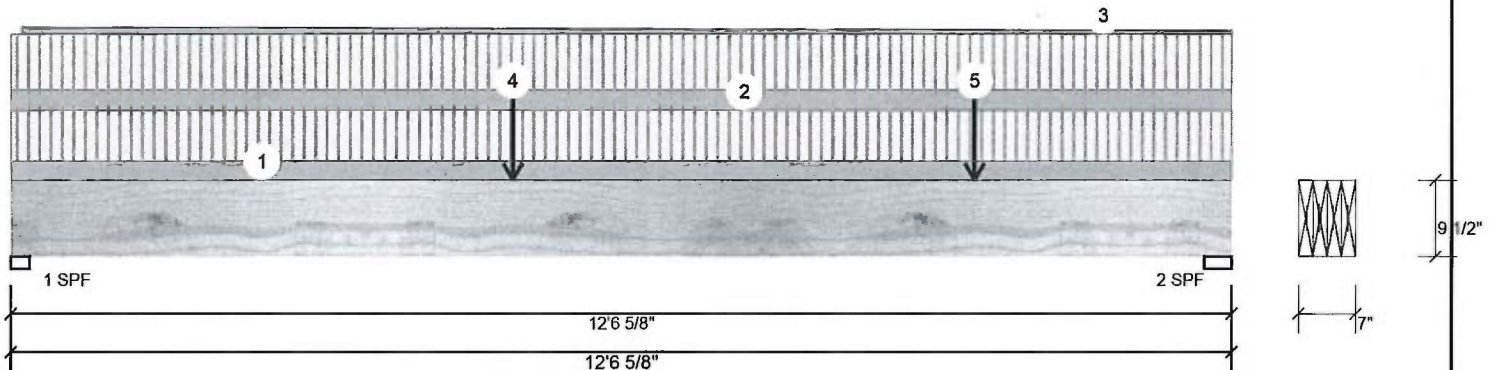
 Client:  
 Project:  
 Address:

 Date: 8/15/2018  
 Designer: S B  
 Job Name: MILLWOOD 3 EL-2  
 Project #:

Page 1 of 2

F11-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 4-Ply - PASSED

Level: Ground Floor



## Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	4	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	Yes
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	2242	1112	48	0
2	5577	2617	193	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	47%	1390 / 3387	4777 L	1.25D+1.5L +0.5S
2 - SPF	3.375"	81%	3271 / 8462	11733 L	1.25D+1.5L +0.5S

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	28195 ft-lb	9'10 7/8"	47266 ft-lb	0.597 (60%)	1.25D+1.5L +0.5S	L
Unbraced	28195 ft-lb	9'10 7/8"	47266 ft-lb	0.597 (60%)	1.25D+1.5L +0.5S	L
Shear	11651 lb	11'6 1/2"	18554 lb	0.628 (63%)	1.25D+1.5L +0.5S	L
Perm Defl in.	0.166 (L/879)	6'8 3/16"	0.407 (L/360)	0.410 (41%)	D	Uniform
LL Defl inch	0.354 (L/413)	6'8 5/8"	0.407 (L/360)	0.870 (87%)	L+0.5S	L
TL Defl inch	0.521 (L/281)	6'8 1/2"	0.610 (L/240)	0.850 (85%)	D+L+0.5S	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 12-6-10	(Span)0-8-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 12-6-10	(Span)0-9-11	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tapered Start	0-1-6		Top	2 PLF	0 PLF	0 PLF	0 PLF	
	End	12-6-10			1 PLF	0 PLF	0 PLF	0 PLF	
4	Point	5-1-14		Top	677 lb	1466 lb	0 lb	0 lb	C3

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

- 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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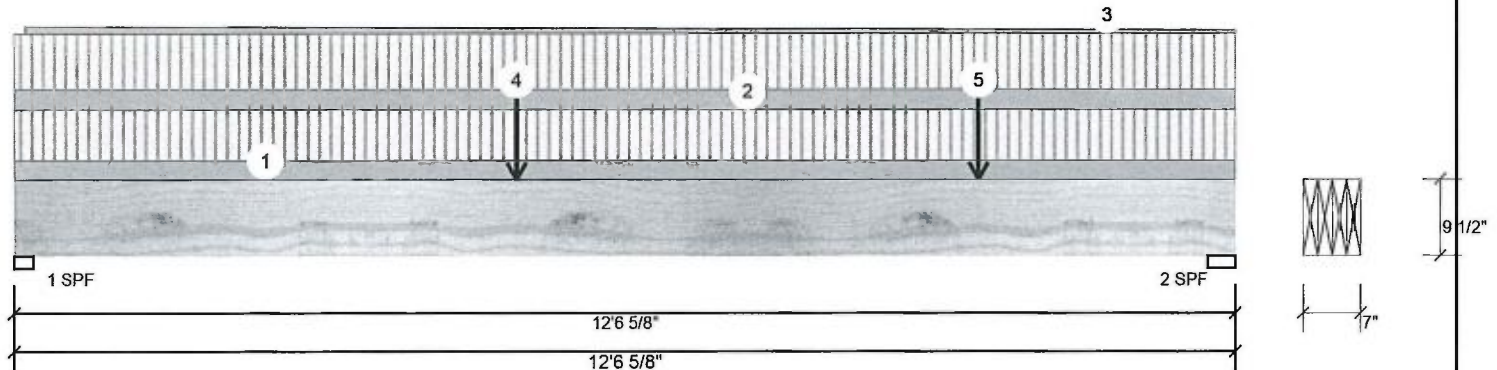
Client:  
Project:  
Address:

Date: 8/15/2018  
Designer: S B  
Job Name: MILLWOOD 3 EL-2  
Project #:

Page 2 of 2

F11-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 4-Ply - PASSED

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Point	9-10-14		Top	2697 lb	5966 lb	241 lb	0 lb	C4
	Self Weight				15 PLF				

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

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

**Notes**

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

**Lumber**

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

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

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

6. For flat roofs provide proper drainage to prevent ponding

**Manufacturer Info**

Forex  
APA: PR-L318

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

**KOTT NASCOR**

This design is valid until 7/10/2021





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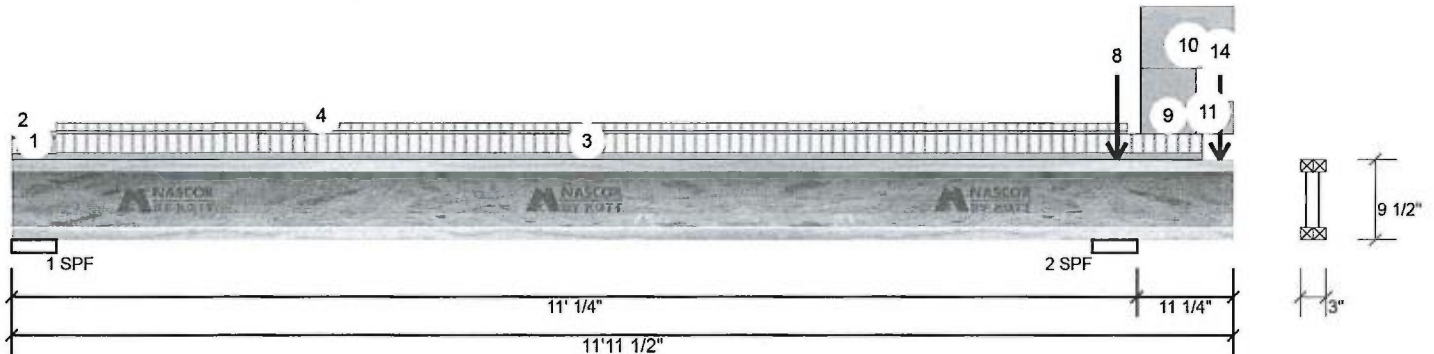
 Client:  
 Project:  
 Address:

 Date: 8/15/2018  
 Designer: S B  
 Job Name: MILLWOOD 3 EL-2  
 Project #:

Page 1 of 2

F13-A NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



## Member Information

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

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	191	65	0	0
2	380	429	177	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.250"	12%	81 / 288	369 L	1.25D+1.5L
2 - SPF	5.250"	27%	536 / 658	1194 LL	1.25D+1.5L +0.5S

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-100 ft-lb	11' 1/4"	4771 ft-lb	0.021 (2%)	1.4D	Uniform
Unbraced	-100 ft-lb	11' 1/4"	4681 ft-lb	0.021 (2%)	1.4D	Uniform
Pos Moment	892 ft-lb	5'5 9/16"	7340 ft-lb	0.122 (12%)	1.25D+1.5L	L
Unbraced	892 ft-lb	5'5 9/16"	897 ft-lb	0.995 (99%)	1.25D+1.5L	L
Shear	369 lb	10'9 5/8"	3080 lb	0.120 (12%)	1.25D+1.5L	LL
Perm Defl in.	0.011 (L/10978)	5'4 13/16"	0.348 (L/360)	0.030 (3%)	D	Uniform
LL Defl inch	0.038 (L/3265)	5'7 1/16"	0.348 (L/360)	0.110 (11%)	L+0.5S	L
TL Defl inch	0.050 (L/2517)	5'6 9/16"	0.521 (L/240)	0.100 (10%)	D+L+0.5S	L
LL Cant	-0.010 (2L/2352)	Rt Cant	0.200 (2L/480)	0.048 (5%)	L+0.5S	L
TL Cant	-0.011 (2L/2084)	Rt Cant	0.300 (2L/360)	0.036 (4%)	D+L+0.5S	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 6'6" o.c.
- 5 Bottom flange must be laterally braced at a maximum of 6'3" o.c.

## 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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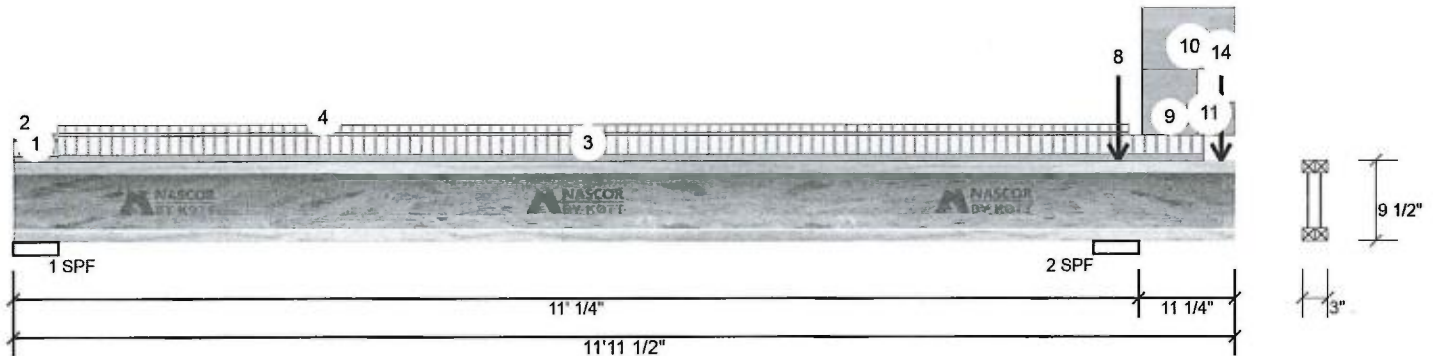
Client:  
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Designer: S B  
Job Name: MILLWOOD 3 EL-2  
Project #:

Page 2 of 2

F13-A NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-5-4	(Span)1-0-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-5-4	(Span)0-3-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	0-5-4 to 11-7-14	(Span)1-2-11	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Tie-In	0-5-4 to 10-11-2	(Span)0-6-5	Top	15 PSF	40 PSF	0 PSF	0 PSF	
5	Point	10-9-14		Top	29 lb	0 lb	0 lb	0 lb	Wall Self Weight
6	Point	10-9-14		Top	159 lb	159 lb	177 lb	0 lb	F2 F2
7	Point	10-9-14		Top	5 lb	10 lb	0 lb	0 lb	J4
8	Point	10-9-14		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
9	Part. Uniform	11-0-10 to 11-7-2		Top	88 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
10	Part. Uniform	11-0-10 to 11-11-8		Top	82 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
11	Part. Uniform	11-7-2 to 11-11-8		Top	44 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
12	Point	11-9-14		Top	2 lb	0 lb	0 lb	0 lb	Wall Self Weight
13	Point	11-9-14		Top	2 lb	5 lb	0 lb	0 lb	J4
14	Point	11-9-14		Top	4 lb	0 lb	0 lb	0 lb	Wall Self Weight

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

## 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, multiply 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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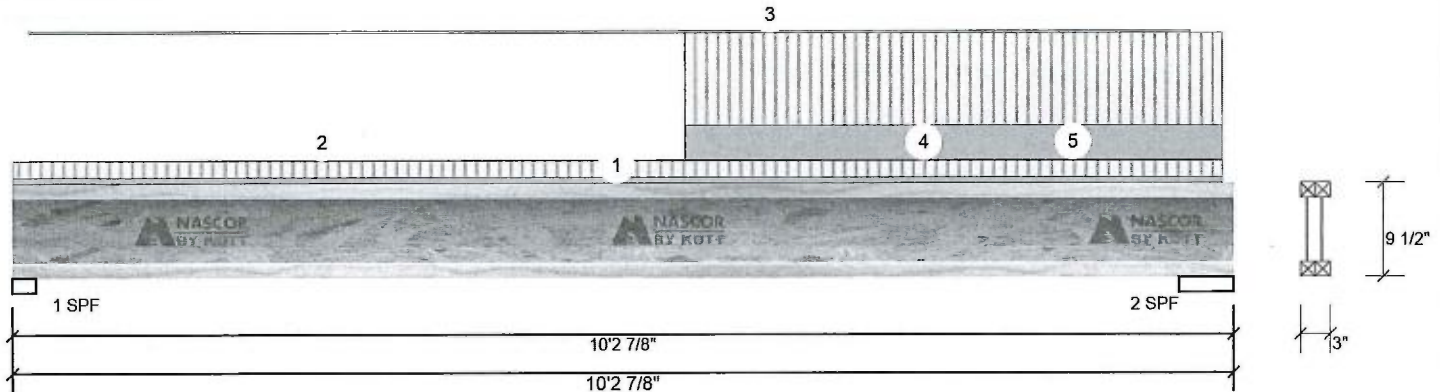
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 Project:  
 Address:

 Date: 8/15/2018  
 Designer: S B  
 Job Name: MILLWOOD 3 EL-2  
 Project #:

Page 1 of 1

F13-B NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	216	100	0	0
2	542	221	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - SPF	2.375"	17%	125 / 324	449 L 1.25D+1.5L
2 - SPF	5.500"	35%	276 / 813	1089 L 1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1785 ft-lb	6'3 1/2"	7340 ft-lb	0.243 (24%)	1.25D+1.5L	L
Unbraced	1785 ft-lb	6'3 1/2"	1795 ft-lb	0.994 (99%)	1.25D+1.5L	L
Shear	1005 lb	9'10 1/8"	3080 lb	0.326 (33%)	1.25D+1.5L	L
Perm Defl in.	0.025 (L/4665)	5'5 3/8"	0.324 (L/360)	0.080 (8%)	D	Uniform
LL Defl inch	0.058 (L/2005)	5'6 3/8"	0.324 (L/360)	0.180 (18%)	L	L
TL Defl inch	0.083 (L/1403)	5'6 1/16"	0.485 (L/240)	0.170 (17%)	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 4'11" 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 10-1-12	(Span)1-0-14	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-1-10 to 5-4-14		Top	1 PLF	0 PLF	0 PLF	0 PLF	
3	Part. Uniform	0-1-11 to 9-10-8		Top	3 PLF	0 PLF	0 PLF	0 PLF	
4	Tapered Start	5-4-14		Top	1 PLF	0 PLF	0 PLF	0 PLF	
	End	9-10-11			0 PLF	0 PLF	0 PLF	0 PLF	
5	Part. Uniform	5-7-12 to 10-1-12		Top	45 PLF	120 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

## 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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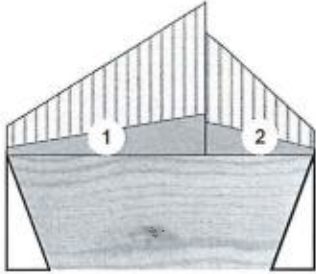
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Date: 8/15/2018  
Designer: S B  
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Project #:

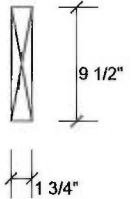
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**F14-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED**

Level: Ground Floor



1 Hanger (LSSUI25)  
2 Hanger (LSSUI25)  
2'1 7/16"  
2'1 7/16"

**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	16	10	0	0
2	17	11	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	3.500"	1%	13 / 24	36 L	1.25D+1.5L
2 - Hanger	3.500"	1%	13 / 26	39 L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	16 ft-lb	1'1 1/8"	11362 ft-lb	0.001 (0%)	1.25D+1.5L	L
Unbraced	16 ft-lb	1'1 1/8"	10925 ft-lb	0.001 (0%)	1.25D+1.5L	L
Shear	4 lb	1'1 1/4"	4638 lb	0.001 (0%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
LL Defl inch	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
TL Defl inch	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		

**Design Notes**

- 1 Fill all hanger nailing holes.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Top braced at bearings.
- 4 Bottom braced at bearings.

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 1-4-8	(Span)0-3-4 to 1-4-14	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	1-4-8 to 2-1-7	(Span)1-1-10 to 0-2-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				4 PLF				

**Notes**

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

**Lumber**

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

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

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

6. For flat roofs provide proper drainage to prevent ponding

**Manufacturer Info**

Forex  
APA: PR-L318

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

**KOTT NASCOR**

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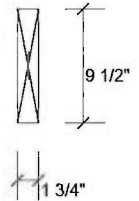
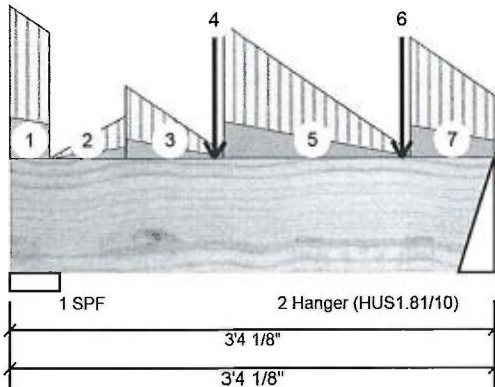
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 Project:  
 Address:

 Date: 8/15/2018  
 Designer: S B  
 Job Name: MILLWOOD 3 EL-2  
 Project #:

Page 1 of 2

F14-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

Level: Ground Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	29 (-48)	(-1)	0	0
2	48 (-31)	12	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.125"	1%	-1 / 43	42 (-73)	L	0.9D+1.5L
2 - Hanger	3.000"	2%	15 / 71	86 (-36)	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-66 ft-lb	1'5"	7840 ft-lb	0.008 (1%)	1.25D+1.5L	L
Unbraced	-94 ft-lb	1'5"	10055 ft-lb	0.009 (1%)	1.25D+1.5L	L
Pos Moment	33 ft-lb	2'4 1/16"	11362 ft-lb	0.003 (0%)	1.25D+1.5L	L
Unbraced	33 ft-lb	2'4 1/16"	10055 ft-lb	0.003 (0%)	1.25D+1.5L	L
Shear	64 lb	1' 7/8"	3200 lb	0.020 (2%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
LL Defl inch	0.001 (L/55396)	1'5"	0.096 (L/360)	0.010 (1%)	L	L
TL Defl inch	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		

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 Tie-down connection required at bearing 1 for uplift 73 lb (Combination 1.25D+1.5L, Load Case L).
- 4 Tie-down connection required at bearing 2 for uplift 36 lb (Combination 0.9D+1.5L, Load Case L).
- 5 Top braced at bearings.
- 6 Bottom braced at bearings.

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

Continued on page 2...

## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

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

6. For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

 Forex  
 APA: PR-L318

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

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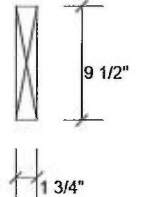
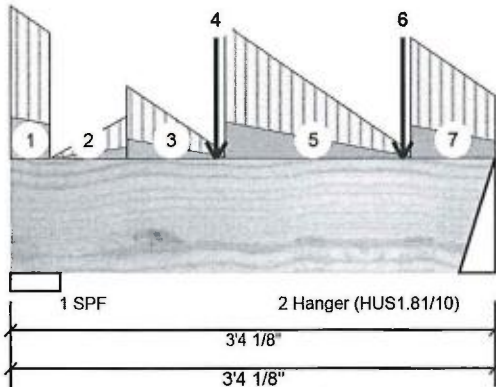
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Project:  
Address:

Date: 8/15/2018  
Designer: S B  
Job Name: MILLWOOD 3 EL-2  
Project #:

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**F14-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED**

Level: Ground Floor



Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
2	Tie-In	0-3-4 to 0-9-11	(Span)0-0-0 to 0-5-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	0-9-11 to 1-5-11	(Span)0-9-12 to 0-0-14	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Point	1-5-0		Far Face	-30 lb	-79 lb	0 lb	0 lb	J3
5	Tie-In	1-5-11 to 2-9-2	(Span)1-6-1 to 0-0-14	Top	15 PSF	40 PSF	0 PSF	0 PSF	
6	Point	2-8-7		Far Face	10 lb	27 lb	0 lb	0 lb	J7
7	Tie-In	2-9-2 to 3-4-2	(Span)1-4-3 to 0-8-6	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				4 PLF				

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

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

**Notes**

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

**Lumber**

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

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

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

6. For flat roofs provide proper drainage to prevent ponding

**Manufacturer Info**

Forex  
APA: PR-L318

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



This design is valid until 7/10/2021





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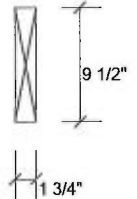
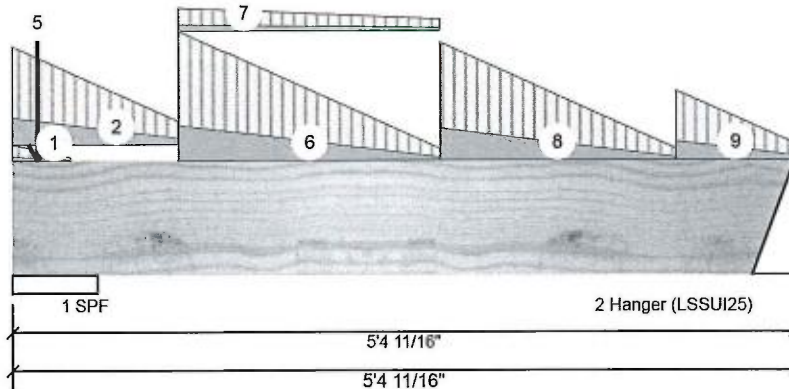
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 Project:  
 Address:

 Date: 8/15/2018  
 Designer: S B  
 Job Name: MILLWOOD 3 EL-2  
 Project #:

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

Level: Ground Floor


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

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

Brg	Live	Dead	Snow	Wind
1	98	110	0	0
2	65	34	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	7.063"	4%	137 / 147	285	L	1.25D+1.5L
2 - Hanger	3.500"	3%	42 / 97	139	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	182 ft-lb	2'8 7/8"	11362 ft-lb	0.016 (2%)	1.25D+1.5L	L
Unbraced	182 ft-lb	2'8 7/8"	7969 ft-lb	0.023 (2%)	1.25D+1.5L	L
Shear	116 lb	1'3 13/16"	4638 lb	0.025 (3%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/58254)	2'9 11/16"	0.154 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.002 (L/28735)	2'9 1/2"	0.154 (L/360)	0.010 (1%)	L	L
TL Defl inch	0.003 (L/19243)	2'9 9/16"	0.232 (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**

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-4-13	(Span)0-4-4 to 0-0-14	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 1-1-12	(Span)2-1-11 to 0-6-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	0-2-2		Top	15 lb	0 lb	0 lb	0 lb	Wall Self Weight
4	Point	0-2-2		Top	33 lb	0 lb	0 lb	0 lb	Wall Self Weight

Continued on page 2...

**Notes**

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

**Lumber**

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

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

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

6. For flat roofs provide proper drainage to prevent ponding

**Manufacturer Info**

 Forex  
 APA: PR-L318

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

This design is valid until 7/10/2021







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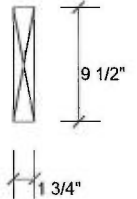
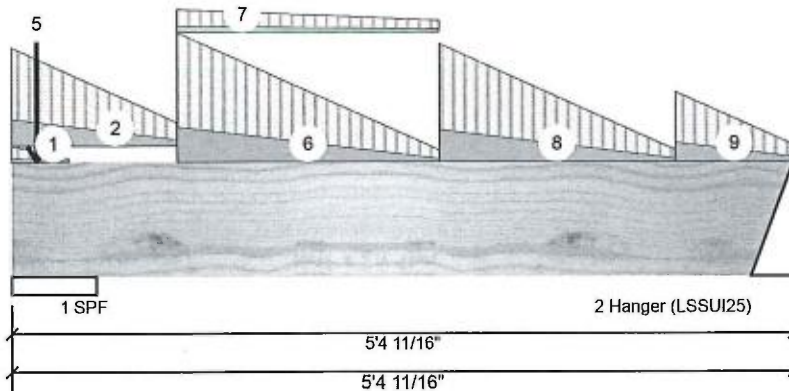
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Job Name: MILLWOOD 3 EL-2  
Project #:

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

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Point	0-2-2		Top	14 lb	0 lb	0 lb	0 lb	Wall Self Weight
6	Tie-In	1-1-12 to 2-11-7	(Span)2-9-15 to 0-3-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
7	Tie-In	1-1-12 to 2-11-7	(Span)0-6-1 to 0-3-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
8	Tie-In	2-11-7 to 4-6-15	(Span)2-6-15 to 0-3-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
9	Tie-In	4-6-15 to 5-4-11	(Span)1-6-4 to 0-4-6	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				4 PLF				

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

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

## Notes

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

## Lumber

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

## chemicals

## Handling &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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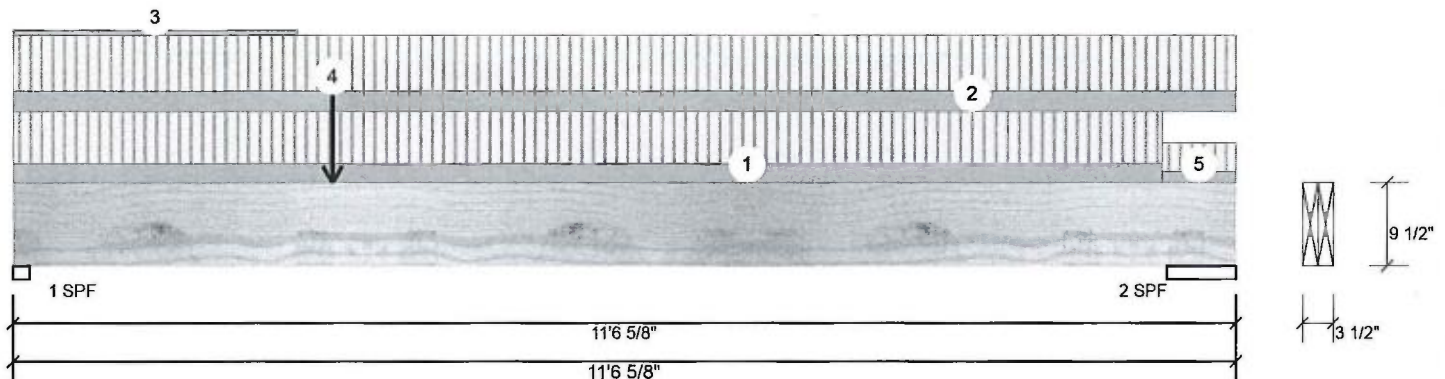
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 Designer: S B  
 Job Name: MILLWOOD 3 EL-2  
 Project #:

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F4-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	1658	698	0	0
2	761	343	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	1.875"	83%	873 / 2487	3360 L	1.25D+1.5L
2 - SPF	7.778"	9%	428 / 1142	1570 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	9428 ft-lb	3' 1/4"	22724 ft-lb	0.415 (41%)	1.25D+1.5L	L
Unbraced	9428 ft-lb	3' 1/4"	20390 ft-lb	0.462 (46%)	1.25D+1.5L	L
Shear	3281 lb	10 5/8"	9277 lb	0.354 (35%)	1.25D+1.5L	L
Perm Defl in.	0.073 (L/1789)	4'11 1/16"	0.362 (L/360)	0.200 (20%)	D	Uniform
LL Defl inch	0.172 (L/756)	4'10 9/16"	0.362 (L/360)	0.480 (48%)	L	L
TL Defl inch	0.245 (L/532)	4'10 3/4"	0.544 (L/240)	0.450 (45%)	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 10-10-4	(Span)0-11-5	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 11-6-10	(Span)1-0-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-0-0 to 2-8-4		Top	2 PLF	0 PLF	0 PLF	0 PLF	
4	Point	3-0-4		Top	780 lb	1973 lb	0 lb	0 lb	C5
5	Tie-In	10-10-4 to 11-6-10	(Span)0-6-5	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				8 PLF				

## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

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

- 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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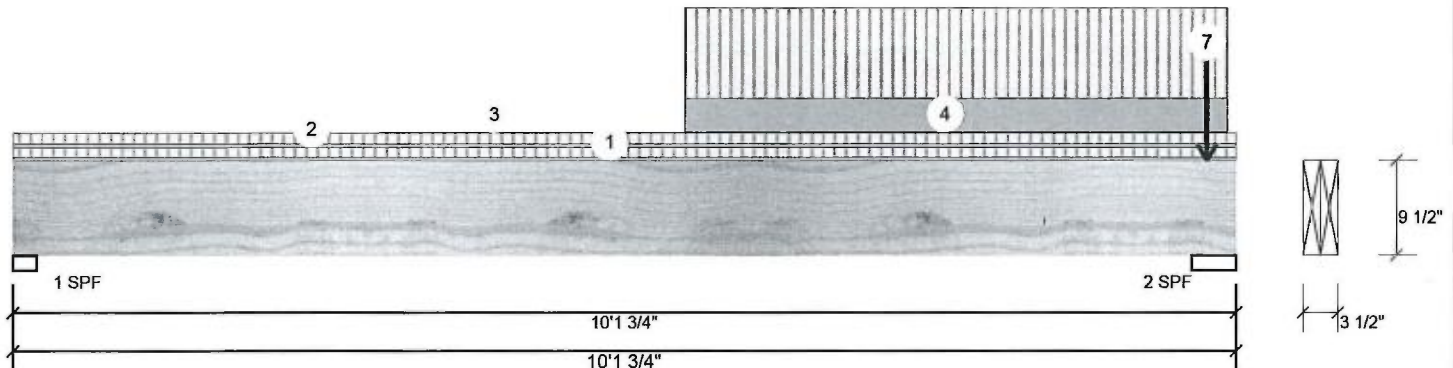
 Client:  
 Project:  
 Address:

 Date: 8/15/2018  
 Designer: S B  
 Job Name: MILLWOOD 3 EL-2  
 Project #:

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F4-C Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	246	132	0	0
2	691	355	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	10%	165 / 368	533 L	1.25D+1.5L
2 - SPF	4.375"	16%	443 / 1036	1480 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1990 ft-lb	6'2 5/16"	22724 ft-lb	0.088 (9%)	1.25D+1.5L	L
Unbraced	1990 ft-lb	6'2 5/16"	20862 ft-lb	0.095 (10%)	1.25D+1.5L	L
Shear	853 lb	9' 5/8"	9277 lb	0.092 (9%)	1.25D+1.5L	L
Perm Defl in.	0.016 (L/7264)	5'3 3/4"	0.324 (L/360)	0.050 (5%)	D	Uniform
LL Defl inch	0.033 (L/3498)	5'4 15/16"	0.324 (L/360)	0.100 (10%)	L	L
TL Defl inch	0.049 (L/2361)	5'4 9/16"	0.485 (L/240)	0.100 (10%)	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 Multiple plies must be fastened together as per manufacturer's details.
- 4 Top loads must be supported equally by all plies.
- 5 Top braced at bearings.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on full section width.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 10-1-12	(Span)0-7-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 10-1-12	(Span)0-8-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	3-0-8 to 6-2-8		Top	1 PLF	0 PLF	0 PLF	0 PLF	
4	Part. Uniform	5-6-14 to 10-0-14		Top	45 PLF	120 PLF	0 PLF	0 PLF	
5	Point	9-10-14		Top	24 lb	64 lb	0 lb	0 lb	J11

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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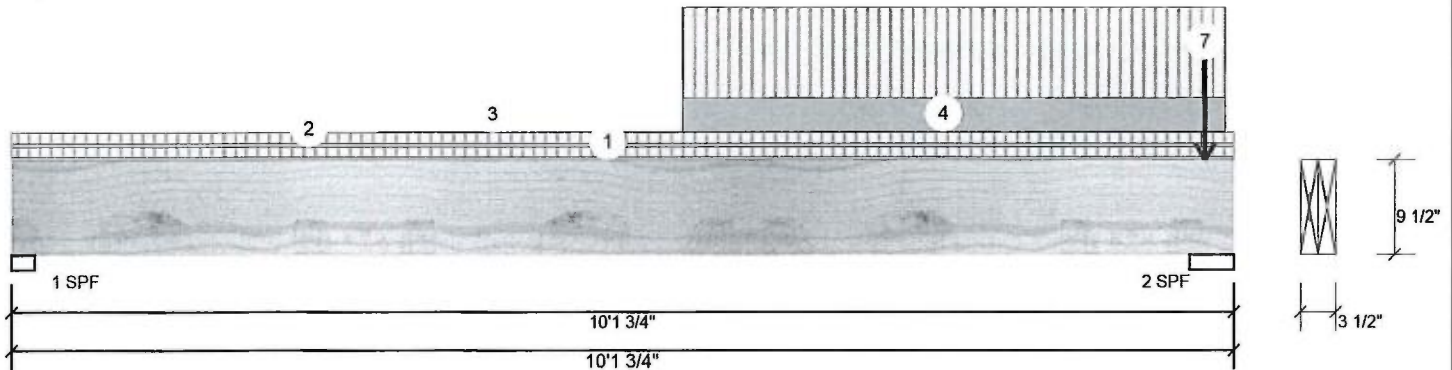
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Project:  
Address:

Date: 8/15/2018  
Designer: S B  
Job Name: MILLWOOD 3 EL-2  
Project #:

Page 2 of 2

F4-C Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Point	9-10-14		Top	23 lb	62 lb	0 lb	0 lb	J11
7	Point	9-10-14		Top	55 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Self Weight				8 PLF				

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

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

**Notes**

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

**Lumber**

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

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

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

6. For flat roofs provide proper drainage to prevent ponding

**Manufacturer Info**

Forex  
APA: PR-L318

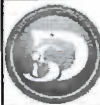
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14 Anderson Blvd, Ontario  
Canada  
L4A 7X4  
905-642-4400

**KOTT NASCOR**

This design is valid until 7/10/2021







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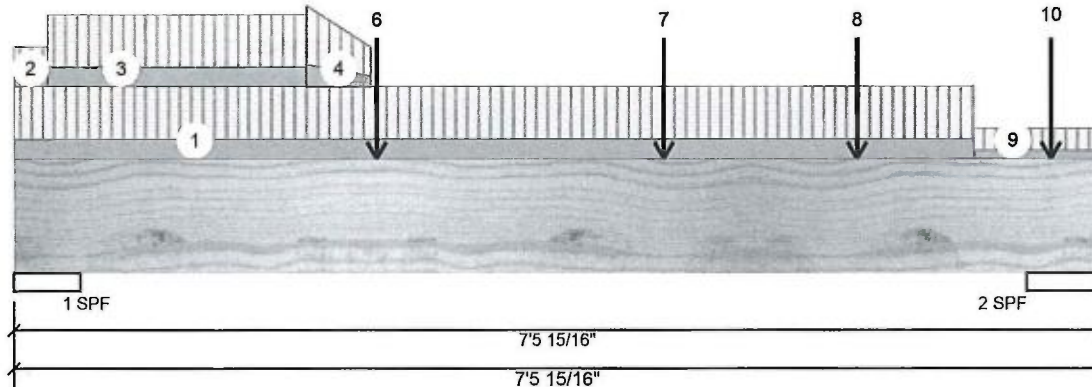
 Client:  
 Project:  
 Address:

 Date: 8/15/2018  
 Designer: S B  
 Job Name: MILLWOOD 3 EL-2  
 Project #:

Page 1 of 2

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

Level: Ground Floor



## Member Information

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

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	2144 (-21)	922	0	0
2	1185 (-10)	515	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	37%	1153 / 3216	4369 L	1.25D+1.5L
2 - SPF	6.188"	18%	643 / 1778	2421 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	8989 ft-lb	2'6 1/16"	22724 ft-lb	0.396 (40%)	1.25D+1.5L	L
Unbraced	8989 ft-lb	2'6 1/16"	21851 ft-lb	0.411 (41%)	1.25D+1.5L	L
Shear	4281 lb	1'2 1/4"	9277 lb	0.462 (46%)	1.25D+1.5L	L
Perm Defl in.	0.029 (L/2726)	3'2 3/8"	0.222 (L/360)	0.130 (13%)	D	Uniform
LL Defl inch	0.068 (L/1168)	3'2 1/4"	0.222 (L/360)	0.310 (31%)	L	L
TL Defl inch	0.098 (L/818)	3'2 1/4"	0.332 (L/240)	0.290 (29%)	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 6-7-8	(Span)0-10-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-2-12	(Span)0-5-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	0-2-12 to 2-0-4	(Span)0-10-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Tie-In	2-0-4 to 2-5-9	(Span)0-11-9 to 0-5-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
5	Point	2-6-1		Near Face	1239 lb	2953 lb	0 lb	0 lb	F8
6	Point	2-6-1		Near Face	0 lb	-31 lb	0 lb	0 lb	F8

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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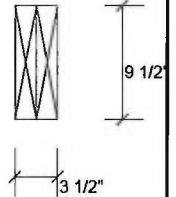
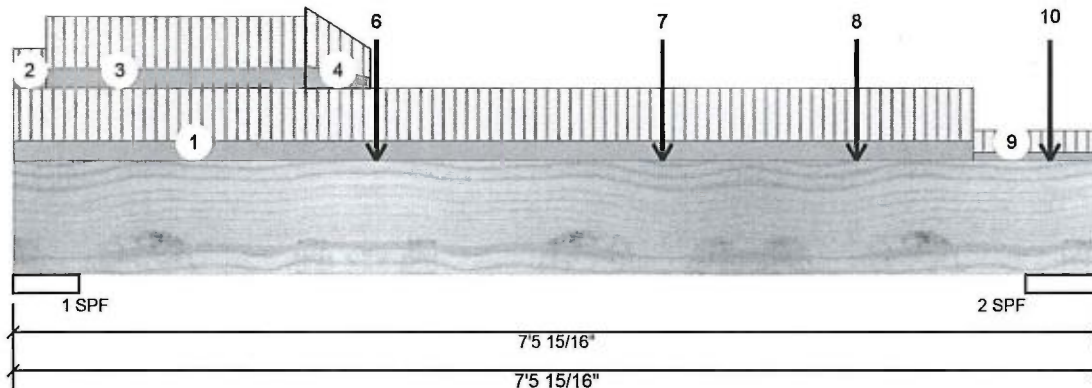
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Project:  
Address:

Date: 8/15/2018  
Designer: S B  
Job Name: MILLWOOD 3 EL-2  
Project #:

Page 2 of 2

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

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
7	Point	4-5-12		Near Face	16 lb	44 lb	0 lb	0 lb	J1
8	Point	5-9-12		Near Face	28 lb	75 lb	0 lb	0 lb	J7
9	Tie-In	6-7-8 to 7-5-15	(Span)0-4-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
10	Point	7-1-12		Near Face	37 lb	99 lb	0 lb	0 lb	J8
	Self Weight				8 PLF				

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

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

**Notes**

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**Lumber**

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

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

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

6. For flat roofs provide proper drainage to prevent ponding

**Manufacturer Info**

Forex  
APA: PR-L318

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

**KOTT NASCOR**

This design is valid until 7/10/2021





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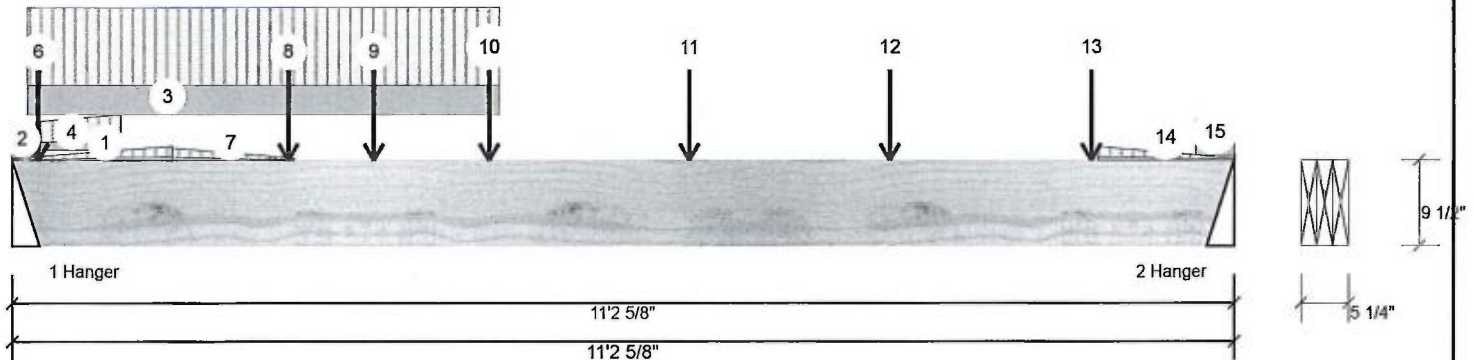
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 Project #:

Page 1 of 2

F8-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" 3-Ply - PASSED

Level: Ground Floor



## Member Information

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

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	2953 (-31)	1239	0	0
2	1654	714	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - Hanger	3.000"	51% 1549 / 4430	5979 L	1.25D+1.5L
2 - Hanger	3.000"	29% 892 / 2481	3373 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	15477 ft-lb	3'4"	35449 ft-lb	0.437 (44%)	1.25D+1.5L	L
Unbraced	15477 ft-lb	3'4"	35449 ft-lb	0.437 (44%)	1.25D+1.5L	L
Shear	5341 lb	11 3/4"	13915 lb	0.384 (38%)	1.25D+1.5L	L
Perm Defl in.	0.085 (L/1529)	5'1 1/4"	0.362 (L/360)	0.240 (24%)	D	Uniform
LL Defl inch	0.199 (L/654)	5'1"	0.362 (L/360)	0.550 (55%)	L	L
TL Defl inch	0.284 (L/458)	5'1 1/8"	0.542 (L/240)	0.520 (52%)	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.

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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 1-5-11	(Span)0-2-7 to 1-7-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-2-3	(Span)0-11-11 to 0-9-11	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-1-10 to 4-5-13		Top	90 PLF	240 PLF	0 PLF	0 PLF	
4	Tie-In	0-2-10 to 1-0-0	(Span)3-2-2 to 4-0-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	

Continued on page 2...

## Notes

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

## Lumber

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

## chemicals

## 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  
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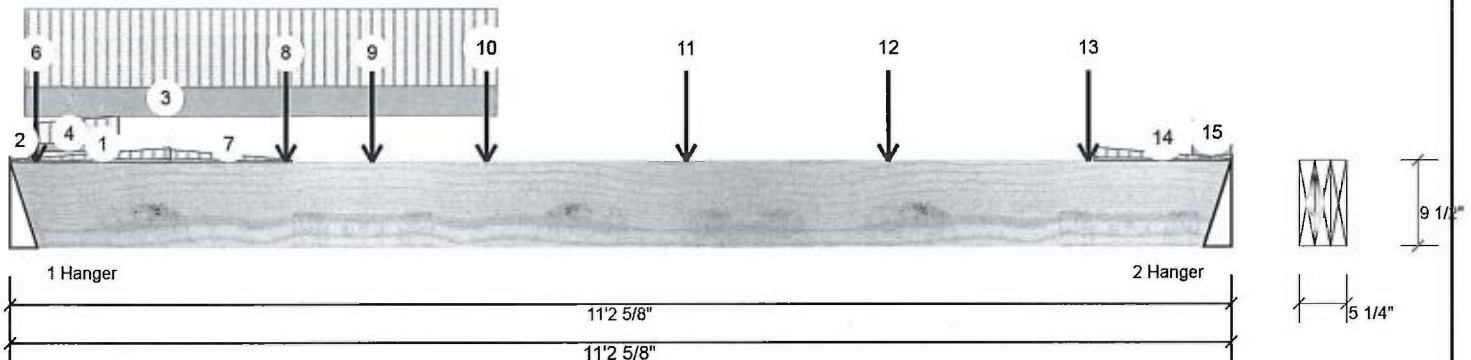
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Job Name: MILLWOOD 3 EL-2  
Project #:

Page 2 of 2

F8-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" 3-Ply - PASSED

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Point	0-2-14		Near Face	12 lb	48 lb	0 lb	0 lb	F14
6	Point	0-2-14		Near Face	0 lb	-31 lb	0 lb	0 lb	F14
7	Tie-In	1-5-11 to 2-7-3	(Span)1-4-13 to 0-2-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
8	Point	2-6-8		Far Face	14 lb	38 lb	0 lb	0 lb	J1
9	Point	3-4-0		Top	1013 lb	2424 lb	0 lb	0 lb	C6
10	Point	4-4-10		Far Face	27 lb	71 lb	0 lb	0 lb	J7
11	Point	6-2-11		Far Face	39 lb	105 lb	0 lb	0 lb	J8
12	Point	8-0-13		Far Face	113 lb	303 lb	0 lb	0 lb	J8
13	Point	9-10-14		Far Face	158 lb	422 lb	0 lb	0 lb	J3
14	Tie-In	9-11-9 to 11-2-10	(Span)1-6-6 to 0-2-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
15	Tie-In	10-10-7 to 11-2-10	(Span)4-0-0 to 3-7-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				11 PLF				

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

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

## Notes

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## Lumber

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

chemicals

## Handling &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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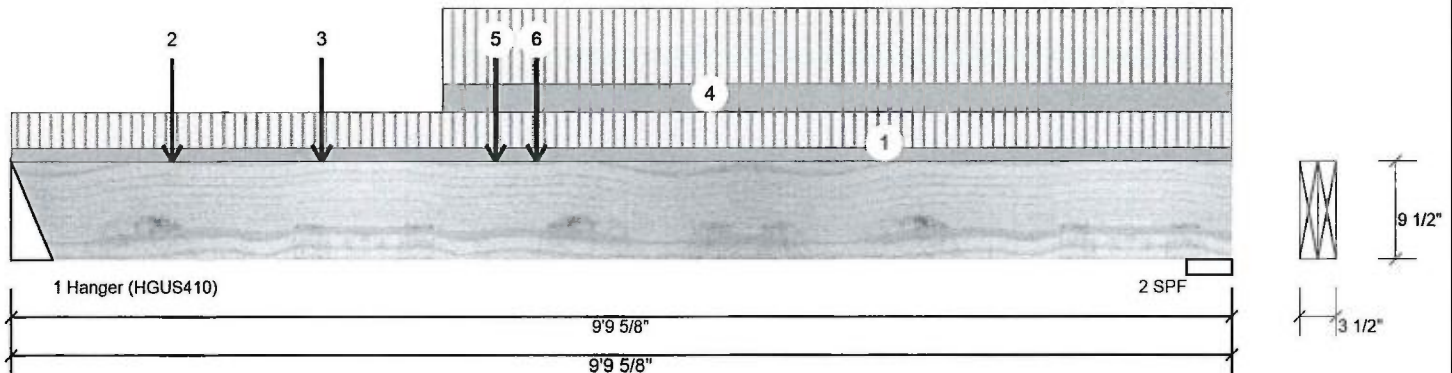
Client:  
Project:  
Address:

Date: 8/15/2018  
Designer: S B  
Job Name: MILLWOOD 3 EL-2  
Project #:

Page 1 of 2

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

Level: Ground Floor



## Member Information

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

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	1478	667	0	0
2	616	292	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	4.000"	29%	833 / 2216	3049	L	1.25D+1.5L
2 - SPF	4.375"	14%	365 / 924	1289	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	6674 ft-lb	2'6"	22724 ft-lb	0.294 (29%)	1.25D+1.5L	L
Unbraced	6674 ft-lb	2'6"	21042 ft-lb	0.317 (32%)	1.25D+1.5L	L
Shear	3021 lb	1' 3/4"	9277 lb	0.326 (33%)	1.25D+1.5L	L
Perm Defl in.	0.042 (L/2662)	4'3 5/8"	0.308 (L/360)	0.140 (14%)	D	Uniform
LL Defl inch	0.093 (L/1194)	4'3 5/16"	0.308 (L/360)	0.300 (30%)	L	L
TL Defl inch	0.134 (L/825)	4'3 3/8"	0.461 (L/240)	0.290 (29%)	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	Tie-In	0-0-0 to 9-9-10	(Span)0-5-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	1-3-9		Far Face	11 lb	17 lb	0 lb	0 lb	F14
3	Point	2-6-0		Far Face	714 lb	1654 lb	0 lb	0 lb	F8
4	Tie-In	3-5-10 to 9-9-10	(Span)0-10-14	Top	15 PSF	40 PSF	0 PSF	0 PSF	
5	Point	3-10-12		Top	27 lb	72 lb	0 lb	0 lb	

Continued on page 2...

## Notes

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

## Lumber

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

## chemicals

## Handling &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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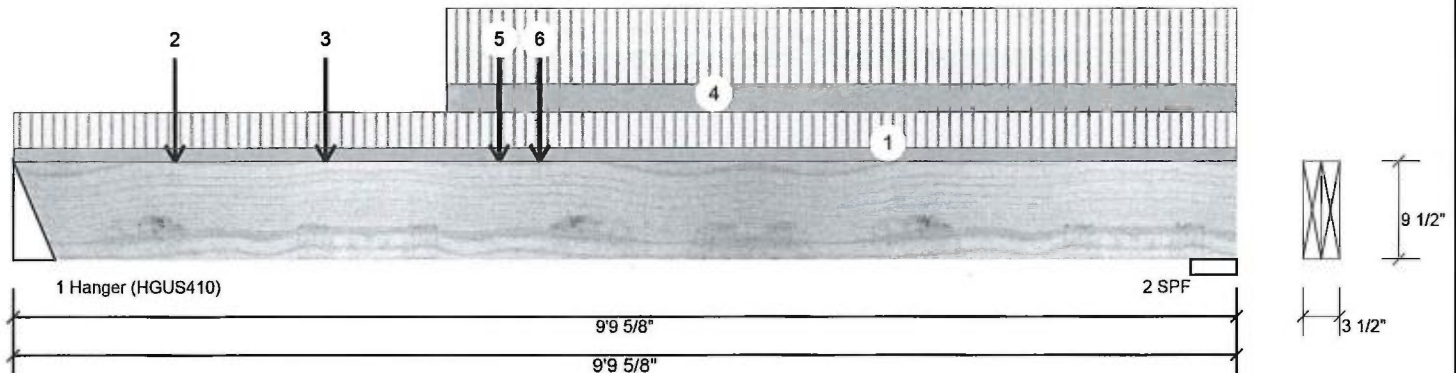
Client:  
Project:  
Address:

Date: 8/15/2018  
Designer: S B  
Job Name: MILLWOOD 3 EL-2  
Project #:

Page 2 of 2

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

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Point	4-2-11		Top	57 lb	152 lb	0 lb	0 lb	
	Self Weight				8 PLF				

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

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

**Notes**

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

**Lumber**

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

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

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

6. For flat roofs provide proper drainage to prevent ponding

**Manufacturer Info**

Forex  
APA: PR-L318

Kott Lumber Company  
14 Anderson Blvd, Ontario  
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**KOTT NASCOR**

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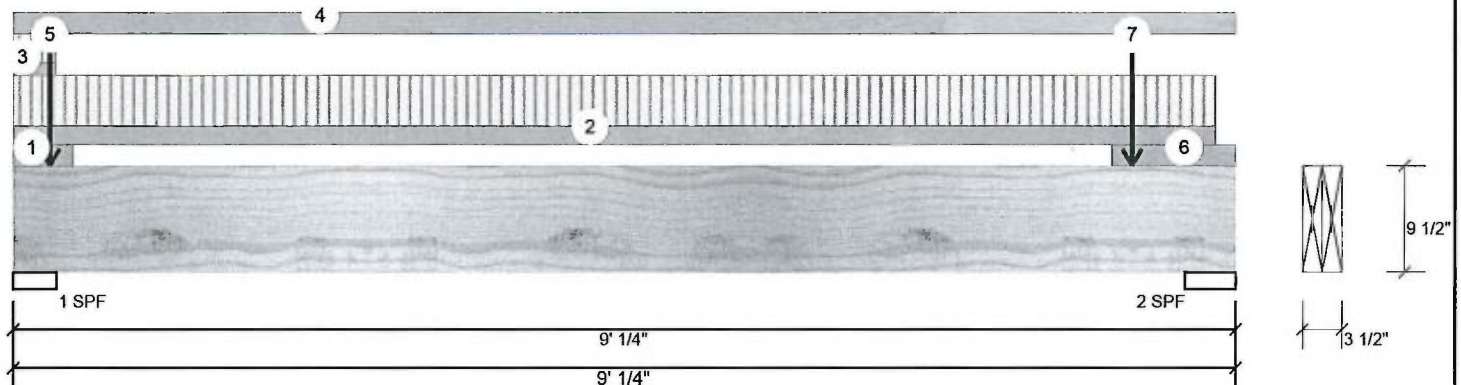
 Client:  
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 Date: 8/15/2018  
 Designer: S B  
 Job Name: MILLWOOD 3 EL-2  
 Project #:

Page 1 of 2

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

Level: Ground Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

Type:	Girder	Application:	Floor (Residential)
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	1242	1055	173	0
2	1153	1050	169	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.813"	40%	1319 / 1950	3269 L	1.25D+1.5L +0.5S
2 - SPF	4.467"	33%	1313 / 1814	3127 L	1.25D+1.5L +0.5S

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4669 ft-lb	4'7"	22724 ft-lb	0.205 (21%)	1.25D+1.5L +0.5S	L
Unbraced	4669 ft-lb	4'7"	21311 ft-lb	0.219 (22%)	1.25D+1.5L +0.5S	L
Shear	2166 lb	7'11 1/16"	9277 lb	0.233 (23%)	1.25D+1.5L +0.5S	L
Perm Defl in.	0.045 (L/2254)	4'6 1/4"	0.282 (L/360)	0.160 (16%)	D	Uniform
LL Defl inch	0.054 (L/1870)	4'6 5/16"	0.282 (L/360)	0.190 (19%)	L+0.5S	L
TL Defl inch	0.099 (L/1022)	4'6 5/16"	0.423 (L/240)	0.230 (23%)	D+L+0.5S	L

READ ALL NOTES ON THIS PAGE AND ON  
ENGINEERING NOTE PAGE ENP-2. THIS  
NOTE PAGE IS AN INTEGRAL PART OF THIS  
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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 Multiple plies must be fastened together as per manufacturer's details.
- 4 Top loads must be supported equally by all plies.
- 5 Top braced at bearings.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on full section width.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 0-5-5		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
2	Part. Uniform	0-0-0 to 8-10-8		Top	74 PLF	196 PLF	0 PLF	0 PLF	J4
3	Part. Uniform	0-0-0 to 0-3-12		Top	47 PLF	113 PLF	0 PLF	0 PLF	J4
4	Part. Uniform	0-0-0 to 9-0-4		Top	82 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight

Continued on page 2...

## Notes

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

## Lumber

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

## chemicals

## Handling &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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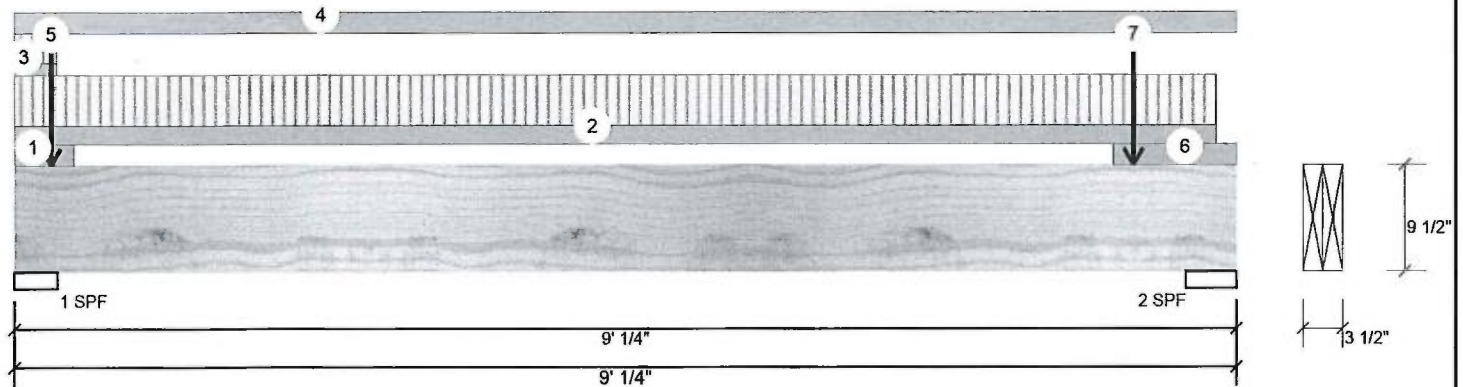
Client:  
Project:  
Address:

Date: 8/15/2018  
Designer: S B  
Job Name: MILLWOOD 3 EL-2  
Project #:

Page 2 of 2

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

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Point	0-3-4		Top	256 lb	311 lb	164 lb	0 lb	F17 F17
6	Part. Uniform	8-1-5 to 9-0-4		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
7	Point	8-3-2		Top	261 lb	309 lb	178 lb	0 lb	F17 F17
	Self Weight				8 PLF				

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

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

## Notes

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

## Lumber

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

## chemicals

## Handling &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





**NASCOR****Second Floor**  
LVL/LSL

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
F10	Forex 2.0E-3000Fb LVL	1.75	9.5	1	3	3	18-0-0
F8	Forex 2.0E-3000Fb LVL	1.75	9.5	1	3	3	12-0-0
F4	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	12-0-0
F9	Forex 2.0E-3000Fb LVL	1.75	9.5	3	2	6	10-0-0
F7	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	8-0-0
F5	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	6-0-0
F14	Forex 2.0E-3000Fb LVL	1.75	9.5			1	4-0-0
F12	Forex 2.0E-3000Fb LVL	1.75	11.875	1	3	3	16-0-0

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
J13	NJ40U	3.5	9.5			10	16-0-0
J14	NJ60U	3.5	9.5			9	18-0-0
J2	NJH	2.5	9.5			13	14-0-0
J11	NJH	2.5	9.5			8	12-0-0
J4	NJH	2.5	9.5			37	10-0-0
J3	NJH	2.5	9.5			1	8-0-0
J6	NJH	2.5	9.5			1	6-0-0
J7	NJH	2.5	9.5			3	4-0-0

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

Label	Description	Width	Depth	Qty	Piles	Pcs	Length
BLK3	NJ60U	3.5	9.5	LinFt	Varies		8-0-0

Label	Pcs	Description	Skew	Slope	fasteners	Supported Member
H2	16	LT359		4 10d	2 10d x 1 1/2	Live
H5	2	SUR2 56/9 (Min)	Right		14 10d x 1 1/2	Dead
H6	10	LT259		4 10d	2 10d x 1 1/2	Deflection Joist
H7	1	HGUS55/10		46 16d	16 16d	LL Span 1/
H8	5	HGUS410		46 16d	16 16d	TL Span 1/
H10	1	LSSU410-L	Var	14 16d	12 10d x 1 1/2	LL Cant 2L/
H11	1	LSSU125-L	Var	9 10d	7 10d x 1 1/2	TL Cant 2L/
H12	40	LF259		10 10d	1 #8 x 1 1/4WS	Deflection Girder
H13	2	LSSUH310-L	Var	14 16d	12 10d x 1 1/2	LL Span 1/

**NOTES:**

1. Framers to verify dimensions on the architectural drawings.
2. Double joist only requires 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 nm 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.

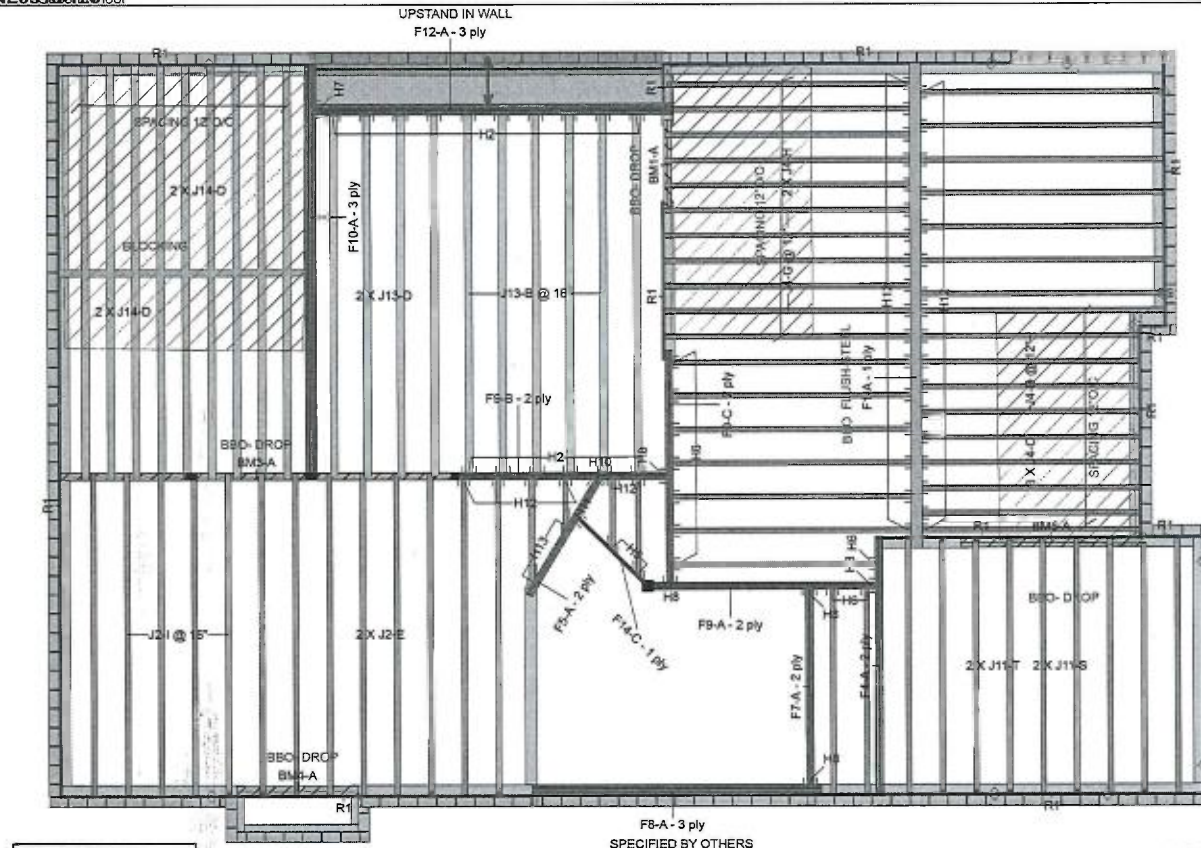
Hatch area represents ceramic tiled floor with an additional dead load of 5 PSF.

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

**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.**



JOISTS SPACING 16" O/C  
UNLESS  
NOTED OTHERWISE

Legend	PS
Point Load Support	
Load from Above	
Wall	
Norbord Rimboard Plus 1.125 X 9.5	
NJ40U 9.5	
NJ60U 9.5	
NJH 9.5	
Forex 2.0E-3000Fb LVL 1.75 X 9.5	
Forex 2.0E-3000Fb LVL 1.75 X 11.875	
1.75 X 9.5 (Dropped)	
2.5 X 9.5 (Dropped)	
5.25 X 10.25	

1. OBC 2012 O.Reg 332/12 as amended
2. Nascor CCMC - 13535-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.

**Architectural Drawing Info**

VA3 DESIGN  
255 CONSUMERS ROAD  
TORONTO, ON M2J 1R4

Project # 18012  
Model: Millwood 3 EL-1A  
Date: JUN 29, 2018 REV 4

**THIS CERTIFICATION IS TO CONFIRM THAT:**

1. THE LOADS USED IN THE CALCULATION OF THE ATTACHED APPROVED COMPONENTS CONFORM TO THE FLOOR ASSEMBLY SHOWN ON THIS LAYOUT.

2. THE FLOOR JOISTS COMPLY WITH THE NASCOR SPAN TABLE FOR THE LOADS AND SPACING SHOWN ON THIS LAYOUT.

THE FLOOR SYSTEM MUST BE ASSEMBLED IN ACCORDANCE TO THE NASCOR SPECIFIER GUIDE. MULTI-PLY MEMBERS MUST BE ATTACHED TOGETHER AS PER THE INCLUDED MULTIPLE MEMBER CONNECTION DETAIL.

ALL OTHER COMPONENTS AND STRUCTURAL ELEMENTS SUPPORTING THE FLOOR SYSTEM SUCH AS BEAMS, WALLS, COLUMNS AND FOUNDATION WALLS AND FOOTINGS INCLUDING ANCHORAGE OF COMPONENTS AND BRACING FOR LATERAL STABILITY ARE THE RESPONSIBILITY OF OTHERS.

**KOTT**

**Layout Name**  
MILLWOOD 3 EL-2

**Design Method**  
LSD

**Description**  
GREENPARK HOMES  
MINISALE, BRAMPTON, ON

**Created**  
June 27, 2018

**Builder**  
RM

**Sales Rep**  
RM

**Designer**  
S B

**Shipping**  
Project

**Builder's Project**  
Kott Lumber Company  
14 Anderson Blvd  
Stouffville, Ontario  
Canada  
L4A 7X4  
905-642-4400

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

**Floor**  
Loads  
Live 40  
Dead 15

**Deflection Joist**  
LL Span 1/ 480  
TL Span 1/ 360  
LL Cant 2L/ 480  
TL Cant 2L/ 360

**Deflection Girder**  
LL Span 1/ 360  
TL Span 1/ 240  
LL Cant 2L/ 480  
TL Cant 2L/ 360

**Decking**  
Deck CSB  
Thickness 5/8"  
Fastener Nailed & Glued  
Vibration  
Coiling Gypsum 1/2"

**Roof**  
Loads  
Live 0  
Dead 17  
Snow 36

**Deflection Joist**  
LL Span 1/ 360  
TL Span 1/ 240  
LL Cant 2L/ 360  
TL Cant 2L/ 360

**Deflection Girder**  
LL Span 1/ 360  
TL Span 1/ 240  
LL Cant 2L/ 360  
TL Cant 2L/ 360

**Decking**  
Deck SPF Plywood  
Thickness 5/8"  
Fastener Nailed Only





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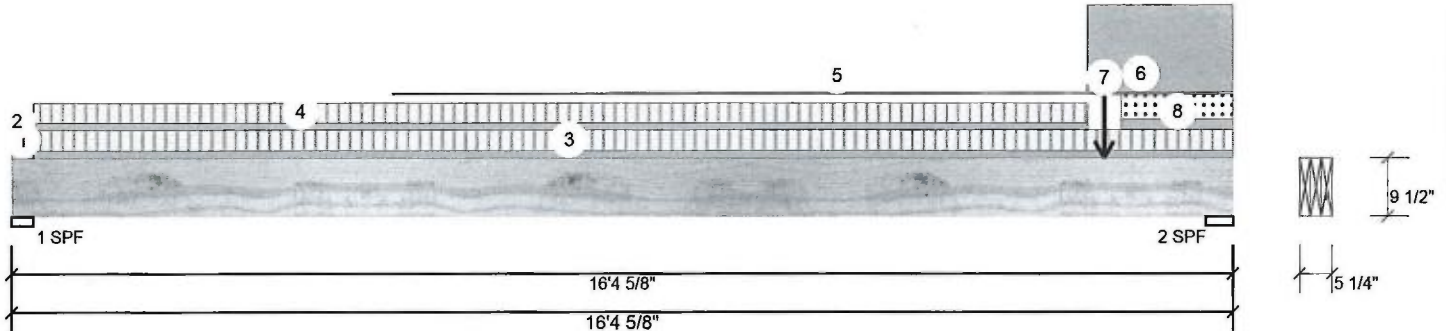
Client:  
Project:  
Address:

Date: 8/15/2018  
Designer: S B  
Job Name: MILLWOOD 3 EL-2  
Project #:

Page 1 of 2

**F10-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 3-Ply - PASSED**

Level: Second Floor

**Member Information**

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

**Unfactored Reactions UNPATTERNED lb (Uplift)**

Brg	Live	Dead	Snow	Wind
1	467	441	241	0
2	2024	2666	2479	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	12%	552 / 821	1373 L	1.25D+1.5L +0.5S
2 - SPF	4.375"	57%	3333 / 4731	8064 L	1.25D+1.5S +0.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	11165 ft-lb	14'8"	35449 ft-lb	0.315 (31%)	1.25D+1.5S +0.5L	L
Unbraced	11165 ft-lb	14'8"	33795 ft-lb	0.330 (33%)	1.25D+1.5S +0.5L	L
Shear	7866 lb	15'3 1/2"	13915 lb	0.565 (57%)	1.25D+1.5S +0.5L	L
Perm Defl in.	0.190 (L/999)	9'1 1/16"	0.528 (L/360)	0.360 (36%)	D	Uniform
LL Defl inch	0.246 (L/773)	9'5/8"	0.528 (L/360)	0.470 (47%)	L+0.5S	L
TL Defl inch	0.437 (L/436)	9'13/16"	0.793 (L/240)	0.550 (55%)	D+L+0.5S	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  
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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 0-3-8	(Span)0-7-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-3-8	(Span)0-8-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	0-3-8 to 16-4-10	(Span)0-11-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Tie-In	0-3-8 to 14-5-6	(Span)0-10-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	

Continued on page 2...

**Notes**

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

**Lumber**

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

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

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

- 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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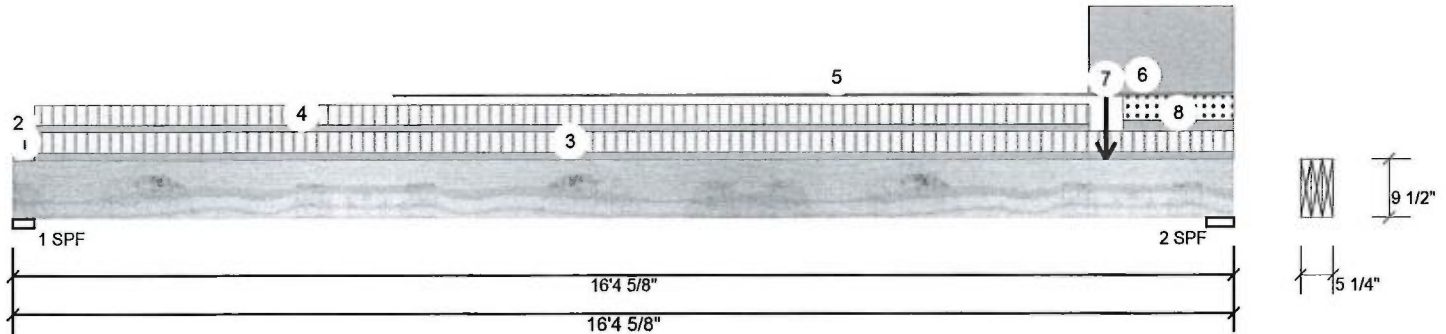
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Project:  
Address:

Date: 8/15/2018  
Designer: S B  
Job Name: MILLWOOD 3 EL-2  
Project #:

Page 2 of 2

F10-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 3-Ply - PASSED

Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Tapered Start	5-1-5		Top	1 PLF	0 PLF	0 PLF	0 PLF	
	End	16-2-4			2 PLF	0 PLF	0 PLF	0 PLF	
6	Part. Uniform	14-5-4 to 16-4-10		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
7	Point	14-8-0		Near Face	2522 lb	1928 lb	2686 lb	0 lb	F12
8	Part. Uniform	14-10-12 to 16-4-10		Top	10 PLF	0 PLF	23 PLF	0 PLF	
	Self Weight				11 PLF				

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

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

## Notes

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

## Lumber

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

## chemicals

## Handling &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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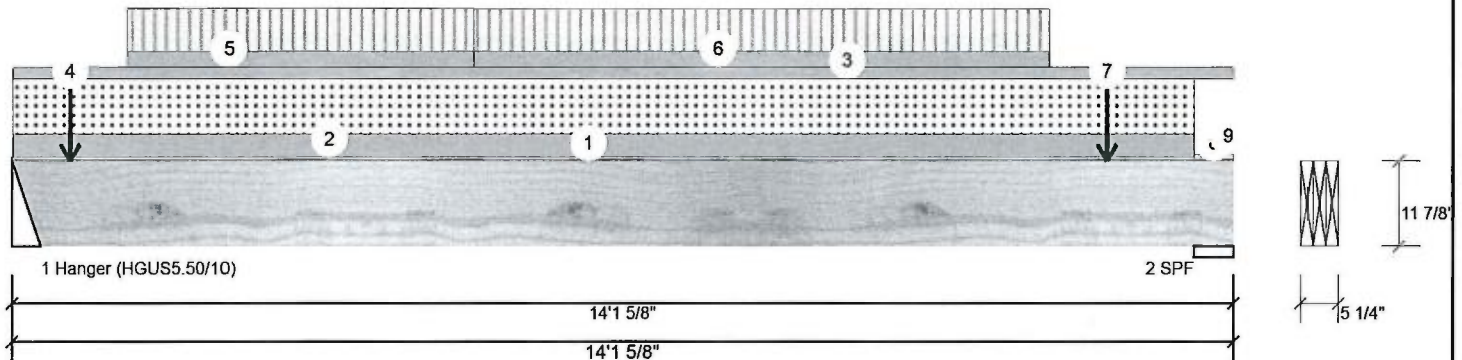
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 Project:  
 Address:

 Date: 8/15/2018  
 Designer: S B  
 Job Name: MILLWOOD 3 EL-2  
 Project #:

Page 1 of 2

**F12-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 3-Ply - PASSED**

Level: Second Floor

**Member Information**

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

**Unfactored Reactions UNPATTERNED lb (Uplift)**

Brg	Live	Dead	Snow	Wind
1	1928	2522	2686	0
2	1777	2425	2562	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	4.000"	52% 3153 / 4993	8146	L	1.25D+1.5S +0.5L
2 - SPF	5.500"	44% 3031 / 4731	7763	L	1.25D+1.5S +0.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	26538 ft-lb	7'	53447 ft-lb	0.497 (50%)	1.25D+1.5S +0.5L	L
Unbraced	26538 ft-lb	7'	50634 ft-lb	0.524 (52%)	1.25D+1.5S +0.5L	L
Shear	7024 lb	1'3 1/8"	17394 lb	0.404 (40%)	1.25D+1.5S +0.5L	L
Perm Defl in.	0.198 (L/814)	7'	0.449 (L/360)	0.440 (44%)	D	Uniform
LL Defl inch	0.287 (L/563)	7'	0.449 (L/360)	0.640 (64%)	S+0.5L	L
TL Defl inch	0.486 (L/333)	7'	0.673 (L/240)	0.720 (72%)	D+S+0.5L	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 braced at bearings.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on full section width.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 13-8-2		Top	8 PLF	0 PLF	18 PLF	0 PLF	
2	Part. Uniform	0-0-2 to 13-8-2		Top	157 PLF	0 PLF	366 PLF	0 PLF	
3	Part. Uniform	0-0-2 to 14-1-10		Top	78 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
4	Point	0-8-2		Near Face	120 lb	319 lb	0 lb	0 lb	J13

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

**KOTT NASCOR**

This design is valid until 7/10/2021







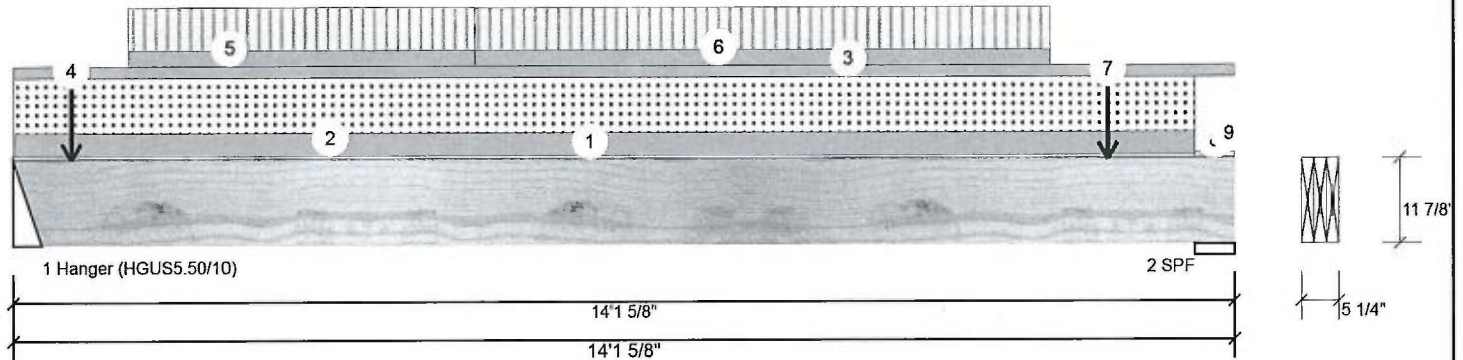
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Client:  
Project:  
Address:

Date: 8/15/2018  
Designer: S B  
Job Name: MILLWOOD 3 EL-2  
Project #:

Page 2 of 2

F12-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 3-Ply - PASSED Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Part. Uniform	1-4-2 to 5-4-2		Near Face	107 PLF	286 PLF	0 PLF	0 PLF	
6	Part. Uniform	5-4-2 to 12-0-2		Near Face	106 PLF	283 PLF	0 PLF	0 PLF	
7	Point	12-8-2		Near Face	128 lb	341 lb	0 lb	0 lb	J13
8	Tie-In	13-8-2 to 14-1-10	(Span)1-7-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
9	Part. Uniform	14-0-2 to 14-1-10		Top	4 PLF	0 PLF	0 PLF	0 PLF	
	Self Weight				14 PLF				

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

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

**Notes**

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

**Lumber**

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

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

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

6. For flat roofs provide proper drainage to prevent ponding

**Manufacturer Info**

Forex  
APA: PR-L318

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

**KOTT NASCOR**

This design is valid until 7/10/2021





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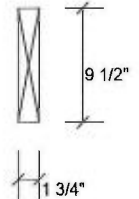
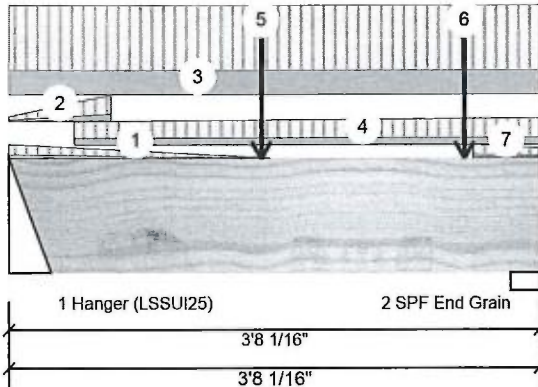
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 Date: 8/15/2018  
 Designer: S B  
 Job Name: MILLWOOD 3 EL-2  
 Project #:

Page 1 of 2

**F14-C Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED**

Level: Second Floor

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

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

Brg	Live	Dead	Snow	Wind
1	641	248	0	0
2	666	257	0	0

**Bearings and Factored Reactions**

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	3.500"	28%	310 / 962	1271 L	1.25D+1.5L
2 - SPF End Grain	2.438"	42%	321 / 999	1320 L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	958 ft-lb	1'9 13/16"	11362 ft-lb	0.084 (8%)	1.25D+1.5L	L
Unbraced	958 ft-lb	1'9 13/16"	9640 ft-lb	0.099 (10%)	1.25D+1.5L	L
Shear	718 lb	2'8 7/8"	4638 lb	0.155 (15%)	1.25D+1.5L	L
Perm Defl in.	0.003 (L/14388)	1'10 1/4"	0.110 (L/360)	0.030 (3%)	D	Uniform
LL Defl inch	0.007 (L/5563)	1'10 1/4"	0.110 (L/360)	0.060 (6%)	L	L
TL Defl inch	0.010 (L/4012)	1'10 1/4"	0.165 (L/240)	0.060 (6%)	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 Top braced at bearings.
- 4 Bottom braced at bearings.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-9-10	(Span) 1-10-12 to 0-0-14	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-8-7	(Span) 0-7-8 to 3-6-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-0-0 to 3-8-1		Top	90 PLF	240 PLF	0 PLF	0 PLF	
4	Tie-In	0-5-7 to 3-8-1	(Span) 3-1-8 to 3-6-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
5	Point	1-8-15		Far Face	20 lb	52 lb	0 lb	0 lb	J7

Continued on page 2...

**Notes**

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

**Lumber**

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

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

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

6. For flat roofs provide proper drainage to prevent ponding

**Manufacturer Info**

Forex  
APA: PR-L318

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



This design is valid until 7/10/2021





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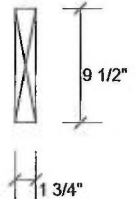
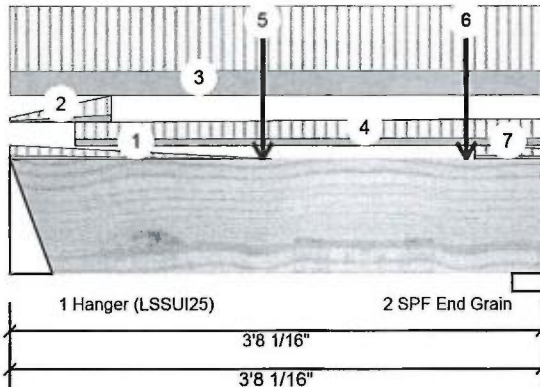
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Project:  
Address:

Date: 8/15/2018  
Designer: S B  
Job Name: MILLWOOD 3 EL-2  
Project #:

Page 2 of 2

**F14-C Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED**

Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Point	3-1-13		Far Face	30 lb	79 lb	0 lb	0 lb	J7
7	Tie-In	3-2-8 to 3-8-1	(Span)1-10-2 to 1-4-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				4 PLF				

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

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

**Notes**

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

**Lumber**

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

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

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multiply 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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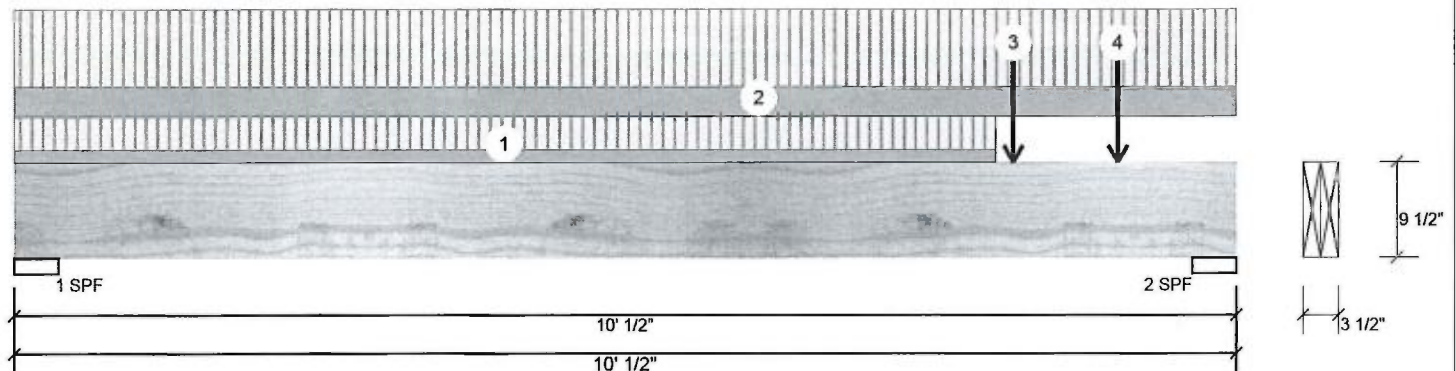
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 Date: 8/15/2018  
 Designer: S B  
 Job Name: MILLWOOD 3 EL-2  
 Project #:

Page 1 of 1

## F4-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Second Floor



## Member Information

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

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	270	149	0	0
2	789	385	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.375"	6%	187 / 405	592	L	1.25D+1.5L
2 - SPF	4.375"	18%	481 / 1183	1664	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2159 ft-lb	7'10 9/16"	22724 ft-lb	0.095 (9%)	1.25D+1.5L	L
Unbraced	2159 ft-lb	7'10 9/16"	20965 ft-lb	0.103 (10%)	1.25D+1.5L	L
Shear	1604 lb	8'11 3/8"	9277 lb	0.173 (17%)	1.25D+1.5L	L
Perm Defl in.	0.017 (L/6499)	5'5 1/2"	0.315 (L/360)	0.060 (6%)	D	Uniform
LL Defl inch	0.033 (L/3397)	5'6 1/8"	0.315 (L/360)	0.110 (11%)	L	L
TL Defl inch	0.051 (L/2231)	5'5 15/16"	0.472 (L/240)	0.110 (11%)	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 8-0-13	(Span)0-6-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 10-0-8	(Span)1-2-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	8-2-9		Far Face	275 lb	570 lb	0 lb	0 lb	F9
4	Point	9-0-13		Far Face	65 lb	174 lb	0 lb	0 lb	J3
	Self Weight				8 PLF				

## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

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

- 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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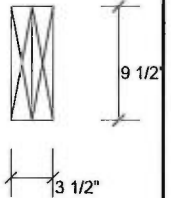
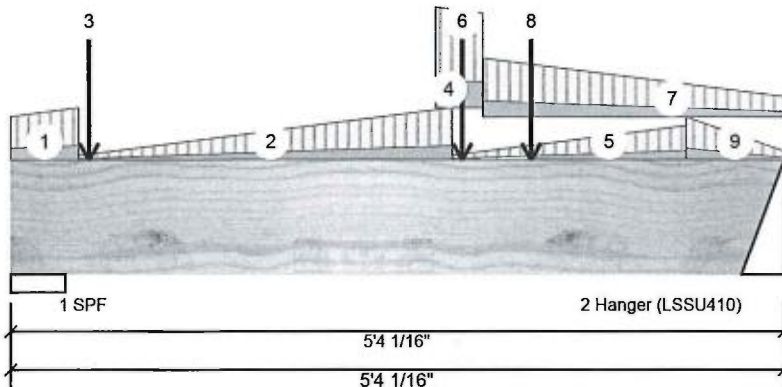
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 Project:  
 Address:

 Date: 8/15/2018  
 Designer: S B  
 Job Name: MILLWOOD 3 EL-2  
 Project #:

Page 1 of 2

F5-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Second Floor



## Member Information

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

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	375	164	0	0
2	564	237	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.563"	8%	205 / 563	768 L	1.25D+1.5L
2 - Hanger	3.500"	13%	296 / 847	1143 L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1603 ft-lb	3'7 3/16"	22724 ft-lb	0.071 (7%)	1.25D+1.5L	L
Unbraced	1603 ft-lb	3'7 3/16"	22724 ft-lb	0.071 (7%)	1.25D+1.5L	L
Shear	1058 lb	4'3 13/16"	9277 lb	0.114 (11%)	1.25D+1.5L	L
Perm Defl in.	0.003 (L/17600)	3'1 1/2"	0.160 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch	0.008 (L/7322)	3'1 13/16"	0.160 (L/360)	0.050 (5%)	L	L
TL Defl inch	0.011 (L/5171)	3'1 5/8"	0.240 (L/240)	0.050 (5%)	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 braced at bearings.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on full section width.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-5-10	(Span)1-5-0 to 1-8-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-5-10 to 3-0-10	(Span)0-1-12 to 1-8-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	0-6-8		Far Face	35 lb	93 lb	0 lb	0 lb	J8

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

**KOTT NASCOR**

This design is valid until 7/10/2021





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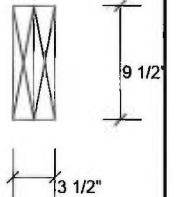
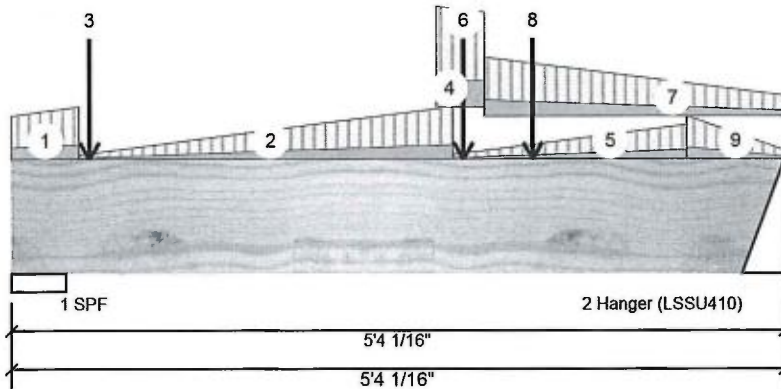
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Project:  
Address:

Date: 8/15/2018  
Designer: S B  
Job Name: MILLWOOD 3 EL-2  
Project #:

Page 2 of 2

F5-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
4	Tie-In	2-11-4 to 3-3-3	(Span)3-3-6 to 3-1-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
5	Tie-In	3-0-10 to 4-7-15	(Span)0-1-12 to 1-1-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
6	Point	3-1-8		Far Face	14 lb	37 lb	0 lb	0 lb	J7
7	Tie-In	3-3-3 to 5-4-1	(Span)1-11-0 to 0-8-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
8	Point	3-7-3		Near Face	248 lb	641 lb	0 lb	0 lb	F14
9	Tie-In	4-7-15 to 5-4-1	(Span)1-4-13 to 0-3-6	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				8 PLF				

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

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

## Notes

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

## Lumber

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

## chemicals

## Handling &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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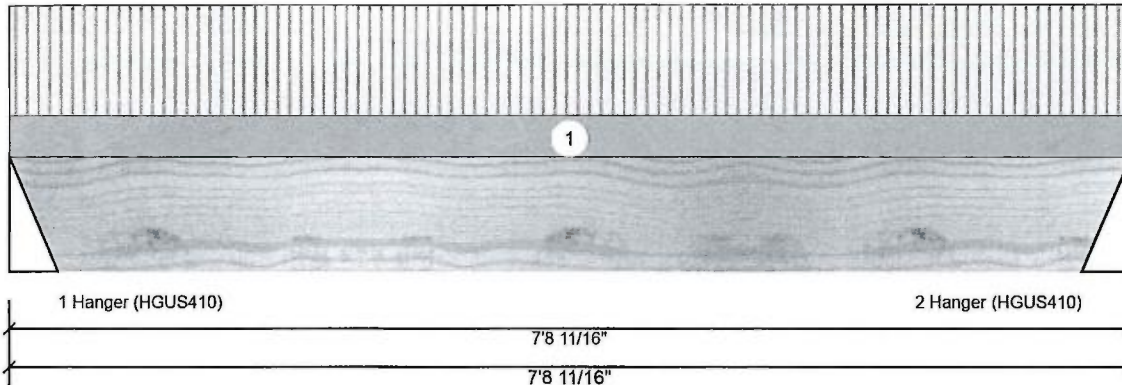
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 Date: 8/15/2018  
 Designer: S B  
 Job Name: MILLWOOD 3 EL-2  
 Project #:

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

Level: Second Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	71	56	0	0
2	71	56	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	4.000"	2%	70 / 107	177	L	1.25D+1.5L
2 - Hanger	4.000"	2%	70 / 107	177	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	295 ft-lb	3'10 3/8"	22724 ft-lb	0.013 (1%)	1.25D+1.5L	L
Unbraced	295 ft-lb	3'10 3/8"	21705 ft-lb	0.014 (1%)	1.25D+1.5L	L
Shear	128 lb	6'7 15/16"	9277 lb	0.014 (1%)	1.25D+1.5L	L
Perm Defl in.	0.002 (L/41749)	3'10 3/8"	0.239 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.003 (L/32937)	3'10 3/8"	0.239 (L/360)	0.010 (1%)	L	L
TL Defl inch	0.005 (L/18411)	3'10 3/8"	0.359 (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

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 7-8-11	(Span)0-11-0 to 0-11-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	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 &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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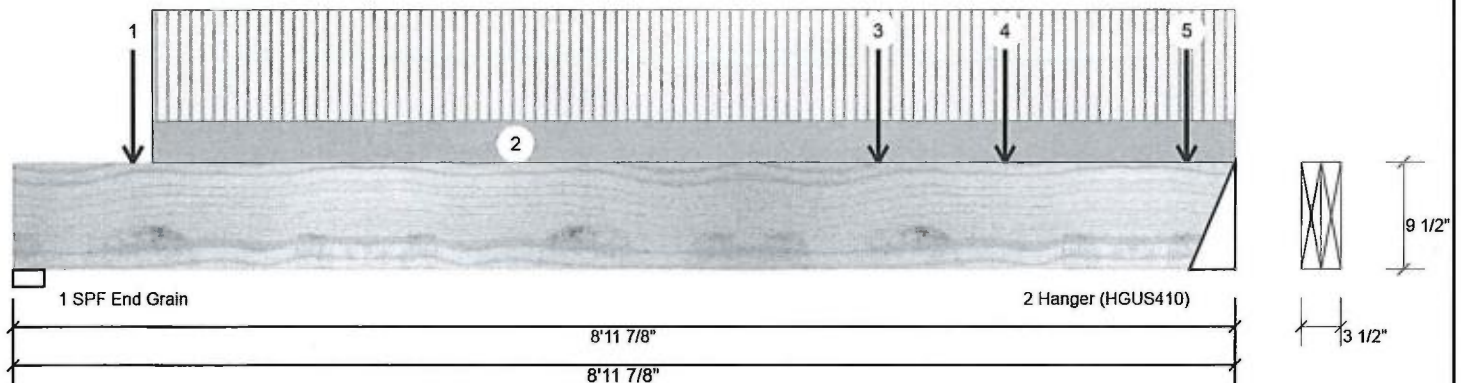
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 Project:  
 Address:

 Date: 8/15/2018  
 Designer: S B  
 Job Name: MILLWOOD 3 EL-2  
 Project #:

Page 1 of 1

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

Level: Second Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	1758	756	0	0
2	570	275	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - SPF End Grain	2.750"	50%	945 / 2637	3582 L 1.25D+1.5L
2 - Hanger	4.000"	12%	344 / 855	1199 L 1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2571 ft-lb	10 5/8"	22724 ft-lb	0.113 (11%)	1.25D+1.5L	L
Unbraced	2571 ft-lb	10 5/8"	21279 ft-lb	0.121 (12%)	1.25D+1.5L	L
Shear	3573 lb	11 1/2"	9277 lb	0.385 (39%)	1.25D+1.5L	L
Perm Defl in.	0.017 (L/6104)	4' 7/8"	0.285 (L/360)	0.060 (6%)	D	Uniform
LL Defl inch	0.034 (L/2981)	4' 1/2"	0.285 (L/360)	0.120 (12%)	L	L
TL Defl inch	0.051 (L/2003)	4' 15/16"	0.428 (L/240)	0.120 (12%)	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 braced at bearings.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on full section width.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Point	0-10-10		Far Face	735 lb	1800 lb	0 lb	0 lb	F9
2	Tie-In	1-0-6 to 8-11-14	(Span)0-10-4 to 0-10-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	6-4-9		Near Face	56 lb	71 lb	0 lb	0 lb	F7
4	Point	7-3-10		Near Face	67 lb	177 lb	0 lb	0 lb	J4
5	Point	8-7-10		Near Face	54 lb	144 lb	0 lb	0 lb	J4
	Self Weight				8 PLF				

## Notes

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## Lumber

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

## chemicals

## Handling &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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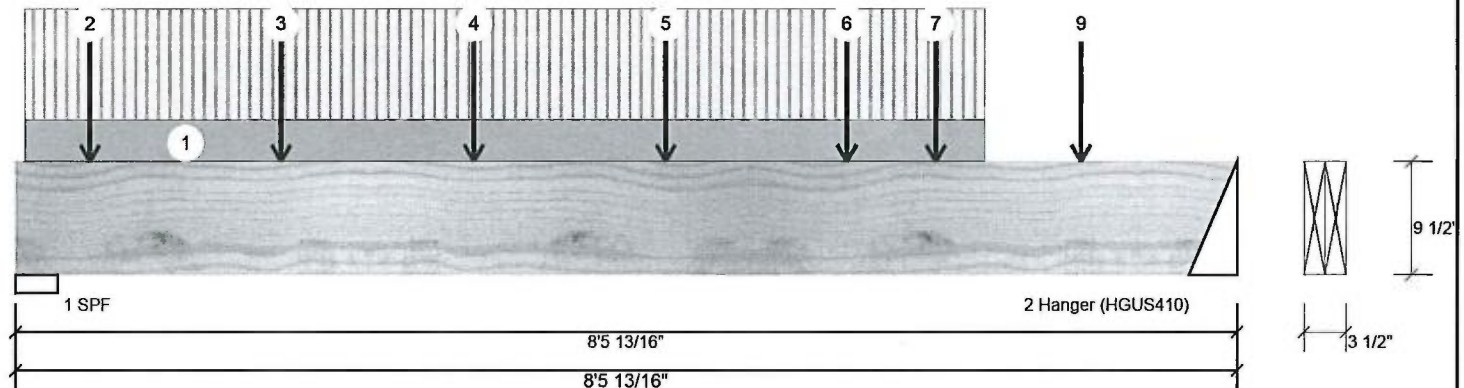
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 Project:  
 Address:

 Date: 8/15/2018  
 Designer: S B  
 Job Name: MILLWOOD 3 EL-2  
 Project #:

Page 1 of 2

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

Level: Second Floor



## Member Information

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

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	1973	780	0	0
2	1694	686	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	52%	975 / 2959	3934	L	1.25D+1.5L
2 - Hanger	4.000"	33%	857 / 2541	3398	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	7040 ft-lb	4'6 1/4"	22724 ft-lb	0.310 (31%)	1.25D+1.5L	L
Unbraced	7040 ft-lb	4'6 1/4"	21464 ft-lb	0.328 (33%)	1.25D+1.5L	L
Shear	3828 lb	7'5 1/16"	9277 lb	0.413 (41%)	1.25D+1.5L	L
Perm Defl in.	0.038 (L/2539)	4'3 1/2"	0.266 (L/360)	0.140 (14%)	D	Uniform
LL Defl inch	0.094 (L/1019)	4'3 7/16"	0.266 (L/360)	0.350 (35%)	L	L
TL Defl inch	0.132 (L/727)	4'3 7/16"	0.399 (L/240)	0.330 (33%)	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 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	0-0-12 to 6-8-12		Far Face	106 PLF	283 PLF	0 PLF	0 PLF	
2	Point	0-6-4		Near Face	122 lb	326 lb	0 lb	0 lb	J2
3	Point	1-10-4		Near Face	99 lb	263 lb	0 lb	0 lb	J2
4	Point	3-2-4		Near Face	39 lb	103 lb	0 lb	0 lb	J8
5	Point	4-6-4		Near Face	15 lb	40 lb	0 lb	0 lb	J7
6	Point	5-9-6		Near Face	237 lb	564 lb	0 lb	0 lb	F5

Continued on page 2...

## Notes

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## Lumber

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

## chemicals

## Handling &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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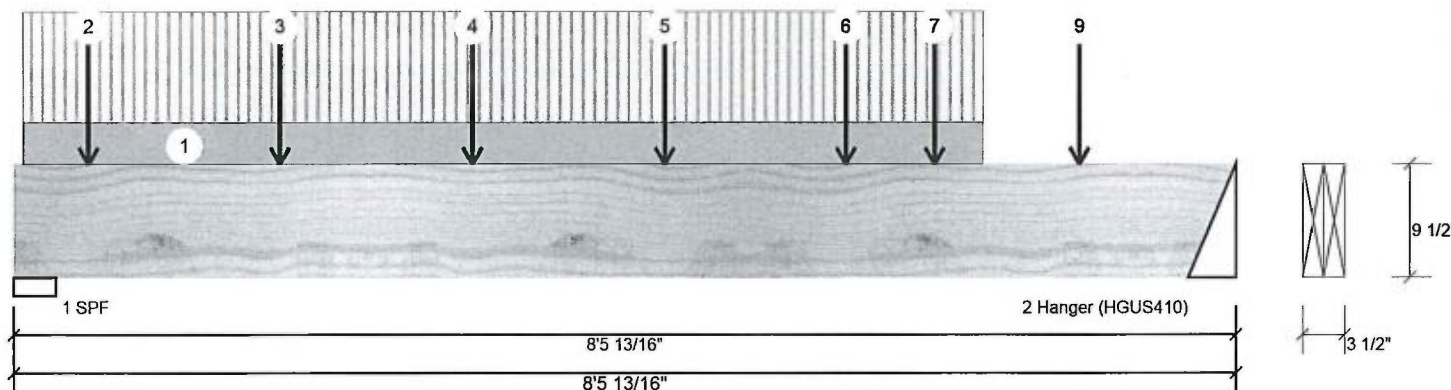
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Address:

Date: 8/15/2018  
Designer: S B  
Job Name: MILLWOOD 3 EL-2  
Project #:

Page 2 of 2

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

Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
7	Point	6-4-12		Near Face	20 lb	53 lb	0 lb	0 lb	J7
8	Point	7-4-12		Far Face	131 lb	350 lb	0 lb	0 lb	J13
9	Point	7-4-12		Near Face	31 lb	81 lb	0 lb	0 lb	J7
	Self Weight				8 PLF				

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

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

**Notes**

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

**Lumber**

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

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

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

6. For flat roofs provide proper drainage to prevent ponding

**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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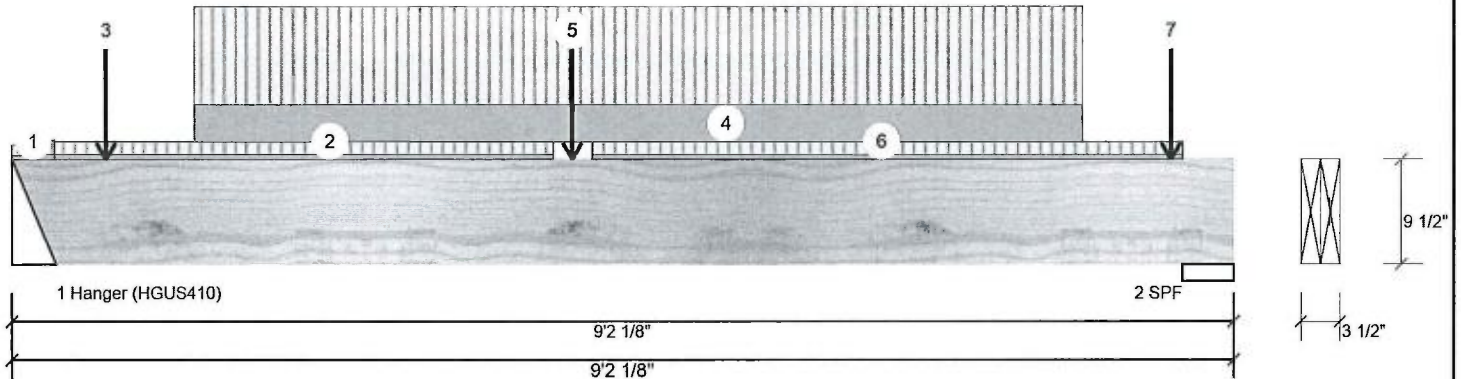
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 Date: 8/15/2018  
 Designer: S B  
 Job Name: MILLWOOD 3 EL-2  
 Project #:

Page 1 of 2

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

Level: Second Floor



## Member Information

## Unfactored Reactions UNPATTERNED lb (Uplift)

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

Brg	Live	Dead	Snow	Wind
1	1800	735	0	0
2	1751	713	0	0

## Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - Hanger	4.000"	35%	919 / 2699	3618 L 1.25D+1.5L
2 - SPF	4.625"	35%	891 / 2627	3518 L 1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	11061 ft-lb	4'2 9/16"	22724 ft-lb	0.487 (49%)	1.25D+1.5L	L
Unbraced	11061 ft-lb	4'2 9/16"	21268 ft-lb	0.520 (52%)	1.25D+1.5L	L
Shear	3557 lb	1' 3/4"	9277 lb	0.383 (38%)	1.25D+1.5L	L
Perm Defl in.	0.059 (L/1740)	4'4 5/16"	0.286 (L/360)	0.210 (21%)	D	Uniform
LL Defl inch	0.146 (L/708)	4'4 5/16"	0.286 (L/360)	0.510 (51%)	L	L
TL Defl inch	0.205 (L/503)	4'4 5/16"	0.429 (L/240)	0.480 (48%)	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 braced at bearings.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on full section width.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-3-14	(Span)1-0-6 to 1-4-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-3-14 to 4-0-13	(Span)1-3-0 to 1-2-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	0-8-8		Near Face	65 lb	174 lb	0 lb	0 lb	J3
4	Part. Uniform	1-4-8 to 8-0-8		Near Face	70 PLF	188 PLF	0 PLF	0 PLF	

Continued on page 2...

## Notes

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

## Lumber

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

## chemicals

## 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**

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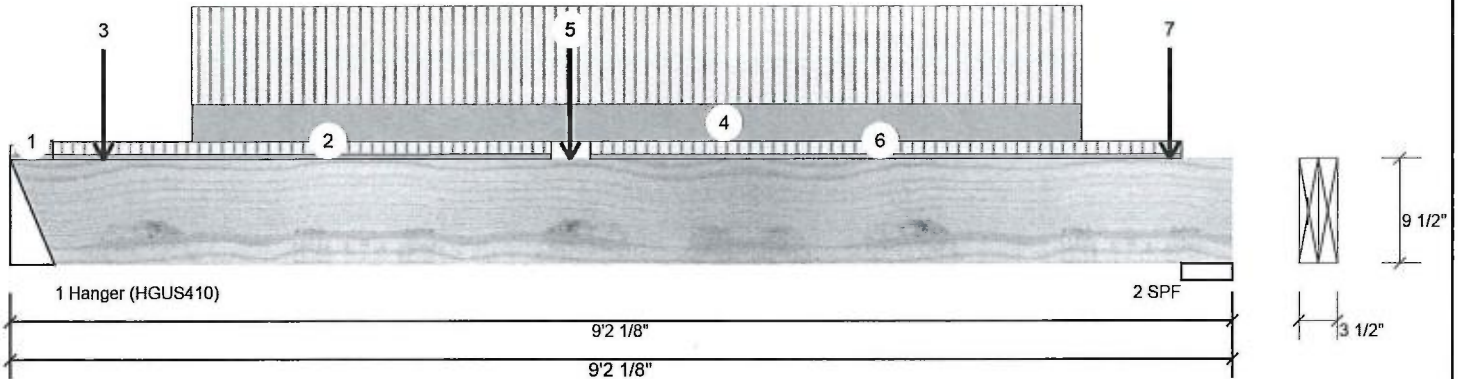
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 Address:

 Date: 8/15/2018  
 Designer: S B  
 Job Name: MILLWOOD 3 EL-2  
 Project #:

Page 2 of 2

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

Level: Second Floor



Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Point	4-2-9		Far Face	686 lb	1694 lb	0 lb	0 lb	F9
6	Tie-In	4-4-5 to 8-9-9	(Span)1-2-13 to 1-2-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
7	Point	8-8-8		Near Face	82 lb	220 lb	0 lb	0 lb	J4
	Self Weight				8 PLF				

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

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

## Notes

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

## Lumber

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

## chemicals

## Handling &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

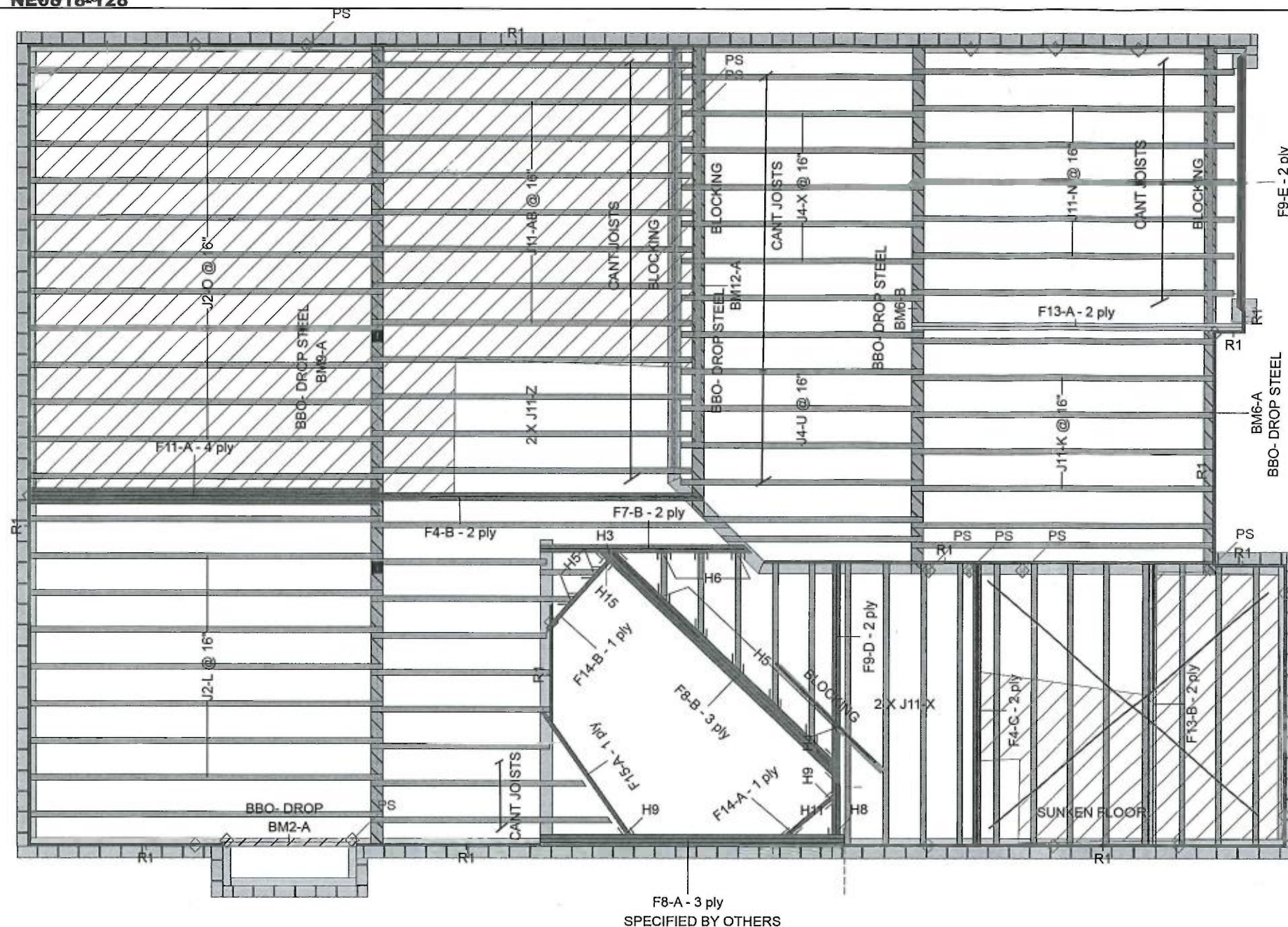
Kott Lumber Company  
 14 Anderson Blvd, Ontario  
 Canada  
 L4A 7X4  
 905-642-4400

**KOTT NASCOR**

This design is valid until 7/10/2021







JOISTS SPACING 16" O/C  
UNLESS  
NOTED OTHERWISE

Architectural Drawing Info  
VA3 DESIGN  
255 CONSUMERS ROAD  
TORONTO, ON M2J 1R4

Project # 18012  
Model: Millwood 3  
Date: JUN 29, 2018 REV 4

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

Version 18.40.162 Powered by iStruct™

#### Legend

PS	Point Load Support
◇	Load from Above
■	Wall
■	Norboard Rimboard Plus 1.125 X NJ 9.5
■	NJH 9.5
■	Forex 2.0E-3000Fb LVL 1.75 X 1.75 X 9.5 (Dropped)
■	5.25 X 10.25 (Dropped)

#### 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.

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



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
F11	Forex 2.0E-3000Fb LVL	1.75	9.5	1	4	4	14-0-0
F8	Forex 2.0E-3000Fb LVL	1.75	9.5	2	3	6	12-0-0
F4	Forex 2.0E-3000Fb LVL	1.75	9.5	2	2	4	12-0-0
F9	Forex 2.0E-3000Fb LVL	1.75	9.5	2	2	4	10-0-0
F7	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	8-0-0
F15	Forex 2.0E-3000Fb LVL	1.75	9.5			1	6-0-0
F14	Forex 2.0E-3000Fb LVL	1.75	9.5			2	4-0-0

Joist							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F13	NJ	1.5	9.5	2	2	4	12-0-0
J2	NJH	2.5	9.5			22	14-0-0
J11	NJH	2.5	9.5			38	12-0-0
J4	NJH	2.5	9.5			13	10-0-0
J3	NJH	2.5	9.5			10	8-0-0
J8	NJH	2.5	9.5			2	6-0-0
J7	NJH	2.5	9.5			2	4-0-0
J1	NJH	2.5	9.5			1	2-0-0

Rim Board							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norboard Rimboard Plus 1.125 X 9.5	1.125	9.5			13	12

Blocking							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK1	NJH	2.5	9.5	LinFt		Varies	39-0-0

Hanger							
				Beam/Girder		Supported Member	
Label	Pcs	Description	Skew	Slope	fasteners	fasteners	
H3	1	HGUS5.50/10...	Right				
H4	1	HGUS5.50/10...	Left				
H5	7	SUR2.56/9 (Min)	Right		14 16d	2 10dx1 1/2	
H6	3	LT259			4 10d	2 10dx1 1/2	
H8	1	HGUS410			46 16d	16 16d	
H9	2	LSSUI25-R	Var	Var	9 10d	7 10dx1 1/2	
H11	1	LSSUI25-L	Var	Var	9 10d	7 10dx1 1/2	
H15	1	HUS1.81/10			30 16d	10 16d	

#### 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.

# NASCOR

Layout Name  
MILLWOOD 3 EL-2

Design Method  
LSD

Description  
GREENPARK HOMES  
MINISALE, BRAMPTON, ON

Created  
June 27, 2018

Builder

Sales Rep  
RM

Designer  
S B

Shipping

Project

Builder's Project

Kott Lumber Company

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

Ground Floor

Design Method  
Building Code  
LSD  
NBCC 2010 / OBC 2012

Floor

Loads

Live 40

Dead 15

Deflection Joist

LL Span L/ 480

TL Span L/ 360

LL Cant 2L/ 480

TL Cant 2L/ 360

Deflection Girder

LL Span L/ 360

TL Span L/ 240

LL Cant 2L/ 480

TL Cant 2L/ 360

Decking

Deck OSB

Thickness 3/4"

Fastener Nailed & Glued

Vibration

CITY OF BRAMPTON  
BUILDING DIVISION  
REVIEWED

JAN 03 2019

BY  
MARK DERKSEN

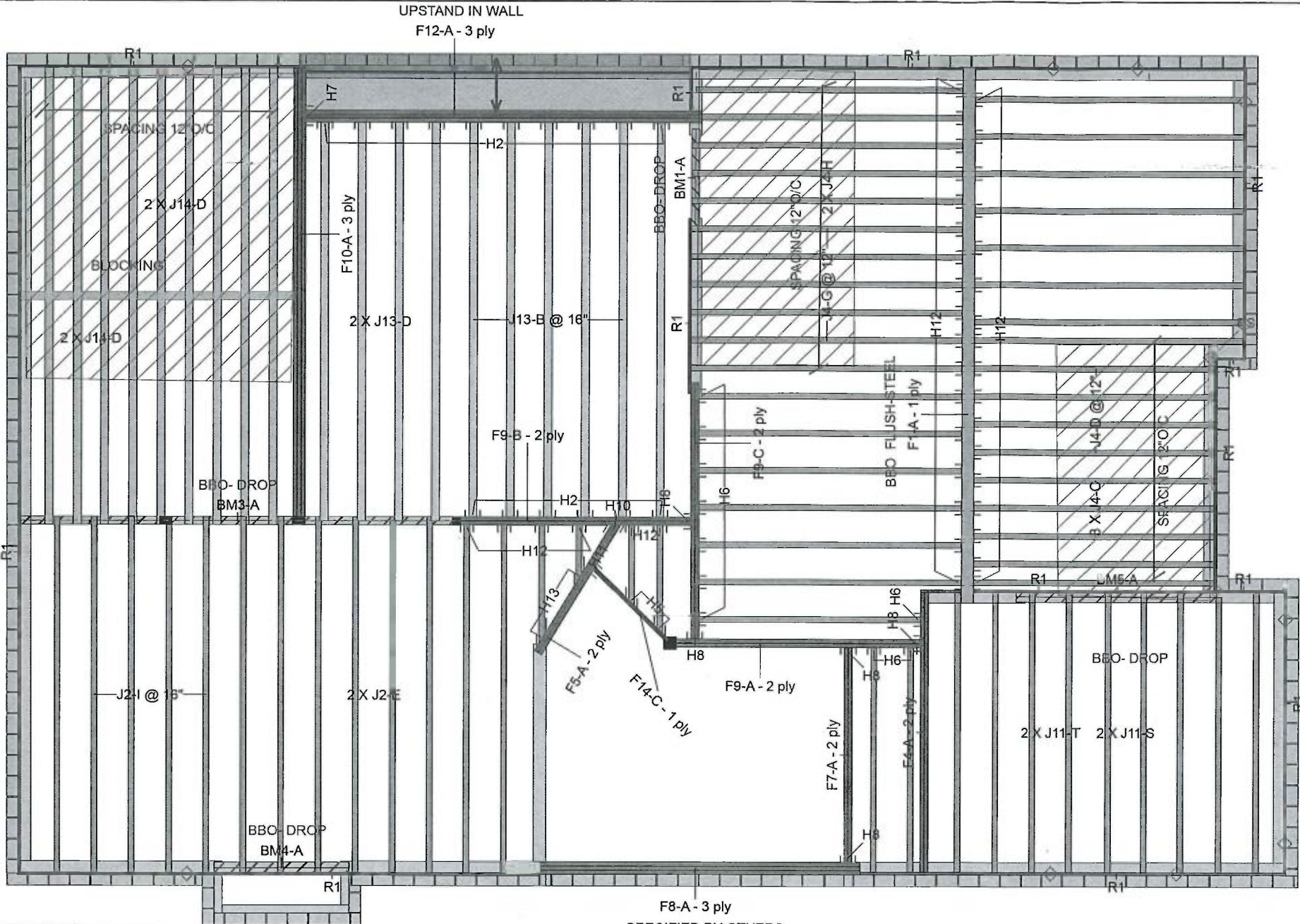
All work shall conform to the Ontario  
Building Code O. Reg. 332/12 as amended

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

# KOTT

18-333299-000-00 RR\_FLOOR





JOISTS SPACING 16"O/C  
UNLESS  
NOTED OTHERWISE

Legend	
PS	Point Load Support
◊	Load from Above
Wall	Wall
Norbord Rimboard Plus 1.125 X 9.5	Norbord Rimboard Plus 1.125 X 9.5
NJ40U 9.5	NJ40U 9.5
NJ60U 9.5	NJ60U 9.5
NJH 9.5	NJH 9.5
Forex 2.0E-3000Fb LVL 1.75 X 9.5	Forex 2.0E-3000Fb LVL 1.75 X 9.5
Forex 2.0E-3000Fb LVL 1.75 X 11.875	Forex 2.0E-3000Fb LVL 1.75 X 11.875
1.75 X 9.5 (Dropped)	1.75 X 9.5 (Dropped)
2.5 X 9.5 (Dropped)	2.5 X 9.5 (Dropped)
5.25 X 10.25	5.25 X 10.25

- 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)

Architectural Drawing Info  
VA3 DESIGN  
255 CONSUMERS ROAD  
TORONTO, ON M2J 1R4  
Project # 18012  
Model: Millwood 3 EL- 1A  
Date: JUN 29, 2018 REV 4

THIS CERTIFICATION IS TO CONFIRM THAT:

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- THE FLOOR JOISTS COMPLY WITH THE NASCOR SPAN TABLE FOR THE LOADS AND SPACING SHOWN ON THIS LAYOUT.

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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							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F10	Forex 2.0E-3000Fb LVL	1.75	9.5	1	3	3	18-0-0
F8	Forex 2.0E-3000Fb LVL	1.75	9.5	1	3	3	12-0-0
F4	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	12-0-0
F9	Forex 2.0E-3000Fb LVL	1.75	9.5	3	2	6	10-0-0
F7	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	8-0-0
F5	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	6-0-0
F14	Forex 2.0E-3000Fb LVL	1.75	9.5			1	4-0-0
F12	Forex 2.0E-3000Fb LVL	1.75	11.875	1	3	3	16-0-0
Joist							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
J13	NJ40U	3.5	9.5			10	16-0-0
J14	NJ60U	3.5	9.5			9	18-0-0
J2	NJH	2.5	9.5			13	14-0-0
J11	NJH	2.5	9.5			8	12-0-0
J4	NJH	2.5	9.5			37	10-0-0
J3	NJH	2.5	9.5			1	8-0-0
J8	NJH	2.5	9.5			1	6-0-0
J7	NJH	2.5	9.5			3	4-0-0
Rim Board							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			12	12
Blocking							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK3	NJ60U	3.5	9.5	LinFt		Varies	8-0-0
Hanger							
				Beam/Girder		Supported Member	
Label	Pcs	Description	Skew	Slope	fasteners	fasteners	
H2	16	LT359			4 10d	2 10dx1 1/2	
H5	2	SUR2.56/9 (Min)	Right		14 10dx1 1/2	2 10dx1 1/2	
H6	10	LT259			4 10d	2 10dx1 1/2	
H7	1	HGUS5.50/10			46 16d	16 16d	
H8	5	HGUS410			46 16d	16 16d	
H10	1	LSSU410-L	Var	Var	14 16d	12 10dx1 1/2	
H11	1	LSSU125-L	Var	Var	9 10d	7 10dx1 1/2	
H12	40	LF259			10 10d	1 #8x1 1/4WS	
H13	2	LSSUH310-L	Var	Var	14 16d	12 10dx1 1/2	

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 be deviate from the architectural drawings. Project Engineer to review and approve the deviation prior to construction.



Layout Name  
MILLWOOD 3 EL-2  
Design Method  
LSD  
Description  
GREENPARK HOMES  
MINISALE, BRAMPTON, ON  
Created  
June 27, 2018  
Builder  
Sales Rep  
RM  
Designer  
S B  
Shipping  
Project  
Builder's Project  
Kott Lumber Company  
14 Anderson Blvd  
Stouffville, Ontario  
Canada  
L4A 7X4  
905-642-4400

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

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

Roof  
Loads  
Live  
0  
Dead  
17  
Snow  
36  
Deflection Joist  
LL Span L/  
360  
TL Span L/  
240  
LL Cant 2L/  
360  
TL Cant 2L/  
360  
Deflection Girder  
LL Span L/  
360  
TL Span L/  
240  
LL Cant 2L/  
360  
TL Cant 2L/  
360  
Decking  
Deck  
SPF Plywood  
Thickness  
5/8"  
Fastener  
Nailed Only

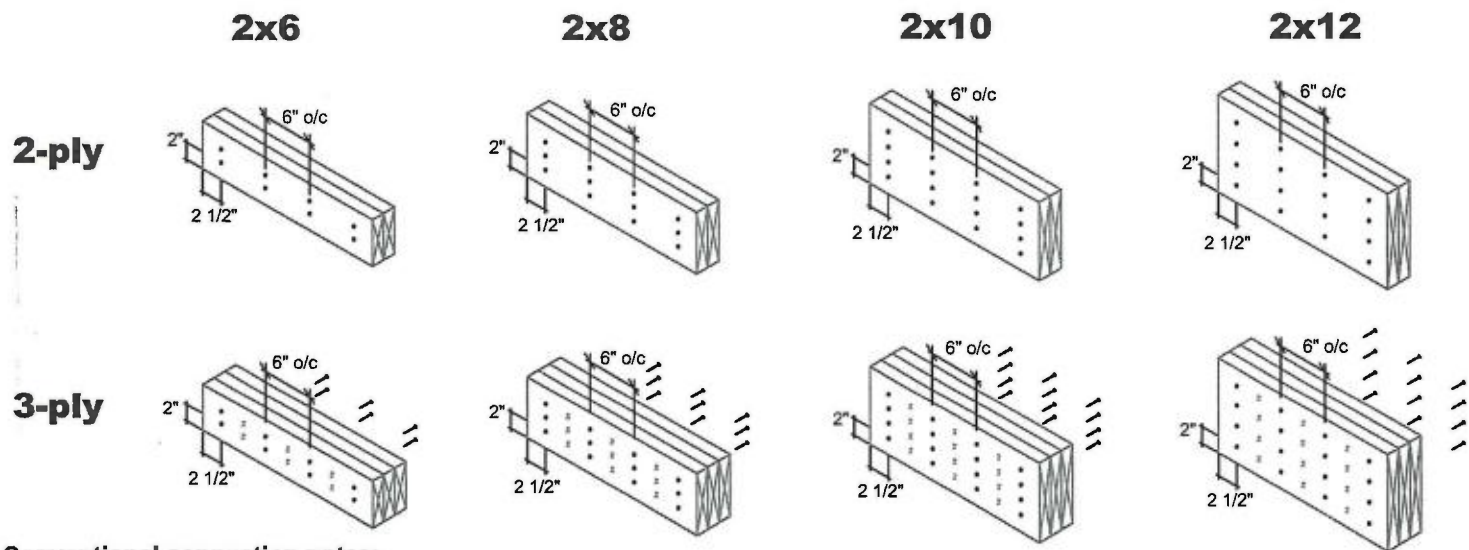




# MULTIPLE MEMBER CONNECTIONS

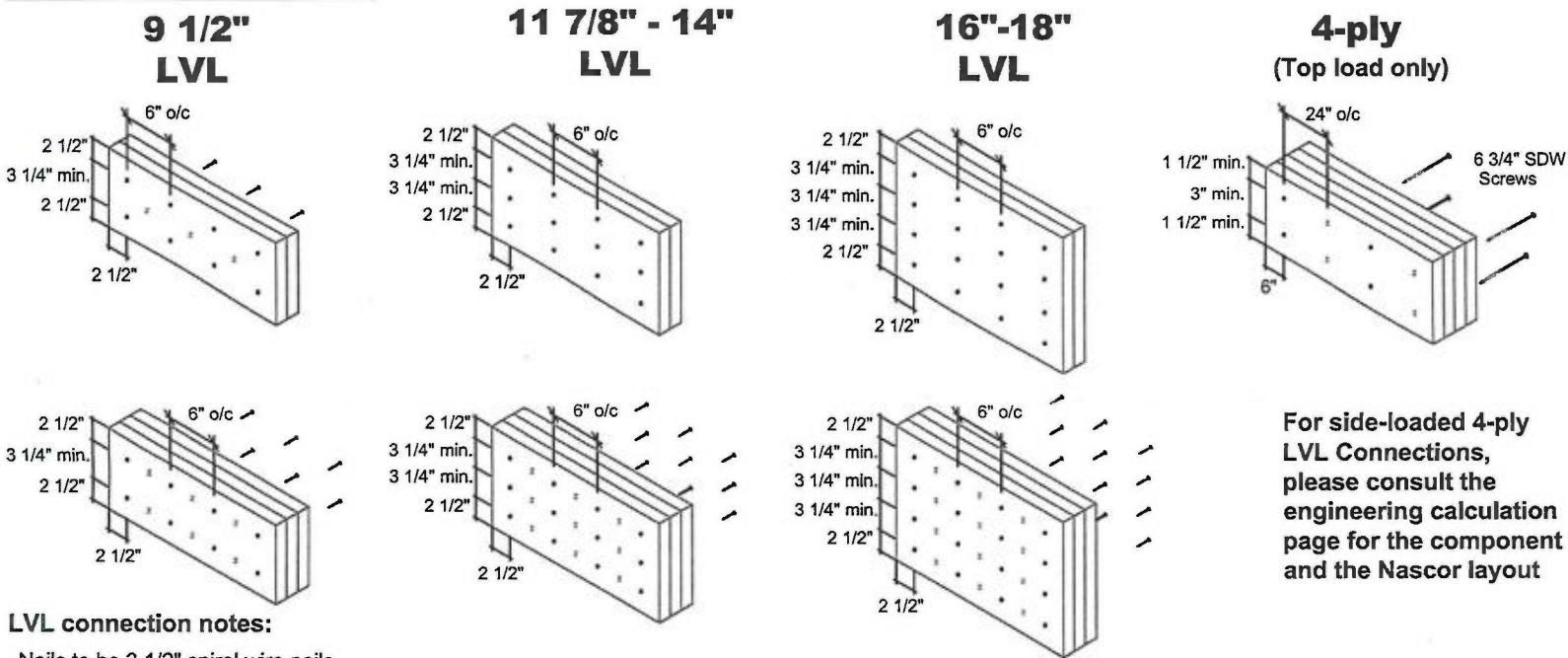
GREENPARK HOMES-MINISALE-  
MILLWOOD 3 EL 2-BRAMPTON-ON

## 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.

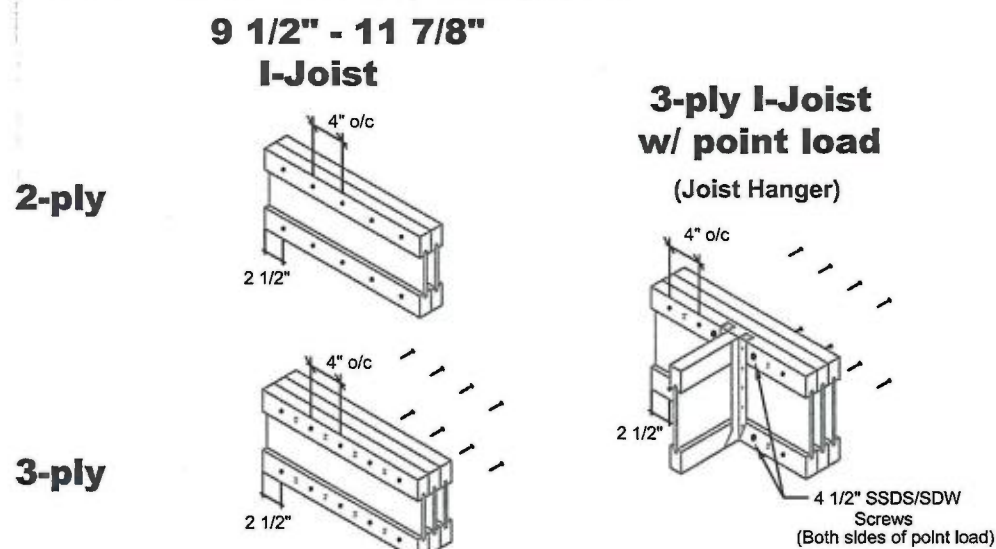
## LVL Connections (for uniform distributed loads)



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

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

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



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

MULTI-PLY  
CONNECTION  
DETAILS

Date: November 30, 2016  
Scale: NTS



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