# MILLWOOD 3 - EL. REVISION 2009-10-09

# Please read all notes prior to installation of the component

## **DESIGN INFORMATION**

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

The responsibility of the undersigned engineer is <u>only</u> 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 <a href="http://www.nascor.ca">http://www.nascor.ca</a>.

## 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 preauthorization.



# **MULTIPLE MEMBER CONNECTIONS**

## Conventional Connections (for uniform distributed loads)

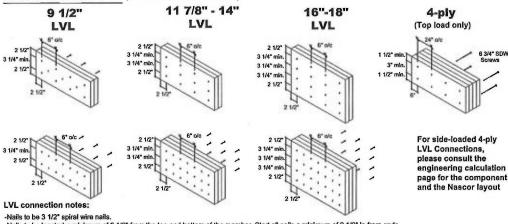
2x6 2x8 2x12

#### Conventional connection notes:

-Nails to be 3" 10d spiral wire nai

Natis 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 nall driven from the opposite side.

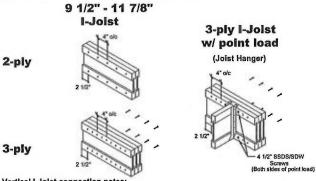
## LVL Connections (for uniform distributed loads)



-Nalls 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:

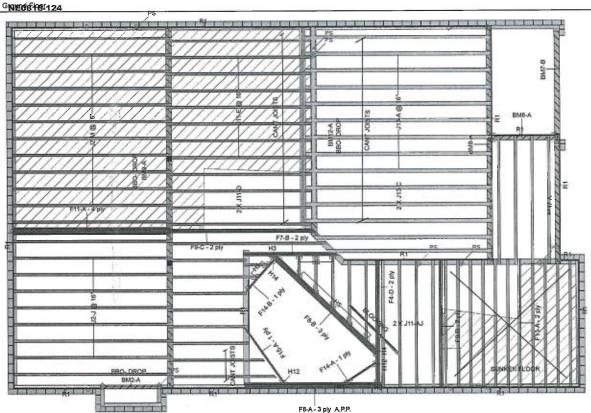
-Nails to be 3" spiral wire nails.

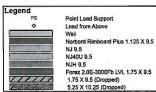
-Nalls to be located at centre of top and bottom flanges, Start all nalls a minimum of 2 1/2" in from ends.
-Number of rows and spacing as per details shown, unless noted otherwise.
- "X" represents nail driven from the opposite side.

MULTI -PLY CONNECTION DETAILS



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





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. Ground Floor LVL/LSL Width Depth Qty Plies Pcs Length Label Description 1.75 9.5 F11 Forex 2.0E-3000Fb LVI ayout Name 12-0-0 MILLWOOD 3 EL-1A 2.0E-3000Fb LVL FQ 1.75 12-0-0 9.5 Design Method 2.0E-3000Fb LVL LSD F4 9.5 10-0-0 Forex 2.0E-3000Fb LVL Description 8-0-0 GREENPARK HOMES F7 1.75 9.5 2 2.0E-3000Fb LVL MINISALE, BRAMPTON, ON F15 1.75 9.5 6-0-0 Created Forex 2.0E-3000Fb LVL June 27, 2018 4-0-0 Builder 2.0E-3000Fb LVL **Joist** Sales Rep Label Description Width Depth Qty Piles Pcs Length RM 9.5 9.5 F13 N.1 1.5 2 12-0-0 13 16-0-0 Designer J13 NJ400 3.5 SB 1 14-0-0 J12 NJ40U J2 NJH 2.5 9.5 22 14-0-0 30 12-0-0 Shipping J11 NJH 2.5 9.5 Project 1 10-0-0 9.5 J10 NJH Builder's Project 2.5 9.5 2.5 9.5 J9 NJH **Kott Lumber Company** JB NJH J7 NJH 6-0-0 14 Anderson Blvd 9.5 2 4-0-0 J1 NJH Stauffville Ontario 1 2-0-0 2.5 9.5 Rim Board Canada Width Depth | Qty | Piles | Pcs | Length L4A 7X4 Label Description Norbord Rimboard 1.125 Plus 1.125 X 9.5 9.5 14 905-642-4400 Ground Floor Width Depth Qty Piles Pcs Length Design Method Label Description Building Code NBCC 2010 / OBC 2012 3.5 9.5 LinFt Varies 13-0-0 BLK1 NJ4DU

BLK2	NJH	2	.5	9,5	LinFt		Varies	18-0-0	Floor
Hange					Be	am/Girder		ported	Loads Live
Label	Pcs	Description	Skew	Slop	e fa	asteners	fas	toners	Dead
H1	2	Unknown Hanger							Deflection Joist LL Span L/
НЗ	1	HGUS5.50/10	Right						TL Span L/
H4	- 1	HGUS5.50/10	Left						LL Cant 2L/
H5	7	SUR2.56/9 (Min)	Right			14 16d	2 10	dx1 1/2	TL Cant 2L/
Н6	3	LT259				4 10d	2 10	dx1 1/2	Deflection Girder
H9	1	HGUS410				46 16d	16	3 16d	LL Span L/
H11	1	LSSUI25-L	Var	Var		9 10d	7 10	dx1 1/2	TL Span L/
H12	2	LSSUI25-R	Var	Var		9 10d	7 10	dx1 1/2	LL Cant 2L/
H14	1	HUS1.81/10				30 16d	10	16d	TL Cant 2L/
NOTES:									Decking

- Framer to verify dimensions on the architectural drawings Double joist only require filler/backer ply when supporting another member using a face-mounted hanger.
- member using a lace-mounted hanger. Install 2x4 blocking @ 24" of 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 boiling 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

Hatch area represents ceramic tiled floor with an additional dead load

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

JOISTS SPACING 16"O/C UNLESS NOTED OTHERWISE

- 1. OBC 2012 O.Reg 332/12 as amended
- 2. Nascor CCMC 13535-R
- 3 LVL CCMC -12904-R 4. CAN/CSA-OB6-09
- 5. CCMC -12787-R APA PR-L310(C)

Version 18.40.162 Powered by IStruct's

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



Dock

Thickness

Fastener

Vibration Architectural Drawing Info

VA3 DESIGN 255 CONSUMERS ROAD TORONTO,ON M2J 1R4

Model: Millwood 3 Date: JUNE 29, 2018 REV 4

Project # 18012

**PAGE 3 OF 38** 

LSD

15

480

360

480

360

360

240

480

360

OSB

3/4"

Naited & Glued

Page 1 of 2



Client: Project: Address: Date: 8/15/2018

Designer: SB

Job Name: MILLWOOD 3 EL-1A

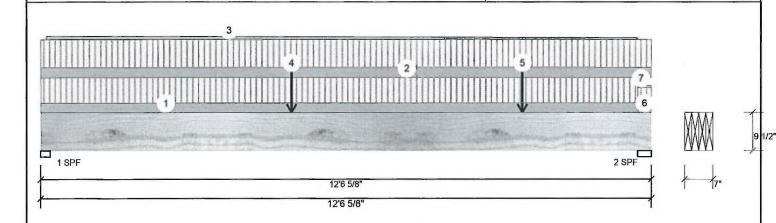
Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500"

4-Ply - PASSED

Level: Ground Floor



Member Inform	ation			Unfacto	red Reac	tions U	NPATTERN	ED lb (	(Uplift)
Туре:	Girder	Application:	Floor (Residential)	Brg	Live		Dead	Sno	W
Plies:	4	Design Method:	LSD	1	2249		1115	4	8
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012	2	5546		2608	19	3
Deflection LL:	360	Load Sharing:	Yes						
Deflection TL:	240	Deck:	Not Checked						
Importance:	Normal	Vibration:	Not Checked						
General Load									
Floor Live:	40 PSF			Bearing	s and Fac	tored l	Reactions		
Dead:	15 PSF			Bearing	Length	Cap.	React D/L lb	Total	Ld. Case
				1 - SPF	2.375"	47%	1394 / 3397	4791	L
Analysis Results			· · · · · · · · · · · · · · · · · · ·	2-SPF	3.375"	80%	3259 / 8415	11675	L

Analysis Actual Location Allowed Capacity Comb. Case 28059 ft-lb 9'10 7/8" 47266 ft-lb 0.594 (59%) 1.25D+1.5L L Moment +0.58 0.594 (59%) 1.25D+1.5L L Unbraced 28059 ft-lb 9'10 7/8" 47266 ft-lb +0.58 0.625 (62%) 1.25D+1.5L L 11595 lb 11'6 1/2" 18554 lb Shear +0.5S6'8 1/8" 0.407 (L/360) 0.410 (41%) D Uniform Perm Defl in. 0.166 (L/879) LL Defl inch 0.354 (L/413) 6'8 1/2" 0.407 (L/360) 0.870 (87%) L+0.5S L 6'8 3/8" 0.610 (L/240) 0.850 (85%) D+L+0.5S TL Defl inch 0.521 (L/281)

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.



Wind 0 0

Ld. Comb. 1.25D+1.5L +0.58 1.25D+1.5L +0.5S

**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.

Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
Tie-In	0-0-0 to 12-3-4	(Span)0-8-13	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
Tie-In	0-0-0 to 12-6-10	(Span)0-9-11	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
Tapered Start	0-1-6		Тор	2 PLF	0 PLF	0 PLF	0 PLF	
End	12-3-4			1 PLF	0 PLF	0 PLF	0 PLF	
Point	5-1-14		Тор	687 lb	1496 lb	0 lb	0 lb	C3
	Tie-In Tie-In Tapered Start End	Tie-In 0-0-0 to 12-3-4 Tie-In 0-0-0 to 12-6-10 Tapered Start 0-1-6 End 12-3-4	Tie-In 0-0-0 to 12-3-4 (Span)0-8-13 Tie-In 0-0-0 to 12-6-10 (Span)0-9-11 Tapered Start 0-1-6 End 12-3-4	Tie-In         0-0-0 to 12-3-4         (Span)0-8-13         Top           Tie-In         0-0-0 to 12-6-10         (Span)0-9-11         Top           Tapered Start         0-1-6         Top           End         12-3-4         Top	Tie-In         0-0-0 to 12-3-4         (Span)0-8-13         Top         15 PSF           Tie-In         0-0-0 to 12-6-10         (Span)0-9-11         Top         15 PSF           Tapered Start         0-1-6         Top         2 PLF           End         12-3-4         1 PLF	Tie-In         0-0-0 to 12-3-4         (Span)0-8-13         Top         15 PSF         40 PSF           Tie-In         0-0-0 to 12-6-10         (Span)0-9-11         Top         15 PSF         40 PSF           Tapered Start         0-1-6         Top         2 PLF         0 PLF           End         12-3-4         1 PLF         0 PLF	Tie-In         0-0-0 to 12-3-4         (Span)0-8-13         Top         15 PSF         40 PSF         0 PSF           Tie-In         0-0-0 to 12-6-10         (Span)0-9-11         Top         15 PSF         40 PSF         0 PSF           Tapered Start         0-1-6         Top         2 PLF         0 PLF         0 PLF           End         12-3-4         1 PLF         0 PLF         0 PLF	Tie-In         0-0-0 to 12-3-4         (Span)0-8-13         Top         15 PSF         40 PSF         0 PSF         0 PSF           Tie-In         0-0-0 to 12-6-10         (Span)0-9-11         Top         15 PSF         40 PSF         0 PSF         0 PSF           Tapered Start         0-1-6         Top         2 PLF         0 PLF         0 PLF         0 PLF           End         12-3-4         1 PLF         0 PLF         0 PLF         0 PLF

Continued on page 2...

Notes

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

Lumber

- Handling & Installation
- LVL beams must not be cut or drilled
   Refer to manufacturer's product informuregarding installation requirements, multifastening details, beam strength values, and details.
- approvals

  Design assumes top edge is laterally restrained

  Design assumes top edge is laterally restrained

  Provide lateral support at bearing points to avoid lateral displacement and rotation
- 6. For flat roofs provide proper drainage to prevent

Manufacturer Info APA: PR-L318

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



Client:

Project: Address: Date: 8/15/2018

Designer: SB

Job Name: MILLWOOD 3 EL-1A

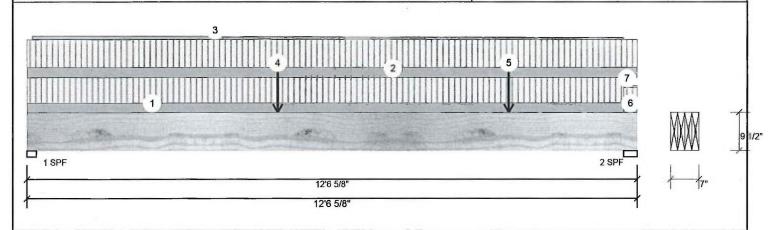
Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500"

4-Ply - PASSED

Level: Ground Floor



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Point	9-10-14		Тор	2681 lb	5913 lb	241 lb	0 lb	C4
6	Tie-In	12-3-4 to 12-6-10	(Span)0-6-5	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
7	Part. Uniform	12-3-4 to 12-6-10		Тор	1 PLF	0 PLF	0 PLF	0 PLF	
	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.

Calculated Structured Designs is responsible only of the design criteria and loadings shown. It is the component obtained in 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

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

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





Client: Project: Address: Date: 8/15/2018

Designer: SB

Job Name: MILLWOOD 3 EL-1A

Project #:

2-Ply - PASSED 9.500"

Level: Ground Floor

4 3 6 5 1 SPF 2 SPF 10'2 7/8' 10'2 7/8'

Menuper milon	nation			Ulliactor	eu Reac	HOHS O	MALIERIA	ED ID (	opinty	
Type:	Girder	Application:	Floor (Residential)	Brg	Live		Dead	Snov	N	Wind
Plies:	2	Design Method:	LSD	1	308		138		0	0
Moisture Condition	: Dry	Building Code:	NBCC 2010 / OBC 2012	2	633		257		0	0
Deflection LL:	360	Load Sharing:	No							
Deflection TL:	240	Deck:	Not Checked	1						
Importance:	Normal	Vibration:	Not Checked	1						
General Load										
Floor Live:	40 PSF			Bearings	and Fac	tored i	Reactions			
Dead:	15 PSF			Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
				1 - SPF	2.375"	24%	173 / 463	636	L	1.25D+1.5L
				2-SPF	5.500"	41%	321 / 949	1270	L	1.25D+1.5L
Analysis Result	·c							_		

Member Information

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2192 ft-lb	6'1 11/16"	7340 ft-lb	0.299 (30%)	1.25D+1.5L	L
Unbraced	2192 ft-lb	6'1 11/16"	2202 ft-lb	0.995 (100%)	1.25D+1.5L	L
Shear	1181 lb	9'10 1/8"	3080 lb	0.384 (38%)	1.25D+1.5L	L
Perm Defl in.	0.031 (L/3745)	5'4 1/8"	0.324 (L/360)	0.100 (10%)	D	Uniform
LL Defl inch	0.073 (L/1586)	5'4 7/8"	0.324 (L/360)	0.230 (23%)	L	L
TL Defl inch	0.105 (L/1114)	5'4 11/16"	0.485 (L/240)	0.220 (22%)	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.

Unfactored Reactions UNDATTERNED Ib (Unlift)

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 4'6" o.c.

5 Bottom flange braced at bearings.

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the slegion criteria and loadings shown. It is the assponsibility of the customer and/or the contractor to insure the component suitability of the intended application, and to verify the dimensions and loads.  Lumber  1. Dry service conditions, unless noted otherwise 2. Lioist not to be treated with fire retardant or corrosive		nation b hole is and	lateral displacement and rota 6. Web stiffeners for point to point loop on the following state of the following s	ad as shown Minimum 8.5 inches er drainage to prevent	Nascor by K	(O)		Canada 447.74 905-642-4400		
Notes		chemicals			5. Provide lateral support at I		Manufactur	anufacturer Info		Kott Lumber Company 14 Anderson Blvd, Ontario
7	Part. Uniform	9-9-6 to 9-10-11		Тор	1 PLF	0 PLF	0 PLF	0 PLF		
6	Part. Uniform	5-7-12 to 10-1-12		Тор	45 PLF	120 PLF	0 PLF	0 PLF		
	End	9-9-6			1 PLF	0 PLF	0 PLF	0 PLF		
5	Tapered Start	5-5-7		Тор	0 PLF	0 PLF	0 PLF	0 PLF		
4	Part. Uniform	0-1-11 to 9-10-8		Тор	3 PLF	0 PLF	0 PLF	0 PLF		
3	Part. Uniform	0-1-10 to 5-4-13		Тор	2 PLF	0 PLF	0 PLF	0 PLF		
2	Tie-In	0-0-0 to 10-2-14	(Span)1-0-14	Тор	15 PSF	40 PSF	0 PSF	0 PSF		
1	Tie-In	0-0-0 to 9-9-6	(Span)0-11-2	Тор	15 PSF	40 PSF	0 PSF	0 PSF		
ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments	•

#### Notes



Client:

Project: Address: Date: Designer: 8/15/2018

SB

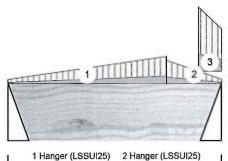
Job Name: MILLWOOD 3 EL-1A

Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500" - PASSED

Level: Ground Floor



2'11 5/16" 2'11 5/16"



Ld. Comb.

1.25D+1.5L

1.25D+1.5L

Member Info	rmation		
Туре:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition	on: 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		

	Unfacto	red Reaction	S UNPATTER	NED lb (Uplif	t)
	Brg	Live	Dead	Snow	Wind
	1	24	15	0	0
2	2	52	25	0	0

Cap. React D/L lb

18 / 36

31/78

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	39 ft-lb	1'6 7/8"	11362 ft-lb	0.003 (0%)	1.25D+1.5L	L
Unbraced	39 ft-lb	1'6 7/8"	10386 ft-lb	0.004 (0%)	1.25D+1.5L	L
Shear	26 lb	1' 1/4"	4638 lb	0.006 (1%)	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%)		

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** 

1%

**Bearings and Factored Reactions** 

Bearing Length

Hanger 2 -

Hanger

3.500"

3.500"

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



Total Ld. Case

55 L

109 L

1	Fill	all	han	ger	na
		an,	Hui	gci	114

- iling 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 2-2-4	(Span)0-3-0 to 1-8-2	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	2-2-4 to 2-11-5	(Span)1-5-2 to 0-3-3	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	2-7-8 to 2-11-5	(Span)4-0-0 to 2-7-10	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				4 PLF				

#### Notes

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

# Lumber

Handling & Installation

- tVL 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.
- approvals

  Damaged Beams must not be used
- Dasign assumes top edge is laterally restrained
  Provide lateral support at bearing points to avoid
  lateral displacement and rotation

Manufacturer Info Forex APA: PR-L318

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









Client: Project: Address: Date:

8/15/2018

Designer: SB

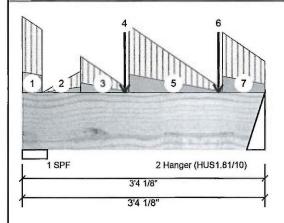
Job Name: MILLWOOD 3 EL-1A

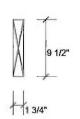
Project #:

1

2

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





Wind

0

0

0

0

Member Info	rmation		
Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition	on: 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	1	

Unfacto	red Reactions	SUNPATTER	MED IP (Oblit	t)
Brg	Live	Dead	Snow	

(-1)

12

29 (-48)

48 (-31)

Bearing:	s and Fac	tored l	Reactions				
Bearing	Length	Сар.	React D/L lb	Total	Ld. Case	Ld. Comb.	Т
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**

15 PSF

Dead:

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.

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

Continued on page 2...

#### Notes

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

### Lumber

Dry service conditions, unless noted otherwise
 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-pty fastening details, beam strength values, and code
- tastentry wearen-approvals

  Damaged Beams must not be used

  Design essumes 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 L4A 7X4 905-642-4400





Client:

Project: Address: Date:

8/15/2018 SB

Job Name: MILLWOOD 3 EL-1A

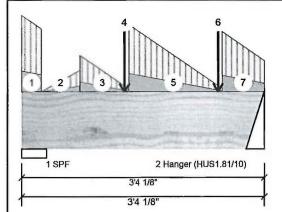
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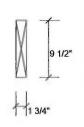
Designer:

Forex 2.0E-3000Fb LVL F14-B

1.750" X 9.500" - PASSED

Level: Ground Floor





Continued f	rom 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	Тор	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	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
4	Point	1-5-0		Far Face	-30 lb	-79 lb	0 lb	0 lb	J9
5	Tie-In	1-5-11 to 2-9-2	(Span)1-6-1 to 0-0-14	Тор	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	Тор	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.

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

Lumber

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

chemicals

Handling & Installation

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

For flat roofs provide proper drainage to prevent ponding

This design is valid until 7/10/2021

Manufacturer Info

APA: PR-L318

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







Client:

Project: Address: Date: 8/15/2018

Designer: SB

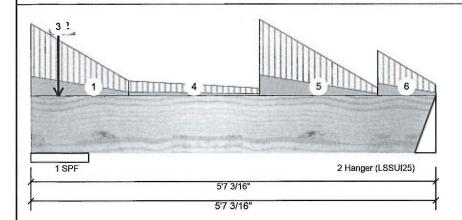
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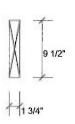
Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500" - PASSED

Level: Ground Floor





Wind

0

0

0

0

Member Information								
Type:	Girder	Application:	Floor (Residential)					
Plies:	1	Design Method:	LSD					
Moisture Condition	on: Dry	Building Code:	NBCC 2010 / OBC 201					
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	d Reactions	UNPATTERNED	Ib (Uplift)
Brg	Live	Dead	Snow

38

28

67

49

2

В

Bearings	s and Fac	tored l	Reactions				
Bearing	Length	Сар.	React D/L lb	Total	Ld. Case	Ld. Comb.	
1 - SPF	9.582"	1%	47 / 101	148	L	1.25D+1.5L	
2 - Hanger	3.500"	2%	35 / 74	109	L	1.25D+1.5L	

# **Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	118 ft-lb	3'4 3/4"	11362 ft-lb	0.010 (1%)	1.25D+1.5L	L
Unbraced	118 ft-lb	3'4 3/4"	7968 ft-lb	0.015 (1%)	1.25D+1.5L	L
Shear	71 lb	4'6 15/16"	4638 lb	0.015 (2%)	1.25D+1.5L	L
Perm Defl in	1. 0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
LL Defl inch	0.001 (L/48729)	3'3 1/4"	0.154 (L/360)	0.010 (1%)	L	L
TL Defl inch	0.002 (L/30960)	3'3"	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
- 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

3 DOMOIN	bidoca at bearings.								
ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-4-5	(Span)2-5-5 to 0-6-1	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-3-3 to 0-7-6	(Span)0-3-13 to 0-0-14	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	0-4-10		Тор	1 lb	0 lb	0 lb	0 lb	Wall Self Weight
Continued o	n nage 2								

Continued on page 2...

#### Notes

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

# Lumber

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

## Handling & Installation

- Training & 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
- 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

This design is valid until 7/10/2021

Manufacturer Info APA: PR-L318

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







Client:

Project: Address:

8/15/2018 Date:

SB Designer:

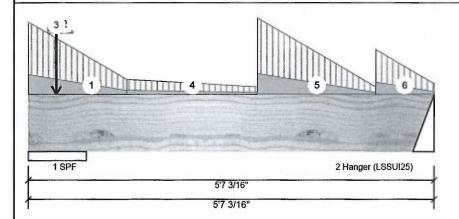
Job Name: MILLWOOD 3 EL-1A

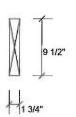
Project #:

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
4	Tie-In	1-4-5 to 3-1-15	(Span)0-6-1 to 0-3-1	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
5	Tie-In	3-1-15 to 4-9-8	(Span)2-6-15 to 0-3-1	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
6	Tie-In	4-9-8 to 5-7-3	(Span)1-6-4 to 0-4-6	Тор	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.

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

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

chemicals

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled

2. Refer to manufacturer's product information regarding shatlallation requirements, multi-ply supproved tellatis, beam strength values, and code approved 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

For flat roots provide proper drainage to prevent ponding

Manufacturer Info

APA: PR-L318

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







Client:

Project: Address: Date:

8/15/2018

Designer: SB

Job Name: MILLWOOD 3 EL-1A

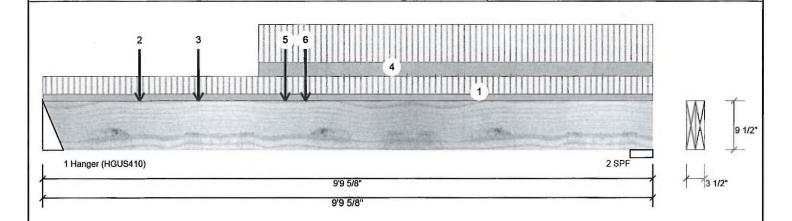
Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500"

2-Ply - PASSED

Level: Ground Floor



Member Infor	mation			Unfactored Reactions UNPATTERNED Ib (Uplift)						
Туре:	Girder	Application:	Floor (Residential)	Brg	Live		Dead	Snow	,	Wind
Plies:	2	Design Method:	LSD	1	1537		690	0	j	0
Moisture Condition	n: Dry	Building Code:	NBCC 2010 / OBC 2012	2	631		298	0	J	0
Deflection LL:	360	Load Sharing:	No							
Deflection TL:	240	Deck:	Not Checked							
Importance:	Normal	Vibration:	Not Checked							
General Load										
Floor Live:	40 PSF			Bearings	and Fac	tored F	Reactions			
Dead:	15 PSF			Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
				1 - Hanger	4.000"	30%	862 / 2306	3168	L	1.25D+1.5L
Analysis Resul	ts			_	4.375"	14%	372 / 947	1319	L	1.25D+1.5L

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	6884 ft-lb	2'6"	22724 ft-lb	0.303 (30%)	1.25D+1.5L	L
Unbraced	6884 ft-lb	2'6"	21042 ft-lb	0.327 (33%)	1.25D+1.5L	L
Shear	3140 lb	1' 3/4"	9277 lb	0.338 (34%)	1.25D+1.5L	L
Perm Defl in.	0.043 (L/2596)	4'3 9/16"	0.308 (L/360)	0.140 (14%)	D	Uniform
LL Defl inch	0.095 (L/1160)	4'3 3/16"	0.308 (L/360)	0.310 (31%)	L	L
TL Defl inch	0.138 (L/802)	4'3 5/16"	0.461 (L/240)	0.300 (30%)	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 9-9-10	(Span)0-5-2	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	1-6-12		Far Face	25 lb	52 lb	0 lb	0 lb	F14
3	Point	2-6-0		Far Face	729 lb	1694 lb	0 lb	0 lb	F8
4	Tie-In	3-5-10 to 9-9-10	(Span) 0-10-14	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
5	Point	3-10-12		Тор	27 lb	72 lb	0 lb	0 lb	

Continued on page 2...

Notes

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

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

Handling & Installation

Harifulling & Installation

1. UV, 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. Dameged Beams must not be used

Design assumes top edge is laterally restrained Provide tateral support at bearing points to avoid lateral displacement and rotation

For flat roofs provide proper drainage to prevent ponding

Manufacturer Info APA: PR-L318

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



isDesign™

Client:

Project: Address: Date: 8/15/2018

Designer: SB

Job Name: MILLWOOD 3 EL-1A

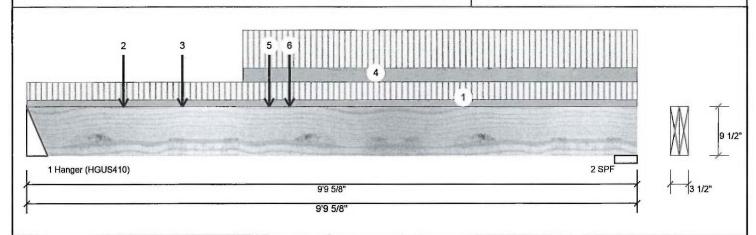
Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500"

2-Ply - PASSED

Level: Ground Floor



.Continued from page 1

ID Load Type 6 **Point** 

Self Weight

Location Trib Width 4-2-11

Side Тор

Dead 57 lb 8 PLF

Live 152 lb Snow 0 lb Wind Comments

0 lb

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

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

#### Notes

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

# Lumber

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

Handling & Installation

- 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 laterary restrained

  5. 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







Client:

Project: Address:

8/15/2018 Date:

Designer: SB

Job Name: MILLWOOD 3 EL-1A

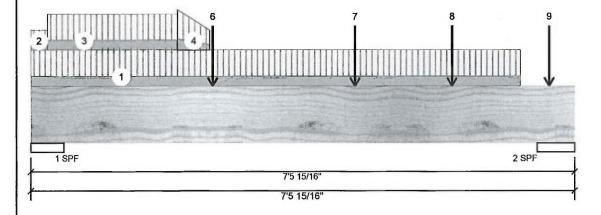
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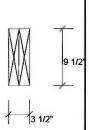
Forex 2.0E-3000Fb LVL

1.750" X 9.500"

2-Ply - PASSED

Level: Ground Floor





Member	Information

Type:	Girder
Plies:	2
Moisture Condition:	Dry
Deflection LL:	360
Deflection TL:	240
Importance:	Normal
General Load	
Floor Live:	40 PSF
Dead:	15 PSF

Floor (Residential) Design Method: LSD NBCC 2010 / OBC 2012

**Building Code:** Load Sharing: No

Application:

Deck: Not Checked Not Checked Vibration:

**Unfactored Reactions UNPATTERNED Ib (Uplift)** 

Brg	Live	Dead	Snow	Wind
1	2211 (-21)	948	0	0
1 2	1212 (-10)	525	0	0

## Bearings and Factored Reactions

	Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
	1 - SPF	5.500"	38%	1185 / 3317	4502	L	1.25D+1.5L
ł	2 - SPF	6.188"	19%	656 / 1819	2475	L	1.25D+1.5L

**Analysis Results** 

Actual	Location	Allowed	Capacity	Comb.	Case
9269 ft-lb	2'6 1/16"	22724 ft-lb	0.408 (41%)	1.25D+1.5L	L
9269 ft-lb	2'6 1/16"	21851 ft-lb	0.424 (42%)	1.25D+1.5L	L
4414 lb	1'2 1/4"	9277 lb	0.476 (48%)	1.25D+1.5L	L
0.030 (L/2651)	3'2 3/8"	0.222 (L/360)	0.140 (14%)	D	Uniform
0.070 (L/1132)	3'2 3/16"	0.222 (L/360)	0.320 (32%)	L	L
0.101 (L/793)	3'2 1/4"	0.332 (L/240)	0.300 (30%)	D+L	L
	9269 ft-lb 9269 ft-lb	9269 ft-lb 2'6 1/16" 9269 ft-lb 2'6 1/16" 4414 lb 1'2 1/4" 0.030 (L/2651) 3'2 3/8" 0.070 (L/1132) 3'2 3/16"	9269 ft-lb 2'6 1/16" 22724 ft-lb 9269 ft-lb 2'6 1/16" 21851 ft-lb 4414 lb 1'2 1/4" 9277 lb 0.030 (L/2651) 3'2 3/8" 0.222 (L/360) 0.070 (L/1132) 3'2 3/16" 0.222 (L/360)	9269 ft-lb 2'6 1/16" 22724 ft-lb 0.408 (41%) 9269 ft-lb 2'6 1/16" 21851 ft-lb 0.424 (42%) 4414 lb 1'2 1/4" 9277 lb 0.476 (48%) 0.030 (L/2651) 3'2 3/8" 0.222 (L/360) 0.140 (14%) 0.070 (L/1132) 3'2 3/16" 0.222 (L/360) 0.320 (32%)	9269 ft-lb 2'6 1/16" 22724 ft-lb 0.408 (41%) 1.25D+1.5L 9269 ft-lb 2'6 1/16" 21851 ft-lb 0.424 (42%) 1.25D+1.5L 4414 lb 1'2 1/4" 9277 lb 0.476 (48%) 1.25D+1.5L 0.030 (L/2651) 3'2 3/8" 0.222 (L/360) 0.140 (14%) D 0.070 (L/1132) 3'2 3/16" 0.222 (L/360) 0.320 (32%) L

**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.

READ ALL NOTES ON THIS PAGE AND ON

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

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



# **Design Notes**

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 6-9-0	(Span)0-10-4	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-2-12	(Span)0-5-12	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	0-2-12 to 2-0-4	(Span)0-10-4	Тор	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	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
5	Point	2-6-1		Near Face	1277 lb	3051 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

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

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

paymons deprovals approvals each must not be used Design assumes top edge is laterally restrained Provide fateral support at bearing points to avoid lateral displacement and rotation

 For flat roofs provide proper drainage to prevent ponding Manufacturer Info

APA: PR-L318

Kott Lumber Company 14 Anderson Blvd, Ontario Canada L4A 7X4









Client:

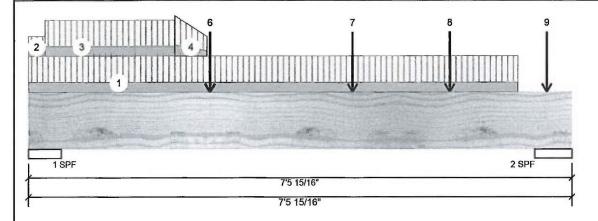
Project: Address: Date: 8/15/2018

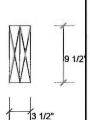
Designer: S B

Job Name: MILLWOOD 3 EL-1A

Project #:

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





Continued	from	page	1
		L-9-	

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	Point	7-1-12		Near Face	37 lb	99 lb	0 Њ	0 lb	J8
	Self Weight				8 PLF				
ı									

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.

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

## Lumber

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

#### chemicals

Handling & Installation

- Handling & Installation

  1. IVA beams must not be cut or drilled

  2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastering details, beam strength values, and code approvals

  3. Demaged Beams must not be used

  4. Design assumes top edge is laterafy restrained

  5. 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







Client:

Project: Address:

8/15/2018 Date:

SB Designer:

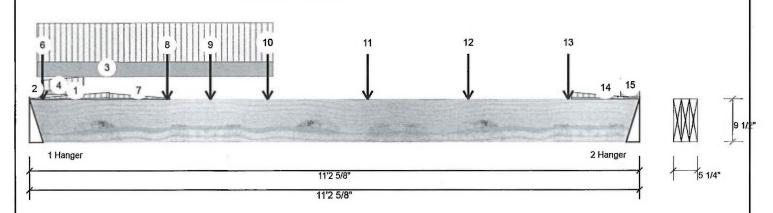
Job Name: MILLWOOD 3 EL-1A

Project #:

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

3-Ply - PASSED

Level: Ground Floor



Member Inforn	nation				Unfacto	red Reacti	ons U	NPATTERN	ED lb (	(Uplift)	
Type:	Girder		Application:	Floor (Residential)	Brg	Live		Dead	Snov	w	_
Plies:	3		Design Method:	LSD	1	3051 (-31)		1277		0	
Moisture Condition:	Dry		<b>Building Code:</b>	NBCC 2010 / OBC 2012	2	1694		729		0	
Deflection LL:	360		Load Sharing:	Yes							
Deflection TL:	240		Deck:	Not Checked							
Importance:	Normal		Vibration:	Not Checked							
General Load											
Floor Live:	40 PSF				Bearing	s and Fact	ored	Reactions			
Dead:	15 PSF	10			Bearing	Length	Сар.	React D/L lb	Total	Ld. Case	_
					1 - Hanger	3.000"	53%	1597 / 4577	6174	L	
analysis Results				2-	3.000"	30%	912 / 2541	3452	L		

Analysis Results										
Analysis	Actual	Location	Allowed	Capacity	Comb.	Case				
Moment	16089 ft-lb	3'4"	35449 ft-lb	0.454 (45%)	1.25D+1.5L	L				
Unbraced	16089 ft-lb	3'4"	35449 ft-lb	0.454 (45%)	1.25D+1.5L	L				
Shear	5536 lb	11 3/4"	13915 lb	0.398 (40%)	1.25D+1.5L	L				
Perm Defl in.	0.088 (L/1480)	5'1 1/8"	0.362 (L/360)	0.240 (24%)	D	Uniform				
LL Defl inch	0.206 (L/631)	5' 7/8"	0.362 (L/360)	0.570 (57%)	L	L				

5'1" 0.542 (L/240) 0.540 (54%) D+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.

Hanger



Wind 0 0

Ld. Comb.

1.25D+1.5L

1.25D+1.5L

# **Design Notes**

1 Fill all hanger nailing holes.

TL Defl inch 0.294 (L/442)

- 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 1-5-11	(Span)0-2-7 to 1-7-4	Тор	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	Тор	15 PSF	40 PSF	0 PSF	0 PSF		
3	Part. Uniform	0-1-10 to 4-5-13		Тор	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	Тор	15 PSF	40 PSF	0 PSF	0 PSF		

Continued on page 2...

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

andling & 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
Dannaged 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





Client: Project: Address: Date: 8/15/2018

Designer: SB

Job Name: MILLWOOD 3 EL-1A

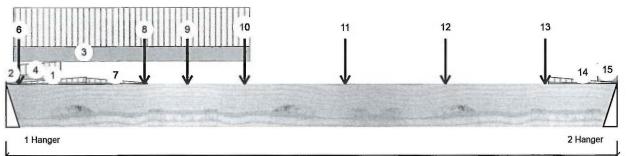
Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500"

3-Ply - PASSED

Level: Ground Floor



11'2 5/8" 11'2 5/8"

.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	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
8	Point	2-6-8		Far Face	14 lb	38 lb	0 ib	0 lb	J1
9	Point	3-4-0		Тор	1067 lb	2562 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	J9
14	Tie-In	9-11-9 to 11-2-10	(Span)1-6-6 to 0-2-9	Тор	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	Тор	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

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer endfor the contractor to ensure the component suitability of the Inlended 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

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

Forex APA: PR-L318

Manufacturer Info

Kott Lumber Company 14 Anderson Blvd, Ontario Canada L4A 7X4

905-642-4400



Client

Project: Address: Date: 8/15/2018

Designer: SB

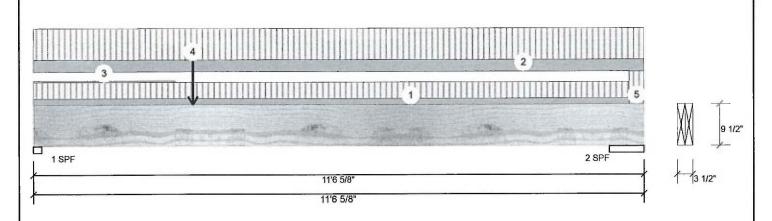
Job Name: MILLWOOD 3 EL-1A

Project #:

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

2-Ply - PASSED

Level: Ground Floor



Member Info	rmation			Unfactor	ed Reacti	ons UNPATTE
Type:	Girder	Application:	Floor (Residential)	Brg	Live	Dead
Plies:	2	Design Method:	LSD	1	1647	691
Moisture Condition	on: Dry	Building Code:	NBCC 2010 / OBC 2012	2	731	331
Deflection LL:	360	Load Sharing:	No			
Deflection TL:	240	Deck:	Not Checked			
Importance:	Normal	Vibration:	Not Checked			
General Load						
Floor Live:	40 PSF			Bearings	and Facto	ored Reaction
Dead:	15 PSF			Bearing I	•	Cap. React D/L

ERNED Ib (Uplift)

1	1647	691	0	0
2	731	331	0	0

Snow

l	Bearing	Length	Cap.	React D/L ib	Total	Ld. Case	Ld. Comb.	
l	1-SPF	1.875"	83%	864 / 2470	3333	L	1.25D+1.5L	
1	2-SPF	7.778"	9%	414 / 1096	1510	L	1.25D+1.5L	

**Analysis Results** 

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	9431 ft-lb	3' 1/4"	22724 ft-lb	0.415 (42%)	1.25D+1.5L	L
Unbraced	9431 ft-lb	3' 1/4"	20390 ft-lb	0.463 (46%)	1.25D+1.5L	L
Shear	3270 lb	10 5/8"	9277 lb	0.353 (35%)	1.25D+1.5L	L
Perm Defl in.	0.072 (L/1812)	4'10 13/16"	0.362 (L/360)	0.200 (20%)	D	Uniform
LL Defl inch	0.170 (L/766)	4'10 1/4"	0.362 (L/360)	0.470 (47%)	L	L
TL Defl inch	0.242 (L/538)	4'10 7/16"	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



Wind

**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.

U Laterar	alciliacilicas tallo pasca	off full section width.							
ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 11-3-4	(Span)0-6-5	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 11-6-10	(Span)1-0-3	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-0-0 to 2-8-4		Тор	1 PLF	0 PLF	0 PLF	0 PLF	
4	Point	3-0-4		Тор	797 lb	2020 lb	0 lb	0 lb	C5
5	Tie-In	11-3-4 to 11-6-10	(Span)0-9-5	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				8 PLF				

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

Dry service conditions, unless noted otherwise
 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 appropriate.
- rastering details, ocean surrigin 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 prevenil ponding

Manufacturer Info APA: PR-L318

Kott Lumber Company 14 Anderson Blvd, Ontario Canada L4A 7X4







Client:

Project: Address:

8/15/2018 Date:

Designer: SB

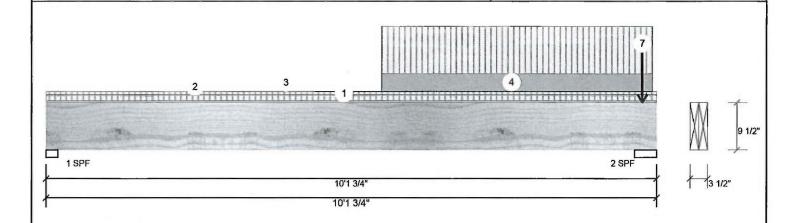
Job Name: MILLWOOD 3 EL-1A

Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500"

Level: Ground Floor 2-Ply - PASSED



								•		
Type:	Girder	Application:	Floor (Residential)	Brg	Live		Dead	Snov	v	Wind
Plies:	2	Design Method:	LSD	1	212		118		0	0
Moisture Condition	: Dry	Building Code:	NBCC 2010 / OBC 2012	2	627		316		0	0
Deflection LL:	360	Load Sharing:	No							
Deflection TL:	240	Deck:	Not Checked							
Importance:	Normal	Vibration:	Not Checked							
General Load										
Floor Live:	40 PSF			Bearings	and Fac	tored I	Reactions			
Dead:	15 PSF			Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
				1-SPF	2.375"	9%	148 / 319	467	L	1.25D+1.5L
				2-SPF	4.375"	14%	395 / 940	1335	L	1.25D+1.5L

#### **Analysis Results**

Member Information

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1843 ft-lb	6'3"	22724 ft-lb	0.081 (8%)	1.25D+1.5L	L
Unbraced	1843 ft-lb	6'3"	20862 ft-lb	0.088 (9%)	1.25D+1.5L	L
Shear	799 lb	9' 5/8"	9277 lb	0.086 (9%)	1.25D+1.5L	L
Perm Defl in.	0.015 (L/7851)	5'4 1/8"	0.324 (L/360)	0.050 (5%)	D	Uniform
LL Defl inch	0.030 (L/3833)	5'5 7/16"	0.324 (L/360)	0.090 (9%)	L	L
TL Defl inch	0.045 (L/2576)	5'5"	0.485 (L/240)	0.090 (9%)	D+L	L

**Design Notes** 

- 1 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3), Assumed point load size; beam width X 4.5.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Multiple plies must be fastened together as per manufacturer's details.
- 4 Top loads must be supported equally by all plies.
- 5 Top braced at bearings.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on full section width

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.

**Unfactored Reactions UNPATTERNED Ib (Uplift)** 

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.



	/ Lateral Steriue	mess ratio based of	run section water.							
	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	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
	2	Tie-In	0-0-0 to 10-1-12	(Span)0-4-7	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
	3	Tapered Start	3-0-7		Тор	0 PLF	0 PLF	0 PLF	0 PLF	
		End	6-2-12			1 PLF	0 PLF	0 PLF	0 PLF	
	4	Part. Uniform	5-6-14 to 10-0-14		Тор	45 PLF	120 PLF	0 PLF	0 PLF	
_	Maria Caracteria Control of the Cont	_								

Continued on page 2...

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

### Lumber

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

chemicals

Handling & Installation

- Handling & Installation

  1. LVL beams must not be cut or drilled

  2. Refer to manufacturer's product information regarding installation requirements, mutti-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 rolation

For flat roofs provide proper drainage to pre ponding

APA: PR-L318

Manufacturer Info

Kott Lumber Company 14 Anderson Blvd, Ontario Canada L4A7X4 905-642-4400



isDesign™

Client:

Project: Address: Date: 8/15/2018

Designer: SB

Job Name: MILLWOOD 3 EL-1A

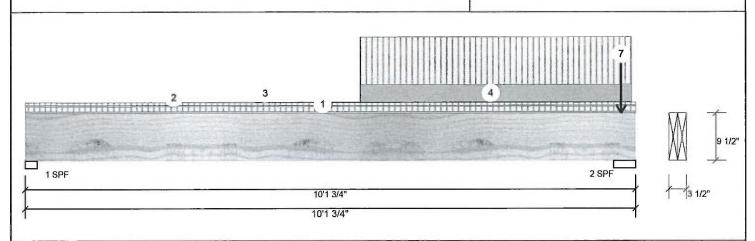
Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500"

2-Ply - PASSED

Level: Ground Floor



Continued fr	rom page 1								
ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Point	9-10-14		Тор	25 lb	66 lb	0 lb	0 lb	J11
6	Point	9-10-14		Тор	11 lb	30 lb	0 lb	0 lb	J11
7	Point	9-10-14		Тор	41 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.

Calculated Struchared 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 Interned 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

Handling & Installation

1. LVL beams must not be cut or drilled

2. Refer to manufacturer's product information regarding installation requirements, multi-pty fastening details, beam strength values, and code approvals

3. Damaged Beams must not be used

4. Design assumes top edge is lateraty restrained

5. Provide lateral support at bearing points to avoid lateral displacement and rotation

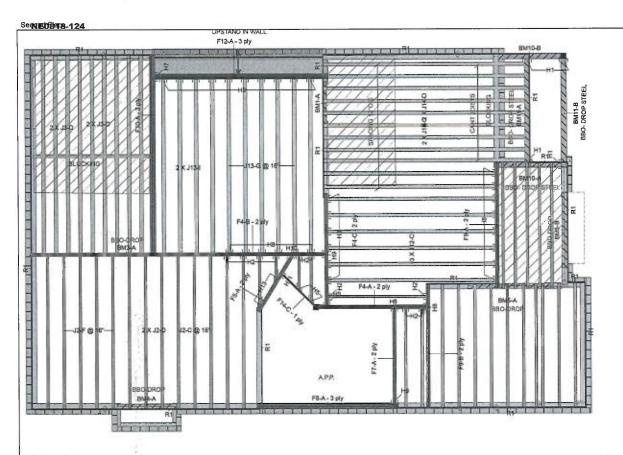
For flat roofs provide proper drainage to prevent ponding

Manufacturer Info APA: PR-L318

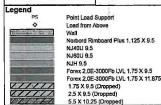
Kott Lumber Company 14 Anderson Blvd, Ontario Canada L4A 7X4 905-642-4400







JOISTS SPACING 16"O/C NOTED OTHERWISE



#### THIS CERTIFICATION IS TO CONFIRM THAT:

1. THE LOADS USED IN THE CALCULATION OF THE ATTACHED APPROVED COMPONENTS CONFORM TO THE FLOOR ASSEMBLY

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.

SHOWN ON THIS LAYOUT.



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.

Width Depth Qty Plies Pcs Length Label Description 1.75 9.5 3 3 1 Layout Name 12-0-0 MILLWOOD 3 EL-1A 1.75 3 3 12-0-0 9.5 Design Method LSD

**PAGE 21 OF 38** 

1.75 Forex 2.0E-3000Fb LVL 9.5 8-0-0 1.75 9,5 6-0-0 Forex 2.0E-3000Fb LVL 9.5 400 2.0E-3000Fb LVL 1.75 11.875 16-0-0 F12 Forex 2.0E-3000Fb LVL l Joist 
 Width
 Depth
 Qty
 Piles
 Pcs
 Length

 3.5
 9.5
 9
 18-0-0
 Label Description 9 18-0-0 J14 NJ40U 9.5 J13 NJ40L 8 14-0-0 9 18-0-0 J12 NJ40U 3.5 9.5 3.5 9.5 2.5 9.5 J3 NJ60U J2 NJH 14-0-0 15 12-0-0 J11 NJH 2.5 9.5 9.5 2 10-0-0 1 8-0-0 1 6-0-0 J10 NJH J9 NJH 2.5 9.5 JB NJH 9.5 J7 NJH 9.5 3 4-0-0 Rim Board

Second Floor

LVL/LSL

Blocking Label Description Width Depth Qty Plies Pcs Length Varies 7-0-0 BLK1 NJ40U 3.5

BLK3 NJ60U Hanger Member Label Pcs Description Skew Slope fasteners fasteners 4 Unknown Hanger H1 H2 10 LF259 10 10d 1 #8x1 1/4WS H5 SUR2,56/9 (Min) Right HGUS5,50/10 46 16d 16 16d

H8 32 LF359 H9 3 HGUS410 H10 1 LSSU410-L Var Var H11 1 LSSUI25-L Var Var

Double joist only require filler/backer ply when supporting another member using a face-mounted hanger.

member using a race-internal inarger.
Install 2x4 blocking @ 24" ofe under parallel non-loadbearing walls.
Install single-ply flush window header along inside face of nimboard/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 bolling

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

Hatch area represents ceramic tited floor with an additional dead load

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

F10 Forex 2 DE-3000Eh I VI 2.0E-3000Fb LVL 2.0E-3000Fb LVL F4 1.75 9.5 2.0E-3000Fb LVL Description GREENPARK HOMES MINISALE, BRAMPTON, ON Created June 27, 2018 Builder Sales Rep RM Designer SB Shipping Project **Builder's Project** Kott Lumber Company 14 Anderson Blvd Stouffville, Ontario Canada L4A 7X4 Width Depth Qty Plies Pcs Length 905-642-4400 R1 Norbord Rimboard Plus 1.125 X 9.5 Second Floor 1.125 Design Method LSD Building Code NBCC 2010 / OBC 9.5 LinFt 9.5 LinFt Floor \_oads ive 40 15 Doad Deflection Joist 480 LL Span L/ 360 TL Span L/ 480 LL Cant 2L 14 10dx1 1/2 2 10dx1 1/2 TL Cant 2L/ 360 Deflection Girder 2 #8x1 1/4WS LL Span L/ 360 46 16d 16 16d LL Span L/ 14 16d 12 10dx1 1/2 9 10d 7 10dx1 1/2 LL Cant 2L/ 480 360 14 16d 12 10dx1 1/2 TL Cant 2L/ H13 2 LSSUH310-L Var Var Decking NOTES OSB Deck 5/8" Framer to venty dimensions on the architectural drawings. Thickness

Architectural Drawing Info

Fastener

Vibration Celling:

VA3 DESIGN 255 CONSUMERS ROAD TORONTO, ON M2J 1R4

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

Nailed & Glued

Gypsum 1/2"



5. CCMC -12787-R APA PR-L310(C) Version 18.40.162 Powered by iStruct\*\*

2. Nascor CCMC - 13535-R

3. LVL CCMC -12904-R

4. CAN/CSA-086-09

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

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



Client:

Project: Address: Date: 8/15/2018

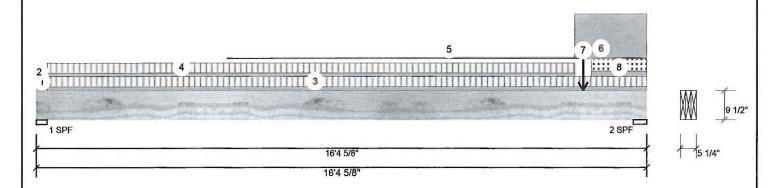
SB Designer:

Job Name: MILLWOOD 3 EL-1A

Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500" 3-Ply - PASSED Level: Second Floor



Member Inforn	nation						Unfacto	red Reac	tions U	NPATTERN	ED lb (	Uplift)	
Туре:	Girder		Application:	FI	oor (Residentia	al)	Brg	Live		Dead	Sno	W	Wind
Plies:	3		Design Meth	nod: LS	SD		1	467		441	24	1	0
Moisture Condition:	Dry		Building Cod	de: Ni	BCC 2010 / O	BC 2012	2	2024		2666	247	9	0
Deflection LL:	360		Load Sharin	ig: Ye	es								
Deflection TL:	240		Deck:	Ne	ot Checked								
Importance:	Normal		Vibration:	N	ot Checked								
General Load						-							
Floor Live:	40 PSF						Bearings	s and Fac	tored l	Reactions			
Dead:	15 PSF						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
Analysis Result	s						2-SPF	4.375"	57%	3333 / 4731	8064	L	1.25D+1.5S +0.5L
Analysis Act	ual	Location	Allowed C	Capacity	Comb.	Case							3.52
Moment 1116	65 ft-lb	14'8"	35449 ft-lb 0.	.315 (31%)	1.25D+1.5S	L	READ	ALL NOTE	S ON TH	IS PAGE AND	ON		

+0.5L Unbraced 11165 ft-lb 14'8" 33795 ft-lb 0.330 (33%) 1.25D+1.5S L +0.5L 0.565 (57%) 1.25D+1.5S L 15'3 1/2" 13915 lb Shear 7866 lb +0.5L Perm Defl in. 0.190 (L/999) 9'1 1/16" 0.528 (L/360) 0.360 (36%) D Uniform 9' 5/8" 0.528 (L/360) 0.470 (47%) L+0.5S LL Defl inch 0.246 (L/773) 1 9' 13/16" 0.793 (L/240) 0.550 (55%) D+L+0.5S TL Defl inch 0.437 (L/436)

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

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

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



Design Notes

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-3-8	(Span)0-7-12	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-3-8	(Span)0-8-4	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	0-3-8 to 16-4-10	(Span)0-11-4	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
4	Tie-In	0-3-8 to 14-5-6	(Span) 0-10-12	Тор	15 PSF	40 PSF	0 PSF	0 PSF	

Continued on page 2...

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

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

chemicals

Handling & Installation

LVL beams must not be cut or drilled Refer to menufacturer's product information regarding installation requirements, multi-pty fastening details, beam strength values, and code

fastening detens, seam of the provide approvals
Damaged Beams must not be used
Design essumes top edge is laterally restrained
Provide lateral support at bearing points to avoid
lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent

Manufacturer Info Forex

APA: PR-L318

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



isDesign<sup>™</sup>

Client:

Project: Address: Date: 8/15/2018

Designer: SB

Job Name: MILLWOOD 3 EL-1A

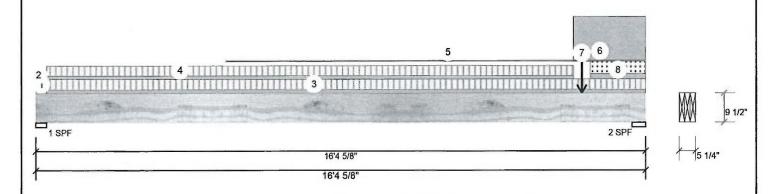
Project #:

Forex 2.0E-3000Fb LVL F10-A

1.750" X 9.500"

3-Ply - PASSED

Level: Second Floor



Continued fro	m page 1								
ID	Load Type	Location Tri	rib Width	Side	Dead	Live	Snow	Wind	Comments
5	Tapered Start	5-1-5		Тор	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		Тор	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		Тор	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 Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the Intended application, and to verify the dimensions and loads.

Lumber

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

Handling & Installation

LVL beams must not be cut or drilled
 Refer to manufacturer's product information regarding installation requirements, multi-ply fastering defails, beam strength values, and code approvals.

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

This design is valid until 7/10/2021

Manufacturer Info

Forex

APA: PR-L318

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







Client:

Project: Address:

8/15/2018 Date:

Designer: SB

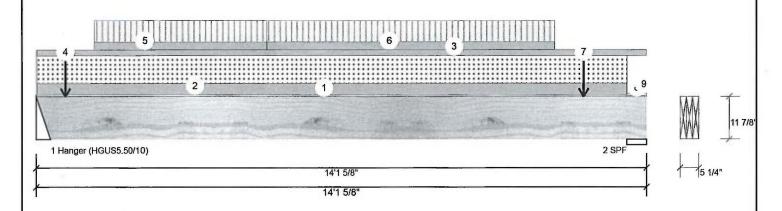
Job Name: MILLWOOD 3 EL-1A

Project #

Forex 2.0E-3000Fb LVL

1.750" X 11.875"

3-Ply - PASSED Level: Second Floor



Member Inform	nation		
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		
		I	

Unfactored	Reactions	UNPAT	TERNED	lb	(Uplift)

Brg	Live	Dead	Snow	Wind
1	1928	2522	2686	0
Brg 1 2	1774	2424	2562	0

Bearing	Length	Cap.	React D/L Ib	Iotai	Ld. Case	Ld. Comb.
1 - Hanger	4.000"	52%	3153 / 4993	8146	L	1.25D+1.5S +0.5L
2 - SPF	5.500"	44%	3030 / 4730	7760	L	1.25D+1.5S +0.5L

**Analysis Results** Location Allowed Actual Comb. Case Analysis Capacity 0.497 (50%) 1.25D+1.5S L 26537 ft-lb 7' 53447 ft-lb Moment +0.5L 26537 ft-lb 50634 ft-lb 0.524 (52%) 1.25D+1.5S L Unbraced +0.5L 7024 lb 1'3 1/8" 17394 lb 0.404 (40%) 1.25D+1.5S L Shear +0.5L 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

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.

**Bearings and Factored Reactions** 



#### 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 of	on full section width.						
ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind
1	Part. Uniform	0-0-0 to 13-8-2		Тор	8 PLF	0 PLF	18 PLF	0 PLF
2	Part. Uniform	0-0-2 to 13-8-2		Тор	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 J13 120 lb 319 lb 0 lb 0 lb 4 Point 0-8-2 Near Face

Continued on page 2...

#### Notes

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

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent

Manufacturer Info Forex APA: PR-L318

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



Comments



isDesign<sup>™</sup>

Client:

Project: Address: Date: 8/15/2018

Designer: SB

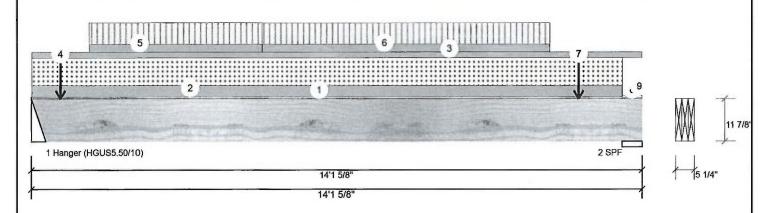
Job Name: MILLWOOD 3 EL-1A

Project #:

Forex 2.0E-3000Fb LVL F12-A

1.750" X 11.875"

3-Ply - PASSED Level: Second Floor



Continued fro	om 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	127 lb	338 lb	0 lb	0 lb	J13
8	Tie-In	13-8-2 to 14-1-10	(Span)1-7-0	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
9	Part. Uniform	14-0-2 to 14-1-10		Тор	4 PLF	0 PLF	0 PLF	0 PLF	
	Self Weight				14 PLF				
ı									

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.

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

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

Handling & Installation

Handling & Installation

1. LVL beams must not be cut or drilled

2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastering 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

For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

APA: PR-L318

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







Client: Project: Address: Date: 8/15/2018

Designer: SB

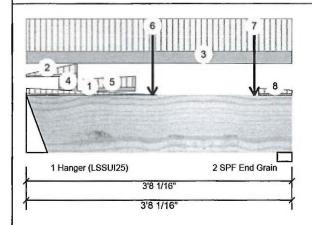
Job Name: MILLWOOD 3 EL-1A

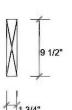
Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500" - PASSED

Level: Second Floor





Member Infor	mation		
Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition	n: 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		

NPATTERNED Ib (Uplift)

600	232	0	0
561	218	0	0

#### **Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	840 ft-lb	1'8 15/16"	11362 ft-lb	0.074 (7%)	1.25D+1.5L	L
Unbraced	840 ft-lb	1'8 15/16"	9640 ft-lb	0.087 (9%)	1.25D+1.5L	L
Shear	639 lb	2'8 7/8"	4638 lb	0.138 (14%)	1.25D+1.5L	L
Perm Defl in.	0.002 (L/16401)	1'9 7/8"	0.110 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch	0.006 (L/6369)	1'9 13/16"	0.110 (L/360)	0.060 (6%)	L	L
TL Defl inch	0.009 (L/4588)	1'9 13/16"	0.165 (L/240)	0.050 (5%)	D+L	L

## **Bearings and Factored Reactions**

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	3.500"	26%	290 / 900	1190	L	1.25D+1.5L
2 - SPF End	2.438"	35%	272 / 841	1113	L	1.25D+1.5L

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 DUMUIII	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	Тор	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	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-0-0 to 3-8-1		Тор	90 PLF	240 PLF	0 PLF	0 PLF	
4	Tie-In	0-5-7 to 0-8-7	(Span)3-1-8 to 3-6-10	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
5	Tie-In	0-9-8 to 1-6-0	(Span)3-3-6 to 4-0-0	Тор	15 PSF	40 PSF	0 PSF	0 PSF	

Continued on page 2...

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

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

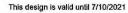
Handling & Installation

- LVL beams must not be cut or drilled
   Refer to manufacturer's product information regarding installation requirements, multi-pty fastening details, beam strength values, and code appropriate.
- 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

Forex

Kott Lumber Company 14 Anderson Blvd, Ontario Canada L4A 7X4 Manufacturer Info APA: PR-L318 905-642-4400









Client:

Project: Address: Date: 8/15/2018

Designer: SB

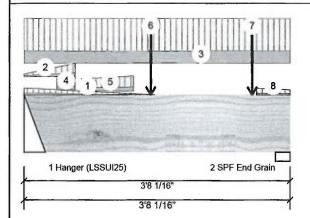
Job Name: MILLWOOD 3 EL-1A

Project #:

Forex 2.0E-3000Fb LVL F14-C

1.750" X 9.500" - PASSED

Level: Second Floor



Continuea	from page 1
ID	Load

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Point	1-8-15		Far Face	20 lb	52 lb	0 lb	0 lb	J7
7	Point	3-1-13		Far Face	30 lb	79 lb	dl 0	0 lb	J7
8	Tie-In	3-2-8 to 3-8-1	(Span)1-10-2 to 1-4-8	Тор	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 Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings abovan. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended annotation, and to verify the dimensions and loads.

# Lumber

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

- chemical
  Handling & Installation
  1. Viz beams must not be cut or drilled
  2. Refer to manufacturer's product information
  requirements, multi-ply
  restoring details, beam strength values, and code
  approvats
  3. Demaged 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

For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

APA: PR-L318

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







Client:

Project: Address:

8/15/2018 Date:

Designer: SB

Job Name: MILLWOOD 3 EL-1A

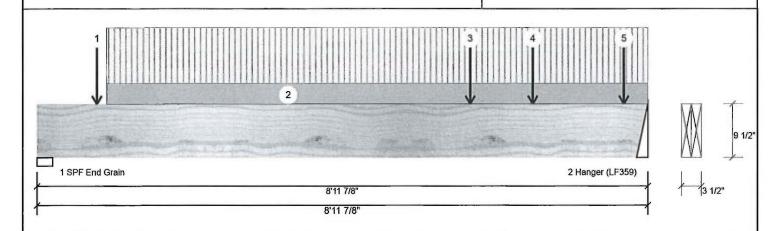
Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500"

2-Ply - PASSED

Level: Second Floor



Туре:	Girder	Application:	Floor (Residential)	Brg	Live		Dead	Sn
Plies:	2	Design Method:	LSD	1	2001		849	
Moisture Condition	: Dry	Building Code:	NBCC 2010 / OBC 2012	2	579		277	
Deflection LL:	360	Load Sharing:	No					
Deflection TL:	240	Deck:	Not Checked					
Importance:	Normal	Vibration:	Not Checked					
General Load								
Floor Live:	40 PSF			Bearings	and Fac	tored	Reactions	
Dead:	15 PSF	9		Bearing	Length	Cap.	React D/L lb	Tota
10.2				1 - SPF End	2.750"	57%	1062 / 3001	406

**Analysis Results** 

Member Information

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2916 ft-lb	10 5/8"	22724 ft-lb	0.128 (13%)	1.25D+1.5L	L
Unbraced	2916 ft-lb	10 5/8"	21223 ft-lb	0.137 (14%)	1.25D+1.5L	L
Shear	4053 lb	11 1/2"	9277 lb	0.437 (44%)	1.25D+1.5L	L
Perm Defl in.	0.019 (L/5434)	4'2 5/8"	0.291 (L/360)	0.070 (7%)	D	Uniform
LL Defl inch	0.040 (L/2603)	4'1 3/8"	0.291 (L/360)	0.140 (14%)	L	L
TL Defl inch	0.059 (L/1760)	4'1 13/16"	0.436 (L/240)	0.140 (14%)	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.

Unfactored	Reactions	UNPATTERNED	lb (Uplift)
Bra	Live	Dead	Snow

Brg	Live	Dead	Snow	Wind
1	2001	849	0	0
2	579	277	0	0

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End	2.750"	57%	1062 / 3001	4062	L	1.25D+1.5L

347 / 869

1216 L

Grain 2 -

2.000"

Hanger READ ALL NOTES ON THIS PAGE AND ON **ENGINEERING NOTE PAGE ENP-2. THIS** NOTE PAGE IS AN INTEGRAL PART OF THIS

23%

**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



1.25D+1.5L

ID Load Type Location Trib Width Side Dead Live Snow Wind Comments **Point** 0 - 10 - 10Far Face 831 lb 2053 lb 0 lb 0 lb F4 (Span)0-10-4 Top 15 PSF 40 PSF 0 PSF 1-0-6 to 8-11-14 0 PSF Tie-In 2 to 0-10-4 3 Point 6-4-9 Near Face 55 lb 70 lb 0 lb 0 lb F7 Point 7-3-10 67 lb 177 lb 0 lb J10 4 Near Face 0 lb 5 **Point** 8-7-10 Near Face 54 lb 144 lb 0 lb 0 lb J10 Self Weight 8 PLF

Calculated Struchared Designs is responsible only of the struckural 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 hierarchy of the intended application, and to varify the dimensions and loads.

### Lumber

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

chemicals

Handling & Installation

- andling & Installation
  LVL beams must not be cut or drilled
  Refer to manufacturer's product information
  regarding installation requirements, musti-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





Client:

Project: Address:

8/15/2018 Date:

Designer: SB

Job Name: MILLWOOD 3 EL-1A

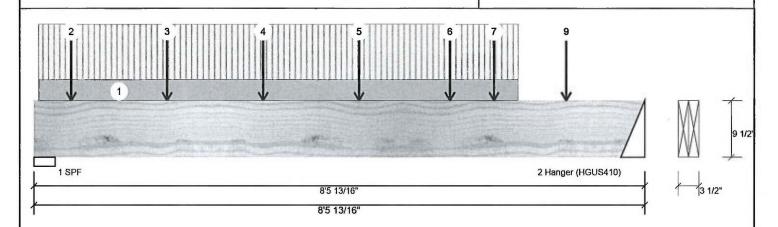
Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500"

2-Ply - PASSED

Level: Second Floor



Brg

viember inform	iation		
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)**

1	2020	797	0	0
2	1688	683	0	0

Snow

Dead

# **Bearings and Factored Reactions**

Live

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.	
1 - SPF	3.500"	53%	996 / 3030	4027	L	1.25D+1.5L	
2 - Hanger	4.000"	33%	854 / 2533	3387	L	1.25D+1.5L	

**Analysis Results Analysis** Actual Location Allowed Capacity Comb. 7070 ft-lb 4'6 1/4" 22724 ft-lb 0.311 (31%) 1.25D+1.5L L Moment 7070 ft-lb 4'6 1/4" 21464 ft-lb 0.329 (33%) 1.25D+1.5L L Unbraced 3818 lb 7'5 1/16" 9277 lb 0.412 (41%) 1.25D+1.5L L Shear Perm Defl in. 0.038 (L/2523) 4'3 3/8" 0.266 (L/360) 0.140 (14%) D LL Defl inch 0.095 (L/1011)

4'3 1/4" 0.266 (L/360) 0.360 (36%) L 4'3 1/4" 0.399 (L/240) 0.330 (33%) D+L TL Defl inch 0.133 (L/722)

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



Wind

**Design Notes** 

1 Fill all hanger nailing holes.

Manahau Infarmation

- 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.

BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-12 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	125 lb	333 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	226 lb	536 lb	0 lb	0 Њ	F5

Continued on page 2...

#### Notes

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

## Lumber

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

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent

Uniform

L

Manufacturer Info APA: PR-I 318

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







Client: Project: Address:

8/15/2018 Date:

Designer: SB

Job Name: MILLWOOD 3 EL-1A

Level: Second Floor

Project #:

1.750" X 9.500" 2-Ply - PASSED

2 Hanger (HGUS410)

9 1/2

..Continued from page 1

1 SPF

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				

8'5 13/16" 8'5 13/16"

> 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.

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor lo 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

andling & Installation
LVL beams must not be cut or drilled
Refer to manufacturer's product information
regarding instablation requirements, multi-ply
fastening details, beam strength values, and code
approvals
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Design assumes top edge is laterally restrained
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lateral displacement and rotation

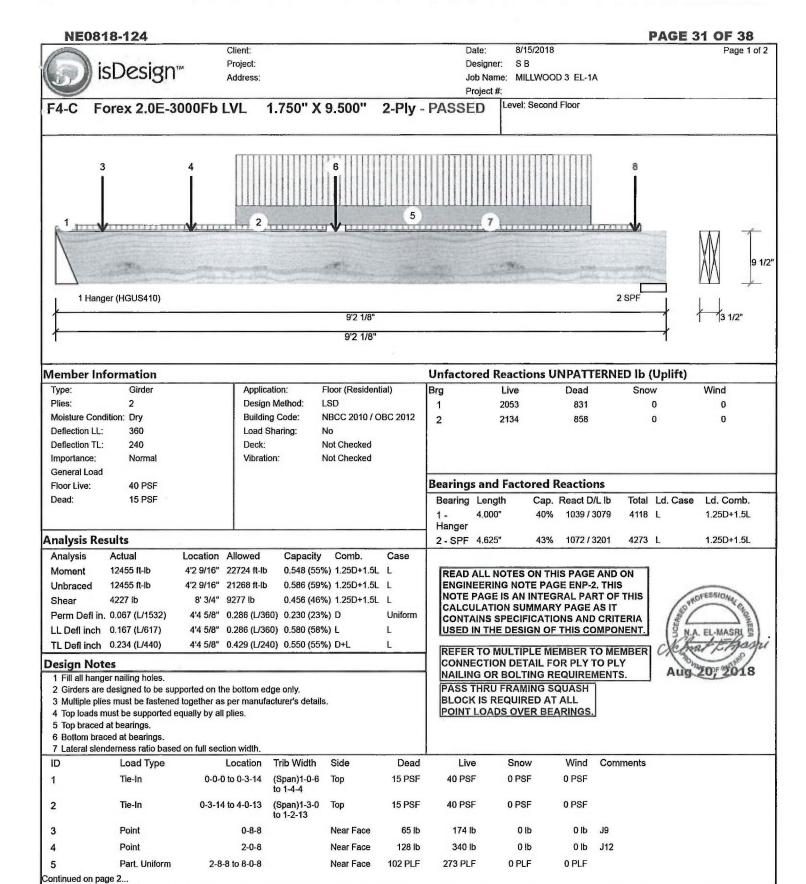
For flat roofs provide proper drainage to prevent ponding

This design is valid until 7/10/2021

Manufacturer Info Forex APA: PR-L318

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





Notes

Lumber

Handling & Installation

LVL beams must not be cut or drilled Refer to manufacturer's product information regarding installation requirements, multi-pty fastening details, beam strength values, and code

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For flat roofs provide proper drainage to prevent ponding

Manufacturer Info APA: PR-L318

Kott Lumber Company 14 Anderson Blvd, Ontario L4A 7X4









isDesign™

Client:

Project: Address:

8/15/2018 Date:

Designer: SB

Job Name: MILLWOOD 3 EL-1A

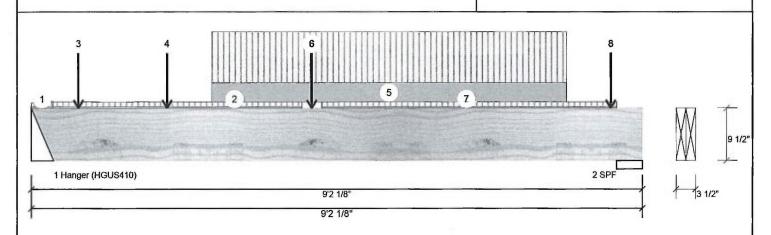
Project #

Forex 2.0E-3000Fb LVL

1.750" X 9.500"

2-Ply - PASSED

Level: Second Floor



.Continued from p	age 1									
ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments	
6	Point	4-2-9		Far Face	683 lb	1688 lb	0 lb	0 lb	F4	
7	Tie-In	4-4-5 to 8-9-9	(Span)1-2-13 to 1-2-10	Тор	15 PSF	40 PSF	0 PSF	0 PSF		
8	Point	8-8-8		Near Face	120 lb	319 lb	0 lb	0 lb	J12	
	Self Weight				8 PLF					
	ID 6 7	6 Point 7 Tie-In 8 Point	ID         Load Type         Location           6         Point         4-2-9           7         Tie-In         4-4-5 to 8-9-9           8         Point         8-8-8	ID         Load Type         Location         Trib Width           6         Point         4-2-9           7         Tie-In         4-4-5 to 8-9-9 (Span)1-2-13 to 1-2-10           8         Point         8-8-8	ID         Load Type         Location         Trib Width         Side           6         Point         4-2-9         Far Face           7         Tie-In         4-4-5 to 8-9-9         (Span)1-2-13 to 1-2-10 to 1-2-10         Top           8         Point         8-8-8         Near Face	ID         Load Type         Location         Trib Width         Side         Dead           6         Point         4-2-9         Far Face         683 lb           7         Tie-In         4-4-5 to 8-9-9 to 1-2-13 to 1-2-13 to 1-2-10         Top         15 PSF           8         Point         8-8-8         Near Face         120 lb	ID         Load Type         Location         Trib Width         Side         Dead         Live           6         Point         4-2-9         Far Face         683 lb         1688 lb           7         Tie-In         4-4-5 to 8-9-9 to 1-2-13 to 1-2-13 to 1-2-10         Top         15 PSF         40 PSF           8         Point         8-8-8         Near Face         120 lb         319 lb	ID         Load Type         Location         Trib Width         Side         Dead         Live         Snow           6         Point         4-2-9         Far Face         683 lb         1688 lb         0 lb           7         Tie-In         4-4-5 to 8-9-9 to 1-2-13 to 1-2-13 to 1-2-10         Top         15 PSF         40 PSF         0 PSF           8         Point         8-8-8         Near Face         120 lb         319 lb         0 lb	ID         Load Type         Location         Trib Width         Side         Dead         Live         Snow         Wind           6         Point         4-2-9         Far Face         683 lb         1688 lb         0 lb         0 lb           7         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           8         Point         8-8-8         Near Face         120 lb         319 lb         0 lb         0 lb	ID         Load Type         Location         Trib Width         Side         Dead         Live         Snow         Wind         Comments           6         Point         4-2-9         Far Face         683 lb         1688 lb         0 lb         0 lb         7 lb         7 lb         15 PSF         40 PSF         0 PSF

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

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

Notes

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

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

Handling & Installation

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. Demeged Beams must not be used

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 APA: PR-L318

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





Client:

Project: Address:

8/15/2018 Date:

Designer: SB

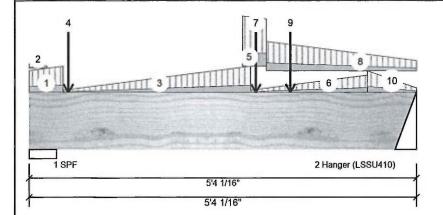
Job Name: MILLWOOD 3 EL-1A

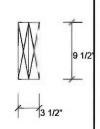
Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500" 2-Ply - PASSED

Level: Second Floor





Wind

Member Information							
Type:	Girder	Application:	Floor (Residential)				
Plies:	2	Design Method:	LSD				
Moisture Condition	on: 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		1110-00-00-00					
Floor Live:	40 PSF						
Dead:	15 PSF	l					

**Unfactored Reactions UNPATTERNED Ib (Uplift)** Brg Live Dead Snow

1	363	159	0	0
2	536	226	0	0

# **Bearings and Factored Reactions**

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.563"	8%	199 / 545	744	L	1.25D+1.5L
2 - Hanger	3.500"	12%	282 / 804	1087	L	1.25D+1.5L

**Analysis Results** 

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1519 ft-lb	3'7 3/16"	22724 ft-lb	0.067 (7%)	1.25D+1.5L	L
Unbraced	1519 ft-lb	3'7 3/16"	22724 ft-lb	0.067 (7%)	1.25D+1.5L	L
Shear	1002 lb	4'3 13/16"	9277 lb	0.108 (11%)	1.25D+1.5L	L
Perm Defl in.	0.003 (L/18467)	3'1 1/2"	0.160 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch	0.007 (L/7708)	3'1 11/16"	0.160 (L/360)	0.050 (5%)	L	L
TL Defl inch	0.011 (L/5438)	3'1 9/16"	0.240 (L/240)	0.040 (4%)	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.

Laterary	oleriaetricos ratio basea	on fail ocoupit maai.								
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	Тор	15 PSF	40 PSF	0 PSF	0 PSF		
2	Tie-In	0-0-0 to 0-2-15	(Span)0-3-8 to 0-1-12	Тор	15 PSF	40 PSF	0 PSF	0 PSF		
3	Tie-In	0-5-10 to 3-0-10	(Span)0-1-12 to 1-8-7	Тор	15 PSF	40 PSF	0 PSF	0 PSF		

Continued on page 2...

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer end'or the contractor to ensure the component suitability of the intended

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

Handling & Installation

LIVI, 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 conding

Manufacturer Info Forex APA: PR-L318

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









Client:

Project: Address:

8/15/2018 Date:

Designer: SB

Job Name: MILLWOOD 3 EL-1A

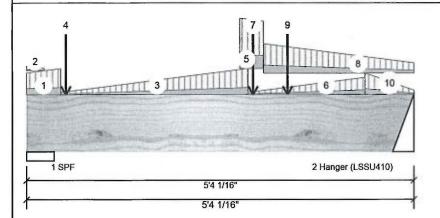
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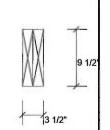
Forex 2.0E-3000Fb LVL

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	Point	0-6-8		Far Face	35 lb	93 lb	0 lb	0 lb	J8
5	Tie-In	2-11-4 to 3-3-3	(Span)3-3-6 to 3-1-0	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
6	Tie-In	3-0-10 to 4-7-15	(Span)0-1-12 to 1-1-7	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
7	Point	3-1-8		Far Face	14 lb	37 lb	0 lb	0 lb	J7
8	Tie-In	3-3-3 to 5-4-1	(Span)1-11-0 to 0-8-0	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
9	Point	3-7-3		Near Face	232 lb	600 lb	0 lb	0 lb	F14
10	Tie-In	4-7-15 to 5-4-1	(Span)1-4-13 to 0-3-6	Тор	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 Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

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

Handling & Installation

Handling & Installation

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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

For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

APA: PR-L318

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





Client:

Project: Address:

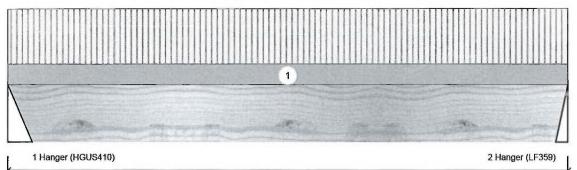
8/15/2018 Date:

Designer: SB

Job Name: MILLWOOD 3 EL-1A

Project #:

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



Wind

ED PROFESSIONAL

N.A. EL-MASRI

0

0

7'8 11/16'

7'8 11/16"

Member	Information
_	

nember imormation						
Type:	Girder					
Plies:	2					
Moisture Condition:	Dry					
Deflection LL:	360					
Deflection TL:	240					
Importance:	Normal					
General Load						
Floor Live:	40 PSF					

15 PSF

Floor (Residential) NBCC 2010 / OBC 2012

No Not Checked Not Checked

LSD

Brg	Live	Dead	Snow
1	73	57	0
2	70	55	0

**Unfactored Reactions UNPATTERNED lb (Uplift)** 

# **Analysis Results**

Dead:

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	309 ft-lb	3'11 3/8"	22724 ft-lb	0.014 (1%)	1.25D+1.5L	L
Unbraced	309 ft-lb	3'11 3/8"	21657 ft-lb	0.014 (1%)	1.25D+1.5L	L
Shear	132 lb	6'9 15/16"	9277 lb	0.014 (1%)	1.25D+1.5L	L
Perm Defl in.	0.002 (L/39248)	3'11 3/8"	0.245 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.003 (L/30962)	3'11 3/8"	0.245 (L/360)	0.010 (1%)	L	L
TL Defl inch	0.005 (L/17308)	3'11 3/8"	0.368 (L/240)	0.010 (1%)	D+L	L

Application:

Design Method:

**Building Code:** 

Load Sharing:

Deck:

Vibration:

**Bearings and Factored Reactions** 

Bearing	Length	Cap. R	eact D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	4.000"	2%	72 / 109	180	L	1.25D+1.5L
2 -	2.000"	3%	69 / 104	173	L	1.25D+1.5L

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.



- 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.

/ Lateral	sienderness 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	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				8 PLF				

Notes

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

Handling & Installation

tVL 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

paprovals

Damaged Beams must not be used

Design assumes top edge is laterally restrained

Provide lateral support at bearing points to avoid
lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 7/10/2021

Manufacturer Info APA: PR-L318

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







Client:

Project: Address: Date: 8/15/2018

Designer: SB

Job Name: MILLWOOD 3 EL-1A

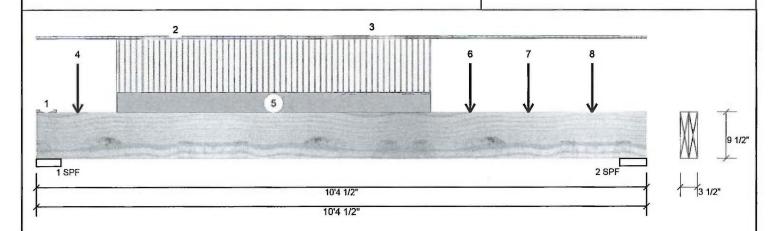
Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500"

2-Ply - PASSED

Level: Second Floor



Type:	Girder	Application:	Floor (Residential)	Brg	Live		Dead	Snov	N	Wind
Plies:	2	Design Method:	LSD	1	1364		555		0	0
Moisture Condition	n: Dry	Building Code:	NBCC 2010 / OBC 2012	2	1365		564		0	0
Deflection LL:	360	Load Sharing:	No							
Deflection TL:	240	Deck:	Not Checked							
Importance:	Normal	Vibration:	Not Checked	1						
General Load										
Floor Live:	40 PSF			Bearings	and Fact	ored R	eactions			
Dead:	15 PSF			Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
				1 - SPF	5.000"	25%	694 / 2046	2740	L	1.25D+1.5L
				2-SPF	5.500"	23%	705 / 2047	2752	L	1.25D+1.5L

**Analysis Results** 

Member Information

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	6506 ft-lb	5'2 1/8"	22724 ft-lb	0.286 (29%)	1.25D+1.5L	L
Unbraced	6506 ft-lb	5'2 1/8"	20894 ft-lb	0.311 (31%)	1.25D+1.5L	L
Shear	2718 lb	9'2 1/4"	9277 lb	0.293 (29%)	1.25D+1.5L	L
Perm Defl in.	0.048 (L/2382)	5'2 3/16"	0.321 (L/360)	0.150 (15%)	D	Uniform
LL Defl inch	0.119 (L/968)	5'2 1/8"	0.321 (L/360)	0.370 (37%)	L	L
TL Defl inch	0.168 (L/688)	5'2 1/8"	0.481 (L/240)	0.350 (35%)	D+L	L
LL Defl inch	0.119 (L/968)	5'2 1/8"	0.321 (L/360)	0.370 (37%)	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.

**Unfactored Reactions UNPATTERNED Ib (Uplift)** 

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 0-4-2	(Span)0-6-4	Тор	15 PSF	40 PSF	0 PSF	0 PSF		
2	Tie-In	0-0-0 to 10-4-8	(Span)0-5-12	Тор	15 PSF	40 PSF	0 PSF	0 PSF		
3	Part. Uniform	0-3-7 to 9-11-0		Тор	1 PLF	0 PLF	0 PLF	0 PLF		
4	Point	0-8-7		Far Face	102 lb	272 lb	0 lb	0 lb	J12	
5	Part. Uniform	1-4-7 to 6-8-7		Far Face	102 PLF	273 PLF	0 PLF	0 PLF		
6	Point	7-4-7		Far Face	120 lb	319 lb	0 lb	0 lb	J12	

Continued on page 2...

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design, criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component solutability 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 con-

Handling & Installation

- Handling & Installation

  1. IVI beams must not be cut or drilled

  2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastering 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

For flat roofs provide proper drainage to prevent ponding

Manufacturer Info APA: PR-L318

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





Client:

Project: Address:

8/15/2018 Date:

Designer: SB

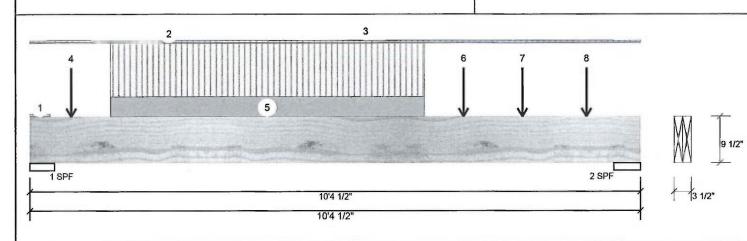
Job Name: MILLWOOD 3 EL-1A

Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500" 2-Ply - PASSED

Level: Second Floor



.Continued from page 1 Location Trib Width Side Live Snow Wind Comments ID Load Type Dead Far Face 110 lb 287 lb 0 lb J12 7 **Point** 8-4-7 8 Point 9-5-7 Far Face 116 lb 292 lb 0 lb 0 lb J12 8 PLF 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

NOtes
Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the inlended 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

Handling & Installation

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

For flat roofs provide proper drainage to prevent ponding

Forex

Manufacturer Info

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

isDesign"

Client:

Project: Address: Date: 8/15/2018

Designer: SB

Job Name: MILLWOOD 3 EL-1A

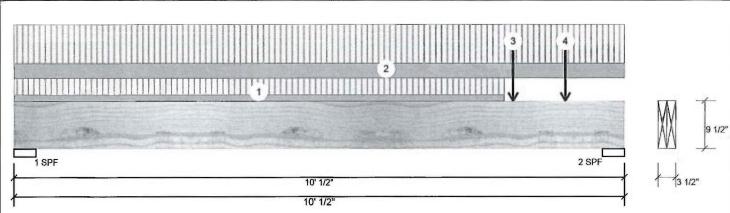
Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500"

2-Ply - PASSED

Level: Second Floor



Member Information Unfactored Reactions UNPATTERNED Ib (Uplift)

Girder Type: Plies: 2 Moisture Condition: Dry Deflection LL: 360 Deflection TL: 240 Importance: Normal General Load Floor Live: 40 PSF 15 PSF Dead:

Floor (Residential) Application: Design Method: LSD **Building Code:** NBCC 2010 / OBC 2012 Load Sharing: Deck: Not Checked

Not Checked

Brg Wind Live Dead Snow 0 272 150 0 0 2 796 387 0

**Bearings and Factored Reactions** Bearing Length Cap. React D/L lb Total Ld. Case Ld. Comb. 1-SPF 4.375" 6% 187 / 408 595 L 1.25D+1.5L 2 - SPF 4.375" 18% 484 / 1194 1678 L 1.25D+1.5L

Analysis Results

**Analysis** Actual Location Allowed Capacity Comb. Case 0.096 (10%) 1.25D+1.5L L Moment 2178 ft-lb 7'11" 22724 ft-lb 2178 ft-lb 7'11" 20965 ft-lb 0.104 (10%) 1.25D+1.5L L Unbraced 0.174 (17%) 1.25D+1.5L L Shear 1617 lb Perm Defl in. 0.017 (L/6476) 5'5 9/16" 0.315 (L/360) 0.060 (6%) D Uniform LL Defl inch 0.034 (L/3368) 5'6 3/16" 0.315 (L/360) 0.110 (11%) L L TL Defl inch 0.051 (L/2216) 5'6" 0.472 (L/240) 0.110 (11%) D+L

Vibration:

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

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

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



**Design Notes** 

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 8-0-13	(Span)0-6-0	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 10-0-8	(Span)1-2-0	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	8-2-9		Far Face	277 lb	579 lb	0 lb	0 lb	F4
4	Point	9-0-13		Far Face	65 lb	174 lb	0 lb	0 lb	J9
	Self Weight				8 PLF				

Notes

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

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

Handling & Installation

I. 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

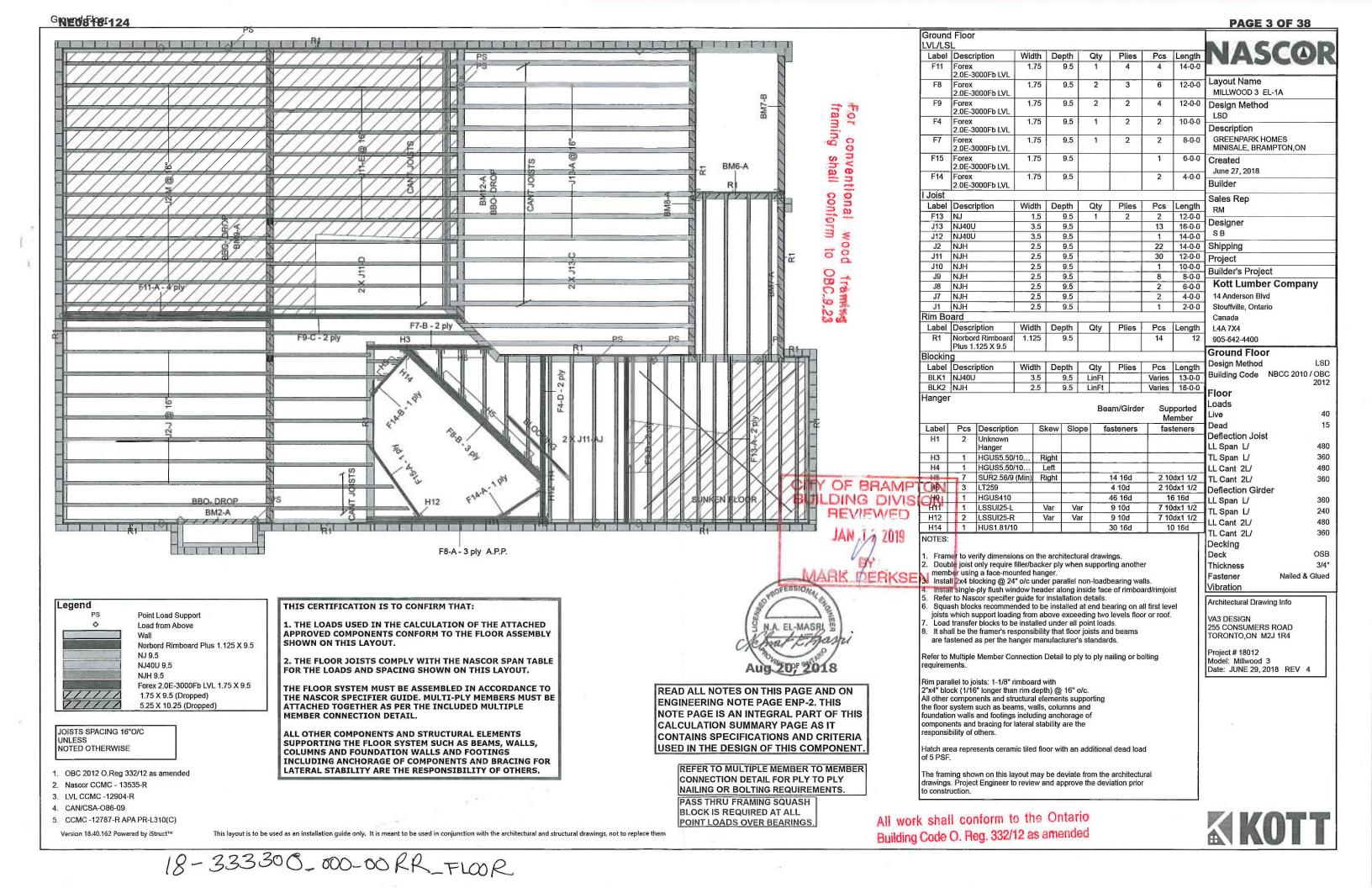
Design assumes top edge is laterally restrained Provide lateral support at bearing points to avok lateral displacement and rotation

Manufacturer Info Forex APA: PR-L318

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







12-C 00 1



BM11-B DROP STEEL

X N X

Ho

LVL/LSL Label Description Width Depth Qty Plies Pcs Length F10 Forex 1.75 9.5 3 2.0E-3000Fb LVL Layout Name F9 12-0-0 Forex 1.75 9.5 4 2.0E-3000Fb LVL MILLWOOD 3 EL-1A 1.75 12-0-0 Design Method 2.0E-3000Fb LVL F4 Forex 1.75 9.5 10-0-0 Description 2.0E-3000Fb LVL GREENPARK HOMES MINISALE, BRAMPTON,ON F7 Forex 1.75 8-0-0 2.0E-3000Fb LVL F5 Forex 1.75 9.5 6-0-0 Created 2.0E-3000Fb LVL June 27, 2018 Forex 1.75 9.5 4-0-0 Builder 2.0E-3000Fb LVL F12 Forex 1.75 11.875 16-0-0 Sales Rep 2.0E-3000Fb LVL RM Joist Designer Label Description Width Depth Pcs Length SB J14 NJ40U 3.5 9.5 9 18-0-0 10 16-0-0 Shipping J13 NJ40U 3.5 9.5 J12 NJ40U 3.5 9.5 14-0-0 Project .13 N.160U 3.5 9 18-0-0 9.5 Builder's Project J2 NJH 2.5 9.5 13 14-0-0 **Kott Lumber Company** J11 NJH 2.5 9.5 15 12-0-0 J10 NJH 2 10-0-0 25 9.5 14 Anderson Blvd J9 NJH 2.5 9.5 1 8-0-0 Stouffville Ontario 1 6-0-0 J8 NJH 2.5 9,5 Canada J7 NJH 2.5 9.5 3 4-0-0 L4A 7X4 Rim Board 905-642-4400 Label Description Width Depth | Qty | Plies | Pcs | Length Second Floor R1 Norbord Rimboard 1.125 9.5 Design Method Plus 1.125 X 9.5 Building Code NBCC 2010 / OBC Blocking Plies Pcs Length Label Description Width | Depth | Qty BLK1 NJ40U 3.5 9.5 LinFt Varies 7-0-0 Varies 8-0-0 Floor BLK3 NJ60U 9.5 LinFt 3.5 Hanger Live Dead

anger					Beam/Girder	Supported Member
Label	Pcs	Description	Skew	Slope	fasteners	fasteners
H1	4	Unknown Hanger				
H2	10	LF259			10 10d	1 #8x1 1/4WS
H5	2	SUR2.56/9 (Min)	Right		14 10dx1 1/2	2 10dx1 1/2
H7	1	HGUS5.50/10			46 16d	16 16d
Н8	32	LF359			10 10d	2 #8x1 1/4WS
H9	3	HGUS410			46 16d	16 16d
H10	1	LSSU410-L	Vаг	Var	14 16d	12 10dx1 1/2
H11	1	LSSUI25-L	Var	Var	9 10d	7 10dx1 1/2
H13	2	LSSUH310-L	Var	Var	14 16d	12 10dx1 1/2

## NOTES:

Second Floor

- 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/rimioist
- 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.

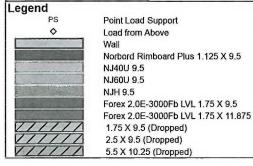
Refer to Multiple Member Connection Detail to ply to ply nailing or bolting

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 sponsibility of others.

Hatch area represents ceramic tiled floor with an additional dead load

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

JOISTS SPACING 16"O/C UNLESS NOTED OTHERWISE



### THIS CERTIFICATION IS TO CONFIRM THAT:

APPROVED COMPONENTS CONFORM TO THE FLOOR ASSEMBLY SHOWN ON THIS LAYOUT.

APP

F8-A - 3 ply

F4-A - 2 ply

H2-

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

ALL OTHER COMPONENTS AND STRUCTURAL ELEMENTS

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

1.75 X 9.5 (Dropped)

2. Nascor CCMC - 13535-R

3. LVL CCMC -12904-R

4 CAN/CSA-086-09

CCMC -12787-R APA PR-L310(C) Version 18.40.162 Powered by iStruct™

1. THE LOADS USED IN THE CALCULATION OF THE ATTACHED

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.

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.



LSD

15

480

360

480

360

360

240

480

360

OSB

5/8"

Nailed & Glued

Gypsum 1/2"

**Deflection Joist** 

LL Span L/ TL Span L/

LL Cant 2L/

TL Cant 2L/ Deflection Girder

LL Span L/

TL Span L/

LL Cant 2L/

TL Cant 2L/

Decking

**Thickness** 

Fastener

Vibration

Ceiling:

Architectural Drawing Info

255 CONSUMERS ROAD

TORONTO, ON M2J 1R4

Date: JUN 29, 2018 REV 4

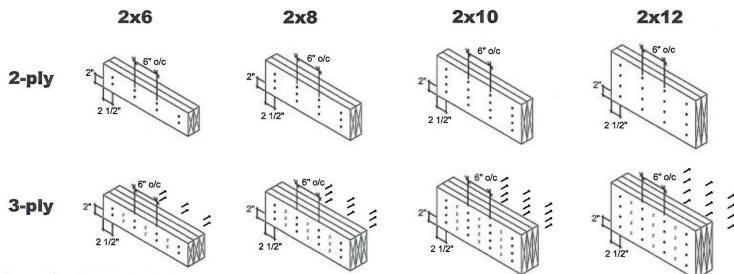
Project # 18012 Model: Millwood 3

Deck

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

# MULTIPLE MEMBER CONNECTIONS

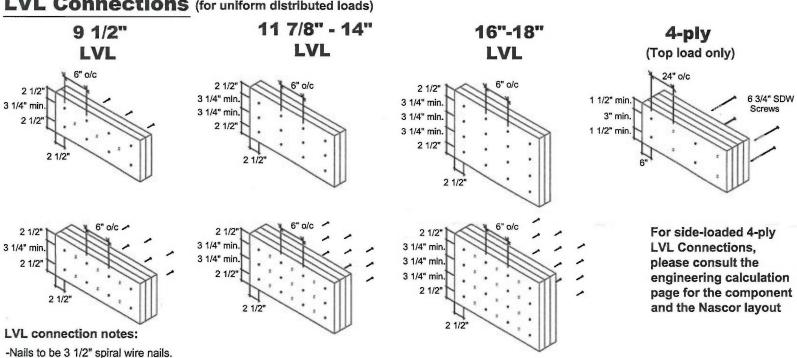
# Conventional Connections (for uniform distributed loads)



# Conventional connection notes:

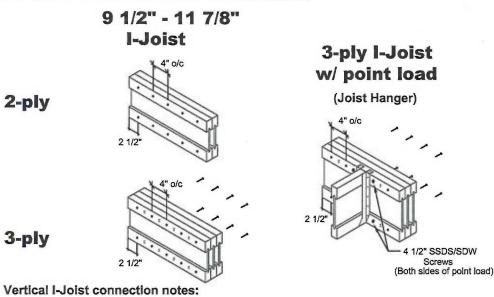
- -Nails to be 3" 10d spiral wire nails.
- -Nails to be located a minimum of 2" from the top and bottom of the member. Start all nails a minimum of 2 1/2" in from ends.
- -Number of rows and spacing as per details shown, unless noted otherwise.
- "X" represents nail driven from the opposite side.

# LVL Connections (for uniform distributed loads)



- -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)



- -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

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