

Engineering Note Page (ENP-2)

REVISION 2018-10-17

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

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

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

The responsibility of the undersigned is limited to the verification of the structural capacity of the 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 transfer blocks. Structural elements such as walls, posts, connectors, and transfer 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 floor joists is to be carried out in accordance with the current edition of the manufacturer's literature available at <http://www.kottgroup.com>.

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 transfer block framing is required at all point loads over bearings.

HANDLING AND INSTALLATION

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



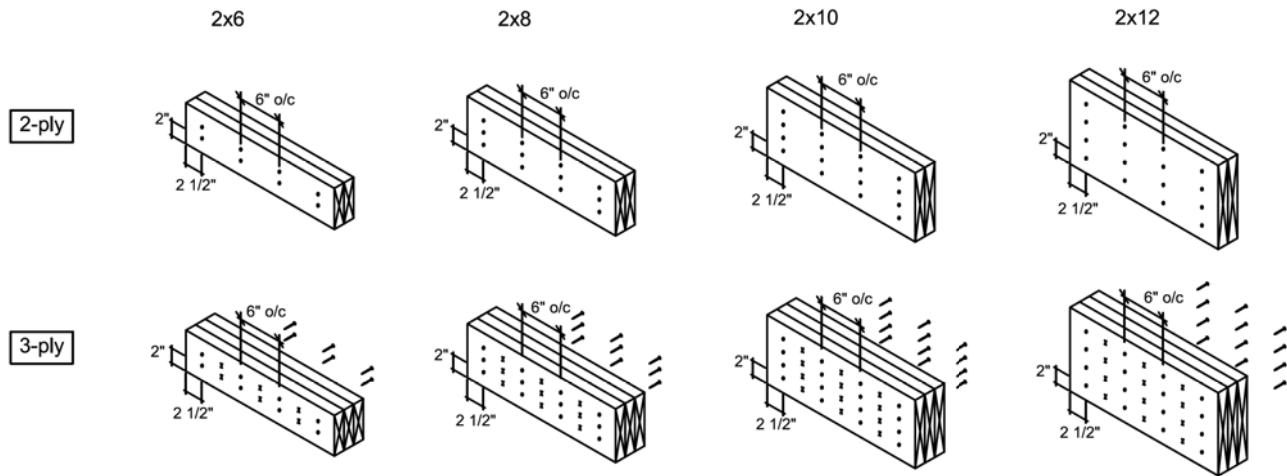
CITY OF RICHMOND HILL
BUILDING DIVISION

09/22/2022

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Per: joshua.nabua

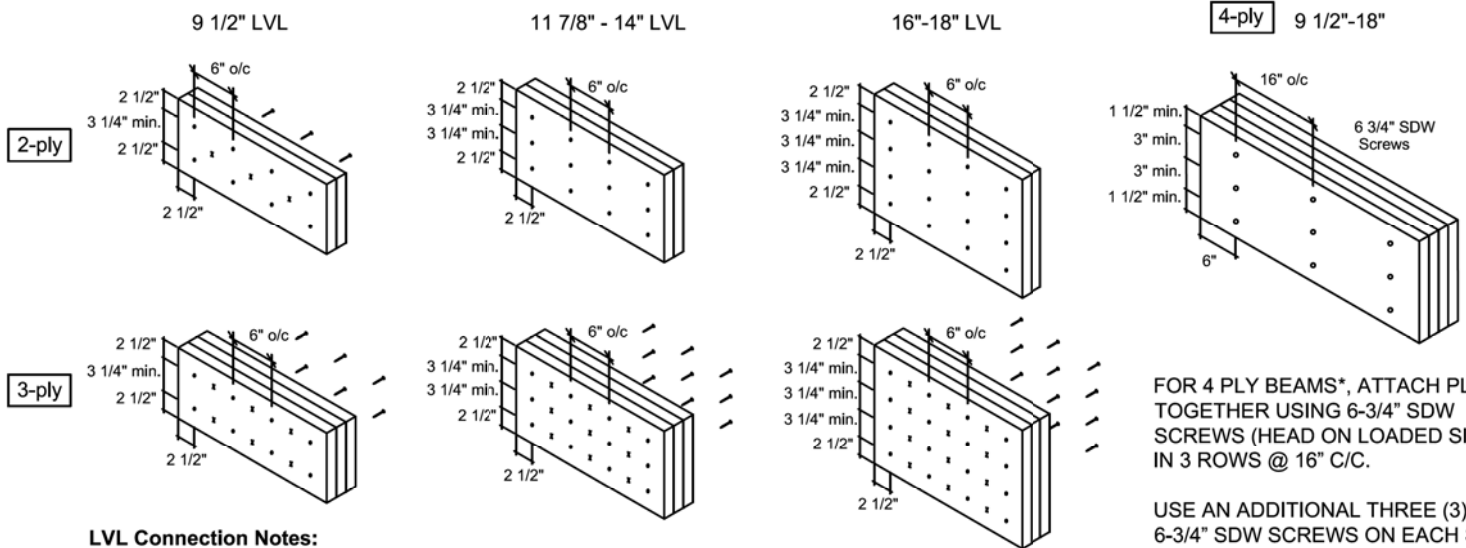
Conventional Connections



Conventional Connection Notes:

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

LVL Connections



LVL Connection Notes:

- LVL ply width is 1-3/4"
- Nails to be 3 1/2" common wire nails.
- Nails to be located 2 1/2" min. from the top and bottom of the member. Start all nails 2 1/2" min. from ends.
- Minimum 3 1/4" spacing between rows.
- Number of rows and spacing as per details shown, unless noted otherwise.
- "X" represents nail driven from the opposite side.
- Head of all specified screws must be on the loaded side.

FOR 4 PLY BEAMS*, ATTACH PLYS TOGETHER USING 6-3/4" SDW SCREWS (HEAD ON LOADED SIDE) IN 3 ROWS @ 16" C/C.

USE AN ADDITIONAL THREE (3) 6-3/4" SDW SCREWS ON EACH SIDE (OF EACH FACE) AT POINT LOAD LOCATIONS @ 1/2 SPACING, WHERE APPLICABLE.

*UNLESS NOTED OTHERWISE ON LAYOUT OR CALCULATION SHEET OF BEAM IN THE FLOOR PACKAGE

Multiple Member Connections

All connections are for uniformly distributed loads.

For multi-ply connections of I-joists, refer to Manufacturer's Installation Guide

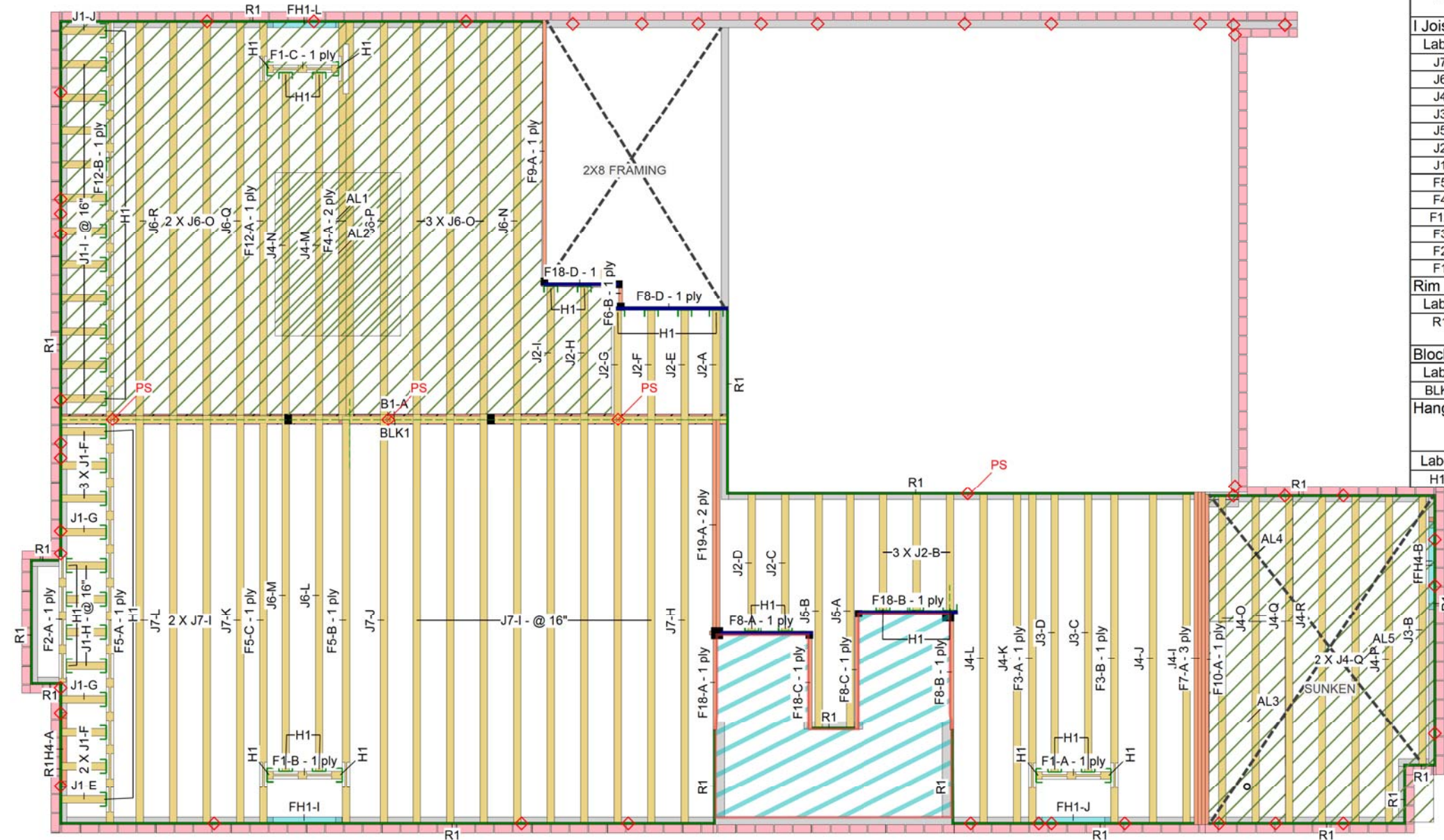
Last revised: February 19, 2021



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BUILDING DIVISION
KOTT Inc.
3228 Moodie Drive
Ottawa, ON
K2H 7V1
613-838-2775

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Ground Floor



I Joist							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
J7	AJS 24	3.5	9.5			14	18-0-0
J6	AJS 24	3.5	9.5			11	16-0-0
J4	AJS 24	3.5	9.5			12	14-0-0
J3	AJS 24	3.5	9.5			3	12-0-0
J5	AJS 24	3.5	9.5			2	10-0-0
J2	AJS 24	3.5	9.5			11	6-0-0
J1	AJS 24	3.5	9.5			24	2-0-0
F5	AJS 24	3.5	9.5			3	18-0-0
F4	AJS 24	3.5	9.5	1	2	2	16-0-0
F12	AJS 24	3.5	9.5			2	16-0-0
F3	AJS 24	3.5	9.5			2	14-0-0
F2	AJS 24	3.5	9.5			1	6-0-0
F1	AJS 24	3.5	9.5			3	4-0-0

Rim Board							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			13	12-0-0

Blocking							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK1	AJS 24	3.5	9.5	LinFt		Varies	22-0-0

Hanger							
Label	Pcs	Description	Skew	Slope	fasteners	Supported Member	
H1	51	LF359			10 10d	2 #8x1 1/4WS	

JOB INFORMATION	
Builder	GREENPARK
Project	ROUNDEL HOMES INC
Shipping	GLENROWAN 41-3-2 RICHMOND HILL, ON
Sales Rep	RALPH MIRIGELLO
Designer	W C
Plotted	June 09, 2021
Layout Name	GR41-3-2 STANDARD & REAR UPGRADE
Job Path	
DESIGN CRITERIA	
Ground Floor	
Design Method	LSD (Canada)
Building Code	NBCC 2015 / OBC 2012
Floor Loads	
Live	40
Dead	15
Decking	
Decking	OSB
Thickness	5/8"
Fastener	Nailed & Glued
Vibration	
Ceiling:	Gypsum 1/2"

CCMC References	
Boise - 12472-R , 12787-R	
LP - 12412-R	
Forex - 14056-R	
Kott Inc.	
3228 Moodie Dr, Ottawa	
14 Anderson Blvd, Uxbridge	
Ontario	
613-838-2775 /	
905-642-4400	



Hatch Area represents where additional load has been applied. (e.g. 5 psf for ceramic tile)

AJS140 I-Joists can be substituted with LP20 I-Joists for 9.5" and 11.875" depths shown on this layout.

- All blocking to be cut from 12' joists
- 2' & 4' Lengths to be cut from 8' Length, 6' lengths to be cut from 12' Length
- Ends of joists to be laterally supported
- Packing of Steel beams and attachment by others
- Shower and water closet flange locations are approximate only, consult architectural drawing for exact locations
- Beams identified as "B" are dropped and supplied by others
- Install 2x4 blocking @ 24" o/c under parallel non-loadbearing walls
- Load transfer blocks to be installed under all point loads
- Refer to Multiple Member Connection Detail for ply to ply nailing or bolting requirements
- Hangers and Fasteners to be installed as per manufacturer
- Framing shown on this layout may deviate from architectural drawings. Arch / Eng to review and approve the deviation prior to construction.

Legend

PS	Point Load Support
◇	Load from Above
	Wall
	Wall Opening
	Norbord Rimboard Plus 1.125 X 9.5
	AJS 24 9.5
	Forex 2.0E-3000Fb LVL 1.75 X 9.5
	(Dropped)
	Forex 2.0E-3000Fb LVL 1.75 X 9.5

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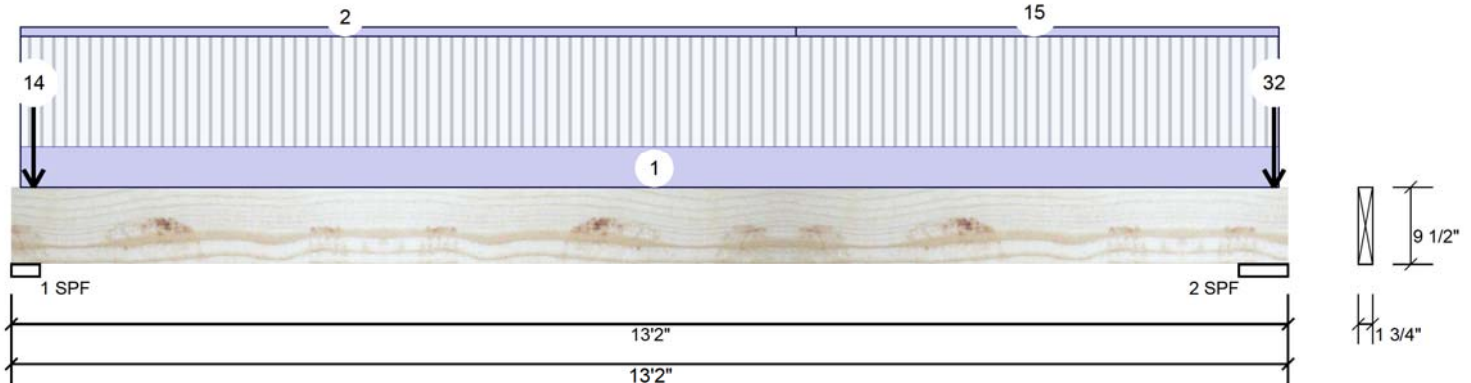
Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

Page 1 of 57

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

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	143	147	41	0
2	Vertical	145	151	48	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	12%	184 / 255	439	L	1.25D+1.5L+S
2 - SPF	6.063"	Vert	7%	189 / 266	455	L	1.25D+1.5L+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	580 ft-lb	6'5 11/16"	11248 ft-lb	0.052 (5%)	1.25D+1.5L	L
Unbraced	580 ft-lb	6'5 11/16"	11248 ft-lb	0.052 (5%)	1.25D+1.5L	L
Shear	164 lb	1'1"	4592 lb	0.036 (4%)	1.25D+1.5L	L
Perm Defl in.	0.022 (L/6909)	6'5 3/4"	0.416 (L/360)	0.052 (5%)	D	Uniform
LL Defl inch	0.028 (L/5353)	6'5 3/4"	0.312 (L/480)	0.090 (9%)	L+0.5S	L
TL Defl inch	0.050 (L/3016)	6'5 3/4"	0.625 (L/240)	0.080 (8%)	D+L+0.5S	L

Design Notes

- 1 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 3.5.
- 2 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top must be continuously laterally braced.
- 5 Bottom must be laterally braced at bearings.

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

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

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



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-1-2 to 13-0-14	0-3-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-1-2 to 8-1-0		Top	1 PLF	0 PLF	0 PLF	0 PLF	
3	Point	0-2-12		Top	11 lb	30 lb	0 lb	0 lb	J4
	Bearing Length	0-5-8							
4	Point	0-2-12		Top	9 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							

Continued on page 2...

Notes

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

Lumber

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

Handling & Installation

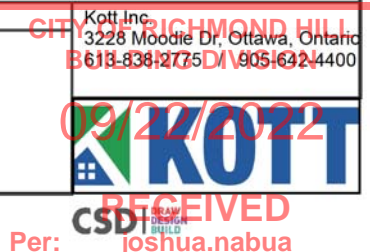
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2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

This design is valid until 5/24/2024





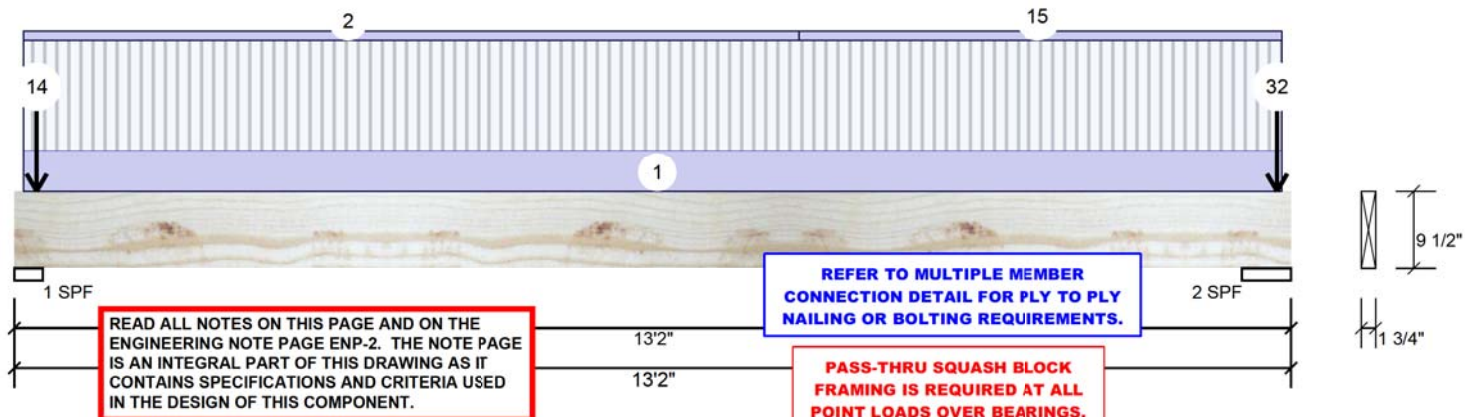
Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

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

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Point	0-2-12		Top	9 lb	0 lb	23 lb	0 lb	
	Bearing Length	0-5-8							
6	Point	0-2-12		Top	12 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
7	Point	0-2-12		Top	7 lb	19 lb	0 lb	0 lb	J4
	Bearing Length	0-5-8							
8	Point	0-2-12		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
9	Point	0-2-12		Top	6 lb	0 lb	15 lb	0 lb	
	Bearing Length	0-5-8							
10	Point	0-2-12		Top	7 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
11	Point	0-2-12		Top	6 lb	17 lb	0 lb	0 lb	J4
	Bearing Length	0-5-8							
12	Point	0-2-12		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
13	Point	0-2-12		Top	1 lb	0 lb	3 lb	0 lb	
	Bearing Length	0-5-8							
14	Point	0-2-12		Top	7 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
15	Part. Uniform	8-1-0 to 13-0-14		Top	1 PLF	0 PLF	0 PLF	0 PLF	
16	Point	13-0-4		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
18	Point	13-0-4		Top	6 lb	17 lb	0 lb	0 lb	J4
	Bearing Length	0-5-8							
19	Point	13-0-4		Top	1 lb	0 lb	3 lb	0 lb	
	Bearing Length	0-5-8							
20	Point	13-0-4		Top	7 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
21	Point	13-0-4		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight



Notes

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Lumber

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Handling & Installation

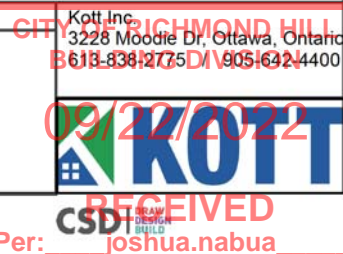
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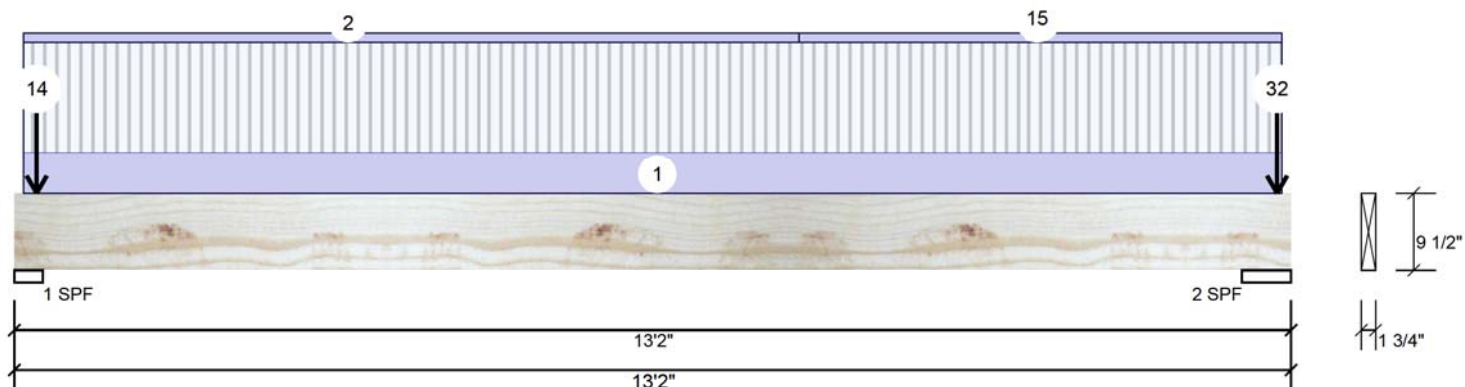
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Level: Ground Floor



...Continued from page 2

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
	Bearing Length	0-5-8							
23	Point	13-0-4		Top	7 lb	19 lb	0 lb	0 lb	J4
	Bearing Length	0-5-8							
24	Point	13-0-4		Top	6 lb	0 lb	15 lb	0 lb	
	Bearing Length	0-5-8							
25	Point	13-0-4		Top	0 lb	0 lb	1 lb	0 lb	
	Bearing Length	0-5-8							
26	Point	13-0-4		Top	7 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
27	Point	13-0-4		Top	9 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
29	Point	13-0-4		Top	11 lb	30 lb	0 lb	0 lb	J4
	Bearing Length	0-5-8							
30	Point	13-0-4		Top	9 lb	0 lb	23 lb	0 lb	
	Bearing Length	0-5-8							
31	Point	13-0-4		Top	2 lb	0 lb	6 lb	0 lb	
	Bearing Length	0-5-8							
32	Point	13-0-4		Top	12 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
	Self Weight				4 PLF				

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

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

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July 06 2021

Notes

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Lumber

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

chemicals**Handling & Installation**

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

This design is valid until 5/24/2024

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613-838-2775 / 905-642-4400



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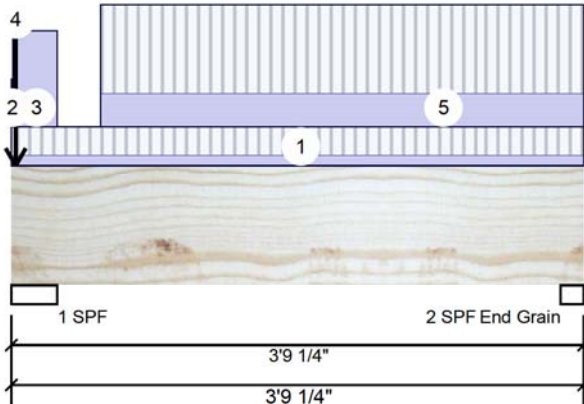
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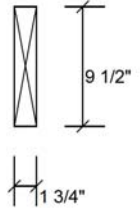
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Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	375	225	0	0
2	Vertical	180	74	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.625"	Vert	22%	281 / 562	843	L	1.25D+1.5L
2 - SPF	1.835"	Vert	15%	93 / 269	362	L	1.25D+1.5L
End Grain							

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	294 ft-lb	1'11 11/16"	11362 ft-lb	0.026 (3%)	1.25D+1.5L	L
Unbraced	294 ft-lb	1'11 11/16"	11362 ft-lb	0.026 (3%)	1.25D+1.5L	L
Shear	181 lb	1'1 1/8"	4638 lb	0.039 (4%)	1.25D+1.5L	L
Perm Defl in. (L/44366)	0.001	1'11 5/8"	0.115 (L/360)	0.008 (1%)	D	Uniform
LL Defl inch (L/18385)	0.002	1'11 5/8"	0.086 (L/480)	0.026 (3%)	L	L
TL Defl inch (L/12998)	0.003	1'11 5/8"	0.172 (L/240)	0.018 (2%)	D+L	L



July 06 2021

Design Notes

- Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- Girders are designed to be supported on the bottom edge only.
- Top must be continuously laterally braced.
- Bottom must be laterally braced at bearings.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 3-9-4	0-7-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 0-0-2		Top	41 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
3	Part. Uniform	0-0-2 to 0-3-10		Top	82 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
4	Point	0-0-5		Top	136 lb	222 lb	0 lb	0 lb	F19 F19
	Bearing Length	0-5-8							
5	Tie-In	0-7-1 to 3-9-4	1-10-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				4 PLF				

Notes

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Lumber

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

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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3228 Moodie Dr, Ottawa, Ontario
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Per: joshua.nabua



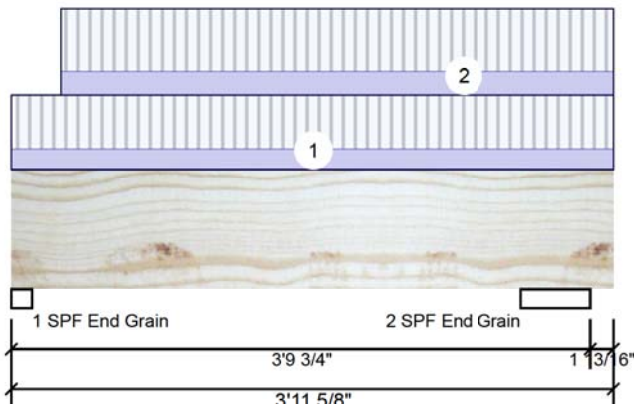
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Page 8 of 57

F18-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

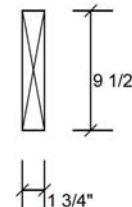
Level: Ground Floor



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

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

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



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	311	125	0	0
2	Vertical	402	160	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	1.625"	Vert	30%	156 / 468	623	L_	1.25D+1.5L
2 - SPF End Grain	5.500"	Vert	11%	200 / 602	802	LL	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-4 ft-lb	3'9 3/4"	8181 ft-lb	0.001 (0%)	1.25D+1.5L	L_
Pos Moment	575 ft-lb	1'10"	11362 ft-lb	0.051 (5%)	1.25D+1.5L	L_
Unbraced	575 ft-lb	1'10"	11362 ft-lb	0.051 (5%)	1.25D+1.5L	L_
Shear	502 lb	11 1/8"	4638 lb	0.108 (11%)	1.25D+1.5L	L_
Perm Defl in. (L/23304)	0.002	1'10"	0.117 (L/360)	0.015 (2%)	D	Uniform
LL Defl inch	0.005 (L/9253)	1'10"	0.088 (L/480)	0.052 (5%)	L	L_
TL Defl inch	0.006 (L/6623)	1'10"	0.176 (L/240)	0.036 (4%)	D+L	L_
LL Cant (2L/10289)	-0.000	Rt Cant	0.200 (2L/480)	0.002 (0%)	L	L_
TL Cant (2L/7470)	-0.000	Rt Cant	0.300 (2L/240)	0.002 (0%)	D+L	L_

Design Notes

- Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- Girders are designed to be supported on the bottom edge only.
- Top must be continuously laterally braced.
- Bottom must have sheathing attached or be continuously braced.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 3-11-10		Top	33 PLF	87 PLF	0 PLF	0 PLF	
2	Part. Uniform	0-3-15 to 3-11-10		Far Face	38 PLF	101 PLF	0 PLF	0 PLF	
	Self Weight				4 PLF				

Notes

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

Lumber

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

Handling & Installation

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

- For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

Kott Inc.
3228 Moodie Dr, Ottawa, Ontario
613-838-2775 / 905-642-4400



Per: joshua.nabua



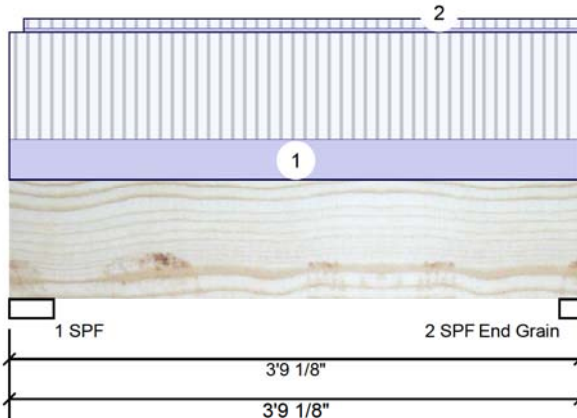
Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

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F18-C Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

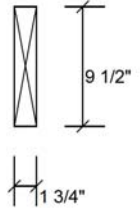
Level: Ground Floor



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

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

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



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	161	68	0	0
2	Vertical	149	63	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	9%	85 / 242	327	L	1.25D+1.5L
2 - SPF	1.625"	Vert	14%	78 / 223	302	L	1.25D+1.5L
End Grain							

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	250 ft-lb	1'11 1/2"	11362 ft-lb	0.022 (2%)	1.25D+1.5L	L
Unbraced	250 ft-lb	1'11 1/2"	11362 ft-lb	0.022 (2%)	1.25D+1.5L	L
Shear	150 lb	1'11"	4638 lb	0.032 (3%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/51317)	1'11 9/16"	0.115 (L/360)	0.007 (1%)	D	Uniform
LL Defl inch	0.002 (L/21611)	1'11 9/16"	0.086 (L/480)	0.022 (2%)	L	L
TL Defl inch	0.003 (L/15207)	1'11 9/16"	0.173 (L/240)	0.016 (2%)	D+L	L

Design Notes

- Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- Girders are designed to be supported on the bottom edge only.
- Top must be continuously laterally braced.
- Bottom must be laterally braced at bearings.



July 06 2021

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 3-9-2	1-10-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-1-2 to 3-9-2	0-2-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				4 PLF				

Notes

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

Lumber

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

Handling & Installation

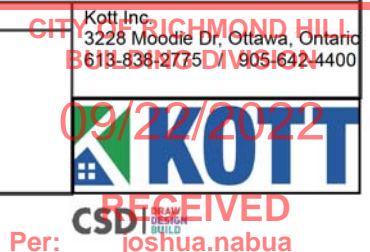
- LVL beams must not be cut or drilled
- Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
- Damaged Beams must not be used
- Design assumes top edge is laterally restrained
- Provide lateral support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

- For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

This design is valid until 5/24/2024





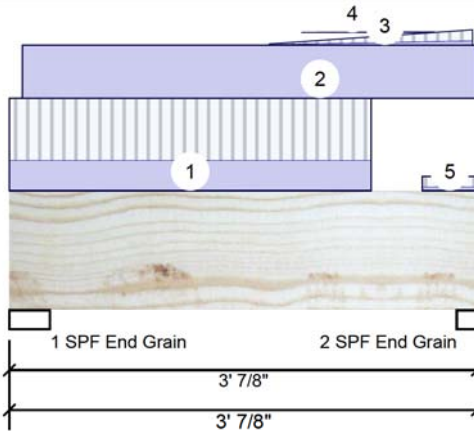
Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

Page 10 of 57

F18-D Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

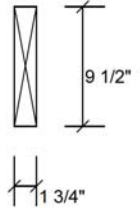
Level: Ground Floor



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

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

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



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	182	246	0	0
2	Vertical	118	208	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.198"	Vert	15%	308 / 273	580	L	1.25D+1.5L
2 - SPF End Grain	1.625"	Vert	23%	260 / 177	437	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	351 ft-lb	1'6 13/16"	10339 ft-lb	0.034 (3%)	1.25D+1.5L	L
Unbraced	351 ft-lb	1'6 13/16"	10339 ft-lb	0.034 (3%)	1.25D+1.5L	L
Shear	420 lb	2'1 3/4"	4221 lb	0.099 (10%)	1.25D+1.5L	L
Perm Defl in. (L/17504)	0.002	1'7 1/16"	0.093 (L/360)	0.021 (2%)	D	Uniform
LL Defl inch (L/25241)	0.001	1'6 13/16"	0.070 (L/480)	0.019 (2%)	L	L
TL Defl inch (L/10337)	0.003	1'7"	0.140 (L/240)	0.023 (2%)	D+L	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Top must be continuously laterally braced.
- 4 Bottom must have sheathing attached or be continuously braced.



July 06 2021

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 2-4-8		Near Face	57 PLF	117 PLF	0 PLF	0 PLF	
2	Part. Uniform	0-1-0 to 3-0-14		Top	100 PLF	0 PLF	0 PLF	0 PLF	
3	Tie-In	1-8-8 to 3-0-8	0-0-7 to 0-6-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Tapered Start	1-11-0		Top	0 PLF	0 PLF	0 PLF	0 PLF	
	End	2-9-8			1 PLF	0 PLF	0 PLF	0 PLF	
5	Tie-In	2-8-8 to 3-0-14	0-5-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				4 PLF				

Notes

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

Lumber

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

Handling & Installation

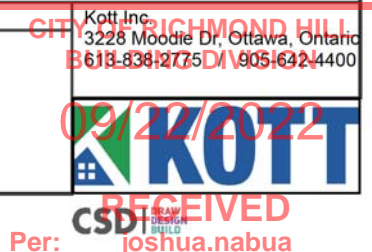
1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

This design is valid until 5/24/2024



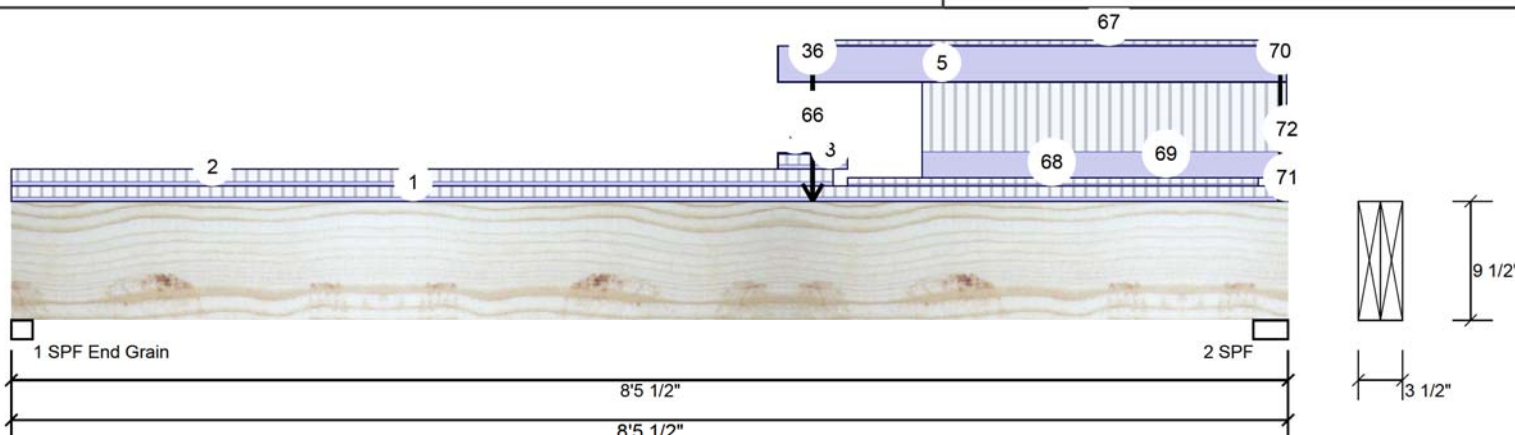


Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

F19-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	403	256	0	0
2	Vertical	1714	968	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	1.688"	Vert	21%	320 / 605	925	L	1.25D+1.5L
2 - SPF	2.750"	Vert	64%	1210 / 2571	3780	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3221 ft-lb	5'3 5/8"	22724 ft-lb	0.142 (14%)	1.25D+1.5L	L
Unbraced	3221 ft-lb	5'3 5/8"	22724 ft-lb	0.142 (14%)	1.25D+1.5L	L
Shear	1389 lb	7'5 1/4"	9277 lb	0.150 (15%)	1.25D+1.5L	L
Perm Defl in.	0.023 (L/4225)	4'7 1/2"	0.274 (L/360)	0.085 (9%)	D	Uniform
LL Defl inch	0.034 (L/2916)	4'6 5/8"	0.205 (L/480)	0.165 (16%)	L	L
TL Defl inch	0.057 (L/1726)	4'6 15/16"	0.411 (L/240)	0.139 (14%)	D+L	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 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 must be continuously laterally braced.
- 6 Bottom must be laterally braced at bearings.
- 7 Lateral slenderness ratio based on full section width.

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

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

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



July 06 2021

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 8-5-6	0-7-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 5-5-4	0-8-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tapered Start	5-0-14		Top	9 PLF	25 PLF	0 PLF	0 PLF	
	End	5-6-6			9 PLF	25 PLF	0 PLF	0 PLF	
4	Tapered Start	5-0-14		Top	1 PLF	2 PLF	0 PLF	0 PLF	

Continued on page 2...

Notes

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Lumber

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

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

This design is valid until 5/24/2024

Kott Inc.
3228 Moodie Dr, Ottawa, Ontario
613-838-2775 / 905-642-4400

RECEIVED
Per: joshua.nabua

09/22/2022

Client: GREENPARK
Project:
Address: GLENROWAN 41-3-2
RICHMOND HILL, ON

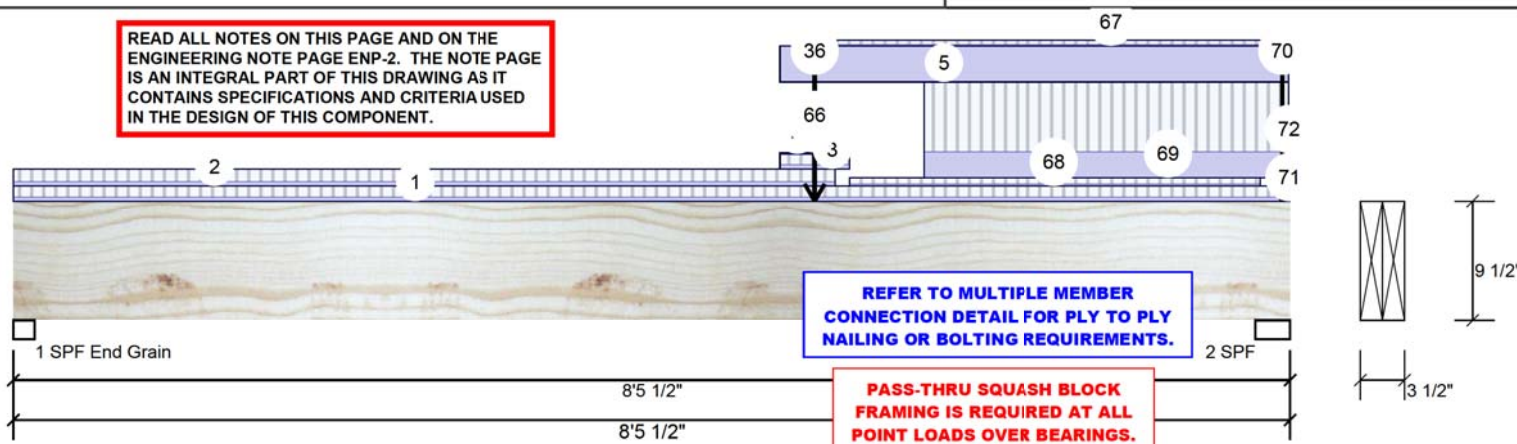
Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

Page 12 of 57

F19-A	Forex 2.0E-3000Fb LVL	1.750" X 9.500"	2-Ply - PASSED
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Level: Ground Floor

**READ ALL NOTES ON THIS PAGE AND ON THE
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CONTAINS SPECIFICATIONS AND CRITERIA USED
IN THE DESIGN OF THIS COMPONENT.**



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
	End	5-6-6			1 PLF	2 PLF	0 PLF	0 PLF	
5	Part. Uniform	5-0-14 to 8-5-6		Top	82 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
6	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
7	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
8	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
9	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
10	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
11	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
12	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
13	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
14	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
15	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
16	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
17	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
18	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
19	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	



Notes

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Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

This design is valid until 5/24/2024

Kott Inc.
3228 Moodie Dr, Ottawa, Ontario
613-838-2775 / 905-642-4400

09/22/2022



RECEIVED
CSDI DRAW DESIGN BUILD
Per: joshua.nabua



Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

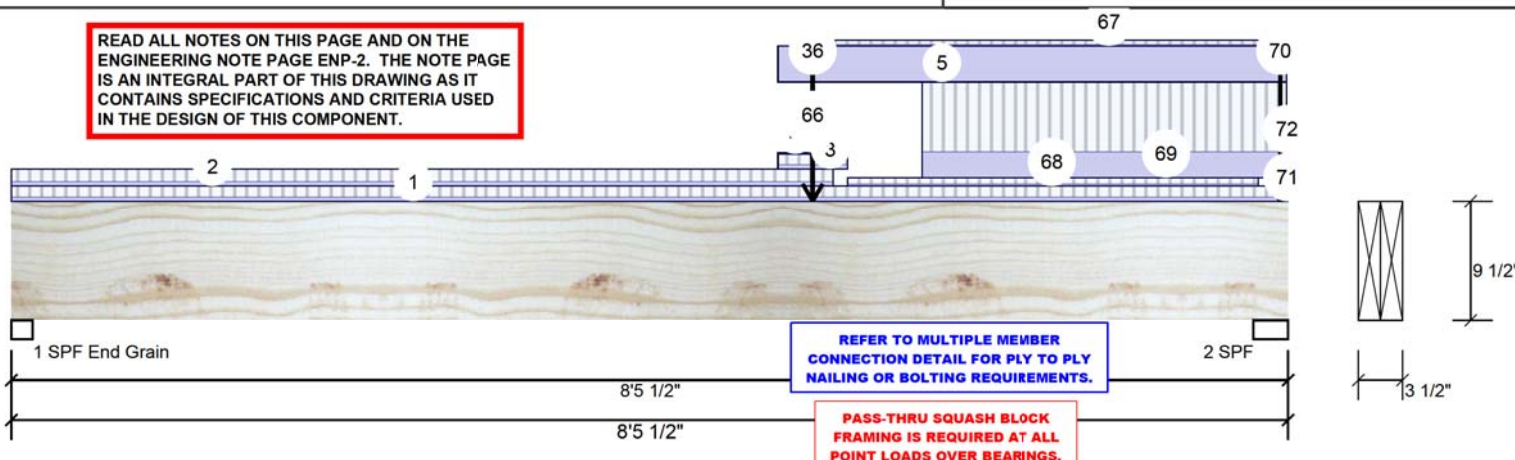
Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

Page 13 of 57

F19-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor

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



...Continued from page 2

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
20	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
21	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
22	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
23	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
24	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
25	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
26	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
27	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
28	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
29	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
30	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
31	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
32	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
33	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
34	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	



July 06 2021

Notes

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Lumber

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

chemicals**Handling & Installation**

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

This design is valid until 5/24/2024

Kott Inc.
3228 Moodie Dr, Ottawa, Ontario
K1M 1Y1
613-838-2775 / 905-642-4400



Per: joshua.nabua



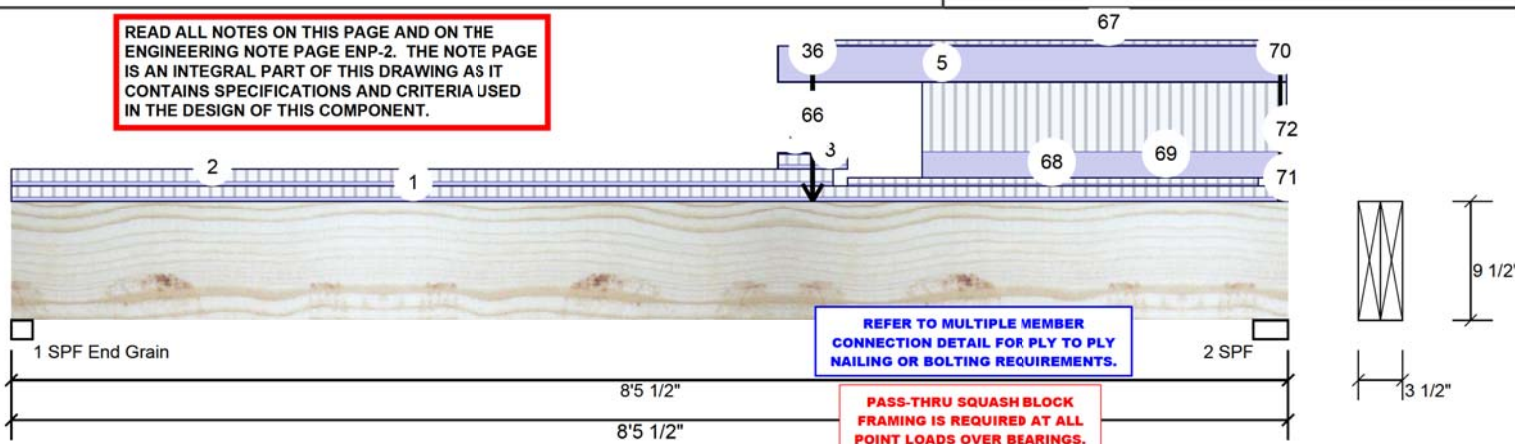
Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

F19-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor

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...Continued from page 3

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
35	Tapered Start	5-3-10		Top	0 PLF	1 PLF	0 PLF	0 PLF	
	End	5-3-10			0 PLF	1 PLF	0 PLF	0 PLF	
36	Point	5-3-10		Top	193 lb	356 lb	0 lb	0 lb	F19 F19
	Bearing Length	0-5-8							
37	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
38	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
39	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
40	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
41	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
42	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
43	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
44	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
45	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
46	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
47	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
48	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
49	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	



July 06 2021

Notes

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Lumber

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2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

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3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

This design is valid until 5/24/2024

Kott Inc.
3228 Moodie Dr, Ottawa, Ontario
613-838-2775 / 905-642-4400



Per: joshua.nabua



Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

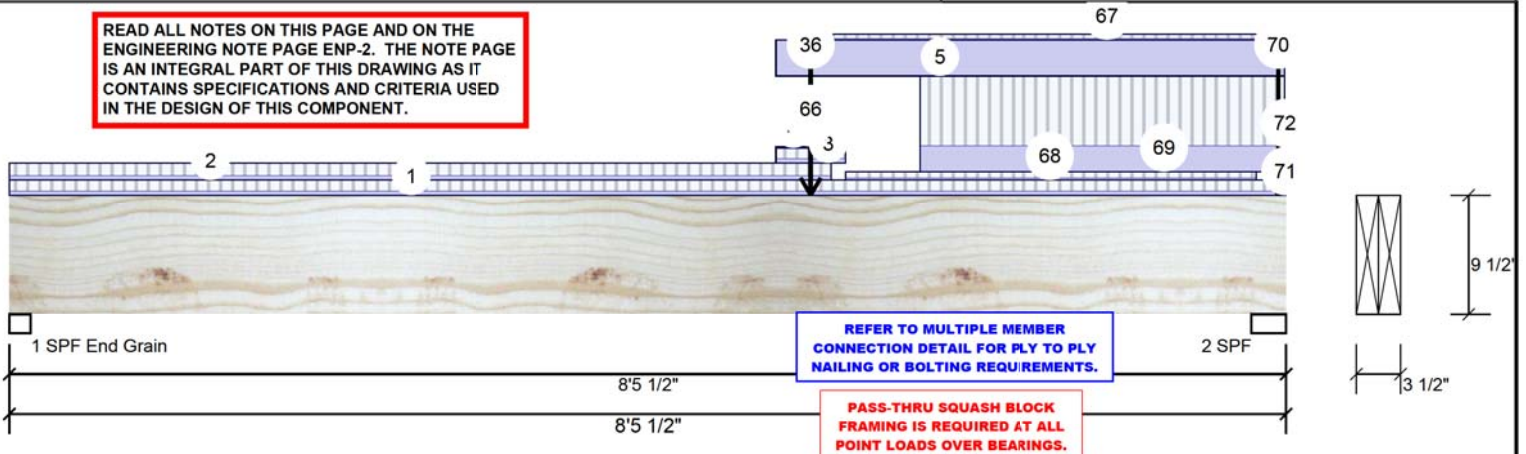
Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

Page 15 of 57

F19-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor

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...Continued from page 4

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
50	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
51	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
52	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
53	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
54	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
55	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
56	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
57	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
58	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
59	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
60	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
61	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
62	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
63	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
64	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	



July 06 2021

Notes

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Lumber

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

chemicals

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

This design is valid until 5/24/2024

Kott Inc.
3228 Moodie Dr, Ottawa, Ontario
K1M 1Y7
613-838-2775 / 905-642-4400



Per: joshua.nabua



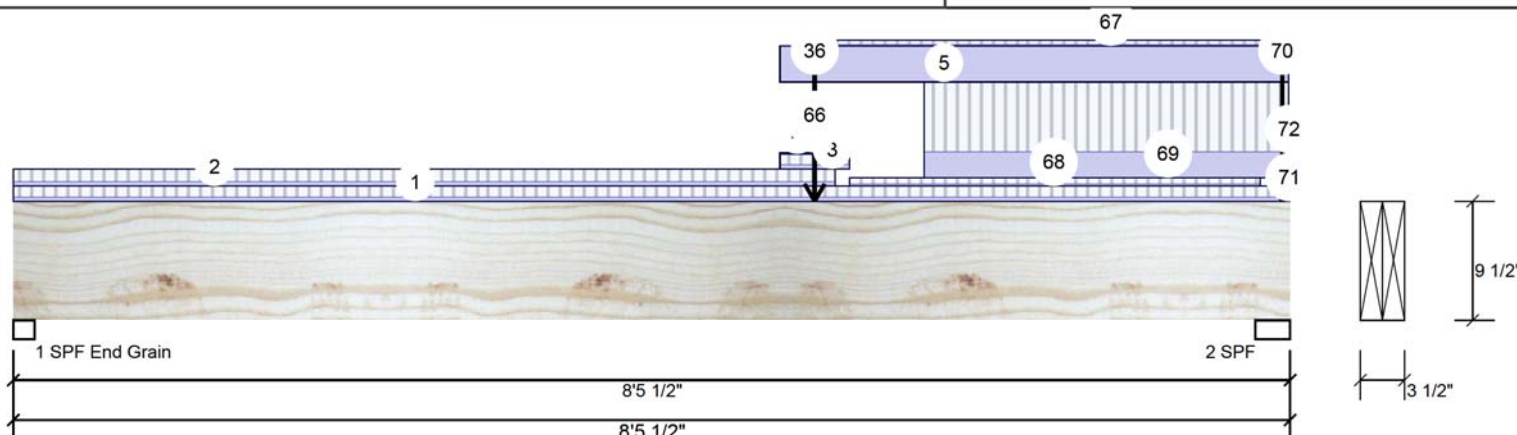
Client: GREENPARK
 Project: GLENROWAN 41-3-2
 Address: RICHMOND HILL, ON

Date: 7/5/2021
 Input by: W C
 Job Name: GR41-3-2 STANDARD & REAR UPGRADE
 Project #: ROUNDEL HOMES INC

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F19-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor



...Continued from page 5

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
65	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
66	Tapered Start	5-3-10		Top	1 PLF	3 PLF	0 PLF	0 PLF	
	End	5-3-10			1 PLF	3 PLF	0 PLF	0 PLF	
67	Tie-In	5-5-4 to 8-5-8	0-2-11	Top	15 PSF	40 PSF	0 PSF	0 PSF	
68	Tapered Start	5-6-6		Top	5 PLF	14 PLF	0 PLF	0 PLF	
	End	8-3-2			5 PLF	14 PLF	0 PLF	0 PLF	
69	Part. Uniform	6-0-5 to 8-5-6		Top	59 PLF	158 PLF	0 PLF	0 PLF	J9
70	Point	8-4-14		Top	381 lb	935 lb	0 lb	0 lb	F15 F15
	Bearing Length	0-5-8							
71	Part. Uniform	8-5-6 to 8-5-8		Top	30 PLF	79 PLF	0 PLF	0 PLF	J9
72	Part. Uniform	8-5-6 to 8-5-8		Top	41 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
	Self Weight				8 PLF				

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

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

**READ ALL NOTES ON THIS PAGE AND ON THE
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July 06 2021

Notes

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Lumber

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2. LVL not to be treated with fire retardant or corrosive

chemicals**Handling & Installation**

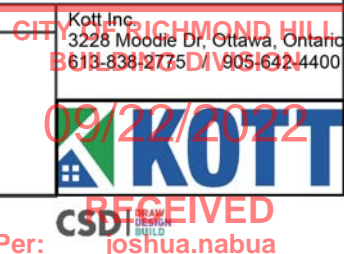
1. LVL beams must not be cut or drilled
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3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

This design is valid until 5/24/2024





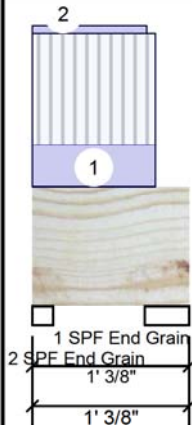
Client: GREENPARK
 Project: GLENROWAN 41-3-2
 Address: RICHMOND HILL, ON

Date: 7/5/2021
 Input by: W C
 Job Name: GR41-3-2 STANDARD & REAR UPGRADE
 Project #: ROUNDEL HOMES INC

Page 30 of 57

F6-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

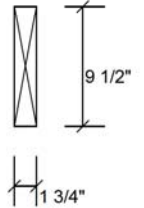
Level: Ground Floor



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

PASS-THRU SQUASH BLOCK
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Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	13	7	0	0
2	Vertical	11	7	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	1.625"	Vert	1%	9 / 19	28	L	1.25D+1.5L
2 - SPF End Grain	3.500"	Vert	1%	9 / 16	25	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4 ft-lb	5 1/4"	11362 ft-lb	0.000 (0%)	1.25D+1.5L	L
Unbraced	4 ft-lb	5 1/4"	11362 ft-lb	0.000 (0%)	1.25D+1.5L	L
Shear	20 lb	-(5/8")	4638 lb	0.004 (0%)	1.25D+1.5L	L
Perm Defl in. (L/1083323)	0.000	5 1/4"	0.024 (L/360)	0.000 (0%)	D	Uniform
LL Defl inch (L/622800)	0.000	5 1/4"	0.018 (L/480)	0.001 (0%)	L	L
TL Defl inch (L/395454)	0.000	5 1/4"	0.036 (L/240)	0.001 (0%)	D+L	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Top must be continuously laterally braced.
- 4 Bottom must have sheathing attached or be continuously braced.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-9-11	0-8-11	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 0-9-0		Top	2 PLF	0 PLF	0 PLF	0 PLF	
	Self Weight				4 PLF				

Notes

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Lumber

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

Handling & Installation

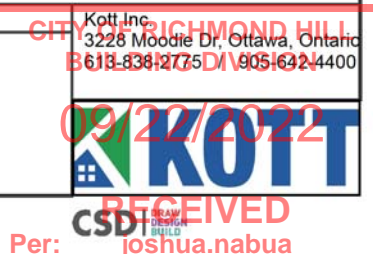
1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

This design is valid until 5/24/2024



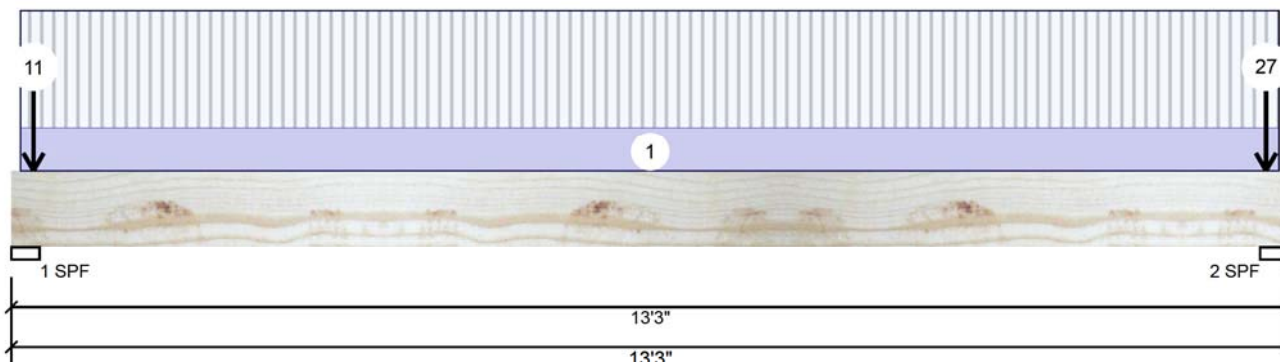


Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

F7-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 3-Ply - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	3	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	Yes
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	169	205	6	0
2	Vertical	1656	2107	1521	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	5%	257 / 254	511	L	1.25D+1.5L
2 - SPF	3.500"	Vert	70%	2634 / 4006	6640	L	1.25D+1.5L+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	714 ft-lb	6'7 1/2"	33677 ft-lb	0.021 (2%)	1.25D+1.5L	L
Unbraced	714 ft-lb	6'7 1/2"	33677 ft-lb	0.021 (2%)	1.25D+1.5L	L
Shear	205 lb	1'1"	13219 lb	0.015 (2%)	1.25D+1.5L	L
Perm Defl in.	0.013 (L/11754)	6'7 9/16"	0.426 (L/360)	0.031 (3%)	D	Uniform
LL Defl inch	0.009 (L/17240)	6'7 9/16"	0.320 (L/480)	0.028 (3%)	L+0.5S	L
TL Defl inch	0.022 (L/6989)	6'7 9/16"	0.640 (L/240)	0.034 (3%)	D+L+0.5S	L

Design Notes

- 1 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 3.5.
- 2 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 3.5.
- 3 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Multiple plies must be fastened together as per manufacturer's details.
- 6 Top loads must be supported equally by all plies.
- 7 Top must be continuously laterally braced.
- 8 Bottom must be laterally braced at bearings.
- 9 Lateral slenderness ratio based on full section width.

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

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

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July 06 2021

Notes

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Handling & Installation

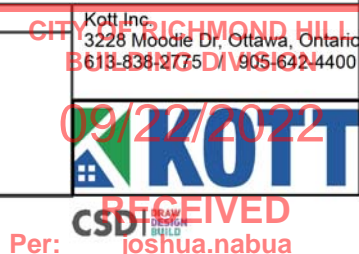
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4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

This design is valid until 5/24/2024



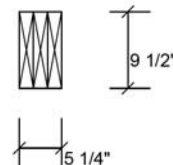
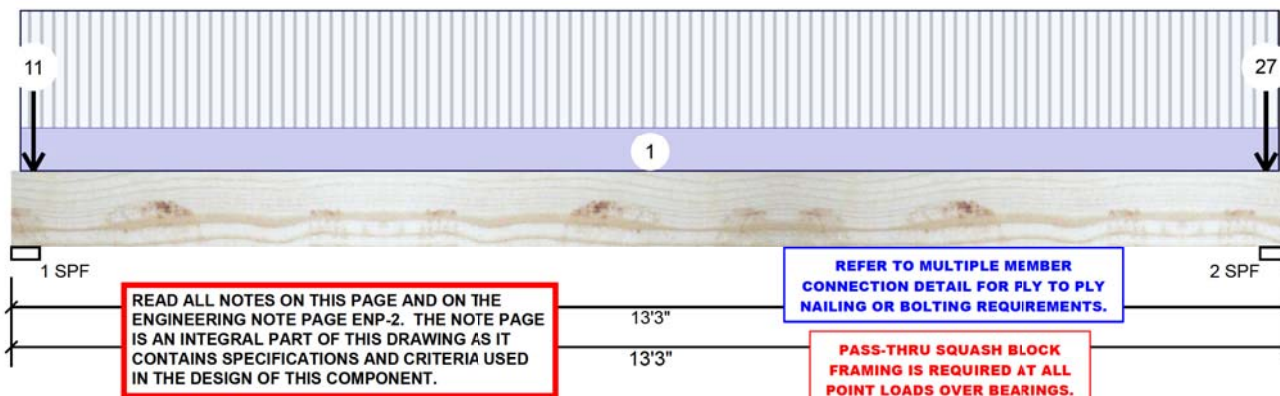


Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

F7-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 3-Ply - PASSED

Level: Ground Floor



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-1-2 to 13-1-14	0-3-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-2-12		Top	18 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
3	Point	0-2-12		Top	21 lb	57 lb	0 lb	0 lb	J4
	Bearing Length	0-5-8							
4	Point	0-2-12		Top	18 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
5	Point	0-2-12		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
6	Point	0-2-12		Top	7 lb	19 lb	0 lb	0 lb	J4
	Bearing Length	0-5-8							
7	Point	0-2-12		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
8	Point	0-2-12		Top	8 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
9	Point	0-2-12		Top	9 lb	25 lb	0 lb	0 lb	J4
	Bearing Length	0-5-8							
10	Point	0-2-12		Top	3 lb	0 lb	6 lb	0 lb	
	Bearing Length	0-5-8							
11	Point	0-2-12		Top	8 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
12	Point	13-0-4		Top	1 lb	2 lb	0 lb	0 lb	
	Bearing Length	0-5-8							
13	Point	13-0-4		Top	9 lb	25 lb	0 lb	0 lb	J4
	Bearing Length	0-5-8							
14	Point	13-0-4		Top	5 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
15	Point	13-0-4		Top	8 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
16	Point	13-0-4		Top	1 lb	2 lb	0 lb	0 lb	



July 06 2021

Continued on page 3...

Notes

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Lumber

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

Handling & Installation

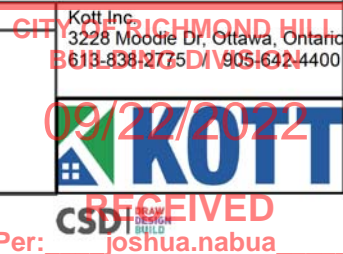
1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

This design is valid until 5/24/2024



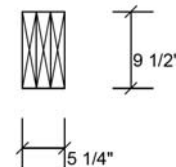
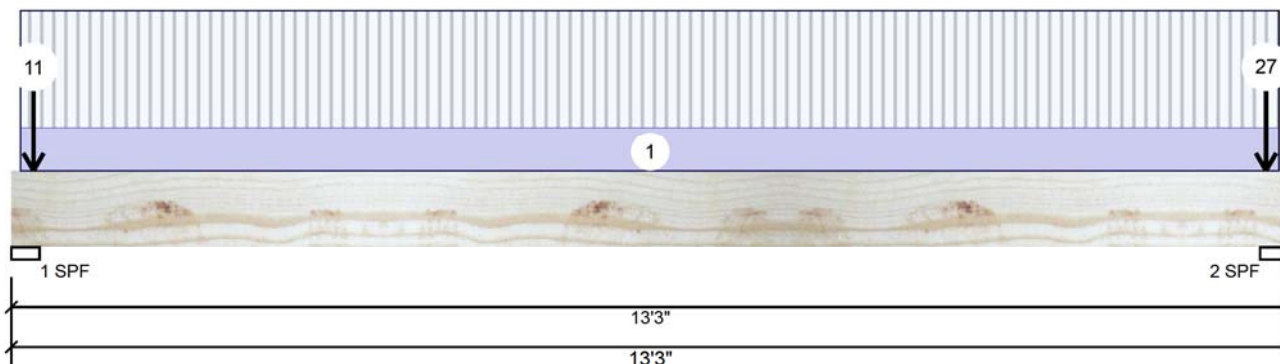


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Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

F7-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 3-Ply - PASSED

Level: Ground Floor



...Continued from page 2

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
	Bearing Length	0-5-8							
17	Point	13-0-4		Top	7 lb	19 lb	0 lb	0 lb	J4
	Bearing Length	0-5-8							
18	Point	13-0-4		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
19	Point	13-0-4		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
20	Point	13-0-4		Top	1907 lb	1480 lb	1521 lb	0 lb	B2 B2 F14 F14
	Bearing Length	0-5-8							
21	Point	13-0-4		Top	1 lb	2 lb	0 lb	0 lb	
	Bearing Length	0-5-8							
22	Point	13-0-4		Top	22 lb	58 lb	0 lb	0 lb	J4
	Bearing Length	0-5-8							
23	Point	13-0-4		Top	7 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
24	Point	13-0-4		Top	2 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
25	Point	13-0-4		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
27	Point	13-0-4		Top	18 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
	Self Weight				11 PLF				

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

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

**READ ALL NOTES ON THIS PAGE AND ON THE
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Notes

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Lumber

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2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

This design is valid until 5/24/2024

Kott Inc.
3228 Moodie Dr, Ottawa, Ontario
613-838-2775 / 905-642-4400



RECEIVED
Per: joshua.nabua

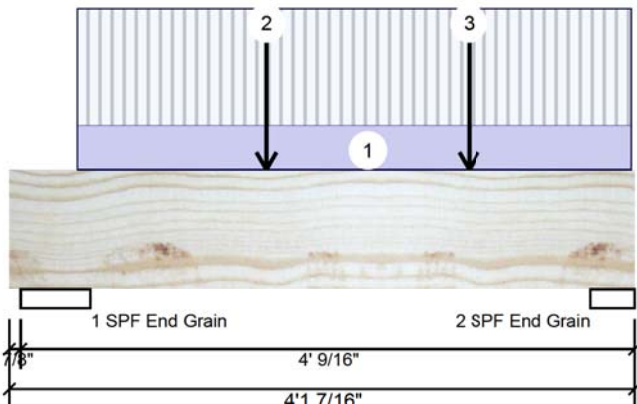


Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

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

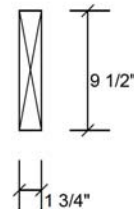
Level: Ground Floor



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IN THE DESIGN OF THIS COMPONENT.



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	270	110	0	0
2	Vertical	340	136	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	5.500"	Vert	8%	138 / 405	543	_L	1.25D+1.5L
2 - SPF End Grain	3.500"	Vert	15%	170 / 511	681	_L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	615 ft-lb	1'10 3/16"	11362 ft-lb	0.054 (5%)	1.25D+1.5L	_L
Unbraced	615 ft-lb	1'10 3/16"	11362 ft-lb	0.054 (5%)	1.25D+1.5L	_L
Shear	497 lb	3' 7/16"	4638 lb	0.107 (11%)	1.25D+1.5L	_L
Perm Defl in. (L/21812)	0.002	2' 5/8"	0.120 (L/360)	0.017 (2%)	D	Uniform
LL Defl inch	0.005 (L/8663)	2' 1/2"	0.090 (L/480)	0.055 (6%)	L	LL
TL Defl inch	0.007 (L/6200)	2' 5/8"	0.179 (L/240)	0.039 (4%)	D+L	LL
LL Cant (2L/9677)	-0.000	Lt Cant	0.200 (2L/480)	0.001 (0%)	L	LL
TL Cant (2L/6926)	-0.000	Lt Cant	0.300 (2L/240)	0.001 (0%)	D+L	LL

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Top must be continuously laterally braced.
- 4 Bottom must have sheathing attached or be continuously braced.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-5-6 to 4-1-3		Top	33 PLF	87 PLF	0 PLF	0 PLF	
2	Point	1-8-4		Far Face	56 lb	149 lb	0 lb	0 lb	J2
3	Point	3-0-4		Far Face	54 lb	144 lb	0 lb	0 lb	J2
	Self Weight				4 PLF				

Notes

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Lumber

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

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

Kott Inc.
3228 Moodie Dr, Ottawa, Ontario
K1M 1Y7
613-838-2775 / 905-642-4400



Per: joshua.nabua

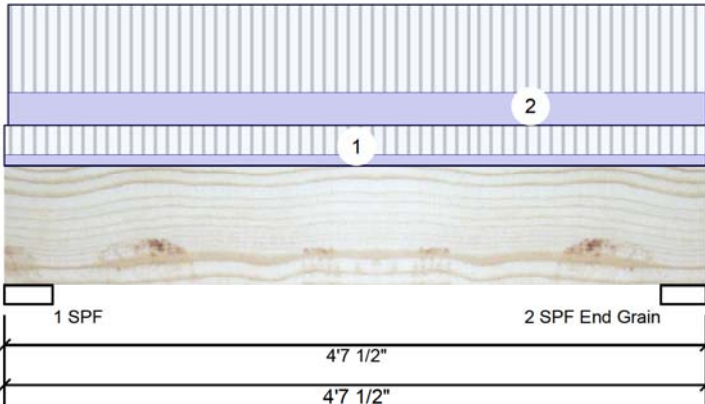


Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

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

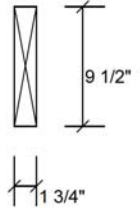
Level: Ground Floor



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

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

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



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	234	96	0	0
2	Vertical	234	96	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.813"	Vert	11%	121 / 351	471	L	1.25D+1.5L
2 - SPF	3.589"	Vert	10%	121 / 351	471	L	1.25D+1.5L
End Grain							

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	437 ft-lb	2'3 7/8"	11362 ft-lb	0.038 (4%)	1.25D+1.5L	L
Unbraced	437 ft-lb	2'3 7/8"	11362 ft-lb	0.038 (4%)	1.25D+1.5L	L
Shear	252 lb	3'6 3/8"	4638 lb	0.054 (5%)	1.25D+1.5L	L
Perm Defl in. (L/28858)	0.002	2'3 7/8"	0.138 (L/360)	0.012 (1%)	D	Uniform
LL Defl inch (L/11905)	0.004	2'3 7/8"	0.103 (L/480)	0.040 (4%)	L	L
TL Defl inch (L/8428)	0.006	2'3 7/8"	0.207 (L/240)	0.028 (3%)	D+L	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Top must be continuously laterally braced.
- 4 Bottom must be laterally braced at bearings.



July 06 2021

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 4-7-8	0-7-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-5 to 4-7-8	1-10-14	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				4 PLF				

Notes

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Lumber

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

Handling & Installation

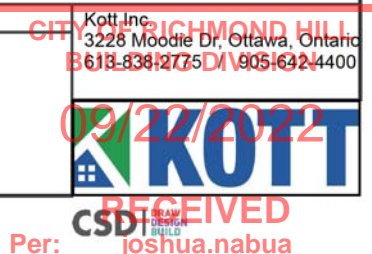
1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

This design is valid until 5/24/2024





Client: GREENPARK
Project:
Address: GLENROWAN 41-3-2
RICHMOND HILL, ON

Date: 7/5/2021
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Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

Page 36 of 57

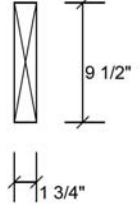
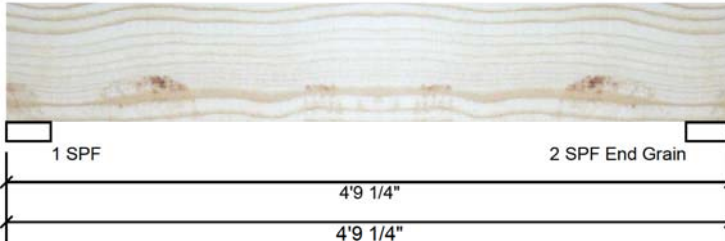
F8-C Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

Level: Ground Floor

**REFER TO MULTIPLE MEMBER
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Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	0	9	0	0
2	Vertical	0	9	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	1%	13 / 0	13	Uniform	1.4D
2 - SPF	3.500"	Vert	0%	13 / 0	13	Uniform	1.4D
End Grain							

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	12 ft-lb	2'4 5/8"	7385 ft-lb	0.002 (0%)	1.4D	Uniform
Unbraced	12 ft-lb	2'4 5/8"	7385 ft-lb	0.002 (0%)	1.4D	Uniform
Shear	11 lb	3'8 1/4"	3015 lb	0.004 (0%)	1.4D	Uniform
Perm Defl in. (L/287716)	0.000	2'4 5/8"	0.144 (L/360)	0.001 (0%)	D	Uniform
LL Defl inch (L/999)	0.000	0	999.000 (L/0)	0.000 (0%)		
TL Defl inch (L/287716)	0.000	2'4 5/8"	0.216 (L/240)	0.001 (0%)	D	Uniform

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Top must be continuously laterally braced.
- 4 Bottom must be laterally braced at bearings.



July 06 2021

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
	Self Weight				4 PLF				

Notes

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Lumber

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2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
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4. Design assumes top edge is laterally restrained
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6. For flat roofs provide proper drainage to prevent ponding

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Manufacturer Info

Forex
APA: PR-L318

Kott Inc.
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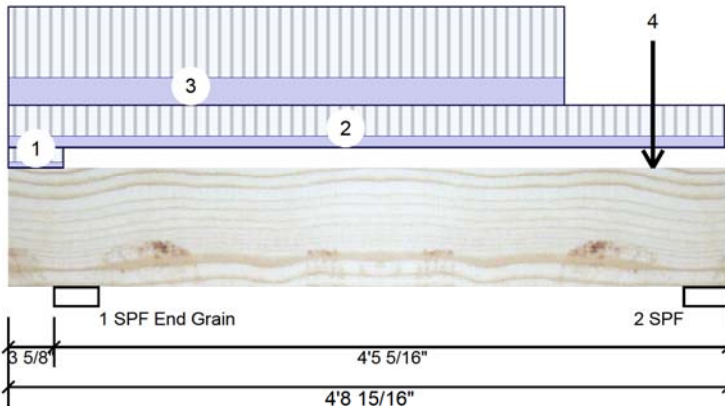


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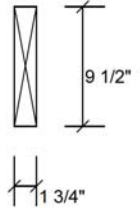
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Member Information

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Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	359	158	0	0
2	Vertical	623	408	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	16%	198 / 539	737	LL	1.25D+1.5L
2 - SPF	3.500"	Vert	38%	510 / 937	1447	_L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-14 ft-lb	3 9/16"	7385 ft-lb	0.002 (0%)	1.25D+1.5L	_L
Pos Moment	671 ft-lb	2'8 1/4"	11362 ft-lb	0.059 (6%)	1.25D+1.5L	_L
Unbraced	671 ft-lb	2'8 1/4"	11362 ft-lb	0.059 (6%)	1.25D+1.5L	_L
Shear	1507 lb	3'7 15/16"	4638 lb	0.325 (32%)	1.25D+1.5L	_L
Perm Defl in. (L/16467)	0.003	2'7 11/16"	0.136 (L/360)	0.022 (2%)	D	Uniform
LL Defl inch	0.006 (L/8004)	2'6 11/16"	0.102 (L/480)	0.060 (6%)	L	_L
TL Defl inch	0.009 (L/5388)	2'7"	0.203 (L/240)	0.045 (4%)	D+L	_L
LL Cant (2L/8060)	-0.001	Lt Cant	0.200 (2L/480)	0.004 (0%)	L	_L
TL Cant (2L/5569)	-0.001	Lt Cant	0.300 (2L/240)	0.004 (0%)	D+L	_L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Top must be continuously laterally braced.
- 4 Bottom must have sheathing attached or be continuously braced.



July 06 2021

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-4-6	0-5-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 4-8-10		Top	15 PLF	40 PLF	0 PLF	0 PLF	
3	Part. Uniform	0-0-0 to 3-7-15		Near Face	36 PLF	93 PLF	0 PLF	0 PLF	

Continued on page 2...

Notes

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Lumber

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

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

Kott Inc.
3228 Moodie Dr, Ottawa, Ontario
K1H 8B8
613-838-2775 / 905-642-4400



Per: joshua.nabua



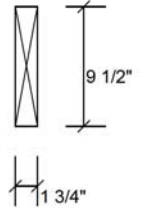
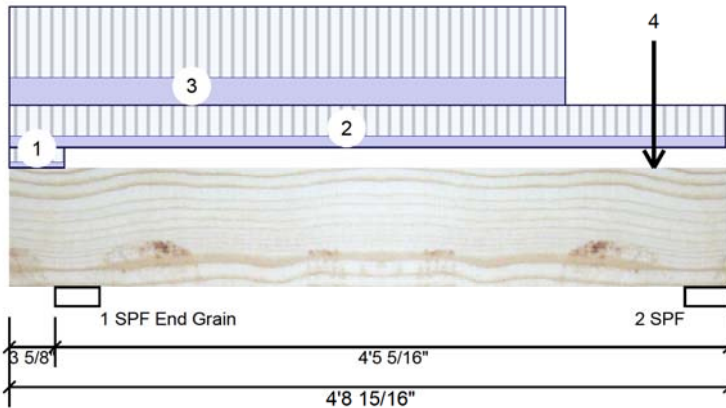
Client: GREENPARK
 Project:
 Address: GLENROWAN 41-3-2
 RICHMOND HILL, ON

Date: 7/5/2021
 Input by: W C
 Job Name: GR41-3-2 STANDARD & REAR UPGRADE
 Project #: ROUNDEL HOMES INC

Page 38 of 57

F8-D 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	Point	4-2-15		Near Face	343 lb	446 lb	0 lb	0 lb	J2
	Self Weight				4 PLF				

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

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

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July 06 2021

Notes

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Lumber

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

chemicals

Handling & Installation

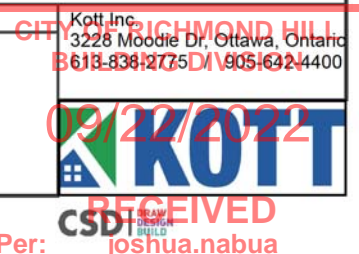
1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

This design is valid until 5/24/2024



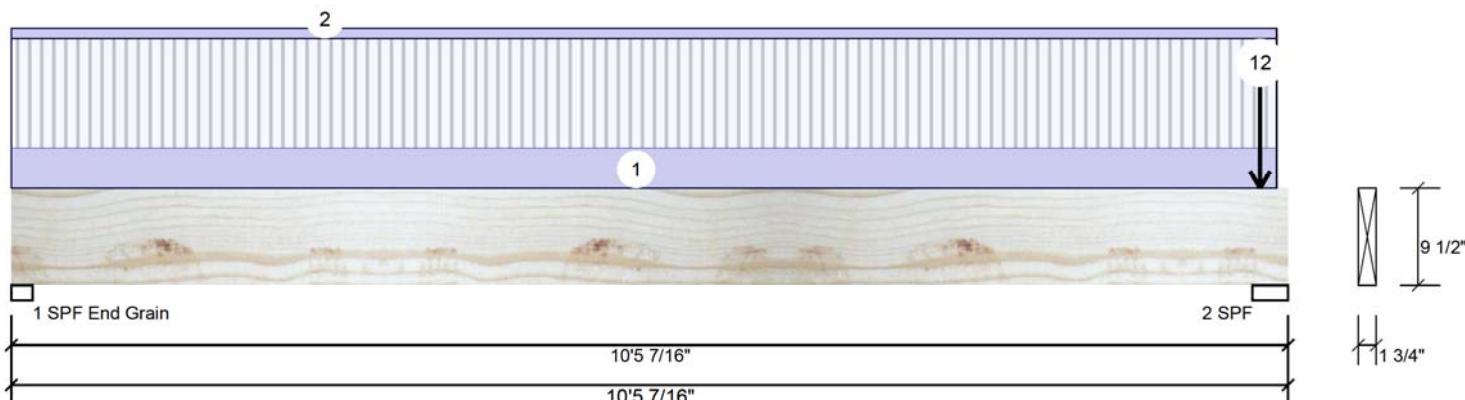


Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

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

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	112	72	0	0
2	Vertical	146	148	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	2.063"	Vert	10%	90 / 167	257	L	1.25D+1.5L
2 - SPF	3.500"	Vert	11%	184 / 219	404	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	637 ft-lb	5'2"	11362 ft-lb	0.056 (6%)	1.25D+1.5L	L
Unbraced	637 ft-lb	5'2"	11362 ft-lb	0.056 (6%)	1.25D+1.5L	L
Shear	213 lb	11 9/16"	4638 lb	0.046 (5%)	1.25D+1.5L	L
Perm Defl in.	0.014 (L/8470)	5'2"	0.337 (L/360)	0.043 (4%)	D	Uniform
LL Defl inch	0.022 (L/5454)	5'2"	0.253 (L/480)	0.088 (9%)	L	L
TL Defl inch	0.037 (L/3318)	5'2"	0.506 (L/240)	0.072 (7%)	D+L	L

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

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

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July 06 2021

Design Notes

- 1 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 3.5.
- 2 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top must be continuously laterally braced.
- 5 Bottom must be laterally braced at bearings.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 10-4-5	0-6-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 10-4-5		Top	2 PLF	0 PLF	0 PLF	0 PLF	
3	Point	10-2-11		Top	19 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
4	Point	10-2-11		Top	13 lb	34 lb	0 lb	0 lb	J6
	Bearing Length	0-5-8							

Continued on page 2...

Notes

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Lumber

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

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

This design is valid until 5/24/2024

Kott Inc.
3228 Moodie Dr, Ottawa, Ontario
K1M 1Y1
613-838-2775 / 905-642-4400



Per: joshua.nabua

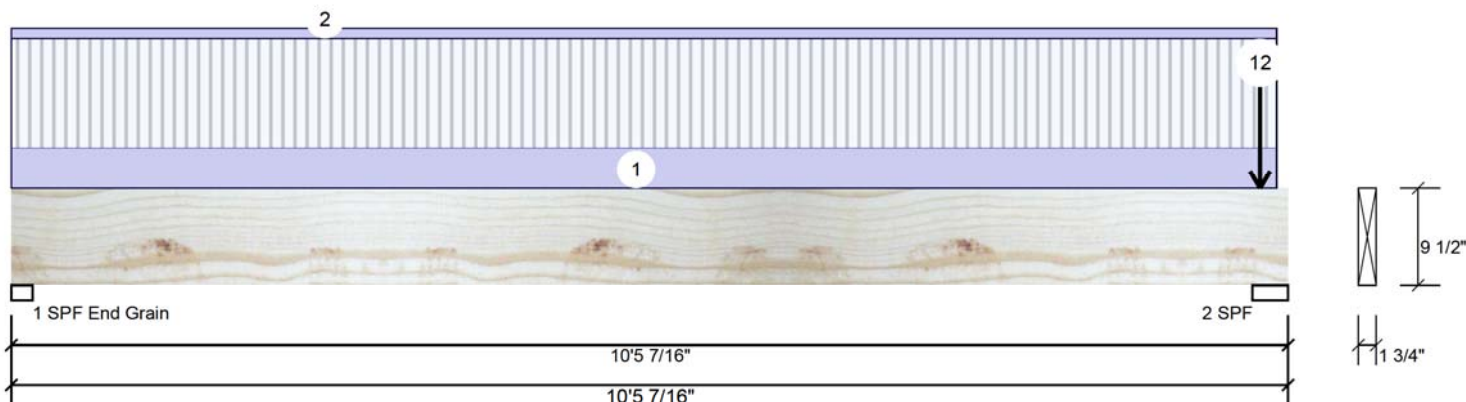


Client: GREENPARK
 Project: GLENROWAN 41-3-2
 Address: RICHMOND HILL, ON

Date: 7/5/2021
 Input by: W C
 Job Name: GR41-3-2 STANDARD & REAR UPGRADE
 Project #: ROUNDEL HOMES INC

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

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Point	10-2-11		Top	19 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
7	Point	10-2-11		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
9	Point	10-2-11		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
10	Point	10-2-11		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
12	Point	10-2-11		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
	Self Weight				4 PLF				

**REFER TO MULTIPLE MEMBER
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July 06 2021

Notes

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Lumber

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

Handling & Installation

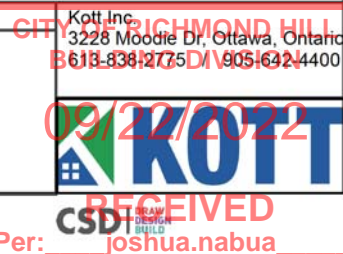
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3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

This design is valid until 5/24/2024

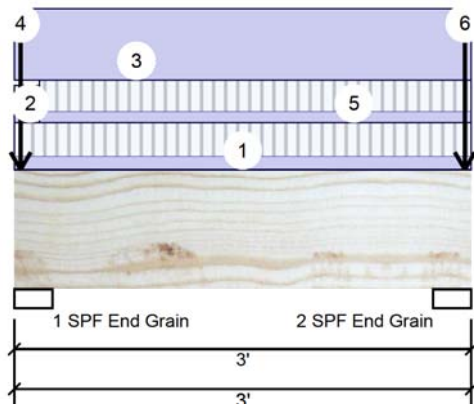




Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

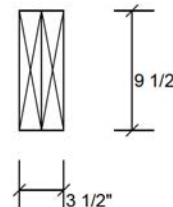
FH4-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED Level: Ground Floor



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

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

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Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	142	480	270	0
2	Vertical	143	360	39	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	Vert	17%	600 / 547	1147	L	1.25D+1.5S +L
2 - SPF End Grain	3.000"	Vert	11%	451 / 214	664	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	224 ft-lb	1'6"	17270 ft-lb	0.013 (1%)	1.25D+1.5L	L
Unbraced	224 ft-lb	1'6"	17270 ft-lb	0.013 (1%)	1.25D+1.5L	L
Shear	126 lb	1' 1/2"	7050 lb	0.018 (2%)	1.25D+1.5L	L
Perm Defl in. (L/52304)	0.001	1'6"	0.088 (L/360)	0.007 (1%)	D	Uniform
LL Defl inch (L/82027)	0.000	1'6"	0.066 (L/480)	0.006 (1%)	L+0.5S	L
TL Defl inch (L/31939)	0.001	1'6"	0.131 (L/240)	0.008 (1%)	D+L+0.5S	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 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 must be continuously laterally braced.
- 6 Bottom must have sheathing attached or be continuously braced.
- 7 Lateral slenderness ratio based on full section width.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tapered Start	0-0-0		Top	15 PLF	39 PLF	0 PLF	0 PLF	
	End	3-0-0			15 PLF	39 PLF	0 PLF	0 PLF	
2	Part. Uniform	0-0-0 to 0-2-0		Top	12 PLF	31 PLF	0 PLF	0 PLF	J1
3	Part. Uniform	0-0-0 to 3-0-0		Top	82 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight

Continued on page 2...

Notes

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

Lumber

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

Handling & Installation

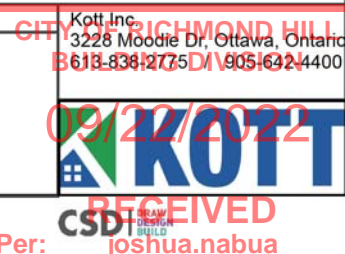
1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

This design is valid until 5/24/2024





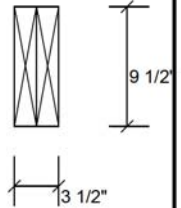
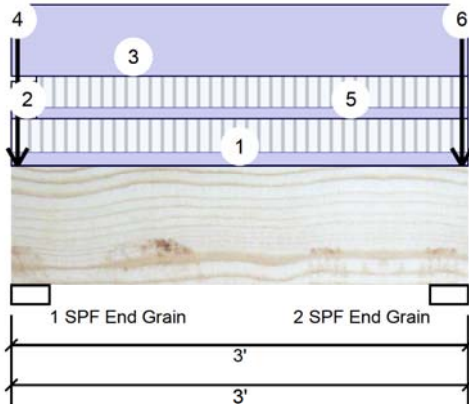
Client: GREENPARK
 Project: GLENROWAN 41-3-2
 Address: RICHMOND HILL, ON

Date: 7/5/2021
 Input by: W C
 Job Name: GR41-3-2 STANDARD & REAR UPGRADE
 Project #: ROUNDEL HOMES INC

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FH4-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
4	Point	0-0-8		Top	304 lb	30 lb	270 lb	0 lb	Header Column
	Bearing Length	0-3-8							
5	Part. Uniform	0-2-0 to 3-0-0		Top	13 PLF	36 PLF	0 PLF	0 PLF	J1
6	Point	2-11-8		Top	184 lb	30 lb	39 lb	0 lb	Header Column
	Bearing Length	0-3-8							
	Self Weight				8 PLF				

**REFER TO MULTIPLE MEMBER
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 NAILING OR BOLTING REQUIREMENTS.**

**PASS-THRU SQUASH BLOCK
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July 06 2021

Notes

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Lumber

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

Handling & Installation

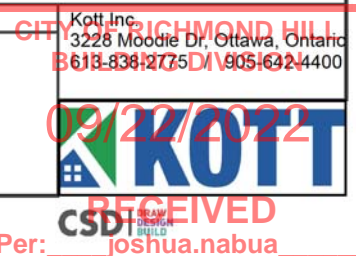
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3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

This design is valid until 5/24/2024





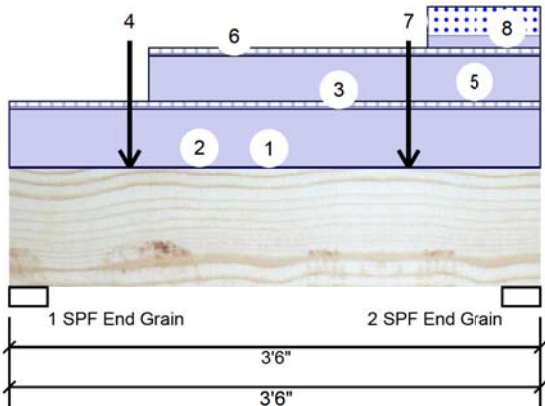
Client: GREENPARK
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Page 48 of 57

FH4-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

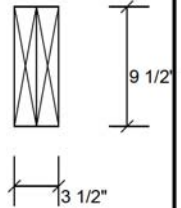
Level: Ground Floor



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

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Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	52	568	59	0
2	Vertical	40	525	188	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	Vert	17%	710 / 136	846	L	1.25D+1.5L +S
2 - SPF End Grain	3.000"	Vert	18%	656 / 248	904	L	1.25D+1.5L +S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	596 ft-lb	1'9 1/4"	14770 ft-lb	0.040 (4%)	1.25D+1.5L +S	L
Unbraced	596 ft-lb	1'9 1/4"	14770 ft-lb	0.040 (4%)	1.25D+1.5L +S	L
Shear	526 lb	1' 1/2"	6030 lb	0.087 (9%)	1.25D+1.5L +S	L
Perm Defl in.	0.003 (L/13887)	1'8 3/8"	0.104 (L/360)	0.026 (3%)	D	Uniform
LL Defl inch	0.001 (L/52298)	2'2 5/8"	0.078 (L/480)	0.009 (1%)	S+0.5L	L
TL Defl inch	0.003 (L/11120)	1'9 3/8"	0.156 (L/240)	0.022 (2%)	D+S+0.5L	L

Design Notes

- 1 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 3.
- 2 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 3.
- 3 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Multiple plies must be fastened together as per manufacturer's details.
- 6 Top loads must be supported equally by all plies.
- 7 Top must be continuously laterally braced.
- 8 Bottom must have sheathing attached or be continuously braced.
- 9 Lateral slenderness ratio based on full section width.



July 06 2021

Notes

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Lumber

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

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

Kott Inc.
 3228 Moodie Dr, Ottawa, Ontario
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Per: joshua.nabua



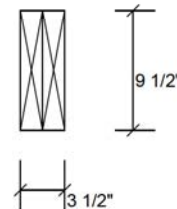
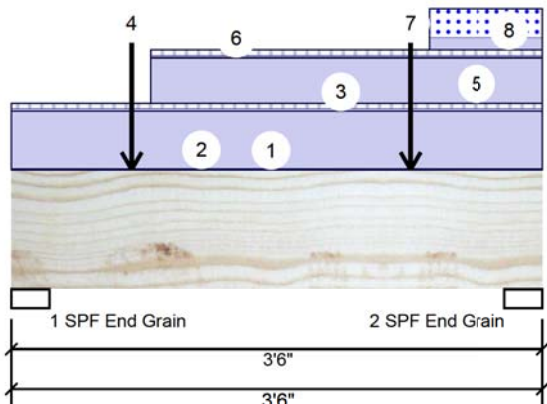
Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

Date: 7/5/2021
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Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

Page 49 of 57

FH4-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 3-6-0		Top	1 PLF	0 PLF	0 PLF	0 PLF	
2	Part. Uniform	0-0-0 to 3-6-0		Top	102 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
3	Tapered Start	0-0-0		Top	4 PLF	10 PLF	0 PLF	0 PLF	
	End	3-6-0		Top	4 PLF	10 PLF	0 PLF	0 PLF	
4	Point	0-9-8		Top	320 lb	31 lb	17 lb	0 lb	Header Column
	Bearing Length	0-3-8							
5	Part. Uniform	0-11-0 to 3-6-0		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
6	Tapered Start	0-11-0		Top	4 PLF	10 PLF	0 PLF	0 PLF	
	End	3-6-0		Top	4 PLF	10 PLF	0 PLF	0 PLF	
7	Point	2-7-7		Top	139 lb	0 lb	191 lb	0 lb	Header Column
	Bearing Length	0-3-8							
8	Part. Uniform	2-8-15 to 3-6-0		Top	21 PLF	0 PLF	51 PLF	0 PLF	
	Self Weight				8 PLF				

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

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

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July 06 2021

Notes

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Lumber

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

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

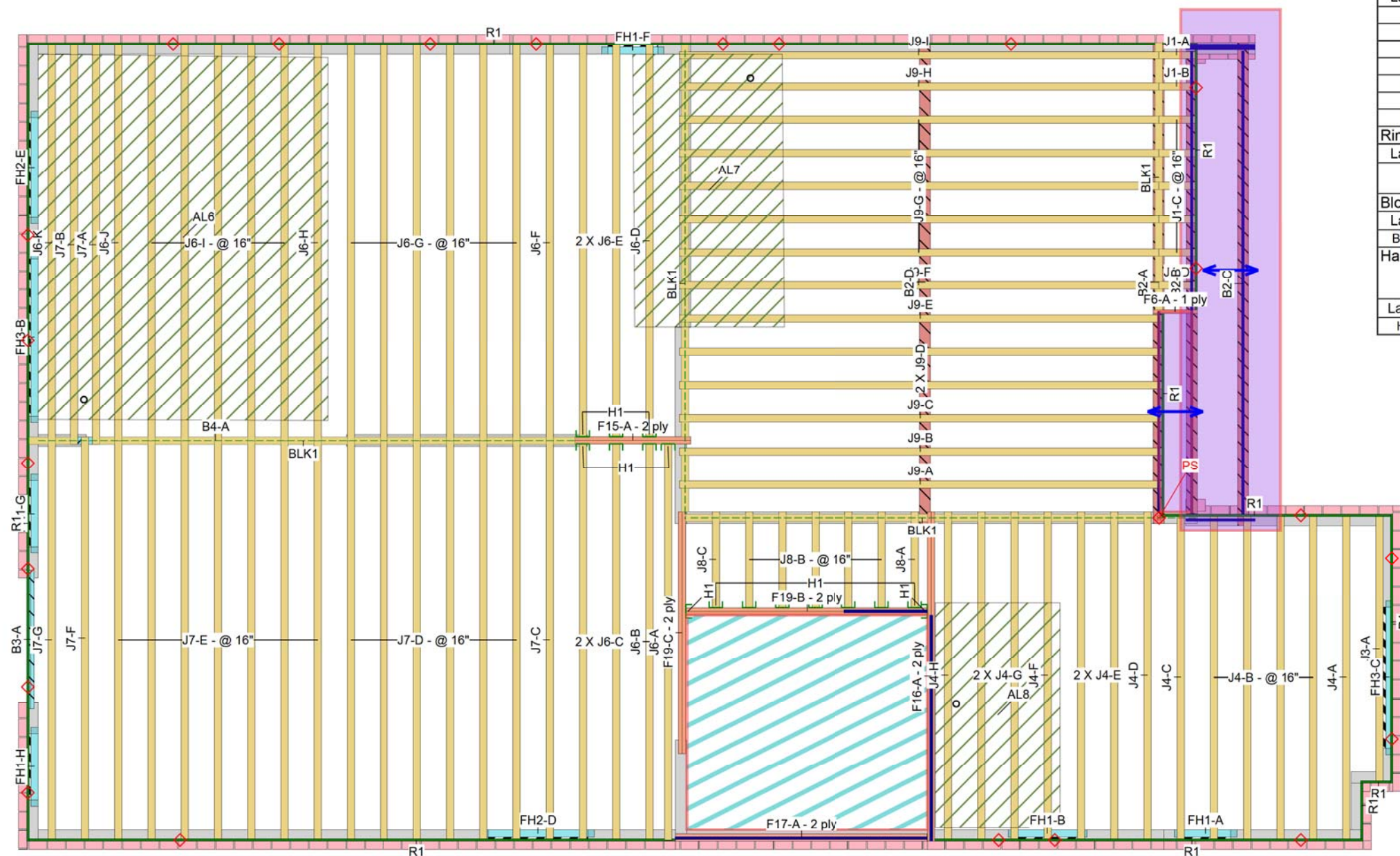
This design is valid until 5/24/2024

Kott Inc.
3228 Moodie Dr, Ottawa, Ontario
613-838-2775 / 905-642-4400



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Per: joshua.nabua

Second Floor

Second Floor
LVL/LSL

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F16	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	14-0-0
F17	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	12-0-0
F19	Forex 2.0E-3000Fb LVL	1.75	9.5	2	2	4	10-0-0
F15	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	6-0-0
F6	Forex 2.0E-3000Fb LVL	1.75	9.5			1	2-0-0

I Joist

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
J9	AJS 24	3.5	9.5			14	20-0-0
J7	AJS 24	3.5	9.5			18	18-0-0
J6	AJS 24	3.5	9.5			22	16-0-0
J4	AJS 24	3.5	9.5			13	14-0-0
J3	AJS 24	3.5	9.5			1	12-0-0
J8	AJS 24	3.5	9.5			7	4-0-0
J1	AJS 24	3.5	9.5			8	2-0-0

Rim Board

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			14	12-0-0

Blocking

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK1	AJS 24	3.5	9.5	LinFt		Varies	54-0-0

Hanger

Label	Pcs	Description	Skew	Slope	fasteners	Supported Member
H1	16	LF359			10 10d	2 #8x1 1/4WS

JOB INFORMATION

Builder	GREENPARK
Project	ROUNDEL HOMES INC
Shipping	GLENROWAN 41-3-2 RICHMOND HILL, ON
Sales Rep	RALPH MIRIGELLO
Designer	W C
Plotted	June 09, 2021
Layout Name	GR41-3-2 STANDARD & REAR UPGRADE

Job Path

DESIGN CRITERIA

Second Floor	
Design Method	LSD (Canada)
Building Code	NBCC 2015 / OBC 2012

Floor

Loads	
Live	40
Dead	15
Decking	
Decking	OSB
Thickness	5/8"
Fastener	Nailed & Glued
Vibration	
Ceiling:	Gypsum 1/2"

Roof

Loads	
Live	0
Dead	10.3
Snow	21
Decking	
Decking	SPF Plywood

CCMC References

Boise - 12472-R , 12787-R
LP - 12412-R
Forex - 14056-R

Kott Inc.

3228 Moodie Dr, Ottawa
14 Anderson Blvd, Uxbridge
Ontario

613-838-2775 /
905-642-4400



Hatch Area represents where additional load has been applied. (e.g. 5 psf for ceramic tile)

AJS140 I-Joists can be substituted with LP20 I-Joists for 9.5" and 11.875" depths shown on this layout.

- All blocking to be cut from 12' joists
- 2' & 4' Lengths to be cut from 8' Length, 6' lengths to be cut from 12' Length
- Ends of joists to be laterally supported
- Packing of Steel beams and attachment by others
- Shower and water closet flange locations are approximate only, consult architectural drawing for exact locations
- Beams identified as "B" are dropped and supplied by others
- Install 2x4 blocking @ 24" o/c under parallel non-loadbearing walls
- Load transfer blocks to be installed under all point loads
- Refer to Multiple Member Connection Detail for ply to ply nailing or bolting requirements
- Hangers and Fasteners to be installed as per manufacturer
- Framing shown on this layout may deviate from architectural drawings. Arch / Eng to review and approve the deviation prior to construction.

Legend

PS	Point Load Support
◇	Load from Above
Wall	Wall
Wall Opening	Wall Opening
Norbord Rimboard Plus 1.125 X 9.5	Norbord Rimboard Plus 1.125 X 9.5
AJS 24 9.5	AJS 24 9.5
Forex 2.0E-3000Fb LVL 1.75 X 9.5	Forex 2.0E-3000Fb LVL 1.75 X 9.5
1.75 X 9.5 (Dropped)	1.75 X 9.5 (Dropped)
5.25 X 8 (Dropped)	5.25 X 8 (Dropped)

CITY OF RICHMOND HILL
BUILDING DIVISION
09/22/2022
RECEIVED
Per: [Signature]



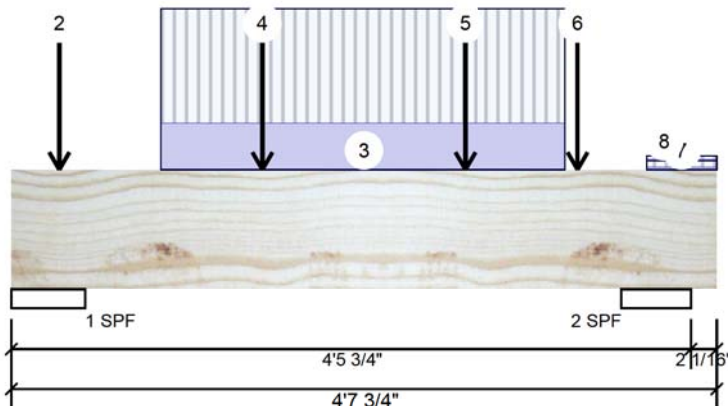
Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

Page 50 of 57

F15-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

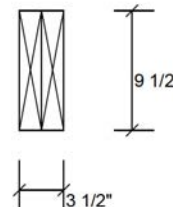
Level: Second Floor



**REFER TO MULTIPLE MEMBER
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Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	1383	550	0	0
2	Vertical	935	381	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.813"	Vert	22%	687 / 2075	2762	L_	1.25D+1.5L
2 - SPF	5.500"	Vert	16%	477 / 1403	1879	LL	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2041 ft-lb	2'4"	22724 ft-lb	0.090 (9%)	1.25D+1.5L	L_
Unbraced	2041 ft-lb	2'4"	22724 ft-lb	0.090 (9%)	1.25D+1.5L	L_
Shear	1734 lb	3'2 3/4"	9277 lb	0.187 (19%)	1.25D+1.5L	LL
Perm Defl in. (L/12687)	0.004	2'4 1/16"	0.128 (L/360)	0.028 (3%)	D	Uniform
LL Defl inch	0.009 (L/5125)	2'4 1/16"	0.096 (L/480)	0.094 (9%)	L	L_
TL Defl inch	0.013 (L/3650)	2'4 1/16"	0.191 (L/240)	0.066 (7%)	D+L	L_
LL Cant	-0.001 (2L/5300)	Rt Cant	0.200 (2L/480)	0.004 (0%)	L	L_
TL Cant	-0.001 (2L/3780)	Rt Cant	0.300 (2L/240)	0.004 (0%)	D+L	L_

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 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 must be continuously laterally braced.
- 6 Bottom must have sheathing attached or be continuously braced.
- 7 Lateral slenderness ratio based on full section width.



July 06 2021

Notes

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Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

This design is valid until 5/24/2024

Kott Inc.
3228 Moodie Dr, Ottawa, Ontario
K1M 1Y7
613-838-2775 / 905-642-4400



Per: joshua.nabua



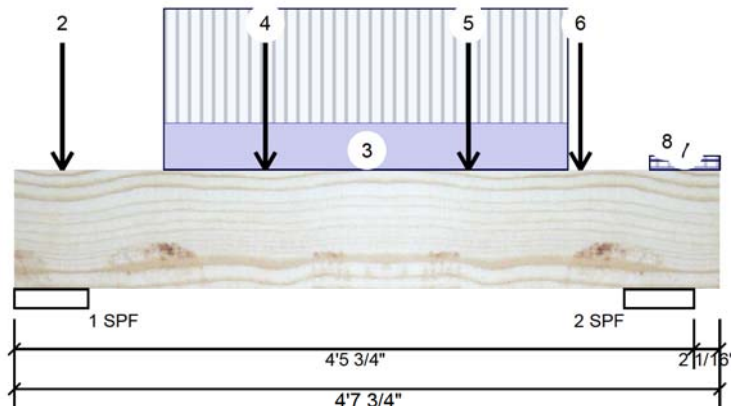
Client: GREENPARK
Project:
Address: GLENROWAN 41-3-2
RICHMOND HILL, ON

Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

Page 51 of 57

F15-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Second Floor



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Point	0-3-12		Far Face	108 lb	287 lb	0 lb	0 lb	J6
2	Point	0-3-12		Near Face	101 lb	269 lb	0 lb	0 lb	J6
3	Part. Uniform	0-11-12 to 3-7-12		Far Face	123 PLF	303 PLF	0 PLF	0 PLF	
4	Point	1-7-12		Near Face	157 lb	418 lb	0 lb	0 lb	J6
5	Point	2-11-12		Near Face	123 lb	327 lb	0 lb	0 lb	J6
6	Point	3-8-12		Near Face	74 lb	197 lb	0 lb	0 lb	J6
7	Tie-In	4-2-4 to 4-7-12	0-5-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
8	Tie-In	4-2-4 to 4-7-12	0-2-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				8 PLF				

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

**PASS-THRU SQUASH BLOCK
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July 06 2021

Notes

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Lumber

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

Handling & Installation

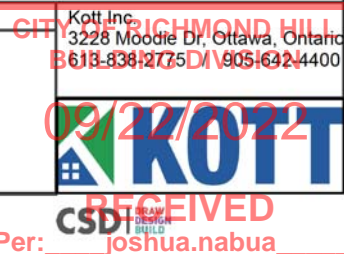
1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

This design is valid until 5/24/2024



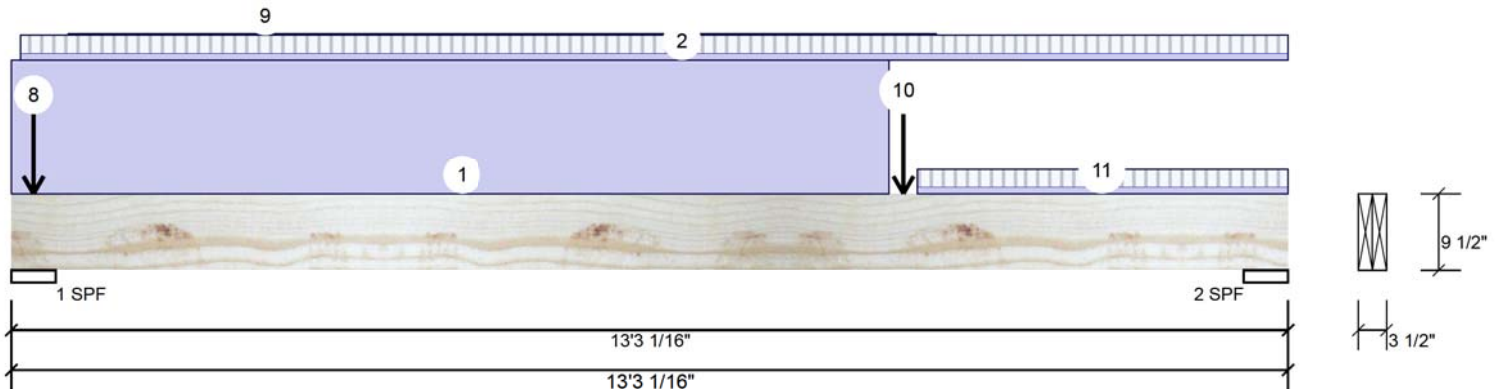


Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

F16-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Second Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	276	865	150	0
2	Vertical	579	603	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	Vert	17%	1082 / 225	1307	L	1.25D+1.5S
2 - SPF	5.500"	Vert	16%	754 / 868	1622	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5400 ft-lb	8'6 5/8"	19997 ft-lb	0.270 (27%)	1.25D+1.5L	L
Unbraced	5400 ft-lb	8'6 5/8"	19997 ft-lb	0.270 (27%)	1.25D+1.5L	L
Shear	1552 lb	12' 1/16"	8164 lb	0.190 (19%)	1.25D+1.5L	L
Perm Defl in.	0.140 (L/1071)	6'7 7/8"	0.415 (L/360)	0.336 (34%)	D	Uniform
LL Defl inch	0.091 (L/1651)	7'3 1/2"	0.312 (L/480)	0.291 (29%)	L+0.5S	L
TL Defl inch	0.230 (L/652)	6'10 13/16"	0.623 (L/240)	0.368 (37%)	D+L+0.5S	L

Design Notes

- 1 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 4.5.
- 2 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Multiple plies must be fastened together as per manufacturer's details.
- 5 Top loads must be supported equally by all plies.
- 6 Top must be continuously laterally braced.
- 7 Bottom must be laterally braced at a maximum of 9'3" o.c.
- 8 Lateral slenderness ratio based on full section width.

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

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

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July 06 2021

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 9-1-3		Top	100 PLF	0 PLF	0 PLF	0 PLF	
2	Tie-In	0-1-2 to 13-3-1	0-4-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	0-2-12		Top	17 lb	0 lb	43 lb	0 lb	
	Bearing Length	0-5-8							

Continued on page 2...

Notes

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Lumber

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

chemicals

Handling & Installation

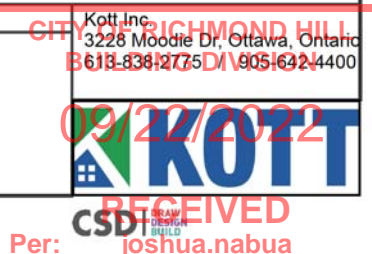
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4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

This design is valid until 5/24/2024



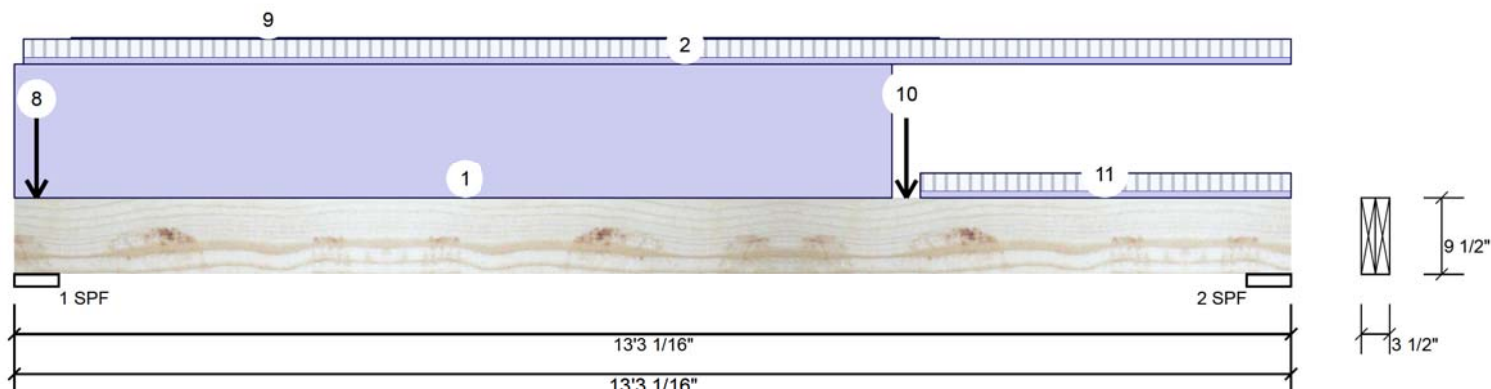


Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

F16-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
4	Point	0-2-12		Top	8 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
5	Point	0-2-12		Top	26 lb	0 lb	65 lb	0 lb	
	Bearing Length	0-5-8							
6	Point	0-2-12		Top	12 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
7	Point	0-2-12		Top	17 lb	0 lb	42 lb	0 lb	
	Bearing Length	0-5-8							
8	Point	0-2-12		Top	8 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
9	Part. Uniform	0-7-1 to 9-7-0		Top	1 PLF	0 PLF	0 PLF	0 PLF	
10	Point	9-3-0		Far Face	275 lb	626 lb	0 lb	0 lb	F19
11	Tie-In	9-4-12 to 13-3-1	0-3-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				8 PLF				

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Lumber

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2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

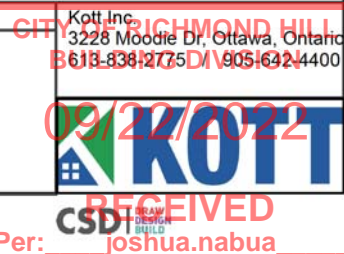
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Manufacturer Info

Forex
APA: PR-L318

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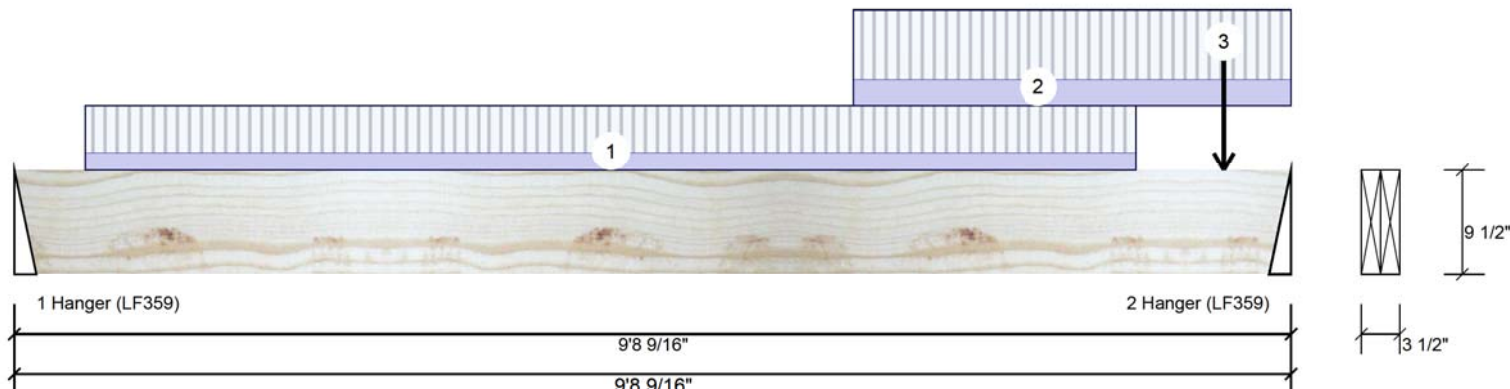




Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

F19-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED Level: Second Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	364	175	0	0
2	Vertical	626	275	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	Vert	15%	219 / 546	765	L	1.25D+1.5L
2 - Hanger	2.000"	Vert	25%	344 / 938	1282	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2259 ft-lb	5'7 5/16"	22724 ft-lb	0.099 (10%)	1.25D+1.5L	L
Unbraced	2259 ft-lb	5'7 5/16"	22724 ft-lb	0.099 (10%)	1.25D+1.5L	L
Shear	1132 lb	8'9 1/16"	9277 lb	0.122 (12%)	1.25D+1.5L	L
Perm Defl in.	0.018 (L/6311)	5' 1/4"	0.317 (L/360)	0.057 (6%)	D	Uniform
LL Defl inch	0.039 (L/2897)	5' 5/8"	0.238 (L/480)	0.166 (17%)	L	L
TL Defl inch	0.057 (L/1985)	5' 1/2"	0.475 (L/240)	0.121 (12%)	D+L	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Fill all hanger nailing holes.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Multiple plies must be fastened together as per manufacturer's details.
- 5 Top loads must be supported equally by all plies.
- 6 Top must be continuously laterally braced.
- 7 Bottom must have sheathing attached or be continuously braced.
- 8 Lateral slenderness ratio based on full section width.

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

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

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



July 06 2021

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-6-7 to 8-6-7		Far Face	27 PLF	71 PLF	0 PLF	0 PLF	
2	Part. Uniform	6-4-8 to 9-8-9		Top	40 PLF	105 PLF	0 PLF	0 PLF	
3	Point	9-2-7		Far Face	27 lb	71 lb	0 lb	0 lb	J8
	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 application, and to verify the dimensions and loads.

Lumber

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

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

This design is valid until 5/24/2024

Kott Inc.
3228 Moodie Dr, Ottawa, Ontario
K1H 8B8
613-838-2775 / 905-642-4400



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Per: joshua.nabua

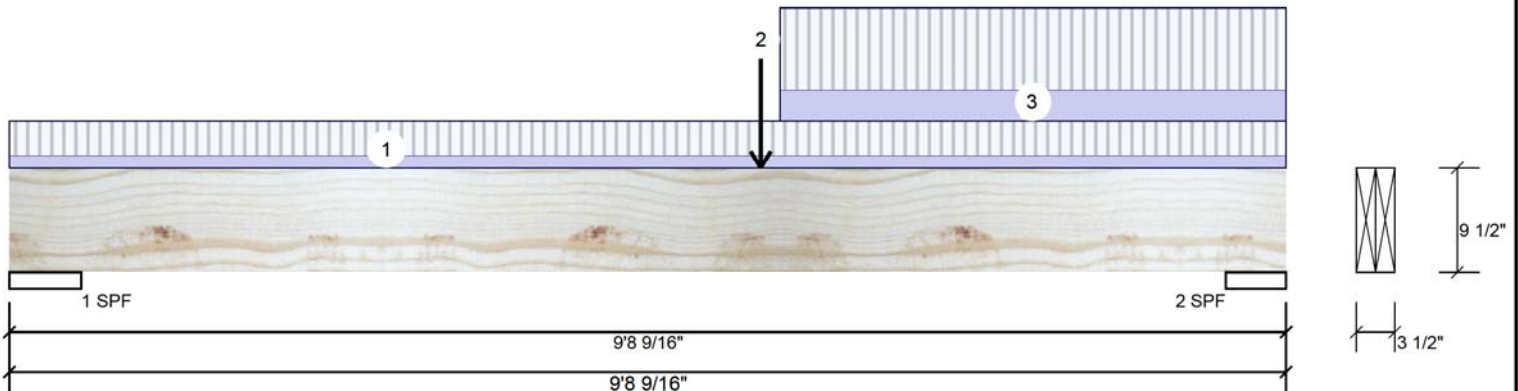


Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

F19-C Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Second Floor


Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	222	136	0	0
2	Vertical	356	193	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	6.522"	Vert	4%	171 / 334	504	L	1.25D+1.5L
2 - SPF	5.500"	Vert	7%	241 / 534	775	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2121 ft-lb	5'8 1/2"	22724 ft-lb	0.093 (9%)	1.25D+1.5L	L
Unbraced	2121 ft-lb	5'8 1/2"	22724 ft-lb	0.093 (9%)	1.25D+1.5L	L
Shear	676 lb	8'5 9/16"	9277 lb	0.073 (7%)	1.25D+1.5L	L
Perm Defl in.	0.014 (L/7490)	5'3 1/16"	0.295 (L/360)	0.048 (5%)	D	Uniform
LL Defl inch	0.026 (L/4081)	5'3 3/4"	0.221 (L/480)	0.118 (12%)	L	L
TL Defl inch	0.040 (L/2642)	5'3 1/2"	0.442 (L/240)	0.091 (9%)	D+L	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 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 must be continuously laterally braced.
- 6 Bottom must be laterally braced at a maximum of 5'8 1/2" o.c.
- 7 Lateral slenderness ratio based on full section width.

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

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

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



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 9-8-9	0-3-6	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	5-8-8		Near Face	175 lb	364 lb	0 lb	0 lb	F19
3	Tie-In	5-10-4 to 9-8-9	0-8-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				8 PLF				

Notes

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

Lumber

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

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

This design is valid until 5/24/2024

Kott Inc.
3228 Moodie Dr, Ottawa, Ontario
613-838-2775 / 905-642-4400



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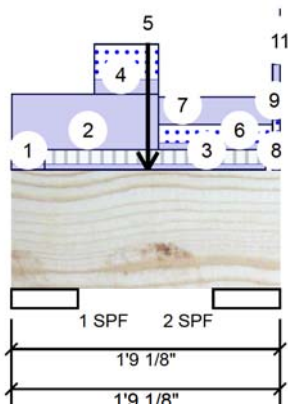


Client: GREENPARK
Project: GLENROWAN 41-3-2
Address: RICHMOND HILL, ON

Date: 7/5/2021
Input by: W C
Job Name: GR41-3-2 STANDARD & REAR UPGRADE
Project #: ROUNDEL HOMES INC

F6-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

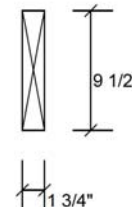
Level: Second Floor



REFER TO MULTIPLE MEMBER
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NAILING OR BOLTING REQUIREMENTS.

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

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Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	19	234	352	0
2	Vertical	17	223	383	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.250"	Vert	34%	292 / 546	839	L	1.25D+1.5S +L
2 - SPF	5.250"	Vert	34%	279 / 590	870	L	1.25D+1.5S +L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	385 ft-lb	10 3/4"	11362 ft-lb	0.034 (3%)	1.25D+1.5S +L	L
Unbraced	385 ft-lb	10 3/4"	11362 ft-lb	0.034 (3%)	1.25D+1.5S +L	L
Shear	29 lb	6 3/8"	3015 lb	0.010 (1%)	1.25D+1.5L	L
Perm Defl in. (L/17946)	0.001	10 3/4"	0.034 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch (L/8947)	0.001	10 3/4"	0.025 (L/480)	0.054 (5%)	S+0.5L	L
TL Defl inch (L/5970)	0.002	10 3/4"	0.051 (L/240)	0.040 (4%)	D+S+0.5L	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 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 4.5.
- 3 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top must be continuously laterally braced.
- 6 Bottom must have sheathing attached or be continuously braced.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-2-10	0-6-5	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-1 to 0-11-10		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
3	Tie-In	0-2-10 to 1-8-0	0-6-5	Top	15 PSF	40 PSF	0 PSF	0 PSF	

Continued on page 2...

Notes

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Lumber

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

chemicals

Handling & Installation

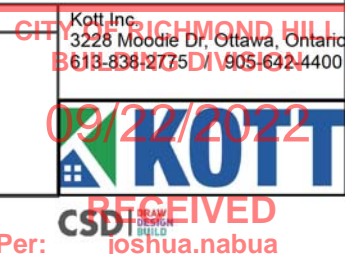
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6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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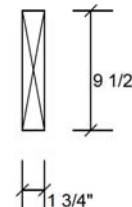
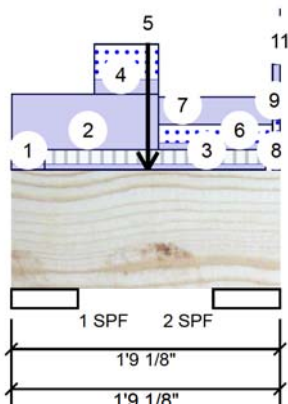
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 Project: GLENROWAN 41-3-2
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 Project #: ROUNDEL HOMES INC

Page 57 of 57

F6-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
4	Part. Uniform	0-6-8 to 0-11-10		Top	21 PLF	0 PLF	51 PLF	0 PLF	
5	Point	0-10-12		Top	309 lb	0 lb	691 lb	0 lb	F14 F14
	Bearing Length	0-5-8							
6	Part. Uniform	0-11-10 to 1-8-9		Top	10 PLF	0 PLF	26 PLF	0 PLF	
7	Part. Uniform	0-11-10 to 1-8-9		Top	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
8	Part. Uniform	1-8-9 to 1-9-2		Top	21 PLF	0 PLF	51 PLF	0 PLF	
9	Part. Uniform	1-8-9 to 1-9-2		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
10	Part. Uniform	1-9-2 to 1-9-2		Top	21 PLF	0 PLF	51 PLF	0 PLF	
11	Part. Uniform	1-9-2 to 1-9-2		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
	Self Weight				4 PLF				

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

**PASS-THRU SQUASH BLOCK
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July 06 2021

Notes

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Manufacturer Info

Forex
 APA: PR-L318

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