

**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.



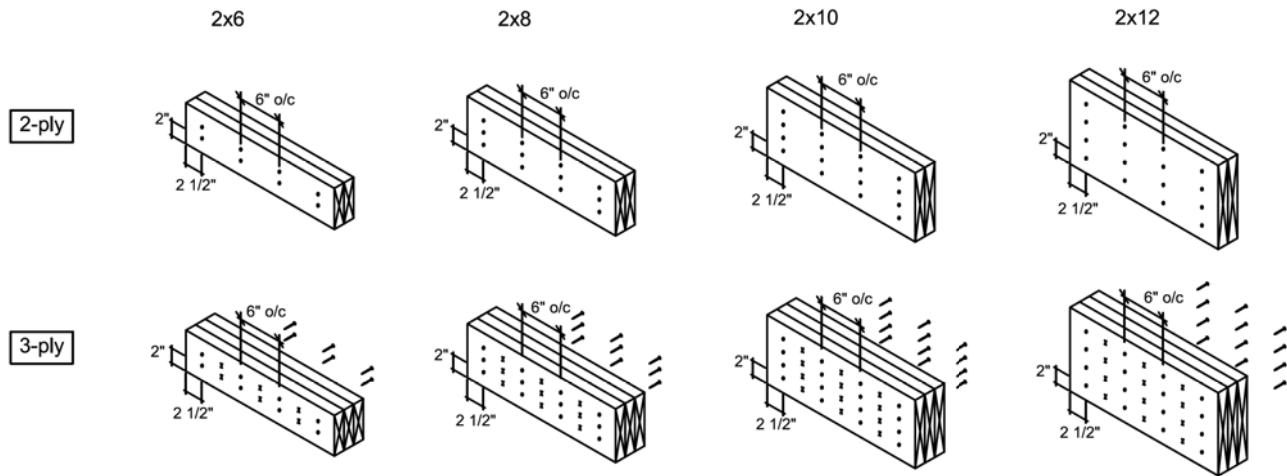
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BUILDING DIVISION

09/22/2022

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Per: joshua.nabua

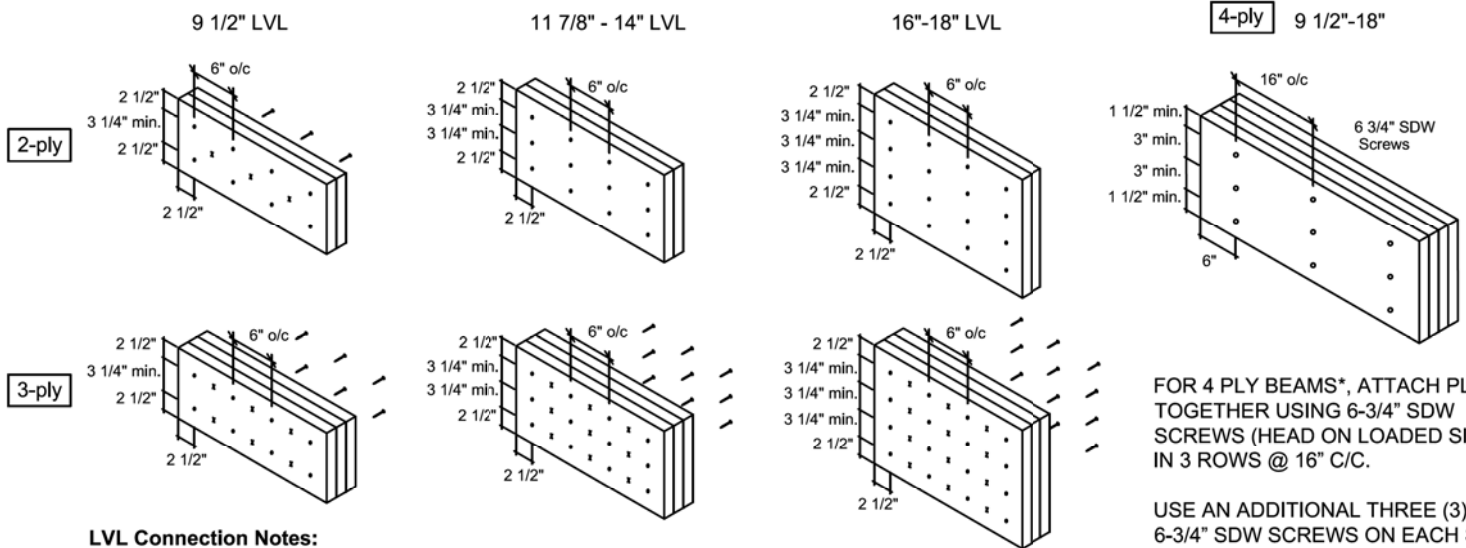
## Conventional Connections



### 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

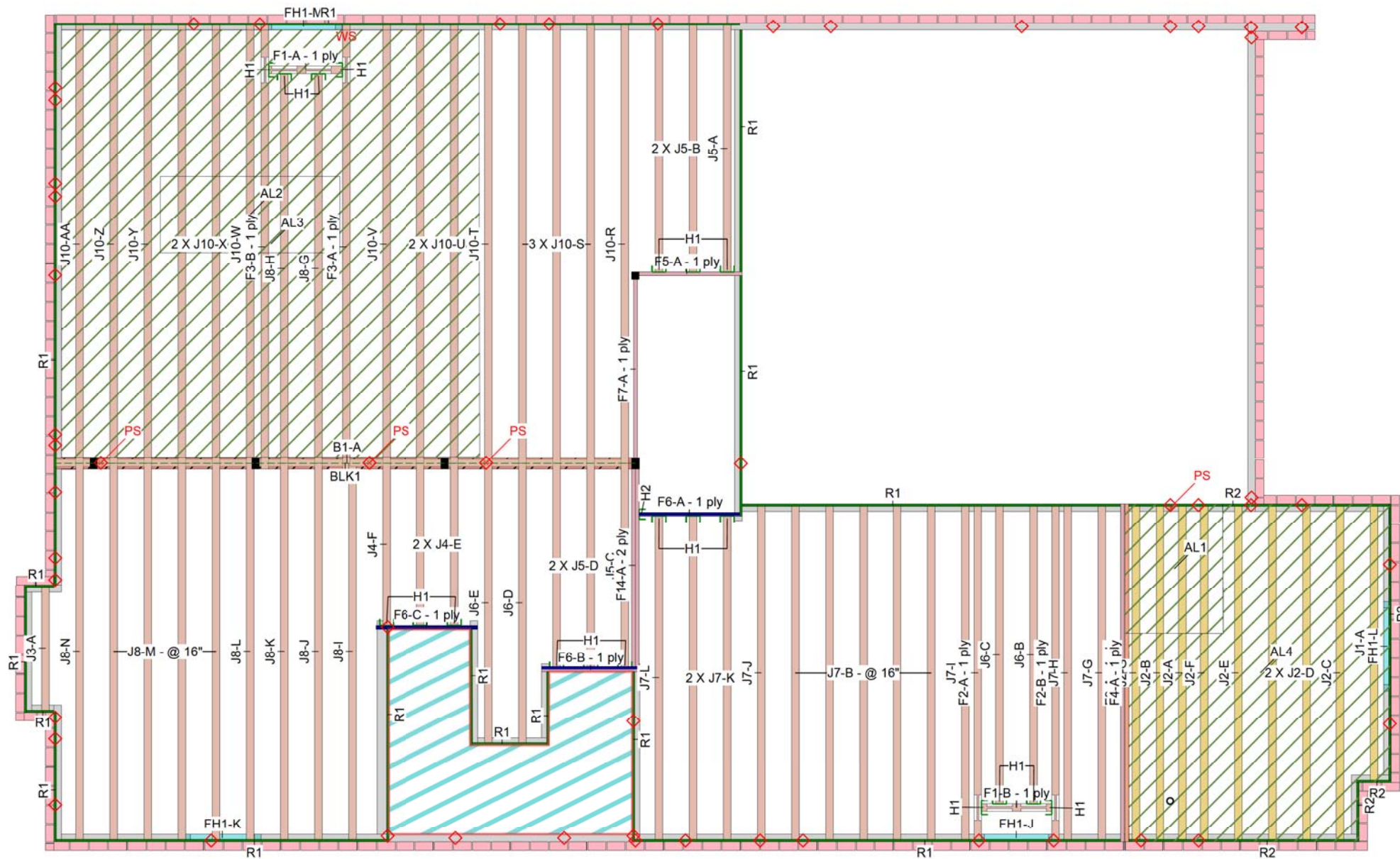


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KOTT Inc.  
3228 Moodie Drive  
Ottawa, ON  
K2H 7V1  
613-838-2775

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## Ground Floor

Ground Floor  
LVL/LSL

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F4	Forex 2.0E-3000Fb LVL	1.75	9.5			1	14-0-0
F9	Forex 2.0E-3000Fb LVL	1.75	11.875			1	14-0-0
F14	Forex 2.0E-3000Fb LVL	1.75	11.875	1	2	2	10-0-0
F7	Forex 2.0E-3000Fb LVL	1.75	11.875			1	8-0-0
F5	Forex 2.0E-3000Fb LVL	1.75	11.875			1	6-0-0
F6	Forex 2.0E-3000Fb LVL	1.75	11.875			3	4-0-0

## I Joist

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
J2	AJS 24	3.5	9.5			8	14-0-0
J1	AJS 24	3.5	9.5			1	12-0-0
F3	AJS 24	3.5	11.875			2	18-0-0
F2	AJS 24	3.5	11.875			2	14-0-0
F1	AJS 24	3.5	11.875			2	4-0-0
J10	AJS 24	3.5	11.875			14	18-0-0
J8	AJS 24	3.5	11.875			11	16-0-0
J7	AJS 24	3.5	11.875			12	14-0-0
J6	AJS 24	3.5	11.875			4	12-0-0
J5	AJS 24	3.5	11.875			6	10-0-0
J4	AJS 24	3.5	11.875			3	8-0-0
J3	AJS 24	3.5	11.875			1	6-0-0

## Rim Board

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R2	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			3	12-0-0
R1	Norbord Rimboard Plus 1.125 X 11.875	1.125	11.875			13	12-0-0

## Blocking

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK1	AJS 24	3.5	11.875	LinFt		Varies	18-0-0

## Hanger

Label	Pcs	Description	Skew	Slope	fasteners	Supported Member
H1	20	LF3511			12 10d	2 #8x1 1/4WS
H2	1	HUS1.81/10			30 16d	10 16d

## JOB INFORMATION

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

WS	Web Stiffener
-WS	In Hanger Label Denotes Web Stiffener
PS	Point Load Support
◇	Load from Above
Wall	Wall
Wall Opening	Wall Opening
Norbord Rimboard Plus 1.125 X 11.875	Norbord Rimboard Plus 1.125 X 11.875
Norbord Rimboard Plus 1.125 X 9.5	Norbord Rimboard Plus 1.125 X 9.5
AJS 24 9.5	AJS 24 9.5

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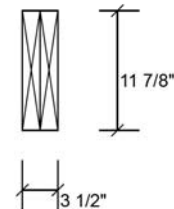
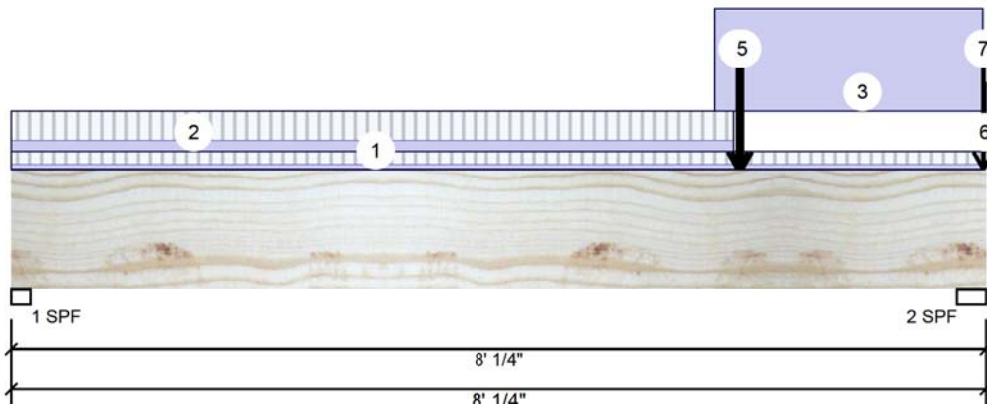


Client: GREENPARK  
Project: ROUNDEL HOMES INC  
Address: GLENROWAN 41-2-1  
RICHMOND HILL, ON

Date: 7/5/2021  
Input by: W C  
Job Name: GR41-2-1 STANDARD  
Project #: ROUNDEL HOMES INC

Page 1 of 41

**F14-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED** Level: Ground Floor



### Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 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	322	186	0	0
2	Vertical	1948	960	0	0

### Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	1.901"	Vert	17%	233 / 484	716	L	1.25D+1.5L
2 - SPF	2.875"	Vert	67%	1199 / 2922	4122	L	1.25D+1.5L

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3062 ft-lb	5'11 3/4"	34261 ft-lb	0.089 (9%)	1.25D+1.5L	L
Unbraced	3062 ft-lb	5'11 3/4"	34261 ft-lb	0.089 (9%)	1.25D+1.5L	L
Shear	1661 lb	6'9 1/2"	11596 lb	0.143 (14%)	1.25D+1.5L	L
Perm Defl in. (L/10831)	0.009	4'6 15/16"	0.258 (L/360)	0.033 (3%)	D	Uniform
LL Defl inch	0.016 (L/5871)	4'7 1/2"	0.194 (L/480)	0.082 (8%)	L	L
TL Defl inch	0.024 (L/3807)	4'7 5/16"	0.387 (L/240)	0.063 (6%)	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.**



July 05 2021

**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.**

### 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 6' 3/16" o.c.
- 7 Lateral slenderness ratio based on full section width.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 8-0-0	0-2-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 5-11-5	0-5-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	5-9-8 to 7-11-15		Top	64 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
4	Point	5-11-12		Top	184 lb	405 lb	0 lb	0 lb	F8 F8
	Bearing Length	0-3-8							

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

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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3228 Moodie Dr, Ottawa, Ontario  
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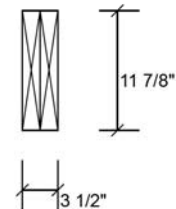
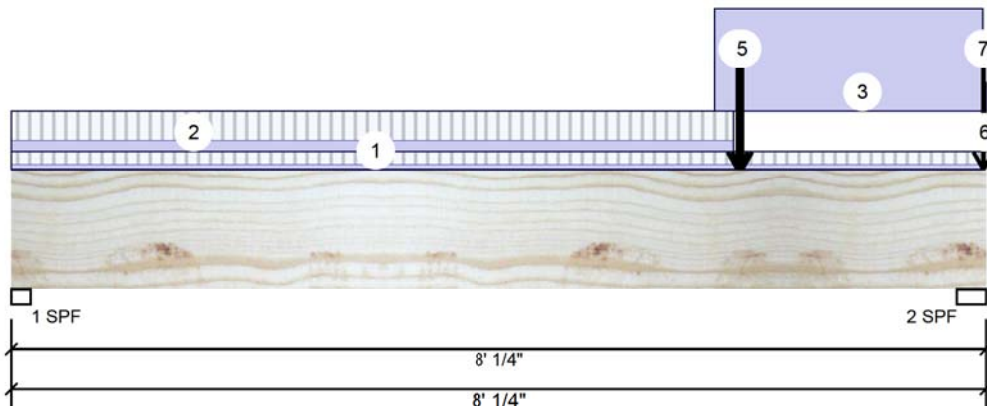


Client: GREENPARK  
Project: ROUNDEL HOMES INC  
Address: GLENROWAN 41-2-1  
RICHMOND HILL, ON

Date: 7/5/2021  
Input by: W C  
Job Name: GR41-2-1 STANDARD  
Project #: ROUNDEL HOMES INC

Page 2 of 41

**F14-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED** Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Point	6-0-3		Near Face	205 lb	523 lb	0 lb	0 lb	F6
6	Part. Uniform	7-11-15 to 8-0-4		Top	43 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
7	Point	8-0-0		Top	472 lb	1167 lb	0 lb	0 lb	C1
	Bearing Length	0-3-8							
	Self Weight				10 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.**



July 05 2021

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**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**

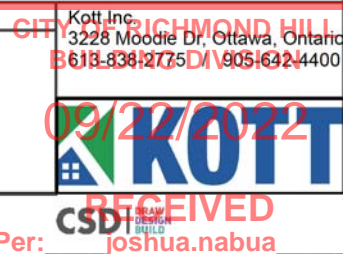
1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support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







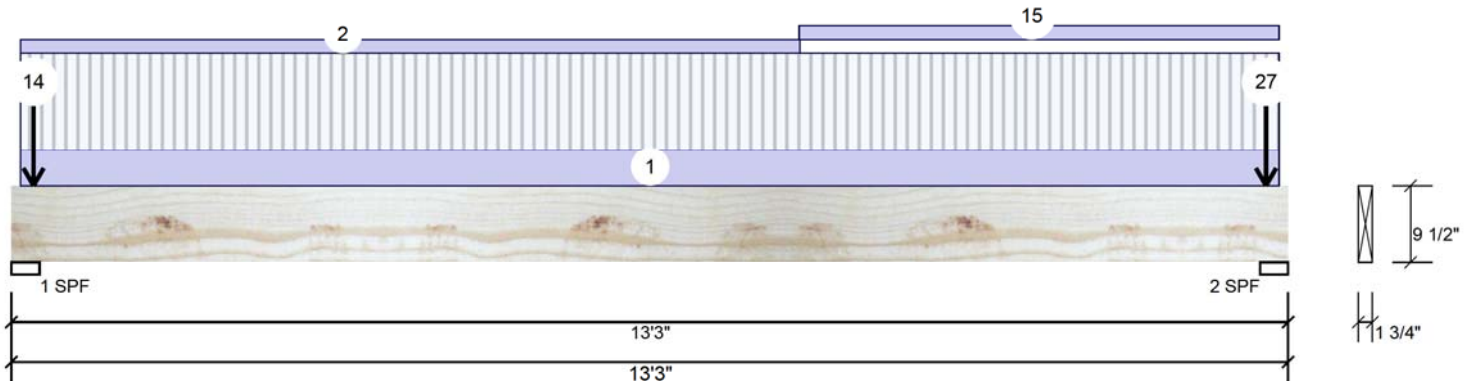
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Project #: ROUNDEL HOMES INC

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

Level: Ground Floor



## Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 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	100	135	79	0
2	Vertical	116	95	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	11%	169 / 218	387	L	1.25D+1.5S +L
2 - SPF	3.500"	Vert	8%	119 / 174	293	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	407 ft-lb	6'7 1/2"	11248 ft-lb	0.036 (4%)	1.25D+1.5L	L
Unbraced	407 ft-lb	6'7 1/2"	11248 ft-lb	0.036 (4%)	1.25D+1.5L	L
Shear	114 lb	12'2"	4592 lb	0.025 (2%)	1.25D+1.5L	L
Perm Defl in.	0.019 (L/8075)	6'7 9/16"	0.426 (L/360)	0.045 (4%)	D	Uniform
LL Defl inch	0.018 (L/8546)	6'7 9/16"	0.320 (L/480)	0.056 (6%)	L+0.5S	L
TL Defl inch	0.037 (L/4152)	6'7 9/16"	0.640 (L/240)	0.058 (6%)	D+L+0.5S	L

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

**PASS-THRU SQUASH BLOCK  
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## 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 Top must be continuously laterally braced.
- 6 Bottom must be laterally braced at bearings.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-1-2 to 13-1-14	0-2-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-1-2 to 8-2-1		Top	1 PLF	0 PLF	0 PLF	0 PLF	
3	Point	0-2-12		Top	8 lb	0 lb	21 lb	0 lb	
	Bearing Length	0-5-8							
4	Point	0-2-12		Top	5 lb	14 lb	0 lb	0 lb	J7

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

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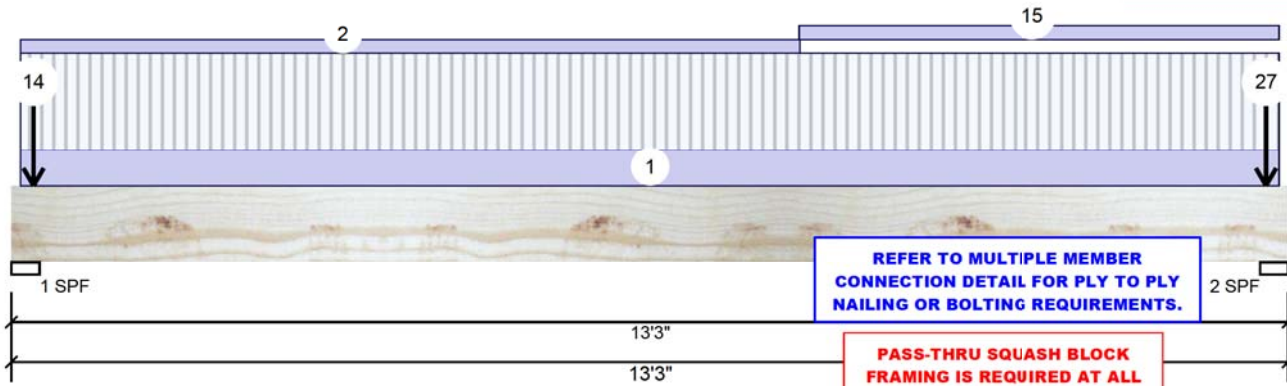
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Page 12 of 41

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

Level: Ground Floor

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...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
	Bearing Length	0-5-8							
5	Point	0-2-12		Top	4 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
6	Point	0-2-12		Top	5 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
7	Point	0-2-12		Top	12 lb	0 lb	29 lb	0 lb	
	Bearing Length	0-5-8							
8	Point	0-2-12		Top	7 lb	20 lb	0 lb	0 lb	J7
	Bearing Length	0-5-8							
9	Point	0-2-12		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	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	12 lb	0 lb	29 lb	0 lb	
	Bearing Length	0-5-8							
12	Point	0-2-12		Top	7 lb	20 lb	0 lb	0 lb	J7
	Bearing Length	0-5-8							
13	Point	0-2-12		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	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	8-2-0 to 13-1-14		Top	1 PLF	0 PLF	0 PLF	0 PLF	
16	Point	13-0-4		Top	9 lb	24 lb	0 lb	0 lb	J7
	Bearing Length	0-5-8							
18	Point	13-0-4		Top	1 lb	2 lb	0 lb	0 lb	
	Bearing Length	0-5-8							
19	Point	13-0-4		Top	7 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
20	Point	13-0-4		Top	9 lb	24 lb	0 lb	0 lb	J7
	Bearing Length	0-5-8							



## 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

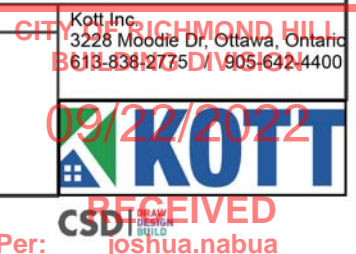
1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support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

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 5/24/2024

## Manufacturer Info

Forex  
APA: PR-L318







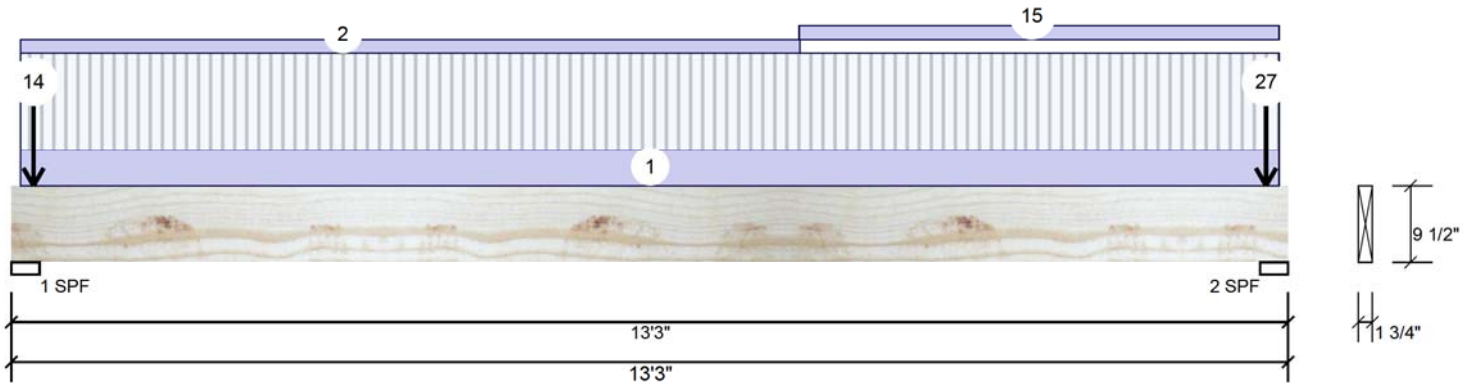
Client: GREENPARK  
 Project: ROUNDEL HOMES INC  
 Address: GLENROWAN 41-2-1  
 RICHMOND HILL, ON

Date: 7/5/2021  
 Input by: W C  
 Job Name: GR41-2-1 STANDARD  
 Project #: ROUNDEL HOMES INC

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

Level: Ground Floor



...Continued from page 2

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
22	Point	13-0-4		Top	1 lb	2 lb	0 lb	0 lb	
	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	6 lb	17 lb	0 lb	0 lb	J7
	Bearing Length	0-5-8							
26	Point	13-0-4		Top	1 lb	1 lb	0 lb	0 lb	
	Bearing Length	0-5-8							
27	Point	13-0-4		Top	5 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.**



July 05 2021

**READ ALL NOTES ON THIS PAGE AND ON THE  
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 IN THE DESIGN OF THIS COMPONENT.**

## 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

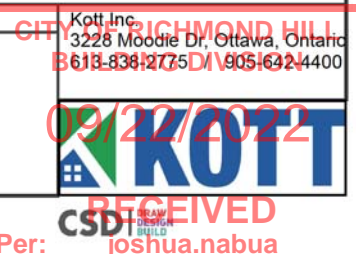
1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support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







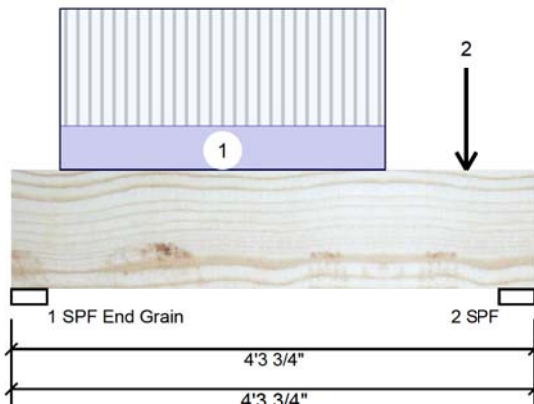
Client: GREENPARK  
Project: ROUNDEL HOMES INC  
Address: GLENROWAN 41-2-1  
RICHMOND HILL, ON

Date: 7/5/2021  
Input by: W C  
Job Name: GR41-2-1 STANDARD  
Project #: ROUNDEL HOMES INC

Page 14 of 41

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

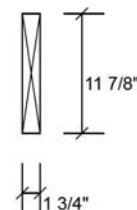
Level: Ground Floor



**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  
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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	330	133	0	0
2	Vertical	365	146	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.505"	Vert	15%	167 / 495	662	L	1.25D+1.5L
2 - SPF	3.500"	Vert	19%	183 / 547	730	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	677 ft-lb	2'1 5/16"	17130 ft-lb	0.039 (4%)	1.25D+1.5L	L
Unbraced	677 ft-lb	2'1 5/16"	17130 ft-lb	0.039 (4%)	1.25D+1.5L	L
Shear	1025 lb	3' 3/8"	5798 lb	0.177 (18%)	1.25D+1.5L	L
Perm Defl in. (L/31156)	0.001	2'1 9/16"	0.128 (L/360)	0.012 (1%)	D	Uniform
LL Defl inch (L/12435)	0.004	2'1 9/16"	0.096 (L/480)	0.039 (4%)	L	L
TL Defl inch (L/8888)	0.005	2'1 9/16"	0.193 (L/240)	0.027 (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 have sheathing attached or be continuously braced.



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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-4-13 to 3-0-13		Far Face	72 PLF	193 PLF	0 PLF	0 PLF	
2	Point	3-8-13		Far Face	67 lb	180 lb	0 lb	0 lb	J5
	Self Weight				5 PLF				

## Notes

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

## Lumber

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

## Handling & Installation

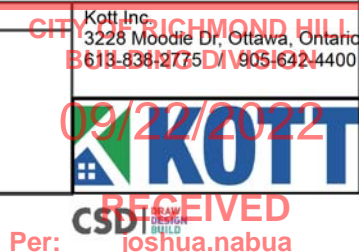
1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support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





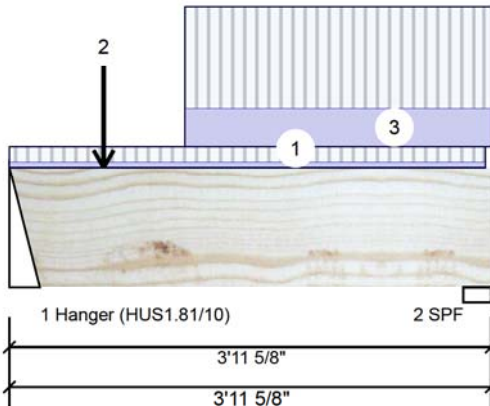
Client: GREENPARK  
Project: ROUNDEL HOMES INC  
Address: GLENROWAN 41-2-1  
RICHMOND HILL, ON

Date: 7/5/2021  
Input by: W C  
Job Name: GR41-2-1 STANDARD  
Project #: ROUNDEL HOMES INC

Page 15 of 41

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

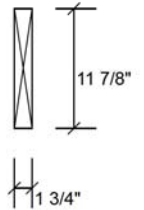
Level: Ground Floor



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  
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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	523	205	0	0
2	Vertical	595	232	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	3.000"	Vert	27%	257 / 785	1042	L	1.25D+1.5L
2 - SPF	2.938"	Vert	37%	290 / 893	1183	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	948 ft-lb	2' 5/16"	17130 ft-lb	0.055 (6%)	1.25D+1.5L	L
Unbraced	948 ft-lb	2' 5/16"	17130 ft-lb	0.055 (6%)	1.25D+1.5L	L
Shear	1463 lb	1' 2 7/8"	5798 lb	0.252 (25%)	1.25D+1.5L	L
Perm Defl in. (L/22421)	0.002	2' 1/8"	0.120 (L/360)	0.016 (2%)	D	Uniform
LL Defl inch	0.005 (L/8759)	2' 1/8"	0.090 (L/480)	0.055 (5%)	L	L
TL Defl inch	0.007 (L/6299)	2' 1/8"	0.180 (L/240)	0.038 (4%)	D+L	L



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## 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.
- Fill all hanger nailing holes.
- 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 3-11-1		Top	15 PLF	40 PLF	0 PLF	0 PLF	
2	Point	0-9-5		Near Face	107 lb	286 lb	0 lb	0 lb	J7
3	Part. Uniform	1-5-5 to 3-11-10		Near Face	100 PLF	267 PLF	0 PLF	0 PLF	
	Self Weight				5 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

- 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  
K1M 1Y1  
613-838-2775 / 905-642-4400



Per: joshua.nabua





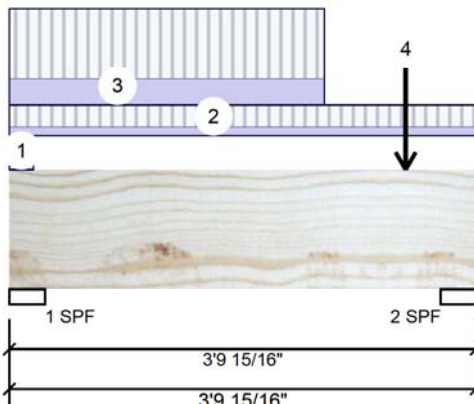
Client: GREENPARK  
Project: ROUNDEL HOMES INC  
Address: GLENROWAN 41-2-1  
RICHMOND HILL, ON

Date: 7/5/2021  
Input by: W C  
Job Name: GR41-2-1 STANDARD  
Project #: ROUNDEL HOMES INC

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# F6-B Forex 2.0E-3000Fb LVL 1.750" X 11.875" - PASSED

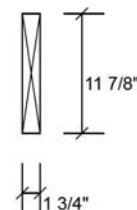
Level: Ground Floor



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  
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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	415	166	0	0
2	Vertical	359	145	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	22%	208 / 622	830	L	1.25D+1.5L
2 - SPF	3.500"	Vert	19%	181 / 539	720	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	580 ft-lb	1'10 3/8"	17130 ft-lb	0.034 (3%)	1.25D+1.5L	L
Unbraced	580 ft-lb	1'10 3/8"	17130 ft-lb	0.034 (3%)	1.25D+1.5L	L
Shear	895 lb	2'6 9/16"	5798 lb	0.154 (15%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/35748)	1'10 5/8"	0.112 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.003 (L/14400)	1'10 5/8"	0.084 (L/480)	0.033 (3%)	L	L
TL Defl inch	0.004 (L/10265)	1'10 5/8"	0.169 (L/240)	0.023 (2%)	D+L	L



July 05 2021

## 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 0-2-6	1-5-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 3-9-15		Top	20 PLF	52 PLF	0 PLF	0 PLF	
3	Part. Uniform	0-0-0 to 2-7-0		Far Face	62 PLF	164 PLF	0 PLF	0 PLF	
4	Point	3-3-0		Far Face	52 lb	139 lb	0 lb	0 lb	J5
	Self Weight				5 PLF				

## Notes

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

## Lumber

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



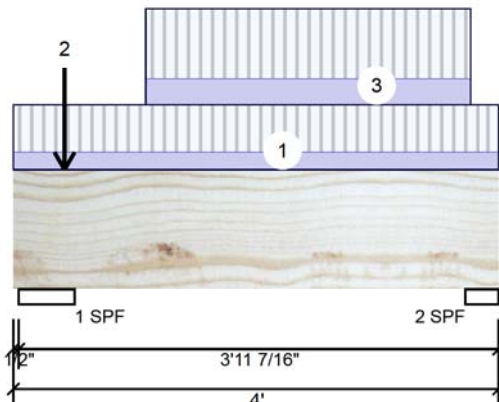
Client: GREENPARK  
Project: ROUNDEL HOMES INC  
Address: GLENROWAN 41-2-1  
RICHMOND HILL, ON

Date: 7/5/2021  
Input by: W C  
Job Name: GR41-2-1 STANDARD  
Project #: ROUNDEL HOMES INC

Page 17 of 41

# F6-C Forex 2.0E-3000Fb LVL 1.750" X 11.875" - PASSED

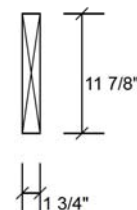
Level: Ground Floor



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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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	596	249	0	0
2	Vertical	374	150	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	Vert	20%	311 / 893	1204	LL	1.25D+1.5L
2 - SPF	3.500"	Vert	20%	187 / 562	749	_L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	604 ft-lb	2' 15/16"	17130 ft-lb	0.035 (4%)	1.25D+1.5L	_L
Unbraced	604 ft-lb	2' 15/16"	17130 ft-lb	0.035 (4%)	1.25D+1.5L	_L
Shear	494 lb	1'5 7/8"	5798 lb	0.085 (9%)	1.25D+1.5L	LL
Perm Defl in.	0.001 (L/34861)	2' 11/16"	0.117 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.003 (L/13899)	2' 3/4"	0.087 (L/480)	0.035 (3%)	L	_L
TL Defl inch	0.004 (L/9937)	2' 3/4"	0.175 (L/240)	0.024 (2%)	D+L	_L
LL Cant	-0.000 (2L/20066)	Lt Cant	0.200 (2L/480)	0.000 (0%)	L	_L
TL Cant	-0.000 (2L/14376)	Lt Cant	0.300 (2L/240)	0.000 (0%)	D+L	_L



July 05 2021

## 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	0-0-0 to 4-0-0		Top	32 PLF	85 PLF	0 PLF	0 PLF	
2	Point	0-5-1		Far Face	126 lb	294 lb	0 lb	0 lb	J4
3	Part. Uniform	1-1-1 to 3-9-1		Far Face	47 PLF	126 PLF	0 PLF	0 PLF	
	Self Weight				5 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

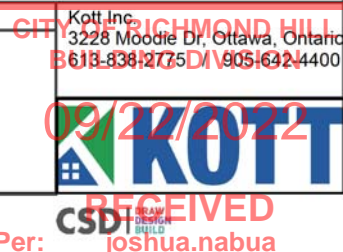
1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support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







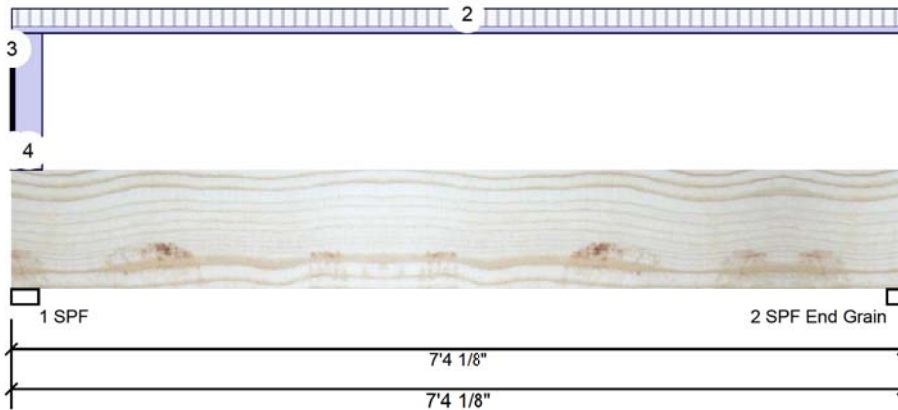
Client: GREENPARK  
Project: ROUNDEL HOMES INC  
Address: GLENROWAN 41-2-1  
RICHMOND HILL, ON

Date: 7/5/2021  
Input by: W C  
Job Name: GR41-2-1 STANDARD  
Project #: ROUNDEL HOMES INC

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# F7-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" - PASSED

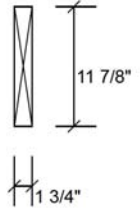
Level: Ground Floor



**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	1198	516	0	0
2	Vertical	30	29	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.688"	Vert	84%	645 / 1797	2442	L	1.25D+1.5L
2 - SPF	1.625"	Vert	4%	36 / 45	81	L	1.25D+1.5L
End Grain							

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	141 ft-lb	3'8 9/16"	17130 ft-lb	0.008 (1%)	1.25D+1.5L	L
Unbraced	141 ft-lb	3'8 9/16"	17130 ft-lb	0.008 (1%)	1.25D+1.5L	L
Shear	62 lb	6'2 5/8"	5798 lb	0.011 (1%)	1.25D+1.5L	L
Perm Defl in. (L/70817)	0.001	3'8 9/16"	0.237 (L/360)	0.005 (1%)	D	Uniform
LL Defl inch (L/67516)	0.001	3'8 5/8"	0.178 (L/480)	0.007 (1%)	L	L
TL Defl inch (L/34564)	0.002	3'8 9/16"	0.355 (L/240)	0.007 (1%)	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 05 2021

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 0-0-5		Top	21 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
2	Tie-In	0-0-1 to 7-4-2	0-2-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	0-0-1		Top	472 lb	1167 lb	0 lb	0 lb	C1
	Bearing Length	0-3-8							
4	Part. Uniform	0-0-5 to 0-3-1		Top	64 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
	Self Weight				5 PLF				

## Notes

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

## Lumber

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

## Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 5/24/2024

## Manufacturer Info

Forex  
APA: PR-L318

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



Per: joshua.nabua



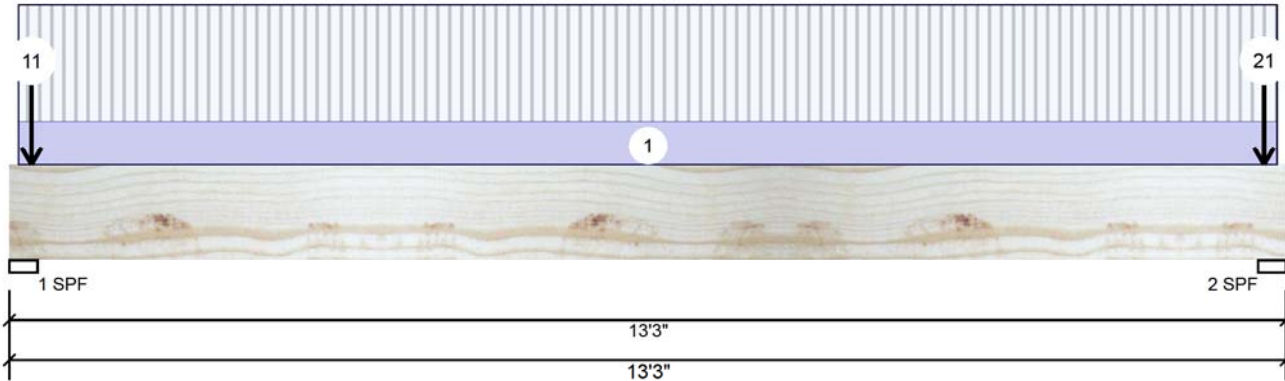
Client: GREENPARK  
Project: ROUNDEL HOMES INC  
Address: GLENROWAN 41-2-1  
RICHMOND HILL, ON

Date: 7/5/2021  
Input by: W C  
Job Name: GR41-2-1 STANDARD  
Project #: ROUNDEL HOMES INC

Page 19 of 41

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

Level: Ground Floor



## Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 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	140	194	137	0
2	Vertical	149	115	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	16%	242 / 345	588	L	1.25D+1.5S +L
2 - SPF	3.500"	Vert	10%	144 / 223	367	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	769 ft-lb	6'7 1/2"	16959 ft-lb	0.045 (5%)	1.25D+1.5L	L
Unbraced	769 ft-lb	6'7 1/2"	16959 ft-lb	0.045 (5%)	1.25D+1.5L	L
Shear	207 lb	1'3 3/8"	5740 lb	0.036 (4%)	1.25D+1.5L	L
Perm Defl in.	0.015 (L/10562)	6'7 9/16"	0.426 (L/360)	0.034 (3%)	D	Uniform
LL Defl inch	0.022 (L/7090)	6'7 9/16"	0.320 (L/480)	0.068 (7%)	L+0.5S	L
TL Defl inch	0.036 (L/4242)	6'7 9/16"	0.640 (L/240)	0.057 (6%)	D+L+0.5S	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.**



July 05 2021

**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.**

## 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 Top must be continuously laterally braced.
- 6 Bottom must be laterally braced at bearings.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-1-2 to 13-1-14	0-4-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-2-12		Top	8 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
3	Point	0-2-12		Top	17 lb	0 lb	42 lb	0 lb	

Continued on page 2...

## Notes

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

## Lumber

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

## Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

Forex  
APA: PR-L318

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



**RECEIVED**  
Per: joshua.nabua





Client: GREENPARK  
Project: ROUNDEL HOMES INC  
Address: GLENROWAN 41-2-1  
RICHMOND HILL, ON

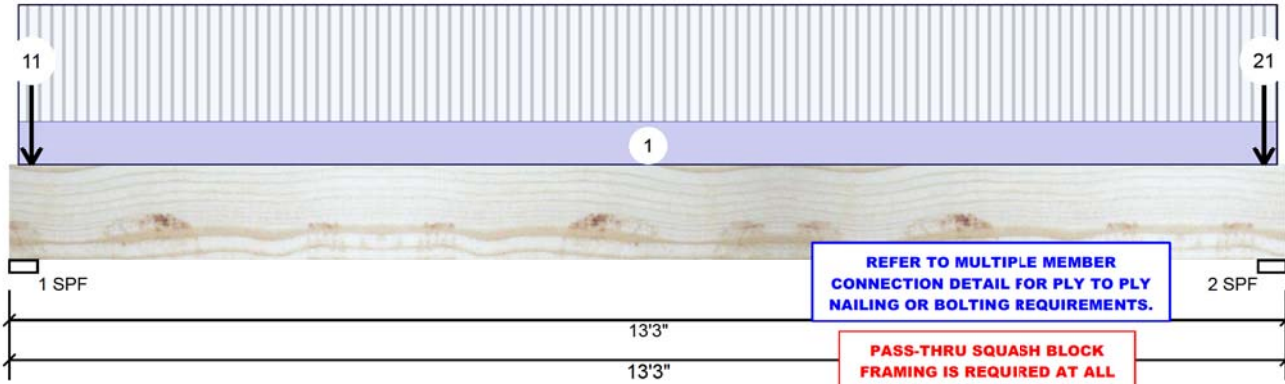
Date: 7/5/2021  
Input by: W C  
Job Name: GR41-2-1 STANDARD  
Project #: ROUNDEL HOMES INC

Page 20 of 41

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

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
	Bearing Length	0-5-8							
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	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
6	Point	0-2-12		Top	12 lb	0 lb	29 lb	0 lb	
	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	13 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
9	Point	0-2-12		Top	27 lb	0 lb	66 lb	0 lb	
	Bearing Length	0-5-8							
10	Point	0-2-12		Top	13 lb	35 lb	0 lb	0 lb	J7
	Bearing Length	0-5-8							
11	Point	0-2-12		Top	13 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
12	Point	13-0-4		Top	2 lb	4 lb	0 lb	0 lb	
	Bearing Length	0-5-8							
13	Point	13-0-4		Top	13 lb	35 lb	0 lb	0 lb	J7
	Bearing Length	0-5-8							
15	Point	13-0-4		Top	13 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	
	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	1 lb	3 lb	0 lb	0 lb	
	Bearing Length	0-5-8							
21	Point	13-0-4		Top	8 lb	0 lb	0 lb	0 lb	Wall Self Weight



## 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

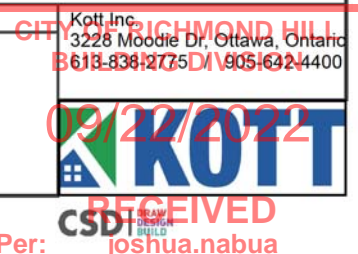
1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support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





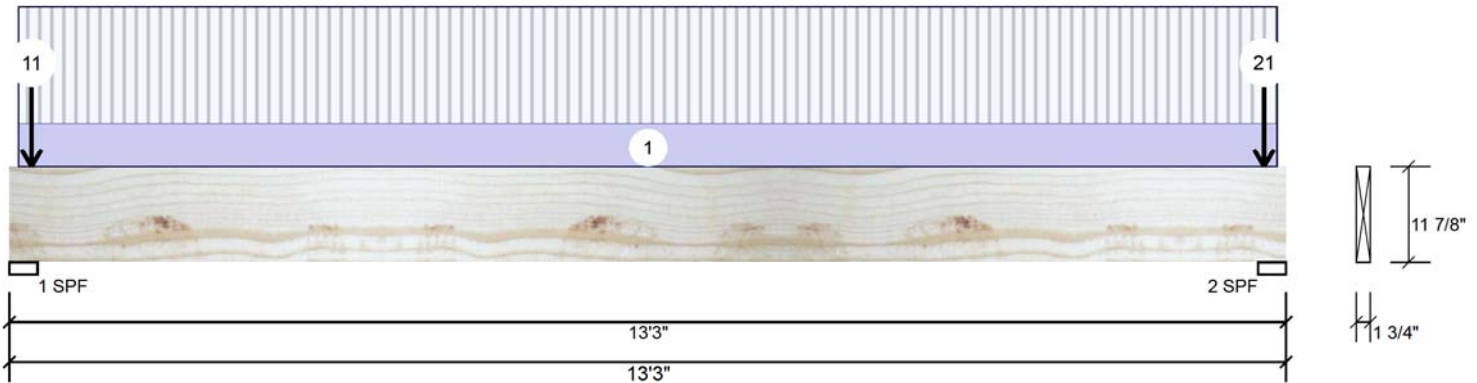
Client: GREENPARK  
 Project: ROUNDEL HOMES INC  
 Address: GLENROWAN 41-2-1  
 RICHMOND HILL, ON

Date: 7/5/2021  
 Input by: W C  
 Job Name: GR41-2-1 STANDARD  
 Project #: ROUNDEL HOMES INC

Page 21 of 41

**F9-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" - 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							
	Self Weight				5 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.**



July 05 2021

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

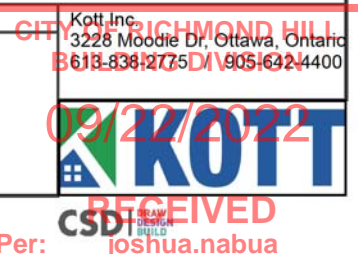
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3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

#### Manufacturer Info

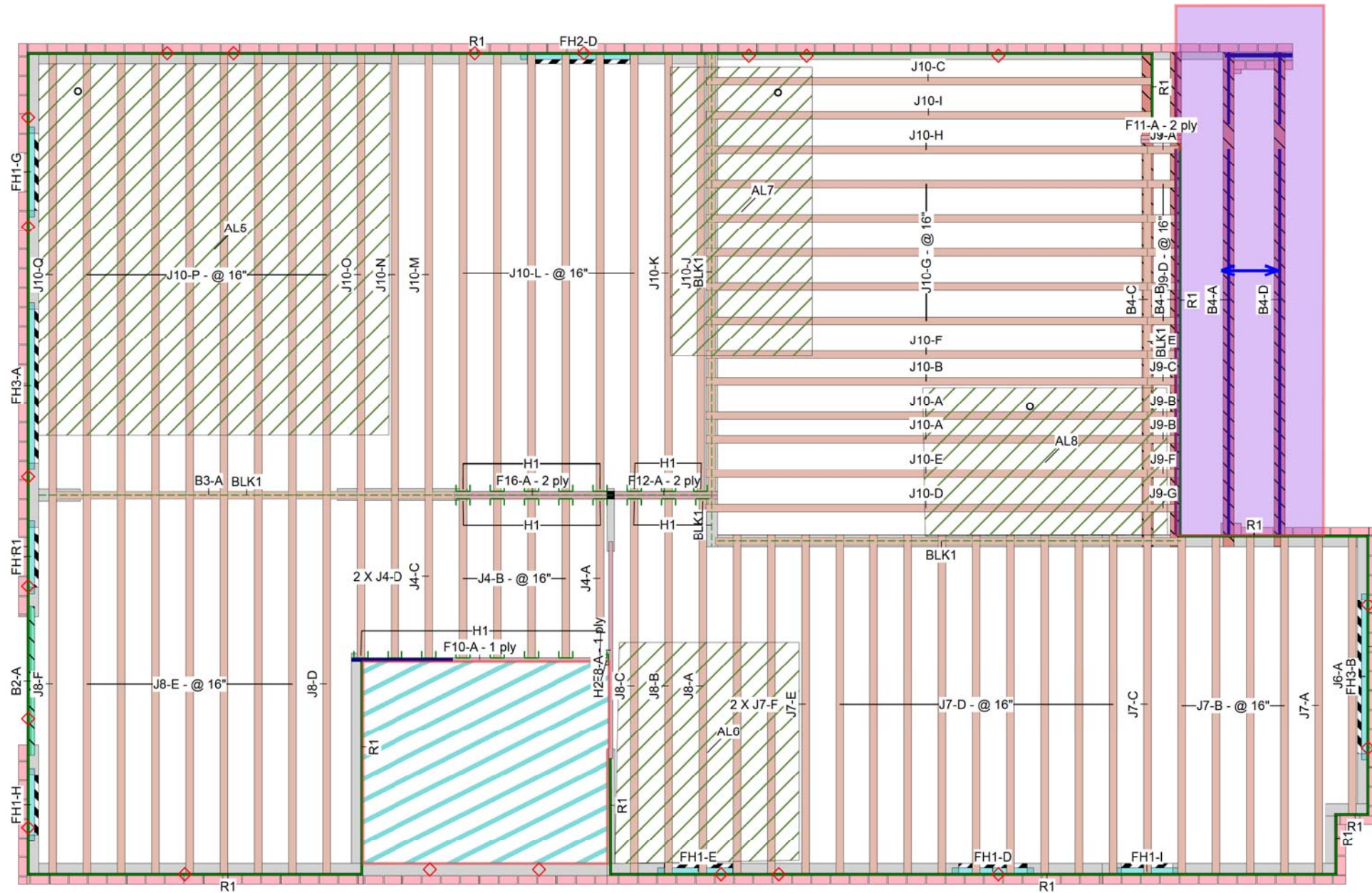
Forex  
 APA: PR-L318

This design is valid until 5/24/2024





## Second Floor

Second Floor  
LVL/LSL

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F10	Forex 2.0E-3000Fb LVL	1.75	11.875			1	12-0-0
F8	Forex 2.0E-3000Fb LVL	1.75	11.875			1	10-0-0
F16	Forex 2.0E-3000Fb LVL	1.75	11.875	1	2	2	8-0-0
F12	Forex 2.0E-3000Fb LVL	1.75	11.875	1	2	2	6-0-0
F11	Forex 2.0E-3000Fb LVL	1.75	11.875	1	2	2	2-0-0

## I Joist

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
J10	AJS 24	3.5	11.875			34	18-0-0
J8	AJS 24	3.5	11.875			12	16-0-0
J7	AJS 24	3.5	11.875			18	14-0-0
J6	AJS 24	3.5	11.875			1	12-0-0
J4	AJS 24	3.5	11.875			8	8-0-0
J9	AJS 24	3.5	11.875			12	2-0-0

## Rim Board

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 11.875	1.125	11.875			15	12-0-0

## Blocking

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK1	AJS 24	3.5	11.875	LinFt		Varies	52-0-0

## Hanger

Label	Pcs	Description	Skew	Slope	fasteners	Supported Member
H1	24	LF3511			12 10d	2 #8x1 1/4WS
H2	1	HUS1.81/10			30 10dx1 1/2	10 16d

## JOB INFORMATION

<b>Builder</b>	GREENPARK
<b>Project</b>	ROUNDEL HOMES INC
<b>Shipping</b>	GLENROWAN 41-2-1 RICHMOND HILL, ON
<b>Sales Rep</b>	RALPH MIRIGELLO
<b>Designer</b>	W C
<b>Plotted</b>	June 09, 2021
<b>Layout Name</b>	GR41-2-1 STANDARD

## Job Path

## DESIGN CRITERIA

<b>Second Floor</b>	
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.**

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

## Legend

WS	Web Stiffener
-WS	In Hanger Label Denotes Web Stiffener
PS	Point Load Support
◇	Load from Above
▨	Wall
▩	Wall Opening
▨	Norbord Rimboard Plus 1.125 X 11.875
▨	AJS 24, 11.875
▨	Forex 2.0E-3000Fb LVL 1.75 X 11.875

**CITY OF RICHMOND HILL**  
**BUILDING DIVISION**  
**09/22/2022**  
**RECEIVED**  
Per: jpsmith





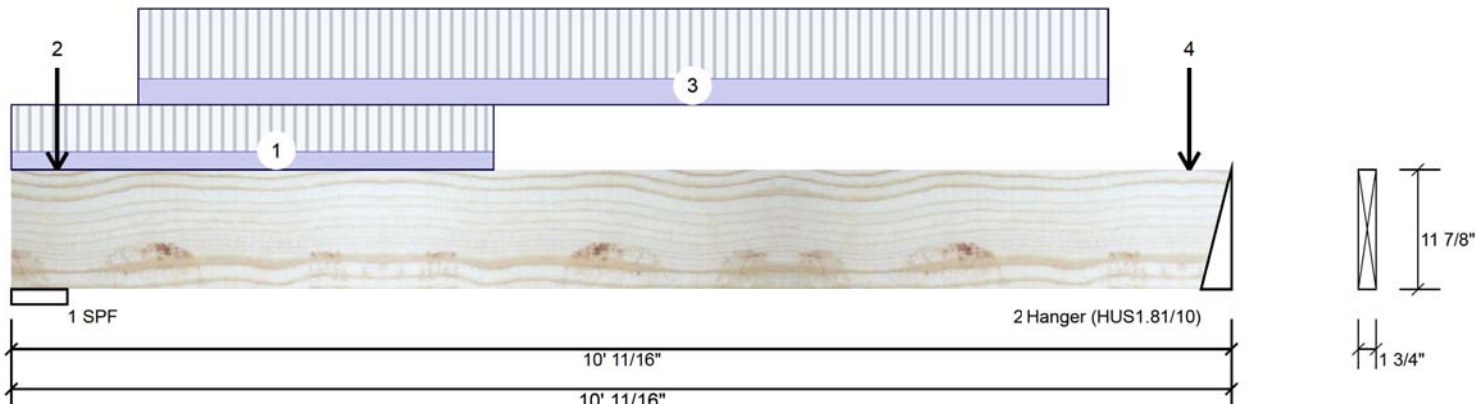
Client: GREENPARK  
Project: ROUNDEL HOMES INC  
Address: GLENROWAN 41-2-1  
RICHMOND HILL, ON

Date: 7/5/2021  
Input by: W C  
Job Name: GR41-2-1 STANDARD  
Project #: ROUNDEL HOMES INC

Page 26 of 41

# F10-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" - PASSED

Level: Second 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	869	352	0	0
2	Vertical	657	271	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	Vert	29%	440 / 1304	1744	L	1.25D+1.5L
2 -	3.000"	Vert	34%	339 / 986			

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3335 ft-lb	4'8 1/4"	17130 ft-lb	0.195 (19%)	1.25D+1.5L	L
Unbraced	3335 ft-lb	4'8 1/4"	17130 ft-lb	0.195 (19%)	1.25D+1.5L	L
Shear	1352 lb	8'9 13/16"	5798 lb	0.233 (23%)	1.25D+1.5L	L
Perm Defl in.	0.026 (L/4329)	5' 1/8"	0.316 (L/360)	0.083 (8%)	D	Uniform
LL Defl inch	0.064 (L/1770)	5' 1/16"	0.237 (L/480)	0.271 (27%)	L	L
TL Defl inch	0.090 (L/1257)	5' 1/16"	0.474 (L/240)	0.191 (19%)	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.**



July 05 2021

## 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 Top must be continuously laterally braced.
- 5 Bottom must have sheathing attached or be continuously braced.

**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	Part. Uniform	0-0-0 to 3-11-11		Top	32 PLF	84 PLF	0 PLF	0 PLF	
2	Point	0-4-8		Far Face	30 lb	81 lb	0 lb	0 lb	J4
3	Part. Uniform	1-0-8 to 9-0-8		Far Face	47 PLF	125 PLF	0 PLF	0 PLF	
4	Point	9-8-8		Far Face	42 lb	112 lb	0 lb	0 lb	J4
	Self Weight				5 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

Kott Inc.  
3228 Moodie Dr, Ottawa, Ontario  
K1M 1Y4  
613-838-2775 / 905-642-4400



Per: joshua.nabua



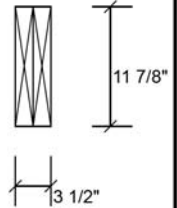
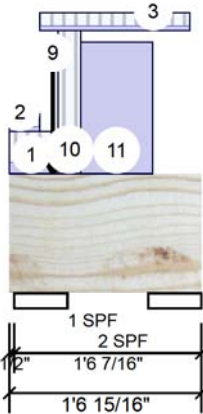


Client: GREENPARK  
Project: ROUNDEL HOMES INC  
Address: GLENROWAN 41-2-1  
RICHMOND HILL, ON

Date: 7/5/2021  
Input by: W C  
Job Name: GR41-2-1 STANDARD  
Project #: ROUNDEL HOMES INC

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**F11-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED** Level: Second Floor



### Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 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	22	638	1281	0
2	Vertical	9	42	0	0

### Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.250"	Vert	32%	798 / 1943	2741	LL	1.25D+1.5S +L
2 - SPF	5.250"	Vert	1%	53 / 14	67	_L	1.25D+1.5L

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	14 ft-lb	8 11/16"	22269 ft-lb	0.001 (0%)	1.25D+1.5L	_L
Unbraced	14 ft-lb	8 11/16"	22269 ft-lb	0.001 (0%)	1.25D+1.5L	_L
Shear	49 lb	1'5 5/8"	7537 lb	0.007 (1%)	1.25D+1.5L	_L
Perm Defl in.	0.000 (L/442483)	9 3/16"	0.031 (L/360)	0.001 (0%)	D	Uniform
LL Defl inch	0.000 (L/1409007)	6 3/4"	0.024 (L/480)	0.000 (0%)	L+0.5S	_L
TL Defl inch	0.000 (L/349521)	8 13/16"	0.047 (L/240)	0.001 (0%)	D+L+0.5S	_L
LL Cant	-0.000 (2L/15256834)	Lt Cant	0.200 (2L/480)	0.000 (0%)	L+0.5S	_L
TL Cant	-0.000 (2L/4866440)	Lt Cant	0.300 (2L/240)	0.000 (0%)	D+L+0.5S	_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.**



July 05 2021

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IN THE DESIGN OF THIS COMPONENT.**

### Design Notes

- 1 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 4.5.
- 2 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 have sheathing attached or be continuously braced.
- 8 Lateral slenderness ratio based on full section width.

### Notes

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

### Lumber

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

### chemicals

### Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

### Manufacturer Info

Forex  
APA: PR-L318

Kott Inc.  
3228 Moodie Dr, Ottawa, Ontario  
K1M 1Y4  
613-838-2775 / 905-642-4400



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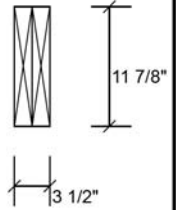
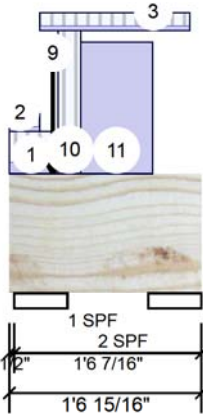


Client: GREENPARK  
Project: ROUNDEL HOMES INC  
Address: GLENROWAN 41-2-1  
RICHMOND HILL, ON

Date: 7/5/2021  
Input by: W C  
Job Name: GR41-2-1 STANDARD  
Project #: ROUNDEL HOMES INC

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**F11-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED** Level: Second Floor



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-4-13	0-5-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-3-0	0-2-6	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	0-3-0 to 1-5-13	0-2-6	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Point	0-4-5		Top	3 lb	0 lb	8 lb	0 lb	
	Bearing Length	0-5-8							
5	Point	0-4-5		Top	13 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
6	Point	0-4-5		Top	557 lb	0 lb	1262 lb	0 lb	F13 F13
	Bearing Length	0-5-8							
7	Point	0-4-5		Top	5 lb	0 lb	11 lb	0 lb	
	Bearing Length	0-5-8							
8	Point	0-4-5		Top	27 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
9	Point	0-4-5		Top	2 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
10	Tie-In	0-4-13 to 0-7-1	1-7-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
11	Part. Uniform	0-7-1 to 1-2-1		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
	Self Weight				10 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.**



July 05 2021

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**Notes**

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

**Lumber**

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

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

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

6. For flat roofs provide proper drainage to prevent ponding

**Manufacturer Info**

Forex  
APA: PR-L318

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



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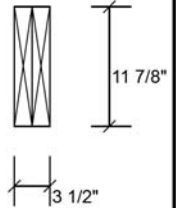
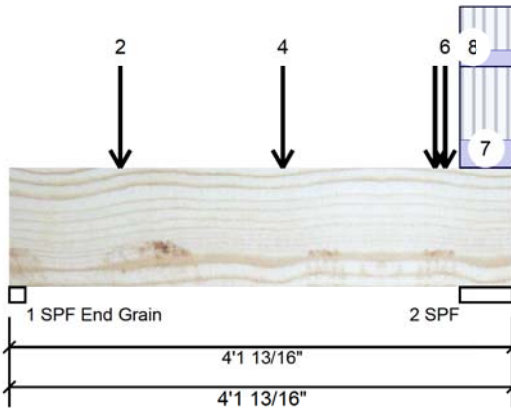


Client: GREENPARK  
Project: ROUNDEL HOMES INC  
Address: GLENROWAN 41-2-1  
RICHMOND HILL, ON

Date: 7/5/2021  
Input by: W C  
Job Name: GR41-2-1 STANDARD  
Project #: ROUNDEL HOMES INC

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**F12-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED** Level: Second Floor



### Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 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	974	407	0	0
2	Vertical	1198	517	0	0

### Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	1.581"	Vert	48%	509 / 1461	1971	L	1.25D+1.5L
2 - SPF	5.447"	Vert	21%	646 / 1797	2443	L	1.25D+1.5L

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2170 ft-lb	2'2 15/16"	34261 ft-lb	0.063 (6%)	1.25D+1.5L	L
Unbraced	2170 ft-lb	2'2 15/16"	34261 ft-lb	0.063 (6%)	1.25D+1.5L	L
Shear	2413 lb	2'8 1/2"	11596 lb	0.208 (21%)	1.25D+1.5L	L
Perm Defl in. (L/19407)	0.002	2'2 3/8"	0.123 (L/360)	0.019 (2%)	D	Uniform
LL Defl inch	0.005 (L/8168)	2'2 3/8"	0.092 (L/480)	0.059 (6%)	L	L
TL Defl inch	0.008 (L/5749)	2'2 3/8"	0.184 (L/240)	0.042 (4%)	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.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top must be continuously laterally braced.
- Bottom must have sheathing attached or be continuously braced.
- 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 05 2021

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Point	0-10-15		Far Face	168 lb	448 lb	0 lb	0 lb	J10
2	Point	0-10-15		Near Face	140 lb	337 lb	0 lb	0 lb	J8
3	Point	2-2-15		Far Face	175 lb	434 lb	0 lb	0 lb	J10
4	Point	2-2-15		Near Face	160 lb	384 lb	0 lb	0 lb	J8
5	Point	3-5-15		Far Face	91 lb	210 lb	0 lb	0 lb	J10

Continued on page 2...

### Notes

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

### Lumber

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

### Handling & Installation

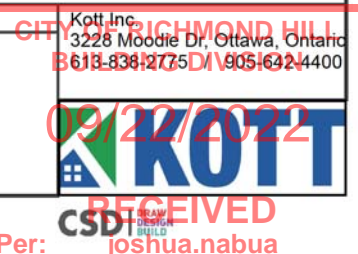
- LVL beams must not be cut or drilled
- Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
- Damaged Beams must not be used
- Design assumes top edge is laterally restrained
- Provide lateral support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

- For flat roofs provide proper drainage to prevent ponding

### Manufacturer Info

Forex  
APA: PR-L318

This design is valid until 5/24/2024





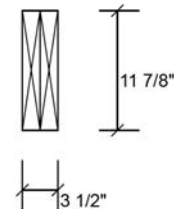
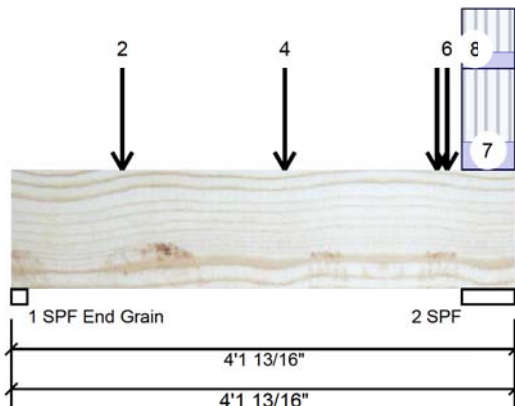
Client: GREENPARK  
Project: ROUNDEL HOMES INC  
Address: GLENROWAN 41-2-1  
RICHMOND HILL, ON

Date: 7/5/2021  
Input by: W C  
Job Name: GR41-2-1 STANDARD  
Project #: ROUNDEL HOMES INC

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**F12-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED**

Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Point	3-6-15		Near Face	146 lb	347 lb	0 lb	0 lb	J8
7	Tie-In	3-8-6 to 4-1-13	0-5-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
8	Tie-In	3-8-6 to 4-1-13	0-3-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				10 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.**



July 05 2021

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#### 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



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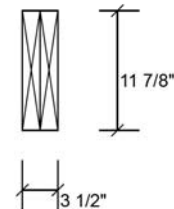
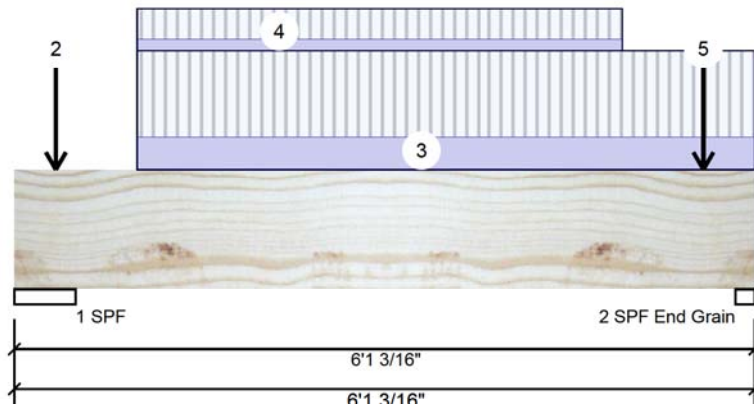


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Project: ROUNDEL HOMES INC  
Address: GLENROWAN 41-2-1  
RICHMOND HILL, ON

Date: 7/5/2021  
Input by: W C  
Job Name: GR41-2-1 STANDARD  
Project #: ROUNDEL HOMES INC

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**F16-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED** Level: Second Floor



### Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 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	1459	576	0	0
2	Vertical	1360	537	0	0

### Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	6.026"	Vert	22%	721 / 2188	2908	L	1.25D+1.5L
2 - SPF	1.938"	Vert	54%	671 / 2040	2711	L	1.25D+1.5L
End Grain							

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3572 ft-lb	3'2 7/8"	34261 ft-lb	0.104 (10%)	1.25D+1.5L	L
Unbraced	3572 ft-lb	3'2 7/8"	34261 ft-lb	0.104 (10%)	1.25D+1.5L	L
Shear	2357 lb	1'5 7/8"	11596 lb	0.203 (20%)	1.25D+1.5L	L
Perm Defl in.	0.006 (L/11178)	3'2 3/4"	0.185 (L/360)	0.032 (3%)	D	Uniform
LL Defl inch	0.015 (L/4411)	3'2 13/16"	0.139 (L/480)	0.109 (11%)	L	L
TL Defl inch	0.021 (L/3163)	3'2 3/4"	0.278 (L/240)	0.076 (8%)	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 must be continuously laterally braced.
- 5 Bottom must have sheathing attached or be continuously braced.
- 6 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 05 2021

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Point	0-4-1		Far Face	102 lb	273 lb	0 lb	0 lb	J10
2	Point	0-4-1		Near Face	46 lb	122 lb	0 lb	0 lb	J4
3	Part. Uniform	1-0-1 to 6-1-3		Far Face	132 PLF	352 PLF	0 PLF	0 PLF	
4	Part. Uniform	1-0-1 to 5-0-1		Near Face	46 PLF	124 PLF	0 PLF	0 PLF	
5	Point	5-8-1		Near Face	51 lb	136 lb	0 lb	0 lb	J4
	Self Weight				10 PLF				

### Notes

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

### Lumber

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

### chemicals

### Handling & Installation

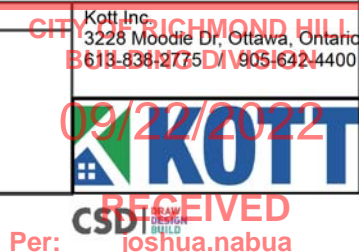
1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support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





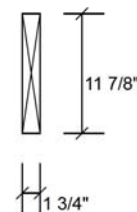
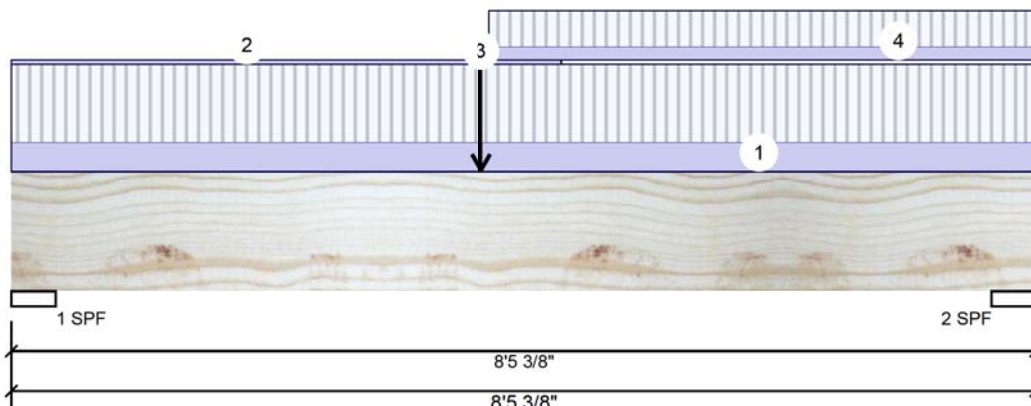
Client: GREENPARK  
Project: ROUNDEL HOMES INC  
Address: GLENROWAN 41-2-1  
RICHMOND HILL, ON

Date: 7/5/2021  
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Job Name: GR41-2-1 STANDARD  
Project #: ROUNDEL HOMES INC

Page 32 of 41

# F8-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" - PASSED

Level: Second 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	445	204	0	0
2	Vertical	405	184	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.385"	Vert	20%	255 / 667	922	L	1.25D+1.5L
2 - SPF	4.571"	Vert	17%	230 / 607	837	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2960 ft-lb	3'10 5/16"	17130 ft-lb	0.173 (17%)	1.25D+1.5L	L
Unbraced	2960 ft-lb	3'10 5/16"	17130 ft-lb	0.173 (17%)	1.25D+1.5L	L
Shear	869 lb	1'4 1/4"	5798 lb	0.150 (15%)	1.25D+1.5L	L
Perm Defl in.	0.015 (L/6137)	3'10 3/8"	0.261 (L/360)	0.059 (6%)	D	Uniform
LL Defl inch	0.035 (L/2700)	3'10 3/8"	0.196 (L/480)	0.178 (18%)	L	
TL Defl inch	0.050 (L/1875)	3'10 3/8"	0.391 (L/240)	0.128 (13%)	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.**

**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 05 2021

## 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 a maximum of 4'7 1/16" o.c.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 8-5-6	0-5-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 4-6-6		Top	1 PLF	0 PLF	0 PLF	0 PLF	
3	Point	3-10-6		Far Face	271 lb	657 lb	0 lb	0 lb	F10
4	Tie-In	3-11-4 to 8-5-6	0-2-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				5 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

chemicals

## Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

Forex  
APA: PR-L318

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