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 <u>only</u> limited to the calculation of this building component for the loads and conditions shown on this drawing.

The responsibility of the undersigned is limited to the verification of the structural capacity of the 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.

<u>CODE</u>

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 preauthorization.

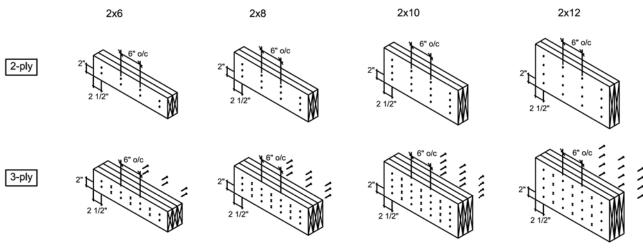


CITY OF RICHMOND HILL BUILDING DIVISION

09/22/2022

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Per: joshua.nabua

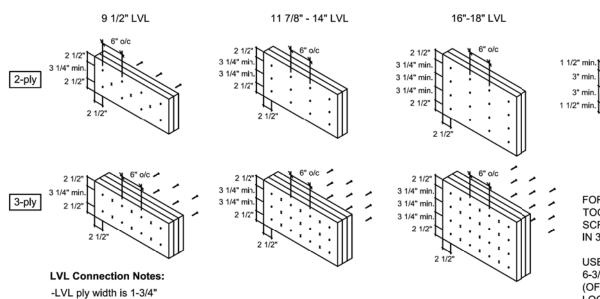
Conventional Connections



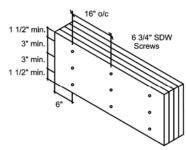
Conventional Connection Notes:

- -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



- -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.



4-ply 9 1/2"-18"

FOR 4 PLY BEAMS*, ATTACH PLIES 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



KOTTY INF. RICHMOND HILL 3228 Moodle Brive ISION Ottawa, ON K2H7V1/ZZ 613-838-2775

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Last revised: February 19, 2021

KTF-GREENPARK-GLENROWAN 41-2-2 Ground Floor FH1-NR1

2 X J5-B

F5-A - 1 ply

2X8 FRAMING

F6-A - 1 ply

2 X J7-K

R1

F1-B - 1 ply FH1-K

R2

-3 X J10-S- 2-

2 X J5-D 4

F6-B - 1 ply

2 X J10-U 0-

2 X J4-E

F6-C - 1 ply,

VL/LS	Floor							JOB INFORMATION
Label		Width	Depth	Qty	Plies	Pcs	Length	Builder
F4	Forex	1.75	9.5		3, 1133	1	14-0-0	GREENPARK
	2.0E-3000Fb LVL							Project
F9	Forex 2.0E-3000Fb LVL	1.75	11.875			1	14-0-0	ROUNDEL HOMES IN
F14	Forex 2.0E-3000Fb LVL	1.75	11.875	1	2	2	10-0-0	Shipping GLENROWAN 41-2-2 RICHMOND HILL, ON
F7	Forex 2.0E-3000Fb LVL	1.75	11.875			1	8-0-0	Sales Rep
F5	Forex 2.0E-3000Fb LVL	1.75	11.875			1	6-0-0	RALPH MIRIGELLO
F6	Forex 2.0E-3000Fb LVL	1.75	11.875			3	4-0-0	Designer W C
Joist								Plotted
Label	Description	Width	Depth	Qty	Plies	Pcs	Length	June 09, 2021
J2	AJS 24	3.5	9.5		100000000000000000000000000000000000000	9	14-0-0	Layout Name
F3	AJS 24	3.5	11.875			2	18-0-0	GR41-2-2 STANDARD
F2	AJS 24	3.5	11.875			2	14-0-0	
F1	AJS 24	3.5	11.875			2	4-0-0	Job Path
J10	AJS 24	3.5	11.875			14	18-0-0	DESIGN CRITERIA
J8	AJS 24	3.5	11.875			11	16-0-0	Ground Floor
J7	AJS 24	3.5	11.875			12	14-0-0	Design Method
J6	AJS 24	3.5	11.875			4	12-0-0	Building Code
J5	AJS 24	3.5	11.875			6	10-0-0	Floor
J4	AJS 24	3.5	11.875			3	8-0-0	Loads
J3	AJS 24	3.5	11.875			1	6-0-0	Live
Rim Bo	ard							Dead
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	Decking Decking
R1	Norbord Rimboard Plus 1.125 X 11.875	1.125	11.875			13	12-0-0	Thickness Fastener Vibration
Blockin	g					,		Ceiling:
Label		Width	Depth	Qty	Plies	Pcs	Length	Coming.
BLK1	AJS 24	3.5	11.875	LinFt		Varies	18-0-0	1

Skew Slope

fasteners

12 10d

30 16d

uilder GREENPARK roject ROUNDEL HOMES INC hipping GLENROWAN 41-2-2 RICHMOND HILL, ON ales Rep RALPH MIRIGELLO esigner WC lotted lune 09, 2021 ayout Name GR41-2-2 STANDARD b Path SIGN CRITERIA round Floor esign Method LSD (Canada) NBCC 2015 / OBC 2012 uilding Code oor oads 40 15 ecking OSB ecking 5/8" nickness stener Nailed & Glued bration Gypsum 1/2" eiling:

CCMC References

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

Kott Inc.

fasteners

2 #8x1 1/4WS

10 16d

3228 Moodie Dr, Ottawa

613-838-2775 / 905-642-4400



IM0721-007 Page 3 of 22

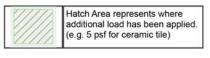
1.	All	blocking	to be	cut from	12'	joists	
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Label Pcs Description

1 HUS1.81/10

H1 20 LF3511

- 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
- 10. 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.



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

Version 21.20.293 Powered by iStruct™ Dataset: embedded

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

Legend CITY OF RICHMOND HILL In Hanger Laber Denotes Web Stiffene PS Point Load Support Coad from Above / 2 **\Q** Wall Opening Norbord Rimboard Plus 1,125 X 11.875 Norbord Rimboard Plus 1 125 X 9.5 AJS 24 95 hua nabua



Client: Project: Address:

GREENPARK

7/5/2021

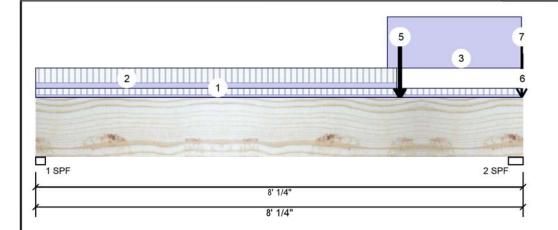
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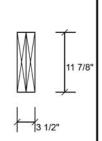
GLENROWAN 41-2-2 Job Name: GR41-2-2 STANDARD RICHMOND HILL, ON Project #: ROUNDEL HOMES INC

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

2-Ply - PASSED

Level: Ground Floor





Wind

Member Information Type: 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 40 PSF Floor Live: 15 PSF Dead:

Unfactored Reactions UNPATTERNED Ib (Uplift) Bra Direction

Dig	Direction	LIVE	Dead	OHOW	VVIIIG
1	Vertical	322	186	0	0
2	Vertical	1948	960	0	0

Rearings and Factored Reactions

Dearing.	bearings and ractored 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.	0.009 (L/10831)	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.



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.

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.

pht

Continued on page 2...

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

- Dry service conditions, unless noted otherwise
 LVL not to be treated with fire retardant or corrosive
- Handling & Installation
- LVL beams must not be cut or drilled
 Refer to manufacturer's product information regarding installation requirements, multi-pl regarding installation requirements, multi-fastening details, beam strength values, and co 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 rolation

6. For flat roofs provide proper drainage to prevent

This design is valid until 5/24/2024

Forex APA: PR-L318

Manufacturer Info

3228 Moodie Dr. Ottawa, Ontario 618-838-2775 D/\905-642-4400

shua.nabua

Page 2 of 35



Client: Project: Address:

GREENPARK

7/5/2021

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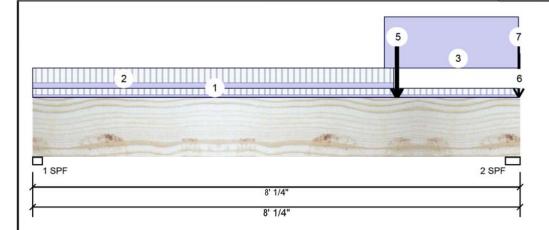
WC

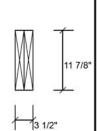
GLENROWAN 41-2-2 RICHMOND HILL, ON Job Name: GR41-2-2 STANDARD Project #: ROUNDEL HOMES INC

Forex 2.0E-3000Fb LVL F14-A

1.750" X 11.875"

2-Ply - PASSED Level: Ground Floor





Continued	from	page 1	
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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		Тор	43 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
7	Point	8-0-0		Тор	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.



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.

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- Dry service conditions, unless noted otherwise
 LVL not to be treated with fire retardant or corrosive
- Handling & Installation
- I. UVL beams must not be cutor drilled
 Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam stength 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 rolation
- For flat roofs provide proper drainage to prevent ponding

This design is valid until 5/24/2024

Manufacturer Info Forex APA: PR-L318

3228 Moodie Dr. Ottawa, Ontario 61B-838-2775 D/\905-642-4400



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Client: Project: Address:

GREENPARK

GLENROWAN 41-2-2

RICHMOND HILL, ON

7/5/2021

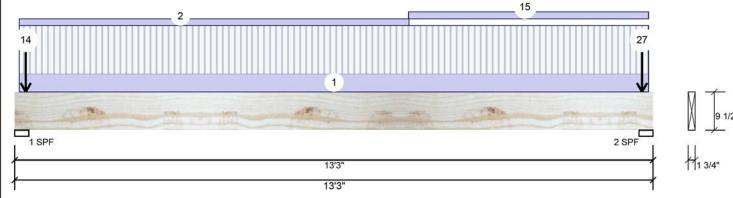
WC Input by:

Job Name: GR41-2-2 STANDARD Project #: ROUNDEL HOMES INC

Level: Ground Floor

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

15



Member Inforn	nation			Unfactored Reactions UNPATTERNED Ib (Uplift)						
Type:	Girder	Application:	Floor (Residential)	Brg	Direction	Live	Dead	Snow	Wind	
Plies:	1	Design Method:	LSD	1	Vertical	100	138	87	0	
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012	2	Vertical	116	95	0	0	
Deflection LL:	480	Load Sharing:	No							
Deflection TL:	240	Deck:	Not Checked							
Importance:	Normal - II	Vibration:	Not Checked							
General Load					L)7 (2012-)	98 SUSSES	· megasa			
Floor Live:	40 PSF			Bear	ings and Fa	actored Read	ctions			
Dead:	15 PSF			Bea	ring Length	Dir. Cap.	React D/L lb	Total Ld. Case	Ld. Comb.	
				1 - 8	SPF 3.500"	Vert 11%	173 / 230	403 L	1.25D+1.5S +L	
Analysis Result	s			2 - 8	SPF 3.500"	Vert 8%	119 / 174	293 L	1.25D+1.5L	

Analysis Actual Location Allowed Capacity Comb. Case 6'7 1/2" 11135 ft-lb Moment 407 ft-lb 0.037 (4%) 1.25D+1.5L L Unbraced 407 ft-lb 6'7 1/2" 11135 ft-lb 0.037 (4%) 1.25D+1.5L L 114 lb 12'2" 4546 lb 0.025 (3%) 1.25D+1.5L L Shear 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

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.

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
- 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.

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.



Load Type Location Trib Width Side Dead Live Snow Wind Comments 0-1-2 to 13-1-14 Top 15 PSF 40 PSF 0 PSF 0 PSF Tie-In Part. Uniform 0-1-2 to 8-2-1 1 PLF 0 PLF 0 PLF 0 PLF Top 3 Point 0-2-12 Top 9 lb 0 lb 23 lb 0 lb Bearing Length 0-5-8 Point 0-2-12 5 lb 14 lb 0 lb 0 lb J7 Top Continued on page 2...

Notes

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

- Dry service conditions, unless noted otherwise
 LVL not to be treated with fire retardant or corrosive
- Handling & Installation
- LVL beams must not be cut or drilled
 Refer to manufacturer's product information regarding installation requirements, multi-pl
- regarding installation requirements, multi-fastening details, beam strength values, and or approvals naged Beams must not be used

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

6. For flat roofs provide proper drainage to prevent

Forex APA: PR-L318

Manufacturer Info

3228 Moodie Dr. Ottawa, Ontari 613-838-2775 D/\905-642-4400



This design is valid until 5/24/2024 oshua.nabua

Page 12 of 35

isDesign

Client: Project: Address:

GREENPARK

GLENROWAN 41-2-2

RICHMOND HILL, ON

7/5/2021

Input by: WC

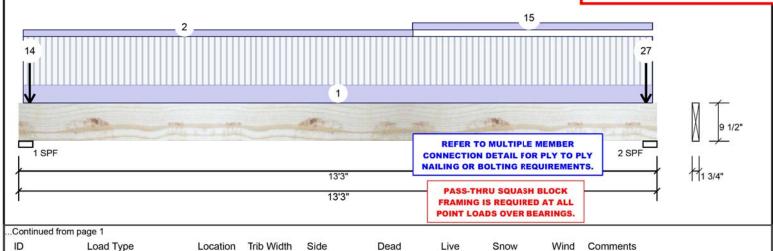
Job Name: GR41-2-2 STANDARD Project #: ROUNDEL HOMES INC

Forex 2.0E-3000Fb LVL F4-A

1.750" X 9.500" - 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.



ı		Eoda ijpo	Location	 Oldo	Doud		011011		Commonto	
ı		Bearing Length	0-5-8							
ı	5	Point	0-2-12	Тор	4 lb	0 lb	0 lb	0 lb	Wall Self Weight	
ı		Bearing Length	0-5-8							
ı	6	Point	0-2-12	Тор	5 lb	0 lb	0 lb	0 lb	Wall Self Weight	
ı		Bearing Length	0-5-8							
ı	7	Point	0-2-12	Тор	13 lb	0 lb	32 lb	0 lb		
ı		Bearing Length	0-5-8							
ı	8	Point	0-2-12	Тор	7 lb	20 lb	0 lb	0 lb	J7	
ı		Bearing Length	0-5-8							
ı	9	Point	0-2-12	Тор	6 lb	0 lb	0 lb	0 lb	Wall Self Weight	
ı		Bearing Length	0-5-8							1
ı	10	Point	0-2-12	Тор	7 lb	0 lb	0 lb	0 lb	Wall Self Weight	18
ı		Bearing Length	0-5-8							1
ı	11	Point	0-2-12	Тор	13 lb	0 lb	32 lb	0 lb		1
ı		Bearing Length	0-5-8							
ı	12	Point	0-2-12	Тор	7 lb	20 lb	0 lb	0 lb	J7	
ı		Bearing Length	0-5-8							
ı	13	Point	0-2-12	Тор	6 lb	0 lb	0 lb	0 lb	Wall Self Weight	
ı		Bearing Length	0-5-8							
ı	14	Point	0-2-12	Тор	7 lb	0 lb	0 lb	0 lb	Wall Self Weight	
ı		Bearing Length	0-5-8							
ı	15	Part. Uniform	8-2-0 to 13-1-14	Тор	1 PLF	0 PLF	0 PLF	0 PLF		
ı	16	Point	13-0-4	Тор	9 lb	24 lb	0 lb	0 lb	J7	
ı		Bearing Length	0-5-8							
ı	18	Point	13-0-4	Тор	1 lb	2 lb	0 lb	0 lb		
ı		Bearing Length	0-5-8							
ı	19	Point	13-0-4	Тор	7 lb	0 lb	0 lb	0 lb	Wall Self Weight	
		Bearing Length	0-5-8							
	20	Point	13-0-4	Тор	9 lb	24 lb	0 lb	0 lb	J7	
		Bearing Length	0-5-8							
1										



Notes

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

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

 1. IVI, beams must not be cutor drilled

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

 3. Damaged Beams must not be used

 4. Design assumes top edge is laterally restrained

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

- For flat roofs provide proper drainage to prevent ponding

This design is valid until 5/24/2024

Manufacturer Info Forex

APA: PR-L318



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Page 13 of 35



Client: Project: Address:

GREENPARK

GLENROWAN 41-2-2

7/5/2021

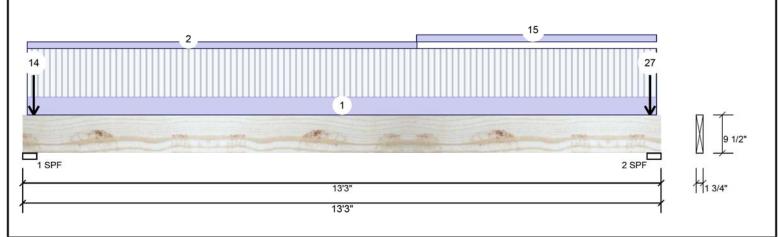
Input by: WC

Job Name: GR41-2-2 STANDARD Project #: ROUNDEL HOMES INC

RICHMOND HILL, ON

Level: Ground Floor





Continued fr	rom page 2								
ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
22	Point	13-0-4		Тор	1 lb	2 lb	0 lb	0 lb	
	Bearing Length	0-5-8							
23	Point	13-0-4		Тор	7 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
24	Point	13-0-4		Тор	6 lb	17 lb	0 lb	0 lb	J7
	Bearing Length	0-5-8							
26	Point	13-0-4		Тор	1 lb	1 lb	0 lb	0 lb	
	Bearing Length	0-5-8							
27	Point	13-0-4		Тор	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.



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.

Notes

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

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

 1. IVI, beams must not be cutor drilled

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

 3. Damaged Beams must not be used

 4. Design assumes top edge is laterally restrained

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

- 6. For flat roofs provide proper drainage to prevent

This design is valid until 5/24/2024

Forex APA: PR-L318

Manufacturer Info

3228 Moodie Dr. Ottawa, Ontario 61B-838-2775 D/\905-642-4400



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CSD joshua.nabua

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Client: Project: Address:

GREENPARK

GLENROWAN 41-2-2

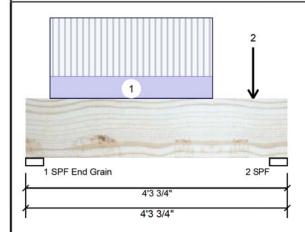
RICHMOND HILL, ON

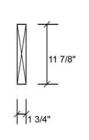
7/5/2021 WC Input by:

Job Name: GR41-2-2 STANDARD Project #: ROUNDEL HOMES INC

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							

ļ	Unfactored	Reactions	UNPAI	LEKNED	lb ((Uplift)	

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	330	133	0	0
2	Vertical	365	146	0	0

Analysis Results

Dead:

Г	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.	0.001 (L/31156)	2'1 9/16"	0.128 (L/360)	0.012 (1%)	D	Uniform
	LL Defl inch	0.004 (L/12435)	2'1 9/16"	0.096 (L/480)	0.039 (4%)	L	L
	TL Defl inch	0.005 (L/8888)	2'1 9/16"	0.193 (L/240)	0.027 (3%)	D+L	L

0-4-13 to 3-0-13

3-8-13

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

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.



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.

Point

Load Type

Self Weight

Part. Uniform

15 PSF

4 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 DESIG	N OF THIS COM	IPONENT.	
Dead	Live	Snow	Wind	Comments
72 PLF	193 PLF	0 PLF	0 PLF	
67 lb	180 lb	0 lb	0 lb	J5

ID

1 2

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

- Dry service conditions, unless noted otherwise
 LVL not to be treated with fire retardant or corrosive
- Handling & Installation
- LVL beams must not be cut or drilled
 Refer to manufacturer's product information regarding installation requirements, multi-pl regarding installation requirements, multi-fastening details, beam strength values, and co approvals Damaged Beams must not be used

Location Trib Width

Side

Far Face

Far Face

- Design assumes top edge is laterally restrained
 Provide lateral support at bearing points to avoid
 lateral displacement and rolation
- 6. For flat roofs provide proper drainage to prevent

This design is valid until 5/24/2024

5 PLF

APA: PR-L318

Manufacturer Info

3228 Moodie Dr. Ottawa, Ontario 61B-838-2775 D/\905-642-4400



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Client: Project: Address:

GREENPARK

GLENROWAN 41-2-2

RICHMOND HILL, ON

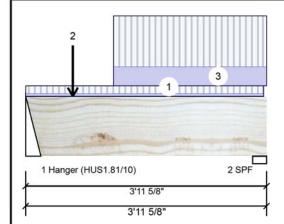
7/5/2021

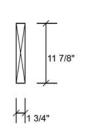
WC Input by:

Job Name: GR41-2-2 STANDARD Project #: ROUNDEL HOMES INC

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

Level: Ground Floor





Member Info	ormation				Unfa	actored Rea	actions UNP	ATTERNED I	b (Uplift)	
Type:	Girder		Application:	Floor (Residential)	Brg	Direction	Live	Dead	Snow	Wind
Plies:	1		Design Method:	LSD	1	Vertical	523	205	0	0
Moisture Condit	ion: Dry		Building Code:	NBCC 2015 / OBC 2012	2	Vertical	595	232	0	0
Deflection LL:	480		Load Sharing:	No						
Deflection TL:	240		Deck:	Not Checked						
Importance:	Normal - II		Vibration:	Not Checked						
General Load						9 to 17	100000	255.0		
Floor Live:	40 PSF				Bear	rings and F	actored Rea	ctions		
Dead:	15 PSF				Bea	aring Length	Dir. Cap.	React D/L lb	Total Ld. Case	Ld. Comb.
					1 - Har	3.000" nger	Vert 27%	257 / 785	1042 L	1.25D+1.5L
Analysis Resi	ults				2 -	SPF 2.938"	Vert 37%	290 / 893	1183 L	1.25D+1.5L
Analysis	Actual	Location	Allowed Capa	city Comb. Case					1	
Moment	948 ft-lb	2' 5/16"	17130 ft-lb 0.055	(6%) 1.25D+1.5L L		REFER TO	MULTIPLE M	EMBER		

L

2' 5/16" 17130 ft-lb Moment 948 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 0.252 (25%) 1.25D+1.5L L 1463 lb 1'2 7/8" 5798 lb Shear Perm Defl in. 0.002 2' 1/8" 0.120 (L/360) 0.016 (2%) D (L/22421) LL Defl inch 0.005 (L/8759) 2' 1/8" 0.090 (L/480) 0.055 (5%) L TL Defl inch 0.007 (L/6299)

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.

3 Girders are designed to be supported on the bottom edge only.

5 Bottom must have sheathing attached or be continuously braced.

Uniform 2' 1/8" 0.180 (L/240) 0.038 (4%) D+L

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

CONNECTION DETAIL FOR PLY TO PLY

NAILING OR BOLTING REQUIREMENTS.

Comments

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**

Snow

0 PLF

0 PLF

0 lb

IN THE DESIGN OF THIS COMPONENT.

Wind

0 PLF

0 PLF

0 lb J7



ID

Design Notes

2 Fill all hanger nailing holes.

4 Top must be continuously laterally braced.

Load Type

1	Part. Uniform	0-0-0 to 3-11-1	Тор	15 PLF
2	Point	0-9-5	Near Face	107 lb
3	Part. Uniform	1-5-5 to 3-11-10	Near Face	100 PLF

0 PLF Self Weight 5 PLF

Location Trib Width

Side

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

- Dry service conditions, unless noted otherwise
 LVL not to be treated with fire retardant or corrosive
- Handling & Installation
- LVL beams must not be cutor drilled
 Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
- naged Beams must not be used
- Design assumes top edge is laterally restrained
 Provide lateral support at bearing points to avoid
 lateral displacement and rolation

6. For flat roofs provide proper drainage to prevent

This design is valid until 5/24/2024

Dead

Live

40 PLF

286 lb

267 PLF

APA: PR-L318

Manufacturer Info



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Page 16 of 35



Project: Address:

Client: GREENPARK

GLENROWAN 41-2-2

RICHMOND HILL, ON

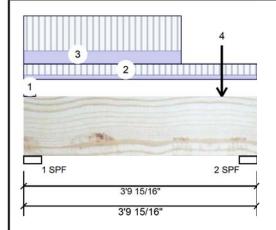
7/5/2021

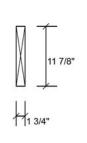
WC Input by:

Job Name: GR41-2-2 STANDARD Project #: ROUNDEL HOMES INC

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

Level: Ground Floor





Member Information Unfactored Reactions UNPATTERNED Ib (Uplift) Brg Type: Application: Floor (Residential) Direction Live Dead Snow Wind Plies: 1 Design Method: LSD 415 166 0 1 Vertical 0 Moisture Condition: Dry Building Code: NBCC 2015 / OBC 2012 359 0 0 2 Vertical 145 Deflection LL: 480 Load Sharing: No Deflection TL: 240 Deck: Not Checked Importance: Normal - II Vibration: Not Checked General Load Bearings and Factored Reactions 40 PSF Floor Live: 15 PSF Dead: 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"

Analysis Results

Design Notes

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

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

19%

181 / 539

720 L

Vert

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



1.25D+1.5L

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

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.

4 Dolloill	must have sheatining atta	cried of be continuou	ory braceu.						
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	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 3-9-15		Тор	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				

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

- Dry service conditions, unless noted otherwise
 LVL not to be treated with fire retardant or corrosive
- Handling & Installation
- LVL beams must not be cut or drilled
 Refer to manufacturer's product information regarding installation requirements, multi-pl regarding installation requirements, multi-fastening details, beam strength values, and co approvals
- naged Beams must not be used
- Design assumes top edge is laterally restrained
 Provide lateral support at bearing points to avoid
 lateral displacement and rolation

6. For flat roofs provide proper drainage to prevent

This design is valid until 5/24/2024

APA: PR-L318

Manufacturer Info

3228 Moodie Dr. Ottawa, Ontari 618-838-2775 D/\905-642-4400

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isDesign

Client: Project: Address:

GREENPARK

GLENROWAN 41-2-2

RICHMOND HILL, ON

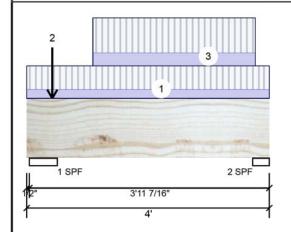
7/5/2021

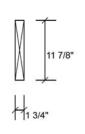
WC Input by:

Job Name: GR41-2-2 STANDARD Project #: ROUNDEL HOMES INC

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

Level: Ground Floor





Member Infor	mation			Unf	actored Rea	actions	UNP	ATTERNED II	b (Uplift)	
Type:	Girder	Application:	Floor (Residential)	Brg	Direction		Live	Dead	Snow	Wind
Plies:	1	Design Method:	LSD	1	Vertical		596	249	0	0
Moisture Conditio	n: Dry	Building Code:	NBCC 2015 / OBC 2012	2	Vertical		374	150	0	0
Deflection LL:	480	Load Sharing:	No							
Deflection TL:	240	Deck:	Not Checked							
Importance:	Normal - II	Vibration:	Not Checked							
General Load					NUMBER OF THE PROPERTY OF THE	9.4	148040	536.0		
Floor Live:	40 PSF			Bea	rings and F	actored	d Read	ctions		
Dead:	15 PSF			Be	aring 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
	- 2012			2-	SPF 3.500"	Vert	20%	187 / 562	749 _L	1.25D+1.5L

Analysis Results

Γ	Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
l	Moment	604 ft-lb	2' 15/16"	17130 ft-lb	0.035 (4%)	1.25D+1.5L	_L
l	Unbraced	604 ft-lb	2' 15/16"	17130 ft-lb	0.035 (4%)	1.25D+1.5L	_L
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
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 (21/14376)	Lt Cant	0.300	0.000 (0%)	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

IN THE DESIGN OF THIS COMPONENT.

ENGINEERING NOTE PAGE ENP-2. THE NOTE PAGE IS AN INTEGRAL PART OF THIS DRAWING AS IT

Manufacturer Info

CONTAINS SPECIFICATIONS AND CRITERIA USED



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		Тор	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				

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- Dry service conditions, unless noted otherwise
 LVL not to be treated with fire retardant or corrosive
- Handling & Installation
- I. UVL beams must not be cutor drilled
 Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam stength 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 rolation

For flat roofs provide proper drainage to prevent ponding

This design is valid until 5/24/2024

APA: PR-L318

3228 Moodie Dr. Ottawa, Ontario 61B-838-2775 D/\905-642-4400



Version 21.40.338 Powered by iStruct™ Dataset: 21060301.1545

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isDesign

Project: Address:

Client: GREENPARK

GLENROWAN 41-2-2

RICHMOND HILL, ON

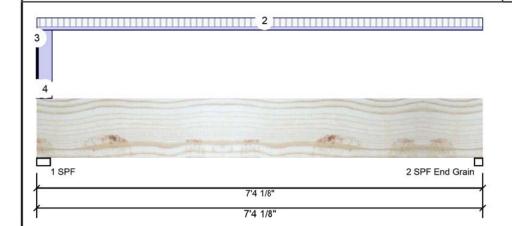
7/5/2021

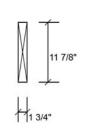
WC Input by:

Job Name: GR41-2-2 STANDARD Project #: ROUNDEL HOMES INC

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

Level: Ground Floor





Mind

Member Inform	nation		
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			

Unfactored Reactions UNPATTERNED Ib (Uplift) Bra Direction Livo

big	Direction	LIVE	Dead	SHOW	VVIIIG
1	Vertical	1198	516	0	0
2	Vertical	30	29	0	0

Analysis Results

Floor Live:

Dead:

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.	0.001 (L/70817)	3'8 9/16"	0.237 (L/360)	0.005 (1%)	D	Uniform
LL Defl inch	0.001 (L/67516)	3'8 5/8"	0.178 (L/480)	0.007 (1%)	L	L
TL Defl inch	0.002 (L/34564)	3'8 9/16"	0.355 (L/240)	0.007 (1%)	D+L	L

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 End	1.625"	Vert	4%	36 / 45	81	L	1.25D+1.5L

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.



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.

40 PSF 15 PSF

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.

L	4 Bottom must b	e laterally braced at be	arings.							
ſ	ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
l	1	Part. Uniform	0-0-0 to 0-0-5		Тор	21 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
l	2	Tie-In	0-0-1 to 7-4-2	0-2-8	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
l	3	Point	0-0-1		Тор	472 lb	1167 lb	0 lb	0 lb	C1
l		Bearing Length	0-3-8							
l	4	Part. Uniform	0-0-5 to 0-3-1		Тор	64 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
١		Self Weight				5 PLF				

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- Dry service conditions, unless noted otherwise
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- Handling & Installation
- I. UVL beams must not be cutor drilled
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 Damaged Beams must not be used

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

For flat roofs provide proper drainage to prevent ponding

This design is valid until 5/24/2024

Manufacturer Info APA: PR-L318

3228 Moodie Dr. Ottawa, Ontario 61B-838-2775 D/\905-642-4400



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Page 19 of 35



Client: Project: Address:

GREENPARK

GLENROWAN 41-2-2

RICHMOND HILL, ON

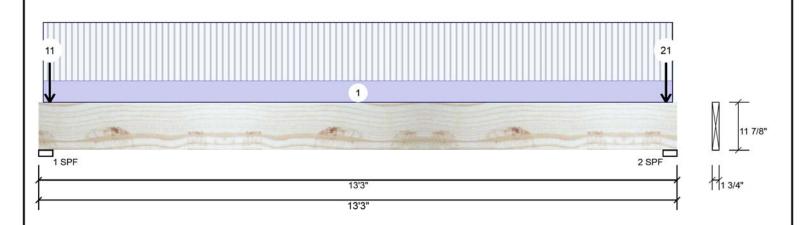
7/5/2021

WC Input by:

Job Name: GR41-2-2 STANDARD Project #: ROUNDEL HOMES INC

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

Level: Ground Floor



Member Inform	nation			Unf	actored Re	actions l	JNP	ATTERNED II	b (Upli	ft)	
Type:	Girder	Application:	Floor (Residential)	Brg	Direction	Li	ve	Dead		Snow	Wind
Plies:	1	Design Method:	LSD	1	Vertical	1	40	199		152	0
Moisture Condition	: Dry	Building Code:	NBCC 2015 / OBC 2012	2	Vertical	1	49	115		0	0
Deflection LL:	480	Load Sharing:	No	-							
Deflection TL:	240	Deck:	Not Checked								
Importance:	Normal - II	Vibration:	Not Checked								
General Load					or to a second	115 25.5	242	* 3000-2			
Floor Live:	40 PSF			Bea	rings and F	actored	Rea	ctions			
Dead:	15 PSF			Ве	aring Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
				1 -	SPF 3.500"	Vert	17%	249 / 368	617	L	1.25D+1.5S +L
Analysis Result	s			2-	SPF 3.500"	Vert	10%	144 / 223	367	L	1.25D+1.5L
				7 6							

Analysis Actual Location Allowed Capacity Comb. Case Moment 0.046 (5%) 1.25D+1.5L L 769 ft-lb 6'7 1/2" 16788 ft-lb Unbraced 769 ft-lb 6'7 1/2" 16788 ft-lb 0.046 (5%) 1.25D+1.5L L 207 lb 1'3 3/8" 5682 lb 0.036 (4%) 1.25D+1.5L L Shear Perm Defl in. 0.015 6'7 9/16" 0.426 (L/360) 0.034 (3%) D Uniform

(L/10562)

LL Defl inch 0.022 (L/7090) 6'7 9/16" 0.320 (L/480) 0.068 (7%) L+0.5S 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

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

Design Notes

- 1 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 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.

CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

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.



O DOLLOITI III	of be laterally braced a	it 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	Тор	15 PSF	40 PSF	0 PSF	0 PSF		
2	Point	0-2-12		Тор	8 lb	0 lb	0 lb	0 lb	Wall Self Weight	
	Bearing Length	0-5-8								
3	Point	0-2-12		Тор	19 lb	0 lb	47 lb	0 lb		
	ID 1 2	ID Load Type 1 Tie-In 2 Point Bearing Length	1 Tie-In 0-1-2 to 13-1-14 2 Point 0-2-12 Bearing Length 0-5-8	ID Load Type Location Trib Width 1 Tie-In 0-1-2 to 13-1-14 0-4-13 2 Point 0-2-12 Bearing Length 0-5-8	ID Load Type Location Trib Width Side 1 Tie-In 0-1-2 to 13-1-14 0-4-13 Top 2 Point 0-2-12 Top Bearing Length 0-5-8	ID Load Type Location Trib Width Side Dead 1 Tie-In 0-1-2 to 13-1-14 0-4-13 Top 15 PSF 2 Point 0-2-12 Top 8 lb Bearing Length 0-5-8	ID Load Type Location Trib Width Side Dead Live 1 Tie-In 0-1-2 to 13-1-14 0-4-13 Top 15 PSF 40 PSF 2 Point 0-2-12 Top 8 lb 0 lb Bearing Length 0-5-8	ID Load Type Location Trib Width Side Dead Live Snow 1 Tie-In 0-1-2 to 13-1-14 0-4-13 Top 15 PSF 40 PSF 0 PSF 2 Point 0-2-12 Top 8 lb 0 lb 0 lb Bearing Length 0-5-8 0-5-8 0-5-8 0-5-8 0-5-8	ID Load Type Location Trib Width Side Dead Live Snow Wind 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 Bearing Length 0-5-8 <t< td=""><td>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 0-5-8 0 PSF 0 PSF<!--</td--></td></t<>	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 0-5-8 0 PSF 0 PSF </td

Continued on page 2...

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

Notes

- Dry service conditions, unless noted otherwise
 LVL not to be treated with fire retardant or corrosive
- Handling & Installation
- LVL beams must not be cutor drilled
 Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
- naged Beams must not be used
- Design assumes top edge is laterally restrained
 Provide lateral support at bearing points to avoid
 lateral displacement and rolation
- 6. For flat roofs provide proper drainage to prevent

This design is valid until 5/24/2024

Manufacturer Info Forex APA: PR-L318

3228 Moodie Dr. Ottawa, Ontario 613-838-2775 D/\905-642-4400



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1.750" X 11.875" - PASSED

Page 20 of 35



Client: Project: Address:

GREENPARK

7/5/2021

Input by: WC

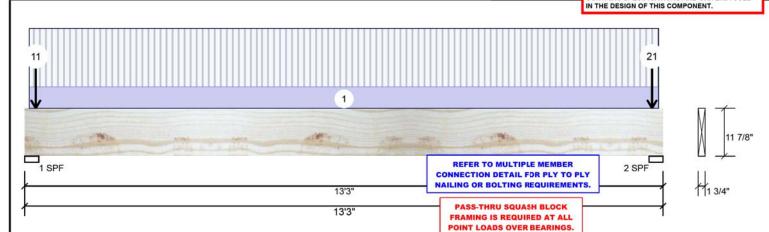
Job Name: GR41-2-2 STANDARD Project #: ROUNDEL HOMES INC

F9-A Forex 2.0E-3000Fb LVL

GLENROWAN 41-2-2 RICHMOND HILL, ON

Level: Ground Floor

READ ALL NOTES ON THIS PAGE AND ON THE 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



						•			
Continued	from page 1	311 10,	ACTOR AND AND TOUR	545 NOs	222 - 22	CP-V		P/7003 09	7850
ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
	Bearing Length	0-5-8							
4	Point	0-2-12		Тор	8 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
5	Point	0-2-12		Тор	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
6	Point	0-2-12		Тор	13 lb	0 lb	32 lb	0 lb	
	Bearing Length	0-5-8							
7	Point	0-2-12		Тор	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
8	Point	0-2-12		Тор	13 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
9	Point	0-2-12		Тор	29 lb	0 lb	73 lb	0 lb	
	Bearing Length	0-5-8							
10	Point	0-2-12		Тор	13 lb	35 lb	0 lb	0 lb	J7
	Bearing Length	0-5-8							
11	Point	0-2-12		Тор	13 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
12	Point	13-0-4		Тор	2 lb	4 lb	0 lb	0 lb	
	Bearing Length	0-5-8							
13	Point	13-0-4		Тор	13 lb	35 lb	0 lb	0 lb	J7
	Bearing Length	0-5-8							
15	Point	13-0-4		Тор	13 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
16	Point	13-0-4		Тор	1 lb	2 lb	0 lb	0 lb	
	Bearing Length	0-5-8							



July 05 2021

Notes

21

18

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.

Point

Point

Bearing Length Point

Bearing Length

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

13-0-4

0-5-8

13-0-4

0-5-8

13-0-4

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 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 rolation

Тор

Top

Top

- This design is valid until 5/24/2024
- For flat roofs provide proper drainage to prevent ponding

6 lb

1 lb

8 lb

0 lb

3 lb

0 lb

Forex APA: PR-L318

Manufacturer Info

0 lb

0 lb

0 lb

0 lb

0 lb

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Wall Self Weight

Wall Self Weight

Page 21 of 35



Client: Project: Address:

GREENPARK

GLENROWAN 41-2-2

RICHMOND HILL, ON

7/5/2021

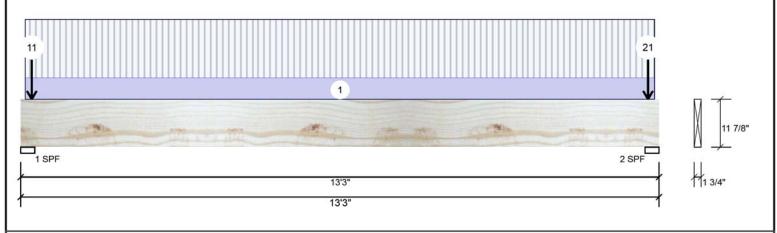
WC Input by:

Job Name: GR41-2-2 STANDARD Project #: ROUNDEL HOMES INC

Forex 2.0E-3000Fb LVL F9-A

1.750" X 11.875" - PASSED

Level: Ground Floor



.Continued from page 2

ID Load Type Bearing Length

Self Weight

0-5-8

Location Trib Width

Side

Dead

5 PLF

Live

Snow

Wind Comments

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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Handling & Installation

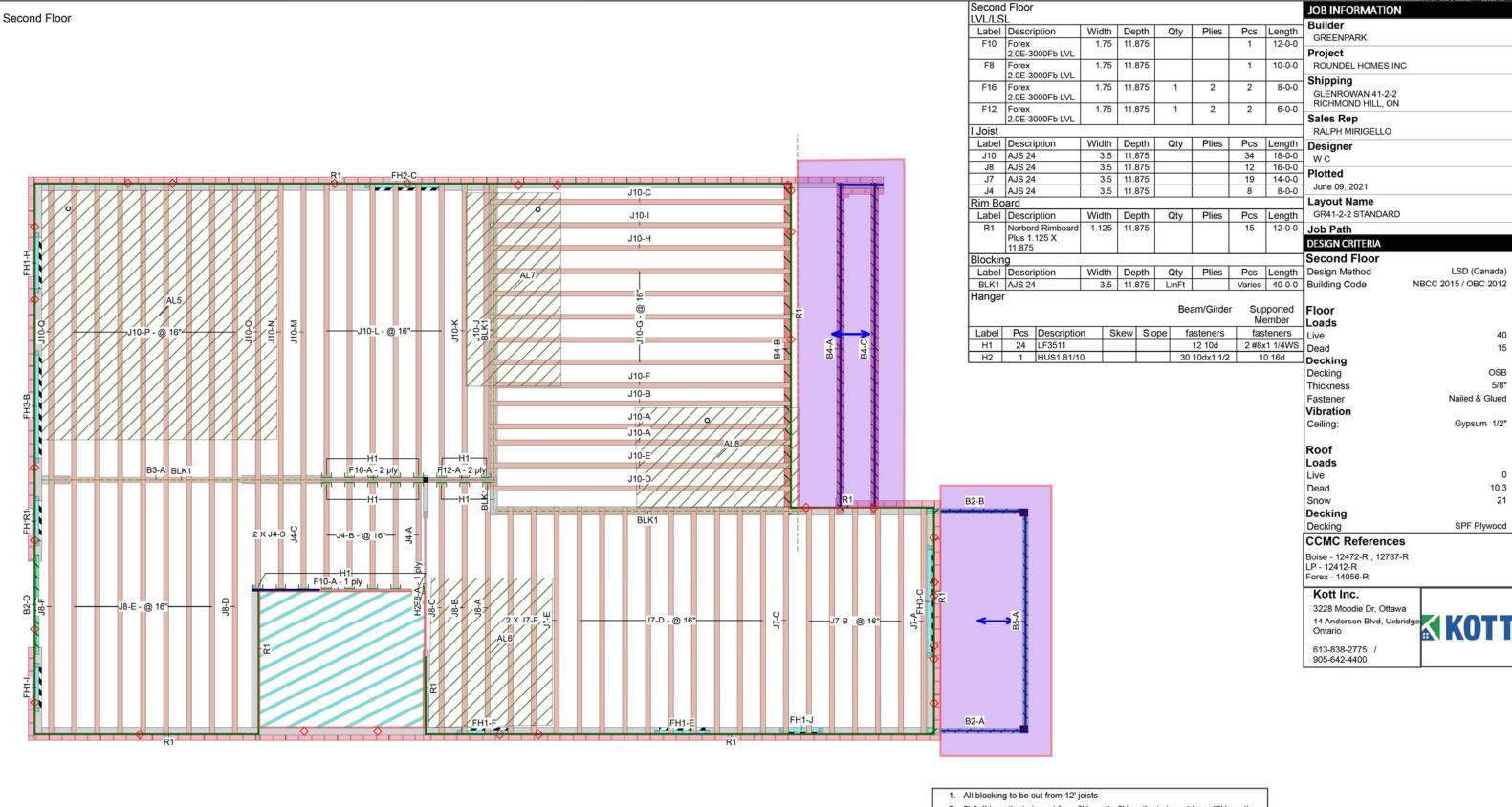
- Design assumes top edge is laterally restrained
 Provide lateral support at bearing points to avoid
 lateral displacement and rolation
- For flat roofs provide proper drainage to prevent ponding

This design is valid until 5/24/2024

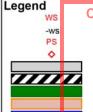
Manufacturer Info Forex APA: PR-L318

3228 Moodie Dr. Ottawa, Ontario 61B-838-2775 D/\905-642-4400





- 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
- 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.



CITY OF RICHMOND HILL Wall Opening

In Hanger Laber Denotes Web Stiffene Point Load Support Coad from Above 2 Norbord Rimboard Plus 1,125 X 11.875 AJS 24 12875 E V E D

Forex 2:0E-3000Fb LVL 1.75 X 11.875

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Hatch Area represents where

(e.g. 5 psf for ceramic tile)

additional load has been applied

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

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

Page 22 of 35



Client: Project: Address:

GREENPARK

GLENROWAN 41-2-2

RICHMOND HILL, ON

7/5/2021

Project #:

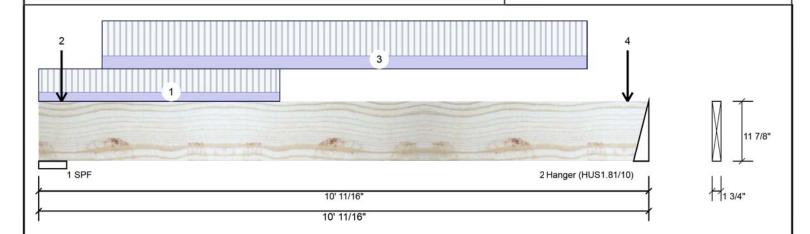
WC Input by:

Job Name: GR41-2-2 STANDARD

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

Level: Second Floor

ROUNDEL HOMES INC



Member Inform	nation			Unfa	actored Re	actions U	NP	ATTERNED II	b (Upli	ft)	
Type:	Girder	Application:	Floor (Residential)	Brg	Direction	Liv	е	Dead		Snow	Wind
Plies:	1	Design Method:	LSD	1	Vertical	86	9	352		0	0
Moisture Condition	: Dry	Building Code:	NBCC 2015 / OBC 2012	2	Vertical	65	7	271		0	0
Deflection LL:	480	Load Sharing:	No	-							
Deflection TL:	240	Deck:	Not Checked								
Importance:	Normal - II	Vibration:	Not Checked	1							
General Load					10.0	- 10 1011		255 H			
Floor Live:	40 PSF			Bear	rings and	Factored I	Rea	ctions			
Dead:	15 PSF			Bea	aring Length	n Dir. (Сар.	React D/L lb	Total	Ld. Case	Ld. Comb.
				1 -	SPF 5.500"	Vert	29%	440 / 1304	1744	L	1.25D+1.5L
Analysis Result	s			2 - Har	3.000" nger	Vert	34%	339 / 986	1325	L	1.25D+1.5L

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.



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.

Manufacturer Info

o Dottom mas	t mare officatining attac	orica or be continued	ory bruceu.		, and the same of				
ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 3-11-11		Тор	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

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- Dry service conditions, unless noted otherwise
 LVL not to be treated with fire retardant or corrosive
- Handling & Installation
- I. UVL beams must not be cutor drilled
 Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam stength 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 rolation

For flat roofs provide proper drainage to prevent ponding

This design is valid until 5/24/2024

Forex APA: PR-L318

3228 Moodie Dr. Ottawa, Ontario 61B-838-2775 D/\905-642-4400

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Page 23 of 35

isDesign

Client: Project: Address:

GREENPARK

7/5/2021

WC Input by:

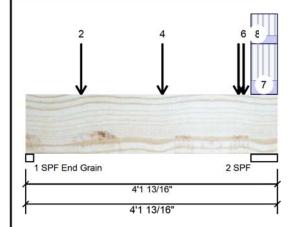
Job Name: GR41-2-2 STANDARD Project #: ROUNDEL HOMES INC

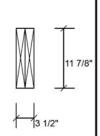
Forex 2.0E-3000Fb LVL F12-A

RICHMOND HILL, ON 1.750" X 11.875"

GLENROWAN 41-2-2

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								
Doad:	15 DSE	1							

Unfactored Reactions UN	NPATTERNED Ib (Uplift)
-------------------------	------------------------

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	974	407	0	0
2	Vertical	1198	517	0	0

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.	0.002 (L/19407)	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

Bearings and Factored Reactions

caring.	eurings and ractorea 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				

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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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 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.

/ Lateral	slenderness ratio based on	full section width.							
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...

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- Dry service conditions, unless noted otherwise
 LVL not to be treated with fire retardant or corrosive
- Handling & Installation
- LVL beams must not be cut or drilled
 Refer to manufacturer's product information regarding installation requirements, multi-ply regarding installation requirements, multi-fastening details, beam strength values, and co 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 rolation
- 6. For flat roofs provide proper drainage to prevent

This design is valid until 5/24/2024

Manufacturer Info

APA: PR-L318



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Page 24 of 35



Client: Project: Address:

GREENPARK

7/5/2021

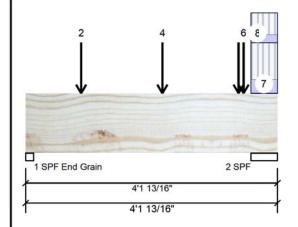
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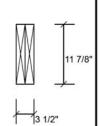
GLENROWAN 41-2-2 Job Name: GR41-2-2 STANDARD RICHMOND HILL, ON Project #: ROUNDEL HOMES INC

F12-A Forex 2.0E-3000Fb LVL

1.750" X 11.875"

2-Ply - PASSED Level: Second Floor





Continued	from	page '	1
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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	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
8	Tie-In	3-8-6 to 4-1-13	0-3-0	Тор	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.

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- Handling & Installation
- Handling & Installation

 1. IVI, beams must not be cutor drilled

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

 3. Damaged Beams must not be used

 4. Design assumes top edge is laterally restrained

 5. Provide lateral support at bearing points to avoid lateral displacement and rolation
- For flat roofs provide proper drainage to prevent ponding

APA: PR-L318

Manufacturer Info

3228 Moodie Dr. Ottawa, Ontario 61B-838-2775 D/\905-642-4400



joshua.nabua

This design is valid until 5/24/2024

Page 25 of 35

isDesign

Client: Project: Address:

GREENPARK

7/5/2021

WC Input by:

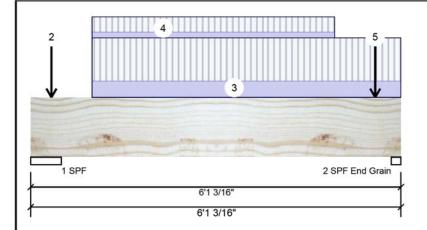
Job Name: GR41-2-2 STANDARD Project #: ROUNDEL HOMES INC

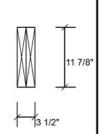
F16-A Forex 2.0E-3000Fb LVL

RICHMOND HILL, ON 1.750" X 11.875"

GLENROWAN 41-2-2

2-Ply - PASSED Level: Second Floor





Member Information

Type:	Girder	A
Plies:	2	De
Moisture Condition:	Dry	Bu
Deflection LL:	480	Lo
Deflection TL:	240	D
Importance:	Normal - II	Vi
General Load		

40 PSF 15 PSF pplication: Floor (Residential) esign Method: LSD

uilding Code: NBCC 2015 / OBC 2012 No

oad Sharing: eck: Not Checked

ibration: Not Checked

Analysis Results

Floor Live:

Dead:

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

Unfactored Reactions UNPATTERNED Ib (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 End Grain	1.938"	Vert	54%	671 / 2040	2711	L	1.25D+1.5L

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	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				

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

- Dry service conditions, unless noted otherwise
 LVL not to be treated with fire retardant or corrosive
- Handling & Installation
- LVL beams must not be cut or drilled
 Refer to manufacturer's product informatio regarding installation requirements, multi-pl
- regarding installation requirements, multi-fastening details, beam strength values, and co 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 rolation
- For flat roofs provide proper drainage to prevent ponding

This design is valid until 5/24/2024

Manufacturer Info APA: PR-L318

3228 Moodie Dr. Ottawa, Ontario 61B-838-2775 D/\905-642-4400

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Client: Project: Address:

GREENPARK

GLENROWAN 41-2-2

RICHMOND HILL, ON

7/5/2021

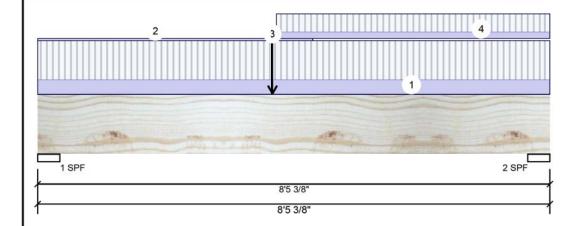
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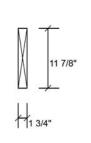
Job Name: GR41-2-2 STANDARD Project #: ROUNDEL HOMES INC

Forex 2.0E-3000Fb LVL

1.750" X 11.875" - PASSED

Level: Second Floor





Member Information

ı	Type:	Girder	Applica
l	Plies:	1	Design
l	Moisture Condition:	Dry	Building
l	Deflection LL:	480	Load Si
l	Deflection TL:	240	Deck:
l	Importance:	Normal - II	Vibratio
l	General Load		
l	Floor Live:	40 PSF	

15 PSF

ation: Floor (Residential) Method: LSD g Code: NBCC 2015 / OBC 2012

Sharing: No Not Checked

Not Checked on:

Unfactored Reactions UNPATTERNED Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	445	204	0	0
2	Vertical	405	184	0	0

Bearings and Factored Reactions

L			Phylips and a	191 P. M. S. M.	CANCEL CONTRACT			
ľ	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

Dead:

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	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.

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.

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	Tie-In	0-0-0 to 8-5-6	0-5-8	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 4-6-6		Тор	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	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				5 PLF				
-		011110000	020	iop	2207022345.2	40101	0 1 01	0101	

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

- Dry service conditions, unless noted otherwise
 LVL not to be treated with fire retardant or corrosive
- Handling & Installation
- 1. UVL beams must not be cutor drilled
 2. Refer to manufacturer's product information regarding installation requirements, multi-ph fastening details, beam stength values, and codi approvals
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