Engineering Note Page (ENP-2)

REVISION 2021-10-04

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.

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.
- 5. It is assumed that each LVL beam where not seated in a hanger is attached using (4) four 3-1/4" common spiral nails for up to 5.5" long bearings and using (6) six 3-1/4" common spiral nails for bearings equal to or longer than 5.5", unless indicated otherwise.

HANDLING AND INSTALLATION

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

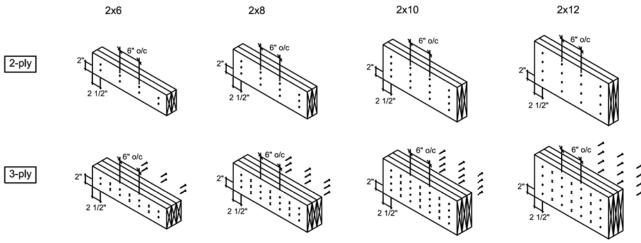


CITY OF RICHMOND HILL BUILDING DIVISION

09/22/2022

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Per: joshua.nabua

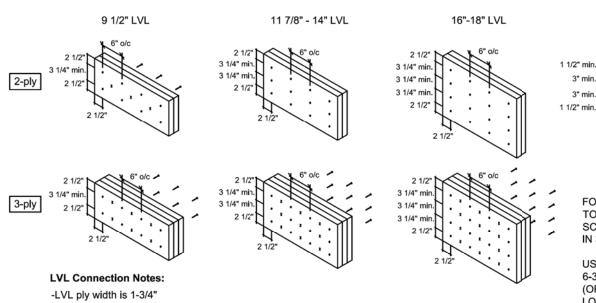
Conventional Connections

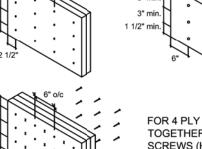


Conventional Connection Notes:

- -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





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

4-ply 9 1/2"-18"

6 3/4" SDW

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

- -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.

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

IM1021-061 Page 3 of 3

LSD (Canada)

40

15

480

240

480

NBCC 2015 / OBC 2012

JOB INFORMATION

ROUNDEL HOMES INC

TERRACOTA 45 1-2

RALPH MIRIGELLO

October 15, 2021

TC451-2 STANDARD

Layout Name

DESIGN CRITERIA

Ground Floor

Design Method

Deflection Joist

Deflection Flush Girder

LL Span L/

TL Span L/

LL Span L/

Building Code

Floor

Loads

Dead

RICHMOND HILL, ON

Builder

Project

Shipping

Sales Rep

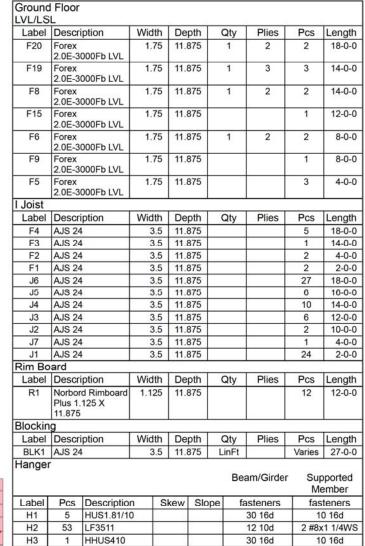
Designer

WC

Plotted

Job Path

GREENPARK



1 HHUS410 Custom Label Description Width Depth Qty Plies Pcs Length H2.5A

240 TL Span L/ **Deflection Dropped Girder** 480 LL Span L/ 240 TL Span L/ **Deflection Header** 480 LL Span L/ TL Span L/ 240 Decking CCMC References 5/8" Boise - 12472-R , 12787-R LP - 12412-R orex - 14056-R Kott Inc. 3228 Moodie Dr, Ottawa 14 Anderson Blvd, Uxbridge Contario 613-838-2775 / 905-642-4400

1. All blocking to be cut from 12' joists

2 X J3-H 67 6

F6-A - 2 ply

J7-A/H1

F5-B - 1 ply

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

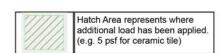
7. Install 2x4 blocking @ 24" o/c under parallel non-loadbearing walls

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

Eng to review and approve the deviation prior to construction.



J4-H

J4-I

J5-C

J5-D

J5-E

J4-L F3-A - 1 ply H2.5A

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

2X8 FRAMING

Version 21.40.338 Powered by iStruct™ Dataset: 21072801.1545

2 X J1-0

Ground Floor

This placement plan is to be used as an installation guide only. It is meant to be used in conjunction with the manufacturers installation guide, the architectural drawings, and not to replace them.11. Framing shown on this layout may deviate from architectural drawings. Arch /

1 ply

2 X J6-T

Legend CITY OF RICHMOND HILL In Hanger Laber Denotes Web Stiffene Point Load Support 0 Load from Above Wall Opening Norbord Rimboard Plus 1,125 X 11.875 AJS 24 11.875 L V L L

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



Project:

Client: GREENPARK

TERRACOTA 45 1-2 Address:

RICHMOND HILL, ON

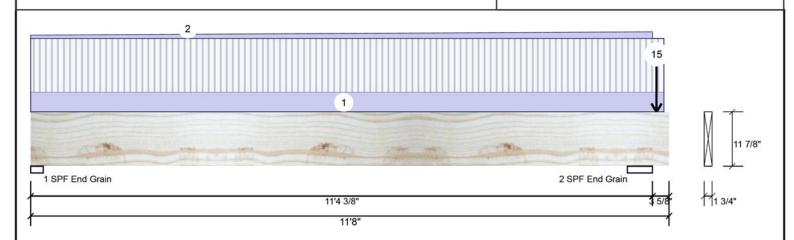
Date: 10/14/2021

WC Input by:

Job Name: TC451-2 STANDARD Project #: ROUNDEL HOMES INC

F15-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" - PASSED

Level: Ground Floor



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

Analysis Results								
Analysis	Actual	Location	Allowed	Capacity				

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-61 ft-lb	11'4 3/8"	15589 ft-lb	0.004 (0%)	1.25D+1.5S +L	_L
Unbraced	-61 ft-lb	11'4 3/8"	4100 ft-lb	0.015 (2%)	1.25D+1.5S +L	_L
Pos Moment	587 ft-lb	5'7 5/16"	15589 ft-lb	0.038 (4%)	1.25D+1.5L	L_
Unbraced	587 ft-lb	5'7 5/16"	15589 ft-lb	0.038 (4%)	1.25D+1.5L	L_
Shear	180 lb	1'2 5/8"	5624 lb	0.032 (3%)	1.25D+1.5L	L_
Perm Defl in.	0.009 (L/15006)	5'7 7/16"	0.366 (L/360)	0.024 (2%)	D	Uniform
LL Defl inch	0.012 (L/10817)	5'7 13/16"	0.274 (L/480)	0.044 (4%)	L	L_
TL Defl inch	0.021 (L/6286)	5'7 11/16"	0.548 (L/240)	0.038 (4%)	D+L	L_
LL Cant	-0.001 (2L/7606)	Rt Cant	0.200 (2L/480)	0.005 (0%)	L	L_
TL Cant	-0.002 (2L/4821)	Rt Cant	0.300 (2L/240)	0.005 (1%)	D+L	L_

Design Notes

- 1 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 4.5.
- 2 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top must be continuously laterally braced.
- 5 Bottom must be laterally braced at bearings

Unfactored Reactions UNPATTERNED Ib (Uplift)

Br	g Direction	Live	Dead	Snow	Wind
-	1 Vertical	91	67	0 (-2)	0
2	2 Vertical	147	208	157	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	2.750"	Vert	7%	84 / 138	221	L_	1.25D+1.5L
2 - SPF End Grain	5.500"	Vert	10%	260 / 382	642	LL	1.25D+1.5S +L



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
- 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
 3. Damaged Beams must not be used

- Design assumes top edge is laterally restrained
 Provide lateral support at bearing points to avoid
 lateral displacement and 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 61B-838-2775 D/\905-642-4400

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Client: Project: Address:

GREENPARK

TERRACOTA 45 1-2

RICHMOND HILL, ON

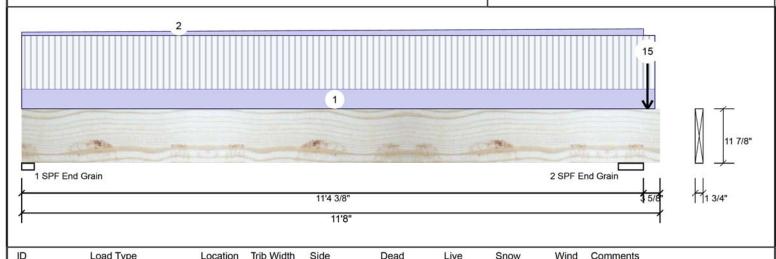
Date: 10/14/2021

Input by: WC

Job Name: TC451-2 STANDARD Project #: ROUNDEL HOMES INC

1.750" X 11.875" - PASSED F15-A Forex 2.0E-3000Fb LVL

Level: Ground Floor



ı	טו	Load Type	Location	ITID VVIOTI	Side	Dead	Live	Show	vvina	Comments
l	1	Tie-In	0-0-0 to 11-6-14	0-4-14	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
l	2	Tapered Start	0-0-0		Тор	1 PLF	0 PLF	0 PLF	0 PLF	
l		End	11-4-6			2 PLF	0 PLF	0 PLF	0 PLF	
l	3	Point	11-5-4		Тор	33 lb	0 lb	83 lb	0 lb	
l		Bearing Length	0-5-8							
l	4	Point	11-5-4		Тор	19 lb	50 lb	0 lb	0 lb	J9
l		Bearing Length	0-5-8							
l	6	Point	11-5-4		Тор	13 lb	0 lb	0 lb	0 lb	Wall Self Weight
l		Bearing Length	0-5-8							
l	7	Point	11-5-4		Тор	13 lb	0 lb	0 lb	0 lb	Wall Self Weight
l		Bearing Length	0-5-8							
l	8	Point	11-5-4		Тор	15 lb	0 lb	36 lb	0 lb	
l		Bearing Length	0-5-8							
l	10	Point	11-5-4		Тор	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
l		Bearing Length	0-5-8							
l	11	Point	11-5-4		Тор	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
l		Bearing Length	0-5-8							
l	12	Point	11-5-4		Тор	15 lb	0 lb	36 lb	0 lb	
l		Bearing Length	0-5-8							
l	14	Point	11-5-4		Тор	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
l		Bearing Length	0-5-8							
١	15	Point	11-5-4		Тор	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
١		Bearing Length	0-5-8							OFESSION

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.

5 PLF



October 18, 2021

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

Forex APA: PR-L318

Manufacturer Info

3228 Moodie Dr. Ottawa, Ontario 618-838-2775 D/ 905-632-4400



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This design is valid until 5/24/2024

Self Weight

Page 1 of 25

Wind

0

0

0

Ld. Comb.

1.25D+1.5L

(0.9D+1.5L)

1.25D+1.5L

1.25D+1.5L



Client: Project: Address:

8

GREENPARK

Date: 9/30/2021

WC Input by:

TERRACOTA 45 1-2 Job Name: TC451-2 STANDARD RICHMOND HILL, ON Project #: ROUNDEL HOMES INC

Brg

1

2

3

Direction

Vertical

Vertical

Vertical

Bearing Length

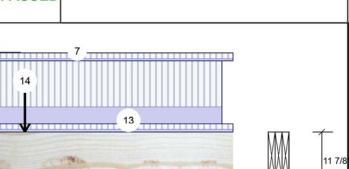
1 - SPF 5.250"

2 - SPF 5.500"

End Grain 3 - SPF 3.500"

F19-A Forex 2.0E-3000Fb LVL 1.750" X 11.875"

Level: Ground Floor 3-Ply - PASSED



Dead

569

3328

757

Cap. React D/L lb

77% 4254 / 12176

664 / 2595

900 / 3163

Snow

0 (-1)

Total Ld. Case

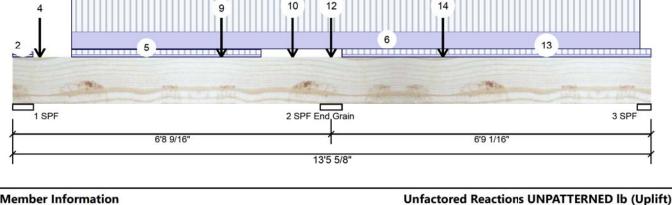
3258 L_

16431 LL

4063 _L

(-282)

0



Girder	Application:	Floor (Residential)
3	Design Method:	LSD
Dry	Building Code:	NBCC 2015 / OBC 2012
480	Load Sharing:	Yes
240	Deck:	Not Checked
Normal - II	Vibration:	Not Checked
40 PSF		
15 PSF	ENGINEERING NOTE PAGE	ENP-2. THE NOTE PAGE THIS DRAWING AS IT
	3 Dry 480 240 Normal - II	3 Design Method: Dry Building Code: 480 Load Sharing: 240 Deck: Normal - II Vibration: 40 PSF 15 PSF READ ALL NOTES ON THIS ENGINEERING NOTE PAGE IS AN INTEGRAL PART OF

HE E PAGE USED

Analysis Results

F	Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
1	Neg Moment	-11489 ft-lb	6'8 9/16"	53447 ft-lb	0.215 (21%)	1.25D+1.5L	LL
F	Pos Moment	9489 ft-lb	9' 13/16"	53447 ft-lb	0.178 (18%)	1.25D+1.5L	_L
ι	Jnbraced	9489 ft-lb	9' 13/16"	53447 ft-lb	0.178 (18%)	1.25D+1.5L	_L
5	Shear	8562 lb	7'11 3/16"	17394 lb	0.492 (49%)	1.25D+1.5L	LL
F	Perm Defl in.	0.012 (L/6755)	9'7 1/2"	0.218 (L/360)	0.053 (5%)	D	Uniform
L	L Defl inch	0.035 (L/2211)	9'7"	0.163 (L/480)	0.217 (22%)	L+0.5S	_L
٦	L Defl inch	0.047 (L/1666)	9'7 1/8"	0.326 (L/240)	0.144 (14%)	D+L+0.5S	_L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Multiple plies must be fastened together as per manufacturer's details.
- 4 Top loads must be supported equally by all plies.
- 5 Tie-down connection required at bearing 1 for uplift 282 b (Combination 0.9D+1.5L, Load
- 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.

OFESSIO.
ED PROFESSION PR
I.MATIJEVIC M

19%

Live

1305

7937

1828

Bearings and Factored Reactions

Dir.

Vert

Vert

Vert

100528832 30 VINCE OF

October 12, 2021

IC	D Loa	d Type Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-	In 0-0-0 to 0-5-2	2 0-3-14	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-	In 0-0-0 to 0-5-2	2 0-4-2	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
3	Poir	nt 0-6-14	1	Far Face	13 lb	29 lb	0 lb	0 lb	J1

Continued on page 2...

Notes

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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-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

Manufacturer Info Forex APA: PR-L318



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Page 2 of 25



Client: Project: Address:

GREENPARK

Date: 9/30/2021

Input by:

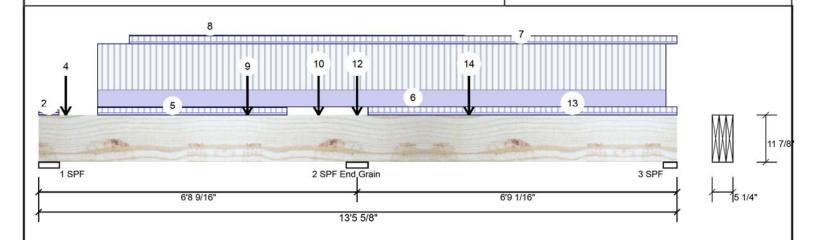
Job Name: TC451-2 STANDARD Project #: ROUNDEL HOMES INC

Forex 2.0E-3000Fb LVL F19-A

RICHMOND HILL, ON 1.750" X 11.875"

TERRACOTA 45 1-2

3-Ply - PASSED Level: Ground Floor



Continued from page 1									
ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
4	Point	0-6-14		Near Face	93 lb	247 lb	0 lb	0 lb	J6
5	Part. Uniform	1-2-14 to 5-2-14		Far Face	18 PLF	37 PLF	0 PLF	0 PLF	
6	Part. Uniform	1-2-14 to 13-2-14		Near Face	124 PLF	331 PLF	0 PLF	0 PLF	
7	Tie-In	1-10-14 to 13-5-10	1-0-12	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
8	Tapered Start	1-10-14		Тор	5 PLF	0 PLF	0 PLF	0 PLF	
	End	8-11-11			4 PLF	0 PLF	0 PLF	0 PLF	
9	Point	4-4-10		Тор	1019 lb	2405 lb	0 lb	0 lb	C7
	Bearing Length	0-3-8							
10	Point	5-10-14		Far Face	20 lb	40 lb	0 lb	0 lb	J1
11	Point	6-8-9		Far Face	11 lb	16 lb	0 lb	0 lb	F9
12	Point	6-8-9		Far Face	0 lb	0 lb	-1 lb	0 lb	F9
13	Part. Uniform	6-11-5 to 13-5-10		Тор	20 PLF	40 PLF	0 PLF	0 PLF	
14	Point	9-0-13		Тор	1395 lb	3450 lb	0 lb	0 lb	C7
	Bearing Length	0-3-8							
	Self Weight				14 PLF				Tana and an



October 12, 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.

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

Forex APA: PR-L318

Manufacturer Info

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

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Page 3 of 25

isDesign

Client: Project: Address: GREENPARK

Date: 9/30/2021

Project #:

Input by: WC

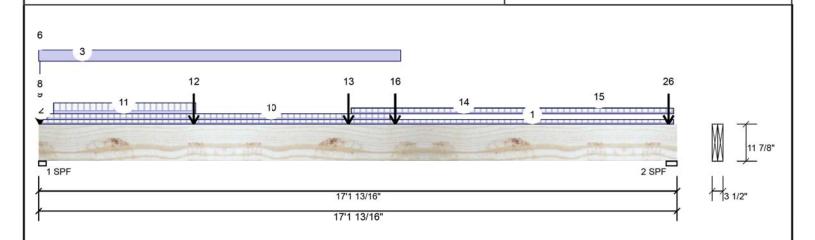
Job Name: TC451-2 STANDARD ROUNDEL HOMES INC

Forex 2.0E-3000Fb LVL F20-A

RICHMOND HILL, ON 1.750" X 11.875"

TERRACOTA 45 1-2

2-Ply - PASSED Level: Ground Floor



Member Inforn	Information				Unfactored Reactions UNPATTERNED Ib (Uplift)				
Type:	Girder	Application:	Floor (Residential)	Brg	Direction	Live	Dead	Snow	Wind
Plies:	2	Design Method:	LSD	1	Vertical	1240	1555	818	0
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012	2	Vertical	1187	858	0	0
Deflection LL:	480	Load Sharing:	No						
Deflection TL:	240	Deck:	Not Checked						
Importance:	Normal - II	Vibration:	Not Checked						
General Load					Not concern	04 (8400)	5 % D		
Floor Live:	40 PSF			Bearings and Factored Reactions					
Dead:	15 PSF			Bea	aring Length	Dir. Cap.	React D/L lb	Total Ld. Case	Ld. Comb.
				1 - 3	SPF 2.375"	Vert 90%	1944 / 2678	4622 L	1.25D+1.5L +S
Analysis Results	nalysis Results				SPF 3.500"	Vert 38%	1073 / 1781	2854 L	1.25D+1.5L

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	15387 ft-lb	8'3 13/16"	34261 ft-lb	0.449 (45%)	1.25D+1.5L	L
Unbraced	15387 ft-lb	8'3 13/16"	34261 ft-lb	0.449 (45%)	1.25D+1.5L	L
Shear	2951 lb	1'2 1/4"	11596 lb	0.255 (25%)	1.25D+1.5L	L
Perm Defl in.	0.246 (L/818)	8'3 7/8"	0.560 (L/360)	0.440 (44%)	D	Uniform
LL Defl inch	0.320 (L/629)	8'6 5/16"	0.420 (L/480)	0.763 (76%)	L+0.5S	L
TL Defl inch	0.566 (L/356)	8'5 3/16"	0.839 (L/240)	0.675 (67%)	D+L+0.5S	L

Allamad

Design Notes

- 1 Performed Secondary Bearing Check (CSA 086-14 6.5.73). Assumed point load size: beam width X 3.5.
- 2 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Multiple plies must be fastened together as per manufacturer's details.
- 5 Top loads must be supported equally by all plies.
- 6 Top must be continuously laterally braced.
- 7 Bottom must be laterally braced at a maximum of 8'10" o.c.
- 8 Lateral slenderness ratio based on full section width



October 12, 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.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 17-0-11	0-7-6	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 0-1-2		Тор	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
3	Part. Uniform	0-0-0 to 9-8-10		Тор	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
4	Part. Uniform	0-0-7 to 0-0-7		Тор	100 PLF	0 PLF	248 PLF	0 PLF	

Continued on page 2...

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

- 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

Manufacturer Info Forex

APA: PR-L318



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This design is valid until 5/24/2024

IM1021-061 Page 9 of 32

Page 4 of 25

isDesign

Client: Project: Address: GREENPARK

TERRACOTA 45 1-2

Date: 9/30/2021

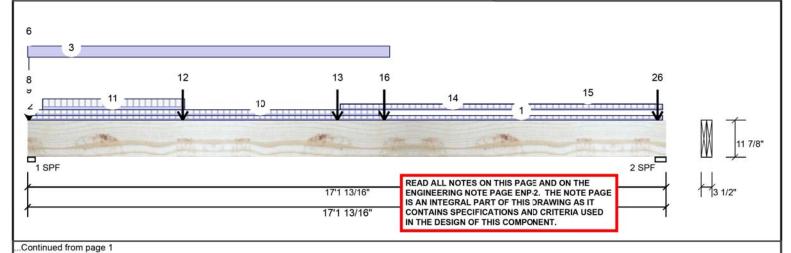
Input by: WC

Job Name: TC451-2 STANDARD Project #: ROUNDEL HOMES INC

Forex 2.0E-3000Fb LVL F20-A

RICHMOND HILL, ON 1.750" X 11.875"

2-Ply - PASSED Level: Ground Floor



- 1	Continued from p	age i								
	ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
	5	Part. Uniform	0-0-7 to 0-0-7		Тор	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
	6	Tapered Start	0-0-7		Тор	1 PLF	2 PLF	0 PLF	0 PLF	
		End	0-0-7			1 PLF	2 PLF	0 PLF	0 PLF	
	7	Part. Uniform	0-0-7 to 0-0-7		Тор	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
	8	Point	0-0-7		Тор	410 lb	0 lb	818 lb	0 lb	F10 F10
		Bearing Length	0-5-8							
	9	Part. Uniform	0-0-7 to 0-0-7		Тор	52 PLF	0 PLF	128 PLF	0 PLF	
	10	Tapered Start	0-2-10		Тор	11 PLF	31 PLF	0 PLF	0 PLF	
		End	9-5-3			11 PLF	31 PLF	0 PLF	0 PLF	
	11	Part. Uniform	0-4-13 to 4-2-6		Тор	23 PLF	60 PLF	0 PLF	0 PLF	
	12	Point	4-1-13		Тор	56 lb	150 lb	0 lb	0 lb	PL1
	776.37	Bearing Length	0-5-8							
	13	Point	8-3-13		Near Face	178 lb	376 lb	0 lb	0 lb	F5
	14	Tie-In	8-4-11 to 17-0-11	0-8-10	Тор	15 PSF	40 PSF	0 PSF	0 PSF	PROFESSIONAL
	15	Part. Uniform	8-4-11 to 16-10-6		Тор	3 PLF	0 PLF	0 PLF	0 PLF	10 pm
	16	Point	9-6-14		Тор	242 lb	586 lb	0 lb	0 lb	F16 F16 I.MATUEVIC I.M
	3820	Bearing Length	0-5-8							1.MATIJEVIC m 100528832 m
	17	Point	16-11-1		Тор	1 lb	3 lb	0 lb	0 lb	100528832
	59400	Bearing Length	0-5-8							32 (11)
	18	Point	16-11-1		Тор	3 lb	9 lb	0 lb	0 lb	J6 SOUNCE OF ONTRE
		Bearing Length	0-5-8							October 12, 2021
	19	Point	16-11-1		Тор	12 lb	32 lb	0 lb	0 lb	J8
		Bearing Length	0-5-8							
	20	Point	16-11-1		Тор	22 lb	0 lb	0 lb	0 lb	Wall Self Weight
		Bearing Length	0-5-8							
	21	Point	16-11-1		Тор	1 lb	3 lb	0 lb	0 lb	
		Bearing Length	0-5-8							
	22	Point	16-11-1		Тор	17 lb	45 lb	0 lb	0 lb	J8
		Bearing Length	0-5-8							
	23	Point	16-11-1		Тор	23 lb	0 lb	0 lb	0 lb	Wall Self Weight

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

Forex APA: PR-L318

Manufacturer Info

3228 Moodie Dr. Ottawa, Ontario 618-838-2775 DN \905-6324400

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IM1021-061 Page 10 of 32

Page 5 of 25

isDesign

Client: Project: Address:

GREENPARK

Date: 9/30/2021

Input by: WC

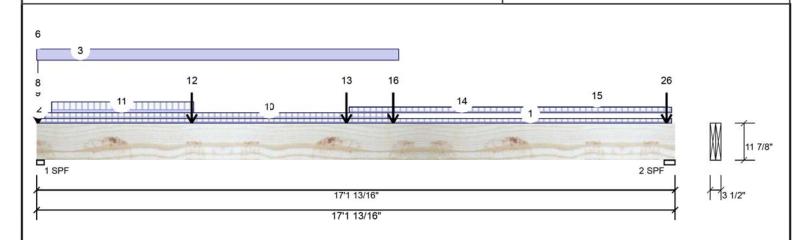
Job Name: TC451-2 STANDARD Project #: ROUNDEL HOMES INC

Forex 2.0E-3000Fb LVL F20-A

RICHMOND HILL, ON 1.750" X 11.875"

TERRACOTA 45 1-2

2-Ply - PASSED Level: Ground Floor



Continued from page 2										
	ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
		Bearing Length	0-5-8							
	24	Point	16-11-1		Тор	1 lb	3 lb	0 lb	0 lb	
		Bearing Length	0-5-8							
	25	Point	16-11-1		Тор	14 lb	38 lb	0 lb	0 lb	J8
		Bearing Length	0-5-8							
	26	Point	16-11-1		Тор	20 lb	0 lb	0 lb	0 lb	Wall Self Weight
		Bearing Length	0-5-8							
		Self Weight				10 PLF				
	ı									



October 12, 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.

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

Forex APA: PR-L318

Manufacturer Info

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

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Page 6 of 25



Client: Project: Address: GREENPARK

TERRACOTA 45 1-2

RICHMOND HILL, ON

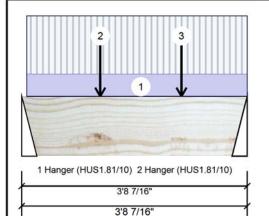
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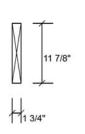
WC Input by:

Job Name: TC451-2 STANDARD Project #: ROUNDEL HOMES INC

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

Level: Ground Floor





Member Information

Type: 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 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 15 PSF CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

Analysis Results

Dead:

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	746 ft-lb	1'7 3/8"	17130 ft-lb	0.044 (4%)	1.25D+1.5L	L
Unbraced	746 ft-lb	1'7 3/8"	17130 ft-lb	0.044 (4%)	1.25D+1.5L	L
Shear	628 lb	2'5 9/16"	5798 lb	0.108 (11%)	1.25D+1.5L	L
Perm Defl in.	0.002 (L/24257)	1'9 5/16"	0.111 (L/360)	0.015 (1%)	D	Uniform
LL Defl inch	0.003 (L/11567)	1'9 7/16"	0.083 (L/480)	0.041 (4%)	L	L
TL Defl inch	0.005 (L/7832)	1'9 7/16"	0.166 (L/240)	0.031 (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 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

Unfactored Reactions UNPATTERNED Ib	(Uplift)
-------------------------------------	----------

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	376	178	0	0
2	Vertical	406	191	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	3.000"	Vert	20%	223 / 565	788	L	1.25D+1.5L
2 - Hanger	3.000"	Vert	22%	239 / 608	848	L	1.25D+1.5L



October 12, 2021

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-1-0 to 3-8-7		Тор	34 PLF	89 PLF	0 PLF	0 PLF	
2	Point	1-3-8		Far Face	120 lb	239 lb	0 lb	0 lb	J2
3	Point	2-7-8		Far Face	109 lb	221 lb	0 lb	0 lb	J2
	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
- 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
 3. Damaged Beams must not be used

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

For flat roofs provide proper drainage to prevent ponding

This design is valid until 5/24/2024

APA: PR-L318

Manufacturer Info

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



Page 7 of 25



Client: Project: Address: GREENPARK

TERRACOTA 45 1-2

RICHMOND HILL, ON

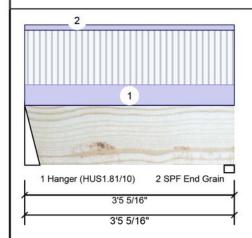
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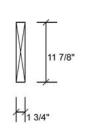
WC Input by:

Job Name: TC451-2 STANDARD Project #: ROUNDEL HOMES INC

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

Level: Ground Floor





Wind

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		

Unf	actored Rea	ctions UNPAT	TERNED Ib (Uplift)
Brg	Direction	Live	Dead	Snow

1	Vertical	37	26	0	0
2	Vertical	35	25	0	0

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	62 ft-lb	1'9 1/8"	17130 ft-lb	0.004 (0%)	1.25D+1.5L	L
Unbraced	62 ft-lb	1'9 1/8"	17130 ft-lb	0.004 (0%)	1.25D+1.5L	L
Shear	32 lb	2'3 7/16"	5798 lb	0.006 (1%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/226271)	1'9 3/16"	0.105 (L/360)	0.002 (0%)	D	Uniform
LL Defl inch	0.000 (L/157647)	1'9 3/16"	0.079 (L/480)	0.003 (0%)	L	L
TL Defl inch	0.000 (L/92913)	1'9 3/16"	0.157 (L/240)	0.003 (0%)	D+L	L

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	3.000"	Vert	2%	32 / 56	88	L	1.25D+1.5L
2 - SPF End Grain	2.004"	Vert	3%	31 / 53	84	L	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 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 be laterally braced at bearings.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 3-5-5	0-6-5	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 3-5-5		Тор	2 PLF	0 PLF	0 PLF	0 PLF	
	Self Weight				5 PLF			DEAD ALL NO	TES ON THIS D

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.

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
- I. UVL 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
 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 618-838-2775 DN 905-632-4400

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Page 8 of 25

isDesign

Client: Project: Address:

GREENPARK

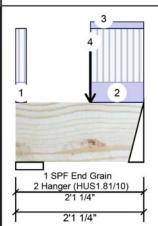
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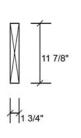
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TERRACOTA 45 1-2 Job Name: TC451-2 STANDARD RICHMOND HILL, ON Project #: ROUNDEL HOMES INC

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

Level: Ground Floor





Member Information

Type:	Girder	Application:	Floor (Residential)				
Plies:	-1	Design Method:	LSD				
Moisture Condition	on: 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	READ ALL NOTES ON THIS PAGE AND ON THE					

NGINEERING 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.

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	80 ft-lb	1'2 11/16"	17130 ft-lb	0.005 (0%)	1.25D+1.5L	L
Unbraced	80 ft-lb	1'2 11/16"	17130 ft-lb	0.005 (0%)	1.25D+1.5L	L
Shear	64 lb	1'5 5/16"	5798 lb	0.011 (1%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/145319)	1'2 3/4"	0.051 (L/360)	0.002 (0%)	D	Uniform
LL Defl inch	0.000 (L/80416)	1'2 3/4"	0.038 (L/480)	0.006 (1%)	L	L
TL Defl inch	0.000 (L/51769)	1'2 3/4"	0.076 (L/240)	0.005 (0%)	D+L	L

Design Notes

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

	Unfactored	Reactions	UNPAT	TERNED IL	(Uplift)
٦	A			22 9 22 2 2 2	1,000,000

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	56	33	0	0
2	Vertical	92	51	0	0
1					

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	5.438"	Vert	2%	41 / 85	125	L	1.25D+1.5L
2 - Hanger	3.000"	Vert	5%	64 / 138	202	L	1.25D+1.5L



October 12, 2021

3 BOROTT	must have sheathing attach	siy braceu.							
ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-2-1	1-10-0	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	1-2-11 to 2-1-4	1-10-0	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	1-2-11 to 2-1-4		Тор	9 PLF	0 PLF	0 PLF	0 PLF	
4	Point	1-2-11		Far Face	37 lb	71 lb	0 lb	0 lb	J7
	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
- 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

Manufacturer Info

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



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Page 9 of 25

isDesign

Client: Project: Address:

GREENPARK

Date: 9/30/2021

WC Input by:

Job Name: TC451-2 STANDARD Project #: ROUNDEL HOMES INC

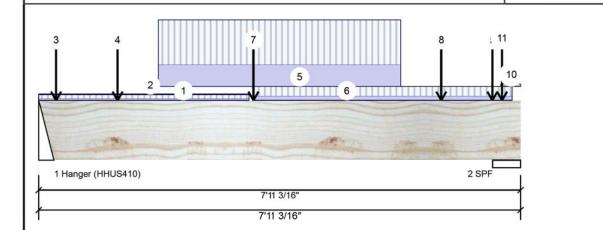
F6-A Forex 2.0E-3000Fb LVL

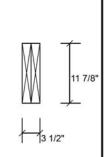
RICHMOND HILL, ON 1.750" X 11.875"

TERRACOTA 45 1-2

2-Ply - PASSED

Level: Ground Floor





Member Information						
Type:	Girder					
Plies:	2					
Moisture Condition:	Dry					
Deflection LL:	480					
Deflection TL:	240					

Normal - II

40 PSF Floor Live: 15 PSF Dead:

Manshau Information

Floor (Residential)

Design Method: LSD Building Code: NBCC 2015 / OBC 2012

Load Sharing: No Deck: Not Checked

Application:

Vibration: Not Checked

Unfactored Reactions UNPATTERNED Ib (Uplift)

В	Brg	Direction	Live	Dead	Snow	Wind
ı	1	Vertical	1963	946	0	0
	2	Vertical	2929	1313	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	3.000"	Vert	53%	1182 / 2945	4128	L	1.25D+1.5L
2-SPF	5.500"	Vert	51%	1641 / 4393	6034	L	1.25D+1.5L

Analysis Results

Importance:

General Load

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4209 ft-lb	3'9 1/4"	34261 ft-lb	0.123 (12%)	1.25D+1.5L	L
Unbraced	4209 ft-lb	3'9 1/4"	34261 ft-lb	0.123 (12%)	1.25D+1.5L	L
Shear	1904 lb	1'2 7/8"	11596 lb	0.164 (16%)	1.25D+1.5L	L
Perm Defl in.	0.013 (L/6850)	3'10 1/8"	0.245 (L/360)	0.053 (5%)	D	Uniform
LL Defl inch	0.025 (L/3535)	3'10 1/4"	0.184 (L/480)	0.136 (14%)	L	L
TL Defl inch	0.038 (L/2332)	3'10 3/16"	0.367 (L/240)	0.103 (10%)	D+L	L

Design Notes

- 1 Performed Secondary Bearing Check (CSA 086-14 6.5.73). Assumed point load size: beam width X 3.
- 2 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam
- 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 Fill all hanger nailing holes.
- 5 Girders are designed to be supported on the bottom edge only.
- 6 Multiple plies must be fastened together as per manufacturer's details.
- 7 Top loads must be supported equally by all plies.
- 8 Top must be continuously laterally braced.
- 9 Bottom must have sheathing attached or be continuously braced.
- 10 Lateral slenderness ratio based on full section width.



October 12, 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.

Notes

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 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

Manufacturer Info Forex

APA: PR-L318

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

oshua.nabua

Page 10 of 25



Client: Project: Address: GREENPARK

Date:

Project #:

9/30/2021

Input by: WC

Job Name: TC451-2 STANDARD

ROUNDEL HOMES INC

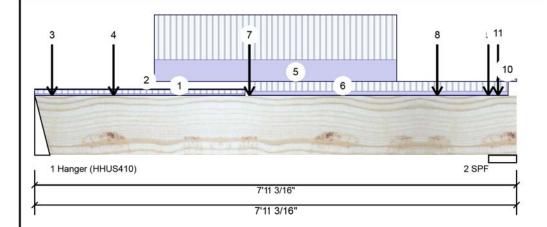
Forex 2.0E-3000Fb LVL F6-A

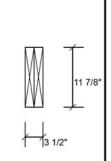
RICHMOND HILL, ON 1.750" X 11.875"

TERRACOTA 45 1-2

2-Ply - PASSED

Level: Ground Floor





ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 3-5-7	0-6-2	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 3-5-6		Тор	3 PLF	0 PLF	0 PLF	0 PLF	
3	Point	0-3-7		Тор	482 lb	1096 lb	0 lb	0 lb	C7
	Bearing Length	0-3-8							
4	Point	1-3-9		Far Face	148 lb	295 lb	0 lb	0 lb	J3
5	Part. Uniform	1-11-9 to 5-11-9		Far Face	106 PLF	218 PLF	0 PLF	0 PLF	
6	Part. Uniform	3-6-5 to 7-9-8		Тор	20 PLF	47 PLF	0 PLF	0 PLF	
7	Point	3-6-5		Near Face	51 lb	92 lb	0 lb	0 lb	F5
8	Point	6-7-9		Far Face	123 lb	254 lb	0 lb	0 lb	J3
9	Point	7-5-10		Тор	811 lb	1965 lb	0 lb	0 lb	C1
	Bearing Length	0-3-8							
10	Tie-In	7-7-5 to 7-11-3	0-2-10	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
11	Point	7-7-9		Far Face	21 lb	44 lb	0 lb	0 lb	J3
	Self Weight				10 PLF				



October 12, 2021

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- 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

Forex APA: PR-L318

Manufacturer Info

3228 Moodie Dr. Ottawa, Ontario 618-638-2775 DN \905-6324400



joshua.nabua

Page 11 of 25



Client: Project: Address:

GREENPARK

Date: 9/30/2021

Project #:

Input by: WC

Job Name: TC451-2 STANDARD

Forex 2.0E-3000Fb LVL F8-C

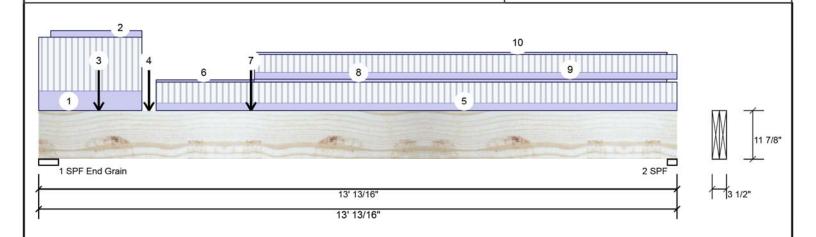
RICHMOND HILL, ON 1.750" X 11.875"

TERRACOTA 45 1-2

2-Ply - PASSED

Level: Ground Floor

ROUNDEL HOMES INC



Member Inforn	nation			
Type:	Girder		Application:	Floor (Residential)
Plies:	2		Design Method:	LSD
Moisture Condition:	Dry		Building Code:	NBCC 2015 / OBC 201
Deflection LL:	480		Load Sharing:	No
Deflection TL:	240		Deck:	Not Checked
Importance:	Normal - II		Vibration:	Not Checked
General Load				
Floor Live:	40 PSF	2542 41	L HOTES ON THE B	A OF AND ON THE
Dead:	15 PSF	ENGINEE IS AN INT CONTAIN	TEGRAL PART OF TH	NP-2. THE NOTE PAGE IIS DRAWING AS IT AND CRITERIA USED
Analysis Desults		IN THE D	ESIGN OF IMIS COM	PONENT.

Anal	ysis	Resu	lts
------	------	------	-----

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	9716 ft-lb	4'3 15/16"	34261 ft-lb	0.284 (28%)	1.25D+1.5L	L
Unbraced	9716 ft-lb	4'3 15/16"	34261 ft-lb	0.284 (28%)	1.25D+1.5L	L
Shear	4811 lb	1'4 11/16"	11596 lb	0.415 (41%)	1.25D+1.5L	L
Perm Defl in.	0.069 (L/2190)	5'11 11/16"	0.420 (L/360)	0.164 (16%)	D	Uniform
LL Defl inch	0.130 (L/1162)	5'10 11/16"	0.315 (L/480)	0.413 (41%)	L	L
TL Defl inch	0.199 (L/759)	5'11 1/16"	0.630 (L/240)	0.316 (32%)	D+L	L

Design Notes

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

	Unf	acto	red	Reactions	UNPAT	TERNED Ib	(Uplift)
٦	_			000	1 a 1 W 1 U 5		50-0 SSS

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	2353	1200	0	0
2	Vertical	762	433	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	4.843"	Vert	40%	1500 / 3530	5030	L	1.25D+1.5L
2 SDE	2 375"	Vert	33%	542 / 1143	1685	1	1 25D+1 5I



October 12, 2021

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 2-1-4	1-10-0	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-2-15 to 2-1-4		Тор	9 PLF	0 PLF	0 PLF	0 PLF	
3	Point	1-2-11		Near Face	37 lb	72 lb	0 lb	0 lb	J7
4	Point	2-3-0		Near Face	946 lb	1963 lb	0 lb	0 lb	F6
5	Tie-In	2-4-12 to 13-0-13	0-8-10	Тор	15 PSF	40 PSF	0 PSF	0 PSF	

Notes

Continued on page 2...

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 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

Manufacturer Info

APA: PR-L318



oshua.nabua

Page 12 of 25



F8-C

Continued from page 1

Client: Project:

GREENPARK

1.750" X 11.875"

Date: 9/30/2021

Project #:

Input by: WC

Job Name: TC451-2 STANDARD

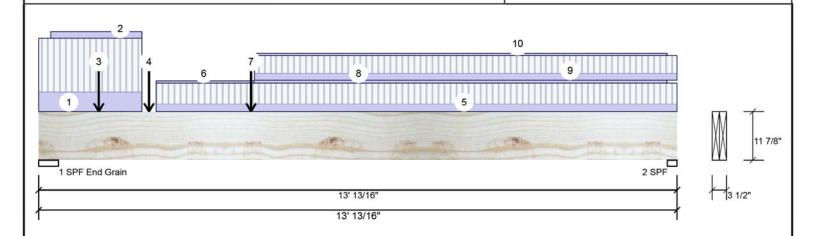
Address: TERRACOTA 45 1-2

Forex 2.0E-3000Fb LVL

RICHMOND HILL, ON

Level: Ground Floor 2-Ply - PASSED

ROUNDEL HOMES INC



Continued fro	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Part. Uniform	2-4-12 to 4-4-11		Тор	3 PLF	0 PLF	0 PLF	0 PLF	
7	Point	4-3-15		Far Face	191 lb	406 lb	0 lb	0 lb	F5
8	Part. Uniform	4-4-11 to 12-10-5		Тор	4 PLF	0 PLF	0 PLF	0 PLF	
9	Tie-In	4-4-13 to 13-0-13	0-7-6	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
10	Part. Uniform	4-4-13 to 12-10-6		Тор	3 PLF	0 PLF	0 PLF	0 PLF	
	Self Weight				10 PLF				



October 12, 2021

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 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



CSD BUILD joshua.nabua

Page 3 of 6



Client: Project: Address:

GREENPARK

TERRACOTA 45 1-2

RICHMOND HILL, ON

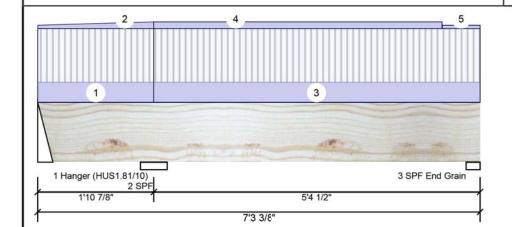
Date: 10/14/2021

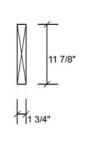
WC Input by:

Job Name: TC451-2 STANDARD Project #: ROUNDEL HOMES INC

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

Level: Ground Floor





Mem	her	Into	rma	tion

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 Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	1	0	0	0
2	Vertical	78	61	0	0
3	Vertical	40	31	0	0

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-107 ft-lb	1'10 7/8"	17130 ft-lb	0.006 (1%)	1.25D+1.5L	LL
Unbraced	-107 ft-lb	1'10 7/8"	8629 ft-lb	0.012 (1%)	1.25D+1.5L	LL
Pos Moment	90 ft-lb	5' 1/16"	17130 ft-lb	0.005 (1%)	1.25D+1.5L	_L
Unbraced	90 ft-lb	5' 1/16"	17130 ft-lb	0.005 (1%)	1.25D+1.5L	_L
Shear	83 lb	3'1 3/8"	5798 lb	0.014 (1%)	1.25D+1.5L	LL
Perm Defl in.	0.001 (L/114857)	4'7 1/4"	0.174 (L/360)	0.003 (0%)	D	Uniform
LL Defl inch	0.001 (L/90069)	4'7 3/16"	0.130 (L/480)	0.005 (1%)	L	_L
TL Defl inch	0.001 (L/50482)	4'7 1/4"	0.261 (L/240)	0.005 (0%)	D+L	_L

, mining one				- apaony		
Neg Moment	-107 ft-lb	1'10 7/8"	17130 ft-lb	0.006 (1%)	1.25D+1.5L	LL
Unbraced	-107 ft-lb	1'10 7/8"	8629 ft-lb	0.012 (1%)	1.25D+1.5L	LL
Pos Moment	90 ft-lb	5' 1/16"	17130 ft-lb	0.005 (1%)	1.25D+1.5L	_L
Unbraced	90 ft-lb	5' 1/16"	17130 ft-lb	0.005 (1%)	1.25D+1.5L	_L
Shear	83 lb	3'1 3/8"	5798 lb	0.014 (1%)	1.25D+1.5L	LL
Perm Defl in.	0.001 (L/114857)	4'7 1/4"	0.174 (L/360)	0.003 (0%)	D	Uniform
LL Defl inch	0.001 (L/90069)	4'7 3/16"	0.130 (L/480)	0.005 (1%)	L	_L
TL Defl inch	0.001 (L/50482)	4'7 1/4"	0.261 (L/240)	0.005 (0%)	D+L	_L

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	3.000"	Vert	1%	-6 / 24	18 (-40)	L_	0.9D+1.5L (1.25D+1.5L)
2 - SPF	5.250"	Vert	4%	88 / 134	222	LL	1.25D+1.5L
3 - SPF End Grain	2.750"	Vert	3%	36 / 56	91	_L	1.25D+1.5L

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 Negligible uplift at end of short span.
- 5 Top must be continuously laterally braced.
- 6 Bottom must be laterally braced at bearings.



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Dry service conditions, unless noted otherwise
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Handling & Installation

- I. IVI, 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

Forex

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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IM1021-061 Page 19 of 32

Page 4 of 6



Client: Project: Address:

GREENPARK

TERRACOTA 45 1-2

RICHMOND HILL, ON

Date: 10/14/2021

Project #:

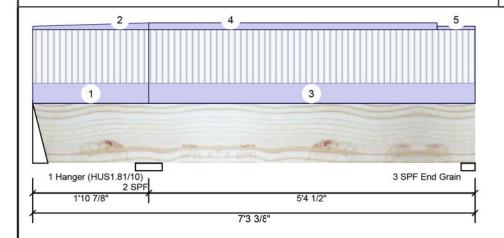
Input by: WC

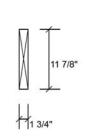
Job Name: TC451-2 STANDARD

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

Level: Ground Floor

ROUNDEL HOMES INC





ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-10-14	0-4-14	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tapered Start	0-0-0		Тор	1 PLF	0 PLF	0 PLF	0 PLF	
	End	1-10-14			2 PLF	0 PLF	0 PLF	0 PLF	
3	Tie-In	1-10-14 to 7-3-6	0-4-14	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
4	Part. Uniform	1-10-14 to 6-7-14		Тор	2 PLF	0 PLF	0 PLF	0 PLF	
5	Part. Uniform	6-7-15 to 7-3-6		Тор	1 PLF	0 PLF	0 PLF	0 PLF	
	Self Weight				5 PLF				



October 18, 2021

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Manufacturer Info

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 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

APA: PR-L318

3228 Moodie Dr. Ottawa, Ontario 618-838-2775 DN \905-6324400



joshua.nabua

F12-B - 1 ply

F12-A - 1 ply

2 X J3-C & - K

F6-B - 2 ply

18-B 18-A

F16-A - 2 ply

J10-A

J10-K

J10-J

J10-I

J10-H

₩10-G

J10-E

J10-D

J10-B

IM1021-061 Page 20 of 32

Second Floor LVL/LSI Label Description Qty Plies Pcs Length Width Depth F20 11.875 18-0-0 Forex 2.0E-3000Fb LVI F8 Forex 2.0E-3000Fb LVL 1.75 11.875 14-0-0 F15 1.75 11.875 12-0-0 Forex 2.0E-3000Fb LVL Forex 2.0E-3000Fb LVL F6 1.75 11.875 2 2 8-0-0 Forex 1.75 11.875 2 6-0-0 2.0E-3000Fb LVL F12 2-0-0 Forey 1.75 11.875 2.0E-3000Fb LVL Joist Width Depth Label Description Qty Plies Pcs Length J10 AJS 24 3.5 11.875 14 22-0-0 J9 AJS 24 3.5 11.875 6 20-0-0 J6 AJS 24 3.5 11.875 33 18-0-0 J4 AJS 24 3.5 11.875 13 14-0-0

J3 AJS 24 3.5 11.875 6 J8 AJS 24 3.5 11.875 4 J1 AJS 24 3.5 11.875 11 Rim Board Width Depth Qty Plies Label Description R1 Norbord Rimboard 1.125 11.875 12-0-0 Plus 1.125 X

11.875 Blocking Label Description Width Depth Qty Plies Pcs Length BLK1 AJS 24 3.5 11.875 LinFt Varies 58-0-0

Hanger Supported Beam/Girder Member fasteners fasteners Label Pcs Description Skew Slope H2 48 LF3511 12 10dx1 1/2 2 #8x1 1/4WS

Custom Width Depth Label Description Qty Plies Pcs Length LL Span L/ H2.5A

JOB INFORMATION Builder GREENPARK Project ROUNDEL HOMES INC Shipping TERRACOTA 45 1-2 RICHMOND HILL, ON Sales Rep RALPH MIRIGELLO Designer WC Plotted October 15, 2021 ayout Name TC451-2 STANDARD Job Path DESIGN CRITERIA 12-0-0 8-0-0 Second Floor 2-0-0 Design Method LSD (Canada) NBCC 2015 / OBC 2012 **Building Code** Pcs Length

Floor oads

Dead **Deflection Joist** LL Span L/

TL Span L/ **Deflection Flush Girder** LL Span L/ TL Span L/

Deflection Dropped Girder

TL Span L/ **Deflection Header**

LL Span L/ TL Span L/ 240 Decking OSB Decking

CCMC References

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

Kott Inc. 3228 Moodie Dr, Ottawa

613-838-2775 / 905-642-4400

14 Anderson Blvd, Uxbridge Ontario

40

15

480

240

480

240

480

240

480

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

Eng to review and approve the deviation prior to construction.

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.

This placement plan is to be used as an installation guide only. It is meant to be used in conjunction with the manufacturers installation guide, the architectural drawings, and not to replace them.11. Framing shown on this layout may deviate from architectural drawings. Arch /

Legend CITY OF RICHMOND HILL In Hanger Laber Denotes Web Stiffene PS Point Load Support **\Q** Coad from Above / 2 Wall Opening Norbord Rimboard Plus 1,125 X 11.875 AJS 24 11.875 L V L L Forex 2:0E-3000Fb LVL 1.75 X 11.875

Second Floor

2 X J6-P

F20-B - 2 ply,

No uplift connection requiered

J4-A

J4-B

J4-F

-3 X J6-N-

-3 X J6-N-

—J9-B - @ 16"—

F8-B - 2 ply

2 X J6-G, 6-

2 X J6-E 9 9

2 X J6-1

F12-A - 1 ply

2 X J3-C & - K

F6-B - 2 ply

J8-B J8-A 1 ply

F16-A - 2 ply

J10-A

/J10-J/

J10-H

J10-G

J10-E

J10-F

J10-D

J10-B

J6-B - @ 16"

6

IM1021-061 Page 21 of 32

LVL/LSL Width Depth Qty Plies Pcs Length Label Description F20 11.875 18-0-0 Forex 2.0E-3000Fb LVI Forex 2.0E-3000Fb LVL F8 1.75 11.875 14-0-0 F15 11.875 Forex 1.75 12-0-0 2.0E-3000Fb LVL Forex 2.0E-3000Fb LVL F6 1.75 11.875 2 2 8-0-0 Forex 1.75 11.875 2 6-0-0 2.0E-3000Fb LVL F12 1.75 11.875 2-0-0 Forey 2.0E-3000Fb LVL

Second Floor

Plus 1.125 X

H2.5A

Joist	100 mm						
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
J10	AJS 24	3.5	11.875			14	22-0-0
J9	AJS 24	3.5	11.875		5	6	20-0-0
J6	AJS 24	3.5	11.875			33	18-0-0
J4	AJS 24	3.5	11.875			13	14-0-0
J3	AJS 24	3.5	11.875			6	12-0-0
J8	AJS 24	3.5	11.875			4	8-0-0
J1	AJS 24	3.5	11.875			11	2-0-0
Rim Bo	ard						
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard	1.125	11.875			15	12-0-0

	11.875						
Blockin	g		791			7	
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK1	AJS 24	3.5	11.875	LinFt		Varies	58-0-0

	BLK1	AJS 24	3.5	11.875	LinFt		Varies	58-0-0
1	Hangei	1						
	15%				Bea	am/Girder	Sup	ported
							Me	ember

Label	Pcs	Description	1 S	kew S	Slope	ta	steners	tas	steners
H2	48	LF3511		1 2		12	10dx1 1/2	2 #8	x1 1/4\
Custon	1	77	- 1	17000					
Label	Descr	iption	Width	Depth	1 (Qtv	Plies	Pcs	Leno

JOB INFORMATION Builder GREENPARK Project ROUNDEL HOMES INC Shipping TERRACOTA 45 1-2 RICHMOND HILL, ON Sales Rep RALPH MIRIGELLO Designer WC **Plotted** October 15, 2021 Layout Name TC451-2 (5-BDRM OPT.) Job Path **DESIGN CRITERIA**

Second Floor Design Method

LSD (Canada) NBCC 2015 / OBC 2012 **Building Code**

Floor Loads Live

15 Dead **Deflection Joist** 480 LL Span L/

TL Span L/ **Deflection Flush Girder** LL Span L/

WS TL Span L/ **Deflection Dropped Girder**

LL Span L/ TL Span L/

Deflection Header LL Span L/

Decking Decking

CCMC References Boise - 12472-R , 12787-R LP - 12412-R

Forex - 14056-R Kott Inc.

TL Span L/

3228 Moodie Dr, Ottawa

613-838-2775 / 905-642-4400



40

240

480

240

480

240

480

240

OSB

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

Eng to review and approve the deviation prior to construction.

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.

Legend CITY OF RICHMOND HILL In Hanger Laber Denotes Web Stiffene -ws Point Load Support PS Coad from Above / 2 **\Q** Wall Opening Norbord Rimboard Plus 1,125 X 11.875 AJS 24 11 875 EVED Forex 2:0E-3000Fb LVL 1.75 X 11.875

Version 21.40.338 Powered by iStruct™ Dataset: 21072801.1545

Second Floor

-3 X J6-L-

F20-B - 2 ply,

No uplift connection requiered

J4-A

J4-B

J4-C

J4-D

/J4-E

-3 X Ja-B- & -3 X

BLK1

-3 X J6-G-

F8-B - 2 ply

J6-I - @ 16" မြ

This placement plan is to be used as an installation guide only. It is meant to be used in conjunction with the manufacturers installation guide, the architectural drawings, and not to replace them.11. Framing shown on this layout may deviate from architectural drawings. Arch /

Page 15 of 25



Client: Project: Address:

GREENPARK

TERRACOTA 45 1-2

RICHMOND HILL, ON

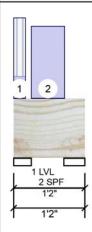
Date: 9/30/2021

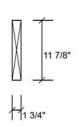
Input by: WC

Job Name: TC451-2 STANDARD Project #: ROUNDEL HOMES INC

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

Level: Second Floor





Member Info	rmation		Unfactored Reactions UNPATTERNED Ib (Uplift)							
Type:	Girder	Application:	Floor (Residential)	Brg	Direction	Live	Dead	5	Snow	Wind
Plies:	1	Design Method:	LSD	1	Vertical	4	11		0	0
Moisture Condition	on: Dry	Building Code:	NBCC 2015 / OBC 2012	2	Vertical	0	10		0	0
Deflection LL:	480	Load Sharing:	No							
Deflection TL:	240	Deck:	Not Checked							
Importance:	Normal - II	Vibration:	Not Checked							
General Load					17 BONE	185 DELOCAT	· constant			
Floor Live:	40 PSF			Beari	ngs and F	actored Read	ctions			
Dead:	15 PSF			Bear	ing Length	Dir. Cap.	React D/L lb	Total L	d. Case	Ld. Comb.
				1 - L'	VL 3.459"	Vert 1%	14/6	21 L	_	1.25D+1.5L
				2-8	PF 4.125"	Vert 1%	15/0	15 L	Jniform	1.4D

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2 ft-lb	6 11/16"	11135 ft-lb	0.000 (0%)	1.4D	Uniform
Unbraced	2 ft-lb	6 11/16"	11135 ft-lb	0.000 (0%)	1.4D	Uniform
Shear	9 lb	1'3 5/16"	3769 lb	0.002 (0%)	1.4D	Uniform
Perm Defl in.	0.000 (L/824026)	6 11/16"	0.022 (L/360)	0.000 (0%)	D	Uniform
LL Defl inch	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
TL Defl inch	0.000 (L/824026)	6 11/16"	0.033 (L/240)	0.000 (0%)	D+L	L



Design Notes

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

I		Self Weight				5 PLF				ON THIS PAGE AND	
I	2	Part. Uniform	0-3-7 to 0-10-0		Тор	27 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight	
I	1	Tie-In	0-0-0 to 0-2-5	0-6-9	Тор	15 PSF	40 PSF	0 PSF	0 PSF		
I	ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments	

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.

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

APA: PR-L318

Manufacturer Info

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



Page 16 of 25



Client: Project: Address:

GREENPARK

TERRACOTA 45 1-2

RICHMOND HILL, ON

Date: 9/30/2021

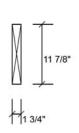
WC Input by:

Job Name: TC451-2 STANDARD Project #: ROUNDEL HOMES INC

1.750" X 11.875" - PASSED F12-B Forex 2.0E-3000Fb LVL

Level: Second Floor





Member Inforn	nation			Unfa	ctored Rea	actions UNI	PATTERNED I	b (Upl	ift)	
Type:	Girder	Application:	Floor (Residential)	Brg	Direction	Live	Dead		Snow	Wind
Plies:	1	Design Method:	LSD	1	Vertical	4	75		121	0
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012	2	Vertical	0	10		0	0
Deflection LL:	480	Load Sharing:	No							
Deflection TL:	240	Deck:	Not Checked	1						
Importance:	Normal - II	Vibration:	Not Checked	1						
General Load					L2.7 S2.01-4-	100	* 14000			
Floor Live:	40 PSF			Bear	ings and F	actored Rea	actions			
Dead:	15 PSF			Bea	ring Length	Dir. Cap	. React D/L lb	Total	Ld. Case	Ld. Comb.
				1 - L	VL 3.500"	Vert 69	6 94 / 186	280	L	1.25D+1.5S +L
Analysis Result	s			2 - 5	SPF 4.125"	Vert 79	6 15/0	15	Uniform	1.4D

Г	Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
l	Moment	2 ft-lb	6 11/16"	11135 ft-lb	0.000 (0%)	1.4D	Uniform
l	Unbraced	2 ft-lb	6 11/16"	11135 ft-lb	0.000 (0%)	1.4D	Uniform
l	Shear	11 lb	-(1 15/16")	3769 lb	0.003 (0%)	1.4D	Uniform
	Perm Defl in.	0.000 (L/811236)	6 11/16"	0.022 (L/360)	0.000 (0%)	D	Uniform
l	LL Defl inch	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
	TL Defl inch	0.000	6 11/16"	0.033 (L/240)	0.000 (0%)	D+S+0.5L	L

PROFESSIONAL I.MATIJEVIC 100528832 WCE OF

October 12, 2021

1 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 4.125.

2 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.

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

4 Top must be continuously laterally braced.

5 Bottom must 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.

	9							
ID Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
Tie-In	0-0-0 to 0-2-6	0-6-5	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
Part. Unifor	m 0-0-0 to 0-1-12		Тор	27 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
Point	0-0-12		Тор	56 lb	0 lb	121 lb	0 lb	F7 F7
Bearing Ler	ngth 0-5-8							
Part. Unifor	m 0-1-12 to 0-10-1		Тор	27 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
Self Weight				5 PLF				

Design 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
- I. UVL 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
 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

Manufacturer Info Forex

APA: PR-L318



oshua.nabua

This design is valid until 5/24/2024

Page 17 of 25



Client: Project: Address: GREENPARK

TERRACOTA 45 1-2

RICHMOND HILL, ON

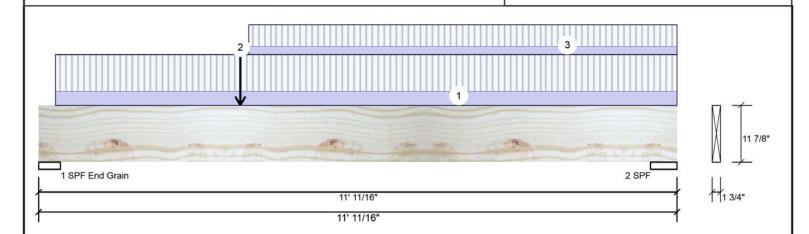
Date: 9/30/2021

WC Input by:

Job Name: TC451-2 STANDARD Project #: ROUNDEL HOMES INC

Forex 2.0E-3000Fb LVL 1.750" X 11.875" - PASSED F15-A

Level: Second Floor



Member Information Unfactored Reactions UNPATTERNED Ib (Uplift) Type: Application: Floor (Residential) Brg Direction Live Dead Plies: 1 Design Method: LSD 461 213 1 Vertical Moisture Condition: Dry Building Code: NBCC 2015 / OBC 2012 2 Vertical 327 156 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 1 - SPF 4.500" Vert 16% 267 / 691 958 L End Grain Analysis Results 2 - SPF 5.500" Vert 12% 194 / 491 685 L

Analysis Location Allowed Actual Capacity Comb. Case Moment 0.162 (16%) 1.25D+1.5L L 2776 ft-lb 3'5 3/4" 17130 ft-lb Unbraced 2776 ft-lb 3'5 3/4" 17130 ft-lb 0.162 (16%) 1.25D+1.5L L 0.157 (16%) 1.25D+1.5L L 909 lb 1'4 3/8" 5798 lb Shear Perm Defl in. 0.025 (L/5064) 5' 13/16" 0.345 (L/360) 0.071 (7%) D Uniform LL Defl inch 0.054 (L/2317) 5' 3/8" 0.259 (L/480) 0.207 (21%) L L TL Defl inch 0.078 (L/1590) 5' 7/16" 0.518 (L/240) 0.151 (15%) D+L

PROFESSIONA I.MATIJEVIC 100528832 VINCE OF

October 12, 2021

F16

Comments

Wind

0 PSF 0 lb

0 PSF

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 7'7" o.c.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	
1	Tie-In	0-3-8 to 11-0-11	0-6-10	Тор	15 PSF	40 PSF	0 PSF	
2	Point	3-5-12		Far Face	191 lb	454 lb	0 lb	
3	Tie-In	3-7-8 to 11-0-11	0-3-14	Тор	15 PSF	40 PSF	0 PSF	
	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
- LVL beams must not be cut or drilled
 Refer to manufacturer's product informatio regarding installation requirements, multi-pl details, beam strength values, and co
- 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, Ontari 618-838-2775 D/\905-642-4400

Snow

0

0

Wind

Ld. Comb.

1.25D+1.5L

1.25D+1.5L

0

0

shua.nabua

Page 18 of 25



Client: Project: Address:

GREENPARK

Date: 9/30/2021

WC Input by:

Job Name: TC451-2 STANDARD Project #: ROUNDEL HOMES INC

F16-A Forex 2.0E-3000Fb LVL

RICHMOND HILL, ON 1.750" X 11.875"

TERRACOTA 45 1-2

2-Ply - PASSED Level: Second Floor

Brg

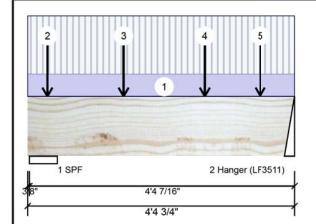
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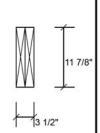
2

Direction

Vertical

Vertical





Wind

0

0

Member	Information
Type:	Girdor

Type:	Girder
Plies:	2
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	240
Importance:	Normal - II
General Load	
Floor Live:	40 PSF

Application: Floor (Residential) Design Method: LSD Building Code: NBCC 2015 / OBC 2012

Load Sharing: No Deck: Not Checked

Vibration: Not Checked

40 PSF

15 PSF

Bearings and Factored Reactions

Unfactored Reactions UNPATTERNED Ib (Uplift)

Live

586

454

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	Vert	10%	303 / 878	1181	LL	1.25D+1.5L
2 - Hanger	2.000"	Vert	18%	239 / 681	920	_L	1.25D+1.5L

Dead

242

191

Snow

0

0

Analysis Results

Dead:

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	894 ft-lb	2'4 5/16"	34261 ft-lb	0.026 (3%)	1.25D+1.5L	_L
Unbraced	894 ft-lb	2'4 5/16"	34261 ft-lb	0.026 (3%)	1.25D+1.5L	_L
Shear	714 lb	3'2 7/8"	11596 lb	0.062 (6%)	1.25D+1.5L	_L
Perm Defl in.	0.001 (L/44783)	2'3 5/8"	0.135 (L/360)	0.008 (1%)	D	Uniform
LL Defl inch	0.003 (L/18817)	2'3 5/8"	0.101 (L/480)	0.026 (3%)	L	_L
TL Defl inch	0.004 (L/13249)	2'3 5/8"	0.202 (L/240)	0.018 (2%)	D+L	_L
LL Cant	-0.000 (2L/22776)	Lt Cant	0.200 (2L/480)	0.000 (0%)	L	_L
TL Cant	-0.000 (2L/16053)	Lt Cant	0.300 (2L/240)	0.000 (0%)	D+L	_L

Design Notes

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



October 12, 2021

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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
- 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 61B-838-2775 D/\905-642-4400



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Page 19 of 25



Client: Project: Address:

GREENPARK

Date: 9/30/2021

Input by:

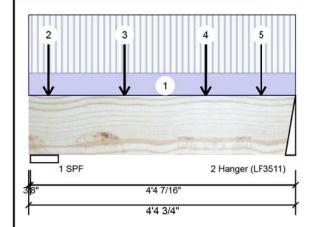
Job Name: TC451-2 STANDARD Project #: ROUNDEL HOMES INC

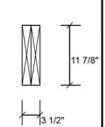
Forex 2.0E-3000Fb LVL F16-A

RICHMOND HILL, ON 1.750" X 11.875"

TERRACOTA 45 1-2

2-Ply - PASSED Level: Second Floor





ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 4-4-12		Тор	34 PLF	89 PLF	0 PLF	0 PLF	
2	Point	0-3-14		Far Face	71 lb	190 lb	0 lb	0 lb	J8
3	Point	1-6-14		Far Face	69 lb	185 lb	0 lb	0 lb	J8
4	Point	2-10-14		Far Face	60 lb	161 lb	0 lb	0 lb	J8
5	Point	3-9-14		Far Face	42 lb	112 lb	0 lb	0 lb	J8
	Self Weight				10 PLF				



October 12, 2021

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 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

3228 Moodie Dr. Otlawa, Ontario 613-838-2775 DI \905-632-4400

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joshua.nabua

Page 5 of 6



Client: Project: Address:

GREENPARK

Date: 10/14/2021 WC Input by:

Project #:

Job Name: TC451-2 STANDARD

F6-B Forex 2.0E-3000Fb LVL

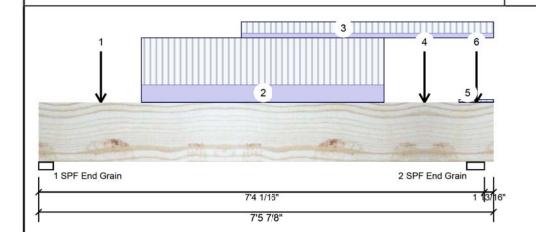
RICHMOND HILL, ON 1.750" X 11.875"

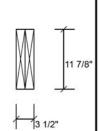
TERRACOTA 45 1-2

2-Ply - PASSED

Level: Second Floor

ROUNDEL HOMES INC





Member Information	1
--------------------	---

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 Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	738	311	0	0
2	Vertical	1055	432	0	0

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-1 ft-lb	7'4 1/16"	25696 ft-lb	0.000 (0%)	1.25D+1.5L	_L
Pos Moment	2982 ft-lb	3'9 3/4"	34261 ft-lb	0.087 (9%)	1.25D+1.5L	L_
Unbraced	2982 ft-lb	3'9 3/4"	34261 ft-lb	0.087 (9%)	1.25D+1.5L	L_
Shear	1525 lb	6' 11/16"	11596 lb	0.131 (13%)	1.25D+1.5L	LL
Perm Defl in.	0.007 (L/11682)	3'8 13/16"	0.234 (L/360)	0.031 (3%)	D	Uniform
LL Defl inch	0.017 (L/4836)	3'8 7/8"	0.175 (L/480)	0.099 (10%)	L	L_
TL Defl inch	0.025 (L/3420)	3'8 7/8"	0.351 (L/240)	0.070 (7%)	D+L	L_
LL Cant	-0.001 (2L/3912)	Rt Cant	0.200 (2L/480)	0.005 (0%)	L	L_
TL Cant	-0.001 (2L/2770)	Rt Cant	0.300 (2L/240)	0.004 (0%)	D+L	L_

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	2.875"	Vert	20%	389 / 1107	1496	L_	1.25D+1.5L
2 - SPF End Grain	3.500"	Vert	23%	540 / 1583	2123	LL	1.25D+1.5L

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.
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- 3 Multiple plies must be fastened together as per manufacturer's details.
- 4 Top loads must be supported equally by all plies.
- 5 Top must be continuously laterally braced.
- 6 Bottom must have sheathing attached or be continuously braced.
- 7 Lateral slenderness ratio based on full section width.



October 18, 2021

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 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
- 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 61B-838-2775 D/\905-642-4400



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Page 6 of 6



Client: Project: Address:

GREENPARK

Date: 10/14/2021

Input by: WC

Job Name: TC451-2 STANDARD Project #: ROUNDEL HOMES INC

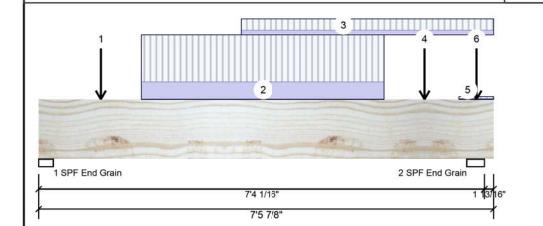
Forex 2.0E-3000Fb LVL F6-B

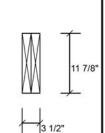
RICHMOND HILL, ON 1.750" X 11.875"

TERRACOTA 45 1-2

2-Ply - PASSED

Level: Second Floor





										_
ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments	
1	Point	1-0-4		Far Face	96 lb	255 lb	0 lb	0 lb	J3	
2	Part. Uniform	1-8-4 to 5-8-4		Far Face	80 PLF	215 PLF	0 PLF	0 PLF		
3	Part. Uniform	3-3-14 to 7-5-14		Тор	20 PLF	52 PLF	0 PLF	0 PLF		
4	Point	6-4-4		Far Face	88 lb	235 lb	0 lb	0 lb	J3	
5	Tie-In	6-11-1 to 7-5-14	0-2-13	Тор	15 PSF	40 PSF	0 PSF	0 PSF		
6	Point	7-2-8		Far Face	83 lb	221 lb	0 lb	0 lb	J3	
	Self Weight				10 PLF					



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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 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. Otlawa, Ontario 613-838-2775 DI \905-632-4400

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Page 22 of 25

isDesign

Client: Project: Address: GREENPARK

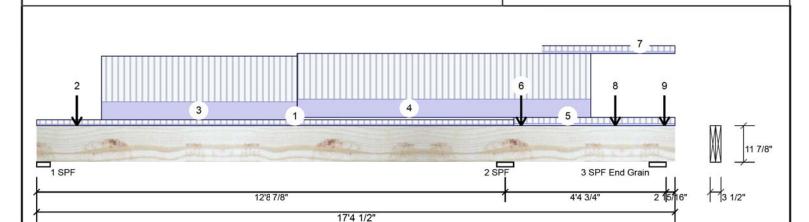
Date: 9/30/2021

WC Input by:

TERRACOTA 45 1-2 RICHMOND HILL, ON Job Name: TC451-2 STANDARD Project #: ROUNDEL HOMES INC

F20-B Forex 2.0E-3000Fb LVL 1.750" X 11.875"

2-Ply - PASSED Level: Second Floor



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:

	neo/thoras	-2-000 C - 0000	WEST PRINCIPLE OF	Antonio (
Δ	na	veis	Recu	tc

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-11129 ft-lb	12'8 7/8"	34261 ft-lb	0.325 (32%)	1.25D+1.5L	LL_
Pos Moment	9359 ft-lb	5'4 1/4"	34261 ft-lb	0.273 (27%)	1.25D+1.5L	L_L
Unbraced	9359 ft-lb	5'4 1/4"	34261 ft-lb	0.273 (27%)	1.25D+1.5L	L_L
Shear	4600 lb	11'6 1/4"	11596 lb	0.397 (40%)	1.25D+1.5L	LL_
Perm Defl in.	0.058 (L/2557)	6' 5/16"	0.414 (L/360)	0.141 (14%)	D	Uniform
LL Defl inch	0.137 (L/1089)	6' 9/16"	0.311 (L/480)	0.441 (44%)	L	L_L
TL Defl inch	0.195 (L/764)	6' 1/2"	0.622 (L/240)	0.314 (31%)	D+L	L_L
LL Cant	0.001 (2L/8775)	Rt Cant	0.200 (2L/480)	0.003 (0%)	L	L_L
TL Cant	0.001 (2L/7822)	Rt Cant	0.300 (2L/240)	0.002 (0%)	D+L	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.
- 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 Tie-down connection required at bearing 3 for uplift 1291 lb (Combination 1.25D+1.5L, Load
- 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.

Unfactored Reactions UNPATTERNED Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	1785	781	0	0
2	Vertical	4679	2040	0	0
3	Vertical	0 (-2)	(-36)	0	0

Bearings and Factored Reactions

	Value of the second sec			CALCON PROPERTY.			
Bearing	Length	Dir.	Сар.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.400"	Vert	38%	956 / 2650	3606	L_L	1.25D+1.5L
2 - SPF	5.500"	Vert	83%	2629 / 7237	9865	LL_	1.25D+1.5L
3 - SPF End Grain	5.500"	Vert	12%	-75 / 1713	1638 (-1291)	_LL	0.9D+1.5L (1.25D+1.5L)



October 12, 2021

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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-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

Manufacturer Info Forex APA: PR-L318

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



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isDesign

Client: Project: Address: GREENPARK

TERRACOTA 45 1-2

Date: 9/30/2021

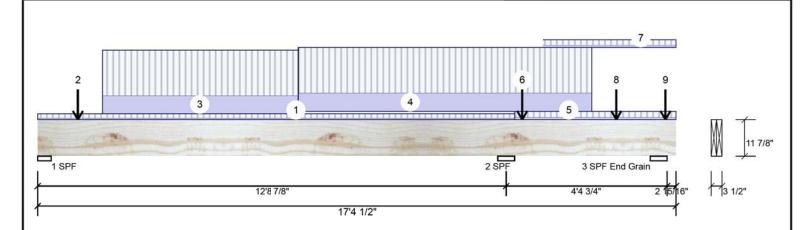
Input by:

Job Name: TC451-2 STANDARD Project #: ROUNDEL HOMES INC

Forex 2.0E-3000Fb LVL F20-B

RICHMOND HILL, ON 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 12-11-10	0-9-2	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	1-1-1		Far Face	168 lb	409 lb	0 lb	0 lb	J6
3	Part. Uniform	1-9-1 to 7-1-1		Far Face	136 PLF	331 PLF	0 PLF	0 PLF	
4	Part. Uniform	7-1-1 to 15-1-1		Far Face	138 PLF	331 PLF	0 PLF	0 PLF	
5	Tie-In	12-11-10 to 17-4-8	1-0-15	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
6	Point	13-2-1		Near Face	9 lb	23 lb	0 lb	0 lb	J1
7	Part. Uniform	13-9-1 to 17-4-8		Near Face	15 PLF	41 PLF	0 PLF	0 PLF	
8	Point	15-9-1		Far Face	173 lb	442 lb	0 lb	0 lb	J6
9	Point	17-1-1		Far Face	166 lb	442 lb	0 lb	0 lb	J6
	Self Weight				10 PLF				



October 12, 2021

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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 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 618-838-2775D/\905-642-4400

CSD BUILD joshua.nabua

Page 24 of 25

isDesign

Client: Project: Address:

GREENPARK

Date:

Project #:

9/30/2021 Input by: WC

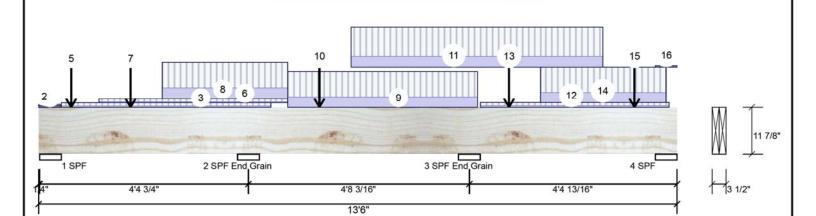
Job Name: TC451-2 STANDARD

1.750" X 11.875" F8-B Forex 2.0E-3000Fb LVL

TERRACOTA 45 1-2 RICHMOND HILL, ON

> Level: Second Floor 2-Ply - PASSED

ROUNDEL HOMES INC



Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition	on: 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		

Analy	sis	Resu	lts
-------	-----	------	-----

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-3023 ft-lb	9'1 3/16"	34261 ft-lb	0.088 (9%)	1.25D+1.5L	L_LL
Pos Moment	2135 ft-lb	11'4 3/16"	34261 ft-lb	0.062 (6%)	1.25D+1.5L	_L_L
Unbraced	2135 ft-lb	11'4 3/16"	34261 ft-lb	0.062 (6%)	1.25D+1.5L	_L_L
Shear	3420 lb	5'7 5/8"	11596 lb	0.295 (29%)	1.25D+1.5L	_LL_
Perm Defl in.	0.003 (L/18604)	6'9 1/16"	0.156 (L/360)	0.019 (2%)	D	Uniform
LL Defl inch	0.009 (L/6055)	6'9 3/8"	0.117 (L/480)	0.079 (8%)	L	L_L_
TL Defl inch	0.012 (L/4568)	6'9 1/4"	0.234 (L/240)	0.053 (5%)	D+L	L_L_
LL Cant	-0.000 (2L/12470)	Lt Cant	0.200 (2L/480)	0.000 (0%)	L	_L_L
TL Cant	-0.000 (2L/9333)	Lt Cant	0.300 (2L/240)	0.000 (0%)	D+L	_L_L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Multiple plies must be fastened together as per manufacturer's details.
- 4 Top loads must be supported equally by all plies.
- 5 Tie-down connection required at bearing 1 for uplift 71 lb (Combination 0.9D+1.5L, Load Case __L_).
- 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.

Unfactored Reactions UNPATTERNED Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	526	221	0	0
2	Vertical	2405	1019	0	0
3	Vertical	3450	1395	0	0
4	Vertical	1172	482	0	0

Bearings and Factored Reactions

bearing.	bearings and ractored Reactions									
Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.			
1 - SPF	5.500"	Vert	12%	270 / 979	1249 (-71)	LL_	1.25D+1.5L (0.9D+1.5L)			
2 - SPF End Grain	5.500"	Vert	36%	1265 / 3943	5208	_LL_	1.25D+1.5L			
3 - SPF End Grain	5.500"	Vert	51%	1782 / 5511	7292	L_LL	1.25D+1.5L			
4 - SPF	5.500"	Vert	22%	579 / 1990	2569	_L_L	1.25D+1.5L			



October 12, 2021

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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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Page 25 of 25

isDesign

Client: Project: Address:

GREENPARK

Date: 9/30/2021

Input by: WC

Job Name: TC451-2 STANDARD Project #: ROUNDEL HOMES INC

Forex 2.0E-3000Fb LVL F8-B

RICHMOND HILL, ON 1.750" X 11.875"

TERRACOTA 45 1-2

2-Ply - PASSED

Level: Second Floor

5 7	8 6	9	13 15 16	11 7/8"
1 SPF	2 SPF End Grain	3 SPF End Grain	4 SPF	ш 🚣
14" 4'4 3	3/4" 1	4'8 3/16"	4'4 13/16"	1/3 1/2"
T T		13'6"	1	

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-5-12	0-3-14	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-5-12	0-4-2	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	0-5-12 to 4-10-11	1-0-15	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
4	Point	0-8-3		Far Face	9 lb	23 lb	0 lb	0 lb	J1
5	Point	0-8-3		Near Face	90 lb	240 lb	0 lb	0 lb	J6
6	Part. Uniform	1-3-3 to 5-3-3		Far Face	14 PLF	37 PLF	0 PLF	0 PLF	
7	Point	1-11-3		Near Face	164 lb	426 lb	0 lb	0 lb	J6
8	Part. Uniform	2-7-3 to 5-3-3		Near Face	143 PLF	330 PLF	0 PLF	0 PLF	
9	Part. Uniform	5-3-3 to 9-3-3		Near Face	137 PLF	330 PLF	0 PLF	0 PLF	
10	Point	5-11-3		Far Face	185 lb	492 lb	0 lb	0 lb	J9
11	Part. Uniform	6-7-3 to 11-11-3		Far Face	140 PLF	375 PLF	0 PLF	0 PLF	
12	Part. Uniform	9-3-15 to 13-4-0		Тор	20 PLF	40 PLF	0 PLF	0 PLF	
13	Point	9-11-3		Near Face	169 lb	439 lb	0 lb	0 lb	J6
14	Part. Uniform	10-7-3 to 13-3-3		Near Face	133 PLF	330 PLF	0 PLF	0 PLF	
15	Point	12-7-3		Far Face	126 lb	336 lb	0 lb	0 lb	J9
16	Tie-In	13-0-8 to 13-6-0	0-3-14	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				10 PLF				



October 12, 2021

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Forex

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