

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

The responsibility of the undersigned is limited to the verification of the structural capacity of the floor joists and LVL beams based on placement as shown on the layout. The loads applied are limited to the gravity effects of the specified loads. The structural integrity of the building and the effect of wind, uplift, seismic, lateral or other forces, calculation of adequate support and anchorage of components, as well as the dimensions and design loads used to calculate components are the responsibility of the overall building designer.

Floor joists and OSB rim board are designed to carry uniformly distributed loads only. Point loads should be transferred through the floor cavity with transfer blocks. Structural elements such as walls, posts, connectors, and transfer blocks are the responsibility of the overall building designer.

The undersigned engineer disclaims any responsibility for damages as a result of being furnished faulty or incorrect information, specifications and/or designs.

Installation of floor joists is to be carried out in accordance with the current edition of the manufacturer's literature available at <http://www.kottgroup.com>.

CODE

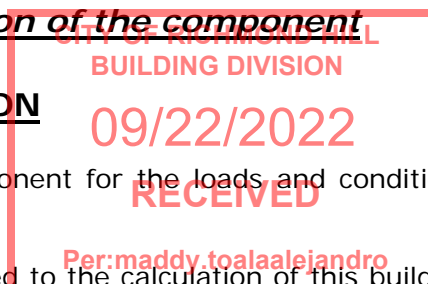
This building component is designed in accordance with the National Building Code of Canada, the Ontario Building Code, CCMC and Canadian Standards Association guidelines.

COMPONENT

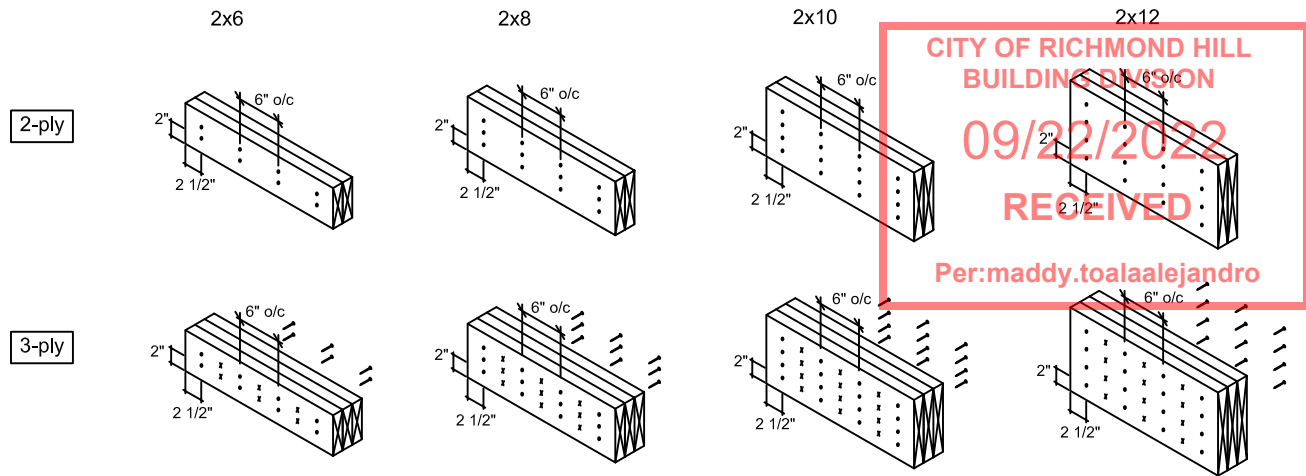
1. The building component used in construction must be the same as indicated on the drawings.
2. The building component must be installed and assembled as per specification shown on the drawing and in accordance with the manufacturer's assembly and installation.
3. Members consisting of multiple plies must be connected as per the document "Multi-ply Connection Details".
4. Pass-thru transfer block framing is required at all point loads over bearings.
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 pre-authorization.



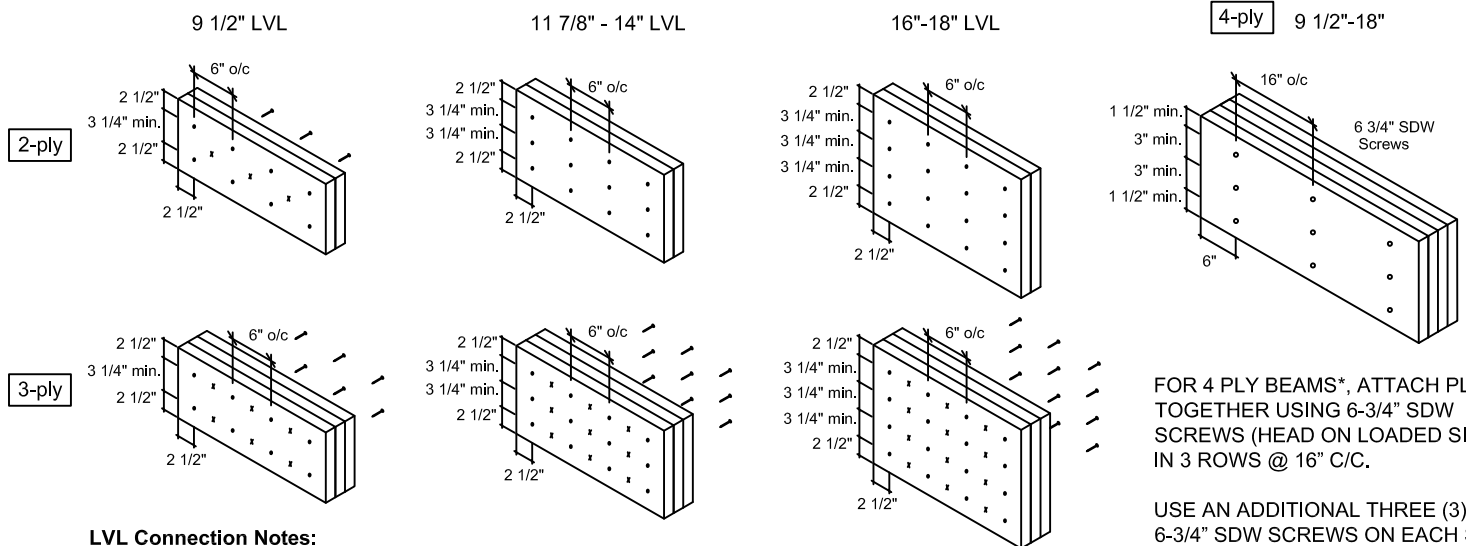
Conventional Connections



Conventional Connection Notes:

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

LVL Connections



LVL Connection Notes:

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

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

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

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

Multiple Member Connections

All connections are for uniformly distributed loads.

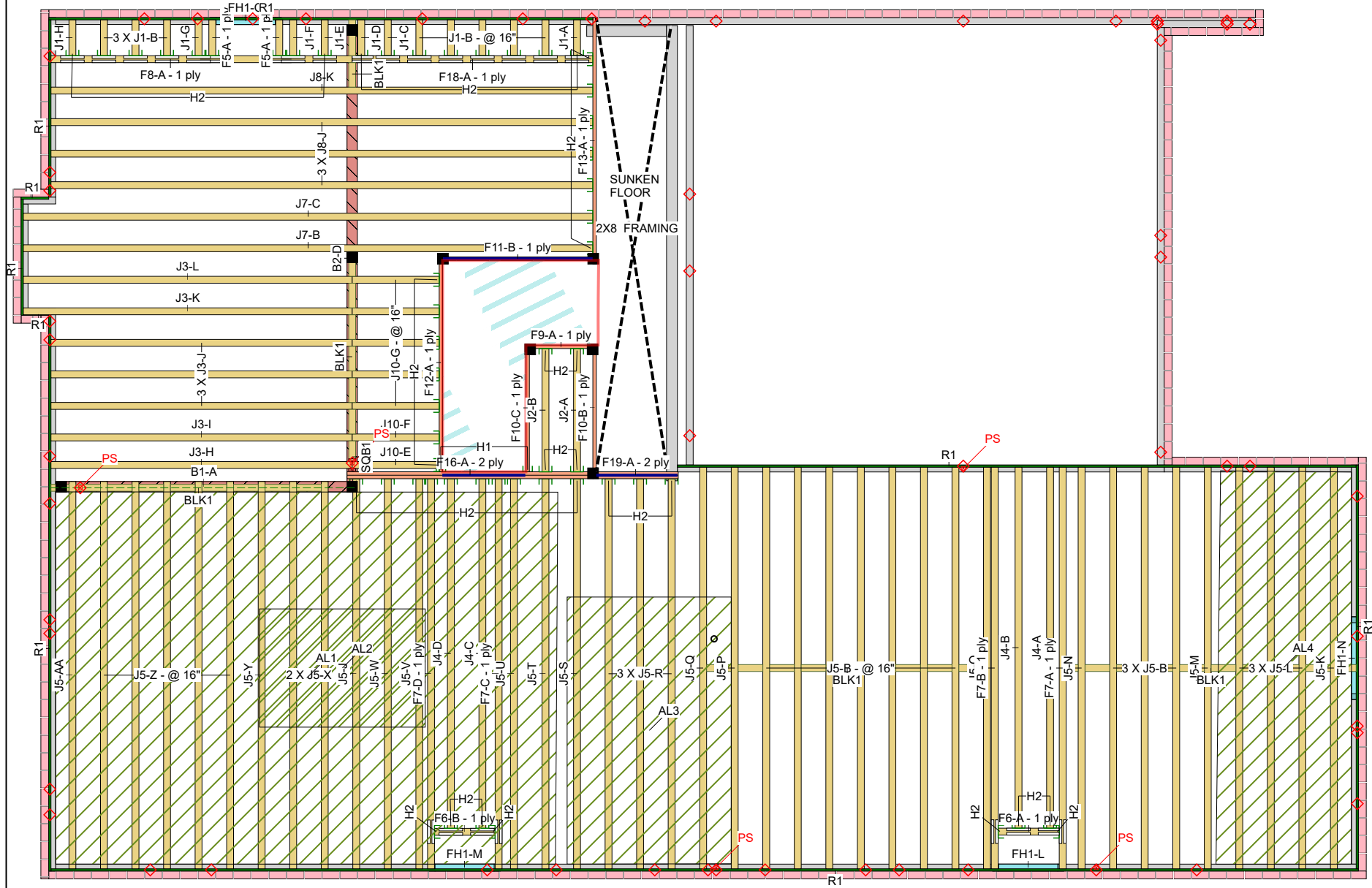
For multi-ply connections of I-joists, refer to Manufacturer's Installation Guide

Last revised: February 19, 2021



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

Ground Floor



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

Ground Floor LVL/LSL							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F16	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	12-0-0
F13	Forex 2.0E-3000Fb LVL	1.75	9.5			1	12-0-0
F12	Forex 2.0E-3000Fb LVL	1.75	9.5			1	10-0-0
F11	Forex 2.0E-3000Fb LVL	1.75	9.5			1	8-0-0
F10	Forex 2.0E-3000Fb LVL	1.75	9.5			2	6-0-0
F19	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	4-0-0
F9	Forex 2.0E-3000Fb LVL	1.75	9.5			1	4-0-0

I Joist							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F7	AJS 24	3.5	9.5			4	18-0-0
F8	AJS 24	3.5	9.5			1	14-0-0
F18	AJS 24	3.5	9.5			1	12-0-0
F6	AJS 24	3.5	9.5			2	4-0-0
F5	AJS 24	3.5	9.5			2	2-0-0
J7	AJS 24	3.5	9.5			2	26-0-0
J8	AJS 24	3.5	9.5			4	24-0-0
J5	AJS 24	3.5	9.5			37	18-0-0
J4	AJS 24	3.5	9.5			4	16-0-0
J3	AJS 24	3.5	9.5			7	14-0-0
J2	AJS 24	3.5	9.5			2	6-0-0
J10	AJS 24	3.5	9.5			7	4-0-0
J1	AJS 24	3.5	9.5			15	2-0-0

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

Blocking							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK1	AJS 24	3.5	9.5	LinFt		Varies	38-0-0

Hanger							
				Beam/Girder		Supported Member	
Label	Pcs	Description	Skew	Slope	fasteners	fasteners	
H1	2	HUS1.81/10			30 16d	10 16d	
H2	56	LF359			10 10d	2 #8x1 1/4WS	

JOB INFORMATION

Builder GREENPARK
Project ROUNDEL HOMES INC
Shipping TERRACOTA 45-3-2 RICHMOND HILL, ON
Sales Rep W C
Designer Plotted October 14, 2021
Layout Name TC45 3-2 STANDARD

Job Path C:\Users\wcadavid\Desktop\JOBS DONE
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DESIGN CRITERIA

Ground Floor	
Design Method	LSD (Canada)
Building Code	NBCC 2015 / OBC 2012
Floor Loads	
Live	40
Dead	15
Deflection Joist	
LL Span L/	360
TL Span L/	240
Deflection Flush Girder	
LL Span L/	360
TL Span L/	240
Deflection Dropped Girder	
LL Span L/	360
TL Span L/	240
Deflection Header	
LL Span L/	360
TL Span L/	240
Decking	
Decking	OSB
Thickness	5/8"

CCMC References

Boise - 12472-R , 12787-R LP - 12412-R Forex - 14056-R	Kott Inc. 3228 Moodie Dr, Ottawa 14 Anderson Blvd, Uxbridge Ontario 613-838-2775 / 905-642-4400
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1. All blocking to be cut from 12' joists
2. 2' & 4' Lengths to be cut from 8' Length, 6' lengths to be cut from 12' Length
3. Ends of joists to be laterally supported
4. Packing of Steel beams and attachment by others
5. Shower and water closet flange locations are approximate only, consult architectural drawing for exact locations
6. Beams identified as "B" are dropped and supplied by others
7. Install 2x4 blocking @ 24" o/c under parallel non-loadbearing walls
8. Load transfer blocks to be installed under all point loads
9. Refer to Multiple Member Connection Detail for ply to ply nailing or bolting requirements
10. Hangers and Fasteners to be installed as per manufacturer
11. Framing shown on this layout may deviate from architectural drawings. Arch / Eng to review and approve the deviation prior to construction.

Legend

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



Client: GREENPARK
Project:
Address: TERRACOTA 45 3-2
RICHMOND HILL, ON

Date: 10/18/2021
Input by: W C
Job Name: TC45 3-2 STANDARD
Project #: ROUNDEL HOMES INC

Page 1 of 22

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

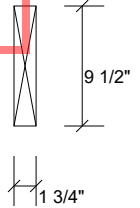
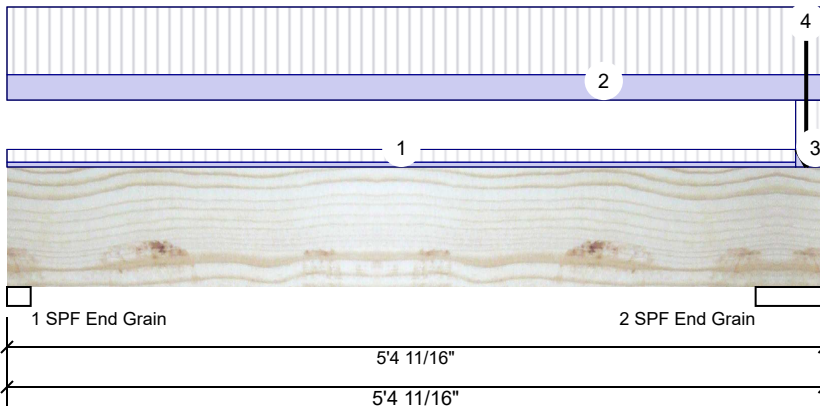
Level: Ground Floor

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BUILDING DIVISION

09/22/2022

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Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	239	99	0	0
2	Vertical	349	143	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	1.875"	Vert	20%	124 / 358	482	L	1.25D+1.5L
2 - SPF End Grain	5.450"	Vert	10%	178 / 524	703	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	569 ft-lb	2'6 9/16"	11362 ft-lb	0.050 (5%)	1.25D+1.5L	L
Unbraced	569 ft-lb	2'6 9/16"	11362 ft-lb	0.050 (5%)	1.25D+1.5L	L
Shear	306 lb	11 3/8"	4638 lb	0.066 (7%)	1.25D+1.5L	L
Perm Defl in. (L/20709)	0.003	2'6 5/8"	0.164 (L/360)	0.017 (2%)	D	Uniform
LL Defl inch	0.007 (L/8608)	2'6 5/8"	0.164 (L/360)	0.042 (4%)	L	L
TL Defl inch	0.010 (L/6081)	2'6 5/8"	0.245 (L/240)	0.039 (4%)	D+L	L

Design Notes

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



October 18, 2021

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 5-2-7	0-4-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 5-4-11	1-11-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	5-2-7 to 5-4-11	1-5-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Point	5-3-4		Top	29 lb	75 lb	0 lb	0 lb	PL1
	Bearing Length	0-3-8							
	Self Weight				4 PLF				

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

Lumber

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

chemicals

Handling & Installation

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

- For flat roofs provide proper drainage to prevent ponding

This design is valid until 5/24/2024

Manufacturer Info

Forex
APA: PR-L318

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





Client: GREENPARK
Project:
Address: TERRACOTA 45 3-2
RICHMOND HILL, ON

Date: 10/18/2021
Input by: W C
Job Name: TC45 3-2 STANDARD
Project #: ROUNDEL HOMES INC

Page 2 of 22

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

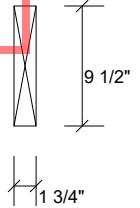
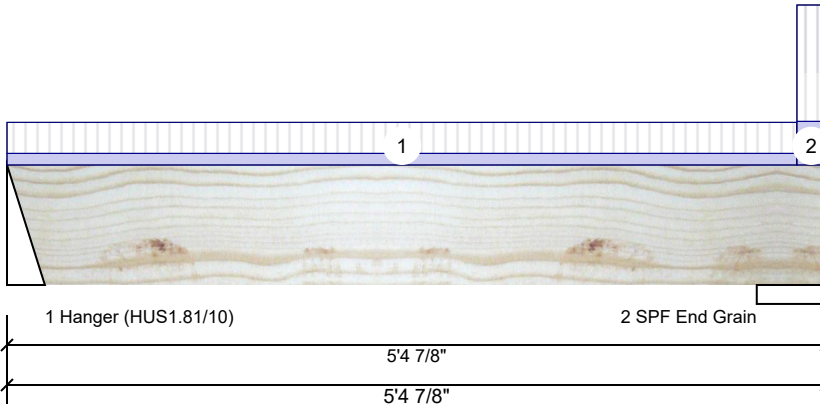
Level: Ground Floor

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BUILDING DIVISION

09/22/2022

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Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	39	25	0	0
2	Vertical	50	30	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	3.000"	Vert	2%	31 / 59	90	L	1.25D+1.5L
2 - SPF End Grain	5.500"	Vert	2%	37 / 75	112	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	100 ft-lb	2'7 3/16"	11362 ft-lb	0.009 (1%)	1.25D+1.5L	L
Unbraced	100 ft-lb	2'7 3/16"	11362 ft-lb	0.009 (1%)	1.25D+1.5L	L
Shear	57 lb	1' 1/2"	4638 lb	0.012 (1%)	1.25D+1.5L	L
Perm Defl in. (L/88893)	0.001	2'7 3/16"	0.161 (L/360)	0.004 (0%)	D	Uniform
LL Defl inch (L/55787)	0.001	2'7 3/16"	0.161 (L/360)	0.006 (1%)	L	L
TL Defl inch (L/34276)	0.002	2'7 3/16"	0.241 (L/240)	0.007 (1%)	D+L	L

Design Notes

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



October 18, 2021

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 5-2-9	0-4-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	5-2-9 to 5-4-13	1-5-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				4 PLF				

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Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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



This design is valid until 5/24/2024



Client: GREENPARK
Project: TERRACOTA 45 3-2
Address: RICHMOND HILL, ON

Date: 10/18/2021
Input by: W C
Job Name: TC45 3-2 STANDARD
Project #: ROUNDEL HOMES INC

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F11-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

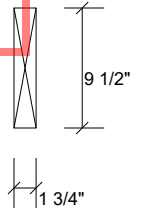
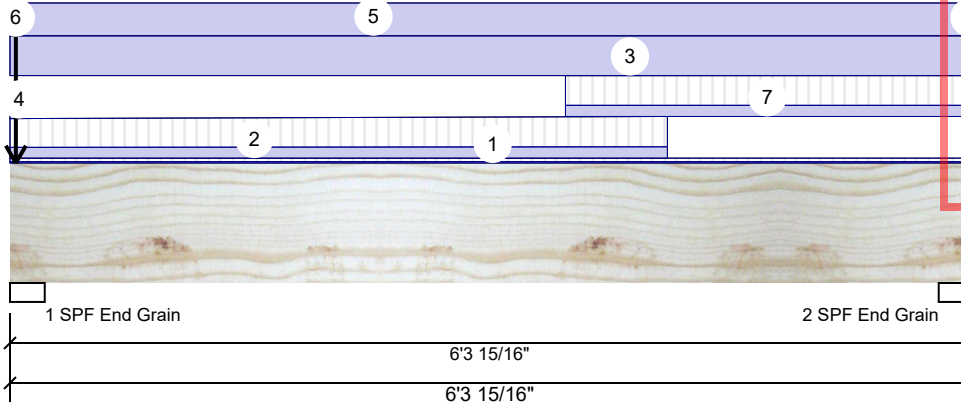
Level: Ground Floor

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BUILDING DIVISION

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Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

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Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	354	826	0	0
2	Vertical	299	756	0	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	54%	1032 / 531	1563	L	1.25D+1.5L
2 - SPF End Grain	2.438"	Vert	54%	945 / 448	1394	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1907 ft-lb	3'3 1/4"	9203 ft-lb	0.207 (21%)	1.25D+1.5L	L
Unbraced	1907 ft-lb	3'3 1/4"	9203 ft-lb	0.207 (21%)	1.25D+1.5L	L
Shear	922 lb	5'4"	3757 lb	0.245 (25%)	1.25D+1.5L	L
Perm Defl in.	0.033 (L/2178)	3'2 1/4"	0.201 (L/360)	0.165 (17%)	D	Uniform
LL Defl inch	0.014 (L/5060)	3'2 7/8"	0.201 (L/360)	0.071 (7%)	L	L
TL Defl inch	0.047 (L/1522)	3'2 7/16"	0.301 (L/240)	0.158 (16%)	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.
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- 3 Top must be continuously laterally braced.
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October 18, 2021

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 6-3-15	0-2-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 4-4-1	1-9-10 to 1-10-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-0-0 to 6-3-15		Top	100 PLF	0 PLF	0 PLF	0 PLF	
4	Part. Uniform	0-0-0 to 0-1-0		Top	22 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
5	Part. Uniform	0-0-0 to 6-3-15		Top	82 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
6	Point	0-0-7		Top	128 lb	73 lb	0 lb	0 lb	F11 F11 F10 F10
	Bearing Length	0-5-8							

Continued on page 2...

Notes

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Lumber

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

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
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Manufacturer Info

Forex
APA: PR-L318

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





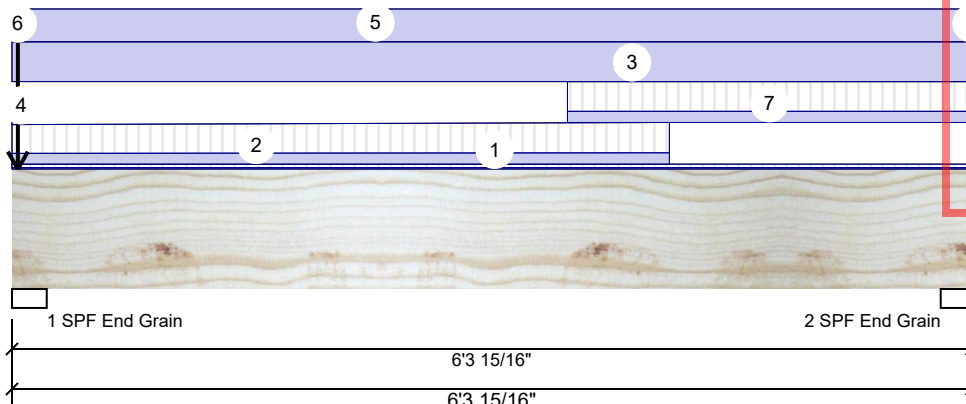
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Page 4 of 22

F11-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

Level: Ground Floor

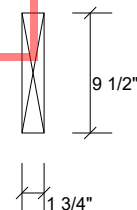


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BUILDING DIVISION

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...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
7	Tie-In	3-8-0 to 6-3-15	1-10-6	Top	15 PSF	40 PSF	0 PSF	0 PSF	
8	Point	6-3-15		Top	60 lb	4 lb	0 lb	0 lb	F15 F15
	Bearing Length	0-5-8							
9	Part. Uniform	6-3-15 to 6-3-15		Top	20 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
	Self Weight				4 PLF				



October 18, 2021

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Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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



This design is valid until 5/24/2024



Client: GREENPARK
Project: TERRACOTA 45 3-2
Address: RICHMOND HILL, ON

Date: 10/18/2021
Input by: W C
Job Name: TC45 3-2 STANDARD
Project #: ROUNDEL HOMES INC

Page 5 of 22

F12-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

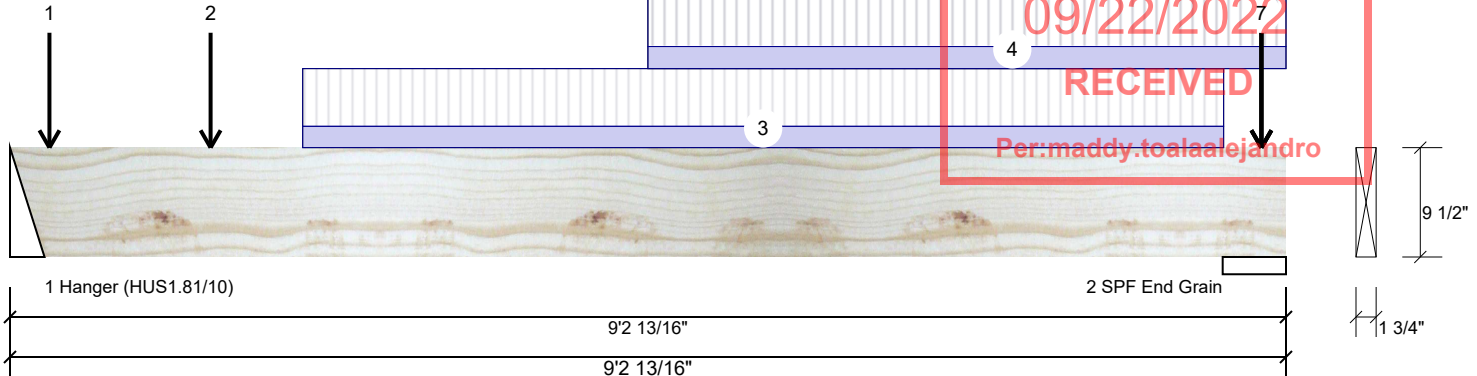
Level: Ground Floor

CITY OF RICHMOND HILL
BUILDING DIVISION

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Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	360	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
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Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	402	167	0	0
2	Vertical	782	609	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	3.000"	Vert	21%	209 / 604	813	L	1.25D+1.5L
2 - SPF End Grain	5.500"	Vert	27%	761 / 1172	1934	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2073 ft-lb	5'1 1/16"	11362 ft-lb	0.182 (18%)	1.25D+1.5L	L
Unbraced	2073 ft-lb	5'1 1/16"	11362 ft-lb	0.182 (18%)	1.25D+1.5L	L
Shear	917 lb	1' 1/2"	4638 lb	0.198 (20%)	1.25D+1.5L	L
Perm Defl in.	0.025 (L/4143)	4'8 1/4"	0.288 (L/360)	0.087 (9%)	D	Uniform
LL Defl inch	0.062 (L/1686)	4'8 7/16"	0.288 (L/360)	0.213 (21%)	L	L
TL Defl inch	0.087 (L/1198)	4'8 3/8"	0.433 (L/240)	0.200 (20%)	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.



October 18, 2021

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Point	0-3-7		Far Face	22 lb	58 lb	0 lb	0 lb	J10
2	Point	1-5-7		Far Face	34 lb	91 lb	0 lb	0 lb	J10
3	Part. Uniform	2-1-7 to 8-9-7		Far Face	27 PLF	73 PLF	0 PLF	0 PLF	
4	Tie-In	4-7-7 to 9-2-13	1-10-6	Top	15 PSF	40 PSF	0 PSF	0 PSF	
5	Point	9-0-11		Top	14 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
6	Point	9-0-11		Top	357 lb	204 lb	0 lb	0 lb	F11 F11 F10 F10

Continued on page 2...

Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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



This design is valid until 5/24/2024



Client: GREENPARK
 Project:
 Address: TERRACOTA 45 3-2
 RICHMOND HILL, ON

Date: 10/18/2021
 Input by: W C
 Job Name: TC45 3-2 STANDARD
 Project #: ROUNDEL HOMES INC

Page 6 of 22

F12-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

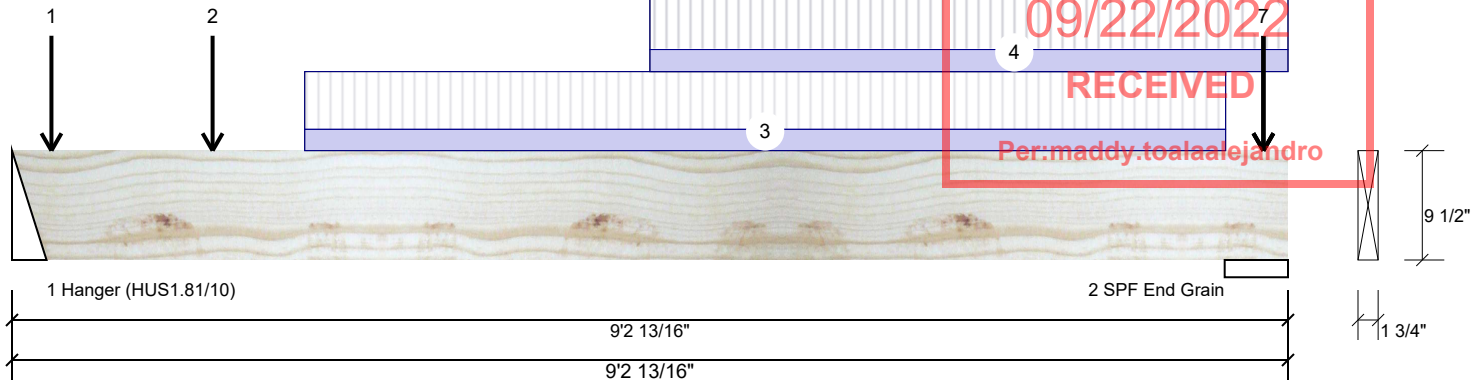
Level: Ground Floor

CITY OF RICHMOND HILL
 BUILDING DIVISION

09/22/2022

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Per:maddy.toalaalejandro



...Continued from page 1

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



October 18, 2021

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Notes

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Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

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



This design is valid until 5/24/2024



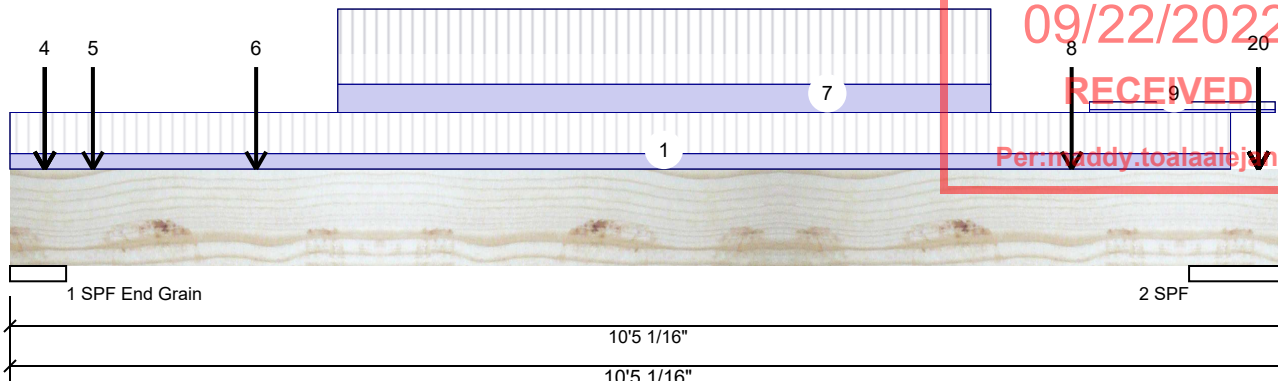
Client: GREENPARK
 Project:
 Address: TERRACOTA 45 3-2
 RICHMOND HILL, ON

Date: 10/18/2021
 Input by: W C
 Job Name: TC45 3-2 STANDARD
 Project #: ROUNDEL HOMES INC

Page 7 of 22

F13-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

Level: Ground Floor



9 1/2"
 1 3/4"

Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

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Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	1069	626	0	0
2	Vertical	1254	687	341	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	5.500"	Vert	33%	782 / 1603	2385	L	1.25D+1.5L
2 - SPF	9.500"	Vert	30%	859 / 2222	3081	L	1.25D+1.5L +S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4997 ft-lb	5'2 5/16"	11362 ft-lb	0.440 (44%)	1.25D+1.5L	L
Unbraced	4997 ft-lb	5'2 5/16"	11362 ft-lb	0.440 (44%)	1.25D+1.5L	L
Shear	2266 lb	8'10 1/16"	4638 lb	0.489 (49%)	1.25D+1.5L	L
Perm Defl in.	0.068 (L/1630)	5'1 3/16"	0.310 (L/360)	0.221 (22%)	D	Uniform
LL Defl inch	0.175 (L/638)	5'1 3/16"	0.310 (L/360)	0.564 (56%)	L+0.5S	L
TL Defl inch	0.243 (L/459)	5'1 3/16"	0.465 (L/240)	0.523 (52%)	D+L+0.5S	L

Design Notes

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



October 18, 2021

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 9-11-10	1-11-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-3-7		Top	190 lb	11 lb	0 lb	0 lb	F15 F15
	Bearing Length	0-5-8							
3	Point	0-3-7		Top	4 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
4	Point	0-3-7		Top	15 lb	0 lb	0 lb	0 lb	Wall Self Weight

Continued on page 2...

Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

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



This design is valid until 5/24/2024



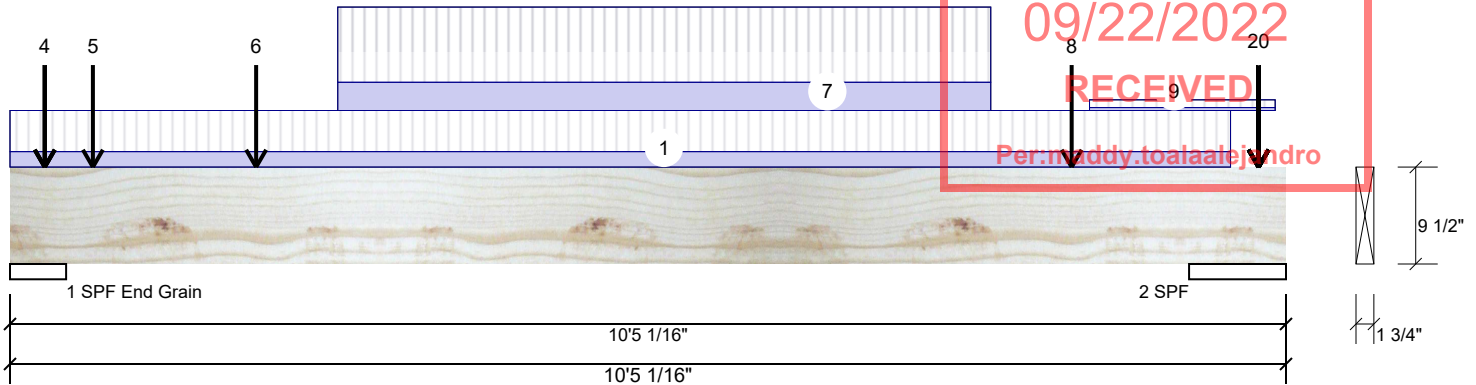
Client: GREENPARK
Project: TERRACOTA 45 3-2
Address: RICHMOND HILL, ON

Date: 10/18/2021
Input by: W C
Job Name: TC45 3-2 STANDARD
Project #: ROUNDEL HOMES INC

Page 8 of 22

F13-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
	Bearing Length	0-5-8							
5	Point	0-8-2		Far Face	40 lb	106 lb	0 lb	0 lb	J7
6	Point	2-0-2		Far Face	68 lb	180 lb	0 lb	0 lb	J7
7	Part. Uniform	2-8-2 to 8-0-2		Far Face	54 PLF	144 PLF	0 PLF	0 PLF	
8	Point	8-8-1		Far Face	168 lb	447 lb	0 lb	0 lb	F18
9	Tie-In	8-9-13 to 10-4-0	0-4-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
10	Point	10-2-6		Top	135 lb	0 lb	310 lb	0 lb	Header Column
	Bearing Length	0-5-8							
11	Point	10-2-6		Top	13 lb	0 lb	31 lb	0 lb	
	Bearing Length	0-5-8							
12	Point	10-2-6		Top	12 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
13	Point	10-2-6		Top	1 lb	1 lb	0 lb	0 lb	
	Bearing Length	0-5-8							
14	Point	10-2-6		Top	12 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
15	Point	10-2-6		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
16	Point	10-2-6		Top	0 lb	1 lb	0 lb	0 lb	
	Bearing Length	0-5-8							
17	Point	10-2-6		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
18	Point	10-2-6		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
19	Point	10-2-6		Top	0 lb	1 lb	0 lb	0 lb	
	Bearing Length	0-5-8							
20	Point	10-2-6		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
	Self Weight				4 PLF				



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Notes

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Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 5/24/2024

Manufacturer Info

Forex
APA: PR-L318

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





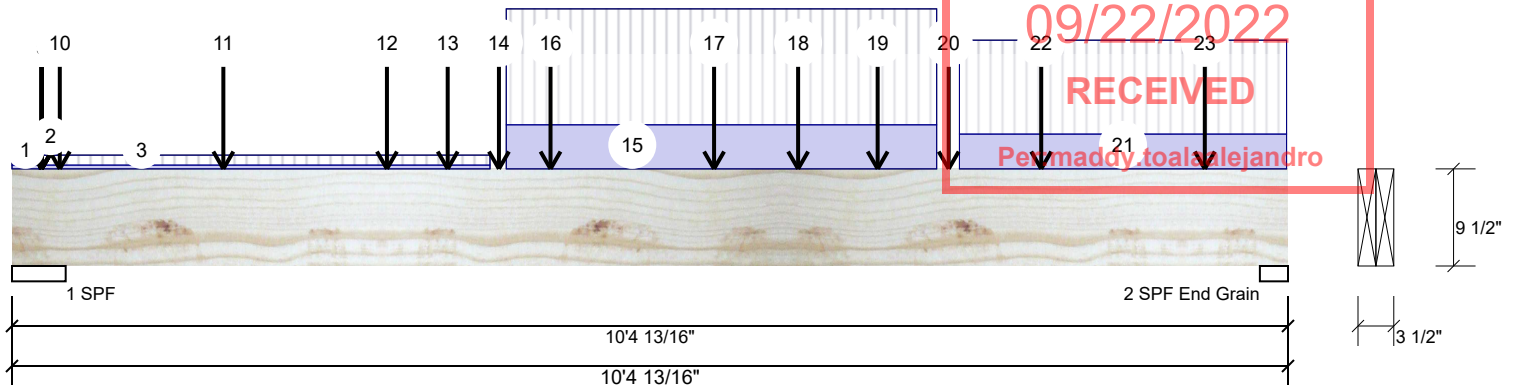
Client: GREENPARK
Project:
Address: TERRACOTA 45 3-2
RICHMOND HILL, ON

Date: 10/18/2021
Input by: W C
Job Name: TC45 3-2 STANDARD
Project #: ROUNDEL HOMES INC

Page 9 of 22

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

Level: Ground Floor


Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	2061	1126	0	0
2	Vertical	2229	1067	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.250"	Vert	40%	1408 / 3092	4500	L	1.25D+1.5L
2 - SPF	2.750"	Vert	65%	1334 / 3343	4677	L	1.25D+1.5L
End Grain							

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	11810 ft-lb	5'3 5/8"	22724 ft-lb	0.520 (52%)	1.25D+1.5L	L
Unbraced	11810 ft-lb	5'3 5/8"	22724 ft-lb	0.520 (52%)	1.25D+1.5L	L
Shear	4514 lb	9'4 9/16"	9277 lb	0.487 (49%)	1.25D+1.5L	L
Perm Defl in.	0.107 (L/1106)	5'3 1/4"	0.329 (L/360)	0.325 (33%)	D	Uniform
LL Defl inch	0.214 (L/552)	5'3 9/16"	0.329 (L/360)	0.652 (65%)	L	L
TL Defl inch	0.321 (L/368)	5'3 7/16"	0.493 (L/240)	0.651 (65%)	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 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.



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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-2-10	0-2-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-4-11	0-2-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	0-2-10 to 3-10-12	0-2-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Point	0-2-14		Top	3 lb	8 lb	0 lb	0 lb	J3

Continued on page 2...

Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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



This design is valid until 5/24/2024



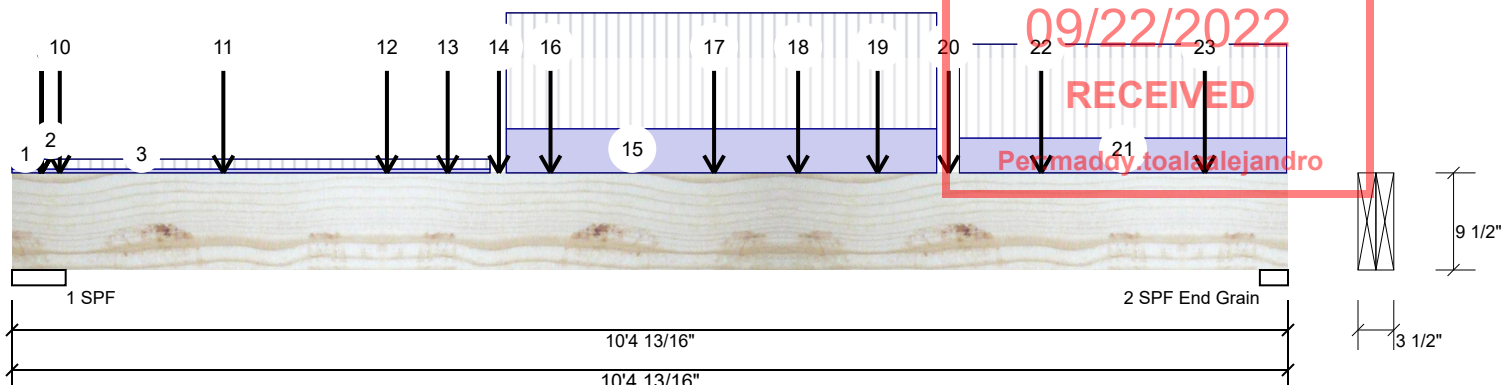
Client: GREENPARK
Project: TERRACOTA 45 3-2
Address: RICHMOND HILL, ON

Date: 10/18/2021
Input by: W C
Job Name: TC45 3-2 STANDARD
Project #: ROUNDEL HOMES INC

Page 10 of 22

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

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
	Bearing Length	0-5-8							
5	Point	0-2-14		Top	3 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
6	Point	0-2-14		Top	20 lb	54 lb	0 lb	0 lb	J3
	Bearing Length	0-5-8							
7	Point	0-2-14		Top	23 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
8	Point	0-2-14		Top	4 lb	11 lb	0 lb	0 lb	J3
	Bearing Length	0-5-8							
9	Point	0-2-14		Top	4 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
10	Point	0-4-11		Near Face	65 lb	102 lb	0 lb	0 lb	J5
11	Point	1-8-11		Near Face	277 lb	439 lb	0 lb	0 lb	J5
12	Point	3-0-11		Near Face	190 lb	301 lb	0 lb	0 lb	J5
13	Point	3-6-10		Near Face	121 lb	252 lb	0 lb	0 lb	F7
14	Point	3-11-10		Far Face	167 lb	402 lb	0 lb	0 lb	F12
15	Part. Uniform	4-0-6 to 7-6-7		Top	38 PLF	100 PLF	0 PLF	0 PLF	
16	Point	4-4-11		Near Face	155 lb	321 lb	0 lb	0 lb	J4
17	Point	5-8-11		Near Face	146 lb	298 lb	0 lb	0 lb	J4
18	Point	6-4-14		Near Face	131 lb	255 lb	0 lb	0 lb	F7
19	Point	7-0-11		Near Face	161 lb	326 lb	0 lb	0 lb	J5
20	Point	7-7-10		Far Face	25 lb	39 lb	0 lb	0 lb	F10
21	Part. Uniform	7-8-11 to 10-4-11		Far Face	30 PLF	81 PLF	0 PLF	0 PLF	
22	Point	8-4-11		Near Face	208 lb	439 lb	0 lb	0 lb	J5
23	Point	9-8-11		Near Face	184 lb	439 lb	0 lb	0 lb	J5
	Self Weight				8 PLF				



October 18, 2021

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Notes

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Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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



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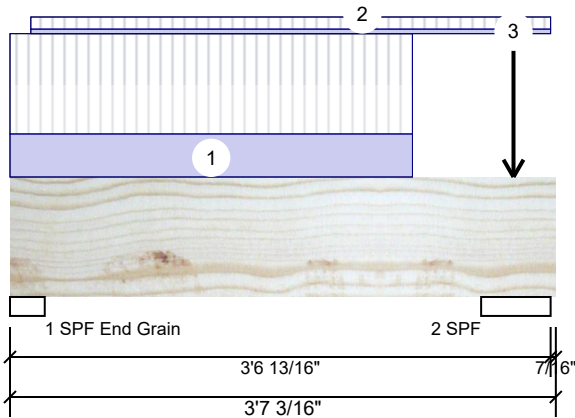
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Project:
Address: TERRACOTA 45 3-2
RICHMOND HILL, ON

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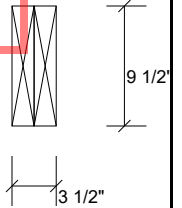
Page 11 of 22

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

Level: Ground Floor


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

Per:maddy.toalaalejandro


Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	620	276	0	0
2	Vertical	681	302	0	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	18%	345 / 930	1275	L_	1.25D+1.5L
2 - SPF	5.500"	Vert	12%	377 / 1021	1399	L_	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	881 ft-lb	1'8 1/4"	22724 ft-lb	0.039 (4%)	1.25D+1.5L	L_
Unbraced	881 ft-lb	1'8 1/4"	22724 ft-lb	0.039 (4%)	1.25D+1.5L	L_
Shear	1021 lb	2'3 13/16"	9277 lb	0.110 (11%)	1.25D+1.5L	L_
Perm Defl in. (L/28405)	0.001	1'8 1/2"	0.106 (L/360)	0.013 (1%)	D	Uniform
LL Defl inch (L/12644)	0.003	1'8 1/2"	0.106 (L/360)	0.028 (3%)	L	LL
TL Defl inch (L/8749)	0.004	1'8 1/2"	0.159 (L/240)	0.027 (3%)	D+L	LL
LL Cant (2L/16233)	-0.000	Rt Cant	0.200 (2L/360)	0.000 (0%)	L	LL
TL Cant (2L/11229)	-0.000	Rt Cant	0.300 (2L/240)	0.000 (0%)	D+L	LL

Design Notes

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

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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



This design is valid until 5/24/2024



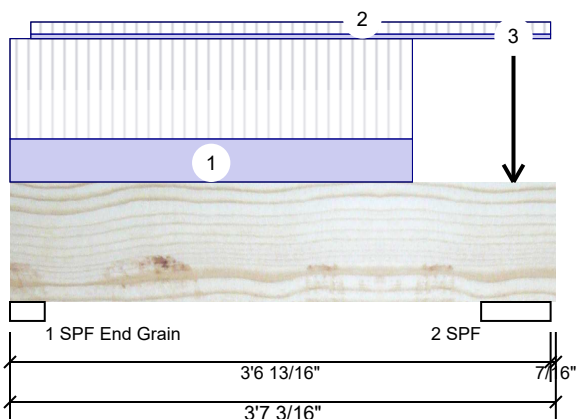
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 Project:
 Address: TERRACOTA 45 3-2
 RICHMOND HILL, ON

Date: 10/18/2021
 Input by: W C
 Job Name: TC45 3-2 STANDARD
 Project #: ROUNDEL HOMES INC

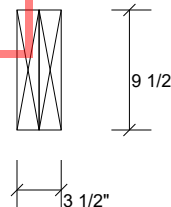
Page 12 of 22

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

Level: Ground Floor


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 BUILDING DIVISION**
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Per:maddy.toalaalejandro



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 2-7-14		Near Face	142 PLF	331 PLF	0 PLF	0 PLF	
2	Part. Uniform	0-1-10 to 3-6-13		Top	15 PLF	40 PLF	0 PLF	0 PLF	
3	Point	3-3-14		Near Face	122 lb	285 lb	0 lb	0 lb	J5
	Self Weight				8 PLF				



October 18, 2021

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 ENGINEERING NOTE PAGE ENP-2. THE NOTE PAGE
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 IN THE DESIGN OF THIS COMPONENT.**

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Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

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



This design is valid until 5/24/2024



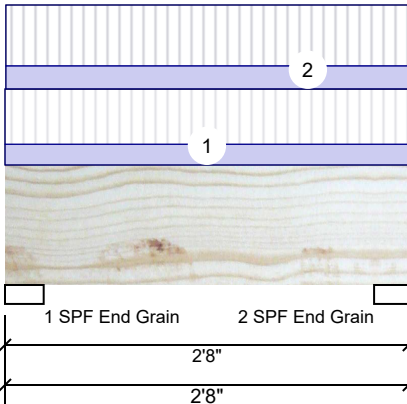
Client: GREENPARK
Project:
Address: TERRACOTA 45 3-2
RICHMOND HILL, ON

Date: 10/18/2021
Input by: W C
Job Name: TC45 3-2 STANDARD
Project #: ROUNDEL HOMES INC

Page 13 of 22

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

Level: Ground Floor

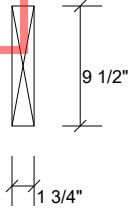


CITY OF RICHMOND HILL
BUILDING DIVISION

09/22/2022

RECEIVED

Per:maddy.toalaalejandro



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	210	84	0	0
2	Vertical	206	83	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.063"	Vert	11%	105 / 315	420	L	1.25D+1.5L
2 - SPF End Grain	2.750"	Vert	12%	103 / 310	413	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	208 ft-lb	1'4 1/8"	11362 ft-lb	0.018 (2%)	1.25D+1.5L	L
Unbraced	208 ft-lb	1'4 1/8"	11362 ft-lb	0.018 (2%)	1.25D+1.5L	L
Shear	225 lb	1'9 1/16"	4638 lb	0.049 (5%)	1.25D+1.5L	L
Perm Defl in. (L/61726)	0.000	1'4 3/16"	0.077 (L/360)	0.006 (1%)	D	Uniform
LL Defl inch (L/24748)	0.001	1'4 3/16"	0.077 (L/360)	0.015 (1%)	L	L
TL Defl inch (L/17666)	0.002	1'4 3/16"	0.115 (L/240)	0.014 (1%)	D+L	L

Design Notes

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



October 18, 2021

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 2-8-0	1-10-6	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-1 to 2-8-0		Near Face	31 PLF	82 PLF	0 PLF	0 PLF	
	Self Weight				4 PLF				

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Notes

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Lumber

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

chemicals

Handling & Installation

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

- For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

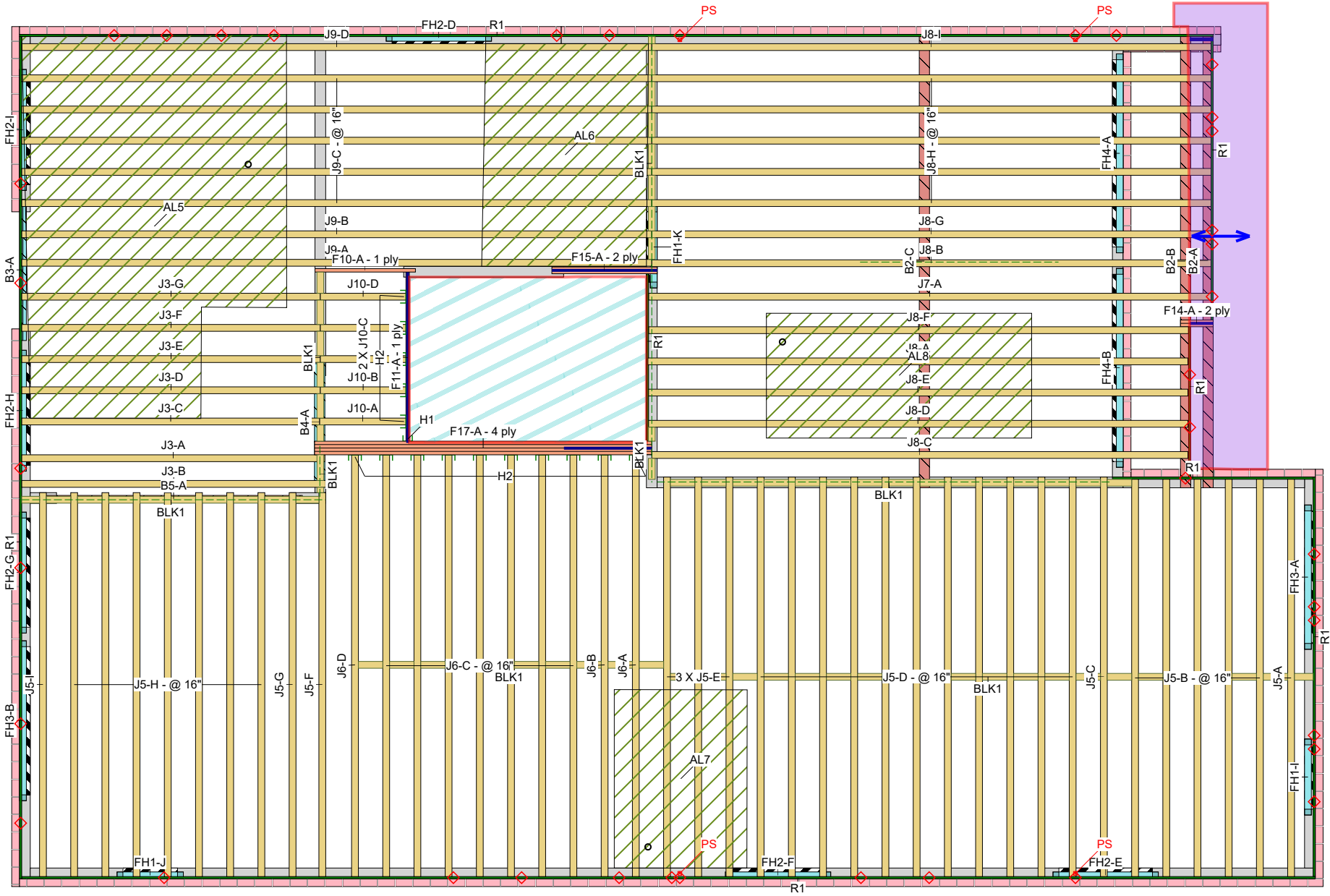
Forex
APA: PR-L318

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



This design is valid until 5/24/2024

Second Floor



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.

Second Floor LVL/LSL							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F17	Forex 2.0E-3000Fb LVL	1.75	9.5	1	4	4	16-0-0
B5	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	12-0-0
F11	Forex 2.0E-3000Fb LVL	1.75	9.5			1	8-0-0
F15	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	6-0-0
F10	Forex 2.0E-3000Fb LVL	1.75	9.5			1	6-0-0
F14	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	2-0-0

I Joist							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
J9	AJS 24	3.5	9.5			8	28-0-0
J7	AJS 24	3.5	9.5			1	26-0-0
J8	AJS 24	3.5	9.5			13	24-0-0
J6	AJS 24	3.5	9.5			10	20-0-0
J5	AJS 24	3.5	9.5			31	18-0-0
J3	AJS 24	3.5	9.5			7	14-0-0
J10	AJS 24	3.5	9.5			5	4-0-0

Rim Board							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			17	12-0-0

Blocking							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK1	AJS 24	3.5	9.5	LinFt		Varies	74-0-0

Hanger							
				Beam/Girder		Supported Member	
Label	Pcs	Description	Skew	Slope	fasteners	fasteners	
H1	1	HUS1.81/10			30 16d	10 16d	
H2	15	LF359			10 10d	2 #8x1 1/4WS	

Custom							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
	6-3/4" Simpson SDW Screw					28	

Multi-Ply Fastening

Second Floor



F14-A, B5-A, F15-A

Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c.



F17-A

Fasten all plies using 2 rows of SDW22634 at 16" o.c. except for regions covered by concentrated load fastening.

Fasten at concentrated side load each side of concentrated load at 1-8-12 with 1 column 2 rows of SDW22634

Fasten at concentrated side load each side of concentrated load at 3-11-12 with 1 column 2 rows of SDW22634

Fasten at concentrated side load each side of concentrated load at 13-8-12 with 1 column 2 rows of SDW22634

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

Legend

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

JOB INFORMATION

Builder GREENPARK
Project ROUNDEL HOMES INC
Shipping CITY OF RICHMOND HILL TERRACOTA 45-3-2 RICHMOND HILL, ON
Sales Rep W C
Designer Plotted
Layout Name TC45 3-2 STANDARD
Job Path S:\CUSTOMERS\GREENPARK\ROUNDEL HOMES

DESIGN CRITERIA

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

Floor

Loads

Live	40
Dead	15

Deflection Joist

LL Span L/	360
TL Span L/	240

Deflection Flush Girder

LL Span L/	360
TL Span L/	240

Deflection Dropped Girder

LL Span L/	360
TL Span L/	240

Deflection Header

LL Span L/	360
TL Span L/	240

Decking

Decking	OSB
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CCMC References

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

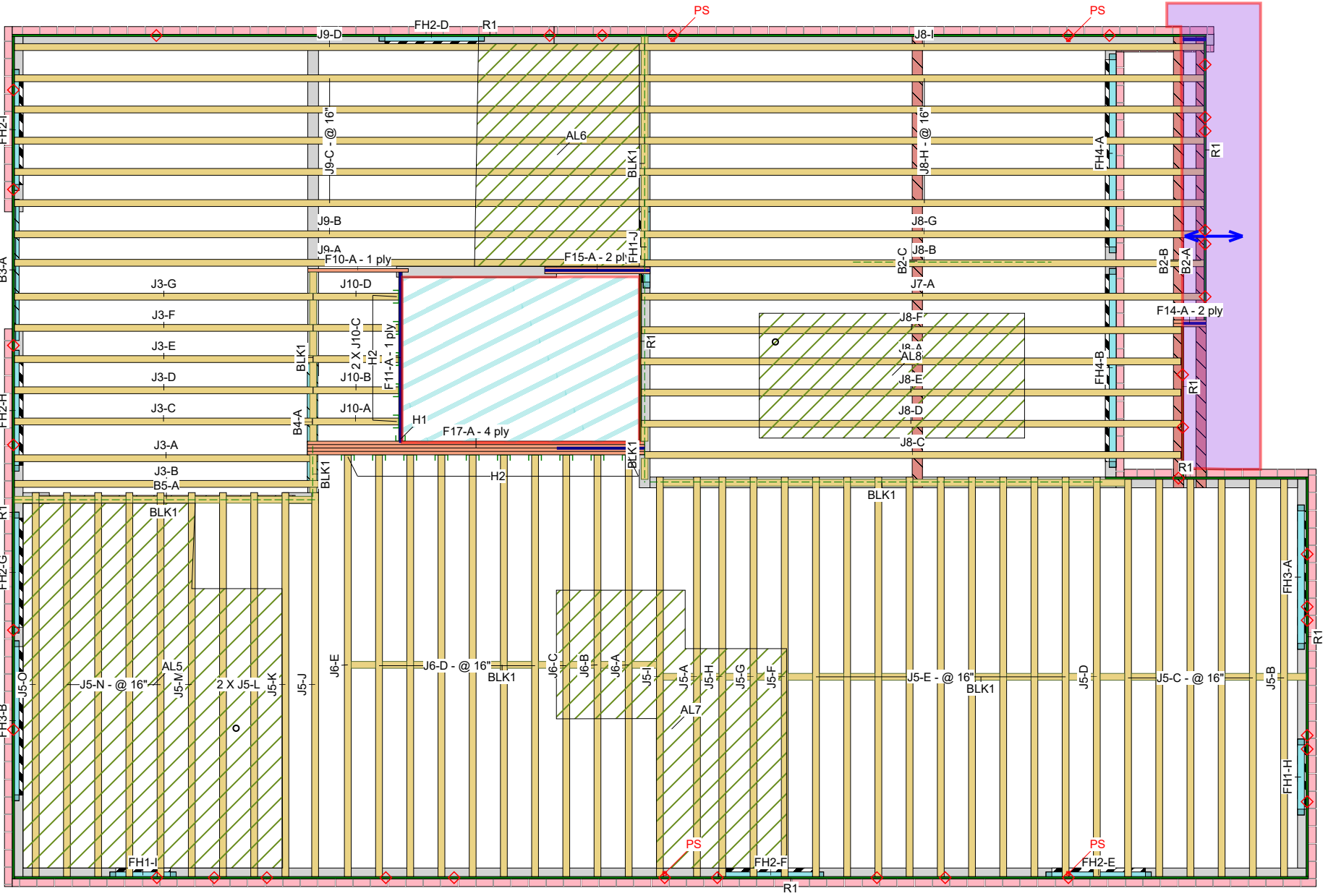
Kott Inc.

3228 Moodie Dr, Ottawa
14 Anderson Blvd, Uxbridge
Ontario

613-838-2775 /
905-642-4400



Second Floor



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.

Second Floor LVL/LSL							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F17	Forex 2.0E-3000Fb LVL	1.75	9.5	1	4	4	16-0-0
B5	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	12-0-0
F11	Forex 2.0E-3000Fb LVL	1.75	9.5			1	8-0-0
F15	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	6-0-0
F10	Forex 2.0E-3000Fb LVL	1.75	9.5			1	6-0-0
F14	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	2-0-0

I Joist							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
J9	AJS 24	3.5	9.5			8	28-0-0
J7	AJS 24	3.5	9.5			1	26-0-0
J8	AJS 24	3.5	9.5			13	24-0-0
J6	AJS 24	3.5	9.5			10	20-0-0
J5	AJS 24	3.5	9.5			31	18-0-0
J3	AJS 24	3.5	9.5			7	14-0-0
J10	AJS 24	3.5	9.5			5	4-0-0

Rim Board							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			17	12-0-0

Blocking							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK1	AJS 24	3.5	9.5	LinFt		Varies	74-0-0

Hanger							
				Beam/Girder		Supported Member	
Label	Pcs	Description	Skew	Slope	fasteners	fasteners	
H1	1	HUS1.81/10			30 16d	10 16d	
H2	15	LF359			10 10d	2 #8x1 1/4WS	

Custom							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
	6-3/4" Simpson SDW Screw					28	

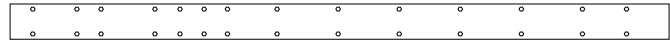
Multi-Ply Fastening

Second Floor



F14-A, B5-A, F15-A

Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c.



F17-A

Fasten all plies using 2 rows of SDW22634 at 16" o.c. except for regions covered by concentrated load fastening.

Fasten at concentrated side load each side of concentrated load at 1-8-12 with 1 column 2 rows of SDW22634

Fasten at concentrated side load each side of concentrated load at 3-11-12 with 1 column 2 rows of SDW22634

Fasten at concentrated side load each side of concentrated load at 13-8-12 with 1 column 2 rows of SDW22634

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

Legend

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

JOB INFORMATION

Builder GREENPARK
Project ROUNDEL HOMES INC
Shipping CITY OF RICHMOND HILL TERRACOTA 45-3-2 RICHMOND HILL, ON
Sales Rep W C
Designer Plotted October 01, 2021
Layout Name TC45 3-2 (5BDRM.OPT)
Job Path S:\CUSTOMERS\GREENPARK\ROUNDEL HOMES

DESIGN CRITERIA

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

Floor

Loads	
Live	40
Dead	15

Deflection Joist

LL Span L/	360
TL Span L/	240

Deflection Flush Girder

LL Span L/	360
TL Span L/	240

Deflection Dropped Girder

LL Span L/	360
TL Span L/	240

Deflection Header

LL Span L/	360
TL Span L/	240

Decking

Decking	OSB
---------	-----

CCMC References

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

Kott Inc.

3228 Moodie Dr, Ottawa
14 Anderson Blvd, Uxbridge
Ontario
613-838-2775 /
905-642-4400





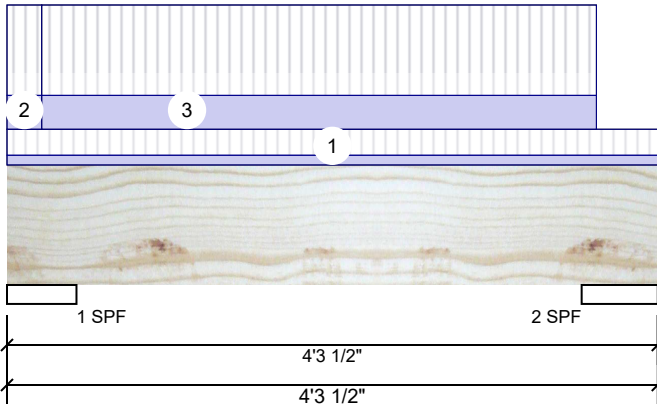
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 Project:
 Address: TERRACOTA 45 3-2
 RICHMOND HILL, ON

Date: 10/18/2021
 Input by: W C
 Job Name: TC45 3-2 STANDARD
 Project #: ROUNDEL HOMES INC

Page 14 of 22

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

Level: Second Floor

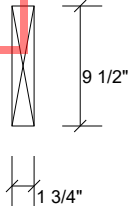


CITY OF RICHMOND HILL
 BUILDING DIVISION

09/22/2022

RECEIVED

Per:maddy.toalaalejandro



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	62	31	0	0
2	Vertical	54	28	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	Vert	2%	39 / 92	131	L	1.25D+1.5L
2 - SPF	6.026"	Vert	2%	36 / 81	116	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	92 ft-lb	2'1 1/2"	11362 ft-lb	0.008 (1%)	1.25D+1.5L	L
Unbraced	92 ft-lb	2'1 1/2"	11362 ft-lb	0.008 (1%)	1.25D+1.5L	L
Shear	58 lb	1'3"	4638 lb	0.012 (1%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/121763)	2'1 1/2"	0.115 (L/360)	0.003 (0%)	D	Uniform
LL Defl inch	0.001 (L/61671)	2'1 1/2"	0.115 (L/360)	0.006 (1%)	L	L
TL Defl inch	0.001 (L/40937)	2'1 1/2"	0.173 (L/240)	0.006 (1%)	D+L	L



October 18, 2021

Design Notes

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

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 4-3-8	0-1-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-2-12	0-6-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	0-2-12 to 3-10-11	0-6-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				4 PLF				

Notes

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Lumber

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

chemicals

Handling & Installation

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

- For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

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



This design is valid until 5/24/2024



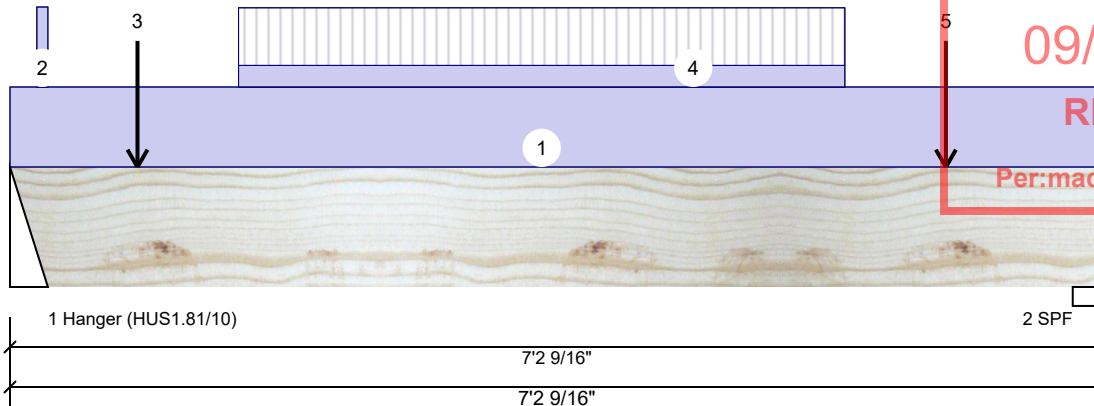
Client: GREENPARK
Project:
Address: TERRACOTA 45 3-2
RICHMOND HILL, ON

Date: 10/18/2021
Input by: W C
Job Name: TC45 3-2 STANDARD
Project #: ROUNDEL HOMES INC

Page 15 of 22

F11-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

Level: Second Floor

CITY OF RICHMOND HILL
BUILDING DIVISION

09/22/2022

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Per:maddy.toalaalejandro

Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	360	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
ENGINEERING NOTE PAGE ENP-2. THE NOTE PAGE
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Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	242	475	0	0
2	Vertical	224	456	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	3.000"	Vert	29%	594 / 363	957	L	1.25D+1.5L
2 - SPF	2.460"	Vert	40%	570 / 336	906	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1597 ft-lb	3'7 1/2"	9658 ft-lb	0.165 (17%)	1.25D+1.5L	L
Unbraced	1597 ft-lb	3'7 1/2"	9658 ft-lb	0.165 (17%)	1.25D+1.5L	L
Shear	817 lb	1' 1/2"	3943 lb	0.207 (21%)	1.25D+1.5L	L
Perm Defl in.	0.032 (L/2603)	3'7 9/16"	0.230 (L/360)	0.138 (14%)	D	Uniform
LL Defl inch	0.017 (L/4789)	3'7 9/16"	0.230 (L/360)	0.075 (8%)	L	L
TL Defl inch	0.049 (L/1686)	3'7 9/16"	0.344 (L/240)	0.142 (14%)	D+L	L

Design Notes

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



October 18, 2021

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 7-2-9		Top	100 PLF	0 PLF	0 PLF	0 PLF	
2	Part. Uniform	0-2-2 to 0-3-0		Top	100 PLF	0 PLF	0 PLF	0 PLF	LL4
3	Point	0-10-1		Far Face	34 lb	90 lb	0 lb	0 lb	J10
4	Part. Uniform	1-6-1 to 5-6-1		Far Face	27 PLF	72 PLF	0 PLF	0 PLF	
5	Point	6-2-1		Far Face	33 lb	88 lb	0 lb	0 lb	J10
	Self Weight				4 PLF				

Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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



This design is valid until 5/24/2024

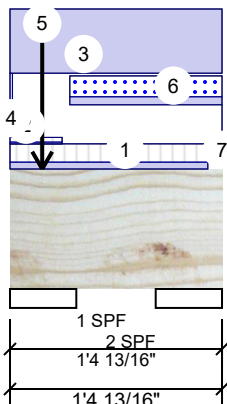


Client: GREENPARK
Project:
Address: TERRACOTA 45 3-2
RICHMOND HILL, ON

Date: 10/18/2021
Input by: W C
Job Name: TC45 3-2 STANDARD
Project #: ROUNDEL HOMES INC

F14-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Second Floor

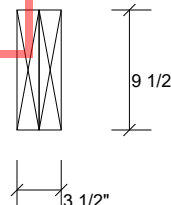


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BUILDING DIVISION

09/22/2022

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Per:maddy.toalaalejandro



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	89	268	297	0
2	Vertical	14	73	18	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.250"	Vert	8%	335 / 534	870	L	1.25D+1.5S+L
2 - SPF	5.250"	Vert	1%	103 / 0	103	Uniform	1.4D

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	8 ft-lb	8 3/8"	14770 ft-lb	0.001 (0%)	1.4D	Uniform
Unbraced	8 ft-lb	8 3/8"	14770 ft-lb	0.001 (0%)	1.4D	Uniform
Shear	49 lb	1'2 3/4"	6865 lb	0.007 (1%)	1.25D+1.5L	L
Perm Defl in. (L/385541)	0.000	8 7/16"	0.022 (L/360)	0.001 (0%)	D	Uniform
LL Defl inch (L/1095869)	0.000	8 7/16"	0.022 (L/360)	0.000 (0%)	S+0.5L	L
TL Defl inch (L/285203)	0.000	8 7/16"	0.032 (L/240)	0.001 (0%)	D+S+0.5L	L



October 18, 2021

Design Notes

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

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-3-11	0-6-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-4-2	0-1-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-0-0 to 1-4-13		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
4	Part. Uniform	0-0-0 to 0-0-3		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight

Continued on page 2...

Notes

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Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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



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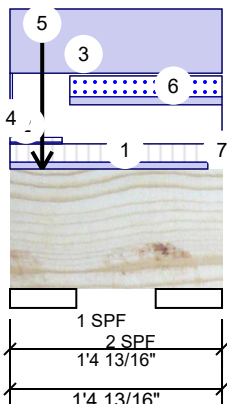
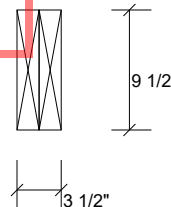
Client: GREENPARK
Project:
Address: TERRACOTA 45 3-2
RICHMOND HILL, ON

Date: 10/18/2021
Input by: W C
Job Name: TC45 3-2 STANDARD
Project #: ROUNDEL HOMES INC

Page 17 of 22

F14-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Second Floor


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...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Point	0-2-9		Top	196 lb	71 lb	289 lb	0 lb	F3 F3
	Bearing Length	0-5-8							
6	Part. Uniform	0-4-12 to 1-4-13		Top	10 PLF	0 PLF	26 PLF	0 PLF	
7	Part. Uniform	1-4-13 to 1-4-13		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
	Self Weight				8 PLF				



October 18, 2021

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Handling & Installation

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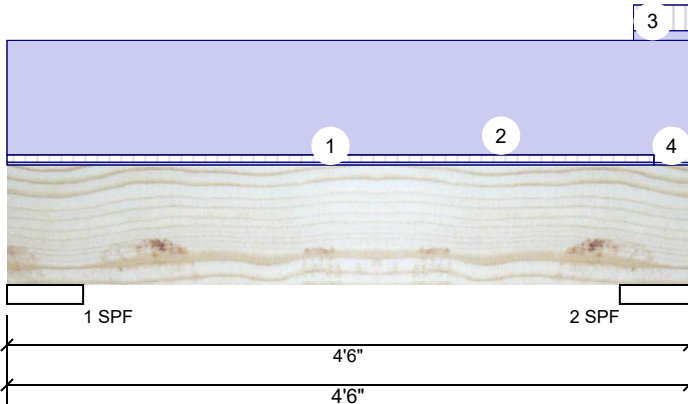
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Job Name: TC45 3-2 STANDARD
Project #: ROUNDEL HOMES INC

Page 18 of 22

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

Level: Second Floor

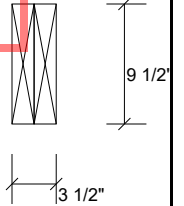


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BUILDING DIVISION**

09/22/2022

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Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	15	250	0	0
2	Vertical	23	248	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	6.026"	Vert	4%	350 / 0	350	Uniform	1.4D
2 - SPF	5.500"	Vert	5%	348 / 0	348	Uniform	1.4D

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	259 ft-lb	2'3 1/4"	14770 ft-lb	0.018 (2%)	1.4D	Uniform
Unbraced	259 ft-lb	2'3 1/4"	14770 ft-lb	0.018 (2%)	1.4D	Uniform
Shear	159 lb	1'3 1/2"	6030 lb	0.026 (3%)	1.4D	Uniform
Perm Defl in.	0.002 (L/28663)	2'3 5/16"	0.122 (L/360)	0.013 (1%)	D	Uniform
LL Defl inch	0.000 (L/486956)	2'3 5/16"	0.122 (L/360)	0.001 (0%)	L	L
TL Defl inch	0.002 (L/27069)	2'3 5/16"	0.183 (L/240)	0.009 (1%)	D+L	L



October 18, 2021

Design Notes

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

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 4-3-4	0-1-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 4-6-0		Top	100 PLF	0 PLF	0 PLF	0 PLF	
3	Tie-In	4-1-10 to 4-6-0	0-6-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Tie-In	4-3-4 to 4-6-0	0-1-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				8 PLF				

Notes

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Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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



This design is valid until 5/24/2024



Client: GREENPARK
Project:
Address: TERRACOTA 45 3-2
RICHMOND HILL, ON

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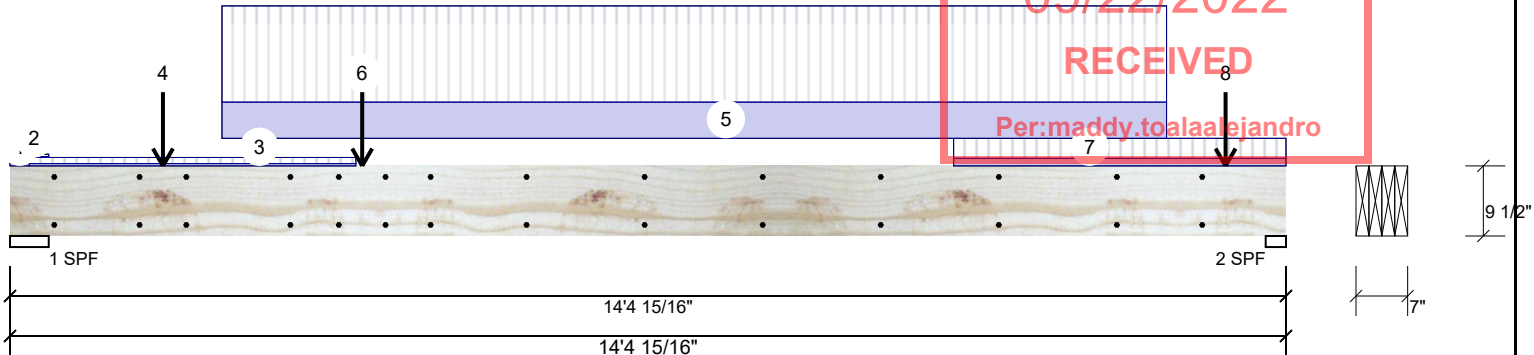
Page 19 of 22

F17-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 4-Ply - PASSED

Level: Second Floor

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

Per: maddy.toalaalejandro


Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	4	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	360	Load Sharing:	Yes
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	2532	1348	0	0
2	Vertical	2811	1275	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.250"	Vert	24%	1685 / 3799	5484	L	1.25D+1.5L
2 - SPF	2.750"	Vert	49%	1594 / 4217	5811	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	19594 ft-lb	7' 1/2"	47266 ft-lb	0.415 (41%)	1.25D+1.5L	L
Unbraced	19594 ft-lb	7' 1/2"	47266 ft-lb	0.415 (41%)	1.25D+1.5L	L
Shear	5657 lb	13' 4 11/16"	18554 lb	0.305 (30%)	1.25D+1.5L	L
Perm Defl in.	0.168 (L/988)	7' 1 13/16"	0.462 (L/360)	0.365 (36%)	D	Uniform
LL Defl inch	0.339 (L/491)	7' 3 1/2"	0.462 (L/360)	0.734 (73%)	L	
TL Defl inch	0.508 (L/328)	7' 2 7/8"	0.693 (L/240)	0.732 (73%)	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 Fasten all plies using 2 rows of SDW22634 at 16" o.c. Maximum end distance not to exceed 8".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Concentrated load fastener specification is in addition to hanger fasteners if a hanger is present.
- 5 Simpson fasteners applied from a single side of the member use tip values where published.
- 6 Girders are designed to be supported on the bottom edge only.
- 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 18, 2021

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Notes

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Lumber

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

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
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6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

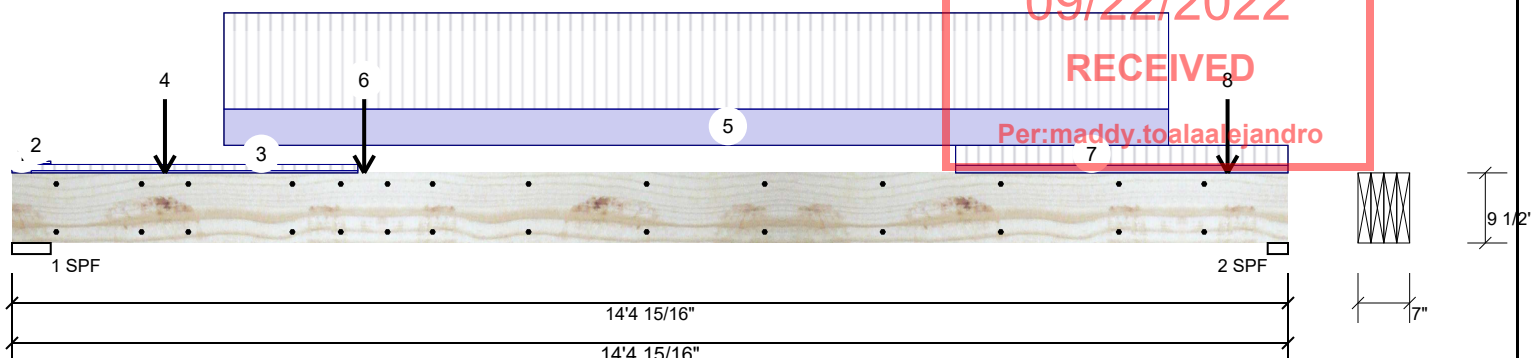
Forex
APA: PR-L318

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



This design is valid until 5/24/2024

Level: Second Floor



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-2-10	0-6-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-5-4	0-2-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	0-2-10 to 3-10-14	0-6-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Point	1-8-12		Near Face	181 lb	483 lb	0 lb	0 lb	J6
5	Part. Uniform	2-4-12 to 13-0-12		Near Face	134 PLF	356 PLF	0 PLF	0 PLF	
6	Point	3-11-12		Far Face	475 lb	242 lb	0 lb	0 lb	F11
7	Part. Uniform	10-7-14 to 14-4-15		Top	28 PLF	74 PLF	0 PLF	0 PLF	
8	Point	13-8-12		Near Face	179 lb	451 lb	0 lb	0 lb	J6
	Self Weight				15 PLF				



October 18, 2021

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613-838-2775 / 905-642-4400



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Client: GREENPARK
Project:
Address: TERRACOTA 45 3-2
RICHMOND HILL, ON

Date: 10/18/2021
Input by: W C
Job Name: TC45 3-2 STANDARD
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Page 21 of 22

F17-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 4-Ply - PASSED

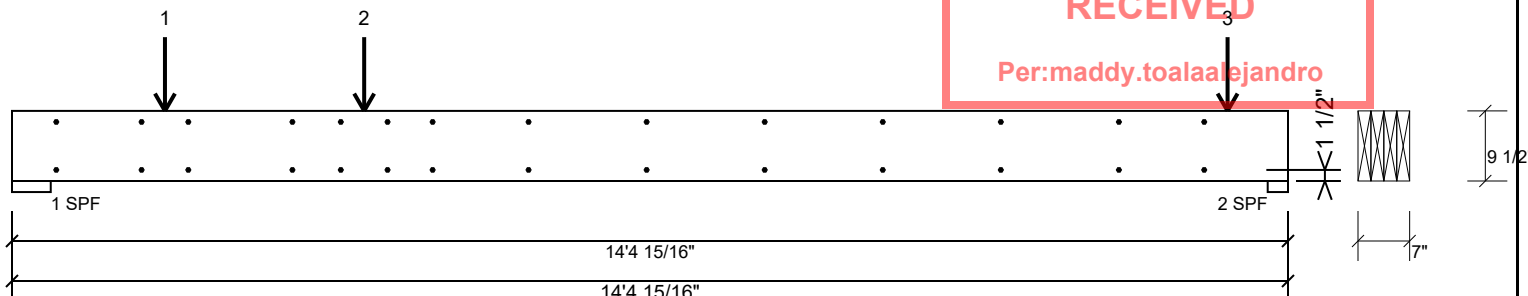
Level: Second Floor

**CITY OF RICHMOND HILL
BUILDING DIVISION**

09/22/2022

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Per: maddy.toalaalejandro



Multi-Ply Analysis

Fasten all plies using 2 rows of SDW22634 at 16" o.c.. except for regions covered by concentrated load fastening. Maximum end distance not to exceed 8".

Capacity	96.1 %
Load	526.1 PLF
Yield Limit per Foot	547.5 PLF
Yield Limit per Fastener	365.0 lb.
Yield Mode	Lookup
Edge Distance	1 1/2"
Min. End Distance	6"
Load Combination	1.25D+1.5L
Duration Factor	1.00



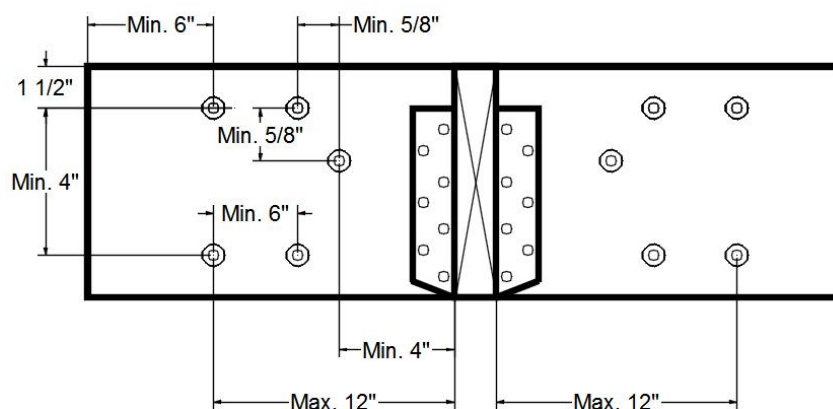
October 18, 2021

Concentrated Load

Fasten at concentrated side load at 1-8-12 with a minimum of (4) – SDW22634 in the pattern shown. All fasteners shall be installed with the head on the side of the applied load.

Capacity	41.5 %
Load	713.1 lb.
Total Yield Limit	1720.0 lb.
Yield Limit per Fastener	430.0 lb.
Yield Mode	Lookup
Load Combination	1.25D+1.5L
Duration Factor	1.00

Min/Max fastener distances for Concentrated Side Loads



Concentrated Load

Fasten at concentrated side load at 3-11-12 with a minimum of (4) – SDW22634 in the pattern shown. All fasteners shall be installed with the head on the side of the applied load.

Capacity	44.6 %
Load	498.8 lb.
Total Yield Limit	1118.0 lb.
Yield Limit per Fastener	279.5 lb.
Yield Mode	Lookup
Load Combination	1.4D
Duration Factor	0.65

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

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



This design is valid until 5/24/2024



Client: GREENPARK
Project:
Address: TERRACOTA 45 3-2
RICHMOND HILL, ON

Date: 10/18/2021
Input by: W C
Job Name: TC45 3-2 STANDARD
Project #: ROUNDEL HOMES INC

Page 22 of 22

F17-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 4-Ply - PASSED

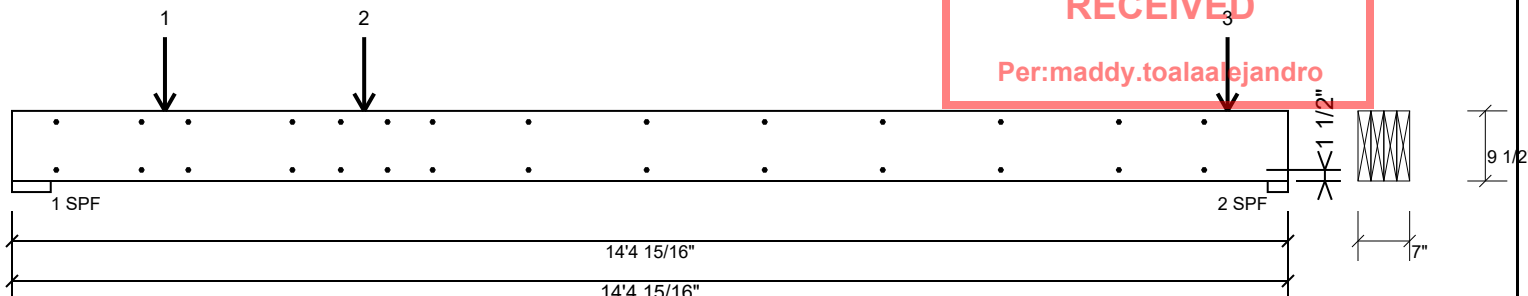
Level: Second Floor

**CITY OF RICHMOND HILL
BUILDING DIVISION**

09/22/2022

RECEIVED

Per: maddy.toalaalejandro



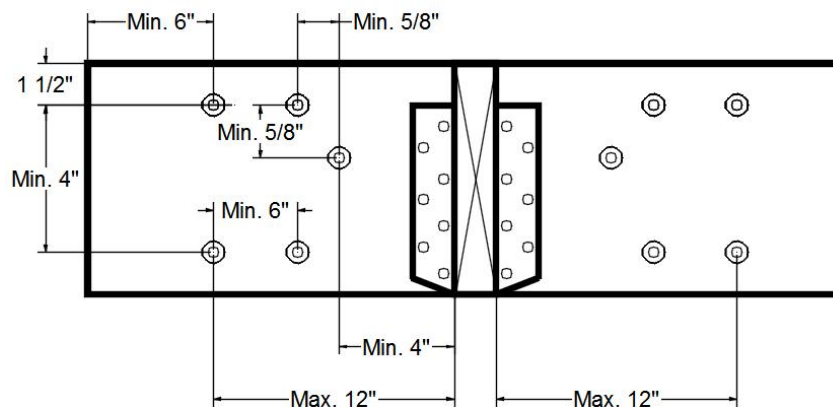
Multi-Ply Analysis

Concentrated Load

Fasten at concentrated side load at 13-8-12 with a minimum of (2) – SDW22634 in the pattern shown. All fasteners shall be installed with the head on the side of the applied load.

Capacity	78.5 %
Load	675.2lb.
Total Yield Limit	860.0 lb.
Yield Limit per Fastener	430.0 lb.
Yield Mode	Lookup
Load Combination	1.25D+1.5L
Duration Factor	1.00

Min/Max fastener distances for Concentrated Side Loads



October 18, 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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Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

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DESIGN
BUILD

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