

## Engineering Notes: EWP-Floors



PLEASE READ ALL NOTES PRIOR TO INSTALLATION OF THE COMPONENT

### RESPONSIBILITIES

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.

### COMPONENT DESIGN INFORMATION

1. THIS BUILDING COMPONENT IS CERTIFIED AS AN INDIVIDUAL COMPONENT FOR THE LOADS AND CONDITIONS SHOWN ON THE CALCULATION PAGE BASED ON INFORMATION PROVIDED BY KOTT DESIGN.
2. THE BUILDING COMPONENT USED IN CONSTRUCTION MUST BE THE SAME AS INDICATED ON THE DRAWINGS.
3. UNLESS NOTED OTHERWISE ON THE LAYOUT OR BEAM CALCULATION SHEET, MEMBERS CONSISTING OF MULTIPLE PLIES MUST BE CONNECTED AS PER THE DOCUMENT "MULTIPLE MEMBER CONNECTION DETAILS" SHOWN ON PAGE 2 OF THIS DOCUMENT.
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.

### 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.

### HANDLING AND INSTALLATION

1. DO NOT DRILL ANY HOLE, CUT OR NOTCH A CERTIFIED BUILDING COMPONENT WITHOUT A WRITTEN PRE-AUTHORIZATION.
2. INSTALLATION AND ASSEMBLY OF FLOOR JOISTS AND LVL BEAMS IS TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUFACTURER'S LITERATURE.

CITY OF RICHMOND HILL  
BUILDING DIVISION

05/24/2023

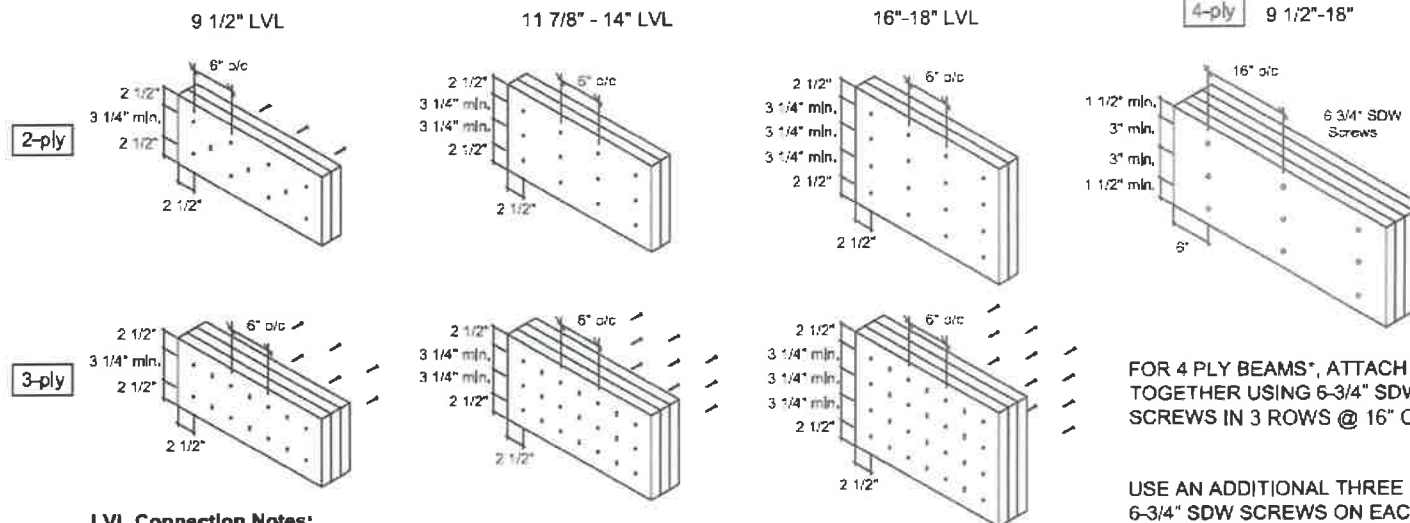
Last Revised January 13, 2023

Per: joshua.nabua



# MULTIPLE MEMBER CONNECTIONS FOR BEAMS SHOWN ON KOTT LAYOUTS

## MULTIPLE MEMBER CONNECTIONS FOR UNIFORMLY DISTRIBUTED TOP & SIDE LOADED LVL BEAMS SHOWN ON KOTT LAYOUTS



### 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 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

FOR MULTIPLE MEMBER CONNECTION OF BOISE ALLJOISTS REFER TO THE BOISE CASCADE INSTALLATION GUIDE

### Installation Guide



CITY OF RICHMOND HILL  
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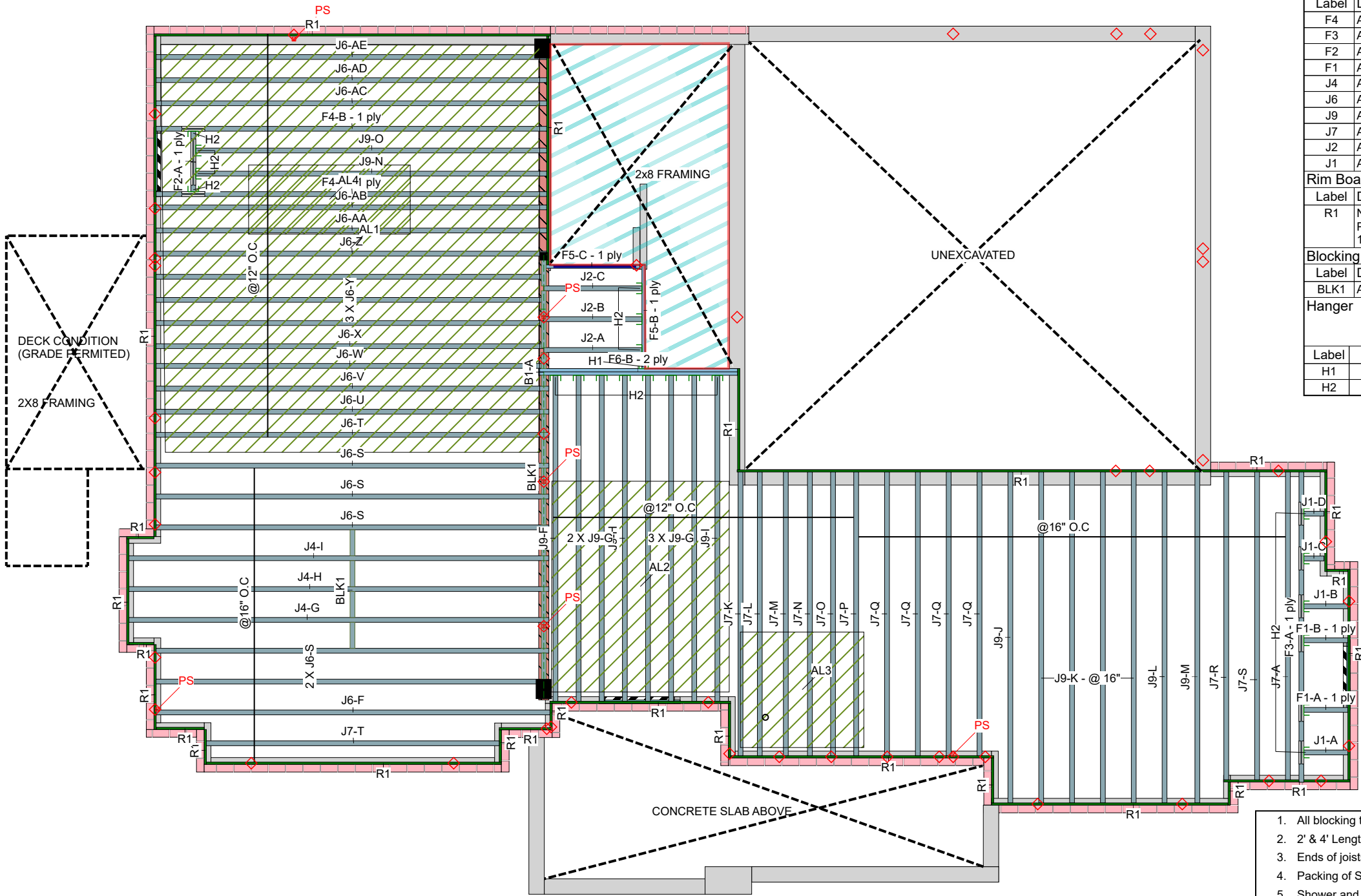
05/24/2023

Last Revised January 13, 2023

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Per: joshua.nabua

Ground Floor



Ground Floor LVL/LSL (Flush)							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F6	Versa-Lam LVL 2.1E 3100 SP	1.75	11.875	1	2	2	10-0-0
F5	Versa-Lam LVL 2.1E 3100 SP	1.75	11.875			2	6-0-0
I Joist (Flush)							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F4	AJS 140	2.5	11.875			2	18-0-0
F3	AJS 140	2.5	11.875			1	14-0-0
F2	AJS 140	2.5	11.875			1	4-0-0
F1	AJS 140	2.5	11.875			2	2-0-0
J4	AJS 140	2.5	11.875			3	20-0-0
J6	AJS 140	2.5	11.875			20	18-0-0
J9	AJS 140	2.5	11.875			17	16-0-0
J7	AJS 140	2.5	11.875			14	14-0-0
J2	AJS 140	2.5	11.875			3	6-0-0
J1	AJS 140	2.5	11.875			4	2-0-0
Rim Board							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 11.875	1.125	11.875			14	12-0-0
Blocking							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK1	AJS 140	2.5	11.875	LinFt		Varies	20-0-0
Hanger							
				Beam/Girder		Supported Member	
Label	Pcs	Description	Skew	Slope	fasteners	fasteners	
H1	1	HUS1.81/10			30 16d	10 16d	
H2	21	LF2511			12 10dx1 1/2	1 #8x1 1/4WS	

JOB INFORMATION	
Builder	GREENPARK
Project	ROUNDEL HOMES INC
Shipping	PINETREE 11- 3 RICHMOND HILL,ON
Sales Rep	RALPH MIRIGELLO
Designer	W C
Plotted	March 28, 2023
Layout Name	PINETREE 11-3 STD & DC
Job Path	S:\CUSTOMERS\GREENPARK\ROUNDEL HOMES INC\MODELS\PINETREE 11\PINETREE 11-ELEV 3\F-PT11-3\PINETREE 11-3 STD & DC.isl

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	3/4"
Fastener	Nailed & Glued
CCMC References	
Boise - 12472-R , 12787-R	
LP - 12412-R, Roseburg - 13310-R	
Forex - 14056-R	

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



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.
12. Multi ply beams with side loading to have all fasteners installed with the head on the side of the applied load
13. Confirmation of adequate support & anchorage of components is the responsibility of the building designer; suggested uplift connectors are as shown
14. Where beam hangs on side of 3-ply member, it is recommended that the equivalent quantity and size of nails required for the hanger attachment also be installed on opposite side of the 3-ply member

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

Installation Guide



(Open your phone's camera and hover over this QR code to access it)

Legend

- PS Point Load Support
- Load from Above
- Wall
- Wall Opening
- Norbord Rimboard Plus 1.125 X 11.875
- AJS 140 11.875
- Versa-Lam LVL 2.1E 3100 SP 1.75 X 11.875
- 1.75 X 9.5 (Dropped)

CITY OF RICHMOND HILL  
BUILDING DIVISION  
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Per: Joshua Nabua



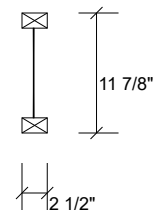
Client: GREENPARK  
Project:  
Address: PINETREE 11- 3  
RICHMOND HILL, ON

Date: 3/23/2023  
Input by: W C  
Job Name: PINETREE 11-3 STD  
Project #: ROUNDEL HOMES INC

Page 1 of 17

**F1-A AJ5 140 11.875" - PASSED**

Level: Ground Floor


**Member Information**

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	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	91	34	0	0
2	Vertical	94	35	0	0

**Bearings and Factored Reactions**

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	Vert	11%	43 / 136	179	L	1.25D+1.5L
2 - SPF	2.375"	Vert	11%	44 / 141	185	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	66 ft-lb	11 1/4"	5305 ft-lb	0.013 (1%)	1.25D+1.5L	L
Unbraced	66 ft-lb	11 1/4"	5305 ft-lb	0.013 (1%)	1.25D+1.5L	L
Shear	159 lb	1'9 1/4"	2350 lb	0.068 (7%)	1.25D+1.5L	L
Perm Defl in. (L/98015)	0.000	11 1/4"	0.056 (L/360)	0.004 (0%)	D	Uniform
LL Defl inch (L/36756)	0.001	11 1/4"	0.056 (L/360)	0.010 (1%)	L	L
TL Defl inch (L/26731)	0.001	11 1/4"	0.083 (L/240)	0.009 (1%)	D+L	L



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

**Design Notes**

- Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- Fill all hanger nailing holes.
- Girders are designed to be supported on the bottom edge only.
- If sheathing is not attached to the top flange, top flange must be laterally braced at maximum 2' o.c.
- If sheathing is not attached to the bottom flange, bottom flange must be laterally braced at maximum 2' o.c.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-10-14	1-6-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 1-10-14	0-11-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	

**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
- Joist not to be treated with fire retardant or corrosive chemicals

chemicals

**Handling & Installation**

- Joist flanges must not be cut or drilled
- Refer to latest copy of the Joist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
- Damaged Joists must not be used
- Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

- Provide lateral support at bearing points to avoid lateral displacement and rotation
- Web stiffeners for point load as shown Minimum point load bearing length >= 3.5 inches
- For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

**Manufacturer Info**

Boise Cascade Wood Products  
1111 W. Jefferson St.  
Boise, ID 83702  
(800) 232-0788  
www.bc.com  
CCMC: 12787

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



Per: joshua.nabua





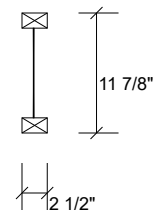
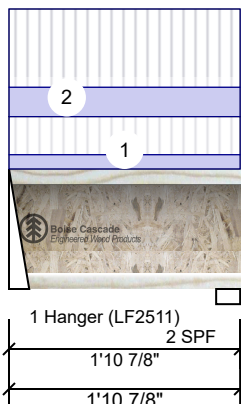
Client: GREENPARK  
Project:  
Address: PINETREE 11-3  
RICHMOND HILL, ON

Date: 3/23/2023  
Input by: W C  
Job Name: PINETREE 11-3 STD  
Project #: ROUNDEL HOMES INC

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**F1-B AJS 140 11.875" - PASSED**

Level: Ground Floor


**Member Information**

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	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	84	31	0	0
2	Vertical	87	33	0	0

**Bearings and Factored Reactions**

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	Vert	10%	39 / 126	165	L	1.25D+1.5L
2 - SPF	2.375"	Vert	10%	41 / 130	171	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	61 ft-lb	11 1/4"	5305 ft-lb	0.012 (1%)	1.25D+1.5L	L
Unbraced	61 ft-lb	11 1/4"	5305 ft-lb	0.012 (1%)	1.25D+1.5L	L
Shear	147 lb	1'9 1/4"	2350 lb	0.063 (6%)	1.25D+1.5L	L
Perm Defl in. (L/106213)	0.000	11 1/4"	0.056 (L/360)	0.003 (0%)	D	Uniform
LL Defl inch (L/39830)	0.001	11 1/4"	0.056 (L/360)	0.009 (1%)	L	L
TL Defl inch (L/28967)	0.001	11 1/4"	0.083 (L/240)	0.008 (1%)	D+L	L



APRIL 14, 2023

**Design Notes**

- Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- Fill all hanger nailing holes.
- Girders are designed to be supported on the bottom edge only.
- If sheathing is not attached to the top flange, top flange must be laterally braced at maximum 2' o.c.
- If sheathing is not attached to the bottom flange, bottom flange must be laterally braced at maximum 2' o.c.

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-10-14	0-8-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 1-10-14	1-6-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	

**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
- Joist not to be treated with fire retardant or corrosive chemicals

chemicals

**Handling & Installation**

- Joist flanges must not be cut or drilled
- Refer to latest copy of the Joist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
- Damaged Joists must not be used
- Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

- Provide lateral support at bearing points to avoid lateral displacement and rotation
- Web stiffeners for point load as shown Minimum point load bearing length >= 3.5 inches
- For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

**Manufacturer Info**

Boise Cascade Wood Products  
1111 W. Jefferson St.  
Boise, ID 83702  
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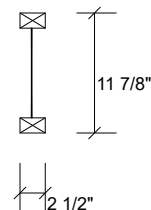
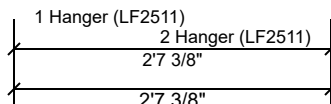
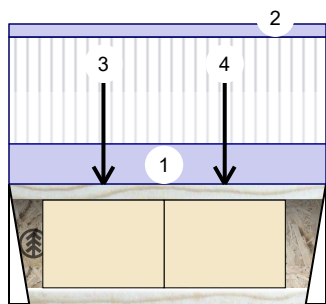
Client: GREENPARK  
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Address: PINETREE 11-3  
RICHMOND HILL, ON

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Input by: W C  
Job Name: PINETREE 11-3 STD  
Project #: ROUNDEL HOMES INC

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**F2-A AJ5 140 11.875" - PASSED**

Level: Ground Floor



### Member Information

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

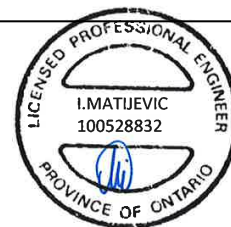
Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	335	236	0	0
2	Vertical	325	185	0	0

### Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	Vert	50%	295 / 502	796	L	1.25D+1.5L
2 - Hanger	2.000"	Vert	45%	232 / 487	719	L	1.25D+1.5L

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	519 ft-lb	1' 13/16"	5305 ft-lb	0.098 (10%)	1.25D+1.5L	L
Unbraced	519 ft-lb	1' 13/16"	5305 ft-lb	0.098 (10%)	1.25D+1.5L	L
Shear	789 lb	1 1/4"	2350 lb	0.336 (34%)	1.25D+1.5L	L
Perm Defl in. (L/10835)	0.003	11 5/16"	0.080 (L/360)	0.033 (3%)	D	Uniform
LL Defl inch (L/7072)	0.004	1'4 5/8"	0.080 (L/360)	0.051 (5%)	L	L
TL Defl inch (L/4321)	0.007	1'2 5/8"	0.120 (L/240)	0.056 (6%)	D+L	L



APRIL 14, 2023

### Design Notes

- Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- Fill all hanger nailing holes.
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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 2-7-6	0-9-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 2-7-6		Top	4 PLF	0 PLF	0 PLF	0 PLF	
3	Point	0-9-6		Near Face	239 lb	282 lb	0 lb	0 lb	J9
4	Point	1-9-6		Near Face	139 lb	291 lb	0 lb	0 lb	J9

### 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
- Joist not to be treated with fire retardant or corrosive chemicals

chemicals

### Handling & Installation

- Joist flanges must not be cut or drilled
- Refer to latest copy of the Joist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
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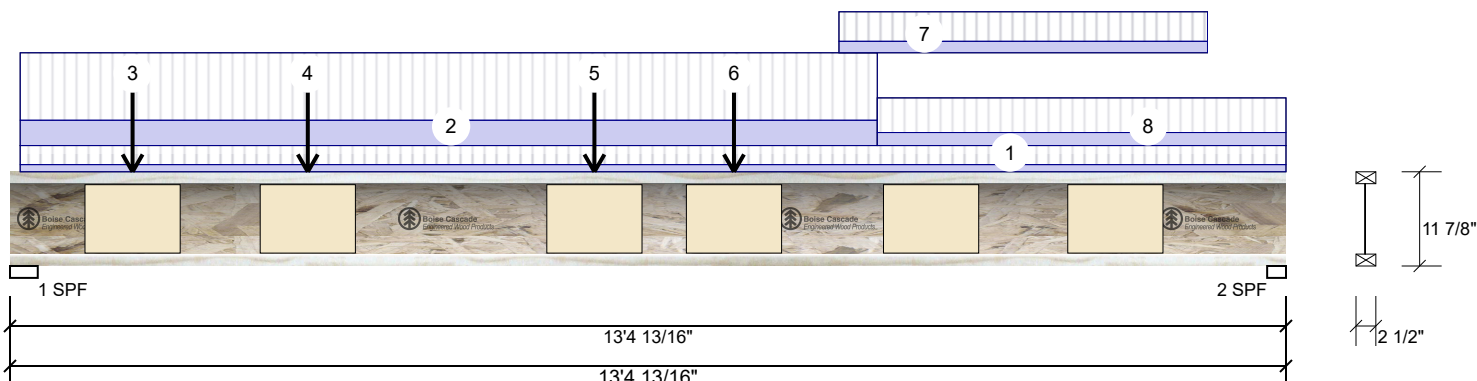
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**F3-A AJS 140 11.875" - PASSED**

Level: Ground Floor



### Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	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	548	206	0	0
2	Vertical	432	163	0	0

### Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	56%	257 / 822	1079	L	1.25D+1.5L
2 - SPF	2.375"	Vert	51%	203 / 649	852	L	1.25D+1.5L

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3394 ft-lb	6'1 11/16"	5305 ft-lb	0.640 (64%)	1.25D+1.5L	L
Unbraced	3394 ft-lb	6'1 11/16"	5305 ft-lb	0.640 (64%)	1.25D+1.5L	L
Shear	1067 lb	2 3/4"	2350 lb	0.454 (45%)	1.25D+1.5L	L
Perm Defl in.	0.071 (L/2190)	6'7 1/2"	0.435 (L/360)	0.164 (16%)	D	Uniform
LL Defl inch	0.191 (L/821)	6'7 7/16"	0.435 (L/360)	0.439 (44%)	L	
TL Defl inch	0.262 (L/597)	6'7 7/16"	0.652 (L/240)	0.402 (40%)	D+L	L



APRIL 14, 2023

### 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.
- If sheathing is not attached to the top flange, top flange must be laterally braced at maximum 2' o.c.
- Bottom flange must be laterally braced at a maximum of 3' 1/8" o.c.

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-1-5 to 13-4-13	0-3-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-1-5 to 9-1-5	1-0-6	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	1-3-7		Near Face	22 lb	58 lb	0 lb	0 lb	J1
4	Point	3-1-9		Near Face	34 lb	91 lb	0 lb	0 lb	F1
5	Point	6-1-11		Near Face	31 lb	84 lb	0 lb	0 lb	F1
6	Point	7-7-4		Near Face	23 lb	62 lb	0 lb	0 lb	J1
7	Part. Uniform	8-8-8 to 12-6-15		Near Face	7 PLF	18 PLF	0 PLF	0 PLF	
8	Tie-In	9-1-5 to 13-4-13	0-6-5	Top	15 PSF	40 PSF	0 PSF	0 PSF	

### 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
- Joist not to be treated with fire retardant or corrosive chemicals

### chemicals

### Handling & Installation

- Joist flanges must not be cut or drilled
- Refer to latest copy of the Joist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
- Damaged Joists must not be used
- Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

- Provide lateral support at bearing points to avoid lateral displacement and rotation
- Web stiffeners for point load as shown Minimum point load bearing length >= 3.5 inches
- For flat roofs provide proper drainage to prevent ponding

### Manufacturer Info

Boise Cascade Wood Products  
1111 W. Jefferson St.  
Boise, ID 83702  
(800) 232-0788  
www.bc.com  
CCMC: 12787

This design is valid until 11/3/2024

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



Per: joshua.nabua



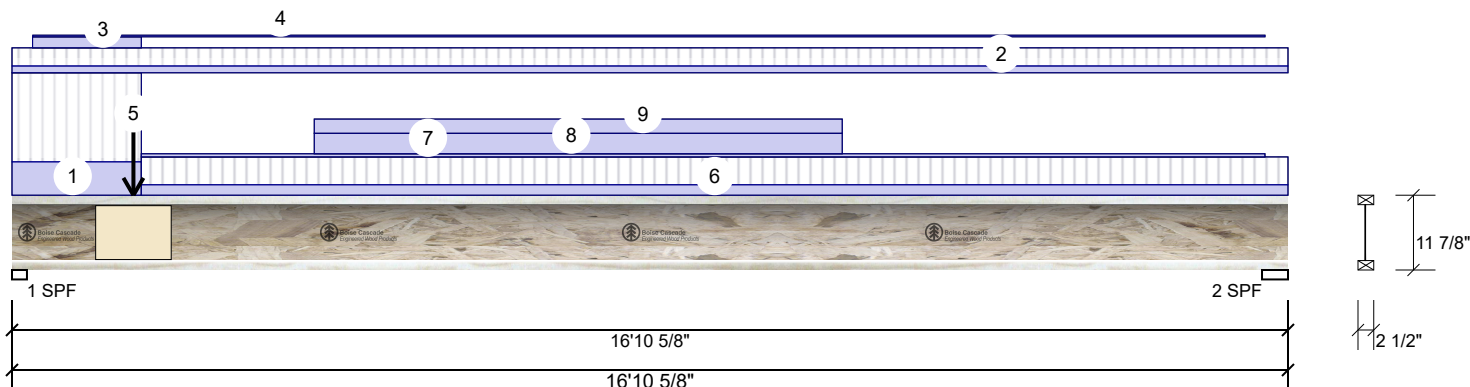
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Project:  
Address: PINETREE 11-3  
RICHMOND HILL, ON

Date: 3/23/2023  
Input by: W C  
Job Name: PINETREE 11-3 STD  
Project #: ROUNDEL HOMES INC

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**F4-A AJ5 140 11.875" - PASSED**

Level: Ground Floor



### Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	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	613	446	0	0
2	Vertical	281	209	0	0

### Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	Vert	88%	558 / 919	1477	L	1.25D+1.5L
2 - SPF	4.125"	Vert	36%	261 / 422	683	L	1.25D+1.5L

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3371 ft-lb	7'4 1/16"	5305 ft-lb	0.636 (64%)	1.25D+1.5L	L
Unbraced	3371 ft-lb	7'4 1/16"	5305 ft-lb	0.636 (64%)	1.25D+1.5L	L
Shear	1459 lb	1 5/8"	2350 lb	0.621 (62%)	1.25D+1.5L	L
Perm Defl in.	0.198 (L/999)	8' 7/16"	0.549 (L/360)	0.360 (36%)	D	Uniform
LL Defl inch	0.224 (L/881)	8' 7/16"	0.549 (L/360)	0.409 (41%)	L	
TL Defl inch	0.422 (L/468)	8' 7/16"	0.823 (L/240)	0.513 (51%)	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 If sheathing is not attached to the top flange, top flange must be laterally braced at maximum 2' o.c.
- 4 Bottom flange must be laterally braced at a maximum of 15'3 5/16" o.c.



APRIL 14, 2023

**READ ALL NOTES ON THIS PAGE AND ON THE ENGINEERING NOTES: EWP-FLOORS. 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 1-8-9	1-4-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 16-10-10	0-3-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-3-4 to 1-8-9		Top	7 PLF	0 PLF	0 PLF	0 PLF	
4	Part. Uniform	0-3-5 to 16-6-15		Top	1 PLF	0 PLF	0 PLF	0 PLF	
5	Point	1-7-5		Far Face	236 lb	335 lb	0 lb	0 lb	F2
6	Tie-In	1-8-9 to 16-10-10	0-5-5	Top	15 PSF	40 PSF	0 PSF	0 PSF	
7	Part. Uniform	1-8-9 to 16-6-15		Top	2 PLF	0 PLF	0 PLF	0 PLF	

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. Joist not to be treated with fire retardant or corrosive chemicals

### chemicals

### Handling & Installation

1. Joist flanges must not be cut or drilled
2. Refer to latest copy of the Joist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Joists must not be used
4. Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. Web stiffeners for point load as shown Minimum point load bearing length >= 3.5 inches
7. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

### Manufacturer Info

Boise Cascade Wood Products  
1111 W. Jefferson St.  
Boise, ID 83702  
(800) 232-0788  
www.bc.com  
CCMC: 12787

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



Per: joshua.nabua





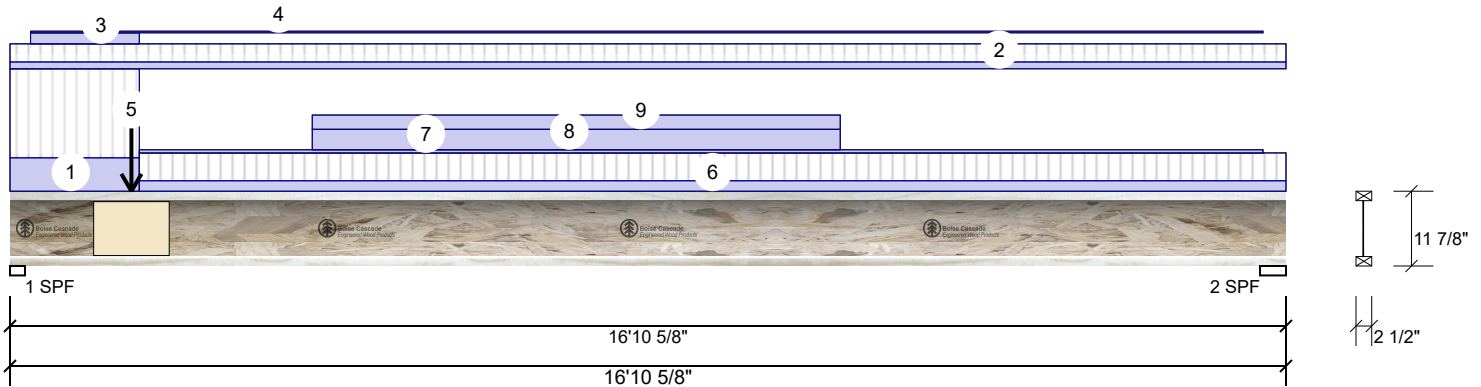
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 Project:  
 Address: PINETREE 11- 3  
 RICHMOND HILL, ON

Date: 3/23/2023  
 Input by: W C  
 Job Name: PINETREE 11-3 STD  
 Project #: ROUNDEL HOMES INC

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**F4-A AJ5 140 11.875" - PASSED**

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
8	Part. Uniform	4-0-0 to 10-11-13		Top	13 PLF	0 PLF	0 PLF	0 PLF	
9	Part. Uniform	4-0-0 to 10-11-13		Top	9 PLF	0 PLF	0 PLF	0 PLF	



APRIL 14, 2023

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#### Notes

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#### Lumber

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

chemicals

#### Handling & Installation

1. Ljoist flanges must not be cut or drilled
2. Refer to latest copy of the Ljoist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Ljoists must not be used
4. Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. Web stiffeners for point load as shown Minimum point load bearing length >= 3.5 inches
7. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

#### Manufacturer Info

Boise Cascade Wood Products  
 1111 W. Jefferson St.  
 Boise, ID 83702  
 (800) 232-0788  
 www.bc.com  
 CCMC: 12787

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



Per: joshua.nabua



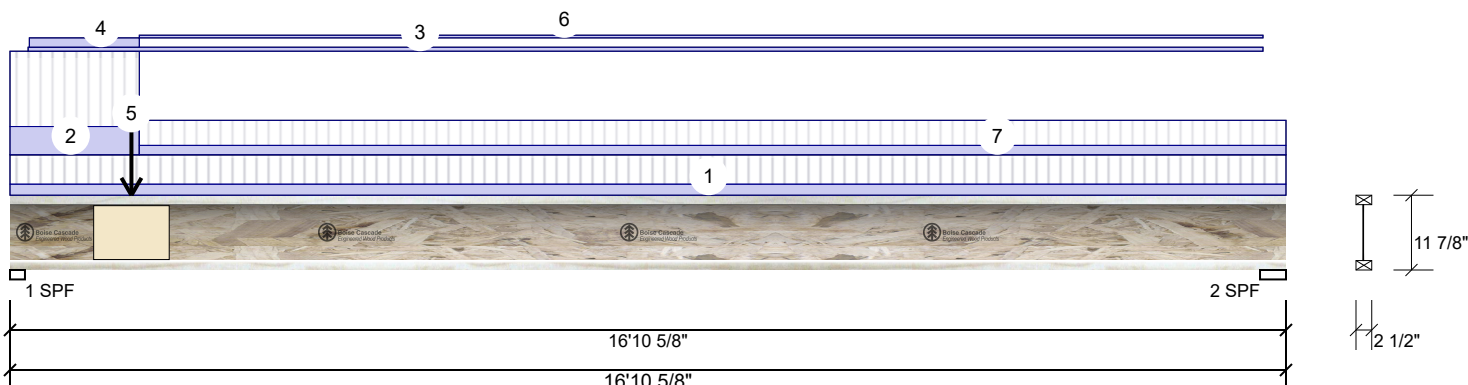
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Project:  
Address: PINETREE 11- 3  
RICHMOND HILL, ON

Date: 3/23/2023  
Input by: W C  
Job Name: PINETREE 11-3 STD  
Project #: ROUNDEL HOMES INC

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**F4-B AJS 140 11.875" - PASSED**

Level: Ground Floor


**Member Information**

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	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	699	367	0	0
2	Vertical	380	189	0	0

**Bearings and Factored Reactions**

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	Vert	90%	459 / 1049	1508	L	1.25D+1.5L
2 - SPF	4.125"	Vert	42%	237 / 569	806	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3544 ft-lb	7'6 11/16"	5305 ft-lb	0.668 (67%)	1.25D+1.5L	L
Unbraced	3544 ft-lb	7'6 11/16"	5305 ft-lb	0.668 (67%)	1.25D+1.5L	L
Shear	1487 lb	1 5/8"	2350 lb	0.633 (63%)	1.25D+1.5L	L
Perm Defl in.	0.148 (L/1335)	8'1 1/8"	0.549 (L/360)	0.270 (27%)	D	Uniform
LL Defl inch	0.290 (L/680)	8'1 7/16"	0.549 (L/360)	0.529 (53%)	L	L
TL Defl inch	0.438 (L/451)	8'1 3/8"	0.823 (L/240)	0.533 (53%)	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 If sheathing is not attached to the top flange, top flange must be laterally braced at maximum 2' o.c.
- 4 Bottom flange must be laterally braced at a maximum of 15'3 5/16" o.c.



APRIL 14, 2023

**READ ALL NOTES ON THIS PAGE AND ON THE ENGINEERING NOTES: EWP-FLOORS. 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 16-10-10	0-6-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 1-8-9	1-4-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-2-14 to 16-6-15		Top	3 PLF	0 PLF	0 PLF	0 PLF	
4	Part. Uniform	0-3-1 to 1-8-9		Top	7 PLF	0 PLF	0 PLF	0 PLF	
5	Point	1-7-5		Near Face	185 lb	325 lb	0 lb	0 lb	F2
6	Part. Uniform	1-8-9 to 16-6-15		Top	2 PLF	0 PLF	0 PLF	0 PLF	
7	Tie-In	1-8-9 to 16-10-10	0-5-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	

**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. Joist not to be treated with fire retardant or corrosive chemicals

**Handling & Installation**

1. Joist flanges must not be cut or drilled
2. Refer to latest copy of the Joist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Joists must not be used
4. Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. Web stiffeners for point load as shown Minimum point load bearing length >= 3.5 inches
7. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

**Manufacturer Info**

Boise Cascade Wood Products  
1111 W. Jefferson St.  
Boise, ID 83702  
(800) 232-0788  
www.bc.com  
CCMC: 12787

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



Per: joshua.nabua



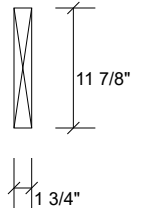
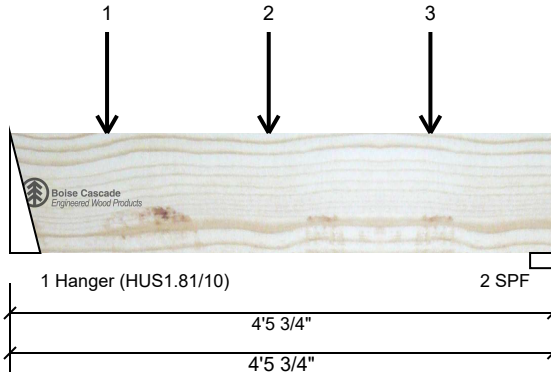
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Project:  
Address: PINETREE 11- 3  
RICHMOND HILL, ON

Date: 3/23/2023  
Input by: W C  
Job Name: PINETREE 11-3 STD  
Project #: ROUNDEL HOMES INC

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**F5-B Versa-Lam LVL 2.1E 3100 SP 1.750" X 11.875" - PASSED**

Level: Ground Floor

**Member Information**

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	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	161	74	0	0
2	Vertical	141	66	0	0

**Bearings and Factored Reactions**

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	3.000"	Vert	6%	92 / 242	335	L	1.25D+1.5L
2 - SPF	2.313"	Vert	12%	82 / 211	293	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	383 ft-lb	2'1 5/8"	17696 ft-lb	0.022 (2%)	1.25D+1.5L	L
Unbraced	383 ft-lb	2'1 5/8"	17696 ft-lb	0.022 (2%)	1.25D+1.5L	L
Shear	333 lb	1'2 7/8"	6608 lb	0.050 (5%)	1.25D+1.5L	L
Perm Defl in. (L/96713)	0.001	2'2 3/4"	0.139 (L/360)	0.004 (0%)	D	Uniform
LL Defl inch (L/43304)	0.001	2'2 5/8"	0.139 (L/360)	0.008 (1%)	L	L
TL Defl inch (L/29911)	0.002	2'2 5/8"	0.208 (L/240)	0.008 (1%)	D+L	L



APRIL 14, 2023

**Design Notes**

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

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Point	0-9-10		Far Face	36 lb	96 lb	0 lb	0 lb	J2
2	Point	2-1-10		Far Face	42 lb	112 lb	0 lb	0 lb	J2
3	Point	3-5-10		Far Face	35 lb	94 lb	0 lb	0 lb	J2
	Self Weight				6 PLF				

**Notes**

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

**Lumber**

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

**Handling & Installation**

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

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

**Manufacturer Info**

Boise Cascade Wood Products  
1111 W. Jefferson St.  
Boise, ID 83702  
(800) 232-0788  
www.bc.com  
CCMC: 12472

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



Per: CS DESIGN BUILD  
Per: joshua.nabua



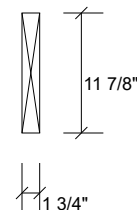
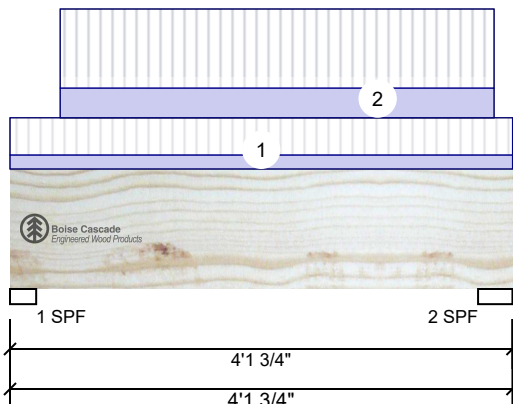
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Project:  
Address: PINETREE 11- 3  
RICHMOND HILL, ON

Date: 3/23/2023  
Input by: W C  
Job Name: PINETREE 11-3 STD  
Project #: ROUNDEL HOMES INC

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# F5-C Versa-Lam LVL 2.1E 3100 SP 1.750" X 11.875" - PASSED

Level: Ground Floor



## Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	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	104	51	0	0
2	Vertical	117	57	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.590"	Vert	8%	64 / 156	219	L	1.25D+1.5L
2 - SPF	3.403"	Vert	7%	71 / 176	247	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	217 ft-lb	2' 1/2"	17696 ft-lb	0.012 (1%)	1.25D+1.5L	L
Unbraced	217 ft-lb	2' 1/2"	17696 ft-lb	0.012 (1%)	1.25D+1.5L	L
Shear	111 lb	1'2 7/16"	6608 lb	0.017 (2%)	1.25D+1.5L	L
Perm Defl in. (L/166078)	0.000	2' 1/2"	0.126 (L/360)	0.002 (0%)	D	Uniform
LL Defl inch (L/79110)	0.001	2' 1/2"	0.126 (L/360)	0.005 (0%)	L	L
TL Defl inch (L/53585)	0.001	2' 1/2"	0.188 (L/240)	0.004 (0%)	D+L	L



APRIL 14, 2023

## 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.

READ ALL NOTES ON THIS PAGE AND ON THE  
ENGINEERING NOTES: EWP-FLOORS. 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 4-1-12	0-5-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-4-15 to 3-11-14		Top	15 PLF	40 PLF	0 PLF	0 PLF	
	Self Weight				6 PLF				

## Notes

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

## Lumber

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

chemicals

## Handling & Installation

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

- For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

Boise Cascade Wood Products  
1111 W. Jefferson St.  
Boise, ID 83702  
(800) 232-0788  
www.bc.com  
CCMC: 12472

This design is valid until 11/3/2024

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



Per: joshua.nabua

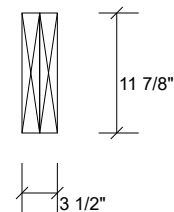
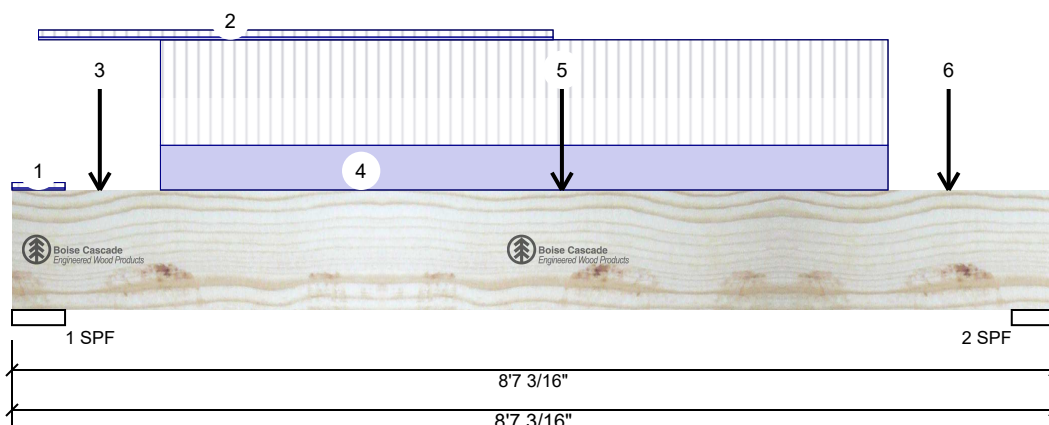


Client: GREENPARK  
Project:  
Address: PINETREE 11- 3  
RICHMOND HILL, ON

Date: 3/23/2023  
Input by: W C  
Job Name: PINETREE 11-3 STD  
Project #: ROUNDEL HOMES INC

**F6-B Versa-Lam LVL 2.1E 3100 SP 1.750" X 11.875" 2-Ply - PASSED**

Level: Ground Floor


**Member Information**

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	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	1204	561	0	0
2	Vertical	1184	554	0	0

**Bearings and Factored Reactions**

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.250"	Vert	22%	702 / 1806	2508	L	1.25D+1.5L
2 - SPF	4.268"	Vert	27%	693 / 1777	2469	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5357 ft-lb	4'6 7/16"	35392 ft-lb	0.151 (15%)	1.25D+1.5L	L
Unbraced	5357 ft-lb	4'6 7/16"	35392 ft-lb	0.151 (15%)	1.25D+1.5L	L
Shear	2544 lb	7'3 1/16"	13217 lb	0.192 (19%)	1.25D+1.5L	L
Perm Defl in.	0.013 (L/7225)	4'4 3/16"	0.264 (L/360)	0.050 (5%)	D	Uniform
LL Defl inch	0.028 (L/3343)	4'4 3/16"	0.264 (L/360)	0.108 (11%)	L	L
TL Defl inch	0.042 (L/2285)	4'4 3/16"	0.397 (L/240)	0.105 (11%)	D+L	L

**Design Notes**

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



APRIL 14, 2023

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-5-4	0-4-5	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-2-10 to 4-5-9	0-5-11	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	0-8-11		Near Face	77 lb	181 lb	0 lb	0 lb	J9
4	Part. Uniform	1-2-11 to 7-2-11		Near Face	119 PLF	281 PLF	0 PLF	0 PLF	
5	Point	4-6-7		Far Face	74 lb	161 lb	0 lb	0 lb	F5

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

This design is valid until 11/3/2024

**Manufacturer Info**

Boise Cascade Wood Products  
1111 W. Jefferson St.  
Boise, ID 83702  
(800) 232-0788  
www.bc.com  
CCMC: 12472

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



Per: joshua.nabua





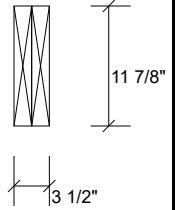
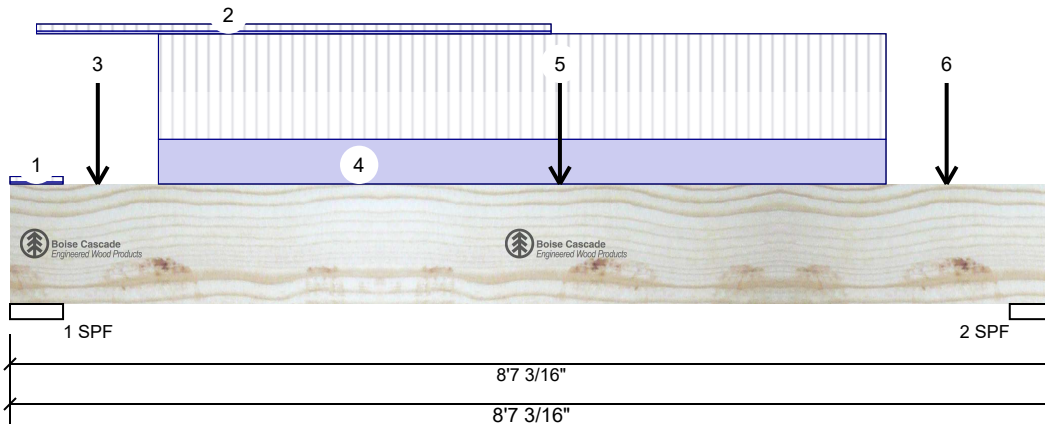
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Page 11 of 17

**F6-B Versa-Lam LVL 2.1E 3100 SP 1.750" X 11.875" 2-Ply - PASSED**

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Point	7-8-11		Near Face	116 lb	274 lb	0 lb	0 lb	J9
	Self Weight				12 PLF				



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#### Notes

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

chemicals

#### Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

#### Manufacturer Info

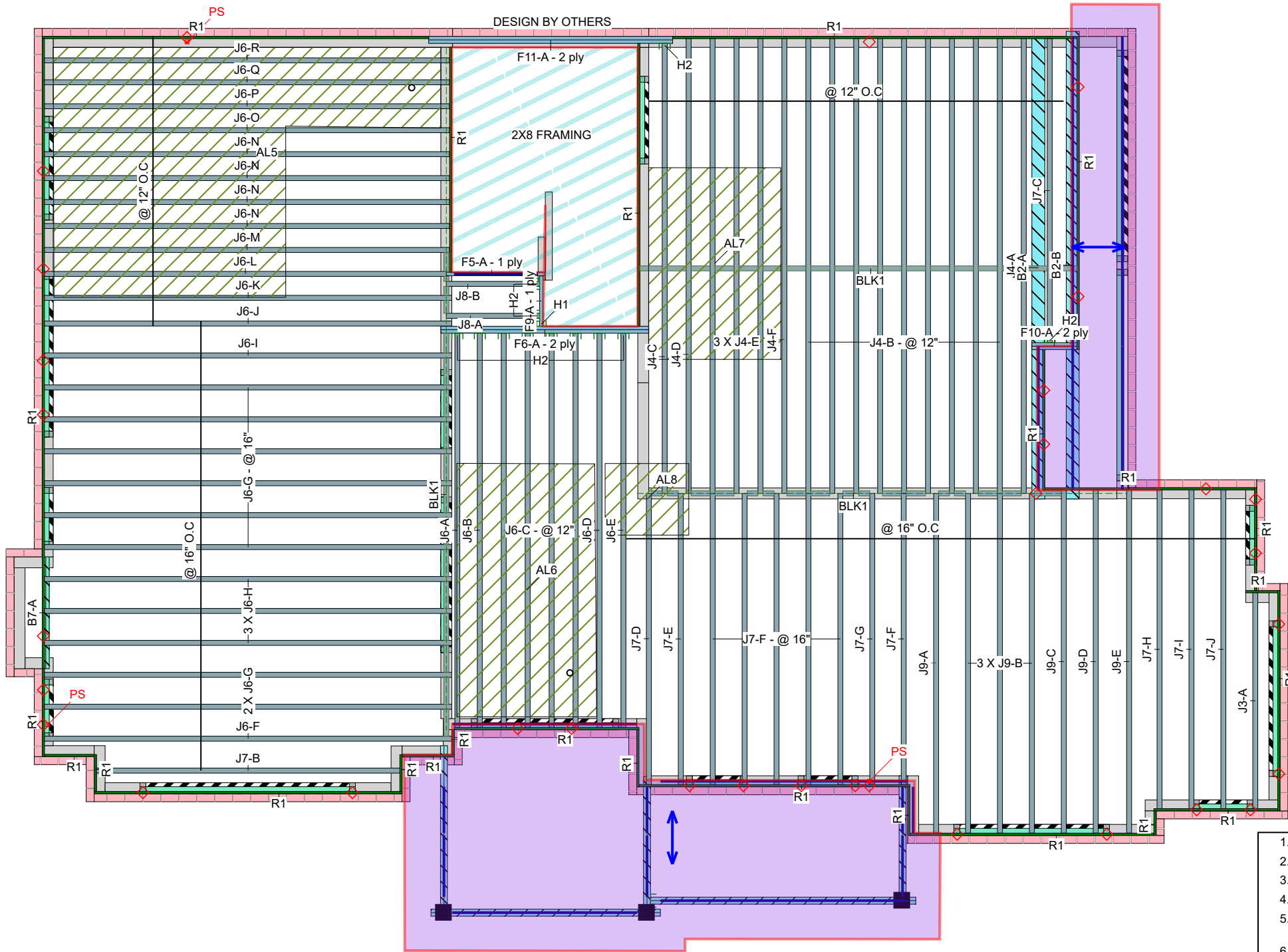
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Per: joshua.nabua

Second Floor



Second Floor LVL/LSL (Flush)							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F11	Versa-Lam LVL 2.1E 3100 SP	1.75	11.875	1	2	2	12-0-0
F6	Versa-Lam LVL 2.1E 3100 SP	1.75	11.875	1	2	2	10-0-0
F5	Versa-Lam LVL 2.1E 3100 SP	1.75	11.875			1	6-0-0
F9	Versa-Lam LVL 2.1E 3100 SP	1.75	11.875			1	4-0-0
F10	Versa-Lam LVL 2.1E 3100 SP	1.75	11.875	1	2	2	2-0-0
I Joist (Flush)							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
J4	AJS 140	2.5	11.875			16	20-0-0
J6	AJS 140	2.5	11.875			33	18-0-0
J9	AJS 140	2.5	11.875			7	16-0-0
J7	AJS 140	2.5	11.875			14	14-0-0
J3	AJS 140	2.5	11.875			1	10-0-0
J8	AJS 140	2.5	11.875			2	4-0-0
Rim Board							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 11.875	1.125	11.875			16	12-0-0
Blocking							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK1	AJS 140	2.5	11.875	LinFt		Varies	43-0-0
Hanger							
				Beam/Girder		Supported Member	
Label	Pcs	Description	Skew	Slope	fasteners	fasteners	
H1	1	HUS1.81/10			30 16d	10 16d	
H2	12	LF2511			12 10d	1 #8x1 1/4WS	

JOB INFORMATION	
Builder	GREENPARK
Project	ROUNDEL HOMES INC
Shipping	PINETREE 11- 3 RICHMOND HILL,ON
Sales Rep	RALPH MIRIGELLO
Designer	W C
Plotted	March 28, 2023
Layout Name	PINETREE 11-3 STD & DC
Job Path	S:\CUSTOMERS\GREENPARK\ROUNDEL HOMES INC\MODELS\PINETREE 11\PINETREE 11-ELEV 3\F-PT11-3\PINETREE 11-3 STD & DC.isl

DESIGN CRITERIA	
Second 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	OSB
Thickness	5/8"
Fastener	Nailed & Glued

CCMC References	
Boise - 12472-R , 12787-R	
LP - 12412-R, Roseburg - 13310-R	
Forex - 14056-R	

Kott Inc.	
3228 Moodie Dr, Ottawa	
14 Anderson Blvd, Uxbridge	
Ontario	
613-838-2775 /	
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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.
12. Multi ply beams with side loading to have all fasteners installed with the head on the side of the applied load
13. Confirmation of adequate support & anchorage of components is the responsibility of the building designer; suggested uplift connectors are as shown
14. Where beam hangs on side of 3-ply member, it is recommended that the equivalent quantity and size of nails required for the hanger attachment also be installed on opposite side of the 3-ply member

Legend	
PS	Point Load Support
◇	Load from Above
	Wall
	Wall Opening
	Norbord Rimboard Plus 1.125 X 11.875
	AJS 140 11.875
	Versa-Lam LVL 2.1E 3100 SP 1.75 X 11.875
	1.75 X 9.5 (Dropped)

Installation Guide



(Open your phone's camera and hover over this QR code to access it)

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

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BUILDING DIVISION  
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Per: Joshua Nabua

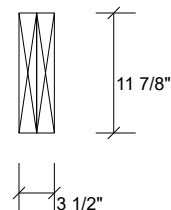
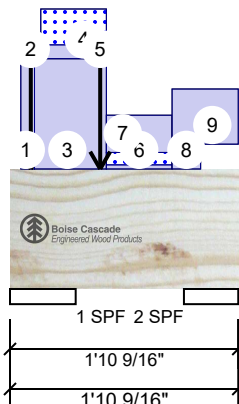


Client: GREENPARK  
 Project:  
 Address: PINETREE 11-3  
 RICHMOND HILL, ON

Date: 3/23/2023  
 Input by: W C  
 Job Name: PINETREE 11-3 STD  
 Project #: ROUNDEL HOMES INC

**F10-A Versa-Lam LVL 2.1E 3100 SP 1.750" X 11.875" 2-Ply - PASSED**

Level: Second Floor


**Member Information**

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	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	289	194	0
2	Vertical	74	79	8	0

**Bearings and Factored Reactions**

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	6.500"	Vert	6%	361 / 501	862	L	1.25D+1.5S +L
2 - SPF	5.375"	Vert	2%	98 / 111	209	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	121 ft-lb	8 15/16"	33268 ft-lb	0.004 (0%)	1.25D+1.5L	L
Unbraced	121 ft-lb	8 15/16"	33268 ft-lb	0.004 (0%)	1.25D+1.5L	L
Shear	409 lb	1'6 3/8"	12424 lb	0.033 (3%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/1040130)	9 1/2"	0.034 (L/360)	0.000 (0%)	D	Uniform
LL Defl inch	0.000 (L/571812)	8 15/16"	0.034 (L/360)	0.001 (0%)	L+0.5S	L
TL Defl inch	0.000 (L/370214)	8 15/16"	0.051 (L/240)	0.001 (0%)	D+L+0.5S	L



APRIL 14, 2023

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**Design Notes**

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-1-1 to 0-2-7		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
2	Point	0-2-1		Top	122 lb	0 lb	175 lb	0 lb	F7 F7
	Bearing Length	0-5-8							
3	Part. Uniform	0-2-7 to 0-9-9		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

This design is valid until 11/3/2024

**Manufacturer Info**

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**RECEIVED**  
 Per: joshua.nabua



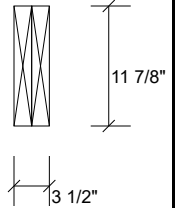
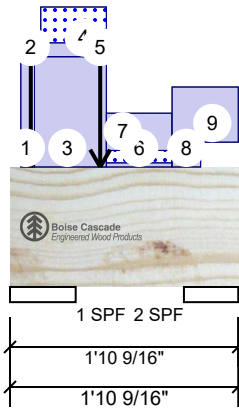
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 RICHMOND HILL, ON

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Page 13 of 17

**F10-A Versa-Lam LVL 2.1E 3100 SP 1.750" X 11.875" 2-Ply - PASSED**

Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
4	Part. Uniform	0-3-1 to 0-9-9		Top	10 PLF	0 PLF	26 PLF	0 PLF	
5	Point	0-8-15		Far Face	122 lb	284 lb	5 lb	0 lb	J7
6	Part. Uniform	0-9-9 to 1-4-1		Top	3 PLF	0 PLF	9 PLF	0 PLF	
7	Part. Uniform	0-9-9 to 1-4-1		Top	27 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
8	Part. Uniform	1-4-1 to 1-6-14		Top	5 PLF	0 PLF	13 PLF	0 PLF	
9	Part. Uniform	1-4-1 to 1-10-9		Top	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
	Self Weight				12 PLF				



APRIL 14, 2023

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**Notes**

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**Lumber**

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

chemicals

**Handling & Installation**

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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 11/3/2024

**Manufacturer Info**

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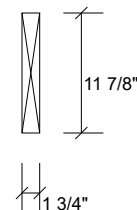
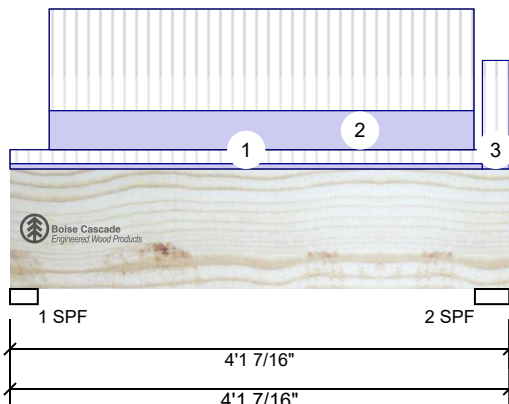


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 Project #: ROUNDEL HOMES INC

# F5-A Versa-Lam LVL 2.1E 3100 SP 1.750" X 11.875" - PASSED

Level: Second Floor



## Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	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	120	58	0	0
2	Vertical	133	63	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.750"	Vert	8%	72 / 179	251	L	1.25D+1.5L
2 - SPF	3.403"	Vert	8%	79 / 200	279	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	247 ft-lb	2' 3/8"	17696 ft-lb	0.014 (1%)	1.25D+1.5L	L
Unbraced	247 ft-lb	2' 3/8"	17696 ft-lb	0.014 (1%)	1.25D+1.5L	L
Shear	123 lb	1'2 5/8"	6608 lb	0.019 (2%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/149068)	2' 7/16"	0.124 (L/360)	0.002 (0%)	D	Uniform
LL Defl inch	0.001 (L/69963)	2' 7/16"	0.124 (L/360)	0.005 (1%)	L	L
TL Defl inch	0.001 (L/47616)	2' 7/16"	0.186 (L/240)	0.005 (1%)	D+L	L



APRIL 14, 2023

## 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 3-10-12	0-2-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-3-14 to 3-9-15		Top	23 PLF	60 PLF	0 PLF	0 PLF	
3	Tie-In	3-10-12 to 4-1-7	1-2-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				6 PLF				

## Notes

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## Lumber

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- LVL not to be treated with fire retardant or corrosive chemicals

chemicals

## Handling & Installation

- LVL beams must not be cut or drilled
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- Provide lateral support at bearing points to avoid lateral displacement and rotation

- For flat roofs provide proper drainage to prevent ponding

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 613-838-2775 / 905-642-4400



Per: joshua.nabua



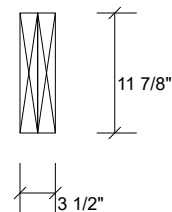
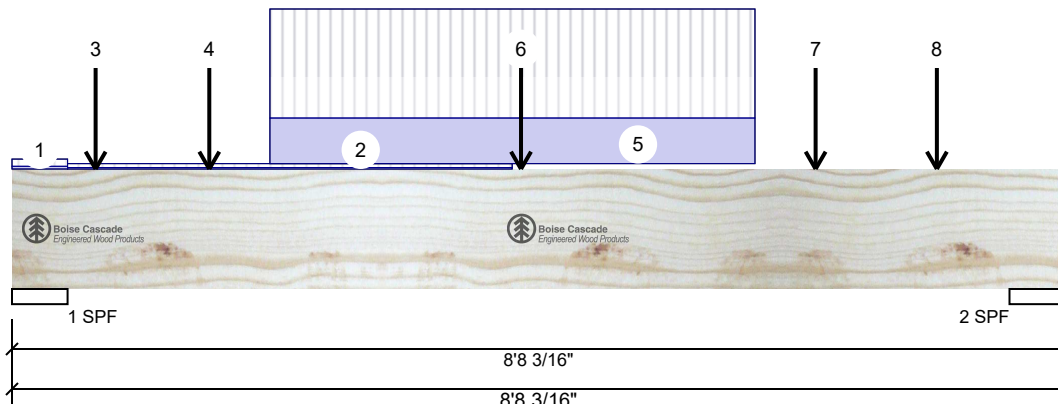


Client: GREENPARK  
Project:  
Address: PINETREE 11- 3  
RICHMOND HILL, ON

Date: 3/23/2023  
Input by: W C  
Job Name: PINETREE 11-3 STD  
Project #: ROUNDEL HOMES INC

**F6-A Versa-Lam LVL 2.1E 3100 SP 1.750" X 11.875" 2-Ply - PASSED**

Level: Second Floor


**Member Information**

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	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	1316	598	0	0
2	Vertical	1344	593	0	0

**Bearings and Factored Reactions**

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	Vert	23%	748 / 1974	2721	L	1.25D+1.5L
2 - SPF	5.500"	Vert	23%	742 / 2016	2757	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5593 ft-lb	4'2 13/16"	35392 ft-lb	0.158 (16%)	1.25D+1.5L	L
Unbraced	5593 ft-lb	4'2 13/16"	35392 ft-lb	0.158 (16%)	1.25D+1.5L	L
Shear	2751 lb	7'2 13/16"	13217 lb	0.208 (21%)	1.25D+1.5L	L
Perm Defl in.	0.014 (L/6992)	4'4 1/16"	0.263 (L/360)	0.051 (5%)	D	Uniform
LL Defl inch	0.030 (L/3143)	4'4 1/8"	0.263 (L/360)	0.115 (11%)	L	L
TL Defl inch	0.044 (L/2168)	4'4 1/8"	0.395 (L/240)	0.111 (11%)	D+L	L

**Design Notes**

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



APRIL 14, 2023

**READ ALL NOTES ON THIS PAGE AND ON THE ENGINEERING NOTES: EWP-FLOORS. 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 0-5-8	0-6-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-5-8 to 4-1-8	0-3-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	0-8-4		Near Face	78 lb	190 lb	0 lb	0 lb	J6
4	Point	1-7-8		Near Face	132 lb	315 lb	0 lb	0 lb	J6
5	Part. Uniform	2-1-8 to 6-1-8		Near Face	136 PLF	325 PLF	0 PLF	0 PLF	

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

This design is valid until 11/3/2024

**Manufacturer Info**

Boise Cascade Wood Products  
1111 W. Jefferson St.  
Boise, ID 83702  
(800) 232-0788  
www.bc.com  
CCMC: 12472

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



Per: joshua.nabua



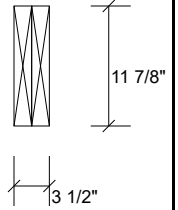
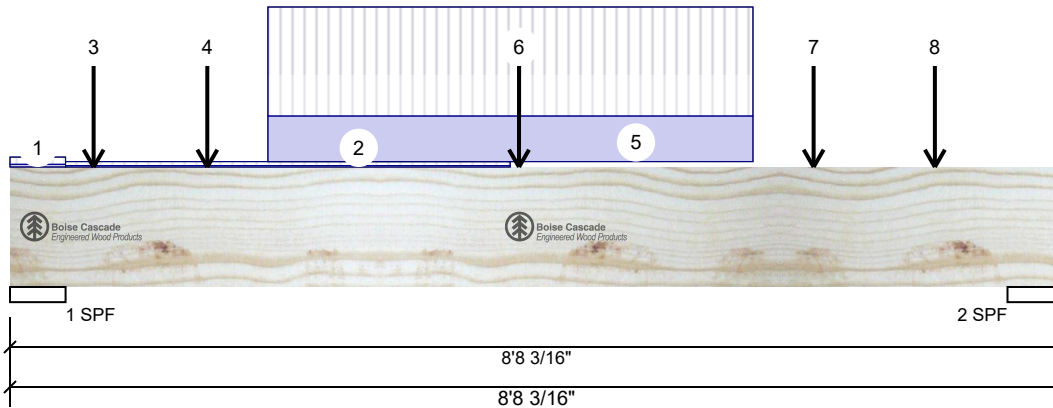
Client: GREENPARK  
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 Address: PINETREE 11- 3  
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Date: 3/23/2023  
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 Job Name: PINETREE 11-3 STD  
 Project #: ROUNDEL HOMES INC

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**F6-A Versa-Lam LVL 2.1E 3100 SP 1.750" X 11.875" 2-Ply - PASSED**

Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Point	4-2-6		Far Face	34 lb	71 lb	0 lb	0 lb	F9
7	Point	6-7-8		Near Face	129 lb	325 lb	0 lb	0 lb	J6
8	Point	7-7-8		Near Face	152 lb	406 lb	0 lb	0 lb	J6
	Self Weight				12 PLF				



APRIL 14, 2023

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 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.

**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 11/3/2024

**Manufacturer Info**

Boise Cascade Wood Products  
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 Boise, ID 83702  
 (800) 232-0788  
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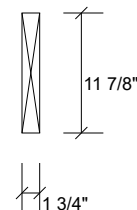
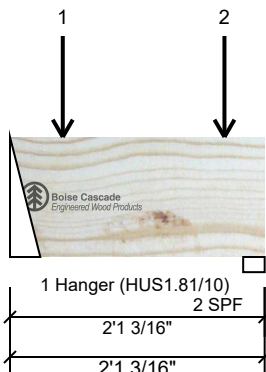
Client: GREENPARK  
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Address: PINETREE 11- 3  
RICHMOND HILL, ON

Date: 3/23/2023  
Input by: W C  
Job Name: PINETREE 11-3 STD  
Project #: ROUNDEL HOMES INC

Page 17 of 17

**F9-A Versa-Lam LVL 2.1E 3100 SP 1.750" X 11.875" - PASSED**

Level: Second Floor

**Member Information**

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	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	71	34	0	0
2	Vertical	69	32	0	0

**Bearings and Factored Reactions**

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	3.000"	Vert	3%	42 / 107	149	L	1.25D+1.5L
2 - SPF	2.125"	Vert	6%	40 / 103	143	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	36 ft-lb	6 1/2"	17696 ft-lb	0.002 (0%)	1.25D+1.5L	L
Unbraced	36 ft-lb	6 1/2"	17696 ft-lb	0.002 (0%)	1.25D+1.5L	L
Shear	147 lb	1'2 7/8"	6608 lb	0.022 (2%)	1.25D+1.5L	L
Perm Defl in. (L/1394879)	0.000	1' 3/4"	0.060 (L/360)	0.000 (0%)	D	Uniform
LL Defl inch (L/711201)	0.000	1' 11/16"	0.060 (L/360)	0.001 (0%)	L	L
TL Defl inch (L/471043)	0.000	1' 11/16"	0.090 (L/240)	0.001 (0%)	D+L	L



APRIL 14, 2023

**Design Notes**

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

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Point	0-5-4		Far Face	28 lb	73 lb	0 lb	0 lb	J8
2	Point	1-9-4		Far Face	25 lb	67 lb	0 lb	0 lb	J8
	Self Weight				6 PLF				

**Notes**

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

**Lumber**

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

chemicals

**Handling & Installation**

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

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

**Manufacturer Info**

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