



## **Sealed Engineered Wood Product (EWP) Components:**

*(Includes, but not limited to: I-Joists, LVL, LSL, Dimensional Lumber)*

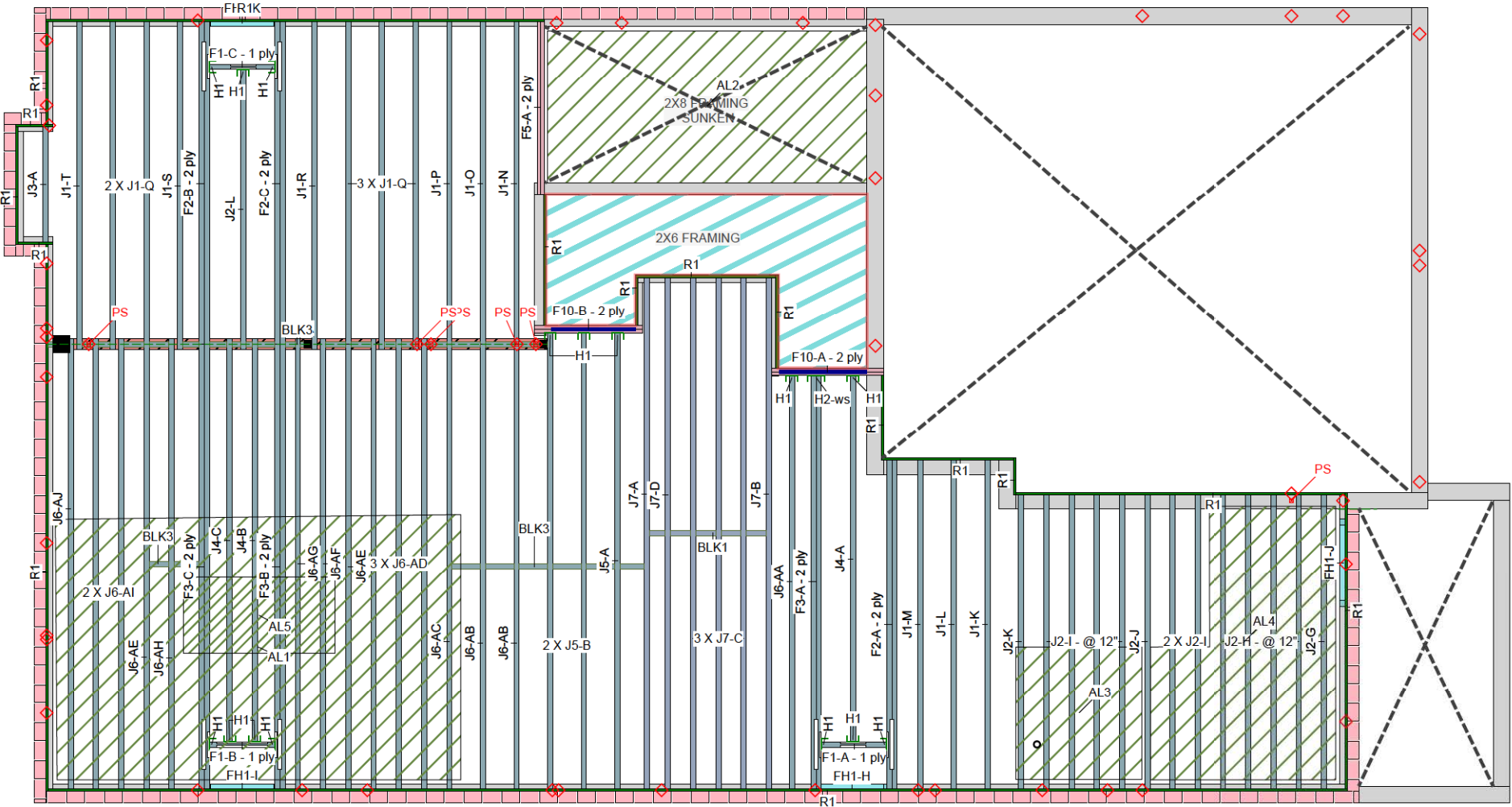
Modulus Engineering Ltd. (MEL) provides EWP component review among a variety of other engineering services to our clients. The scope of the work provided by EWP component review is governed by the arrangement between MEL and our client and not intended to extend or imply to extend beyond this scope. If further review or other engineering work beyond this scope is required, MEL may be retained by the client at the discretion of MEL.

It is becoming more common that component review is requested by project engineers or building designers as a means of additional verification of proprietary EWP components they have specified on their drawings or by building departments for verification of components not covered explicitly in the building code. The intent of this document is to clarify the objectives of the review of the EWP components to ensure the project engineer or building designer and the building official understand the limitations of the component seals. Of particular importance, it should not be implied that the EWP component review and subsequent component seals provided are to be considered as review of the overall structure. This remains the responsibility of the project engineer of record (EOR) or building designer (Architect or other).


MEL reviews components produced by various proprietary design software programs, including: Mitek Sapphire (or Sapphire Supply), CSD iStruct, Simpson Strong-Tie Component Solutions, EZCad Wood-I and WoodWorks Sizer. Each program produces design notes that similarly attempt to clarify the limitations of the individual component design, with slight differences in language. The General Notes provided here are intended to supplement the notes on the sealed components and replace them where contradictions exist. If the intent is unclear, please contact MEL directly to ensure there are no unanswered questions.

### **General Notes:**

- Although MEL reviews components submitted together with layouts provided by our clients (in order to review how the components frame to one another to check member to member loading in the structural model and to review the suitability of hangers noted as well as to determine lamination details provided on the component drawing), the individual component seal stands alone as a unique individual member design/review and the loading noted should also be verified by the building designer or EOR.
- Reactions shown are for gravity loads (vertical) or out of plane wind loads (horizontal, when reviewing wall components) on the member as noted only and does not include any additional loads that may be imposed by other factors such as overturning of shearwalls due to wind or seismic loads.
- Minimum bearing length noted is based on the EWP material itself unless the bearing capacity for the support is specifically noted (most often the case), for the full width of the member supported. If the capacity of the bearing material is less than the capacity of the member itself, a larger bearing length may be required, to be determined by building designer or EOR.
- Adequate bearing surface for large point loads from above must be provided, to be determined by building designer or EOR unless noted on the component design.
- Where bracing or lateral support assumptions are not noted on the component design, continuous bracing for any compression edge, point load location and bearing or support location is assumed.
- Design is based on Dry service condition, defined as an EMC average over the year of 15% or less and never over 19%.
- Dimensions and location of supports as provided and as noted on component design, to be verified by others.
- Lamination details provided on the component drawing have been designed as per CSA-086.
- Any hangers specified have been reviewed in accordance with manufacturers published capacity for gravity and uplift loads only.
- Any flat roof applications must have adequate drainage to avoid ponding and potential overloading of the structure as designed
- Building designer or EOR must ensure the structure is adequate to support the reactions shown (may include uplift at a bearing)
- Building designer or EOR is responsible for the overall structural design including the lateral stability of the structure.
- Products to be installed as per manufacturers instructions and/or as per details provided by the building designer or EOR
- Products should be stored on site and handled as per manufacturers recommendations.
- Damaged products or those modified outside the scope of the manufacturers recommendations should not be installed unless approved by an engineer or building official








Ground Floor LVL/LSL (Flush)							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F5	Forex 2.0E-3000Fb LVL	1.75	11.875	1	2	2	8-0-0
F10	Forex 2.0E-3000Fb LVL	1.75	11.875	2	2	4	6-0-0
I Joist (Flush)							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F3	AJS 140	2.5	11.875	3	2	6	18-0-0
F2	AJS 140	2.5	11.875	3	2	6	14-0-0
F1	AJS 140	2.5	11.875			3	4-0-0
J5	AJS 140	2.5	11.875			3	20-0-0
J6	AJS 140	2.5	11.875			15	18-0-0
J4	AJS 140	2.5	11.875			3	16-0-0
J1	AJS 140	2.5	11.875			14	14-0-0
J2	AJS 140	2.5	11.875			14	12-0-0
J3	AJS 140	2.5	11.875			1	6-0-0
J7	AJS 20	2.5	11.875			6	22-0-0
Rim Board							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 11.875	1.125	11.875			13	12-0-0
Blocking							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK3	AJS 140	2.5	11.875	LinFt		Varies	22-0-0
BLK1	AJS 20	2.5	11.875	LinFt		Varies	4-0-0
Hanger							
				Beam/Girder		Supported Member	
Label	Pcs	Description	Skew	Slope	fasteners	fasteners	
H1	15	LF2511			12 10d	1 #8x1 1/4WS	
H2	1	HU310-2			14 16d	6 10d	

JOB INFORMATION	
Builder	GREENPARK
Project	ZADORRA ESTATES
Shipping	PENROSE 1- EL 2 OSHAWA, ON
Sales Rep	RALPH MIRIGELLO
Designer	W C
Plotted	June 01, 2022
Layout Name	PENROSE 1-EL 2
Job Path	
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/	480
TL Span L/	240
Deflection Flush Girder	
LL Span L/	480
TL Span L/	240
Deflection Dropped Girder	
LL Span L/	480
TL Span L/	240
Deflection Header	
LL Span L/	480
TL Span L/	240
Decking	
Decking	OSB
Thickness	3/4"
CCMC References	
Boise - 12472-R , 12787-R	
LP - 12412-R	
Forex - 14056-R	
Kott Inc.	
3228 Moodie Dr, Ottawa	
14 Anderson Blvd, Uxbridge	
Ontario	
613-838-2775 /	
905-642-4400	
	

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

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

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

Legend	
WS	Web Stiffener
-ws	In Hanger Label Denotes Web Stiffener
PS	Point Load Support
◇	Load from Above
	Wall
	Wall Opening
	Norbord Rimboard Plus 1.125 X 11.875
	AJS 140 11.875
	AJS 20 11.875



Ground Floor

CORPORATION OF THE CITY OF OSHAWA

TRUE COPY

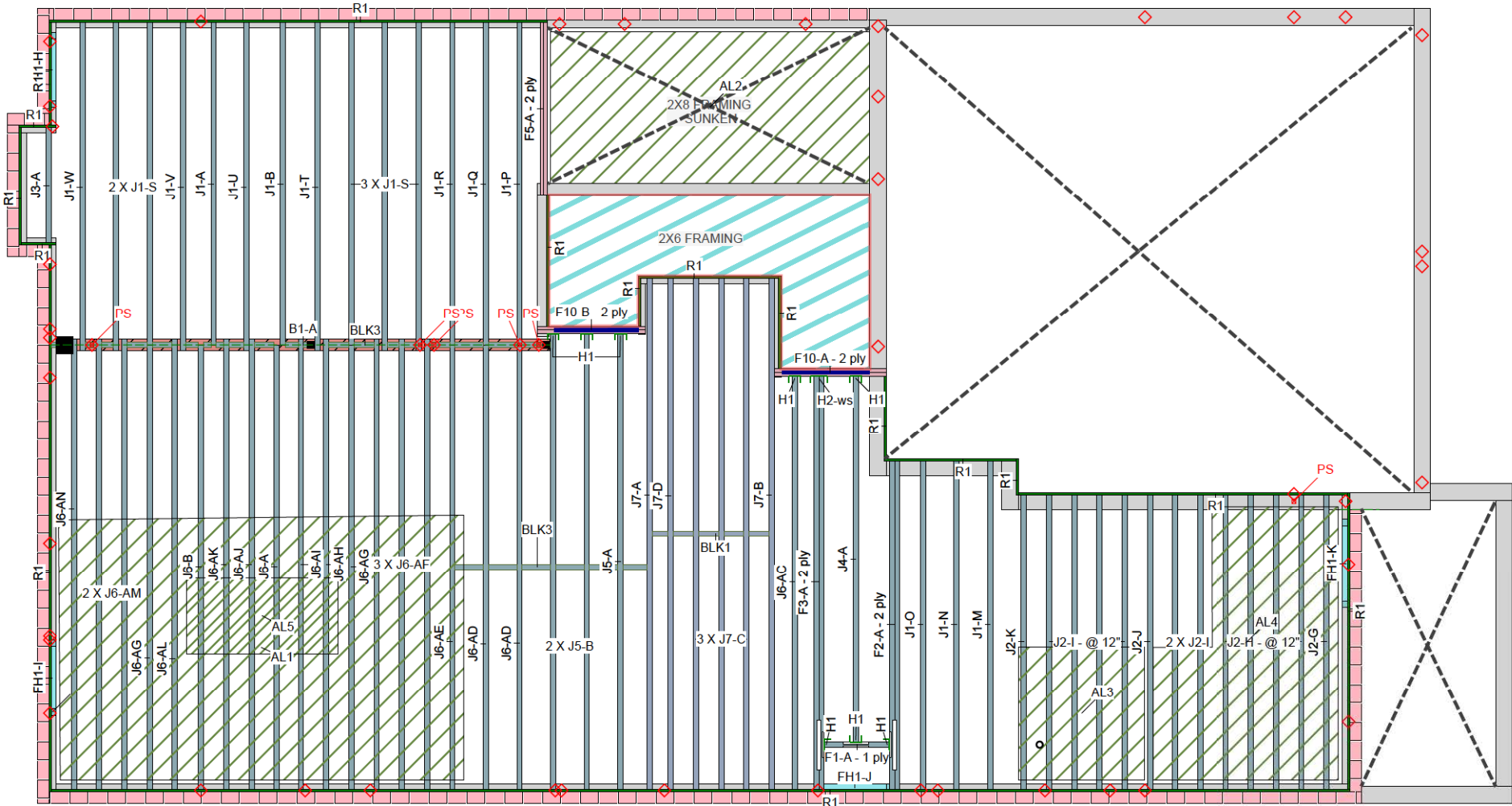
OF PERMIT PLANS

Dec 06 2023

PER: 

CHIEF BUILDING OFFICIAL

MHP 23018



Ground Floor LVL/LSL (Flush)							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
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				Beam/Girder		Supported Member	
Label	Pcs	Description	Skew	Slope	fasteners	fasteners	
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**JOB INFORMATION**

**Builder**  
GREENPARK

**Project**  
ZADORRA ESTATES

**Shipping**  
PENROSE 1- EL 2  
OSHAWA, ON

**Sales Rep**  
RALPH MIRIGELLO

**Designer**  
W C

**Plotted**  
June 01, 2022

**Layout Name**  
PENROSE 1-EL 2 DECK CONDITION

**Job Path**

**DESIGN CRITERIA**

**Ground Floor**

Design Method  
Building Code

LSD (Canada)  
NBCC 2015 / OBC 2012

**Floor Loads**

Live  
Dead

40  
15

**Deflection Joist**

LL Span L/  
TL Span L/

480  
240

**Deflection Flush Girder**

LL Span L/  
TL Span L/

480  
240

**Deflection Dropped Girder**

LL Span L/  
TL Span L/

480  
240

**Deflection Header**

LL Span L/  
TL Span L/

480  
240

**Decking**


Decking  
Thickness

OSB  
3/4"

**CCMC References**

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

**Kott Inc.**  
3228 Moodie Dr, Ottawa  
14 Anderson Blvd, Uxbridge  
Ontario  
  
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7. Install 2x4 blocking @ 24" o/c under parallel non-loadbearing walls
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10. Hangers and Fasteners to be installed as per manufacturer
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**Legend**


WS


-ws


PS


◇











Web Stiffener

In Hanger Label Denotes Web Stiffener

Point Load Support

Load from Above

Wall

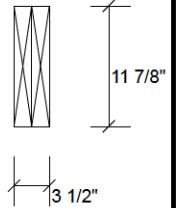
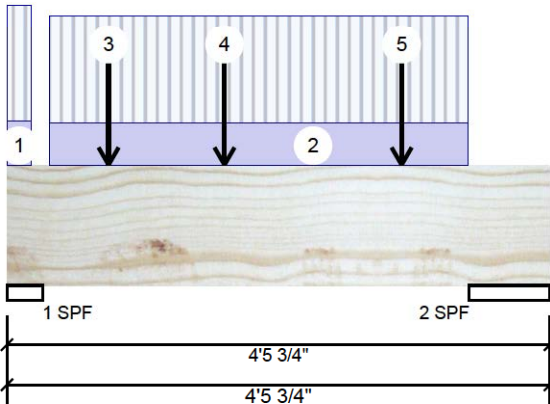
Wall Opening

Norbord Rimboard Plus 1.125 X 11.875

AJS 140 11.875

AJS 20 11.875

**F10-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED** Level Ground Floor



**Member Information**

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

**Unfactored Reactions UNPATTERNED lb (Uplift)**

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	701	284	0	0
2	Vertical	690	283	0	0

**Bearings and Factored Reactions**

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	19%	355 / 1051	1406	L	1.25D+1.5L
2 - SPF	8.000"	Vert	8%	354 / 1035	1389	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1413 ft-lb	1'9 1/2"	34261 ft-lb	0.041 (4%)	1.25D+1.5L	L
Unbraced	1413 ft-lb	1'9 1/2"	34261 ft-lb	0.041 (4%)	1.25D+1.5L	L
Shear	1246 lb	2'9 7/8"	11596 lb	0.107 (11%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/30689)	1'9 1/2"	0.121 (L/360)	0.012 (1%)	D	Uniform
LL Defl inch	0.004 (L/12275)	1'9 1/2"	0.091 (L/480)	0.039 (4%)	L	L
TL Defl inch	0.005 (L/8768)	1'9 1/2"	0.182 (L/240)	0.027 (3%)	D+L	L

**LAMINATE WITH:**  
2 ROWS OF 3.25" AIR NAILS  
FACE SPACING AT 12 IN O/C.  
NAIL FROM LOADED FACE  
MIN HANGER NAILS: (JOIST/BREAM) 3 IN

**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	Tie-In	0-0-0 to 0-2-6	1-10-11	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-4-3 to 3-9-9		Top	27 PLF	70 PLF	0 PLF	0 PLF	
3	Point	0-10-1		Near Face	115 lb	306 lb	0 lb	0 lb	J6
4	Point	1-9-8		Near Face	160 lb	426 lb	0 lb	0 lb	F3

Continued on page 2...

**Notes**

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

**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**

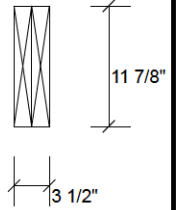
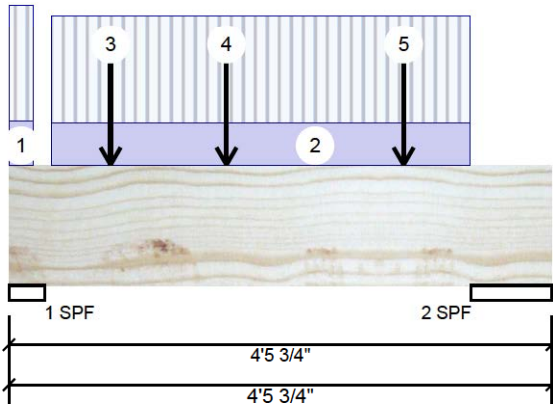
Forex  
APA: PR-L318

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



F10-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED Level Ground Floor

MHP 23018



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Point	3-3-1		Near Face	151 lb	402 lb	0 lb	0 lb	J4
	Self Weight				10 PLF				

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SEE GENERAL NOTES  
DOC: ME-TC02 V 03-2017  
NOTE: ALTERING THIS DOCUMENT  
VOIDS THE ENGINEERS SEAL

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

6. For flat roofs provide proper drainage to prevent ponding

#### Manufacturer Info

Forex  
APA: PR-L318

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



This design is valid until 5/24/2024

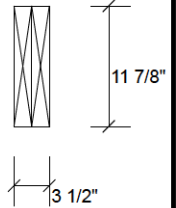
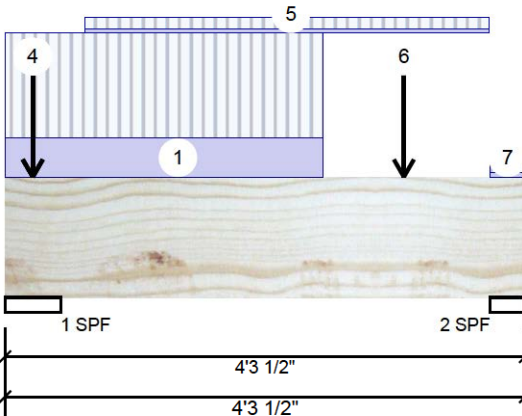




CORPORATION OF THE CITY OF OSHAWA  
TRUE COPY  
GREENPARK  
OF PERMIT PLANS  
Project: Dec 06 2023  
Address: L 2  
RES: CHIEF BUILDING OFFICIAL

Date: 6/1/2022  
Input by: W C ME0722-058  
Job Name: PENROSE 1-EL 2  
Project #: ZADORRA ESTATES  
ME22-5722-3  
Page 3 of 22

F10-B Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED Level Ground Floor



### Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

### Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	872	381	0	0
2	Vertical	684	276	0	0

### Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	Vert	15%	476 / 1308	1784	L	1.25D+1.5L
2 - SPF	3.500"	Vert	18%	345 / 1027	1371	L	1.25D+1.5L

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1330 ft-lb	2'2 1/2"	34261 ft-lb	0.039 (4%)	1.25D+1.5L	L
Unbraced	1330 ft-lb	2'2 1/2"	34261 ft-lb	0.039 (4%)	1.25D+1.5L	L
Shear	1980 lb	3' 1/8"	11596 lb	0.171 (17%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/31468)	2'2 5/8"	0.122 (L/360)	0.011 (1%)	D	Uniform
LL Defl inch	0.004 (L/12519)	2'2 5/8"	0.092 (L/480)	0.038 (4%)	L	L
TL Defl inch	0.005 (L/8956)	2'2 5/8"	0.183 (L/240)	0.027 (3%)	D+L	L

**LAMINATE WITH:**  
2 ROWS OF 3.25" AIR NAILS  
FACE SPACING AT 12 IN O/C.  
NAIL FROM LOADED FACE  
MIN HANGER NAILS: (JOIST/BREAM) 3 IN

### 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.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 2-7-8		Near Face	137 PLF	367 PLF	0 PLF	0 PLF	
2	Point	0-2-12		Top	27 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							

Continued on page 2...

### Notes

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

### Lumber

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

### Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

### Manufacturer Info

Forex  
APA: PR-L318

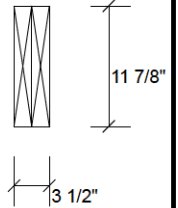
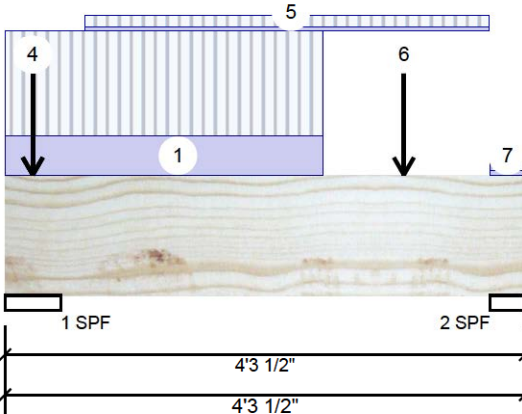
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F10-B Forex 2.0E-3000Fb LVL 1.750 X 11.875" 2-Ply - PASSED Level Ground Floor

MHP 23018



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
3	Point	0-2-12		Top	1 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
4	Point	0-2-12		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
5	Part. Uniform	0-7-15 to 3-11-15		Top	15 PLF	40 PLF	0 PLF	0 PLF	
6	Point	3-3-8		Near Face	168 lb	448 lb	0 lb	0 lb	J5
7	Tie-In	4-0-0 to 4-3-8	1-0-11	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				10 PLF				

MODULUS ENGINEERING LTD.



SEE GENERAL NOTES  
 DOC: ME-TC02 V 03-2017  
 NOTE: ALTERING THIS DOCUMENT  
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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

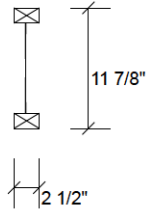
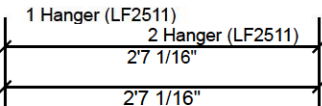
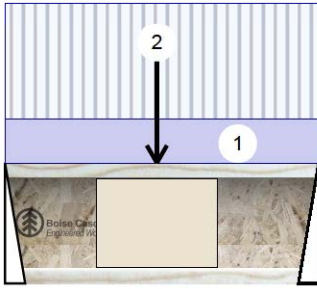


This design is valid until 5/24/2024

F1-A AJS 140 11.875" - PASSED

MHP 23018

Level: Ground Floor



## Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	270	101	0	0
2	Vertical	255	96	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	Vert	33%	126 / 405	531	L	1.25D+1.5L
2 - Hanger	2.000"	Vert	31%	119 / 382	502	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	555 ft-lb	1'3 1/16"	5305 ft-lb	0.105 (10%)	1.25D+1.5L	L
Unbraced	555 ft-lb	1'3 1/16"	5305 ft-lb	0.105 (10%)	1.25D+1.5L	L
Shear	524 lb	1 1/4"	2350 lb	0.223 (22%)	1.25D+1.5L	L
Perm Defl in. (L/15698)	0.002	1'3 1/16"	0.079 (L/360)	0.023 (2%)	D	Uniform
LL Defl inch	0.005 (L/5887)	1'3 1/16"	0.059 (L/480)	0.082 (8%)	L	L
TL Defl inch	0.007 (L/4281)	1'3 1/16"	0.119 (L/240)	0.056 (6%)	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 If sheathing is not attached to the top flange, top flange must be laterally braced at maximum 2' o.c.
- 5 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 2-7-1	0-10-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	1-3-0		Far Face	162 lb	432 lb	0 lb	0 lb	J4

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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. Lumber is to be treated with fire retardant or corrosive chemicals

## Handling & Installation

1. Lumber flanges must not be cut or drilled
2. Refer to latest copy of the Lumber product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Lumber 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

## 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



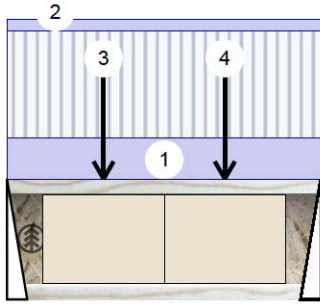
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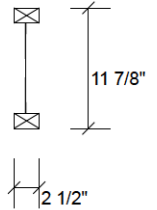
F1-B AJS 140 11.875" - PASSED

MHP 23018

Level: Ground Floor



1 Hanger (LF2511)  
2 Hanger (LF2511)  
2'7 1/16"  
2'7 1/16"



### Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

### Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	360	211	0	0
2	Vertical	361	209	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%	264 / 540	804	L	1.25D+1.5L
2 - Hanger	2.000"	Vert	50%	261 / 542	803	L	1.25D+1.5L

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	540 ft-lb	1'2 3/4"	5305 ft-lb	0.102 (10%)	1.25D+1.5L	L
Unbraced	540 ft-lb	1'2 3/4"	5305 ft-lb	0.102 (10%)	1.25D+1.5L	L
Shear	796 lb	1 1/4"	2350 lb	0.339 (34%)	1.25D+1.5L	L
Perm Defl in. (L/11185)	0.003	1'3 1/8"	0.079 (L/360)	0.032 (3%)	D	Uniform
LL Defl inch	0.004 (L/6544)	1'3 7/16"	0.059 (L/480)	0.073 (7%)	L	L
TL Defl inch	0.007 (L/4129)	1'3 5/16"	0.119 (L/240)	0.058 (6%)	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.
- 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 2-7-1	0-10-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 2-7-1		Top	4 PLF	0 PLF	0 PLF	0 PLF	
3	Point	0-9-9		Far Face	191 lb	315 lb	0 lb	0 lb	J4
4	Point	1-9-9		Far Face	184 lb	314 lb	0 lb	0 lb	J4

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### Notes

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

### Lumber

- 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 5/24/2024

### Manufacturer Info

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

### Kott Inc.

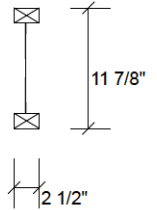
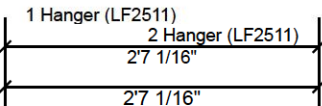
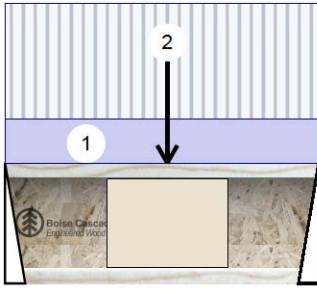
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613-838-2775 / 905-642-4400



F1-C AJS 140 11.875" - PASSED

MHP 23018

Level: Ground Floor



### Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

### Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	204	76	0	0
2	Vertical	216	81	0	0

### Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	Vert	25%	96 / 306	402	L	1.25D+1.5L
2 - Hanger	2.000"	Vert	27%	101 / 324	426	L	1.25D+1.5L

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	432 ft-lb	1'4 1/16"	5305 ft-lb	0.081 (8%)	1.25D+1.5L	L
Unbraced	432 ft-lb	1'4 1/16"	5305 ft-lb	0.081 (8%)	1.25D+1.5L	L
Shear	418 lb	2'5 13/16"	2350 lb	0.178 (18%)	1.25D+1.5L	L
Perm Defl in. (L/20191)	0.001	1'4 1/16"	0.079 (L/360)	0.018 (2%)	D	Uniform
LL Defl inch	0.004 (L/7558)	1'4 1/16"	0.059 (L/480)	0.064 (6%)	L	L
TL Defl inch	0.005 (L/5500)	1'4 1/16"	0.119 (L/240)	0.044 (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.
- 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 2-7-1	0-10-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	1-4-1		Near Face	122 lb	326 lb	0 lb	0 lb	J2

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### Notes

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### 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

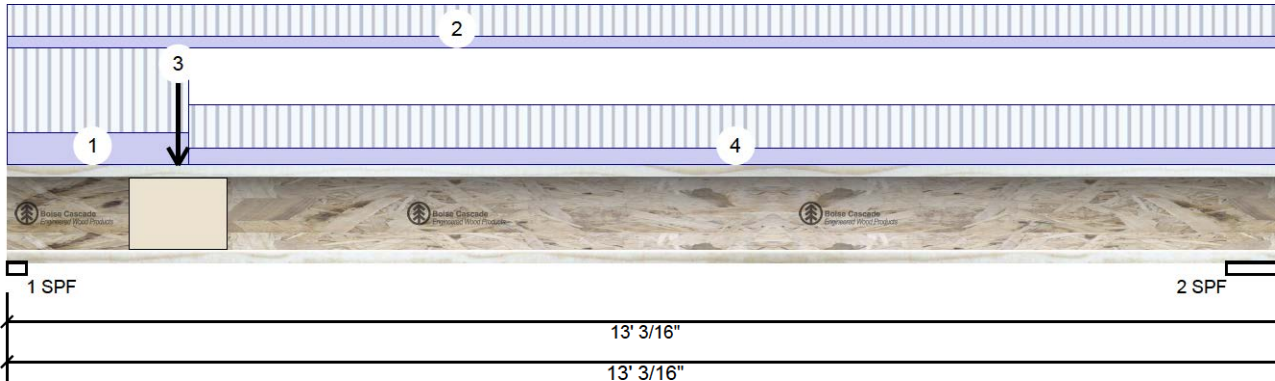
### Kott Inc.

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



This design is valid until 5/24/2024

F2-A AJS 140 11.875" 2-Ply - **PASS** Level Ground Floor



### Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

### Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	609	229	0	0
2	Vertical	394	148	0	0

### Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	Vert	36%	286 / 914	1200	L	1.25D+1.5L
2 - SPF	6.875"	Vert	20%	185 / 591	775	L	1.25D+1.5L

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2480 ft-lb	5'7 9/16"	10610 ft-lb	0.234 (23%)	1.25D+1.5L	L
Unbraced	2480 ft-lb	5'7 9/16"	10610 ft-lb	0.234 (23%)	1.25D+1.5L	L
Shear	1178 lb	1 5/8"	4700 lb	0.251 (25%)	1.25D+1.5L	L
Perm Defl in.	0.025 (L/5980)	6'1 1/8"	0.412 (L/360)	0.060 (6%)	D	Uniform
LL Defl inch	0.066 (L/2244)	6'1 1/8"	0.309 (L/480)	0.214 (21%)	L	
TL Defl inch	0.091 (L/1632)	6'1 1/8"	0.619 (L/240)	0.147 (15%)	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 If sheathing is not attached to the top flange, top flange must be laterally braced at maximum 2' o.c.
- 6 Bottom flange must be laterally braced at a maximum of 11'3 1/4" o.c.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-10-3	1-6-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 13-0-3	0-6-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	1-8-15		Far Face	96 lb	255 lb	0 lb	0 lb	F1
4	Tie-In	1-10-3 to 13-0-3	0-9-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	

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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. Lumber must not be treated with fire retardant or corrosive chemicals

### chemicals

### Handling & Installation

1. Lumber flanges must not be cut or drilled
2. Refer to latest copy of the Lumber product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Lumber 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

### Manufacturer Info

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

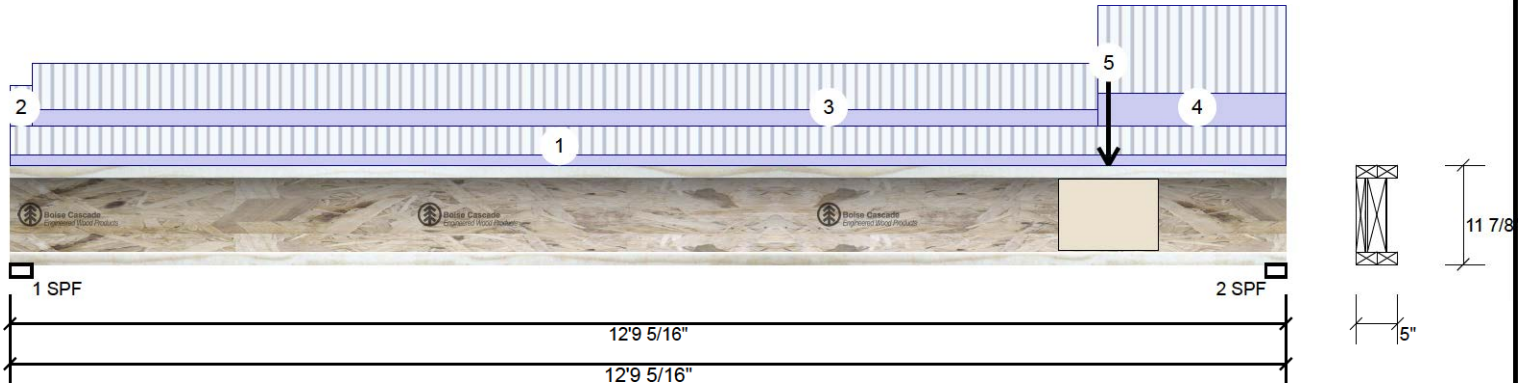
Kott Inc.  
 3228 Moodie Dr, Ottawa, Ontario  
 613-838-2775 / 905-642-4400



This design is valid until 5/24/2024



F2-B AJS 140 11.875" 2-Ply - PASSIVE MHP 23018 Level Ground Floor



### Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

### Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	348	130	0	0
2	Vertical	547	205	0	0

### Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.625"	Vert	20%	163 / 522	685	L	1.25D+1.5L
2 - SPF	2.375"	Vert	32%	256 / 821	1077	L	1.25D+1.5L

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2309 ft-lb	7' 1/16"	10610 ft-lb	0.218 (22%)	1.25D+1.5L	L
Unbraced	2309 ft-lb	7' 1/16"	10610 ft-lb	0.218 (22%)	1.25D+1.5L	L
Shear	1056 lb	12'7 11/16"	4700 lb	0.225 (22%)	1.25D+1.5L	L
Perm Defl in.	0.023 (L/6395)	6'7 1/4"	0.416 (L/360)	0.056 (6%)	D	Uniform
LL Defl inch	0.063 (L/2396)	6'7 1/4"	0.312 (L/480)	0.200 (20%)	L	
TL Defl inch	0.086 (L/1743)	6'7 1/4"	0.624 (L/240)	0.138 (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 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 If sheathing is not attached to the top flange, top flange must be laterally braced at maximum 2' o.c.
- 6 Bottom flange must be laterally braced at a maximum of 11' o.c.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 12-9-5	0-5-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-2-10	0-6-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	0-2-10 to 10-10-12	0-9-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Tie-In	10-10-12 to 12-9-5	1-6-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
5	Point	11-0-0		Near Face	76 lb	204 lb	0 lb	0 lb	F1

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### Notes

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### Lumber

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

### Handling & Installation

1. Lumber flanges must not be cut or drilled
2. Refer to latest copy of the Lumber product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Lumber 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

### Manufacturer Info

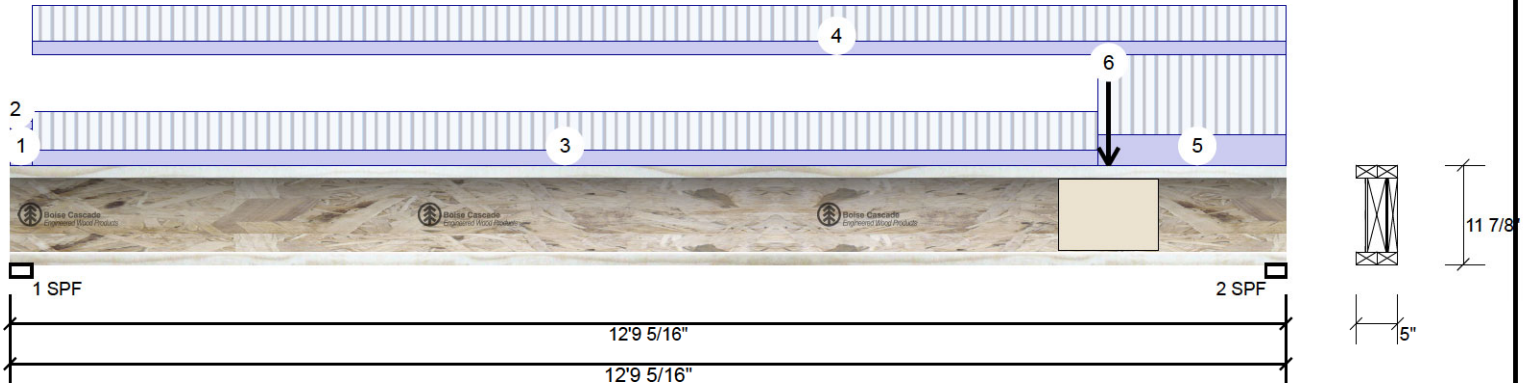
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Kott Inc.  
 3228 Moodie Dr, Ottawa, Ontario  
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This design is valid until 5/24/2024

F2-C AJS 140 11.875" 2-Ply - PASSIVE MHP 23018 Level Ground Floor



### Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

### Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	390	146	0	0
2	Vertical	603	226	0	0

### Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.625"	Vert	22%	183 / 585	768	L	1.25D+1.5L
2 - SPF	2.375"	Vert	35%	283 / 905	1188	L	1.25D+1.5L

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2587 ft-lb	6'11 5/8"	10610 ft-lb	0.244 (24%)	1.25D+1.5L	L
Unbraced	2587 ft-lb	6'11 5/8"	10610 ft-lb	0.244 (24%)	1.25D+1.5L	L
Shear	1165 lb	12'7 11/16"	4700 lb	0.248 (25%)	1.25D+1.5L	L
Perm Defl in.	0.026 (L/5706)	6'7 1/8"	0.416 (L/360)	0.063 (6%)	D	Uniform
LL Defl inch	0.070 (L/2140)	6'7 1/8"	0.312 (L/480)	0.224 (22%)	L	
TL Defl inch	0.096 (L/1556)	6'7 1/8"	0.624 (L/240)	0.154 (15%)	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 If sheathing is not attached to the top flange, top flange must be laterally braced at maximum 2' o.c.
- 6 Bottom flange must be laterally braced at a maximum of 11' o.c.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-2-10	0-6-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-2-10	0-4-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	0-2-10 to 10-10-12	0-8-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Tie-In	0-2-10 to 12-9-5	0-8-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
5	Tie-In	10-10-12 to 12-9-5	1-6-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
6	Point	11-0-0		Far Face	81 lb	216 lb	0 lb	0 lb	F1

### 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. Lumber must not 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

### 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



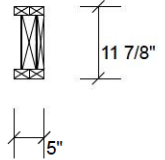
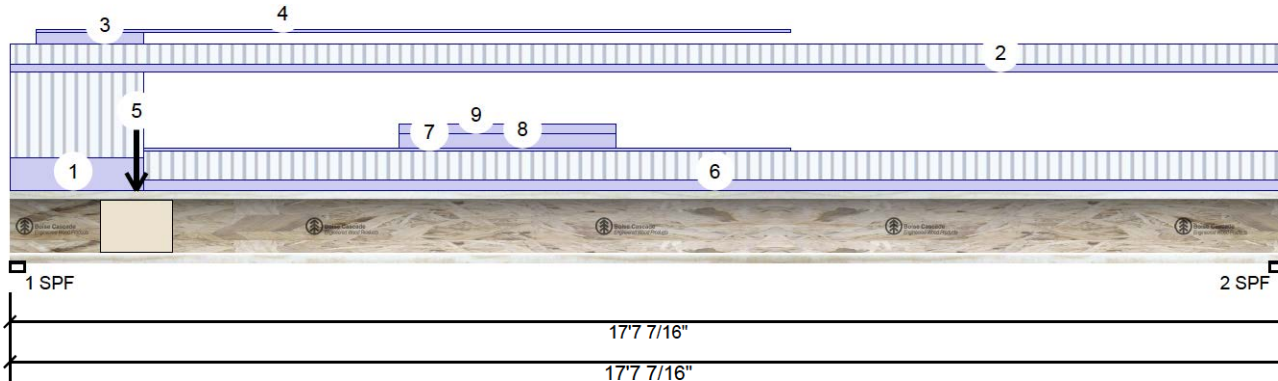
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F3-B AJS 140 11.875" 2-Ply - PASSIVE MHP 23018 Level Ground Floor



### Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

### Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	699	397	0	0
2	Vertical	338	167	0	0

### Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	Vert	46%	496 / 1048	1545	L	1.25D+1.5L
2 - SPF	2.625"	Vert	21%	209 / 507	716	L	1.25D+1.5L

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3658 ft-lb	7'5 7/8"	10610 ft-lb	0.345 (34%)	1.25D+1.5L	L
Unbraced	3658 ft-lb	7'5 7/8"	10610 ft-lb	0.345 (34%)	1.25D+1.5L	L
Shear	1525 lb	1 5/8"	4700 lb	0.324 (32%)	1.25D+1.5L	L
Perm Defl in.	0.091 (L/2289)	8'3 7/16"	0.578 (L/360)	0.157 (16%)	D	Uniform
LL Defl inch	0.156 (L/1330)	8'5 3/4"	0.433 (L/480)	0.361 (36%)	L	L
TL Defl inch	0.247 (L/841)	8'4 15/16"	0.866 (L/240)	0.285 (29%)	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 If sheathing is not attached to the top flange, top flange must be laterally braced at maximum 2' o.c.
- 6 Bottom flange must be laterally braced at a maximum of 15'10 7/16" o.c.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-10-3	1-6-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 17-7-7	0-4-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-4-6 to 1-10-3		Top	8 PLF	0 PLF	0 PLF	0 PLF	
4	Part. Uniform	0-4-6 to 10-9-7		Top	2 PLF	0 PLF	0 PLF	0 PLF	
5	Point	1-8-15		Far Face	209 lb	361 lb	0 lb	0 lb	F1

Continued on page 2...

### Notes

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

### Lumber

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

### chemicals

### Handling & Installation

1. Lumber must not be cut or drilled
2. Refer to latest copy of the Lumber product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Lumber 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 5/24/2024

### 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



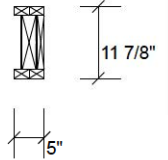
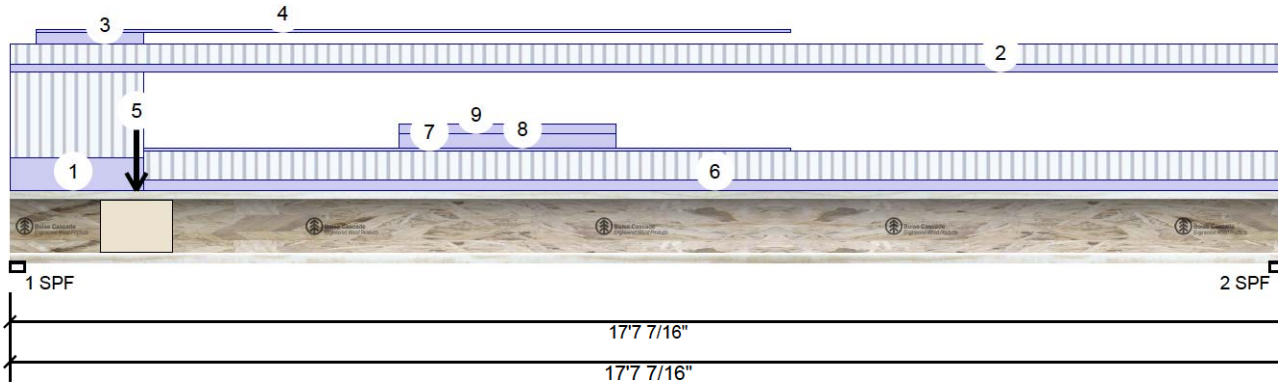


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GREENPARK  
OF PERMIT PLANS  
Project: Dec 06 2023  
Address: L 2  
RES: CHIEF BUILDING OFFICIAL

Date: 6/1/2022  
Input by: W C ME0722-058  
Job Name: PENROSE 1-EL 2  
Project #: ZADORRA ESTATES  
ME22-5722-13

Page 13 of 22

F3-B AJS 140 11.875" 2-Ply - PASSED MHP 23018 Level Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Tie-In	1-10-3 to 17-7-7	0-6-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
7	Part. Uniform	1-10-3 to 10-9-6		Top	2 PLF	0 PLF	0 PLF	0 PLF	
8	Part. Uniform	5-4-7 to 8-4-6		Top	10 PLF	0 PLF	0 PLF	0 PLF	
9	Part. Uniform	5-4-7 to 8-4-6		Top	7 PLF	0 PLF	0 PLF	0 PLF	

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#### Notes

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#### Lumber

1. Dry service conditions, unless noted otherwise
2. Lumber 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 5/24/2024

#### Manufacturer Info

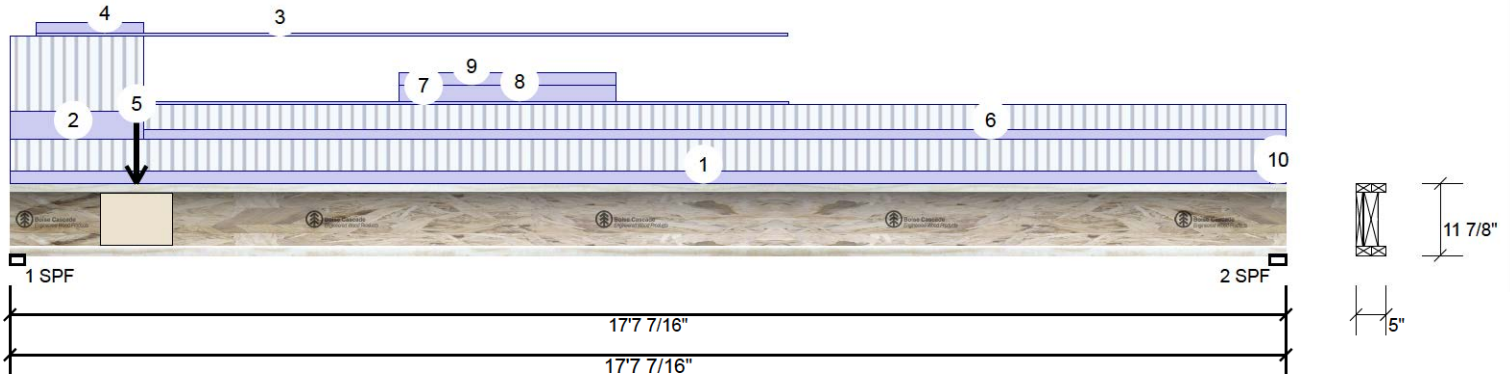
Boise Cascade Wood Products  
1111 W. Jefferson St.  
Boise, ID 83702  
(800) 232-0788  
www.bc.com  
CCMC: 12787

#### Kott Inc.

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



F3-C AJS 140 11.875" 2-Ply - PASSIVE MHP 23018 Level Ground Floor



## Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	800	461	0	0
2	Vertical	440	219	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	Vert	53%	576 / 1201	1777	L	1.25D+1.5L
2 - SPF	2.625"	Vert	27%	273 / 659	933	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4654 ft-lb	7'8 1/2"	10610 ft-lb	0.439 (44%)	1.25D+1.5L	L
Unbraced	4654 ft-lb	7'8 1/2"	10610 ft-lb	0.439 (44%)	1.25D+1.5L	L
Shear	1754 lb	1 5/8"	4700 lb	0.373 (37%)	1.25D+1.5L	L
Perm Defl in.	0.117 (L/1784)	8'4 1/8"	0.578 (L/360)	0.202 (20%)	D	Uniform
LL Defl inch	0.197 (L/1054)	8'6 5/8"	0.433 (L/480)	0.456 (46%)	L	
TL Defl inch	0.314 (L/662)	8'5 5/8"	0.866 (L/240)	0.362 (36%)	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 If sheathing is not attached to the top flange, top flange must be laterally braced at maximum 2' o.c.
- 6 Bottom flange must be laterally braced at a maximum of 15'10 7/16" o.c.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 17-4-13	0-7-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 1-10-3	1-6-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-4-6 to 10-8-15		Top	3 PLF	0 PLF	0 PLF	0 PLF	
4	Part. Uniform	0-4-6 to 1-10-3		Top	8 PLF	0 PLF	0 PLF	0 PLF	
5	Point	1-8-15		Near Face	211 lb	360 lb	0 lb	0 lb	F1

Continued on page 2...

## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

1. Lumber must not be cut or drilled
2. Refer to latest copy of the Lumber product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Lumber 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 5/24/2024

## 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





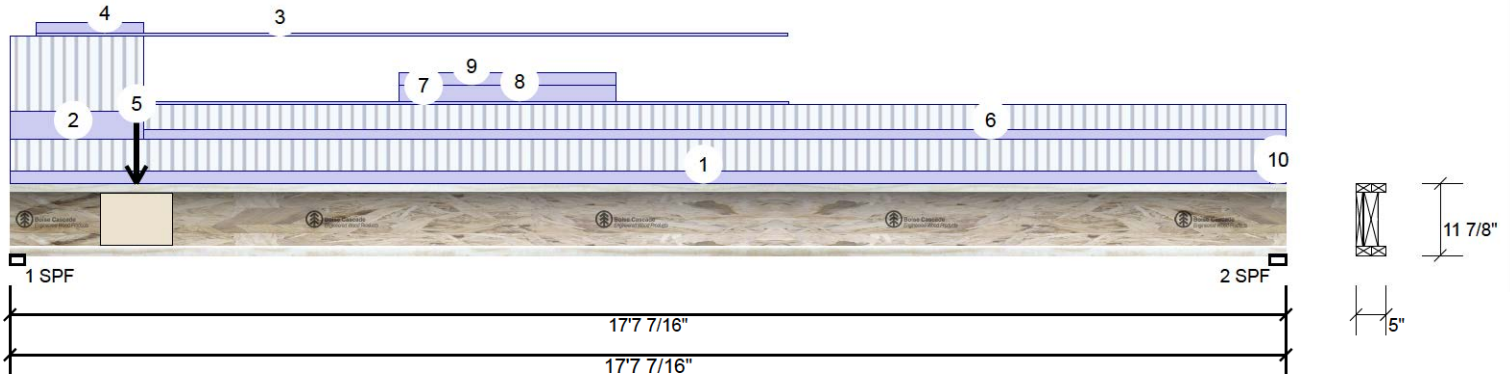


CORPORATION OF THE CITY OF OSHAWA  
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GREENPARK  
OF PERMIT PLANS  
Project: Dec 06 2023  
Address: L 2  
RES: CHIEF BUILDING OFFICIAL

Date: 6/1/2022  
Input by: W C ME0722-058  
Job Name: PENROSE 1-EL 2  
Project #: ZADORRA ESTATES  
ME22-5722-15

Page 15 of 22

F3-C AJS 140 11.875" 2-Ply - PASSED MHP 23018 Level Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Tie-In	1-10-3 to 17-7-7	0-6-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
7	Part. Uniform	1-10-3 to 10-9-0		Top	3 PLF	0 PLF	0 PLF	0 PLF	
8	Part. Uniform	5-4-7 to 8-4-6		Top	13 PLF	0 PLF	0 PLF	0 PLF	
9	Part. Uniform	5-4-7 to 8-4-6		Top	10 PLF	0 PLF	0 PLF	0 PLF	
10	Tie-In	17-4-13 to 17-7-7	0-5-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	

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#### Notes

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

#### Lumber

1. Dry service conditions, unless noted otherwise
2. Lumber 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 5/24/2024

#### Manufacturer Info

Boise Cascade Wood Products  
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Boise, ID 83702  
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CCMC: 12787

#### Kott Inc.

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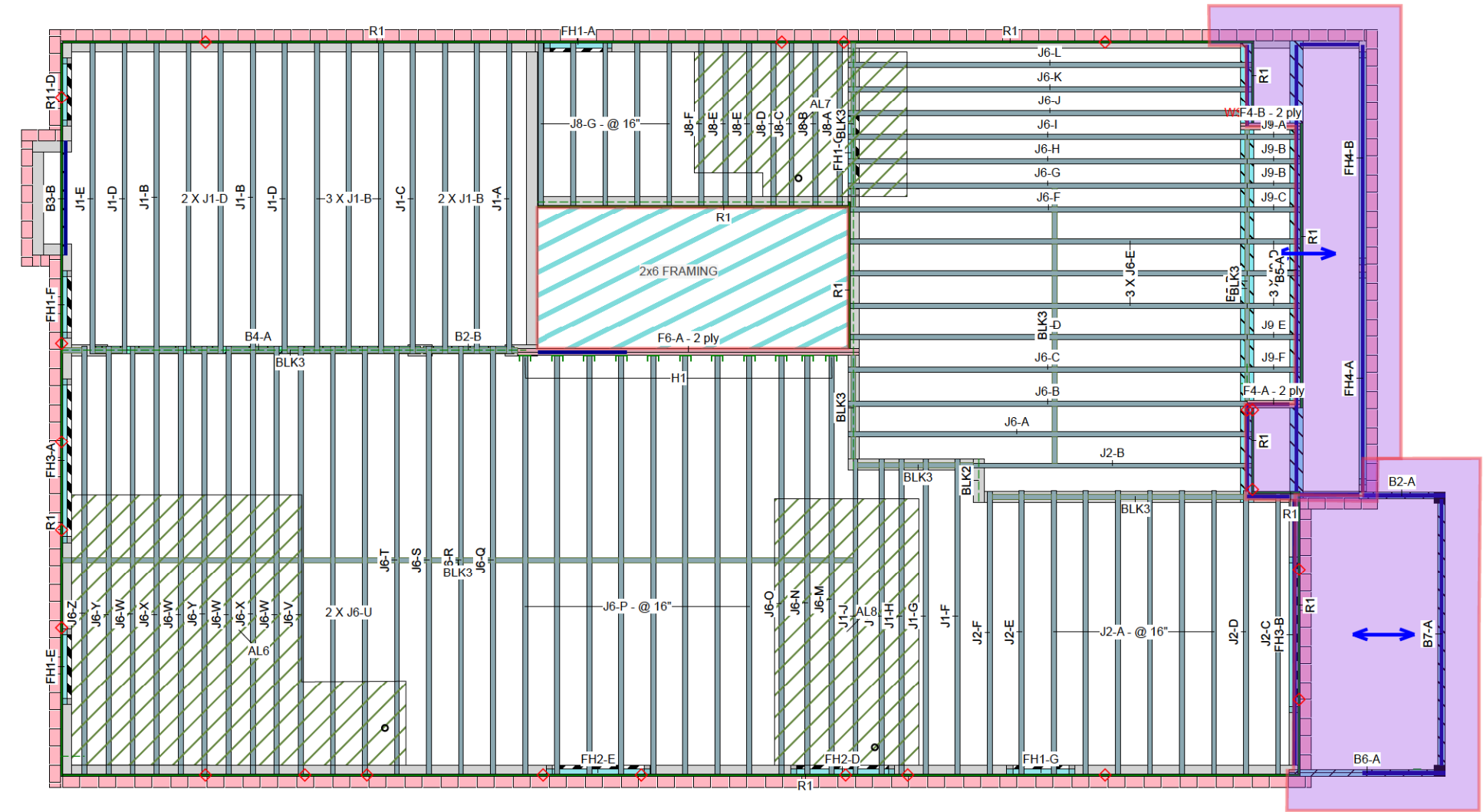
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Dec 06 2023

PER: 

CHIEF BUILDING OFFICIAL

MHP 23018



 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 (Flush)							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F6	Forex 2.0E-3000Fb LVL	1.75	11.875	1	2	2	16-0-0
F4	Forex 2.0E-3000Fb LVL	1.75	11.875	2	2	4	4-0-0
I Joist (Flush)							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
J6	AJS 140	2.5	11.875			41	18-0-0
J1	AJS 140	2.5	11.875			19	14-0-0
J2	AJS 140	2.5	11.875			11	12-0-0
J8	AJS 140	2.5	11.875			12	8-0-0
J9	AJS 140	2.5	11.875			9	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
BLK3	AJS 140	2.5	11.875	LinFt		Varies	84-0-0
Hanger							
				Beam/Girder		Supported Member	
Label	Pcs	Description	Skew	Slope	fasteners	fasteners	
H1	11	LF2511			12 10d	1 #8x1 1/4WS	

**JOB INFORMATION**

**Builder**  
GREENPARK

**Project**  
ZADORRA ESTATES

**Shipping**  
PENROSE 1- EL 2  
OSHAWA, ON

**Sales Rep**  
RALPH MIRIGELLO

**Designer**  
W C

**Plotted**  
June 01, 2022

**Layout Name**  
PENROSE 1-EL 2 & DECK CONDITION

**Job Path**

**DESIGN CRITERIA**

**Second Floor**

Design MethodLSD (Canada)

Building CodeNBCC 2015 / OBC 2012

**Floor Loads**

Live40

Dead15

**Deflection Joist**

LL Span L/480

TL Span L/240

**Deflection Flush Girder**

LL Span L/480

TL Span L/240

**Deflection Dropped Girder**

LL Span L/480

TL Span L/240

**Deflection Header**

LL Span L/480

TL Span L/240

**Decking**

DeckingOSB

Thickness5/8"

**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



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

**Legend**

WS

Web Stiffener

-ws


In Hanger Label Denotes Web Stiffener

PS


Point Load Support

◇


Load from Above




Wall




Wall Opening



Norbord Rimboard Plus 1.125 X 11.875



AJS 140 11.875

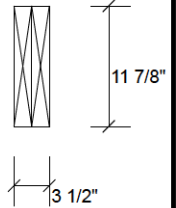
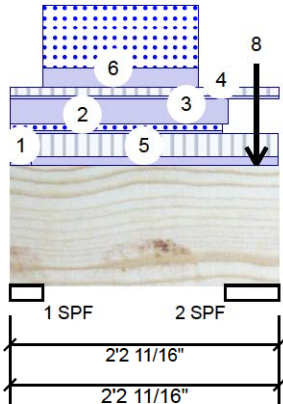


Forex 2.0E-3000Fb LVL 1.75 X 11.875



F4-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2 Ply - PASSED Level Second Floor

MIIP-23018



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	96	183	175	0
2	Vertical	122	247	193	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.256"	Vert	8%	229 / 358	587	L	1.25D+1.5S +L
2 - SPF	5.375"	Vert	6%	309 / 410	720	L	1.25D+1.5S +L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	223 ft-lb	1' 1/8"	34261 ft-lb	0.007 (1%)	1.25D+1.5S +L	L
Unbraced	223 ft-lb	1' 1/8"	34261 ft-lb	0.007 (1%)	1.25D+1.5S +L	L
Shear	164 lb	1' 3 1/8"	11596 lb	0.014 (1%)	1.25D+1.5S +L	L
Perm Defl in.	0.000 (L/92391)	1' 3/16"	0.054 (L/360)	0.004 (0%)	D	Uniform
LL Defl inch	0.000 (L/67298)	1' 1/8"	0.041 (L/480)	0.007 (1%)	S+0.5L	L
TL Defl inch	0.001 (L/38937)	1' 1/8"	0.081 (L/240)	0.006 (1%)	D+S+0.5L	L

TOP LOADED LAMINATE WITH:  
2 ROWS OF 3.25" AIR NAILS  
FACE SPACING AT 12 IN O/C.  
NAIL FROM ONE FACE

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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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

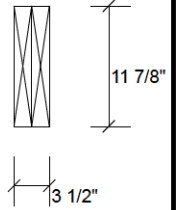
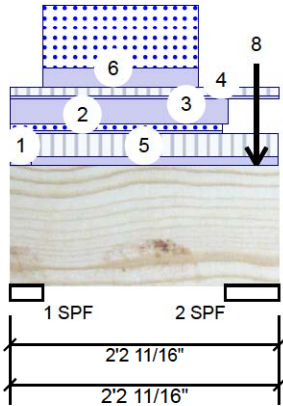
Kott Inc.  
3228 Moodie Dr, Ottawa, Ontario  
613-838-2775 / 905-642-4400



This design is valid until 5/24/2024

F4-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 24 Fly - PASSED Level Second Floor

MHP-23018



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-2-2	0-7-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 1-9-0		Top	10 PLF	0 PLF	23 PLF	0 PLF	
3	Part. Uniform	0-0-0 to 1-9-10		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
4	Tie-In	0-0-0 to 2-2-11	0-8-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
5	Tie-In	0-2-2 to 2-2-8	1-10-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
6	Part. Uniform	0-3-4 to 1-6-11		Top	62 PLF	0 PLF	208 PLF	0 PLF	
7	Point	2-0-6		Top	18 lb	0 lb	60 lb	0 lb	
	Bearing Length	0-5-8							
8	Point	2-0-6		Top	68 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
	Self Weight				10 PLF				

MODULUS ENGINEERING LTD.



SEE GENERAL NOTES  
DOC: ME-TC02 V 03-2017  
NOTE: ALTERING THIS DOCUMENT  
VOIDS THE ENGINEERS SEAL

**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.**

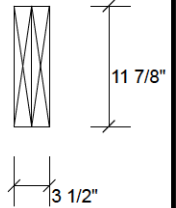
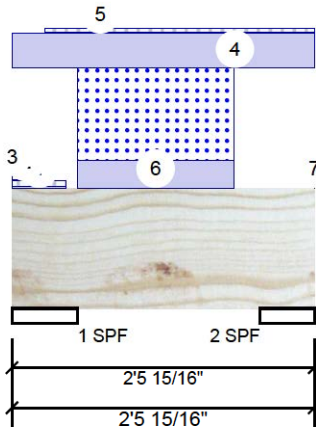
3228 Moodie Dr, Ottawa, Ontario  
613-838-2775 / 905-642-4400



This design is valid until 5/24/2024

F4-B Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2 Ply - PASSED Level Second Floor

MINIP 23018



### Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

### Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	16	167	153	0
2	Vertical	11	146	117	0

### Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	6.500"	Vert	3%	209 / 246	455	L	1.25D+1.5S +L
2 - SPF	5.375"	Vert	3%	182 / 186	368	L	1.25D+1.5S +L

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	163 ft-lb	1'3 5/16"	33575 ft-lb	0.005 (0%)	1.25D+1.5S +L	L
Unbraced	163 ft-lb	1'3 5/16"	33575 ft-lb	0.005 (0%)	1.25D+1.5S +L	L
Shear	120 lb	1'6 3/8"	11364 lb	0.011 (1%)	1.25D+1.5S +L	L
Perm Defl in.	0.000 (L/119899)	1'3 7/16"	0.054 (L/360)	0.003 (0%)	D	Uniform
LL Defl inch	0.000 (L/89952)	1'3 5/16"	0.041 (L/480)	0.005 (1%)	S+0.5L	L
TL Defl inch	0.000 (L/51398)	1'3 3/8"	0.081 (L/240)	0.005 (0%)	D+S+0.5L	L

**TOP LOADED LAMINATE WITH:**  
2 ROWS OF 3.25" AIR NAILS  
FACE SPACING AT 12 IN O/C.  
NAIL FROM ONE FACE

### 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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SEE GENERAL NOTES  
DOC: ME-TC02 V 03-2017  
NOTE: ALTERING THIS DOCUMENT  
VOIDS THE ENGINEERS SEAL

### 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

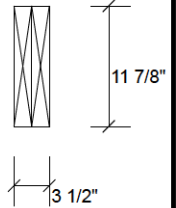
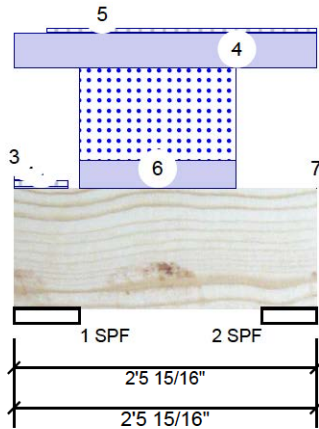


This design is valid until 5/24/2024



F4-B Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2-Ply - PASSED Level Second Floor

MIMP 23018



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-5-6	0-3-6	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-3-4	0-2-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-0-0 to 0-0-0		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
4	Part. Uniform	0-0-0 to 2-5-15		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
5	Tie-In	0-3-4 to 2-5-15	0-2-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
6	Part. Uniform	0-6-8 to 1-9-15		Top	62 PLF	0 PLF	210 PLF	0 PLF	
7	Part. Uniform	2-5-15 to 2-5-15		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
	Self Weight				10 PLF				

MODULUS ENGINEERING LTD.

SEE GENERAL NOTES  
DOC: ME-TC02 V 03-2017NOTE: ALTERING THIS DOCUMENT  
VOIDS THE ENGINEERS SEAL**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: Dec 06 2023  
Address: L 2  
REF: C. Motta  
CHIEF ENGINEER

Date: 6/1/2022

Page 21 of 22

Input by: W C

ME0722-058

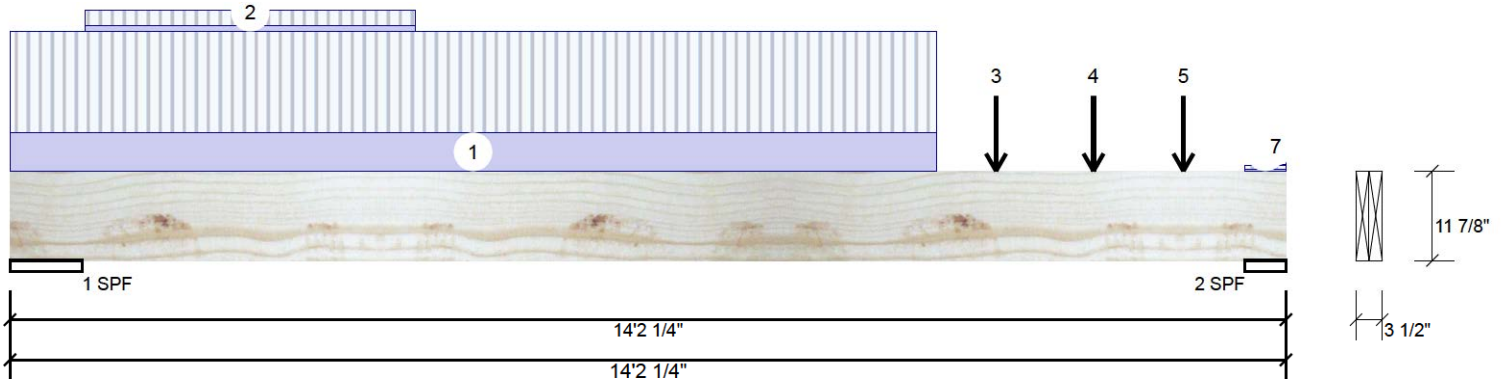
Job Name: PENROSE 1-EL 2

Project #: ZADORRA ESTATES

ME22-5722-21

F6-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 2 Ply - PASSED Level Second Floor

MHP-23018



## Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 / OBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	2745	1108	0	0
2	Vertical	2225	944	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	9.625"	Vert	27%	1385 / 4118	5503	L	1.25D+1.5L
2 - SPF	5.500"	Vert	38%	1180 / 3338	4517	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	15494 ft-lb	7'2"	34261 ft-lb	0.452 (45%)	1.25D+1.5L	L
Unbraced	15494 ft-lb	7'2"	34261 ft-lb	0.452 (45%)	1.25D+1.5L	L
Shear	5184 lb	12'8 7/8"	11596 lb	0.447 (45%)	1.25D+1.5L	L
Perm Defl in.	0.108 (L/1452)	7'3"	0.435 (L/360)	0.248 (25%)	D	Uniform
LL Defl inch	0.264 (L/593)	7'2 13/16"	0.326 (L/480)	0.809 (81%)	L	L
TL Defl inch	0.372 (L/421)	7'2 7/8"	0.653 (L/240)	0.570 (57%)	D+L	L

## LAMINATE WITH:

2 ROWS OF 3.25" AIR NAILS  
FACE SPACING AT 12 IN O/C.

NAIL FROM LOADED FACE

MIN HANGER NAILS: (JOIST/BREAM) 3 IN

## 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.

MODULUS ENGINEERING LTD.



SEE GENERAL NOTES  
DOC: ME-TC02 V 03-2017  
NOTE: ALTERING THIS DOCUMENT  
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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 10-3-9		Near Face	134 PLF	356 PLF	0 PLF	0 PLF	
2	Part. Uniform	0-10-0 to 4-6-1		Top	20 PLF	54 PLF	0 PLF	0 PLF	
3	Point	10-11-9		Near Face	171 lb	416 lb	0 lb	0 lb	J6
4	Point	12-0-9		Near Face	153 lb	359 lb	0 lb	0 lb	J6
5	Point	13-0-9		Near Face	135 lb	320 lb	0 lb	0 lb	J6

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

## chemicals

## Handling &amp; Installation

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

6. For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

Forex  
APA: PR-L318

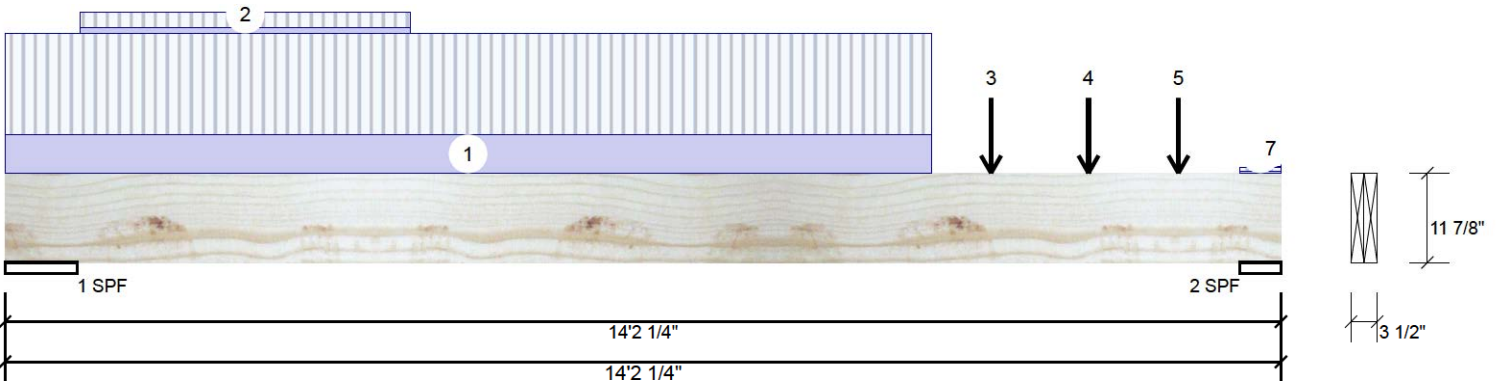
## Kott Inc.

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



This design is valid until 5/24/2024

F6-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 24 Fly - PASSED Level Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Tie-In	13-8-12 to 14-2-4	0-4-6	Top	15 PSF	40 PSF	0 PSF	0 PSF	
7	Tie-In	13-9-14 to 14-2-4	0-3-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				10 PLF				

MODULUS ENGINEERING LTD.

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chemicals

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