



Sealed Engineered Wood Product (EWP) Components:

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

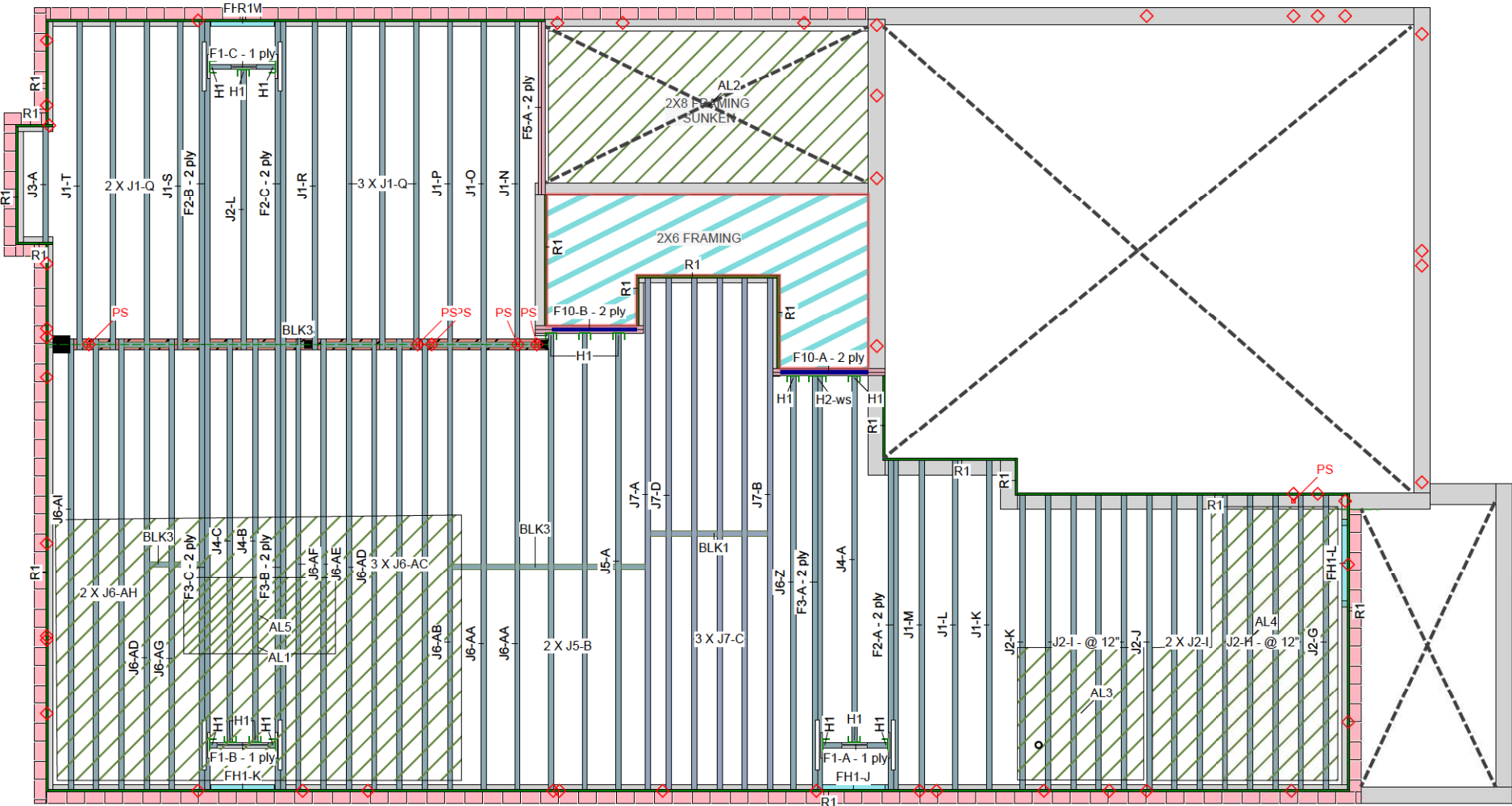
Modulus Engineering Ltd. (MEL) provides EWP component review among a variety of other engineering services to our clients. The scope of the work provided by EWP component review is governed by the arrangement between MEL and our client and not intended to extend or imply to extend beyond this scope.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








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

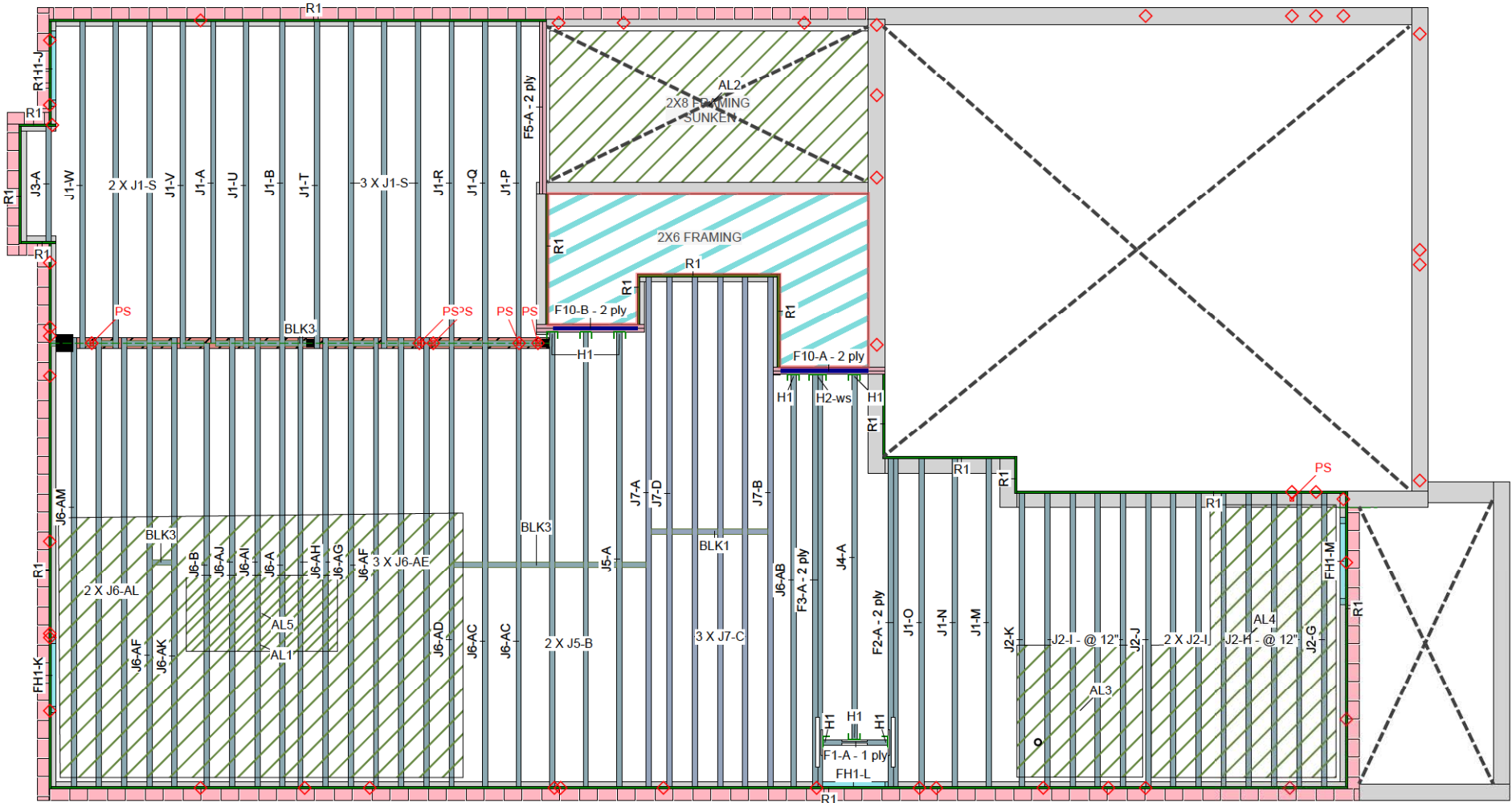
AJS140 I-Joists can be substituted with LP20 I-Joists for 9.5" and 11.875" depths shown on this layout.


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 3 OSHAWA, ON
Sales Rep	RALPH MIRIGELLO
Designer	W C
Plotted	June 02, 2022
Layout Name	PENROSE 1-EL 3
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	
	

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








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

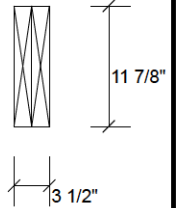
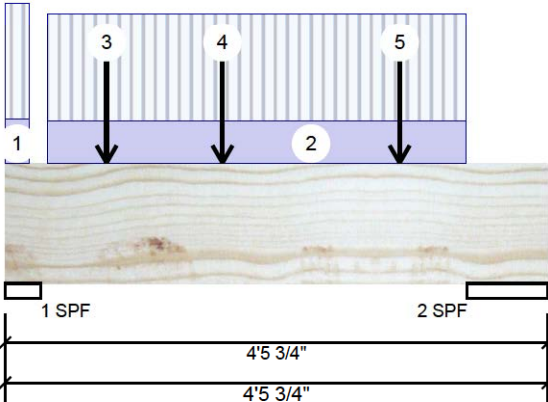
AJS140 I-Joists can be substituted with LP20 I-Joists for 9.5" and 11.875" depths shown on this layout.

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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

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/BAM] 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

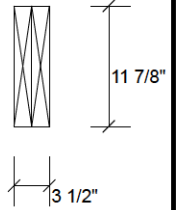
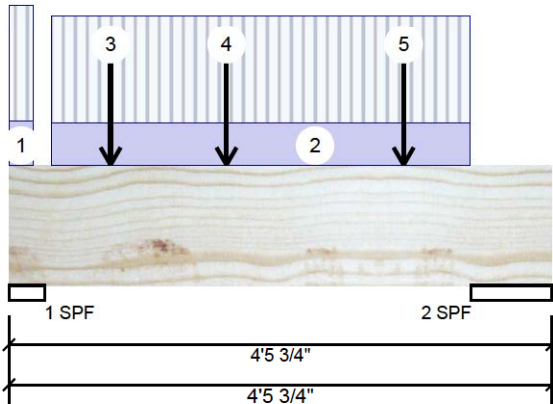
Forex
APA: PR-L318

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

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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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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

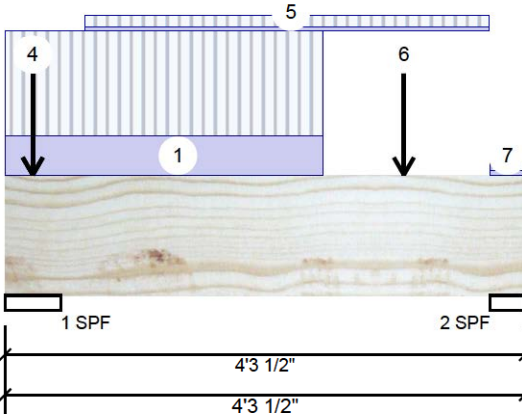
Forex
APA: PR-L318

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



This design is valid until 5/24/2024

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/BAM) 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

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Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

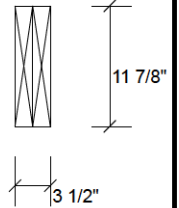
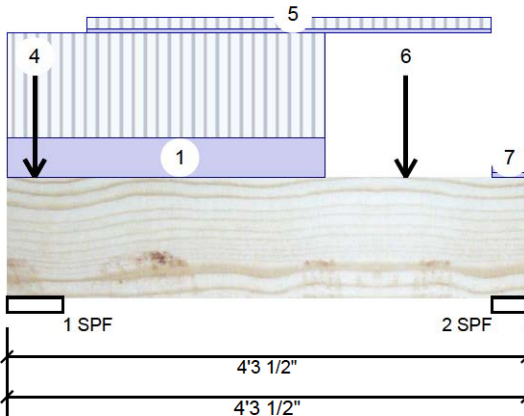
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F10-B Forex 2.0E-3000Fb LVL 1.750 X 11.875" 2-Ply - PASSED Level Ground Floor

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				

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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

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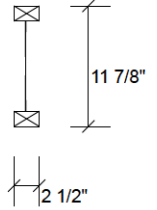
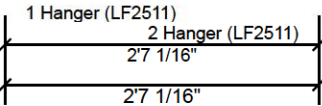
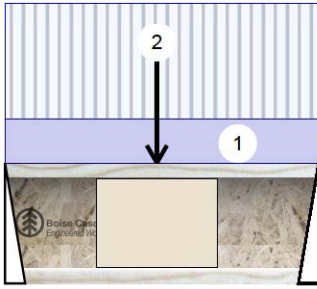


This design is valid until 5/24/2024

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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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

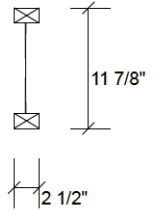
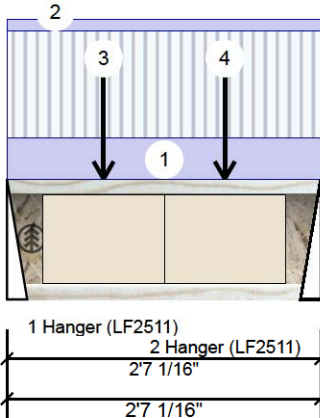


This design is valid until 5/24/2024

F1-B 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	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.

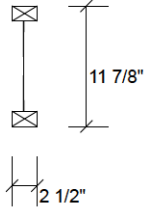
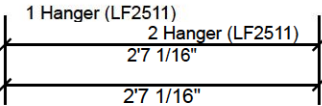
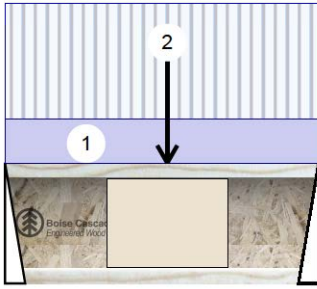
3228 Moodie Dr, Ottawa, Ontario
613-838-2775 / 905-642-4400



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

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

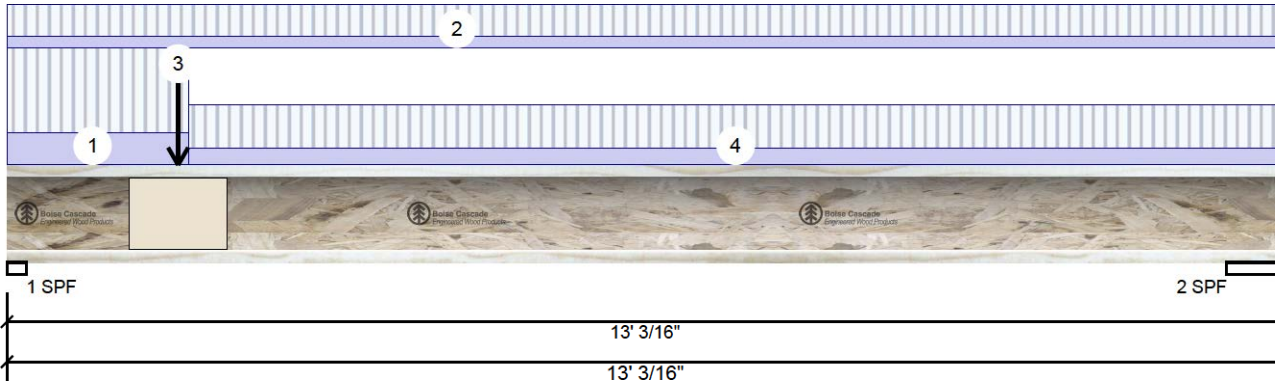
Boise Cascade Wood Products
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 (800) 232-0788
 www.bc.com
 CCMC: 12787

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** 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	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

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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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 1111 W. Jefferson St.
 Boise, ID 83702
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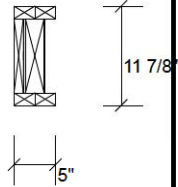
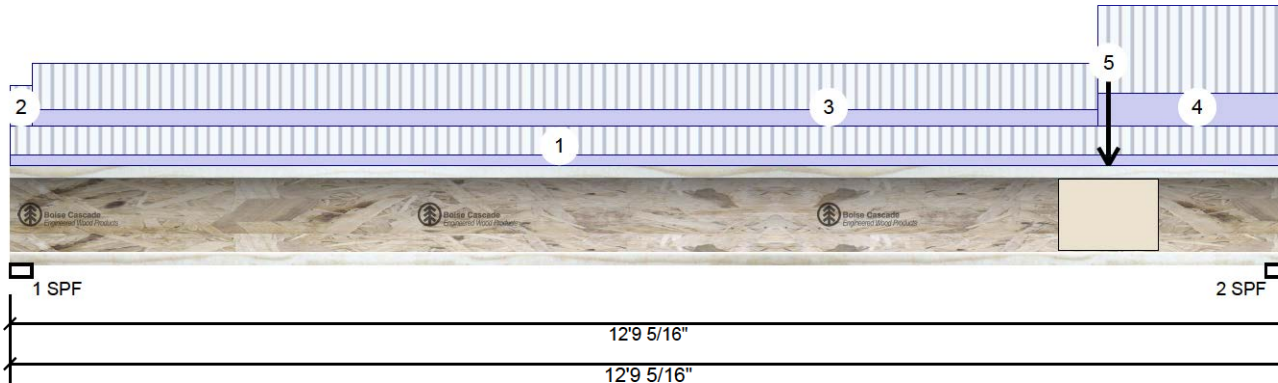
Kott Inc.
 3228 Moodie Dr, Ottawa, Ontario
 613-838-2775 / 905-642-4400



This design is valid until 5/24/2024

F2-B AJS 140 11.875" 2-Ply - **PASS** **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 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

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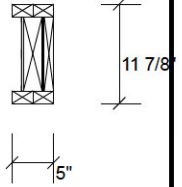
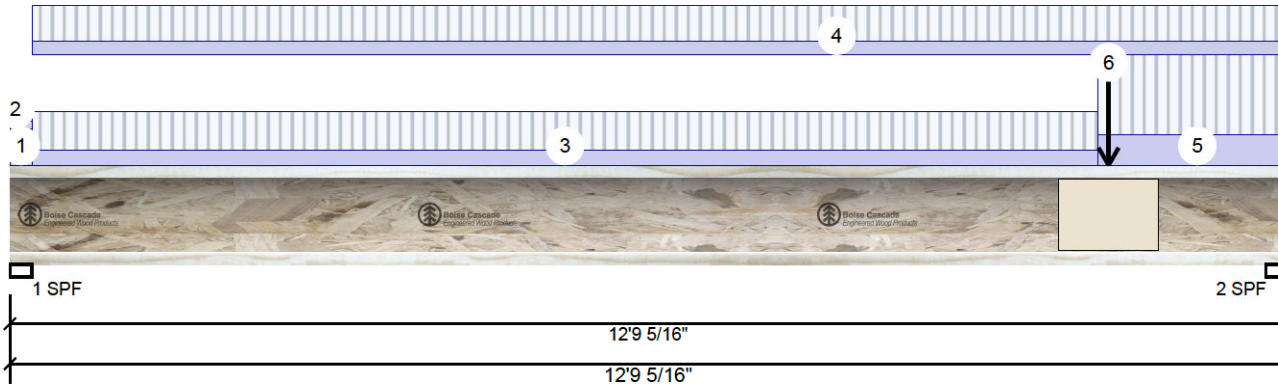
Kott Inc.
 3228 Moodie Dr, Ottawa, Ontario
 613-838-2775 / 905-642-4400



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

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Notes

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Lumber

1. Dry service conditions, unless noted otherwise
2. Lumber must not 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

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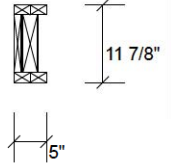
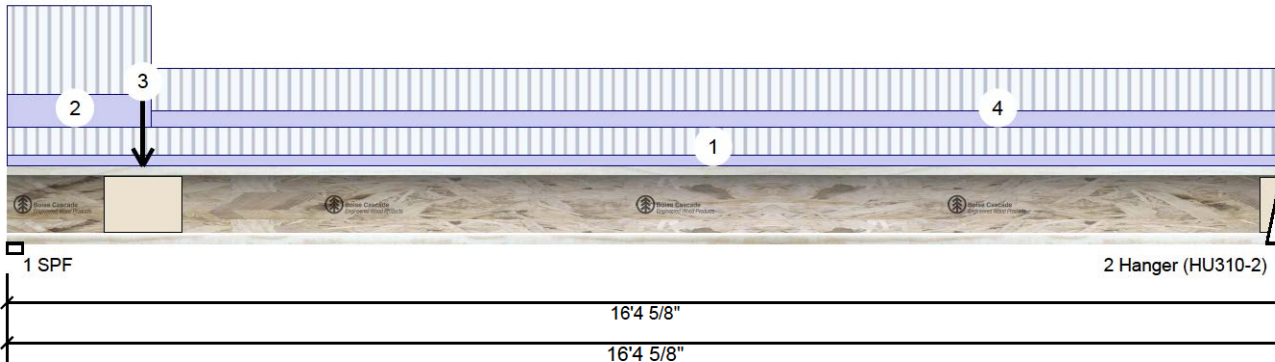


This design is valid until 5/24/2024

F3-A AJS 140 11.875" 2-Ply - PASSIVE MHP 23018

ME22-5724-11

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	693	260	0	0
2	Vertical	426	160	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	Vert	40%	325 / 1040	1364	L	1.25D+1.5L
2 - Hanger	2.500"	Vert	18%	200 / 639	839	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3576 ft-lb	7'6 7/8"	10610 ft-lb	0.337 (34%)	1.25D+1.5L	L
Unbraced	3576 ft-lb	7'6 7/8"	10610 ft-lb	0.337 (34%)	1.25D+1.5L	L
Shear	1343 lb	1 5/8"	4700 lb	0.286 (29%)	1.25D+1.5L	L
Perm Defl in.	0.057 (L/3386)	7'11 7/8"	0.537 (L/360)	0.106 (11%)	D	Uniform
LL Defl inch	0.152 (L/1269)	7'11 7/8"	0.403 (L/480)	0.378 (38%)	L	
TL Defl inch	0.209 (L/923)	7'11 7/8"	0.805 (L/240)	0.260 (26%)	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.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- 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 14'7 11/16" o.c.
- Web stiffeners required at Bearing 2.

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 16-4-10	0-5-12	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	Point	1-8-15		Near Face	101 lb	270 lb	0 lb	0 lb	F1
4	Tie-In	1-10-3 to 16-4-10	0-8-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	

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

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

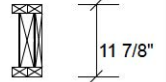
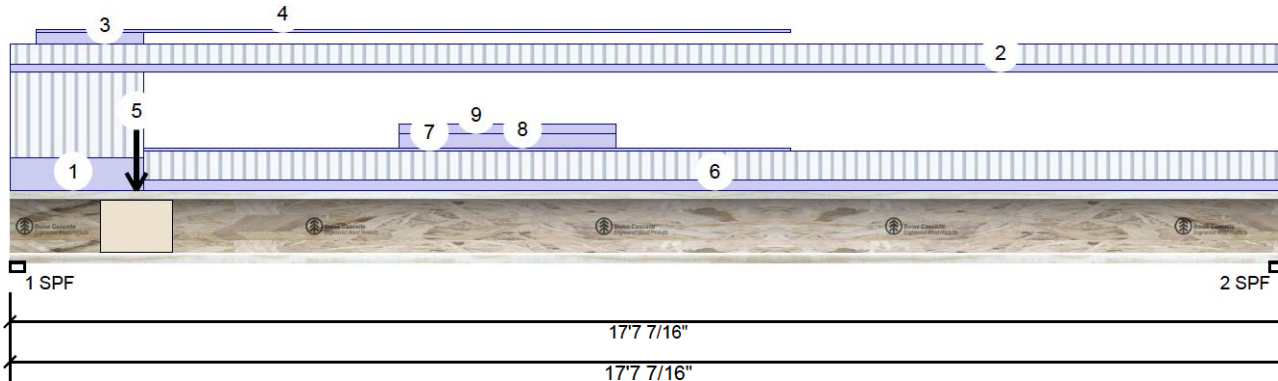
3228 Moodie Dr, Ottawa, Ontario
613-838-2775 / 905-642-4400



This design is valid until 5/24/2024

ME22-5724-12

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





CORPORATION OF THE CITY OF OSHAWA
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GREENPARK
OF PERMIT PLANS
Project: Dec 06 2023
Address: L 3
RES: CHIEF BUILDING OFFICIAL

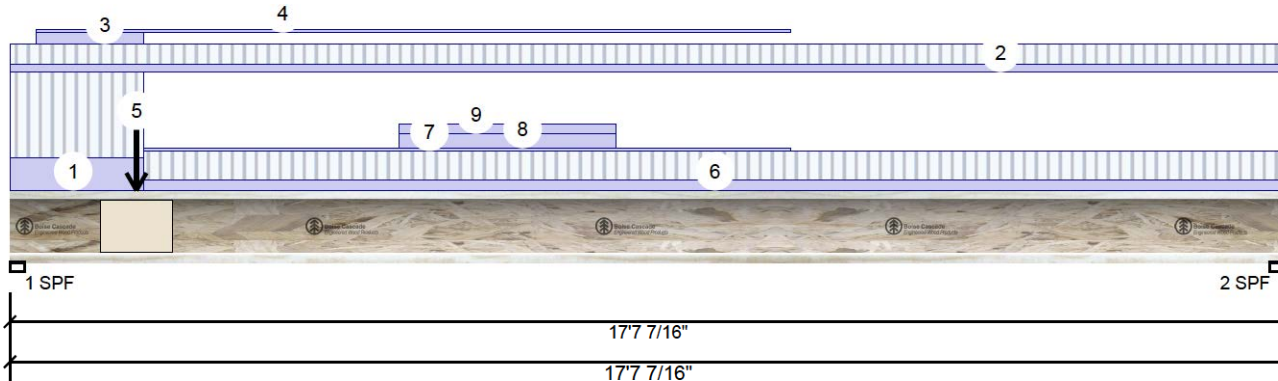
Date: 6/2/2022
Input by: W C ME0722-059
Job Name: PENROSE 1-EL 3
Project #: ZADORRA ESTATES

Page 13 of 21

ME22-5724-13

F3-B AJS 140 11.875" 2-Ply - PASSIVE 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

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

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

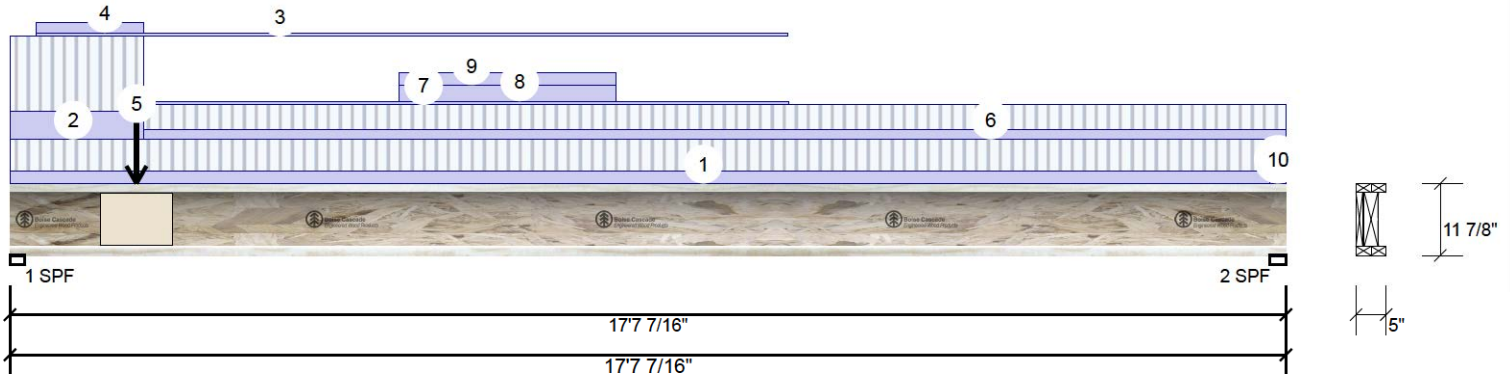
Boise Cascade Wood Products
1111 W. Jefferson St.
Boise, ID 83702
(800) 232-0788
www.bc.com
CCMC: 12787

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

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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 3
RES: CHIEF BUILDING OFFICIAL

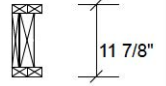
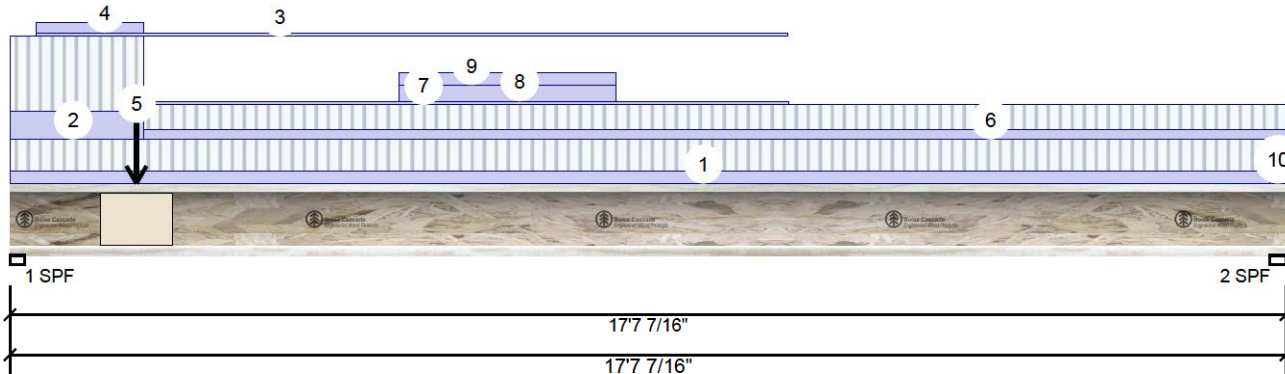
Date: 6/2/2022
Input by: W C ME0722-059
Job Name: PENROSE 1-EL 3
Project #: ZADORRA ESTATES

Page 15 of 21

ME22-5724-15

F3-C AJS 140 11.875" 2-Ply - PASSIVE 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

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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.

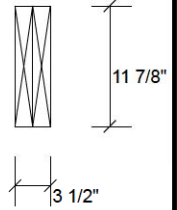
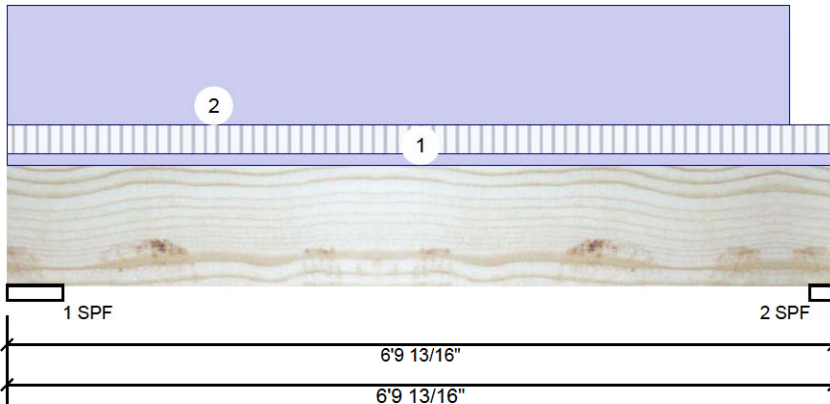
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613-838-2775 / 905-642-4400



ME22-5724-16

F5-A Forex 2.0E-3000Fb LVL 1.750" X 11.875" 24 Ply - PASSED Level Ground 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	68	342	0	0
2	Vertical	63	288	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	Vert	7%	428 / 102	530	L	1.25D+1.5L
2 - SPF	2.375"	Vert	13%	361 / 94	455	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	739 ft-lb	3'6 7/16"	22612 ft-lb	0.033 (3%)	1.25D+1.5L	L
Unbraced	739 ft-lb	3'6 7/16"	22612 ft-lb	0.033 (3%)	1.25D+1.5L	L
Shear	325 lb	5'7 9/16"	7653 lb	0.043 (4%)	1.25D+1.5L	L
Perm Defl in.	0.005 (L/15727)	3'6 7/16"	0.210 (L/360)	0.023 (2%)	D	Uniform
LL Defl inch	0.001 (L/79075)	3'6 1/2"	0.157 (L/480)	0.006 (1%)	L	L
TL Defl inch	0.006 (L/13118)	3'6 7/16"	0.314 (L/240)	0.018 (2%)	D+L	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.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 6-9-13	0-5-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 6-5-8		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
	Self Weight				10 PLF				

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Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

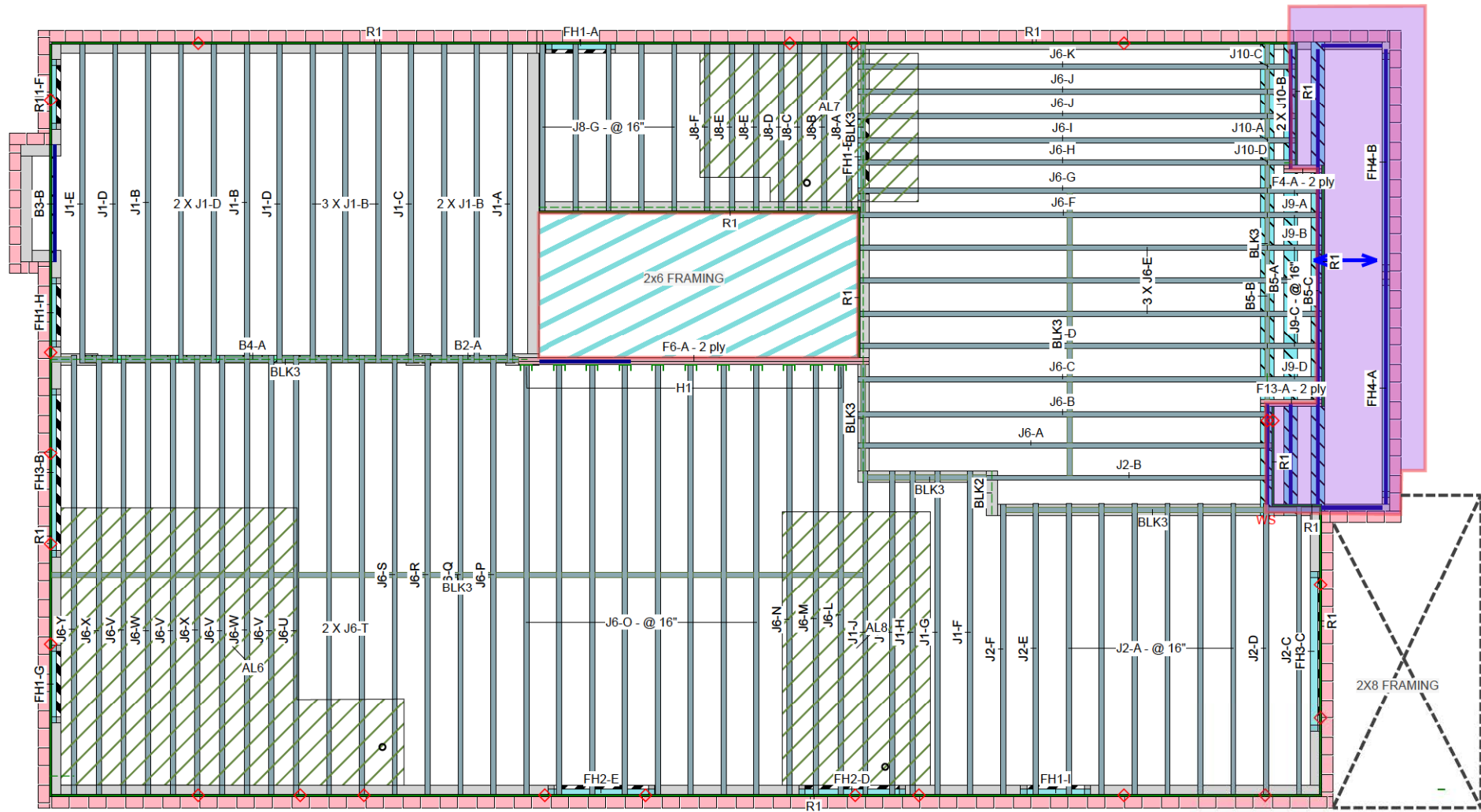
Kott Inc.

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



This design is valid until 5/24/2024

MHP 23018




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
F13	Forex 2.0E-3000Fb LVL	1.75	11.875	1	2	2	4-0-0
F4	Forex 2.0E-3000Fb LVL	1.75	11.875	1	2	2	2-0-0

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			7	4-0-0
J10	AJS 140	2.5	11.875			5	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			16	12-0-0






Blocking							
Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK3	AJS 140	2.5	11.875	LinFt		Varies	87-0-0


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 3 OSHAWA,ON	
Sales Rep RALPH MIRIGELLO	
Designer W C	
Plotted June 02, 2022	
Layout Name PENROSE 1-EL 3 & DECK CONDITION	
Job Path	
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/	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	5/8"
CCMC References	
Boise - 12472-R , 12787-R	
LP - 12412-R	
Forex - 14056-R	
Kott Inc. 3228 Moodie Dr, Ottawa 14 Anderson Blvd, Uxbridge Ontario 613-838-2775 / 905-642-4400	

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

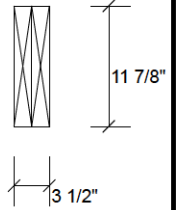
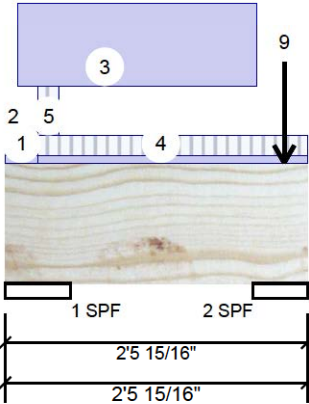
Legend

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

 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.

F13-A Forex 2.0E-3000Fb LVL 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:	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	33	120	0	0
2	Vertical	23	139	40	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	6.500"	Vert	2%	150 / 50	200	L	1.25D+1.5L
2 - SPF	5.375"	Vert	3%	174 / 83	257	L	1.25D+1.5S +L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	50 ft-lb	1'3 1/2"	22955 ft-lb	0.002 (0%)	1.25D+1.5L	L
Unbraced	50 ft-lb	1'3 1/2"	22955 ft-lb	0.002 (0%)	1.25D+1.5L	L
Shear	24 lb	1'6 3/8"	7769 lb	0.003 (0%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/187204)	1'3 9/16"	0.054 (L/360)	0.002 (0%)	D	Uniform
LL Defl inch	0.000 (L/945167)	1'3 9/16"	0.041 (L/480)	0.001 (0%)	L+0.5S	L
TL Defl inch	0.000 (L/156255)	1'3 9/16"	0.081 (L/240)	0.002 (0%)	D+L+0.5S	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.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-3-4	0-5-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-3-4	0-2-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-1-4 to 2-0-14		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
4	Tie-In	0-3-4 to 2-5-15	0-5-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	

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

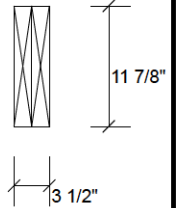
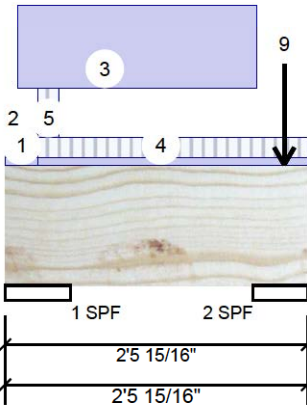
Manufacturer Info

Forex
APA: PR-L318

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



F13-A Forex 2.0E-3000Fb LVL 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
5	Tie-In	0-3-4 to 0-5-6	0-10-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
6	Point	2-3-10		Top	10 lb	0 lb	33 lb	0 lb	
	Bearing Length	0-5-8							
7	Point	2-3-10		Top	38 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
8	Point	2-3-10		Top	2 lb	0 lb	7 lb	0 lb	
	Bearing Length	0-5-8							
9	Point	2-3-10		Top	7 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
	Self Weight				10 PLF				

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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

CORPORATION OF THE CITY OF OSHAWA

TRUE COPY

GREENPARK

OF PERMIT PLANS

Dec 06 2023

CHIEF ENGINEER

Client: GREENPARK

Project: Dec 06 2023

Address: L 3

Date: 6/2/2022

Input by: W C ME0722-059

Job Name: PENROSE 1-EL 3

Project #: ZADORRA ESTATES

Page 20 of 21

ME22-5724-20

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

Level Second Floor

Member Information

Type: Girder

Plies: 2

Moisture Condition: Dry

Deflection LL: 480

Deflection TL: 240

Importance: Normal - II

General Load

Floor Live: 40 PSF

Dead: 15 PSF

Application: Floor (Residential)

Design Method: LSD

Building Code: NBCC 2015 / OBC 2012

Load Sharing: No

Deck: Not Checked

Vibration: Not Checked

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

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.

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

Continued on page 2...

Notes

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.

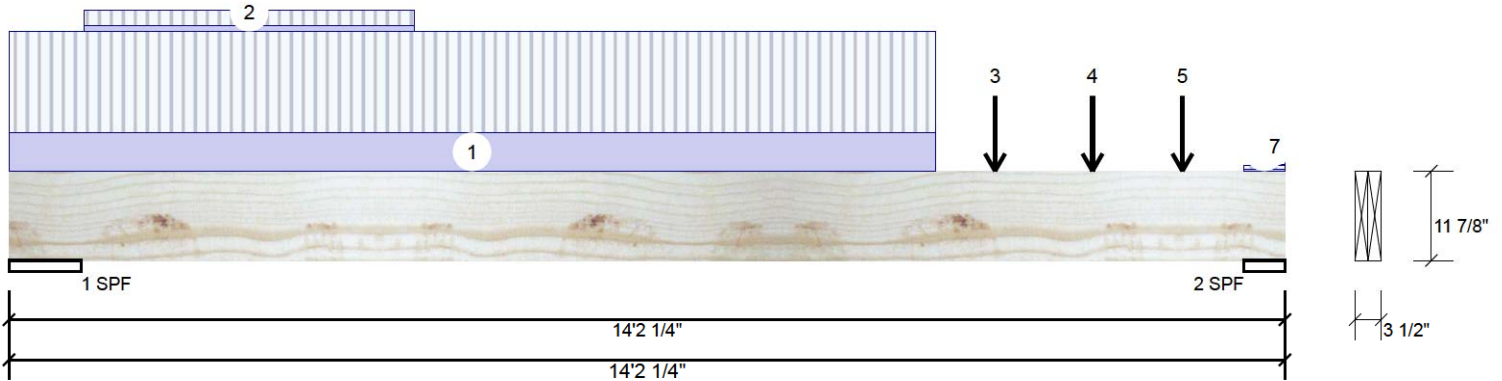
3228 Moodie Dr, Ottawa, Ontario

613-838-2775 / 905-642-4400

This design is valid until 5/24/2024

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

MHP 23018



...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.

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

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