

Engineering Note Page (ENP-2)GREENPARK-MINNISALE HOMES-
MODEL HEMLOCK 5C-1 & 5C-2

REVISION 2009-10-09

Please read all notes prior to installation of the component**DESIGN INFORMATION**

This building component is certified as an individual component for the loads and conditions shown on the calculation and drawing page.

The responsibility of the undersigned engineer is only limited to the calculation of this building component for the loads and conditions shown on this drawing.

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

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

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

Installation of NASCOR joists is to be carried out in accordance with the current edition of the manufacturer's approved literature available at <http://www.nascor.ca>.

CODE

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

COMPONENT

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

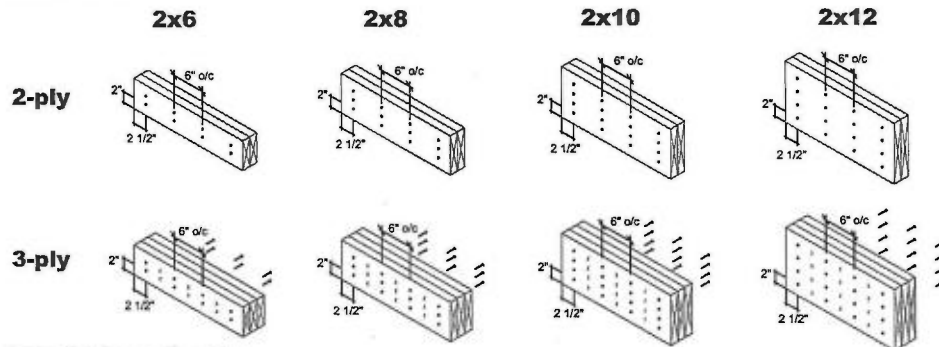
HANDLING AND INSTALLATION

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

MULTIPLE MEMBER CONNECTIONS

GREENPARK-MINNISALE HOMES-
MODEL HEMLOCK 5C-1 & 5C-2

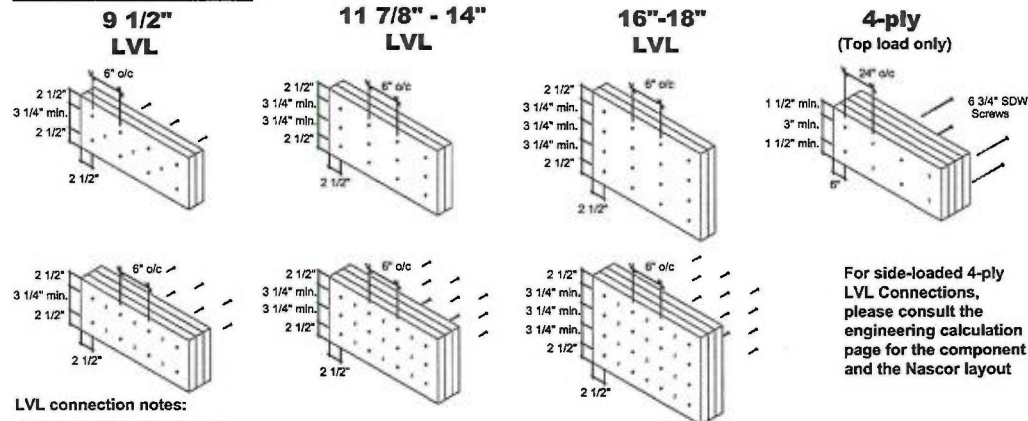
Conventional Connections (for uniform distributed loads)



Conventional connection notes:

- Nails to be 3" 10d spiral wire nails.
- Nails to be located a minimum of 2" from the top and bottom of the member. Start all nails a minimum of 2 1/2" in from ends.
- Number of rows and spacing as per details shown, unless noted otherwise.
- "X" represents nail driven from the opposite side.

LVL Connections (for uniform distributed loads)

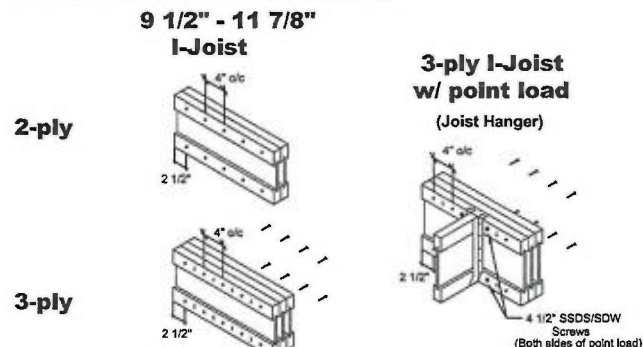


LVL connection notes:

- Nails to be 3 1/2" spiral wire nails.
- Nails to be located a minimum of 2 1/2" from the top and bottom of the member. Start all nails a minimum of 2 1/2" in from ends.
- Minimum 3 1/4" spacing between rows.
- Number of rows and spacing as per details shown, unless noted otherwise.
- "X" represents nail or screw driven from the opposite side.

For side-loaded 4-ply LVL Connections, please consult the engineering calculation page for the component and the Nascor layout

Vertical I-Joist Connections (for uniform distributed loads)



Vertical I-Joist connection notes:

- Nails to be 3" spiral wire nails.
- Nails to be located at centre of top and bottom flanges. Start all nails a minimum of 2 1/2" in from ends.
- Number of rows and spacing as per details shown, unless noted otherwise.
- "X" represents nail driven from the opposite side.

MULTI-PLY
CONNECTION
DETAILS

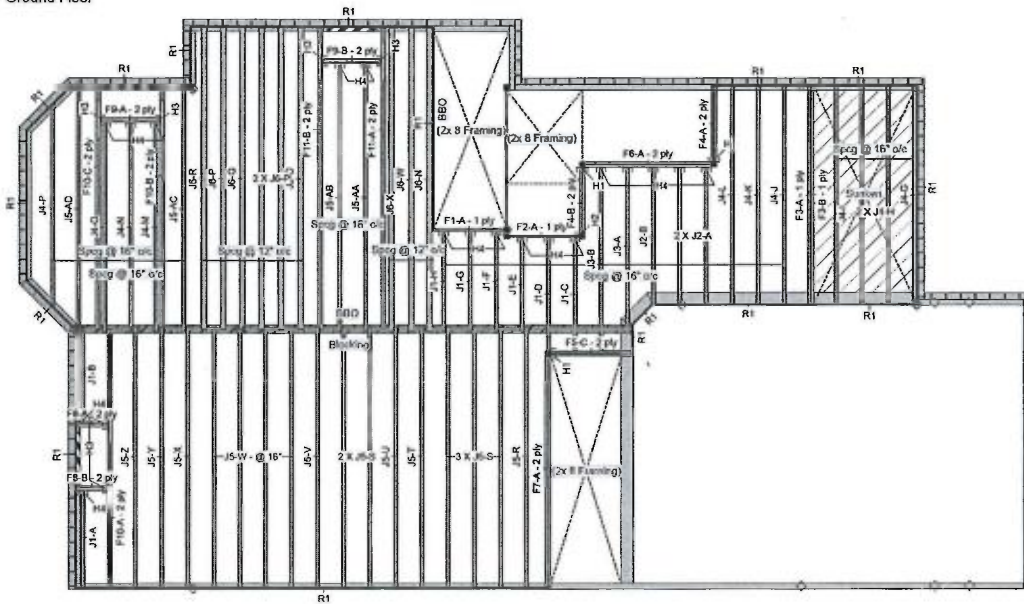
Date: November 30, 2016

Scale: NTS

KOTT

KOTT
3228 Moodie Drive
Ottawa, ON
K2H 7V1
Ph: 613-838-2775
Fx: 613-838-4751

Ground Floor



Legend

	Load from Above
	Wall
	Wall Opening
	Norbord Rimboard Plus 1.125 X 9.5
	NJ 9.5
	NJ60U 9.5
	NJH 9.5
	Forex 2.0E-3000Fb LVL 1.75 X 9.5

1. OBC 2012 O.Reg 332/12 as amended
2. Nascor CCMC - 13535-R
3. LVL CCMC - 14056-R
4. CAN/CSA-O86-09
5. CCMC - 12787-R/APA-L310(C)

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

THIS CERTIFICATION IS TO CONFIRM THAT:

1. THE LOADS USED IN THE CALCULATION OF THE ATTACHED APPROVED COMPONENTS CONFORM TO THE FLOOR ASSEMBLY SHOWN ON THIS LAYOUT.

2. THE FLOOR JOISTS COMPLY WITH THE NASCOR SPAN TABLE FOR THE LOADS AND SPACING SHOWN ON THIS LAYOUT.

THE FLOOR SYSTEM MUST BE ASSEMBLED IN ACCORDANCE TO THE NASCOR SPECIFIER GUIDE. MULTI-PLY MEMBERS MUST BE ATTACHED TOGETHER AS PER THE INCLUDED MULTIPLE MEMBER CONNECTION DETAIL.

ALL OTHER COMPONENTS AND STRUCTURAL ELEMENTS SUPPORTING THE FLOOR SYSTEM SUCH AS BEAMS, WALLS, COLUMNS AND FOUNDATION WALLS AND FOOTINGS INCLUDING ANCHORAGE OF COMPONENTS AND BRACING FOR LATERAL STABILITY ARE THE RESPONSIBILITY OF OTHERS.

Ground Floor

LVL/LSL (Flush)

Label	Description	Width	Depth	Qty	Pieces	Pcs	Length
F7	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	14-0-0
F3	Forex 2.0E-3000Fb LVL	1.75	9.5			2	12-0-0
F6	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	8-0-0
F5	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	8-0-0
F1	Forex 2.0E-3000Fb LVL	1.75	9.5			1	6-0-0
F4	Forex 2.0E-3000Fb LVL	1.75	9.5	2	2	4	4-0-0
F2	Forex 2.0E-3000Fb LVL	1.75	9.5			1	4-0-0

Joist (Flush)

Label	Description	Width	Depth	Qty	Pieces	Pcs	Length
F11	NJ	1.5	9.5	2	2	4	16-0-0
F10	NJ	1.5	9.5	2	2	4	14-0-0
F9	NJ	1.5	9.5	2	2	4	4-0-0
F8	NJ	1.5	9.5	2	2	4	2-0-0
J6	NJ60U	3.5	9.5			9	16-0-0
J5	NJH	2.5	9.5			20	14-0-0
J4	NJH	2.5	9.5			11	12-0-0
J3	NJH	2.5	9.5			2	10-0-0
J2	NJH	2.5	9.5			3	8-0-0
J1	NJH	2.5	9.5			6	6-0-0

Rim Board

Label	Description	Width	Depth	Qty	Pieces	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			11	12

Blocking

Label	Description	Width	Depth	Qty	Pieces	Pcs	Length
BLK1	NJH	2.5	9.5	LnFt		Varies	16-0-0

Hanger

Label	Pcs	Description	Skew	Slope	fasteners	fasteners
H1	3	HUC410 (Min)			14 16d	6 10d
H2	1	HUC01.81/3-SDS				
H3	6	LT2-159			4 10dx1 1/2	2 10dx1 1/2
H4	18	LT259			4 10dx1 1/2	2 10dx1 1/2

NOTES:

1. Framers to verify dimensions on the architectural drawings.
2. Double joist only require filler/backer ply when supporting another member using a face-mounted hanger.
3. Install 2x4 blocking @ 24" o/c under parallel non-load bearing walls.
4. Install single-ply flush window header along inside face of rimboard/rimjoist.
5. Refer to Nascor specifier guide for installation works.
6. Squash blocks recommended to be installed at end bearing on all first level joists which support loading from above exceeding two levels floor or roof.
7. Load transfer blocks to be installed under all point loads.
8. It shall be the framer's responsibility that floor joists and beams are fastened as per the hanger manufacturer's standards.

Refer to Multiple Member Connection Detail to ply to ply nailing or bolting requirements.

Rim parallel to joists: 1-1/8" rimboard with 2"x4" block (1/16" longer than rim depth @ 16" o/c). All other components and structural elements supporting the floor system such as beams, walls, columns, and foundation walls and footings including anchorage of components and bracing for lateral stability are the responsibility of Others.

Hatch area represents ceramic tiled floor with an additional dead load of 5 PSF

The framing shown on this layout may deviate from the architectural and structural drawings. Project Engineer to review and approve the deviation prior to construction.

ARCHITECTURAL DRAWINGS.

REGION DESIGN INC.
8700 Dufferin St., Concord, ON
Date: May 2018
Project No:
Model: Hemlock 5-5C

NASCOR

Layout Name
HEMLOCK 5C-1 & 5C-2
Design Method
LSD
Revised
August 14, 2018
Description
MINNISALE HOMES
BRAMPTON, ONT.
Builder
GREENPARK
Sales Rep
RM
Designer
RCO
Shipping
Project
Builder's Project
Kott Lumber Company
14 Anderson Blvd
Stouffville, Ontario
Canada
L4A 7X4
905-842-4400

Job Path
S:\CUSTOMERS\GREENPARK
MINNISALE HOMES\MODELS
HEMLOCK 5C\HEMLOCK 5C-1
FLOOR\REV\HEMLOCK 5C-1.lsl

Ground Floor

Design Method
Building Code
NBS 2010 / OBC
2012

Floor

Loads
Live
Dead
Deflection Joist
LL Span /
TL Span /
LL Cant 2L/
TL Cant 2L/
Deflection Girder
LL Span /
TL Span /
LL Cant 2L/
TL Cant 2L/
Decking
Deck
Thickness
Fastener
Vibration
SPF Plywood
3/4"
Nailed & Glued

KOTT



isDesign™

Client: GREENPARK

Project:

Address:

Date: 8/14/2018

Designer: RCO

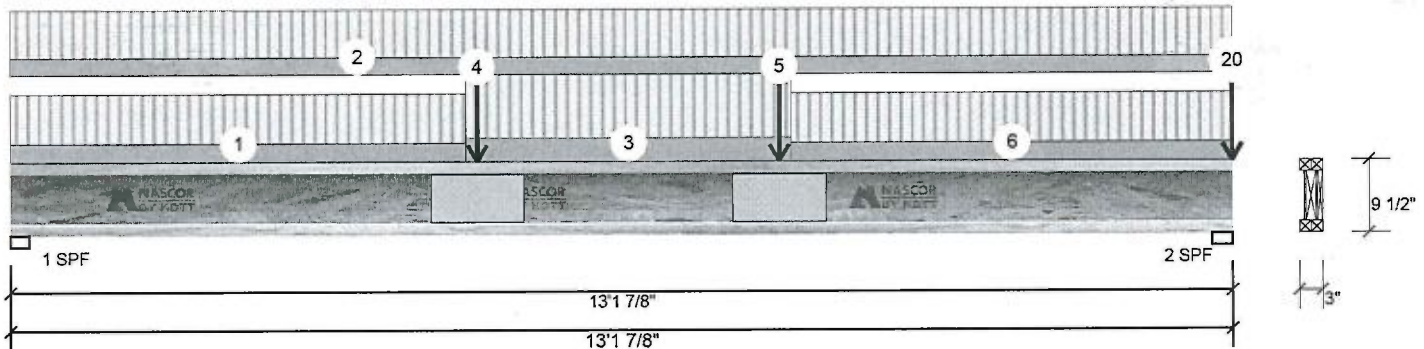
Job Name: HEMLOCK 5C-1

Project #:

Page 1 of 2

F10-A NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Ply:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	424	190	14	0
2	725	364	14	0

Bearings and Factored Reactions

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	33%	237 / 643	881	L	1.25D+1.5L +0.5S
2 - SPF	2.625"	56%	455 / 1094	1549	L	1.25D+1.5L +0.5S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3121 ft-lb	6'6 9/16"	7340 ft-lb	0.425 (43%)	1.25D+1.5L +0.5S	L
Unbraced	3121 ft-lb	6'6 9/16"	3130 ft-lb	0.997 (100%)	1.25D+1.5L +0.5S	L
Shear	871 lb	13'	3080 lb	0.283 (28%)	1.25D+1.5L +0.5S	L
Perm Defl in.	0.081 (L/1904)	6'6 13/16"	0.429 (L/360)	0.190 (19%)	D	Uniform
LL Defl inch	0.175 (L/883)	6'6 13/16"	0.429 (L/360)	0.410 (41%)	L+0.5S	L
TL Defl inch	0.256 (L/603)	6'6 13/16"	0.643 (L/240)	0.400 (40%)	D+L+0.5S	L

Design Notes

- 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.
- Top flange must be laterally braced at a maximum of 3'9" o.c.
- Bottom flange braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0 to 4-10-14	(Span)1-4-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0 to 13-1-14	(Span)1-3-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	4-10-14 to 8-4-14	(Span)1-8-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Point	5-0-6		Far Face	55 lb	62 lb	14 lb	0 lb	F8
5	Point	8-3-6		Far Face	53 lb	62 lb	14 lb	0 lb	F8
6	Tie-In	8-4-14 to 13-1-14	(Span)1-4-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	

Continued on page 2...

Notes

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

Lumber

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

chemicals

Handling & Installation

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

Nascor by Kott

Kott Lumber Company
14 Anderson Blvd, Ontario
Canada
L4A 7X4
905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





isDesign™

Client: GREENPARK

Project:

Address:

Date: 8/14/2018

Designer: RCO

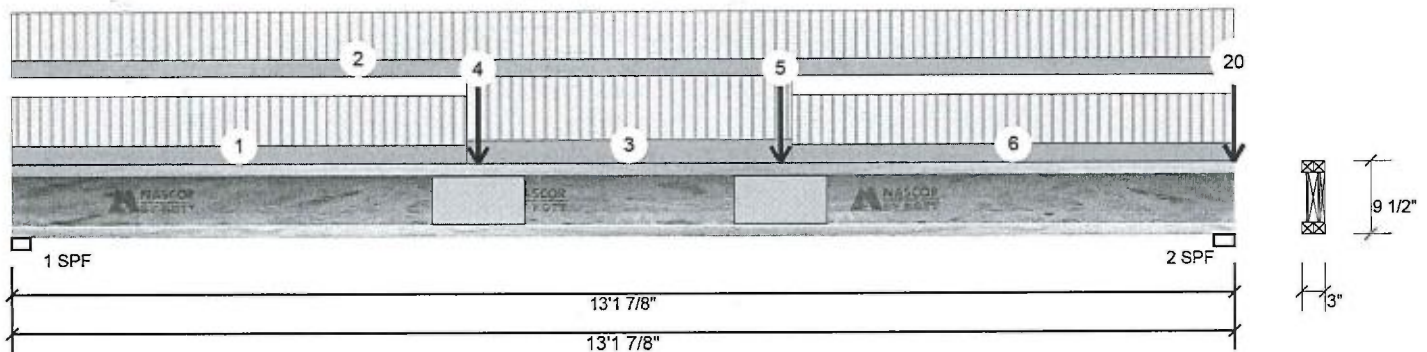
Job Name: HEMLOCK 5C-1

Project #:

Page 2 of 2

F10-A NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
7	Point	13-1-14		Top	7 lb	14 lb	0 lb	0 lb	J5
8	Point	13-1-14		Top	1 lb	2 lb	0 lb	0 lb	J5
9	Point	13-1-14		Top	7 lb	20 lb	0 lb	0 lb	J5
10	Point	13-1-14		Top	6 lb	0 lb	0 lb	0 lb	Wall Self Weight
11	Point	13-1-14		Top	36 lb	77 lb	0 lb	0 lb	J5
12	Point	13-1-14		Top	13 lb	28 lb	0 lb	0 lb	J5
13	Point	13-1-14		Top	41 lb	109 lb	0 lb	0 lb	J5
14	Point	13-1-14		Top	33 lb	0 lb	0 lb	0 lb	Wall Self Weight
15	Point	13-1-14		Top	5 lb	10 lb	0 lb	0 lb	J5
16	Point	13-1-14		Top	6 lb	15 lb	0 lb	0 lb	J5
17	Point	13-1-14		Top	5 lb	0 lb	0 lb	0 lb	Wall Self Weight
18	Point	13-1-14		Top	4 lb	9 lb	0 lb	0 lb	J5
19	Point	13-1-14		Top	5 lb	13 lb	0 lb	0 lb	J5
20	Point	13-1-14		Top	4 lb	0 lb	0 lb	0 lb	Wall Self Weight

REFER TO MULTIPLE MEMBER TO MEMBER
CONNECTION DETAIL FOR PLY TO PLY
NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH
BLOCK IS REQUIRED AT ALL
POINT LOADS OVER BEARINGS.

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. Ljoist not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

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

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

Manufacturer Info

Nascor by Kott

Kott Lumber Company
14 Anderson Blvd, Ontario
Canada
L4A 7X4
905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





isDesign™

Client: GREENPARK

Project:

Address:

Date: 8/14/2018

Designer: RCO

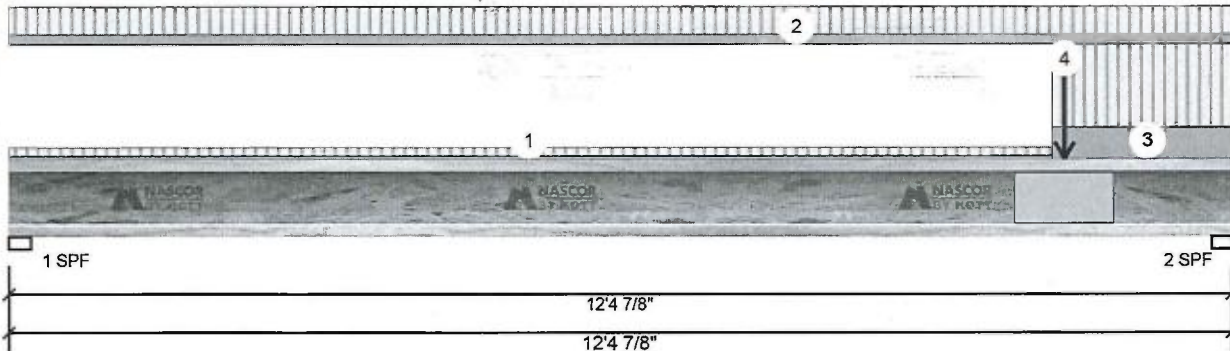
Job Name: HEMLOCK 5C-1

Project #:

Page 1 of 1

F10-B NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	229	86	0	0
2	589	221	0	0

Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.625"	16%	108 / 344	452	L	1.25D+1.5L
2 - SPF	2.375"	43%	276 / 883	1159	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1758 ft-lb	8'1 1/8"	7340 ft-lb	0.239 (24%)	1.25D+1.5L	L
Unbraced	1758 ft-lb	8'1 1/8"	1770 ft-lb	0.993 (99%)	1.25D+1.5L	L
Shear	1136 lb	12'3 1/4"	3080 lb	0.369 (37%)	1.25D+1.5L	L
Perm Defl in.	0.035 (L/4109)	6'7 7/8"	0.404 (L/360)	0.090 (9%)	D	Uniform
LL Defl inch	0.094 (L/1541)	6'7 7/8"	0.404 (L/360)	0.230 (23%)	L	L
TL Defl inch	0.130 (L/1121)	6'7 7/8"	0.606 (L/240)	0.210 (21%)	D+L	L

Design Notes

- 1 Girders are designed to be supported on the bottom edge only.
- 2 Multiple plies must be fastened together as per manufacturer's details.
- 3 Top loads must be supported equally by all plies.
- 4 Top flange must be laterally braced at a maximum of 4'11" o.c.
- 5 Bottom flange braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 10-7-0	(Span)0-3-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 12-4-14	(Span)1-1-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	10-7-0 to 12-4-14	(Span)3-3-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Point	10-8-8		Far Face	135 lb	360 lb	0 lb	0 lb	F9

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

chemicals

Handling & Installation

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

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

Manufacturer Info

Nascor by Kott

Kott Lumber Company
14 Anderson Blvd, Ontario
Canada
L4A 7X4
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KOTT NASCOR

This design is valid until 7/10/2021





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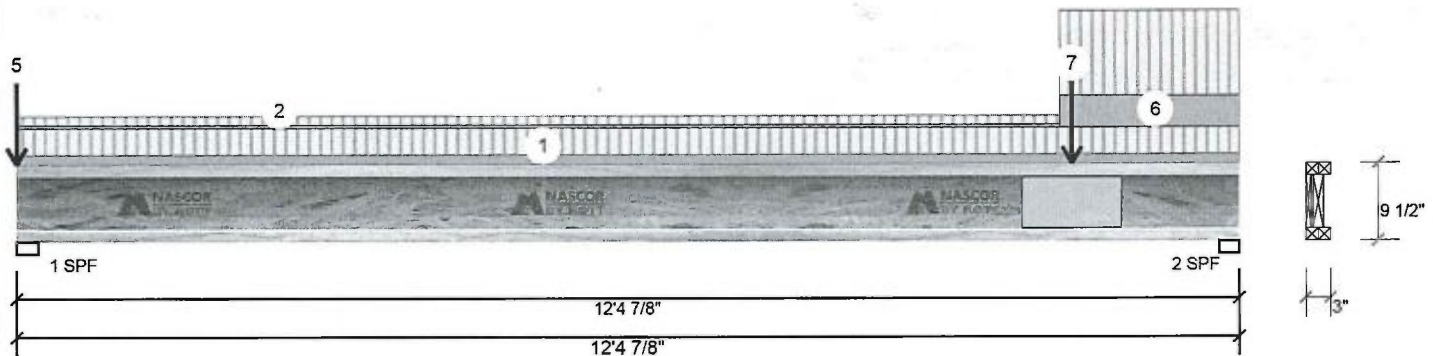
Client: GREENPARK
Project:
Address:

Date: 8/14/2018
Designer: RCO
Job Name: HEMLOCK 5C-1
Project #:

Page 1 of 1

F10-C NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Piles:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	244	98	0	0
2	577	217	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - SPF	2.625"	18%	123 / 366	488 L 1.25D+1.5L
2 - SPF	2.375"	42%	271 / 866	1137 L 1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1702 ft-lb	8'2 1/2"	7340 ft-lb	0.232 (23%)	1.25D+1.5L	L
Unbraced	1702 ft-lb	8'2 1/2"	1720 ft-lb	0.990 (99%)	1.25D+1.5L	L
Shear	1114 lb	12'3 1/4"	3080 lb	0.362 (36%)	1.25D+1.5L	L
Perm Defl in.	0.034 (L/4253)	6'8 1/16"	0.404 (L/360)	0.080 (8%)	D	Uniform
LL Defl inch	0.091 (L/1597)	6'8 1/16"	0.404 (L/360)	0.230 (23%)	L	L
TL Defl inch	0.125 (L/1161)	6'8 1/16"	0.606 (L/240)	0.210 (21%)	D+L	L

Design Notes

- 1 Girders are designed to be supported on the bottom edge only.
- 2 Multiple plies must be fastened together as per manufacturer's details.
- 3 Top loads must be supported equally by all plies.
- 4 Top flange must be laterally braced at a maximum of 5' o.c.
- 5 Bottom flange braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 12-4-14	(Span) 0-11-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 10-7-0	(Span) 0-4-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	0-0-0		Top	5 lb	10 lb	0 lb	0 lb	J5
4	Point	0-0-0		Top	6 lb	15 lb	0 lb	0 lb	J5
5	Point	0-0-0		Top	5 lb	0 lb	0 lb	0 lb	Wall Self Weight
6	Tie-In	10-7-0 to 12-4-14	(Span) 3-3-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
7	Point	10-8-8		Near Face	135 lb	359 lb	0 lb	0 lb	F9

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

chemicals

Handling & Installation

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

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

Manufacturer Info

Nascor by Kott

Kott Lumber Company
14 Anderson Blvd, Ontario
Canada
L4A 7X4
905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





isDesign™

Client: GREENPARK

Project:

Address:

Date: 8/14/2018

Designer: RCO

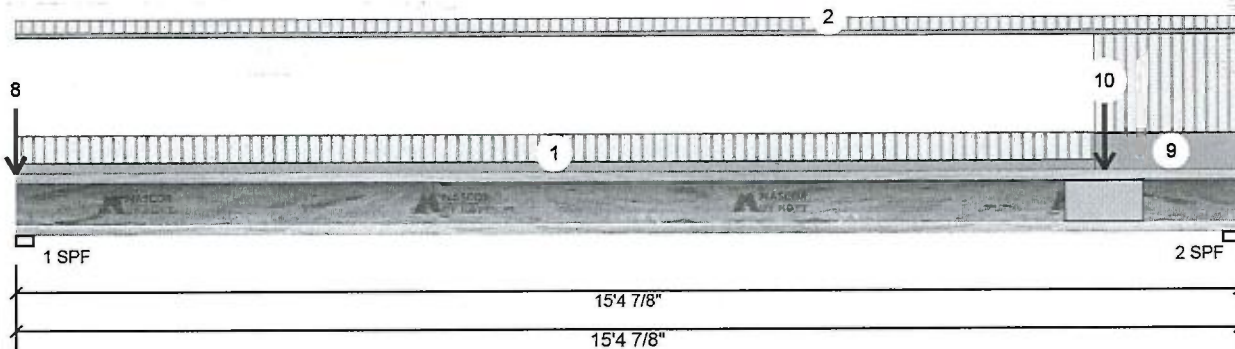
Job Name: HEMLOCK 5C-1

Project #:

Page 1 of 2

F11-A NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Piles:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	405	174	0	0
2	618	232	0	0

Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.625"	30%	218 / 608	826	L	1.25D+1.5L
2 - SPF	2.375"	45%	290 / 927	1216	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2201 ft-lb	9'3 3/4"	7340 ft-lb	0.300 (30%)	1.25D+1.5L	L
Unbraced	2201 ft-lb	9'3 3/4"	2202 ft-lb	1.000 (100%)	1.25D+1.5L	L
Shear	1197 lb	15'3 1/4"	3080 lb	0.389 (39%)	1.25D+1.5L	L
Perm Defl in.	0.068 (L/2685)	8'1 1/2"	0.504 (L/360)	0.130 (13%)	D	Uniform
LL Defl inch	0.180 (L/1008)	8'1 1/2"	0.504 (L/360)	0.360 (36%)	L	L
TL Defl inch	0.248 (L/733)	8'1 1/2"	0.756 (L/240)	0.330 (33%)	D+L	L

Design Notes

- 1 Girders are designed to be supported on the bottom edge only.
- 2 Multiple plies must be fastened together as per manufacturer's details.
- 3 Top loads must be supported equally by all plies.
- 4 Top flange must be laterally braced at a maximum of 4'6" o.c.
- 5 Bottom flange braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 13-7-0	(Span) 0-10-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 15-4-14	(Span) 0-5-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	0-0-0		Top	18 lb	48 lb	0 lb	0 lb	J6
4	Point	0-0-0		Top	16 lb	42 lb	0 lb	0 lb	J5
5	Point	0-0-0		Top	13 lb	0 lb	0 lb	0 lb	Wall Self Weight
6	Point	0-0-0		Top	13 lb	36 lb	0 lb	0 lb	J6

Continued on page 2...

Notes

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

Lumber

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

chemicals

Handling & Installation

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

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

Manufacturer Info

Nascor by Kott

Kott Lumber Company
14 Anderson Blvd, Ontario
Canada
L4A 7X4
905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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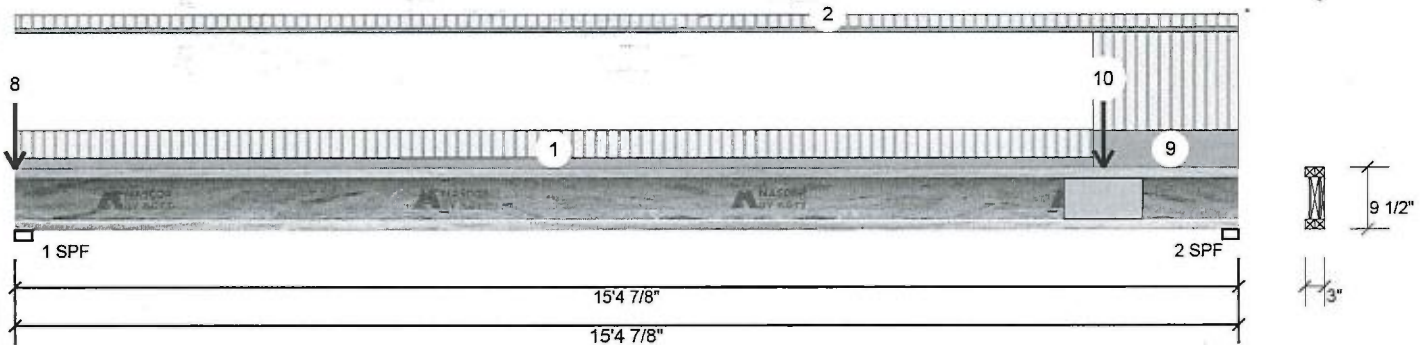
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5C-1
 Project #:

Page 2 of 2

F11-A NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
7	Point	0-0-0		Top	12 lb	31 lb	0 lb	0 lb	J5
8	Point	0-0-0		Top	9 lb	0 lb	0 lb	0 lb	Wall Self Weight
9	Tie-In	13-7-0 to 15-4-14	(Span)3-3-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
10	Point	13-8-8		Far Face	139 lb	370 lb	0 lb	0 lb	F9

REFER TO MULTIPLE MEMBER TO MEMBER
 CONNECTION DETAIL FOR PLY TO PLY
 NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH
 BLOCK IS REQUIRED AT ALL
 POINT LOADS OVER BEARINGS.

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

chemicals

Handling & Installation

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

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

Manufacturer Info

Nascor by Kott

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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Client: GREENPARK

Project:

Address:

Date: 8/14/2018

Designer: RCO

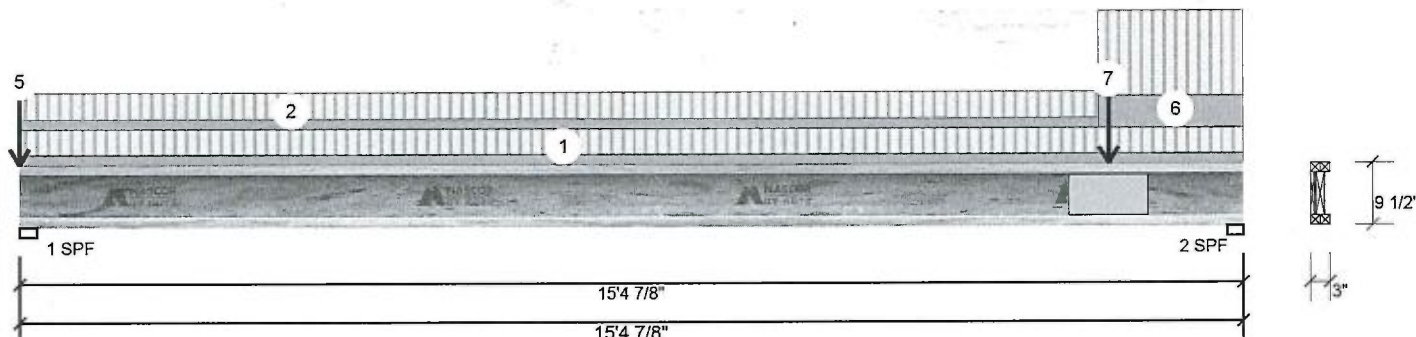
Job Name: HEMLOCK 5C-1

Project #:

Page 1 of 1

F11-B NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	492	204	0	0
2	704	264	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.625"	36%	255 / 739	994 L	1.25D+1.5L
2 - SPF	2.375"	51%	330 / 1055	1385 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2899 ft-lb	8'8 13/16"	7340 ft-lb	0.395 (39%)	1.25D+1.5L	L
Unbraced	2899 ft-lb	8'8 13/16"	2911 ft-lb	0.996 (100%)	1.25D+1.5L	L
Shear	1362 lb	15'3 1/4"	3080 lb	0.442 (44%)	1.25D+1.5L	L
Perm Defl in.	0.089 (L/2038)	8' 1/16"	0.504 (L/360)	0.180 (18%)	D	Uniform
LL Defl inch	0.237 (L/764)	8' 1/16"	0.504 (L/360)	0.470 (47%)	L	L
TL Defl inch	0.326 (L/556)	8' 1/16"	0.756 (L/240)	0.430 (43%)	D+L	L

Design Notes

- 1 Girders are designed to be supported on the bottom edge only.
- 2 Multiple plies must be fastened together as per manufacturer's details.
- 3 Top loads must be supported equally by all plies.
- 4 Top flange must be laterally braced at a maximum of 3'10" o.c.
- 5 Bottom flange braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 15-4-14	(Span) 0-11-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 13-7-0	(Span) 1-0-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	0-0-0		Top	28 lb	76 lb	0 lb	0 lb	J6
4	Point	0-0-0		Top	25 lb	67 lb	0 lb	0 lb	J5
5	Point	0-0-0		Top	20 lb	0 lb	0 lb	0 lb	Wall Self Weight
6	Tie-In	13-7-0 to 15-4-14	(Span) 3-3-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
7	Point	13-8-8		Near Face	133 lb	355 lb	0 lb	0 lb	F9

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

chemicals

Handling & Installation

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

Nascor by Kott

Kott Lumber Company
14 Anderson Blvd, Ontario
Canada
L4A 7X4
905-642-4400



This design is valid until 7/10/2021





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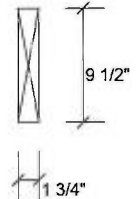
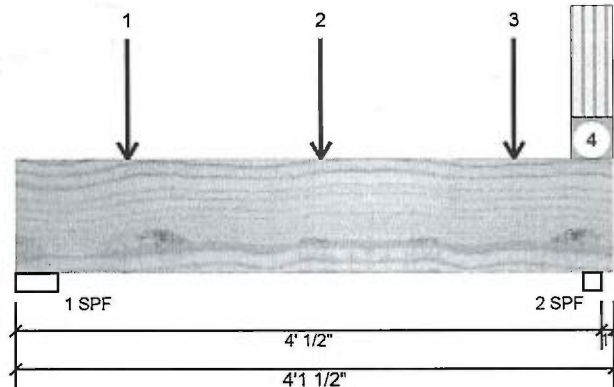
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5C-1
 Project #:

Page 1 of 1

F1-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

Level: Ground Floor



Member Information

Unfactored Reactions UNPATTERNED lb (Uplift)

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Brg	Live	Dead	Snow	Wind
1	172	73	0	0
2	191	79	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	9%	91 / 258	349 L	1.25D+1.5L
2 - SPF	1.500"	24%	99 / 287	386 LL	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	375 ft-lb	2'1 5/16"	11362 ft-lb	0.033 (3%)	1.25D+1.5L	L
Unbraced	375 ft-lb	2'1 5/16"	9142 ft-lb	0.041 (4%)	1.25D+1.5L	L
Shear	378 lb	3'2 1/4"	4638 lb	0.081 (8%)	1.25D+1.5L	LL
Perm Defl in.	0.001 (L/35879)	2'1 3/8"	0.125 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.003 (L/14901)	2'1 3/8"	0.125 (L/360)	0.020 (2%)	L	L
TL Defl inch	0.004 (L/10528)	2'1 3/8"	0.188 (L/240)	0.020 (2%)	D+L	L
LL Cant	-0.000 (2L/15940)	Rt Cant	0.200 (2L/480)	0.001 (0%)	L	L
TL Cant	-0.000 (2L/11273)	Rt Cant	0.300 (2L/360)	0.001 (0%)	D+L	L

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



Design Notes

- Girders are designed to be supported on the bottom edge only.
- Top braced at bearings.
- Bottom braced at bearings.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Point	0-9-5		Near Face	39 lb	103 lb	0 lb	0 lb	J1
2	Point	2-1-5		Near Face	50 lb	132 lb	0 lb	0 lb	J1
3	Point	3-5-5		Near Face	47 lb	126 lb	0 lb	0 lb	J1
4	Tie-In	3-10-0 to 4-1-8	(Span)0-3-14	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				4 PLF				

Notes

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

Lumber

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

chemicals

Handling & Installation

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

- For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400



This design is valid until 7/10/2021





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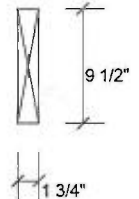
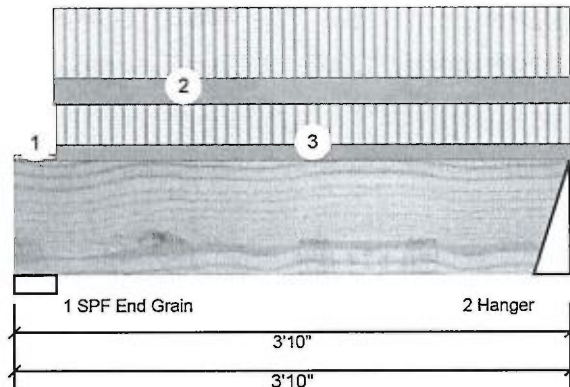
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5C-1
 Project #:

Page 1 of 1

F2-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	273	111	0	0
2	311	125	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	12%	138 / 410	549 L	1.25D+1.5L
2 - Hanger	3.000"	16%	156 / 466	622 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	479 ft-lb	1'11 1/4"	11362 ft-lb	0.042 (4%)	1.25D+1.5L	L
Unbraced	479 ft-lb	1'11 1/4"	9518 ft-lb	0.050 (5%)	1.25D+1.5L	L
Shear	463 lb	1' 1/4"	4638 lb	0.100 (10%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/27860)	1'11 5/16"	0.114 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.004 (L/11180)	1'11 5/16"	0.114 (L/360)	0.030 (3%)	L	L
TL Defl inch	0.005 (L/7978)	1'11 5/16"	0.171 (L/240)	0.030 (3%)	D+L	L

Design Notes

- 1 Fill all hanger nailing holes.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Top braced at bearings.
- 4 Bottom braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-3-8	(Span)0-3-14	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-3-5 to 3-10-0		Near Face	39 PLF	104 PLF	0 PLF	0 PLF	
3	Part. Uniform	0-3-8 to 3-10-0		Top	23 PLF	60 PLF	0 PLF	0 PLF	
	Self Weight				4 PLF				

Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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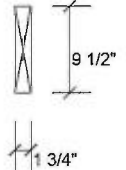
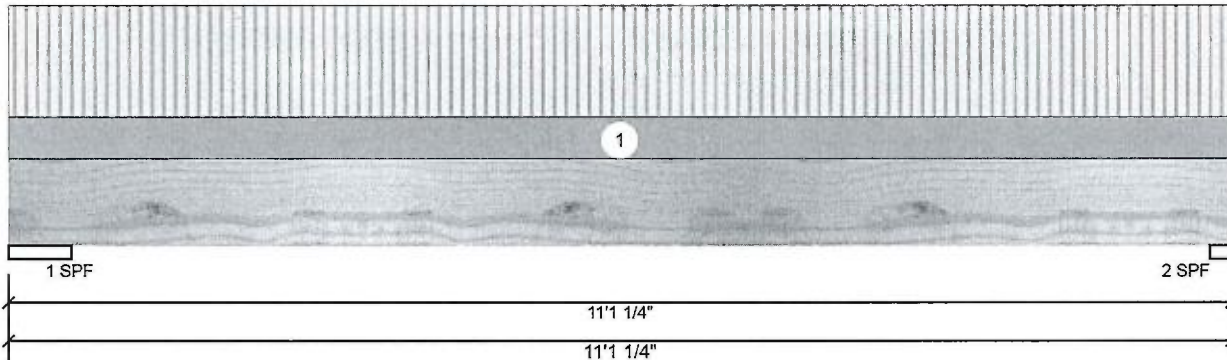
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5C-1
 Project #:

Page 1 of 1

F3-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

Level: Ground Floor



Member Information

Unfactored Reactions UNPATTERNED lb (Uplift)

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Brg	Live	Dead	Snow	Wind
1	148	77	0	0
2	138	72	0	0

Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	6.875"	4%	97 / 222	318	L	1.25D+1.5L
2 - SPF	2.375"	12%	90 / 207	297	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	758 ft-lb	5'8 7/8"	11362 ft-lb	0.067 (7%)	1.25D+1.5L	L
Unbraced	758 ft-lb	5'8 7/8"	3564 ft-lb	0.213 (21%)	1.25D+1.5L	L
Shear	246 lb	1'3 5/8"	4638 lb	0.053 (5%)	1.25D+1.5L	L
Perm Defl in.	0.016 (L/7962)	5'8 7/8"	0.349 (L/360)	0.050 (5%)	D	Uniform
LL Defl inch	0.030 (L/4165)	5'8 7/8"	0.349 (L/360)	0.090 (9%)	L	L
TL Defl inch	0.046 (L/2735)	5'8 7/8"	0.523 (L/240)	0.090 (9%)	D+L	L

Design Notes

- 1 Girders are designed to be supported on the bottom edge only.
- 2 Top braced at bearings.
- 3 Bottom braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.

Comments



ID	Load Type	Location	Trib Width	Side	Dead
1	Tie-In	0-0-0 to 11-1-4	(Span)1-3-7	Top	15 PSF
	Self Weight				4 PLF

Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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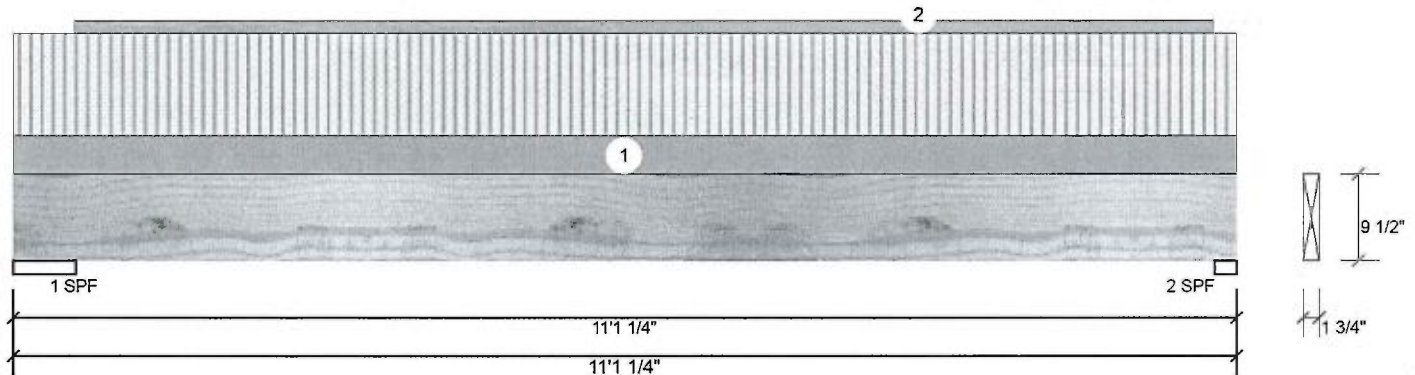
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5C-1
 Project #:

Page 1 of 1

F3-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" - PASSED

Level: Ground Floor



Member Information

Unfactored Reactions UNPATTERNED lb (Uplift)

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Brg	Live	Dead	Snow	Wind
1	139	90	0	0
2	130	85	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	6.875"	4%	112 / 209	321 L	1.25D+1.5L
2 - SPF	2.375"	12%	106 / 195	301 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	770 ft-lb	5'8 7/8"	11362 ft-lb	0.068 (7%)	1.25D+1.5L	L
Unbraced	770 ft-lb	5'8 7/8"	3564 ft-lb	0.216 (22%)	1.25D+1.5L	L
Shear	250 lb	10'2 1/8"	4638 lb	0.054 (5%)	1.25D+1.5L	L
Perm Defl in.	0.019 (L/6735)	5'8 7/8"	0.349 (L/360)	0.050 (5%)	D	Uniform
LL Defl inch	0.028 (L/4415)	5'8 7/8"	0.349 (L/360)	0.080 (8%)	L	L
TL Defl inch	0.047 (L/2667)	5'8 7/8"	0.523 (L/240)	0.090 (9%)	D+L	L

Design Notes

- Girders are designed to be supported on the bottom edge only.
- Top braced at bearings.
- Bottom braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Comments
1	Tie-In	0-0-0 to 11-1-4	(Span)1-2-9	Top	15 PSF	
2	Part. Uniform	0-6-12 to 10-10-12		Top	3 PLF	0 PLF 0 PLF 0 PLF
	Self Weight				4 PLF	

Notes

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

Lumber

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

chemicals

Handling & Installation

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

- For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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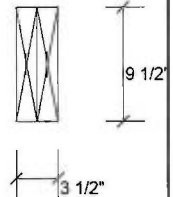
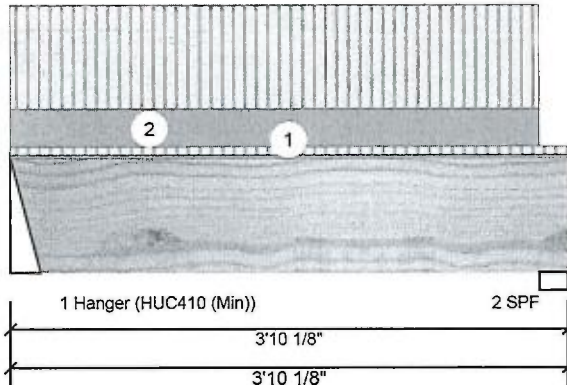
Client: GREENPARK
Project:
Address:

Date: 8/14/2018
Designer: RCO
Job Name: HEMLOCK 5C-1
Project #:

Page 1 of 1

F4-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Piles:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	498	202	0	0
2	448	183	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.500"	15%	252 / 747	999 L	1.25D+1.5L
2 - SPF	2.375"	18%	228 / 673	901 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	822 ft-lb	1'11 1/8"	22724 ft-lb	0.036 (4%)	1.25D+1.5L	L
Unbraced	822 ft-lb	1'11 1/8"	22724 ft-lb	0.036 (4%)	1.25D+1.5L	L
Shear	514 lb	2'11"	9277 lb	0.055 (6%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/32089)	1'11 3/16"	0.119 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.003 (L/12979)	1'11 3/16"	0.119 (L/360)	0.030 (3%)	L	L
TL Defl inch	0.005 (L/9241)	1'11 3/16"	0.178 (L/240)	0.030 (3%)	D+L	L

Design Notes

- 1 Fill all hanger nailing holes.
- 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 braced at bearings.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on full section width.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 3-10-2	(Span)0-11-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 3-7-12		Top	90 PLF	240 PLF	0 PLF	0 PLF	
	Self Weight				8 PLF				

Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

Kott Lumber Company
14 Anderson Blvd, Ontario
Canada
L4A 7X4
905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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Client: GREENPARK

Project:

Address:

Date: 8/14/2018

Designer: RCO

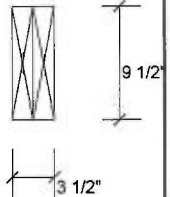
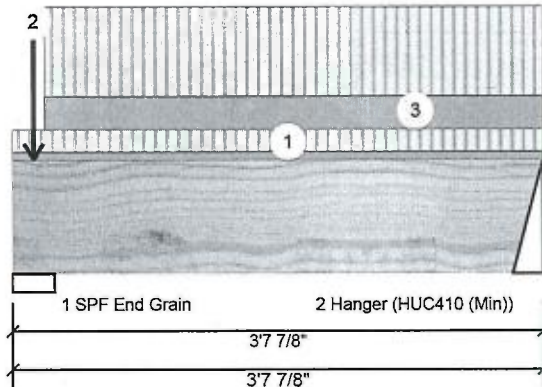
Job Name: HEMLOCK 5C-1

Project #:

Page 1 of 1

F4-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	474	200	0	0
2	171	78	0	0

Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	11%	250 / 710	961	L	1.25D+1.5L
2 - Hanger	2.500"	5%	97 / 257	355	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	267 ft-lb	1'10 7/16"	22724 ft-lb	0.012 (1%)	1.25D+1.5L	L
Unbraced	267 ft-lb	1'10 7/16"	22724 ft-lb	0.012 (1%)	1.25D+1.5L	L
Shear	169 lb	1' 1/4"	9277 lb	0.018 (2%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
LL Defl inch	0.001 (L/41508)	1'10 1/2"	0.109 (L/360)	0.010 (1%)	L	L
TL Defl inch	0.001 (L/28539)	1'10 1/2"	0.164 (L/240)	0.010 (1%)	D+L	L

Design Notes

- 1 Fill all hanger nailing holes.
- 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 braced at bearings.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on full section width.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 3-7-14	(Span)0-11-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-1-12		Far Face	125 lb	311 lb	0 lb	0 lb	F2
3	Tie-In	0-2-10 to 3-7-14	(Span)3-10-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				8 PLF				

Notes

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

Lumber

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

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 Lumber Company
14 Anderson Blvd, Ontario
Canada
L4A 7X4
905-642-4400



This design is valid until 7/10/2021





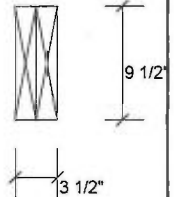
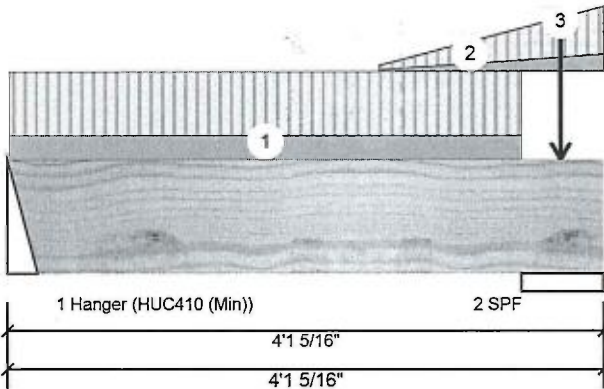
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Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5C-1
 Project #:

Page 1 of 1

F5-C Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED Level: Ground Floor



Member Information

Unfactored Reactions UNPATTERNED lb (Uplift)

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Brg	Live	Dead	Snow	Wind
1	76	43	0	0
2	90	99	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.500"	3%	53 / 114	167 L	1.25D+1.5L
2 - SPF	6.813"	2%	124 / 135	259 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	137 ft-lb	1'10 7/8"	22724 ft-lb	0.006 (1%)	1.25D+1.5L	L
Unbraced	137 ft-lb	1'10 7/8"	22724 ft-lb	0.006 (1%)	1.25D+1.5L	L
Shear	85 lb	11 1/4"	9277 lb	0.009 (1%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
LL Defl inch	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
TL Defl inch	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		

Design Notes

- 1 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 4.5.
- 2 Fill all hanger nailing holes.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Multiple plies must be fastened together as per manufacturer's details.
- 5 Top loads must be supported equally by all plies.
- 6 Top braced at bearings.
- 7 Bottom braced at bearings.
- 8 Lateral slenderness ratio based on full section width.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0.3 to 3-6.8		Top	15 PLF	40 PLF	0 PLF	0 PLF	
2	Tie-In	2-6.13 to 4-1.5	(Span)0-1-12 to 1-5-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point Self Weight	3-9-12		Top	48 lb 8 PLF	0 lb	0 lb	0 lb	Wall Self Weight

Notes

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

Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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Client: GREENPARK

Project:

Address:

Date: 8/14/2018

Designer: RCO

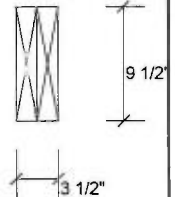
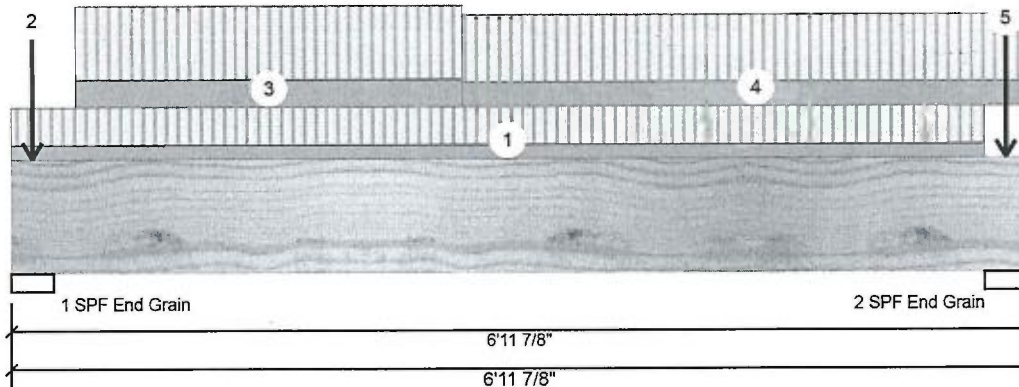
Job Name: HEMLOCK 5C-1

Project #:

Page 1 of 1

F6-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	883	372	0	0
2	1226	502	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	20%	465 / 1325	1790	L	1.25D+1.5L
2 - SPF End Grain	3.500"	27%	628 / 1839	2467	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2336 ft-lb	3'5 7/16"	22724 ft-lb	0.103 (10%)	1.25D+1.5L	L
Unbraced	2336 ft-lb	3'5 7/16"	21881 ft-lb	0.107 (11%)	1.25D+1.5L	L
Shear	1311 lb	1' 1/4"	9277 lb	0.141 (14%)	1.25D+1.5L	L
Perm Defl in.	0.009 (L/8737)	3'5 7/8"	0.218 (L/360)	0.040 (4%)	D	Uniform
LL Defl inch	0.022 (L/3587)	3'5 13/16"	0.218 (L/360)	0.100 (10%)	L	L
TL Defl inch	0.031 (L/2543)	3'5 13/16"	0.327 (L/240)	0.090 (9%)	D+L	L

Design Notes

- 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.
- Top braced at bearings.
- Bottom braced at bearings.
- Lateral slenderness ratio based on full section width.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 6-8-6	(Span)3-10-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-1-12		Near Face	78 lb	171 lb	0 lb	0 lb	F4
3	Part. Uniform	0-5-5 to 3-1-5		Near Face	56 PLF	150 PLF	0 PLF	0 PLF	
4	Part. Uniform	3-1-5 to 6-11-14		Near Face	51 PLF	135 PLF	0 PLF	0 PLF	
5	Point	6-10-2		Far Face	202 lb	498 lb	0 lb	0 lb	F4
	Self Weight				8 PLF				

Notes

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

Lumber

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

chemicals

Handling & Installation

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

- For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

Kott Lumber Company
14 Anderson Blvd, Ontario
Canada
L4A 7X4
905-642-4400



This design is valid until 7/10/2021





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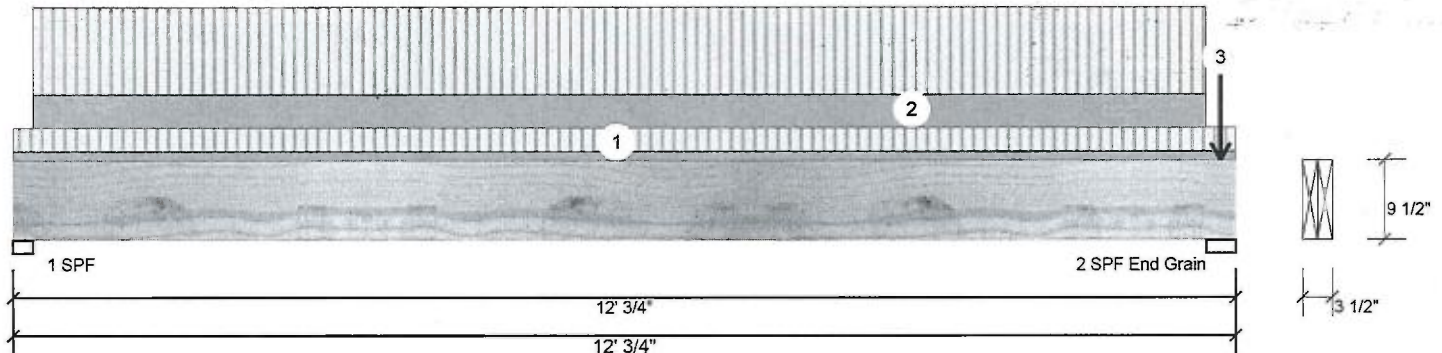
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5C-1
 Project #:

Page 1 of 1

F7-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Ply:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	587	266	0	0
2	665	310	0	0

Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	24%	332 / 881	1213	L	1.25D+1.5L
2 - SPF	3.500"	15%	388 / 998	1385	L	1.25D+1.5L
End Grain						

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3554 ft-lb	5'11 13/16"	22724 ft-lb	0.156 (16%)	1.25D+1.5L	L
Unbraced	3554 ft-lb	5'11 13/16"	20022 ft-lb	0.178 (18%)	1.25D+1.5L	L
Shear	1051 lb	11 1/8"	9277 lb	0.113 (11%)	1.25D+1.5L	L
Perm Defl in.	0.041 (L/3431)	5'11 13/16"	0.390 (L/360)	0.100 (10%)	D	Uniform
LL Defl inch	0.091 (L/1546)	5'11 13/16"	0.390 (L/360)	0.230 (23%)	L	L
TL Defl inch	0.132 (L/1066)	5'11 13/16"	0.585 (L/240)	0.230 (23%)	D+L	L

Design Notes

- 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.
- Top braced at bearings.
- Bottom braced at bearings.
- Lateral slenderness ratio based on full section width.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 12-0-12	(Span)1-0-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-2-6 to 11-9-4	(Span)3-11-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	11-11-0		Near Face	43 lb	76 lb	0 lb	0 lb	F5
	Self Weight				8 PLF				

Notes

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

Lumber

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

chemicals

Handling & Installation

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

- For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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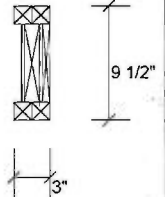
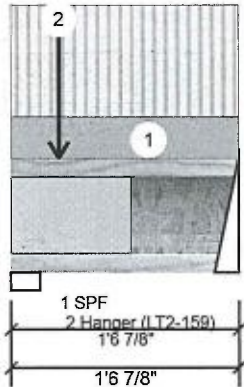
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5C-1
 Project #:

Page 1 of 1

F8-A NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Unfactored Reactions UNPATTERNED lb (Uplift)

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Brg	Live	Dead	Snow	Wind
1	122	225	80	0
2	62	53	14	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	20%	281 / 121	402 L	1.25D+1.5S
2 - Hanger	2.000"	7%	67 / 93	160 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	76 ft-lb	3 15/16"	5578 ft-lb	0.014 (1%)	1.25D+1.5S	L
Unbraced	76 ft-lb	3 15/16"	5327 ft-lb	0.014 (1%)	1.25D+1.5S	L
Shear	398 lb	1 5/8"	2341 lb	0.170 (17%)	1.25D+1.5S	L
Perm Defl in.	0.000 (L/33964)	3 15/16"	0.044 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.000 (L/46459)	6 13/16"	0.044 (L/360)	0.010 (1%)	L+0.5S	L
TL Defl inch	0.001 (L/20199)	4 3/8"	0.067 (L/240)	0.010 (1%)	D+L+0.5S	L

Design Notes

- 1 Fill all hanger nailing holes.
- 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 flange braced at bearings.
- 6 Bottom flange braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-in	0-0-0 to 1-6-14	(Span)3-3-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-3-15		Far Face	240 lb	82 lb	94 lb	0 lb	J1

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

chemicals

Handling & Installation

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

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

Manufacturer Info

Nascor by Kott

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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Client: GREENPARK

Project:

Address:

Date: 8/14/2018

Designer: RCO

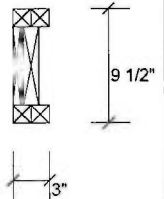
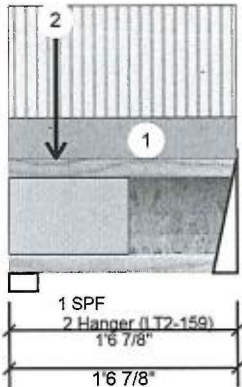
Job Name: HEMLOCK 5C-1

Project #:

Page 1 of 1

F8-B NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	125	233	83	0
2	62	55	14	0

Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	20%	291 / 124	415	L	1.25D+1.5S
2 - Hanger	2.000"	7%	68 / 94	162	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	79 ft-lb	3 15/16"	5578 ft-lb	0.014 (1%)	1.25D+1.5S	L
Unbraced	79 ft-lb	3 15/16"	5327 ft-lb	0.015 (1%)	1.25D+1.5S	L
Shear	411 lb	1 5/8"	2341 lb	0.176 (18%)	1.25D+1.5S	L
Perm Defl in.	0.000 (L/32816)	3 15/16"	0.044 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.000 (L/45552)	6 11/16"	0.044 (L/360)	0.010 (1%)	L+0.5S	L
TL Defl inch	0.001 (L/19599)	4 1/4"	0.067 (L/240)	0.010 (1%)	D+L+0.5S	L

Design Notes

- 1 Fill all hanger nailing holes.
- 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 flange braced at bearings.
- 6 Bottom flange braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-6-14	(Span)3-3-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-3-15		Near Face	249 lb	85 lb	97 lb	0 lb	J1

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

chemicals

Handling & Installation

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

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

Manufacturer Info

Nascor by Kott

Kott Lumber Company
14 Anderson Blvd, Ontario
Canada
L4A 7X4
905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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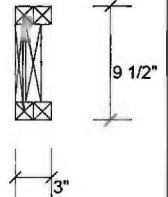
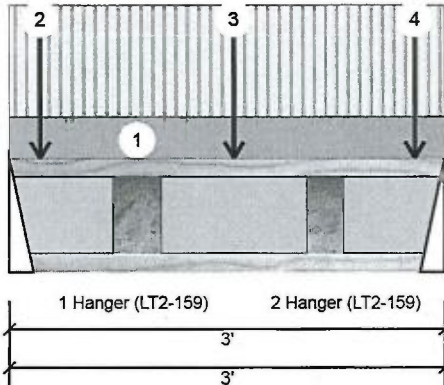
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5C-1
 Project #:

Page 1 of 1

F9-A NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Piles:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED Ib (Uplift)

Brg	Live	Dead	Snow	Wind
1	359	135	0	0
2	360	135	0	0

Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	27%	168 / 538	706	L	1.25D+1.5L
2 - Hanger	2.000"	27%	168 / 540	708	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	475 ft-lb	1'6 9/16"	7340 ft-lb	0.065 (6%)	1.25D+1.5L	L
Unbraced	475 ft-lb	1'6 9/16"	4678 ft-lb	0.102 (10%)	1.25D+1.5L	L
Shear	701 lb	2'10 3/4"	3080 lb	0.228 (23%)	1.25D+1.5L	L
Perm Defl in. (L/24755)	0.001	1'6 9/16"	0.093 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.004 (L/9282)	1'6 9/16"	0.093 (L/360)	0.040 (4%)	L	L
TL Defl inch	0.005 (L/6751)	1'6 9/16"	0.140 (L/240)	0.040 (4%)	D+L	L

Design Notes

1. Fill all hanger nailing holes.
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 flange braced at bearings.
6. Bottom flange braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 3-0-0	(Span)1-8-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-2-9		Near Face	66 lb	176 lb	0 lb	0 lb	J4
3	Point	1-6-9		Near Face	102 lb	272 lb	0 lb	0 lb	J4
4	Point	2-9-9		Near Face	62 lb	166 lb	0 lb	0 lb	J4

Notes

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

Lumber

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

chemicals

Handling & Installation

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

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

Manufacturer Info

Nascor by Kott

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400



This design is valid until 7/10/2021





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Client: GREENPARK

Project:

Address:

Date: 8/14/2018

Designer: RCO

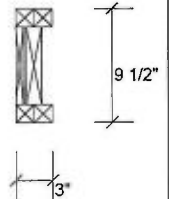
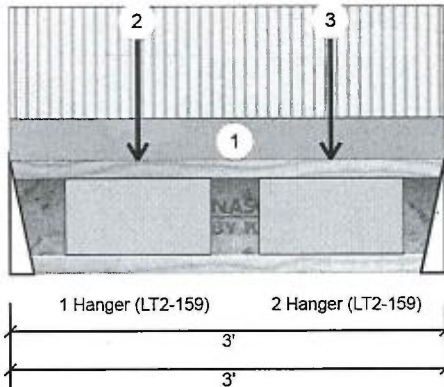
Job Name: HEMLOCK 5C-1

Project #:

Page 1 of 1

F9-B NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Information

Unfactored Reactions UNPATTERNED lb (Uplift)

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Brg	Live	Dead	Snow	Wind
1	355	133	0	0
2	370	139	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	27%	167 / 532	699 L	1.25D+1.5L
2 - Hanger	2.000"	28%	174 / 555	728 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	518 ft-lb	1'1 5/16"	7340 ft-lb	0.071 (7%)	1.25D+1.5L	L
Unbraced	518 ft-lb	1'1 5/16"	4678 ft-lb	0.111 (11%)	1.25D+1.5L	L
Shear	721 lb	2'10 3/4"	3080 lb	0.234 (23%)	1.25D+1.5L	L
Perm Defl in.	0.002 (L/21287)	1'5 1/16"	0.093 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch	0.004 (L/7999)	1'5 1/16"	0.093 (L/360)	0.050 (5%)	L	L
TL Defl inch	0.006 (L/5814)	1'5 1/16"	0.140 (L/240)	0.040 (4%)	D+L	L

Design Notes

- 1 Fill all hanger nailing holes.
- 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 flange braced at bearings.
- 6 Bottom flange braced at bearings.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 3-0-0	(Span)1-8-15 to 1-8-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-10-9		Near Face	119 lb	316 lb	0 lb	0 lb	J5
3	Point	2-2-9		Near Face	114 lb	304 lb	0 lb	0 lb	J5

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

chemicals

Handling & Installation

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

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

Manufacturer Info

Nascor by Kott

Kott Lumber Company
14 Anderson Blvd, Ontario
Canada
L4A 7X4
905-642-4400



This design is valid until 7/10/2021





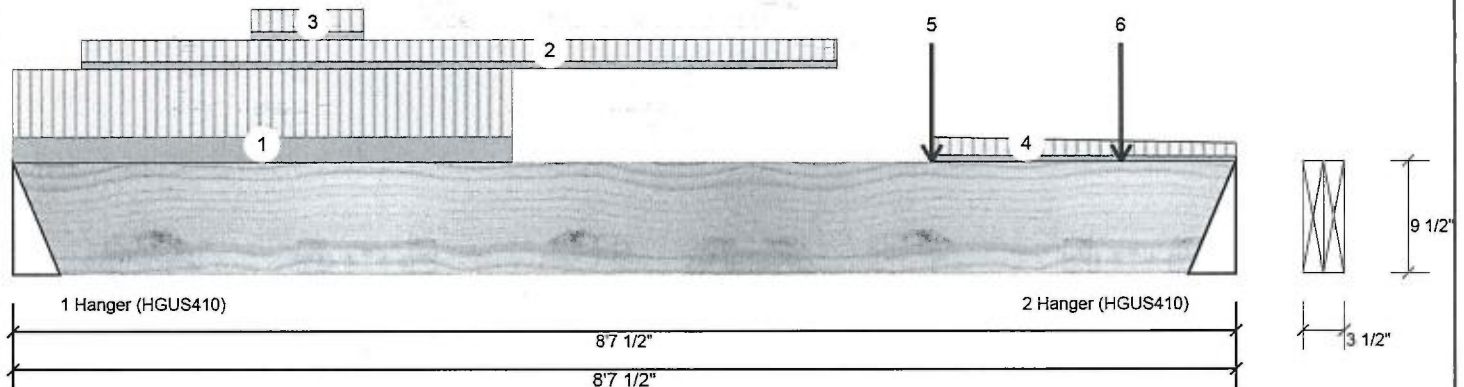
isDesign™

Client: GREENPARK
Project:
Address:

Date: 8/14/2018
Designer: RCO
Job Name: HEMLOCK 5C-1
Project #:

Page 1 of 2

F13-A	Forex 2.0E-3000Fb LVL	1.750" X 9.500"	2-Ply - PASSED	Level: Second Floor
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Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED Ib (Uplift)

Brg	Live	Dead	Snow	Wind
1	1021	414	0	0
2	520	227	0	0

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2887 ft-lb	3'2 5/16"	22724 ft-lb	0.127 (13%)	1.25D+1.5L	L
Unbraced	2887 ft-lb	3'2 5/16"	21433 ft-lb	0.135 (13%)	1.25D+1.5L	L
Shear	1454 lb	1' 3/4"	9277 lb	0.157 (16%)	1.25D+1.5L	L
Perm Defl in.	0.015 (L/6305)	4' 1/8"	0.269 (L/360)	0.060 (6%)	D	Uniform
LL Defl inch	0.037 (L/2638)	3'11 11/16"	0.269 (L/360)	0.140 (14%)	L	L
TL Defl inch	0.052 (L/1860)	3'11 7/8"	0.404 (L/240)	0.130 (13%)	D+L	L

Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	4.000"	20%	518 / 1531	2049	L	1.25D+1.5L
2 - Hanger	4.000"	10%	284 / 780	1063	L	1.25D+1.5L

Design Notes

- 1 Fill all hanger nailing holes.
- 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 braced at bearings.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on full section width.

**READ ALL NOTES ON THIS PAGE AND ON
ENGINEERING NOTE PAGE ENP-2. THIS
NOTE PAGE IS AN INTEGRAL PART OF THIS
CALCULATION SUMMARY PAGE AS IT
CONTAINS SPECIFICATIONS AND CRITERIA
USED IN THE DESIGN OF THIS COMPONENT.**

REFER TO MULTIPLE MEMBER TO MEMBER
CONNECTION DETAIL FOR PLY TO PLY
NAILING OR BOLTING REQUIREMENTS.

**PASS THRU FRAMING SQUASH
BLOCK IS REQUIRED AT ALL
POINT LOADS OVER BEARINGS.**



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 3-6-5		Top	90 PLF	240 PLF	0 PLF	0 PLF	
2	Part. Uniform	0-5-13 to 5-9-13		Near Face	27 PLF	73 PLF	0 PLF	0 PLF	
3	Tie-In	1-8-4 to 2-5-13	(Span)3-11-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Tie-In	6-5-13 to 8-7-8	(Span)3-1-11 to 2-4-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
5	Point	6-5-13		Near Face	28 lb	75 lb	0 lb	0 lb	J9

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 Lumber Company
14 Anderson Blvd, Ontario
Canada
L4A 7X4
905-642-4400

This design is valid until 7/10/2021



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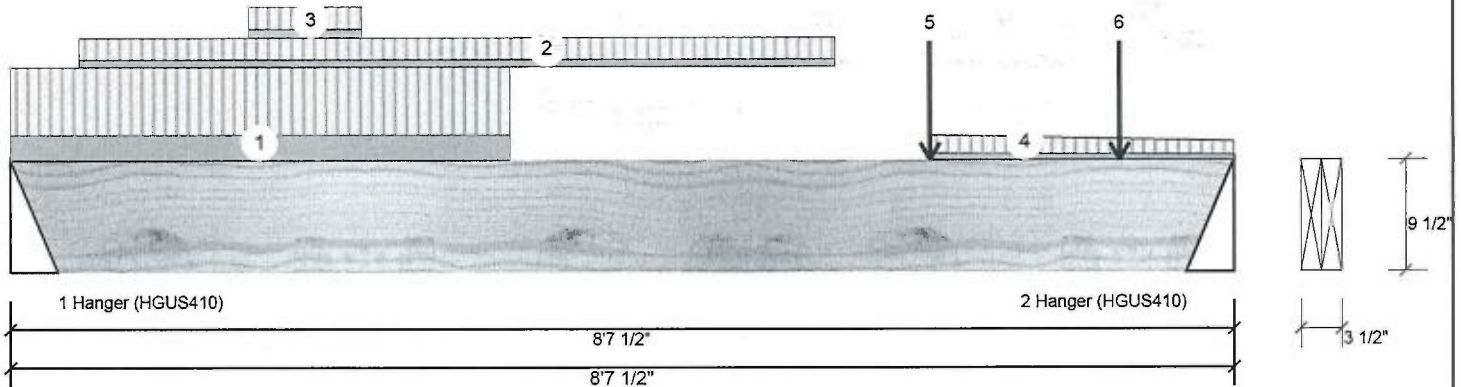
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5C-1
 Project #:

Page 2 of 2

F13-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Point	7-9-13		Near Face	19 lb	51 lb	0 lb	0 lb	J9
	Self Weight				8 PLF				

REFER TO MULTIPLE MEMBER TO MEMBER
 CONNECTION DETAIL FOR PLY TO PLY
 NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH
 BLOCK IS REQUIRED AT ALL
 POINT LOADS OVER BEARINGS.

Notes

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

Lumber

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

chemicals**Handling & Installation**

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





isDesign™

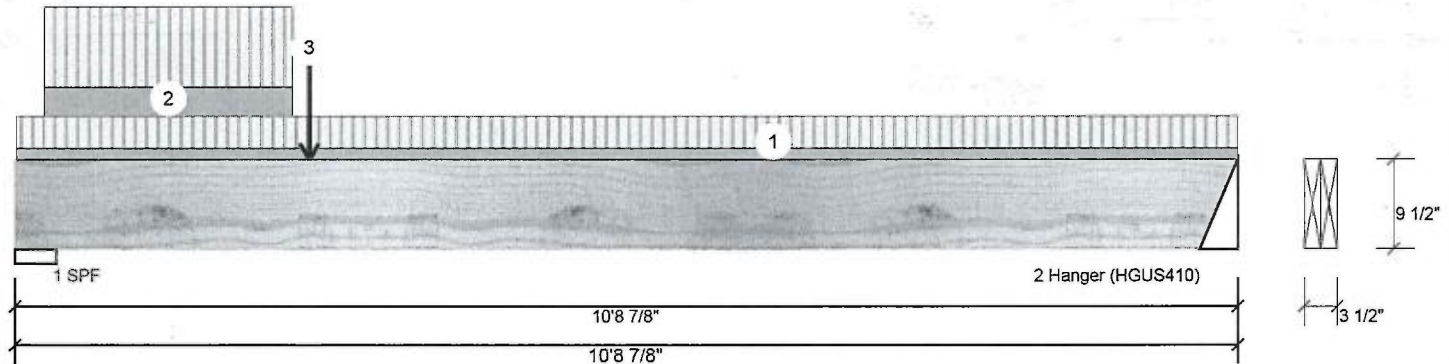
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5C-1
 Project #:

Page 1 of 1

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

Level: Second Floor

**Member Information****Unfactored Reactions UNPATTERNED lb (Uplift)**

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Brg	Live	Dead	Snow	Wind
1	481	246	0	0
2	162	109	0	0

Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.375"	11%	308 / 722	1029	L	1.25D+1.5L
2 - Hanger	4.000"	4%	136 / 243	379	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2176 ft-lb	2'7 1/8"	22724 ft-lb	0.096 (10%)	1.25D+1.5L	L
Unbraced	2176 ft-lb	2'7 1/8"	20683 ft-lb	0.105 (11%)	1.25D+1.5L	L
Shear	971 lb	1'1 1/8"	9277 lb	0.105 (10%)	1.25D+1.5L	L
Perm Defl in.	0.018 (L/6840)	4'10 1/16"	0.339 (L/360)	0.050 (5%)	D	Uniform
LL Defl inch	0.033 (L/3748)	4'8 3/16"	0.339 (L/360)	0.100 (10%)	L	L
TL Defl inch	0.050 (L/2422)	4'8 13/16"	0.508 (L/240)	0.100 (10%)	D+L	L

Design Notes

- 1 Fill all hanger nailing holes.
- 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 braced at bearings.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on full section width.

READ ALL NOTES ON THIS PAGE AND ON
 ENGINEERING NOTE PAGE ENP-2. THIS
 NOTE PAGE IS AN INTEGRAL PART OF THIS
 CALCULATION SUMMARY PAGE AS IT
 CONTAINS SPECIFICATIONS AND CRITERIA
 USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER
 CONNECTION DETAIL FOR PLY TO PLY
 NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH
 BLOCK IS REQUIRED AT ALL
 POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-2 to 10-8-14	(Span)0-4-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-3-2 to 2-5-6	(Span)0-11-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	2-7-2		Far Face	227 lb	520 lb	0 lb	0 lb	F13
	Self Weight				8 PLF				

Notes

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

Lumber

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

chemicals**Handling & Installation**

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

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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Client: GREENPARK

Project:

Address:

Date: 8/14/2018

Designer: RCO

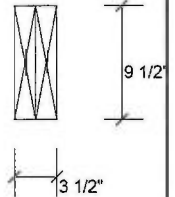
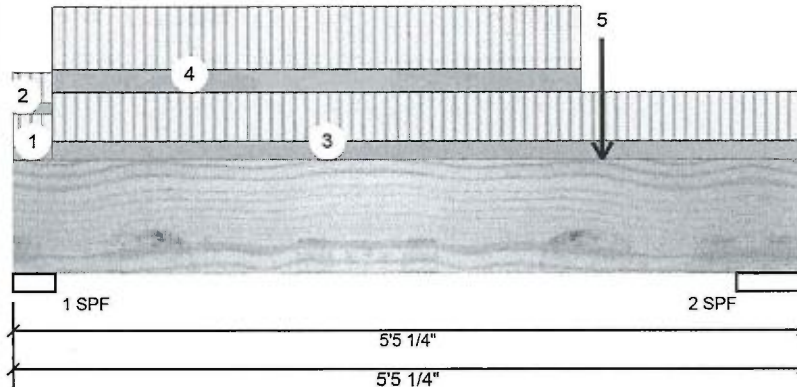
Job Name: HEMLOCK 5C-1

Project #:

Page 1 of 1

F5-A Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Second Floor



Member Information

Type:	Girder	Application:	Floor (Residential)
Piles:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind
1	322	147	0	0
2	908	387	0	0

Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	9%	184 / 483	667	L	1.25D+1.5L
2 - SPF	5.500"	16%	483 / 1362	1845	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1763 ft-lb	4' 3/4"	22724 ft-lb	0.078 (8%)	1.25D+1.5L	L
Unbraced	1763 ft-lb	4' 3/4"	22724 ft-lb	0.078 (8%)	1.25D+1.5L	L
Shear	1786 lb	4'3"	9277 lb	0.192 (19%)	1.25D+1.5L	L
Perm Defl in.	0.004 (L/16219)	3'1 5/16"	0.160 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch	0.008 (L/6979)	3'1 3/4"	0.160 (L/360)	0.050 (5%)	L	L
TL Defl inch	0.012 (L/4880)	3'1 5/8"	0.241 (L/240)	0.050 (5%)	D+L	L

Design Notes

- 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.
- Top braced at bearings.
- Bottom braced at bearings.
- Lateral slenderness ratio based on full section width.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-3-4	(Span)0-8-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-3-4	(Span)0-7-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	0-3-4 to 5-5-4	(Span)1-0-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Tie-In	0-3-4 to 3-11-0	(Span)1-3-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
5	Point	4-0-12		Near Face	414 lb	1021 lb	0 lb	0 lb	F13
	Self Weight				8 PLF				

Notes

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

Lumber

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

chemicals

Handling & Installation

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

- For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
APA: PR-L318

Kott Lumber Company
14 Anderson Blvd, Ontario
Canada
L4A 7X4
905-642-4400

KOTT NASCOR

This design is valid until 7/10/2021





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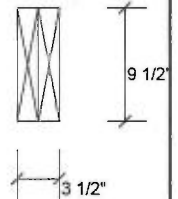
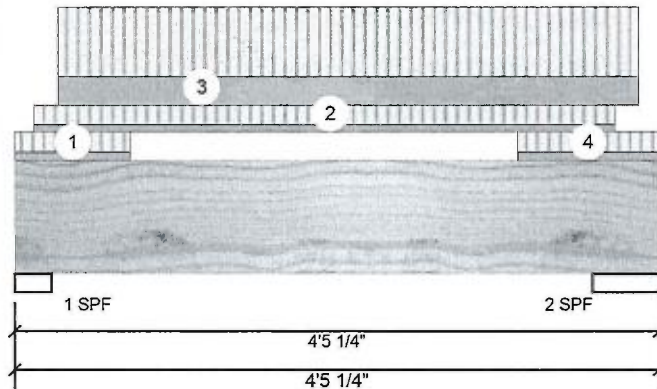
Client: GREENPARK
 Project:
 Address:

Date: 8/14/2018
 Designer: RCO
 Job Name: HEMLOCK 5C-1
 Project #:

Page 1 of 1

F5-B Forex 2.0E-3000Fb LVL 1.750" X 9.500" 2-Ply - PASSED

Level: Second Floor



Member Information

Unfactored Reactions UNPATTERNED lb (Uplift)

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Brg	Live	Dead	Snow	Wind
1	680	291	0	0
2	791	339	0	0

Bearings and Factored Reactions

Bearing	Length	Cap. React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.000"	21%	364 / 1020	1384 L	1.25D+1.5L
2 - SPF	5.500"	14%	423 / 1186	1609 L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1286 ft-lb	2'1 3/8"	22724 ft-lb	0.057 (6%)	1.25D+1.5L	L
Unbraced	1286 ft-lb	2'1 3/8"	22724 ft-lb	0.057 (6%)	1.25D+1.5L	L
Shear	1301 lb	11 3/4"	9277 lb	0.140 (14%)	1.25D+1.5L	L
Perm Defl in.	0.002 (L/19294)	2'1 7/16"	0.128 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch	0.006 (L/8295)	2'1 7/16"	0.128 (L/360)	0.040 (4%)	L	L
TL Defl inch	0.008 (L/5801)	2'1 7/16"	0.193 (L/240)	0.040 (4%)	D+L	L

Design Notes

- 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.
- Top braced at bearings.
- Bottom braced at bearings.
- Lateral slenderness ratio based on full section width.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-9-9	(Span)3-11-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-1-9 to 4-1-9		Far Face	27 PLF	73 PLF	0 PLF	0 PLF	
3	Part. Uniform	0-3-9 to 4-3-9		Near Face	109 PLF	260 PLF	0 PLF	0 PLF	
4	Tie-In	3-5-9 to 4-5-4	(Span)3-11-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				8 PLF				

Notes

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

Lumber

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

chemicals

Handling & Installation

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

- For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Forex
 APA: PR-L318

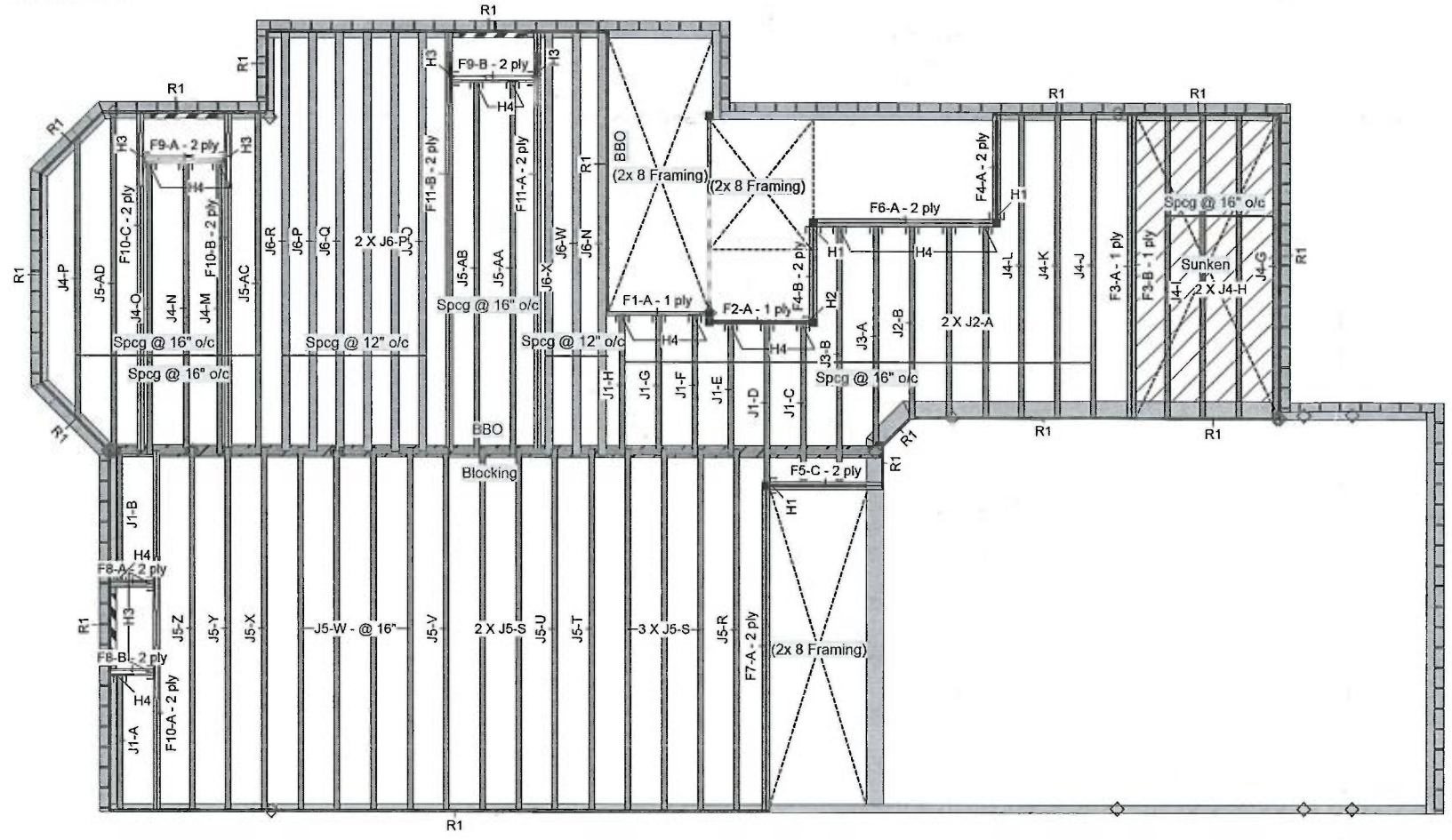
Kott Lumber Company
 14 Anderson Blvd, Ontario
 Canada
 L4A 7X4
 905-642-4400



This design is valid until 7/10/2021



Ground Floor



For conventional wood framing shall conform to OBC.9.23

All work shall conform to the Ontario Building Code O. Reg. 332/12 as amended

Legend

◊	Load from Above
▨	Wall
▧	Wall Opening
▩	Norbord Rimboard Plus 1.125 X 9.5
▪	NJ 9.5
▫	NJ60U 9.5
▬	NJH 9.5
▭	Forex 2.0E-3000Fb LVL 1.75 X 9.5

1. OBC 2012 O.Reg 332/12 as amended
2. Nascor CCMC - 13535-R
3. LVL CCMC -14056-R
4. CAN/CSA-O86-09
5. CCMC -12787-R APA PR-L310(C)

REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.



THIS CERTIFICATION IS TO CONFIRM THAT:

1. THE LOADS USED IN THE CALCULATION OF THE ATTACHED APPROVED COMPONENTS CONFORM TO THE FLOOR ASSEMBLY SHOWN ON THIS LAYOUT.

2. THE FLOOR JOISTS COMPLY WITH THE NASCOR SPAN TABLE FOR THE LOADS AND SPACING SHOWN ON THIS LAYOUT.

THE FLOOR SYSTEM MUST BE ASSEMBLED IN ACCORDANCE TO THE NASCOR SPECIFIER GUIDE. MULTI-PLY MEMBERS MUST BE ATTACHED TOGETHER AS PER THE INCLUDED MULTIPLE MEMBER CONNECTION DETAIL.

ALL OTHER COMPONENTS AND STRUCTURAL ELEMENTS SUPPORTING THE FLOOR SYSTEM SUCH AS BEAMS, WALLS, COLUMNS AND FOUNDATION WALLS AND FOOTINGS INCLUDING ANCHORAGE OF COMPONENTS AND BRACING FOR LATERAL STABILITY ARE THE RESPONSIBILITY OF OTHERS.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

Ground Floor LVL/LSL (Flush)

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F7	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	14-0-0
F3	Forex 2.0E-3000Fb LVL	1.75	9.5			2	12-0-0
F6	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	8-0-0
F5	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	6-0-0
F1	Forex 2.0E-3000Fb LVL	1.75	9.5			1	6-0-0
F4	Forex 2.0E-3000Fb LVL	1.75	9.5	2	2	4	4-0-0
F2	Forex 2.0E-3000Fb LVL	1.75	9.5			1	4-0-0

I Joist (Flush)

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F11	NJ	1.5	9.5	2	2	4	16-0-0
F10	NJ	1.5	9.5	3	2	6	14-0-0
F9	NJ	1.5	9.5	2	2	4	4-0-0
F8	NJ	1.5	9.5	2	2	4	2-0-0
J6	NJ60U	3.5	9.5			9	16-0-0
J5	NJH	2.5	9.5			20	14-0-0
J4	NJH	2.5	9.5			11	12-0-0
J3	NJH	2.5	9.5			2	10-0-0
J2	NJH	2.5	9.5			3	8-0-0
J1	NJH	2.5	9.5			8	6-0-0

Rim Board

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			11	12

Blocking

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK1	NJH	2.5	9.5	LinFt		Varies	16-0-0

Hanger

Label	Pcs	Description	Skew	Slope	fasteners	Supported Member
H1	3	HUC410 (Min)			14 16d	6 10d
H2	1	HUCQ1.81/9-SDS				
H3	6	LT2-159			4 10dx1 1/2	2 10dx1 1/2
H4	18	LT259			4 10dx1 1/2	2 10dx1 1/2

- NOTES:**
1. Framer to verify dimensions on the architectural drawings.
 2. Double joist only require filler/backer ply when supporting another member using a face-mounted hanger.
 3. Install 2x4 blocking @ 24" o/c under parallel non-load bearing walls.
 4. Install single-ply flush window header along inside face of rimboard/rimjoist.
 5. Refer to Nascor specifier guide for installation works.
 6. Squash blocks recommended to be installed at end bearing on all first level joists which support loading from above exceeding two levels floor or roof.
 7. Load transfer blocks to be installed under all point loads.
 8. It shall be the framer's responsibility that floor joists and beams are fastened as per the hanger manufacturer's standards.

Refer to Multiple Member Connection Detail to ply to ply nailing or bolting requirements.

Rim parallel to joists: 1-1/8" rimboard with 2"x 4" block (1/16" longer than rim depth @ 16" o/c). All other components and structural elements supporting the floor system such as beams, walls, columns, and foundation walls and footings including anchorage of components and bracing for lateral stability are the responsibility of Others.

Hatch area represents ceramic tiled floor with an additional dead load of 5 PSF

The framing shown on this layout may deviate from the architectural and structural drawings. Project Engineer to review and approve the deviation prior to construction.

ARCHITECTURAL DRAWINGS:

REGION DESIGN INC.
8700 Dufferin St., Concord, ON
Date: May 2018
Project No:
Model: Hemlock 5-5C



Layout Name
HEMLOCK 5C-1 & 5C-2

Design Method
LSD

Revised
August 14, 2018

Description
MINNISALE HOMES
BRAMPTON, ONT.

Builder
GREENPARK

Sales Rep
RM

Designer
RCO

Shipping
Project

Builder's Project
Kott Lumber Company
14 Anderson Blvd
Stouffville, Ontario
Canada
L4A 7X4
905-642-4400

Job Path
S:\CUSTOMERS\GREENPARK
MINNISALE HOMES\MODELS
HEMLOCK 5C\HEMLOCK 5C-1
FLOOR\REV\HEMLOCK 5C-1.isl

Ground Floor

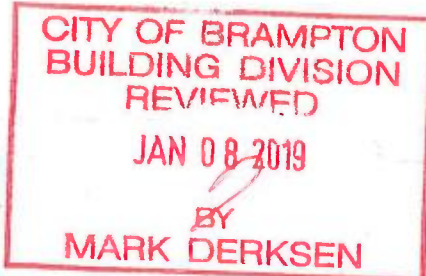
Design Method LSD

Building Code NBCC 2010 / OBC 2012

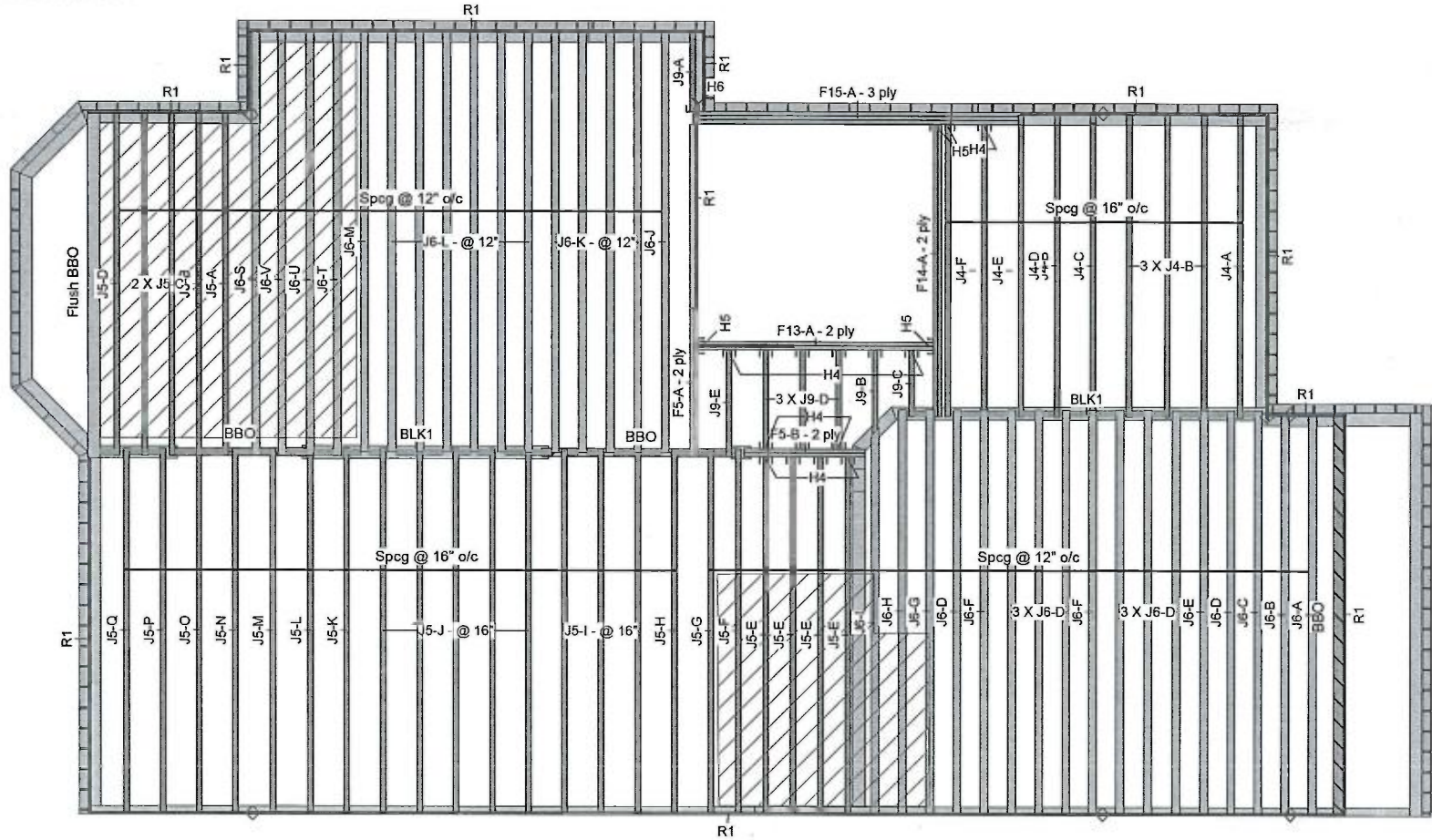
Floor Loads

Live	40
Dead	15
Deflection Joist	
LL Span L/	480
TL Span L/	360
LL Cant 2L/	480
TL Cant 2L/	360
Deflection Girder	
LL Span L/	360
TL Span L/	240
LL Cant 2L/	480
TL Cant 2L/	360
Decking	
Deck	SPF Plywood
Thickness	3/4"
Fastener	Nailed & Glued
Vibration	

LOT 11 R



Second Floor



Legend	
	Load from Above
	Wall
	Norbord Rimboard Plus 1.125 X 9.5
	NJ60U 9.5
	NJH 9.5
	Forex 2.0E-3000Fb LVL 1.75 X 9.5

- OBC 2012 O.Reg 332/12 as amended
- Nascor CCMC - 13535-R
- LVL CCMC -14056-R
- CAN/CSA-O86-09
- CCMC -12787-R APA PR-L310(C)

THIS CERTIFICATION IS TO CONFIRM THAT:

1. THE LOADS USED IN THE CALCULATION OF THE ATTACHED APPROVED COMPONENTS CONFORM TO THE FLOOR ASSEMBLY SHOWN ON THIS LAYOUT.

2. THE FLOOR JOISTS COMPLY WITH THE NASCOR SPAN TABLE FOR THE LOADS AND SPACING SHOWN ON THIS LAYOUT.

THE FLOOR SYSTEM MUST BE ASSEMBLED IN ACCORDANCE TO THE NASCOR SPECIFIER GUIDE. MULTI-PLY MEMBERS MUST BE ATTACHED TOGETHER AS PER THE INCLUDED MULTIPLE MEMBER CONNECTION DETAIL.

ALL OTHER COMPONENTS AND STRUCTURAL ELEMENTS SUPPORTING THE FLOOR SYSTEM SUCH AS BEAMS, WALLS, COLUMNS AND FOUNDATION WALLS AND FOOTINGS INCLUDING ANCHORAGE OF COMPONENTS AND BRACING FOR LATERAL STABILITY ARE THE RESPONSIBILITY OF OTHERS.



REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS.

PASS THRU FRAMING SQUASH BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.

READ ALL NOTES ON THIS PAGE AND ON ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.

Second Floor
LVL/LSL (Flush)

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
F15	Forex 2.0E-3000Fb LVL	1.75	9.5	1	3	3	12-0-0
F14	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	12-0-0
F13	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	10-0-0
F5	Forex 2.0E-3000Fb LVL	1.75	9.5	2	2	4	6-0-0

I Joist (Flush)

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
J6	NJ60U	3.5	9.5			33	16-0-0
J5	NJH	2.5	9.5			27	14-0-0
J4	NJH	2.5	9.5			9	12-0-0
J9	NJH	2.5	9.5			7	4-0-0

Rim Board

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			11	12

Blocking

Label	Description	Width	Depth	Qty	Plies	Pcs	Length
BLK1	NJH	2.5	9.5	LinFt		Varies	21-0-0

Hanger

		Beam/Girder			Supported Member	
Label	Pcs	Description	Skew	Slope	fasteners	fasteners
H4	15	LT259			4 10dx1 1/2	2 10dx1 1/2
H5	3	HGUS410			46 16d	16 16d
H6	1	Unknown Hanger				

NOTES:

- Framer to verify dimensions on the architectural drawings.
- Double joist only require filter/backer ply when supporting another member using a face-mounted hanger.
- Install 2x4 blocking @ 24" o/c under parallel non-load bearing walls.
- Install single-ply flush window header along inside face of rimboard/rimjoist.
- Refer to Nascor specifier guide for installation works.
- Squash blocks recommended to be installed at end bearing on all first level joists which support loading from above exceeding two levels floor or roof.
- Load transfer blocks to be installed under all point loads.
- It shall be the framer's responsibility that floor joists and beams are fastened as per the hanger manufacturer's standards.

Refer to Multiple Member Connection Detail to ply to ply nailing or bolting requirements.

Rim parallel to joists: 1-1/8" rimboard with 2"x 4" block (1/16" longer than rim depth @ 16" o/c). All other components and structural elements supporting the floor system such as beams, walls, columns, and foundation walls and footings including anchorage of components and bracing for lateral stability are the responsibility of Others.

Hatch area represents ceramic tiled floor with an additional dead load of 5 PSF

The framing shown on this layout may deviate from the architectural and structural drawings. Project Engineer to review and approve the deviation prior to construction.

ARCHITECTURAL DRAWINGS:

REGION DESIGN INC.
8700 Dufferin St., Concord, ON
Date: May 2018
Project No:
Model: Hemlock 5-5C

NASCOR

Layout Name
HEMLOCK 5C-1 & 5C-2

Design Method
LSD

Description
MINNISALE HOMES
BRAMPTON, ONT.

Revised
August 14, 2018

Builder
GREENPARK

Sales Rep
RM

Designer
RCO

Shipping
Project

Builder's Project

Kott Lumber Company

14 Anderson Blvd
Stouffville, Ontario
Canada
L4A 7X4
905-642-4400

Job Path

S:\CUSTOMERS\GREENPARK
MINNISALE HOMES\MODELS
HEMLOCK 5C\HEMLOCK 5C-1
FLOOR\REV\HEMLOCK 5C-1.dwg

Second Floor

Design Method LSD
Building Code NBCC 2010 / OBC 2012

Floor

Loads

Live 40
Dead 15

Deflection Joist

LL Span L/ 480

TL Span L/ 360

LL Cant 2L/ 480

TL Cant 2L/ 360

Deflection Girder

LL Span L/ 360

TL Span L/ 240

LL Cant 2L/ 480

TL Cant 2L/ 360

Decking

Deck SPF Plywood

Thickness 5/8"

Fastener Nailed & Glued

Vibration

Ceiling: Gypsum 1/2"

LOT 11 R.

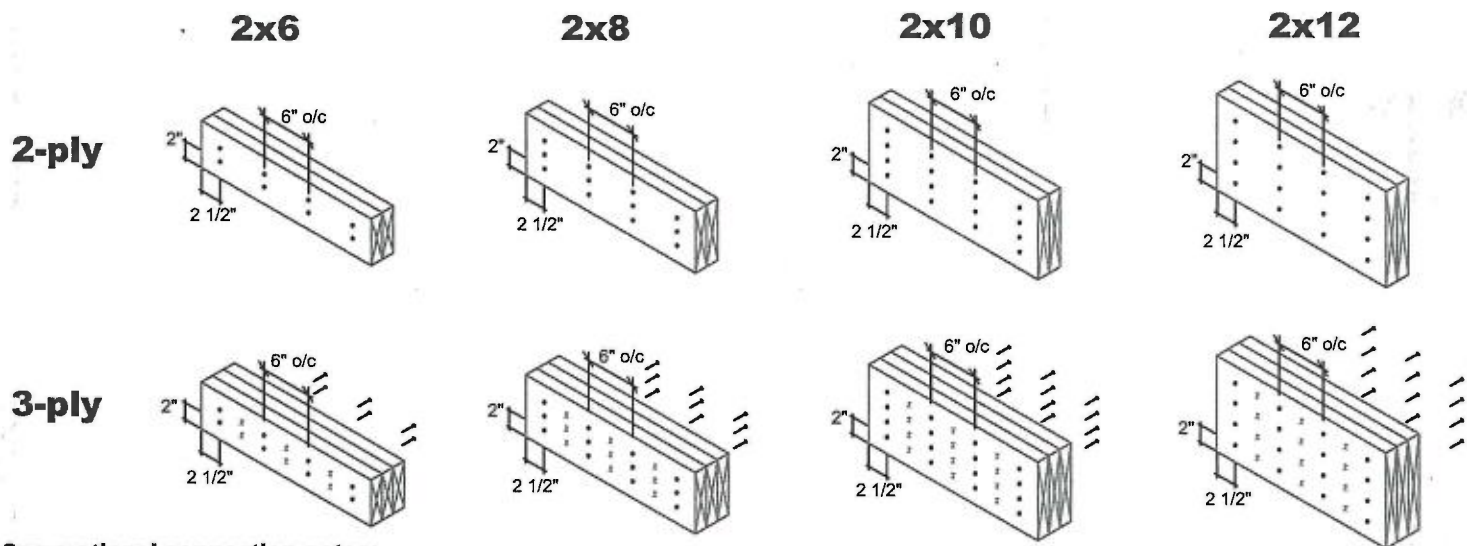
KOTT

MULTIPLE MEMBER CONNECTIONS

GREENPARK-MINNISALE HOMES-
MODEL HEMLOCK 5C-1 & 5C-2

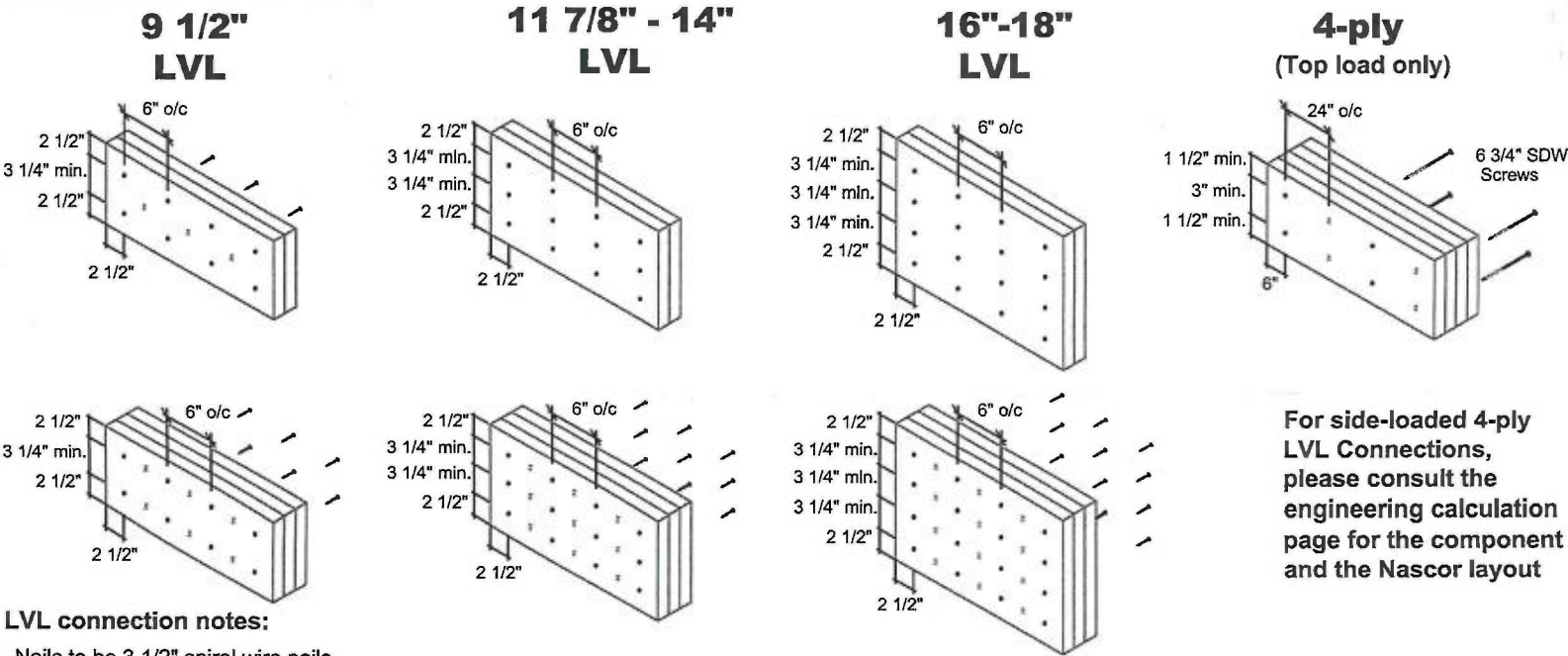
LOT 11R

Conventional Connections (for uniform distributed loads)



- Conventional connection notes:
- Nails to be 3" 10d spiral wire nails.
 - Nails to be located a minimum of 2" from the top and bottom of the member. Start all nails a minimum of 2 1/2" in from ends.
 - Number of rows and spacing as per details shown, unless noted otherwise.
 - "X" represents nail driven from the opposite side.

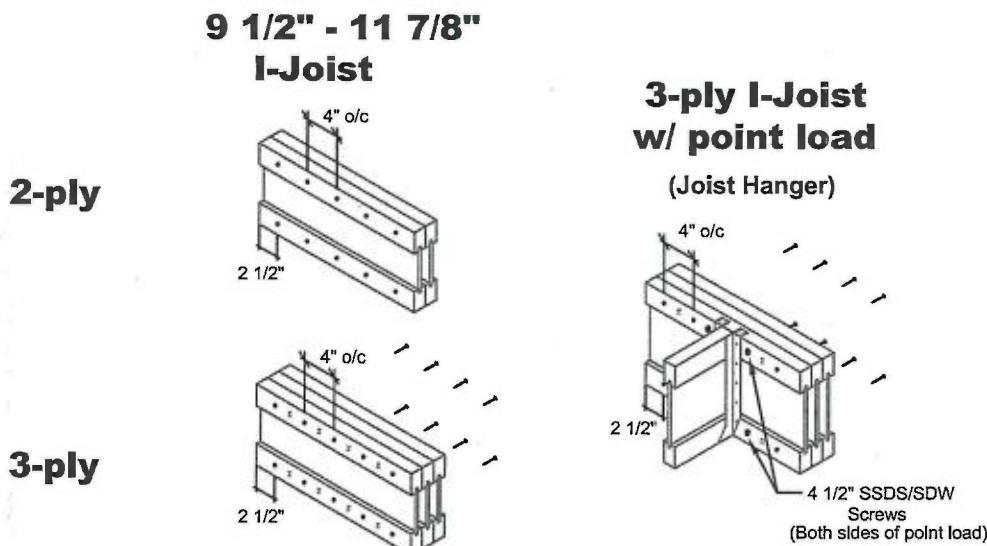
LVL Connections (for uniform distributed loads)



- LVL connection notes:
- Nails to be 3 1/2" spiral wire nails.
 - Nails to be located a minimum of 2 1/2" from the top and bottom of the member. Start all nails a minimum of 2 1/2" in from ends.
 - Minimum 3 1/4" spacing between rows.
 - Number of rows and spacing as per details shown, unless noted otherwise.
 - "X" represents nail or screw driven from the opposite side.

For side-loaded 4-ply LVL Connections, please consult the engineering calculation page for the component and the Nascor layout

Vertical I-Joist Connections (for uniform distributed loads)



- Vertical I-Joist connection notes:
- Nails to be 3" spiral wire nails.
 - Nails to be located at centre of top and bottom flanges. Start all nails a minimum of 2 1/2" in from ends.
 - Number of rows and spacing as per details shown, unless noted otherwise.
 - "X" represents nail driven from the opposite side.

MULTI-PLY
CONNECTION
DETAILS

Date: November 30, 2016
Scale: NTS



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