NEVO 10-110

PAGE I UT 44

Engineering Note Page (ENP-2)

GREENPARK-MINNISALE HOMES-MODEL HEMLOCK 4-1 & 4-2 **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 <u>only</u> 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 preauthorization.

19-440024.000 80 RR KOTT



Client:

Address:

Project:

GREENPARK

Date:

8/13/2018

Designer: RCO

Job Name: HEMLOCK 4-1

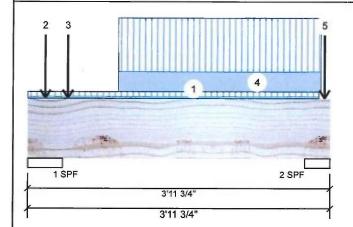
Project #:

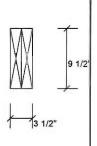
Forex 2.0E-3000Fb LVL

1.750" X 9.500"

2-Ply - PASSED

Level: Ground Floor





Wind

Member Inform	nation
Туре:	Girder
Plies:	2
Moisture Condition:	Dry
Deflection LL:	360
Deflection TL:	240
Importance:	Normal
General Load	
Floor Live:	40 PSF

15 PSF

Application: Design Method: **Building Code:**

Vibration:

Floor (Residential) LSD

NBCC 2010 / OBC 2012 No

Load Sharing: Deck:

Not Checked Not Checked

Unfactored	Reactions	UNPATTERNED	lb (Uplift)
Bra	Live	Dead	Snow

J		Doug	011011	
1	3366	1381	0	0
2	1027	414	0	0

Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.	
1 - SPF	5.500"	62%	1726 / 5049	6775	L	1.25D+1.5L	
2-SPF	4.000"	24%	517 / 1541	2059	L	1.25D+1.5L	

Analysis Results

Dead:

Analysis	Actual	Location	Allowed	Capacity	Comb	Case
Moment	831 ft-lb	2'1 1/16"	22724 ft-lb	0.037 (4%)	1.25D+1.5L	
Unbraced	831 ft-lb	2'1 1/16"	22724 ft-lb	0.037 (4%)	1.25D+1.5L	L
Shear	1816 lb	1'2 1/4"	9277 lb	0.196 (20%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/32006)	2' 13/16"	0.110 (L/360)	0.010 (1%)	D	Uniform
LL Defl inch	0.003 (L/12992)	2' 7/8"	0.110 (L/360)	0.030 (3%)	L	L
TL Defl inch	0.004 (L/9241)	2' 7/8"	0.166 (L/240)	0.030 (3%)	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

- 1 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 4.5.
- 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

Lateral	sier derness rade based c								
ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 3-10-0	(Span)1-4-2	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-2-12		Тор	1074 lb	2663 lb	0 lb	0 lb	C2
3	Point	0-6-5		Far Face	173 lb	386 lb	0 lb	0 lb	J9
4	Part, Uniform	1-2-5 to 3-10-5		Far Face	109 PLF	290 PLF	0 PLF	0 PLF	

Continued on page 2...

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
- approvers
 Damaged Beams must not be used
 Design assumes top edge is laterally restrained
 Provide Tateral support at bearing points to avoid
 lateral displacement and rotation

For flat roofs provide proper drainage to prevent ponding

Manufacturer Info APA: PR-L318

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



This design is valid until 7/10/2021

isDesign™

Project: Address:

GREENPARK Client:

Date:

8/13/2018

Page 2 of 2

PAGE 3 UF 24

RCO Designer:

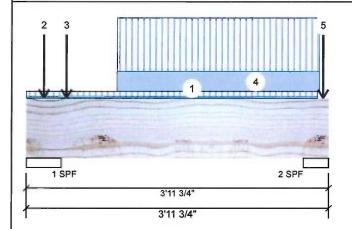
Job Name: HEMLOCK 4-1

Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500" 2-Ply - PASSED

Level: Ground Floor



.Continued from page 1

ID Load Type 5

Location Trib Width 3-10-14

Side Near Face Dead 188 lb

Live 468 lb Snow 0 lb Wind Comments

0 lb F1

Point 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.

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

Handling & Installation

- andling & 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 adge is laterally restrained
 Provide. lateral support at bearing points te avoid
 lateral displacement and rotation

- For flat roofs provide proper drainage to prevent ponding

This design is valid until 7/10/2021

Manufacturer Info

Forex APA: PR-L318







Client:

Address:

Project:

GREENPARK

Date: 8/13/2018

Designer: RCO

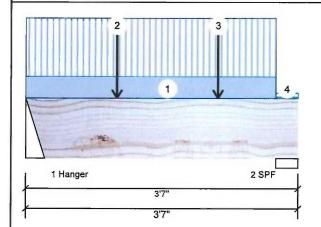
Job Name: HEMLOCK 4-1

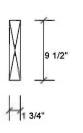
Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500" - PASSED

Level: Ground Floor





Wind

0

1.25D+1.5L

Member Inform	nation
Туре:	Girder
Plies:	1
Moisture Condition:	Dry
Deflection LL:	360
Deflection TL:	240
Importance:	Normal
General Load	
Floor Live:	40 PSF
Dead:	15 PSF

Application: Floor (Residential) Design Method: LSD **Building Code:** NBCC 2010 / OBC 2012 Load Sharing: No Deck: Not Checked Vibration: **Not Checked**

Bearing:	s and Fac	tored R	eactions				
Bearing	Length	Cap. F	React D/L lb	Total	Ld. Case	Ld. Comb.	
1 - Hanger	3.000"	36%	353 / 1052	1405	L	1.25D+1.5L	

348 / 1027

Snow

1374 L

0

0

Unfactored Reactions UNPATTERNED lb (Uplift)

Dead

283

278

Live

701

684

Brg

1

2

2 - SPF 3.500"

Analysis Results Analysis Actual Location Allowed Capacity Comb. 1147 ft-lb Moment 1'8 7/16" 11362 ft-lb 0.101 (10%) 1.25D+1.5L L Unbraced 1147 ft-lb 1'8 7/16" 9778 ft-lb 0.117 (12%) 1.25D+1.5L L 1015 lb Shear 2'6 3/4" 4638 lb 0.219 (22%) 1.25D+1.5L L Perm Defl in. 0.003 1'9 1/16" 0.106 (L/360) 0.030 (3%) D Uniform (L/11424) LL Deff inch 0.008 (L/4633) 1'9 1/16" 0.106 (L/360) 0.080 (8%) L L TL Defl inch 0.012 (L/3296) 1'9 1/16" 0.158 (L/240) 0.070 (7%) D+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.

36%

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

- 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.

_	Dottom Bradea at peanings.	TOTAL EGYED OVER BEAUTION							
ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 3-3-8		Тор	90 PLF	240 PLF	0 PLF	0 PLF	
2	Point	1-2-6		Near Face	123 lb	292 lb	0 lb	0 lb	J4
3	Point	2-6-6		Near Face	126 lb	299 lb	0 lb	0 lb	J4
4	Tie-In	3-3-8 to 3-7-0	(Span)0-10-0	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				4 PLF				

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 Bearns must not be used

 Design assumes top edge is laterally restrained

 Provide lateral support at bearing points to avoid

 lateral displacement and rotation
- For flat roofs provide proper drainage to prevent ponding

This design is valid until 7/10/2021

Manufacturer Info APA: PR-L318







Client:

Address:

GREENPARK

Project:

Date:

RCO Designer:

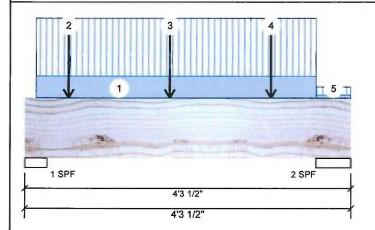
HEMLOCK 4-1 Job Name:

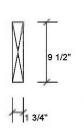
8/13/2018

Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500" - PASSED Level: Ground Floor





Wind

Member Inform	nation
Туре:	Girder
Plies:	1
Moisture Condition:	Dry
Deflection LL:	360
Deflection TL:	240
Importance:	Normal
General Load	
Floor Live:	40 PSF

15 PSF

Application: Design Method:

Building Code:

Floor (Residential)

NBCC 2010 / OBC 2012

Load Sharing: No

Deck: Not Checked Vibration: Not Checked

970 391 0 0 1 350 0 0 2 881

Unfactored Reactions UNPATTERNED Ib (Uplift)

Bearings and Factored Reactions Bearing Length Cap. React D/L lb

Live

Total Ld. Case Ld. Comb. 1 - SPF 3.500" 52% 489 / 1456 1945 L 1.25D+1.5L 2 - SPF 5.500" 30% 437 / 1322 1759 L 1.25D+1.5L

Analysis Results

Dead:

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1695 ft-lb	1'10 7/8"	11362 ft-lb	0.149 (15%)	1.25D+1.5L	L
Unbraced	1695 ft-lb	1'10 7/8"	9238 ft-lb	0.184 (18%)	1.25D+1.5L	L
Shear	1527 lb	1' 1/4"	4638 lb	0.329 (33%)	1.25D+1.5L	L
Perm Defl in.	0.006 (L/7995)	1'11 1/4"	0.122 (L/360)	0.050 (5%)	D	Uniform
LL Defl inch	0.014 (L/3200)	1'11 7/16"	0.122 (L/360)	0.110 (11%)	L	L
TL Defl inch	0.019 (L/2285)	1'11 7/16"	0.183 (L/240)	0.110 (11%)	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

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

o Bottom bracea at bearings.						I CIRT ECADO O VER BEARINGS:			
ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-1-12 to 3-10-0		Тор	90 PLF	240 PLF	0 PLF	0 PLF	
2	Point	0-6-14		Near Face	128 lb	307 lb	0 lb	0 lb	J8
3	Point	1-10-14		Near Face	134 lb	322 lb	0 lb	0 lb	J8
4	Point	3-2-14		Near Face	125 lb	322 lb	0 lb	0 lb	J8
5	Tie-In	3-10-0 to 4-3-8	(Span)1-8-5	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				4 PLF				

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.

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 strongth 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 APA: PR-L318

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



This design is valid until 7/10/2021



Client:

Project: Address: GREENPARK

8/13/2018 Date:

RÇO Designer:

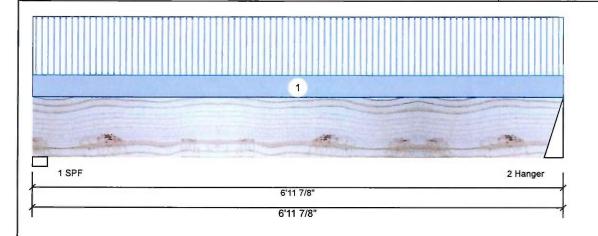
Job Name: HEMLOCK 4-1

Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500" - PASSED

Level: Ground Floor





Member	Information
--------	-------------

Type:	Giraer
Plies:	1
Moisture Condition:	Dry
Deflection LL:	360
Deflection TL:	240
Importance:	Normal

Application: Design Method: **Building Code:** Load Sharing:

Deck:

Vibration:

Floor (Residential) LSD NBCC 2010 / OBC 2012 No Not Checked

Not Checked

Unfactored Reactions UNPATTERNED lb (Uplift) Dead Live Snow Wind 57 0 1 0 0 2 58 35

Importance: Normal General Load Floor Live: 40 PSF Dead: 15 PSF

Bearings and Factored Reactions

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2,375"	5%	43 / 86	129	L	1.25D+1.5L
2 - Hanger	3.000"	3%	44 / 87	131	L	1.25D+1.5L

Analysis Results

l	Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
l	Moment	206 ft-lb	3'5 5/8"	11362 ft-lb	0.018 (2%)	1.25D+1.5L	L
ı	Unbraced	206 ft-lb	3'5 5/8"	5592 ft-lb	0.037 (4%)	1.25D+1.5L	L
l	Shear	94 lb	6' 1/8"	4638 lb	0.020 (2%)	1.25D+1.5L	L
l	Perm Defl in.	0.002 (L/37066)	3'5 5/8"	0.222 (L/360)	0.010 (1%)	D	Uniform
	LL Defl inch	0.004 (L/22480)	3'5 5/8"	0.222 (L/360)	0.020 (2%)	L	L
	TL Defl inch	0.006 (L/13993)	3'5 5/8"	0.333 (L/240)	0.020 (2%)	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

- 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.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments	
1	Tie-In	0-0-0 to 6-11-14	(Span)0-9-14	Тор	15 PSF	40 PSF	0 PSF	0 PSF		
	Self Weight				4 PLF					

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

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

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

For flat roofs provide proper drainage to prevent ponding

This design is valid until 7/10/2021

Manufacturer Info Forex APA: PR-L318





MEA0 10-110 PAUE 3 UF 24

Client: Project: Address: **GREENPARK**

Date: 8/13/2018

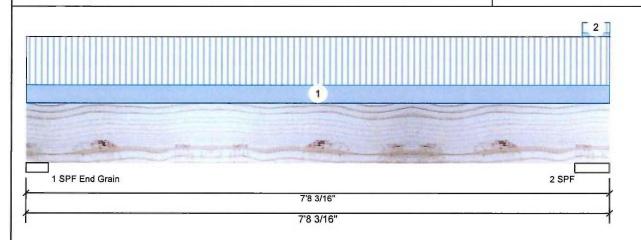
RCO Designer:

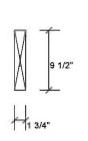
Job Name: HEMLOCK 4-1

Level: Ground Floor

Project #:

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





Wind

0

0

0

0

Page 1 of 1

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

Bearings	and	Factored	Reactions
----------	-----	-----------------	-----------

Live

567

604

1

2

Unfactored Reactions UNPATTERNED Ib (Uplift)

Dead

229

243

Bearing Ler	ngth Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.	Π
1 - SPF 3.50 End Grain	25%	286 / 851	1137	L	1.25D+1.5L	
2 - SPF 5.50	00" 20%	304 / 907	1210	L	1.25D+1.5L	

Analysis Actual Location Allowed Capacity Comb. Case Moment 1884 ft-lb 3'9 1/8" 11362 ft-lb 0.166 (17%) 1.25D+1.5L L Unbraced 1884 ft-lb 3'9 1/8" 5281 ft-lb 0.357 (36%) 1.25D+1.5L L 1064 lb 1' 1/4" 4638 lb 0.229 (23%) 1.25D+1.5L L Shear Perm Defl in. 0.016 (L/5227) 3'9 1/8" 0.235 (L/360) 0.070 (7%) D Uniform LL Defl inch 0.040 (L/2105) 3'9 1/8" 0.235 (L/360) 0.170 (17%) L L TL Defl inch 0.056 (L/1501) 3'9 1/8" 0.353 (L/240) 0.160 (16%) D+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.



Design Notes

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

Member Information

3 Bottom braced at bearings.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 7-8-3		Far Face	57 PLF	151 PLF	0 PLF	0 PLF	
2	Tie-In	7-3-13 to 7-8-3	(Span)1-7-5	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				4 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

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.

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

For flat roofs provide proper drainage to prevent ponding

Forex APA: PR-L318

Manufacturer Info

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





This design is valid until 7/10/2021



Client:

Address:

GREENPARK Project:

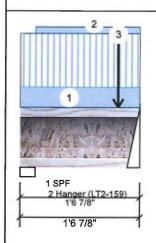
8/13/2018

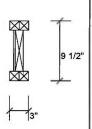
Designer: RCO Job Name: HEMLOCK 4-1

Project #:

2-Ply - PASSED NJ 9.500"

Level: Ground Floor





Wind

0

Member Info	rmation			Unfacto	red Reac	tions U	INPATTERN	ED lb (Uplift)
Туре:	Girder	Application:	Floor (Residential)	Brg	Live		Dead	Snov	N
Plies:	2	Design Method:	LSD	1	65		31		0
Moisture Condition	on: Dry	Building Code:	NBCC 2010 / OBC 2012	2	134		66		0
Deflection LL:	360	Load Sharing:	No	1 -					
Deflection TL:	240	Deck:	Not Checked						
Importance:	Normal	Vibration:	Not Checked						
General Load									
Floor Live:	40 PSF			Bearings	and Fac	tored	Reactions		
Dead:	15 PSF			Bearing	Length	Cap.	React D/L lb	Total	Ld. Case
				1 - SPE	2 375"	5%	39 / 98	137	1

Bearings and Factored Reactions											
Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.					
1 - SPF	2.375"	5%	39 / 98	137	L	1.25D+1.5L					
2 -	2.000"	11%	82 / 201	283	L	1.25D+1.5L					

Analysis Results Analysis Actual Location Allowed Capacity Comb. Case 52 ft-lb 0.007 (1%) Moment 1' 1/16" 7340 ft-lb 1.25D+1.5L L Unbraced 52 ft-lb 1' 1/16" 6912 ft-lb 0.008 (1%) 1.25D+1.5L L 268 lb Shear 1'5 5/8" 3080 lb 0.087 (9%) 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 11 3/4" 0.044 (L/360) 0.010 (1%) L (L/55254) TL Defl inch 0.000 11 11/16" 0.067 (L/240) 0.010 (1%) D+L (L/37041)

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.

Hanger

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

- 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

O DOLLO	in hange braced at 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	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-2-6 to 1-6-14		Тор	8 PLF	0 PLF	0 PLF	0 PLF	
3	Point	1-3-7		Far Face	47 lb	97 lb	0 lb	0 lb	J1

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
 Upost not to be treated with fire retardant or corrosive

Handling & Installation

- Joist flanges must not be cut or drilled Refer to latest copy of the IJoist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
- Damaged Juists must not be used
 Design assumes top flange to be laterally restrained
 by attached sheathing bras specified in engineering
 notes.
- Provide lateral support at bearing points to avoid lateral displacement and rotation
 Web stiffeners for point load as shown Minimum point load bearing length>= 3.5 inches
 For flat roofs provide proper drainage to prevent ponding

This design is valid until 7/10/2021

Manufacturer Info Nascor by Kott







Client:

Project: Address: **GREENPARK**

8/13/2018

RCO

Designer: Job Name: HEMLOCK 4-1

Project #:

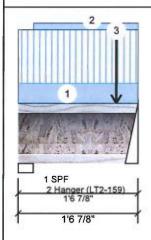
Date:

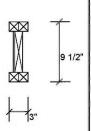
NJ

9.500"

2-Ply - PASSED

Level: Ground Floor





Member Info	rmation			Unfactor	ed React	ions UNPATTERN	ED lb (Uplift))				
Туре:	Girder	Application:	Floor (Residential)	Brg	Live	Dead	Snow	Wind				
Plies:	2	Design Method:	LSD	1	65	31	0	0				
Moisture Condition	on: Dry	Building Code:	NBCC 2010 / OBC 2012	2	133	66	0	0				
Deflection LL:	360	Load Sharing:	No	1								
Deflection TL:	240	Deck:	Not Checked									
Importance:	Normal	Vibration:	Not Checked									
General Load												
Floor Live: 40 PSF				Bearings	and Fact	tored Reactions						
Dead:	15 PSF			Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.				

1 - SPF 2.375"

2 -

Hanger

2.000"

Analysis Results

Γ	Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
ı	Moment	52 ft-lb	1' 1/16"	7340 ft-lb	0.007 (1%)	1.25D+1.5L	L
ı	Unbraced	52 ft-lb	1' 1/16"	6912 ft-lb	0.008 (1%)	1.25D+1.5L	L
l	Shear	267 lb	1'5 5/8"	3080 lb	0.087 (9%)	1.25D+1.5L	L
l	Perm Defl in.	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
	LL Defl inch	0.000 (L/55512)	11 11/16"	0.044 (L/360)	0.010 (1%)	L	L
l	TL Defl inch	0.000 (L/37157)	11 11/16"	0.067 (L/240)	0.010 (1%)	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

5%

11%

39 / 98

82 / 199

136 L

281 L

CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT. REFER TO MULTIPLE MEMBER TO MEMBER

NAILING OR BOLTING REQUIREMENTS. PASS THRU FRAMING SQUASH **BLOCK IS REQUIRED AT ALL** POINT LOADS OVER BEARINGS.

CONNECTION DETAIL FOR PLY TO PLY



1.25D+1.5L

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 flange braced at bearings.

L	o bottom nange	braced at bearings.								
Γ	ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
l	1	Tie-In	0-0-0 to 1-6-14	(Span)3-3-0	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
l	2	Part. Uniform	0-2-7 to 1-6-14		Тор	8 PLF	0 PLF	0 PLF	0 PLF	
ı	3	Point	1-3-7		Near Face	47 lb	96 lb	0 lb	0.lb	.11

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 atherwise
 Upost not to be treated with fire retardant or corrosive

Handling & Installation

- andling & Installation

 I Joist flanges must not be cut or drilled

 Refer to latest copy of the IJoist product information details for framing details, stiffener tables, web hole chart, bridging details, multiply fastening details and handling/erection details

 Damaged IJoists must not be used

 Design assumes top flange to be laterally restrained by attached sheathing or as specified in angineering 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







Client: Project: Address:

GREENPARK

8/13/2018 Date:

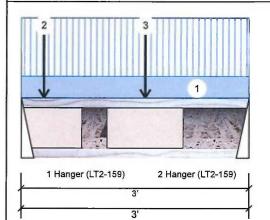
RCO Designer:

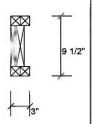
Job Name: HEMLOCK 4-1

Project #:

2-Ply - PASSED NJ 9.500"

Level: Ground Floor





Page 1 of 1

Member	Intormation

Plies: 2 Moisture Condition: Dry Deflection LL: 360 Deflection TL: 240 Importance: Normal General Load Floor Live: 40 PSF	Type:	Girder
Deflection LL: 360 Deflection TL: 240 Importance: Normal General Load	Plies:	2
Deflection TL: 240 Importance: Normal General Load	Moisture Condition:	Dry
Importance: Normal General Load	Deflection LL:	360
General Load	Deflection TL:	240
	Importance:	Normal
Floor Live: 40 PSF	General Load	
	Floor Live:	40 PSF

15 PSF

Application: Design Method:

Floor (Residential)

Building Code: NBCC 2010 / OBC 2012

Load Sharing: Deck:

Not Checked Not Checked Vibration:

Unfactored	Reactions	UNPATTERNED	lb (Uplift)
------------	-----------	-------------	-------------

DIG	Live	Dead	SHOW	VVIIIU
1	426	159	0	0
2	266	100	0	0

Analysis Results

Dead:

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	598 ft-lb	1'7 9/16"	7340 ft-lb	0.081 (8%)	1.25D+1.5L	L
Unbraced	598 ft-lb	1'7 9/16"	4678 ft-lb	0.128 (13%)	1.25D+1.5L	L
Shear	831 lb	1 1/4"	3080 lb	0.270 (27%)	1.25D+1.5L	L
Perm Defl in.	0.002 (L/19712)	1'7 9/16"	0.093 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch	0.005 (L/7401)	1'7 9/16"	0.093 (L/360)	0.050 (5%)	L	L
TL Defl inch	0.006 (L/5381)	1'7 9/16"	0.140 (L/240)	0.040 (4%)	D+L	L

Bearings and Factored Reactions

Dear ing.	o and rac	torear	Cactions				
Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.	
1 - Hanger	2.000"	32%	199 / 639	838	L	1.25D+1.5L	
2 - Hanger	2.000"	20%	125 / 399	523	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 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	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-3-9		Near Face	84 lb	225 lb	0 lb	0 lb	J7
3	Point	1-7-9		Near Face	136 lb	362 lb	0 lb	0 lb	J7

Calculated Structured Designs is responsible only of the Carculated 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.

Dry service conditions unless noted otherwise
 Upost not to be treated with fire retardant or corrosive

- Handling & Installation
- andling & Installation

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

 Damaged Upists must not be used
 Design assumes top flange to be laterally restrained by attached sheathing for as specified in angineering notes.

Provide lateral support at bearing points to avoid lateral displacement and rotation
 Web stiffeners for point load as shown Minimum point load bearing length>= 3,5 inches
 For flat roofs provide proper drainage to prevent ponding

This design is valid until 7/10/2021

Manufacturer Info Nascor by Kott







Client:

GREENPARK

Project: Address:

8/13/2018 Date:

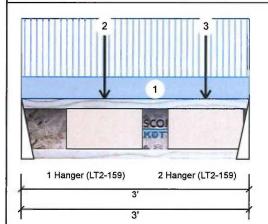
RCO Designer:

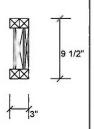
Job Name: HEMLOCK 4-1

Project #:

2-Ply - PASSED NJ 9.500"

Level: Ground Floor





Туре:	Girder	Aı
Plies:	2	D
Moisture Condition:	Dry	Ві
Deflection LL:	360	Lo
Deflection TL:	240	D
Importance:	Normal	Vi
General Load		
Floor Live:	40 PSF	

15 PSF

Member Information

pplication: Floor (Residential) esign Method: LSD Building Code: NBCC 2010 / OBC 2012 oad Sharing: Not Checked eck: ibration: **Not Checked**

Unfactored Reactions UNPATTERNED Ib (Uplift) Live Dead Snow Wind 283 106 1 2 353 132 0 0

133 / 424

165 / 529

Cap. React D/L lb

Analysis Results Location Allowed Actual Analysis Capacity Comb. Case Moment 510 ft-lb 1'1 1/8" 7340 ft-lb 0.070 (7%) 1.25D+1.5L L Unbraced 510 ft-lb 1'1 1/8" 4678 ft-lb 0.109 (11%) 1.25D+1.5L L 687 lb 2'10 3/4" 3080 lb 0.223 (22%) 1.25D+1.5L L Shear Perm Defl in. 0.001 1'1 3/8" 0.093 (L/360) 0.020 (2%) D Uniform (L/23045) LL Defl inch 0.004 (L/8640) 1'1 3/8" 0.093 (L/360) 0.040 (4%) L

1'1 3/8" 0.140 (L/240) 0.040 (4%) D+L

READ ALL NOTES ON THIS PAGE AND ON

21%

27%

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.

Bearings and Factored Reactions

Bearing Length

2.000"

2.000"

1 -

Hanger

Hanger

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



Ld. Comb.

1.25D+1.5L

1.25D+1.5L

Total Ld. Case

557 L

694 L

Design Notes

Dead:

1 Fill all hanger nailing holes.

TL Defl inch 0.005 (L/6284)

- 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.

I	ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
I	1	Tie-In	0-0-0 to 3-0-0	(Span)1-8-15	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
I	2	Point	1-1-2		Far Face	111 lb	296 lb	0 lb	0 lb	J4
I	3	Point	2-5-2		Far Face	88 lb	235 lb	0 lb	0 lb	J4

1

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 intra application, and to verify the dimensions and loads.

Lumber

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

Handling & Installation

- andling & Installation

 Lloist flanges must not be cut or drilled

 Refer to latest copy of the IJoist product information
 details for framing details, stiffener tables, web hole
 ehart, bridging details, multi-ply fastening details and
 handling/erection details

 Damaged IJoists must not be used

 Design assumes too 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 roots provide proper drainage to prevent ponding

Manufacturer Info

Nascor by Kott





MEU0 10-110 PAUE 14 UF 24



Client: Project: Address: **GREENPARK**

8/13/2018 Date:

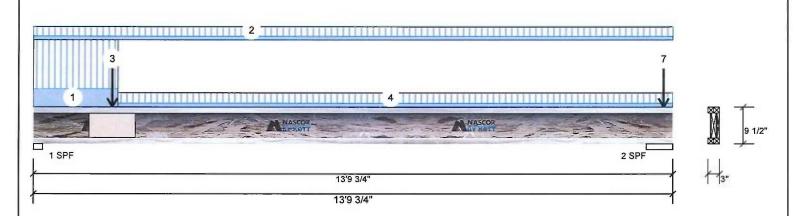
RCO Designer:

Job Name: HEMLOCK 4-1

Project #:

2-Ply - PASSED NJ 9.500"

Level: Ground Floor



Member Inforn	nation			Unfactored Reactions UNPATTERNED lb (Uplift)						
Туре:	Girder	Application:	Floor (Residential)	Brg	Live		Dead	Snov	v	Wind
Plies:	2	Design Method:	LSD	1	578		216	4	0	0
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012	2	423		219	- 4	0	0
Deflection LL:	360	Load Sharing:	No							
Deflection TL:	240	Deck:	Not Checked							
Importance:	Normal	Vibration:	Not Checked							
General Load										
Floor Live:	40 PSF			Bearings a	and Fact	ored R	eactions			
Dead:	15 PSF			Bearing L	ength.	Cap. F	React D/L lb	Total	Ld. Case	Ld. Comb.
				1 - SPF 2	2.375"	42%	270 / 867	1137	L	1.25D+1.5L
				2-SPF 6	3.875"	29%	273 / 634	907	L	1.25D+1.5L

Analysis Results

Ana	ysis	Actual	Location	Allowed	Capacity	Comb.	Case
Mon	nent	1835 ft-lb	4'11 5/16"	7340 ft-lb	0.250 (25%)	1.25D+1.5L	L
Unb	raced	1835 ft-lb	4'11 5/16"	1848 ft-lb	0.993 (99%)	1.25D+1.5L	L
She	ar	1116 lb	1 5/8"	3080 lb	0.362 (36%)	1.25D+1.5L	L
Perr	n Defl in.	0.043 (L/3654)	6'3 1/2"	0.439 (L/360)	0.100 (10%)	D	Uniform
LLD	efl inch	0.115 (L/1369)	6'3 1/2"	0.439 (L/360)	0.260 (26%)	L	L
TLD	efl inch	0.159 (L/996)	6'3 1/2"	0.658 (L/240)	0.240 (24%)	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



Page 1 of 1

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 4'10" o.c.
- 5 Bottom flange braced at bearings

ı	3 Bottom Hange	braced at bearings.							100000000000000000000000000000000000000	
	ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
	1	Tie-In	0-0-0 to 1-9-14	(Span)3-3-0	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
	2	Tie-In	0-0-0 to 13-9-12	(Span)0-7-10	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
	3	Point	1-8-6		Far Face	132 lb	353 lb	0 lb	0 lb	F6
	4	Tie-In	1-9-14 to 13-9-12	(Span)0-8-6	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
	5	Point	13-7-6		Тор	1 lb	3 lb	0 lb	0 lb	J8
ı	6	Point	13-7-6		Тор	76 lb	183 lb	0 lb	0 lb	J8
	7	Point	13-7-6		Тор	53 lb	0 lb	0 lb	0 lb	Wall Self Weight

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.

Dry service conditions unless noted atherwise
 Usist not to be treated with fire retardant or corrosive

Handling & Installation

- Handling & Installation
 Hall Stallation
 Hall Stallation
 Refer to latest copy of the Usist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
 Damaged Usists must not be used
 Design assumes top flange to be laterally restrained by attached sheathing or as specified in angineering notes.

- Provide lateral support at bearing points to avoid lateral displacement and rotation
 Web stiffeners for point load as shown Minimum point load bearing length>= 3,5 inches
 For flat roofs provide proper drainage to prevent ponding

This design is valid until 7/10/2021

Manufacturer Info

Nascor by Kott





PAUE 13 UF 44 MEA0 10-110

isDesign™

Client: Project:

Address:

GREENPARK

Date: 8/13/2018

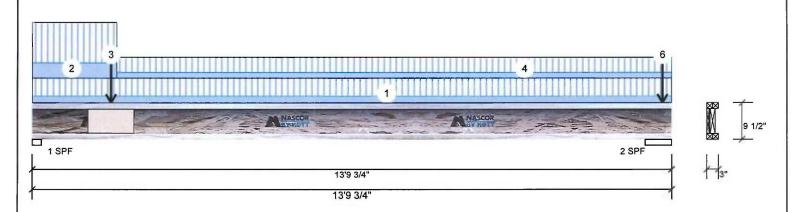
RCO Designer:

Job Name: HEMLOCK 4-1

Project #:

2-Ply - PASSED NJ 9.500"

Level: Ground Floor



Member Inforn	nation			Unfactored Reactions UNPATTERNED lb (Uplift)						
Туре:	Girder	Application:	Floor (Residential)	Brg	Live		Dead	Snow		Wind
Plies:	2	Design Method:	LSD	1	677		254	0		0
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012	2	783		414	0		0
Deflection LL:	360	Load Sharing:	No							
Deflection TL:	240	Deck:	Not Checked							
Importance:	Normal	Vibration:	Not Checked							
General Load										
Floor Live:	40 PSF			Bearings	and Fac	tored F	Reactions			
Dead:	15 PSF			Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
		₩		1 - SPF	2.375"	50%	317 / 1016	1334	L	1.25D+1.5L
				2-SPF	6.875"	55%	518 / 1175	1693	L	1.25D+1.5L

Analysis Results

Г	Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
l	Moment	2794 ft-lb	6' 1/16"	7340 ft-lb	0.381 (38%)	1.25D+1.5L	L
	Unbraced	2794 ft-lb	6' 1/16"	2827 ft-lb	0.988 (99%)	1.25D+1.5L	L
	Shear	1308 lb	1 5/8"	3080 lb	0.425 (42%)	1.25D+1.5L	L
	Perm Defl in.	0.066 (L/2383)	6'6 1/16"	0.439 (L/360)	0.150 (15%)	D	Uniform
	LL Defl inch	0.177 (L/893)	6'6 1/16"	0.439 (L/360)	0.400 (40%)	L	L
	TL Defl inch	0,243 (L/650)	6'6 1/16"	0.658 (L/240)	0.370 (37%)	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.



Page 1 of 1

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 3'11" o.c.

L	5 Bottom flange braced at bearings.							O OVER BEA	artinos.	
	ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
l	1	Tie-In	0-0-0 to 13-9-12	(Span)1-5-6	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
l	2	Tie-In	0-0-0 to 1-9-14	(Span)3-3-0	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
l	3	Point	1-8-6		Near Face	106 lb	283 lb	0 lb	0 lb	F6
l	4	Tie-In	1-9-14 to 13-9-12	(Span)1-2-10	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
ı	5	Point	13-7-6		Тор	151 lb	367 lb	0 lb	0 lb	J8
l	6	Point	13-7-6		Тор	107 lb	dI 0	0 lb	0 lb	Wall Self Weight

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteries 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
 Uplist not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

- andling & Installation

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

MEU0 10-110 PAGE 10 UF 44

sDesign

Client: Project: Address: GREENPARK

8/13/2018 Date:

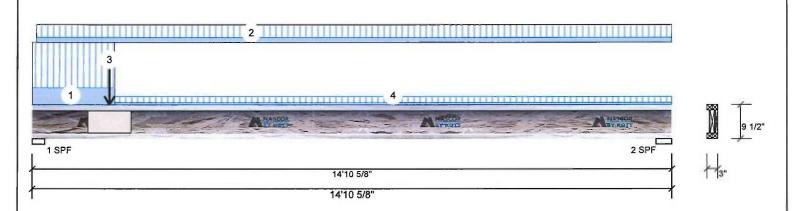
> RCO Designer:

Job Name: HEMLOCK 4-1

Project #:

2-Ply - PASSED NJ 9.500"

Level: Ground Floor



Member Information **Unfactored Reactions UNPATTERNED Ib (Uplift)** Type: Girder Application: Floor (Residential) Wind Plies: Design Method: 678 254 0 1 Moisture Condition: Dry **Building Code:** NBCC 2010 / OBC 2012 0 0 2 251 94 Deflection LL: 360 Load Sharing: No Deflection TL: Not Checked 240 Deck: Importance: Vibration: Not Checked Normal General Load **Bearings and Factored Reactions** 40 PSF Floor Live: Dead: 15 PSF Bearing Length Cap. React D/L lb Total Ld. Case Ld. Comb. 1 - SPF 3.500" 45% 317 / 1017 1334 L 1.25D+1.5L 1.25D+1.5L 2 - SPF 4.375" 495 L 16% 118 / 377

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2185 ft-lb	5'5 1/2"	7340 ft-lb	0.298 (30%)	1.25D+1.5L	L
Unbraced	2185 ft-lb	5'5 1/2"	2202 ft-lb	0.993 (99%)	1.25D+1.5L	L
Shear	1300 lb	2 3/4"	3080 lb	0.422 (42%)	1.25D+1.5L	L
Perm Defl in.	0.060 (L/2850)	6'11 3/8"	0.478 (L/360)	0.130 (13%)	D	Uniform
LL Defl inch	0.161 (L/1067)	6'11 5/16"	0.478 (L/360)	0.340 (34%)	L	L
TI Deflinch	0.222 (L/776)	6'11 5/16"	0.718 (L/240)	0.310 (31%)	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.



Page 1 of 1

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.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-11-0	(Span)3-3-0	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-1-2 to 14-10-10	(Span) 0-10-15	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	1-9-8		Far Face	159 lb	426 lb	0 lb	0 lb	F6
4	Tie-In	1-11-0 to 14-10-10	(Span)0-5-1	Тор	15 PSF	40 PSF	0 PSF	0 PSF	

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
 Upist not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

- andling & Installation

 I boild flanges must not be cut or drilled

 Refer to latest copy of the Jubist product information details for framing details, stiffener tables, web hole chart, bridging details, multiply fastening details and handling/erection details

 Damaged Jubists 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 lengthers 3.5 linches
 For flat roofs provide proper drainage to prevent
- ponding

This design is valid until 7/10/2021

Nascor by Kott

Manufacturer Info







Client: Project:

Address:

GREENPARK

8/13/2018 Date:

RCO Designer:

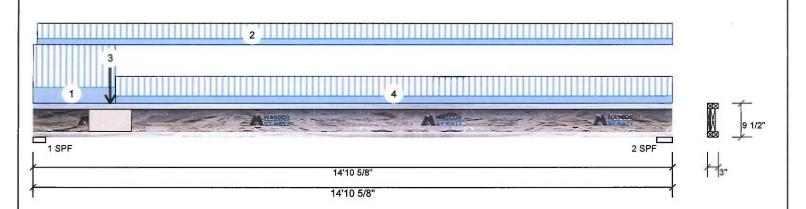
Job Name: HEMLOCK 4-1

Project #:

9.500" NJ

2-Ply - PASSED

Level: Ground Floor



Member Information **Unfactored Reactions UNPATTERNED Ib (Uplift)** Type: Girder Application: Floor (Residential) Dead Plies: 2 Design Method: 694 260 0 1 Moisture Condition: Dry **Building Code:** NBCC 2010 / OBC 2012 0 2 431 162 Deflection LL: Load Sharing: No Deflection TL: 240 Deck: Not Checked Importance: Not Checked Vibration: Normal General Load **Bearings and Factored Reactions** Floor Live: 40 PSF Dead: 15 PSF Bearing Length Cap. React D/L lb Total Ld. Case 1 - SPF 3.500" 46% 325 / 1040 1366 L

Analysis Results

Г	Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
	Moment	3182 ft-lb	6'9 9/16"	7340 ft-lb	0.434 (43%)	1.25D+1.5L	L
	Unbraced	3182 ft-lb	6'9 9/16"	3222 ft-lb	0.988 (99%)	1.25D+1.5L	L
	Shear	1330 lb	2 3/4"	3080 lb	0.432 (43%)	1.25D+1.5L	L
	Perm Defl in.	0.088 (L/1948)	7'2 5/8"	0.478 (L/360)	0.180 (18%)	D	Uniform
	LL Defl inch	0.236 (L/731)	7'2 5/8"	0.478 (L/360)	0.490 (49%)	L	L,
	TL Defl inch	0.324 (L/531)	7'2 5/8"	0.718 (L/240)	0.450 (45%)	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.

28%

202 / 647

849 I

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.

2 - SPF 4.375"

E PROFESSIONAL

Wind

0

0

Ld. Comb.

1.25D+1.5L 1.25D+1.5L

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 3'8" o.c.

5 Bottom flange braced at bearings

3 Bottom	nange braceu at bearing	igs.							
ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-11-0	(Span)3-3-0	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-1-2 to 14-10-10	(Span)1-2-1	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	1-9-8		Near Face	100 lb	266 lb	0 lb	0 lb	F6
4	Tie-In	1-11-0 to 14-10-10	(Span)1-5-15	Тор	15 PSF	40 PSF	0 PSF	0 PSF	

Calculated Structured Designs is responsible only of the Calculated 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
 Unist not to be treated with fire retardant or corrosive
- Handling & Installation
- andling & Installation.

 Nots flanges must not be cut or drilled.
 Refer to latest copy of the Lloist product information details for framing details, sulfidener tables, web hole chart, bridging details, multi-phy fastening details and handling/erection details.

 Damaged bloists must not be used.
 Design assumes top flange to be laterally restrained by attached sheathing or as specified in engirteening 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=2.5. Inches
 For flat roofs provide proper drainage to prevent appoints.

Manufacturer Info Nascor by Kott







Client: Project: Address:

GREENPARK

8/13/2018

Designer: **RCO**

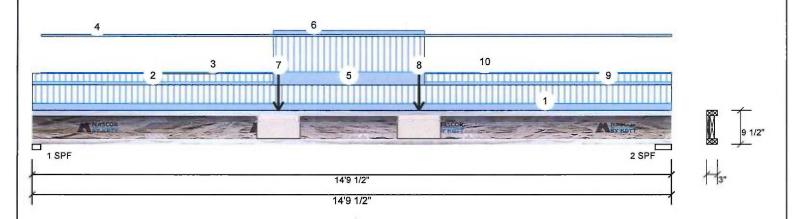
Job Name: HEMLOCK 4-1

Project #:

Date:

NJ 9.500" 2-Ply - PASSED

Level: Ground Floor



Member Inform	nation			Unfactore	ed React	ions UN	NPATTERNI	D lb (Uplift)	
Туре:	Girder	Application:	Floor (Residential)	Brg	Live		Dead	Snov	v	Wind
Plies:	2	Design Method:	LSD	1	375		183		0	0
Moisture Condition:	Dry	Building Code:	NBCC 2010 / OBC 2012	2	380		186		0	0
Deflection LL:	360	Load Sharing:	No							
Deflection TL:	240	Deck:	Not Checked							
Importance:	Normal	Vibration:	Not Checked							
General Load										
Floor Live:	40 PSF			Bearings a	and Fac	tored R	eactions			
Dead:	15 PSF			Bearing L	_ength	Cap. I	React D/L lb	Total	Ld. Case	Ld. Comb.
				1 - SPF 2	2.375"	29%	229 / 562	791	L	1.25D+1.5L
nalveic Poculte				2 - SPF 4	1.500"	26%	233 / 570	803	L	1.25D+1.5L

Analysis Results

Γ	Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
l	Moment	3635 ft-lb	7'3 5/8"	7340 ft-lb	0.495 (50%)	1.25D+1.5L	L
l	Unbraced	3635 ft-lb	7'3 5/8"	3660 ft-lb	0.993 (99%)	1.25D+1.5L	L
l	Shear	785 lb	14'5 3/4"	3080 lb	0.255 (25%)	1.25D+1.5L	L
ı	Perm Defl in.	0.117 (L/1477)	7'3 3/4"	0.478 (L/360)	0.240 (24%)	D	Uniform
ı	LL Defl inch	0.238 (᠘725)	7'3 3/4"	0.478 (L/360)	0.500 (50%)	L	L
l	TL Defl inch	0.354 (L/486)	7'3 3/4"	0.717 (L/240)	0.490 (49%)	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

- 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 3'4" o.c.

5 Bottom flange braced at bearings

O DOLLOIII	nange bracea at bearing	٠.								
ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments	
1	Tie-In	0-0-0 to 14-9-8	(Span)0-11-1	Тор	15 PSF	40 PSF	0 PSF	0 PSF		
2	Tie-In	0-0-0 to 5-6-14	(Span)0-4-15	Тор	15 PSF	40 PSF	0 PSF	0 PSF		
3	Part. Uniform	0-2-7 to 5-6-14		Тор	1 PLF	0 PLF	0 PLF	0 PLF		
4	Part, Uniform	0-2-7 to 14-9-8		Тор	2 PLF	0 PLF	0 PLF	0 PLF		
5	Tie-In	5-6-14 to 9-0-14	(Span)1-8-15	Тор	15 PSF	40 PSF	0 PSF	0 PSF		
6	Part. Uniform	5-6-14 to 9-0-14		Тор	4 PLF	0 PLF	0 PLF	0 PLF		
7	Point	5-8-6		Near Face	66 lb	134 lb	0 lb	0 lb	F5	

Continued on page 2...

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.

Dry service conditions, unless noted atherwise
 Usist not to be treated with fire retardant or corrosive

Handling & Installation

- andling & Installation

 Loist flanges must not be cut or drilled

 Refer to latest copy of the Libist product information
 details for framing details, stiffener tables, web hole
 chart, bridging details, multi-ply fastening details and
 handling/erection details

 Damaged bloists 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



isDesign™

Client: Project: Address: GREENPARK

8/13/2018 Date:

Designer: RCO

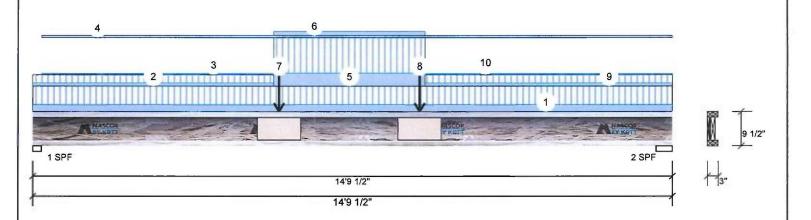
Job Name: HEMLOCK 4-1

Project #:

2-Ply - PASSED F8-C NJ 9.500"

Level: Ground Floor

Page 2 of 2



.Continued from page 1 ID Load Type Location Trib Width Side Dead Live Wind Comments Snow 8 Point 8-11-6 Near Face 66 lb 133 lb 0 lb 0 lb 9 9-0-14 to 14-9-8 (Span)0-4-15 Top 15 PSF 40 PSF 0 PSF 0 PSF Tie-In 10 Part. Uniform 9-0-14 to 14-9-8 1 PLF 0 PLF 0 PLF 0 PLF Top

> 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.

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

- LINGUING & INSTAILATION

 I Wolf flanges must not be used in difficult formation details for framing details, stiffener tables, web hole chart, bridging details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details

 Damaged Loists 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 lengths—3.5 inches
 For flat roofs provide proper drainage to prevent
- ponding

This design is valid until 7/10/2021

Manufacturer Info

Nascor by Kott





MEU0 10-110 PAGE ZI UF 24

sDesign

Client: Project:

Address:

GREENPARK

8/13/2018 Date:

Designer: RCO

Job Name: HEMLOCK 4-1

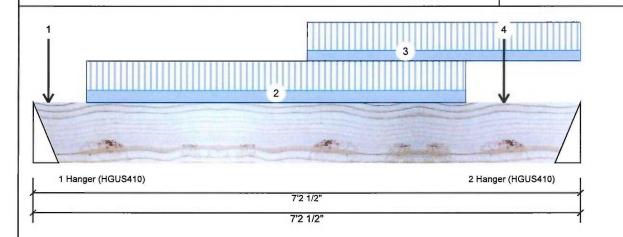
Project #:

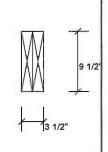
Forex 2.0E-3000Fb LVL

1.750" X 9.500"

2-Ply - PASSED

Level: Second Floor





Page 1 of 1

Туре:	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	1103	473	0	0
2	1457	610	0	0

Unfactored Reactions UNPATTERNED Ib (Uplift)

Bearings and Factored Reactions Bearing Length Cap. React D/L lb 1 -4.000" 22% 591 / 1655

28%

Total Ld. Case Ld. Comb. 2246 L 1.25D+1.5L

Hanger

4.000"

763 / 2185

2949 L 1.25D+1.5L

Hanger

Analysis Results

Member Information

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4254 ft-lb	4' 1/8"	22724 ft-lb	0.187 (19%)	1.25D+1.5L	L
Unbraced	4254 ft-lb	4' 1/8"	21846 ft-lb	0.195 (19%)	1.25D+1.5L	L
Shear	2622 lb	6'1 3/4"	9277 lb	0.283 (28%)	1.25D+1.5L	L
Perm Defl in.	0.017 (L/4697)	3'9"	0.222 (L/360)	0.080 (8%)	D	Uniform
LL Defl inch	0.040 (L/1997)	3'9 3/16"	0.222 (L/360)	0.180 (18%)	L	L
TL Defl inch	0.057 (L/1401)	3'9 1/8"	0.333 (L/240)	0.170 (17%)	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

- 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

Lateral	sicilaciliess ratio based o	ii idii section widii.						
ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind
1	Point	0-2-6		Near Face	63 lb	169 lb	0 lb	0 lb
2	Part, Uniform	0-8-6 to 5-8-6		Near Face	105 PLF	251 PLF	0 PLF	0 PLF
3	Part. Uniform	3-7-4 to 7-2-8		Тор	90 PLF	240 PLF	0 PLF	0 PLF

ı	טו	Load Type	Location	IID Width Side	Dead	Live	SHOW	vviila	Comments
I	1	Point	0-2-6	Near Face	63 lb	169 lb	0 lb	0 lb	J8
I	2	Part, Uniform	0-8-6 to 5-8-6	Near Face	105 PLF	251 PLF	0 PLF	0 PLF	
I	3	Part. Uniform	3-7-4 to 7-2-8	Тор	90 PLF	240 PLF	0 PLF	0 PLF	
I	4	Point	6-2-6	Near Face	116 lb	271 lb	0 lb	0 lb	J8
I		Self Weight			8 PLF				

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design oriteria 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

andling & 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 to pedge is laterally restrained
Provide lateral support at bearing points to avoid
lateral displacement and rotation

For flat roofs provide proper drainage to prevent ponding

This design is valid until 7/10/2021

Forex APA: PR-L318

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

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isDesign[™]

Client:

GREENPARK

Project: Address:

8/13/2018 Date:

RCO Designer:

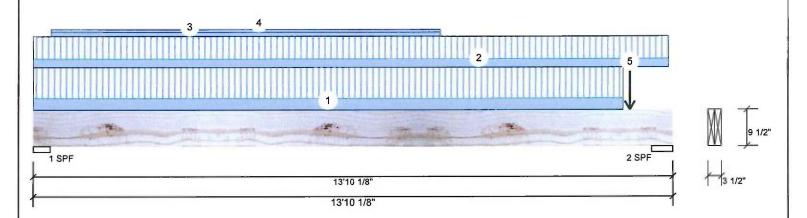
Job Name: HEMLOCK 4-1 Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500"

2-Ply - PASSED

Level: Second Floor



Member Info	rmation			Unfactor	red Reac	tions U	INPATTERNI	ED lb ((Uplift)	
Туре:	Girder	Application:	Floor (Residential)	Brg	Live		Dead	Sno	N	Wind
Plies:	2	Design Method:	LSD	1	334		209		0	0
Moisture Condition	on: Dry	Building Code:	NBCC 2010 / OBC 2012	2	1651		747		0	0
Deflection LL:	360	Load Sharing:	No							
Deflection TL:	240	Deck:	Not Checked							
Importance:	Normal	Vibration:	Not Checked							
General Load										
Floor Live:	40 PSF			Bearings	and Fac	tored	Reactions			
Dead:	15 PSF			Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
				1 - SPF	4.375"	8%	261 / 501	761	L	1.25D+1.5L
				2-SPF	5.500"	29%	934 / 2476	3410	L	1.25D+1.5L
nalysis Resu	ltc			-						

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2858 ft-lb	8' 15/16"	22724 ft-lb	0.126 (13%)	1.25D+1.5L	L
Unbraced	2858 ft-lb	8' 15/16"	19311 ft-lb	0.148 (15%)	1.25D+1.5L	L
Shear	3357 lb	12'7 7/8"	9277 lb	0.362 (36%)	1.25D+1.5L	L
Perm Defl in.	0.050 (L/3160)	7'1 1/4"	0.438 (L/360)	0.110 (11%)	D	Uniform
LL Defl inch	0.087 (L/1811)	7'2 7/8"	0.438 (L/360)	0.200 (20%)	L	L
TL Defl inch	0.137 (L/1151)	7'2 5/16"	0.657 (L/240)	0.210 (21%)	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



PAGE ZZ UF Z4

Page 1 of 1

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

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 12-9-4	(Span)1-1-14	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 13-9-0	(Span)0-10-2	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-4-9 to 8-9-13		Тор	3 PLF	0 PLF	0 PLF	0 PLF	
4	Part. Uniform	0-4-9 to 8-9-13		Тор	2 PLF	0 PLF	0 PLF	0 PLF	
5	Point	12-11-0		Far Face	610 lb	1457 lb	0 lb	dl 0	F14
	Self Weight				8 PLF				

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
Period and therefore the area of the

For flat roofs provide proper drainage to prevent ponding

This design is valid until 7/10/2021

Manufacturer Info

Forex APA: PR-L318







Client:

GREENPARK

Project: Address: Date: 8/13/2018

RCO Designer:

Job Name: HEMLOCK 4-1

Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500"

2-Ply - PASSED

Level: Second Floor

Unfactored Reactions UNPATTERNED Ib (Uplift)

Dead

302

1074

700

Cap. React D/L lb

369 / 1266

1360 / 4048

865 / 2699

17%

38%

30%

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

POINT LOADS OVER BEARINGS.

BLOCK IS REQUIRED AT ALL

Snow

0

0

0

Total Ld. Case

1635 L_

5408 LL

3563 _L

Wind

0

0

0

Ld. Comb.

1.25D+1.5L

1.25D+1.5L

1.25D+1.5L

E PROFESSIONAL

EL-MASRI

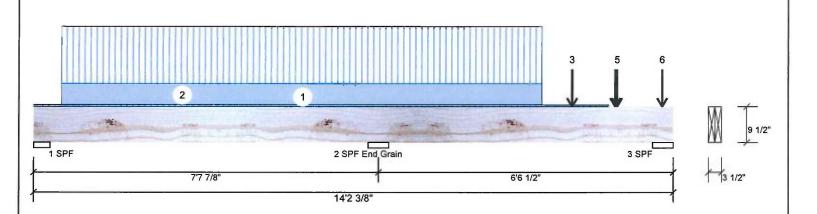
Live

746

2663

1644

Bearings and Factored Reactions



1

2

3

Bearing Length

1 - SPF 4.375"

2 - SPF 5.500"

End Grain 3 - SPF 5.500"

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		

Analysis Res	ults					Certifica-
Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-3841 ft-lb	7'7 7/8"	22724 ft-lb	0.169 (17%)	1.25D+1.5L	LL
Unbraced	-3841 ft-lb	7'7 7/8"	22724 ft-lb	0.169 (17%)	1.25D+1.5L	LL
Pos Moment	3116 ft-lb	11'11 7/16"	22724 ft-lb	0.137 (14%)	1.25D+1.5L	_L
Unbraced	3116 ft-lb	11'11 7/16"	22724 ft-lb	0.137 (14%)	1.25D+1.5L	_L
Shear	3612 lb	13' 1/8"	9277 lb	0.389 (39%)	1.25D+1.5L	_L
Perm Defl in.	0.010 (L/9038)	3'7"	0.245 (L/360)	0.040 (4%)	D	Uniform

3'9 11/16" 0.245 (L/360) 0.140 (14%) L

3'9 1/8" 0.368 (L/240) 0.120 (12%) D+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 braced at bearings.

LL Defl inch 0.034 (L/2632)

TL Defl inch 0.043 (L/2040)

5 Bottom	braced at bearings.									
6 Lateral	6 Lateral slenderness ratio based on full section width.									
ID	Load Type	Location	Trib Width	Side	Dead					
1	Tie-In	0-0-0 to 12-9-4	(Span)0-4-2	Тор	15 PSF					

ı	ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
l	1	Tie-In	0-0-0 to 12-9-4	(Span)0-4-2	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
ı	2	Part. Uniform	0-7-7 to 11-3-7		Far Face	107 PLF	286 PLF	0 PLF	0 PLF	
ı	3	Point	11-11-7		Far Face	125 lb	334 lb	0 lb	0 lb	J9
ı	4	Point	12-11-0		Near Face	473 lb	1103 lb	0 lb	dl 0	F14
ı	5	Point	12-11-7		Far Face	116 lb	286 lb	0 lb	0 lb	J6

Continued on page 2...

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.

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

approvals
Damaged Beams must not be used
Design assumes too edge is laterally restrained
Provide lateral support at bearing points to avoid
lateral displacement and rotation

For flat roofs provide proper drainage to prevent ponding

This design is valid until 7/10/2021

Manufacturer Info Forex APA: PR-L318





isDesign™

Client: Project: Address: GREENPARK

Date:

8/13/2018

Job Name: HEMLOCK 4-1

Designer: RCO

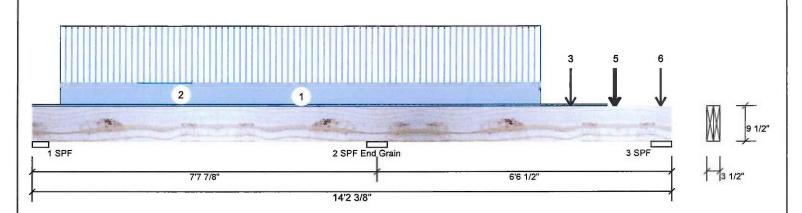
Project #:

Forex 2.0E-3000Fb LVL

1.750" X 9.500"

2-Ply - PASSED

Level: Second Floor



.Continued from page 1

ID Load Type 6 Point

Self Weight

Location Trib Width 13-11-7

Side Far Face Dead 79 lb

Live 191 lb Snow 0 lb Wind Comments di 0 J6

Page 2 of 2

8 PLF

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

 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 fateral support at beaming points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 7/10/2021

Forex APA: PR-L318

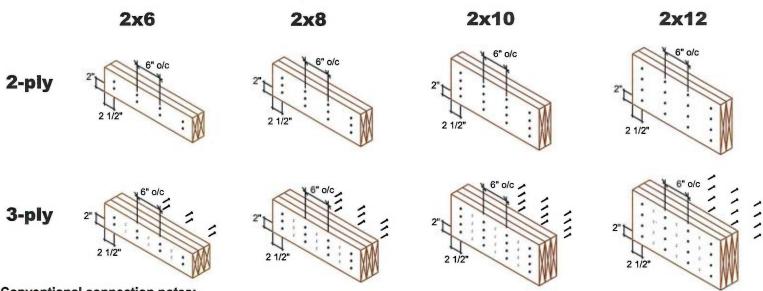
Manufacturer Info



MULTIPLE MEMBER CONNECTIONS

GREENPARK-MINNISALE HOMES-MODEL HEMLOCK 4-1 & 4-2

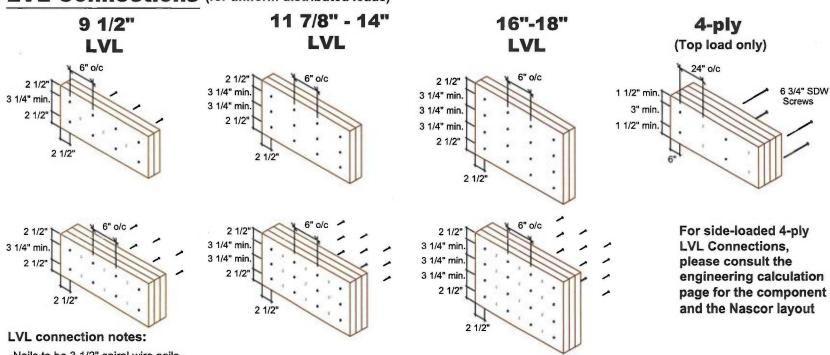
Conventional Connections (for uniform distributed loads)



Conventional connection notes:

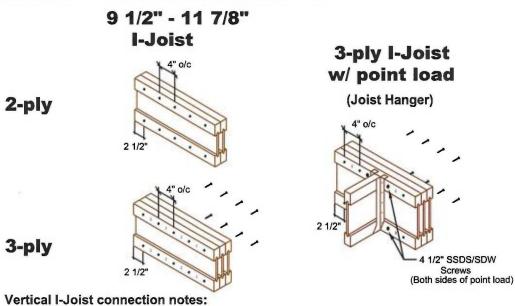
- -Nails to be 3" 10d spiral wire nails.
- -Nails to be located a minimum of 2" from the top and bottom of the member. Start all nails a minimum of 2 1/2" in from ends.
- -Number of rows and spacing as per details shown, unless noted otherwise.
- "X" represents nail driven from the opposite side.

LVL Connections (for uniform distributed loads)



- -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.

Vertical I-Joist Connections (for uniform distributed loads)



- -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**

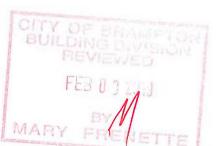
> Date: November 30, 2016 Scale: NTS

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

Ground Floor J9-G **J9-H** (2x 8 Framing) F8-B - 2 ply J7-A (2x 8 Fram J9-J F3-B-1 ply (2x 8 Framing)

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

Engineered floor joists shall be installed in accordance with the supplier's layout and specifications forming part of the permit drawings.



REFER TO MULTIPLE MEMBER TO MEMBER CONNECTION DETAIL FOR PLY TO PLY NAILING OR BOLTING REQUIREMENTS. ASS THRU FRAMING SQUASH

BLOCK IS REQUIRED AT ALL POINT LOADS OVER BEARINGS

ENGINEERING NOTE PAGE ENP-2. THIS NOTE PAGE IS AN INTEGRAL PART OF THIS CALCULATION SUMMARY PAGE AS IT CONTAINS SPECIFICATIONS AND CRITERIA

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

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

THIS CERTIFICATION IS TO CONFIRM THAT:

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 USED IN THE DESIGN OF THIS COMPONENT Legend



Load from Above Wall Opening Norbord Rimboard Plus 1.125 X 9.5 N.195 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)

Ground Floor LVL/LSL (Flush)

F3

F2

F1

Joist (Flush)

F8 NJ

F7 NJ

F6 NJ

J9 NJ60U

J7 NJ60U

J8 NJH

J4 NJH

J3 NJH

J2 NJH

J1 NJH

Label Description

Norbord Rimboard

Plus 1.125 X 9.5

Label Pcs Description

15 LT259

3 LT359

2 MIT49.5

HUCQ1.81/9-

H1 6 LT2-159

1

H8 1 L90

Rim Board

R1

Hanger

H2

H3

H6

F5

Label Description

Forex

Forex

Forex

Forex

Label Description

2.0E-3000Fb LVL

2.0E-3000Fb LVL

2.0E-3000Fb LVL

2.0E-3000Fb LVL

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

Width Depth

9.5

9.5

9.5

Depth

9.5

9.5

9.5

9.5

9.5

9.5

9.5

9.5

9.5

9.5

9.5

Depth

9.5

Skew Slope

1.75

1.75

1.75

1.75

Width

1.5

1.5

1.5

1.5

3.5

3.5

2.5

2.5

2.5

2.5

2.5

Width

1.125

Qty

Qty

3

2

2

2

Qty Plies

Beam/Girder

fasteners

4 10dx1 1/2

4 10dx1 1/2

4 10d

4 10dx1 1/2

Plies

Plies

2

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. 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 addtional dead load

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:

VA3 DESIGN 255 Consumers Rd., Suite 120, Toronto, ON Date: Rev.6; July 23,2018 Project No: 18012 Model: Hemlock 4

19-440024.000.00 RR

Pcs Length Layout Name 6-0-0 HEMLOCK 4-1 & 4-2 2 4-0-0 Design Method LSD 4-0-0 Description MINNISALE HOMES BRAMPTON, ONT. Pcs Length Revised 6 16-0-0 14-0-0 August 13, 2018 4 4-0-0 Builder 2-0-0 4 **GREENPARK** 14 16-0-0 Sales Rep 2 14-0-0 RM 8 14-0-0 4 12-0-0 Designer 7 10-0-0 RCO 6 8-0-0 Shipping 2 6-0-0 Project Builder's Project Pcs Length 13 12 **Kott Lumber Company** 14 Anderson Blvd Stouffville, Ontario Supported Canada Member L4A 7X4 fasteners 905-642-4400 2 10dx1 1/2 Job Path 2 10dx1 1/2 D:\Users\rochavillo\WORK FROM 2 10dx1 1/2 HOME\GREENPARK\MINNISALE HOMES\HEMLOCK 4\HEMLOCK 4 \FLOOR\REV\HEMLOCK 4-1.isl 4 10dx1 1/2 Ground Floor LSD Design Method Building Code NBCC 2010 / OBC 2012 Floor Loads Live 40

> Dead **Deflection Joist** LL Span L/ TL Span L/

LL Cant 2L/ TL Cant 2L/ Deflection Girder

LL Span L/ TL Span L/

LL Cant 2L/ TL Cant 2L/

Decking Deck SPF Plywood

15

480

360

480

360

360

240

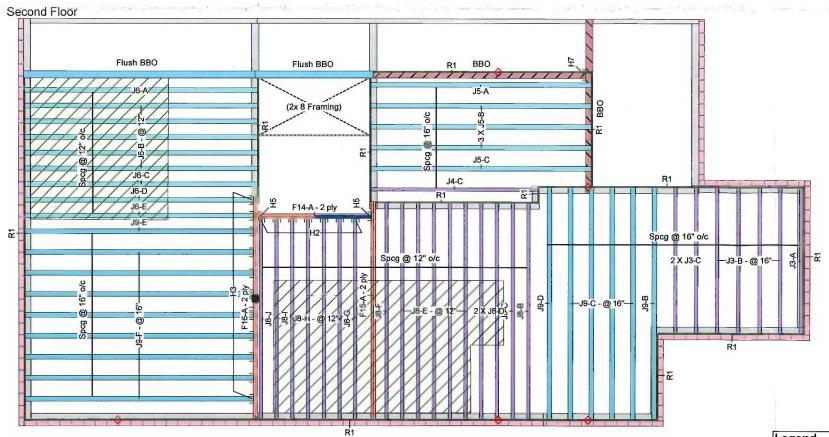
480

360

Thickness 3/4" Fastener Nailed & Glued

Vibration

HEMLOCK 4-1 & 4-2



Legend Load from Above Wall Norbord Rimboard Plus 1.125 X 9.5 NJ40U 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)

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.

Label	Description	Width	Depth	Qty	Plies	Pcs	Length		
F16	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	16-0-0		
F15	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	14-0-0	Layout Name HEMLOCK 4-1 8	
F14	Forex 2.0E-3000Fb LVL	1.75	9.5	1	2	2	8-0-0	Design Method	
I Joist (Flush)									
Label	Description	Width	Depth	Qty	Plies	Pcs	Length	Revised	
J6	NJ40U	3.5	9.5			9	16-0-0	August 13, 2018	
J5	NJ40U	3.5	9.5			5	14-0-0	Description	
J9	NJ60U	3.5	9.5			15	16-0-0	MINNISALE HO	
J8	NJH	2.5	9.5			17	14-0-0	BRAMPTON, O	
J4	NJH	2.5	9.5			1	12-0-0	Builder	
J3	NJH	2.5	9.5			7	10-0-0	GREENPARK	
Rim Bo	ard								
Label	Description	Width	Depth	Qty	Plies	Pcs	Length	Sales Rep	
R1	Norbord Rimboard Plus 1.125 X 9.5	1.125	9.5			13	12	Designer	

Skew Slope

Beam/Girder

fasteners

4 10dx1 1/2

4 10d

46 16d

Member

16 16d

NOTES:

НЗ

H5

H7

Label Pcs Description

11 LT359

2 HGUS410

Unknown

Hanger

H2 7 LT259

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.
- 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.
- . 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

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

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

ARCHITECTURAL DRAWINGS:

VA3 DESIGN 255 Consumers Rd., Suite 120, Toronto, ON Date: Rev.2; May 18,2018 Project No: 18012 Model: Hemlock 4

Design Method Revised August 13, 2018 Description MINNISALE HOMES BRAMPTON, ONT. Builder **GREENPARK** Sales Rep Designer RCO Supported Shipping Project fasteners Builder's Project 2 10dx1 1/2 **Kott Lumber Company** 2 10dx1 1/2 14 Anderson Blvd Stouffville, Ontario Canada L4A 7X4 905-642-4400 Job Path D:\Users\rochavillo\WORK FROM HOME\GREENPARK\MINNISALE HOMES\HEMLOCK 4\HEMLOCK 4-\FLOOR\REV\HEMLOCK 4-1.isl Second Floor Design Method LSD Building Code NBCC 2010 / OBC 2012 Floor Loads Live 40 Dead 15 Deflection Joist 480 LL Span L/ TL Span L/ 360

LL Cant 2L/

TL Cant 2L/

LL Span L/

TL Span L/

LL Cant 2L/

TL Cant 2L/

Decking

Thickness

Fastener

Vibration

Ceiling:

Deck

Deflection Girder

480

360

360

240

480

360

SPF Plywood

Nailed & Glued

Gypsum 1/2"