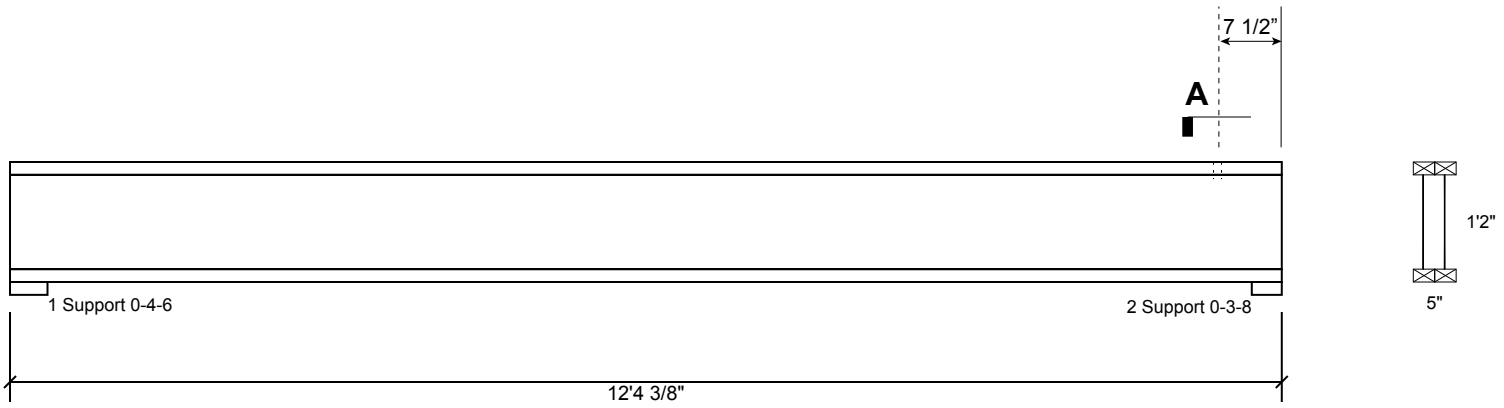
Client:	David Weekley	Date:	7/12/2025
Project:	1001 Serenity	Input by:	DW
Address:	Fuquay-Varina NC, 27526	Job Name:	1001 Serenity
		Project #:	25040099

J14-2 (i416) PJI-40 14.000" 2-Ply - PASSED

Level: 1ST FLOOR

Ticket: EACOM0725-408



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IRC 2018
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	372	93	0	0	0
2	Vertical	540	135	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Support	4.375"	Vert	15%	93 / 373	466	L	D+L
2 - Support	3.500"	Vert	23%	135 / 541	676	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2018 ft-lb	8'7 5/8"	8540 ft-lb	24%	D+L	L
Unbraced	2018 ft-lb	8'7 5/8"	2030 ft-lb	99%	D+L	L
Shear	661 lb	12' 7/8"	3630 lb	18%	D+L	L
LL Defl inch	0.048 (L/2928)	6'9 1/2"	0.296 (L/480)	16%	L	L
TL Defl inch	0.061 (L/2341)	6'9 1/2"	0.592 (L/240)	10%	D+L	L

Location Analysis

Analysis Type	Location	Max Value	Ld. Comb.	Ld. Case
Pos Moment	11'8 7/8"	259 ft-lb	D+L	L
Shear	11'8 7/8"	644 lb	D+L	L
Down Defl	11'8 7/8"	0.007	D+L	L

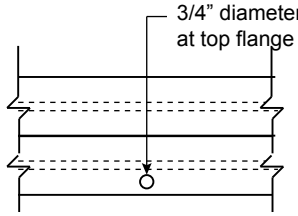
Design Notes

1. Bearing 1: Support; fcp = 725 psi (user input), Bearing 2: Support; fcp = 725 psi (user input)
2. Provide support to prevent lateral movement and rotation at the end bearings.
3. Girders are designed to be supported on bottom edge only and across their full width.
4. Multiple plies must be fastened together as per manufacturer's details.
5. Top loads must be supported equally by all plies.
6. Unsupported length Lu based on points of zero moments.
7. Top flange must be laterally braced at a maximum of 9'11" o.c.
8. Bottom flange must be laterally braced at bearings.

User Notes

1. Outside joist has the hole.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Comments
	Uniform			Top	10 PLF	40 PLF	
	Point	8-7-10		Far Face	105 lb	418 lb	J8(i434)



DETAIL A

(not to scale)

No repair required.

John Mark Bartel

Digitally signed by John Mark Bartel
Date: 2025.07.12 13:52:35 -04'00'

NORTH CAROLINA PROFESSIONAL SEAL 19035 ENGINEER J. MARK BARTEL

July 12, 2025

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

Handling & Installation

1. IJoist flanges must not be cut or drilled
2. 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
3. Damaged IJoists must not be used
4. Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.
5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. Web stiffeners for point load as shown Minimum point load bearing length>= 3.5 inches
7. For flat roofs provide proper drainage to prevent ponding

This design is valid until 2/28/2028

Manufacturer Info

Eacom Timber Corporation
1100 Blvd. West, Suite 2110
Montreal, Quebec
www.eacom.ca
APA: PR-L261, ICC-ES: ESR-1262, ESR-1405

Bartel Engineering, LLC

CSD DRAW DESIGN BUILD