Boise Cascade® ENGINEERED WOOD PRODUCTS

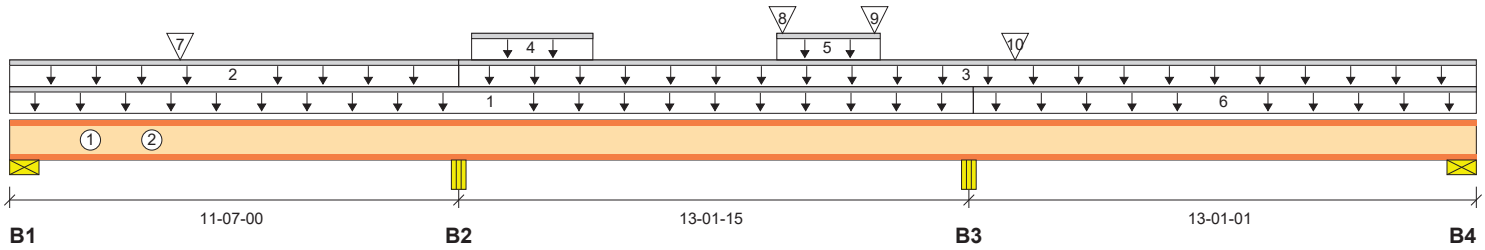
Single 11-7/8" BCI® 4500s-1.8

PASSED

Crawl\Floor Joists\FJ-2(i272) (Floor Joist)

BC Design Engine Member Report Dry | 3 spans | No cant. | 19.2" OCS | Repetitive | Glued & nailed July 11, 2025 08:53:28
Build 8898

Job name:		File name:	4624235_EMBARK WRD028.mmdl
Address:		Description:	Crawl\Floor Joists\FJ-2(i272)
City, State, Zip:		Specifier:	
Customer:		Designer:	
Code reports:	ESR-1336	Company:	



Total Horizontal Product Length = 37-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B1, 4-1/2"	241 / 47	74 / 0			
B2, 4-1/2"	736 / 0	418 / 0			
B3, 4-1/2"	942 / 0	590 / 0			
B4, 4-1/2"	384 / 39	70 / 0			

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 100%	Dead 90%	Snow 115%	Wind 160%	Roof Live 125%	OCS
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	24-10-05	Top	27	7				n\a
2	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	11-07-00	Top	16	4				n\a
3	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	11-07-00	37-10-00	Top	32	8				n\a
4	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	11-11-00	15-00-08	Top		43				n\a
5	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	19-09-08	22-05-08	Top		43				n\a
6	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	24-10-05	37-10-00	Top	32	8				n\a
7	29(i76)	Conc. Pt. (lbs)	L	04-04-12	04-04-12	Top		86				n\a
8	12(i59)	Conc. Pt. (lbs)	L	19-11-04	19-11-04	Top		86				n\a
9	10(i56)	Conc. Pt. (lbs)	L	22-03-12	22-03-12	Top		86				n\a
10	7(i51)	Conc. Pt. (lbs)	L	25-11-04	25-11-04	Top		117				n\a

Hole Summary

Description	Center	Elevation	Ref.	Height	Width	Shape	Orientation
H01	02-01-00	4.938"	L	6"		Circular	Horizontal
H02	03-08-00	4.938"	L	6"		Circular	Horizontal

Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	1187 ft-lbs	39.2%	100%	3	18-10-13
Neg. Moment	-1757 ft-lbs	58.1%	100%	5	24-08-15
End Reaction	454 lbs	31.8%	100%	2	37-10-00
Int. Reaction	1532 lbs	63.6%	100%	5	24-08-15
End Shear	424 lbs	26.1%	100%	2	37-05-08
Cont. Shear	764 lbs	47.0%	100%	5	24-06-11
Hole #1 Shear	203 lbs	27.8%	100%	2	02-01-00
Hole #2 Shear	131 lbs	18.0%	100%	9	03-08-00
Total Load Deflection	L/1257 (0.126")	19.1%	n\a	3	18-05-07
Live Load Deflection	L/999 (0.103")	n\a	n\a	11	31-04-06
Total Neg. Defl.	L/999 (-0.02")	n\a	n\a	3	28-10-13

Boise Cascade® ENGINEERED WOOD PRODUCTS

Single 11-7/8" BCI® 4500s-1.8

PASSED

Crawl\Floor Joists\FJ-2(i272) (Floor Joist)

BC Design Engine Member Report | Dry | 3 spans | No cant. | 19.2" OCS | Repetitive | Glued & nailed | July 11, 2025 08:53:28

Build 8898

Job name:		File name:	4624235_EMBARK WRD028.mmdl
Address:		Description:	Crawl\Floor Joists\FJ-2(i272)
City, State, Zip:		Specifier:	
Customer:		Designer:	
Code reports:	ESR-1336	Company:	

Controls Summary

	Value	% Allowable	Duration	Case	Location
Max Defl.	0.126"	8.4%	n\a	3	18-05-07
Span / Depth	13.3				
Hole Location	Valid				

Bearing Supports

		Dim. (LxW)	Value	% Allow Support	% Allow Member	Material
B1	Wall/Plate	4-1/2" x 1-3/4"	315 lbs	9.4%	22.1%	Unspecified
B2	Beam	4-1/2" x 1-3/4"	1154 lbs	36.2%	48.0%	Unspecified
B3	Beam	4-1/2" x 1-3/4"	1532 lbs	48.0%	63.6%	Unspecified
B4	Wall/Plate	4-1/2" x 1-3/4"	454 lbs	13.6%	31.8%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets User specified (L/480) Live load deflection criteria.
Design meets arbitrary (1.5") Maximum Total load deflection criteria.
Design meets arbitrary (1") Maximum live load deflection criteria.
Composite EI value based on 3/4" thick OSB sheathing glued and nailed to member.
Design based on Dry Service Condition.
BC CALC® analysis is based on IBC 2015.
Calculations assume member is fully braced.
Bearing length at bearing(s) B1, B4 was calculated based on the actual bearing area divided by the supported member width and may not match expected value when bearing is not rectangular or when the supported member is not supported by its full width.

Disclosure