

KeyBeam® 4.600d  
kmBeamEngine 4.6026  
Materials Database 1429

**Member Data**

**Description: UPPER FLOOR (J1) JOIST**

Member Type: Joist Application: Floor  
Top Lateral Bracing: Continuous  
Bottom Lateral Bracing: Continuous  
Moisture Condition: Dry Building Code: IBC/IRC  
Deflection Criteria: L/600 live, L/360 total  
Deck Connection: Glued & Nailed  
Filename: KYB1

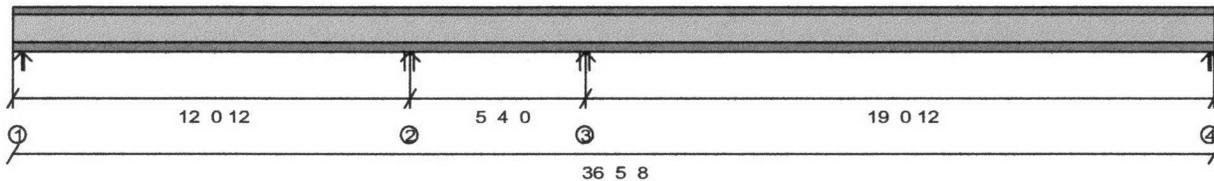
Standard Load:  
Live Load: 40 PSF  
Dead Load: 15 PSF

Joist Design Includes CCMC Vibration Check

Subfloor: 23/32" OSB

Ceiling: 1/2" gypsum

Blocking: (See Requirements Below)



**Bearings and Reactions**

Location	Type	Material	Input Length	Min Required	Gravity Reaction	Gravity Uplift
1 0' 0.000"	Wall	DFL Plate (625psi)	4.500"	1.500"	583#	--
2 12' 0.750"	Wall	DFL Plate (625psi)	3.500"	3.500"	1100#	-310#
3 17' 4.750"	Wall	DFL Plate (625psi)	3.500"	3.500"	2315#	--
4 36' 5.500"	Wall	DFL Plate (625psi)	2.000"	1.500"	843#	--

**Maximum Load Case Reactions**

Used for applying point loads (or line loads) to carrying members

	Live	Dead
1	426#(213plf)	157#(79plf)
2	979#(490plf)	121#(60plf)
3	1740#(870plf)	575#(287plf)
4	614#(307plf)	229#(115plf)

City of Portland  
REVIEWED FOR CODE COMPLIANCE

NOV 08 2013

Permit Number

Design spans

11' 9.125"	5' 4.000"	18' 11.625"
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**Product: 14" LPI-20 Plus 24.0" O.C.**

**PASSES DESIGN CHECKS**

**Blocking: (None)**

**Design assumes continuous lateral bracing along the top chord.**

**Design assumes continuous lateral bracing along the bottom chord.**

**Lateral support is required at each bearing.**

**Review gravity uplift reaction force of 311lbs at bearing 2 and ensure that the structure can resist appropriately.**

**Allowable Stress Design**

	Actual	Allowable	Capacity	Location	Loading
Positive Moment	3228. #	4400. #	73%	28.78'	Odd Spans D+L
Negative Moment	3963. #	4400. #	90%	17.4'	Adjacent 2 D+L
Shear	1252. #	1680. #	74%	17.4'	Adjacent 2 D+L
End Reaction	843. #	1016. #	82%	36.46'	Odd Spans D+L
Int. Reaction	2315. #	2455. #	94%	17.4'	Adjacent 2 D+L
TL Deflection	0.3309"	0.6323"	L/687	27.83'	Odd Spans D+L
LL Deflection	0.2416"	0.3794"	L/941	27.83'	Odd Spans L
Vibration	0.0286"	0.0335"	85%		

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\*\*Passing is defined as when the member, floor joist, beam or girder, shown on this drawing meets applicable design criteria for Loads, Loading Conditions, and Spans listed on this sheet. The design must be reviewed by a qualified designer or design professional as required for approval. This design assumes product installation according to the manufacturer's specifications.

Huttig Building Products - APH  
This calc conforms to ORS2005,  
NDS2001 and 2005ORSC

13-2175269 REV-01

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Constructive Solutions Since 1885

KeyBeam® 4.600d

kmBeamEngine 4.6026

Materials Database 1429

Control: Max Int. React.

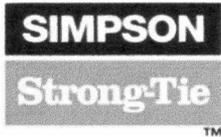
DOLs: Live=100% Snow=115% Roof=125% Wind=160%

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Huttig Building Products - APH  
This calc conforms to ORS2005,  
NDS2001 and 2005ORSC



## UPPER FLOOR

**Customer information**

Company: MILWAUKIE LUMBER CO.  
 Name : ALAN PLUNKETT  
 Address: 10998 SE 21ST AVE.  
 City: MILWAUKIE State: OR Zip: 97222  
 Phone : (503) 654-5417  
 Fax : (503) 654-5410

**Job information**

JobInfo : 32' WIDE FOURSQUARE  
 Project : 306082  
 City : State: Zip:  
 Date : 09/06/2013  
 Quote Expiration Date :  
 Quote Creator : APH

I-Joists				
Series	Depth	Length	Qty	Total Ft
14" LPI 20Plus	14"	37'-0"	6	222
14" LPI 20Plus	14"	23'-0"	8	184
14" LPI 20Plus	14"	20'-0"	4	80
14" LPI 20Plus	14"	17'-0"	1	17
14" LPI 20Plus	14"	13'-0"	5	65
14" LPI 20Plus	14"	5'-0"	7	35
<b>SubTotal: 14" LPI 20Plus (ft)</b>				<b>603</b>
<b>Totals</b>				<b>603</b>

Glulams and Dimension Lumber				
Grade/Layup	Depth	Length	Qty	Total Ft
3-1/2x14 SP_31F-V	14"	14'-0"	1	14
3-1/2x14 SP_31F-V	14"	8'-0"	1	8
<b>SubTotal: 3-1/2x14 SP_31F-V (ft)</b>				<b>22</b>
5-1/2x11-7/8 DF_24F-V4	11 7/8"	19'-0"	1	19
5-1/2x11-7/8 DF_24F-V4	11 7/8"	5'-0"	1	5
<b>SubTotal: 5-1/2x11-7/8 DF_24F-V4 (ft)</b>				<b>24</b>
5-1/2x14 SP_31F-V	14"	14'-0"	1	14
<b>SubTotal: 5-1/2x14 SP_31F-V (ft)</b>				<b>14</b>
<b>Totals</b>				<b>60</b>

*SP\_31F-V = BigBeam*

OSB, LSL and LVL Rim				
Description	Depth	Length	Qty	Total Ft
1x14 LP-OSB Rim	14"	16'-0"	11	176
<b>Totals</b>				<b>176</b>

Sheathing				
Description	Depth	Length	Qty	Total Ft
23/32 Top-Notch 350 4x8			40	
<b>Totals</b>				<b>40</b>

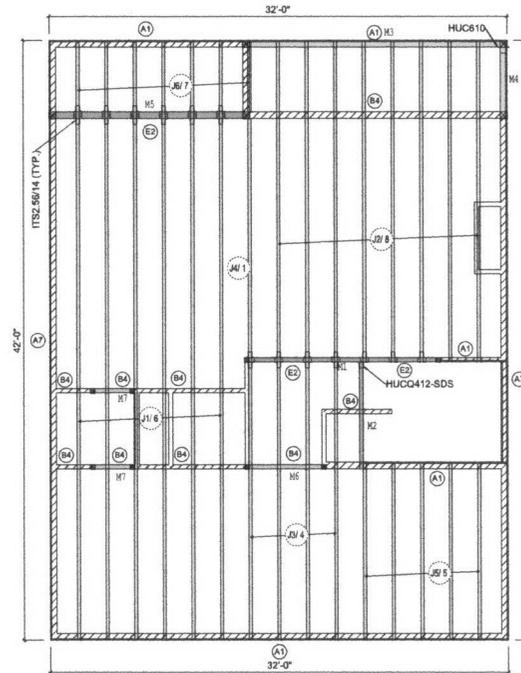
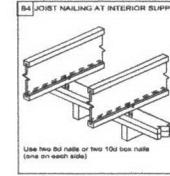
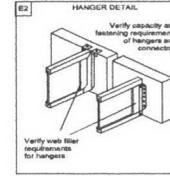
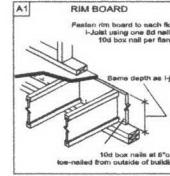
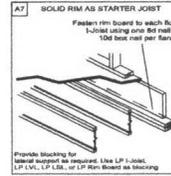
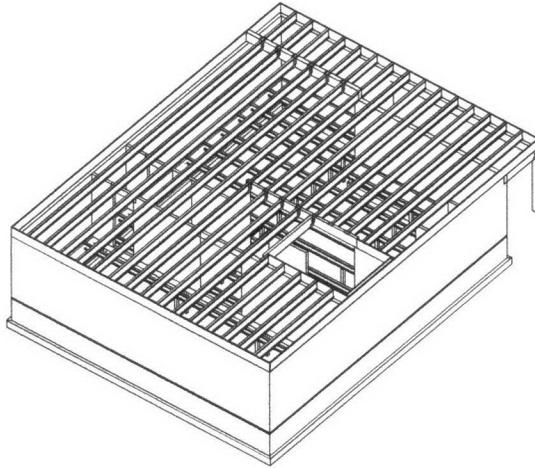
Connector				
Description	Depth	Length	Qty	Total Ft
HUC610			1	
HUCQ412-SDS			1	
ITS2.56/14			23	
<b>Totals</b>				<b>25</b>

SEE INSTALLATION GUIDE FOR APPLICABLE DETAILS

### DESIGN LOADS

FLOOR:		ROOF:	
LIVE LOAD:	40 PSF	LIVE LOAD:	25 PSF
DEAD LOAD:	15 PSF	DEAD LOAD:	15 PSF

CAREFULLY READ THE LOUISIANA PACIFIC  
INSTALLATION GUIDE PRIOR TO PRODUCT PLACEMENT



### UPPER FLOOR PLACEMENT PLAN

FLOOR I-JOIST TO BE 14" LPI 20+ @ 24" O.C. U.N.O.  
NOTE: THIS PLAN IS VALID FOR ENGINEERED WOOD PRODUCTS ONLY AS PROVIDED BY HBP

Joist Schedule			
Label	Qty	Description	Length
J1	6	14" LPI 20Plus	37'-0"
J2	8	14" LPI 20Plus	23'-0"
J3	4	14" LPI 20Plus	20'-0"
J4	1	14" LPI 20Plus	17'-0"
J5	5	14" LPI 20Plus	13'-0"
J6	7	14" LPI 20Plus	5'-0"

Rimboard Schedule			
Label	Qty	Description	Length
R1	11	1x14 LP-OSB Rim	16'-0"

Beam Schedule			
Label	Qty	Description	Length
M1	1	3-1/2x14 SP_31F-V	14'-0"
M2	1	3-1/2x14 SP_31F-V	8'-0"
M3	1	5-1/2x11-7/8 DF_24F-V4	19'-0"
M4	1	5-1/2x11-7/8 DF_24F-V4	5'-0"
M5	1	5-1/2x14 SP_31F-V	14'-0"
M6	1	BBO	5'-8"
M7	2	BBO	3'-1"

Connectors					
Label	Qty	Description	TF Fstnr	Face Fstnr	Joist Fstnr
H1	23	ITS2.56/14	4-16d	2-16d	2-teardrop
H2	1	HUCQ412-SDS	-None	14-	6-
H3	1	HUC610	-None	14-10d	6-10d



**HUTTIG**  
BUILDING PRODUCTS  
8100 SW HUNZIKER RD. TIGARD, OR 97223  
Phone: (503) 620-1411 Fax: (503) 968-6048

PROJECT:  
**32' WIDE FOURSQUARE**  
EMERIO DESIGN  
CUSTOMER:  
MILWAUKIE LUMBER CO.  
MILWAUKIE, OR - (JOSH L.)

DATE OF DESIGN  
09/06/13  
DATE OF REVISION  
NONE  
DESIGNER  
APH  
HUTTIG  
DESIGN NUMBER  
306082  
PAGE  
2 OF 2  
ORIGINAL PLAN DATE  
06/18/13  
SCALE:  
1/4"=1'-0"

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KeyBeam® 4.600d  
kmBeamEngine 4.6026  
Materials Database 1429

**Member Data**

Description: UPPER FLOOR  
(M5) BEAM

Member Type: Beam  
Top Lateral Bracing: Continuous  
Bottom Lateral Bracing: None  
Moisture Condition: Dry  
Deflection Criteria: L/360 live, L/240 total  
Deck Connection: Nailed  
Filename: KYB2

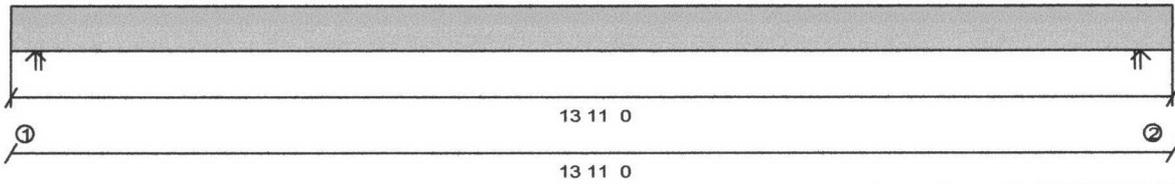
Application: Floor

Standard Load:

Live Load: 490 PLF  
Dead Load: 184 PLF

Building Code: IBC/IRC

Member Weight: 12.3 PLF



**Bearings and Reactions**

	Location	Type	Material	Input Length	Min Required	Gravity Reaction	Gravity Uplift
1	0' 0.000"	Wall	DFL Plate (625psi)	4.500"	2.075"	4540#	--
2	13' 11.000"	Wall	DFL Plate (625psi)	5.500"	2.075"	4540#	--

**Maximum Load Case Reactions**

Used for applying point loads (or line loads) to carrying members

	Live	Dead
1	3241#	1298#
2	3241#	1298#

Design spans  
13' 2.750"

**Product: 3 1/2 x 14 Rosboro BigBeam 1 ply**

**PASSES DESIGN CHECKS**

Design assumes continuous lateral bracing along the top chord.  
Design assumes no lateral bracing along the bottom chord.

**Allowable Stress Design**

	Actual	Allowable	Capacity	Location	Loading
Positive Moment	15014. #	28583. #	52%	6.92'	Total Load D+L
Shear	3739. #	9800. #	38%	12.87'	Total Load D+L
Max. Reaction	4540. #	9844. #	46%	0'	Total Load D+L
TL Deflection	0.2814"	0.6615"	L/564	6.92'	Total Load D+L
LL Deflection	0.2009"	0.4410"	L/790	6.92'	Total Load L

Control: Positive Moment  
DOLs: Live=100% Snow=115% Roof=125% Wind=160%