

Anexo 4

Cálculos



RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 1:19 PM
Designer: Remote
Comment:

Type: A20 Skewed Uplif

9.5" Red-I45™ @ 24" o.c.

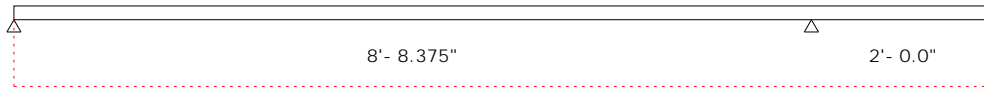
This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail	
	Shear (lb)	3%	-87	2544	160% - Odd Members	PASS	
	Positive Moment (ft-lb)	1%	40	5792	160% - All Loads	PASS	
	Negative Moment (ft-lb)	3%	-189	5792	160% - Odd Members	PASS	
	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
	Span Live	4%	-0.018	-0.435	L / 999+	L / 240	PASS
	Span Total	3%	-0.018	-0.580	L / 999+	L / 180	PASS
	Overhang Live (down)	5%	0.010	0.200	2L / 999+	2L / 240	PASS
	Overhang Total (down)	4%	0.010	0.267	2L / 999+	2L / 180	PASS
	Overhang Live (up)		-0.003		2L / 999+		
	Overhang Total (up)		-0.004		2L / 999+		
SUPPORTS			Support 1	Support 2			
	Live Reaction, Critical (lb) (DOL%)		5 (160)	0			
	Dead Reaction (lb)		1	1			
	Total Reaction (lb) (DOL%)		5 (160)	1 (90)			
	Net Uplift Reaction (lb) (DOL%)		-87 (160)	-132 (160)			
	Bearing Support		Flush Beam	Bottom Wall			
	Req'd Bearing, No Stiffeners (in)		1.75	3.50			
	Req'd Bearing, Stiffeners (in)		-	-			
HANGERS	Model		Top	Face	Member	Header	Size
	Left LSSUI25*			9-10d	7-10dx1.5"	LVL DF/SP	1.75x9.5 DBL
	(* = Web stiffeners required)						

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Wind(160%)	-10.1	0.1	0'-0.0" to 10'-8.375"	Replaces	Net Wind Uplift

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.20".

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The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 1:22 PM
Designer: Remote
Comment:

Type: A20 Uplift

9.5" Red-I45™ @ 24" o.c.

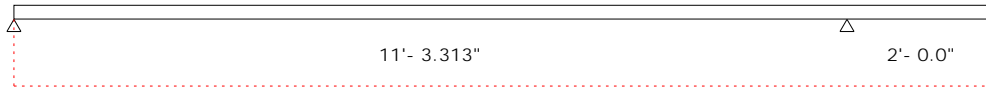
This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail	
	Shear (lb)	4%	-113	2544	160% - Odd Members	PASS	
	Positive Moment (ft-lb)	1%	40	5792	160% - All Loads	PASS	
	Negative Moment (ft-lb)	5%	-318	5792	160% - Odd Members	PASS	
	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
	Span Live	8%	-0.047	-0.564	L / 999+	L / 240	PASS
	Span Total	6%	-0.046	-0.752	L / 999+	L / 180	PASS
	Overhang Live (down)	11%	0.023	0.200	2L / 999+	2L / 240	PASS
	Overhang Total (down)	8%	0.022	0.267	2L / 999+	2L / 180	PASS
	Overhang Live (up)		-0.004		2L / 999+		
	Overhang Total (up)		-0.004		2L / 999+		
SUPPORTS			Support 1	Support 2			
	Live Reaction, Critical (lb) (DOL%)		4 (160)	0			
	Dead Reaction (lb)		1	2			
	Total Reaction (lb) (DOL%)		5 (160)	2 (90)			
	Net Uplift Reaction (lb) (DOL%)		-113 (160)	-156 (160)			
	Bearing Support		Flush	Bottom			
	Req'd Bearing, No Stiffeners (in)		Ledger	Wall			
	Req'd Bearing, Stiffeners (in)		1.75	3.50			
			-	-			
HANGERS	Model		Top	Face	Member	Header	Size
	Left MIU1.81/9			16-10dx1.5"	2-10dx1.5"	Ledger LVL DF/SP	1.75x9.5

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ⤴



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Wind(160%)	-10.1	0.1	0'-0.0" to 13'-3.313"	Replaces	Net Wind Uplift

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.20".

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RedBuilt™, RedSpec™, Red-I™, Red-I45™, Red-I65™, Red-I65T™, Red-I90™, Red-I90H™, Red-I90HS™, Red-L™, Red-LT™, Red-W™, Red-S™, Red-M™, Red-H™, RedLam™, FloorChoice™ are trademarks of RedBuilt LLC, Boise ID, USA. Copyright © 2010-2012 RedBuilt LLC. All rights reserved.



RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: 2nd Floor
Date: 12/18/13 4:30 PM
Designer: Remote
Comment:

Type: B2

11.875" Red-I45™ @ 19.2" o.c. with Glued Sheathing

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control		Pass/Fail	
Shear (lb)	43%	771	1785	100% - All Loads		PASS	
Positive Moment (ft-lb)	31%	1430	4685	100% - All Loads		PASS	
DEFLECTIONS (in)		% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live		19%	0.047	0.247	L / 999+	L / 360	PASS
Span Total		16%	0.061	0.371	L / 999+	L / 240	PASS

FloorChoice™ Rating: 9.9

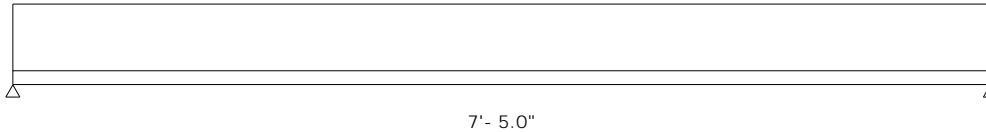


Performance rating is based on: 24 oc (23/32", 3/4") sheathing, glued and nailed, simple span, flexible support. RedSpec has not performed a structural analysis of the sheathing.

SUPPORTS		Support 1	Support 2	HANGERS					
Live Reaction, Critical (lb) (DOL%)		593 (100)	593 (100)	Model	Top	Face	Member	Header	Size
Dead Reaction (lb)		178	178	Left	4-10dx1.5"	2-10dx1.5"	2-Strong-Grip	LVL DF/SP	1.75x11.875 TPL
Total Reaction (lb) (DOL%)		771 (100)	771 (100)	Right	4-10dx1.5"	2-10dx1.5"	2-Strong-Grip	Ledger LVL DF/SP	1.75x11.875
Bearing Support		Flush Beam	Flush Ledger						
Req'd Bearing, No Stiffeners (in)		1.75	1.75						
Req'd Bearing, Stiffeners (in)		-	-						

SPANS AND LOADS

Dimensions represent horizontal design spans.



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Floor(100%)	100	30	0	19.2"	Glued Floor Joist

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.

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Project: Providence Hall High
Location: Herriman, UT
Folder: 2nd Floor
Date: 12/18/13 12:43 PM
Designer: Remote
Comment:

Type: B3

11.875" Red-I45™ @ 19.2" o.c. with Glued Sheathing

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail	
	Shear (lb)	63%	-1129	1785	100% - Conc. Load	PASS	
	Positive Moment (ft-lb)	33%	1549	4685	100% - Conc. Load	PASS	
	Negative Moment (ft-lb)	26%	-1212	4685	100% - Adjacent Third Support	PASS	
	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
	Span Live	16%	0.049	0.299	L / 999+	L / 360	PASS
	Span Total	14%	0.063	0.448	L / 999+	L / 240	PASS

FloorChoice™ Rating: 9.9



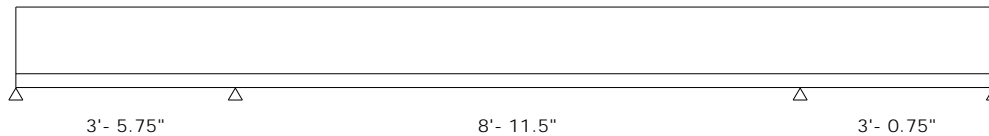
Performance rating is based on: 24 oc (23/32", 3/4") sheathing, glued and nailed, continuous spans, rigid supports. RedSpec has not performed a structural analysis of the sheathing.

SUPPORTS	Support 1	Support 2	Support 3	Support 4
Live Reaction, Critical (lb) (DOL%)	590 (100)	1265 (100)	1282 (100)	542 (100)
Dead Reaction (lb)	6	375	378	-16
Total Reaction (lb) (DOL%)	596 (100)	1640 (100)	1660 (100)	526 (100)
Net Uplift Reaction (lb) (DOL%)	-235 (100)			-304 (100)
Bearing Support	Flush Ledger	Bottom Wall	Bottom Wall	Bottom Wall
Req'd Bearing, No Stiffeners (in)	1.75	3.50	3.50	1.75
Req'd Bearing, Stiffeners (in)	-	-	-	-

HANGERS	Model	Top	Face	Member	Header	Size
Left	ITS1.81/11.88* (* = Web stiffeners required)	4-10d	4-10d	4-10dx1.5"	LVL DF/SP	3.5x18

SPANS AND LOADS

Dimensions represent horizontal design spans.



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Floor(100%)	100	30	0	19.2"	Glued Floor Joist

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Net uplift over 200 lb detected.
- Joist design includes consideration for a 2000 lb load distributed over a 30" square area and all live loads removed.

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: 2nd Floor
Date: 12/19/13 3:02 PM
Designer: Remote
Comment:

Type: B3@Wall Above

11.875" Red-I45™ @ 19.2" o.c. with Glued Sheathing

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control		Pass/Fail
Shear (lb)		91%	1631	1785	100% - Conc. Load		PASS
Positive Moment (ft-lb)		38%	1798	4685	100% - Conc. Load		PASS
Negative Moment (ft-lb)		32%	-1491	4685	100% - Conc. Load		PASS
DEFLECTIONS (in)		% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live		11%	0.023	0.209	L / 999+	L / 360	PASS
Span Total		16%	0.049	0.314	L / 999+	L / 240	PASS

FloorChoice™ Rating: 9.9



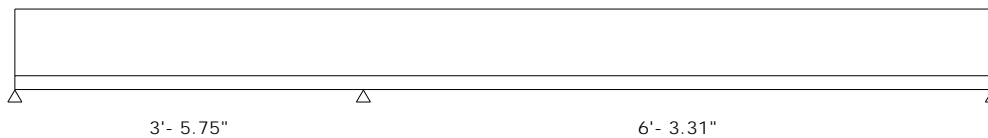
Performance rating is based on: 24 oc (23/32", 3/4") sheathing, glued and nailed, continuous spans, rigid supports. RedSpec has not performed a structural analysis of the sheathing.

SUPPORTS	Support 1	Support 2	Support 3
Live Reaction, Critical (lb) (DOL%)	585 (100)	1060 (100)	739 (100)
Dead Reaction (lb)	133	1294	504
Total Reaction (lb) (DOL%)	718 (100)	2354 (100)	1244 (100)
Net Uplift Reaction (lb) (DOL%)	-12 (100)		
Bearing Support	Flush Ledger	Bottom Wall	Bottom Wall
Req'd Bearing, No Stiffeners (in)	1.75	4.54	2.48
Req'd Bearing, Stiffeners (in)	-	3.50	1.80

HANGERS	Model	Top	Face	Member	Header	Size
Left	ITS1.81/11.88* (* = Web stiffeners required)	4-10d	4-10d	4-10dx1.5"	LVL DF/SP	3.5x18

SPANS AND LOADS

Dimensions represent horizontal design spans.



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Floor(100%)	100	30	0	19.2"	Glued Floor Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	plf	Floor(100%)	0	150	0'-0.0" to 9'-9.06"	Adds To	Wall Above

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Joist design includes consideration for a 2000 lb load distributed over a 30" square area and all live loads removed.

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v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: 2nd Floor
Date: 12/19/13 10:09 AM
Designer: Remote
Comment:

Type: B5

11.875" Red-I45™ @ 19.2" o.c. with Glued Sheathing

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control		Pass/Fail
Shear (lb)	66%	1174	1785	100% - Conc. Load		PASS
Positive Moment (ft-lb)	43%	2027	4685	100% - Conc. Load		PASS
Negative Moment (ft-lb)	40%	-1865	4685	100% - Adjacent Fourth Support		PASS
DEFLECTIONS (in)		Design	Allow.	Design	Allow.	Pass/Fail
Span Live	23%	0.067	0.293	L / 999+	L / 360	PASS
Span Total	19%	0.083	0.440	L / 999+	L / 240	PASS

FloorChoice™ Rating: 9.9

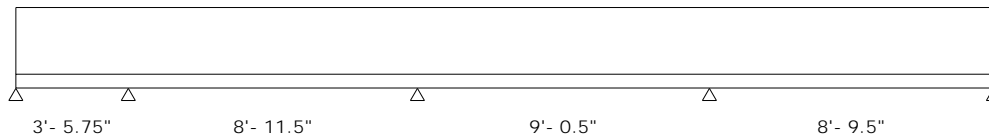


Performance rating is based on: 24 oc (23/32", 3/4") sheathing, glued and nailed, continuous spans, rigid supports. RedSpec has not performed a structural analysis of the sheathing.

SUPPORTS	Support 1	Support 2	Support 3	Support 4	Support 5	
Live Reaction, Critical (lb) (DOL%)	592 (100)	1392 (100)	1605 (100)	1704 (100)	821 (100)	
Dead Reaction (lb)	12	362	432	481	166	
Total Reaction (lb) (DOL%)	604 (100)	1754 (100)	2037 (100)	2184 (100)	987 (100)	
Net Uplift Reaction (lb) (DOL%)	-282 (100)					
Bearing Support	Flush Ledger	Bottom Wall	Bottom Wall	Bottom Wall	Flush Ledger	
Req'd Bearing, No Stiffeners (in)	1.75	3.50	3.53	4.00	1.75	
Req'd Bearing, Stiffeners (in)	-	-	3.50	3.50	-	
HANGERS	Model	Top	Face	Member	Header	Size
Left	ITS1.81/11.88*	4-10d	4-10d	4-10dx1.5"	LVL DF/SP	3.5x18
Right	ITS1.81/11.88	4-10dx1.5"	2-10dx1.5"	2-Strong-Grip	Ledger LVL DF/SP	1.75x11.875
(* = Web stiffeners required)						

SPANS AND LOADS

Dimensions represent horizontal design spans.



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Floor(100%)	100	30	0	19.2"	Glued Floor Joist

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Net uplift over 200 lb detected.
- Joist design includes consideration for a 2000 lb load distributed over a 30" square area and all live loads removed.

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Project: Providence Hall High
Location: Herriman, UT
Folder: 2nd Floor
Date: 12/19/13 3:59 PM
Designer: Remote
Comment:

Type: C10

11.875" Red-I90™ @ 19.2" o.c. with Glued Sheathing

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail	
Shear (lb)	77%	1733	2255	100% - All Loads	PASS	
Positive Moment (ft-lb)	45%	4318	9605	100% - Even Members	PASS	
Negative Moment (ft-lb)	56%	-5395	9605	100% - All Loads	PASS	
DEFLECTIONS (in)		Design	Allow.	Design	Allow.	Pass/Fail
Span Live	51%	0.261	0.508	L / 700	L / 360	PASS
Span Total	41%	0.313	0.762	L / 584	L / 240	PASS

FloorChoice™ Rating: 9.2



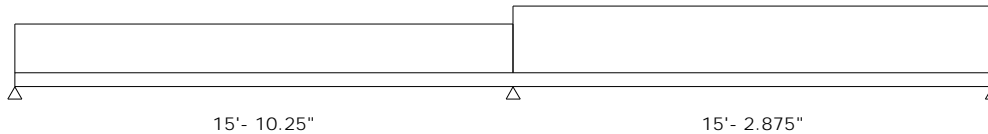
Performance rating is based on: 24 oc (23/32", 3/4") sheathing, glued and nailed, continuous spans, rigid supports. RedSpec has not performed a structural analysis of the sheathing.

SUPPORTS	Support 1	Support 2	Support 3
Live Reaction, Critical (lb) (DOL%)	719 (100)	2551 (100)	1070 (100)
Dead Reaction (lb)	289	933	270
Total Reaction (lb) (DOL%)	1008 (100)	3484 (100)	1340 (100)
Bearing Support	Bottom Wall	Bottom Wall	Flush Beam
Req'd Bearing, No Stiffeners (in)	1.75	3.88	1.75
Req'd Bearing, Stiffeners (in)	-	3.50	-

HANGERS	Model	Top	Face	Member	Header	Size
Right	BA3.56/11.88	6-10d	10-10d	2-10dx1.5"	LVL DF/SP	1.75x11.875 TPL

SPANS AND LOADS

Dimensions represent horizontal design spans.



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Floor(100%)	100	30	0	19.2"	Glued Floor Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Floor(100%)	65	30	0'-0.0" to 15'-10.25"	Replaces	Office & Partition loads

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: 2nd Floor
Date: 12/19/13 4:00 PM
Designer: Remote
Comment:

Type: C7

11.875" Red-I90™ @ 16" o.c. with Glued Sheathing

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	58%	1300	2255	100% - All Loads	PASS
Positive Moment (ft-lb)	51%	4875	9605	100% - All Loads	PASS
DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.
Span Live	54%	0.272	0.500	L / 661	L / 360
Span Total	47%	0.354	0.750	L / 509	L / 240
					Pass/Fail
					PASS
					PASS

FloorChoice™ Rating: 9.1



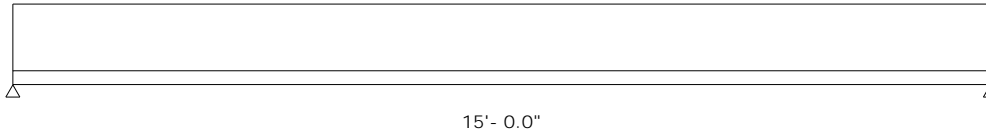
Performance rating is based on: 24 oc (23/32", 3/4") sheathing, glued and nailed, simple span, flexible support. RedSpec has not performed a structural analysis of the sheathing.

SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	1000 (100)	1000 (100)
Dead Reaction (lb)	300	300
Total Reaction (lb) (DOL%)	1300 (100)	1300 (100)
Bearing Support	Flush Beam	Flush Ledger
Req'd Bearing, No Stiffeners (in)	1.75	1.75
Req'd Bearing, Stiffeners (in)	-	-

HANGERS	Model	Top	Face	Member	Header	Size
Left	BA3.56/11.88	6-10d	10-10d	2-10dx1.5"	Ledger LVL DF/SP	1.5x18 DBL
Right	MIU3.56/11		20-10dx1.5"	2-10dx1.5"	Ledger LVL DF/SP	1.5x18

SPANS AND LOADS

Dimensions represent horizontal design spans.



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Floor(100%)	100	30	0	16"	Glued Floor Joist

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.

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The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.



RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: 2nd Floor
Date: 12/19/13 10:41 AM
Designer: Remote
Comment:

Type: C8

11.875" Red-I90™ @ 19.2" o.c. with Glued Sheathing

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	71%	1610	2255	100% - All Loads	PASS
Positive Moment (ft-lb)	65%	6230	9605	100% - All Loads	PASS
DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.
Span Live	70%	0.360	0.516	L / 516	L / 360
Span Total	60%	0.468	0.774	L / 397	L / 240
					Pass/Fail
					PASS
					PASS

FloorChoice™ Rating: 8.7



Performance rating is based on: 24 oc (23/32", 3/4") sheathing, glued and nailed, simple span, flexible support. RedSpec has not performed a structural analysis of the sheathing.

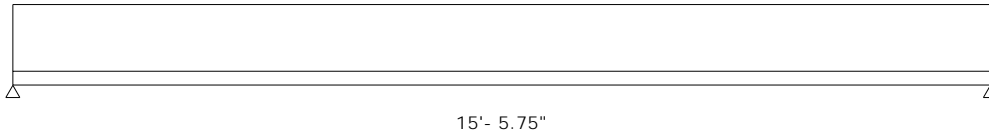
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	1238 (100)	1238 (100)
Dead Reaction (lb)	372	372
Total Reaction (lb) (DOL%)	1610 (100)	1610 (100)
Bearing Support	Flush Beam	Flush Beam
Req'd Bearing, No Stiffeners (in)	2.50	2.50
Req'd Bearing, Stiffeners (in)	1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Left	BA3.56/11.88*	6-10dx1.5"	4-10dx1.5"	2-10dx1.5"	Sawn DF	2x6 (Nailer)
Right	BA3.56/11.88*	6-10dx1.5"	4-10dx1.5"	2-10dx1.5"	Sawn DF	2x6 (Nailer)

(* = Web stiffeners required)

SPANS AND LOADS

Dimensions represent horizontal design spans.



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Floor(100%)	100	30	0	19.2"	Glued Floor Joist

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: 2nd Floor
Date: 12/19/13 4:02 PM
Designer: Remote
Comment:

Type: C9

11.875" Red-I90™ @ 16" o.c. with Glued Sheathing

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	62%	1388	2255	100% - All Loads	PASS
Positive Moment (ft-lb)	58%	5558	9605	100% - All Loads	PASS
DEFLECTIONS (in)					
Span Live	65%	0.344	0.534	Design L / 558	Allow. L / 360
Span Total	56%	0.448	0.801	Design L / 429	Allow. L / 240
					Pass/Fail
					PASS
					PASS

FloorChoice™ Rating: 8.7

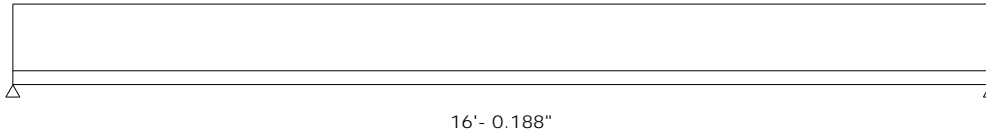


Performance rating is based on: 24 oc (23/32", 3/4") sheathing, glued and nailed, simple span, flexible support. RedSpec has not performed a structural analysis of the sheathing.

SUPPORTS	Support 1	Support 2	HANGERS					
Live Reaction, Critical (lb) (DOL%)	1068 (100)	1068 (100)	Model	Top	Face	Member	Header	Size
Dead Reaction (lb)	320	320	Left MIU3.56/11	6-10d	20-10dx1.5"	2-10dx1.5"	Ledger LVL DF/SP	1.75x11.875
Total Reaction (lb) (DOL%)	1388 (100)	1388 (100)	Right BA3.56/11.88		10-10d	2-10dx1.5"	Glulam DF/SP	5.125x24
Bearing Support	Flush Ledger	Flush Beam						
Req'd Bearing, No Stiffeners (in)	1.75	1.75						
Req'd Bearing, Stiffeners (in)	-	-						

SPANS AND LOADS

Dimensions represent horizontal design spans.



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Floor(100%)	100	30	0	16"	Glued Floor Joist

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.

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v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: 2nd Floor
Date: 12/19/13 3:14 PM
Designer: Remote
Comment:

Type: C9@Wall Above

11.875" Red-I90™ @ 16" o.c. with Glued Sheathing **OVERLOADED**

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail	
End Reaction (lb)	118%	2589	2200	100% - All Loads	FAIL	
Shear (lb)	115%	2589	2255	100% - All Loads	FAIL	
Positive Moment (ft-lb)	108%	10367	9605	100% - All Loads	FAIL	
DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	65%	0.344	0.534	L / 558	L / 360	PASS
Span Total	104%	0.835	0.801	L / 230	L / 240	FAIL



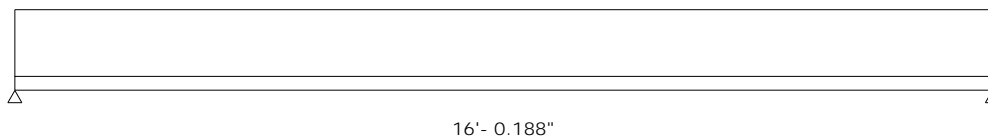
Performance rating is based on: 24 oc (23/32", 3/4") sheathing, glued and nailed, simple span, flexible support. RedSpec has not performed a structural analysis of the sheathing.

SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	1068 (100)	1068 (100)
Dead Reaction (lb)	1521	1521
Total Reaction (lb) (DOL%)	2589 (100)	2589 (100)
Bearing Support	Flush Ledger	Flush Beam
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	-	-

HANGERS	Model	Top	Face	Member	Header	Size
Left	None Found					
Right	None Found					

SPANS AND LOADS

Dimensions represent horizontal design spans.



APPLICATION LOADS	Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
	Uniform	psf	Floor(100%)	100	30	0	16"	Glued Floor Joist

ADDITIONAL LOADS	Type	Units	DOL	Live	Dead	Location from left	Application	Comment
	Uniform	plf	Floor(100%)	0	150	0'-0.0" to 16'-0.188"	Adds To	Wall Above

- NOTES**
- Building code: IBC. Methodology: Allowable Stress Design
 - End reaction capacity exceeded.
 - Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: 2nd Floor
Date: 12/19/13 3:54 PM
Designer: Remote
Comment:

Type: D10

20" Red-I90™ @ 19.2" o.c. with Glued Sheathing

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control		Pass/Fail	
Shear (lb)	72%	2421	3345	100% - Conc. Load		PASS	
Positive Moment (ft-lb)	36%	5868	16435	100% - Even Members		PASS	
Negative Moment (ft-lb)	42%	-6849	16435	100% - All Loads		PASS	
DEFLECTIONS (in)		% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live		9%	0.048	0.547	L / 999+	L / 360	PASS
Span Total		22%	0.181	0.820	L / 999+	L / 240	PASS

FloorChoice™ Rating: 9.7

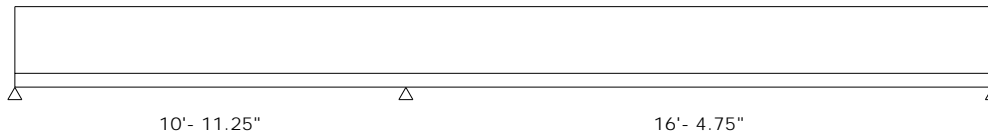


Performance rating is based on: 24 oc (23/32", 3/4") sheathing, glued and nailed, continuous spans, rigid supports. RedSpec has not performed a structural analysis of the sheathing.

SUPPORTS	Support 1	Support 2	Support 3
Live Reaction, Critical (lb) (DOL%)	432 (100)	1130 (100)	451 (100)
Dead Reaction (lb)	610	3495	1308
Total Reaction (lb) (DOL%)	1041 (100)	4625 (100)	1758 (100)
Bearing Support	Bottom Wall	Bottom Wall	Bottom Wall
Req'd Bearing, No Stiffeners (in)	-	-	-
Req'd Bearing, Stiffeners (in)	1.75	4.87	1.75

SPANS AND LOADS

Dimensions represent horizontal design spans.



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Floor(100%)	40	30	0	19.2"	Glued Floor Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	plf	Floor(100%)	0	150	0'-0.0" to 27'-4.0"	Adds To	Wall Above

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Joist design includes consideration for a 1000 lb load distributed over a 30" square area and all live loads removed.

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The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.



RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: 2nd Floor
Date: 12/19/13 11:04 AM
Designer: Remote
Comment:

Type: D12

20" Red-I90™ @ 19.2" o.c. with Glued Sheathing

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail	
Shear (lb)	33%	1104	3345	100% - All Loads	PASS	
Positive Moment (ft-lb)	22%	3607	16435	100% - Even Members	PASS	
Negative Moment (ft-lb)	24%	-3968	16435	100% - All Loads	PASS	
DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	12%	0.080	0.647	L / 999+	L / 360	PASS
Span Total	14%	0.136	0.970	L / 999+	L / 240	PASS

FloorChoice™ Rating: 9.4



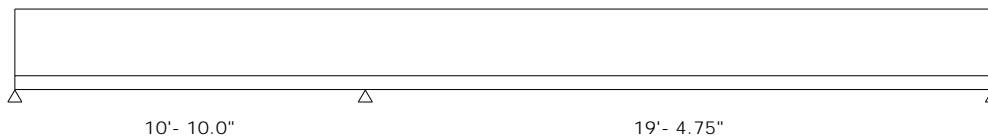
Performance rating is based on: 24 oc (23/32", 3/4") sheathing, glued and nailed, continuous spans, rigid supports. RedSpec has not performed a structural analysis of the sheathing.

SUPPORTS	Support 1	Support 2	Support 3
Live Reaction, Critical (lb) (DOL%)	432 (100)	1294 (100)	521 (100)
Dead Reaction (lb)	103	970	378
Total Reaction (lb) (DOL%)	535 (100)	2264 (100)	899 (100)
Net Uplift Reaction (lb) (DOL%)	-75 (100)		
Bearing Support	Flush Beam	Bottom Wall	Bottom Wall
Req'd Bearing, No Stiffeners (in)	-	-	-
Req'd Bearing, Stiffeners (in)	1.75	3.50	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Left	MIT420*	4-10dx1.5"	2-10dx1.5"	2-10dx1.5"	Sawn DF	2x4 (Nailer)
(* = Web stiffeners required)						

SPANS AND LOADS

Dimensions represent horizontal design spans.



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Floor(100%)	40	30	0	19.2"	Glued Floor Joist

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Joist design includes consideration for a 1000 lb load distributed over a 30" square area and all live loads removed.

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The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.



RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: 2nd Floor
Date: 12/19/13 2:31 PM
Designer: Remote
Comment:

Type: D13

20" Red-I90™ @ 19.2" o.c. with Glued Sheathing

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	43%	-1440	3345	100% - All Loads	PASS
Positive Moment (ft-lb)	33%	5415	16435	100% - Odd Members	PASS
Negative Moment (ft-lb)	36%	-5975	16435	100% - All Loads	PASS
DEFLECTIONS (in)					
	% Allow.	Design	Allow.	Design	Allow.
Span Live	16%	0.119	0.736	L / 999+	L / 360
Span Total	22%	0.241	1.103	L / 999+	L / 240
					Pass/Fail
					PASS
					PASS

FloorChoice™ Rating: 8.7



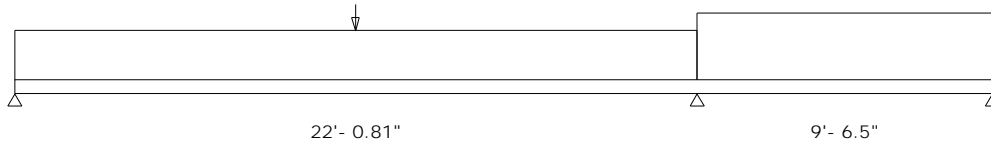
Performance rating is based on: 24 oc (23/32", 3/4") sheathing, glued and nailed, continuous spans, rigid supports. RedSpec has not performed a structural analysis of the sheathing.

SUPPORTS	Support 1	Support 2	Support 3
Live Reaction, Critical (lb) (DOL%)	583 (100)	1664 (100)	459 (100)
Dead Reaction (lb)	518	1314	-75
Total Reaction (lb) (DOL%)	1101 (100)	2978 (100)	384 (100)
Net Uplift Reaction (lb) (DOL%)			-360 (100)
Bearing Support	Flush Ledger	Bottom Wall	Bottom Wall
Req'd Bearing, No Stiffeners (in)	-	-	-
Req'd Bearing, Stiffeners (in)	1.75	3.50	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Left	MIT420*	4-10d	4-10d	2-10dx1.5"	LVL DF/SP	3.5x18
	(* = Web stiffeners required)					

SPANS AND LOADS

Dimensions represent horizontal design spans.



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Floor(100%)	40	30	0	19.2"	Glued Floor Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Floor(100%)	65	30	22'-0.81" to 31'-7.31"	Replaces	Office & Partition loads
Point	plf	Floor(100%)	0	150	11'-0.31"	Adds To	Wall Above

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Net uplift over 200 lb detected.
- Joist design includes consideration for a 1000 lb load distributed over a 30" square area and all live loads removed.

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The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.



RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: 2nd Floor
Date: 12/20/13 9:11 AM
Designer: Remote
Comment:

Type: D15

20" Red-I90™ @ 19.2" o.c. with Glued Sheathing

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control		Pass/Fail
Shear (lb)	45%	1514	3345	100% - All Loads		PASS
Positive Moment (ft-lb)	62%	10238	16435	100% - All Loads		PASS
DEFLECTIONS (in)						
Span Live	42%	0.379	0.901	Design	Allow.	Pass/Fail
Span Total	49%	0.663	1.352	L / 857	L / 360	PASS
				L / 490	L / 240	PASS

FloorChoice™ Rating: 2.3

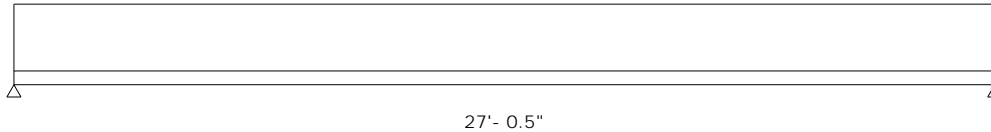


Performance rating is based on: 24 oc (23/32", 3/4") sheathing, glued and nailed, simple span, flexible support. RedSpec has not performed a structural analysis of the sheathing.

SUPPORTS	Support 1	Support 2	HANGERS					
Live Reaction, Critical (lb) (DOL%)	865 (100)	865 (100)	Model	Top	Face	Member	Header	Size
Dead Reaction (lb)	649	649	Left	4-10d	4-10d	2-10dx1.5"	LVL DF/SP	1.75x11.875 DBL
Total Reaction (lb) (DOL%)	1514 (100)	1514 (100)	(* = Web stiffeners required)					
Bearing Support	Flush Beam	Bottom Wall						
Req'd Bearing, No Stiffeners (in)	-	-						
Req'd Bearing, Stiffeners (in)	1.75	1.75						

SPANS AND LOADS

Dimensions represent horizontal design spans.



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Floor(100%)	40	30	0	19.2"	Glued Floor Joist

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Joist design includes consideration for a 1000 lb load distributed over a 30" square area and all live loads removed.

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v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: 2nd Floor
Date: 12/23/13 1:31 PM
Designer: Remote
Comment: used MIU3.56/20 24-N10 2-N10

Type: D16

20" Red-I90™ @ 19.2" o.c. with Glued Sheathing

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control		Pass/Fail
Shear (lb)	46%	-1553	3345	100% - All Loads		PASS
Positive Moment (ft-lb)	36%	5892	16435	100% - Odd Members		PASS
Negative Moment (ft-lb)	52%	-8556	16435	100% - All Loads		PASS
DEFLECTIONS (in)		Design	Allow.	Design	Allow.	Pass/Fail
Span Live	25%	0.209	0.831	L / 999+	L / 360	PASS
Span Total	25%	0.316	1.247	L / 947	L / 240	PASS

FloorChoice™ Rating: 6.8

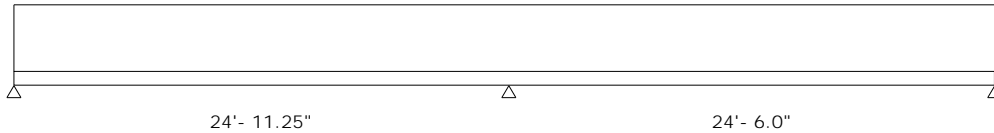


Performance rating is based on: 24 oc (23/32", 3/4") sheathing, glued and nailed, continuous spans, rigid supports. RedSpec has not performed a structural analysis of the sheathing.

SUPPORTS	Support 1	Support 2	Support 3
Live Reaction, Critical (lb) (DOL%)	697 (100)	1978 (100)	687 (100)
Dead Reaction (lb)	451	1483	438
Total Reaction (lb) (DOL%)	1149 (100)	3461 (100)	1125 (100)
Bearing Support	Bottom Wall	Bottom Wall	Flush Ledger
Req'd Bearing, No Stiffeners (in)	-	-	-
Req'd Bearing, Stiffeners (in)	1.75	3.50	1.75

SPANS AND LOADS

Dimensions represent horizontal design spans.



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Floor(100%)	40	30	0	19.2"	Glued Floor Joist

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Joist design includes consideration for a 1000 lb load distributed over a 30" square area and all live loads removed.

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RedSpec™ by RedBuilt™
v7.0.18

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 1/2/14 3:16 PM
Designer: Remote
Comment: Locker room

Type: D20 drift&brace

20" Red-I90™ @ 24" o.c.

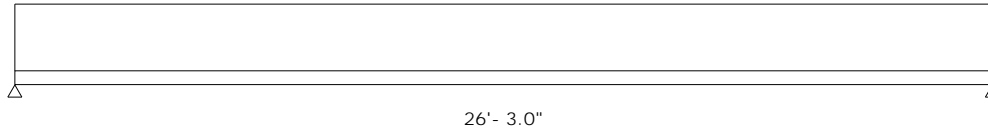
This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (Ib)		66%	3538	5352	160% - All Loads	PASS
Positive Moment (ft-Ib)		88%	23222	26296	160% - All Loads	PASS
DEFLECTIONS (in)		% Allow.	Design	Allow.	Design	Pass/Fail
Span Live		99%	1.299	1.313	L / 243	PASS
Span Total		91%	1.594	1.750	L / 198	PASS
SUPPORTS		Support 1	Support 2			
Live Reaction, Critical (Ib) (DOL%)		2882 (160)	2882 (160)			
Dead Reaction (Ib)		656	656			
Total Reaction (Ib) (DOL%)		3539 (160)	3539 (160)			
Bearing Support		Flush Ledger	Bottom Wall			
Req'd Bearing, No Stiffeners (in)		-	-			
Req'd Bearing, Stiffeners (in)		1.82	1.82			
HANGERS		Model	Top	Face	Member	Header
Left		HB3.56/20*	6-16d	16-16d	10-16d	LVL DF/SP
		(* = Web stiffeners required)				

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Snow(115%)	36.8	0	0'-0.0" to 26'-3.0"	Adds To	Snow Drift B
Uniform	plf	Wind(160%)	80	0	0'-0.0" to 26'-3.0"	Adds To	Brace load

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.



RedSpec™ by RedBuilt™
v7.0.18

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 1/2/14 3:16 PM
Designer: Remote
Comment: Locker room - Uplift Case

Type: D20 drift&brace

20" Red-I90™ @ 24" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	25%	-1312	5352	160% - All Loads	PASS
Positive Moment (ft-lb)	0%	17	14792	90% - Dead Load	PASS
Negative Moment (ft-lb)	33%	-8613	26296	160% - All Loads	PASS

DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	45%	-0.593	-1.313	L / 532	L / 240	PASS
Span Total	34%	-0.591	-1.750	L / 533	L / 180	PASS

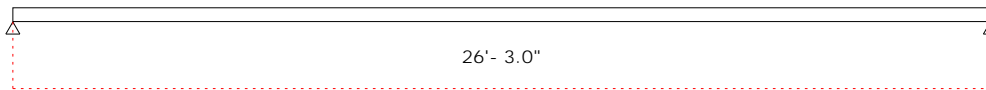
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	0	0
Dead Reaction (lb)	3	3
Total Reaction (lb) (DOL%)	3 (90)	3 (90)
Net Uplift Reaction (lb) (DOL%)	-1312 (160)	-1312 (160)
Bearing Support	Flush Ledger	Bottom Wall
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Left	HB3.56/20* (* = Web stiffeners required)	6-16d	16-16d	10-16d	LVL DF/SP	3.5x18

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	plf	Wind(160%)	-80	0	0'-0.0" to 26'-3.0"	Adds To	Brace load
Uniform	psf	Wind(160%)	-10.1	0.1	0'-0.0" to 26'-3.0"	Replaces	Net wind uplift

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Net uplift over 200 lb detected.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 2:56 PM
Designer: Remote
Comment:

Type: D20 Mech-Uplift

20" Red-I90™ @ 24" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	8%	410	5352	160% - All Loads	PASS
Positive Moment (ft-lb)	0%	17	14792	90% - Dead Load	PASS
Negative Moment (ft-lb)	7%	-1893	26296	160% - All Loads	PASS

DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	10%	-0.133	-1.313	L / 999+	L / 240	PASS
Span Total	8%	-0.132	-1.750	L / 999+	L / 180	PASS

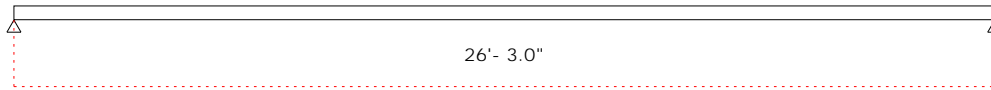
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	0	0
Dead Reaction (lb)	3	3
Total Reaction (lb) (DOL%)	3 (90)	3 (90)
Net Uplift Reaction (lb) (DOL%)	-275 (160)	-410 (160)
Bearing Support	Flush Ledger	Bottom Wall
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Left	MIT420*	4-16d	4-16d	4-10dx1.5"	LVL DF/SP	3.5x18
(* = Web stiffeners required)						

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Wind(160%)	-10.1	0.1	0'-0.0" to 26'-3.0"	Replaces	Net Wind Uplift
Point	plf	Wind(160%)	-80	0	24'-2.0"	Adds To	Brace Load

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Net uplift over 200 lb detected.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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RedSpec™ by RedBuilt™
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Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 2:55 PM
Designer: Remote
Comment:

Type: D20 Mech

20" Red-I90™ @ 24" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail
	Shear (lb)	49%	1881	3847	115% - All Loads	PASS
	Positive Moment (ft-lb)	62%	11628	18900	115% - All Loads	PASS

	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
	Span Live	33%	0.431	1.313	L / 732	L / 240	PASS
	Span Total	47%	0.814	1.750	L / 387	L / 180	PASS

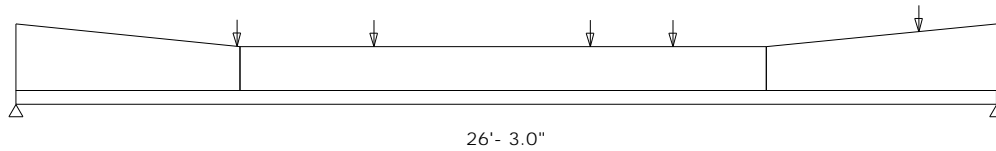
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	1047 (115)	1050 (115)
Live Reaction, Max. (lb) (DOL%)	1060 (160)	1198 (160)
Dead Reaction (lb)	835	778
Total Reaction (lb) (DOL%)	1894 (160)	1976 (160)
Bearing	Flush	Bottom
Support	Ledger	Wall
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Left	MIT420*	4-16d	4-16d	4-10dx1.5"	LVL DF/SP	3.5x18
	(* = Web stiffeners required)					

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Point	lb	Floor(100%)	0	100	5'-11.0"	Adds To	Mech. #1
Point	lb	Floor(100%)	0	100	9'-7.0"	Adds To	Mech. #1
Point	lb	Floor(100%)	0	50	15'-4.5"	Adds To	Mech. #3
Point	lb	Floor(100%)	0	50	17'-7.0"	Adds To	Mech. #3
Point	plf	Wind(160%)	80	0	24'-2.0"	Adds To	Brace Load
Tapered	psf	Snow(115%)	30 to 0	0 to 0	0'-0.0" to 6'-0.0"	Adds To	Drift C
Tapered	psf	Snow(115%)	0 to 30	0 to 0	20'-1.0" to 26'-3.0"	Adds To	Drift C

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 1:26 PM
Designer: Remote
Comment:

Type: D20

20" Red-I90™ @ 24" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	45%	-1741	3847	115% - All Loads	PASS
Positive Moment (ft-lb)	54%	10278	18900	115% - All Loads	PASS

DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	33%	0.429	1.313	L / 734	L / 240	PASS
Span Total	41%	0.725	1.750	L / 435	L / 180	PASS

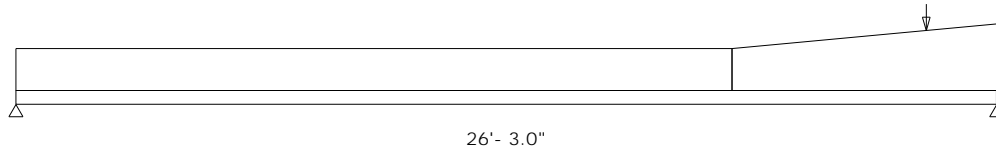
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	888 (115)	1085 (115)
Live Reaction, Max. (lb) (DOL%)	905 (160)	1303 (160)
Dead Reaction (lb)	656	656
Total Reaction (lb) (DOL%)	1561 (160)	1959 (160)
Bearing	Flush	Bottom
Support	Beam	Wall
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Left	MIT420* (* = Web stiffeners required)	4-16d	4-16d	4-10dx1.5"	LVL DF/SP	1.75x11.875 DBL

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: 0.25/12 f



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Point	p/f	Wind(160%)	117.3	0	24'-4.5"	Adds To	Brace Load
Tapered	psf	Snow(115%)	0 to 33.9	0 to 0	19'-2.0" to 26'-3.0"	Adds To	Snow Drift E

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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RedSpec™ by RedBuilt™
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Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 12:02 PM
Designer: Remote
Comment:

Type: D27

20" Red-I90™ @ 24" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	Shear (lb)	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
	Positive Moment (ft-lb)	56%	2138	3847	115% - All Loads	PASS
		44%	8371	18900	115% - All Loads	PASS

	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
	Span Live	29%	0.227	0.783	L / 829	L / 240	PASS
	Span Total	26%	0.273	1.044	L / 688	L / 180	PASS

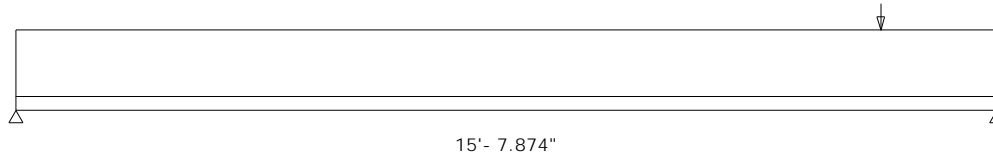
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	1747 (115)	1747 (115)
Live Reaction, Max. (lb) (DOL%)	1820 (160)	2290 (160)
Dead Reaction (lb)	391	391
Total Reaction (lb) (DOL%)	2211 (160)	2682 (160)
Bearing	Flush	Bottom
Support	Beam	Wall
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Left	MIT420*	4-16d	4-16d	4-10dx1.5"	LVL DF/SP	1.75x11.875 TPL
	(* = Web stiffeners required)					

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: 0.25/12 f



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Snow(115%)	78.6	0	0'-0.0" to 15'-7.875"	Adds To	Snow Drift H
Point	plf	Wind(160%)	308	0	13'-9.685"	Adds To	Brace Load

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 12:02 PM
Designer: Remote
Comment:

Type: D27 Uplift

20" Red-I90™ @ 24" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	13%	700	5352	160% - All Loads	PASS
Positive Moment (ft-lb)	0%	6	14792	90% - Dead Load	PASS
Negative Moment (ft-lb)	5%	-1315	26296	160% - All Loads	PASS

DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	5%	-0.039	-0.783	L / 999+	L / 240	PASS
Span Total	4%	-0.038	-1.044	L / 999+	L / 180	PASS

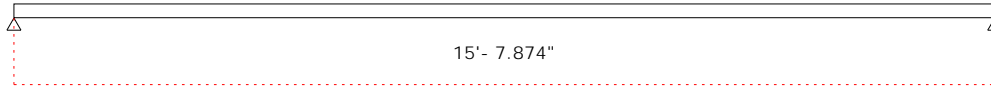
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	0	0
Dead Reaction (lb)	2	2
Total Reaction (lb) (DOL%)	2 (90)	2 (90)
Net Uplift Reaction (lb) (DOL%)	-229 (160)	-700 (160)
Bearing Support	Flush Beam	Bottom Wall
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Left	MIT420*	4-16d	4-16d	4-10dx1.5"	LVL DF/SP	1.75x11.875 TPL
(* = Web stiffeners required)						

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: 0.25/12 f



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Wind(160%)	-10.1	0.1	0'-0.0" to 15'-7.875"	Replaces	Net Wind Uplift
Point	plf	Wind(160%)	-308	0	13'-9.685"	Adds To	Brace Load

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Net uplift over 200 lb detected.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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RedSpec™ by RedBuilt™
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Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 12:45 PM
Designer: Remote
Comment:

Type: D28 Uplift

20" Red-I90™ @ 24" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	3%	-158	5352	160% - All Loads	PASS
Positive Moment (ft-lb)	0%	6	14792	90% - Dead Load	PASS
Negative Moment (ft-lb)	2%	-625	26296	160% - All Loads	PASS

DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	2%	-0.019	-0.791	L / 999+	L / 240	PASS
Span Total	2%	-0.019	-1.054	L / 999+	L / 180	PASS

SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	0	0
Dead Reaction (lb)	2	2
Total Reaction (lb) (DOL%)	2 (90)	2 (90)
Net Uplift Reaction (lb) (DOL%)	-158 (160)	-158 (160)
Bearing	Flush	Flush
Support	Ledger	Beam
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

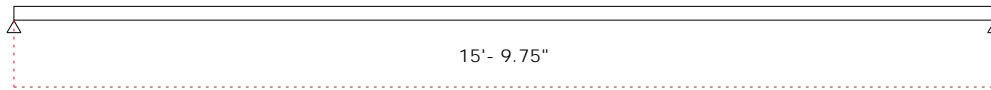
HANGERS	Model	Top	Face	Member	Header	Size
Left	MIT420*	4-16d	4-16d	4-10dx1.5"	LVL DF/SP	1.75x18 DBL
Right	MIT420*	4-16d	4-16d	4-10dx1.5"	LVL DF/SP	1.75x11.875 DBL

(* = Web stiffeners required)

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Wind(160%)	-10.1	0.1	0'-0.0" to 15'-9.75"	Replaces	Net Wind Uplift

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

Y:\C0020-RB\RB13138-085264-Providence Hall High School, UT\085264-Sizing\085264-Sizing.red

The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 12:46 PM
Designer: Remote
Comment:

Type: D28

20" Red-I90™ @ 24" o.c.

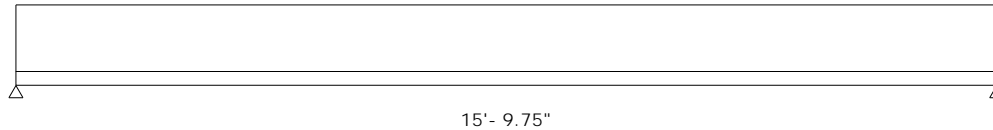
This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail	
	Shear (lb)	24%	917	3847	115% - All Loads	PASS	
	Positive Moment (ft-lb)	19%	3626	18900	115% - All Loads	PASS	
	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	
	Span Live	8%	0.063	0.791	L / 999+	L / 240	
	Span Total	11%	0.111	1.054	L / 999+	L / 180	
SUPPORTS		Support 1	Support 2			Pass/Fail	
Live Reaction, Critical (lb) (DOL%)		522 (115)	522 (115)			PASS	
Dead Reaction (lb)		395	395			PASS	
Total Reaction (lb) (DOL%)		917 (115)	917 (115)			PASS	
Bearing		Flush	Flush				
Support		Ledger	Beam				
Req'd Bearing, No Stiffeners (in)		-	-				
Req'd Bearing, Stiffeners (in)		1.75	1.75				
HANGERS	Model		Top	Face	Member	Header	Size
Left	MIT420*		4-16d	4-16d	4-10dx1.5"	LVL DF/SP	1.75x18 DBL
Right	MIT420*		4-16d	4-16d	4-10dx1.5"	LVL DF/SP	1.75x11.875 DBL
	(* = Web stiffeners required)						

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 1:44 PM
Designer: Remote
Comment:

Type: D30 Uplift

20" Red-I90™ @ 24" o.c.

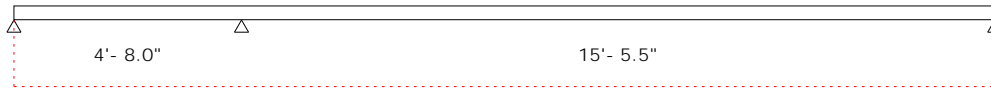
This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control		Pass/Fail
Shear (lb)		3%	155	5352	160% - Simple Span		PASS
Positive Moment (ft-lb)		2%	471	26296	160% - All Loads		PASS
Negative Moment (ft-lb)		1%	-390	26296	160% - Even Members		PASS
DEFLECTIONS (in)		% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live		2%	-0.012	-0.773	L / 999+	L / 240	PASS
Span Total		1%	-0.012	-1.031	L / 999+	L / 180	PASS
SUPPORTS		Support 1	Support 2	Support 3			
Live Reaction, Critical (lb) (DOL%)		99 (160)	0	1 (160)			
Dead Reaction (lb)		-1	3	1			
Total Reaction (lb) (DOL%)		99 (160)	3 (90)	2 (160)			
Net Uplift Reaction (lb) (DOL%)		-47 (160)	-333 (160)	-155 (160)			
Bearing		Flush	Bottom	Bottom			
Support		Beam	Wall	Wall			
Req'd Bearing, No Stiffeners (in)		-	-	-			
Req'd Bearing, Stiffeners (in)		1.75	3.50	1.75			
HANGERS		Model	Top	Face	Member	Header	Size
Left		LBV3.56/20*	6-16dx2.5"	4-16dx2.5"	6-10dx1.5"	Sawn DF	3x6 (Nailer)
		(* = Web stiffeners required)					

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Wind(160%)	-10.1	0.1	0'-0.0" to 20'-1.5"	Replaces	Net Wind Uplift

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Net uplift over 200 lb detected.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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RedSpec™ by RedBuilt™
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Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 1:42 PM
Designer: Remote
Comment:

Type: D30

20" Red-I90™ @ 24" o.c.

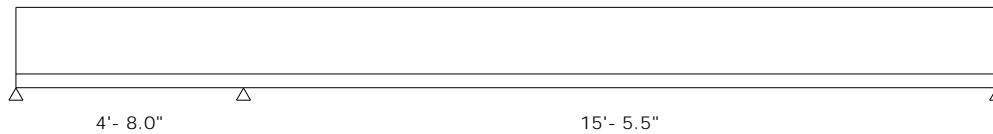
This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail	
	Shear (lb)	23%	-896	3847	115% - Simple Span	PASS	
	Positive Moment (ft-lb)	12%	2249	18900	115% - Even Members	PASS	
	Negative Moment (ft-lb)	14%	-2735	18900	115% - All Loads	PASS	
DEFLECTIONS (in)		% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
	Span Live	5%	0.040	0.773	L / 999+	L / 240	PASS
	Span Total	7%	0.070	1.031	L / 999+	L / 180	PASS
SUPPORTS		Support 1	Support 2	Support 3			
	Live Reaction, Critical (lb) (DOL%)	145 (115)	1098 (115)	412 (115)			
	Dead Reaction (lb)	-136	832	310			
	Total Reaction (lb) (DOL%)	9 (115)	1930 (115)	722 (115)			
	Net Uplift Reaction (lb) (DOL%)	-460 (115)					
	Bearing Support	Flush Beam	Bottom Wall	Bottom Wall			
	Req'd Bearing, No Stiffeners (in)	-	-	-			
	Req'd Bearing, Stiffeners (in)	1.75	3.50	1.75			
HANGERS		Model	Top	Face	Member	Header	Size
	Left	LBV3.56/20*	6-16dx2.5"	4-16dx2.5"	6-10dx1.5"	Sawn DF	3x6 (Nailer)
		(* = Web stiffeners required)					

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Net uplift over 200 lb detected.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 12:24 PM
Designer: Remote
Comment: EOR to approve

Type: D31 2FR

20" Red-I90™ @ 21.5" o.c. OVERLOADED

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
End Reaction (lb)	102%	3131	3076	115% - All Loads	FAIL
Shear (lb)	81%	-3130	3847	115% - All Loads	PASS
Positive Moment (ft-lb)	77%	14626	18900	115% - All Loads	PASS

DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	55%	0.593	1.074	L / 434	L / 240	PASS
Span Total	50%	0.720	1.432	L / 358	L / 180	PASS

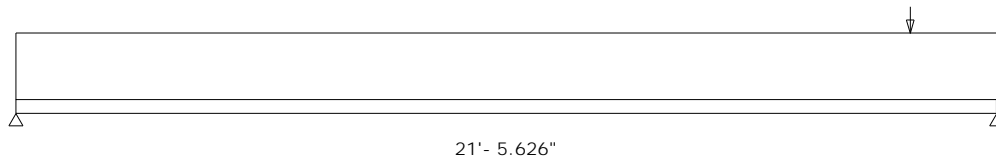
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	2195 (115)	2650 (115)
Dead Reaction (lb)	481	481
Total Reaction (lb) (DOL%)	2676 (115)	3131 (115)
Bearing Support	Flush Beam	Bottom Wall
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	2.24	-

HANGERS	Model	Top	Face	Member	Header	Size
Left	HB3.56/20* (* = Web stiffeners required)	6-16d	16-16d	10-16d	LVL DF/SP	1.75x11.875 TPL

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: 0.25/12



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	21.5"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Snow(115%)	78.6	0	0'-0.0" to 21'-5.625"	Adds To	Snow Drift H
Point	plf	Snow(115%)	308	0	19'-7.0"	Adds To	Brace load

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- End reaction capacity exceeded.
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 12:26 PM
Designer: Remote
Comment: EOR to approve

Type: D31 3FR

20" Red-I90™ @ 24" o.c. OVERLOADED

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
End Reaction (lb)	107%	3284	3076	115% - All Loads	FAIL
Shear (lb)	85%	-3284	3847	115% - All Loads	PASS
Positive Moment (ft-lb)	80%	15198	18900	115% - All Loads	PASS

DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	57%	0.607	1.074	L / 425	L / 240	PASS
Span Total	52%	0.748	1.432	L / 344	L / 180	PASS

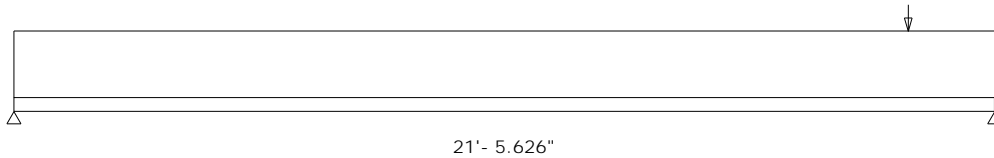
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	2240 (115)	2747 (115)
Dead Reaction (lb)	537	537
Total Reaction (lb) (DOL%)	2776 (115)	3284 (115)
Bearing Support	Flush Beam	Bottom Wall
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	2.55	-

HANGERS	Model	Top	Face	Member	Header	Size
Left	HB3.56/20* (* = Web stiffeners required)	6-16d	16-16d	10-16d	LVL DF/SP	1.75x11.875 TPL

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: 0.25/12



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Snow(115%)	68.8	0	0'-0.0" to 21'-5.625"	Adds To	Snow Drift H
Point	plf	Snow(115%)	308	0	19'-7.0"	Adds To	Brace load

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- End reaction capacity exceeded.
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 12:27 PM
Designer: Remote
Comment:

Type: D31 3FR0.75S&B

20" Red-I90™ @ 24" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail
	Shear (lb)	65%	2511	3847	115% - All Loads	PASS
	Positive Moment (ft-lb)	71%	13482	18900	115% - All Loads	PASS

	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
	Span Live	49%	0.531	1.074	L / 485	L / 240	PASS
	Span Total	47%	0.672	1.432	L / 383	L / 180	PASS

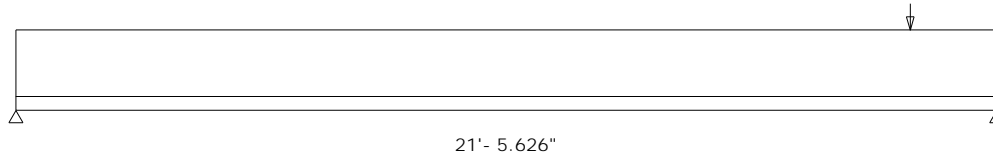
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	1975 (115)	1975 (115)
Live Reaction, Max. (lb) (DOL%)	1995 (160)	2186 (160)
Dead Reaction (lb)	537	537
Total Reaction (lb) (DOL%)	2532 (160)	2723 (160)
Bearing	Flush	Bottom
Support	Beam	Wall
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Left	HB3.56/20* (* = Web stiffeners required)	6-16d	16-16d	10-16d	LVL DF/SP	1.75x11.875 TPL

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: 0.25/12 f



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Snow(115%)	59	0	0'-0.0" to 21'-5.625"	Adds To	0.75 Snow Drift H
Point	lb	Wind(160%)	231	0	19'-7.0"	Adds To	0.75 Brace Load

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 12:15 PM
Designer: Remote
Comment: EOR to approve

Type: D31

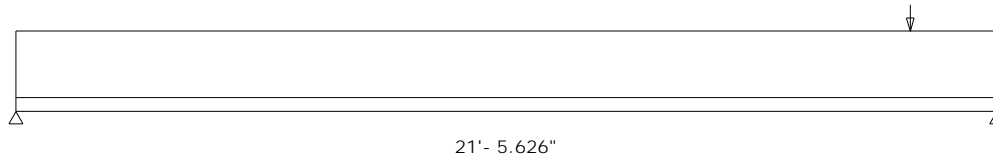
20" Red-I90™ @ 21.5" o.c. OVERLOADED

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail	
	End Reaction (lb)	102%	3131	3076	115% - All Loads	FAIL	
	Shear (lb)	81%	-3130	3847	115% - All Loads	PASS	
	Positive Moment (ft-lb)	77%	14626	18900	115% - All Loads	PASS	
DEFLECTIONS (in)		% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
	Span Live	55%	0.593	1.074	L / 434	L / 240	PASS
	Span Total	50%	0.720	1.432	L / 358	L / 180	PASS
SUPPORTS		Support 1	Support 2				
	Live Reaction, Critical (lb) (DOL%)	2195 (115)	2650 (115)				
	Dead Reaction (lb)	481	481				
	Total Reaction (lb) (DOL%)	2676 (115)	3131 (115)				
	Bearing Support	Flush Beam	Bottom Wall				
	Req'd Bearing, No Stiffeners (in)	-	-				
	Req'd Bearing, Stiffeners (in)	2.24	-				
HANGERS	Model	Top	Face	Member	Header	Size	
Left	LBV3.56/20* (* = Web stiffeners required)	6-16d	4-16d	6-10dx1.5"	LVL DF/SP	1.75x11.875 TPL	

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: 0.25/12



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	21.5"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Point	plf	Snow(115%)	308	0	19'-7.0"	Adds To	Brace load
Uniform	psf	Snow(115%)	78.6	0	0'-0.0" to 21'-5.625"	Adds To	Snow Drift H

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- End reaction capacity exceeded.
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 12:15 PM
Designer: Remote
Comment:

Type: D31 Uplift

20" Red-I90™ @ 24" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	15%	560	3847	115% - All Loads	PASS
Positive Moment (ft-lb)	0%	12	14792	90% - Dead Load	PASS
Negative Moment (ft-lb)	7%	-1806	26296	160% - All Loads	PASS

DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	8%	-0.090	-1.074	L / 999+	L / 240	PASS
Span Total	6%	-0.089	-1.432	L / 999+	L / 180	PASS

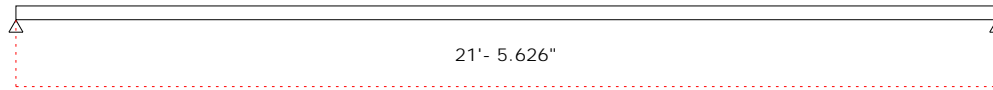
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	0	0
Dead Reaction (lb)	2	2
Total Reaction (lb) (DOL%)	2 (90)	2 (90)
Net Uplift Reaction (lb) (DOL%)	-269 (160)	-777 (160)
Bearing Support	Flush Beam	Bottom Wall
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Left	LBV3.56/20* (* = Web stiffeners required)	6-10d	4-10d	6-10dx1.5"	LVL DF/SP	1.75x11.875 TPL

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: 0.25/12 f



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Wind(160%)	-10.1	0.1	0'-0.0" to 21'-5.625"	Replaces	Net Wind Uplift
Point	plf	Snow(115%)	-308	0	19'-7.0"	Adds To	Brace load

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Net uplift over 200 lb detected.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

Y:\C0020-RB\RB13138-085264-Providence Hall High School, UT\085264-Sizing\085264-Sizing.red

The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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RedSpec™ by RedBuilt™
v7.0.18

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 1/3/14 6:37 PM
Designer: Remote
Comment:

Type: D33 Uplift

20" Red-I90™ @ 24" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	4%	-232	5352	160% - All Loads	PASS
Positive Moment (ft-lb)	0%	13	14792	90% - Dead Load	PASS
Negative Moment (ft-lb)	5%	-1344	26296	160% - All Loads	PASS

DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	7%	-0.075	-1.160	L / 999+	L / 240	PASS
Span Total	5%	-0.075	-1.546	L / 999+	L / 180	PASS

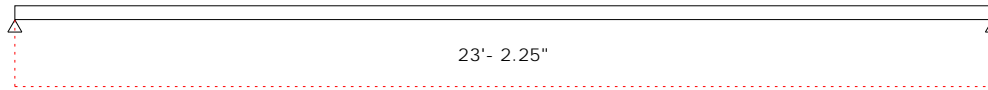
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	0	0
Dead Reaction (lb)	2	2
Total Reaction (lb) (DOL%)	2 (90)	2 (90)
Net Uplift Reaction (lb) (DOL%)	-232 (160)	-232 (160)
Bearing Support	Bottom Wall	Flush Beam
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Right	LBV3.56/20* (* = Web stiffeners required)	6-10dx1.5"	4-10dx1.5"	2-10dx1.5"	Sawn DF	2x6 (Nailer)

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Wind(160%)	-10.1	0.1	0'-0.0" to 23'-2.25"	Replaces	Net Wind Uplift

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Net uplift over 200 lb detected.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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RedSpec™ by RedBuilt™
v7.0.18

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 1/3/14 6:36 PM
Designer: Remote
Comment:

Type: D33

20" Red-I90™ @ 24" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail
	Shear (lb)	58%	2236	3847	115% - All Loads	PASS
	Positive Moment (ft-lb)	54%	10156	18900	115% - All Loads	PASS

	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
	Span Live	27%	0.311	1.160	L / 894	L / 240	PASS
	Span Total	36%	0.561	1.546	L / 496	L / 180	PASS

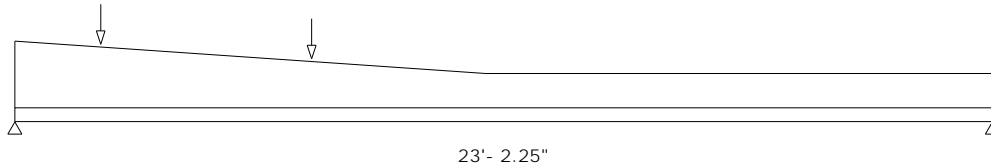
SUPPORTS		Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)		1281 (115)	864 (115)
Dead Reaction (lb)		956	671
Total Reaction (lb) (DOL%)		2237 (115)	1535 (115)
Bearing Support		Bottom Wall	Flush Beam
Req'd Bearing, No Stiffeners (in)		-	-
Req'd Bearing, Stiffeners (in)		1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Right	LBV3.56/20*	6-10dx1.5"	4-10dx1.5"	2-10dx1.5"	Sawn DF	2x6 (Nailer)
	(* = Web stiffeners required)					

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Point	lb	Floor(100%)	0	234	2'-0.5"	Adds To	Mech.#2
Point	lb	Floor(100%)	0	234	7'-0.5"	Adds To	Mech.#2
Tapered	psf	Snow(115%)	55 to 0	0 to 0	0'-0.0" to 11'-2.0"	Adds To	Snow Drift G

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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RedSpec™ by RedBuilt™
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Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 1:25 PM
Designer: Remote
Comment:

Type: D34

DOUBLE 20" Red-I90™ @ 24" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	Shear (lb)	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
	Positive Moment (ft-lb)	30%	-2277	7694		
		31%	11726	37800	115% - All Loads	PASS

DEFLECTIONS (in)	Span Live	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
	Span Total	20%	0.254	1.282	L / 999+	L / 240	
		23%	0.399	1.709	L / 770	L / 180	

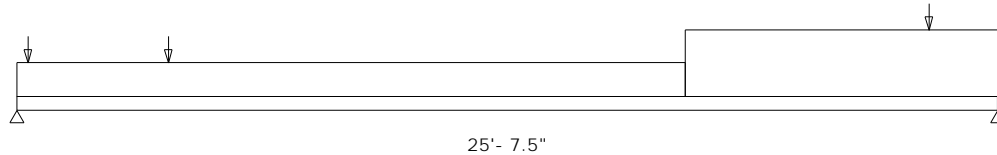
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	992 (115)	1616 (115)
Live Reaction, Max. (lb) (DOL%)	1008 (160)	1834 (160)
Dead Reaction (lb)	870	661
Total Reaction (lb) (DOL%)	1878 (160)	2496 (160)
Bearing	Flush	Bottom
Support	Beam	Wall
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Left	B7.12/20*	6-16d	8-16d	6-16d	LVL DF/SP	1.75x11.875 DBL
	(* = Web stiffeners required)					

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: 0.25/12 f



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Snow(115%)	56.1	0	17'-5.5" to 25'-7.5"	Adds To	Snow Drift F
Point	plf	Wind(160%)	117.3	0	23'-10.0"	Adds To	Brace Load
Point	lb	Floor(100%)	0	125	0'-3.5"	Adds To	Mech.#1
Point	lb	Floor(100%)	0	125	3'-11.5"	Adds To	Mech.#1

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Connect multiple ply members per RedBuilt™ Installation Guidelines.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 1:24 PM
Designer: Remote
Comment:

Type: D36

DOUBLE 20" Red-I90™ @ 24" o.c.

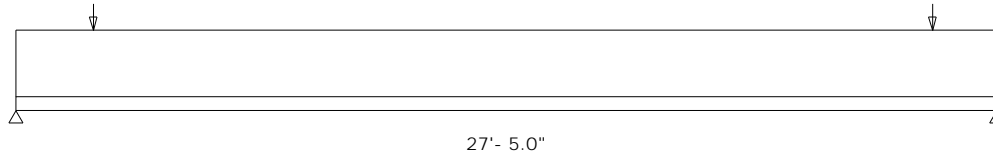
This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail
	Shear (lb)	41%	-3128	7694	115% - All Loads	PASS
	Positive Moment (ft-lb)	57%	21443	37800	115% - All Loads	PASS
	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Pass/Fail
	Span Live	47%	0.640	1.371	L / 514	PASS
	Span Total	45%	0.814	1.828	L / 404	PASS
SUPPORTS		Support 1	Support 2			
Live Reaction, Critical (lb) (DOL%)		2443 (115)	2443 (115)			
Live Reaction, Max. (lb) (DOL%)		2674 (160)	2681 (160)			
Dead Reaction (lb)		686	686			
Total Reaction (lb) (DOL%)		3360 (160)	3366 (160)			
Bearing		Bottom	Bottom			
Support		Wall	Wall			
Req'd Bearing, No Stiffeners (in)		-	-			
Req'd Bearing, Stiffeners (in)		1.75	1.75			

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: 0.25/12 f



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Snow(115%)	56.1	0	0'-0.0" to 27'-5.0"	Adds To	Snow Drift F
Point	plf	Wind(160%)	117.3	0	2'-2.0"	Adds To	Brace Load
Point	plf	Wind(160%)	117.3	0	25'-7.5"	Adds To	Brace Load

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Connect multiple ply members per RedBuilt™ Installation Guidelines.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 1:10 PM
Designer: Remote
Comment:

Type: D37 DBL

DOUBLE 20" Red-I90™ @ 24" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	Shear (lb)	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
	Positive Moment (ft-lb)	29%	2266	7694	115% - All Loads	PASS
		37%	14053	37800	115% - All Loads	PASS

	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
	Span Live	25%	0.368	1.463	L / 953	L / 240	PASS
	Span Total	31%	0.614	1.950	L / 572	L / 180	PASS

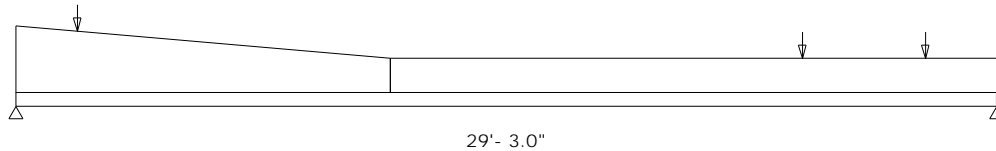
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	1501 (115)	1043 (115)
Live Reaction, Max. (lb) (DOL%)	2079 (160)	1082 (160)
Dead Reaction (lb)	765	948
Total Reaction (lb) (DOL%)	2844 (160)	2030 (160)
Bearing	Bottom	Flush
Support	Wall	Beam
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Right	B7.12/20*	6-16dx2.5"	8-16dx2.5"	6-16dx2.5"	Sawn DF	3x6 (Nailer)
	(* = Web stiffeners required)					

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Point	lb	Floor(100%)	0	125	23'-5.5"	Adds To	Mech.#2
Point	lb	Floor(100%)	0	125	27'-1.5"	Adds To	Mech.#2
Point	plf	Wind(160%)	308	0	1'-10.0"	Adds To	Brace Load
Tapered	psf	Snow(115%)	55 to 0	0 to 0	0'-0.0" to 11'-2.0"	Adds To	Snow Drift G

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt™ recommendations.
- Connect multiple ply members per RedBuilt™ Installation Guidelines.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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RedSpec™ by RedBuilt™
v7.0.18

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 1/3/14 6:44 PM
Designer: Remote
Comment: Use N10 nails instead of N16

Type: D37

20" Red-I90™ @ 24" o.c.

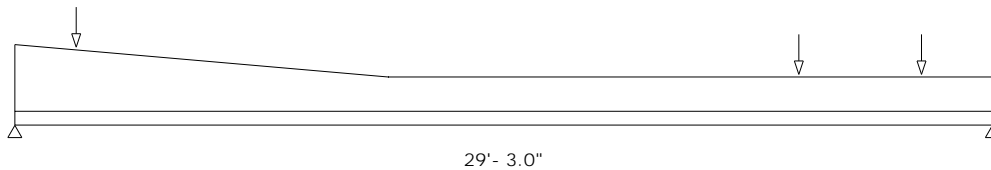
This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control		Pass/Fail
Positive Moment	Shear (lb)	59%	2266	3847	115% - All Loads		PASS
	(ft-lb)	74%	14053	18900	115% - All Loads		PASS
DEFLECTIONS (in)		% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	Span Live	50%	0.736	1.463	L / 477	L / 240	PASS
	Span Total	63%	1.227	1.950	L / 286	L / 180	PASS
SUPPORTS		Support 1	Support 2				
Live Reaction, Critical (lb) (DOL%)		1501 (115)	1043 (115)				
Live Reaction, Max. (lb) (DOL%)		2079 (160)	1082 (160)				
Dead Reaction (lb)		765	948				
Total Reaction (lb) (DOL%)		2844 (160)	2030 (160)				
Bearing		Bottom	Flush				
Support		Wall	Beam				
Req'd Bearing, No Stiffeners (in)		-	-				
Req'd Bearing, Stiffeners (in)		1.75	1.75				
HANGERS	Model	Top	Face	Member	Header	Size	
Right	LBV3.56/20*	6-16dx2.5"	4-16dx2.5"	6-10dx1.5"	Sawn DF	3x6 (Nailer)	
(* = Web stiffeners required)							

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 i



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Point	lb	Floor(100%)	0	125	23'-5.5"	Adds To	Mech.#2
Point	lb	Floor(100%)	0	125	27'-1.5"	Adds To	Mech.#2
Point	plf	Wind(160%)	308	0	1'-10.0"	Adds To	Brace Load
Tapered	psf	Snow(115%)	55 to 0	0 to 0	0'-0.0" to 11'-2.0"	Adds To	Snow Drift G

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 12:40 PM
Designer: Remote
Comment:

Type: D39 @header Upli

DOUBLE 20" Red-I90™ @ 24" o.c.

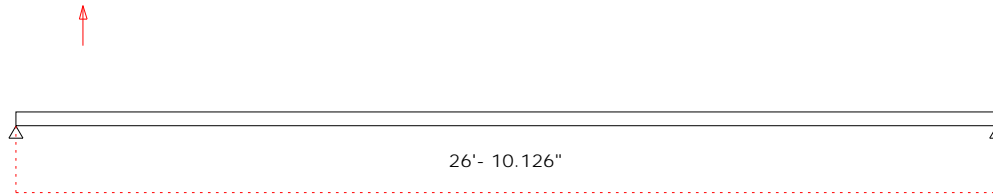
This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail	
	Shear (lb)	4%	-417	10704	160% - All Loads	PASS	
	Positive Moment (ft-lb)	0%	18	29583	90% - Dead Load	PASS	
	Negative Moment (ft-lb)	4%	-1951	52592	160% - All Loads	PASS	
	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
	Span Live	5%	-0.071	-1.342	L / 999+	L / 240	PASS
	Span Total	4%	-0.070	-1.790	L / 999+	L / 180	PASS
SUPPORTS		Support 1	Support 2				
	Live Reaction, Critical (lb) (DOL%)	0	0				
	Dead Reaction (lb)	3	3				
	Total Reaction (lb) (DOL%)	3 (90)	3 (90)				
	Net Uplift Reaction (lb) (DOL%)	-418 (160)	-279 (160)				
	Bearing Support	Bottom Wall	Flush Beam				
	Req'd Bearing, No Stiffeners (in)	-	-				
	Req'd Bearing, Stiffeners (in)	1.75	1.75				
HANGERS	Model	Top	Face	Member	Header	Size	
Right	B7.12/20*	6-16d	8-16d	6-16d	LVL DF/SP	1.75x18 DBL	
	(* = Web stiffeners required)						

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Wind(160%)	-10.1	0.1	0'-0.0" to 26'-10.125"	Replaces	Net Wind Uplift
Point	plf	Wind(160%)	-80	0	1'-10.0"	Adds To	Brace Load

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Net uplift over 200 lb detected.
- Connect multiple ply members per RedBuilt™ Installation Guidelines.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 12:36 PM
Designer: Remote
Comment:

Type: D39 @header

DOUBLE 20" Red-I90™ @ 24" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	Shear (lb)	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
	Positive Moment (ft-lb)	47%	3636	7694		
		64%	24204	37800	115% - All Loads	PASS

	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail	
	Span Live	53%	0.707	1.342	L / 456	L / 240		PASS
	Span Total	48%	0.867	1.790	L / 371	L / 180		PASS

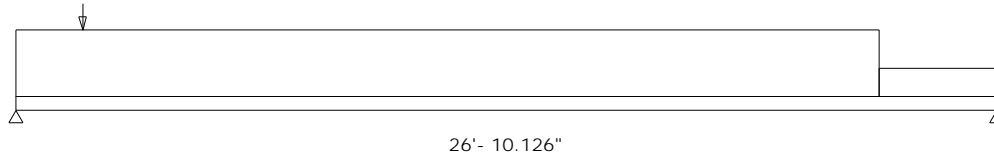
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	2965 (115)	2520 (115)
Live Reaction, Max. (lb) (DOL%)	3114 (160)	2531 (160)
Dead Reaction (lb)	671	671
Total Reaction (lb) (DOL%)	3786 (160)	3202 (160)
Bearing	Bottom	Flush
Support	Wall	Beam
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Right	B7.12/20* (* = Web stiffeners required)	6-16d	8-16d	6-16d	LVL DF/SP	1.75x18 DBL

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Snow(115%)	78.6	0	0'-0.0" to 23'-7.5"	Adds To	Snow Drift H
Point	plf	Wind(160%)	80	0	1'-10.0"	Adds To	Brace Load

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Connect multiple ply members per RedBuilt™ Installation Guidelines.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 12:33 PM
Designer: Remote
Comment:

Type: D39 DBL Uplift

DOUBLE 20" Red-I90™ @ 24" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	8%	-877	10704	160% - All Loads	PASS
Positive Moment (ft-lb)	0%	22	29583	90% - Dead Load	PASS
Negative Moment (ft-lb)	5%	-2835	52592	160% - All Loads	PASS

DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	8%	-0.126	-1.495	L / 999+	L / 240	PASS
Span Total	6%	-0.125	-1.993	L / 999+	L / 180	PASS

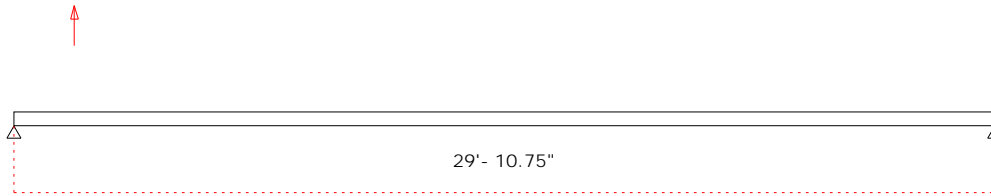
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	0	0
Dead Reaction (lb)	3	3
Total Reaction (lb) (DOL%)	3 (90)	3 (90)
Net Uplift Reaction (lb) (DOL%)	-877 (160)	-337 (160)
Bearing Support	Bottom Wall	Flush Ledger
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Right	B7.12/20* (* = Web stiffeners required)	6-16d	8-16d	6-16d	LVL DF/SP	1.75x18 DBL

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Wind(160%)	-10.1	0.1	0'-0.0" to 29'-10.75"	Replaces	Net Wind Uplift
Point	plf	Wind(160%)	-308	0	1'-10.0"	Adds To	Brace Load

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Net uplift over 200 lb detected.
- Connect multiple ply members per RedBuilt™ Installation Guidelines.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 12:33 PM
Designer: Remote
Comment:

Type: D39 DBL

DOUBLE 20" Red-I90™ @ 24" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)		45%	3432	7694	115% - All Loads	PASS
Positive Moment (ft-lb)		67%	25179	37800	115% - All Loads	PASS

DEFLECTIONS (in)		% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live		57%	0.859	1.495	L / 418	L / 240	PASS
Span Total		56%	1.109	1.993	L / 324	L / 180	PASS

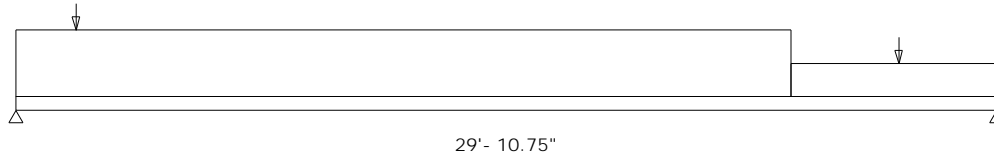
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	2673 (115)	2088 (115)
Live Reaction, Max. (lb) (DOL%)	3251 (160)	2126 (160)
Dead Reaction (lb)	760	860
Total Reaction (lb) (DOL%)	4011 (160)	2986 (160)
Bearing Support	Bottom Wall	Flush Ledger
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Right	B7.12/20* (* = Web stiffeners required)	6-16d	8-16d	6-16d	LVL DF/SP	1.75x18 DBL

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	24"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Snow(115%)	59	0	0'-0.0" to 23'-7.5"	Adds To	Snow Drift H
Point	plf	Wind(160%)	308	0	1'-10.0"	Adds To	Brace Load
Point	lb	Floor(100%)	0	125	26'-11.0"	Adds To	Mech. #1

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Connect multiple ply members per RedBuilt™ Installation Guidelines.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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RedSpec™ by RedBuilt™
v7.0.18

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 1/6/14 1:14 PM
Designer: Remote
Comment:

Type: D40 FPC

20" Red-I90™ @ 19.2" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail
	Shear (lb)	56%	-2137	3847	115% - All Loads	PASS
	Positive Moment (ft-lb)	98%	18463	18900	115% - All Loads	PASS

DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	77%	1.219	1.584	L / 312	L / 240	PASS
Span Total	80%	1.699	2.112	L / 224	L / 180	PASS

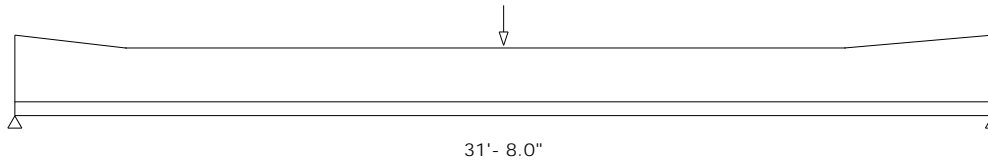
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	1490 (115)	1504 (115)
Dead Reaction (lb)	633	633
Total Reaction (lb) (DOL%)	2123 (115)	2137 (115)
Bearing Support	Flush Ledger	Bottom Wall
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Left	LBV3.56/20*	6-10dx1.5"	4-10dx1.5"	6-10dx1.5"	LVL DF/SP	3.5x18
	(* = Web stiffeners required)					

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	19.2"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Snow(115%)	13.9	0	0'-0.0" to 31'-8.0"	Adds To	Snow Drift A
Point	lb	Floor(100%)	500	0	15'-10.0"	Adds To	Folding Partition Load @ 50%
Tapered	psf	Snow(115%)	17.5 to 0	0 to 0	0'-0.0" to 3'-7.0"	Adds To	Snow Drift E
Tapered	psf	Snow(115%)	0 to 17.5	0 to 0	26'-10.5" to 31'-8.0"	Adds To	Snow Drift E

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 1/6/14 1:14 PM
Designer: Remote
Comment:

Type: D40 FPL

RedSpec™ by RedBuilt™
v7.0.18

20" Red-I90™ @ 19.2" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail
	Shear (lb)	70%	2688	3847	115% - All Loads	PASS
	Positive Moment (ft-lb)	93%	17566	18900	115% - All Loads	PASS

	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
	Span Live	77%	1.224	1.584	L / 310	L / 240	PASS
	Span Total	81%	1.705	2.112	L / 223	L / 180	PASS

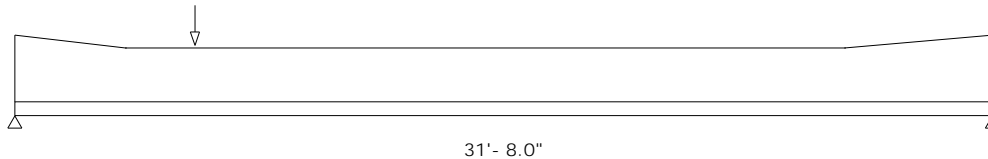
SUPPORTS		Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)		2056 (115)	1438 (115)
Dead Reaction (lb)		633	633
Total Reaction (lb) (DOL%)		2689 (115)	2071 (115)
Bearing Support		Flush Ledger	Bottom Wall
Req'd Bearing, No Stiffeners (in)		-	-
Req'd Bearing, Stiffeners (in)		2.28	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Left	LBV3.56/20*	6-16d	4-16d	6-10dx1.5"	LVL DF/SP	3.5x18
	(* = Web stiffeners required)					

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	19.2"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Snow(115%)	13.9	0	0'-0.0" to 31'-8.0"	Adds To	Snow Drift A
Point	lb	Floor(100%)	1000	0	5'-10.0"	Adds To	Folding Partition Load
Tapered	psf	Snow(115%)	17.5 to 0	0 to 0	0'-0.0" to 3'-7.0"	Adds To	Snow Drift E
Tapered	psf	Snow(115%)	0 to 17.5	0 to 0	26'-10.5" to 31'-8.0"	Adds To	Snow Drift E

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 11:51 AM
Designer: Remote
Comment:

Type: D40-FPL&R

20" Red-I90™ @ 19.2" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	63%	2425	3847	115% - All Loads	PASS
Positive Moment (ft-lb)	89%	16767	18900	115% - All Loads	PASS

DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	73%	1.159	1.584	L / 328	L / 240	PASS
Span Total	78%	1.640	2.112	L / 232	L / 180	PASS

SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	1792 (115)	1749 (115)
Dead Reaction (lb)	633	633
Total Reaction (lb) (DOL%)	2426 (115)	2383 (115)
Bearing Support	Flush Ledger	Bottom Wall
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

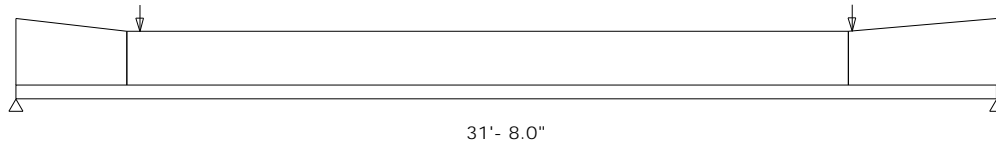
HANGERS	Model	Top	Face	Member	Header	Size
Left	MIT420*	4-16d	4-16d	4-10dx1.5"	LVL DF/SP	3.5x18

(* = Web stiffeners required)

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	19.2"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Snow(115%)	13.9	0	0'-0.0" to 31'-8.0"	Adds To	Snow Drift A
Point	lb	Floor(100%)	500	0	4'-0.0"	Adds To	Folding Partition Load
Point	lb	Floor(100%)	500	0	27'-0.0"	Adds To	Folding Partition Load
Point	plf	Floor(100%)	30	0	4'-0.0"	Adds To	Sofit Load
Tapered	psf	Snow(115%)	17.5 to 0	0 to 0	0'-0.0" to 3'-7.0"	Adds To	Snow Drift E
Tapered	psf	Snow(115%)	0 to 17.5	0 to 0	26'-10.5" to 31'-8.0"	Adds To	Snow Drift E

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 10:05 AM
Designer: Remote
Comment: Use B7.12/20*xSKR3 6-16d/8-16d/6-16d

Type: D41 DBL

DOUBLE 20" Red-I90™ @ 19.2" o.c.

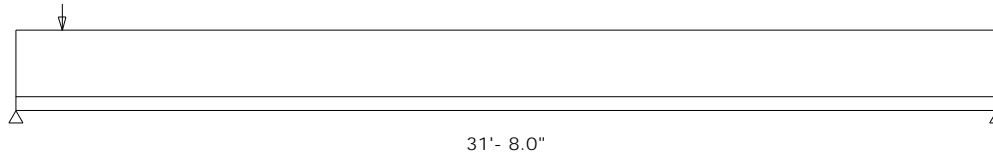
This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control		Pass/Fail
	Shear (lb)	34%	2604	7694	115% - All Loads		PASS
	Positive Moment (ft-lb)	55%	20618	37800	115% - All Loads		PASS
	DEFLECTIONS (in)						
	Span Live	48%	0.754	1.584	Design	Allow.	Pass/Fail
	Span Total	47%	0.994	2.112	L / 504	L / 240	PASS
					L / 382	L / 180	PASS
SUPPORTS		Support 1	Support 2				
Live Reaction, Critical (lb) (DOL%)		1971 (115)	1971 (115)				
Live Reaction, Max. (lb) (DOL%)		2124 (160)	1979 (160)				
Dead Reaction (lb)		633	633				
Total Reaction (lb) (DOL%)		2758 (160)	2612 (160)				
Bearing		Flush	Bottom				
Support		Ledger	Wall				
Req'd Bearing, No Stiffeners (in)		-	-				
Req'd Bearing, Stiffeners (in)		1.75	1.75				

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	19.2"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Snow(115%)	44.8	0	0'-0.0" to 31'-8.0"	Adds To	Snow Drift A
Point	plf	Wind(160%)	100.5	0	1'-6.0"	Adds To	Brace Load

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Connect multiple ply members per RedBuilt™ Installation Guidelines.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

Y:\C0020-RB\RB13138-085264-Providence Hall High School, UT\085264-Sizing\085264-Sizing.red

The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 10:05 AM
Designer: Remote
Comment: Use B7.12/20*xSKR3 6-16d/8-16d/6-16d

Type: D41 DBL Uplift

DOUBLE 20" Red-I90™ @ 19.2" o.c.

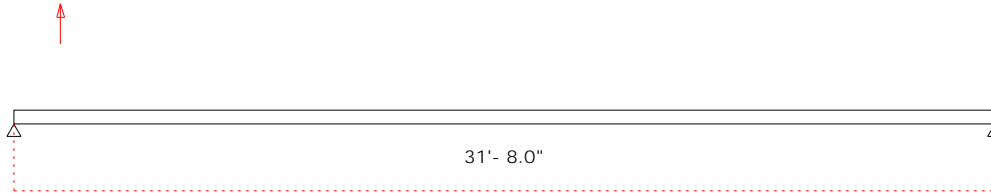
This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail	
	Shear (lb)	4%	-406	10704	160% - All Loads	PASS	
	Positive Moment (ft-lb)	0%	20	29583	90% - Dead Load	PASS	
	Negative Moment (ft-lb)	4%	-2128	52592	160% - All Loads	PASS	
	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
	Span Live	7%	-0.104	-1.584	L / 999+	L / 240	PASS
	Span Total	5%	-0.103	-2.112	L / 999+	L / 180	PASS
SUPPORTS		Support 1	Support 2				
	Live Reaction, Critical (lb) (DOL%)	0	0				
	Dead Reaction (lb)	3	3				
	Total Reaction (lb) (DOL%)	3 (90)	3 (90)				
	Net Uplift Reaction (lb) (DOL%)	-407 (160)	-261 (160)				
	Bearing Support	Flush	Bottom				
	Req'd Bearing, No Stiffeners (in)	-	-				
	Req'd Bearing, Stiffeners (in)	1.75	1.75				

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	19.2"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Wind(160%)	-10.1	0.1	0'-0.0" to 31'-8.0"	Replaces	Net Wind Uplift
Point	plf	Wind(160%)	-100.5	0	1'-6.0"	Adds To	Brace Load

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Net uplift over 200 lb detected.
- Connect multiple ply members per RedBuilt™ Installation Guidelines.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

Y:\C0020-RB\RB13138-085264-Providence Hall High School, UT\085264-Sizing\085264-Sizing.red

The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 11:40 AM
Designer: Remote
Comment:

Type: D41

20" Red-I90™ @ 19.2" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail
	Shear (lb)	45%	1743	3847	115% - All Loads	PASS
	Positive Moment (ft-lb)	71%	13508	18900	115% - All Loads	PASS

	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
	Span Live	41%	0.648	1.570	L / 581	L / 240	PASS
	Span Total	60%	1.259	2.093	L / 299	L / 180	PASS

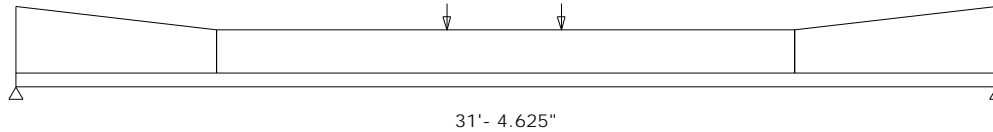
SUPPORTS		Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)		990 (115)	991 (115)
Dead Reaction (lb)		753	752
Total Reaction (lb) (DOL%)		1743 (115)	1743 (115)
Bearing		Flush	Bottom
Support		Ledger	Wall
Req'd Bearing, No Stiffeners (in)		-	-
Req'd Bearing, Stiffeners (in)		1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Left	MIT420*	4-16d	4-16d	4-10dx1.5"	LVL DF/SP	3.5x18
	(* = Web stiffeners required)					

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	19.2"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Point	lb	Floor(100%)	0	125	13'-9.5"	Adds To	Mech.#1
Point	lb	Floor(100%)	0	125	17'-5.5"	Adds To	Mech.#1
Tapered	psf	Snow(115%)	31.4 to 0	0 to 0	0'-0.0" to 6'-5.0"	Adds To	Snow Drift D
Tapered	psf	Snow(115%)	0 to 31.4	0 to 0	24'-11.0" to 31'-4.625"	Adds To	Snow Drift D

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

Y:\C0020-RB\RB13138-085264-Providence Hall High School, UT\085264-Sizing\085264-Sizing.red

The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 11:40 AM
Designer: Remote
Comment:

Type: D41 Uplift

RedSpec™ by RedBuilt™
v7.0.16

20" Red-I90™ @ 19.2" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	5%	-251	5352	160% - All Loads	PASS
Positive Moment (ft-lb)	0%	20	14792	90% - Dead Load	PASS
Negative Moment (ft-lb)	7%	-1970	26296	160% - All Loads	PASS

DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	12%	-0.187	-1.570	L / 999+	L / 240	PASS
Span Total	9%	-0.186	-2.093	L / 999+	L / 180	PASS

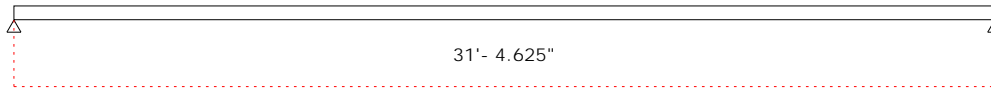
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	0	0
Dead Reaction (lb)	3	3
Total Reaction (lb) (DOL%)	3 (90)	3 (90)
Net Uplift Reaction (lb) (DOL%)	-251 (160)	-251 (160)
Bearing	Flush	Bottom
Support	Ledger	Wall
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Left	MIT420*	4-16d	4-16d	4-10dx1.5"	LVL DF/SP	3.5x18
	(* = Web stiffeners required)					

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	19.2"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Wind(160%)	-10.1	0.1	0'-0.0" to 31'-4.625"	Replaces	Net Wind Uplift

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Net uplift over 200 lb detected.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

Y:\C0020-RB\RB13138-085264-Providence Hall High School, UT\085264-Sizing\085264-Sizing.red

The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 9:57 AM
Designer: Remote
Comment:

Type: D42 DBL

DOUBLE 20" Red-I90™ @ 19.2" o.c.

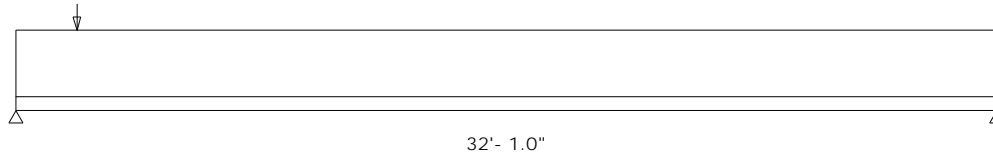
This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail
	Shear (lb)	34%	2638	7694	115% - All Loads	PASS
	Positive Moment (ft-lb)	56%	21164	37800	115% - All Loads	PASS
	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.
	Span Live	65%	1.047	1.605	L / 368	L / 240
	Span Total	61%	1.299	2.139	L / 296	L / 180
SUPPORTS		Support 1	Support 2			Pass/Fail
Live Reaction, Critical (lb) (DOL%)		1997 (115)	1997 (115)			
Live Reaction, Max. (lb) (DOL%)		2789 (160)	2649 (160)			
Dead Reaction (lb)		642	642			
Total Reaction (lb) (DOL%)		3431 (160)	3290 (160)			
Bearing		Bottom	Bottom			
Support		Wall	Wall			
Req'd Bearing, No Stiffeners (in)		-	-			
Req'd Bearing, Stiffeners (in)		1.75	1.75			

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	19.2"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Snow(115%)	44.8	0	0'-0.0" to 32'-1.0"	Adds To	Snow Drift A
Uniform	plf	Wind(160%)	40	0	0'-0.0" to 32'-1.0"	Adds To	Brace load @ 0.5
Point	plf	Wind(160%)	100.5	0	2'-0.0"	Adds To	Brace Load

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Connect multiple ply members per RedBuilt™ Installation Guidelines.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 9:52 AM
Designer: Remote
Comment:

Type: D42 Uplift

DOUBLE 20" Red-I90™ @ 19.2" o.c.

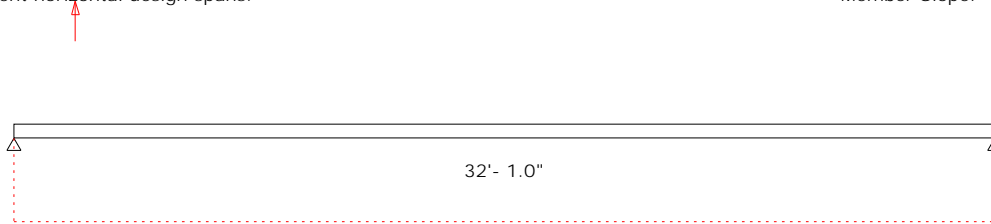
This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail	
	Shear (lb)	10%	-1049	10704	160% - All Loads	PASS	
	Positive Moment (ft-lb)	0%	21	29583	90% - Dead Load	PASS	
	Negative Moment (ft-lb)	14%	-7367	52592	160% - All Loads	PASS	
	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
	Span Live	23%	-0.363	-1.605	L / 999+	L / 240	PASS
	Span Total	17%	-0.362	-2.139	L / 999+	L / 180	PASS
SUPPORTS		Support 1	Support 2				
Live Reaction, Critical (lb) (DOL%)		0	0				
Dead Reaction (lb)		3	3				
Total Reaction (lb) (DOL%)		3 (90)	3 (90)				
Net Uplift Reaction (lb) (DOL%)		-1049 (160)	-908 (160)				
Bearing Support		Bottom Wall	Bottom Wall				
Req'd Bearing, No Stiffeners (in)		-	-				
Req'd Bearing, Stiffeners (in)		1.75	1.75				

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 i



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	19.2"	Snow Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	p/f	Wind(160%)	-40	0	0'-0.0" to 32'-1.0"	Adds To	Brace load @ 0.5
Uniform	psf	Wind(160%)	-10.1	0.1	0'-0.0" to 32'-1.0"	Replaces	Net Wind Uplift
Point	p/f	Wind(160%)	-100.5	0	2'-0.0"	Adds To	Brace Load

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Net uplift over 200 lb detected.
- Connect multiple ply members per RedBuilt™ Installation Guidelines.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

Y:\C0020-RB\RB13138-085264-Providence Hall High School, UT\085264-Sizing\085264-Sizing.red

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RedSpec™ by RedBuilt™
v7.0.18

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 1/3/14 6:57 PM
Designer: Remote
Comment: Use W1420*SKL60 w/2N10-2-10d @Left end

Type: D43 @GLB&WF Upli

20" Red-I90™ @ 24" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	1%	-49	5352	160% - All Loads	PASS
Positive Moment (ft-lb)	0%	1	14792	90% - Dead Load	PASS
Negative Moment (ft-lb)	0%	-60	26296	160% - All Loads	PASS

DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	0%	-0.001	-0.246	L / 999+	L / 240	PASS
Span Total	0%	-0.001	-0.328	L / 999+	L / 180	PASS

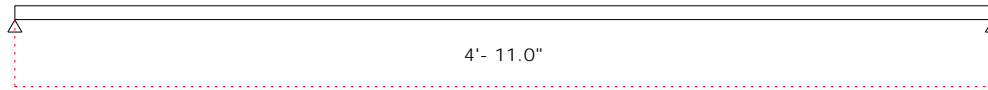
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	0	0
Dead Reaction (lb)	0	0
Total Reaction (lb) (DOL%)	0 (90)	0 (90)
Net Uplift Reaction (lb) (DOL%)	-49 (160)	-49 (160)
Bearing Support	Flush Beam	Flush Beam
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Right	LBV3.56/20X*SKL30 (* = Web stiffeners required)	6-10dx1.5"	4-10dx1.5"	6-10dx1.5"	Sawn DF	2x6 (Nailer)

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Roof(125%)	33	15	0	24"	Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Wind(160%)	-10.1	0.1	0'-0.0" to 4'-11.0"	Replaces	Net Wind Uplift

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

Y:\C0020-RB\RB13138-085264-Providence Hall High School, UT\085264-Sizing\085264-Sizing.red

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RedSpec™ by RedBuilt™
v7.0.18

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 1/3/14 6:56 PM
Designer: Remote
Comment:

Type: D43 @GLB&WF

20" Red-I90™ @ 24" o.c.

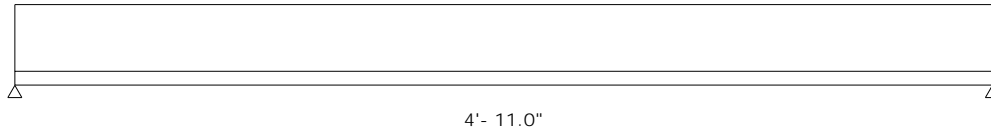
This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (Ib)	6%	236	4181	125% - All Loads		PASS
Positive Moment (ft-Ib)	1%	290	20544	125% - All Loads		PASS
DEFLECTIONS (in)		% Allow.	Design	Allow.	Design	Pass/Fail
Span Live	1%	0.002	0.246	L / 999+	L / 240	PASS
Span Total	1%	0.003	0.328	L / 999+	L / 180	PASS
SUPPORTS	Support 1	Support 2				
Live Reaction, Critical (Ib) (DOL%)	162 (125)	162 (125)				
Dead Reaction (Ib)	74	74				
Total Reaction (Ib) (DOL%)	236 (125)	236 (125)				
Bearing Support	Flush Beam	Flush Beam				
Req'd Bearing, No Stiffeners (in)	-	-				
Req'd Bearing, Stiffeners (in)	1.75	1.75				
HANGERS	Model	Top	Face	Member	Header	Size
Left	W1420X*SKL60	2-10dx1.5"		2-10d	Glulam DF/SP	5.125x15
Right	LBV3.56/20X*SKL30	6-10dx1.5"	4-10dx1.5"	6-10dx1.5"	Sawn DF	2x6 (Nailer)
	(* = Web stiffeners required)					

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 i



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Roof(125%)	33	15	0	24"	Roof Joist

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 1:31 PM
Designer: Remote
Comment:

Type: D43 @GLB

20" Red-I90™ @ 24" o.c.

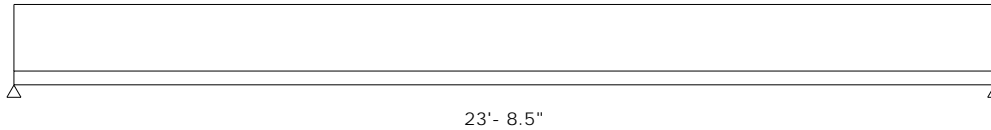
This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail	
	Shear (lb)	20%	830	4181	125% - All Loads	PASS	
	Positive Moment (ft-lb)	24%	4919	20544	125% - All Loads	PASS	
	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Pass/Fail	
	Span Live	14%	0.162	1.186	L / 999+	PASS	
	Span Total	18%	0.284	1.581	L / 999+	PASS	
SUPPORTS		Support 1	Support 2				
Live Reaction, Critical (lb) (DOL%)		474 (125)	474 (125)				
Dead Reaction (lb)		356	356				
Total Reaction (lb) (DOL%)		830 (125)	830 (125)				
Bearing Support		Bottom Wall	Flush Beam				
Req'd Bearing, No Stiffeners (in)		-	-				
Req'd Bearing, Stiffeners (in)		1.75	1.75				
HANGERS	Model		Top	Face	Member	Header	Size
Right	W1420X*SKL60		2-10dx1.5"		2-10d	Glulam DF/SP	5.125x15
	(* = Web stiffeners required)						

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Roof(125%)	20	15	0	24"	Roof Joist

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

Y:\C0020-RB\RB13138-085264-Providence Hall High School, UT\085264-Sizing\085264-Sizing.red

The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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RedSpec™ by RedBuilt™
v7.0.18

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 1/3/14 6:58 PM
Designer: Remote
Comment:

Type: D43 @WF Roof

20" Red-I90™ @ 24" o.c.

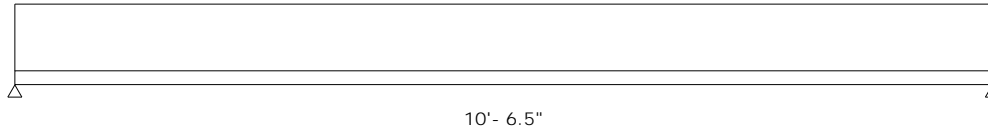
This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (Ib)		12%	506	4181	125% - All Loads	PASS
Positive Moment (ft-Ib)		6%	1334	20544	125% - All Loads	PASS
DEFLECTIONS (in)		% Allow.	Design	Allow.	Design	Pass/Fail
Span Live		3%	0.017	0.527	L / 999+	PASS
Span Total		4%	0.025	0.703	L / 999+	PASS
SUPPORTS		Support 1	Support 2			
Live Reaction, Critical (Ib) (DOL%)		348 (125)	348 (125)			
Dead Reaction (Ib)		158	158			
Total Reaction (Ib) (DOL%)		506 (125)	506 (125)			
Bearing Support		Flush Beam	Bottom Wall			
Req'd Bearing, No Stiffeners (in)		-	-			
Req'd Bearing, Stiffeners (in)		1.75	1.75			
HANGERS		Model	Top	Face	Member	Header
Left		LBV3.56/20X*SKR30	6-10dx1.5"	4-10dx1.5"	6-10dx1.5"	Sawn DF
		(* = Web stiffeners required)				Size 2x6 (Nailer)

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Roof(125%)	33	15	0	24"	Roof Joist

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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v7.0.18

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 1/3/14 6:58 PM
Designer: Remote
Comment:

Type: D43 @WF Uplift

20" Red-I90™ @ 24" o.c.

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	2%	-105	5352	160% - All Loads	PASS
Positive Moment (ft-lb)	0%	3	14792	90% - Dead Load	PASS
Negative Moment (ft-lb)	1%	-277	26296	160% - All Loads	PASS

DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	1%	-0.005	-0.526	L / 999+	L / 240	PASS
Span Total	1%	-0.005	-0.702	L / 999+	L / 180	PASS

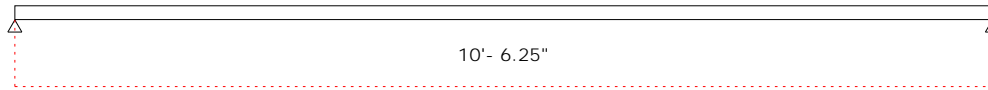
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	0	0
Dead Reaction (lb)	1	1
Total Reaction (lb) (DOL%)	1 (90)	1 (90)
Net Uplift Reaction (lb) (DOL%)	-105 (160)	-105 (160)
Bearing Support	Flush Beam	Bottom Wall
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

HANGERS	Model	Top	Face	Member	Header	Size
Left	LBV3.56/20X*SKL30 (* = Web stiffeners required)	6-10dx1.5"	4-10dx1.5"	6-10dx1.5"	Sawn DF	2x6 (Nailer)

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Roof(125%)	33	15	0	24"	Roof Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Wind(160%)	-10.1	0.1	0'-0.0" to 10'-6.25"	Replaces	Net Wind Uplift

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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RedSpec™ by RedBuilt™
v7.0.18

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 1/3/14 6:59 PM
Designer: Remote
Comment:

Type: D43 @WF

20" Red-I90™ @ 24" o.c.

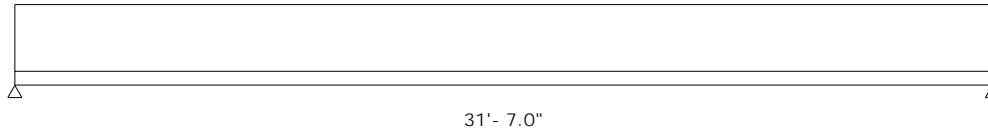
This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail
	Shear (lb)	26%	1105	4181	125% - All Loads	PASS
	Positive Moment (ft-lb)	42%	8729	20544	125% - All Loads	PASS
	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.
	Span Live	30%	0.475	1.580	L / 798	L / 240
	Span Total	39%	0.832	2.106	L / 456	L / 180
SUPPORTS		Support 1	Support 2			Pass/Fail
Live Reaction, Critical (lb) (DOL%)		632 (125)	632 (125)			PASS
Dead Reaction (lb)		474	474			PASS
Total Reaction (lb) (DOL%)		1106 (125)	1106 (125)			PASS
Bearing Support		Flush Beam	Flush Beam			
Req'd Bearing, No Stiffeners (in)		-	-			
Req'd Bearing, Stiffeners (in)		1.75	1.75			
HANGERS	Model		Top	Face	Member	Header
Left	LBV3.56/20*		6-10dx1.5"	4-10dx1.5"	6-10dx1.5"	Sawn DF
Right	LBV3.56/20X*SKL30		6-10dx1.5"	4-10dx1.5"	2-10dx1.5"	Sawn DF
	(* = Web stiffeners required)					Size
						2x6 (Nailer)
						2x6 (Nailer)

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 f



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Roof(125%)	20	15	0	24"	Roof Joist

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Sloped length multiplier = 1.000. Bevel cut add = 0.42".

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: 2nd Floor
Date: 12/16/13 3:51 PM
Designer: Remote
Comment:

Type: D5

20" Red-I90™ @ 19.2" o.c. with Glued Sheathing

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	74%	2470	3345	100% - All Loads	PASS
Positive Moment (ft-lb)	64%	10596	16435	100% - All Loads	PASS
DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.
Span Live	49%	0.278	0.572	L / 740	L / 360
Span Total	39%	0.334	0.858	L / 616	L / 240
					Pass/Fail
					PASS
					PASS

FloorChoice™ Rating: 9.5



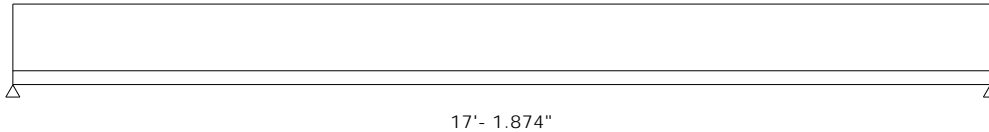
Performance rating is based on: 24 oc (23/32", 3/4") sheathing, glued and nailed, simple span, flexible support. RedSpec has not performed a structural analysis of the sheathing.

SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	2059 (100)	2059 (100)
Dead Reaction (lb)	412	412
Total Reaction (lb) (DOL%)	2471 (100)	2471 (100)
Bearing Support	Bottom Wall	Flush Beam
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	2.76	2.76

HANGERS	Model	Top	Face	Member	Header	Size
Right	HWU3.56/20* (* = Web stiffeners required)	4-16dx2.5"	4-16dx2.5"	6-10d	Sawn DF	3x6 (Nailer)

SPANS AND LOADS

Dimensions represent horizontal design spans.



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Floor(100%)	150	30	0	19.2"	Glued Floor Joist

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.

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v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: 2nd Floor
Date: 12/20/13 8:59 AM
Designer: Remote
Comment:

Type: D6

20" Red-I90™ @ 19.2" o.c. with Glued Sheathing

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control		Pass/Fail
Shear (lb)	57%	1902	3345	100% - All Loads		PASS
Positive Moment (ft-lb)	72%	11839	16435	100% - All Loads		PASS
DEFLECTIONS (in)						
Span Live	24%	0.177	0.732	Design	Allow.	Pass/Fail
Span Total	48%	0.525	1.098	L / 999+	L / 360	PASS
				L / 501	L / 240	PASS

FloorChoice™ Rating: 7.7

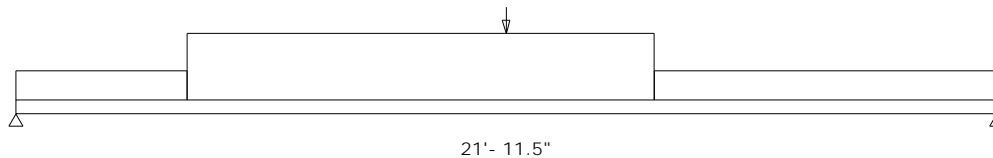


Performance rating is based on: 24 oc (23/32", 3/4") sheathing, glued and nailed, simple span, rigid supports. RedSpec has not performed a structural analysis of the sheathing.

SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	703 (100)	703 (100)
Dead Reaction (lb)	1200	1035
Total Reaction (lb) (DOL%)	1902 (100)	1738 (100)
Bearing Support	Bottom Wall	Bottom Wall
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	1.75	1.75

SPANS AND LOADS

Dimensions represent horizontal design spans.



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Floor(100%)	40	30	0	19.2"	Glued Floor Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Point	plf	Floor(100%)	0	150	10'-11.75"	Adds To	Wall Above
Uniform	plf	Floor(100%)	0	90	3'-10.0" to 14'-3.5"	Adds To	Wall Above

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Joist design includes consideration for a 1000 lb load distributed over a 30" square area and all live loads removed.

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v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: 2nd Floor
Date: 12/20/13 10:37 AM
Designer: Remote
Comment:

Type: D9

20" Red-I90™ @ 19.2" o.c. with Glued Sheathing

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control		Pass/Fail
Shear (lb)	80%	2687	3345	100% - All Loads		PASS
Positive Moment (ft-lb)	84%	13743	16435	100% - All Loads		PASS
DEFLECTIONS (in)						
Span Live	39%	0.343	0.878	Design	Allow.	Pass/Fail
Span Total	64%	0.846	1.317	L / 921	L / 360	PASS
				L / 374	L / 240	PASS

FloorChoice™ Rating: 3.2

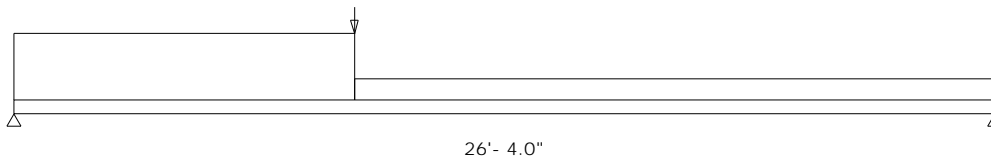


Performance rating is based on: 24 oc (23/32", 3/4") sheathing, glued and nailed, simple span, rigid supports. RedSpec has not performed a structural analysis of the sheathing.

SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	843 (100)	843 (100)
Dead Reaction (lb)	1844	912
Total Reaction (lb) (DOL%)	2687 (100)	1755 (100)
Bearing Support	Bottom Wall	Bottom Wall
Req'd Bearing, No Stiffeners (in)	-	-
Req'd Bearing, Stiffeners (in)	3.50	1.75

SPANS AND LOADS

Dimensions represent horizontal design spans.



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Floor(100%)	40	30	0	19.2"	Glued Floor Joist

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	plf	Floor(100%)	0	150	0'-0.0" to 9'-1.75"	Adds To	Wall Above
Point	plf	Floor(100%)	0	75	9'-1.75"	Adds To	Wall Above

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Continuous lateral support required at top edge. Lateral support at bottom edge shall be per RedBuilt recommendations.
- Joist design includes consideration for a 1000 lb load distributed over a 30" square area and all live loads removed.

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Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 1:53 PM
Designer: Remote
Comment:

Type: MF24

DOUBLE 1.75 x 18 RedLam™ LVL 2.0E

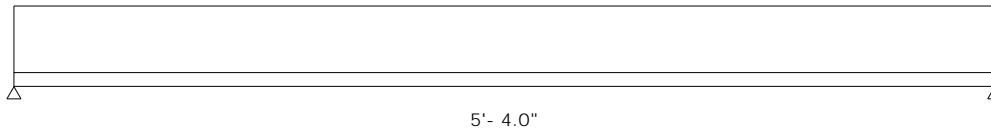
This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail
	Shear (lb)	5%	698	13766	115% - All Loads	PASS
	Positive Moment (ft-lb)	4%	2128	49708	115% - All Loads	PASS
	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Pass/Fail
	Span Live	1%	0.002	0.267	L / 999+	PASS
	Span Total	1%	0.003	0.356	L / 999+	PASS
SUPPORTS		Support 1	Support 2			
Live Reaction, Critical (lb) (DOL%)		880 (115)	880 (115)			
Dead Reaction (lb)		716	716			
Total Reaction (lb) (DOL%)		1596 (115)	1596 (115)			
Bearing Support		Flush	Flush			
Req'd Bearing (in)		1.50	1.50			
HANGERS	Model		Top	Face	Member	Header
	Left	MIT418	4-10d	4-10d	2-10dx1.5"	LVL DF/SP
	Right	MIT418	4-10d	4-10d	2-10dx1.5"	LVL DF/SP
						Size
						1.75x18 DBL
						1.75x18 DBL

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	10'	Snow Roof Beam

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Support bearing length requirements must be checked separately.
- Continuous lateral support required at top and bottom edge.
- Sloped length multiplier = 1.000. Bevel cut add = 0.38".

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v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 2:04 PM
Designer: Remote
Comment: EOR Verify HB5.5/18 Hanger

Type: MF35 Uplift

TRIPLE 1.75 x 18 RedLam™ LVL 2.0E

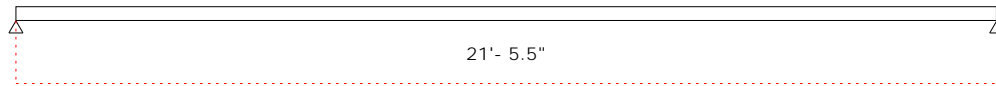
This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control		Pass/Fail
Shear (lb)		9%	-2680	28728	160% - All Loads		PASS
Positive Moment (ft-lb)		3%	1593	58353	90% - Dead Load		PASS
Negative Moment (ft-lb)		16%	-16717	103739	160% - All Loads		PASS
DEFLECTIONS (in)		% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live		29%	-0.307	-1.073	L / 840	L / 240	PASS
Span Total		20%	-0.280	-1.431	L / 920	L / 180	PASS
SUPPORTS		Support 1	Support 2				
Live Reaction, Critical (lb) (DOL%)		0	0				
Dead Reaction (lb)		297	297				
Total Reaction (lb) (DOL%)		297 (90)	297 (90)				
Net Uplift Reaction (lb) (DOL%)		-3116 (160)	-3116 (160)				
Bearing		Flush	Bottom				
Support		Beam	Wall				
Req'd Bearing (in)		1.50	1.50				

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: 0.25/12 f



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	1'	Snow Roof Beam

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	plf	Wind(160%)	-308	0	0'-0.0" to 21'-5.5"	Adds To	Brace Load
Uniform	psf	Wind(160%)	-10.1	0.1	0'-0.0" to 21'-5.5"	Replaces	Net Wind Uplift

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Support bearing length requirements must be checked separately.
- Continuous lateral support required at top and bottom edge.
- Net uplift (see reactions) requires additional connector consideration.
- Sloped length multiplier = 1.000. Bevel cut add = 0.38".

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 2:01 PM
Designer: Remote
Comment:

Type: MF35

TRIPLE 1.75 x 18 RedLam™ LVL 2.0E

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	15%	4441	28728	160% - All Loads	PASS
Positive Moment (ft-lb)	27%	27701	103739	160% - All Loads	PASS

DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	39%	0.413	1.073	L / 623	L / 240	PASS
Span Total	32%	0.464	1.431	L / 555	L / 180	PASS

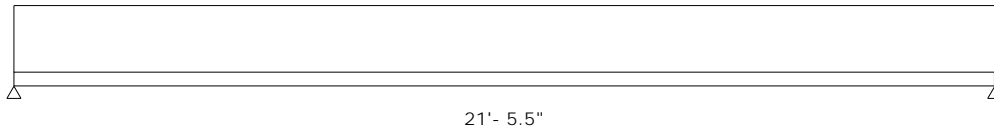
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	4600 (160)	4600 (160)
Dead Reaction (lb)	564	564
Total Reaction (lb) (DOL%)	5164 (160)	5164 (160)
Bearing Support	Flush Beam	Bottom Wall
Req'd Bearing (in)	1.50	1.50

HANGERS	Model	Top	Face	Member	Header	Size
Left	HB5.50/18	6-16d	16-16d	10-16d	LVL DF/SP	1.75x11.875 TPL

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: 0.25/12 f



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	1'	Snow Roof Beam

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	plf	Wind(160%)	308	0	0'-0.0" to 21'-5.5"	Adds To	Brace Load
Uniform	psf	Snow(115%)	87.7	0	0'-0.0" to 21'-5.5"	Adds To	Snow Drift H

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Support bearing length requirements must be checked separately.
- Continuous lateral support required at top and bottom edge.
- Sloped length multiplier = 1.000. Bevel cut add = 0.38".

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The products noted are intended for interior, untreated, non-corrosive applications with normal temperatures and dry conditions of use, and must be installed in accordance with local building code requirements and RedBuilt™ recommendations. The loads, spans, and spacing have been provided by others and must be approved for the specific application by the design professional for the project. Unless otherwise noted, this output has not been reviewed by a RedBuilt™ associate. PRODUCT SUBSTITUTION VOIDS THIS ANALYSIS.

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 2:53 PM
Designer: Remote
Comment:

Type: MF44 Uplift

DOUBLE 1.75 x 18 RedLam™ LVL 2.0E

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	2%	242	10773	90% - Dead Load	PASS
Positive Moment (ft-lb)	5%	1976	38902	90% - Dead Load	PASS
Negative Moment (ft-lb)	2%	-1066	69159	160% - All Loads	PASS

DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	8%	-0.117	-1.463	L / 999+	L / 240	PASS
Span Total	2%	0.042	1.950	L / 999+	L / 180	PASS

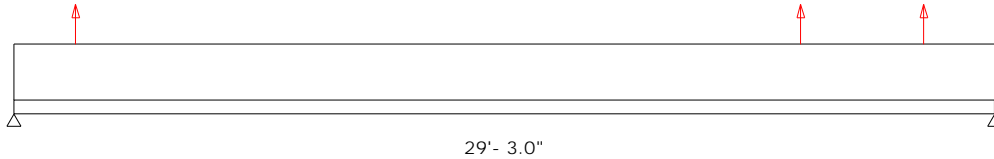
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	0	0
Dead Reaction (lb)	270	270
Total Reaction (lb) (DOL%)	270 (90)	270 (90)
Net Uplift Reaction (lb) (DOL%)	-231 (160)	-312 (160)
Bearing Support	Bottom Wall	Flush Beam
Req'd Bearing (in)	1.50	1.50

HANGERS	Model	Top	Face	Member	Header	Size
Right	B3.56/18	6-16dx2.5"	8-16dx2.5"	6-16dx2.5"	Sawn DF	3x6 (Nailer)

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	1'	Snow Roof Beam

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Wind(160%)	-10.1	0.1	0'-0.0" to 29'-3.0"	Replaces	Net Wind Uplift
Point	lb	Snow(115%)	-240	0	23'-5.5"	Adds To	Header Reaction
Point	lb	Snow(115%)	-240	0	27'-1.5"	Adds To	Header Reaction
Point	plf	Wind(160%)	-308	0	1'-10.0"	Adds To	Brace Load

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Support bearing length requirements must be checked separately.
- Continuous lateral support required at top and bottom edge.
- Net uplift (see reactions) requires additional connector consideration.
- Sloped length multiplier = 1.000. Bevel cut add = 0.38".

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RedSpec™ by RedBuilt™
v7.0.16

Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 2:53 PM
Designer: Remote
Comment:

Type: MF44

DOUBLE 1.75 x 18 RedLam™ LVL 2.0E

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	23%	-3163	13766	115% - All Loads	PASS
Positive Moment (ft-lb)	46%	22947	49708	115% - All Loads	PASS

DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	35%	0.506	1.463	L / 694	L / 240	PASS
Span Total	55%	1.066	1.950	L / 329	L / 180	PASS

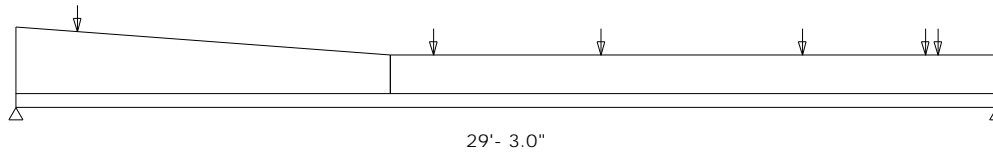
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	1242 (115)	1502 (115)
Live Reaction, Max. (lb) (DOL%)	1531 (160)	1521 (160)
Dead Reaction (lb)	1212	1777
Total Reaction (lb) (DOL%)	2743 (160)	3298 (160)
Bearing	Bottom	Flush
Support	Wall	Beam
Req'd Bearing (in)	1.50	1.50

HANGERS	Model	Top	Face	Member	Header	Size
Right	B3.56/18	6-16dx2.5"	8-16dx2.5"	6-16dx2.5"	Sawn DF	3x6 (Nailer)

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	1'	Snow Roof Beam

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Point	lb	Snow(115%)	680	515	23'-5.5"	Adds To	Header Reaction
Point	lb	Snow(115%)	72	55	27'-1.5"	Adds To	Header Reaction
Point	plf	Wind(160%)	308	0	1'-10.0"	Adds To	Brace Load
Point	lb	Floor(100%)	0	175	12'-5.5"	Adds To	Mech. #2
Point	lb	Floor(100%)	0	175	17'-5.5"	Adds To	Mech. #2
Tapered	psf	Snow(115%)	55 to 0	0 to 0	0'-0.0" to 11'-2.0"	Adds To	Snow Drift G
Point	lb	Floor(100%)	0	125	23'-5.5"	Adds To	Mech. #1
Point	lb	Floor(100%)	0	125	27'-6.0"	Adds To	Mech. #1
Point	lb	Snow(115%)	360	275	12'-5.5"	Adds To	Header Reaction
Point	lb	Snow(115%)	360	275	17'-5.5"	Adds To	Header Reaction

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Support bearing length requirements must be checked separately.
- Continuous lateral support required at top and bottom edge.
- Sloped length multiplier = 1.000. Bevel cut add = 0.38".

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Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 1:59 PM
Designer: Remote
Comment:

Type: MF45 Uplift

DOUBLE 1.75 x 18 RedLam™ LVL 2.0E

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS	% Allow.	Design	Allow.	DOL - Control	Pass/Fail
Shear (lb)	3%	-514	19152	160% - All Loads	PASS
Positive Moment (ft-lb)	5%	2073	38902	90% - Dead Load	PASS
Negative Moment (ft-lb)	1%	-941	69159	160% - All Loads	PASS

DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
Span Live	10%	-0.142	-1.495	L / 999+	L / 240	PASS
Span Total	5%	0.101	1.993	L / 999+	L / 180	PASS

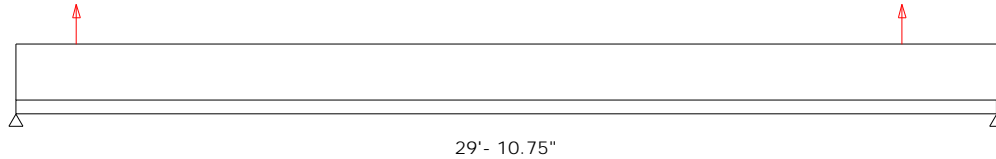
SUPPORTS	Support 1	Support 2
Live Reaction, Critical (lb) (DOL%)	0	0
Dead Reaction (lb)	277	277
Total Reaction (lb) (DOL%)	277 (90)	277 (90)
Net Uplift Reaction (lb) (DOL%)	-513 (160)	-205 (160)
Bearing Support	Bottom Wall	Flush Ledger
Req'd Bearing (in)	1.50	1.50

HANGERS	Model	Top	Face	Member	Header	Size
Right	HB3.56/18	6-16d	16-16d	10-16d	LVL DF/SP	1.75x18 DBL

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	1.8'	Snow Roof Beam

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Wind(160%)	-10.1	0.1	0'-0.0" to 29'-10.75"	Replaces	Net Wind Uplift
Point	plf	Wind(160%)	-308	0	1'-10.0"	Adds To	Brace Load
Point	lb	Wind(160%)	-205	0	27'-0.0"	Adds To	Header reaction

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Support bearing length requirements must be checked separately.
- Continuous lateral support required at top and bottom edge.
- Net uplift (see reactions) requires additional connector consideration.
- Sloped length multiplier = 1.000. Bevel cut add = 0.38".

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Project: Providence Hall High
Location: Herriman, UT
Folder: Roof
Date: 12/30/13 1:58 PM
Designer: Remote
Comment:

Type: MF45

DOUBLE 1.75 x 18 RedLam™ LVL 2.0E

This product meets or exceeds the set design controls for the application and loads listed

DESIGN CONTROLS		% Allow.	Design	Allow.	DOL - Control	Pass/Fail
	Shear (lb)	35%	-4777	13766	115% - All Loads	PASS
	Positive Moment (ft-lb)	63%	31517	49708	115% - All Loads	PASS

	DEFLECTIONS (in)	% Allow.	Design	Allow.	Design	Allow.	Pass/Fail
	Span Live	80%	1.196	1.495	L / 300	L / 240	PASS
	Span Total	79%	1.576	1.993	L / 228	L / 180	PASS

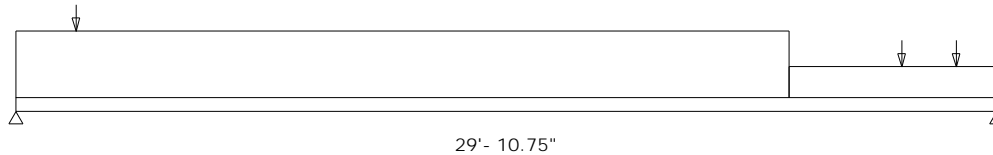
SUPPORTS		Support 1	Support 2
	Live Reaction, Critical (lb) (DOL%)	3175 (115)	3412 (115)
	Live Reaction, Max. (lb) (DOL%)	3681 (160)	3445 (160)
	Dead Reaction (lb)	976	1514
	Total Reaction (lb) (DOL%)	4657 (160)	4958 (160)
	Bearing	Bottom	Flush
	Support	Ledger	Ledger
	Req'd Bearing (in)	1.77	1.89

HANGERS	Model		Top	Face	Member	Header	Size
	Right	HB3.56/18	6-16d	16-16d	10-16d	LVL DF/SP	1.75x18 DBL

SPANS AND LOADS

Dimensions represent horizontal design spans.

Member Slope: -0.25/12 ↑



APPLICATION LOADS

Type	Units	DOL	Live	Dead	Partition	Tributary	Member Type
Uniform	psf	Snow(115%)	33	25	0	1.8'	Snow Roof Beam

ADDITIONAL LOADS

Type	Units	DOL	Live	Dead	Location from left	Application	Comment
Uniform	psf	Snow(115%)	87.7	0	0'-0.0" to 23'-6.75"	Adds To	Snow Drift H
Point	lb	Floor(100%)	0	250	28'-8.0"	Adds To	Mech. #1
Point	plf	Wind(160%)	308	0	1'-10.0"	Adds To	Brace Load
Point	lb	Snow(115%)	1244	382	27'-0.0"	Adds To	Header reaction

NOTES

- Building code: IBC. Methodology: Allowable Stress Design
- Support bearing length requirements must be checked separately.
- Continuous lateral support required at top and bottom edge.
- Sloped length multiplier = 1.000. Bevel cut add = 0.38".

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