

PRMH20250744

Calculations required to be provided by
the Permittee on site for all Inspections

STRUCTURAL CALCULATIONS
**TARGET 0342 - CONDENSER
ANCHORAGE**

PULLAYUP, WA

**City of Puyallup
Building
REVIEWED
FOR
COMPLIANCE**

SKinnear
07/14/2025
10:48:50 AM



EXP: 05/25/27

6/25/25

PREPARED FOR:

Target

**DCE JOB #
25RUI01**



DC ENGINEERING

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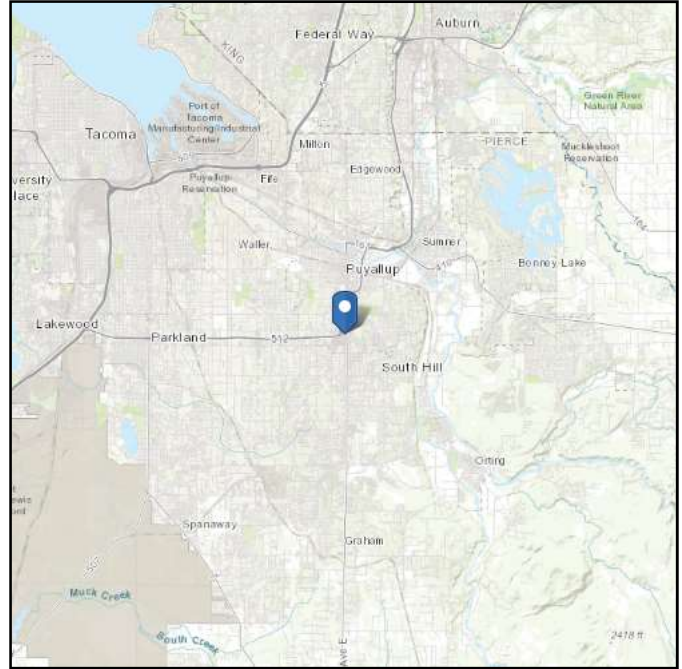
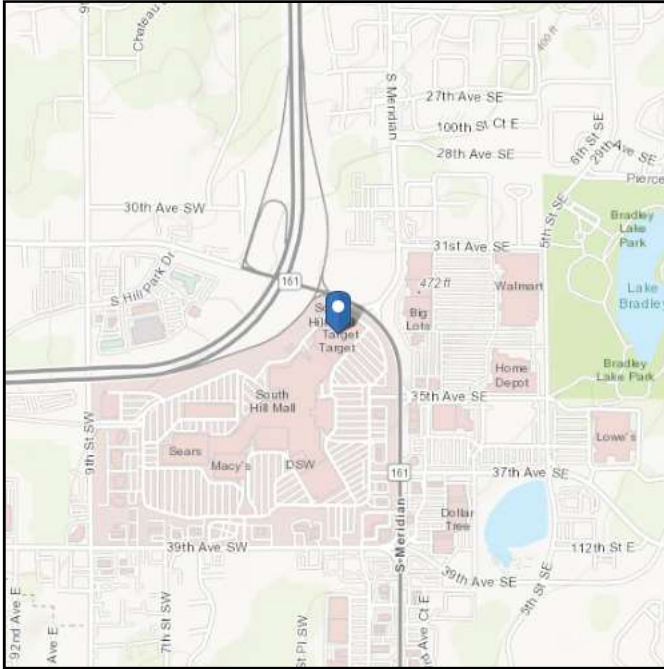
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Design Criteria

ASCE Hazards Report

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Latitude: 47.159988
Longitude: -122.295185
Elevation: 437.31315390215696 ft
(NAVD 88)



Wind

Results:

Wind Speed	97 Vmph
10-year MRI	67 Vmph
25-year MRI	73 Vmph
50-year MRI	78 Vmph
100-year MRI	83 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed: Thu Jun 12 2025

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2.

Site Soil Class: D - Default (see Section 11.4.3)

Results:

S_s :	1.264	S_{D1} :	N/A
S_1 :	0.436	T_L :	6
F_a :	1.2	PGA :	0.5
F_v :	N/A	PGA _M :	0.6
S_{MS} :	1.516	F_{PGA} :	1.2
S_{M1} :	N/A	I_e :	1
S_{DS} :	1.011	C_v :	1.353

Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.

Data Accessed: Thu Jun 12 2025

Date Source: [USGS Seismic Design Maps](#)

Results:

Mapped Elevation:

Data Source:

Date Accessed: Thu Jun 12 2025

In "Case Study" areas, site-specific case studies are required to establish ground snow loads. Extreme local variations in ground snow loads in these areas preclude mapping at this scale.

Ground snow load determination for such sites shall be based on an extreme value statistical analysis of data available in the vicinity of the site using a value with a 2 percent annual probability of being exceeded (50-year mean recurrence interval).

Statutory requirements of the Authority Having Jurisdiction are not included.

Site is outside ASCE/SEI 7-16, Table 7.2-5 boundaries. For ground snow loads in this area, see SEAW Snow Load Analysis for Washington, 2nd Ed. (1995). [Structural Engineers Association of Washington, Seattle, WA](#)

Snow load values are mapped to a 0.5 mile resolution. This resolution can create a mismatch between the mapped elevation and the site-specific elevation in topographically complex areas. Engineers should consult the local authority having jurisdiction in locations where the reported 'elevation' and 'mapped elevation' differ significantly from each other.

Rain

Results:

15-minute duration: No Data

60-minute duration: No Data

Data Source:

NOAA National Weather Service, Precipitation Frequency Data Server, Atlas 14
(<https://www.nws.noaa.gov/oh/hdsc/>)

Date Accessed:

Thu Jun 12 2025

For rainfall-event data in this area, see NOAA Hydrometeorological Design Studies Center, [Current Precipitation Frequency Information and Documents for Washington](#).

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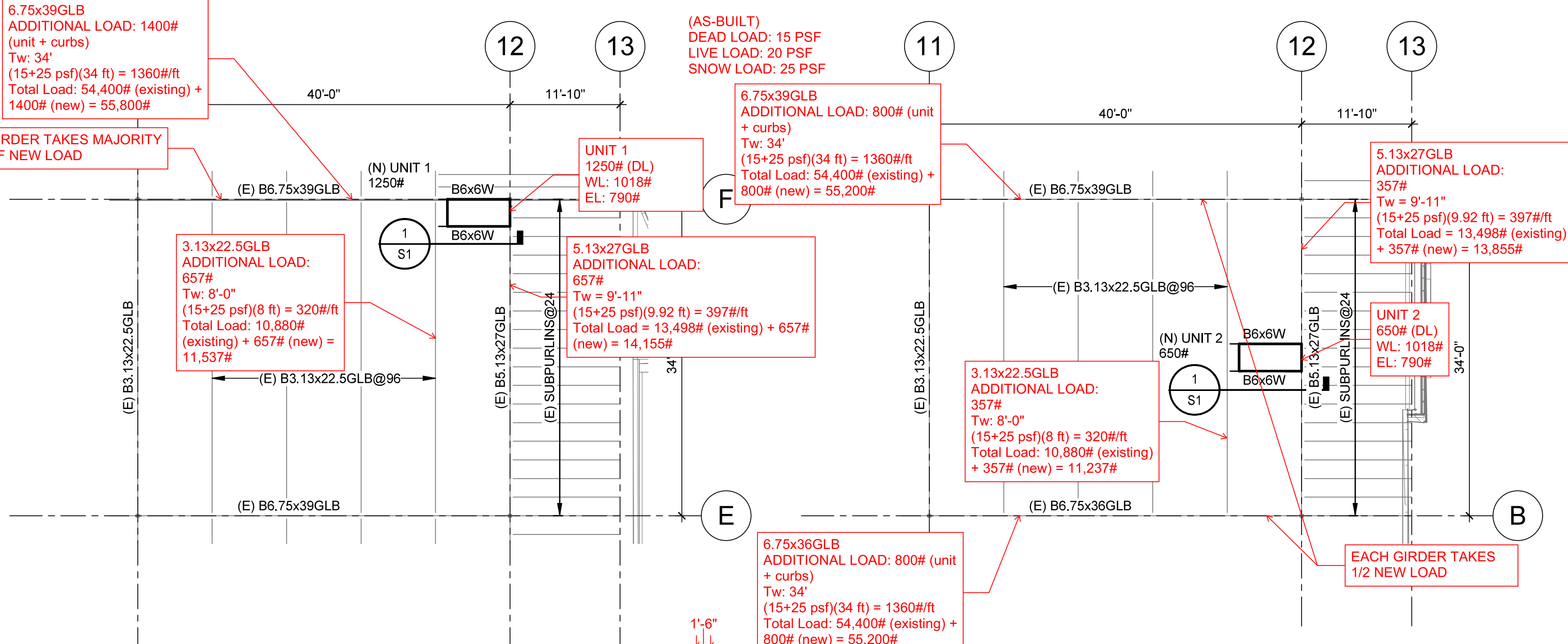


Table R301.2(1) Climatic and Geographical Design Criteria											
Ground Snow Load	Wind Design		Seismic Design Category ^f	Subject to Damage from			Winter Design Temp ^e	Ice Shield Underlay ^h	Flood Hazards ^g	Air Freeze Index ⁱ	Mean Annual Temp ^j
	Speed ^d (mph)	Topograp hical effects ^k		Weathering ^a	Frost Line Depth ^b	Termites ^c					
20 lbs/ft	85	No	D-1	Moderate	12 inches	Slight to Moderate	17°	No	Puyallup Municipal Code 21.07	250	50°



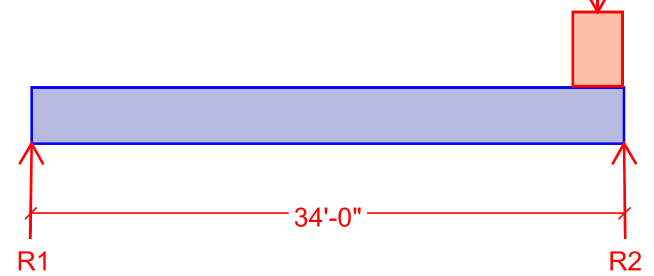
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GRAVITY CALCULATIONS

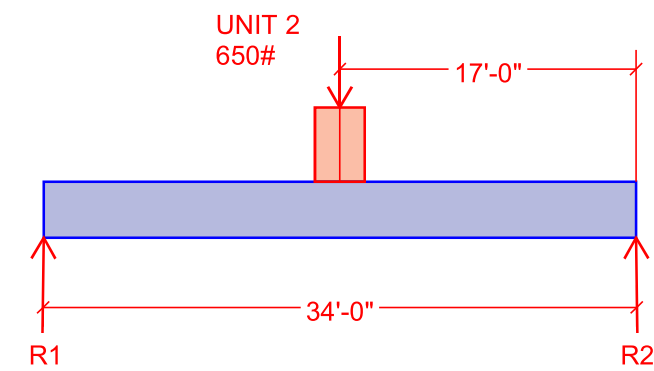


1 PARTIAL FRAMING PLAN - UNIT 1
SCALE: 3/32" = 1'-0"

2 PARTIAL FRAMING PLAN - UNIT 2
SCALE: 3/32" = 1'-0"



MR2 = 0; -R1(34)+1250(1.5) = 0
MR2 = 0; -R1(34)+1875 = 0
MR2 = 0; R1 = 55#
R1 = 55#
R2 = 1195#
GLB (GRID F) TAKES 96% OF LOAD



R1=R2
GLBs ON GRID B AND GRID C EACH TAKE 50% OF THE LOAD

Windloads on Rooftop Equipment

ASCE 7-16 SECTION 29.4.1

PROJECT: 25RUI01
UNIT: UNIT 1

DATE 6/23/2025
BY NA

VELOCITY PRESSURE

$$q_z = .00256 * K_z * K_{zt} * K_d * K_e * V^2 = 18.5 \text{ psf} \quad (26.10-1)$$

$K_z = 0.904247$ $z(\text{ft}) = 20.25$ $z_g = 900$ $\alpha = 9.5$

$K_{zt} = 1$

$K_d = 0.85$

$K_e = 1$

$V = 97$

DESIGN FORCES

Lateral Force

$$F_h = q_z(GC_r)A_f = 1.02 \text{ kips} \quad (29.4-2)$$

1018 pounds

$GC_r = 1.9$

$A_f = 29 \text{ ft}^2$

Uplift Force

$$F_v = q_z(GC_r)A_r = 0.57 \text{ kips} \quad (29.4-3)$$

567 pounds

$GC_r = 1.5$

$A_r = 20 \text{ ft}^2$

OVERTURNING EVALUATION

PROJECT: 25RUI01
UNIT: UNIT 1

DATE: 6/24/2025
BY: NA

PHYSICAL DATA			
EQUIPMENT WEIGHT (V	1250 lb	a_p	2.5
EQUIPMENT WIDTH =	35.00 in	R_p	6
S_{ds} =	1.011	I_p	1
		z (ft)	20.50
		h (ft)	20.00
		z/h	1.000

SEISMIC: 0.6DL + 0.7E OVERTURNING MOMENT 1.0E = 632 lb C.G.= 24.80 in M_o = 10969.35 in-lb 0.91 kip-ft	WIND: 0.6DL + 0.6W OVERTURNING MOMENT 1.0W= 1018 lb WIND CENTROID 24.80 in M_{oh} = 15147.84 lb-in 1.26 kip-ft
---	---

F_p 632 lb 13.3-1 F_p 2022 lb 13.3-2 F_p 379 lb 13.3-3	1.0W= 567 lb WIND CENTROID 17.50 in M_{ov} = 5954 lb-in 0.50 kip-ft	ASD LOAD COMBINATION HORIZONTAL LOAD (UNFACTORED) HEIGHT WHERE LATERAL FORCE OCCURS VERTICAL LOAD (UNFACTORED) WIDTH WHERE LATERAL FORCE OCCURS
--	---	---

RESISTING MOMENT M_r = 10471 in-lb 0.87 kip-ft $M_r < M_o$	RESISTING MOMENT M_r = 13125 lb-in 1.09 kip-ft $M_r < M_o$
---	---

DETERMINE MAX TENSION AND SHEAR			
T=	14 lb	228 lb	
V=	442 lb	611 lb	
(TENSION TO RESIST OVERTURNING) (SHEAR DUE TO LATERAL FORCE)			

DETERMINE MAX TENSION AND SHEAR IN EACH ANCHOR			
Attachments on (1) side of equipment:		2	
Total Attachments:		4	
T _{bolt} =	7 lb	114 lb	
V _{bolt} =	111 lb	153 lb	

OMEGA =	1
T=	7 lb
V=	111 lb

T _{bolt} (DESIGN)	114
V _{bolt} (DESIGN)	153

COMBINED LATERAL AND WITHDRAWAL LOADS

PROJECT: 25RUI01

DATE: 6/24/2025

UNIT: UNIT 1

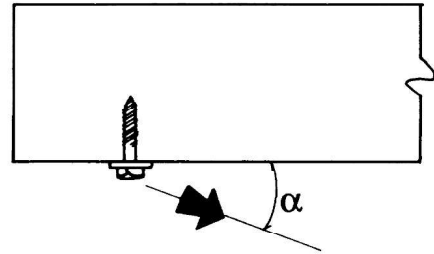
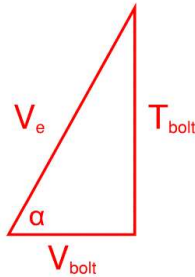
BY: NA

$T_{\text{bolt}} = 114 \text{ lbs}$

$V_{\text{bolt}} = 153 \text{ lbs}$

$V_e = 191 \text{ lbs}$

$\alpha = 36.7 \text{ deg}$



NDS 12.4.1 COMBINED LATERAL AND WITHDRAW LOADS

$p = 2.75 \text{ in}$
 $Z_{\text{(TABLE)}} = 350 \text{ lbs}$
 $W_{\text{(TABLE)}} = 172 \text{ lbs}$
 LOAD DURATION FACTOR 1.6

$Z' = 560 \text{ lbs}$

$W' = 275 \text{ lbs}$

$Z'_\alpha = 617 \text{ lbs}$

$Z'_\alpha > V_e$ **GOOD**

NOTES

SIMPSON 1/4"x4 1/2" SDS SCREWS

Z & W VALUES FROM ICC-ES EVALUATION REPORT **ESR-2236**

$$Z'_\alpha = \frac{(W'p)Z'}{(W'p)\cos^2 \alpha + Z' \sin^2 \alpha} \quad (12.4-1)$$

where:

α = angle between the wood surface and the direction of applied load, degrees

p = length of thread penetration into the main member, in.

COMBINED LATERAL AND WITHDRAWAL LOADS

PROJECT: UNIT 1 ATTACHMENT TO GLULAM PURLIN
UNIT: UNIT 1

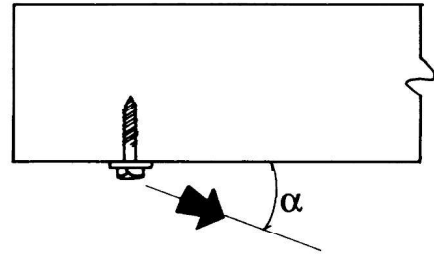
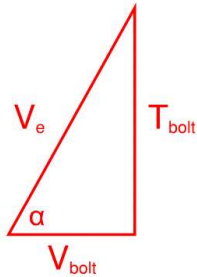
DATE: 6/24/2025
BY: NA

$T_{\text{bolt}} = 114 \text{ lbs}$

$V_{\text{bolt}} = 153 \text{ lbs}$

$V_e = 191 \text{ lbs}$

$\alpha = 36.7 \text{ deg}$



NDS 12.4.1 COMBINED LATERAL AND WITHDRAW LOADS

$p = 3 \text{ in}$
 $Z_{\text{(TABLE)}} = 280 \text{ lbs}$
 $W_{\text{(TABLE)}} = 187 \text{ lbs}$
LOAD DURATION FACTOR 1.6

$Z' = 448 \text{ lbs}$

$W' = 299 \text{ lbs}$

$Z'_\alpha = 546 \text{ lbs}$

$Z'_\alpha > V_e$

GOOD

NOTES

SDWS221000DB

Z & W VALUES FROM ICC-ES EVALUATION REPORT **ER-192**

$$Z'_\alpha = \frac{(W'p)Z'}{(W'p)\cos^2 \alpha + Z' \sin^2 \alpha} \quad (12.4-1)$$

where:

α = angle between the wood surface and the direction of applied load, degrees

p = length of thread penetration into the main member, in.

Windloads on Rooftop Equipment

ASCE 7-16 SECTION 29.4.1

PROJECT: 25RUI01
UNIT: UNIT 2

DATE 6/23/2025
BY NA

VELOCITY PRESSURE

$$q_z = .00256 * K_z * K_{zt} * K_d * K_e * V^2 = 18.5 \text{ psf} \quad (26.10-1)$$

$K_z = 0.904247$ $z(\text{ft}) = 20.25$ $z_g = 900$ $\alpha = 9.5$

$K_{zt} = 1$

$K_d = 0.85$

$K_e = 1$

$V = 97$

DESIGN FORCES

Lateral Force

$$F_h = q_z(GC_r)A_f = 1.02 \text{ kips} \quad (29.4-2)$$

1018 pounds

$$GC_r = 1.9$$
$$A_f = 29 \text{ ft}^2$$

Uplift Force

$$F_v = q_z(GC_r)A_r = 0.57 \text{ kips} \quad (29.4-3)$$

567 pounds

$$GC_r = 1.5$$
$$A_r = 20 \text{ ft}^2$$

OVERTURNING EVALUATION

PROJECT: 25RUI01
UNIT: UNIT 2

DATE: 6/24/2025
BY: NA

PHYSICAL DATA			
EQUIPMENT WEIGHT (V	650 lb	a_p	2.5
EQUIPMENT WIDTH =	35.00 in	R_p	6
$S_{ds} =$	1.011	I_p	1
		$z(ft)$	20.50
		$h(ft)$	20.00
		z/h	1.000
SEISMIC: 0.6DL + 0.7E		WIND: 0.6DL + 0.6W	
OVERTURNING MOMENT		OVERTURNING MOMENT	
1.0E =	329 lb	1.0W =	1018 lb
C.G. =	24.80 in	WIND CENTROID	24.80 in
$M_o =$	5704.062 in-lb	$M_{oh} =$	15147.84 lb-in
	0.48 kip-ft		1.26 kip-ft
F_p	329 lb	13.3-1	
F_p	1051 lb	13.3-2	1.0W = 567 lb
F_p	197 lb	13.3-3	WIND CENTROID 17.50 in
		$M_{ov} =$	5954 lb-in
			0.50 kip-ft
RESISTING MOMENT		RESISTING MOMENT	
$M_r =$	5445 in-lb	$M_r =$	6825 lb-in
	0.45 kip-ft		0.57 kip-ft
$M_r < M_o$		$M_r < M_o$	
DETERMINE MAX TENSION AND SHEAR			
T =	7 lb		408 lb
V =	230 lb		611 lb
DETERMINE MAX TENSION AND SHEAR IN EACH ANCHOR			
Attachments on (1) side of equipment:	2		
Total Attachments:	4		
$T_{bolt} =$	4 lb		204 lb
$V_{bolt} =$	58 lb		153 lb
OMEGA = 1			
T =	4 lb		
V =	58 lb		
T_{bolt} (DESIGN) 204			
V_{bolt} (DESIGN) 153			

COMBINED LATERAL AND WITHDRAWAL LOADS

PROJECT: UNIT 2
UNIT: UNIT 2

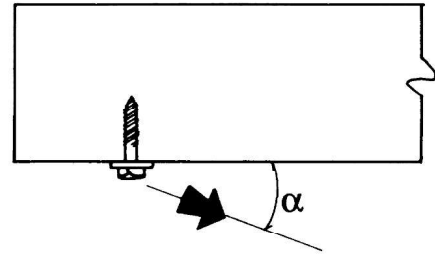
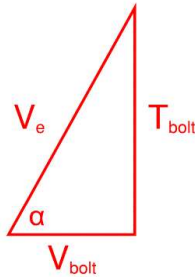
DATE: 6/24/2025
BY: NA

$T_{\text{bolt}} = 204$ 650

$V_{\text{bolt}} = 153$ lbs

$V_e = 255$ lbs

$\alpha = 53.2$ deg



NDS 12.4.1 COMBINED LATERAL AND WITHDRAW LOADS

$p = 2.75$ in
 $Z(\text{TABLE}) = 350$ lbs
 $W(\text{TABLE}) = 172$ lbs
LOAD DURATION FACTOR 1.6

$Z' = 560$ lbs

$W' = 275$ lbs

$Z'_\alpha = 672$ lbs

$Z'_\alpha > V_e$ **GOOD**

NOTES

SIMPSON 1/4"x4 1/2" SDS SCREWS

Z & W VALUES FROM ICC-ES EVALUATION REPORT **ESR-2236**

$$Z'_\alpha = \frac{(W'p)Z'}{(W'p)\cos^2\alpha + Z'\sin^2\alpha} \quad (12.4-1)$$

where:

α = angle between the wood surface and the direction of applied load, degrees

p = length of thread penetration into the main member, in.

COMBINED LATERAL AND WITHDRAWAL LOADS

PROJECT: UNIT 2 ATTACHMENT TO GLULAM PURLIN
UNIT: UNIT 2

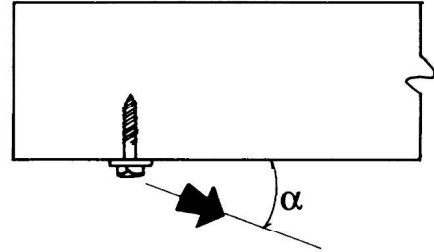
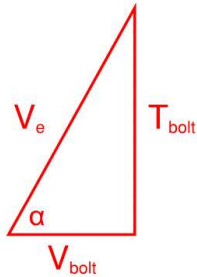
DATE: 6/24/2025
BY: NA

$T_{\text{bolt}} = 204$ 650

$V_{\text{bolt}} = 153$ lbs

$V_e = 255$ lbs

$\alpha = 53.2$ deg



NDS 12.4.1 COMBINED LATERAL AND WITHDRAW LOADS

$p = 3$ in
 $Z_{\text{(TABLE)}} = 280$ lbs
 $W_{\text{(TABLE)}} = 187$ lbs
LOAD DURATION FACTOR 1.6

$Z' = 448$ lbs

$W' = 299$ lbs

$Z_{\alpha}' = 660$ lbs

$Z_{\alpha}' > V_e$ **GOOD**

NOTES

SDWS221000DB

Z & W VALUES FROM ICC-ES EVALUATION REPORT **ER-192**

$$Z_{\alpha}' = \frac{(W'p)Z'}{(W'p)\cos^2\alpha + Z'\sin^2\alpha} \quad (12.4-1)$$

where:

α = angle between the wood surface and the direction of applied load, degrees

p = length of thread penetration into the main member, in.

Wood Beam

Project File: 25RUI01.ec6

LIC# : KW-06015046, Build:20.25.05.07

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(c) ENERCALC, LLC 1982-2025

DESCRIPTION: 6x6 WOOD BEAM - Unit 1

CODE REFERENCES

Calculations per NDS 2018, IBC 2018, CBC 2019

Load Combination Set : ASCE 7-22 / IBC 2024 (L<=100psf)

Material Properties

Analysis Method : Allowable Stress Design

Load Combination : ASCE 7-22 / IBC 2024 (L<=100psf)

Wood Species : Douglas Fir-Larch

Wood Grade : No.1

Beam Bracing : Beam is Fully Braced against lateral-torsional buckling

Fb + 1,350.0 psi

Fb - 1,350.0 psi

Fc - Prll 925.0 psi

Fc - Perp 625.0 psi

Fv 170.0 psi

Ft 675.0 psi

E : Modulus of Elasticity

Ebend- xx 1,600.0ksi

Eminbend - xx 580.0ksi

Density 31.210pcf



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight NOT internally calculated and added

Point Load : D = 0.3130, W = 0.5090, E = 0.3950 k @ 8.0 ft

Point Load : D = 0.3130, W = -0.5090, E = -0.3950 k @ 2.250 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.180	1	Maximum Shear Stress Ratio	=	0.073	1
Section used for this span		6x6		Section used for this span		6x6	
fb: Actual	=	218.88psi		fv: Actual	=	11.16 psi	
F'b	=	1,215.00psi		F'v	=	153.00 psi	
Load Combination				Load Combination			
Location of maximum on span	=	2.248ft	D Only	Location of maximum on span	=	0.000 ft	D Only
Span # where maximum occurs	=	Span # 1		Span # where maximum occurs	=	Span # 1	
Maximum Deflection							
Max Downward Transient Deflection		0 in	Ratio = 0 < 360	n/a			
Max Upward Transient Deflection		-0.059 in	Ratio = 1620 >= 360	Span: 1 : W Only			
Max Downward Total Deflection		0.036 in	Ratio = 2635 >= 180	Span: 1 : D Only			
Max Upward Total Deflection		-0.014 in	Ratio = 7013 >= 180	Span: 1 : +0.60D+0.60W			

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios										Moment Values			Shear Values		
Segment Length	Span #	M	V	CD	CM	C _t	CLx	C _F	C _{fu}	C _i	C _r	M	fb	F'b	V	fv	F'v
D Only														0.0	0.00	0.0	0.0
Length = 8.0 ft	1	0.180	0.073	0.90	1.00	1.00	1.00	0.811	1.00	1.00	1.00	0.51	218.9	1,215.0	0.22	11.2	153.0
+D+0.60W														0.0	0.00	0.0	0.0
Length = 8.0 ft	1	0.002	0.001	1.60	1.00	1.00	1.00	0.811	1.00	1.00	1.00	0.01	5.3	2,160.0	0.01	0.3	272.0
+D+0.450W														0.0	0.00	0.0	0.0
Length = 8.0 ft	1	0.027	0.011	1.60	1.00	1.00	1.00	0.811	1.00	1.00	1.00	0.14	58.7	2,160.0	0.06	3.0	272.0
+0.60D+0.60W														0.0	0.00	0.0	0.0
Length = 8.0 ft	1	0.038	0.015	1.60	1.00	1.00	1.00	0.811	1.00	1.00	1.00	0.19	82.2	2,160.0	0.08	4.2	272.0

Project Title:
 Engineer:
 Project ID:
 Project Descr:

Wood Beam

Project File: 25RUI01.ec6

LIC# : KW-06015046, Build:20.25.05.07

DC ENGINEERING

(c) ENERCALC, LLC 1982-2025

DESCRIPTION: 6x6 WOOD BEAM - Unit 1

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios										Moment Values			Shear Values		
			M	V	CD	CM	C _t	CLx	C _F	C _{fu}	C _i	C _r	M	fb	F ^b	V	f _v	F ^v
+D+0.70E						1.00	1.00	1.00	0.811	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 8.0 ft	1		0.012	0.005	1.60	1.00	1.00	1.00	0.811	1.00	1.00	1.00	0.06	25.5	2,160.0	0.03	1.3	272.0
+D+0.5250E						1.00	1.00	1.00	0.811	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 8.0 ft	1		0.034	0.014	1.60	1.00	1.00	1.00	0.811	1.00	1.00	1.00	0.17	73.9	2,160.0	0.08	3.8	272.0
+0.60D+0.70E						1.00	1.00	1.00	0.811	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 8.0 ft	1		0.029	0.012	1.60	1.00	1.00	1.00	0.811	1.00	1.00	1.00	0.14	62.0	2,160.0	0.06	3.2	272.0

Overall Maximum Deflections

Span	Load Combination	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
1		0.0000	0.000	W Only	-0.0592	3.591

Vertical Reactions

Support notation : Far left is #1

Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	0.225	0.621
Max Upward from Load Combinations	0.076	0.621
Max Upward from Load Cases	0.225	0.401
Max Downward from all Load Conditions (Resisting Uplift)	-0.366	
Max Downward from Load Combinations (Resisting Uplift)	-0.085	
Max Downward from Load Cases (Resisting Uplift)	-0.366	
D Only	0.225	0.401
+D+0.60W	0.005	0.621
+D+0.450W	0.060	0.566
+0.60D+0.60W	-0.085	0.460
+D+0.70E	0.026	0.600
+D+0.5250E	0.076	0.550
+0.60D+0.70E	-0.064	0.439
W Only	-0.366	0.366
E Only	-0.284	0.284

Wood Beam

Project File: 25RUI01.ec6

LIC# : KW-06015046, Build:20.25.05.07

DC ENGINEERING

(c) ENERCALC, LLC 1982-2025

DESCRIPTION: 6x6 WOOD BEAM - Unit 2

CODE REFERENCES

Calculations per NDS 2018, IBC 2018, CBC 2019
Load Combination Set : ASCE 7-22 / IBC 2024 (L<=100psf)

Material Properties

Analysis Method : Allowable Stress Design	Fb + 1,350.0 psi	E : Modulus of Elasticity
Load Combination : ASCE 7-22 / IBC 2024 (L<=100psf)	Fb - 1,350.0 psi	Ebend- xx 1,600.0ksi
	Fc - Prll 925.0 psi	Eminbend - xx 580.0ksi
Wood Species : Douglas Fir-Larch	Fc - Perp 625.0 psi	
Wood Grade : No.1	Fv 170.0 psi	
	Ft 675.0 psi	Density 31.210pcf
Beam Bracing : Beam is Fully Braced against lateral-torsional buckling		



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight NOT internally calculated and added
Point Load : D = 0.1790, W = 0.5090, E = 0.3950 k @ 8.0 ft
Point Load : D = 0.1790, W = -0.5090, E = -0.3950 k @ 2.250 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.103	1	Maximum Shear Stress Ratio	=	0.042	1
Section used for this span		6x6		Section used for this span		6x6	
fb: Actual	=	125.17psi		fv: Actual	=	6.38 psi	
F'b	=	1,215.00psi		F'v	=	153.00 psi	
Load Combination				Load Combination			
Location of maximum on span	=	2.248ft	D Only	Location of maximum on span	=	0.000 ft	D Only
Span # where maximum occurs	=	Span # 1		Span # where maximum occurs	=	Span # 1	
Maximum Deflection							
Max Downward Transient Deflection		0 in	Ratio = 0 < 360	n/a			
Max Upward Transient Deflection		-0.059 in	Ratio = 1620 >= 360	Span: 1 : W Only			
Max Downward Total Deflection		0.021 in	Ratio = 4608 >= 180	Span: 1 : D Only			
Max Upward Total Deflection		-0.023 in	Ratio = 4165 >= 180	Span: 1 : +0.60D+0.60W			

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios										Moment Values			Shear Values		
Segment Length	Span #	M	V	CD	CM	C _t	CLx	C _F	C _{fu}	C _i	C _r	M	fb	F'b	V	fv	F'v
D Only														0.0	0.00	0.0	0.0
Length = 8.0 ft	1	0.103	0.042	0.90	1.00	1.00	1.00	0.811	1.00	1.00	1.00	0.29	125.2	1,215.0	0.13	6.4	153.0
+D+0.60W					1.00	1.00	1.00	0.811	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 8.0 ft	1	0.041	0.017	1.60	1.00	1.00	1.00	0.811	1.00	1.00	1.00	0.20	88.4	2,160.0	0.09	4.5	272.0
+D+0.450W					1.00	1.00	1.00	0.811	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 8.0 ft	1	0.016	0.007	1.60	1.00	1.00	1.00	0.811	1.00	1.00	1.00	0.08	35.0	2,160.0	0.04	1.8	272.0
+0.60D+0.60W					1.00	1.00	1.00	0.811	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 8.0 ft	1	0.064	0.026	1.60	1.00	1.00	1.00	0.811	1.00	1.00	1.00	0.32	138.5	2,160.0	0.14	7.1	272.0

Project Title:
 Engineer:
 Project ID:
 Project Descr:

Wood Beam

Project File: 25RUI01.ec6

LIC# : KW-06015046, Build:20.25.05.07

DC ENGINEERING

(c) ENERCALC, LLC 1982-2025

DESCRIPTION: 6x6 WOOD BEAM - Unit 2

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios										Moment Values			Shear Values		
			M	V	CD	CM	C _t	CLx	C _F	C _{fu}	C _i	C _r	M	fb	F ^b	V	f _v	F ^v
+D+0.70E						1.00	1.00	1.00	0.811	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 8.0 ft	1		0.032	0.013	1.60	1.00	1.00	1.00	0.811	1.00	1.00	1.00	0.16	68.2	2,160.0	0.07	3.5	272.0
+D+0.5250E						1.00	1.00	1.00	0.811	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 8.0 ft	1		0.009	0.004	1.60	1.00	1.00	1.00	0.811	1.00	1.00	1.00	0.05	19.8	2,160.0	0.02	1.0	272.0
+0.60D+0.70E						1.00	1.00	1.00	0.811	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 8.0 ft	1		0.055	0.022	1.60	1.00	1.00	1.00	0.811	1.00	1.00	1.00	0.27	118.2	2,160.0	0.12	6.0	272.0

Overall Maximum Deflections

Span	Load Combination	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
1		0.0000	0.000	W Only	-0.0592	3.591

Vertical Reactions

Support notation : Far left is #1

Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	0.129	0.449
Max Upward from Load Combinations		0.449
Max Upward from Load Cases	0.129	0.366
Max Downward from all Load Conditions (Resisting Uplift)	-0.366	
Max Downward from Load Combinations (Resisting Uplift)	-0.142	
Max Downward from Load Cases (Resisting Uplift)	-0.366	
D Only	0.129	0.229
+D+0.60W	-0.091	0.449
+D+0.450W	-0.036	0.394
+0.60D+0.60W	-0.142	0.357
+D+0.70E	-0.070	0.428
+D+0.5250E	-0.020	0.378
+0.60D+0.70E	-0.122	0.336
W Only	-0.366	0.366
E Only	-0.284	0.284

Wood Beam

Project File: 25RUI01.ec6

LIC#: KW-06015046, Build:20.25.05.07

DC ENGINEERING

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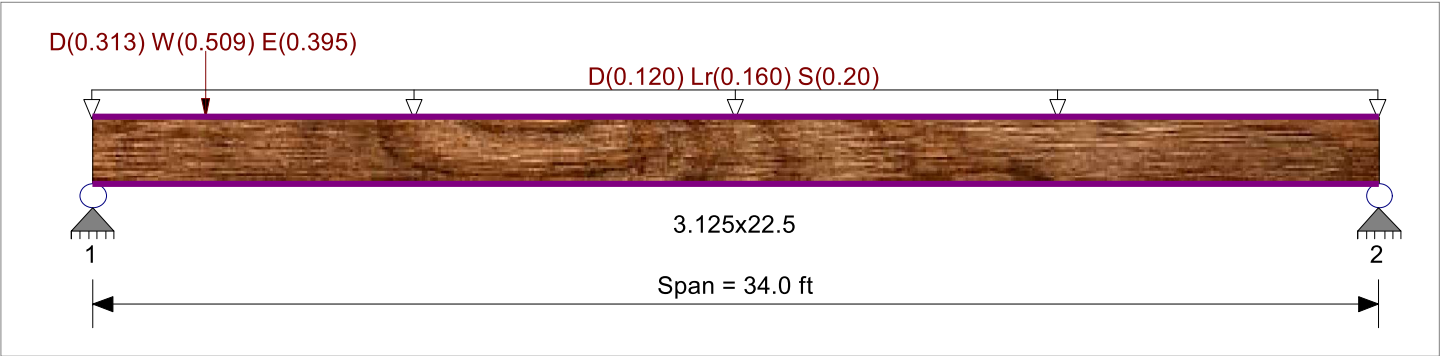
DESCRIPTION: (E) 3.125x22.5 PURLINS - grids E-F

CODE REFERENCES

Calculations per NDS 2018, IBC 2018, CBC 2019
Load Combination Set : ASCE 7-22 / IBC 2024 (L<=100psf)

Material Properties

Analysis Method :	Allowable Stress Design	Fb +	2,400.0 psi	E : Modulus of Elasticity	
Load Combination :	ASCE 7-22 / IBC 2024 (L<=100psf)	Fb -	1,850.0 psi	Ebend- xx	1,800.0ksi
		Fc - Prll	1,650.0 psi	Eminbend - xx	950.0ksi
Wood Species :	DF/DF	Fc - Perp	650.0 psi		
Wood Grade :	24F-V4	Fv	265.0 psi		
		Ft	1,100.0 psi	Density	31.210pcf
Beam Bracing :	Beam is Fully Braced against lateral-torsional buckling				



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loading
Loads on all spans...
Uniform Load on ALL spans : D = 0.0150, Lr = 0.020, S = 0.0250 ksf, Tributary Width = 8.0 ft
Point Load : D = 0.3130, W = 0.5090, E = 0.3950 k @ 3.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.706	1	Maximum Shear Stress Ratio	=	0.312	1
Section used for this span		3.125x22.5		Section used for this span		3.125x22.5	
fb: Actual	=	1,831.50psi		fv: Actual	=	94.98 psi	
F'b	=	2,595.18psi		F'v	=	304.75 psi	
Load Combination		+D+0.70S		Load Combination		+D+0.70S	
Location of maximum on span	=	16.876ft		Location of maximum on span	=	0.000 ft	
Span # where maximum occurs	=	Span # 1		Span # where maximum occurs	=	Span # 1	
Maximum Deflection							
Max Downward Transient Deflection	1.133 in	Ratio =	360 >= 360	Span: 1 : S Only			
Max Upward Transient Deflection	0 in	Ratio =	0 < 360	n/a			
Max Downward Total Deflection	1.694 in	Ratio =	240 >= 180	Span: 1 : +D+Lr			
Max Upward Total Deflection	0 in	Ratio =	0 < 180	n/a			

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios										Moment Values			Shear Values		
Segment Length	Span #	M	V	CD	CM	C _t	CLx	C _V	C _{fu}	C _i	C _r	M	fb	F'b	V	fv	F'v
D Only														0.0			
Length = 34.0 ft	1	0.448	0.209	0.90	1.00	1.00	1.00	0.940	1.00	1.00	1.00	20.01	910.9	2,031.0	2.33	49.8	238.5
+D+Lr														0.0			
Length = 34.0 ft	1	0.696	0.306	1.25	1.00	1.00	1.00	0.940	1.00	1.00	1.00	43.13	1,963.0	2,820.8	4.75	101.4	331.3
+D+0.70S														0.0			
Length = 34.0 ft	1	0.706	0.312	1.15	1.00	1.00	1.00	0.940	1.00	1.00	1.00	40.24	1,831.5	2,595.2	4.45	95.0	304.8
+D+0.750Lr														0.0			

Project Title:
 Engineer:
 Project ID:
 Project Descr:

Wood Beam

Project File: 25RUI01.ec6

LIC# : KW-06015046, Build:20.25.05.07

DC ENGINEERING

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DESCRIPTION: (E) 3.125x22.5 PURLINS - grids E-F

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios										Moment Values			Shear Values		
			M	V	CD	CM	C _t	CLx	C _v	C _{fu}	C _i	C _r	M	fb	F ^b	V	f _v	F ^v
Length = 34.0 ft	1		0.603	0.267	1.25	1.00	1.00	1.00	0.940	1.00	1.00	1.00	37.35	1,700.0	2,820.8	4.15	88.5	331.3
+D+0.5250S						1.00	1.00	1.00	0.940	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft	1		0.617	0.275	1.15	1.00	1.00	1.00	0.940	1.00	1.00	1.00	35.19	1,601.3	2,595.2	3.92	83.7	304.8
+D+0.60W						1.00	1.00	1.00	0.940	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft	1		0.258	0.131	1.60	1.00	1.00	1.00	0.940	1.00	1.00	1.00	20.48	932.1	3,610.7	2.61	55.7	424.0
+D+0.750Lr+0.450W						1.00	1.00	1.00	0.940	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft	1		0.475	0.219	1.60	1.00	1.00	1.00	0.940	1.00	1.00	1.00	37.70	1,715.7	3,610.7	4.36	93.0	424.0
+D+0.5250S+0.450W						1.00	1.00	1.00	0.940	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft	1		0.448	0.208	1.60	1.00	1.00	1.00	0.940	1.00	1.00	1.00	35.53	1,617.1	3,610.7	4.13	88.1	424.0
+0.60D+0.60W						1.00	1.00	1.00	0.940	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft	1		0.157	0.084	1.60	1.00	1.00	1.00	0.940	1.00	1.00	1.00	12.48	567.8	3,610.7	1.68	35.8	424.0
+D+0.70E						1.00	1.00	1.00	0.940	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft	1		0.258	0.130	1.60	1.00	1.00	1.00	0.940	1.00	1.00	1.00	20.44	930.1	3,610.7	2.58	55.1	424.0
+D+0.10S+0.5250E						1.00	1.00	1.00	0.940	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft	1		0.293	0.142	1.60	1.00	1.00	1.00	0.940	1.00	1.00	1.00	23.22	1,056.7	3,610.7	2.82	60.3	424.0
+0.60D+0.70E						1.00	1.00	1.00	0.940	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft	1		0.157	0.083	1.60	1.00	1.00	1.00	0.940	1.00	1.00	1.00	12.43	565.8	3,610.7	1.65	35.2	424.0

Overall Maximum Deflections

Span	Load Combination	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
1	+D+Lr	1.6942	17.000		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1

Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	5.304	5.047
Max Upward from Load Combinations	5.304	5.047
Max Upward from Load Cases	3.400	3.400
D Only	2.584	2.327
+D+Lr	5.304	5.047
+D+0.70S	4.964	4.707
+D+0.750Lr	4.624	4.367
+D+0.5250S	4.369	4.112
+D+0.60W	2.863	2.354
+D+0.750Lr+0.450W	4.833	4.387
+D+0.5250S+0.450W	4.578	4.132
+0.60D+0.60W	1.829	1.423
+D+0.70E	2.837	2.351
+D+0.10S+0.5250E	3.114	2.685
+0.60D+0.70E	1.803	1.420
Lr Only	2.720	2.720
S Only	3.400	3.400
W Only	0.464	0.045
E Only	0.360	0.035

Wood Beam

Project File: 25RUI01.ec6

LIC#: KW-06015046, Build:20.25.05.07

DC ENGINEERING

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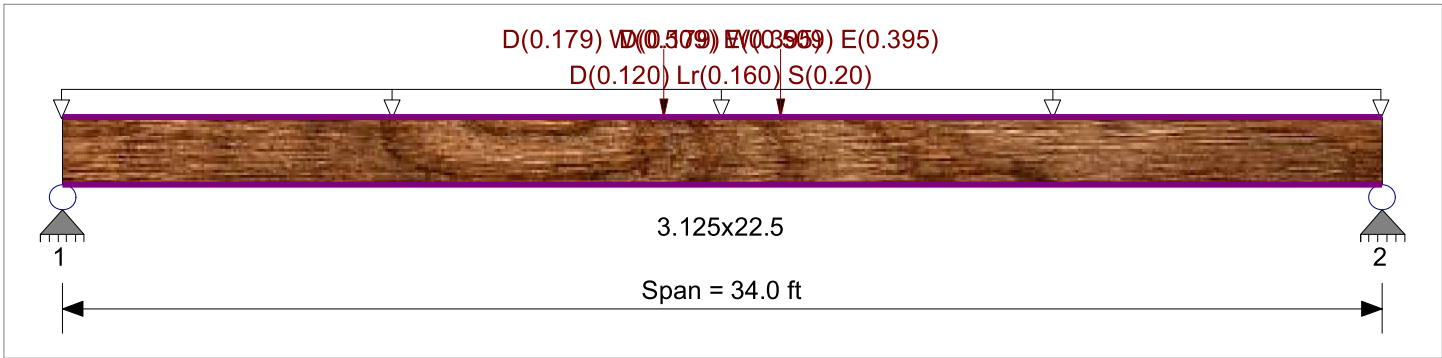
DESCRIPTION: (E) 3.125x22.5 PURLINS - grids B-C

CODE REFERENCES

Calculations per NDS 2018, IBC 2018, CBC 2019
Load Combination Set : ASCE 7-22 / IBC 2024 (L<=100psf)

Material Properties

Analysis Method : Allowable Stress Design	Fb + 2,400.0 psi	E : Modulus of Elasticity
Load Combination : ASCE 7-22 / IBC 2024 (L<=100psf)	Fb - 1,850.0 psi	Ebend- xx 1,800.0ksi
	Fc - Prll 1,650.0 psi	Eminbend - xx 950.0ksi
Wood Species : DF/DF	Fc - Perp 650.0 psi	
Wood Grade : 24F-V4	Fv 265.0 psi	
	Ft 1,100.0 psi	Density 31.210pcf
Beam Bracing : Beam is Fully Braced against lateral-torsional buckling		



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loading
Loads on all spans...
Uniform Load on ALL spans : D = 0.0150, Lr = 0.020, S = 0.0250 ksf, Tributary Width = 8.0 ft
Point Load : D = 0.1790, W = 0.5090, E = 0.3950 k @ 15.50 ft
Point Load : D = 0.1790, W = 0.5090, E = 0.3950 k @ 18.50 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.746	1	Maximum Shear Stress Ratio	=	0.304	: 1
Section used for this span		3.125x22.5		Section used for this span		3.125x22.5	
fb: Actual	=	1,936.34psi		fv: Actual	=	92.71 psi	
F'b	=	2,595.18psi		F'v	=	304.75 psi	
Load Combination		+D+0.70S		Load Combination		+D+0.70S	
Location of maximum on span	=	17.000ft		Location of maximum on span	=	0.000 ft	
Span # where maximum occurs	=	Span # 1		Span # where maximum occurs	=	Span # 1	
Maximum Deflection							
Max Downward Transient Deflection	1.133 in	Ratio =	360 >= 360	Span: 1 : S Only			
Max Upward Transient Deflection	0 in	Ratio =	0 < 360	n/a			
Max Downward Total Deflection	1.767 in	Ratio =	230 >= 180	Span: 1 : +D+Lr			
Max Upward Total Deflection	0 in	Ratio =	0 < 180	n/a			

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios										Moment Values			Shear Values		
Segment Length	Span #	M	V	CD	CM	C _t	CLx	C _V	C _{fu}	C _i	C _r	M	fb	F'b	V	fv	F'v
D Only														0.0	0.00	0.0	0.0
Length = 34.0 ft	1	0.500	0.199	0.90	1.00	1.00	1.00	0.940	1.00	1.00	1.00	22.32	1,015.7	2,031.0	2.23	47.5	238.5
+D+Lr														0.0	0.00	0.0	0.0
Length = 34.0 ft	1	0.733	0.299	1.25	1.00	1.00	1.00	0.940	1.00	1.00	1.00	45.44	2,067.9	2,820.8	4.65	99.2	331.3
+D+0.70S														0.0	0.00	0.0	0.0
Length = 34.0 ft	1	0.746	0.304	1.15	1.00	1.00	1.00	0.940	1.00	1.00	1.00	42.55	1,936.3	2,595.2	4.35	92.7	304.8

Project Title:
 Engineer:
 Project ID:
 Project Descr:

Wood Beam

Project File: 25RUI01.ec6

LIC# : KW-06015046, Build:20.25.05.07

DC ENGINEERING

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DESCRIPTION: (E) 3.125x22.5 PURLINS - grids B-C

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios										Moment Values			Shear Values			
Segment	Length	Span #	M	V	CD	CM	C _t	CLx	C _V	C _{fu}	C _i	C _r	M	fb	F'b	V	f _v	F'v
+D+0.750Lr						1.00	1.00	1.00	0.940	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft		1	0.640	0.260	1.25	1.00	1.00	1.00	0.940	1.00	1.00	1.00	39.66	1,804.8	2,820.8	4.04	86.3	331.3
+D+0.5250S						1.00	1.00	1.00	0.940	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft		1	0.657	0.267	1.15	1.00	1.00	1.00	0.940	1.00	1.00	1.00	37.49	1,706.2	2,595.2	3.82	81.4	304.8
+D+0.60W						1.00	1.00	1.00	0.940	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft		1	0.341	0.127	1.60	1.00	1.00	1.00	0.940	1.00	1.00	1.00	27.05	1,231.1	3,610.7	2.53	54.0	424.0
+D+0.750Lr+0.450W						1.00	1.00	1.00	0.940	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft		1	0.545	0.215	1.60	1.00	1.00	1.00	0.940	1.00	1.00	1.00	43.21	1,966.4	3,610.7	4.27	91.1	424.0
+D+0.5250S+0.450W						1.00	1.00	1.00	0.940	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft		1	0.517	0.204	1.60	1.00	1.00	1.00	0.940	1.00	1.00	1.00	41.04	1,867.7	3,610.7	4.04	86.3	424.0
+0.60D+0.60W						1.00	1.00	1.00	0.940	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft		1	0.228	0.083	1.60	1.00	1.00	1.00	0.940	1.00	1.00	1.00	18.12	824.8	3,610.7	1.64	35.0	424.0
+D+0.70E						1.00	1.00	1.00	0.940	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft		1	0.335	0.126	1.60	1.00	1.00	1.00	0.940	1.00	1.00	1.00	26.60	1,210.7	3,610.7	2.50	53.4	424.0
+D+0.10S+0.5250E						1.00	1.00	1.00	0.940	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft		1	0.358	0.138	1.60	1.00	1.00	1.00	0.940	1.00	1.00	1.00	28.42	1,293.5	3,610.7	2.74	58.4	424.0
+0.60D+0.70E						1.00	1.00	1.00	0.940	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft		1	0.223	0.081	1.60	1.00	1.00	1.00	0.940	1.00	1.00	1.00	17.68	804.4	3,610.7	1.61	34.4	424.0

Overall Maximum Deflections

Span	Load Combination	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
1	+D+Lr	1.7666	17.124		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1

Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	5.198	5.198
Max Upward from Load Combinations	5.198	5.198
Max Upward from Load Cases	3.400	3.400
D Only	2.478	2.478
+D+Lr	5.198	5.198
+D+0.70S	4.858	4.858
+D+0.750Lr	4.518	4.518
+D+0.5250S	4.263	4.263
+D+0.60W	2.783	2.783
+D+0.750Lr+0.450W	4.747	4.747
+D+0.5250S+0.450W	4.492	4.492
+0.60D+0.60W	1.792	1.792
+D+0.70E	2.755	2.755
+D+0.10S+0.5250E	3.025	3.025
+0.60D+0.70E	1.763	1.763
Lr Only	2.720	2.720
S Only	3.400	3.400
W Only	0.509	0.509
E Only	0.395	0.395

Wood Beam

Project File: 25RUI01.ec6

LIC# : KW-06015046, Build:20.25.05.07

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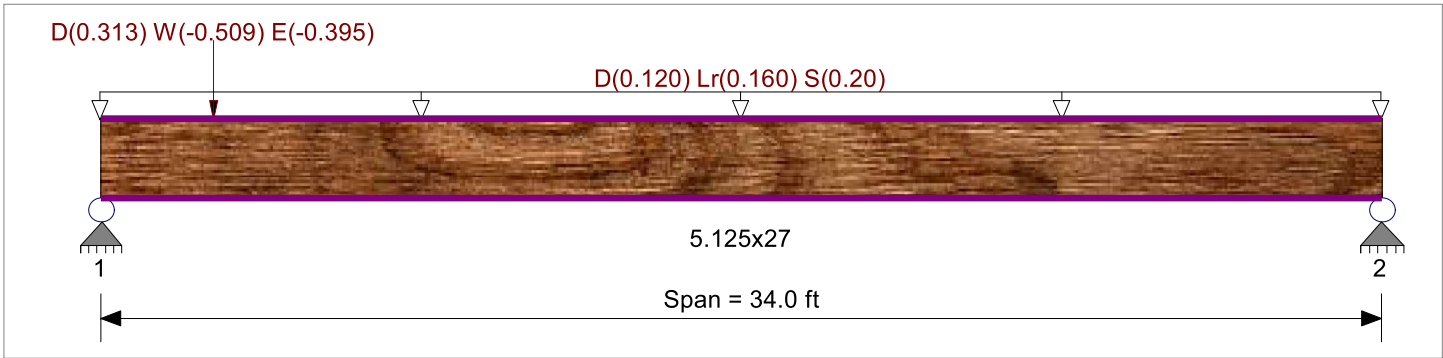
DESCRIPTION: (E) 5.13x27 PURLIN - grids E-F

CODE REFERENCES

Calculations per NDS 2018, IBC 2018, CBC 2019
Load Combination Set : ASCE 7-22 / IBC 2024 (L<=100psf)

Material Properties

Analysis Method : Allowable Stress Design	Fb + 2,400.0 psi	E : Modulus of Elasticity
Load Combination : ASCE 7-22 / IBC 2024 (L<=100psf)	Fb - 1,850.0 psi	Ebend- xx 1,800.0ksi
	Fc - Prll 1,650.0 psi	Eminbend - xx 950.0ksi
Wood Species : DF/DF	Fc - Perp 650.0 psi	
Wood Grade : 24F-V4	Fv 265.0 psi	
	Ft 1,100.0 psi	Density 31.210pcf
Beam Bracing : Beam is Fully Braced against lateral-torsional buckling		



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loading
Loads on all spans...
Uniform Load on ALL spans : D = 0.0150, Lr = 0.020, S = 0.0250 ksf, Tributary Width = 8.0 ft
Point Load : D = 0.3130, W = -0.5090, E = -0.3950 k @ 3.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.337 : 1	Maximum Shear Stress Ratio	=	0.162 : 1
Section used for this span		5.125x27	Section used for this span		5.125x27
fb: Actual	=	816.61psi	fv: Actual	=	49.51 psi
F'b	=	2,425.30psi	F'v	=	304.75 psi
Load Combination		+D+0.70S	Load Combination		+D+0.70S
Location of maximum on span	=	16.876ft	Location of maximum on span	=	0.000 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1
Maximum Deflection					
Max Downward Transient Deflection	0.400 in	Ratio = 1020 >=360	Span: 1 : S Only		
Max Upward Transient Deflection	-0.013 in	Ratio = 31655 >=360	Span: 1 : W Only		
Max Downward Total Deflection	0.627 in	Ratio = 650 >=180	Span: 1 : +D+Lr		
Max Upward Total Deflection	0 in	Ratio = 0 <180	n/a		

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios										Moment Values			Shear Values		
Segment Length	Span #	M	V	CD	CM	C _t	CLx	C _V	Cfu	C _i	C _r	M	fb	F'b	V	fv	F'v
D Only														0.0			
Length = 34.0 ft	1	0.225	0.114	0.90	1.00	1.00	1.00	0.879	1.00	1.00	1.00	22.15	426.8	1,898.1	2.50	27.1	238.5
+D+Lr														0.0			
Length = 34.0 ft	1	0.331	0.159	1.25	1.00	1.00	1.00	0.879	1.00	1.00	1.00	45.26	872.3	2,636.2	4.86	52.7	331.3
+D+0.70S														0.0			
Length = 34.0 ft	1	0.337	0.162	1.15	1.00	1.00	1.00	0.879	1.00	1.00	1.00	42.37	816.6	2,425.3	4.57	49.5	304.8
+D+0.750Lr														0.0			
Length = 34.0 ft	1				1.00	1.00	1.00	0.879	1.00	1.00	1.00				0.00	0.0	0.0

Project Title:
 Engineer:
 Project ID:
 Project Descr:

Wood Beam

Project File: 25RUI01.ec6

LIC# : KW-06015046, Build:20.25.05.07

DC ENGINEERING

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DESCRIPTION: (E) 5.13x27 PURLIN - grids E-F

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios									Moment Values			Shear Values			
			M	V	CD	CM	C _t	CLx	C _V	C _{fu}	C _i	C _r	M	fb	F'b	V	fv	F'v
Length = 34.0 ft +D+0.5250S	1		0.289	0.140	1.25	1.00	1.00	1.00	0.879	1.00	1.00	1.00	39.48	760.9	2,636.2	4.27	46.3	331.3
						1.00	1.00	1.00	0.879	1.00	1.00	1.00						
Length = 34.0 ft +D+0.60W	1		0.297	0.144	1.15	1.00	1.00	1.00	0.879	1.00	1.00	1.00	37.32	719.2	2,425.3	4.05	43.9	304.8
						1.00	1.00	1.00	0.879	1.00	1.00	1.00						
Length = 34.0 ft +D+0.750Lr+0.450W	1		0.124	0.057	1.60	1.00	1.00	1.00	0.879	1.00	1.00	1.00	21.69	417.9	3,374.3	2.22	24.1	424.0
						1.00	1.00	1.00	0.879	1.00	1.00	1.00						
Length = 34.0 ft +D+0.5250S+0.450W	1		0.224	0.104	1.60	1.00	1.00	1.00	0.879	1.00	1.00	1.00	39.14	754.3	3,374.3	4.06	44.0	424.0
						1.00	1.00	1.00	0.879	1.00	1.00	1.00						
Length = 34.0 ft +0.60D+0.60W	1		0.211	0.098	1.60	1.00	1.00	1.00	0.879	1.00	1.00	1.00	36.97	712.5	3,374.3	3.84	41.6	424.0
						1.00	1.00	1.00	0.879	1.00	1.00	1.00						
Length = 34.0 ft +D+0.70E	1		0.073	0.034	1.60	1.00	1.00	1.00	0.879	1.00	1.00	1.00	12.83	247.2	3,374.3	1.32	14.3	424.0
						1.00	1.00	1.00	0.879	1.00	1.00	1.00						
Length = 34.0 ft +D+0.10S+0.5250E	1		0.124	0.057	1.60	1.00	1.00	1.00	0.879	1.00	1.00	1.00	21.73	418.7	3,374.3	2.25	24.4	424.0
						1.00	1.00	1.00	0.879	1.00	1.00	1.00						
Length = 34.0 ft +0.60D+0.70E	1		0.141	0.067	1.60	1.00	1.00	1.00	0.879	1.00	1.00	1.00	24.72	476.4	3,374.3	2.61	28.3	424.0
						1.00	1.00	1.00	0.879	1.00	1.00	1.00						
Length = 34.0 ft	1		0.074	0.034	1.60	1.00	1.00	1.00	0.879	1.00	1.00	1.00	12.87	248.0	3,374.3	1.32	14.3	424.0

Overall Maximum Deflections

Span	Load Combination	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
1	+D+Lr	0.6273	17.000		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1

Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	5.555	5.297
Max Upward from Load Combinations	5.555	5.297
Max Upward from Load Cases	3.400	3.400
Max Downward from all Load Conditions (Resisting Uplift)	-0.464	-0.045
Max Downward from Load Cases (Resisting Uplift)	-0.464	-0.045
D Only	2.835	2.577
+D+Lr	5.555	5.297
+D+0.70S	5.215	4.957
+D+0.750Lr	4.875	4.617
+D+0.5250S	4.620	4.362
+D+0.60W	2.557	2.551
+D+0.750Lr+0.450W	4.666	4.597
+D+0.5250S+0.450W	4.411	4.342
+0.60D+0.60W	1.423	1.520
+D+0.70E	2.583	2.553
+D+0.10S+0.5250E	2.986	2.899
+0.60D+0.70E	1.449	1.522
Lr Only	2.720	2.720
S Only	3.400	3.400
W Only	-0.464	-0.045
E Only	-0.360	-0.035

Wood Beam

Project File: 25RUI01.ec6

LIC#: KW-06015046, Build:20.25.05.07

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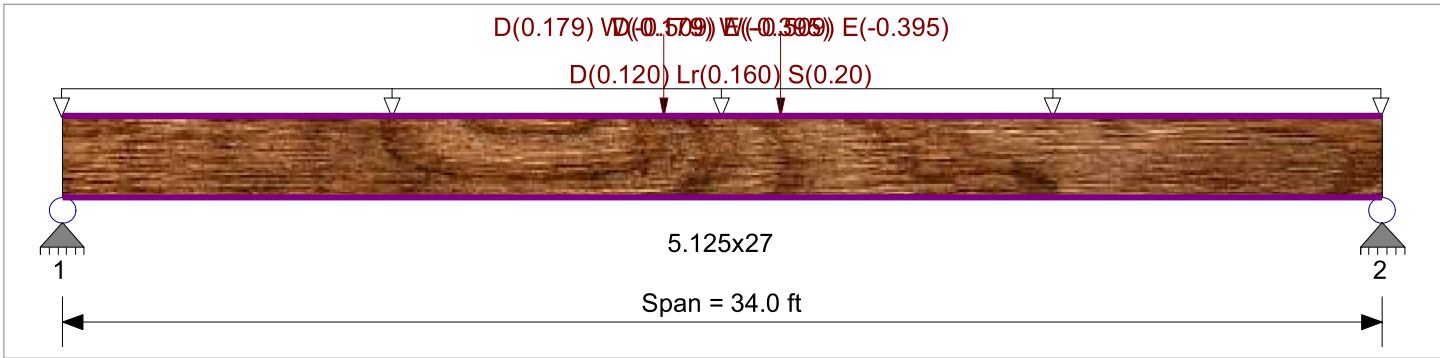
DESCRIPTION: (E) 5.13x27 PURLIN - grids B-C

CODE REFERENCES

Calculations per NDS 2018, IBC 2018, CBC 2019
Load Combination Set : ASCE 7-22 / IBC 2024 (L<=100psf)

Material Properties

Analysis Method : Allowable Stress Design	Fb + 2,400.0 psi	E : Modulus of Elasticity
Load Combination : ASCE 7-22 / IBC 2024 (L<=100psf)	Fb - 1,850.0 psi	Ebend- xx 1,800.0ksi
	Fc - Prll 1,650.0 psi	Eminbend - xx 950.0ksi
Wood Species : DF/DF	Fc - Perp 650.0 psi	
Wood Grade : 24F-V4	Fv 265.0 psi	
	Ft 1,100.0 psi	Density 31.210pcf
Beam Bracing : Beam is Fully Braced against lateral-torsional buckling		



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loading
Loads on all spans...
Uniform Load on ALL spans : D = 0.0150, Lr = 0.020, S = 0.0250 ksf, Tributary Width = 8.0 ft
Point Load : D = 0.1790, W = -0.5090, E = -0.3950 k @ 15.50 ft
Point Load : D = 0.1790, W = -0.5090, E = -0.3950 k @ 18.50 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.355	1	Maximum Shear Stress Ratio	=	0.159	: 1
Section used for this span		5.125x27		Section used for this span		5.125x27	
fb: Actual	=	861.01psi		fv: Actual	=	48.36 psi	
F'b	=	2,425.30psi		F'v	=	304.75 psi	
Load Combination		+D+0.70S		Load Combination		+D+0.70S	
Location of maximum on span	=	17.000ft		Location of maximum on span	=	0.000 ft	
Span # where maximum occurs	=	Span # 1		Span # where maximum occurs	=	Span # 1	
Maximum Deflection							
Max Downward Transient Deflection	0.400 in	Ratio =	1020 >=360	Span: 1 : S Only			
Max Upward Transient Deflection	-0.095 in	Ratio =	4311 >=360	Span: 1 : W Only			
Max Downward Total Deflection	0.653 in	Ratio =	624 >=180	Span: 1 : +D+Lr			
Max Upward Total Deflection	0 in	Ratio =	0 <180	n/a			

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios										Moment Values			Shear Values		
Segment Length	Span #	M	V	CD	CM	C _t	CLx	C _V	C _{fu}	C _i	C _r	M	fb	F'b	V	fv	F'v
D Only														0.0	0.00	0.0	0.0
Length = 34.0 ft	1	0.248	0.109	0.90	1.00	1.00	1.00	0.879	1.00	1.00	1.00	24.45	471.1	1,898.1	2.39	25.9	238.5
+D+Lr					1.00	1.00	1.00	0.879	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft	1	0.348	0.156	1.25	1.00	1.00	1.00	0.879	1.00	1.00	1.00	47.57	916.7	2,636.2	4.76	51.6	331.3
+D+0.70S					1.00	1.00	1.00	0.879	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft	1	0.355	0.159	1.15	1.00	1.00	1.00	0.879	1.00	1.00	1.00	44.68	861.0	2,425.3	4.46	48.4	304.8

Project Title:
 Engineer:
 Project ID:
 Project Descr:

Wood Beam

Project File: 25RUI01.ec6

LIC# : KW-06015046, Build:20.25.05.07

DC ENGINEERING

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DESCRIPTION: (E) 5.13x27 PURLIN - grids B-C

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios										Moment Values			Shear Values		
			M	V	CD	CM	C _t	CLx	C _v	C _{fu}	C _i	C _r	M	fb	F ^b	V	f _v	F ^v
+D+0.750Lr						1.00	1.00	1.00	0.879	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft	1		0.305	0.136	1.25	1.00	1.00	1.00	0.879	1.00	1.00	1.00	41.79	805.3	2,636.2	4.17	45.2	331.3
+D+0.5250S						1.00	1.00	1.00	0.879	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft	1		0.315	0.140	1.15	1.00	1.00	1.00	0.879	1.00	1.00	1.00	39.62	763.5	2,425.3	3.94	42.8	304.8
+D+0.60W						1.00	1.00	1.00	0.879	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft	1		0.113	0.053	1.60	1.00	1.00	1.00	0.879	1.00	1.00	1.00	19.71	379.9	3,374.3	2.09	22.6	424.0
+D+0.750Lr+0.450W						1.00	1.00	1.00	0.879	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft	1		0.218	0.101	1.60	1.00	1.00	1.00	0.879	1.00	1.00	1.00	38.24	736.9	3,374.3	3.94	42.7	424.0
+D+0.5250S+0.450W						1.00	1.00	1.00	0.879	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft	1		0.206	0.095	1.60	1.00	1.00	1.00	0.879	1.00	1.00	1.00	36.07	695.1	3,374.3	3.72	40.3	424.0
+0.60D+0.60W						1.00	1.00	1.00	0.879	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft	1		0.057	0.029	1.60	1.00	1.00	1.00	0.879	1.00	1.00	1.00	9.94	191.5	3,374.3	1.13	12.3	424.0
+D+0.70E						1.00	1.00	1.00	0.879	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft	1		0.115	0.054	1.60	1.00	1.00	1.00	0.879	1.00	1.00	1.00	20.16	388.6	3,374.3	2.12	23.0	424.0
+D+0.10S+0.5250E						1.00	1.00	1.00	0.879	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft	1		0.138	0.063	1.60	1.00	1.00	1.00	0.879	1.00	1.00	1.00	24.12	464.9	3,374.3	2.48	26.9	424.0
+0.60D+0.70E						1.00	1.00	1.00	0.879	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 34.0 ft	1		0.059	0.030	1.60	1.00	1.00	1.00	0.879	1.00	1.00	1.00	10.38	200.1	3,374.3	1.16	12.6	424.0

Overall Maximum Deflections

Span	Load Combination	Max. "L" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
1	+D+Lr	0.6529	17.124		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1

Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	5.449	5.449
Max Upward from Load Combinations	5.449	5.449
Max Upward from Load Cases	3.400	3.400
Max Downward from all Load Conditions (Resisting Uplift)	-0.509	-0.509
Max Downward from Load Cases (Resisting Uplift)	-0.509	-0.509
D Only	2.729	2.729
+D+Lr	5.449	5.449
+D+0.70S	5.109	5.109
+D+0.750Lr	4.769	4.769
+D+0.5250S	4.514	4.514
+D+0.60W	2.423	2.423
+D+0.750Lr+0.450W	4.540	4.540
+D+0.5250S+0.450W	4.285	4.285
+0.60D+0.60W	1.332	1.332
+D+0.70E	2.452	2.452
+D+0.10S+0.5250E	2.861	2.861
+0.60D+0.70E	1.361	1.361
Lr Only	2.720	2.720
S Only	3.400	3.400
W Only	-0.509	-0.509
E Only	-0.395	-0.395

Wood Beam

Project File: 25RUI01.ec6

LIC# : KW-06015046, Build:20.25.05.07

DC ENGINEERING

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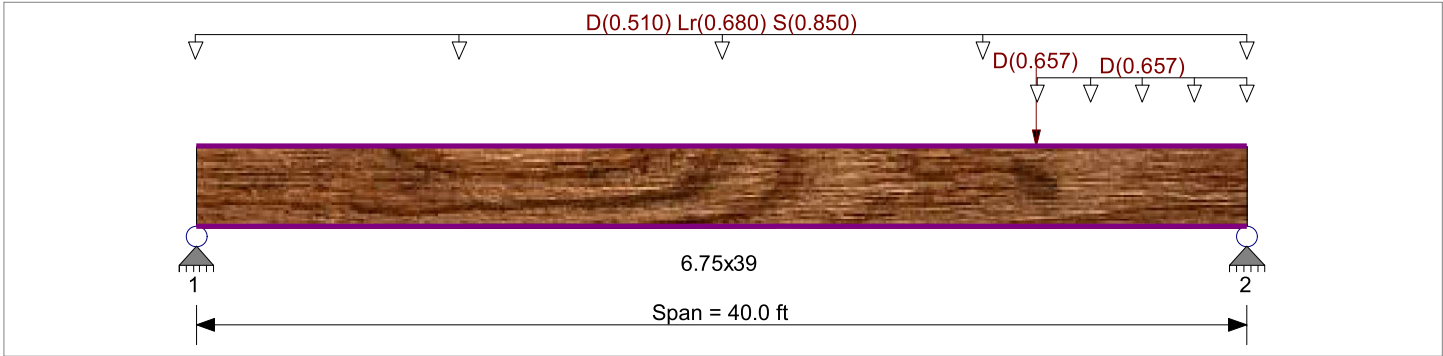
DESCRIPTION: (E) 6.75x39 GLULAM - Grid F

CODE REFERENCES

Calculations per NDS 2018, IBC 2018, CBC 2019
Load Combination Set : ASCE 7-22 / IBC 2024 (L<=100psf)

Material Properties

Analysis Method : Allowable Stress Design	Fb + 2,400.0 psi	E : Modulus of Elasticity
Load Combination : ASCE 7-22 / IBC 2024 (L<=100psf)	Fb - 1,850.0 psi	Ebend- xx 1,800.0ksi
	Fc - Prll 1,650.0 psi	Eminbend - xx 950.0ksi
Wood Species : DF/DF	Fc - Perp 650.0 psi	
Wood Grade : 24F-V4	Fv 265.0 psi	
	Ft 1,100.0 psi	Density 31.210pcf
Beam Bracing : Beam is Fully Braced against lateral-torsional buckling		



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loading
Loads on all spans...
Uniform Load on ALL spans : D = 0.0150, Lr = 0.020, S = 0.0250 ksf, Tributary Width = 34.0 ft
Point Load : D = 0.6570 k @ 32.0 ft
Uniform Load : D = 0.6570 k/ft, Extent = 32.0 --> 40.0 ft, Tributary Width = 1.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.770 : 1	Maximum Shear Stress Ratio	=	0.424 : 1
Section used for this span		6.75x39	Section used for this span		6.75x39
fb: Actual	=	1,723.33psi	fv: Actual	=	129.09 psi
F'b	=	2,237.57 psi	F'v	=	304.75 psi
Load Combination		+D+0.70S	Load Combination		+D+0.70S
Location of maximum on span	=	20.584ft	Location of maximum on span	=	36.788 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1
Maximum Deflection					
Max Downward Transient Deflection	0.820 in	Ratio = 585 >=360	Span: 1 : S Only		
Max Upward Transient Deflection	0 in	Ratio = 0 <360	n/a		
Max Downward Total Deflection	1.277 in	Ratio = 376 >=180	Span: 1 : +D+Lr		
Max Upward Total Deflection	0 in	Ratio = 0 <180	n/a		

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios										Moment Values			Shear Values		
Segment Length	Span #	M	V	CD	CM	C _t	CLx	C _v	C _{fu}	C _i	C _r	M	fb	F'b	V	fv	F'v
D Only														0.0	0.00	0.0	0.0
Length = 40.0 ft	1	0.508	0.303	0.90	1.00	1.00	1.00	0.811	1.00	1.00	1.00	126.93	890.2	1,751.1	12.67	72.2	238.5
+D+Lr														0.0	0.00	0.0	0.0
Length = 40.0 ft	1	0.758	0.414	1.25	1.00	1.00	1.00	0.811	1.00	1.00	1.00	262.72	1,842.5	2,432.1	24.08	137.2	331.3
+D+0.70S														0.0	0.00	0.0	0.0
Length = 40.0 ft	1	0.770	0.424	1.15	1.00	1.00	1.00	0.811	1.00	1.00	1.00	245.74	1,723.3	2,237.6	22.65	129.1	304.8

Project Title:
 Engineer:
 Project ID:
 Project Descr:

Wood Beam

Project File: 25RUI01.ec6

LIC# : KW-06015046, Build:20.25.05.07

DC ENGINEERING

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DESCRIPTION: (E) 6.75x39 GLULAM - Grid F

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios										Moment Values			Shear Values		
			M	V	CD	CM	C _t	CLx	C _v	C _{fu}	C _i	C _r	M	fb	F ^b	V	f _v	F ^v
+D+0.750Lr						1.00	1.00	1.00	0.811	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 40.0 ft	1		0.660	0.365	1.25	1.00	1.00	1.00	0.811	1.00	1.00	1.00	228.75	1,604.2	2,432.1	21.23	121.0	331.3
+D+0.5250S						1.00	1.00	1.00	0.811	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 40.0 ft	1		0.677	0.377	1.15	1.00	1.00	1.00	0.811	1.00	1.00	1.00	216.01	1,514.9	2,237.6	20.16	114.9	304.8
+0.60D						1.00	1.00	1.00	0.811	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 40.0 ft	1		0.172	0.102	1.60	1.00	1.00	1.00	0.811	1.00	1.00	1.00	76.16	534.1	3,113.1	7.60	43.3	424.0
+D+0.10S						1.00	1.00	1.00	0.811	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 40.0 ft	1		0.324	0.189	1.60	1.00	1.00	1.00	0.811	1.00	1.00	1.00	143.88	1,009.0	3,113.1	14.09	80.3	424.0

Overall Maximum Deflections

Span	Load Combination	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
1	+D+Lr	1.2766	20.292		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1

Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	25.598	30.197
Max Upward from Load Combinations	25.598	30.197
Max Upward from Load Cases	17.000	17.000
D Only	11.998	16.597
+D+Lr	25.598	30.197
+D+0.70S	23.898	28.497
+D+0.750Lr	22.198	26.797
+D+0.5250S	20.923	25.522
+0.60D	7.199	9.958
+D+0.10S	13.698	18.297
Lr Only	13.600	13.600
S Only	17.000	17.000

Wood Beam

Project File: 25RUI01.ec6

LIC# : KW-06015046, Build:20.25.05.07

DC ENGINEERING

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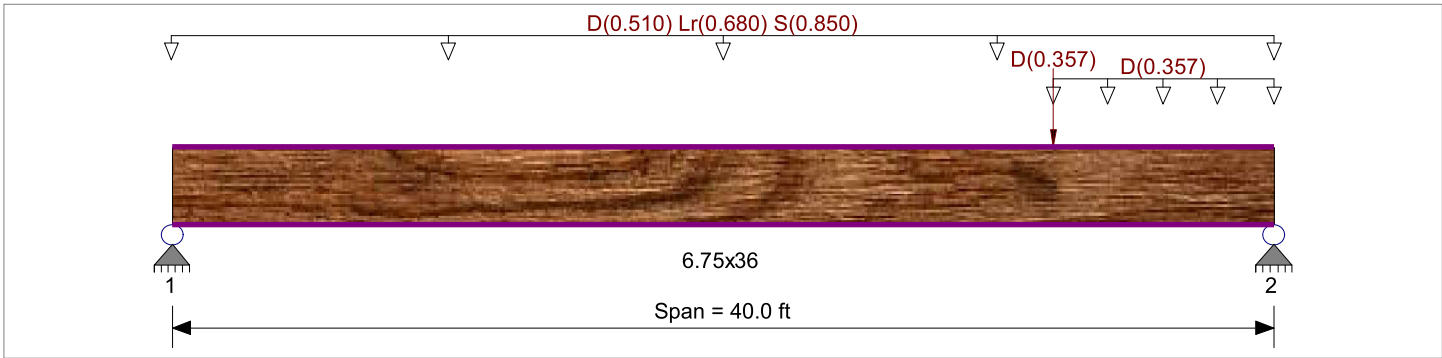
DESCRIPTION: (E) 6.75x36 GLULAM - Grid B

CODE REFERENCES

Calculations per NDS 2018, IBC 2018, CBC 2019
Load Combination Set : ASCE 7-22 / IBC 2024 (L<=100psf)

Material Properties

Analysis Method : Allowable Stress Design	Fb + 2,400.0 psi	E : Modulus of Elasticity
Load Combination : ASCE 7-22 / IBC 2024 (L<=100psf)	Fb - 1,850.0 psi	Ebend- xx 1,800.0ksi
	Fc - Prll 1,650.0 psi	Eminbend - xx 950.0ksi
Wood Species : DF/DF	Fc - Perp 650.0 psi	
Wood Grade : 24F-V4	Fv 265.0 psi	
	Ft 1,100.0 psi	Density 31.210pcf
Beam Bracing : Beam is Fully Braced against lateral-torsional buckling		



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loading
Loads on all spans...
Uniform Load on ALL spans : D = 0.0150, Lr = 0.020, S = 0.0250 ksf, Tributary Width = 34.0 ft
Load for Span Number 1
Uniform Load : D = 0.3570 k/ft, Extent = 32.0 --> 40.0 ft, Tributary Width = 1.0 ft
Point Load : D = 0.3570 k @ 32.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.871 : 1	Maximum Shear Stress Ratio	=	0.437 : 1
Section used for this span		6.75x36	Section used for this span		6.75x36
fb: Actual	=	1,964.84psi	fv: Actual	=	133.25 psi
F'b	=	2,255.55psi	F'v	=	304.75 psi
Load Combination		+D+0.70S	Load Combination		+D+0.70S
Location of maximum on span	=	20.292ft	Location of maximum on span	=	37.080 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1
Maximum Deflection					
Max Downward Transient Deflection	1.042 in	Ratio = 460 >=360	Span: 1 : S Only		
Max Upward Transient Deflection	0 in	Ratio = 0 <360	n/a		
Max Downward Total Deflection	1.575 in	Ratio = 304 >=180	Span: 1 : +D+Lr		
Max Upward Total Deflection	0 in	Ratio = 0 <180	n/a		

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios										Moment Values			Shear Values		
Segment Length	Span #	M	V	CD	CM	C _t	CLx	C _v	C _{fu}	C _i	C _r	M	fb	F'b	V	fv	F'v
D Only														0.0	0.00	0.0	0.0
Length = 40.0 ft	1	0.559	0.296	0.90	1.00	1.00	1.00	0.817	1.00	1.00	1.00	119.79	985.9	1,765.2	11.42	70.5	238.5
+D+Lr														0.0	0.00	0.0	0.0
Length = 40.0 ft	1	0.858	0.429	1.25	1.00	1.00	1.00	0.817	1.00	1.00	1.00	255.72	2,104.7	2,451.7	23.04	142.2	331.3
+D+0.70S														0.0	0.00	0.0	0.0

Project Title:
 Engineer:
 Project ID:
 Project Descr:

Wood Beam

Project File: 25RUI01.ec6

LIC# : KW-06015046, Build:20.25.05.07

DC ENGINEERING

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DESCRIPTION: (E) 6.75x36 GLULAM - Grid B

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios										Moment Values			Shear Values		
			M	V	CD	CM	C _t	CLx	C _V	C _{fu}	C _i	C _r	M	fb	F'b	V	fv	F'v
Length = 40.0 ft	1		0.871	0.437	1.15	1.00	1.00	1.00	0.817	1.00	1.00	1.00	238.73	1,964.8	2,255.5	21.59	133.3	304.8
+D+0.750Lr						1.00	1.00	1.00	0.817	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 40.0 ft	1		0.744	0.375	1.25	1.00	1.00	1.00	0.817	1.00	1.00	1.00	221.73	1,825.0	2,451.7	20.14	124.3	331.3
+D+0.5250S						1.00	1.00	1.00	0.817	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 40.0 ft	1		0.763	0.386	1.15	1.00	1.00	1.00	0.817	1.00	1.00	1.00	208.98	1,720.0	2,255.5	19.05	117.6	304.8
+0.60D						1.00	1.00	1.00	0.817	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 40.0 ft	1		0.188	0.100	1.60	1.00	1.00	1.00	0.817	1.00	1.00	1.00	71.87	591.5	3,138.2	6.85	42.3	424.0
+D+0.10S						1.00	1.00	1.00	0.817	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 40.0 ft	1		0.359	0.187	1.60	1.00	1.00	1.00	0.817	1.00	1.00	1.00	136.77	1,125.7	3,138.2	12.88	79.5	424.0

Overall Maximum Deflections

Span	Load Combination	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
1	+D+Lr	1.5749	20.146		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1

Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	25.210	27.709
Max Upward from Load Combinations	25.210	27.709
Max Upward from Load Cases	17.000	17.000
D Only	11.610	14.109
+D+Lr	25.210	27.709
+D+0.70S	23.510	26.009
+D+0.750Lr	21.810	24.309
+D+0.5250S	20.535	23.034
+0.60D	6.966	8.466
+D+0.10S	13.310	15.809
Lr Only	13.600	13.600
S Only	17.000	17.000

Wood Beam

Project File: 25RUI01.ec6

LIC# : KW-06015046, Build:20.25.05.07

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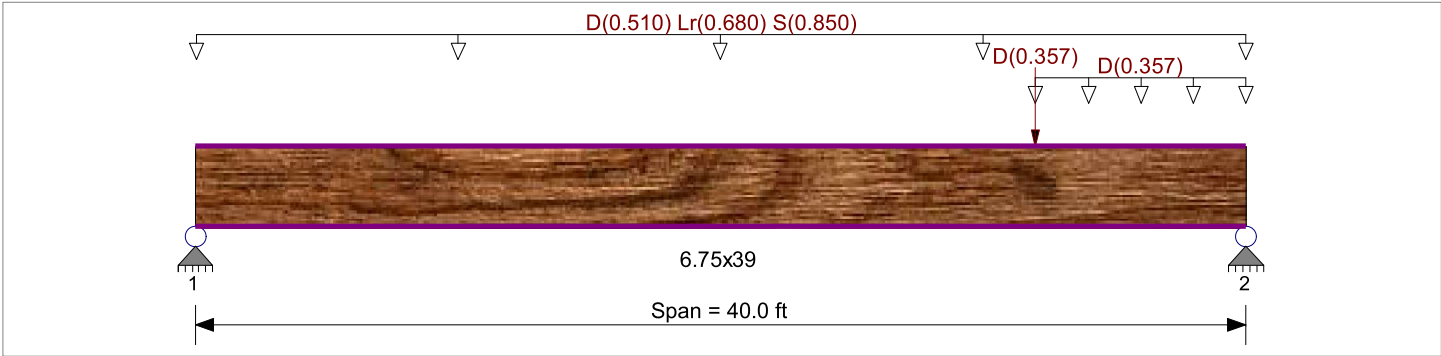
DESCRIPTION: (E) 6.75x39 GLULAM - Grid C

CODE REFERENCES

Calculations per NDS 2018, IBC 2018, CBC 2019
Load Combination Set : ASCE 7-22 / IBC 2024 (L<=100psf)

Material Properties

Analysis Method : Allowable Stress Design	Fb + 2,400.0 psi	E : Modulus of Elasticity
Load Combination : ASCE 7-22 / IBC 2024 (L<=100psf)	Fb - 1,850.0 psi	Ebend- xx 1,800.0ksi
	Fc - Prll 1,650.0 psi	Eminbend - xx 950.0ksi
Wood Species : DF/DF	Fc - Perp 650.0 psi	
Wood Grade : 24F-V4	Fv 265.0 psi	
	Ft 1,100.0 psi	Density 31.210pcf
Beam Bracing : Beam is Fully Braced against lateral-torsional buckling		



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loading
Loads on all spans...
Uniform Load on ALL spans : D = 0.0150, Lr = 0.020, S = 0.0250 ksf, Tributary Width = 34.0 ft
Load for Span Number 1
Uniform Load : D = 0.3570 k/ft, Extent = 32.0 --> 40.0 ft, Tributary Width = 1.0 ft
Point Load : D = 0.3570 k @ 32.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.751 : 1	Maximum Shear Stress Ratio	=	0.397 : 1
Section used for this span		6.75x39	Section used for this span		6.75x39
fb: Actual	=	1,680.34psi	fv: Actual	=	120.90 psi
F'b	=	2,237.57 psi	F'v	=	304.75 psi
Load Combination		+D+0.70S	Load Combination		+D+0.70S
Location of maximum on span	=	20.292ft	Location of maximum on span	=	36.788 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1
Maximum Deflection					
Max Downward Transient Deflection	0.820 in	Ratio = 585 >=360	Span: 1 : S Only		
Max Upward Transient Deflection	0 in	Ratio = 0 <360	n/a		
Max Downward Total Deflection	1.243 in	Ratio = 386 >=180	Span: 1 : +D+Lr		
Max Upward Total Deflection	0 in	Ratio = 0 <180	n/a		

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios										Moment Values			Shear Values		
Segment Length	Span #	M	V	CD	CM	C _t	CLx	C _v	C _{fu}	C _i	C _r	M	fb	F'b	V	fv	F'v
D Only														0.0	0.00	0.0	0.0
Length = 40.0 ft	1	0.483	0.268	0.90	1.00	1.00	1.00	0.811	1.00	1.00	1.00	120.66	846.2	1,751.1	11.23	64.0	238.5
+D+Lr					1.00	1.00	1.00	0.811	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 40.0 ft	1	0.740	0.390	1.25	1.00	1.00	1.00	0.811	1.00	1.00	1.00	256.60	1,799.5	2,432.1	22.65	129.0	331.3
+D+0.70S					1.00	1.00	1.00	0.811	1.00	1.00	1.00			0.0	0.00	0.0	0.0

Project Title:
 Engineer:
 Project ID:
 Project Descr:

Wood Beam

Project File: 25RUI01.ec6

LIC# : KW-06015046, Build:20.25.05.07

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DESCRIPTION: (E) 6.75x39 GLULAM - Grid C

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios										Moment Values			Shear Values		
			M	V	CD	CM	C _t	CLx	C _v	C _{fu}	C _i	C _r	M	fb	F'b	V	fv	F'v
Length = 40.0 ft	1		0.751	0.397	1.15	1.00	1.00	1.00	0.811	1.00	1.00	1.00	239.61	1,680.3	2,237.6	21.22	120.9	304.8
+D+0.750Lr						1.00	1.00	1.00	0.811	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 40.0 ft	1		0.642	0.340	1.25	1.00	1.00	1.00	0.811	1.00	1.00	1.00	222.61	1,561.1	2,432.1	19.79	112.8	331.3
+D+0.5250S						1.00	1.00	1.00	0.811	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 40.0 ft	1		0.658	0.350	1.15	1.00	1.00	1.00	0.811	1.00	1.00	1.00	209.86	1,471.7	2,237.6	18.72	106.7	304.8
+0.60D						1.00	1.00	1.00	0.811	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 40.0 ft	1		0.163	0.091	1.60	1.00	1.00	1.00	0.811	1.00	1.00	1.00	72.40	507.7	3,113.1	6.74	38.4	424.0
+D+0.10S						1.00	1.00	1.00	0.811	1.00	1.00	1.00			0.0	0.00	0.0	0.0
Length = 40.0 ft	1		0.310	0.170	1.60	1.00	1.00	1.00	0.811	1.00	1.00	1.00	137.65	965.3	3,113.1	12.66	72.1	424.0

Overall Maximum Deflections

Span	Load Combination	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
1	+D+Lr	1.2430	20.146		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1

Values in KIPS

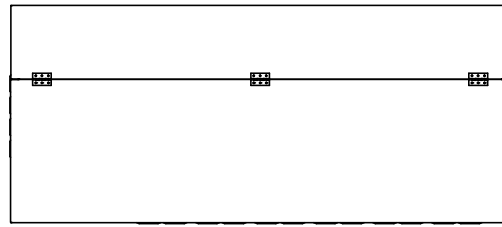
Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	25.298	27.797
Max Upward from Load Combinations	25.298	27.797
Max Upward from Load Cases	17.000	17.000
D Only	11.698	14.197
+D+Lr	25.298	27.797
+D+0.70S	23.598	26.097
+D+0.750Lr	21.898	24.397
+D+0.5250S	20.623	23.122
+0.60D	7.019	8.518
+D+0.10S	13.398	15.897
Lr Only	13.600	13.600
S Only	17.000	17.000



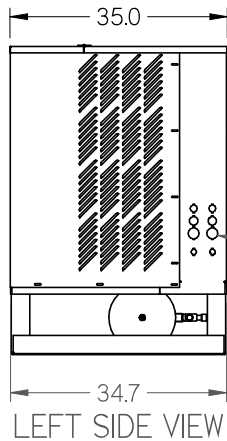
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EQUIPMENT INFORMATION

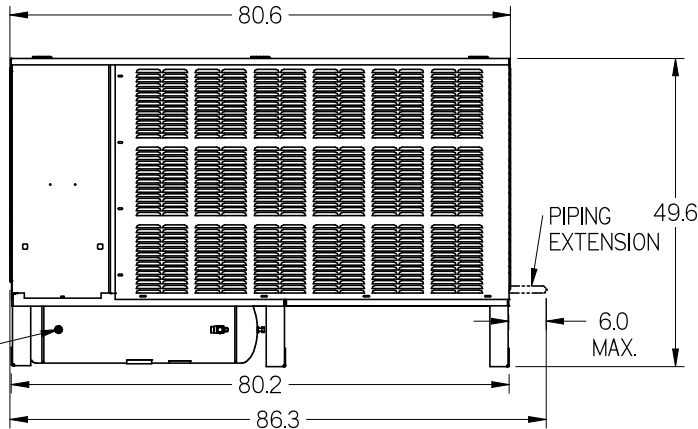
**LARGE SIZE
OUTDOOR UNIT
HEAVY DUTY BASE
"HTHx-xxxxxxx-xx-A"
WEIGHT: 1,250 LBS.**



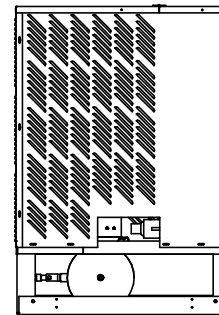
TOP VIEW



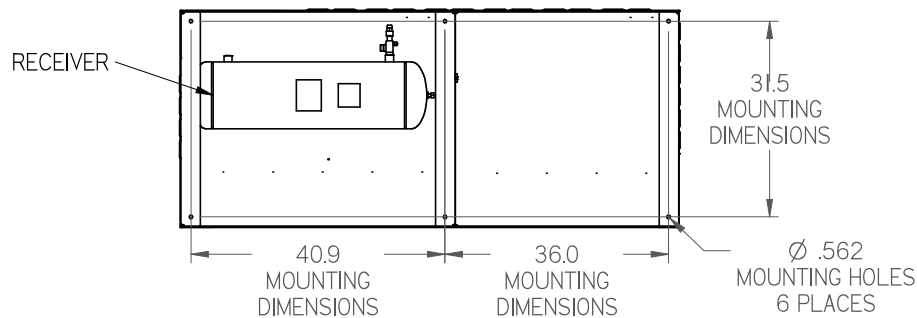
LEFT SIDE VIEW



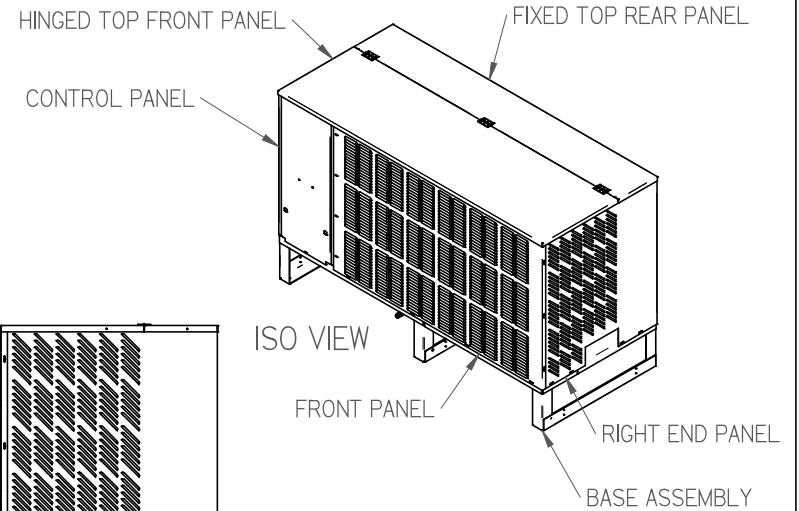
FRONT VIEW



RIGHT SIDE VIEW



BOTTOM VIEW



ISO VIEW

NOTES:

1. IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO ENSURE THAT THE FINAL EQUIPMENT INSTALLATION MEETS ALL APPLICABLE CODE REQUIREMENTS.
2. ILLUSTRATION SHOWN IS FOR GENERAL REPRESENTATION ONLY. ACTUAL PRODUCT WILL VARY DEPENDENT UPON APPLICATION.
3. OVERALL DIMENSIONS: 86.3 L X 35 W X 49.6 H.

INFORMATION SUBJECT TO CHANGE

DIMENSIONS ARE IN INCHES. DATE DRAWN: 2017/09/14	HUSSmann®
THIRD ANGLE PROJECTION	H SERIES LARGE OUTDOOR HD BASE
SHEET 1 OF 3	DOC PD-000000019 REV B