Job No. AA 19-10.103

BeamChek v2018 licensed to: Anderson Architecture Reg # 8111-1829

Petrie Residence/M.I/main residence — hdr @ study/side wdw south

HDR # 18 - alt # — Prepared by: LA — Date: 3/28/21

Selection **3-1/8x 10-1/2 GLB 24F-V4 DF/DF** — Lu = 0.0 Ft

Conditions NDS 2015

Min Bearing Area R1= 4.6 in² R2= 4.1 in² (1.5) DL Defl= 0.10 in Recom Camber= 0.16 in

Data

Beam Span	8.0 ft	Reaction 1 LL	1652 #	Reaction 2 LL	1478 #
Beam Wt per ft	7.97 #	Reaction 1 TL	2999 #	Reaction 2 TL	2649 #
Bm Wt Included	64 #	Maximum V	2999 #		
Max Moment	8732 '#	Max V (Reduced)	2642 #		
TL Max Defl	L / 240	TL Actual Defl	L / 492		
LL Max Defl	L / 360	LL Actual Defl	L / >1000		

Attributes

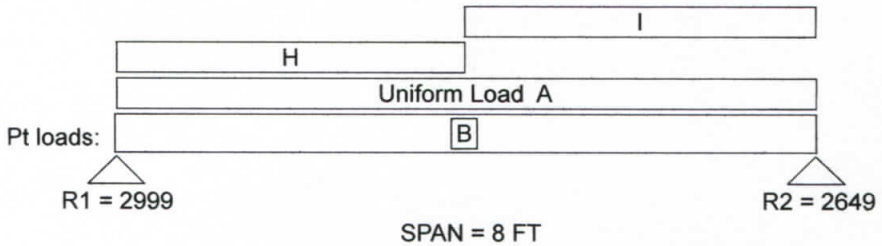
	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl
Actual	57.42	32.81	0.20	0.09
Critical	43.66	16.51	0.40	0.27
Status	OK	OK	OK	OK
Ratio	76%	50%	49%	34%

Values / *Adjustments*

	Fb (psi)	Fv (psi)	E (psi x mil)	Fc⊥ (psi)
Reference Values	2400	240	1.8	650
Adjusted Values	2400	240	1.8	650
Cv Volume	1.000			
Cd Duration	1.00	1.00		
Cr Repetitive	1.00			
Ch Shear Stress		N/A		
Cm Wet Use	1.00	1.00	1.00	1.00
Cl Stability	1.0000	Rb = 0.00	Le = 0.00 Ft	

Loads Uniform LL: 25 Uniform TL: 50 = A

Point LL	Point TL	Distance	Par Unif LL	Par Unif TL	Start	End
1877	B = 3084	4.0	175	H = 350	0	4.0
			88	I = 175	4.0	8.0



SPAN = 8 FT

Uniform and partial uniform loads are lbs per lineal ft.

Job No. AA 19-10.103

BeamChek v2018 licensed to: Anderson Architecture Reg # 8111-1829

Petrie Residence/M.I/main residence — hdr @ study/side wdw south

HDR # 18 - alt # 1 — Prepared by: LA — Date: 3/28/21

Selection **3-1/2x 9-1/4 2.0E TJ Parallam W.S. PSL** — Lu = 0.0 Ft

Conditions NDS 2015

Min Bearing Area R1= 4.8 in² R2= 4.3 in² (1.5) DL Defl= 0.11 in

Data

Beam Span	8.0 ft	Reaction 1 LL	1652 #	Reaction 2 LL	1478 #
Beam Wt per ft	10.12 #	Reaction 1 TL	3007 #	Reaction 2 TL	2657 #
Bm Wt Included	81 #	Maximum V	3007 #		
Max Moment	8749 '#	Max V (Reduced)	2691 #		
TL Max Defl	L / 240	TL Actual Defl	L / 459		
LL Max Defl	L / 360	LL Actual Defl	L / 989		

Attributes

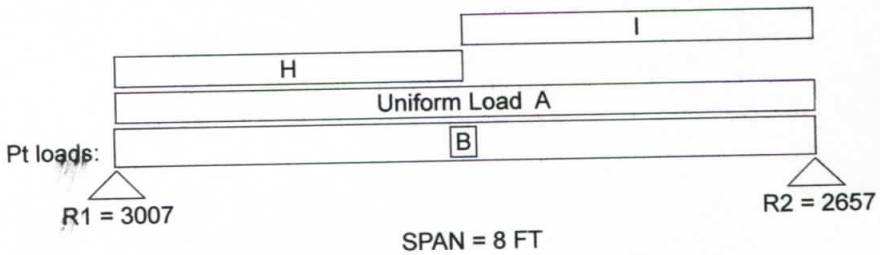
	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl
Actual	49.91	32.38	0.21	0.10
Critical	35.17	13.92	0.40	0.27
Status	OK	OK	OK	OK
Ratio	70%	43%	52%	36%

Values / *Adjustments*

	Fb (psi)	Fv (psi)	E (psi x mil)	Fc⊥ (psi)
Reference Values	2900	290	2.2	625
Adjusted Values	2985	290	2.2	625
CF Size Factor	1.029			
Cd Duration	1.00	1.00		
Cr Repetitive	1.00			
Ch Shear Stress		N/A		
Cm Wet Use	1.00	1.00	1.00	1.00
Cl Stability	1.0000	Rb = 0.00	Le = 0.00 Ft	

Loads Uniform LL: 25 Uniform TL: 50 = A

Point LL	Point TL	Distance	Par Unif LL	Par Unif TL	Start	End
1877	B = 3084	4.0	175	H = 350	0	4.0
			88	I = 175	4.0	8.0



SPAN = 8 FT

Uniform and partial uniform loads are lbs per lineal ft.

Job No. AA 19-10.103

BeamChek v2018 licensed to: Anderson Architecture Reg # 8111-1829

Petrie Residence/M.I/main residence — Dek rim above kitchen window

REV Dek Jst # 26- alt # — Prepared by: LA — Date: 3/28/21

Selection **2x 8 HF #2** — Lu = 0.0 Ft — Lu @OH = 0.0 Ft

Conditions NDS 2015, Overhang, Uplift @ R1

Min Bearing Area R1= -0.5 in² R2= 1.6 in² (1.5) DL Defl= 0.04 in.

Data

Beam Span	2.0 ft	Reaction 1 LL	-180 #	Reaction 2 LL	540 #
Beam Wt per ft	2.64 #	Reaction 1 TL	-218 #	Reaction 2 TL	654 #
Bm Wt Included	16 #	Maximum V	363 #	Overhang Length	4.0 ft
Max Moment	581 '#	Max V (Reduced)	319 #	Total Beam Length	6.0 ft
TL Max Defl	L / 240	TL Actual Defl	L / < -1000	OH TL Actual Defl	L / 529
LL Max Defl	L / 360	LL Actual Defl	L / < -1000	OH LL Actual Defl	L / 683

Attributes

	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl	OH TL Defl	OH LL Defl
Actual	13.14	10.88	0.00	0.00	0.18	0.14
Critical	6.84	3.19	0.10	0.07	0.40	0.27
Status	OK	OK	OK	OK	OK	OK
Ratio	52%	29%	4%	5%	45%	53%

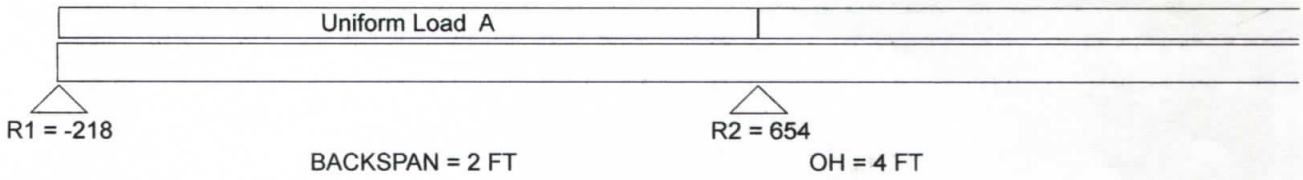
Values / *Adjustments*

	Fb (psi)	Fv (psi)	E (psi x mil)	Fc⊥ (psi)
Reference Values	850	150	1.3	405
Adjusted Values	1020	150	1.3	405
CF Size Factor	1.200			
Cd Duration	1.00	1.00		
Cr Repetitive	1.00			
Ch Shear Stress		N/A		
Cm Wet Use	1.00	1.00	1.00	1.00

Cl Stability	1.0000	Rb = 0.00	Le = 0.00 Ft
Cl Stability @ OH	1.0000	Rb = 0.00	Le = 0.00 Ft

Loads Uniform LL: 60 Uniform TL: 70 = A (Uniform Ld on Backspan)

Par Unif LL	Par Unif TL	Start	End
60	K = 70 (OH)	0	4.0



Uniform and partial uniform loads are lbs per lineal ft. Overhanging load distances are from R2.

Job No. AA 19-10.103

BeamChek v2018 licensed to: Anderson Architecture Reg # 8111-1829

Petrie Residence/M.I/main residence — Dek jsts above kitchen window

REV Dek Jst # 26A- alt # — Prepared by: LA — Date: 3/28/21

Selection **2x 8 HF #2 @ 16 in oc** — Lu = 0.0 Ft — Lu @OH = 0.0 Ft

Conditions NDS 2015, Overhang, Repetitive Use, Uplift @ R1

Min Bearing Area R1= -0.7 in² R2= 2.1 in² (1.5) DL Defl= 0.05 in.

Data

Beam Span	2.0 ft	Reaction 1 LL	-240 #	Reaction 2 LL	720 #
Beam Wt per ft	0 #	Reaction 1 TL	-280 #	Reaction 2 TL	840 #
Bm Wt Included	0 #	Maximum V	467 #	Overhang Length	4.0 ft
Max Moment	747 '#	Max V (Reduced)	410 #	Total Beam Length	6.0 ft
TL Max Defl	L / 240	TL Actual Defl	L / < -1000	OH TL Actual Defl	L / 410
LL Max Defl	L / 360	LL Actual Defl	L / < -1000	OH LL Actual Defl	L / 512

Attributes

	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl	OH TL Defl	OH LL Defl
Actual	13.14	10.88	-0.01	0.00	0.23	0.19
Critical	7.64	4.10	0.10	0.07	0.40	0.27
Status	OK	OK	OK	OK	OK	OK
Ratio	58%	38%	5%	6%	59%	70%

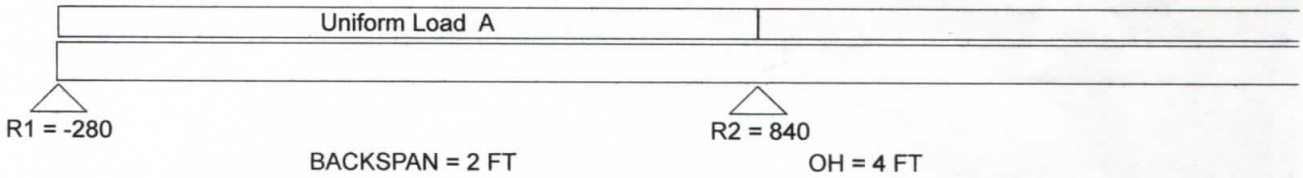
Values / *Adjustments*

	Fb (psi)	Fv (psi)	E (psi x mil)	Fc_l (psi)
Reference Values	850	150	1.3	405
Adjusted Values	1173	150	1.3	405
CF Size Factor	1.200			
Cd Duration	1.00	1.00		
Cr Repetitive	1.15			
Ch Shear Stress		N/A		
Cm Wet Use	1.00	1.00	1.00	1.00

Cl Stability	1.0000	Rb = 0.00	Le = 0.00 Ft
Cl Stability @ OH	1.0000	Rb = 0.00	Le = 0.00 Ft

Loads Uniform LL: 80 Uniform TL: 93 = A (Uniform Ld on Backspan)

Par Unif LL	Par Unif TL	Start	End
80	K = 93 (OH)	0	4.0



Uniform and partial uniform loads are lbs per lineal ft. Overhanging load distances are from R2.

Job No. AA 19-10.103

BeamChek v2018 licensed to: Anderson Architecture Reg # 8111-1829

Petrie Residence/M.I/main residence — fl flr bm near kitchen window

REV FL FLR BM# 27-alt # — Prepared by: LA — Date: 3/28/21

Selection **5-1/4x 11-7/8 2.0E TJ Parallam W.S. PSL** — Lu = 0.0 Ft

Conditions NDS 2015

Min Bearing Area R1= 5.3 in² R2= 5.3 in² (1.5) DL Defl= 0.21 in

Data

Beam Span	15.0 ft	Reaction 1 LL	1370 #	Reaction 2 LL	1370 #
Beam Wt per ft	19.48 #	Reaction 1 TL	3319 #	Reaction 2 TL	3319 #
Bm Wt Included	292 #	Maximum V	3319 #		
Max Moment	7332 '#	Max V (Reduced)	2714 #		
TL Max Defl	L / 240	TL Actual Defl	L / 598		
LL Max Defl	L / 360	LL Actual Defl	L / >1000		

Attributes

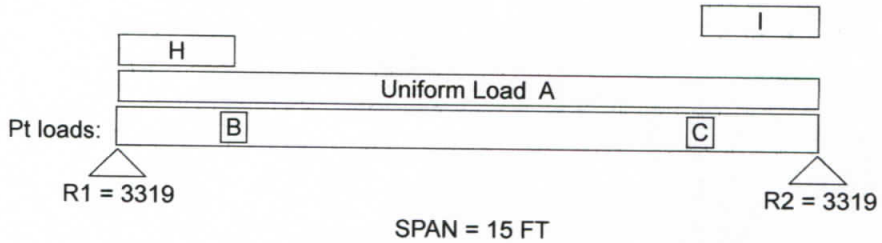
	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl
Actual	123.39	62.34	0.30	0.09
Critical	30.31	14.04	0.75	0.50
Status	OK	OK	OK	OK
Ratio	25%	23%	40%	18%

Values / *Adjustments*

	Fb (psi)	Fv (psi)	E (psi x mil)	Fc_l (psi)
Reference Values	2900	290	2.2	625
Adjusted Values	2903	290	2.2	625
CF Size Factor	1.001			
Cd Duration	1.00	1.00		
Cr Repetitive	1.00			
Ch Shear Stress		N/A		
Cm Wet Use	1.00	1.00	1.00	1.00
Cl Stability	1.0000	Rb = 0.00	Le = 0.00 Ft	

Loads Uniform LL: 5 Uniform TL: 56 = A

Point LL	Point TL	Distance	Par Unif LL	Par Unif TL	Start	End
687	B = 1415	2.5	258	H = 535	0	2.5
687	C = 1415	12.5	258	I = 535	12.5	15.0



SPAN = 15 FT

Uniform and partial uniform loads are lbs per lineal ft.

Job No. AA 19-10.103

BeamChek v2018 licensed to: Anderson Architecture Reg # 8111-1829

Petrie Residence/M.I/main residence — fl flr bm near kitchen window

REV FL FLR BM# 27-alt # | — Prepared by: LA — Date: 3/28/21

Selection **7x 11-7/8 2.0E TJ Parallam W.S. PSL** — Lu = 0.0 Ft

Conditions NDS 2015

Min Bearing Area R1= 5.4 in² R2= 5.4 in² (1.5) DL Defl= 0.16 in

Data

Beam Span	15.0 ft	Reaction 1 LL	1370 #	Reaction 2 LL	1370 #
Beam Wt per ft	25.98 #	Reaction 1 TL	3367 #	Reaction 2 TL	3367 #
Bm Wt Included	390 #	Maximum V	3367 #		
Max Moment	7515 '#	Max V (Reduced)	2757 #		
TL Max Defl	L / 240	TL Actual Defl	L / 780		
LL Max Defl	L / 360	LL Actual Defl	L / >1000		

Attributes

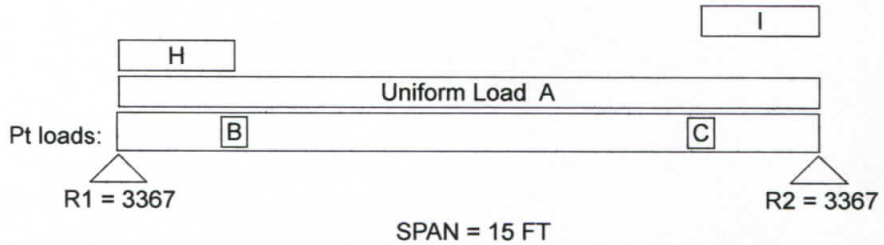
	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl
Actual	164.52	83.13	0.23	0.07
Critical	31.06	14.26	0.75	0.50
Status	OK	OK	OK	OK
Ratio	19%	17%	31%	13%

Values / *Adjustments*

	Fb (psi)	Fv (psi)	E (psi x mil)	Fc⊥ (psi)
Reference Values	2900	290	2.2	625
Adjusted Values	2903	290	2.2	625
CF Size Factor	1.001			
Cd Duration	1.00	1.00		
Cr Repetitive	1.00			
Ch Shear Stress		N/A		
Cm Wet Use	1.00	1.00	1.00	1.00
Cl Stability	1.0000	Rb = 0.00	Le = 0.00 Ft	

Loads Uniform LL: 5 Uniform TL: 56 = A

Point LL	Point TL	Distance	Par Unif LL	Par Unif TL	Start	End
687	B = 1415	2.5	258	H = 535	0	2.5
687	C = 1415	12.5	258	I = 535	12.5	15.0



SPAN = 15 FT

Uniform and partial uniform loads are lbs per lineal ft.

Job No. AA 19-10.103

BeamChek v2018 licensed to: Anderson Architecture Reg # 8111-1829

Petrie Residence/M.I/main residence — spiral stair support abv study

FLR BM# 38 - alt # — Prepared by: LA — Date: 3/28/21

Selection **5-1/8x 18 GLB 24F-V4 DF/DF** — Lu = 0.0 Ft

Conditions NDS 2015, Wet Use

Min Bearing Area R1= 8.8 in² R2= 14.5 in² (2.0) DL Defl= 0.12 in Recom Camber= 0.17 in

Data

Beam Span	14.0 ft	Reaction 1 LL	1877 #	Reaction 2 LL	3345 #
Beam Wt per ft	22.42 #	Reaction 1 TL	3018 #	Reaction 2 TL	5008 #
Bm Wt Included	314 #	Maximum V	5008 #		
Max Moment	18410 '#	Max V (Reduced)	4350 #		
TL Max Defl	L / 240	TL Actual Defl	L / 750		
LL Max Defl	L / 360	LL Actual Defl	L / >1000		

Attributes

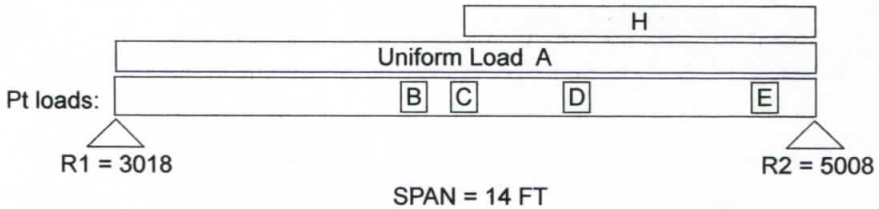
	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl
Actual	276.75	92.25	0.22	0.11
Critical	115.07	31.07	0.70	0.47
Status	OK	OK	OK	OK
Ratio	42%	34%	32%	23%

Values / *Adjustments*

	Fb (psi)	Fv (psi)	E (psi x mil)	Fc⊥ (psi)
Reference Values	2400	240	1.8	650
Adjusted Values	1920	210	1.5	345
Cv Volume	1.000			
Cd Duration	1.00	1.00		
Cr Repetitive	1.00			
Ch Shear Stress		N/A		
Cm Wet Use	0.80	0.875	0.833	0.53
Cl Stability	1.0000	Rb = 0.00	Le = 0.00 Ft	

Loads Uniform LL: 25 Uniform TL: 50 = A

Point LL	Point TL	Distance	Par Unif LL	Par Unif TL	Start	End
791	B = 944	6.0	88	H = 157	7.0	14.0
821	C = 1642	7.0				
1853	D = 2384	9.25				
791	E = 944	13.0				



SPAN = 14 FT

Uniform and partial uniform loads are lbs per lineal ft.

Job No. AA 19-10.103

BeamChek v2018 licensed to: Anderson Architecture Reg # 8111-1829

Petrie Residence/M.I/main residence — spiral stair support abv study

FLR BM# 38 - alt # 1 — Prepared by: LA — Date: 3/28/21

Selection **5-1/8x 25-1/2 GLB 24F-V4 DF/DF** — Lu = 0.0 Ft

Conditions NDS 2015, Wet Use

Min Bearing Area R1= 9.0 in² R2= 14.7 in² (2.0) DL Defl= 0.04 in Recom Camber= 0.06 in

Data

Beam Span	14.0 ft	Reaction 1 LL	1877 #	Reaction 2 LL	3345 #
Beam Wt per ft	31.76 #	Reaction 1 TL	3084 #	Reaction 2 TL	5074 #
Bm Wt Included	445 #	Maximum V	5074 #		
Max Moment	18639 '#	Max V (Reduced)	4067 #		
TL Max Defl	L / 240	TL Actual Defl	L / >1000		
LL Max Defl	L / 360	LL Actual Defl	L / >1000		

Attributes

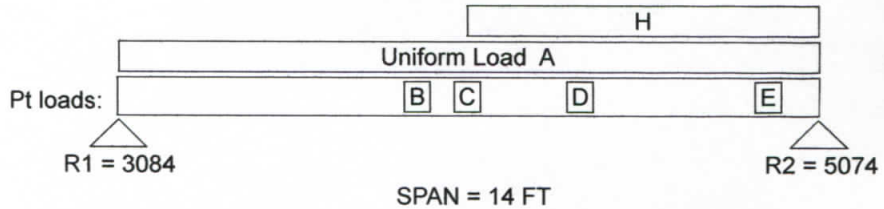
	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl
Actual	555.42	130.69	0.08	0.04
Critical	120.62	29.05	0.70	0.47
Status	OK	OK	OK	OK
Ratio	22%	22%	11%	8%

Values / *Adjustments*

	Fb (psi)	Fv (psi)	E (psi x mil)	Fc⊥ (psi)
Reference Values	2400	240	1.8	650
Adjusted Values	1854	210	1.5	345
Cv Volume	0.966			
Cd Duration	1.00	1.00		
Cr Repetitive	1.00			
Ch Shear Stress		N/A		
Cm Wet Use	0.80	0.875	0.833	0.53
Cl Stability	1.0000	Rb = 0.00	Le = 0.00 Ft	

Loads Uniform LL: 25 Uniform TL: 50 = A

Point LL	Point TL	Distance	Par Unif LL	Par Unif TL	Start	End
791	B = 944	6.0	88	H = 157	7.0	14.0
821	C = 1642	7.0				
1853	D = 2384	9.25				
791	E = 944	13.0				



SPAN = 14 FT

Uniform and partial uniform loads are lbs per lineal ft.

Job No. AA 19-10.103

BeamChek v2018 licensed to: Anderson Architecture Reg # 8111-1829

Petrie Residence/M.I/main residence — spiral stair support abv study

FLR BM# 39 - alt # — Prepared by: LA — Date: 3/28/21

Selection **PT 6x 10 HF #1** — Lu = 0.0 Ft

Conditions NDS 2015, Wet Use, Incised

Min Bearing Area R1= 7.0 in² R2= 8.8 in² (2.0) DL Defl= 0.04 in

Data

Beam Span	7.0 ft	Reaction 1 LL	1510 #	Reaction 2 LL	1853 #
Beam Wt per ft	12.7 #	Reaction 1 TL	1904 #	Reaction 2 TL	2384 #
Bm Wt Included	89 #	Maximum V	2384 #		
Max Moment	5262 '#	Max V (Reduced)	2207 #		
TL Max Defl	L / 240	TL Actual Defl	L / 784		
LL Max Defl	L / 360	LL Actual Defl	L / >1000		

Attributes

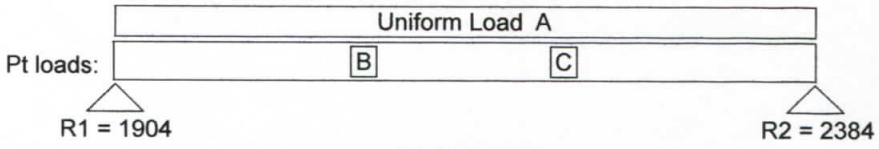
	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl
Actual	82.73	52.25	0.11	0.07
Critical	75.17	29.56	0.35	0.23
Status	OK	OK	OK	OK
Ratio	91%	57%	31%	29%

Values / *Adjustments*

	Fb (psi)	Fv (psi)	E (psi x mil)	Fc⊥ (psi)
Reference Values	1050	140	1.3	405
Adjusted Values	840	112	1.2	271
CF Size Factor	1.000			
Cd Duration	1.00	1.00		
Cr Repetitive	1.00			
Ch Shear Stress		N/A		
Cm Wet+Ci Incised	0.80	0.80	0.95	0.67
Cl Stability	1.0000	Rb = 0.00	Le = 0.00 Ft	

Loads Uniform LL: 180 Uniform TL: 210 = A

Point LL	Point TL	Distance
450	B = 525	2.5
1653	C = 2204	4.5



SPAN = 7 FT

Uniform and partial uniform loads are lbs per lineal ft.

Job No. AA 19-10.103

BeamChek v2018 licensed to: Anderson Architecture Reg # 8111-1829

Petrie Residence/M.I/main residence — spiral stair support abv study

FLR BM# 39A - alt # — Prepared by: LA — Date: 3/28/21

Selection **PT 4x 8 HF #1** — Lu = 0.0 Ft

Conditions NDS 2015, Wet Use, Incised

Min Bearing Area R1= 4.0 in² R2= 3.5 in² (2.0) DL Defl= 0.04 in

Data

Beam Span	7.0 ft	Reaction 1 LL	919 #	Reaction 2 LL	791 #
Beam Wt per ft	6.17 #	Reaction 1 TL	1094 #	Reaction 2 TL	944 #
Bm Wt Included	43 #	Maximum V	1094 #		
Max Moment	2064 '#	Max V (Reduced)	963 #		
TL Max Defl	L / 240	TL Actual Defl	L / 588		
LL Max Defl	L / 360	LL Actual Defl	L / 811		

Attributes

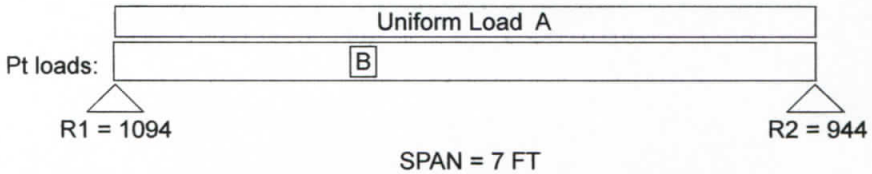
	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl
Actual	30.66	25.38	0.14	0.10
Critical	28.74	12.42	0.35	0.23
Status	OK	OK	OK	OK
Ratio	94%	49%	41%	44%

Values / *Adjustments*

	Fb (psi)	Fv (psi)	E (psi x mil)	Fc⊥ (psi)
Reference Values	975	150	1.5	405
Adjusted Values	862	116	1.3	271
CF Size Factor	1.300			
Cd Duration	1.00	1.00		
Cr Repetitive	1.00			
Ch Shear Stress		N/A		
Cm Wet+Ci Incised	0.68	0.776	0.855	0.67
Cl Stability	1.0000	Rb = 0.00	Le = 0.00 Ft	

Loads Uniform LL: 180 Uniform TL: 210 = A

Point LL	Point TL	Distance
450	B = 525	2.5



SPAN = 7 FT

Uniform and partial uniform loads are lbs per lineal ft.

Job No. AA 19-10.103

BeamChek v2018 licensed to: Anderson Architecture Reg # 8111-1829

Petrie Residence/M.I/main residence — bm/hdr @ entry/study opn'g

BM/HDR # 42 - alt # — Prepared by: LA — Date: 3/28/21

Selection **3-1/8x 12 GLB 24F-V4 DF/DF** — Lu = 0.0 Ft

Conditions NDS 2015

Min Bearing Area R1= 8.4 in² R2= 6.8 in² (1.5) DL Defl= 0.07 in Recom Camber= 0.10 in

Data

Beam Span	6.5 ft	Reaction 1 LL	2949 #	Reaction 2 LL	2381 #
Beam Wt per ft	9.11 #	Reaction 1 TL	5444 #	Reaction 2 TL	4391 #
Bm Wt Included	59 #	Maximum V	5444 #		
Max Moment	12780 '#	Max V (Reduced)	4725 #		
TL Max Defl	L / 240	TL Actual Defl	L / 625		
LL Max Defl	L / 360	LL Actual Defl	L / >1000		

Attributes

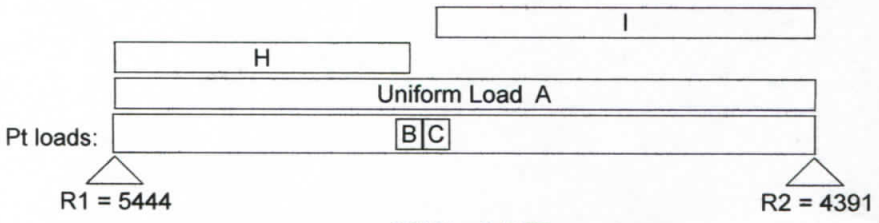
	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl
Actual	75.00	37.50	0.12	0.06
Critical	63.90	29.53	0.33	0.22
Status	OK	OK	OK	OK
Ratio	85%	79%	38%	26%

Values / *Adjustments*

	Fb (psi)	Fv (psi)	E (psi x mil)	Fc⊥ (psi)
Reference Values	2400	240	1.8	650
Adjusted Values	2400	240	1.8	650
Cv Volume	1.000			
Cd Duration	1.00	1.00		
Cr Repetitive	1.00			
Ch Shear Stress		N/A		
Cm Wet Use	1.00	1.00	1.00	1.00
Cl Stability	1.0000	Rb = 0.00	Le = 0.00 Ft	

Loads Uniform LL: 145 Uniform TL: 360 = A

Point LL	Point TL	Distance	Par Unif LL	Par Unif TL	Start	End
474	B = 1224	2.75	175	H = 350	0	2.75
3345	C = 5074	3.0	25	I = 50	3.0	6.5



SPAN = 6.5 FT

Uniform and partial uniform loads are lbs per lineal ft.

Job No. AA 19-10.103

BeamChek v2018 licensed to: Anderson Architecture Reg # 8111-1829

Petrie Residence/M.I/main residence — bm/hdr @ entry/study opn'g

BM/HDR # 42 - alt # 1 — Prepared by: LA — Date: 3/28/21

Selection **3-1/2x 9-1/2 2.0E TJ Parallam W.S. PSL** — Lu = 0.0 Ft

Conditions NDS 2015

Min Bearing Area R1= 8.7 in² R2= 7.0 in² (1.5) DL Defl= 0.10 in

Data

Beam Span	6.5 ft	Reaction 1 LL	2949 #	Reaction 2 LL	2381 #
Beam Wt per ft	10.39 #	Reaction 1 TL	5448 #	Reaction 2 TL	4395 #
Bm Wt Included	68 #	Maximum V	5448 #		
Max Moment	12786 '#	Max V (Reduced)	4878 #		
TL Max Defl	L / 240	TL Actual Defl	L / 424		
LL Max Defl	L / 360	LL Actual Defl	L / 926		

Attributes

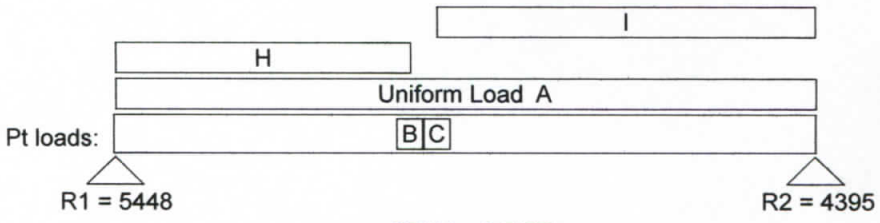
	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl
Actual	52.65	33.25	0.18	0.08
Critical	51.55	25.23	0.33	0.22
Status	OK	OK	OK	OK
Ratio	98%	76%	57%	39%

Values / *Adjustments*

	Fb (psi)	Fv (psi)	E (psi x mil)	Fc⊥ (psi)
Reference Values	2900	290	2.2	625
Adjusted Values	2976	290	2.2	625
CF Size Factor	1.026			
Cd Duration	1.00	1.00		
Cr Repetitive	1.00			
Ch Shear Stress		N/A		
Cm Wet Use	1.00	1.00	1.00	1.00
Cl Stability	1.0000	Rb = 0.00	Le = 0.00 Ft	

Loads Uniform LL: 145 Uniform TL: 360 = A

Point LL	Point TL	Distance	Par Unif LL	Par Unif TL	Start	End
474	B = 1224	2.75	175	H = 350	0	2.75
3345	C = 5074	3.0	25	I = 50	3.0	6.5



SPAN = 6.5 FT

Uniform and partial uniform loads are lbs per lineal ft.

Job No. AA 19-10.103

BeamChek v2018 licensed to: Anderson Architecture Reg # 8111-1829

Petrie Residence/M.I/main residence — bm/hdr @ entry/study opn'g

BM/HDR # 42 - alt # 2 — Prepared by: LA — Date: 3/28/21

Selection **3-1/2x 11-1/4 2.0E TJ Parallam W.S. PSL** — Lu = 0.0 Ft

Conditions NDS 2015

Min Bearing Area R1= 8.7 in² R2= 7.0 in² (1.5) DL Defl= 0.06 in

Data

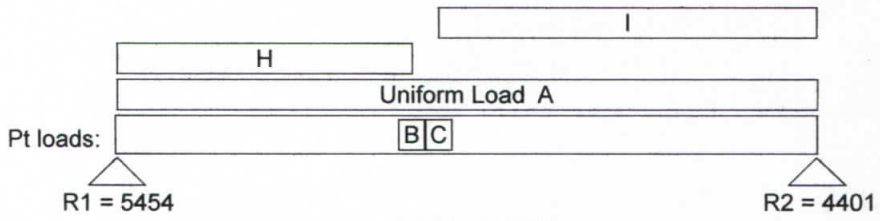
Beam Span	6.5 ft	Reaction 1 LL	2949 #	Reaction 2 LL	2381 #
Beam Wt per ft	12.3 #	Reaction 1 TL	5454 #	Reaction 2 TL	4401 #
Bm Wt Included	80 #	Maximum V	5454 #		
Max Moment	12796 '#	Max V (Reduced)	4777 #		
TL Max Defl	L / 240	TL Actual Defl	L / 704		
LL Max Defl	L / 360	LL Actual Defl	L / >1000		

Attributes	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl
Actual	73.83	39.38	0.11	0.05
Critical	52.57	24.71	0.33	0.22
Status	OK	OK	OK	OK
Ratio	71%	63%	34%	23%

Values		Fb (psi)	Fv (psi)	E (psi x mil)	Fc⊥ (psi)
	Reference Values	2900	290	2.2	625
	Adjusted Values	2921	290	2.2	625
Adjustments	CF Size Factor	1.007			
	Cd Duration	1.00	1.00		
	Cr Repetitive	1.00			
	Ch Shear Stress		N/A		
	Cm Wet Use	1.00	1.00	1.00	1.00
	Cl Stability	1.0000	Rb = 0.00	Le = 0.00 Ft	

Loads Uniform LL: 145 Uniform TL: 360 = A

Point LL	Point TL	Distance	Par Unif LL	Par Unif TL	Start	End
474	B = 1224	2.75	175	H = 350	0	2.75
3345	C = 5074	3.0	25	I = 50	3.0	6.5



SPAN = 6.5 FT

Uniform and partial uniform loads are lbs per lineal ft.