Residential Deck Drawings

General Notes

1. All lumber shall be pressure treated for exterior use. All metal fasteners & hangers shall be G185 galvanized, stainless steel or otherwise compatible with the wood treatment. *All bolts shall be 1/2" diameter, minimum.*
2. All beams, joists, posts and decking shall be No. 2 Southern Pine, or better.
3. All beam splices and top rails shall occur at a post or otherwise on adequate bearing.
4. All footings shall be cast-in-place concrete with a min. 2500 psi compressive strength.
5. Guards are required at all areas where the deck/porch floor is greater than 30" above grade at any point.
6. Required guards shall be 36" tall (min.) and be constructed such that a 4" diameter object will not pass through.
7. Guard post spacing shall not exceed 6 ft. on center.
8. Required guards & handrails at stairs shall range from 34" to 38" vertically above the stair nosings.
9. Handrail ends, at the top and bottom, shall terminate into a post or be returned to a wall.
10. On stairs with closed risers, treads shall have a projected nosing ranging from 3/4" to 1-1/4". All treads and risers shall be equal.
11. The deck/porch floor shall be within 8-1/4" of the top of the door threshold.
12. Live Load Deflection: Joists & Beams- L/360
    Guards- L/240
13. Design Loads: Floor Live Load - 40 lbs./sf (min.)
    Wind Speed - 90 mph
    Soil Bearing Pressure - 3000 lbs./sf
14. Guards shall be designed for a 200 lb. concentrated load placed along the top rail in any direction, at any point.
15. This deck/porch is not designed for hot-tub or spa loading.
16. All exterior stairs & associated landings shall be illuminated.
17. Post size is based on the height of the deck floor above finished grade (at the highest point):
    0' to 8' high: 4x4, 4x6, 6x6
    8' to 10' high: 4x6, 6x6
    10' and up: 6x6 (required for multi-level decks too)
18. All separated beams shall receive full depth solid blocking at 24" on center, maximum spacing.
19. *The actual field construction shall match the approved plans. All field changes and/or deviations require an Engineering Change approval.*

Framing/Footing Table

[1] Choose one floor joist size with the associated span, [2] Choose one floor beam size. Entire row applies.

PT CAM BEAMS SEE ATTACHED

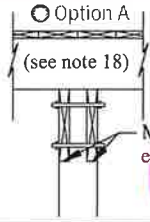
Floor Joists[a]			Floor Beams[b]			Footing Size				1/2" Ledger Board Bolts
Choose Joist Size	Lumber Size (nominal)	Max. Span [A] (feet)	Choose One Row	Lumber Size (nominal)	Max. Span [B] (feet)	Single-Span Floor Joists min. dia. [C] (inches)	Single-Span Floor Joists min. thick [D] (inches)	Multi-Span Floor Joists min. dia. [C] (inches)	Multi-Span Floor Joists min. thick [D] (inches)	Spacing (inches)
○	2 x 6	8	○	(2) 2 x 6	5	12	6	15	8	24
			○	(2) 2 x 8	7	13	7	19	10	24
			○	(2) 2 x 10	9	15	8	23	12	24
			○	(2) 2 x 12	11	17	9	24	12	24
●	2 x 8	10	○	(2) 2 x 8	7	14	7	20	10	16
			○	(2) 2 x 10	9	17	9	24	12	16
			●	(2) 2 x 12	10	18	9	25	13	16
●	2 x 10	13	○	(2) 2 x 10	8	17	9	24	12	16
			●	(2) 2 x 12	9	18	9	26	13	16
○	2 x 12	16	○	(2) 2 x 12	8	20	10	28	14	12

a. Choose one joist size and cooresponding maximum span. All joists are spaced a maximum of 16" oc.
b. Choose one floor beam (entire row) that cooresponds with the size of joist chosen.

Beam to Post Connection Options

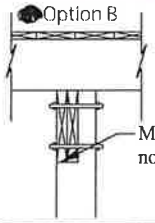
[3] Choose one beam to post connection option. [4] Choose one post size based on the height of the deck.

○ Option A



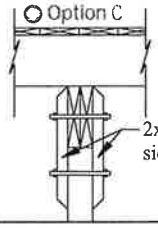
○ 4x4 posts (up to 8 ')
○ 4x6 posts (up to 10')
○ 6x6 posts req'd over 10')

● Option B



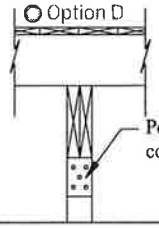
○ 4x4 posts (up to 8 ')
○ 4x6 posts (up to 10')
● 6x6 posts req'd over 10')

○ Option C



○ 4x4 posts (up to 8 ')
○ 4x6 posts (up to 10')
○ 6x6 posts req'd over 10')

○ Option D



○ 4x4 posts (up to 8 ')
○ 4x6 posts (up to 10')
○ 6x6 posts req'd over 10')

Property Owner:	Designer:	Contractor:	Application No.
Name: TOM TOFT	Name: FRANK SNELL	Name: BELLA DECKS INC	
Address:	Address:	Address:	Sheet No. 1 of 4
Phone:	Phone:	Phone:	Residential Deck Drawings

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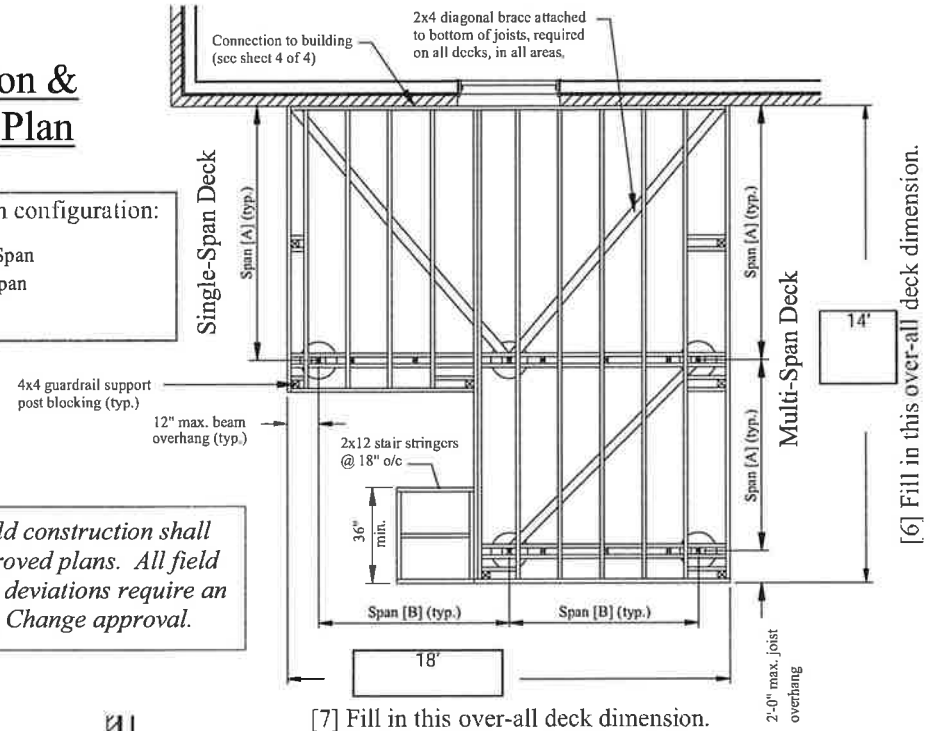
Foundation & Framing Plan

[5] Choose one span configuration:

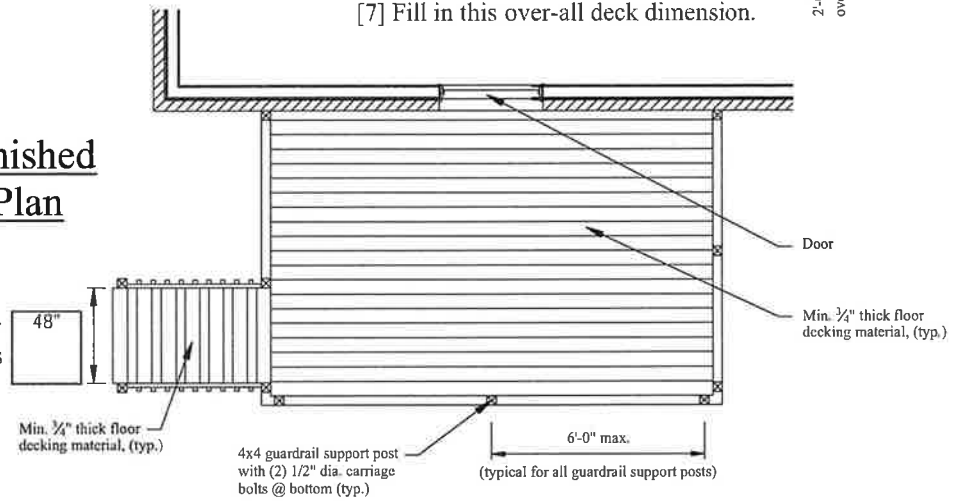
- ◉ Single-Span
- ○ Multi-Span

The actual field construction shall match the approved plans. All field changes and/or deviations require an Engineering Change approval.

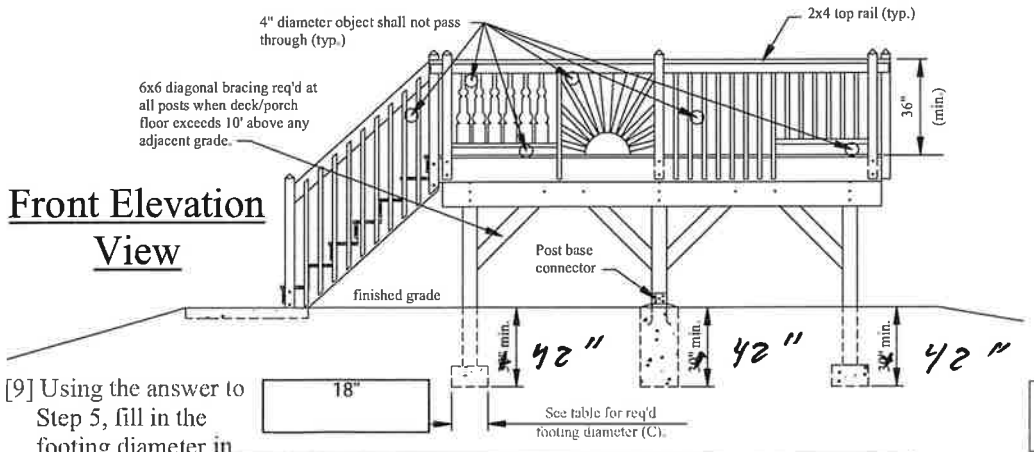


[7] Fill in this over-all deck dimension.

Deck Finished Floor Plan



Front Elevation View



[10] Choose a footing option:

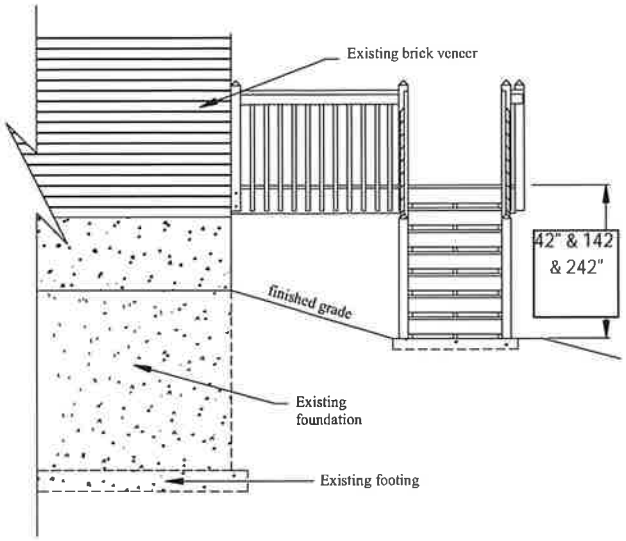
- ○ Post attached to top of concrete footing
- ◉ Post on top of buried concrete footing

Application No.

Sheet No. 2 of 4

Residential Deck Drawings

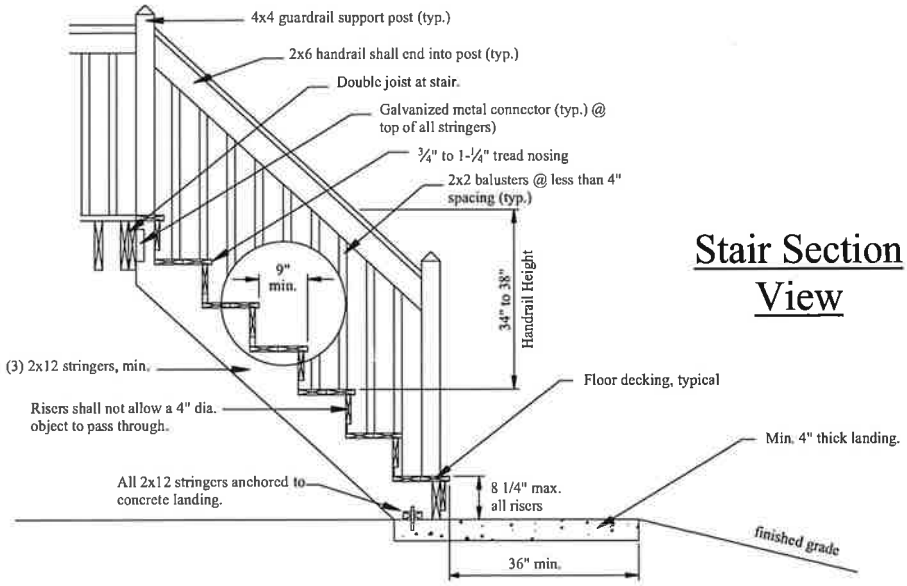
Left Side Elevation View



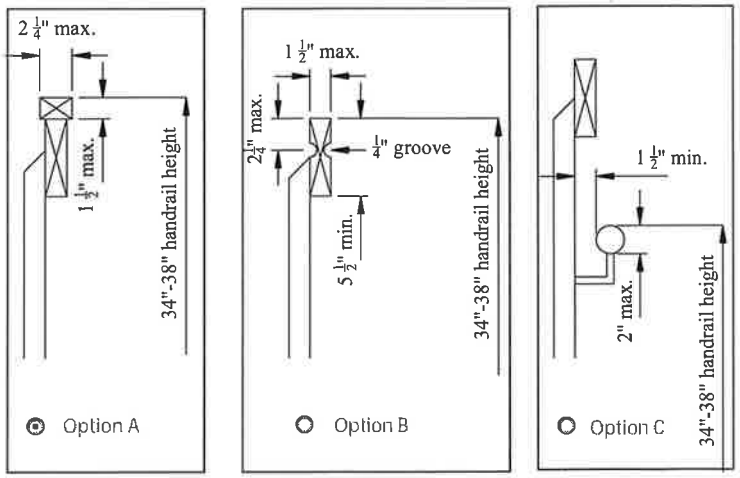
[11] Fill in the highest point above grade in inches.

The actual field construction shall match the approved plans. All field changes and/or deviations require an Engineering Change approval.

Stair Section View



Handrail Sections



[12] Choose a handrail grip style:

Application No.
Sheet No. 3 of 4

Residential Deck Drawings

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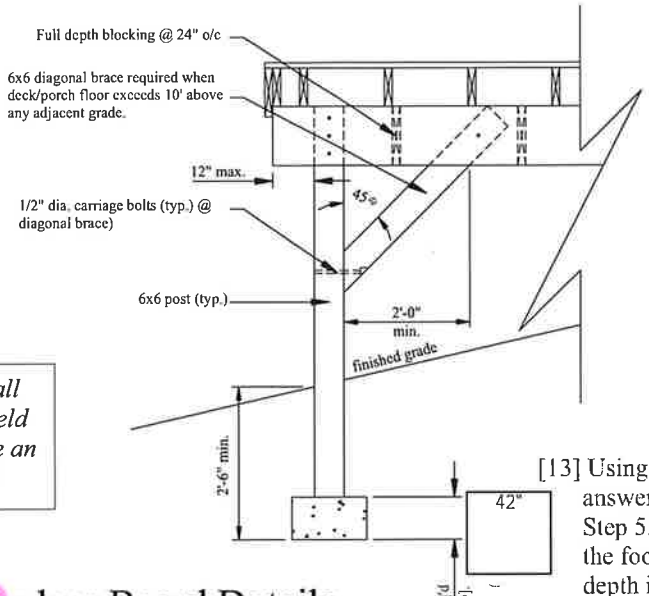
Post & Beam Detail



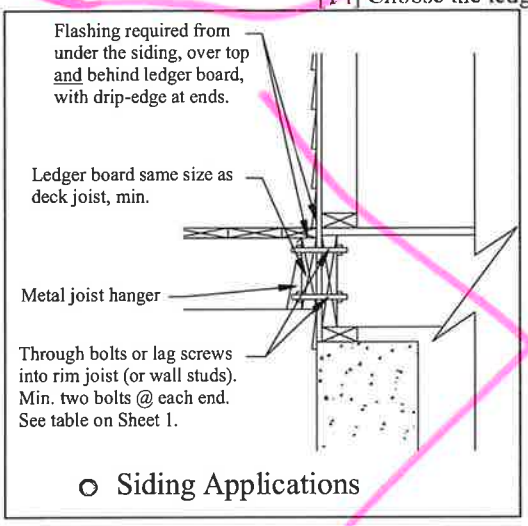
The actual field construction shall match the approved plans. All field changes and/or deviations require an Engineering Change approval.

[13] Using the answer from Step 5, fill in the footing depth in inches.

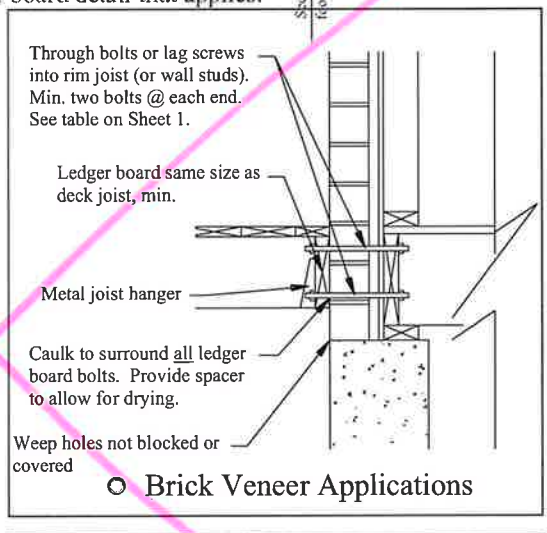
FREE STANDING

Ledger Board Details

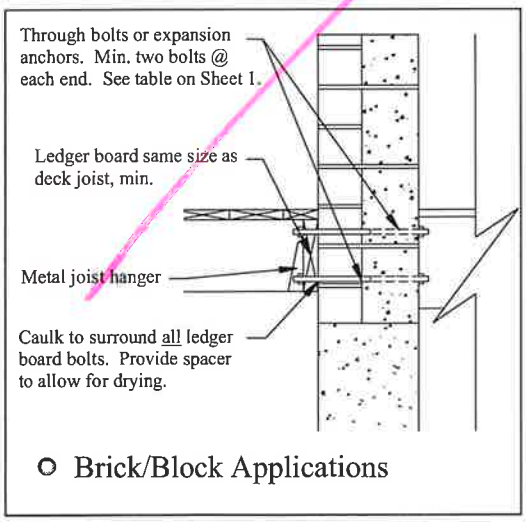
[14] Choose the ledger board detail that applies.



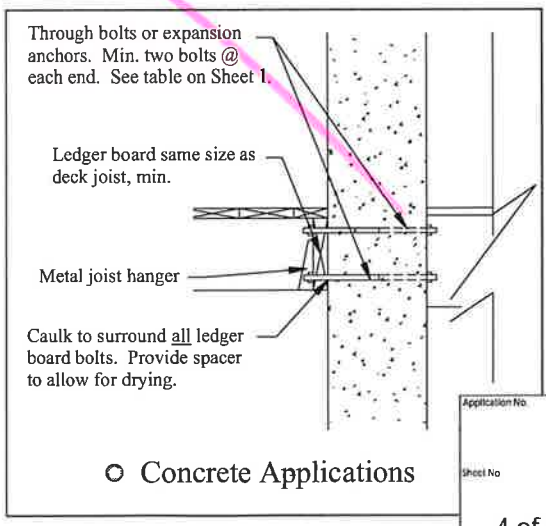
○ Siding Applications



○ Brick Veneer Applications



○ Brick/Block Applications



○ Concrete Applications

Application No.

Sheet No.

Residential Deck Drawings

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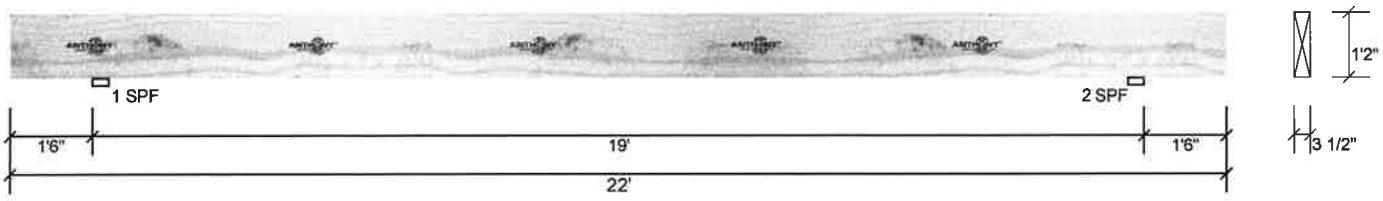
Client:
Project:
Address:

Date: 5/31/2018
Designer:
Job Name:
Quantity 1
Project #

B1 Anthony Power Preserved 3.500" X 14.000" - PASSED

Level: Level



User Inputs

Design Method:	ASD	Load Sharing:	No	Spans	
Building Code:	IBC/IRC 2015	Importance:	Normal	Left Cant:	1-6-0
Type:	Girder	Temperature:	Temp <= 100°F	Span 1:	19-0-0
Application:	Floor	Decking:	Not Checked	Right Cant:	1-6-0
Plies:	1	Defl. LL Span:	L / 360	Bearings	
Material Type:	Glulam	Defl. LL Cant:	L / 180	Brg 1:	3.5" SPF
Material Name:	Anthony Power Preserved	Defl. TL Span:	L / 240	Brg 2:	3.5" SPF
Depth:	14	Defl. TL Cant:	L / 120		
Width:	3.5				

Analysis Details

Material Properties

Name	E	Fb	Fb_top	Fcp	Fv	Density	Layup Label
Anthony Power Preserved	1.8E6	2400	2400	740	300	42	24F-V5M1

Resistance Factors

Moment Factor	Shear Factor	Comp Perp Factor	Cr-Bending	Cr-Shear	Load Sharing	Ct	Ct (E)	CM (Fb)	CM (Fv)	CM (Fcp)
0.995038506084494	1	1	1	1	No	1	1	1	1	1

EI (including Ct (E) and CM (E))

Bare EI	Composite EI	Ct (E) (temp. factor for E)	CM (E) Wet use factor for E
1.440600E+009	1.440600E+009	1	1

Load Combinations Checked for Strength (Factors include importance factor)

Comb. No.	Description	Pattern Count	Cd-Duration	D	L	S	W	C
1	D	1	0.9	1	0	0	0	0
2	D+L	7	1	1	1	0	0	0

Load Combinations Checked for Deflection (Total Loads: Dead + Live Loads)

Comb. No.	Description	Pattern Count	Cd-Duration	D	L	S	W	C
1	D	1	0.9	1	0	0	0	0
2	D+L	7	1	1	1	0	0	0

Load Combinations Checked for Deflection (Live Loads)

Comb. No.	Description	Pattern Count	Cd-Duration	D	L	S	W	C
1	L	7	1	0	1	0	0	0

Quantity 1

B1 Anthony Power Preserved 3.500" X 14.000" - PASSED

Level: Level

Bearing Calculation (MR: Max Reaction)

Brg. No.	Capacity	Input Length	Req'ed Length	Reaction	MR Load Comb.	MR Load Case	MR Dead	MR Live	Uplift
1	425	3.5	3.5	4024	D+L	LL_	927.2	3096.8	0
2	425	3.5	3.5	4024	D+L	_LL	927.2	3096.8	0

Maximum Moment at Each Segment (zero moment to zero moment) for the Worst Load Case

Combination	Load Case	Segment Len.	Moment	Top/Bottom	Left End-X	Cd	Cv	CL	Resist. Factor	Mr	Mr_orig	Ratio
D+L	_L_	1-6-5	95	Top	1-6-0	1	1	0.995	0.995	22867	22867	0.0041
D+L	_L_	18-7-13	15843	Bottom	11-0-0	1	1	0.812	0.812	22867	22867	0.6928
D+L	_L_	1-6-5	95	Top	20-4-4	1	1	0.995	0.995	22867	22867	0.0041

Maximum Shear at Each Member

Mem No.	Span No.	Brg No.	Max	Combination	Load Case	Cd	Res... Fac...	Max Shear	Vr	Ratio
1	Lt Cant	1	No	D+L	LL_	1	1	121	9800	0.0124
2	Spn 1	2	Yes	D+L	_LL	1	1	2999	9800	0.3061
3	Rt Cant	2	No	D+L	_LL	1	1	121	9800	0.0124

Maximum Deflection on Span and Cantilever for Total Load (Dead + Live)

Def. Span Desc.	Combination	Load Case	Max Deflection	Span ID	Span-X	Span Analog Length	L / Allowable	L / Actual	Ratio
Critical Span	D+L	_L_	0.692	Spn 1	9-4-5	18-8-8	240	324.4	0.74
Critical Cant. Up	D+L	_L_	0.1772	Lt Cant		1-6-0	120	101.6	0.5906
Critical Cant. Down			0				120	999	0

Maximum Deflection on Span and Cantilever for Live Load Only

Def. Span Desc.	Combination	Load Case	Max Deflection	Span ID	Span-X	Span Analog Length	L / Allowable	L / Actual	Ratio
Critical Span	L	_L_	0.5357	Spn 1	9-4-5	18-8-8	360	419.1	0.86
Critical Cant. Up	L	_L_	0.1374	Lt Cant		1-6-0	180	131	0.6872
Critical Cant. Down	L	_L_	0.0055	Lt Cant		1-6-0	180	3264.3	0.0276