Project: Dripps Load Calc

Location: Multi-Loaded Multi-Span Beam 1
Multi-Loaded Multi-Span Beam
[2009 International Building Code(AISC 13th Ed ASD)]
HSS 6 x 4 x 5/16 x 15.3 FT (2.6 + 10.1 + 2.6) / ASTM A500-GR.B-46
Section Adequate By: 2.0%
Controlling Factor: Moment

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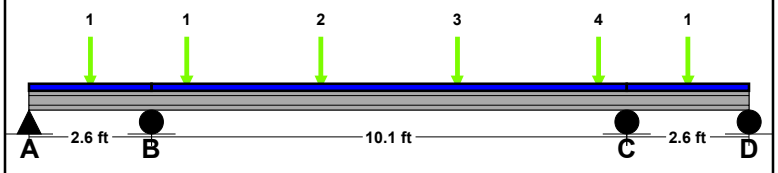
DEFLECTIONS	Left		Center		Right	
Live Load	0.00	IN L/Infinity	0.00	IN L/Infinity	0.00	IN L/Infinity
Dead Load	-0.02	in	0.29	in	-0.02	in
Total Load	-0.02	IN L/1850	0.29	IN L/416	-0.02	IN L/1917
Live Load Deflection Criteria: L/360			Total Load Deflection Criteria: L/240			

REACTIONS	A	B	C	D
Live Load	0 lb	0 lb	0 lb	0 lb
Dead Load	-4487 lb	30958 lb	30901 lb	-4277 lb
Total Load	-4487 lb	30958 lb	30901 lb	-4277 lb
Uplift (1.5 F.S)	**-4487 lb**	0 **lb**	0 **lb**	**-4277 lb**
Bearing Length	0.00 in	3.50 in	3.50 in	0.00 in

BEAM DATA	Left	Center	Right
Span Length	2.6 ft	10.1 ft	2.6 ft
Unbraced Length-Top	0 ft	0 ft	0 ft
Unbraced Length-Bottom	2.6 ft	10.1 ft	2.6 ft

LOADING DIAGRAM



UNIFORM LOADS	Left	Center	Right
Uniform Live Load	0 plf	0 plf	0 plf
Uniform Dead Load	0 plf	0 plf	0 plf
Beam Self Weight	19 plf	19 plf	19 plf
Total Uniform Load	19 plf	19 plf	19 plf

POINT LOADS - LEFT SPAN

Load Number	One
Live Load	0 lb
Dead Load	8800 lb
Location	1.3 ft

CENTER SPAN

Load Number	One	Two	Three	Four
Live Load	0 lb	0 lb	0 lb	0 lb
Dead Load	8800 lb	8800 lb	8800 lb	8800 lb
Location	0.75 ft	3.6 ft	6.5 ft	9.5 ft

RIGHT SPAN

Load Number	One
Live Load	0 lb
Dead Load	8800 lb
Location	1.3 ft

STEEL PROPERTIES
HSS 6 x 4 x 5/16 - A500-GR.B-46

Properties:

Steel Yield Strength:	Fy =	46	ksi
Modulus of Elasticity:	E =	29000	ksi
Tube Steel Section (X Axis):	dx =	6	in
Tube Steel Section (Y Axis):	dy =	4	in
Tube Steel Wall Thickness:	t =	0.291	in
Area:	A =	5.26	in2
Moment of Inertia (X Axis):	Ix =	24.8	in4
Section Modulus (X Axis):	Sx =	8.27	in3
Plastic Section Modulus (X Axis):	Zx =	10.3	in3
Plastic Section Modulus (Y Axis):	Zy =	7.75	in3

Design Properties per AISC 13th Edition Steel Manual:

Flange Buckling Ratio:	FBR =	10.75	
Allowable Flange Buckling Ratio:	AFBR =	28.12	
Allowable Flange Buckling Ratio non-compact:	AFBR_NC =	35.15	
Web Buckling Ratio:	WBR =	17.62	
Allowable Web Buckling Ratio for Eqn. F7-5:	AWBR =	60.76	
Nominal Flexural Strength w/ Safety Factor:	Mn =	23643	ft-lb
Controlling Equation:	F7-1		
Web height to thickness ratio:	h/tw =	17.62	lb
Limiting height to thickness ratio for eqn. G2-2:	h/tw-limit =	56.24	
Cv Factor:	Cv =	1	
Controlling Equation:	G2-2		
Nominal Shear Strength w/ safety factor:	Vn =	54904	

Controlling Moment: -23172 ft-lb
Over right support of span 1 (Left Span)
Created by combining all dead loads and live loads on span(s) 1, 2, 3
Controlling Shear: -17774 lb
10.0 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s

Comparisons with required sections:	Req'd	Provided
Moment of Inertia (deflection):	14.31 in4	24.8 in4
Moment:	-23172 ft-lb	23643 ft-lb
Shear:	-17774 lb	54904 lb