

# Steel Design Report

Element: **Untitled2 ( )**  
 Description:  
 Date: **08/20/2010 01:09 PM**

Company:  
 User:  
 Software: **Digital Canal Steel Design 4.0**

## GENERAL INFORMATION

Description	Value	Description	Value
Run Mode	Design Mode	$K_y$	1.00
Design Code	AISC 13th Edition LRFD	$K_z$	1.00
Beam-Column Length	12.00 ft	Total Load Deflection Limit	L / 240
Steel Yield Stress	50.00 ksi	Live Load Deflection Limit	L / 360
$C_b$ Calculation	$12.5M_{max} / (2.5M_{max} + 3M_A + 4M_B + 3M_C)$	Lateral Torsional Braced (LTB) Length	
$C_{mx}$ Calculation	Always use 1.0 (conservative)	Section Shape	HSS
$C_{my}$ Calculation	Always use 1.0 (conservative)	Maximum Section Depth	20.00 in
$L_x$	12.00 ft	Minimum Section Depth	3.00 in
$L_y$	12.00 ft	Back-Back Distance (double angles only)	-
$L_z$	12.00 ft	Section Width (angles, double angles)	-
$K_x$	1.00	Check Section List	-
		Maximum Stress Ratio	1.000

## LOAD INFORMATION

Ref. No.	Load Case	Load Type	Dir	Begin Value	Begin Position	End Value	End Position
1	Dead	Concen	Z	-190.000 (kips)	12.000 (ft)	-	-
2	Live	Linear	Y	-1.500 (kips / ft)	0.000 (ft)	-1.500 (kips / ft)	12.000 (ft)
3	Wind	Linear	X	-0.250 (kips / ft)	0.000 (ft)	-0.350 (kips / ft)	12.000 (ft)

## SELECTED LOAD COMBINATIONS

Load Combination	Code Check	Total	Live	Dependent	Conditional
LC2: 1.40DL	x			-	-
LC3: 1.20DL+1.60LL+0.50SL	x			-	-
LC4: 1.20DL+LL+1.60SL	x			-	-
LC5: 1.20DL+0.80WL+1.60SL	x			-	-
LC6: 1.20DL+LL+1.60WL+0.50SL	x			-	-
LC7: 1.20DL+LL+0.20SL+EL	x			-	-
LC8: 0.90DL+1.60WL	x			-	-
LC9: 0.90DL+EL	x			-	-

## CRITICAL STRESS SUMMARY

Ref. No.	Section Name	Opt. Mark	Governing Criteria	Stress Ratio	Load Combination	Distance (ft)
2	HSS6X14X3/8	-	Axial-Bending	0.9630	LC3: 1.20DL+1.60LL+0.50SL	6.0000
3	HSS7X9X1/2	-	Axial-Bending	0.8207	LC3: 1.20DL+1.60LL+0.50SL	6.0000
4	HSS8X8X3/8	-	Axial-Bending	0.9877	LC3: 1.20DL+1.60LL+0.50SL	6.0000
5	HSS9X9X5/16	-	Axial-Bending	0.9518	LC3: 1.20DL+1.60LL+0.50SL	6.0000
6	HSS10X8X5/16	-	Axial-Bending	0.9271	LC3: 1.20DL+1.60LL+0.50SL	6.0000
7	HSS12X10X1/4	✓	Axial-Bending	0.9745	LC3: 1.20DL+1.60LL+0.50SL	6.0000