

# Steel Design Report

Element: **Untitled2 ()**  
 Description:  
 Date: **10/31/2002 03:32 PM**

Company:  
 User:  
 Software: **Digital Canal Steel Beam Column Design**

## GENERAL INFORMATION

Description	Value
Run Mode	Design Mode
Design Code	AISC LRFD (1994)
Beam-Column Length	12.00 ft
Steel Yield Stress	36.00 ksi
$C_p$ Calculation	$12.5M_{max} / (2.5M_{max} + 3M_A + 4M_B + 3M_C)$
$C_{mx}$ Calculation	Always use 1.0 (conservative)
$C_{my}$ Calculation	Always use 1.0 (conservative)
$L_x$	12.00 ft
$L_y$	12.00 ft
$L_z$	12.00 ft
$K_x$	1.00
$K_y$	1.00
$K_z$	1.00
Total Load Deflection Limit	L / 240
Live Load Deflection Limit	L / 360
Lateral Torsional Braced (LTB) Length	
Section Shape	TS
Maximum Section Depth	24.00 in
Minimum Section Depth	6.00 in
Back-Back Distance (double angles only)	-
Section Width (angles, double angles)	-
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	-75 (kips)	12 (ft)	-	-
2	Live	Concen	Z	-115 (kips)	12 (ft)	-	-
3	Live	Linear	Y	-1.5 (kips / ft)	0 (ft)	-1.5 (kips / ft)	12 (ft)
4	Live	Concen	X	0.75 (kips)	5.2 (ft)	-	-

## SELECTED LOAD COMBINATIONS

Load Combination	Code Check	Total	Live	Dependent	Conditional
LC1: 1.0DL+1.0LL+1.0WL+1.0SL	x	x		-	-
LC2: 1.4DL	x			-	-
LC3: 1.2DL+1.6LL+0.5SL	x			-	-
LC4: 1.2DL+1.6SL+0.5LL	x			-	-
LC5: 1.2DL+1.6SL+0.8WL	x			-	-
LC6: 1.2DL+1.3WL+0.5LL+0.5SL	x			-	-
LC7: 1.2DL+0.5LL+0.2SL	x			-	-
LC8: 0.9DL+1.3WL	x			-	-
LC9: 0.9DL-1.3WL	x			-	-

## CRITICAL STRESS SUMMARY

Ref. No.	Section Name	Opt. Mark	Governing Criteria	Stress Ratio	Load Combination	Distance (ft)
1	TS12x6x.5	-	Axial-Bending	0.9444	LC3: 1.2DL+1.6LL+0.5SL	5.7561
2	TS14x6x.5	-	Axial-Bending	0.8035	LC3: 1.2DL+1.6LL+0.5SL	5.4000
3	TS18x6x.3125	✓	Axial-Bending	0.9576	LC3: 1.2DL+1.6LL+0.5SL	5.4000