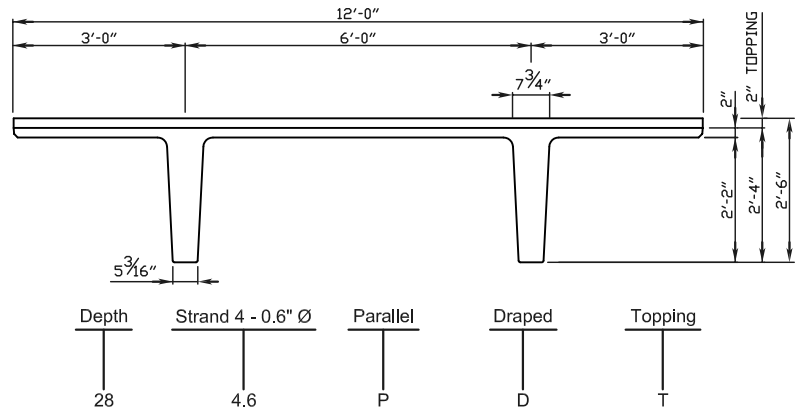


# Prestressed Concrete 28" x 12' DOUBLE TEE (2" TOPPING)

PHYSICAL PROPERTIES	
A = 624 in. <sup>2</sup>	S <sub>b</sub> = 2,289 in. <sup>3</sup>
I = 45,595 in. <sup>4</sup>	S <sub>t</sub> = 5,643 in. <sup>3</sup>
I' = 58,325 in. <sup>4</sup>	S' <sub>tt</sub> = 10,512 in. <sup>3</sup>
Y <sub>b</sub> = 19.92 in.	Wt. = 650 PLF
Y <sub>t</sub> = 8.08 in.	Wt. = 54 PSF
Y' <sub>bb</sub> = 22.15 in.	Wt.' = 950 PLF
Y' <sub>tt</sub> = 7.85 in.	Wt.' = 79 PSF



## DESIGN DATA

1. Precast Strength @ release = 3,500 PSI.
2. Precast Strength @ release for draped tees = 4,500 PSI.
3. Precast Strength @ 28 days = 6,000 PSI
4. Topping Strength @ 28 days = 3,000 PSI
5. Precast / Topping Density = 150 PCF
6. Strand = 0.6" Ø 270K Lo-Relaxation.
7. Maximum moment capacity is critical at midspan for parallel strands and is critical near 0.4 span for draped strands.
8. Maximum bottom tensile stress is  $12\sqrt{f_c} = 930$  PSI
9. Flexural capacity is based on stress/strain strand relationships.
10. All superimposed load is treated as live load in the flexural strength analysis. To determine the allowable live load if the amount of superimposed dead load is known use the following conversion method...

$$\text{Allowable Live Load} = \frac{(1.6)(\text{Load Table Value}) - (1.2)(\text{Superimposed Dead Load})}{1.6}$$

11. If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
12. Deflection limits were not considered when determining allowable loads in this table.

ALLOWABLE SUPERIMPOSED LIVE LOADS (psf)																	IBC 2012 & ACI 318-11 (1.2 D + 1.6 L)																
Section	Ø Mn (in. Kips)	Span (Feet)																															
		38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84								
28 - 4.6PT	5,628	75	62	51	41	32																											
28 - 6.6PT	8,074			99	85	73	62	52	44	36	30																						
28 - 8.6PT	10,277						95	83	72	62	54	46	39	33																			
28 - 10.6PT	12,234									97	86	76	66	58	50	42	34																
28 - 12.6PT	13,947										106	95	82	72	62	53	45	37															
28 - 14.6DT	18,517														99	88	78	69	61	53	46	40	34										
28 - 16.6DT	20,785															102	91	82	73	64	57	50	44	38									
28 - 18.6DT	22,960																103	93	83	75	67	59	52	46	40	35							



2655 Molly Pitcher Hwy. South, Box N  
Chambersburg, PA 17202-9203  
717-267-4505 Fax 717-267-4518

This table is for simple spans and uniform loads. Design data for any of these span-load conditions is available on request. Individual designs may be furnished to satisfy unusual conditions of heavy loads, concentrated loads, cantilevers, etc...