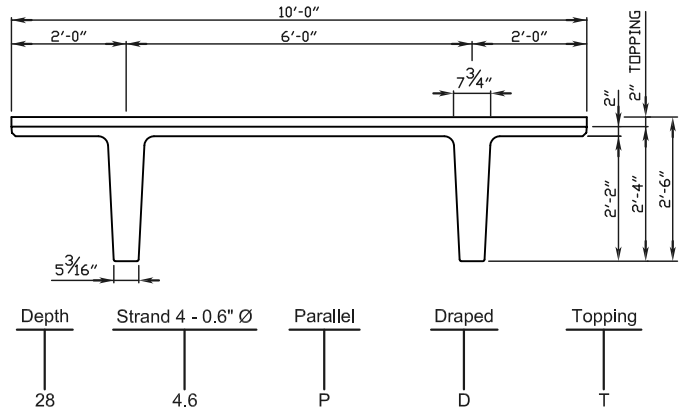


Prestressed Concrete 28" x 10' DOUBLE TEE (2" TOPPING)

PHYSICAL PROPERTIES

| | |
|------------------------------|---|
| A = 576 in. ² | S _b = 2,223 in. ³ |
| I = 42,973 in. ⁴ | S _t = 4,957 in. ³ |
| I' = 55,288 in. ⁴ | S' _{tt} = 9,231 in. ³ |
| Y _b = 19.33 in. | Wt. = 600 PLF |
| Y _t = 8.67 in. | Wt. = 60 PSF |
| Y' _{bb} = 21.53 in. | Wt.' = 850 PLF |
| Y' _{tt} = 8.47 in. | Wt.' = 85 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) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 40 | 42 | 44 | 46 | 48 | 50 | 52 | 54 | 56 | 58 | 60 | 62 | 64 | 66 | 68 | 70 | 72 | 74 | 76 | 78 | 80 | 82 | 84 | 86 | | | | |
| 28 - 4.6PT | 5,614 | 82 | 68 | 57 | 46 | 37 | | | | | | | | | | | | | | | | | | | | | | | |
| 28 - 6.6PT | 8,044 | | | 109 | 94 | 81 | 70 | 60 | 51 | 43 | 35 | | | | | | | | | | | | | | | | | | |
| 28 - 8.6PT | 10,223 | | | | | | 106 | 93 | 82 | 72 | 62 | 54 | 47 | 40 | 34 | | | | | | | | | | | | | | |
| 28 - 10.6PT | 12,150 | | | | | | | | | | 109 | 97 | 86 | 76 | 67 | 57 | 48 | 40 | 33 | | | | | | | | | | |
| 28 - 12.6PT | 13,822 | | | | | | | | | | | | 105 | 92 | 80 | 70 | 60 | 52 | 44 | 36 | | | | | | | | | |
| 28 - 14.6DT | 18,365 | | | | | | | | | | | | | | | | 100 | 89 | 79 | 70 | 62 | 55 | 48 | 41 | | | | | |
| 28 - 16.6DT | 20,590 | | | | | | | | | | | | | | | | | | 104 | 93 | 84 | 75 | 67 | 59 | 52 | 45 | 39 | | |
| 28 - 18.6DT | 22,690 | | | | | | | | | | | | | | | | | | | | 105 | 95 | 86 | 77 | 69 | 62 | 55 | 48 | 42 |



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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...