Prestressed Concrete
Spandrel Panel 10SP72

PHYSICAL PROPERTIES

$A = 720 \text{ in.}^2$ $S_b = 8,640 \text{ in.}^3$
$I = 311,040 \text{ in.}^4$ $S_t = 8,640 \text{ in.}^3$
$Y_b = 36.00 \text{ in.}$ $Wt. = 750 \text{ PLF}$
$Y_t = 36.00 \text{ in.}$
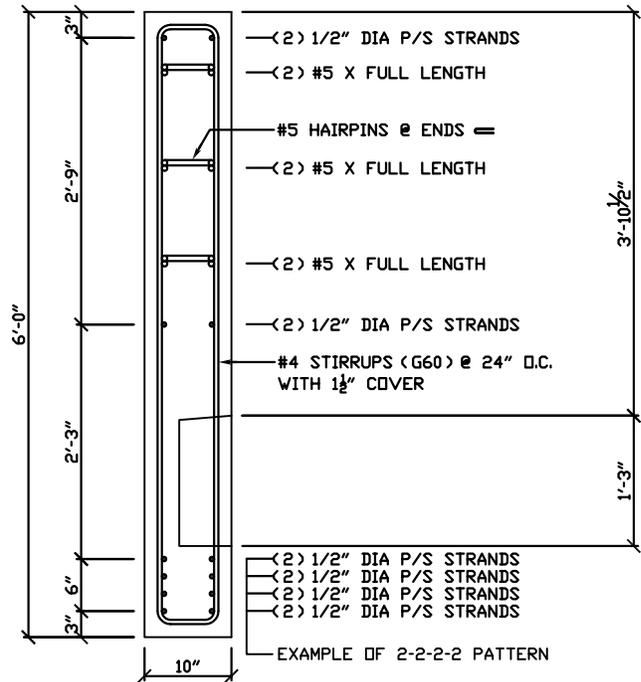
DESIGN DATA

1. Precast Strength @ 28 days = 6,000 PSI
2. Precast Strength @ release = 3,500 PSI.
3. Precast Density = 150 PCF
4. Strand = 1/2"Ø 270K Lo-Relaxation.
5. Ultimate moment capacity shown below is for full strand development & tension controlled section.
6. Maximum bottom tensile stress is $12\sqrt{f'c} = 930 \text{ PSI}$
7. Flexural strength capacity is based on stress/strain strand relationships and is slightly variable.
8. Deflection limits were not considered when determining allowable loads in this table.
9. All superimposed live loads listed are controlled by ultimate flexural strength, not allowable stresses.
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.

ALLOWABLE SUPERIMPOSED LIVE LOADS (KLF)					IBC 2012 & ACI 318-11 (1.2 D + 1.6 L)							
Bottom Strands	Middle Strands	Top Strands	Longitudinal Bars	Strand Debonding	Moment Capacity	SPAN						
						20'	24'	30'	36'	40'	48'	
2 - 2 - 0 - 0	2	2	6 - #5	None	13,228 "k	13.21	9.00	5.56	3.69	2.88	1.82	
2 - 2 - 2 - 0	2	2	6 - #5	None	17,434 "k	17.59	12.04	7.50	5.04	3.98	2.59	
2 - 2 - 2 - 2	2	2	6 - #5	None	21,295 "k	21.61	14.84	9.29	6.28	4.98	3.28	

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...

03/25/14

10SP72