Prestressed Concrete
16"x4'-0" NiCore Plank

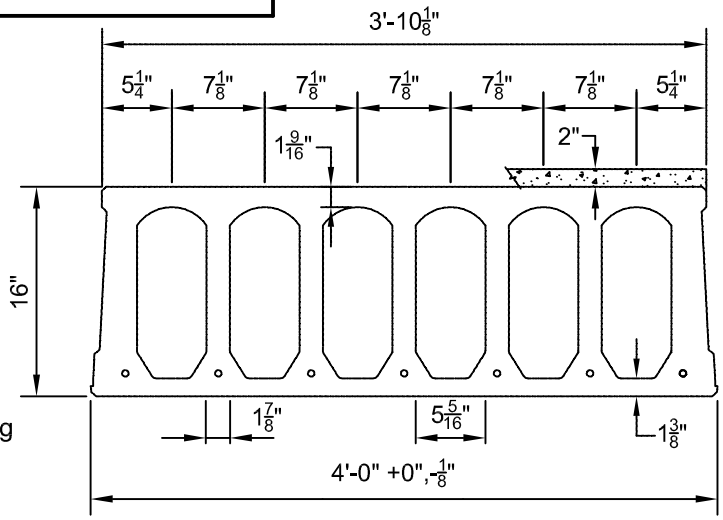
1 Hour Fire Resistance Rating With 2" Topping

PHYSICAL PROPERTIES
Composite Section

A_c = 418 in.^{2}	Precast b_w = 14.25 in.
I_c = 15498 in.^{4}	Precast S_{bcp} = 1653 in.^{3}
Y_{bcp} = 9.38 in.	Topping S_{tct} = 2542 in.^{3}
Y_{tcp} = 6.62 in.	Precast S_{tcp} = 2340 in.^{3}
Y_{tct} = 8.82 in.	Precast Wt. = 367 PLF
	Precast Wt. = 91.75 PSF

DESIGN DATA

1. Precast Strength @ 28 days = 6000 PSI
2. Precast Strength @ release = 3800 PSI
3. Precast Density = 150 PCF
4. Strand = 1/2"Ø and 0.6"Ø 270K Lo-Relaxation.
5. Strand Height = 1.75 in.
6. Ultimate moment capacity (when fully developed)..
   7-1/2"Ø, 270K = 323.1 k-ft at 60% jacking force
   7-0.6"Ø, 270K = 441.9 k-ft at 60% jacking force
7. Maximum bottom tensile stress is $10\sqrt{f'c}$ = 775 PSI
8. 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...



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

10. If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
11. Flexural strength capacity is based on stress/strain strand relationships.
12. Deflection limits were not considered when determining allowable loads in this table.
13. Topping Strength @ 28 days = 3000 PSI. Topping Weight = 25 PSF.
14. These tables are based upon the topping having a uniform 2" thickness over the entire span. A lesser thickness might occur if camber is taken into account during design, thus reducing the load capacity.
15. Some span/strand combinations require some 3/8"Ø top strands.
16. Some load values are controlled by ultimate web shear strength per ACI Equation 11-1 and Section 11.4.6.1(b). Shear capacity can be increased by partially filling cores in order to achieve fexural capacity.
17. Camber is inherent in all prestressed hollow core slabs and is a function of the amount of eccentric prestressing force needed to carry the superimposed design loads along with a number of other variables. Because prediction of camber is based on empirical formulas it is at best an estimate, with the actual camber usually higher than calculated values.

SAFE SUPERIMPOSED SERVICE LOADS

Strand Pattern		SPAN (FEET)																		
		21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57
7 - 1/2"ø	LOAD (PSF)	332	293	260	233	221	200	182	165	151	139	127	117	108	95	80				
7 - 0.6"ø	LOAD (PSF)	332	293	260	233	210	190	172	156	143	131	131	120	111	102	94	87	80	74	68

NITTERHOUSE
CONCRETE PRODUCTS
CHAMBERSBURG, PA 717-267-4505
WWW.NITTERHOUSECONCRETE.COM

This load table is for general information only for preliminary design. It is not intended for final design without competent professional examination and verification of its accuracy, suitability, and applicability by a licensed professional engineer, designer, or architect. It 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, flange or stem openings and narrow widths.