

Prestressed Concrete 6"x4'-0" NiCore Plank

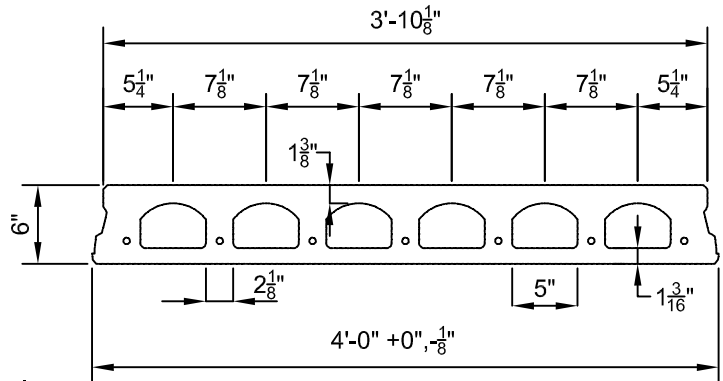
1 Hour Fire Resistance Rating (Untopped)

PHYSICAL PROPERTIES Precast

$A = 187 \text{ in.}^2$	$b_w = 16.13 \text{ in.}$
$I = 757 \text{ in.}^4$	$S_b = 245 \text{ in.}^3$
$Y_b = 3.09 \text{ in.}$	$S_t = 260 \text{ in.}^3$
$Y_t = 2.91 \text{ in.}$	$Wt. = 195 \text{ PLF}$
$e = 1.34 \text{ in.}$	$Wt. = 48.75 \text{ PSF}$

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 270K Lo-Relaxation.
5. Strand Height = 1.75 in.
6. Ultimate moment capacity (when fully developed)..
 7-3/8"Ø, 270K = 46.4 k-ft at 60% jacking force
 6-1/2"Ø, 270K = 67.2 k-ft at 60% jacking force
 7-1/2"Ø, 270K = 75.5 k-ft at 60% jacking force
7. Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
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...



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

9. If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
10. Flexural strength capacity is based on stress/strain strand relationships.
11. Deflection limits were not considered when determining allowable loads in this table.
12. Load values to the left of the solid line are controlled by ultimate shear strength.
13. Load values to the right are controlled by ultimate flexural strength or allowable service stresses.
14. 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)																		
		12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
6 - 1/2"Ø	LOAD (PSF)	353	322	295	273	244	215	197	175	155	149	132	118	104	92	81	73	64	57	50
7 - 1/2"Ø	LOAD (PSF)	407	372	341	303	269	244	226	202	183	166	149	133	118	105	94	83	74	66	59

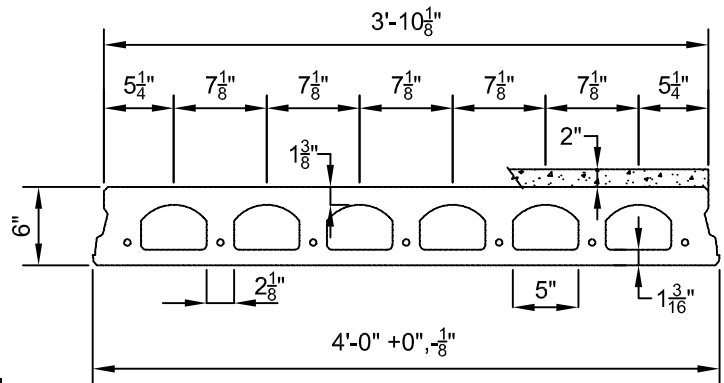
Prestressed Concrete 6"x4'-0" NiCore Plank

1 Hour Fire Resistance Rating With 2" Topping

PHYSICAL PROPERTIES Composite Section	
$A_c = 253 \text{ in.}^2$	Precast $b_w = 16.13 \text{ in.}$
$I_c = 1519 \text{ in.}^4$	Precast $S_{bcp} = 370 \text{ in.}^3$
$Y_{bcp} = 4.10 \text{ in.}$	Topping $S_{tct} = 551 \text{ in.}^3$
$Y_{tcp} = 1.90 \text{ in.}$	Precast $S_{tcp} = 799 \text{ in.}^3$
$Y_{tct} = 3.90 \text{ in.}$	Precast Wt. = 195 PLF
	Precast Wt. = 48.75 PSF

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)..
 7-3/8"Ø, 270K = 65.8 k-ft at 60% jacking force
 6-1/2"Ø, 270K = 92.6 k-ft at 60% jacking force
 7-1/2"Ø, 270K = 95.3 k-ft at 60% jacking force
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...



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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Topping Strength @ 28 days = 3000 PSI. Topping Weight = 25 PSF.
- 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.
- Load values to the left of the solid line are controlled by ultimate shear strength.
- Load values to the right are controlled by ultimate flexural strength or allowable service stresses.
- 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)																		
		12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
6 - 1/2"Ø	LOAD (PSF)	524	478	437	377	334	292	269	237	224	193	166	142	122	104	88	73	61	49	39
7 - 1/2"Ø	LOAD (PSF)	541	492	451	416	364	331	293	274	242	214	190	167	144	124	107	91	77	64	53

Prestressed Concrete 6"x4'-0" NiCore Plank

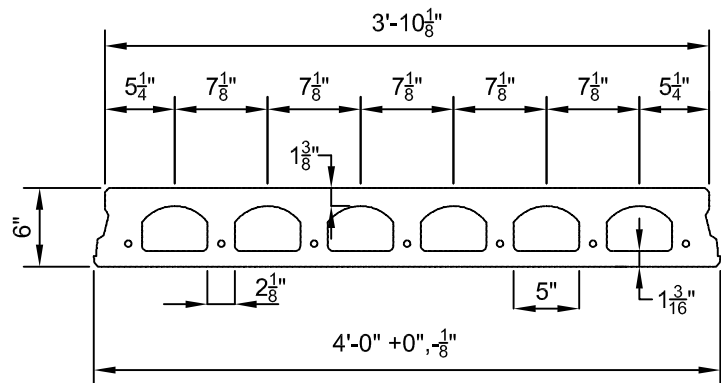
1.5 Hour Fire Resistance Rating (Untopped)

PHYSICAL PROPERTIES Precast

$A = 187 \text{ in.}^2$	$b_w = 16.13 \text{ in.}$
$I = 757 \text{ in.}^4$	$S_b = 245 \text{ in.}^3$
$Y_b = 3.09 \text{ in.}$	$S_t = 260 \text{ in.}^3$
$Y_t = 2.91 \text{ in.}$	$Wt. = 195 \text{ PLF}$
$e = 1.34 \text{ in.}$	$Wt. = 48.75 \text{ PSF}$

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)..
 7-3/8"Ø, 270K = 46.4 k-ft at 60% jacking force
 6-1/2"Ø, 270K = 67.2 k-ft at 60% jacking force
 7-1/2"Ø, 270K = 75.5 k-ft at 60% jacking force
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...



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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Load values to the left of the solid line are controlled by ultimate shear strength.
- Load values to the right are controlled by ultimate flexural strength or allowable service stresses.
- 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.
- At 1.5 hours the calculated strand temperature is 790 degrees Fahrenheit @ 49% of yield strength

SAFE SUPERIMPOSED SERVICE LOADS

Strand Pattern		SPAN (FEET)																		
		12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
6 - 1/2"Ø	LOAD (PSF)	353	322	295	273	244	215	197	175	155	149	132	118	104	92	81	73	64	57	50
7 - 1/2"Ø	LOAD (PSF)	407	372	341	303	269	244	226	202	183	166	149	133	118	105	94	83	74	66	59

Prestressed Concrete 6"x4'-0" NiCore Plank

2 Hour Fire Resistance Rating (Gypsum Topping)

PHYSICAL PROPERTIES Precast

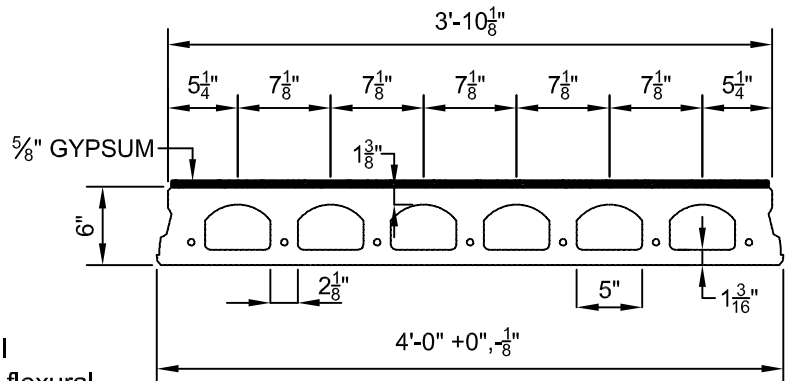
$A = 187 \text{ in.}^2$	$b_w = 16.13 \text{ in.}$
$I = 757 \text{ in.}^4$	$S_b = 245 \text{ in.}^3$
$Y_b = 3.09 \text{ in.}$	$S_t = 260 \text{ in.}^3$
$Y_t = 2.91 \text{ in.}$	$Wt. = 195 \text{ PLF}$
$e = 1.34 \text{ in.}$	$Wt. = 48.75 \text{ PSF}$

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)..
 7-3/8"Ø, 270K = 46.4 k-ft at 60% jacking force
 6-1/2"Ø, 270K = 67.2 k-ft at 60% jacking force
 7-1/2"Ø, 270K = 75.5 k-ft at 60% jacking force
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...

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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Load values to the left of the solid line are controlled by ultimate shear strength.
- Load values to the right are controlled by ultimate flexural strength or allowable service stresses.
- 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.
- The safe superimposed service loads listed below are on top of the gypsum. The weight of the gypsum has already been taken into account with the hollow core slab weight.
- At 2 hours the calculated strand temperature is 790 degrees Fahrenheit @ 49% of yield strength



SAFE SUPERIMPOSED SERVICE LOADS

Strand Pattern		SPAN (FEET)																		
		16																		
		12	13	14	15		17	18	19	20	21	22	23	24	25	26	27	28	29	30
6 - 1/2"Ø	LOAD (PSF)	353	322	295	273	244	215	189	165	143	125	110	96	84	73	64	55	48	41	35
7 - 1/2"Ø	LOAD (PSF)	407	372	341	303	269	244	225	197	172	152	133	118	104	92	81	71	63	55	48

Prestressed Concrete 6"x4'-0" NiCore Plank

2 Hour Fire Resistance Rating With 2" Topping

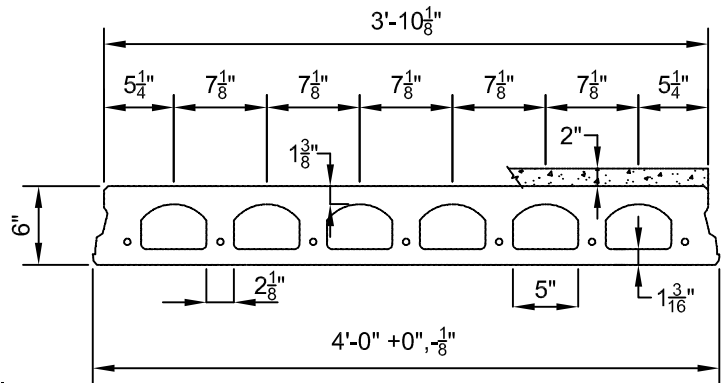
PHYSICAL PROPERTIES Composite Section	
$A_c = 253 \text{ in.}^2$	Precast $b_w = 16.13 \text{ in.}$
$I_c = 1519 \text{ in.}^4$	Precast $S_{bcp} = 370 \text{ in.}^3$
$Y_{bcp} = 4.10 \text{ in.}$	Topping $S_{tct} = 551 \text{ in.}^3$
$Y_{tcp} = 1.90 \text{ in.}$	Precast $S_{tcp} = 799 \text{ in.}^3$
$Y_{tct} = 3.90 \text{ in.}$	Precast Wt. = 195 PLF
	Precast Wt. = 48.75 PSF

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)..
 7-3/8"Ø, 270K = 65.8 k-ft at 60% jacking force
 6-1/2"Ø, 270K = 92.6 k-ft at 60% jacking force
 7-1/2"Ø, 270K = 95.3 k-ft at 60% jacking force
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...

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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Topping Strength @ 28 days = 3000 PSI. Topping Weight = 25 PSF.
- 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.
- Load values to the left of the solid line are controlled by ultimate shear strength.
- Load values to the right are controlled by ultimate flexural strength or allowable service stresses.
- 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.
- At 2 hours the calculated strand temperature is 790 degrees Fahrenheit @ 49% of yield strength



SAFE SUPERIMPOSED SERVICE LOADS

Strand Pattern		SPAN (FEET)																		
		12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
6- 1/2"Ø	LOAD (PSF)	524	478	437	377	334	292	269	235	205	179	157	137	120	104	88	73	61	49	39
7 - 1/2"Ø	LOAD (PSF)	541	492	451	416	364	331	293	274	242	214	190	167	144	124	107	91	77	64	53

Prestressed Concrete 6"x4'-0" NiCore Plank

3 Hour Fire Resistance Rating With 2" Topping

PHYSICAL PROPERTIES Composite Section

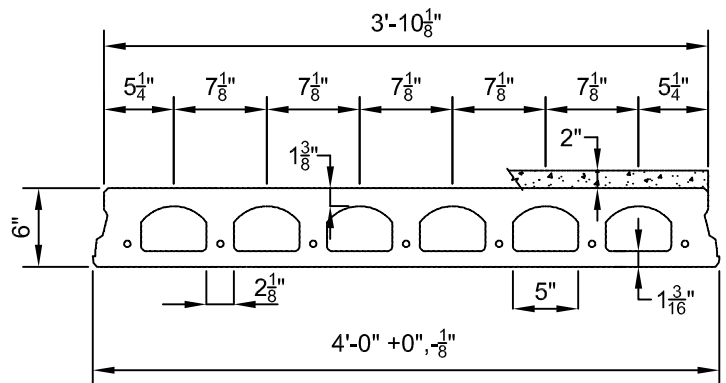
$A_c = 253 \text{ in.}^2$	Precast $b_w = 16.13 \text{ in.}$
$I_c = 1519 \text{ in.}^4$	Precast $S_{bcp} = 370 \text{ in.}^3$
$Y_{bcp} = 4.10 \text{ in.}$	Topping $S_{tct} = 551 \text{ in.}^3$
$Y_{tcp} = 1.90 \text{ in.}$	Precast $S_{tcp} = 799 \text{ in.}^3$
$Y_{tct} = 3.90 \text{ in.}$	Precast Wt. = 195 PLF
	Precast Wt. = 48.75 PSF

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)..
 - 7-3/8"Ø, 270K = 65.8 k-ft at 60% jacking force
 - 6-1/2"Ø, 270K = 92.6 k-ft at 60% jacking force
 - 7-1/2"Ø, 270K = 95.3 k-ft at 60% jacking force
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...

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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Topping Strength @ 28 days = 3000 PSI. Topping Weight = 25 PSF.
- 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.
- All load values are controlled by ultimate flexural strength or fire endurance limits.
- 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.
- At 3 hours the calculated strand temperature is 925 degrees Fahrenheit @ 32% of yield strength



SAFE SUPERIMPOSED SERVICE LOADS

Strand Pattern		SPAN (FEET)																		
		12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
6- 1/2"Ø	LOAD (PSF)	455	377	314	264	223	189	161	137	116	99	83	70	58	48	38	30	23	16	10
7 - 1/2"Ø	LOAD (PSF)	535	445	373	315	268	229	196	169	145	125	107	92	78	66	55	46	38	30	23

Prestressed Concrete 8"x4'-0" NiCore Plank

1 Hour Fire Resistance Rating (Untopped)

PHYSICAL PROPERTIES Precast

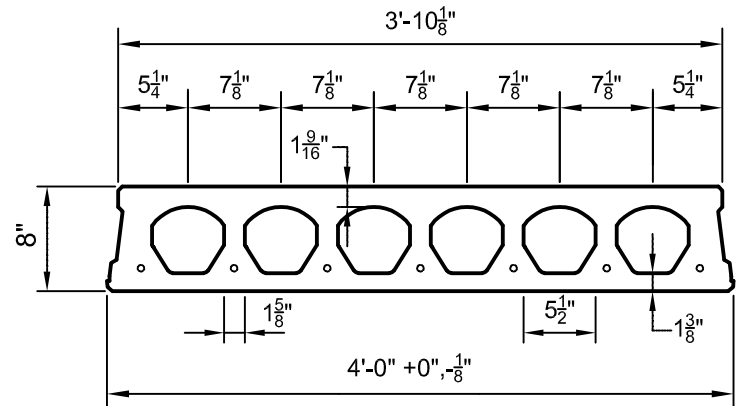
$A = 235 \text{ in.}^2$	$b_w = 13.13 \text{ in.}$
$I = 1838 \text{ in.}^4$	$S_b = 459 \text{ in.}^3$
$Y_b = 4.00 \text{ in.}$	$S_t = 459 \text{ in.}^3$
$Y_t = 4.00 \text{ in.}$	$Wt. = 245 \text{ PLF}$
$e = 2.25 \text{ in.}$	$Wt. = 61.25 \text{ PSF}$

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)..
 $7\text{-}3/8\text{'Ø, 270K} = 70.6 \text{ k-ft at 60\% jacking force}$
 $6\text{-}1/2\text{'Ø, 270K} = 104.7 \text{ k-ft at 60\% jacking force}$
 $7\text{-}1/2\text{'Ø, 270K} = 119.8 \text{ k-ft at 60\% jacking force}$
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...

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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Load values to the left of the solid line are controlled by ultimate shear strength.
- Load values to the right are controlled by ultimate flexural strength or allowable service stresses.
- 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)																		
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
6 - 1/2"Ø LOAD (PSF)	287	267	250	235	217	197	180	168	159	147	133	120	109	99	90	81	74	67	60
7 - 1/2"Ø LOAD (PSF)	288	269	252	236	222	210	196	179	165	152	144	137	126	117	108	100	91	83	75

Prestressed Concrete 8"x4'-0" NiCore Plank

1 Hour Fire Resistance Rating With 2" Topping

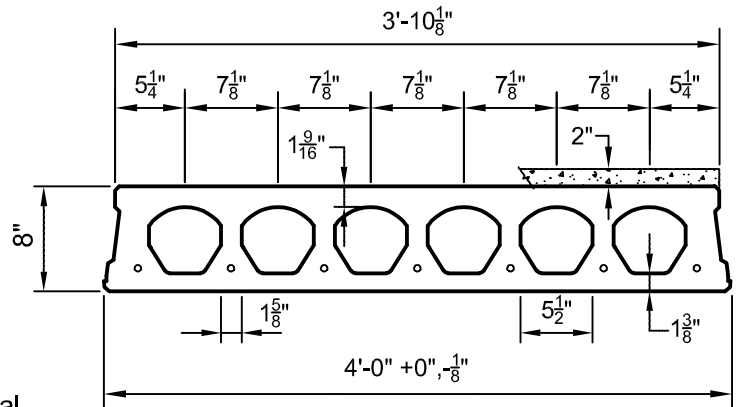
PHYSICAL PROPERTIES Composite Section

$A_c = 301 \text{ in.}^2$	Precast $b_w = 13.13 \text{ in.}$
$I_c = 3134 \text{ in.}^4$	Precast $S_{bcp} = 616 \text{ in.}^3$
$Y_{bcp} = 5.09 \text{ in.}$	Topping $S_{tct} = 902 \text{ in.}^3$
$Y_{tcp} = 2.91 \text{ in.}$	Precast $S_{tcp} = 1076 \text{ in.}^3$
$Y_{fct} = 4.91 \text{ in.}$	Precast Wt. = 245 PLF
	Precast Wt. = 61.25 PSF

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)..
 7-3/8"Ø, 270K = 90.1 k-ft at 60% jacking force
 6-1/2"Ø, 270K = 130.6 k-ft at 60% jacking force
 7-1/2"Ø, 270K = 147.8 k-ft at 60% jacking force
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...

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



- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Topping Strength @ 28 days = 3000 PSI. Topping Weight = 25 PSF.
- 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.
- Load values to the left of the solid line are controlled by ultimate shear strength.
- Load values to the right are controlled by ultimate flexural strength or allowable service stresses.
- 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)																		
		17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
6 - 1/2"Ø	LOAD (PSF)	366	341	318	299	271	245	223	211	196	176	159	143	129	113	98	85	74	63	53
7 - 1/2"Ø	LOAD (PSF)	367	342	320	300	282	265	243	221	202	189	180	165	151	134	118	104	91	80	69

Prestressed Concrete 8"x4'-0" NiCore Plank

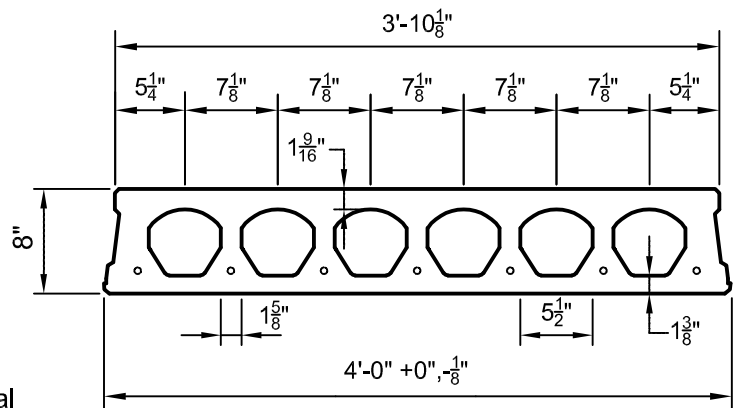
2 Hour Fire Resistance Rating (Untopped)

PHYSICAL PROPERTIES Precast

$A = 235 \text{ in.}^2$	$b_w = 13.13 \text{ in.}$
$I = 1838 \text{ in.}^4$	$S_b = 459 \text{ in.}^3$
$Y_b = 4.00 \text{ in.}$	$S_t = 459 \text{ in.}^3$
$Y_t = 4.00 \text{ in.}$	$Wt. = 245 \text{ PLF}$
$e = 2.25 \text{ in.}$	$Wt. = 61.25 \text{ PSF}$

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)..
 $7\text{-}3/8\text{'Ø, 270K} = 70.6 \text{ k-ft at 60\% jacking force}$
 $6\text{-}1/2\text{'Ø, 270K} = 104.7 \text{ k-ft at 60\% jacking force}$
 $7\text{-}1/2\text{'Ø, 270K} = 119.8 \text{ k-ft at 60\% jacking force}$
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...



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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Load values to the left of the solid line are controlled by ultimate shear strength.
- Load values to the right are controlled by ultimate flexural strength or allowable service stresses.
- 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.
- At 2 hours the calculated strand temperature is 790 degrees Fahrenheit @ 49% of yield strength

SAFE SUPERIMPOSED SERVICE LOADS

Strand Pattern		SPAN (FEET)																		
		17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
6 - 1/2"Ø	LOAD (PSF)	287	267	250	235	207	183	162	144	128	114	101	89	79	70	62	54	47	41	35
7 - 1/2"Ø	LOAD (PSF)	288	269	252	236	222	210	196	176	157	141	126	113	101	90	81	72	64	57	50

Prestressed Concrete 8"x4'-0" NiCore Plank

2 Hour Fire Resistance Rating With 2" Topping

PHYSICAL PROPERTIES Composite Section

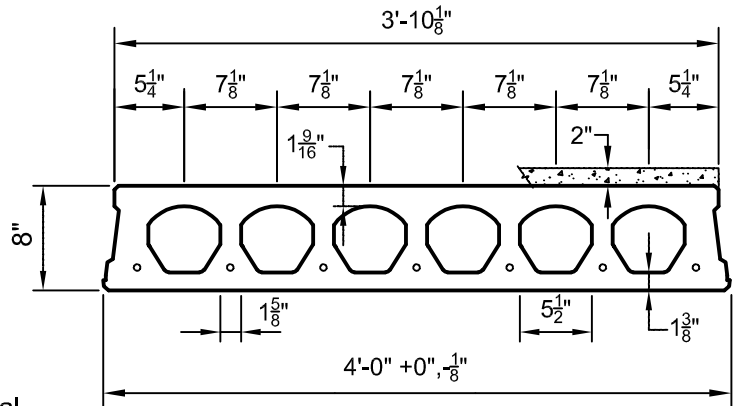
$A_c = 301 \text{ in.}^2$	Precast $b_w = 13.13 \text{ in.}$
$I_c = 3134 \text{ in.}^4$	Precast $S_{bcp} = 616 \text{ in.}^3$
$Y_{bcp} = 5.09 \text{ in.}$	Topping $S_{tct} = 902 \text{ in.}^3$
$Y_{tcp} = 2.91 \text{ in.}$	Precast $S_{tcp} = 1076 \text{ in.}^3$
$Y_{tct} = 4.91 \text{ in.}$	Precast Wt. = 245 PLF
	Precast Wt. = 61.25 PSF

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)..
 7-3/8"Ø, 270K = 90.1 k-ft at 60% jacking force
 6-1/2"Ø, 270K = 130.6 k-ft at 60% jacking force
 7-1/2"Ø, 270K = 147.8 k-ft at 60% jacking force
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...

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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Topping Strength @ 28 days = 3000 PSI. Topping Weight = 25 PSF.
- 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.
- Load values to the left of the solid line are controlled by ultimate shear strength.
- Load values to the right are controlled by ultimate flexural strength or allowable service stresses.
- 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.
- At 2 hours the calculated strand temperature is 790 degrees Fahrenheit @ 49% of yield strength



SAFE SUPERIMPOSED SERVICE LOADS

Strand Pattern		SPAN (FEET)																		
		17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
6 - 1/2"Ø	LOAD (PSF)	366	341	318	293	258	227	201	177	156	138	122	107	94	82	71	62	53	45	37
7 - 1/2"Ø	LOAD (PSF)	367	342	320	300	282	265	243	216	193	171	153	136	121	107	95	84	74	64	56

Prestressed Concrete 8"x4'-0" NiCore Plank

3 Hour Fire Resistance Rating (Gypsum Topping)

PHYSICAL PROPERTIES Precast

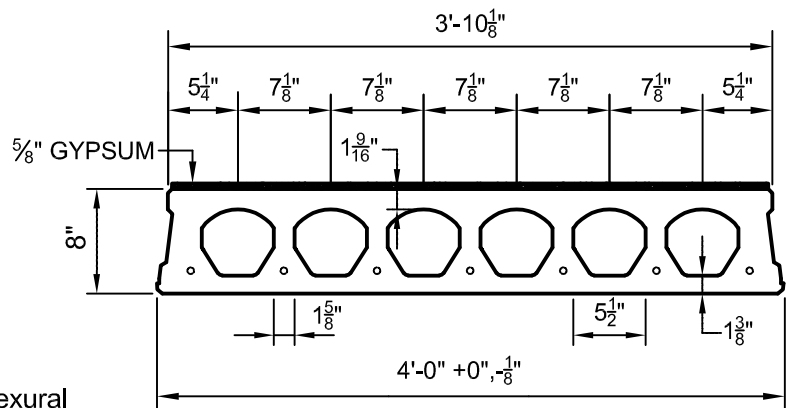
$A = 235 \text{ in.}^2$	$b_w = 13.13 \text{ in.}$
$I = 1838 \text{ in.}^4$	$S_b = 459 \text{ in.}^3$
$Y_b = 4.00 \text{ in.}$	$S_t = 459 \text{ in.}^3$
$Y_t = 4.00 \text{ in.}$	$Wt. = 245 \text{ PLF}$
$e = 2.25 \text{ in.}$	$Wt. = 61.25 \text{ PSF}$

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)..
 $7\text{-}3/8\text{'Ø, 270K} = 70.6 \text{ k-ft at 60\% jacking force}$
 $6\text{-}1/2\text{'Ø, 270K} = 104.7 \text{ k-ft at 60\% jacking force}$
 $7\text{-}1/2\text{'Ø, 270K} = 119.8 \text{ k-ft at 60\% jacking force}$
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...

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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Load values are controlled by ultimate flexural strength or structural fire endurance.
- 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.
- The safe superimposed service loads listed below are on top of the gypsum. The weight of the gypsum has already been taken into account with the hollow core slab weight.
- At 3 hours the calculated strand temperature is 925 degrees Fahrenheit @ 32% of yield strength



SAFE SUPERIMPOSED SERVICE LOADS

Strand Pattern	SPAN (FEET)																		
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
6 - 1/2"Ø	LOAD (PSF)																		
7 - 1/2"Ø	212	183	158	136	118	102	88	76	65	55	47	39	32	26	21	16	X		
	256	221	192	168	146	128	112	98	85	74	64	55	47	40	34	28	22	18	13

Prestressed Concrete 8"x4'-0" NiCore Plank

3 Hour Fire Resistance Rating With 2" Topping

PHYSICAL PROPERTIES Composite Section

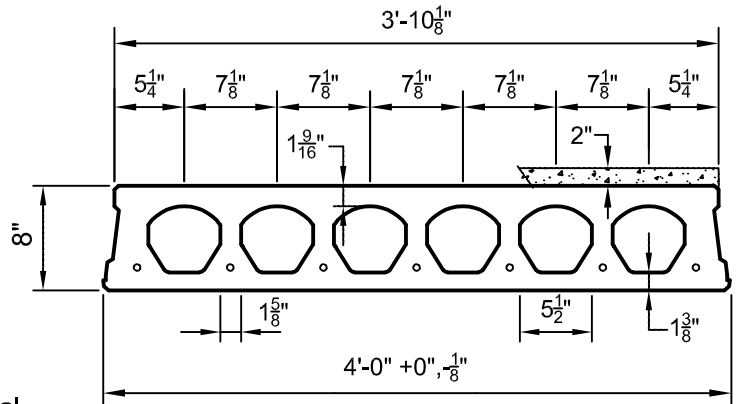
$A_c = 301 \text{ in.}^2$	Precast $b_w = 13.13 \text{ in.}$
$I_c = 3134 \text{ in.}^4$	Precast $S_{bcp} = 616 \text{ in.}^3$
$Y_{bcp} = 5.09 \text{ in.}$	Topping $S_{tct} = 902 \text{ in.}^3$
$Y_{tcp} = 2.91 \text{ in.}$	Precast $S_{tcp} = 1076 \text{ in.}^3$
$Y_{tct} = 4.91 \text{ in.}$	Precast Wt. = 245 PLF
	Precast Wt. = 61.25 PSF

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)..
 7-3/8"Ø, 270K = 90.1 k-ft at 60% jacking force
 6-1/2"Ø, 270K = 130.6 k-ft at 60% jacking force
 7-1/2"Ø, 270K = 147.8 k-ft at 60% jacking force
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...

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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Topping Strength @ 28 days = 3000 PSI. Topping Weight = 25 PSF.
- 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.
- All load values are controlled by ultimate flexural strength or fire endurance limits.
- 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.
- At 3 hours the calculated strand temperature is 925 degrees Fahrenheit @ 32% of yield strength



SAFE SUPERIMPOSED SERVICE LOADS

Strand Pattern	SPAN (FEET)																		
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
6 - 1/2"Ø	LOAD (PSF)																		
7 - 1/2"Ø	268	230	197	170	146	125	107	91	77	65	54	44	35	27	20	13	X		
	323	279	241	209	182	158	137	119	103	88	76	64	54	45	36	29	22	16	10

Prestressed Concrete 10"x4'-0" NiCore Plank

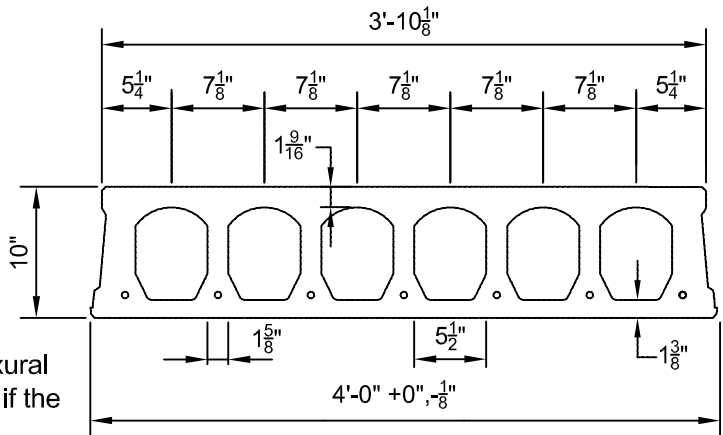
1 Hour Fire Resistance Rating (Untopped)

PHYSICAL PROPERTIES Precast

$A = 262 \text{ in.}^2$	$b_w = 13.13 \text{ in.}$
$I = 3196 \text{ in.}^4$	$S_b = 640 \text{ in.}^3$
$Y_b = 4.99 \text{ in.}$	$S_t = 638 \text{ in.}^3$
$Y_t = 5.01 \text{ in.}$	$Wt. = 272 \text{ PLF}$
$e = 3.24 \text{ in.}$	$Wt. = 68.00 \text{ PSF}$

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 270K Lo-Relaxation.
5. Strand Height = 1.75 in.
6. Ultimate moment capacity (when fully developed)..
6-1/2"Ø, 270K = 142.3 k-ft at 60% jacking force
7-1/2"Ø, 270K = 163.4 k-ft at 60% jacking force
7. Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
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...



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

9. If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
10. Flexural strength capacity is based on stress/strain strand relationships.
11. Deflection limits were not considered when determining allowable loads in this table.
12. Load values to the left of the solid line are controlled by ultimate shear strength.
13. Load values to the right are controlled by ultimate flexural strength or allowable service stresses.
14. 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)																		
		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
6 - 1/2"Ø	LOAD (PSF)	206	192	175	160	146	134	122	112	102	94	86	78	72	65	60	54	49	X	
7 - 1/2"Ø	LOAD (PSF)	215	199	187	178	169	157	146	136	125	115	106	98	90	83	76	70	63	57	52

Prestressed Concrete 10"x4'-0" NiCore Plank

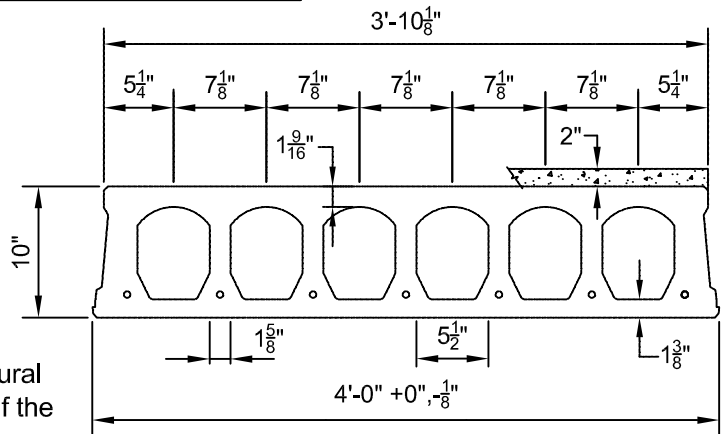
1 Hour Fire Resistance Rating With 2" Topping

PHYSICAL PROPERTIES Composite Section

$A_c = 327 \text{ in.}^2$	Precast $b_w = 13.13 \text{ in.}$
$I_c = 5102 \text{ in.}^4$	Precast $S_{bcp} = 824 \text{ in.}^3$
$Y_{bcp} = 6.19 \text{ in.}$	Topping $S_{tct} = 1242 \text{ in.}^3$
$Y_{tcp} = 3.81 \text{ in.}$	Precast $S_{tcp} = 1340 \text{ in.}^3$
$Y_{tcp} = 5.81 \text{ in.}$	Precast Wt. = 272 PLF
	Precast Wt. = 68.00 PSF

DESIGN DATA


- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø and 0.6" Ø 270K Lo-Relaxation
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)..
6-1/2"Ø, 270K = 168.1 k-ft at 60% jacking force
7-1/2"Ø, 270K = 191.7 k-ft at 60% jacking force
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...



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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Topping Strength @ 28 days = 3000 PSI. Topping Weight = 25 PSF.
- 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.
- Load values to the left of the solid line are controlled by ultimate shear strength.
- Load values to the right are controlled by ultimate flexural strength or allowable service stresses.
- 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)																						
		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44				
6 - 1/2"Ø	LOAD (PSF)	240	218	198	180	163	148	135	123	112	101	91	80	70	60									
7 - 1/2"Ø	LOAD (PSF)	257	237	226	215	196	179	164	150	137	124	111	99	88	77									

Prestressed Concrete 10"x4'-0" NiCore Plank

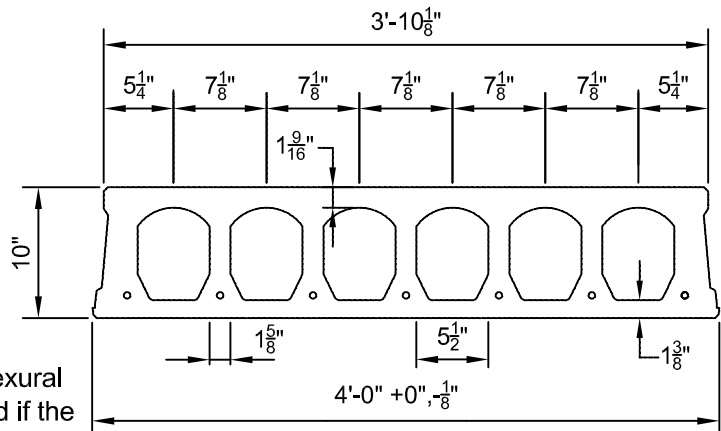
2 Hour Fire Resistance Rating (Untopped)

PHYSICAL PROPERTIES Precast

$A = 262 \text{ in.}^2$	$b_w = 13.13 \text{ in.}$
$I = 3196 \text{ in.}^4$	$S_b = 640 \text{ in.}^3$
$Y_b = 4.99 \text{ in.}$	$S_t = 638 \text{ in.}^3$
$Y_t = 5.01 \text{ in.}$	$Wt. = 272 \text{ PLF}$
$e = 3.24 \text{ in.}$	$Wt. = 68.00 \text{ PSF}$

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 270K Lo-Relaxation.
5. Strand Height = 1.75 in.
6. Ultimate moment capacity (when fully developed)..
6-1/2"Ø, 270K = 142.3 k-ft at 60% jacking force
7-1/2"Ø, 270K = 163.4 k-ft at 60% jacking force
7. Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
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...



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

9. If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
10. Flexural strength capacity is based on stress/strain strand relationships.
11. Deflection limits were not considered when determining allowable loads in this table.
12. Load values to the left of the solid line are controlled by ultimate shear strength.
13. Load values to the right are controlled by ultimate flexural strength or allowable service stresses.
14. 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.
15. At 2 hours the calculated strand temperature is 790 degrees Fahrenheit @ 49% of yield strength

SAFE SUPERIMPOSED SERVICE LOADS																				
Strand Pattern		SPAN (FEET)																		
		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
6 - 1/2"Ø	LOAD (PSF)	167	150	134	121	108	97	87	77	69	61	54	48	42	37	31	26	<div></div>		
7 - 1/2"Ø	LOAD (PSF)	204	184	166	150	136	123	111	100	91	82	73	66	59	52	46	41			

Prestressed Concrete 10"x4'-0" NiCore Plank

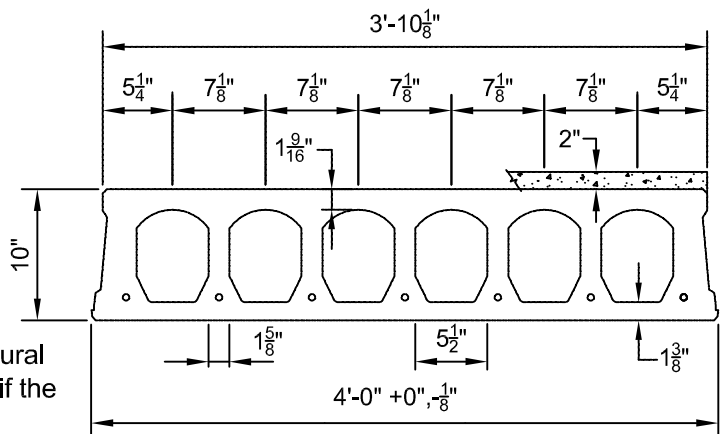
2 Hour Fire Resistance Rating With 2" Topping

PHYSICAL PROPERTIES Composite Section

$A_c = 327 \text{ in.}^2$	Precast $b_w = 13.13 \text{ in.}$
$I_c = 5102 \text{ in.}^4$	Precast $S_{bcp} = 824 \text{ in.}^3$
$Y_{bcp} = 6.19 \text{ in.}$	Topping $S_{tct} = 1242 \text{ in.}^3$
$Y_{tcp} = 3.81 \text{ in.}$	Precast $S_{tcp} = 1340 \text{ in.}^3$
$Y_{tcp} = 5.81 \text{ in.}$	Precast Wt. = 272 PLF
	Precast Wt. = 68.00 PSF

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø and 0.6" Ø 270K Lo-Relaxation
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)..
6-1/2"Ø, 270K = 168.1 k-ft at 60% jacking force
7-1/2"Ø, 270K = 191.7 k-ft at 60% jacking force
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...



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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Topping Strength @ 28 days = 3000 PSI. Topping Weight = 25 PSF.
- 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.
- Load values to the left of the solid line are controlled by ultimate shear strength.
- Load values to the right are controlled by ultimate flexural strength or allowable service stresses.
- 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.
- At 2 hours the calculated strand temperature is 790 degrees Fahrenheit @ 49% of yield strength

SAFE SUPERIMPOSED SERVICE LOADS		SPAN (FEET)																		
Strand Pattern		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
6 - 1/2"Ø	LOAD (PSF)	191	170	152	135	120	107	94	83	73	64	55	47	40	33	X				
7 - 1/2"Ø	LOAD (PSF)	234	210	189	170	153	137	123	110	98	87	77	68	60	52					

Prestressed Concrete 10"x4'-0" NiCore Plank

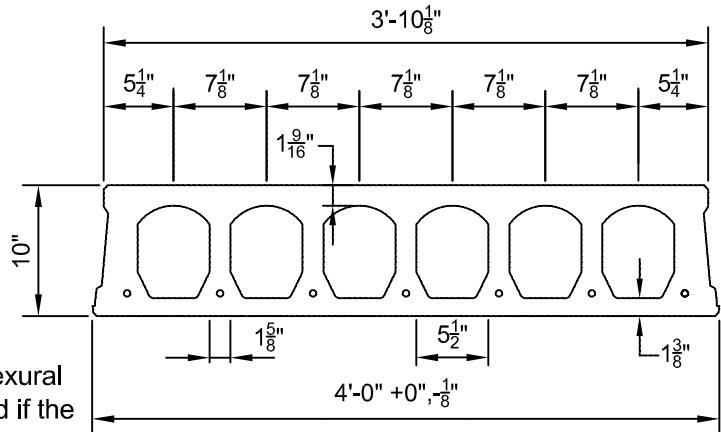
3 Hour Fire Resistance Rating (Untopped)

PHYSICAL PROPERTIES Precast

$A = 262 \text{ in.}^2$	$b_w = 13.13 \text{ in.}$
$I = 3196 \text{ in.}^4$	$S_b = 640 \text{ in.}^3$
$Y_b = 4.99 \text{ in.}$	$S_t = 638 \text{ in.}^3$
$Y_t = 5.01 \text{ in.}$	$Wt. = 272 \text{ PLF}$
$e = 3.24 \text{ in.}$	$Wt. = 68.00 \text{ PSF}$

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)..
6-1/2"Ø, 270K = 142.3 k-ft at 60% jacking force
7-1/2"Ø, 270K = 163.4 k-ft at 60% jacking force
7. Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
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...



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

9. If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
10. Flexural strength capacity is based on stress/strain strand relationships.
11. Deflection limits were not considered when determining allowable loads in this table.
12. Load values are controlled by ultimate flexural strength or structural fire endurance.
13. 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.
14. At 3 hours the calculated strand temperature is 925 degrees Fahrenheit @ 32% of yield strength

SAFE SUPERIMPOSED SERVICE LOADS

Strand Pattern		SPAN (FEET)																					
		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44			
7 - 1/2"Ø	LOAD (PSF)	113	100	88	77	68	59	51	44	38	32	26	21	16									
7 - 0.6"Ø	LOAD (PSF)	185	166	150	135	122	110	99	89	80	71	64	56	50	44	38	33	29	24	20			

Prestressed Concrete 10"x4'-0" NiCore Plank

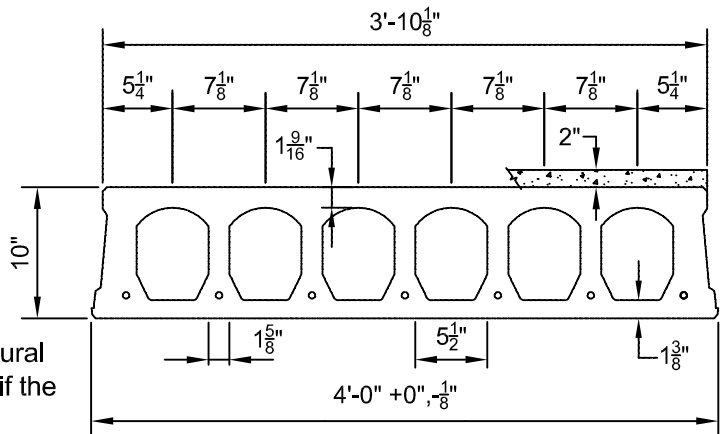
3 Hour Fire Resistance Rating With 2" Topping

PHYSICAL PROPERTIES Composite Section

$A_c = 327 \text{ in.}^2$	Precast $b_w = 13.13 \text{ in.}$
$I_c = 5102 \text{ in.}^4$	Precast $S_{bcp} = 824 \text{ in.}^3$
$Y_{bcp} = 6.19 \text{ in.}$	Topping $S_{tct} = 1242 \text{ in.}^3$
$Y_{tcp} = 3.81 \text{ in.}$	Precast $S_{tcp} = 1340 \text{ in.}^3$
$Y_{tcp} = 5.81 \text{ in.}$	Precast Wt. = 272 PLF
	Precast Wt. = 68.00 PSF

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø and 0.6"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)..
6-1/2"Ø, 270K = 168.1 k-ft at 60% jacking force
7-1/2"Ø, 270K = 191.7 k-ft at 60% jacking force
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...



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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Topping Strength @ 28 days = 3000 PSI. Topping Weight = 25 PSF.
- 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.
- All load values are controlled by ultimate flexural strength or fire endurance limits.
- 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.
- At 3 hours the calculated strand temperature is 925 degrees Fahrenheit @ 32% of yield strength

SAFE SUPERIMPOSED SERVICE LOADS

Strand Pattern	SPAN (FEET)																		
	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
7 - 1/2"Ø	LOAD (PSF)																		
7 - 1/2"Ø	127	111	97	84	72	62	52	44	36	28	22	16	10						
7 - 0.6"Ø	212	190	170	152	136	121	108	96	85	75	66	57	50						
7 - 0.6"Ø														42	36	29	24	18	13

Prestressed Concrete 12"x4'-0" NiCore Plank

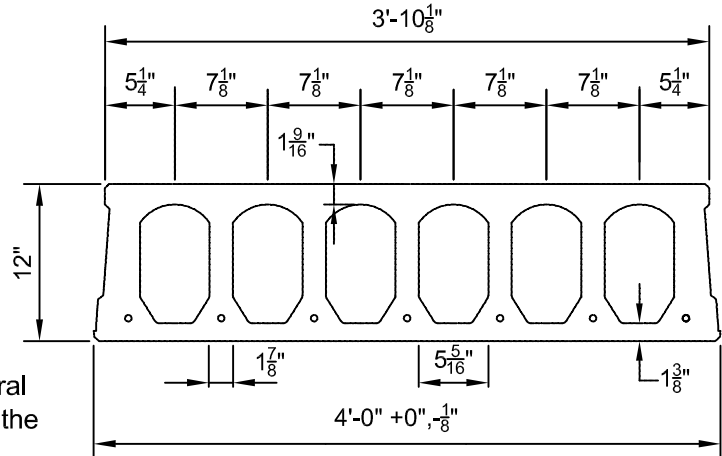
1 Hour Fire Resistance Rating (Untopped)

PHYSICAL PROPERTIES Precast

$A = 296 \text{ in.}^2$	$b_w = 14.25 \text{ in.}$
$I = 5191 \text{ in.}^4$	$S_b = 867 \text{ in.}^3$
$Y_b = 5.99 \text{ in.}$	$S_t = 863 \text{ in.}^3$
$Y_t = 6.01 \text{ in.}$	$Wt = 308 \text{ PLF}$
$e = 4.24 \text{ in.}$	$Wt = 77.00 \text{ PSF}$

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 270K Lo-Relaxation.
5. Strand Height = 1.75 in.
6. Ultimate moment capacity (when fully developed)..
6-1/2"Ø, 270K = 180.4 k-ft at 60% jacking force
7-1/2"Ø, 270K = 207.5 k-ft at 60% jacking force
7. Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
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...



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

9. If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
10. Flexural strength capacity is based on stress/strain strand relationships.
11. Deflection limits were not considered when determining allowable loads in this table.
12. Load values to the left of the solid line are controlled by ultimate shear strength.
13. Load values to the right are controlled by ultimate flexural strength or allowable service stresses.
14. 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)																		
	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
6 - 1/2"Ø	LOAD (PSF)																		
6 - 1/2"Ø	208	191	175	161	148	137	126	116	106	98	90	83	76	70	64	58	53	48	44
7 - 1/2"Ø	LOAD (PSF)																		
7 - 1/2"Ø	247	229	211	194	179	166	154	142	131	121	112	104	96	89	82	76	70	64	59

Prestressed Concrete 12"x4'-0" NiCore Plank

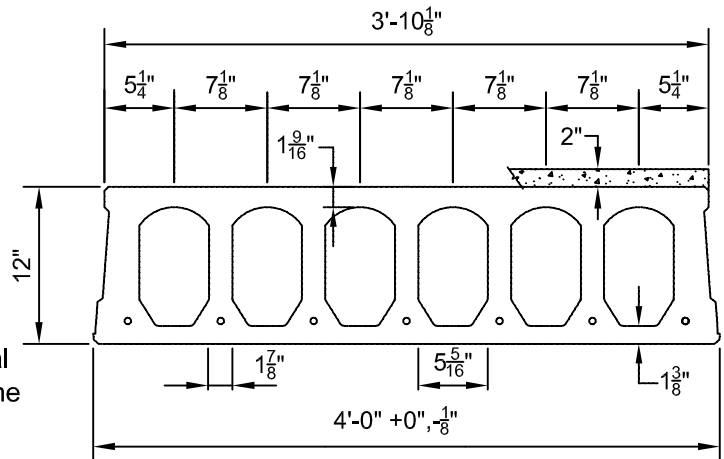
1 Hour Fire Resistance Rating With 2" Topping

PHYSICAL PROPERTIES Composite Section

$A_c = 361 \text{ in.}^2$	Precast $b_w = 14.25 \text{ in.}$
$I_c = 7840 \text{ in.}^4$	Precast $S_{bcp} = 1081 \text{ in.}^3$
$Y_{bcp} = 7.26 \text{ in.}$	Topping $S_{tct} = 1644 \text{ in.}^3$
$Y_{tcp} = 4.74 \text{ in.}$	Precast $S_{tcp} = 1653 \text{ in.}^3$
$Y_{tct} = 6.74 \text{ in.}$	Precast Wt. = 308 PLF
	Precast Wt. = 77.00 PSF

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)..
6-1/2"Ø, 270K = 205.4 k-ft at 60% jacking force
7-1/2"Ø, 270K = 235.4 k-ft at 60% jacking force
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...



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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Topping Strength @ 28 days = 3000 PSI. Topping Weight = 25 PSF.
- 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.
- Load values to the left of the solid line are controlled by ultimate shear strength.
- Load values to the right are controlled by ultimate flexural strength or allowable service stresses.
- 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		SPAN (FEET)																		
Strand Pattern		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
6 - 1/2"Ø	LOAD (PSF)	303	275	251	228	208	190	174	159	145	133	121	111	101	92	83	76	69	61	52
7 - 1/2"Ø	LOAD (PSF)	342	322	299	273	250	229	211	193	177	163	150	138	127	116	107	98	87	78	69

Prestressed Concrete 12"x4'-0" NiCore Plank

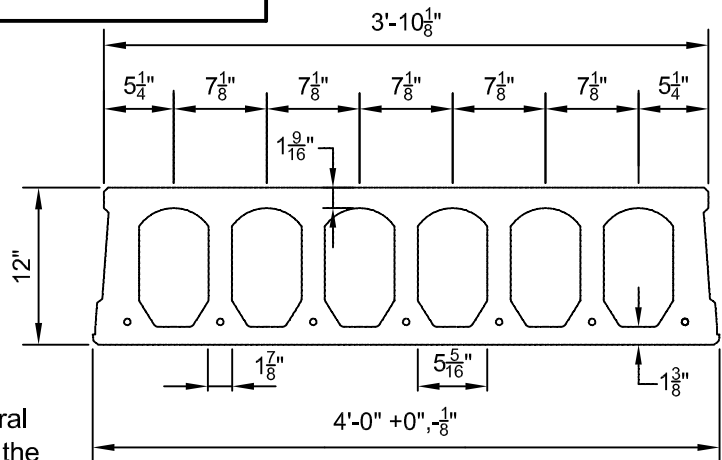
2 Hour Fire Resistance Rating (Untopped)

PHYSICAL PROPERTIES Precast

$A = 296 \text{ in.}^2$	$b_w = 14.25 \text{ in.}$
$I = 5191 \text{ in.}^4$	$S_b = 867 \text{ in.}^3$
$Y_b = 5.99 \text{ in.}$	$S_t = 863 \text{ in.}^3$
$Y_t = 6.01 \text{ in.}$	$W_t = 308 \text{ PLF}$
$e = 4.24 \text{ in.}$	$W_t = 77.00 \text{ PSF}$

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø and 0.6"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)..
6-1/2"Ø, 270K = 180.4 k-ft at 60% jacking force
7-1/2"Ø, 270K = 207.5 k-ft at 60% jacking force
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...



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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- All load values are controlled by ultimate flexural strength or structural fire endurance.
- 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.
- At 2 hours the calculated strand temperature is 790 degrees Fahrenheit @ 49% of yield strength

SAFE SUPERIMPOSED SERVICE LOADS

Strand Pattern		SPAN (FEET)																		
		29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
6 - 1/2"Ø	LOAD (PSF)	160	144	130	117	106	95	85	76	68	61	54	47	41	36	30	X			
7 - 1/2"Ø	LOAD (PSF)	197	179	163	148	135	122	111	101	91	83	74	67	60	54	48	42	37	32	27

Prestressed Concrete 12"x4'-0" NiCore Plank

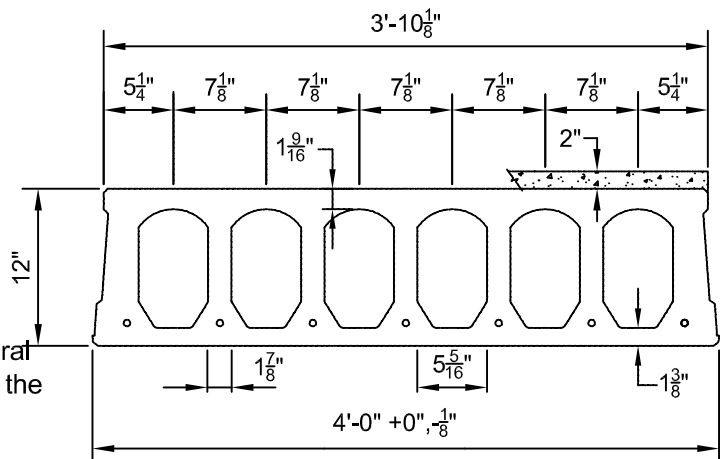
2 Hour Fire Resistance Rating With 2" Topping

PHYSICAL PROPERTIES Composite Section

$A_c = 361 \text{ in.}^2$ Precast $b_w = 14.25 \text{ in.}$
 $I_c = 7840 \text{ in.}^4$ Precast $S_{bcp} = 1081 \text{ in.}^3$
 $Y_{bcp} = 7.26 \text{ in.}$ Topping $S_{tct} = 1644 \text{ in.}^3$
 $Y_{tcp} = 4.74 \text{ in.}$ Precast $S_{tcp} = 1653 \text{ in.}^3$
 $Y_{tct} = 6.74 \text{ in.}$ Precast Wt. = 308 PLF
 Precast Wt. = 77.00 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)..
 6-1/2"Ø, 270K = 205.4 k-ft at 60% jacking force
 7-1/2"Ø, 270K = 235.4 k-ft at 60% jacking force
7. Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
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...



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

9. If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
10. Flexural strength capacity is based on stress/strain strand relationships.
11. Deflection limits were not considered when determining allowable loads in this table.
12. Topping Strength @ 28 days = 3000 PSI. Topping Weight = 25 PSF.
13. 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.
14. Load values to the left of the solid line are controlled by ultimate shear strength.
15. Load values to the right are controlled by ultimate flexural strength or allowable service stresses.
16. 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.
17. At 2 hours the calculated strand temperature is 790 degrees Fahrenheit @ 49% of yield strength

SAFE SUPERIMPOSED SERVICE LOADS

Strand Pattern		SPAN (FEET)																		
		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
6 - 1/2"Ø	LOAD (PSF)	242	217	194	174	156	140	125	111	99	87	77	68	59	51	43	36	29	23	18
7 - 1/2"Ø	LOAD (PSF)	295	266	240	217	196	177	160	144	130	117	105	94	84	74	65	57	50	43	36

Prestressed Concrete 12"x4'-0" NiCore Plank

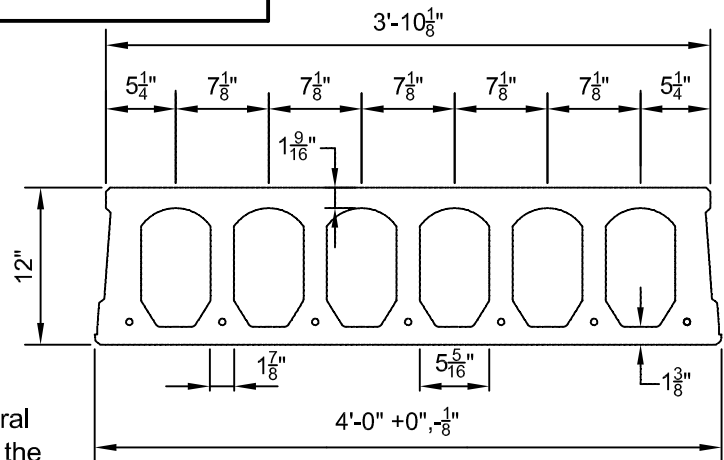
3 Hour Fire Resistance Rating (Untopped)

PHYSICAL PROPERTIES Precast

$A = 296 \text{ in.}^2$	$b_w = 14.25 \text{ in.}$
$I = 5191 \text{ in.}^4$	$S_b = 867 \text{ in.}^3$
$Y_b = 5.99 \text{ in.}$	$S_t = 863 \text{ in.}^3$
$Y_t = 6.01 \text{ in.}$	$W_t = 308 \text{ PLF}$
$e = 4.24 \text{ in.}$	$W_t = 77.00 \text{ PSF}$

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)..
6-1/2"Ø, 270K = 180.4 k-ft at 60% jacking force
7-1/2"Ø, 270K = 207.5 k-ft at 60% jacking force
7. Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
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...



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

9. If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
10. Flexural strength capacity is based on stress/strain strand relationships.
11. Deflection limits were not considered when determining allowable loads in this table.
12. Load values are controlled by ultimate flexural strength or structural fire endurance.
13. 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.
14. At 3 hours the calculated strand temperature is 925 degrees Fahrenheit @ 32% of yield strength

SAFE SUPERIMPOSED SERVICE LOADS

Strand Pattern	SPAN (FEET)																		
	28	29	30	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
7 - 1/2"Ø LOAD (PSF)	118	105	93	72	63	55	48	41	35	29	23	18	14	X					
7 - 0.6"Ø LOAD (PSF)	196	178	161	132	120	108	98	88	79	71	64	57	50	44	39	33	29	24	20

Prestressed Concrete 12"x4'-0" NiCore Plank

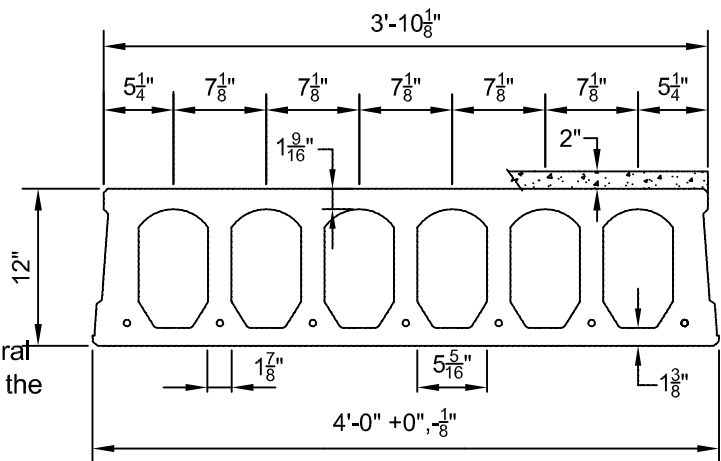
3 Hour Fire Resistance Rating With 2" Topping

PHYSICAL PROPERTIES Composite Section

$A_c = 361 \text{ in.}^2$	Precast $b_w = 14.25 \text{ in.}$
$I_c = 7840 \text{ in.}^4$	Precast $S_{bcp} = 1081 \text{ in.}^3$
$Y_{bcp} = 7.26 \text{ in.}$	Topping $S_{tct} = 1644 \text{ in.}^3$
$Y_{tcp} = 4.74 \text{ in.}$	Precast $S_{tcp} = 1653 \text{ in.}^3$
$Y_{tct} = 6.74 \text{ in.}$	Precast Wt. = 308 PLF
	Precast Wt. = 77.00 PSF

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø and 0.6"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)..
6-1/2"Ø, 270K = 205.4 k-ft at 60% jacking force
7-1/2"Ø, 270K = 235.4 k-ft at 60% jacking force
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...



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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Topping Strength @ 28 days = 3000 PSI. Topping Weight = 25 PSF.
- 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.
- All load values are controlled by ultimate flexural strength or fire endurance limits.
- 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.
- At 3 hours the calculated strand temperature is 925 degrees Fahrenheit @ 32% of yield strength

SAFE SUPERIMPOSED SERVICE LOADS

Strand Pattern	SPAN (FEET)																		
	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
7 - 1/2"Ø	LOAD (PSF)																		
LOAD (PSF)																			
7 - 0.6"Ø	217	195	176	158	142	127	114	102	91	80	71	62	54	46	39	33	27	21	16

Prestressed Concrete 16"x4'-0" NiCore Plank (2 Solid Cells)

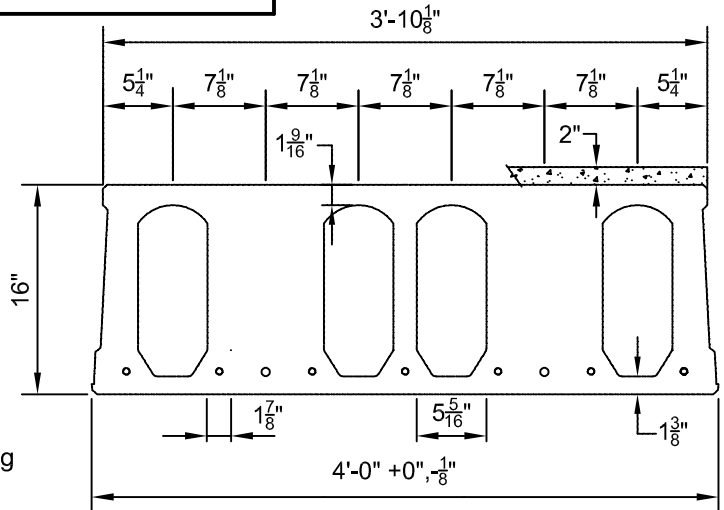
1 Hour Fire Resistance Rating With 2" Topping

PHYSICAL PROPERTIES Composite Section

$A_c = 544 \text{ in.}^2$	Precast $b_w = 24.88 \text{ in.}$
$I_c = 17169 \text{ in.}^4$	Precast $S_{bcp} = 1907 \text{ in.}^3$
$Y_{bcp} = 9.00 \text{ in.}$	Topping $S_{tct} = 1908 \text{ in.}^3$
$Y_{tcp} = 7.00 \text{ in.}$	Precast $S_{tcp} = 2454 \text{ in.}^3$
$Y_{tct} = 9.00 \text{ in.}$	Precast Wt. = 501 PLF
	Precast Wt. = 125.25 PSF

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø and 0.6"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Two (2) #8 rebars added at 1.875 in.
- Ultimate moment capacity (when fully developed)..
7-1/2"Ø, 270K = 417.7 k-ft at 60% jacking force
7-0.6"Ø, 270K = 530.8 k-ft at 60% jacking force
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...



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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Topping Strength @ 28 days = 3000 PSI. Topping Weight = 25 PSF.
- 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.
- Some span/strand combinations require some 3/8"Ø top strands.
- Some load values are controlled by ultimate web shear strength per ACI Equation 11-1 and Section 11.4.6.1(b). Load values to the left of the solid line are controlled by ultimate shear strength.
- Load values to the right are controlled by ultimate flexural strength or allowable service stresses.
- 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)	590	520	470	420	380	350	320	290	258	214	177	145	117	92	71	<div></div>			
7 - 0.6"Ø	LOAD (PSF)	598	532	476	430	391	357	327	301	277	257	238	212	178	149	123				

Prestressed Concrete 16"x4'-0" NiCore Plank (2 Solid Cells)

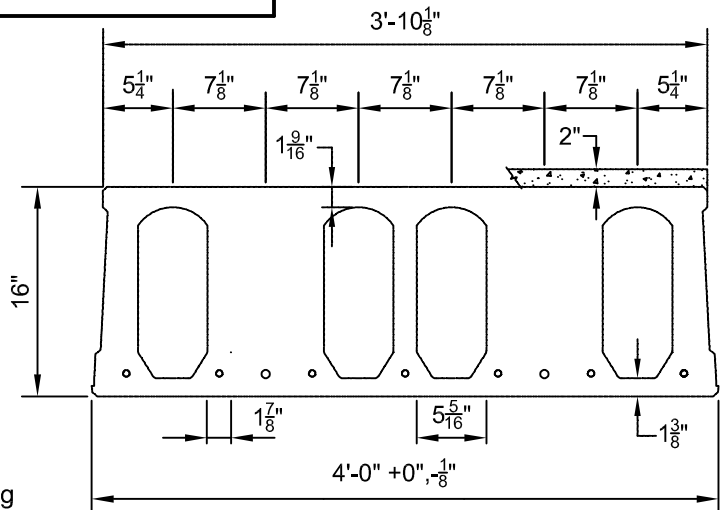
2 Hour Fire Resistance Rating With 2" Topping

PHYSICAL PROPERTIES Composite Section

$A_c = 544 \text{ in.}^2$	Precast $b_w = 24.88 \text{ in.}$
$I_c = 17169 \text{ in.}^4$	Precast $S_{bcp} = 1907 \text{ in.}^3$
$Y_{bcp} = 9.00 \text{ in.}$	Topping $S_{tct} = 1908 \text{ in.}^3$
$Y_{tcp} = 7.00 \text{ in.}$	Precast $S_{tcp} = 2454 \text{ in.}^3$
$Y_{tct} = 9.00 \text{ in.}$	Precast Wt. = 501 PLF
	Precast Wt. = 125.25 PSF

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø and 0.6"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Two (2) #8 rebars added at 1.875 in.
- Ultimate moment capacity (when fully developed)..
7-1/2"Ø, 270K = 417.7 k-ft at 60% jacking force
7-0.6"Ø, 270K = 530.8 k-ft at 60% jacking force
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...



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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Topping Strength @ 28 days = 3000 PSI. Topping Weight = 25 PSF.
- 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.
- Some span/strand combinations require some 3/8"Ø top strands.
- Some load values are controlled by ultimate web shear strength per ACI Equation 11-1 and Section 11.4.6.1(b). Load values to the left of the solid line are controlled by ultimate shear strength.
- Load values to the right are controlled by ultimate flexural strength or allowable service stresses.
- 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.
- At 2 hours the calculated strand temperature is 790 degrees Fahrenheit @ 49% of yield strength.

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)	590	520	470	420	380	350	320	290	247	207	173	143	117	92	71	<div></div>			
7 - 0.6"Ø	LOAD (PSF)	598	532	476	430	391	357	327	301	277	257	238	212	178	149	123				

Prestressed Concrete 16"x4'-0" NiCore Plank (2 Solid Cells)

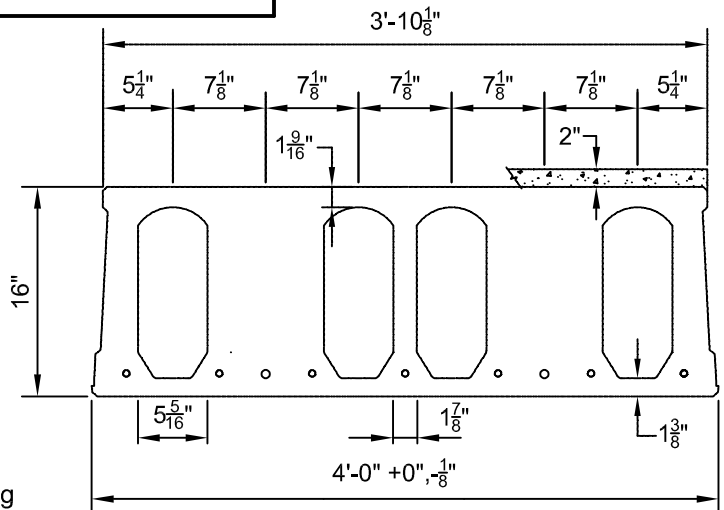
3 Hour Fire Resistance Rating With 2" Topping

PHYSICAL PROPERTIES Composite Section

$A_c = 544 \text{ in.}^2$	Precast $b_w = 24.88 \text{ in.}$
$I_c = 17169 \text{ in.}^4$	Precast $S_{bcp} = 1907 \text{ in.}^3$
$Y_{bcp} = 9.00 \text{ in.}$	Topping $S_{tct} = 1908 \text{ in.}^3$
$Y_{tcp} = 7.00 \text{ in.}$	Precast $S_{tcp} = 2454 \text{ in.}^3$
$Y_{tct} = 9.00 \text{ in.}$	Precast Wt. = 501 PLF
	Precast Wt. = 125.25 PSF

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø and 0.6"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Two (2) #8 rebars added at 1.875 in.
- Ultimate moment capacity (when fully developed)..
7-1/2"Ø, 270K = 417.7 k-ft at 60% jacking force
7-0.6"Ø, 270K = 530.8 k-ft at 60% jacking force
- Maximum bottom tensile stress is 10 $f_c = 775 \text{ PSI}$
- 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...



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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Topping Strength @ 28 days = 3000 PSI. Topping Weight = 25 PSF.
- 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.
- Some span/strand combinations require some 3/8"Ø top strands.
- Some load values are controlled by ultimate web shear strength per ACI Equation 11-1 and Section 11.4.6.1(b). Load values to the left of the solid line are controlled by ultimate shear strength.
- Load values to the right are controlled by ultimate flexural strength or allowable service stresses.
- 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.
- At 3 hours the calculated strand temperature is 790 degrees Fahrenheit @ 49% of yield strength.

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
7 - 1/2"Ø	LOAD (PSF)	590	520	470	420	344	282	231	189	153	123	97	74	55	37	<div></div>		
7 - 0.6"Ø	LOAD (PSF)	598	532	476	430	391	357	316	264	220	183	152	124	100	79	61	45	30

Prestressed Concrete 16"x4'-0" NiCore Plank

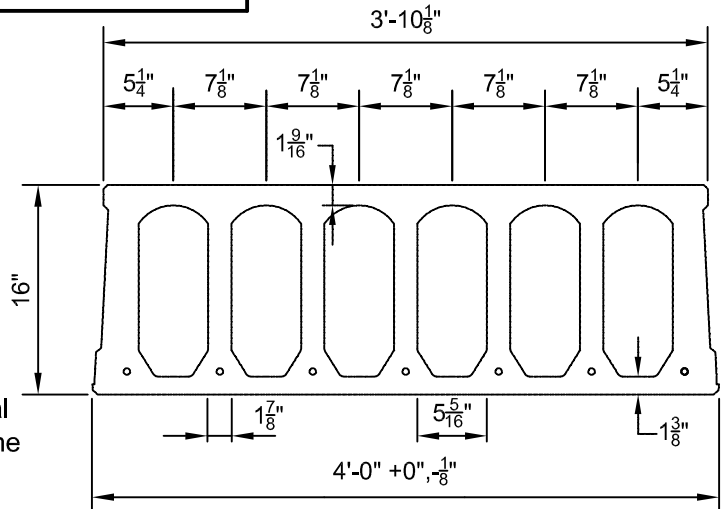
1 Hour Fire Resistance Rating (Untopped)

PHYSICAL PROPERTIES Precast

$A = 352 \text{ in.}^2$	$b_w = 14.25 \text{ in.}$
$I = 10,985 \text{ in.}^4$	$S_b = 1,379 \text{ in.}^3$
$Y_b = 7.97 \text{ in.}$	$S_t = 1,367 \text{ in.}^3$
$Y_t = 8.03 \text{ in.}$	$Wt = 367 \text{ PLF}$
$e = 6.19 \text{ in.}$	$Wt = 91.75 \text{ PSF}$

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø and 0.6"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)..
7-1/2"Ø, 270K = 295.8 k-ft at 60% jacking force
7-0.6"Ø, 270K = 406.8 k-ft at 60% jacking force
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...



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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Span/strand combinations to the left of and below the solid line require 3/8"Ø top strands.
- 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 flexural capacity.
- 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										IBC 2012 & ACI 318-11 (1.2 D + 1.6 L)										
Strand Pattern		SPAN (FEET)																		
		24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
7 - 1/2"Ø	LOAD (PSF)	251	225	203	196	179	163	150	138	127	117	109	101	91	79	67	57	<div></div>		
7 - 0.6"Ø	LOAD (PSF)	254	227	205	186	169	154	141	130	119	121	112	104	96	90	83	77			

Prestressed Concrete 16"x4'-0" NiCore Plank

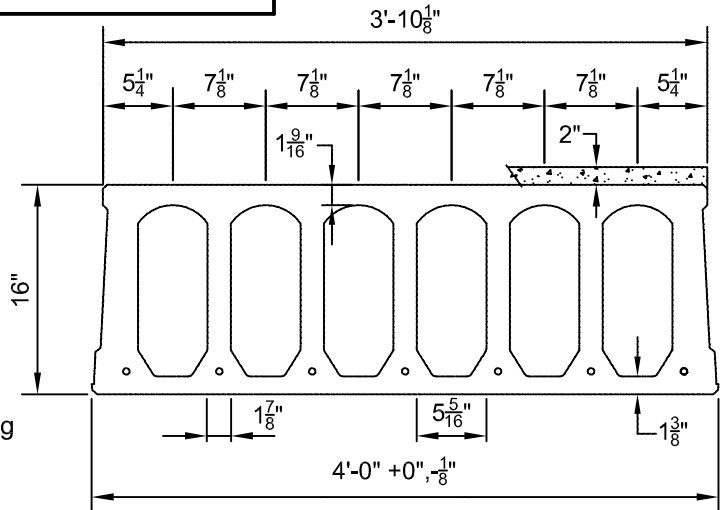
1 Hour Fire Resistance Rating With 2" Topping

PHYSICAL PROPERTIES Composite Section

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

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø and 0.6"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- 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
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...



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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Topping Strength @ 28 days = 3000 PSI. Topping Weight = 25 PSF.
- 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.
- Some span/strand combinations require some 3/8"Ø top strands.
- 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 flexural capacity.
- 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	<div></div>			
7 - 0.6"Ø	LOAD (PSF)	332	293	260	233	210	190	172	156	143	131	131	120	111	102	94				

Prestressed Concrete 16"x4'-0" NiCore Plank

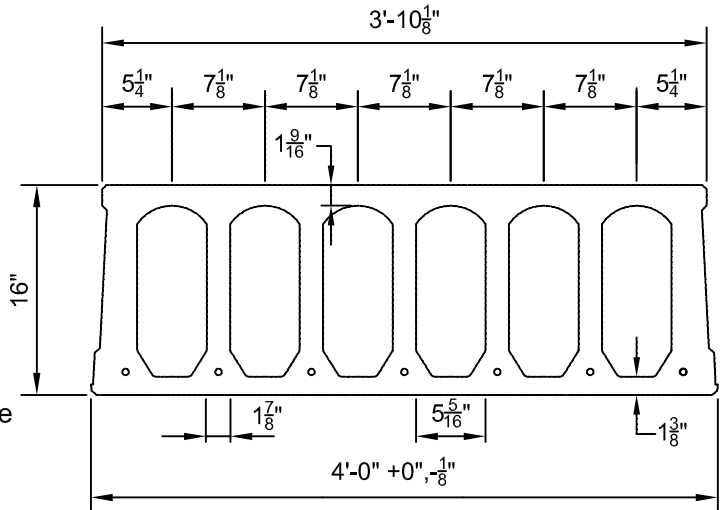
2 Hour Fire Resistance Rating (Untopped)

PHYSICAL PROPERTIES Precast

$A = 352 \text{ in.}^2$	$b_w = 14.25 \text{ in.}$
$I = 10,985 \text{ in.}^4$	$S_b = 1,379 \text{ in.}^3$
$Y_b = 7.97 \text{ in.}$	$S_t = 1,367 \text{ in.}^3$
$Y_t = 8.03 \text{ in.}$	$Wt = 367 \text{ PLF}$
$e = 6.19 \text{ in.}$	$Wt = 91.75 \text{ PSF}$

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)..
7-1/2"Ø, 270K = 295.8 k-ft at 60% jacking force
7-0.6"Ø, 270K = 406.8 k-ft at 60% jacking force
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...



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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Span/strand combinations to the left of and below the solid line require 3/8"Ø top strands.
- Load values are controlled by ultimate flexural strength, structural fire endurance, or ultimate web shear.
- 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 flexural capacity.
- 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.
- At 2 hours the calculated strand temperature is 790 degrees Fahrenheit @ 49% of yield strength.

SAFE SUPERIMPOSED SERVICE LOADS

Strand Pattern		SPAN (FEET)																		
		24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
7 - 1/2"Ø	LOAD (PSF)	251	225	203	196	179	163	150	133	111	92	76	62	49	38	28	19			
7 - 0.6"Ø	LOAD (PSF)	254	227	205	186	169	154	141	130	119	121	112	104	96	90	76	64	53	43	34

Prestressed Concrete 16"x4'-0" NiCore Plank

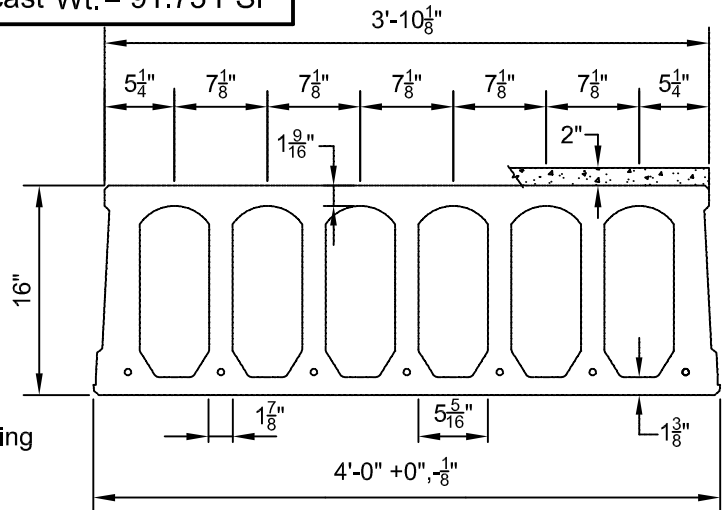
2 Hour Fire Resistance Rating With 2" Topping

PHYSICAL PROPERTIES Composite Section

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

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø and 0.6"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- 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
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...



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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Topping Strength @ 28 days = 3000 PSI. Topping Weight = 25 PSF.
- 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.
- Span/strand combinations to the left of and below the solid line require 3/8"Ø top strands.
- 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 flexural capacity.
- 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.
- At 2 hours the calculated strand temperature is 790 degrees Fahrenheit @ 49% of yield strength.

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	148	121	99	79	62	47	34	<div></div>			
7 - 0.6"Ø	LOAD (PSF)	332	293	260	233	210	190	172	156	143	131	131	120	111	102	92				

Prestressed Concrete 16"x4'-0" NiCore Plank

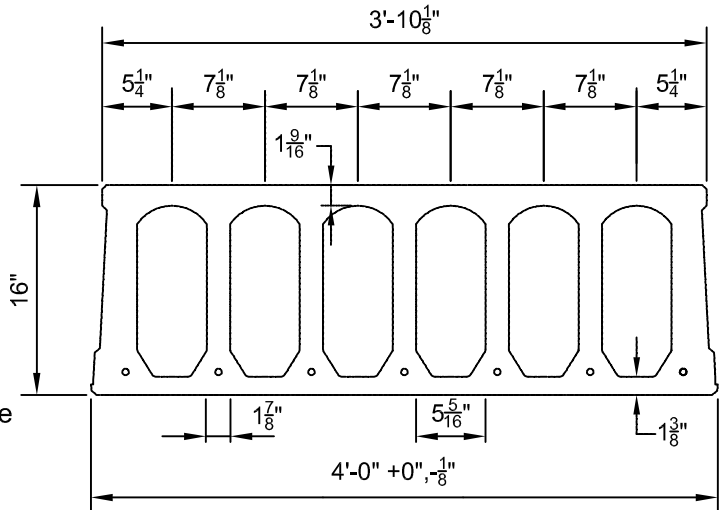
3 Hour Fire Resistance Rating (Untopped)

PHYSICAL PROPERTIES Precast

$A = 352 \text{ in.}^2$	$b_w = 14.25 \text{ in.}$
$I = 10,985 \text{ in.}^4$	$S_b = 1,379 \text{ in.}^3$
$Y_b = 7.97 \text{ in.}$	$S_t = 1,367 \text{ in.}^3$
$Y_t = 8.03 \text{ in.}$	$Wt = 367 \text{ PLF}$
$e = 6.19 \text{ in.}$	$Wt = 91.75 \text{ PSF}$

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)..
 $7\text{-}1\frac{1}{2}"\text{Ø}, 270\text{K} = 295.8 \text{ k-ft at } 60\% \text{ jacking force}$
 $7\text{-}0.6"Ø, 270\text{K} = 406.8 \text{ k-ft at } 60\% \text{ jacking force}$
7. Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
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...



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

9. If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
10. Flexural strength capacity is based on stress/strain strand relationships.
11. Deflection limits were not considered when determining allowable loads in this table.
12. Span/strand combinations to the left of and below the solid line require 3/8"Ø top strands.
13. Load values are controlled by ultimate flexural strength, structural fire endurance, or ultimate web shear.
14. 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 flexural capacity.
15. 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.
16. At 2 hours the calculated strand temperature is 790 degrees Fahrenheit @ 49% of yield strength.

SAFE SUPERIMPOSED SERVICE LOADS																				
Strand Pattern		SPAN (FEET)																		
		24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
7 - 1/2"Ø	LOAD (PSF)	251	225	182	147	118	94	74	57	42	30	19	9							
7 - 0.6"Ø	LOAD (PSF)	254	227	205	186	169	154	141	117	97	79	64	51	39	29	20	11			

Prestressed Concrete 16"x4'-0" NiCore Plank

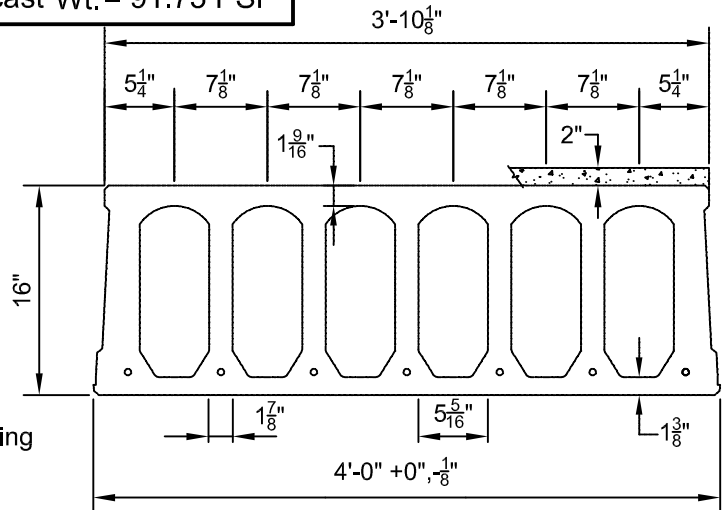
3 Hour Fire Resistance Rating With 2" Topping

PHYSICAL PROPERTIES Composite Section

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

DESIGN DATA


- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø and 0.6"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- 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
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775 \text{ PSI}$
- 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...



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

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Topping Strength @ 28 days = 3000 PSI. Topping Weight = 25 PSF.
- 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.
- Span/strand combinations to the left of and below the solid line require 3/8"Ø top strands.
- 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 flexural capacity.
- 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.
- At 3 hours the calculated strand temperature is 925 degrees Fahrenheit @ 32% of yield strength.

SAFE SUPERIMPOSED SERVICE LOADS

Strand Pattern		SPAN (FEET)																		
		14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50
7 - 1/2"Ø	LOAD (PSF)	570	478	409	355	312	276	240	191	151	119	92	69	50	34	20				
7 - 0.6"Ø	LOAD (PSF)	570	478	409	355	312	276	246	221	199	180	164	143	117	94	74				