Fig. 10.13.1 Hollow-core Slabs

Cross section

Plan

Elevation

Rough Broom Deck Finish
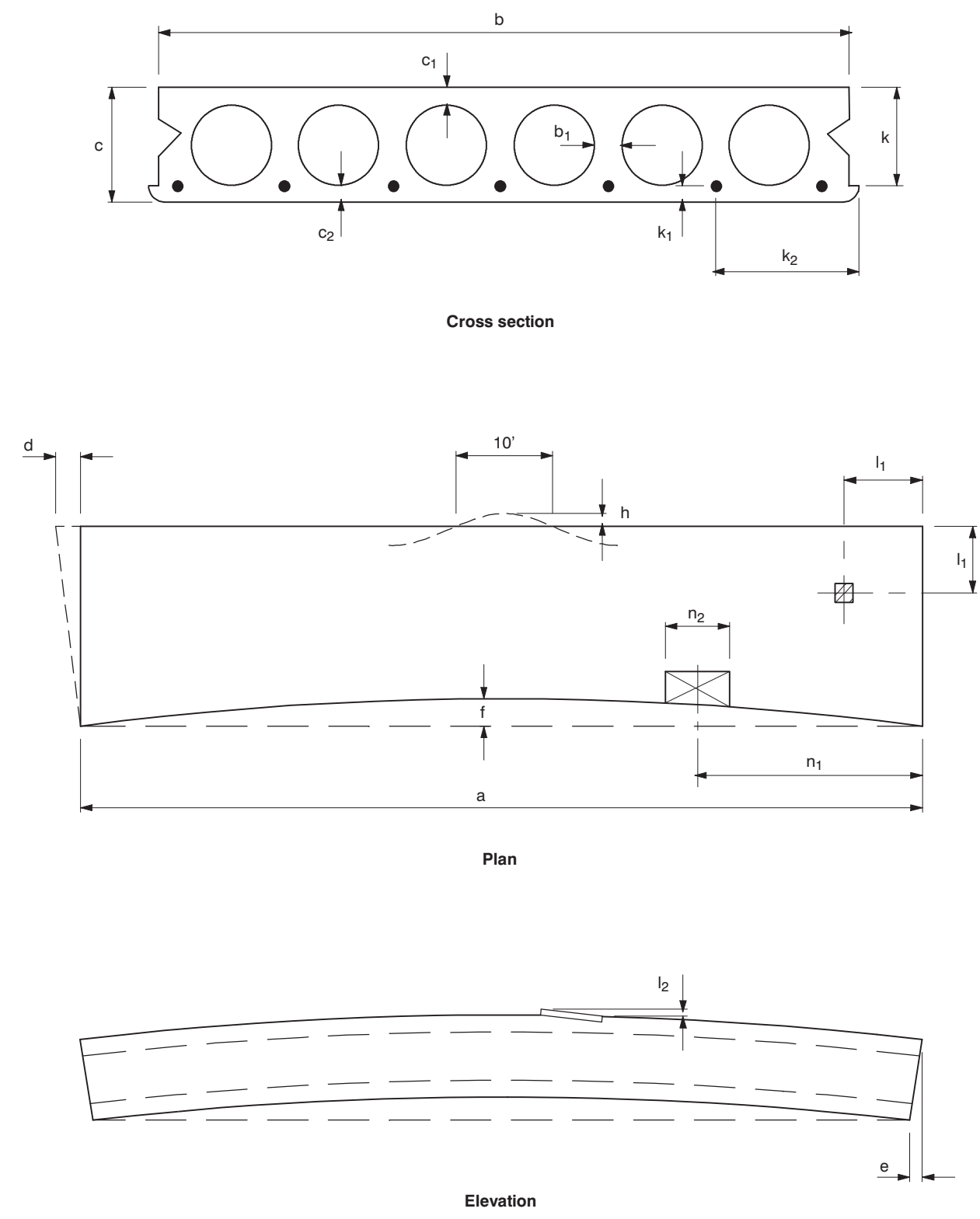
10.13   Hollow-core Slabs

a = Length . . . . ±½ in. [±13 mm]

b = Width (overall) . . . . ±¼ in. [±6 mm]

b_1 = Web width:
The total web width defined by the sum of the actual measured values of "b_1" shall not be less than 85 percent of the sum of the nominal web widths "$b_{1,\,nominal}$"

c = Depth (overall) . . . . ±¼ in. [±6 mm]

c_1 = Top flange depth:
Top flange area defined by the actual measured values of average "c_1" x "b" shall not be less than 85 percent of the nominal area calculated by "$c_{1,\,nominal}$" x "$b_{nominal}$"

c_2 = Bottom flange depth:
Bottom flange area defined by the actual measured values of average "c_2" x "b" shall not be less than 85 percent of the nominal area calculated by "$c_{2,\,nominal}$" x "$b_{nominal}$"

d = Variation from specified plan end squareness or skew . . . . ±½ in. [±13 mm]

e = Variation from specified elevation end squareness or skew
. . . . ±1/8 in. per 12 in., ±½ in. maximum
. . . . [±3 mm per 300 mm, ±13 mm maximum]

f = Sweep . . . . ±3/8 in. [±10 mm]

g = Applications requiring close control of differential camber between adjacent members should be discussed with the producer to determine applicable tolerances.

h = Local smoothness of any surface . . . . ¼ in. in 10 ft. [6 mm in 3 m]

k = Center of gravity (CG) of strand group . . . . ±¼ in. [±6 mm]

k_1 = Location of strand perpendicular to plane of panel . . . . ±½ in. [±13 mm]
Minimum cover . . . . ¾ in. [19 mm]

k_2 = Location of strand parallel to plane of panel . . . . ±¾ in. [±19 mm]
Minimum cover . . . . ¾ in. [19 mm]

l_1 = Location of embedment* . . . . ±2 in. [±50 mm]

l_2 = Tipping and flushness of embedment . . . . ±¼ in. [±6 mm]

n_1 = Location of blockout . . . . ±2 in. [±50 mm]

n_2 = Size of blockouts . . . . ±½ in. [±13 mm]

x = Weight:
Actual measured value shall not exceed 110 percent of the nominal published unit weight used in the design.

* Some hollow-core production systems do not permit the incorporation of embedments. Contact local producers for suitable alternate details if embedments are not practical.
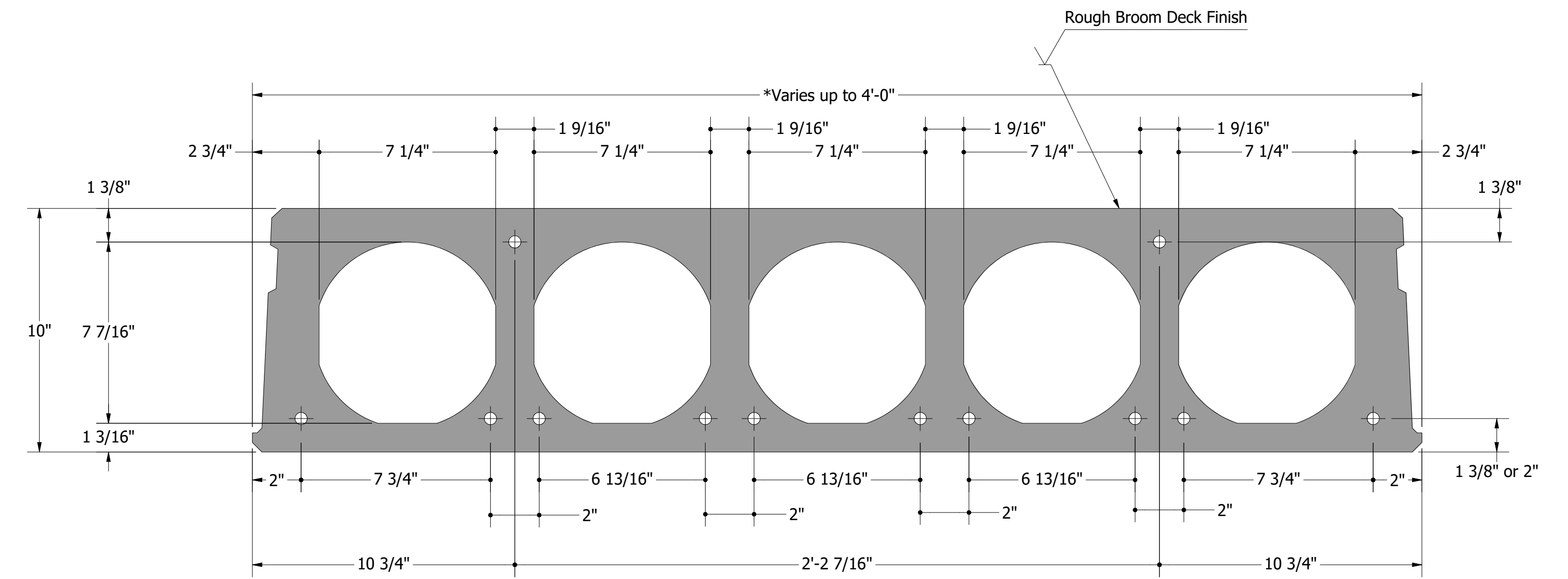
E10" x 48" SECTION

1.125" Minimum Strand Cover

IBC Fire Ratings	No Structural Topping				
	Unrestrained 1 hour				
	Restrained 2 hours				

Section Properties				
A = 243 in²		Y_t = 4.9 in		b_w = 10.4 in
I = 3080 in⁴		Y_b = 5.1 in		wt = 64 psf

ϕM_n k-ft/ft	37.38	49.03	60.25		
Series	1.125E10-86	1.125E10-88	1.125E10-810		
Span (ft)	Allowable Superimposed Load in lbs/ft²				
15					
20	370	389	408		
25	246	289	313		
30	160	202	232		
35	105	147	169		
40	69	105	128		

Strands: ½"φ 270 ksi Low-Lax Stress to 65% (26.9 kip)
Concrete Strength: f'$_c$ = 8,000 psi at 28 days
Topping Strength: f'$_c$ = 3,000 psi at 28 days

E10" x 48" SECTION

1.125" Minimum Strand Cover

IBC Fire Ratings	2" Bonded Structural Topping				
	Unrestrained 1 hour				
	Restrained 4 hours				

Section Properties				
A = 299 in²		Y_t = 5.8 in		b_w = 10.4 in
I = 4677 in⁴		Y_b = 6.2 in		wt = 89 psf

ϕM_n k-ft/ft	43.78	56.28	67.85		
Series	1.125E10-86T	1.125E10-88T	1.125E10-810T		
Span (ft)	Allowable Superimposed Load in lbs/ft²				
15					
20	407	407	407		
25	283	309	309		
30	176	237	244		
35	112	163	197		
40	70	109	145		

Strands: ½"φ 270 ksi Low-Lax Stress to 65% (26.9 kip)
Concrete Strength: f'$_c$ = 8,000 psi at 28 days
Topping Strength: f'$_c$ = 3,000 psi at 28 days