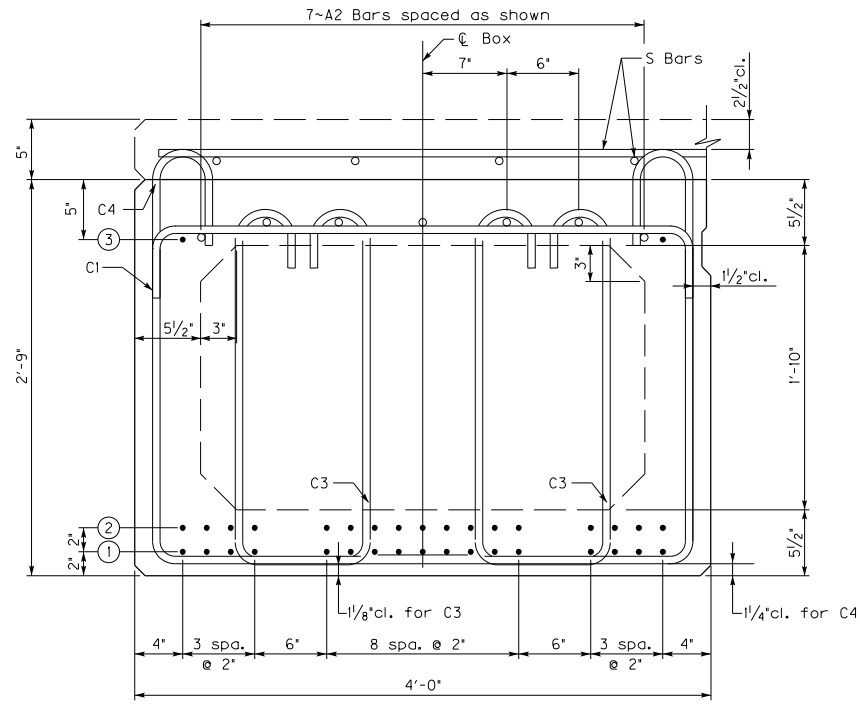
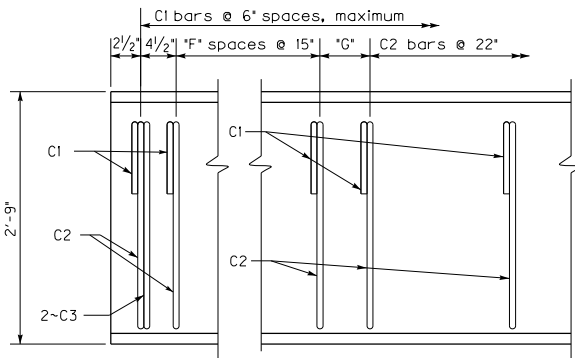


B33 BEAM

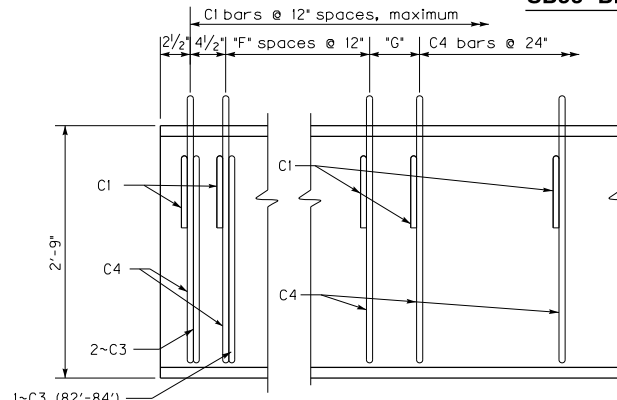


CB33 BEAM



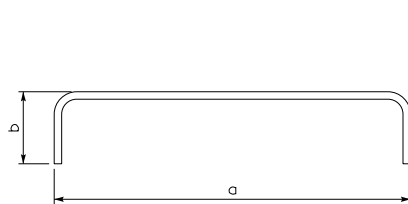
B33 ELEVATION OF 0° SKEW

(Refer to BDP-003, for skewed details)

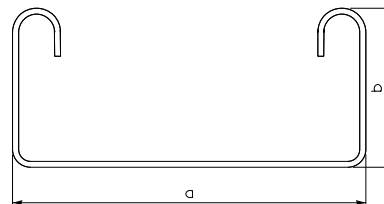


CB33 ELEVATION OF 0° SKEW

(Refer to BDP-003, for skewed details)



C1(e) Bar



C2(e)-C4(e) Bars

TABLE OF STRAND DATA

Beam Type	Beam Length (feet)	Number of Strands Required		
		Row ①	Row ②	Row ③
B33	66	17	5	
	68	17	6	
	70	17	7	
	72	17	8	
	74	17	10	
	76	17	11	
CB33	78	17	12	
	72	17	7	
	74	17	9	
	76	17	10	
	78	17	11	
	80	17	13	
	82	17	14	2
	84	17	15	2

TABLE OF DIMENSION DATA

Beam Type	Beam Length (feet)	"F"	"G"				
B33	66	5	17"				
	68	5	18"				
	70	6	15"				
	72	6	16"				
	74	6	17"				
	76	6	18"				
CB33	78	6	19"				
	72	7	17"				
	74	7	17"				
	76	8	17"				
	78	8	17"				
	80	8	17"				
	82	8	17"				
	84	8	17"				

BAR QUANTITIES TABLE

Beam Type	Beam Length (feet)	BAR QUANTITIES TABLE				DESIGN DATA					
		C1	C2	C3	C4	DC kips	DW kips	LL kips	LL+I kips	Δd (in.)	Δc (in.)
B33	66	133	42	4		28.4	1.9	51.6	64.3		
	68	137	43	4		29.3	1.9	52.2	65.0		
	70	141	45	4		30.2	2.0	52.8	65.6		
	72	145	46	4		31.0	2.0	53.3	66.2		
	74	149	47	4		31.9	2.1	53.9	66.8		
	76	153	48	4		32.7	2.2	54.4	67.5		
CB33	78	157	49	4		33.6	2.2	55.0	68.0		
	72	73		4	46	40.0	2.0	53.3	66.2	0.4	1.1
	74	75		4	47	41.1	2.1	53.9	66.8	0.4	1.2
	76	77		4	49	42.2	2.2	54.4	67.5	0.5	1.3
	78	79		4	50	43.3	2.2	55.0	68.0	0.5	1.4
	80	81		4	51	44.4	2.3	55.5	68.6	0.6	1.5
	82	83		6	52	45.5	2.3	56.1	69.2	0.6	1.4
	84	85		6	53	46.6	2.4	56.6	69.8	0.7	1.5

Straight Reinforcement

Mark	Size	Length
A1(E)	#5	Beam Length Minus 3'
A2(E)	#4	Beam Length Minus 3'
D(E)	#8	2'-0"

NOTE: A1 and A2 bars are to be lapped 2'-2" when necessary.

Bent Reinforcement

Mark	Size	a	b
C1(e)	#5	3'-9"	6"
C2(e)	#4	3'-9"	2'-5 1/4"
C3(e)	#5	11 3/8"	2'-5 3/8"
C4(e)	#4	3'-9"	2'-10 1/4"

KENTUCKY
DEPARTMENT OF HIGHWAYS
BOX BEAM
B33 & CB33
DETAILS

STANDARD DRAWING NO. BDP-010-04
SUBMITTED *Mark* *Net* 12-02-11
APPROVED *Shih* 12-02-11
DIRECTOR DIVISION OF STRUCTURAL DESIGN
STATE HIGHWAY ENGINEER