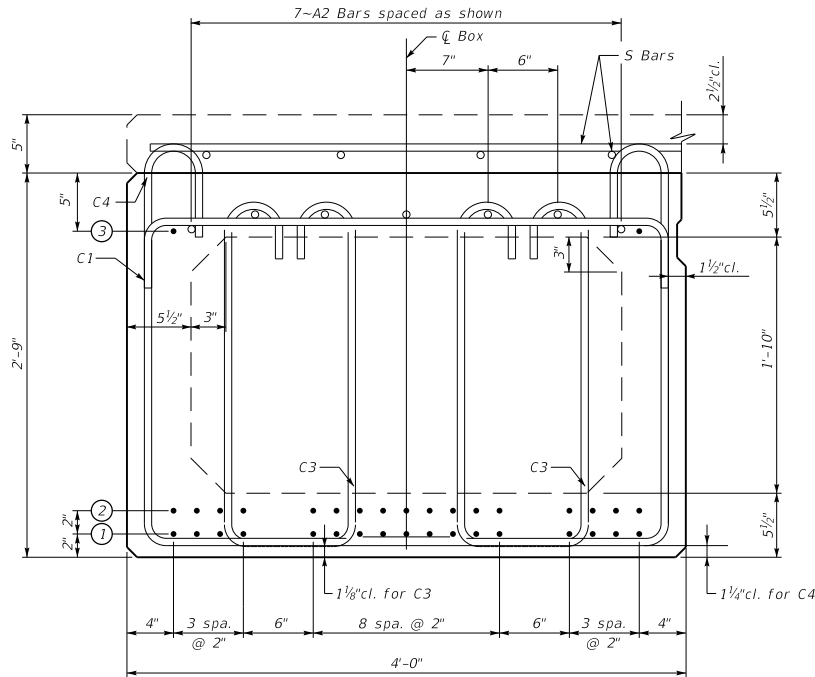
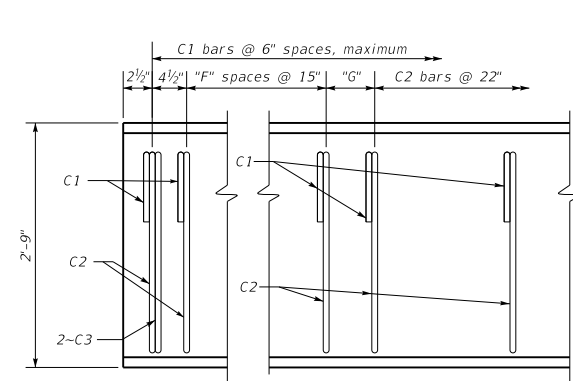


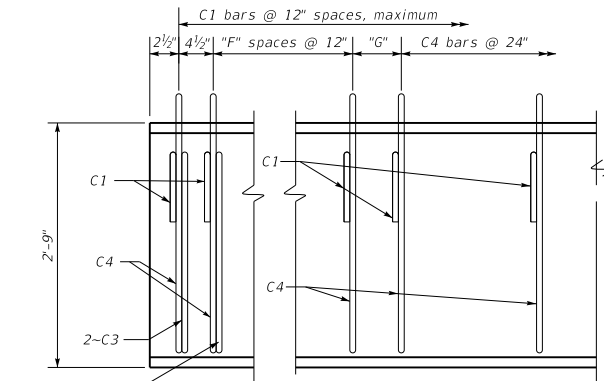
**B33 BEAM**



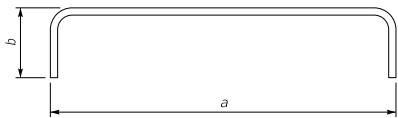
**CB33 BEAM**



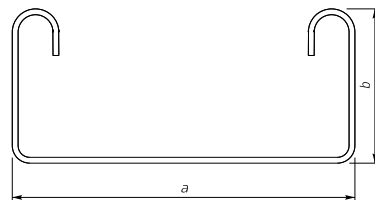
**B33 ELEVATION OF 0° SKEW**  
(Refer to BDP-003,c.e. for skewed details)



**CB33 ELEVATION OF 0° SKEW**  
(Refer to BDP-003,c.e. 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	
	78	17	12	
CB33	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"			
	78	6	19"			
CB33	72	7	17"			
	74	7	17"			
	76	8	17"			
	78	8	17"			
	80	8	17"			
	82	8	17"			
	84	8	17"			

**BAR QUANTITIES TABLE DESIGN DATA**

Beam Type	Beam Length (feet)	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		
	78	157	49	4		33.6	2.2	55.0	68.0		
CB33	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: *Boyd Adams* DIRECTOR DIVISION OF STRUCTURAL DESIGN DATE: 02-26-20

APPROVED: *Boyd Adams* STATE STRUCTURAL ENGINEER DATE: 02-26-20