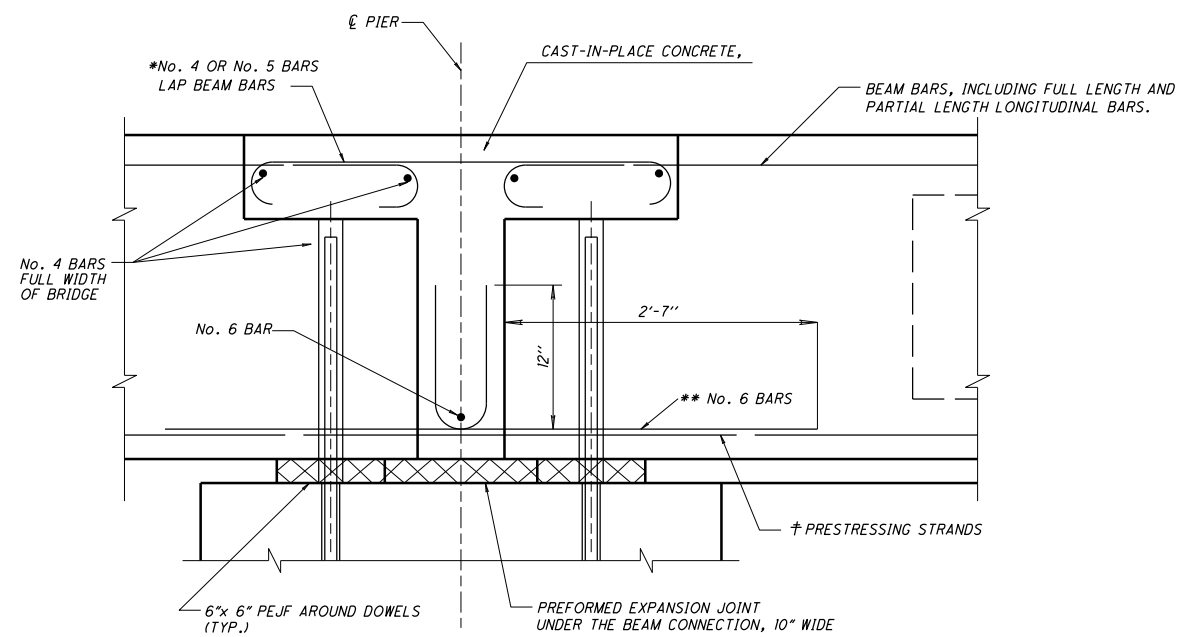


PARTIAL PLAN OF BEAM CONNECTION OVER PIER



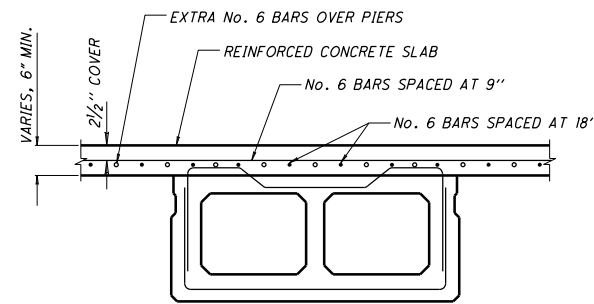
SECTION A-A

- * LAP BARS SAME SIZE AND NUMBER AS BEAM BARS. HOOKS MAY BE ROTATED FROM THE VERTICAL POSITION TO PROVIDE THE REQUIRED CLEARANCE.
- ** PROVIDE 6 No. 6 BARS EACH BEAM END IN 48" WIDE BEAMS AND 4 No. 6 BARS EACH BEAM END IN 36" WIDE BEAMS. No. 6 BARS SHALL BE LOCATED ON TOP OF STIRRUPS AND SHALL BE UNIFORMLY SPACED ACROSS THE BEAM.
- † AT THE FABRICATOR'S OPTION, STRANDS MAY BE EXTENDED AND BENT UP IN LIEU OF No. 6 BARS. 48" WIDE BEAMS WITH A TOTAL OF 12 OR MORE STRANDS SHALL HAVE A MINIMUM OF 6 STRANDS BENT UP. 48" WIDE BEAMS WITH LESS THAN 12 STRANDS TOTAL SHALL HAVE APPROXIMATELY ONE HALF OF THE TOTAL NUMBER OF STRANDS BENT UP. 36" WIDE BEAMS WITH A TOTAL OF 8 OR MORE STRANDS SHALL HAVE A MINIMUM OF 4 STRANDS BENT UP. 36" WIDE BEAMS WITH LESS THAN 8 STRANDS TOTAL SHALL HAVE APPROXIMATELY ONE HALF OF THE TOTAL NUMBER OF STRANDS BENT UP.

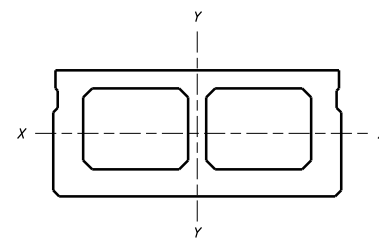
NOTE: THE PRESTRESSING STRANDS WHICH ARE BENT UP SHALL BE STAGGERED IN ABUTTING BEAM ENDS TO AVOID INTERFERENCE.

BENT REINFORCING BARS							BENDING DIAGRAMS	
MARK	TYPE	A	B	C	D	E		
A	1	32"	8"					
B	2	32"	13"	10 1/2"	2"	7"		
C	2	32"	13"	4 1/2"	2"	19"		
D	1	32"	13"					
E	2	32"	17"	4 1/2"	2"	19"		
F	2	32"	17"	10 1/2"	2"	7"		
G	1	32"	17"					
H	1	32"	23"					
I	1	32"	29"					
J	1	32"	38"					
K	1	44"	23"					
M	1	44"	8"					
N	1	44"	13"					
O	1	44"	17"					
P	2	44"	13"	13 1/2"	2"	13"		
Q	2	44"	17"	13 1/2"	2"	13"		
R	2	44"	17"	7 1/2"	2"	25"		
S	1	44"	29"					
T	1	44"	38"					
V	2	44"	13"	7 1/2"	2"	25"		
W	2	44"	12"	9 1/2"	6 1/2"	12"		
X	2	44"	17"	9 1/2"	6 1/2"	12"		
Y	2	44"	21"	9 1/2"	6 1/2"	12"		
WW	2	32"	12"	6 1/2"	6 1/2"	6"		
XX	2	32"	17"	6 1/2"	6 1/2"	6"		
YY	2	32"	21"	6 1/2"	6 1/2"	6"		

NOTE: ALL BARS ARE #4



36" OR 48" WIDE COMPOSITE BEAM WITH SLAB



36" OR 48" WIDE COMPOSITE BEAM

48" WIDE BOX BEAM - SECTION PROPERTIES							
BEAM ONLY	D	12"	17"	21"	27"	33"	42"
	A _b	567.8	590.3	647.8	713.8	774.5	873.5
I _b	6850	18819	33884	66222	111342	205459	
Y _b	5.97"	8.44"	10.42"	13.39"	16.33"	20.78"	
Z _t	1136	2198	3202	4866	6681	9684	
Z _b	1147	2230	3253	4945	6816	9886	
COMPOSITE SECTION	I _c	18681	38620	62057	109704	173831	303315
	Y _b ^c	8.32	11.40	13.69	17.13	20.51	25.49
	Z _t ^c	5079	6898	8489	11119	13922	18367
Z _b ^c	2245	3387	4533	6403	8474	11901	

36" WIDE BOX BEAMS - SECTION PROPERTIES							
BEAM ONLY	D	12"	17"	21"	27"	33"	42"
	A _b	423.8	458.3	515.8	581.8	642.5	741.5
I _b	5122	14122	25622	50634	86049	161155	
Y _b	5.96"	8.42"	10.40"	13.37"	16.30"	20.75"	
Z _t	848	1646	2416	3714	5153	7582	
Z _b	859	1677	2464	3788	5279	7768	
COMPOSITE SECTION	I _c	14003	29153	47126	83956	134078	236517
	Y _b ^c	8.32	11.31	13.53	16.88	20.17	25.00
	Z _t ^c	3809	5127	6308	8296	10448	13916
Z _b ^c	1682	2577	3483	4974	6649	9459	

SECTION PROPERTIES FOR COMPOSITE SECTIONS ARE COMPUTED WITH A SLAB THICKNESS OF 5". TOTAL THICKNESS OF SLAB IS 6" WHICH INCLUDES 1" MONOLITHIC WEARING SURFACE.

$$\frac{E_{slab}}{E_{beam}} = 0.90$$

DEFINITIONS:

- D = TOTAL DEPTH OF THE NON-COMPOSITE BEAM (IN)
- A_b = CROSS-SECTIONAL AREA OF THE NON-COMPOSITE BEAM (IN²)
- I_b = MOMENT OF INERTIA OF THE NON-COMPOSITE BEAM ABOUT THE X-X AXIS (IN⁴)
- Y_b = LOCATION OF THE NEUTRAL AXIS OF THE NON-COMPOSITE SECTION MEASURED FROM THE EXTREME BOTTOM FIBER (IN)
- Z_t = SECTION MODULUS FOR THE EXTREME TOP FIBER OF THE NON-COMPOSITE BEAM (IN³)
- Z_b = SECTION MODULUS FOR THE EXTREME BOTTOM FIBER OF THE NON-COMPOSITE BEAM (IN³)
- I_c = MOMENT OF INERTIA OF THE COMPOSITE BEAM ABOUT THE X-X AXIS (IN⁴)
- Y_b^c = LOCATION OF NEUTRAL AXIS OF COMPOSITE SECTION MEASURED FROM THE EXTREME BOTTOM FIBER (IN)
- Z_t^c = SECTION MODULUS FOR THE EXTREME TOP FIBER OF COMPOSITE SECTION (IN³)
- Z_b^c = SECTION MODULUS FOR THE EXTREME BOTTOM FIBER OF THE COMPOSITE SECTION (IN³)