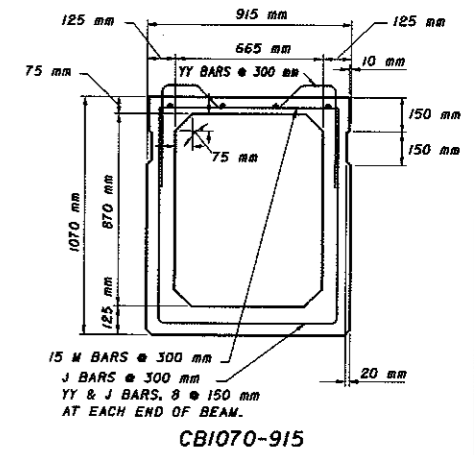
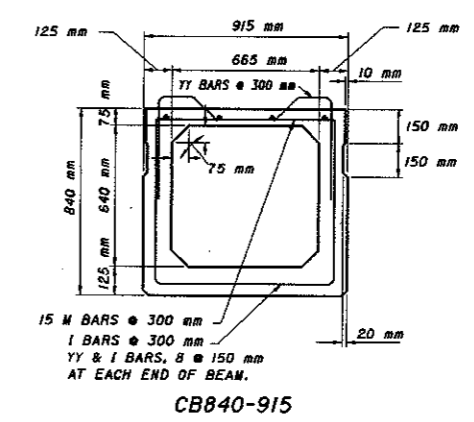
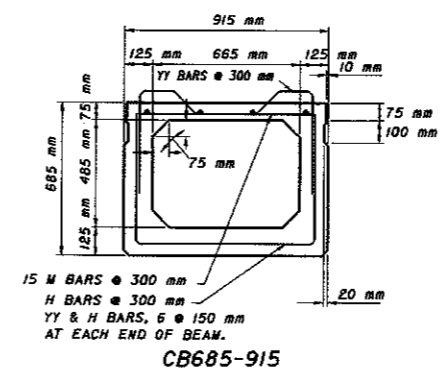
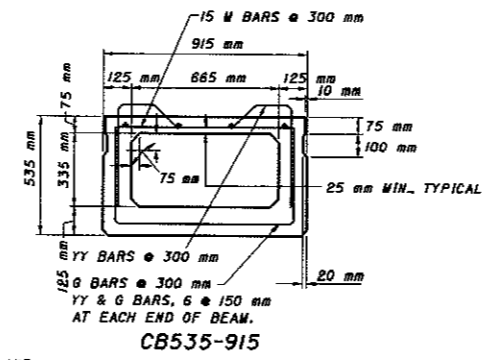
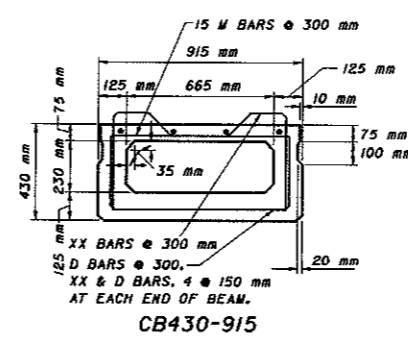
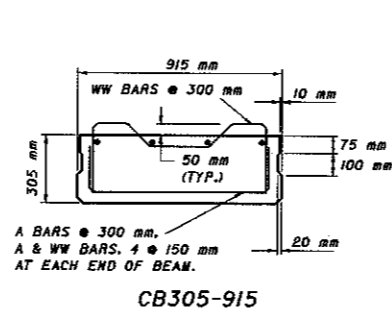
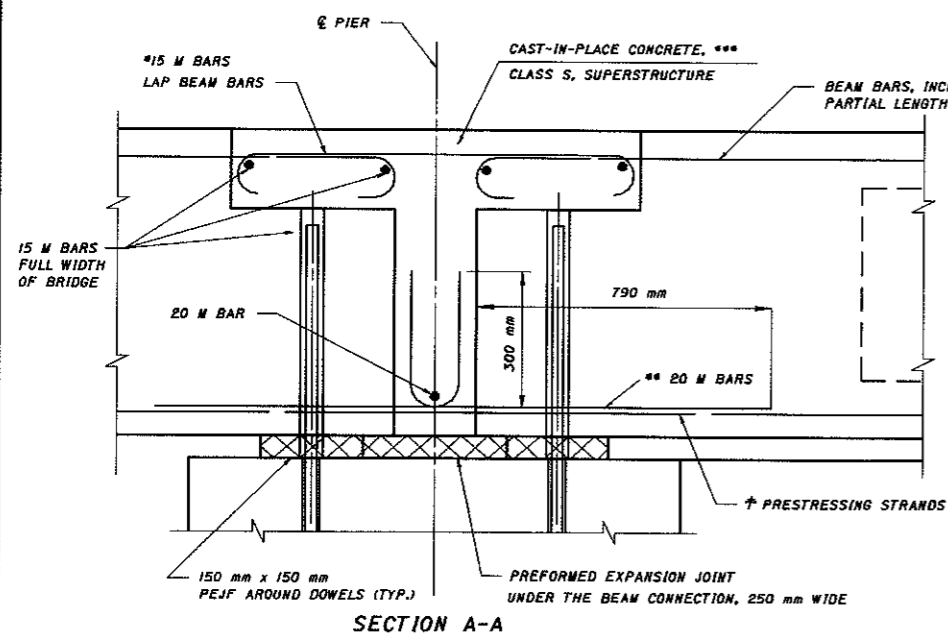


PARTIAL PLAN OF BEAM CONNECTION OVER PIER

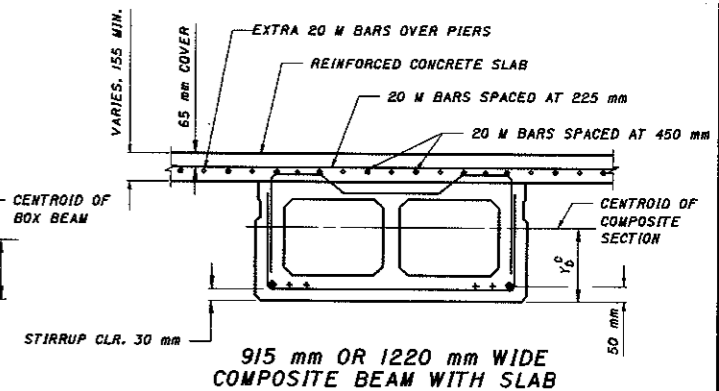
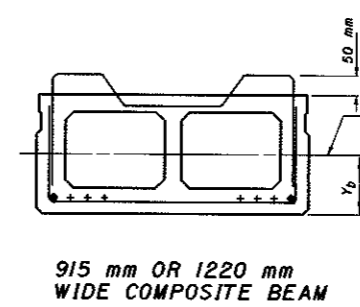


915 mm WIDE COMPOSITE BEAMS



SECTION A-A

		SECTION PROPERTIES					
		1220 mm WIDE COMPOSITE BOX BEAM					
		CB305-1220	CB430-1220	CB535-1220	CB685-1220	CB840-1220	CB1070-1220
BEAM ONLY	$A_b \times 10^3$	366.3	312.5	346.1	376.7	411.9	470.1
	$I_b \times 10^6$	2844.1	6971.5	12183.9	23231.5	38,515.6	70515.9
	Y_b	151.9	201.7	248.2	309.4	377.4	483.1
	$Z_t \times 10^6$	18.6	30.3	42.7	61.7	83.6	120.8
	$Z_b \times 10^6$	18.7	34.6	49.1	75.1	102.0	146.0
COMPOSITE SECTION	$I_c \times 10^6$	7777.3	15497.5	24498.1	43179.0	67429.9	115899.2
	Y_c	211.8	292.6	348.7	428.5	510.5	631.7
	$Z_t \times 10^6$	83.6	111.3	132.6	167.9	205.7	266.4
	$Z_c \times 10^6$	36.7	53.0	70.3	100.7	132.1	183.9



NOTE: REINFORCING BAR DATA AND NOTES ARE SHOWN ON SHEET 3 OF 4.

SECTION PROPERTIES FOR COMPOSITE SECTIONS ARE COMPUTED WITH A SLAB THICKNESS OF 125 mm. TOTAL THICKNESS OF SLAB IS 150 mm WHICH INCLUDES 25 mm MONOLITHIC WEARING SURFACE.

SLAB CONCRETE IS CLASS S CONCRETE: $f'_c = 31.0 \text{ MPa}$
MINIMUM BEAM CONCRETE STRENGTH AT 28 DAYS: $f'_c = 38.0 \text{ MPa}$

ALL REINFORCING STEEL IN THE COMPOSITE DECK SLAB AND BARS PROJECTING FROM THE PRESTRESSED BOX BEAMS SHALL BE GRADE 400 EPOXY COATED BARS.

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

ALL DIMENSIONS ARE IN mm

- * LAP BARS SAME SIZE AND NUMBER AS BEAM BARS. HOOKS MAY BE ROTATED FROM THE VERTICAL POSITION TO PROVIDE THE REQUIRED CLEARANCE.
 - ** PROVIDE 6-20 M BARS EACH BEAM END IN 1220 mm WIDE BEAMS AND 4-20 M BARS EACH BEAM END IN 915 mm WIDE BEAMS. 20 M 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 20 M BARS. 1220 mm WIDE BEAMS WITH A TOTAL OF 12 OR MORE STRANDS SHALL HAVE A MINIMUM OF 6 STRANDS BENT UP. 1220 mm WIDE BEAMS WITH LESS THAN 12 STRANDS TOTAL SHALL HAVE APPROXIMATELY ONE HALF OF THE TOTAL NUMBER OF STRANDS BENT UP. 915 mm WIDE BEAMS WITH A TOTAL OF 8 OR MORE STRANDS SHALL HAVE A MINIMUM OF 4 STRANDS BENT UP. 915 mm WIDE BEAMS WITH LESS THAN 8 STRANDS TOTAL SHALL HAVE APPROXIMATELY ONE HALF OF THE TOTAL NUMBER OF STRANDS BENT UP.
 - *** IN LIEU OF CLASS S CONCRETE, THE CONTRACTOR AT HIS OPTION MAY USE OTHER CONCRETE MIXTURES IN ACCORDANCE WITH CMS 499.03 FOR ACHIEVING THE REQUIRED STRENGTH EARLIER.
- NOTE: THE PRESTRESSING STRANDS WHICH ARE BENT UP SHALL BE STAGGERED IN ABUTTING BEAM ENDS TO AVOID INTERFERENCE.

		SECTION PROPERTIES					
		915 mm WIDE COMPOSITE BOX BEAM					
		CB305-915	CB430-915	CB535-915	CB685-915	CB840-915	CB1070-915
BEAM ONLY	$A_b \times 10^3$	273.5	241.5	276.1	314.8	350.2	408.1
	$I_b \times 10^6$	2124.9	5242.8	9377.3	18145.6	30467.7	56691.5
	Y_b	151.6	198.4	245.1	314.7	384.0	491.7
	$Z_t \times 10^6$	13.9	22.4	32.5	48.9	67.1	98.6
	$Z_b \times 10^6$	14.0	26.4	38.3	57.6	79.3	115.3
COMPOSITE SECTION	$I_c \times 10^6$	5828.5	11849.3	18934.8	33162.0	52259.1	90895.8
	Y_c	211.8	288.3	342.1	423.4	503.4	622.6
	$Z_t \times 10^6$	62.6	82.5	99.0	126.4	156.2	204.6
	$Z_c \times 10^6$	27.5	41.1	55.4	78.3	103.8	146.0

REVISIONS		STATE OF OHIO DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES AND STRUCTURAL DESIGN	
		STANDARD PRESTRESSED CONCRETE BOX BEAM BRIDGE DETAILS	
APPROVED	<i>Richard L. Engel</i>	ENGINEER OF BRIDGES	DRAWING NO. PSBD-1-93M
DATE: 12-19-94		PREPARED	SHEET NO. 4 OF 4 SHEETS
MRG	REF	CHECKED WLF SEM	REVIEWED LMW