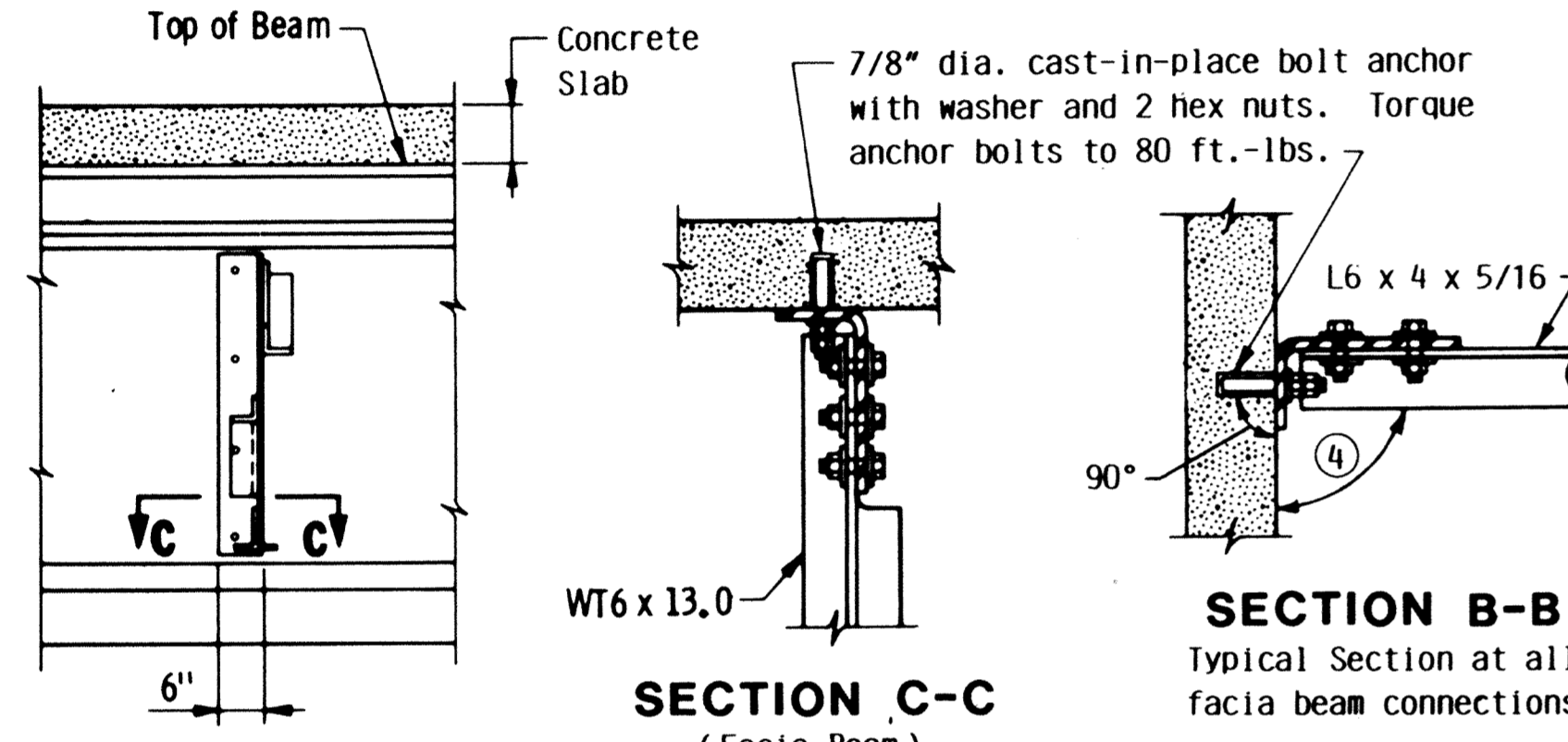
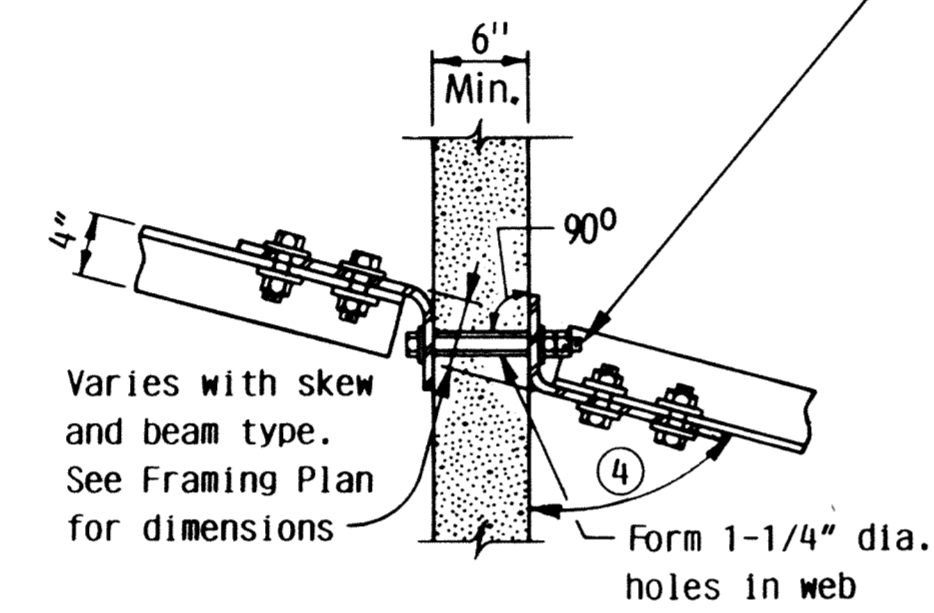


PART TRANSVERSE SECTION (Square Bridge Shown)

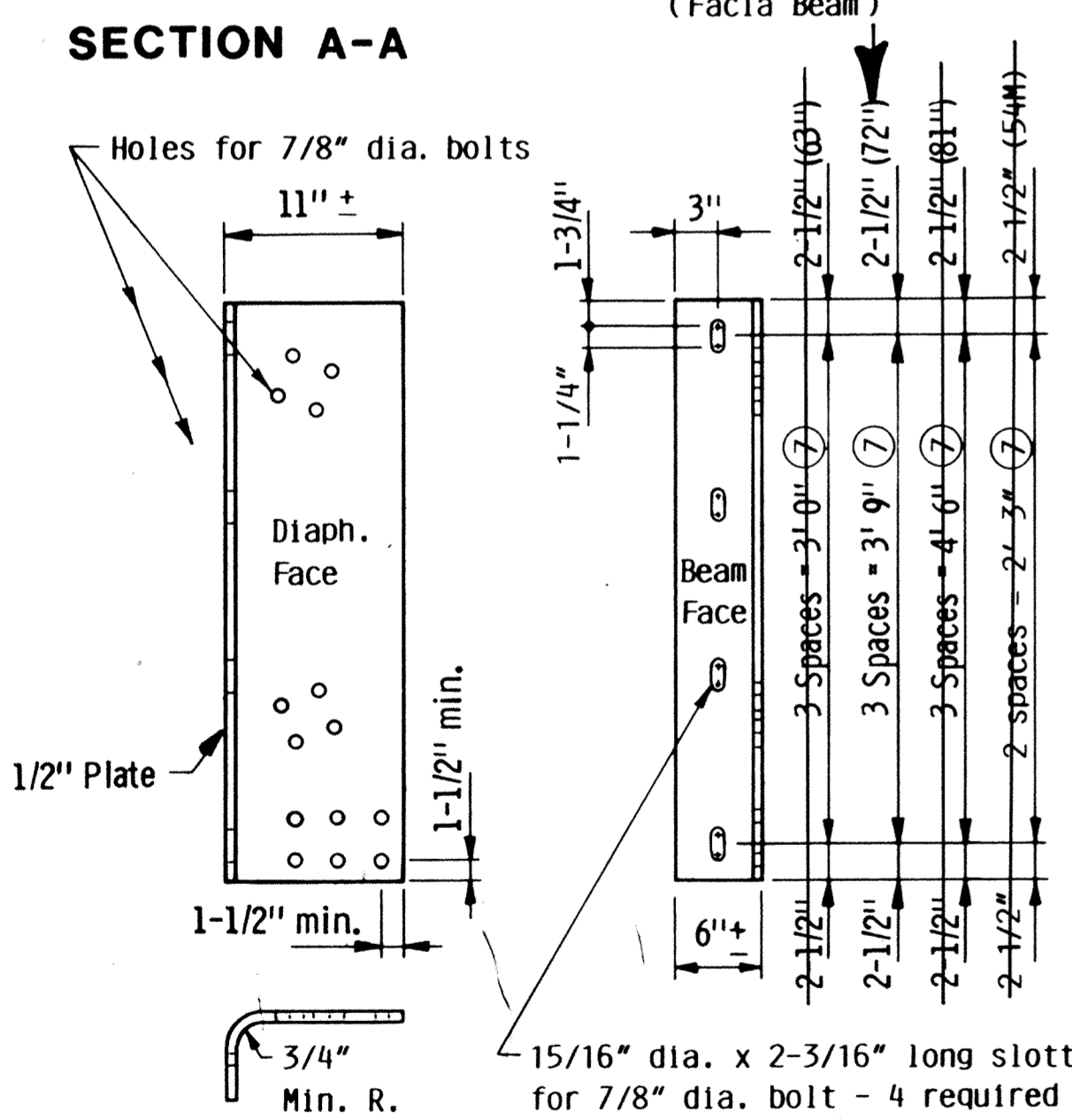


SECTION B-B Typical Section at all interior beam diaphragm connections

SECTION C-C (Facia Beam) Typical Section at all fascia beam connections

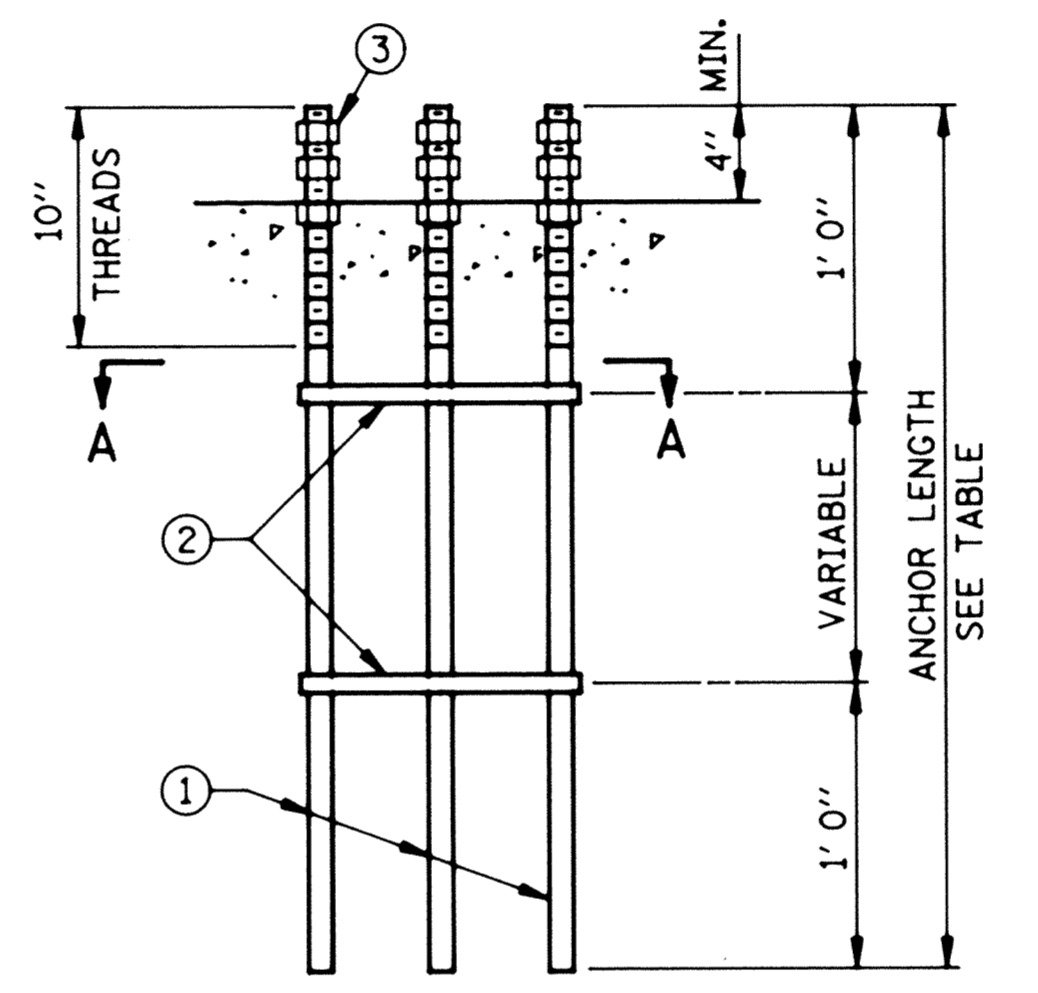
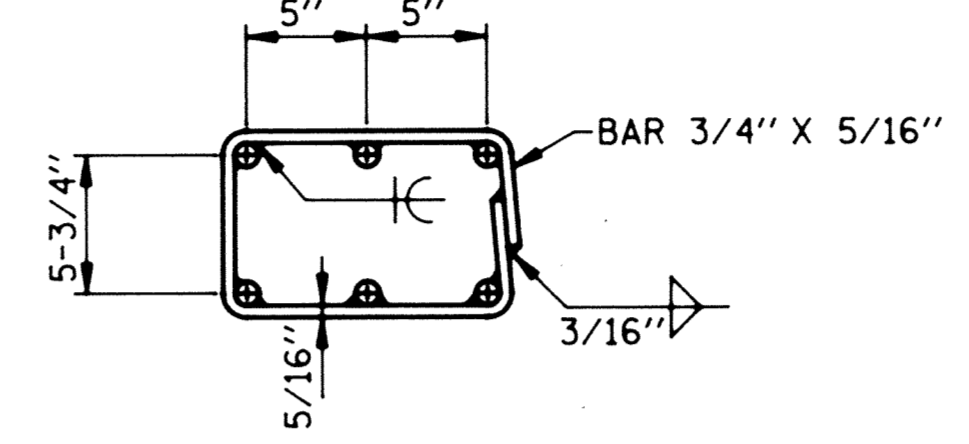
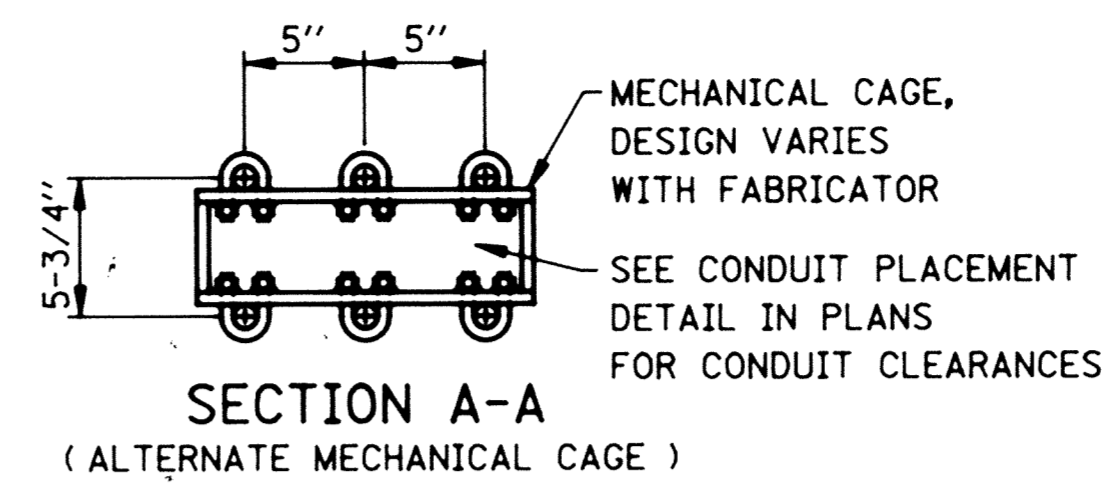


TYP. INTERMEDIATE DIAPHRAGM Typical Section at Interior Diaphragms



DIAPHRAGM SUPPORT

- NOTES:**
- All structural steel shown on this detail, including bolts and washers, shall be included in the payment for diaphragms for prestressed beams.
 - Diaphragms over the piers are considered to be intermediate, if the slab is continuous.
 - For bolt lengths greater than 9", use high strength bolts per Spec. SAE Grade 5 or better.
 - For skew angles under 20°, use 90° less the skew angle. For angles over 20°, use 90°.
 - As an alternative to the 7/8" bolt connection, the contractor may submit details and catalogue or performance information of a cast-in-place anchorage to the Engineer for approval.
 - If diaphragms are used at ends of beams, reduce the length for end blocks accordingly.
 - Bolt holes shall be spaced so as to miss prestressed strands in concrete beams. See prestressed concrete beam sheets for more information.
 - See Spec. 2405.3M for installation.



ELEVATION

STANDARD RAIL TYPES (SEE PLANS FOR TYPE)	ANCHOR LENGTH
TYPE "J" WITH PIPE	2' 10"
TYPE "J" MEDIAN	3' 0"
TYPE "J" WITHOUT WEAR COURSE	3' 0"
TYPE "J" WITH WEAR COURSE	3' 2"
TYPE "J" WITH SIDEWALK/ BRIDGE SLAB	3' 10"
TYPE "J" WITH 6" SIDEWALK SLAB	4' 4"
TYPE "J" ON RETAINING WALL	3' 0"
CONCRETE BASE WITH FENCE	2' 8"

NOTES:

- GENERAL NOTES:**
- ALL RODS ARE TO BE 1" NOMINAL DIA. WITH 1 - 8UNC - 2A THREADS. HEAVY HEX NUTS PER SPEC. 3391.2B FOR 1" DIA. THREADED RODS (18 REQUIRED). HEX NUTS TO BE TAPPED 1/64" OVERSIZED PRIOR TO GALVANIZING, AND RETAPPED TO STANDARD SIZE AFTER GALVANIZING - ALTERNATES I & II.
 - GALVANIZE ~~THREADED RODS, CAGES, AND NUTS~~ BEFORE OR AFTER FABRICATION AS PER SPEC. 3392. REPAIR ANY FABRICATION DAMAGE BY ZINC METALIZING AS PER SPEC. 2471.3L.
 - TOP OF THE LOWER NUTS SHALL BE FLUSH WITH TOP OF CONCRETE RAILING. WRAP THE THREADS BELOW THE NUTS WITH 3 LAYERS OF PLASTIC ELECTRICAL TAPE.
 - SUBSTITUTE MATERIALS AS PER SPEC. 1605.
 - LIGHT POLE ANCHOR RODS AND NUTS SHALL BE STAINLESS STEEL.

- ALTERNATE I NOTES:**
- THREADED RODS, STEEL AS PER SPEC. 3309 (6 REQUIRED).
 - MECHANICAL OR WELDED ALIGNMENT CAGE, STEEL AS PER SPEC. 3306 (2 REQUIRED).
- ALTERNATE II NOTES:**
- THREADED RODS, STEEL AS PER SPEC. 3385, TYPE B OR C (6 REQUIRED).
 - PROVIDE A MECHANICAL CAGE FOR ROD ALIGNMENT. STEEL AS PER SPEC. 3306 (2 REQUIRED).

- ALTERNATE III NOTES:**
- THREADED STAINLESS STEEL RODS ASTM A 276, AUSTENITIC GRADE, CONDITION A (ANNEALED). Fy = 50,000 P.S.I. MINIMUM.
 - MECHANICAL ALIGNMENT CAGE, STEEL AS PER SPEC. 3306 (2 REQUIRED). GALVANIZE AFTER FABRICATION AS PER SPEC. 3392.
 - HEAVY HEX NUTS FOR 1" DIA. RODS PER SPEC. 3391.2E (18 REQUIRED).

RECORD PLAN OCT. 1993

APPROVED: September 24, 1987
 Developed by: ENGINEERING STANDARDS and BRIDGES & STRUCTURES
 Issued by: ENGINEERING STANDARDS

STATE OF MINNESOTA
 DEPARTMENT OF TRANSPORTATION
STEEL INTERMEDIATE BOLTED DIAPHRAGM FOR 54M & 63" - 81" PRESTRESSED CONC. BEAMS

REVISION
 DETAIL NO.
B406

APPROVED: AUGUST 31, 1989
 Developed by: ENGINEERING STANDARDS and BRIDGES & STRUCTURES
 Issued by: ENGINEERING STANDARDS

STATE OF MINNESOTA
 DEPARTMENT OF TRANSPORTATION
LIGHT POLE ANCHORAGE

REVISION
 DETAIL NO.
B950 (MODIFIED)