

GENERAL NOTES

The manufacture of precast prestressed concrete beams shall conform to the Kansas Department of Transportation Specifications.

The ultimate compressive strength of concrete as determined by cylinder tests at the age of 28 days shall be a minimum of 5000 PSI unless otherwise noted. Concrete shall be air entrained. The mix design shall be approved by the KDOT Materials Section.

Beam lengths shown on the design plans are net lengths measured horizontally along the beam centerline. The beam manufacturer shall make necessary allowances for grade and shortening due to elastic shortening, creep and shrinkage.

The beam shall reasonably conform to the lines and dimensions shown on the design plans and be within the tolerances specified in the latest publication of AASHTO, "Tentative Standards for Prestressed Piles, Slab, I-Beams and Box Bridges and an Interim Manual for Inspection of Such Construction," except as modified by this sheet or as modified by the KDOT Specifications.

All exposed edges of beams except top and ends shall be beveled with a 3/4 inch triangular moulding or rounded to a 3/4 inch radius. The angle of intersection between web and flange shall be rounded.

Tops of beams are to be struck off level and given a wire brush or stiff broom finish, applied in the direction transverse to the length of the beam. At approximately the time of initial set the top of beam shall be brushed transversely with a coarse wire brush to remove all laitance.

Unless otherwise shown on the design plans, the prestressing steel shall be 1/2 inch nominal diameter Grade 270 "Uncoated Seven Wire Stress-Relieved Low Relaxation Strands for Prestressed Concrete" ASTM Designation A416. Minimum ultimate strength of strands shall be 41,300 pounds.

Unless otherwise shown on the design plans, ultimate compressive cylinder strength of concrete shall be 4,000 PSI minimum before detensioning of prestressing strands.

An initial tensile force of 1,000 to 3,000 pounds shall be applied to each strand to take up any slack in the cables. Unless otherwise noted in the plans, a tensile force of 31,000 pounds shall be applied to each strand. Strands which are to be deflected shall be stressed to a magnitude such that after deflection they are tensioned to 31,000 pounds.

Trapped air holes and surface voids on the exterior face of the exterior beams shall be filled and the surface covered with an approved 2 part cement based acrylic polymer water seal that leaves no noticeable discoloration. The sealer shall be mixed and applied according to the manufacturer's recommendations. This work shall be subsidiary to the bid item "Prestressed Concrete Beams". (Do for Box-T Girders.)

Detensioning of strands shall be performed in a sequence to minimize lateral eccentricity. Method and sequence of release shall be shown on shop details. Extreme care shall be exercised in lifting, handling, storage and transportation of the beam to prevent damage. They shall be lifted by means of the device shown or by an alternate approved design. The beam shall be maintained in an upright position at all times and shall be supported on bearing points positioned below the designated lifting points or below the designated bearing points.

During transportation only, the beam may be supported by bearing points below the girders at a maximum of 5'-0" from the beam end. If this is done, additional shear reinforcement (end stirrup bars) shall be added for a distance of one beam depth measured from point of support toward center of span.

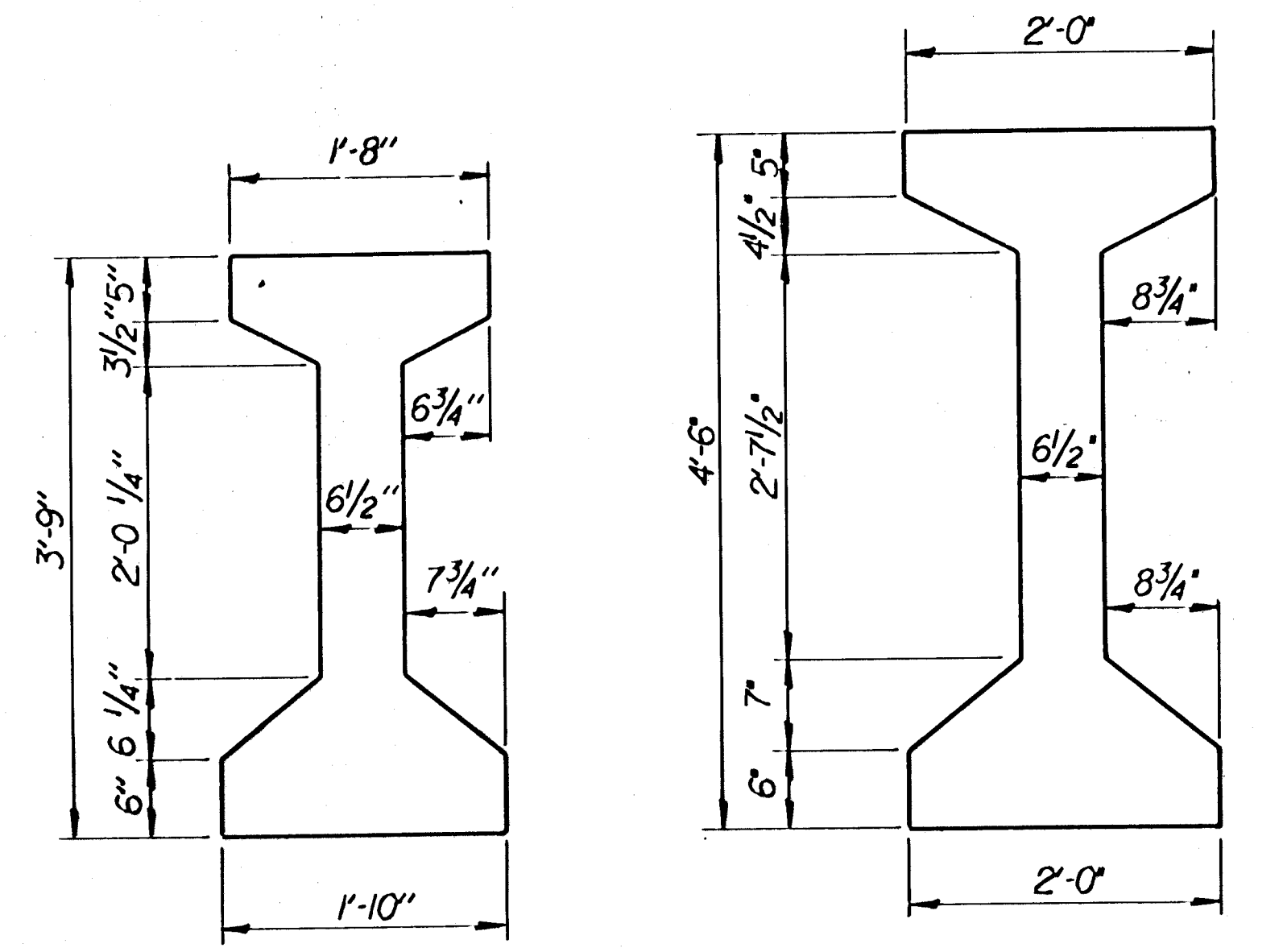
Beam shall have a minimum age of 28 days before placing of bridge slab. Diaphragms shall be poured as noted on the design plans.

Each beam shall have the following information stenciled by painting on the webs approximately 5 feet from beam end: date of strand release, date of concrete placement and beam mark.

Coil ties and bolts shall have an ultimate strength of 50 percent in excess of the manufacturer's safe load and shall be approved by the Engineer. Coil ties that touch prestressing strands shall be coated with an approved epoxy coating. Details will be shown on the shop details. Coil ties and bolts will not be paid for directly but shall be subsidiary to the bid item "Prestressed Concrete Beams".

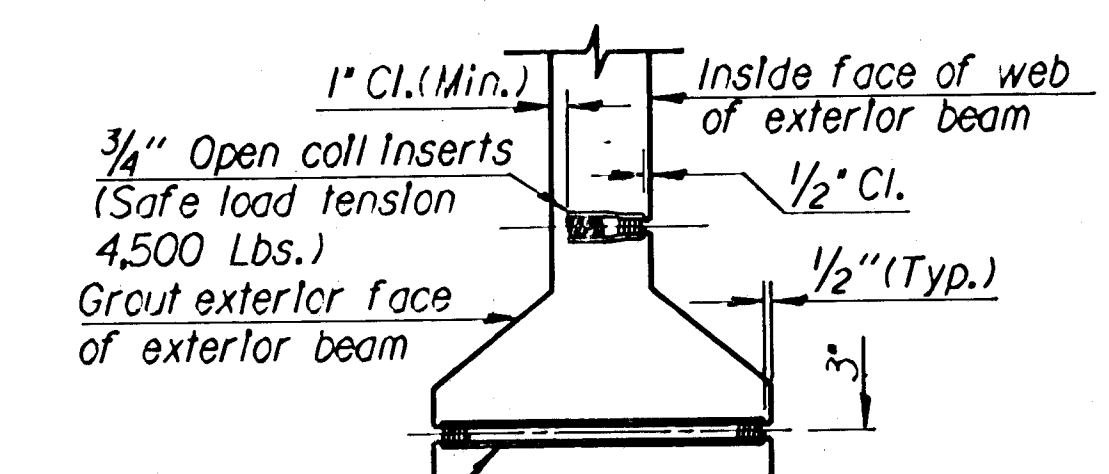
Shop drawings shall be submitted in accordance with the Standard Specifications except that nine (9) sets will be required.

Elastomeric Bearing Pads shall conform to KDOT Specifications. Bearing pad and Type B expansion joint material will not be paid for directly but shall be subsidiary to the bid item "Prestressed Concrete Beams".



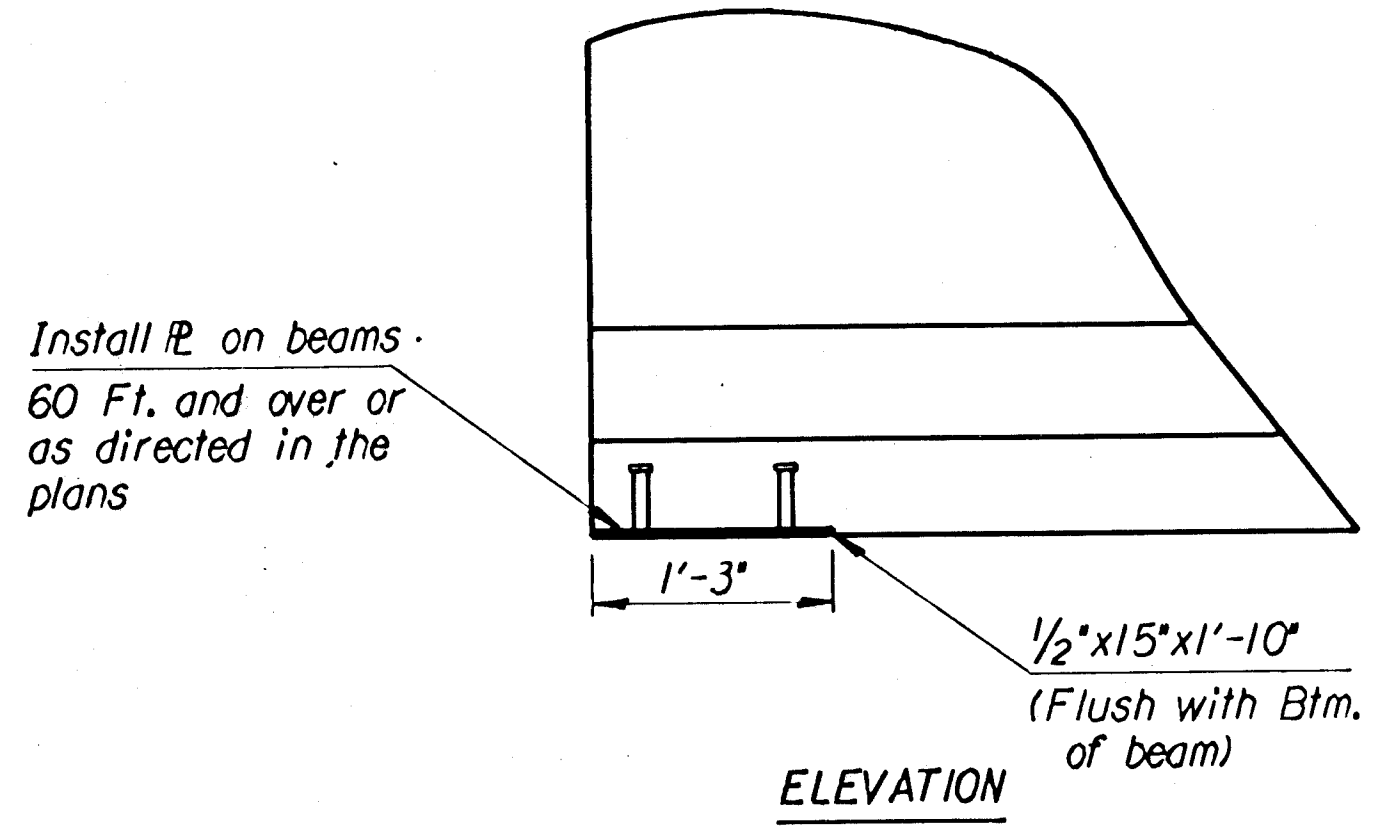
	TYPE K3	TYPE K4
Area	525 In. ²	644 In. ²
IcG	127,490 In. ⁴	236,105 In. ⁴
Y Bot.	21.02 In.	25.89 In.
Vol./Surf. Area	3.56 In.	3.65 In.
Wt./Ft.	547 Lbs.	671 Lbs.

TYPICAL BEAM SECTIONS



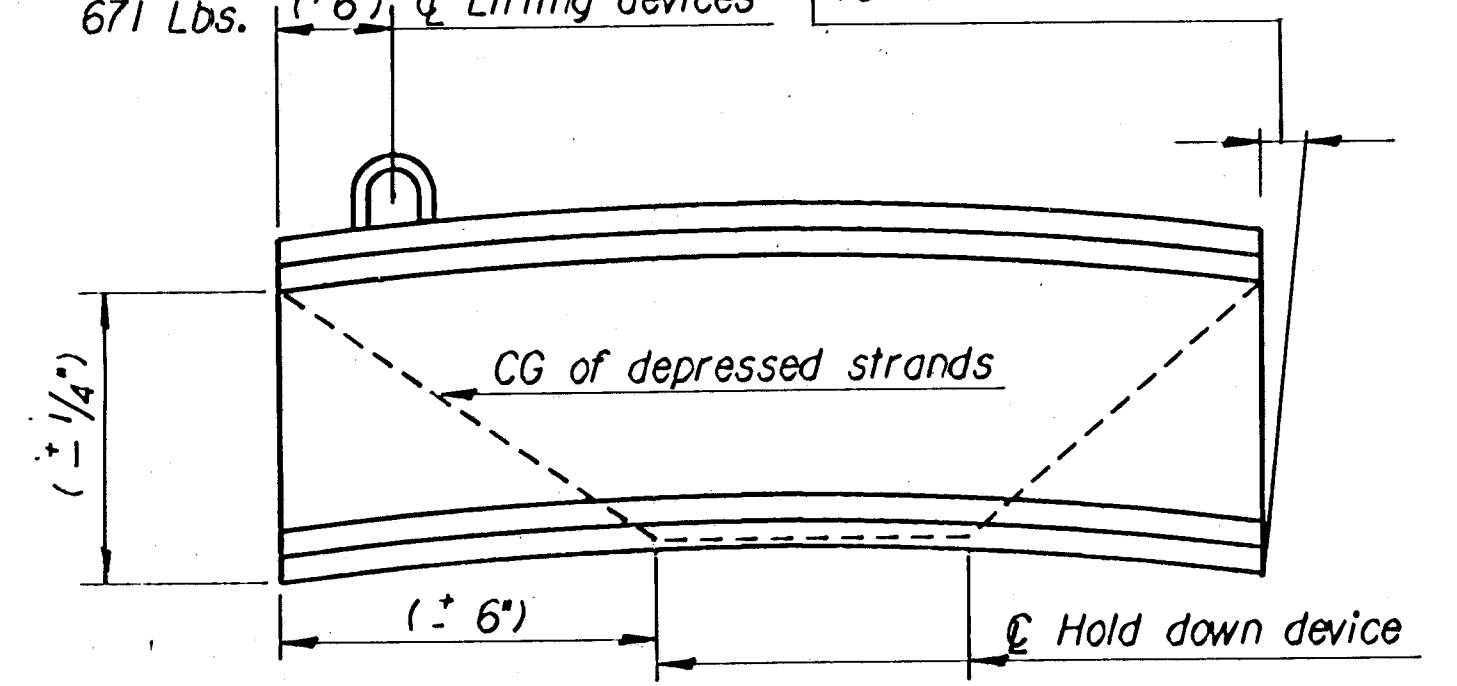
DETAIL OF COIL INSERT

(See Beam Detail sheet for locations)



ELEVATION

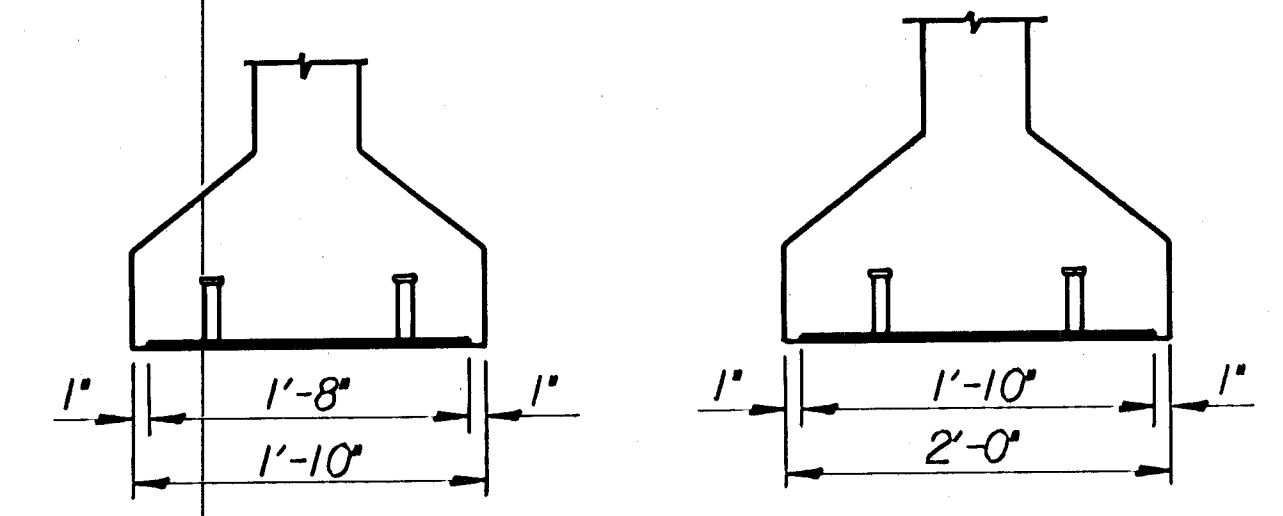
Maximum deviation from plane normal to axis of beam 1/8" per Ft. of beam height.



ELEVATION

Note: Dimensions shown in parentheses are tolerances only.

CG = Center of Gravity



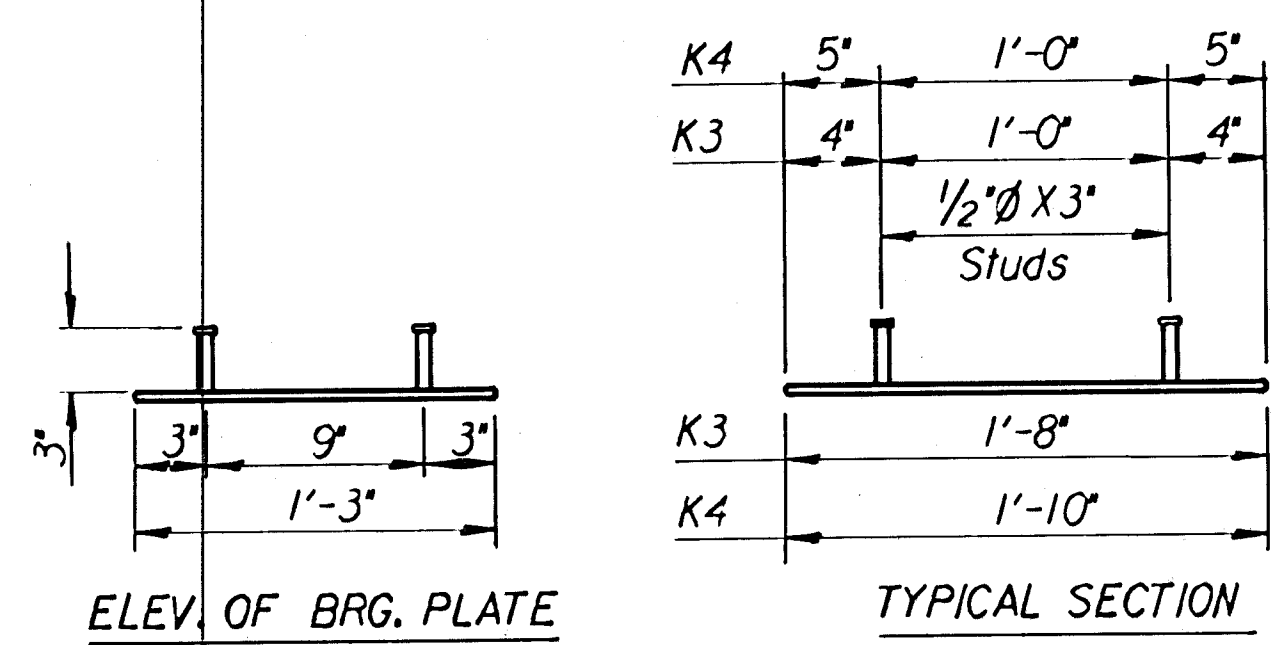
END VIEW (K3 Beam)

END VIEW (K4 Beam)

Note: Stud welding will be in accordance with the latest edition of AWS D1.1.

Plate shall meet the requirements of ASTM A709 Grade 36. The stud anchors will be made of material as specified for Shear Connector Studs in the Standard Specifications.

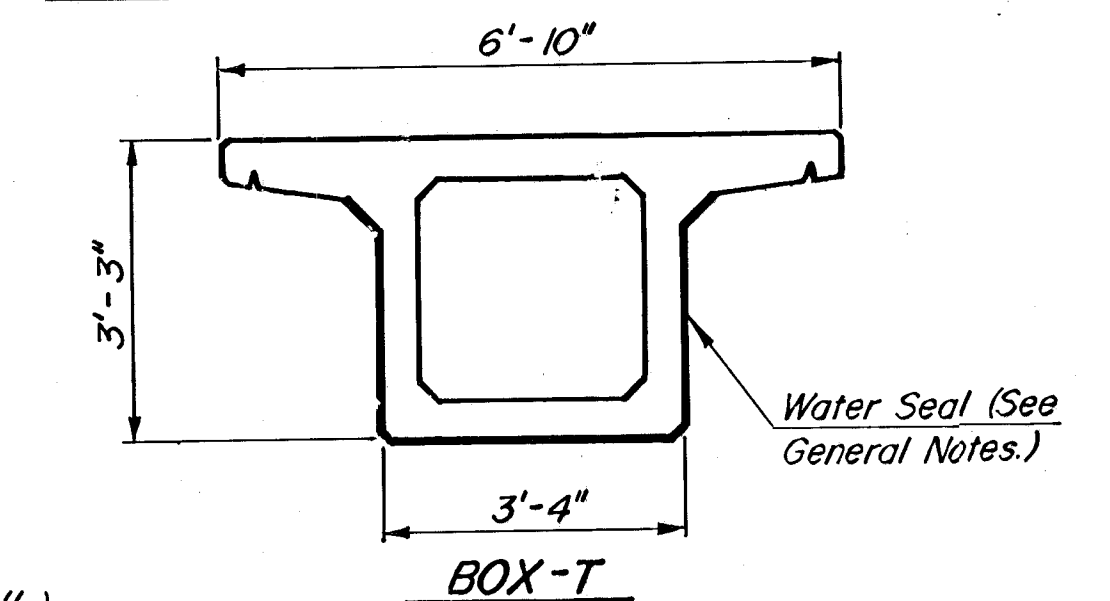
The exposed surface of the bearing plate shall be galvanized. All work and material to install the bearing plates shall be subsidiary to the bid item "Prestressed Concrete Beam".



ELEV. OF BRG. PLATE

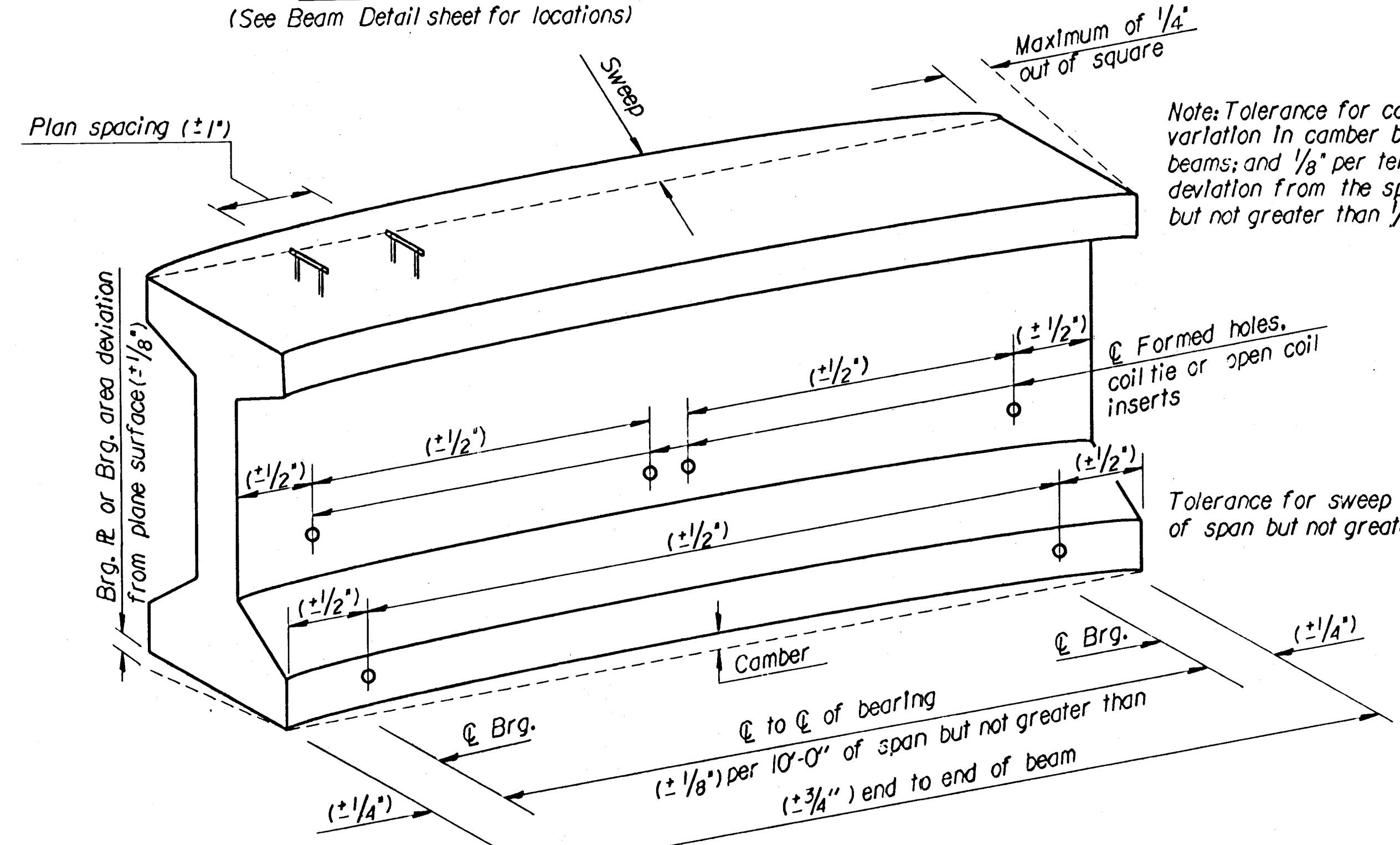
TYPICAL SECTION

BEARING PLATE DETAILS

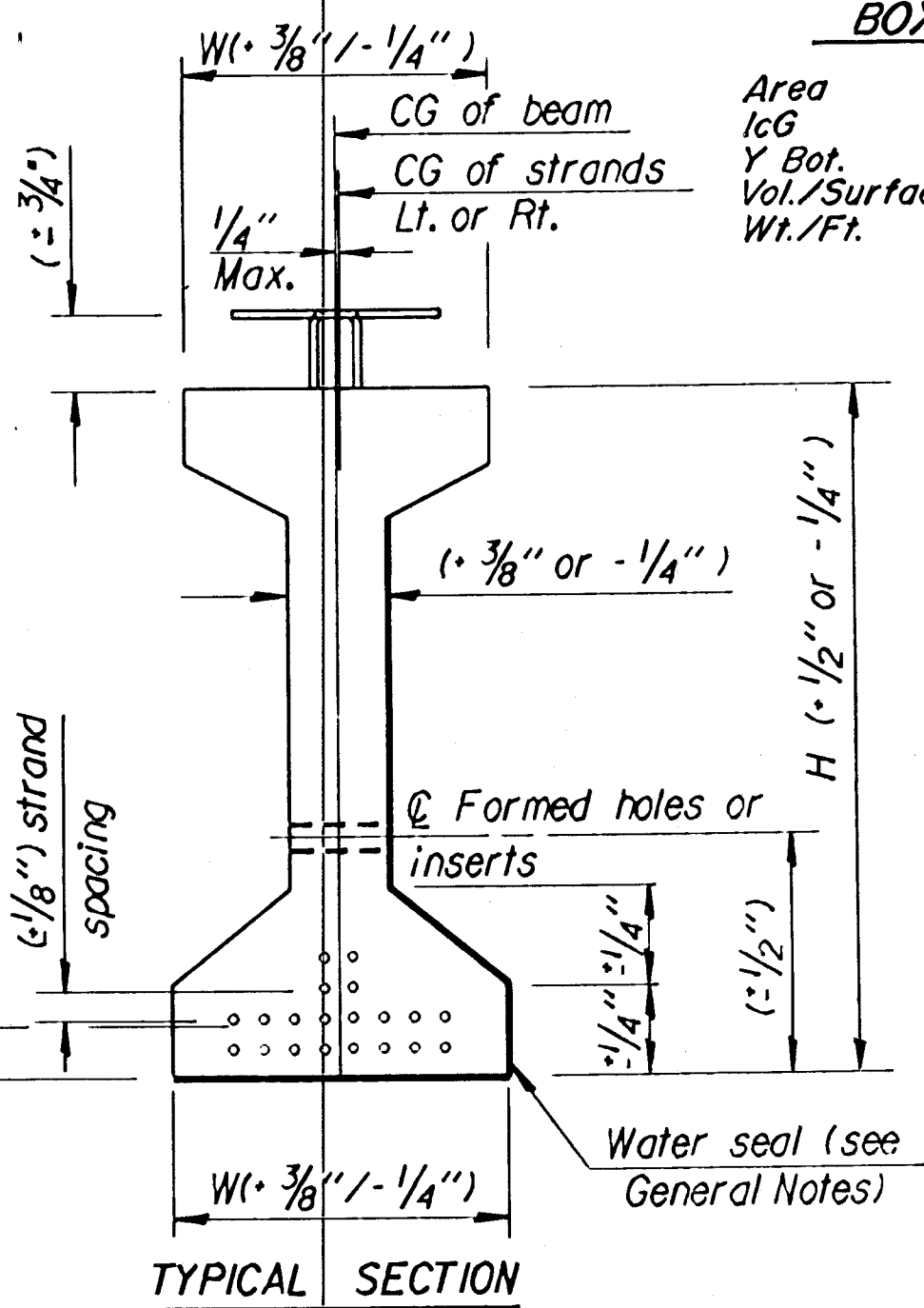


BOX-T

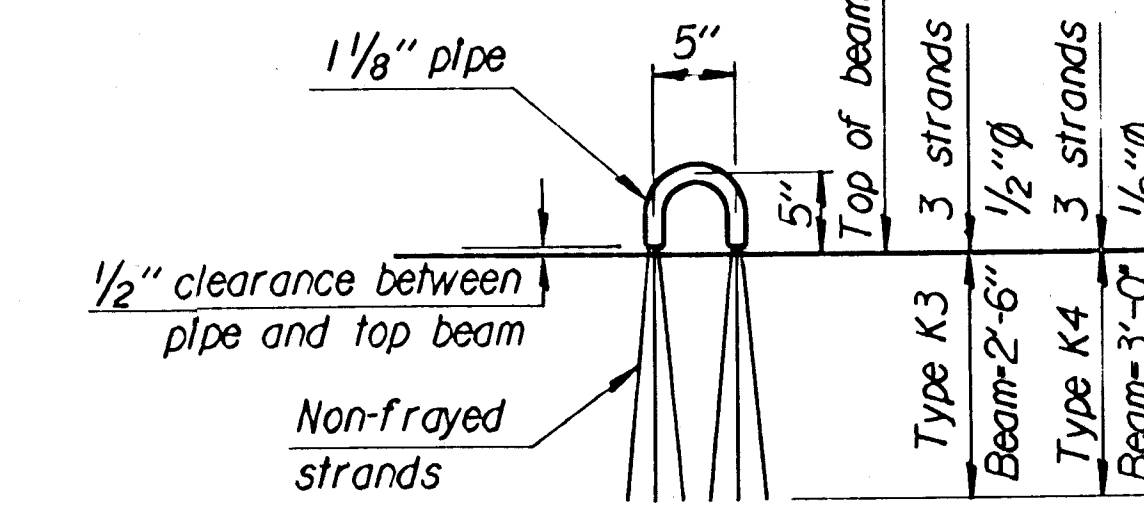
Area	= 1,012 In. ²
IcG	= 193,329 In. ⁴
Y Bot.	= 24.44 In.
Vol./Surface Area	= 2.83 In.
Wt./Ft.	= 1,054 Lbs.



PRESTRESSED BEAM FABRICATION TOLERANCES



TYPICAL SECTION



LIFTING DEVICE

NO.	DATE	REVISIONS	BY	APP'D
3	6-22-90	Change bearing plate	LRR	KFH
2	3-10-89	Add air entrainment to concrete	LRR	KFH
1	8-8-88	Water seal on exterior girder	LRR	KFH

KANSAS DEPARTMENT OF TRANSPORTATION

STANDARD PRESTRESSED CONCRETE BEAM DETAILS

STD. NO. 300	DESIGNED	TRACED
APPROVAL	7-2-90	APP'D
DETAIL CK.	DETAIL CK.	REVISIONS
QUANTITIES	QUANTITIES	QUANTITIES
QUANTITIES	QUANTITIES	QUANTITIES

NO.	DATE	REVISIONS
1	10-04-73	0000000000.DGN
2	17-MAY-1991	15-49

BRIDGE	View	PLOT1
ZFA3110.047300000000.DGN		
17-MAY-1991 15:49		