

| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|--------|-----------------|------|-----------|--------------|
| KANSAS | 54-87 K-6657-01 | 2002 | 545 | 1122 |

GENERAL NOTES

Fabricate the precast prestressed beams in accordance with the KDOT Specifications. Submit shop drawings in accordance with the KDOT Specifications except nine sets are required.

Use air entrained concrete. The KDOT Materials Section shall approve the mix design. Unless otherwise shown on the plans, $f'c = 35 \text{ MPa}$ and $f'c$ at release = 30 MPa.

Use reinforcing steel conforming to the requirements of ASTM A615M-96, Grade 420. All reinforcing shall be epoxy-coated.

Use 13 mm nominal diameter, uncoated, seven-wire, low relaxation prestressing tendons conforming to the requirements of ASTM A416, Grade 1860.

Use coil ties and bolts having an ultimate strength 50% in excess of the manufacturer's safe load. The Engineer shall approve the coil ties. Coat coil ties that touch prestressing tendons with an approved epoxy coating. Show coil tie details on the shop drawings. Coil ties and bolts shall be subsidiary to the bid item, "Prestressed Concrete Beams".

Use elastomeric bearing pads conforming to the KDOT Specifications. Bearing pads and Type B expansion joint material shall be subsidiary to the bid item, "Prestressed Concrete Beams".

The 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 for shortening due to elastic shortening, creep and shrinkage.

The beams 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 the KDOT Specifications.

Bevel all exposed edges of beams except the tops and ends with a 20 mm triangular molding or round the edges to a 20 mm radius. Round the angle of intersection between the web and the flanges.

Apply an initial force of 5 to 10 kN to each strand to take up any slack in the cables. Unless otherwise noted on the plans, apply a force of 138 kN to each strand. Stress harped strands to a magnitude such that they are tensioned to 138 kN after they are in position.

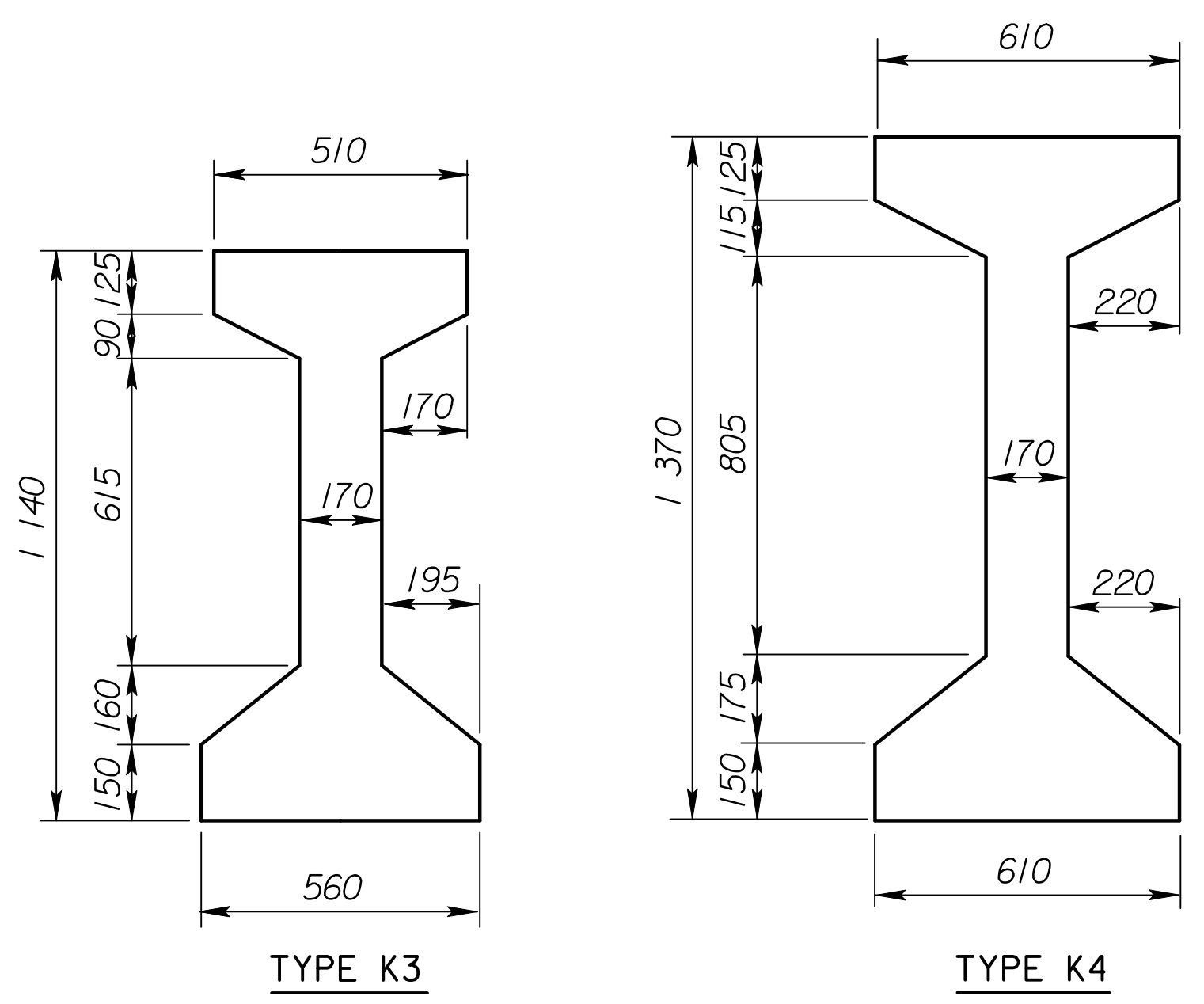
Strike off level and apply a wire brush or stiff broom finish to the tops of the beams. Apply the finish transverse to the length of the beam. (Note: When using precast panels for deck construction, the outside 125 mm on each side of the top flange shall be finished smooth with a steel trowel.) At approximately the time of initial set, brush the top of the beam transversely with a coarse wire brush to remove all laitance.

Fill trapped air holes and surface voids on the exterior face of the exterior beams with an approved concrete masonry coating. This work shall conform to KDOT Specifications. This work shall be subsidiary to the bid item, "Prestressed Concrete Beams".

Detension strands in a sequence which minimizes lateral eccentricity. Show the method and sequence of strand release on the shop drawings. Use extreme care when lifting, handling, storing and transporting beams. Use the lifting system shown or an alternate system approved by the Engineer. Keep the beam in an upright position at all times. Support the beam on bearing points positioned directly below the designated lifting points or designated bearing points.

Do not place the bridge slab before the beams are 28 days old. Pour diaphragms as detailed in the bridge plans.

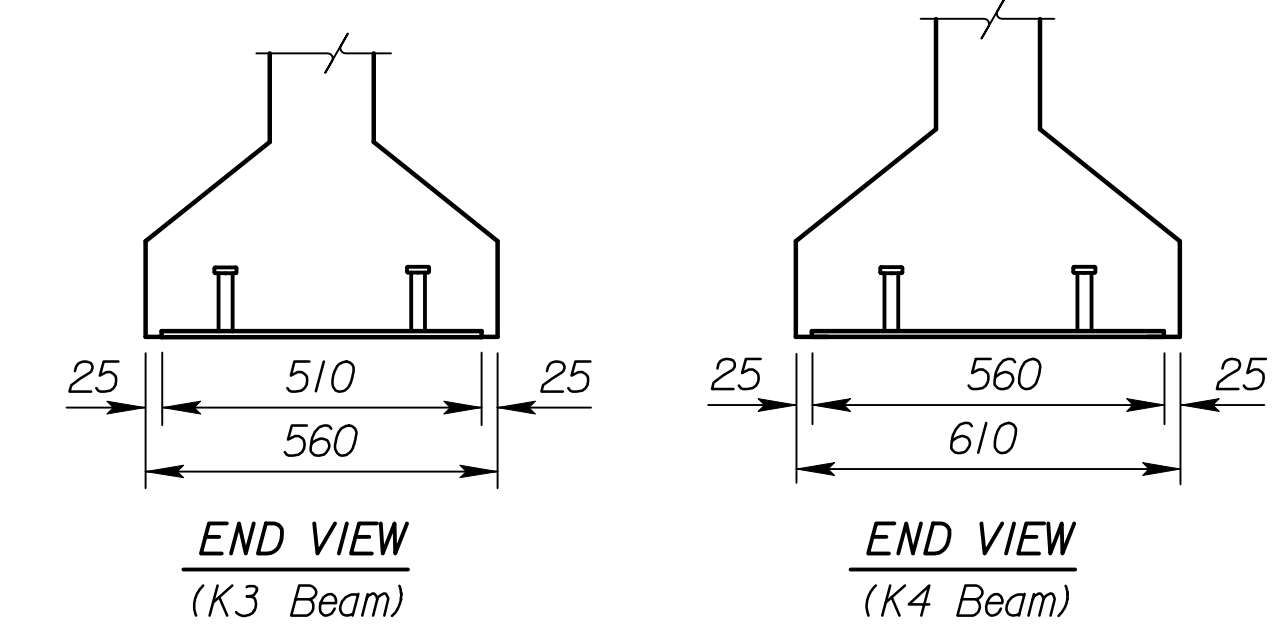
Stencil with paint the following information on the webs approximately 1.5 m from one end of the beam: date of concrete placement, date of strand release, and beam mark.



| Property | TYPE K3 | TYPE K4 |
|-----------------|--|--|
| Area | 341 300 mm ² | 417 700 mm ² |
| IcG | 52 858x10 ⁶ mm ⁴ | 97 912x10 ⁶ mm ⁴ |
| Y Bot | 533 mm | 658 mm |
| Vol./Surf. Area | 91 mm | 94 mm |
| Mass/m | 819 kg | 1002 kg |

12 mm x 375 mm x 560 mm (K4)
12 mm x 375 mm x 510 mm (K3)
(Flush with bottom of beam.)

ELEVATION



END VIEW
(K3 Beam)

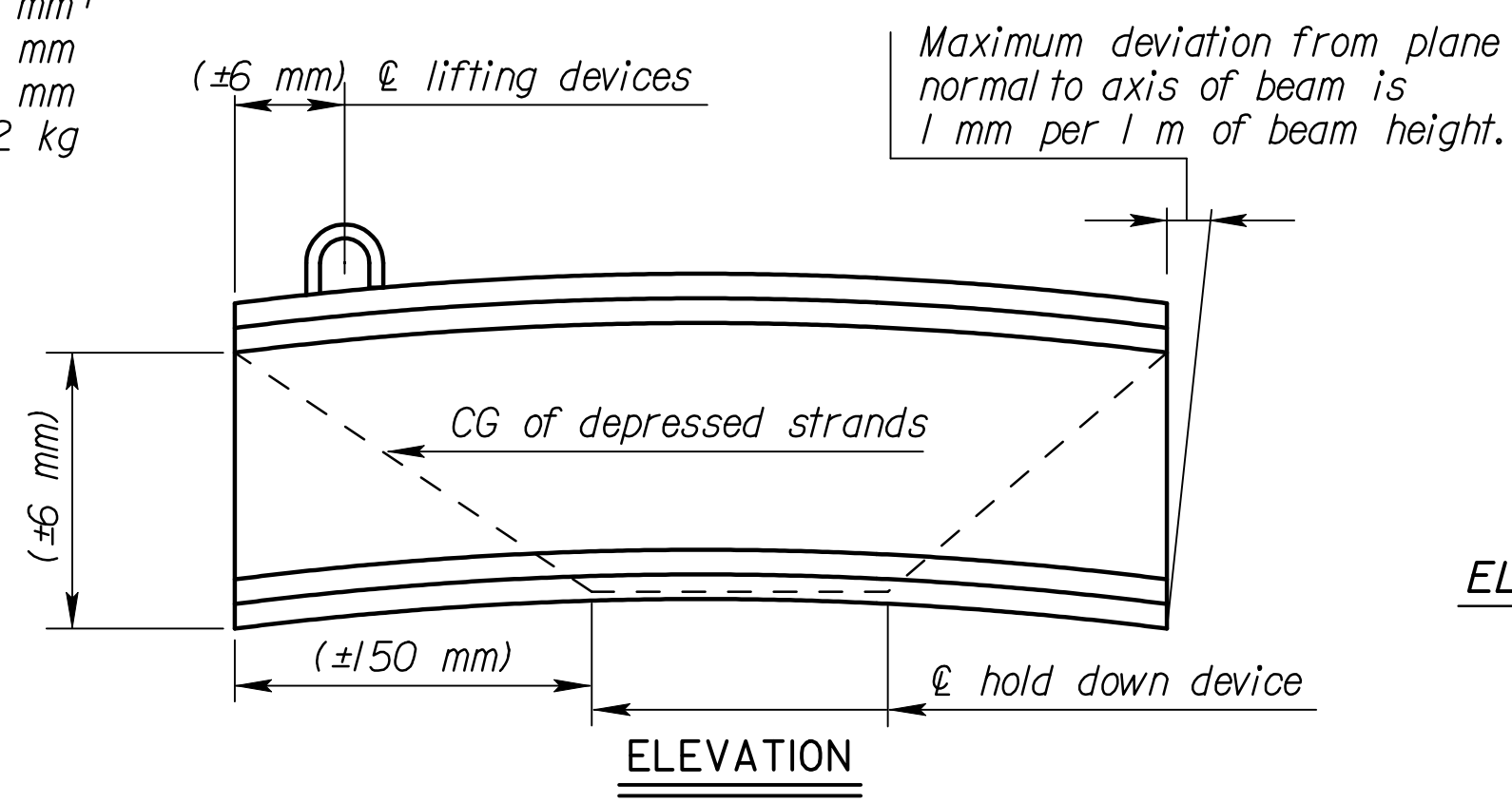
END VIEW
(K4 Beam)

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

Use plate conforming to the requirements of ASTM A709M Grade 250. The stud anchors will be made of material as specified for Shear Connector Studs in the KDOT Specifications.

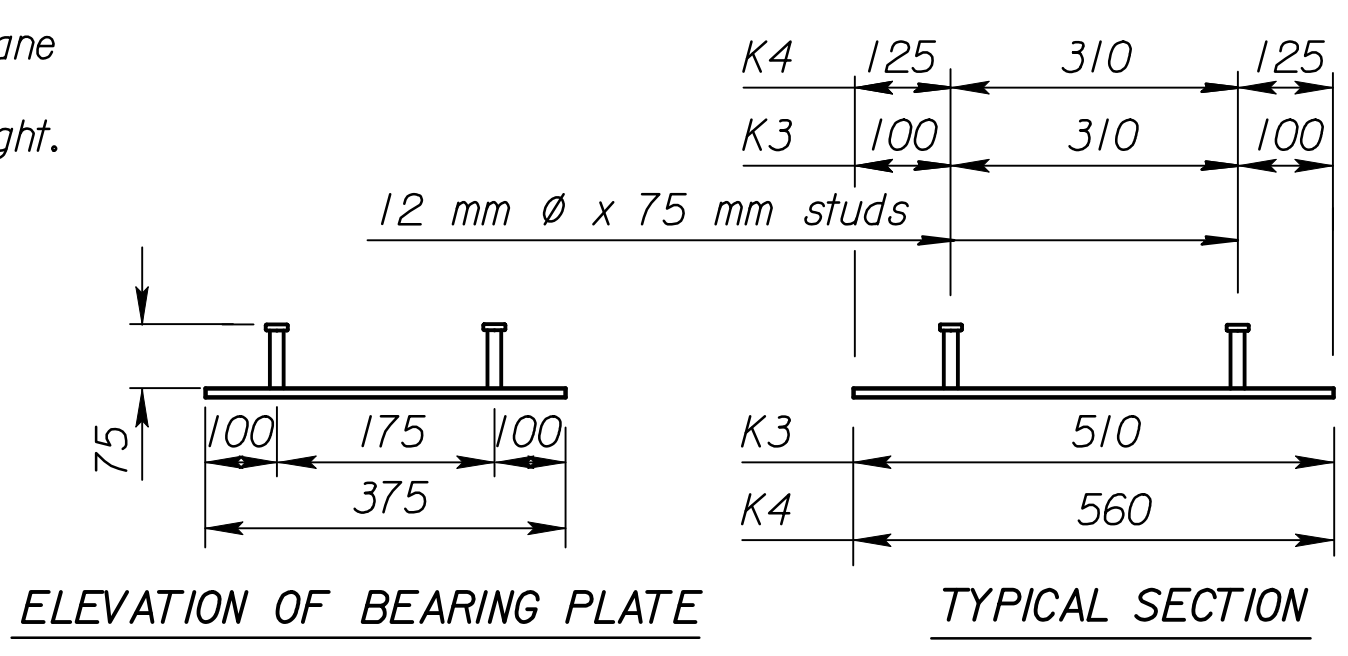
The exposed surface of the bearing plates shall be galvanized.

All work and material to install the bearing plates shall be subsidiary to the bid item "Prestressed Concrete Beam".



ELEVATION

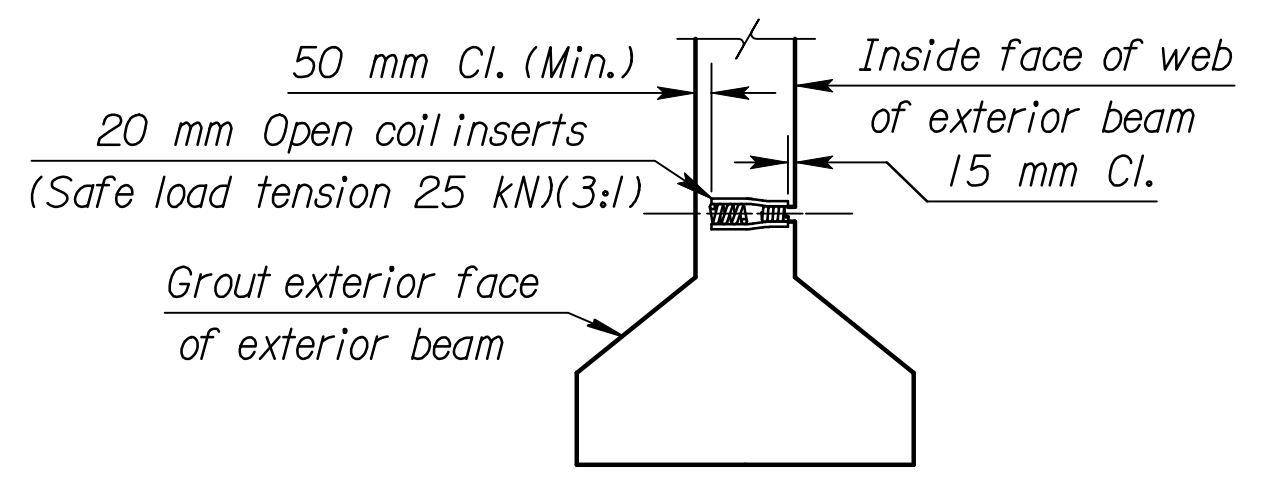
Maximum deviation from plane normal to axis of beam is 1 mm per 1 m of beam height.



ELEVATION OF BEARING PLATE

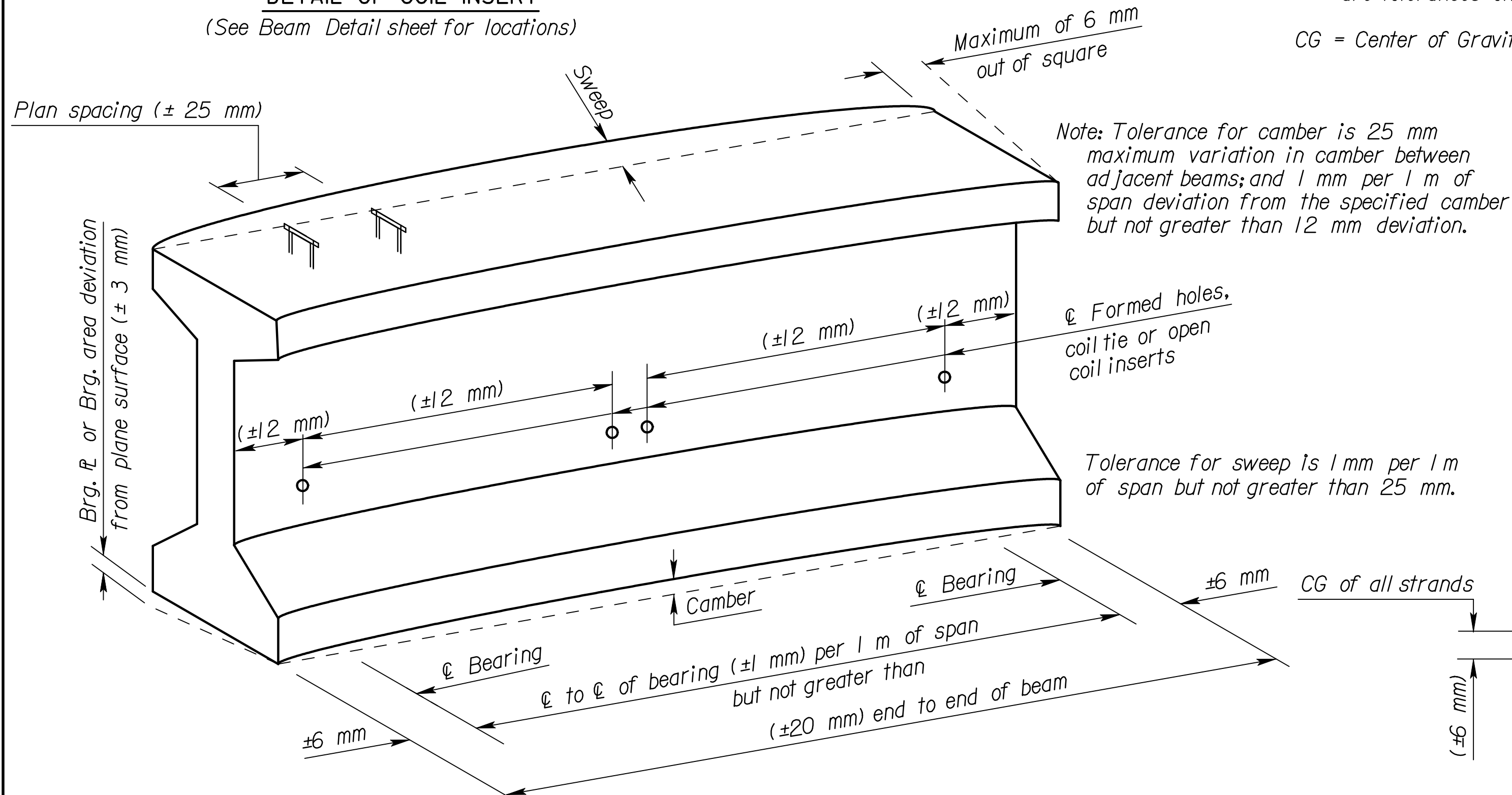
TYPICAL SECTION

BEARING PLATE DETAILS

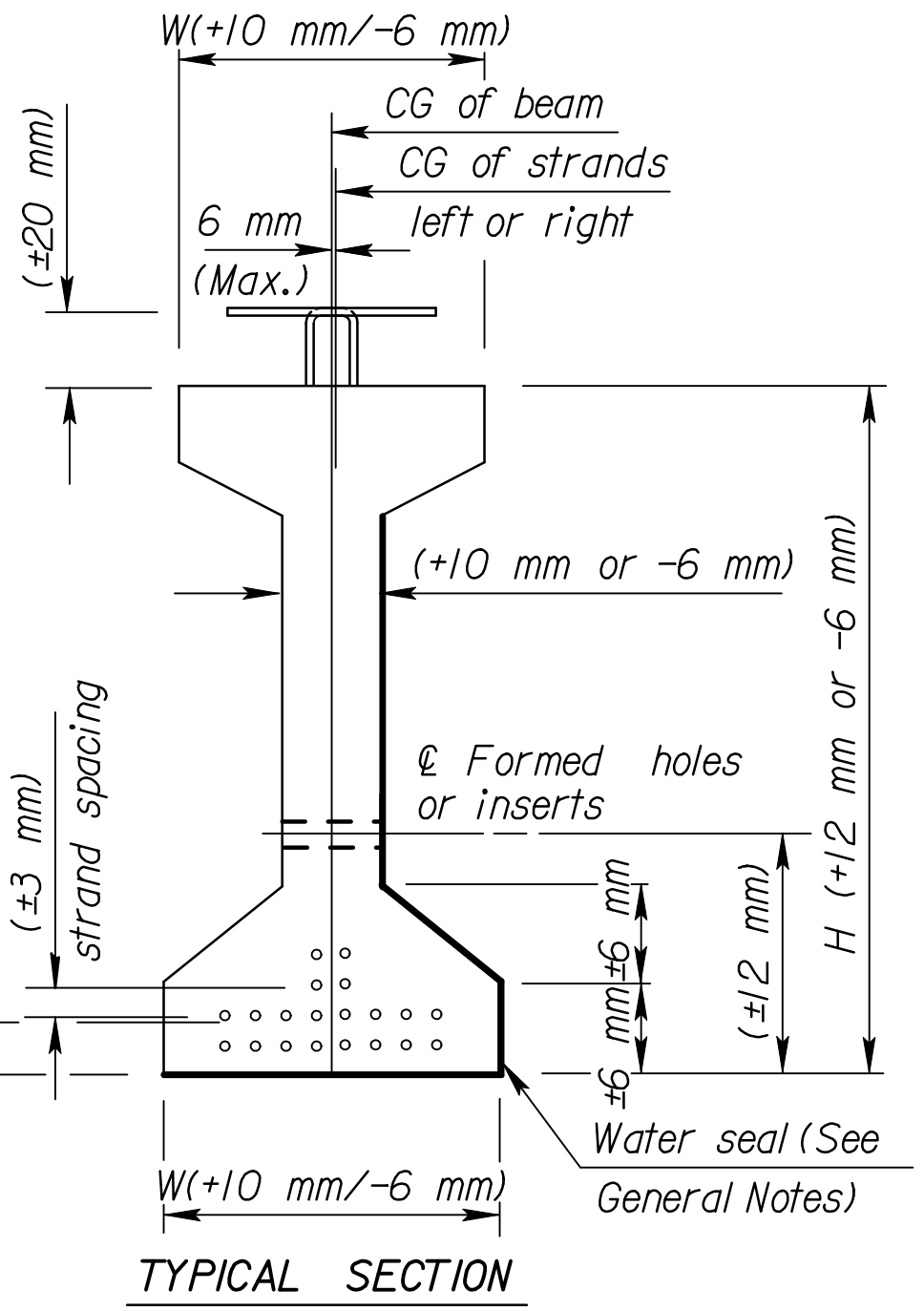


DETAIL OF COIL INSERT

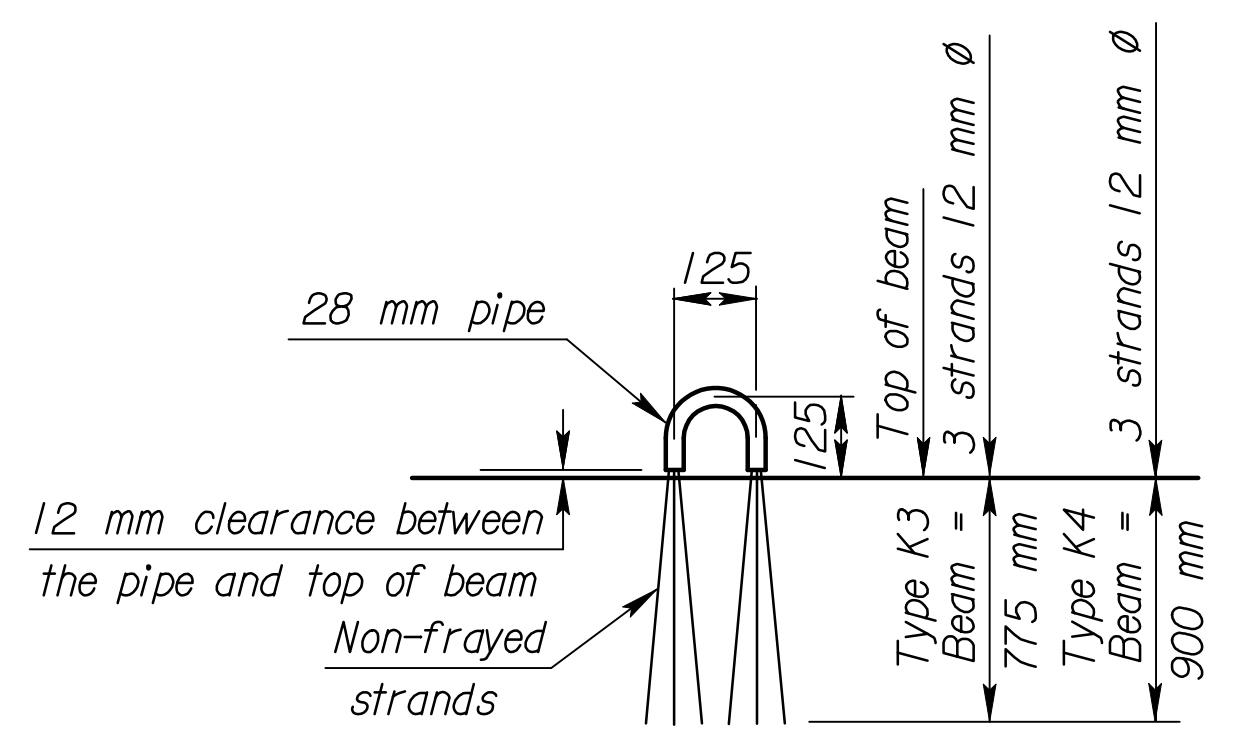
(See Beam Detail sheet for locations)



PRESTRESSED BEAM FABRICATION TOLERANCES



TYPICAL SECTION



RECORD DRAWING

| NO. | DATE | REVISIONS | BY | APP'D |
|-----|---------|-------------------------------------|-----|-------|
| 7 | 6-23-97 | Added precast panel note | LRR | KFH |
| 6 | 3-28-97 | Delete optional brg. pl. | LRR | KFH |
| 5 | 6-5-96 | Remove btm fig open coil tie insert | LRR | KFH |
| 4 | 3-27-96 | ASTM 615M-96 changes | LRR | KFH |

KANSAS DEPARTMENT OF TRANSPORTATION

STANDARD PRESTRESSED CONCRETE BEAM DETAILS

| DESIGNED | DETAIL | QUANTITIES | CADD |
|----------|--------|------------|------|
| CK. | CK. | CK. | CK. |

Plotted By : gdr
 Plot File : I:\1997\97362\As-Builts\dnr\vol_3\SI_545-KDOT_STD-BR300SI.dgn
 Last Rev: 9-5-07
 Bk: gdr
 Plot Date : Sept. 07