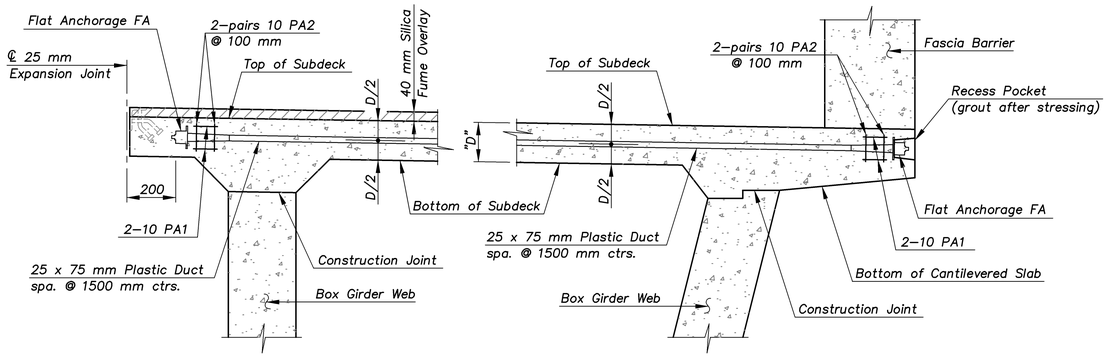
E.F. INDICATES EACH FACE.
N.F. INDICATES NEAR FACE.
F.F. INDICATES FAR FACE.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	54–87 K–8258–01	2007	266	556



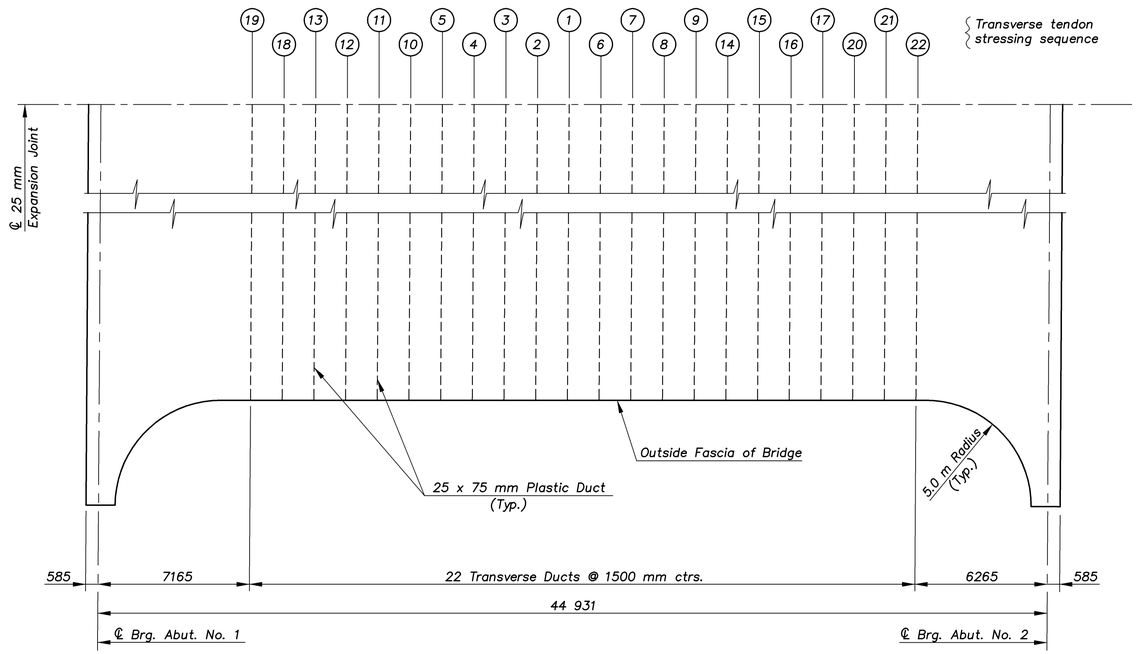
NEAR CENTERLINE OF BRIDGE

NEAR OUTSIDE FASCIA OF BRIDGE

CLEARANCE REQUIREMENTS FOR TRANSVERSE DUCTS

Transverse Post–Tensioning

Diameter of Strand	13 mm
Area of Strand	100 mm²
Number of Strands	3 per Tendon
Tendon Profile	Straight
Assumed Duct Size	25x75 mm Corrugated Oval
Jacking Stress (0.75 Fu)	1396 MPa
Jacking Force per Strand	135 kN
Jacking Force per Tendon	405 kN

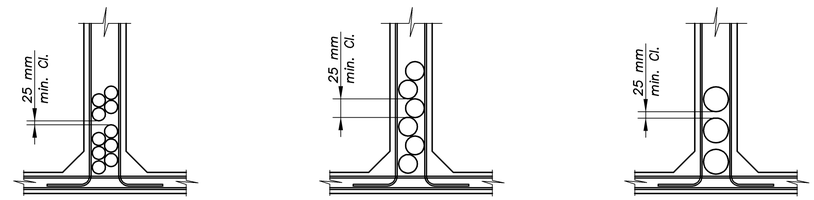


PLAN SHOWING TRANSVERSE DUCT SPACING

(West Box shown, East Box similar)

1:100

ROCK/BOXGRD

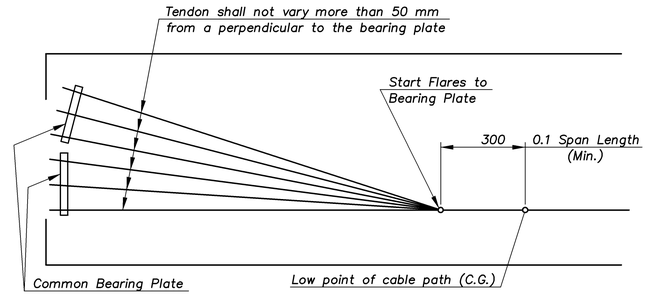


DUCTS 75 mm O.D. AND LESS

DUCTS OVER 75 mm O.D. TO 113 mm O.D.

DUCTS OVER 113 mm O.D.

CLEARANCE REQUIREMENTS FOR LONGITUDINAL DUCTS



note: individual bearing plates shall be placed normal to ℄ of tendon.

BEARING PLATE PRESTRESSING PATH

PRESTRESSING NOTES

1. Concrete: f'c = 35 MPa minumum after 28 days.
   f'ci = 30 MPa minumum at time of stressing.
2. P Jack Force = 9386 kN per web required at jack end
   AS = P Jack / 0.75 f's
3. Tendons shall be jacked to 0.75 f's and anchored at an equivalent anchor set = 10 mm.
4. Design tendon stress loss due to anchor set and elastic shortening of concrete was calculated to be 137.9 MPa at the jacking end of the tendons immediately after seating.
5. The design is based on a friction curvature coefficient (M) = 0.20, a friction wobble coefficient per meter of Prestressing Steel (K)=0.0002, and initial stress of Pi/Pj = 0.945 times jacking stress at point of no movement. The Contractor shall submit elongation and jacking calculations based on the Post–Tensioning system to be used.
6. Reinforcing steel may be adjusted during the installation of prestressing ducts as required to provide planned clearances for the metal conduits, anchorages, jacks, and equipment if approved by the Engineer. Cutting of reinforcing steel will not be permitted.
7. The ducts shall be securely tied to the vertical stirrups at 1.3 meter maximum spacing to prevent displacement during concreting.
8. Bearing plates shall be placed tightly against the forms which shall be braced and anchored to support their weight.
9. At the Contractor's option, the prestressing force may vary up to plus/minus 5% from the theoretical equal force per web, provided the total P Jack is obtained and distributed symmetrically about the centerline of the typical section.
10. No more than 1/2 of the prestressing force in any one web may be stressed before an equal force is stressed in the adjacent webs. At no time during the stressing operations shall more than 1/6 of the total prestressing force be applied eccentrically about the centerline of the structure.
11. Prestressing strands shall conform to ASTM A416 Grade 1860 and shall be low relaxation strands.
12. The tendons shall not be jacked until all tiebacks at both of the abutment drilled shafts are installed and locked off.
13. All tendons shall be jacked from the the north end (Abutment No. 1 End) of the structure.
14. Falsework shall not be removed until after post–tensioning.
15. The silica fume overlay shall be placed after post–tensioning.

KANSAS DEPARTMENT OF TRANSPORTATION

BR. NO. 54–87–31.12(702) STA. 3+877.518

PRESTRESSING DETAILS & NOTES

ROCK ROAD OVER KELLOGG AVENUE

Proj. No. 54–87 K–8258–01 SEDGWICK COUNTY

CFS
Cook, Flatt & Strobel ENGINEERS, P.A.

DESIGNED	R.S.C.	SCALE	Varies
DETAILED	T.R.G.	DATE	
QUANTITIES	T.R.G.	SHEET	20 OF 41