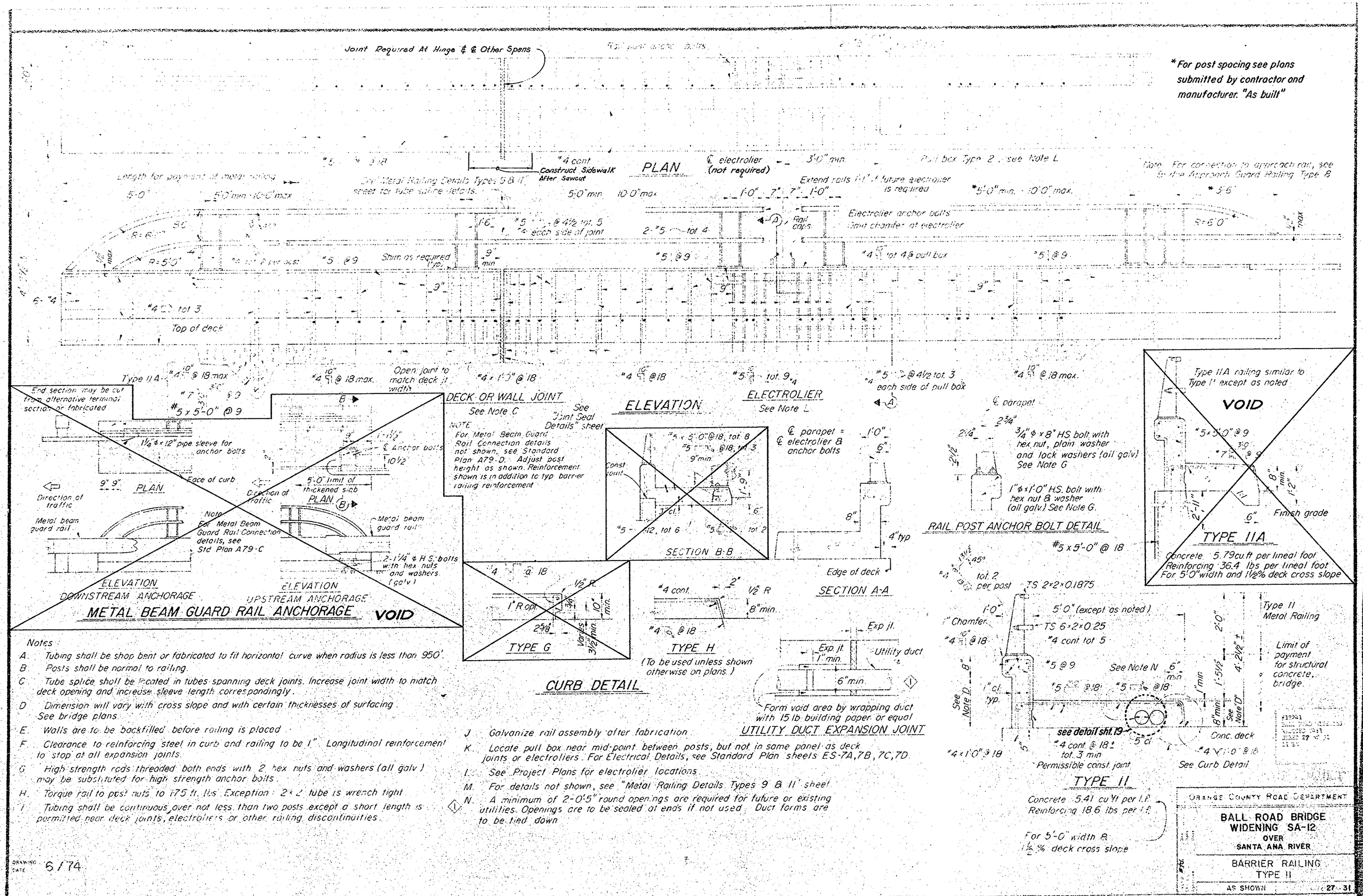

Notes:

A. Tubing shall be shop bent or fabricated to fit horizontal curve when radius is less than 950'.

B. Posts shall be normal to railing.

C. Tube splice shall be located in tubes spanning deck joints. Increase joint width to match deck opening and increase sleeve length correspondingly.

D. Dimension will vary with cross slope and with certain thicknesses of surfacing. See bridge plans.

E. Walls are to be backfilled before railing is placed.

F. Clearance to reinforcing steel in curb and railing to be 1". Longitudinal reinforcement to stop at all expansion joints.

G. High strength rods threaded both ends with 2 hex nuts and washers (all galv.) may be substituted for high strength anchor bolts.

H. Torque rail to post nuts to 175 ft. lbs. Exception: 2×2 tube is wrench tight.

I. Tubing shall be continuous over not less than two posts except a short length is permitted near deck joints, electroliers or other railing discontinuities.

J. Galvanize rail assembly after fabrication.

K. Locate pull box near mid-point between posts, but not in same panel as deck joints or electroliers. For Electrical Details, see Standard Plan sheets ES-7A, 7B, 7C, 7D.

L. See Project Plans for electrolier locations.

M. For details not shown, see "Metal Railing Details Types 9 & 11" sheet.

N. A minimum of 2-0'5" round openings are required for future or existing utilities. Openings are to be sealed at ends if not used. Duct forms are to be tied down.

DRAWING DATE 6/74

ORANGE COUNTY ROAD DEPARTMENT

BALL ROAD BRIDGE WIDENING SA-12 OVER SANTA ANA RIVER

BARRIER RAILING TYPE 11

AS SHOWN 27-31

DR. #2 (12241)