GENERAL: This drawing provides design and construction details. The project plans for each structure shall provide the necessary additional railing dimensions, including parapet length, post spacing, reinforcing steel list, estimated quantities and any other pertinent information including special notes and details.


DESIGN DATA:
CONCRETE - Compressive Strength = 4500 PSI
Reinforcing Steel - Min. Yield Strength = 60,000 PSI
Steel Tubing - Min. Yield Strength = 46,000 PSI
All Other Steel - Min. Yield Strength = 36,000 PSI

TUBE SPACES: Are to be located so that each tube segment shall be connected to not less than two posts.

MATERIALS: Furnish shaped structural tubing according to T07.10 (ASTM A500), Grade B, Reinforcing steel according to T07.00 and steel for plates according to T07.01.

FASTENERS: Furnish fasteners as follows:
The anchor bolts, nut and washers shall conform to T07.11 (ASTM A325), the thread length requirements of the bolts may be modified.
The horizontal rail to post connection bolts and hex nuts shall conform to T07.10 (ASTM A500) and to A325 W120. The rectangular beam washers in A325 W120 are not to be used. The washers shall conform to ASTM F245, Type 2.
The hex cap screws (bolts), hex nuts and washers shall conform to ASTM A490.

GALVANIZING: Galvanize all shaped structural tubes, plates, hardware and accessories according to T07.00. Paint all exposed structural tubing ends and post cap edges prior to galvanizing.

HORIZONTAL CURVATURE: This standard is applicable to structures having a railing curvature radius of 20 feet or more. For a radius of less than 20 feet, the design shall be special. For structures on curvatures of 80" on more, shaped structural tubing may be furnished straight and forced into position in the field and the tube segments are to be attached to no more than 3 posts.

CONTROL JOINTS: Joints to concrete parapets. Sandcut 1" deep Control Joints along the perimeter of the Parapet as soon as the saw can be operated without damaging the concrete.

USE AN EDGE GUIDE, PENCIL OR JIG TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE AND ALIGNED AT ALL JOINS OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAWN SAN PLATE. A MINIMUM WIDTH OF 4" INCH.

PLACE CONTROL JOINTS AT A MINIMUM OF 6'-0" AND A MAXIMUM OF 10'-0" OR CENTERS. PLACE JOINTS NO CLOSER THAN 1'-0" FROM THE CENTER OF THE POSTS.

VERTICAL REINFORCING STEEL SHALL CLEAR THE CONTROL JOINTS TO A MINIMUM OF 3 INCHES, OBTAIN CLEARANCE BY FIELD ADJUSTING THE REINFORCING STEEL SPACING OR LOCATION OF THE CONTROL JOINTS.

SEAL THE PERIMETER OF THE CONTROL JOINTS TO A MINIMUM DEPTH OF 1 INCH WITH A POLYURETHANE OR POLYHACRIC MATERIAL CONFORMING TO ASTM C950. TYPE S, LEAVE THE BOTTOM ONE-HALF INCH OF BOTH THE INSIDE AND OUTSIDE FACES OF THE PARAPET SEAL TO ALLOW ANY WATER WHICH MIGHT ENTER THE JOINT TO ESCAPE.

FOR BRIDGE TRIMWORK ASSEMBLY DETAILS NOT SHOWN, SEE STANDARD CONSTRUCTION DRAWING OR J. I. ONLY A TYPE I ASSEMBLY IS TO BE USED.

METHOD OF MEASUREMENT: The Department will measure the length of railing between the ends of the concrete parapet.

BASIS OF PAYMENT: The cost of the concrete above the upper surface of the sidewalk, reinforcing steel, sawcuts, cabling components, anchor bolts, hex nuts and washers, steel plates, posts, tubing railing, post caps, bolts, hex nuts and washers, cap screws, hex nuts and washers, and other hardware are included for payment in the unit price bid for the measured length.
The Department will pay for accepted quantities at the contract price for item S11, post, railing (concrete parapet with steel tubing railing).

DESIGNER NOTES: This standard is intended for use when the approach roadway section contains a sidewalk and the approach railing is on the outside of the sidewalk. If the approach railing is located at the face of the curb, the approach railing shall run continuously across the full length of the bridge. If the approach roadway section has no sidewalk, the thickness of the sidewalk shall not be placed on the superstructure and should be pre-ferably placed off of the approach slab. If the approach railing is of a different parapet type located outside of the sidewalk, the transition between the two different types of railing is to be placed on the approach slab and requires a special design which is to be fully detailed in the structure portions of the plans.

Maximum width of sidewalk on the bridge is 5 feet and the sidewalk height shall be 0.8 inches measured at the toe of cur.

For Bend Bars where necessary, include bending diagrams or project plans.

DESIGNER TO VERIFY VERTICAL LEG LENGTHS ARE ADEQUATE. Length as listed is based on a curb height of 8", with no allowance for cross-slope.