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

DESIGN SPECIFICATIONS: "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" adopted by American Association of State Highway and Transportation Officials, 1995, including the 1997 interim specifications, and the ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA: CONCRETE - CLASS 5 OR HIGH PERFORMANCE F'c = 31 MPa, REINFORCING STEEL ASTM A615, MRW or ASTM GRADE 40, Fy = 400 MPa, SHAPED STRUCTURAL TUBE ASTM A500 GRADE B, Fy = 317 MPa, BASE PLATES, POST CAPS AND THE INNER SLEEVE SPlice PLATES SHALL BE ASTM A536, Fy = 250 MPa.

TUBE SPACES ARE TO BE LOCATED SO THAT EACH TUBE SEGMENT SHALL BE CONNECTED TO NOT LESS THAN TWO POSTS.

MATERIAL: SHAPED STRUCTURAL TUBE SHALL BE AS PER ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS) ITEM 710.10. REINFORCING STEEL SHALL BE AS PER ITEM 720.20. STEEL FOR PLATES SHALL BE ASP PER ITEM 711.01.

GALVANIZED: ALL SHAPED STRUCTURAL TUBES, PLATES, HARDWARE AND ACCESSORIES SHALL BE GALVANIZED IN ACCORDANCE WITH CMS 711.02.

HORIZONTAL CURVATURE: THIS STANDARD IS APPLICABLE TO STRUCTURES HAVING A RAILING CURVATURE RADIUS OF 6 METERS OR MORE. FOR A RADIUS OF LESS THAN 6 METERS, THE DESIGN SHALL BE SPECIAL. FOR STRUCTURES ON CURVATURES WITH A RADIUS OF 600 METERS OR MORE SHAPED STRUCTURAL TUBES MAY BE FURNISHED STRAIGHT AND FORCED INTO POSITION IN THE FIELD AND THE RAIL TUBE SEGMENTS ARE TO BE ATTACHED TO NO MORE THAN 3 POSTS.


THE USE OF AN EDGE GUIDE, FENCE OR JOI IS REQUIRED TO ENSURE THAT THE JOINTS ARE STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF 6 MM.

THE PERIMETER OF THE CONTROL JOINT SHALL BE CLOSED WITH A CAULKING MATERIAL TO A MINIMUM DEPTH OF 25 MM IN ACCORDANCE WITH FEDERAL SPECIFICATION TT-S-222. THE BOTTOM 13 MM OF BOTH THE INSIDE AND OUTSIDE FACES OF THE PARAPET SHOULDN'T BE LEFT UNSEATED TO ALLOW ANY WATER WHICH MAY ENTER THE JOINT TO ESCAPE.

JOINTS SHALL BE PLACED AT A MINIMUM OF 1800 MM AND MAXIMUM OF 3050 MM ON CENTERS. SAWCUTS SHALL NOT BE CONSTRUCTED CLOSER THAN 350 MM FROM THE CENTER OF THE POSTS.

VERTICAL REINFORCING STEEL SHALL CLEAR THE CONTROL JOINTS BY 75 MM WIDTH. CLEARANCE SHALL BE OBTAINED BY ADJUSTMENT OF THE CONTROL JOINT OR REINFORCING STEEL SPACING.

FOR BRIDGE TERMINAL ASSEMBLY DETAILS NOT SHOWN, SEE STANDARD CONSTRUCTION DRAWING OR-3.I.W. ONLY A TYPE I ASSEMBLY IS TO BE USED.

ALL EXPRESSED STRUCTURAL TUBE ENDS AND POST CAP EDGES SHALL BE ROUNDED PRIOR TO GALVANIZING.

METHOD OF MEASUREMENT: CONCRETE ABOVE THE UPPER SURFACE OF THE SIDEWALK, REINFORCING STEEL, SAWCUTS, CAULKING COMPOUNDS, NUT BOLTS, HEX NUTS, WASHERS, STEEL PLATES, POSTS, TUBE RAILING, POST CAPS, BOLTS, CAP SCREWS, HEX NUTS, WASHERS AND OTHER HARDWARE ARE TO BE INCLUDED AND PAID PER LINEAR FEET. NOTES 52) "RAILING (CONCRETE PARAPET WITH TWO STEEL TUBE RAILING)" THE LENGTH FOR PAYMENT SHALL BE THE LENGTH OF RAILING MOUNTED BETWEEN ENDS OF THE CONCRETE PARAPET.


THE MINIMUM WIDTH OF THE SIDEWALK ON THE BRIDGE IS 1500 MM AND THE SIDEWALK HEIGHT SHALL BE 203 MM.

FASTENERS/STAINLESS STEEL FASTENERS SHALL CONFORM TO THE FOLLOWING:

THE ANCHOR BOLTS, HEX NUTS AND WASHERS SHALL CONFORM TO CMS 711.09 (FAST-W 430).

THE HORIZONTAL RAIL TO CONNECT CONSTRUCTION BOLTS AND HEX NUTS SHALL CONFORM TO CMS 711.10 AND TO ASAHDG #180. THE RADIUS OF THE BEND WASHERS IN ASAHDG #180 IS 75 MM. THE HEX CAP SCREWS (BOLTS), HEX NUTS AND WASHERS SHALL CONFORM TO ASM 444.

NOTE: THE BOLT, NUT AND WASHER DIMENSIONS ARE INCHES SOFT CONVERTED TO METRIC.

FIELD BEND BARS WHERE NECESSARY, INCLUDE BEND DIAMETER OR PROJECT PLANS. DESIGNER TO VERIFY VERTICAL LEG LENGTHS ARE ADEQUATE. LENGTH AS LISTED IS BASED ON A CURB HEIGHT OF 200 MM, WITH NO ALLOWANCE FOR CROSS-SLOPE.