ANCHORS

CONCRETE BARRIER RAIL INSTALLATIONS ON CONCRETE PAVEMENT

ASPHALT PAVEMENT

CONCRETE PAVEMENT

INSTALLATIONS ON ASPHALT PAVEMENT

FOR TEMPORARY OR PERMANENT CONCRETE BARRIER RAIL INSTALLATIONS ON CONCRETE PAVEMENT

NOTE: UNLESS OTHER UNITS ARE SHOWN. METRIC AND ARE IN MILLIMETERS (mm).

- Cast the pinning holes into the C.B.R. using 2" (50.8) I.D. steel pipe. Do not drill the pinning holes.
- Use steel, conforming to AASHTO M 270 [270M], Grade 40, with a minimum yield strength of 36 ksi (250 MPa) for pins and attachment angles.
- Use type 2 anchors when a deeper embedment (5 1/2" [140]) into the bridge deck or concrete pavement is permissible.
- Use type 3 anchors by first driving the rebar dowel through the barrier to allow lifting of the barrier without interference. Then widen the gap and fill the pinning holes with an approved sealant.
- Use Type 2 anchors when a deeper embedment (1 3/4" [45 mm]) into the bridge deck is permissible.
- Clean the holes in the concrete pavement and fill with an approved non-shrink or epoxy grout.
- Use type 2 anchors when a deeper embedment (5 1/2" [140]) into the bridge deck or concrete pavement is permissible.

NOTE: USE THESE ANCHORS WITH STANDARD CONCRETE BARRIER RAIL (C.B.R.), AS SHOWN IN DTL. DWG. NO. 605-00, UNLESS OTHERWISE SHOWN.
1. Use continuous smooth round bars conforming to ASTM A416, Grade 60 [420].
2. Cold read the loops by using a jig that will produce an accurate radius without marring the bar. Do not heat the bar to facilitate bending.
3. No welding is permitted on the smooth round bars or reinforcing steel.

**NOTES:**

1. Use Class Deck Concrete or Equivalent.
2. Reinforcing steel consists of deformed bars conforming to ASTM A615, Grade 60 [420].
3. Connect each 10" (250 mm) section with connecting pins as detailed and conforming to ASTM A253 [253M], Grade 1 [5], or better. Connecting pins need not be painted.
4. Cutouts on ends of each section are shown with slight taper to facilitate form removal. Rectangular cutouts are acceptable.
5. The contractor is responsible for the proper fit-up of the precast concrete barrier rail. Arrange and fit the supporting number of connecting pins to ensure the proper fit-up can be maintained on all roadway alignment, curbes as well as on tangents. This is to be determined early in fabrication.
6. Attach reflectors to rail every 10 ft [3050 mm] use aluminum alloy meeting the aluminum association Alloy Al 6061-T6 (or equivalent). Attach to the manufacturer's specifications for permanent mounting. Or water-based (buoyancy) application, manufacturer with Nordic.
7. The optional tapered end shown is acceptable alternately to the vertical end for all concrete barrier rail ends.
8. Galvanize or epoxy coat loops and connecting pins after fabrication. Connect each 10" (250 mm) section with Subsection 712.1.1. Galvanize in accordance with AASHTO M 31 [31M], Grade 60 [420], or other applicable ASTM specification without zinc.
9. * Use Alternates "A" (200 mm) dia. hole with "B" (250 mm) square washer (see detail).
NOTES:

1. USE CLASS DECK CONCRETE OR EQUIVALENT.
2. REINFORCING STEEL CONSISTS OF DEFORMED BARS CONFORMING TO ASTM A 706 [270M], GRADE 36 [250], OR BETTER. CONNECTING PINS NEED NOT BE PAINTED.
3. COLD BEND THE LOOPS BY USING A JIG THAT WILL PRODUCE AN ACCURATE RADIUS WITHOUT MARRING THE BAR. DO NOT HEAT THE BAR TO FACILITATE BENDING.
4. WELD REBAR TO LOOPS MEETING SECTION 556 REQUIREMENTS USING 1/8" [3 mm] DIA. E8018 GRADE 36 [250], GRADE 60 [420] FOR REBAR AS ON TANGENT. THIS IS TO BE DETERMINED EARLY IN FABRICATION.
5. NO ADDITIONAL WELDING IS PERMITTED ON THE SMOOTH ROUND BARS OR REINFORCING STEEL. USE CONTINUOUS SMOOTH ROUND BARS CONFORMING TO ASTM A 242 [242M], GRADE 50 [350], OR BETTER. CONNECTING PINS NEED NOT BE PAINTED.

OPTIONAL LOOP FABRICATION REQUIREMENTS

1. USE REINFORCING STEEL CONFORMING TO ASTM A 615 [615M], GRADE 44 [300], OR BETTER. CONNECTING PINS NEED NOT BE PAINTED.
2. COLD BEND THE LOOPS BY USING A JIG THAT WILL PRODUCE AN ACCURATE RADIUS WITHOUT MARRING THE BAR. DO NOT HEAT THE BAR TO FACILITATE BENDING.
3. AS WELDING IS PERMITTED ON THE SMOOTH ROUND BARS OR REINFORCING STEEL.

UNITS SHOWN IN BRACKETS [ ] ARE METRIC AND ARE IN MILLIMETERS (mm). UNLESS OTHER UNITS ARE SHOWN.