Thrie-Beam

DESCRIPTION:

1. Non skewed deck joint shown, actual joint dimensions and orientation vary. For treatment at skewed deck joints see Skew Detail, Index 521-480. Provide open Railing Joints at Deck Expansion Joint locations matching the dimension of the Deck Joint.

2. Provide 3/8 Intermediate Open Joints at:
   - (1) Superstructure supports where slab is continuous.
   - (2) Vertical Face Retrofit Extends beyond Bridge Railing, the 2'-6" minimum dimension shall apply to both the front and back face of the railing.

3. Curb heights vary from 5" Min. to 1'-2" Max.

NOTES:

1. On approach end provide a Roadway Guardrail Transition, Index 538-002 (as shown) or other site specific treatment. See Roadway Plans for limiting station of Roadway Guardrail Transition or other site specific treatment. If limiting station of Roadway Guardrail Transition is on the bridge, attach Thrie-Beam Terminal Connector to railing as shown above. If limiting station of Roadway Guardrail Transition is along the Wing Wall, see Indexes 2, 3, 4 or 5, Sheets 3 and 4. On skewed bridges, if the beam along the deck joint extends across the width of the railing, the 2"-6" minimum dimension shall apply to both the front and back face of the railing. For treatment of trailing end see Roadway Plans. If vertical Face retrofit extends beyond bridge and approach slab ends, see Index 521-484 for treatment and Details.

2. Field cut Bars 5S and Dowel Bars 6D to maintain clearance within Vertical Face Retrofit Railing.

3. Where existing structure has been removed and not encased in new concrete; match adjoining areas and finish flat by grooving or grinding as required. Exposed existing reinforcing steel not encased in new concrete shall be burned off 1" below existing concrete and ground over.

PARTIAL PLAN OF RAILING

PARTIAL ELEVATION OF INSIDE FACE OF RAILING (Existing Traffic Railing, Expansion Dowel Assemblies & Bars 4C not shown for clarity)

TYPICAL TREATMENT OF RAILING ALONG BRIDGE

TYPICAL SECTION THRU RAILING ALONG APPROACH SLAB

TYPICAL SECTION THRU EXISTING APPROACH SLAB AND END BENT WING WALL SHOWING LIMITS OF REMOVAL (SCHEMES 4 AND 5 ONLY)

CROSS REFERENCE:

For General Notes, Estimated Quantities, Dowel Notes & Bending Diagrams see Index 521-480.
PARTIAL PLAN OF RAILING
(Existing Wing Post not shown for clarity)

SCHEME 1
RAILING END TREATMENT FOR PERPENDICULAR OR ANGLED WING WALLS

SCHEME 1 NOTES:
1. Provide Transition Block (as shown) or Curb if existing Approach Slab does not have a curb, see Roadway Plans. Shape and height of Transition Block or Curb shall match existing bridge curb. Railing End Transition Block may be omitted on trailing ends with no opposing traffic.
2. Field bend Dowel Bars 4L within Transition Block as required to maintain 2" top and side clearance and 3" bottom clearance.
3. If a Special Steel Guardrail Post is required for attachment to the top of a sloping Wing Wall, saw cut and remove a wedge shaped portion of the sloping Wing Wall as required to provide a level surface for post installation.

SCHEME 2
RAILING END TREATMENT FOR PARALLEL CURBS

SCHEME 2 NOTES:
1. Provide Transition Block (as shown) or Curb if existing Approach Slab does not have a curb, see Roadway Plans. Shape and height of Transition Block or Curb shall match existing bridge curb. Railing End Transition Block may be omitted on trailing ends with no opposing traffic.
2. Field bend Dowel Bars 4L within Transition Block as required to maintain 2" top and side clearance and 3" bottom clearance.
3. If a Special Steel Guardrail Post is required for attachment to the top of a sloping Wing Wall, saw cut and remove a wedge shaped portion of the sloping Wing Wall as required to provide a level surface for post installation.
**SCHEME 3 NOTES:**

1. See Roadway Plans for limiting station of Roadway Guardrail Transition or other site specific treatment. If limiting station of Roadway Guardrail Transition is on the bridge, attach Three-Beam Terminal Connector to railing as shown above. If limiting station of Roadway Guardrail Transition is on the bridge, see Sheet 1.

2. Dowel Bars 4N may be installed on a maximum angle of 45° to the cut edge of the Approach Slab as shown to facilitate drilling of holes and installation of bars.

3. At the Contractor’s option, along the length of the Approach Slab curb that is to be replaced, Dowel Bars 6D may be cast in with the new section of curb as shown or they may be installed in drilled holes in the new section of curb using an Adhesive Bonding Material System with a 1'-0" minimum embedment.
**PUBLIC WORKS IMPROVEMENT PROJECT**

**SCHEME 5**

**RAILING END TREATMENT FOR PARALLEL CURBS**

1. **Limiting Station of Transition**
   - Varies (2'-6" Min.)
   - Transition Block (See Note 3)

2. **Railing End Transition**
   - Varies (2'-6" Min.)
   - Transition Block (See Note 3)

3. **Roadway Guardrail Transition**
   - (See Note 1 Below & Note 1, Sheet 1)

4. **Asphalt Overlay**
   - When present (Varies)

5. **Existing Approach Slab**

6. **Dowel Bars 4N**
   - @ 1'-3" Spacing
   - Max. (Back Face only)

7. **Limiting Station of Transition**
   - (See Note 3)

**PARTIAL ELEVATION OF INSIDE FACE OF RAILING**

(Existing Wing Post, Railing Reinforcing and Expansion Dowel Assemblies not shown for clarity)

**SCHEME 5 NOTES:**

1. See Roadway Plans for limiting station of Roadway Guardrail Transition or other site specific treatment. If limiting station of Roadway Guardrail Transition is along the Wing Wall, attach Thrie-Beam Terminal Connector to railing as shown above. If limiting station of Roadway Guardrail Transition is on the bridge, see Sheet 1.

2. Dowel Bars 4N may be installed on a maximum angle of 45° to the cut edge of the Approach Slab to facilitate drilling of holes and installation of bars.

3. Provide Transition Block (as shown) or Curb if existing Approach Slab Curb does not extend beyond end of existing End Bent Wing Wall, see Roadway Plans. Shape and height of Transition Block or Curb shall match existing bridge curb. Railing End Transition and Transition Block may be omitted on trailing ends with no opposing traffic.

4. Field bend Dowel Bars 4M within Transition Block as required to maintain 2" top and side clearance and 3" bottom clearance.

5. At the Contractor's option, along the length of the Approach Slab curb that is to be replaced, Dowel Bars 6D may be cast in with the new section of curb as shown or they may be installed in drilled holes in the new section of curb using an Adhesive Bonding Material System with a 1'-0" minimum embedment.

**SECTION C-C**

**TYPICAL SECTION THRU RAILING ALONG APPROACH SLAB**

(SCHEME 4 SHOWN, SCHEME 5 SIMILAR)

**VARIABLES:**

- **Curb Heights:** Varies from 5" Min. to 10" Max. Match height and shape of existing curb on bridge.
- **Dowel Bars 4N:** @ 1'-3" (Typ.)
- **Dowel Bars 6D:** @ 1'-3" Spacing (Max. Back Face only)
- **Dowel Bars 4C:** (Typ.)
- **Dowel Bars 6D:** @ 7" Spacing (Front Face only)
- **Dowel Bars 4M:** (See Note 4)
- **Dowel Bars 5S:** (Typ.)
- **Transition Block:** (See Note 3)
- **Dowel Bars 6D:** (See Note 5)
- **Organic Felt bond breaker along joint**