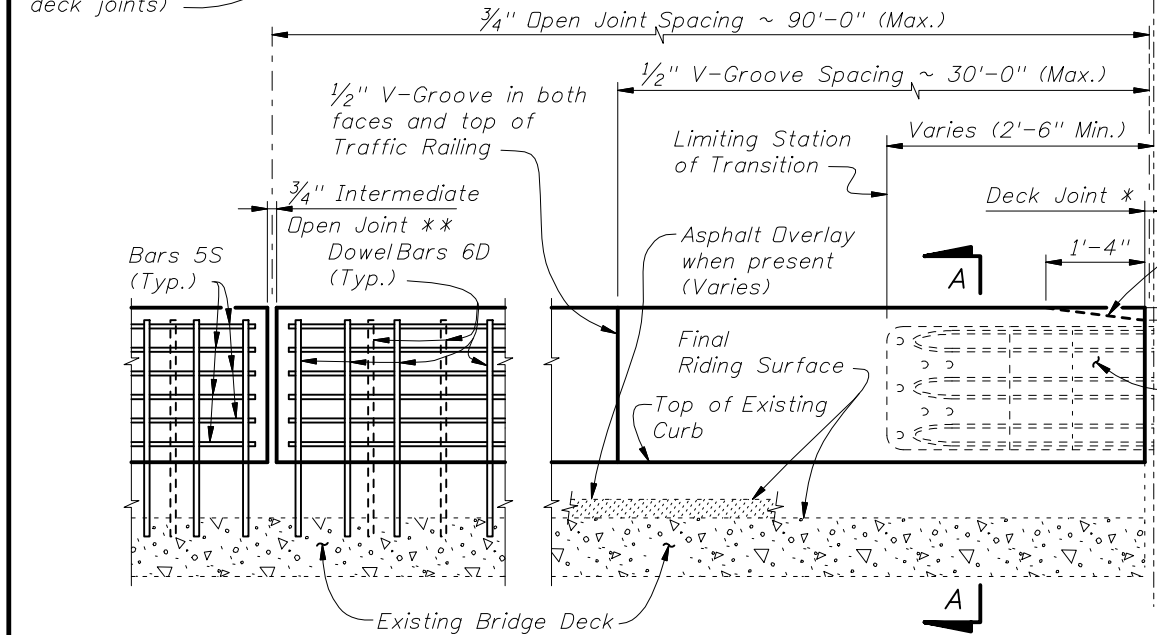


PARTIAL PLAN OF RAILING

Expansion Dowel Assembly
Bars 4C (Typ.)
Dowel Bars 6D (Typ.)
Bars 5S (Typ.)
3 1/2" (Typ.)
7 1/2"
2 equal sp. @ 1 1/4" Max.
1'-3" Spacing Max. (Typ. along Bridge)
2 equal sp. @ 1'-3" Max.
1'-3" Spacing Max. (Typ. along Bridge)
Deck Joint *



PARTIAL ELEVATION OF INSIDE FACE OF RAILING
(Expansion Dowel Assemblies and Bars 4C not shown for clarity)

TYPICAL TREATMENT OF RAILING ALONG BRIDGE

- NOTES:**
1. On approach end provide a Roadway Guardrail Transition, Index No. 402 (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 Schemes 2 or 3, Sheets 2 & 3. On skewed bridges, if the skew 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 No. 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 grouting or grinding as required. Exposed existing reinforcing steel not encased in new concrete shall be burned off 1" below existing concrete and grouted over.

* Non skewed deck shown, actual joint dimensions and orientation vary. For treatment at skewed deck joints see Skew Detail, Index No. 480. Open Railing Joints at Deck Expansion Joint locations shall match the dimension of the Deck Joint. Deck Joint at Begin Bridge or End Bridge shown, Deck Joint at \varnothing Pier or Intermediate Bent similar.

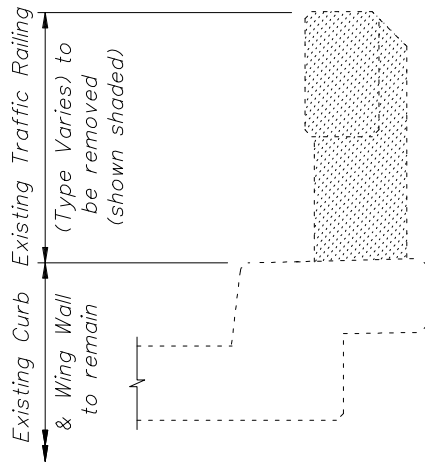
** 3/4" Intermediate Open Joints shall be provided at:

- (1) - Substructure supports where existing bridge deck is continuous.
- (2) - Midspan where span length exceeds 90 ft.
- (3) - Intermediate locations (equally spaced) between midspan and substructure supports where span length exceeds 180 ft.

Expansion Dowel & Bars 4C not required at end of railing for Scheme 1, except where traffic railing retrofit extends beyond ends of bridge, see Index No. 484

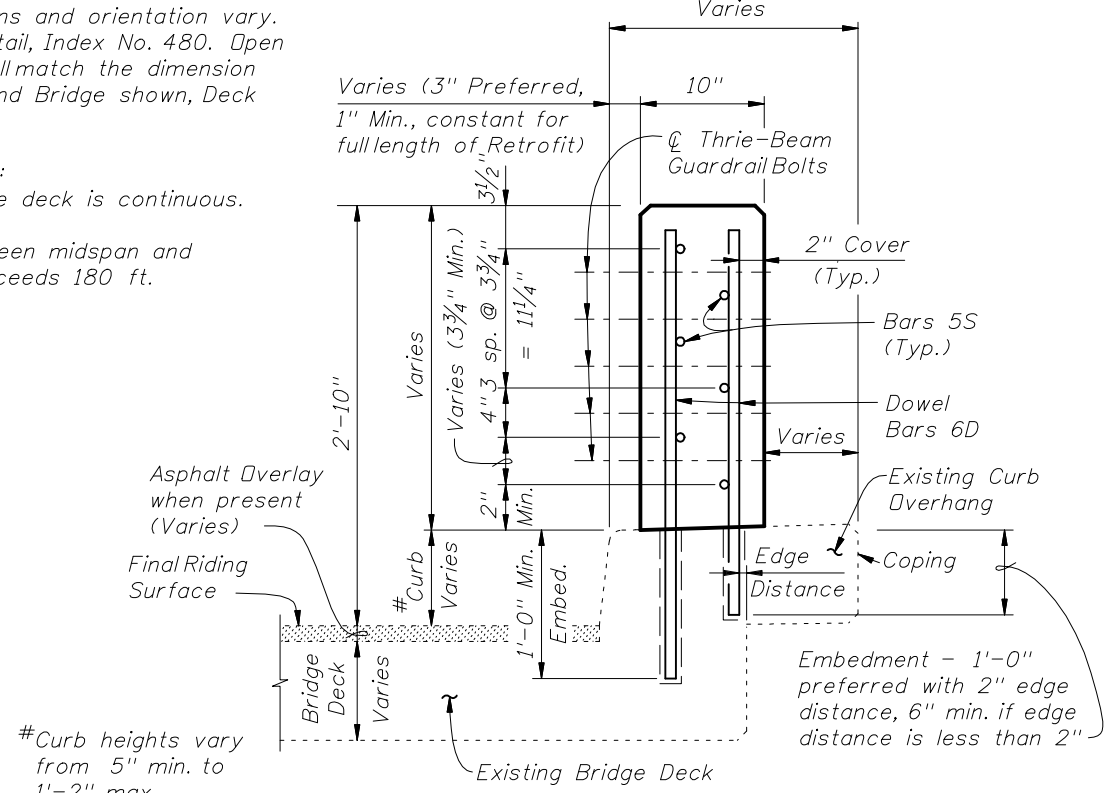
Front Face of Backwall, Begin or End Bridge & Match Line (See Sheet 2 and 3 and Index No. 484, Sheets 5, 9 & 10.)

Railing End Transition Scheme 1 only (See Note 1, Scheme 1, Sheet 2, & Index No. 484, Sheet 5, 9 & 10)

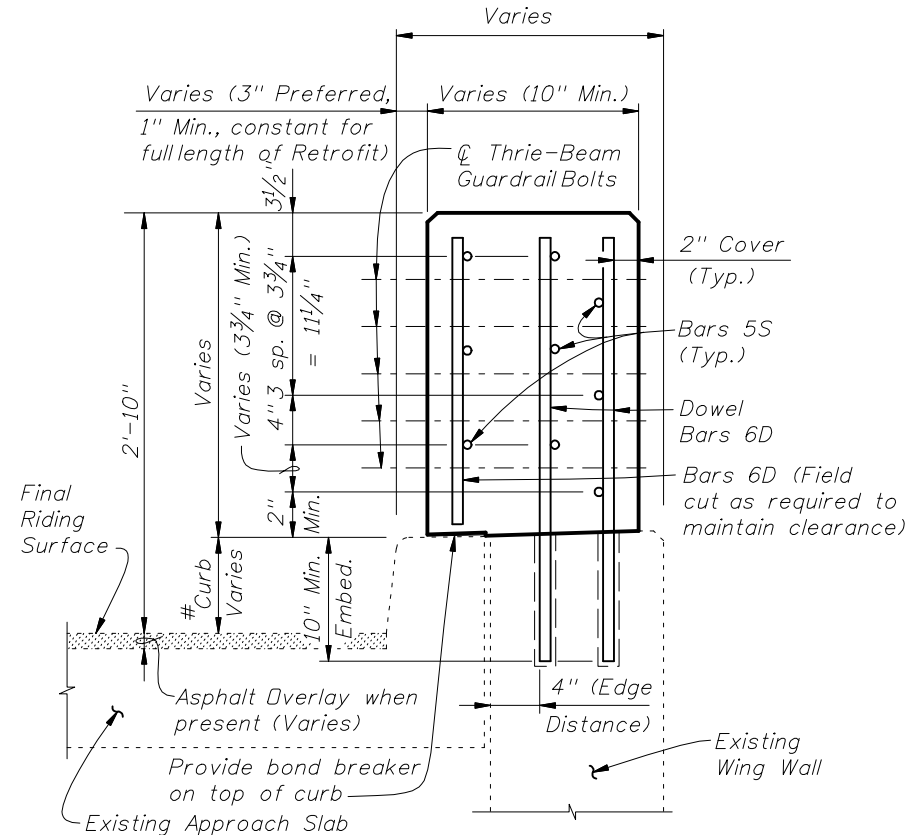


TYPICAL SECTION THRU EXISTING TRAFFIC RAILING
SHOWING LIMITS OF REMOVAL
(BRIDGE DECK SHOWN, WING WALL SIMILAR)

CROSS REFERENCE:
For General Notes, Estimated Quantities, Dowel Detail, Expansion Dowel Detail, Reinforcing Steel Notes & Bending Diagram see Index No. 480.

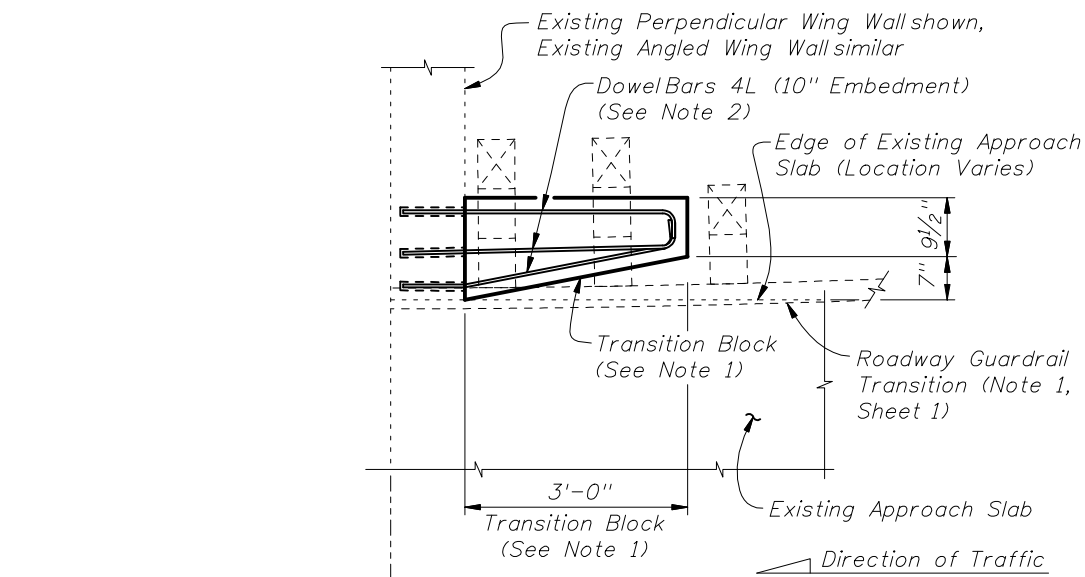


SECTION A-A
TYPICAL SECTION THRU RAILING ON BRIDGE DECK



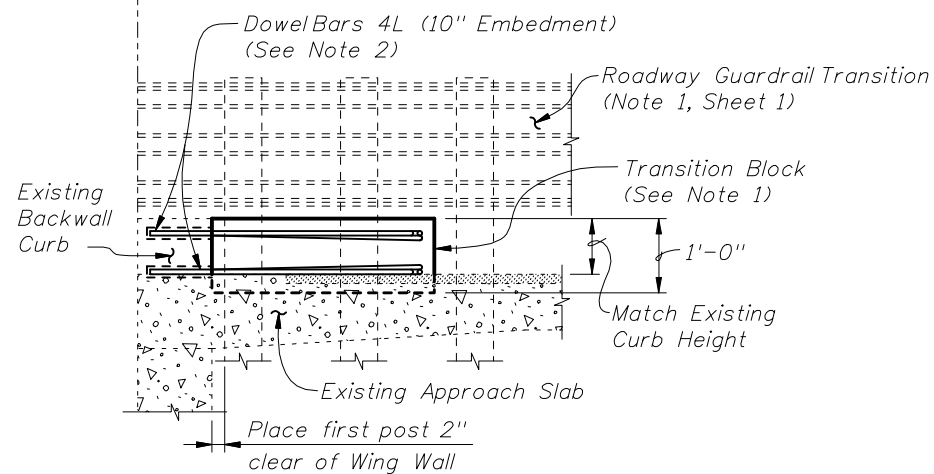
SECTION B-B
TYPICAL SECTION THRU RAILING ON WING WALL





Front Face of Backwall, Begin or End Bridge & Match Line (See Sheet 1)

PARTIAL PLAN OF GUARDRAIL

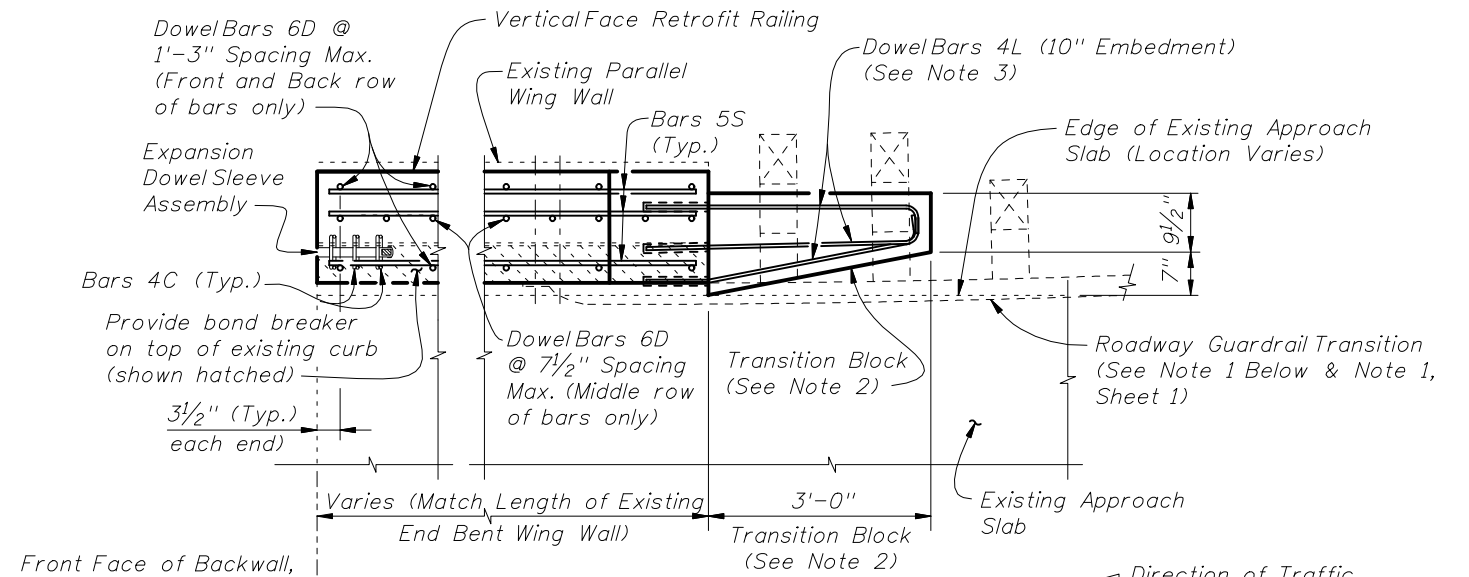


PARTIAL ELEVATION OF INSIDE FACE OF GUARDRAIL

SCHEME 1
RAILING END TREATMENT FOR PERPENDICULAR OR ANGLED WING WALLS

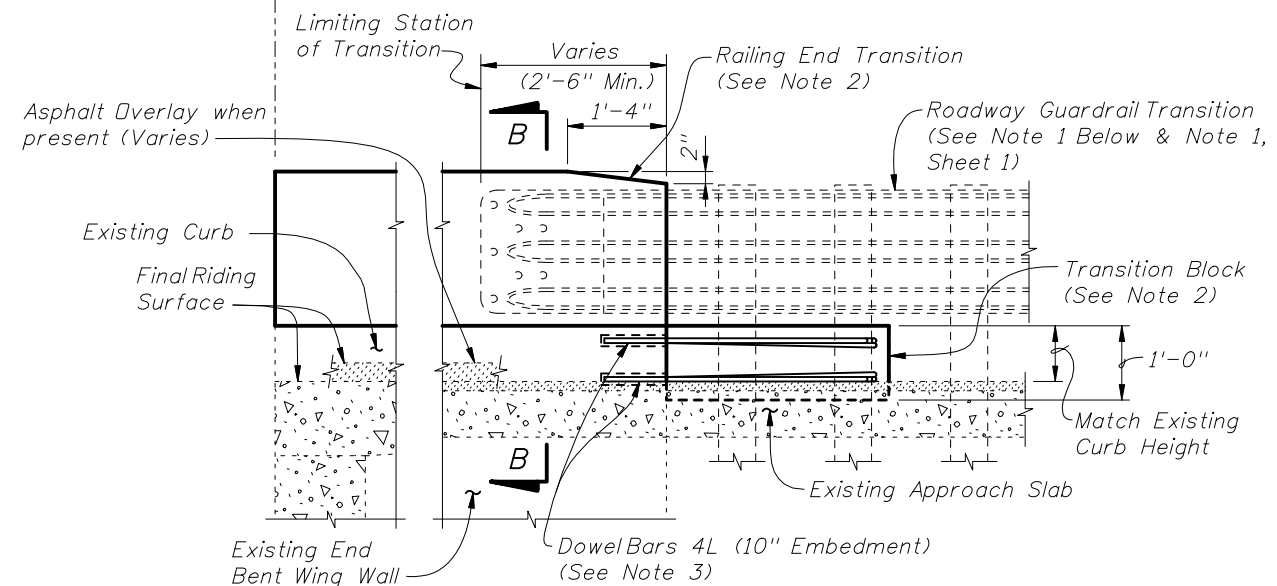
SCHEME 1 NOTES:

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 and Transition Block may be omitted on trailing ends with no opposing traffic.
2. Field bend DowelBars 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.



Front Face of Backwall, Begin or End Bridge & Match Line (See Sheet 1)

PARTIAL PLAN OF RAILING

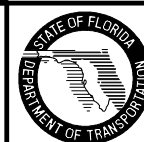


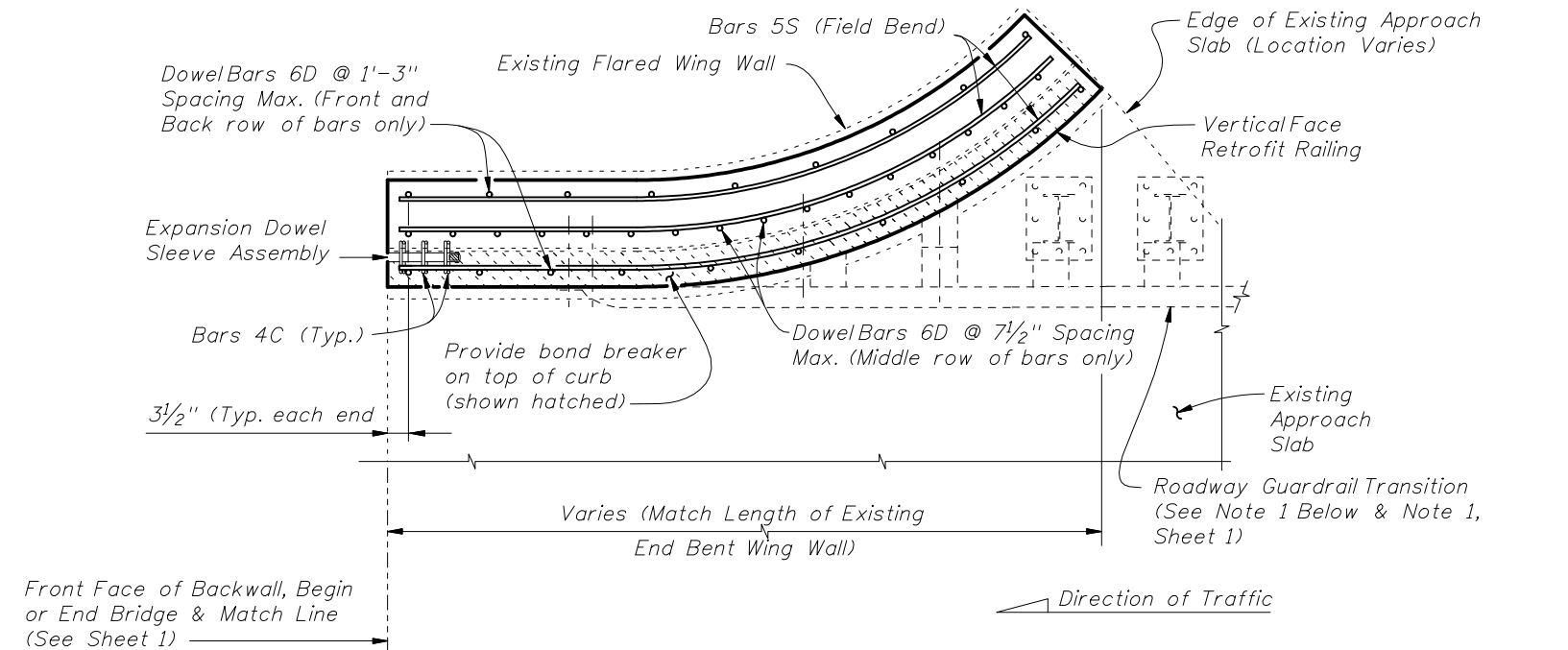
PARTIAL ELEVATION OF INSIDE FACE OF RAILING
(Railing Reinforcing and Expansion Dowel Assemblies not shown for clarity)

SCHEME 2
RAILING END TREATMENT FOR PARALLEL WING WALLS

SCHEME 2 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. On skewed bridges, if the skew 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.
2. 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.
3. Field bend DowelBars 4L within Transition Block as required to maintain 2" top and side clearance and 3" bottom clearance.

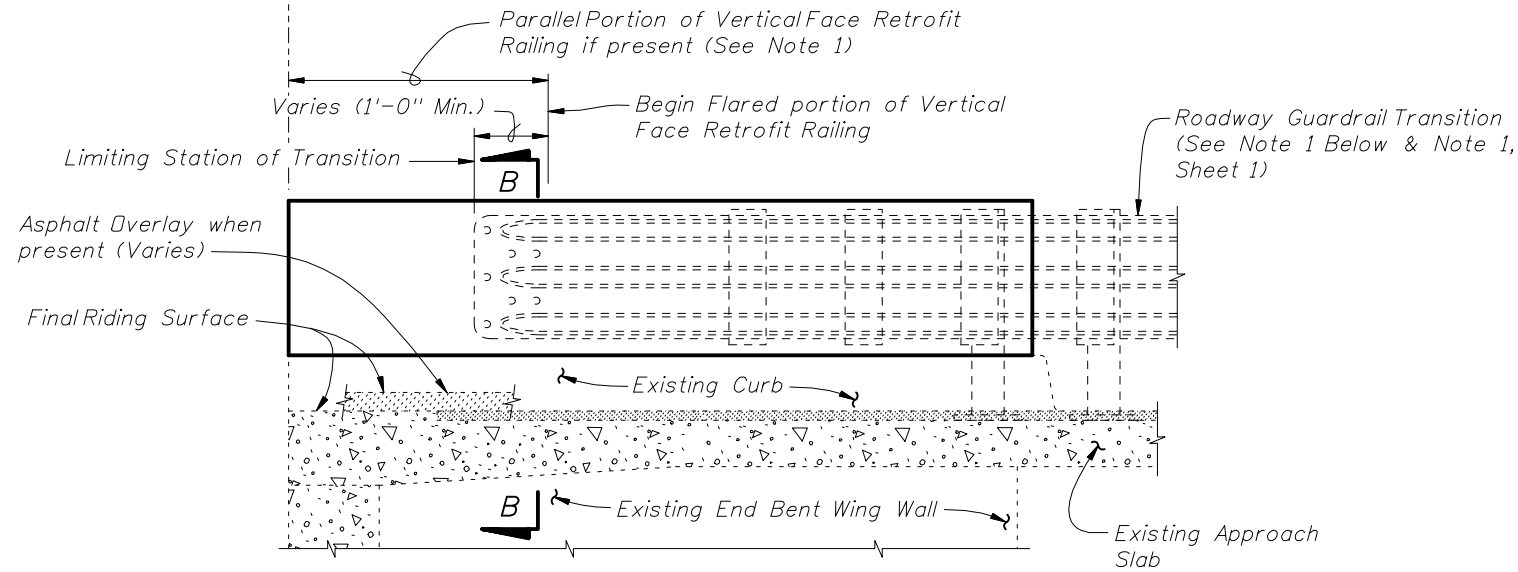




SCHEME 3 NOTE:

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 Three-Beam Terminal Connector to railing as shown above. If limiting station of Roadway Guardrail Transition is on the bridge, see Sheet 1.

PARTIAL PLAN OF RAILING



PARTIAL ELEVATION OF INSIDE FACE OF RAILING
(Railing Reinforcing and Expansion Dowel Assemblies not shown for clarity)

SCHEME 3
RAILING END TREATMENT FOR
FLARED WING WALLS

