

GENERAL NOTES

CONCRETE: Concrete for the Traffic Railing (Vertical Face Retrofit) shall be Class IV. Concrete for Curb Transition Blocks shall be Class II (Bridge Deck).

ADHESIVE-BONDED DOWELS: Adhesive Bonding Material Systems for Dowels shall comply with Specification Section 937 and be installed in accordance with Specification Section 416. The field testing proof loads required by Specification Section 416 shall be 23,800 lbs. for Dowel Bars 6D on the inside face (traffic side) of the railing (1'-0" embedment) and 18,500 lbs for Dowel Bars 6D along the outside face of the traffic railing (5" min. embedment).

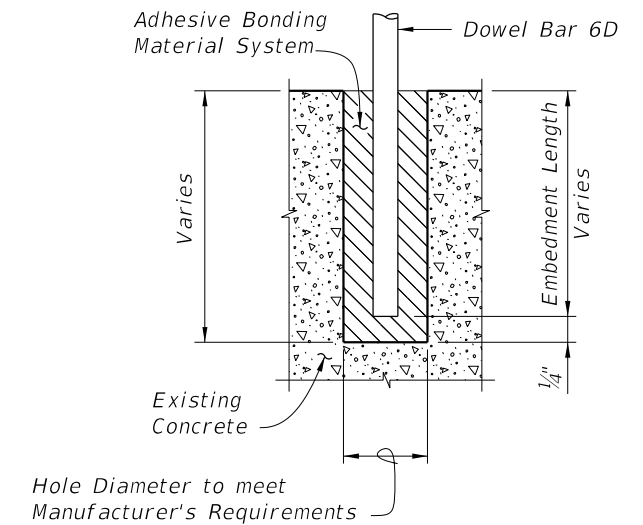
BRIDGES ON CURVED ALIGNMENTS: The details presented in this Standard are shown for bridges on tangent alignments. Details for bridges on horizontally curved alignments are similar.

BARRIER DELINEATORS: Barrier Delineators shall meet Specification Section 993. Install Barrier Delineators on top of the Traffic Railing along the entire length of the bridge 2" from the face on the traffic side in accordance with Specification Section 705. Barrier Delineator color (white or yellow) shall match the color of the near edgeline.

GUARDRAIL: See Index 536-001 for guardrail component details, geometric layouts and associated notes not fully detailed herein.

BRIDGE NAME PLATE: If a portion of the existing Traffic Railing is to be removed that carries the bridge name, number and or date, or if the installation of the Traffic Railing (Thrie Beam Retrofit) will obscure the bridge name, number and or date, then replace the information that has been removed or obscured, with 3" tall black lettering on white nonreflective sheeting applied to the top of the adjacent guardrail. The information must be clearly visible from the right side of the approaching travel lane. The sheeting and adhesive backing shall comply with Specification Section 994 and may comprise individual decals of letters and numbers.


PAYMENT: Concrete Traffic Railing-Bridge Retrofit - Post & Beam Railing (EA) includes all material and labor required to demolish a portion of the existing structure where required and to construct the concrete portion of the retrofit railing. Guardrail Approach Transition to rigid Barriers (EA) includes transition block, and necessary hardware to complete the Guardrail transitions shown.

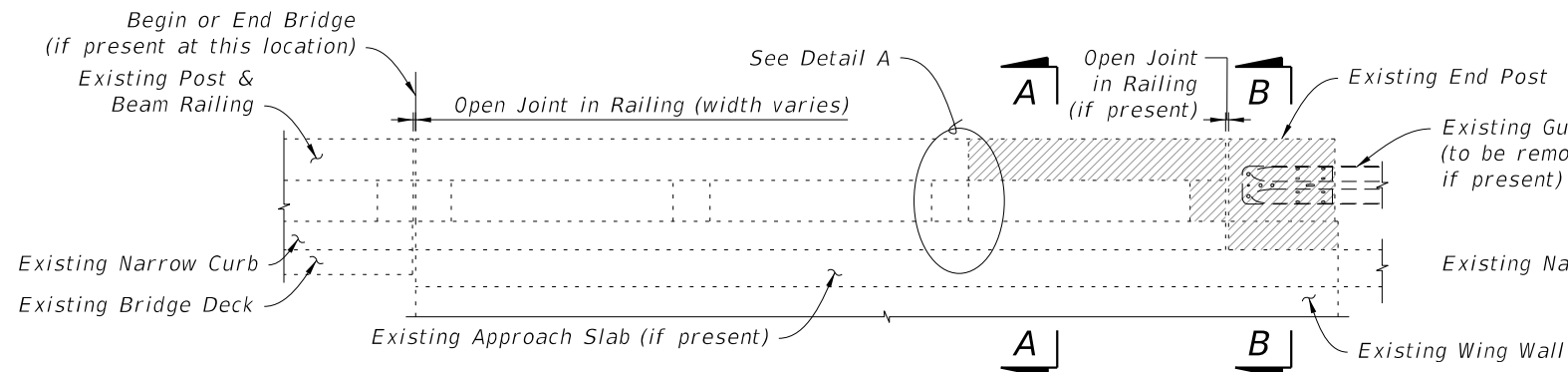


DOWEL DETAIL

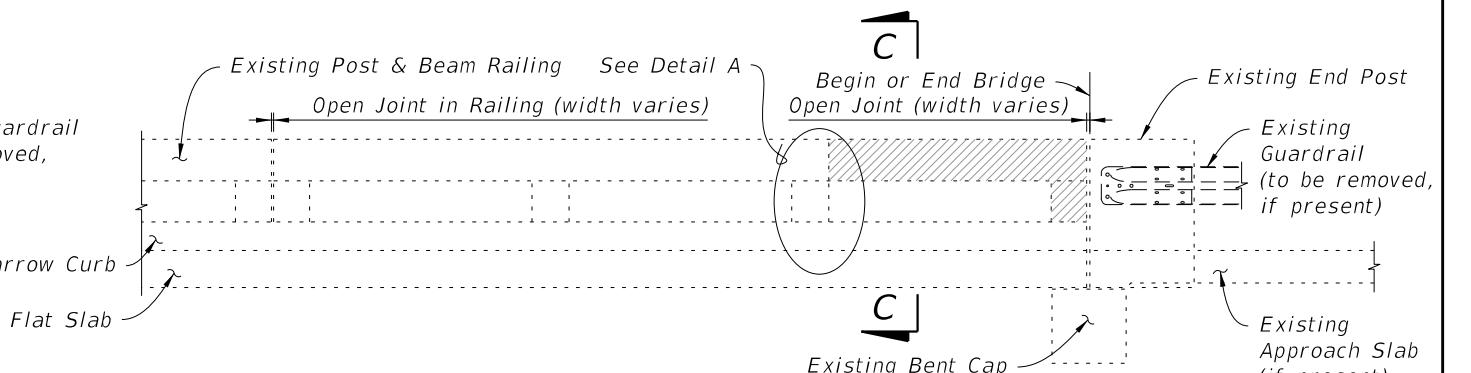
Note:
Shift dowel holes to clear if the existing reinforcement is encountered.

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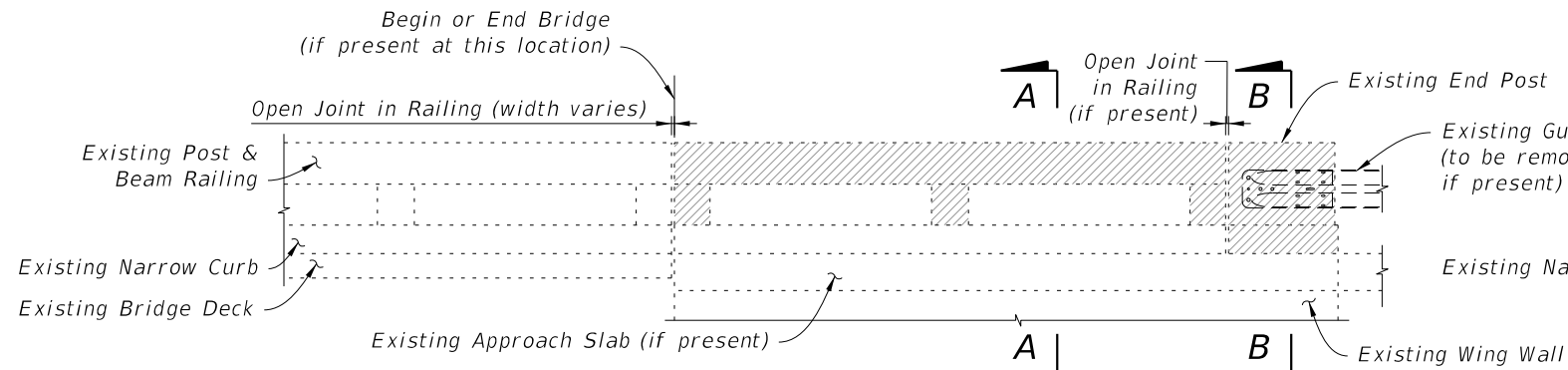
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| LAST REVISION 11/01/19 | REVISION | DESCRIPTION: |  FY 2023-24 STANDARD PLANS | GUARDRAIL TRANSITIONS-EXISTING POST & BEAM BRIDGE RAILINGS (NARROW & RECESSED CURBS) | INDEX 521-404 | SHEET 1 of 8 |
|------------------------------|----------|--------------|---|---|------------------|-----------------|



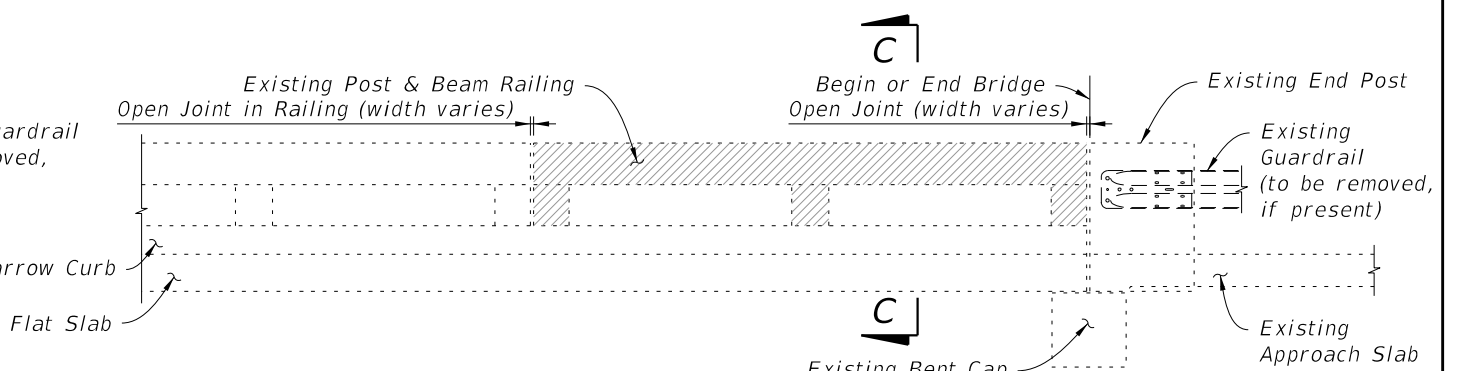
3 OR MORE CONTINUOUS RAILING PANELS ON WINGWALL ADJACENT TO END POST



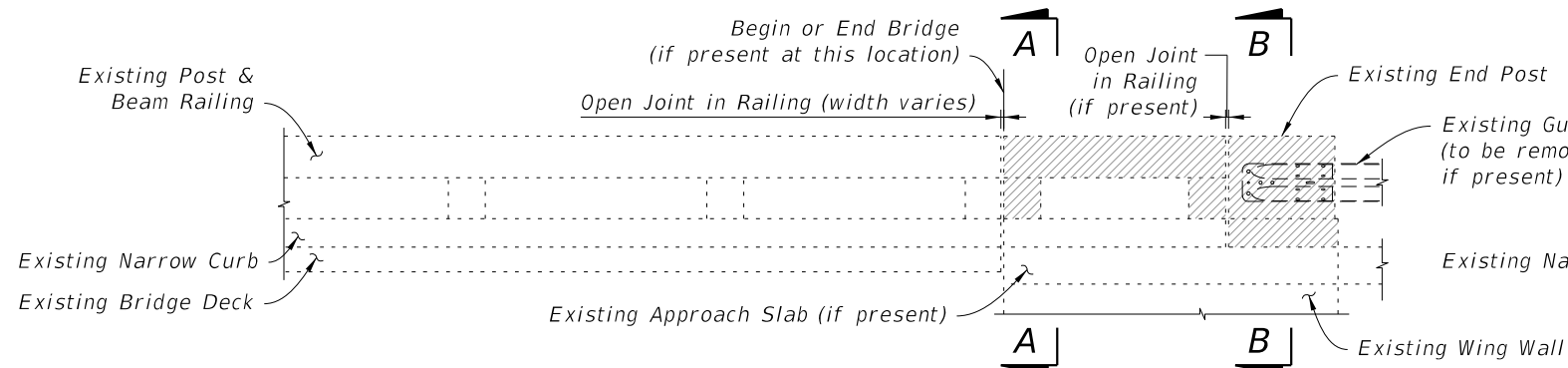
3 OR MORE CONTINUOUS RAILING PANELS ADJACENT TO BEGIN OR END BRIDGE



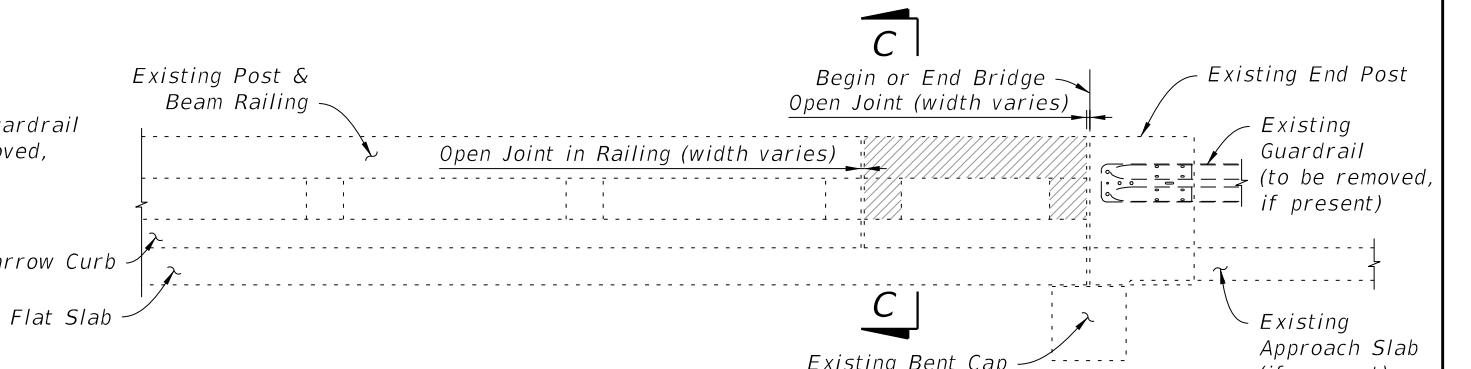
2 CONTINUOUS RAILING PANELS ON WINGWALL ADJACENT TO END POST



2 CONTINUOUS RAILING PANELS ADJACENT TO BEGIN OR END BRIDGE



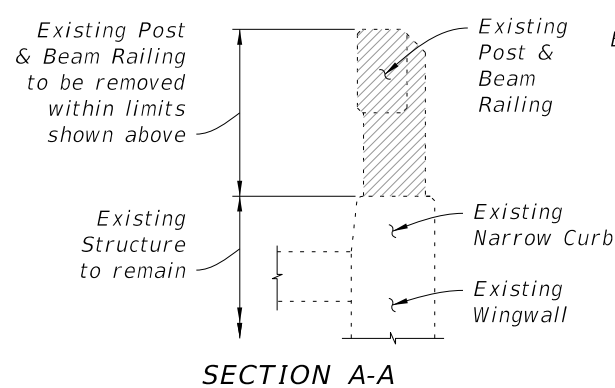
1 RAILING PANEL ON WINGWALL ADJACENT TO END POST



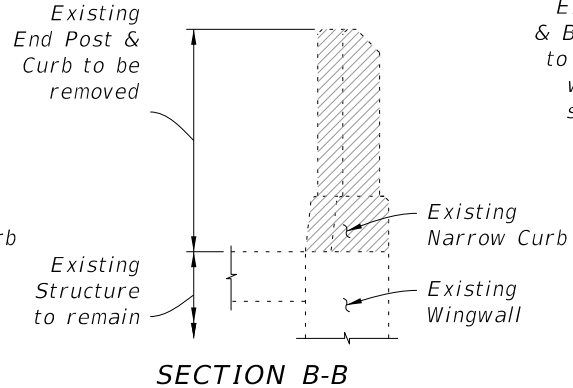
1 RAILING PANEL ADJACENT TO BEGIN OR END BRIDGE

SCHEME 1 - APPROACH ENDS OF BRIDGES WITH BEAM OR GIRDER SUPERSTRUCTURE

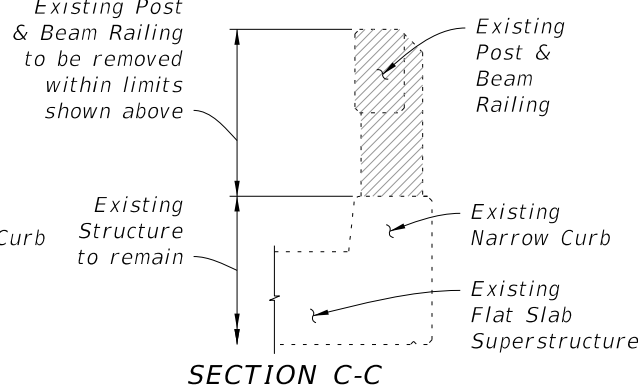
SCHEME 2 - APPROACH ENDS OF BRIDGES WITH FLAT SLAB SUPERSTRUCTURE & PARALLEL WINGWALLS (SHOWN) OR BEAM OR GIRDER SUPERSTRUCTURE & PARALLEL OR CURVED WINGWALLS (SIMILAR)



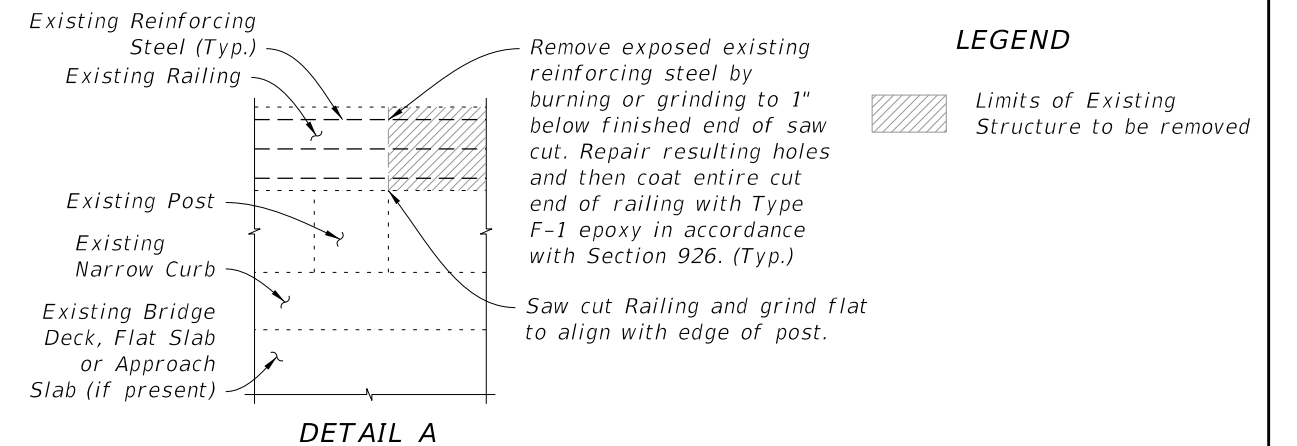
SECTION A-A



SECTION B-B



SECTION C-C



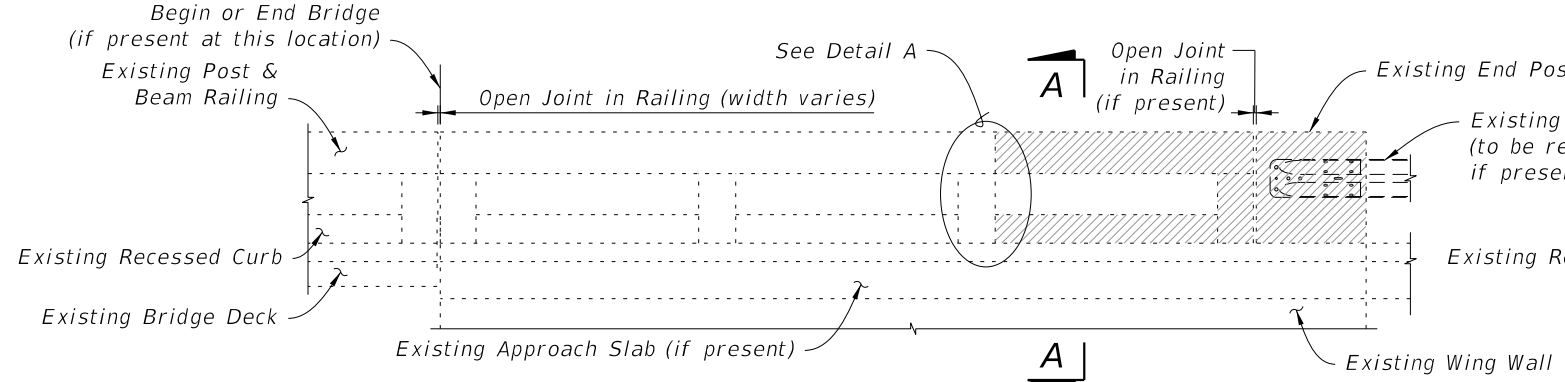
DETAIL A

LIMITS OF REMOVAL OF EXISTING STRUCTURE - POST & BEAM RAILING WITH NARROW CURB

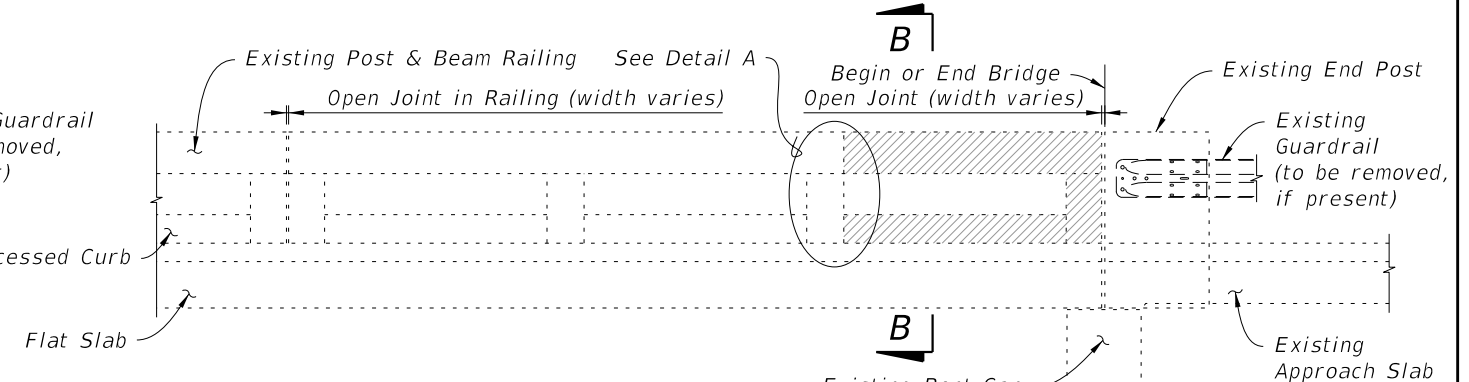
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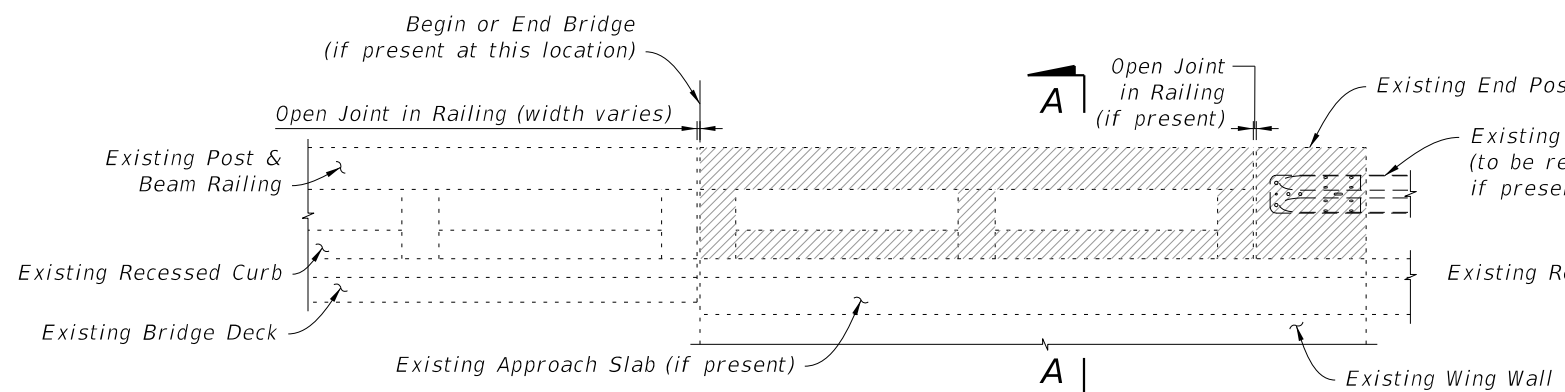




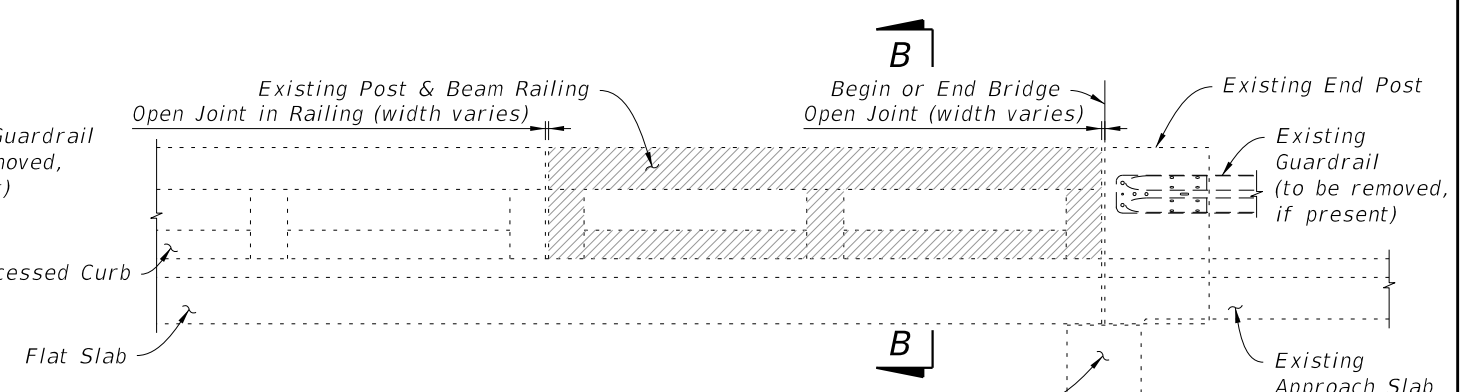
3 OR MORE CONTINUOUS RAILING PANELS ON WINGWALL ADJACENT TO END POST



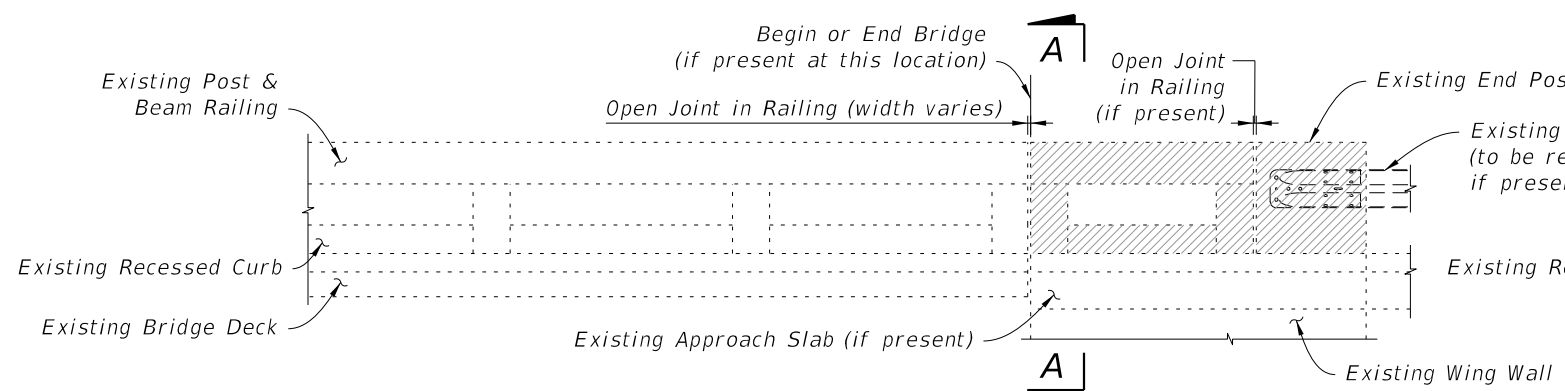
3 OR MORE CONTINUOUS RAILING PANELS ADJACENT TO BEGIN OR END BRIDGE



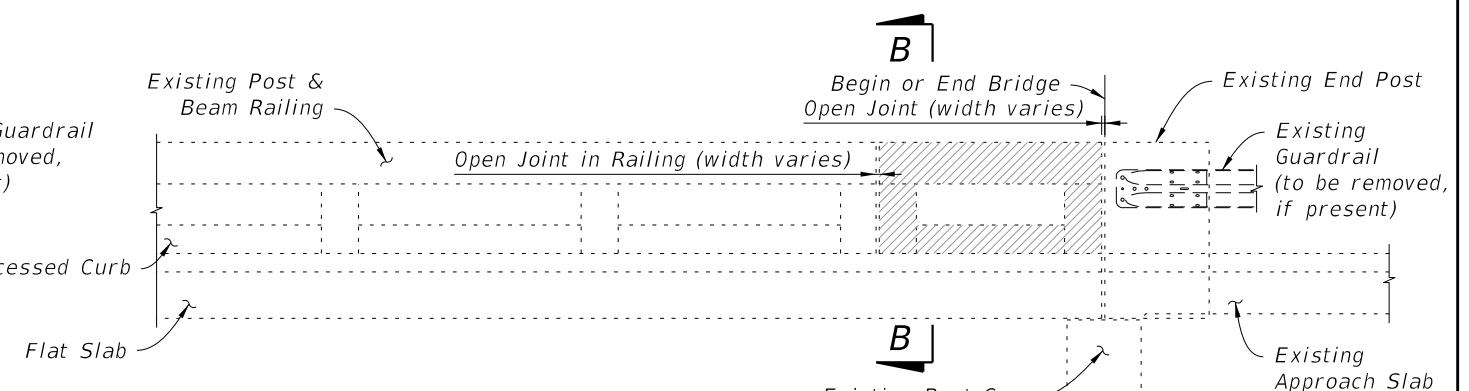
2 CONTINUOUS RAILING PANELS ON WINGWALL ADJACENT TO END POST



2 CONTINUOUS RAILING PANELS ADJACENT TO BEGIN OR END BRIDGE



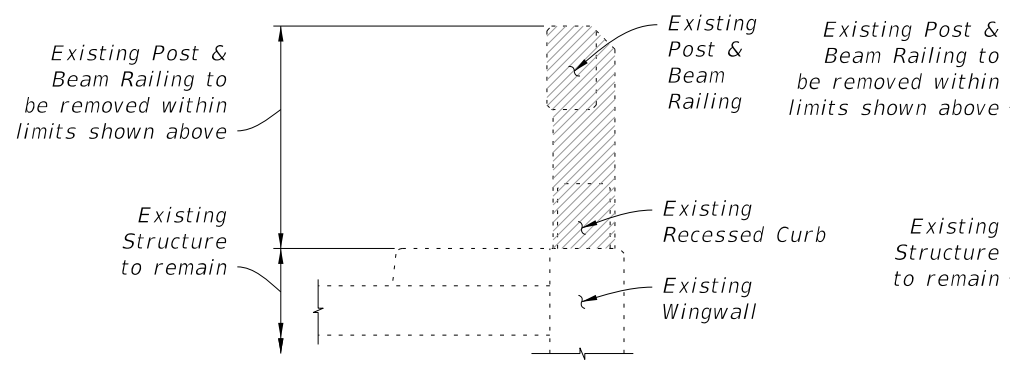
1 RAILING PANEL ON WINGWALL ADJACENT TO END POST



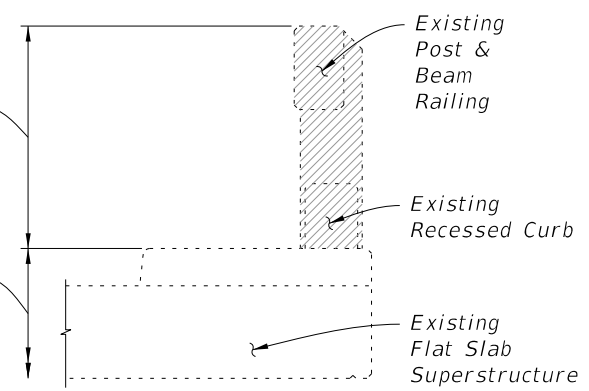
1 RAILING PANEL ADJACENT TO BEGIN OR END BRIDGE

SCHEME 3 - APPROACH ENDS OF BRIDGES WITH BEAM OR GIRDER SUPERSTRUCTURE

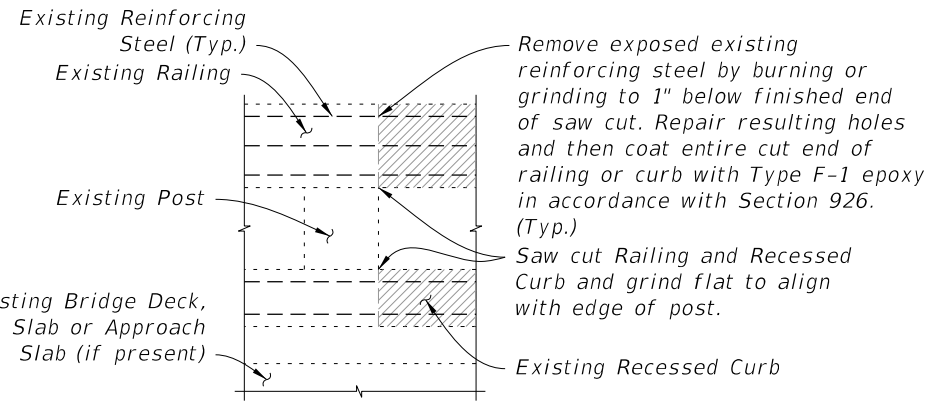
SCHEME 4 - APPROACH ENDS OF BRIDGES WITH FLAT SLAB SUPERSTRUCTURE & PARALLEL WINGWALLS (SHOWN) OR BEAM OR GIRDER SUPERSTRUCTURE & PARALLEL OR CURVED WINGWALLS (SIMILAR)



SECTION A-A



SECTION B-B



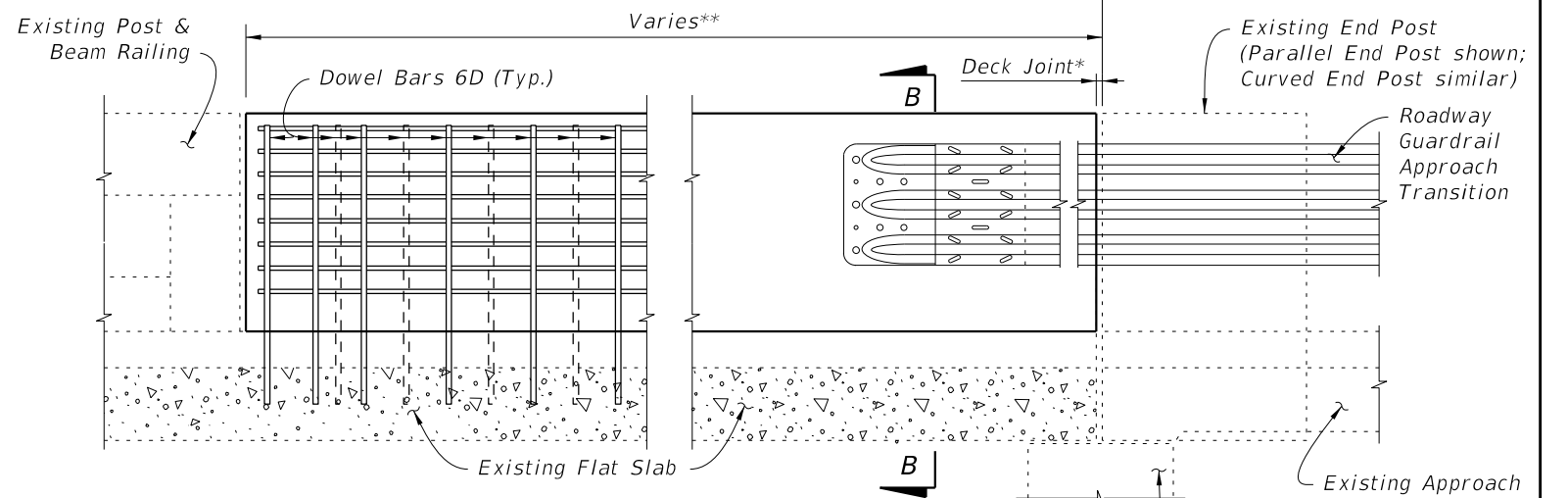
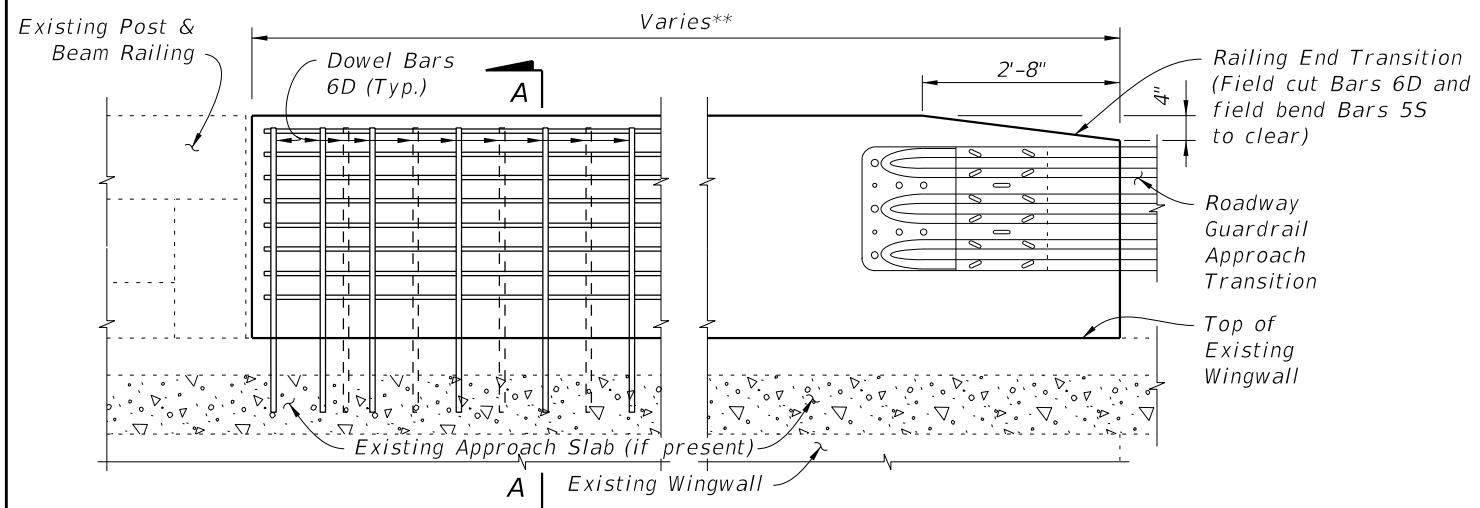
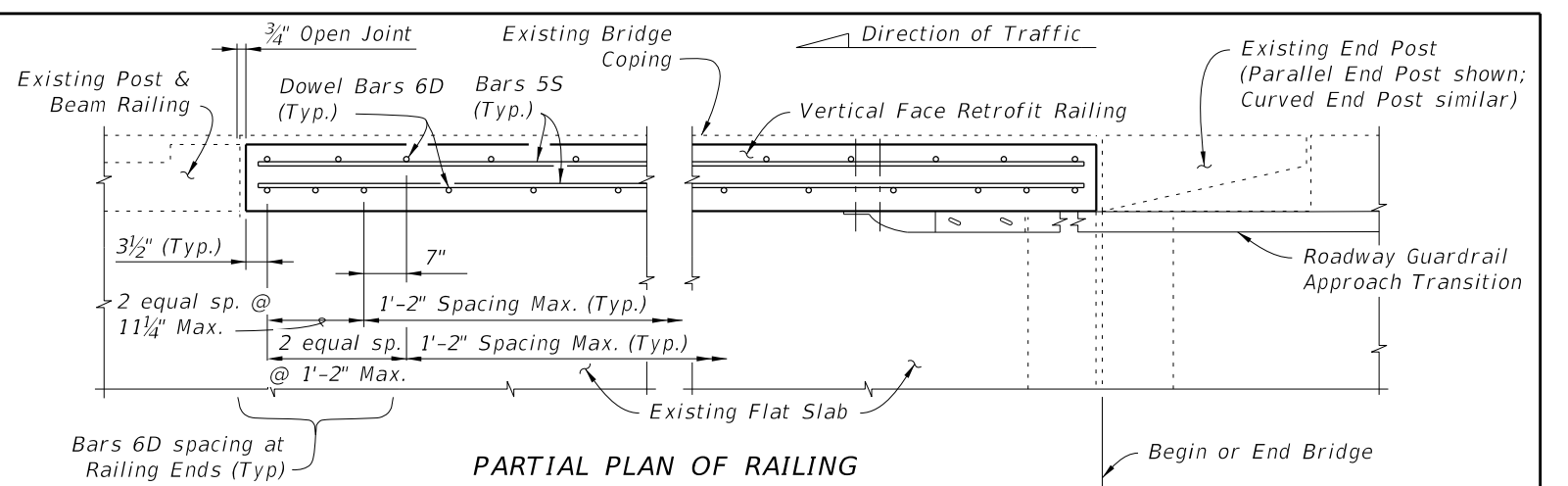
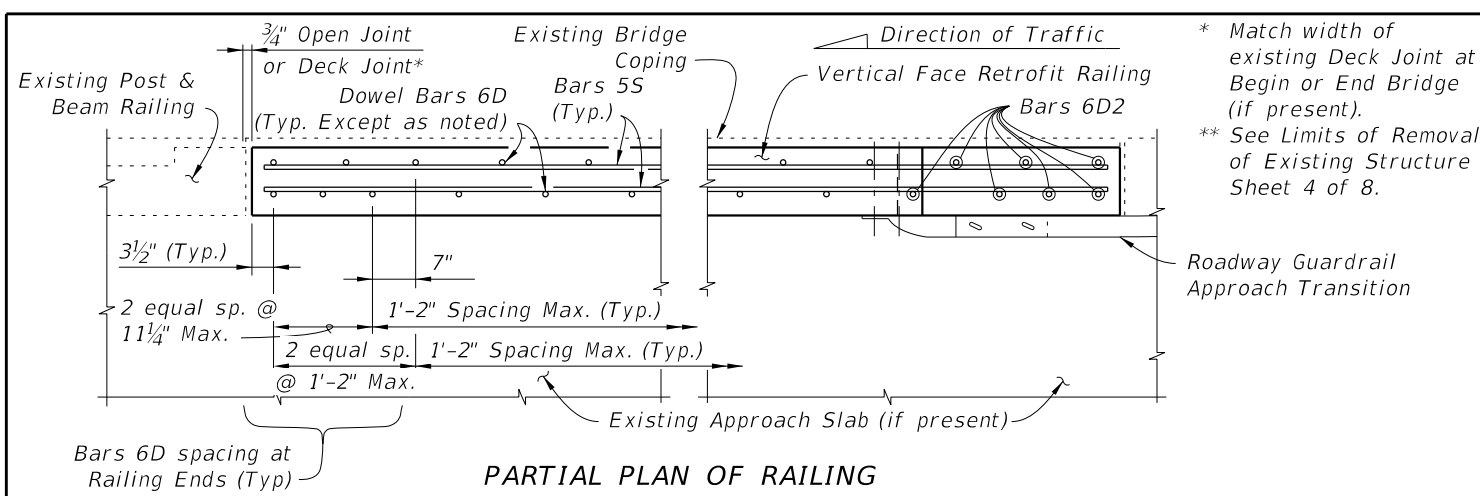
DETAIL A

LEGEND
 Limits of Existing Structure to be removed

LIMITS OF REMOVAL OF EXISTING STRUCTURE - POST & BEAM RAILING WITH RECESSED CURB

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| | | | | | | |

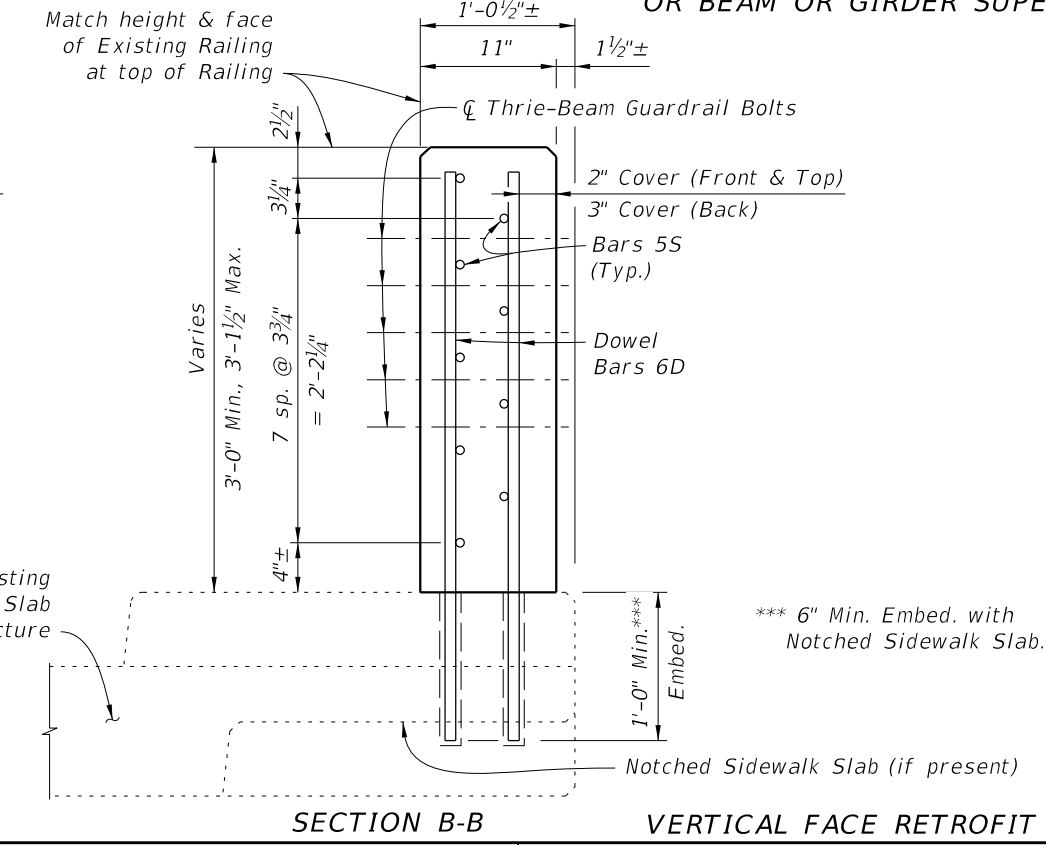
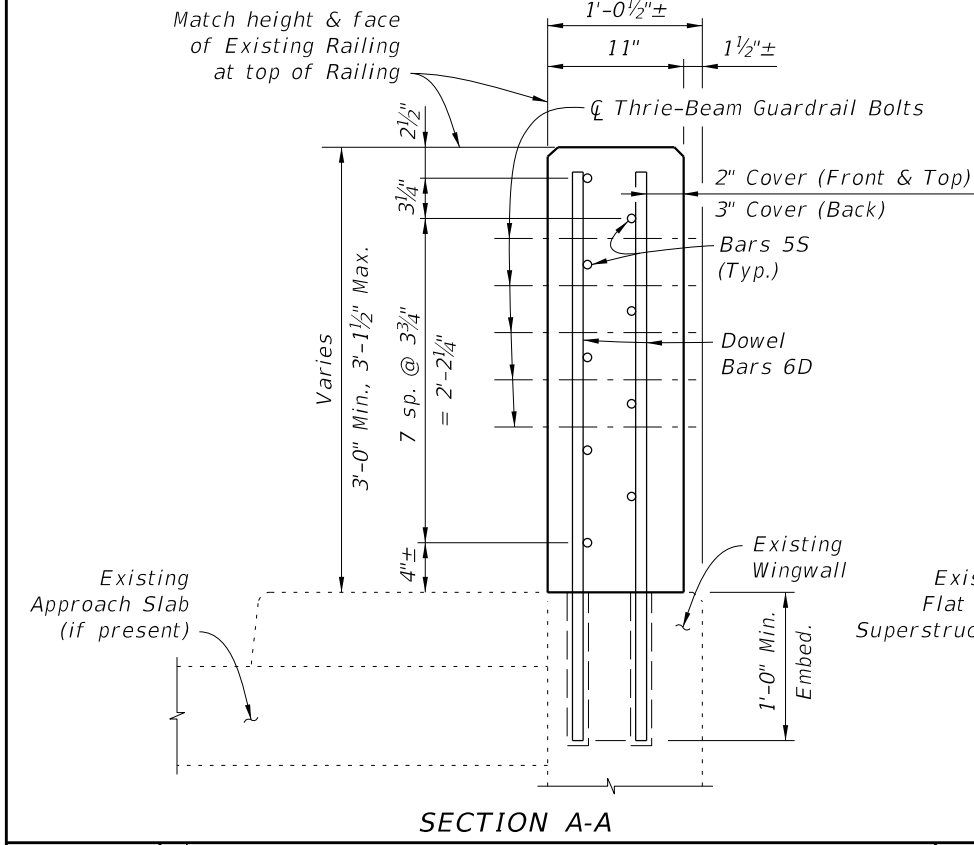


PARTIAL ELEVATION OF INSIDE FACE OF RAILING

PARTIAL ELEVATION OF INSIDE FACE OF RAILING

SCHEME 4 - APPROACH ENDS OF BRIDGES WITH FLAT SLAB SUPERSTRUCTURE & PARALLEL WINGWALLS (SHOWN) OR BEAM OR GIRDER SUPERSTRUCTURE & PARALLEL OR CURVED WINGWALLS (SIMILAR)

SCHEME 3 - APPROACH ENDS OF BRIDGES WITH BEAM OR GIRDER SUPERSTRUCTURE



| ESTIMATED TRAFFIC RAILING QUANTITIES | | |
|--------------------------------------|-------|----------|
| ITEM | UNIT | QUANTITY |
| Concrete | CY/FT | 0.102 |
| Reinforcing Steel | LB/FT | 17.97 |

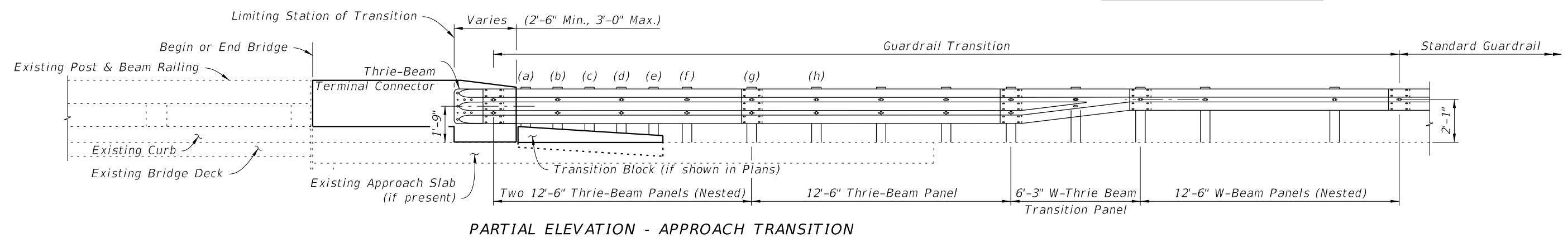
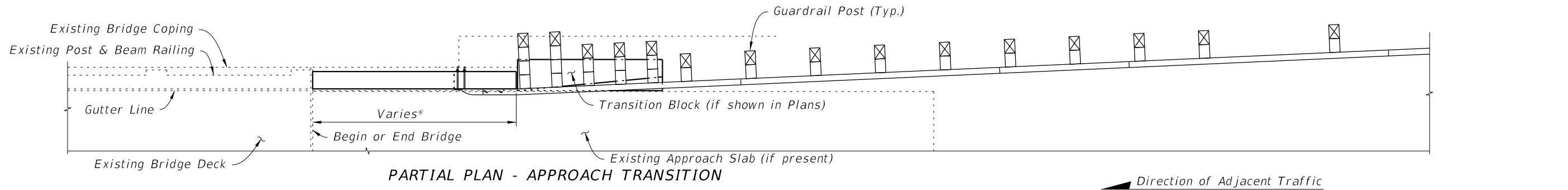
| CONVENTIONAL REINFORCING STEEL BENDING DIAGRAM | | | |
|--|------|----------|---|
| BILL OF REINFORCING STEEL | | | 3'-4" Bars 6D Length as Required Bars 5S |
| MARK | SIZE | LENGTH | |
| D | 6 | 3'-4" | BARS 6D & 5S |
| S | 5 | AS REQD. | |

REINFORCING STEEL NOTES:

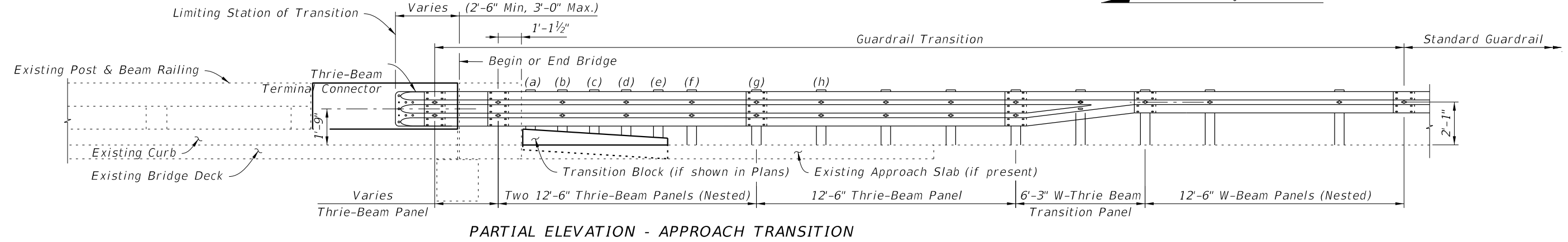
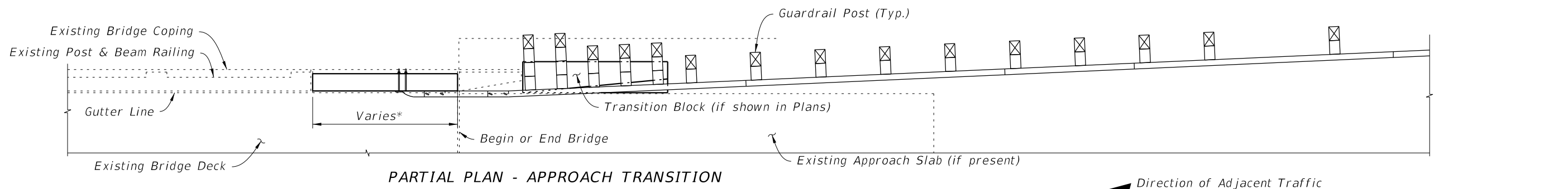
- All bar dimensions in the bending diagrams are out to out.
- The reinforcement for the railing on a retaining wall shall be the same as detailed for a bridge deck.
- All reinforcing steel in the Vertical Face Retrofit Railing shall have a 2" minimum cover.

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SCHMES 1 & 3
(Narrow Curb Shown, Recessed Curb Similar)

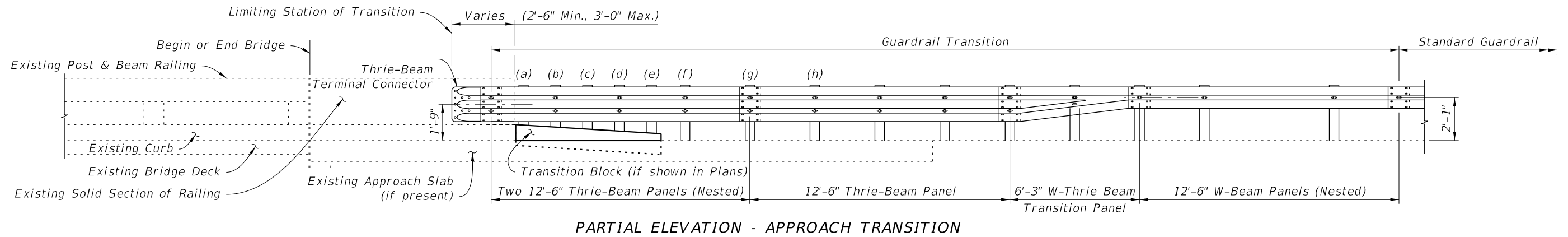
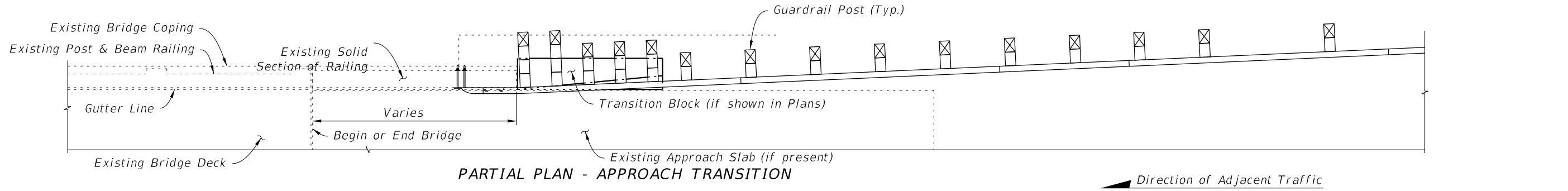


SCHMES 2 & 4
(Narrow Curb Shown, Recessed Curb Similar, Flat Slab Superstructure Shown, Beam or Girder Superstructure Similar)

* See Limits of Removal of Existing Structure, Sheets 2 of 8 and 4 of 8.

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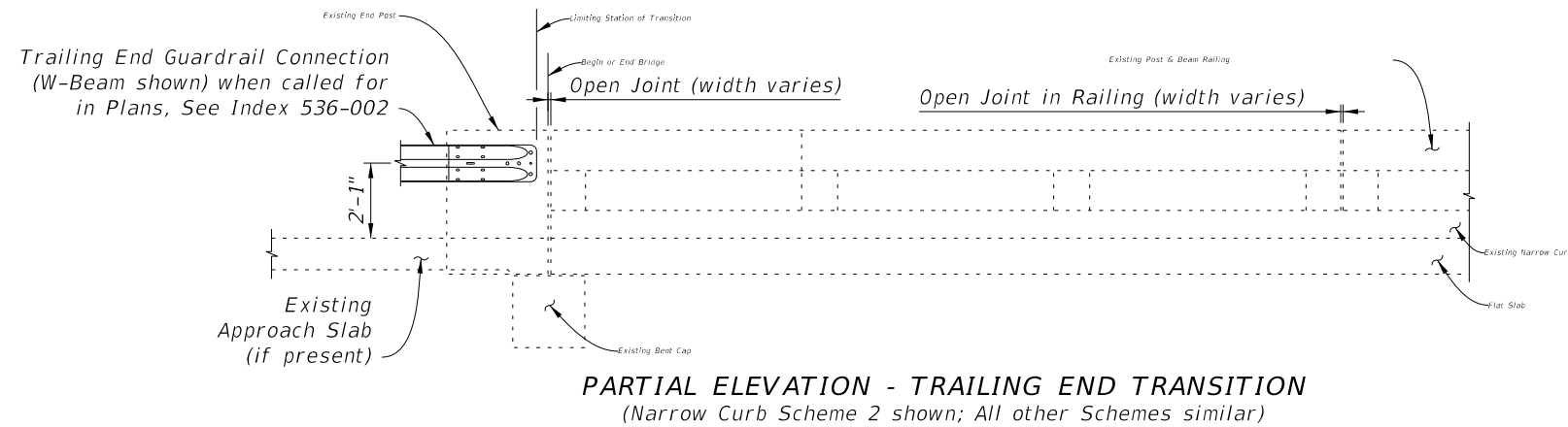
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PARTIAL ELEVATION - APPROACH TRANSITION

SCHEME 5

(Narrow Curb shown; Recessed Curb similar)



PARTIAL ELEVATION - TRAILING END TRANSITION

(Narrow Curb Scheme 2 shown; All other Schemes similar)

SCHEME 6

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