Index 20910 Approach Slabs (Rigid Pavement Approaches)

Design Criteria

AASHTO LRFD Bridge Design Specifications, 6th Edition; ***Structures Detailing Manual (SDM)***

Design Assumptions and Limitations

Index 20910 is intended to be used with concrete (rigid) roadway approach pavement.

Approach Slabs are intended to provide a smooth vertical transition between the roadway approach pavement and the bridge. They are supported at the bridge end by the end bent and by the embankment at the roadway approach end. This support configuration allows the Approach Slabs to rotate and settle as the roadway approach embankment settles. No additional supports (piles, footings, etc.) are required or allowed.

Index 20910 works with Index 306 Bridge Approach Expansion Joint Concrete Pavement. The roadway approach end of the Approach Slab must be non-skewed to match up with Index 306.

The approach slab is designed with the following assumptions:

- From the back face of the End Bent Backwall, a 10' length of the approach slab is assumed to span unsupported while the remainder of the approach slab beyond this 10' length is designed as a beam on an elastic foundation.
- For simplicity, 50% of the dead load and the maximum reaction from an HL93 loading is applied to the backwall of the end bent.

The details adjacent to the End Bent Backwall as shown on the standard are intended for use with Poured Joint with Backer Rod and Strip Seal Expansion Joints. If other expansion joint types are used, e.g. finger or modular expansion joints, modifications to the standard may be required to accommodate the expansion joints and the blockouts used to install them.

Plan Content Requirements

Index 20910 requires supplemental sheets, a completed data table and reinforcing bar lists to be included in the Structures Plans. Some roadway elements may need to be carried onto the approach slab, and in these cases special attention must be given to clarifying in the plans which elements are to be included as part of the roadway.

In the Structures Plans:

Include supplemental sheets showing as a minimum a Plan View with geometry and pertinent information not covered by this standard e.g., Survey Lines, PGL, Direction of Stationing, Phase Construction Joints, Raised Sidewalks and any other information necessary to accurately complete detailing of the Approach Slabs. Match the skew angle

of the bridge at the bridge end of the Approach Slab. The roadway approach end of the Approach Slab shall be non-skewed (perpendicular to the stationing line) to match up with the details shown on Index 306 Bridge Approach Expansion Joint Concrete Pavement. Include cross references to ***Design Standards*** Index 20910.

Urban roadway approaches usually have a 6-inch raised sidewalk. If the raised sidewalk is not continued across the bridge, when possible, transition the raised sidewalk to the bridge sidewalk over the length of the approach slab. Design and detail the transition to prohibit low spots or ponding and to redirect or collect runoff from the bridge and approach slab into suitable roadway or drainage structures.

Include Approach Slab Finish Grade Elevations with the Bridge Finish Grade Elevations.

Include reinforcing bars in the Reinforcing Steel List. All reinforcing bars are straight bars (Types 1 and 2). Bars 5C1 are 5'-0" long.

Complete the following "Approach Slab Index No. 20910 Table of Dimensions and Estimated Quantities" and include it on the supplemental sheets. See Introduction I.3 for more information regarding use of Data Tables.

APPROACH SLAB INDEX NO. 20910 TABLE OF DIMENSIONS AND ESTIMATED QUANTITIES								Table Date 01-01-12
LOCATION	DIMENSIONS					ANGLE Ø	REINFORCING STEEL (Lbs.)	CLASS II (Bridge Deck) CONCRETE (C.Y.)
	L1	L2	M1	M2	N			

Dimension and Quantity Notes:
Dimensions L1 & L2 are measured along gutter line, inside face of parapet or inside face of railing on raised sidewalks.
Dimensions L1 & L2 are arc dimensions within curved alignments.

Quantities shown are for one Approach Slab and where applicable, raised sidewalks. Quantities do not include items placed on the slab such as Traffic Railing, Pedestrian/Bicycle Railings or Traffic Separators.

For Traffic Railing, Pedestrian/Bicycle Railing and Traffic Separator Quantities see Bid Item List.

Payment.

Item number	Item description	Unit Measure
400-2-10	Concrete Class II, Approach Slabs	CY
400-9	Bridge Deck Grooving and Planing - Deck Thickness 8.5" or Greater	SY
415-1-9	Reinforcing Steel - Approach Slabs	LB

The stabilization required under the approach slabs shall be paid for using the standard roadway pay item and the quantity included in the roadway plans. In addition, roadway elements such as guardrail, earthwork, sidewalks, etc., which are part of the roadway approaches to the bridge and which interface with the approach slabs, will also be included and paid for in the roadway quantities.