Index 20900 Approach Slabs (Flexible Pavement Approaches) (Rev. 07/15)

Design Criteria

AASHTO LRFD Bridge Design Specifications; ***Structures Detailing Manual (SDM)***

Design Assumptions and Limitations

Index 20900 is intended to be used with asphalt (flexible) 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.

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, use the following loads from the approach slab in combination with other appropriate loads when designing the end bent, for the overturning analysis and for establishing the pile/drilled shaft/spread footing loads:

- 50% of the dead load of the approach slab and any other approach slab supported components including the asphalt overlay, traffic/pedestrian railings, raised sidewalks, traffic separators, etc.
- The maximum reaction from an HL93 live loading applied to the approach slab.

Apply these loads at the centerline of the top of the end bent backwall. See ***SDG*** Section 3.13 and ***SDM*** Chapter 12 for additional end bent design and detailing requirements.

The details of the approach slab 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 20900 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 Roadway Plans:

Include details and payment for the optional base under the approach slab. The minimum structural requirement under the approach slab is Optional Base Group 2. If the optional base group for the roadway approaches is Group 2 or better, the same base group may be continued under the approach slab.

The asphalt overlay should be continuous with the roadway asphalt pavement. Include the required pavement type along with the structural and friction course thicknesses.

Past recommendations for asphalt overlay thickness are as follows:

FC-5: final structural course of 1" and a friction course of 0.75"

FC 9.5: final structural course of 0.75" and a friction course of 1.0".

FC-12.5: overlay the approach slab with one layer of friction course 1.75" thick.

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. Label Approach Slab by name or Index number. Match the skew angle of the bridge at both ends of the Approach Slab.

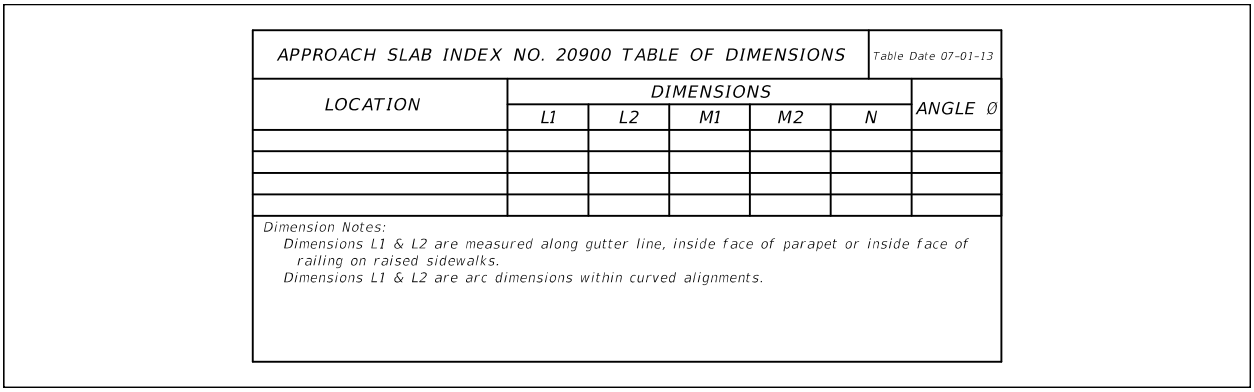
Urban roadway approaches usually have a 6-inch raised sidewalk. If the raised sidewalk is not continued across the bridge, when possible, transition the raised sidewalk to the bridge sidewalk over the length of the approach slab. Design and detail the transition to prohibit low spots or ponding and to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

When raised sidewalks are required on the approach slab, include the details for the sidewalks with the approach slab sheets. Concrete quantities for raised sidewalks on the approach slab shall be paid for as approach slab concrete.

Include Approach Slab Finish Grade Elevations with the Bridge Finish Grade Elevations. Show Finish Grade Elevations at the top of the asphalt overlay.

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

Complete the following "Approach Slab Index No. 20900 Table of Dimensions" and include it on the supplemental sheets. See Introduction I.3 for more information regarding use of Data Tables.



APPROACH SLAB INDEX NO. 20900 TABLE OF DIMENSIONS — Table Date 07-01-13

LOCATION	DIMENSIONS					ANGLE Ø
	L1	L2	M1	M2	N	

Dimension 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.

Payment.

Item number	Item description	Unit Measure
400-2-10	Concrete Class II, Approach Slabs	CY
415-1-9	Reinforcing Steel - Approach Slabs	LB

The embankment and stabilization required under the approach slabs shall be paid for using the standard roadway pay items and the quantities included in the roadway plans.