Index 458-100 Expansion Joint System - Strip Seal

Design Criteria

AASHTO LRFD Bridge Design Specifications; ***Structures Design Guidelines (SDG)***

Design Assumptions and Limitations

Use Index 458-100 in accordance with the requirements of ***SDG*** 6.3 and 6.4.

Plan Content Requirements

Show Strip Seal Expansion Joints on Superstructure and Approach Slab detail sheets and other sheets as required. Label Expansion Joint by name or Index number. Show Sidewalk Cover Plates at all expansion joint locations that intersect with sidewalks.

Complete the "Strip Seal Expansion Joint Data Table Index 458-100" using the instructions provided and include the table in the plans. See ***FDM*** **115** for more information regarding use of Data Tables.

Instructions:

1. Total Design Movement is the absolute value of the total factored temperature movement (expansion and contraction), measured in the direction of movement. Use Figures 1 through 4, for determining the Direction of Movement.
2. Include a value for Dimension A in the Data Table. Dimension A (measured perpendicular to the joint) @ 70°F is normally set at 2 inches to accommodate installation of the joint seal and a total design movement up to 3 inches. Set Dimension A to account for skews or greater design movements while meeting the design limitations below:
   a. the minimum factored joint opening in the Direction of Movement is ½ inch for concrete superstructures and 1” for steel superstructures;
   b. the maximum factored joint opening in the Direction of Travel ("W" per ***SDG*** 6.4) is 4 inches;
3. Dimension A adjustments for 10°F shall be based on the unfactored movements perpendicular to the centerline of the joint.

STRIP SEAL EXPANSION JOINT DATA TABLE
INDEX 458-100

Table Date 01/01/12

LOCATION	TOTAL DESIGN MOVEMENT			MOVEMENT ANGLE α	SKEW ANGLE		DIM. A @ 70°F	DIM. A ADJUSTMENT PER 10°F
	IN DIRECTION OF MOVEMENT	PERPENDICULAR TO ℄ JOINT	PARALLEL TO ℄ JOINT		LEFT SIDE	RIGHT SIDE		

NOTE:
Dim. A adjustment per 10°F shown is measured perpendicular to ℄ Expansion Joint. For theoretical direction of movement, see Index 458-100, Sheet 1.

Figure 1 Curved Bridge (Single Continuous Unit) with Skewed Joints

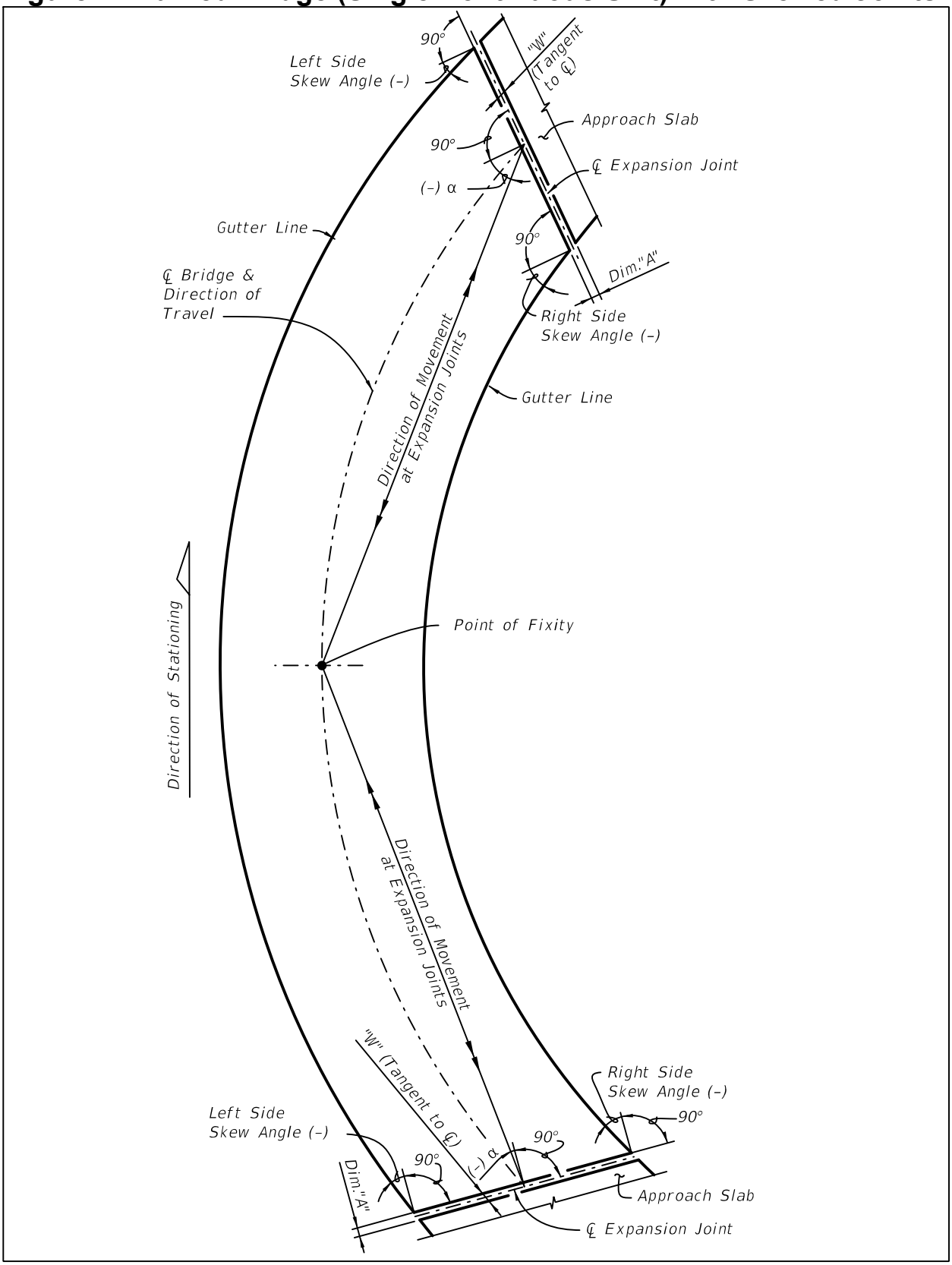


Figure 2 Curved Bridge (Single Continuous Unit) with Radial Joints

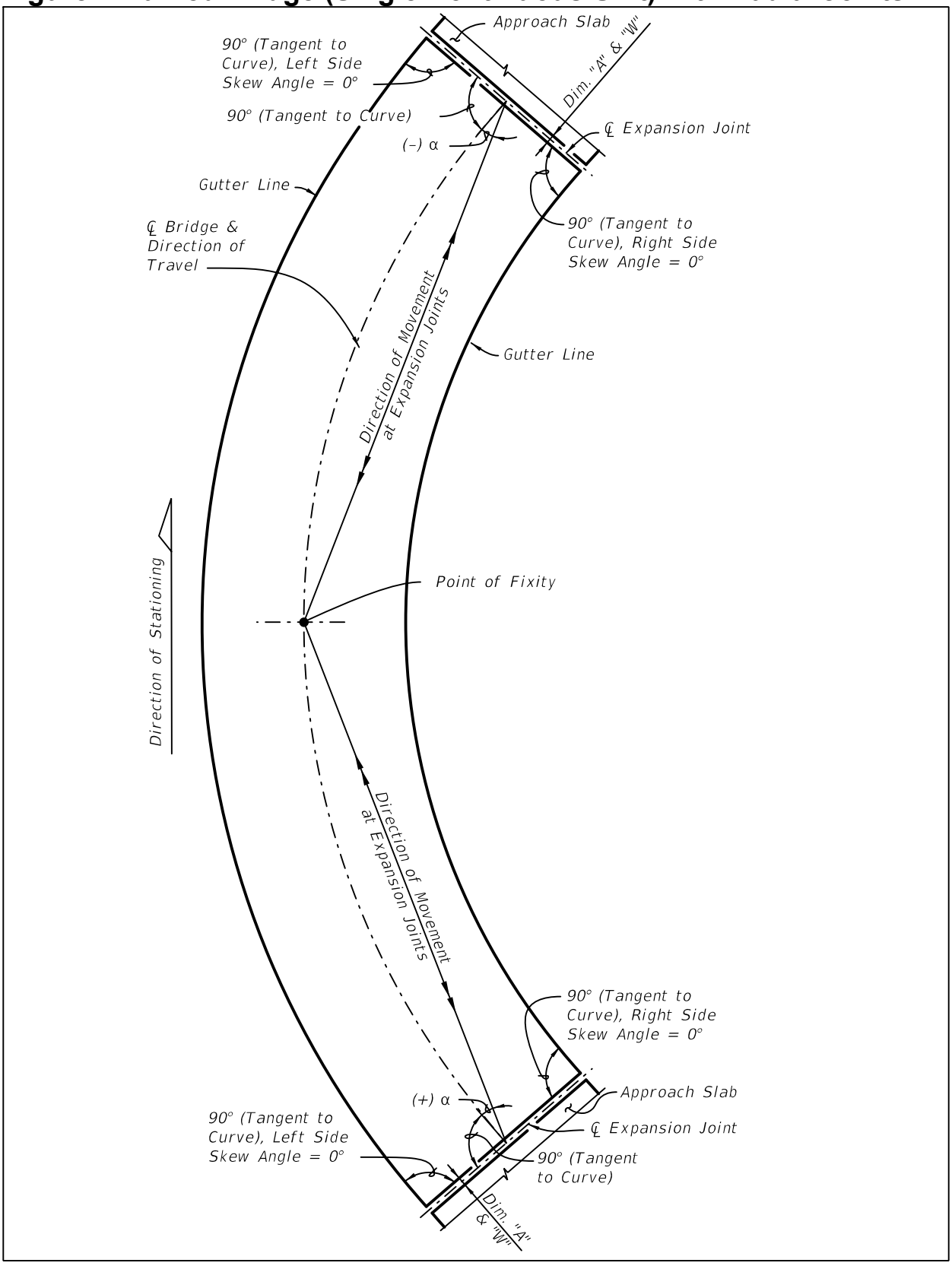


Figure 3 Curved Bridge (Multiple Continuous Units) with Radial Joints

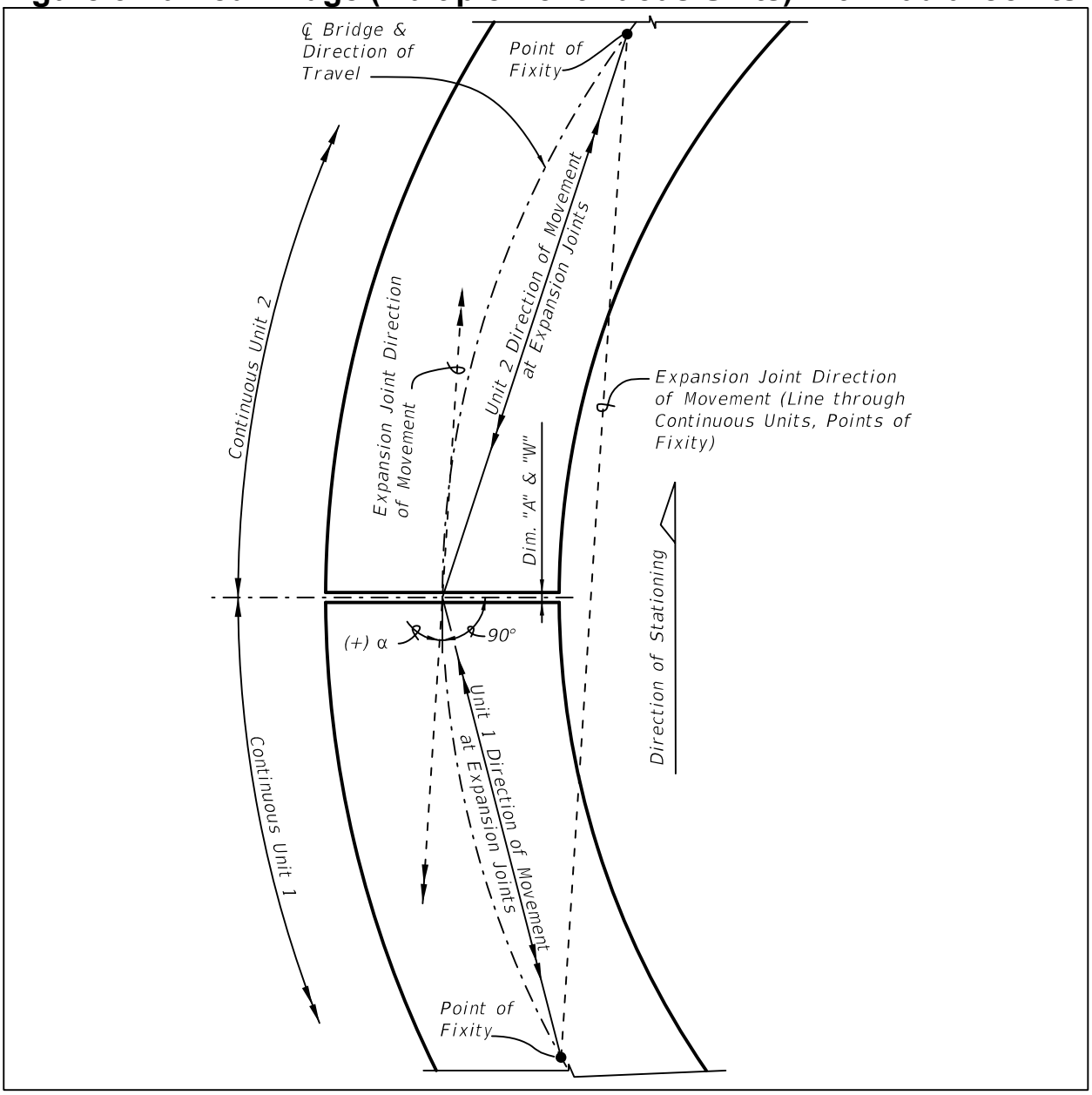
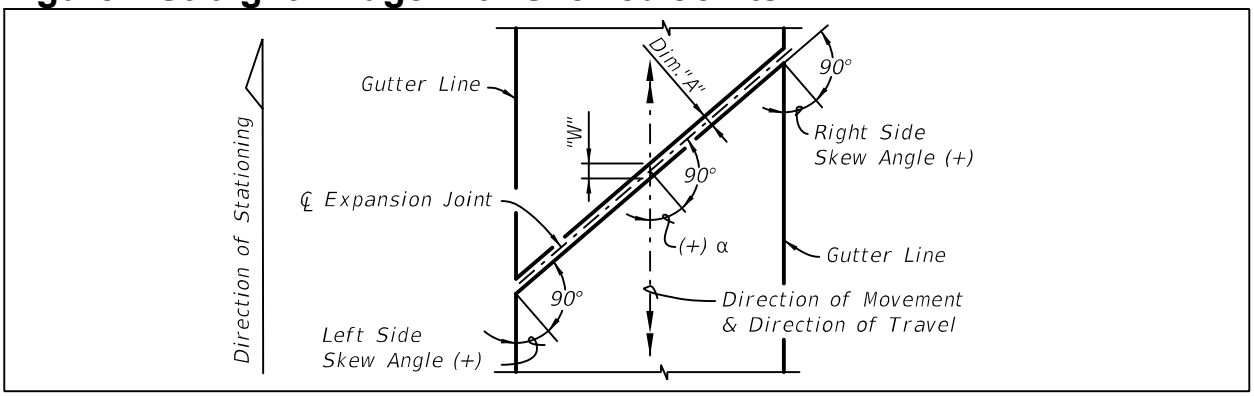


Figure 4 Straight Bridge with Skewed Joints



Payment

Item number	Item Description	Unit Measure
458-1-12	Bridge Deck Expansion Joint, New Construction - F&I; Strip Seal	LF