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RESEARCH UPDATE

Update U97-2

XJS BRIDGE JOINT SYSTEM

REFERENCE:

WP 93-R-21

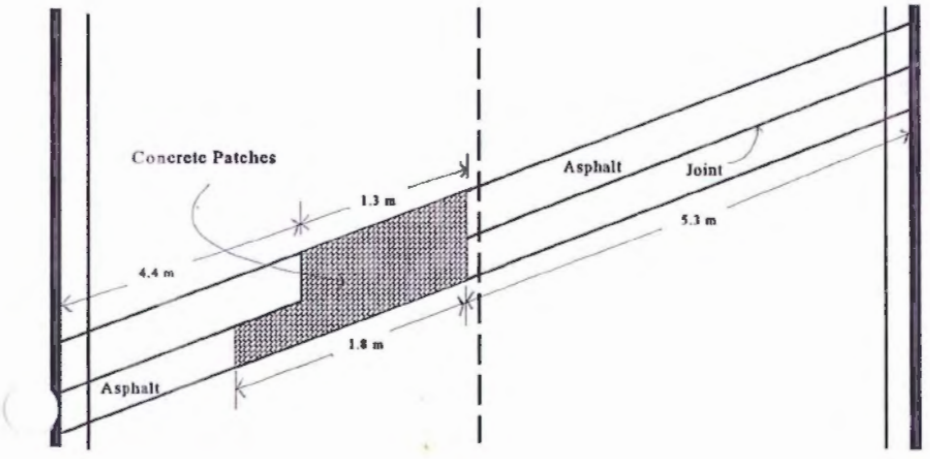
HISTORY:

Due to the failure of many bituminous joints on bridges throughout the state, investigations of alternative system are being conducted. The XJS Bridge Joint System, applied on Bridge 20S on I91 in Westminster, VT by Garvi Construction Products, is one of the alternatives.

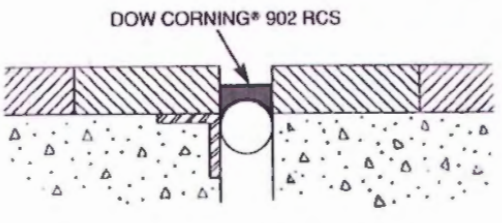
DESCRIPTION:

Bridge 20S is a reinforced concrete deck overlaid with bituminous concrete pavement. The joint in question i located at the northerly abutment and is 11 meters (m) long, and is slightly skewed. The XJS system was selected to replac the current sawed and sealed joint. Installation of this system was completed in October of 1992.

The joint exhibited 45 centimeters (cm) of transverse cracking which prompted District maintenance personnel t replace part of the joint in September of 1993 with two concrete patches (see diagram). During an inspection in 1994 i was noted that 0.3 m of asphaltic material either side of this repair job was not bonded to the deck, while another 0.3 n section, adjacent to the joint, was cracked and depressed. In 1995 this joint was again inspected. The sealant used for th system was still quite flexible. No additional problems were observed at that time.



XJS Joint, Bridge 20S I-91, Westminster, VT



XJS Joint

Metric All units are in metric except for mile markers/mileage references and suppliers' costs

OBSERVATIONS:

This joint, along with others, was inspected by personnel from Materials and Research on July 16, 1996. During this survey only 75 millimeters (mm) of distress, other than the concrete patches were observed. The debonding probler noted in 1994 was not evident. The joint width itself varied from 32 mm near the curb to 40 mm at the left side of th passing lane. Numerous small cracks were noticed in the bituminous concrete pavement on the approach slab.

FOLLOW UP

This joint system will continue to be surveyed and evaluated, and reports will be issued as significant data ar collected. In 1997, the XJS system will be used for two joint systems on Bridge 72N on I89 in Winooski. This will b evaluated under Work Plan 93-R-21.

XJS
Bridge 20S I91

allation
1992

XJS
Bridge 20S I91

4 year inspection
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