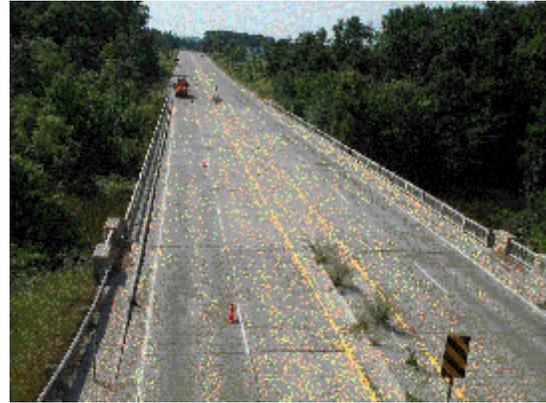


Technical Data Sheet

Bridge Identification:	1640120000000B01
Facility Carried:	Relocated US 31
Feature Intersected:	Pentwater River
Location:	Hart
County:	Oceana
Region:	Grand
Year Built:	1954
Year Reconstructed:	1988
Bridge Type:	Two-Girder System
No. of Spans:	3
Deck Area:	17,030 S.F.
Paint System:	Type 4
Paint Area:	46,000 S.F.



Plan View Looking South (1)



West Elevation (2)

Fracture-Critical Members
<ol style="list-style-type: none"> 1. Pin and Hanger Assemblies 2. Tension Areas of Main Girders

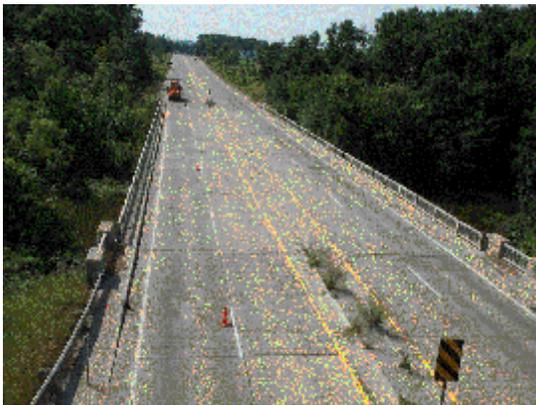
Fatigue-Sensitive Details
<ol style="list-style-type: none"> 1. Floorbeam-to-Girder Connections 2. Lateral Bracing-to-Girder Connections

General Bridge Description

Bridge B01 of 64012 is a three-span, steel, two-girder-system bridge carrying Relocated U.S. Route 31 over the Pentwater River at the north limits of the town of Hart in Oceana County. The spans measure 84'-0", 102'-0", and 84'-0" from south to north, and the overall length of the bridge is 270'-0". The out-to-out width of the deck is 63'-1". A 1" longitudinal joint along the centerline of the bridge separates the superstructure into two halves, each providing for two 12'-0" travel lanes with a 2'-6" sidewalk. The bridge is supported by reinforced concrete abutments and rigid frame piers.

The floor system is comprised of longitudinal stringers and transverse floorbeams that frame into the two main riveted girders along either edge of the eastbound and westbound roadways. Span 2 contains a 60'-0" suspended span supported by pin and hanger assemblies at the end of the girders cantilevered from Spans 1 and 3.

The bridge was built in 1954 and rehabilitated in 1988, when the pins and hangers for the non-redundant suspended spans were replaced.



North Approach Looking South (3)



West Elevation (4)

Inspection Checklists

For additional information and detailed inspection procedures, refer to the Inspection and Maintenance Program section of this manual.

Fracture-Critical Members/Fatigue-Sensitive Details

! Pin and hanger assemblies. (Photos 5 and 6)



Pin and Hanger Assembly at East Girder, S.B. Bridge (5)

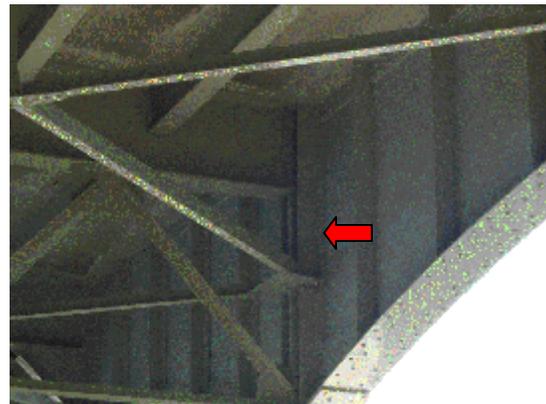


Pin and Hanger Assembly at West Girder, S.B. Bridge (6)

! Girder webs at floorbeam connections. (Photos 7 and 8)



Typical Connection of Floor Beam to Girder (7)



Connection of Floor Beam to Girder at Pier (8)

! Lateral bracing gusset plates at floorbeam connections.

! Tension areas of main girders. See Figure 1 in the Inspection and Maintenance Program section of this manual for tension areas of main girders.

Other

! **Bearing assemblies.** The bearings at the abutments appear to be excessively inclined for ambient temperature. Accumulations of pack rust can cause the bearings to become frozen.



Excessively Inclined and Frozen Rocker Bearing (9)

! **Deck.** The cold joints in the deck above each floorbeam are susceptible to leaking, which causes the top flanges of the floorbeams to corrode.

! **Substructure.** The abutments appear to be moving towards the channel. The beam and girder ends at one time had come into contact with the abutment backwalls. Notches were cut into the north abutment backwall to accommodate the beam ends. These areas should be checked carefully for structural distress.



Abutment Backwall Notched to Disengage it from Beam (10)

Maintenance Recommendations

Regularly Scheduled Maintenance Items

Recommendation	Schedule
Clean bridge drainage system components (deck drains and downspouts).	6 to 12 months
Flush bridge deck joints and check for leaks.	12 months
Powerwash bridge superstructure.	12 months
Powerwash bearings and pin and hanger assemblies.	12 months