

# Bridge Inspection Report

**03636**  
**SH 12 Benton**  
**over**  
**BEAVER LAKE**



**Inspection Date:**

**Inspected By:**

**Inspection Type(s):**

Inspector:

Structure Number: 03636

Inspection Date:

Facility Carried: SH 12 Benton

## Bridge Inspection Report

## National Bridge Inventory

IDENTIFICATION		INSPECTIONS	
(1) STATE CODE	056 - Arkansas	(90) INSPECTION DATE	08/28/2017
(8) STRUCTURE NUMBER	03636	(91) DESIGNATED INSPECTION FREQUENCY	24
(5) INV. ROUTE (ON/UNDER)	1 3 1 12 0	(92) CRITICAL FEATURE INSPECTION	(93) CFI DATE
(2) HIGHWAY AGENCY	09 (3) COUNTY CODE 007	A. FRACTURE CRITICAL DETAIL	Y 24 08/28/2017
(4) PLACE CODE	00000	B. UNDERWATER INSPECTION	Y 60 07/13/2016
(6) FEATURES INTERSECTED	BEAVER LAKE	C. OTHER SPECIAL	N
(7) FACILITY CARRIED	SH 12 Benton		
(9) LOCATION	6.19 MI E JCT US 62B		
(11) MILEPOINT 7.340	(12) BASE HIGHWAY NETWORK 0		
(13A) LRS INVENTORY ROUTE	0000000000 (13B) SUBROUTE NUMBER 00		
(16) LATITUDE 36.33203	(17) LONGITUDE -94.01994		
(98A) BORDER BRIDGE CODE			
PERCENT RESPONSIBILITY	(99) BORDER BRIDGE STRUCT		
STRUCTURE TYPE AND MATERIAL		CONDITION	
(43) STRUCTURE TYPE, MAIN		(58) DECK	6
A) KIND OF MATERIAL/DESIGN: 4 - Steel continuous		(59) SUPERSTRUCTURE	5
B) TYPE OF DESIGN/CONSTR: 03 - Girder and Floorbeam System		(60) SUBSTRUCTURE	7
(44) STRUCTURE TYPE, APPROACH SPANS		(61) CHANNEL & CHANNEL PROTECTION	8
A) KIND OF MATERIAL/DESIGN: 0 - Other		(62) CULVERT	N
B) TYPE OF DESIGN/CONSTR: 00 - Other			
(45) NUMBER OF SPANS IN MAIN 12	(46) NUMBER OF APPROACH 0		
(107) DECK STRUCTURE TYPE 1	(108A) WEARING SURFACE 1		
(108B) DECK MEMBRANE 0	(108C) DECK PROTECTION 0		
AGE OF SERVICE		LOAD RATING AND POSTING	
(27) YEAR BUILT 1963	(106) YEAR RECONSTRUCTED 0000	(31) DESIGN LOAD	2
(42) TYPE OF SERVICE ON 1 UNDER 5		(63) METHOD USED TO DETERMINE OPERATING RATING	1
(28) LANES ON 02 UNDER 00		(64) OPERATING RATING	36.0
(29) AVERAGE DAILY TRAFFIC 5100	(19) BYPASS DETOUR LENGTH 19	(65) METHOD USED TO DETERMINE INVENTORY RATING	1
(30) YEAR OF AVERAGE DAILY TRAFFIC 2014		(66) INVENTORY RATING	21.1
(109) AVERAGE DAILY TRUCK TRAFFIC 1		(70) BRIDGE POSTING	5
		(41) STRUCTURE OPEN/POSTED/CLOSED	A
GEOMETRIC DATA		APPRAISAL	
(48) LENGTH OF MAX SPAN (ft.) 130	(49) STRUCTURE LENGTH (ft.) 1515	(67) STRUCTURAL EVALUATION	4
(50) CURB/SIDEWALK WIDTHS (ft.) LEFT 1.5 RIGHT 1.5		(68) DECK GEOMETRY	2
(51) BRDG RDWY WIDTH CURB-TO-CURB (ft.) 24.0		(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL	N
(52) DECK WIDTH, OUT-TO-OUT (ft.) 29.5		(71) WATERWAY ADEQUACY	8
(32) APPROACH ROADWAY WIDTH (ft.) 22.0		(72) APPROACH ROADWAY ALIGNMENT	8
(33) BRIDGE MEDIAN 0	(34) SKEW (DEG.) 0	(36) TRAFFIC SAFETY FEATURE	
(35) STRUCTURE FLARED 0	(10) INV RTE, MIN VERT CLEAR (ft.) 99.99	36A) BRIDGE RAILINGS:	0
(47) TOTAL HORIZONTAL CLEARANCE (ft.) 24.0		36B) TRANSITIONS:	0
(53) VERTICAL CLEARANCE OVER BRIDGE ROADWAY (ft.) 99.99		36C) APPROACH GUARDRAIL:	0
(54) VERTICAL UNDER CLEARANCE (ft.) N 0		36D) APPROACH GUARDRAIL ENDS:	1
(55) LATERAL UNDER CLEARANCE RIGHT (ft.) N 99.9		(113) SCOUR CRITICAL BRIDGES	8
(56) MIN LATERAL UNDER CLEARANCE (ft.) 0		SUFFICIENCY RATING	2
		STATUS	38.2
PROPOSED IMPROVEMENTS		CLASSIFICATION	
(75A) TYPE OF WORK PROPOSED 31	(75B) WORK DONE BY 1	(112) NBIS BRIDGE LENGTH	Y
(76) LENGTH OF STRUCTURE IMPROVEMENT (ft.) 1546.0		(104) HIGHWAY SYSTEM OF THE INVENTORY ROUTE	0
(94) BRIDGE IMPROVEMENT COST (\$) 0		(26) FUNCTIONAL CLASSIFICATION OF INVENTORY ROUTE	07
(95) ROADWAY IMPROVEMENT COST (\$) 125		(100) STRAHNET HIGHWAY DESIGNATION	0
(96) TOTAL PROJECT COST 2689		(101) PARALLEL STRUCTURE DESIGNATION	N
(97) YEAR OF IMPROVEMENT COST ESTIMATE 2003		(102) DIRECTION OF TRAFFIC	2
(114) FUTURE ADT 6769	(115) YEAR OF FUTURE ADT 2027	(103) TEMP STRUCTURE	
		(105) FEDERAL LANDS HIGHWAYS	0
		(110) DESIGNATED NATIONAL NETWORK	0
		(20) TOLL	3
		(21) MAINTENANCE RESPONSIBILITY	01
		(22) OWNER	01
		(37) HISTORICAL	5
		NAVIGATION DATA	
		(38) NAVIGATION CONTROL	0
		(111) PIER OR ABUTMENT PROTECTION	1
		(39) NAV VERT CLEARANCE (ft.)	0
		(116) MIN NAVIGATION VERT CLEARANCE, VERT LIFT BRIDGE (ft.)	0
		(40) NAV HORIZONTAL CLEARANCE (ft.)	0

Inspector:

Structure Number: 03636

Inspection Date:

Facility Carried: SH 12 Benton

## Bridge Inspection Report

## Element Inspection

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
12 - Reinforced Concrete Deck	1- Ben.	36240	sq. ft.	21645	14393	202	0
08/28/2017 - RSM & WNR: -The driving surface has sealable transverse cracking in all spans. -Span #1 driving surface has spalling in both lanes along abutment #1 sliding plate assembly. -Span #1 has a 3'x3' area of spalling near bent #1 with smaller spalls in the surrounding area. -Span #3 has spalling at centerline and in the right lane. -Span #4 has a 2'x3' spall in the left lane. -Span #5 has spalling along the finger joint assembly. -Spans #6 and #7 have large areas of spalling over bent #6 with steel exposed in some locations. The undersurface of span #6 has a short duration transverse crack with efflorescence on right side. -The left gutter of span #7 has a 4' long area of spalling with the surrounding area delaminated. -Span #8 has spalling along the finger joint assembly and large spalls in the left lane and gutter approximately 15' ahead of finger joint assembly. -Span #9 has large areas of spalling in the left and right lanes adjacent to bent #9. -Span #10 has a 4'x2' spall in the left lane near mid-span. -Span #11 has areas of spalling near centerline and in the right gutter. -Span #12 has areas of moderate sized spalls in the left lane near centerline.							
1080 - Delamination/Spall/Patched Area		286			84	202	
1130 - Cracking (RC and Other)		2205			2205		
1190 - Abrasion/Wear (PSC/RC)		12104			12104		

Inspector:

Structure Number: 03636

Inspection Date:

Facility Carried: SH 12 Benton

## Bridge Inspection Report

## Element Inspection

107 - Steel Open Girder/Beam	1- Ben.	3020	ft.	2895	112	13	0
<p>08/28/2017 - RSM &amp; WNR:</p> <ul style="list-style-type: none"> <li>-The exterior sides of girders #1 and #2 have areas of failing paint with active corrosion and pitting in locations. The most notable areas are where the deck drains discharge water onto the superstructure.</li> <li>-Span #1, girders #1 and #2, splice plate have pack rust on bottom flange splice plate connection on interior and exterior sides. Interior of Girder #2 is most notable with out-of-plane bending to bottom splice plate due to 1/4" pack rust.</li> <li>-Span #2 girder #1, splice plate #2 has paint failure with corrosion to exterior side and 5/8" pack rust with out-of-plane bending to bottom flange connection plate on interior side.</li> <li>-Span #2, Girder #2 has minor out-of-plane bending to interior bottom splice plate due to pack rust</li> <li>-Top flanges of girders have areas of corrosion with flaking rust on the exterior sides where deck drains discharge water.</li> <li>-Span #3, girder #2, splice plate #1 has pack rust with slight out of plane bending to bottom connection plate.</li> <li>-Span #4, girder #1 has imperfection approximately 16" behind splice plate#2 where bottom flange tapers in thickness.</li> <li>-Span #4, Girder #1, splice connection #2 has corrosion to bottom flange and connection plate.</li> <li>-Span #5, girder #1 bottom pin connection has minor pack rust and has heavy flaking rust on the interior and exterior sides of the thickened web adjacent to the pin connection. The cross bracing adjacent to pin and hanger assemblies have pack rust with corrosion and section loss with out-of-plane bending to connection plates.</li> <li>-Span #5, girder #1 splice plate connection has heavy flaking rust.</li> <li>-Span #6, Girder #1, splice connection #2 has 3/8 pack rust with out-of-plane bending to connection plate.</li> <li>-Span #7, Girder #1 at splice plate #1 has 3/8" pack rust to interior side of connection plate with out-of-plane bending.</li> <li>-Span #8, girders #1 and 2, exterior splice plates have flaking rust. The exterior web of girder #2 has initial section loss at the splice plate connection.</li> <li>-Span #8, Girders #1 and #2 have heavy pack rust to ends of Girders adjacent to pin and hanger assemblies.</li> <li>-Span #9, Girder #1, splice connection #1 has 5/8" pack rust with out-of-plane bending to bottom flange splice plate on interior side. The bottom flange has section loss along the edge on the interior side at the connection plate.</li> <li>-Span #10, Girder #1 has approximately 1/8" pitting to interior side bottom flange adjacent to splice plate connection #1.</li> <li>-Span #11, Girder #2 has 0.10" deep pitting to bottom flange adjacent to splice connection #1. Girder #2 at splice connection #2 has pitting to exterior side of bottom flange.</li> <li>-Span #12, girder #1, interior bottom flange splice plate has 1/2" pack rust with out of plane bending.</li> <li>-Span #12, girder #2 approximately 5' from bent #11 has corrosion with pitting to exterior web.</li> </ul>							
1000 - Corrosion		125			112	13	
515 - Steel Protective Coating		40684	sq. ft.	40219	0	212	253
3420 - Peeling/Bubbling/Cracking (Steel Protective Coatings)		246				168	78



Inspector:

Structure Number: 03636

Inspection Date:

Facility Carried: SH 12 Benton

## Bridge Inspection Report

## Element Inspection

3440 - Effectiveness (Steel Protective Coatings)		219				44	175
113 - Steel Stringer	1- Ben.	3020	ft.	3006	0	14	0
08/28/2017 - RSM & WNR: -Span #8-The ends of stringers over the pin and hanger assembly have active corrosion with thick flaking rust and measurable section loss at the stringer floorbeam connections, and at the stringer finger joint connections.							
1000 - Corrosion		14				14	
515 - Steel Protective Coating		14219	sq. ft.	14163	0	0	56
3440 - Effectiveness (Steel Protective Coatings)		56					56
152 - Steel Floor Beam	1- Ben.	1606	ft.	1601	5	0	0
08/28/2017 - RSM & WNR: -Span #5, floor beam #2 right side has heavy flaking rust with section loss at lower connection plate of cross bracing. -The ends of floor beams in span #8 below the finger joint have corrosion to the bottom flanges and webs. -Floor beams have areas of paint failure. Floor beam over bent #8 has large areas of flaking paint on the span #7 side.							
1000 - Corrosion		5			5		
515 - Steel Protective Coating		9144	sq. ft.	9132	0	0	12
3420 - Peeling/Bubbling/Cracking (Steel Protective Coatings)		12					12
161 - Steel Pin and Pin & Hanger Assembly or both	1- Ben.	4	each	0	0	4	0
08/28/2017 - RSM & WNR: Field measurements were taken from center of top pin to center of bottom pin at all pin and hanger locations. Distance center to center of pins is 60" at all locations. -Pack rust exists at lower pin connections and may be limiting movement at Girder #1. -Span #5, girder #1 bottom pin connection has minor pack rust and heavy flaking rust on the interior and exterior sides of the thickened web adjacent to the pin connection. -Span #5, Girder #1 hanger straps have minor section loss. -Span #5, Girder 2 has approximately 1/8" pack rust on the exterior side. -Span #8, Girders #1 and #2 has approximately 1/16" pack rust at lower pin connections on interior and exterior sides. The upper pin connections have minor pack rust in locations.							
1000 - Corrosion		4				4	
205 - Reinforced Concrete Column	1- Ben.	11	each	11			
08/28/2017 - RSM & WNR: All columns are below water level at this inspection. No apparent noteworthy deficiencies visible in the portions of columns visible.							
215 - Reinforced Concrete Abutment	1- Ben.	99	ft.	88	1	10	0
08/28/2017 - RSM & WNR: -Abutment #2 has a 3' spall in top left corner of breastwall. -The top of the South abutment backwall has spalling in the left and right lanes that has created potholes in the driving surface.							
1080 - Delamination/Spall/Patched Area		11			1	10	

Inspector:

Structure Number: 03636

Inspection Date:

Facility Carried: SH 12 Benton

## Bridge Inspection Report

## Element Inspection

234 - Reinforced Concrete Pier Cap	1- Ben.	308	ft.	308			
	08/28/2017 - RSM & WNR: No noteworthy deficiencies visible in the caps at this inspection.						
305 - Assembly Joint without Seal	1- Ben.	118	ft.	111	0	7	0
	08/28/2017 - RSM & WNR: The sliding plate assembly in the left lane at abutment #2 has a tear in the assembly from apparent impact damage that appears to be from winter operations. -The sliding plate assemblies and finger joint assemblies have spalling along the joints. -The finger joint assembly in span #8 has heavy corrosion with flaking rust and section loss at the finger joint stringer connections.						
2370 - Metal Deterioration or Damage		7				7	
311 - Movable Bearing	1- Ben.	12	each	10	1	1	0
	08/28/2017 - RSM & WNR: -Moveable bearings at abutment #1 have corrosion to masonry plates. -The moveable bearings at abutments #1 and #2 have red rust indicating wear.						
1000 - Corrosion		2			1	1	
515 - Steel Protective Coating		96	sq. ft.	92	0	4	0
3420 - Peeling/Bubbling/Cracking (Steel Protective Coatings)		3				3	
3440 - Effectiveness (Steel Protective Coatings)		1				1	
313 - Fixed Bearing	1- Ben.	14	each	14			
	08/28/2017 - RSM & WNR: Paint system is beginning to fail in locations with rust forming in locations.						
515 - Steel Protective Coating		84	sq. ft.	58	0	24	2
3420 - Peeling/Bubbling/Cracking (Steel Protective Coatings)		20				18	2
3440 - Effectiveness (Steel Protective Coatings)		6				6	

Inspector:

Structure Number: 03636

Inspection Date:

Facility Carried: SH 12 Benton

## Bridge Inspection Report

### Maintenance Needs

Date Reported: 9/12/2011 12:00:00 AM

Priority: D - Routine

Work Code:

---

#### Deficiency Description:

Superstructure / expansion joints - The superstructure has areas of corrosion to girders at the splice connections and to webs of girders adjacent to the pin and hanger assemblies and to exterior sides of webs where water from the deck drains discharge onto the superstructure.

The finger joint assemblies, ends of stringers and floor beams in spans #5 and #8 have heavy corrosion with thick flaking rust.

#### Work Description:

---

Date Repairs Completed:

Maintenance Comments:

---

Stage: Open



PHOTO 1      Description      Span #5 right stringer

Stage: Monitor



PHOTO 2      Description      Corrosion at stringer/finger joint connection.

Inspector:

Inspection Date:

Structure Number: 03636

Facility Carried: SH 12 Benton

## Bridge Inspection Report

### Maintenance Needs

Stage: Monitor



PHOTO 3      Description      Corrosion at stringer / floorbeam connection.

Stage: Monitor

Stage: Monitor



PHOTO 5      Description      Corrosion to girder adjacent to pin and hanger assembly.



PHOTO 4      Description      Corrosion at stringer / floorbeam connection.

Inspector:

Structure Number: 03636

Inspection Date:

Facility Carried: SH 12 Benton

## Bridge Inspection Report

### Maintenance Needs

Date Reported: 9/12/2011 12:00:00 AM

Priority: D - Routine

Work Code:

---

Deficiency Description:

Abutment #2 Left side Breastwall and assembly joint  
Large spall and loose anchorage in assembly joint

Work Description:

---

Date Repairs Completed:

Maintenance Comments:

---

Stage: Open



PHOTO 1      Description      Abut #2 left top corner



Inspector:

Structure Number: 03636

Inspection Date:

Facility Carried: SH 12 Benton

## Bridge Inspection Report

### Maintenance Needs

Date Reported: 08/04/2015

Priority: D - Routine

Work Code:

---

#### Deficiency Description:

Pin and Hanger assemblies - The pin and hanger assemblies have corrosion with pack rust between the hanger bars and webs of girders at the lower pin connections.

#### Work Description:

---

Date Repairs Completed:

Maintenance Comments:

---

Stage: Open



PHOTO 1      Description      Span #5 Lower Hanger Assembly

Stage: Monitor



PHOTO 2      Description      Corrosion with pack rust to pin and hanger assemblies.

Inspector:

Inspection Date:

Structure Number: 03636

Facility Carried: SH 12 Benton

## Bridge Inspection Report

### Maintenance Needs

Stage: Monitor



PHOTO 3      Description      Corrosion with pack rust to pin and hanger assemblies.

Stage: Open



PHOTO 4      Description      Span #8 Lower Hanger Assembly

Inspector:

Structure Number: 03636

Inspection Date:

Facility Carried: SH 12 Benton

## Bridge Inspection Report

### Maintenance Needs

Date Reported: 08/29/2016

Priority: D - Routine

Work Code:

---

#### Deficiency Description:

Superstructure, Splice plate connections -

The splice plate connections for girders # 1 and # 2 have paint failure with active corrosion and pack rust with out of plane bending to the interior side bottom flange splice plates in several locations. Most notable areas are girder # 1 of span # 7 at splice # 2 which has approximately 1/2" pack rust at the bottom flange interior connection plate that has caused out of plane bending to the connection plate.

Girders # 1 and # 2 of span # 9 at splice # 1 interior bottom flange splice plates at splice # 1 have pack rust with out of plane bending to the interior bottom flange splice plates.

Work Description:

---

Date Repairs Completed:

Maintenance Comments:

---

Stage: Open



PHOTO 1 Description

Stage: Monitor



PHOTO 2 Description Pack rust with out-of-plane bending to connection plate.



Inspector:

Inspection Date:

Structure Number: 03636

Facility Carried: SH 12 Benton

## Bridge Inspection Report

### Maintenance Needs

Stage: Monitor



PHOTO 3      Description      Pack rust with out-of-plane bending to connection plate.

Stage: Open



PHOTO 4      Description

Inspector:

Structure Number: 03636

Inspection Date:

Facility Carried: SH 12 Benton

## Bridge Inspection Report

### Maintenance Needs

Date Reported: 9/12/2011 12:00:00 AM

Priority: D - Routine

Work Code:

---

#### Deficiency Description:

The exterior sides of girders # 1 and 2 have paint failure with areas of active corrosion and pitting. The exterior side of girders # 2 in spans # 5 and 12 are the most notable areas of corrosion.

#### Work Description:

---

Date Repairs Completed:

Maintenance Comments:

---

Stage: Assigned



PHOTO 1      Description      Span #2 minor section loss to bottom flange and lower 1/2 of web in girder #1

Stage: Monitor



PHOTO 2      Description      Span #12, girder #2 approximately 5' from bent #11 has corrosion with pitting to exterior web.

Inspector:

Inspection Date:

Structure Number: 03636

Facility Carried: SH 12 Benton

## Bridge Inspection Report

### Maintenance Needs

Stage: Monitor



PHOTO 3      Description      Span #5, girder #1, paint failure and corrosion.

Stage: Open



PHOTO 5      Description      Paint condition right side

Stage: Monitor



PHOTO 4      Description      Span #2, girder #1, adjacent to splice plate #2. Corrosion to exterior side.



Inspector:

Structure Number: 03636

Inspection Date:

Facility Carried: SH 12 Benton

## Bridge Inspection Report

### Maintenance Needs

Date Reported: 9/12/2011 12:00:00 AM

Priority: D - Routine

Work Code:

---

#### Deficiency Description:

Span #2, Girder #1 bottom flange 35' back of pier #2-corrosion with minor pitting.

#### Work Description:

---

Date Repairs Completed: 08/28/2017

#### Maintenance Comments:

08/28/2017 - RSM - This deficiency included in another sequence.

---

Stage: Open



PHOTO 1      Description      Span #2 minor section loss to bottom flange and lower 1/2 of web in girder #1



PHOTO 2      Description      span #2 corrosion with minor section loss

Inspector:

Structure Number: 03636

Inspection Date:

Facility Carried: SH 12 Benton

## Bridge Inspection Report

### Maintenance Needs

Date Reported: 9/26/2013 12:00:00 AM

Priority: C - Important

Work Code:

---

#### Deficiency Description:

Deck - The deck has spalling and delaminated areas in several locations. Spans #6 and #7 have large areas of spalling over bent #6 with failing asphalt repairs and exposed reinforcing steel in locations. The area surrounding the spalls is delaminated in several locations. The gutters have numerous delaminated areas throughout.

#### Work Description:

---

Date Repairs Completed:

Maintenance Comments:

---

Stage: Monitor



PHOTO 1      Description      Spalling adjacent to abutment #1 sliding plate assembly.

Stage: Monitor

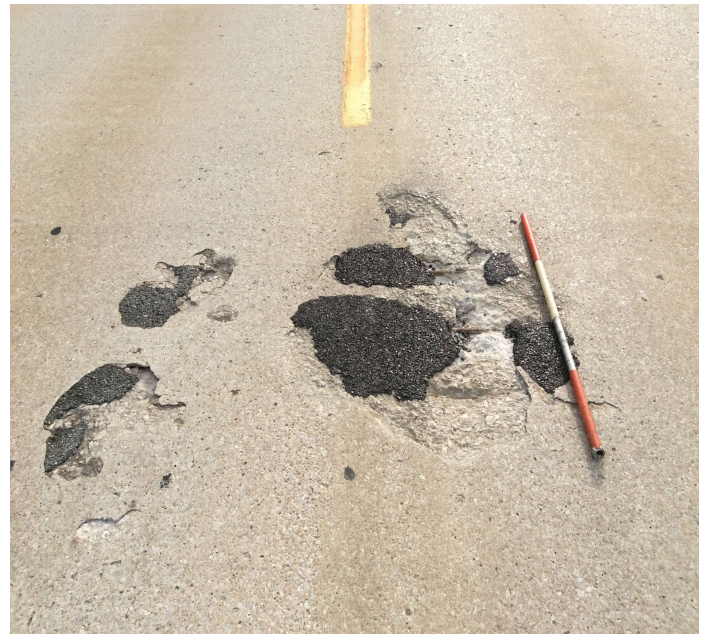


PHOTO 2      Description      Deck spalling typical.



Inspector:

Inspection Date:

Structure Number: 03636

Facility Carried: SH 12 Benton

## Bridge Inspection Report

### Maintenance Needs

Stage: Monitor



PHOTO 3 Description Deck spalling typical.

Stage: Monitor

Stage: Monitor



PHOTO 5 Description Deck spalling typical.

Stage: Monitor



PHOTO 4 Description Deck spalling typical.



PHOTO 6 Description Deck spalling typical.