MASSACHUSETTS HIGHWAY DEPARTMENT

STRUCTURES INSPECTION FIELD REPORT

ROUTINE INSPECTION

2-DIST	B.I.N.	BR. DEPT. NO.
05	437	C-07-001

CITY/TOWN	8-STRUCTURE NO.	11-Kilo. POINT	41-STATUS	90-ROUTINE INSP. DATE
CHATHAM	C07001-437-MUN-NBI	000.322	A:OPEN	OCT 7, 2008

07-FACILITY CARRIED	MEMORIAL NAME/LOCAL NAME	27-YR BUILT	106-YR REBUILT	YR REHAB'D (NON 106)
HWY BRIDGE ST		1936	1980	2007

06-FEATURES INTERSECTED	26-FUNCTIONAL CLASS	DIST. BRIDGE INSPECTION ENGINEER	
WATER MITCHELL RIVER	Urban Collector	D. A. Palmer	

43-STRUCTURE TYPE	22-OWNER	21-MAINTAINER	TEAM LEADER	PROJ MGR
716 : Timber Movable - Bascule	Town Agency	Town Agency	S. M. Darling	Transystems Lichtenstein

107-DECK TYPE	WEATHER	TEMP. (air)	TEAM MEMBERS
8 : Timber	Sunny	16°C	J. KLOFAS

ITEM 58 — DECK: 6

		DEF
1.Wearing surface	5	M-P
2.Deck Condition	6	M-P
3.Stay in place forms	N	-
4.Curbs	5	M-P
5.Median	N	-
6.Sidewalks	6	M-P
7.Parapets	N	-
8.Railing	6	M-P
9.Anti Missile Fence	N	-
10.Drainage System	N	-
11.Lighting Standards	N	-
12.Utilities	5	M-P
13.Deck Joints	4	S-P
14.	N	-
15.	N	-
16.	N	-

CURB REVEAL (In millimeters)	N	S
	330	330

APPROACHES

		DEF
a. Appr. pavement condition	5	M-P
b. Appr. Roadway Settlement	5	M-P
c. Appr. Sidewalk Settlement	5	M-P
d.	N	-

OVERHEAD SIGNS (Attached to bridge) (Y/N): N

		DEF
a. Condition of Welds	N	-
b. Condition of Bolts	N	-
c. Condition of Signs	N	-

ITEM 59 — SUPERSTRUCTURE: 6

		DEF
1.Stringers	6	M-P
2.Floorbeams	N	-
3.Floor System Bracing	N	-
4.Girders or Beams	7	-
5.Trusses - General	N	-
a. Upper Chords	N	-
b. Lower Chords	N	-
c. Web Members	N	-
d. Lateral Bracing	N	-
e. Sway Bracings	N	-
f. Portals	N	-
g. End Posts	N	-
6.Pin & Hangers	N	-
7.Conn Plt's, Gussets & Angles	N	-
8.Cover Plates	N	-
9.Bearing Devices	N	-
10.Diaphragms/Cross Frames	6	M-P
11.Rivets & Bolts	5	M-P
12.Welds	6	M-P
13.Member Alignment	6	M-P
14.Paint/Coating	5	M-P
15.King Posts	6	M-P

Year Painted	N

COLLISION DAMAGE: *Please explain*
None ( ) Minor X) Moderate ( ) Severe ( )

LOAD DEFLECTION: *Please explain*
None ( ) Minor X) Moderate ( ) Severe ( )

LOAD VIBRATION: *Please explain*
None ( ) Minor X) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) N

Any Cracks: (Y/N) N

ITEM 60 — SUBSTRUCTURE: 4

	Dive	Cur	DEF
1. Abutments		5	
a. Pedestals	N	N	-
b. Bridge Seats	N	7	-
c. Backwalls	N	6	M-P
d. Breastwalls	N	6	M-P
e. Wingwalls	N	6	M-P
f. Slope Paving/Rip-Rap	N	7	-
g. Pointing	N	N	-
h. Footings	N	5	M-P
i. Piles	N	H	-
j. Scour	N	N	-
k. Settlement	N	7	-
l.	N	N	-
m.	N	N	-
2. Piers or Bents		N	
a. Pedestals	N	N	-
b. Caps	N	N	-
c. Columns	N	N	-
d. Stems/Webs/Pierwalls	N	N	-
e. Pointing	N	N	-
f. Footing	N	N	-
g. Piles	N	N	-
h. Scour	N	N	-
i. Settlement	N	N	-
j.	N	N	-
k.	N	N	-
3. Pile Bents		5	
a. Pile Caps	N	6	M-P
b. Piles	4	5	S-P
c. Diagonal Bracing	4	4	S-A
d. Horizontal Bracing	4	4	S-A
e. Fasteners	3	4	S-P

UNDERMINING (Y/N) If YES please explain: N

COLLISION DAMAGE:
None ( ) Minor X) Moderate ( ) Severe ( )

SCOUR: *Please explain*
None (X) Minor ( ) Moderate ( ) Severe ( )

I-60 (Dive Report): 4 *I-60 (This Report):* 5

93B-U/W (DIVE) Insp 01/10/2008

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
CHATHAM	437	C-07-001	C07001-437-MUN-NBI	OCT 7, 2008

ITEM 61 4

CHANNEL & CHANNEL PROTECTION

	Dive	Cur	DEF
1.Channel Scour	7	H	-
2.Embankment Erosion	7	7	-
3.Debris	7	7	-
4.Vegetation	7	7	-
5.Utilities	7	H	-
6.Rip-Rap/Slope Protection	7	7	-
7.Aggradation	7	7	-
8.Fender System	3	3	S-A

STREAM FLOW VELOCITY:
Tidal (X) High ( ) Moderate ( ) Low ( ) None ( )

ITEM 61 (Dive Report): 4 *ITEM 61 (This Report)* 5

93b-U/W INSP. DATE: 01/10/2008

ITEM 36 ***TRAFFIC SAFETY***

	36	COND	DEF
A. Bridge Railing	0	5	M-P
B. Transitions	0	0	-
C. Approach Guardrail	0	5	M-P
D. Approach Guardrail Ends	0	7	-

WEIGHT POSTING *Not Applicable* X

	H	3	3S2	Single
Actual Posting	N	N	N	N
Recommended Posting	N	N	N	N

Waived Date: 03/26/1997 EJDMT Date: 00/00/00

Signs In Place (Y=Yes,N=No, NR=NotRequired) Legibility/ Visibility	At bridge E	At bridge W	Other Advance E	Other Advance W

CLEARANCE POSTING *Not Applicable*

	N ft	N in	S ft	S in	meter
Actual Field Measurement		0		0	
Posted Clearance		0		0	

Signs In Place (Y=Yes,N=No, NR=NotRequired) Legibility/ Visibility	At bridge N	At bridge S	Advance N	Advance S
	N	N	N	N

ACCESSIBILITY (Y/N/P)

	Needed	Used
Lift Bucket	N	N
Ladder	N	N
Boat	Y	Y
Waders	N	N
Inspector 50	N	N
Rigging	N	N
Staging	Y	Y
Traffic Control	N	N
RR Flagger	N	N
Police	N	N
Other:		
	N	N

TOTAL HOURS 29

PLANS (Y/N): Y

(V.C.R.) (Y/N): N

TAPE#:

List of field tests performed:

RATING
Rating Report (Y/N): Y
Date: 02/01/1997
Inspection data at time of existing rating
I 58: 7 I 59: 7 I 60: - Date :00/00/00

(To be filled out by DBIE)
Request for Rating or Rerating (Y/N): N

If YES please give priority:
HIGH ( ) MEDIUM ( ) LOW ( )

REASON:

CONDITION RATING GUIDE (For Items 58, 59, 60 and 61)

	CODE	CONDITION	DEFECTS
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advance section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advance deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service - beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M= Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion of steel, Minor scouring, Clogged drainage, etc.

S= Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroded rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

C-S= Critical Structural Deficiency - A deficiency in a structural element of a bridge that poses an extreme unsafe condition due to the failure or imminent failure of the element which will affect the structural integrity of the bridge.

C-H= Critical Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

URGENCY OF REPAIR:

I = Immediate- [Inspector(s) immediately contact District Bridge Inspection Engineer (DBIE) to report the Deficiency and to receive further instruction from him/her].

A = ASAP- [Action/Repair should be initiated by District Maintenance Engineer or the Responsible Party (if not a State owned bridge) upon receipt of the Inspection Report].

P = Prioritize- [Shall be prioritized by District Maintenance Engineer or the Responsible Party (if not a State owned bridge) and repairs made when funds and/or manpower is available].

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
CHATHAM	437	C-07-001	C07001-437-MUN-NBI	OCT 7, 2008

REMARKS

BRIDGE ORIENTATION

The bridge is oriented west/east with the Mitchell River oriented north/south.

GENERAL REMARKS

Bridge C-07-001 (437) carries Bridge Street over the Mitchell River in the Town of Chatham. The superstructure consists of eleven (11) timber multi-stringer approach spans (spans 1-7 and 9-12) with a timber deck and one (1) movable timber multi-stringer bascule span (span 8) with a timber deck. In addition, there are two (2) cast-in-place concrete abutment spans adjacent to the abutments. The substructure consists of concrete abutments and timber pile bents. The timber pile bents are numbered 1-6, 7A and 8-11 from west to east. There are smaller supplemental bents at bents 4 and 6 which are numbered 4A and 6A, respectively.

ITEM 58 - DECK

Item 58.1 - Wearing surface

(Fair): The timber wearing surface has moderate wear, particularly in the wheel lines, with slight punkiness, splits and checks throughout. The knots in the wood and the nail heads generally protrude above the surface **(see photo 1)**. Random wearing surface planks have been replaced throughout the deck.

The bituminous wearing surface over the abutment spans has random cracks up to 3/8" wide and minor wear, particularly in the wheel lines.

Item 58.2 - Deck Condition

(Satisfactory): The timber deck has some random areas with slight punkiness on the underside, however, there are no significantly deteriorated areas.

There is a 1'-0" diameter by 2" deep spall around a weep hole with heavy efflorescence on the underside of the cast-in-place concrete deck for the east abutment span.

Item 58.4 - Curbs

(Fair): The timber curbs which also act as a traffic rail have minor splits and checks throughout. The worst case is at the east end of the bascule span (span 8) south curb where a 3'-0" length of curb is heavily deteriorated **(see photo 2)**. At several locations the curb/traffic rails are misaligned transversely up to 1 1/2" **(see photo 3)**.

Item 58.6 - Sidewalks

(Satisfactory): The timber sidewalk has minor wear, splits and checks throughout with minor build-up of sand and debris along the curbs.

Item 58.8 - Railing

(Satisfactory): There are minor to moderate checks and splits in the timber pedestrian rails and posts.

Item 58.12 - Utilities

(Fair): There are several deteriorated, broken, loose or missing support brackets for the electrical conduit along the north side of the bridge. At one location in span 11, the conduit has been temporarily fastened with rope. In addition, there are deteriorated, broken and loose electrical conduits with exposed wiring along the west side of bents 5 and 7A which appear abandoned **(see photo 4)**.

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
CHATHAM	437	C-07-001	C07001-437-MUN-NBI	OCT 7, 2008

REMARKS

Item 58.13 - Deck Joints
(Poor): The steel armor at both abutment deck joints exhibits minor scraps and gouges, particularly at the east abutment. The timber joint at the east end of the bascule span (span 8) is extremely tight when the bridge is closed. The bascule span deck remains approximately 1/2" higher than the adjacent span deck at this joint after an opening and does not close completely until traffic drives over the joint. There is 1 1/2" of lateral misalignment between the span 8 and span 9 deck along the bent 8 deck joint **(see photo 5)**.

APPROACHES

Approaches a - Appr. pavement condition
(Fair): The bituminous pavement at both approaches exhibits longitudinal and transverse cracks up to 1" wide. Previously sealed cracks in the east approach have opened up.

Approaches b - Appr. Roadway Settlement
(Fair): An 8'-0" wide by 16'-0" long bituminous patch in the westbound lane of the west approach has settled up to 1". A 3'-0" long by 1'-2" wide area of the east approach pavement has settled 1 3/4" along the south end of the east abutment deck joint.

Approaches c - Appr. Sidewalk Settlement
(Fair): The northwest and southwest approach sidewalks have settled up to 2". The northeast approach sidewalk has a 2'-1" wide area with up to 4" of settlement along the curb **(see photo 6)**.

ITEM 59 - SUPERSTRUCTURE

Item 59.1 - Stringers
(Satisfactory): The timber stringers exhibit minor shakes and checks which are typically 1/8" wide **(see photo 7)** with isolated stringers checked up to 5/16" wide **(see photo 8)**. There is minor collision damage (scrapes and gouges) to the underside of the stringers in the bascule span (span 8) **(see photo 9)**. There is a 3'-0" long by 6" high spall with exposed and rusted rebar on the south side of the abutment span beam at the northeast corner of the bridge.

Item 59.4 - Girders or Beams
(Good): The bascule span (span 8) timber lifting beam has been replaced since the last inspection **(see photo 10)**.

Item 59.10 - Diaphragms/Cross Frames
(Satisfactory): Many of the timber spacer blocks between the stringers are loose and/or have rotated **(see photo 11)**. Random blocks exhibit minor shakes and checking. There is an isolated spacer block in span 12 which exhibits severe deterioration between the third and fourth stringers from the south.

Item 59.11 - Rivets & Bolts
(Fair): There is minor corrosion of the bolts throughout the superstructure. The bascule span (span 8) counterweight steel shell connection bolts (located in span 7) exhibit moderate to heavy corrosion with some minor section loss.

Item 59.12 - Welds
(Satisfactory): The bascule span (span 8) counterweight steel shell welds (located in span 7) are generally in satisfactory condition with some minor rusting.

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
CHATHAM	437	C-07-001	C07001-437-MUN-NBI	OCT 7, 2008

REMARKS

Item 59.13 - Member Alignment
(Satisfactory): The toe end of the bascule span (span 8) appears to have shifted 1 1/2" to the north, see Item 58.13 for additional comments.

Item 59.14 - Paint/Coating
(Fair): The bascule span (span 8) counterweight steel shell galvanized coating (located in span 7) exhibits moderate to heavy corrosion with some minor section loss on its west end **(see photo 12)**.

Item 59.15 - King Posts
(Satisfactory): The timber king posts exhibit checks up to 1/4" wide by 4'-0" long with a maximum depth of 3" throughout their entire height with the heaviest concentration on the north face of the south post **(see photo 13)**.

SuperStructure Collision Notes
There is minor collision damage (scrapes and gouges) to the underside of the stringers in the bascule span (span 8) (see photo 9).

SuperStructure Load Deflection Notes
There is minor deflection under live load.

SuperStructure Load Vibration Notes
There is minor vibration under live load.

ITEM 60 - SUBSTRUCTURE

Item 60.1 - Abutments
Item 60.1.c - Backwalls
(Satisfactory): There are several vertical and diagonal cracks in the east abutment backwall.

Item 60.1.d - Breastwalls
(Satisfactory): There is an 1/8" wide horizontal crack along the south half of the east abutment breastwall with a 4'-6" wide by up to 5" high by 2" deep spall along the crack. Both the east and west abutment breastwalls exhibit hairline cracks with efflorescence. The timber sill attached to the west abutment breastwall exhibits minor checking.

Item 60.1.e - Wingwalls
(Satisfactory): The southeast wingwall is covered with a concrete skim coat which exhibits isolated cracks up to 1/16" wide with efflorescence. The southwest wingwall exhibits a full length horizontal hairline crack with several vertical hairline cracks extending from the horizontal crack.

Item 60.1.h - Footings
(Fair): Both the east and west abutment footings at the south end are partially exposed through the rip-rap. There are up to 3" wide cracks through the south corner of the west abutment footing **(see photo 14)**. Note these footings appear to be a concrete apron, but there are no available plans to support this.

Item 60.3 - Pile Bents
Item 60.3.a - Pile Caps
(Satisfactory): The timber pile caps typically have up to 1/16" wide checks on all surfaces. Isolated timber caps have 1/8" to 1/4" wide checks which measure up to 3'-0" long **(see photo 15)**.

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
CHATHAM	437	C-07-001	C07001-437-MUN-NBI	OCT 7, 2008

REMARKS

Item 60.3.b - Piles

(Fair): The timber piles typically have heavy marine growth with minor to moderate brooming and section loss in the tidal zone **(see photo 16)**. Above the tidal zone, the piles have vertical checks up to 1/8" wide at random locations. Random piles throughout have had a section removed from the upper portion of the pile typically 3" deep by 2'-6" high. There is little to no protective creosote coating remaining on the piles. Protective sleeves have been placed around several piles at bents 1, 2, 3 and 4. See the attached Routine Underwater Inspection Report for more information.

Item 60.3.c - Diagonal Bracing

(Poor): **(DEF=S/A)** The timber bracing (for each individual pile bent) generally exhibits moderate to heavy deterioration and section loss in the tidal zone. **The worst case is at the north end of bent 5 where there is a 5'-0" section of the bracing which has completely deteriorated.**

Item 60.3.d - Horizontal Bracing

(Poor): **(DEF=S/A)** The timber bracing (between pile bents) generally exhibits moderate to heavy deterioration and section loss in the tidal zone. **The worst case is at the south end of bent 8 where there is a 4'-0" section of the bracing which has completely deteriorated.**

Item 60.3.e - Fasteners

(Poor): The fasteners that attach the bracing generally exhibit moderate to heavy corrosion with moderate to heavy section loss in the tidal zone.

SubStructure Collision Notes

See Item 61.8.d for comments.

ITEM 61 - CHANNEL AND CHANNEL PROTECTION

Item 61.8 - Fender System

Item 61.8.c - Horizontal Bracing

(Poor): **(DEF=S/A)** The horizontal timber members generally exhibit moderate splitting and checking above the tidal zone. **In the tidal zone, these members exhibit heavy marine growth with moderate to heavy deterioration and section loss (up to 100%)**. See the attached Routine Underwater Inspection Report for more information.

Item 61.8.d - Vertical Bracing

(Serious): **(DEF=S/A)** The vertical timber members generally exhibit moderate splitting and checking above the tidal zone. **In the tidal zone, these members exhibit heavy marine growth with moderate to heavy deterioration and section loss (up to 100%)**. The east fender also exhibits impact damage at its north and south ends with several vertical timber members leaning/rotated **(see photo 17).** See the attached Routine Underwater Inspection Report for more information.

Item 61.8.e - Fasteners

(Fair): Fasteners have heavy surface rust and are deteriorated within the tidal zone. See the attached Routine Underwater Inspection Report for more information.

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
CHATHAM	437	C-07-001	C07001-437-MUN-NBI	OCT 7, 2008

REMARKS

TRAFFIC SAFETY

Item 36a - Bridge Railing

(Fair): The timber curbs which are non-mountable act as a traffic rail and do not conform to the current standards. See Item 58.4 for comments.

Item 36b - Transitions

(Missing): There are no transitions between the timber pedestrian rail and the approach thrie beam guardrails at all four corners of the bridge.

Item 36c - Approach Guardrail

(Fair): The southeast guardrail has five posts that are not up tight against the abutment wingwall with up to a 1 1/2" gap **(see photo 18)**. There is minor impact damage to the northeast approach guardrail. The guardrails consist of multiple types (thrie beam and w-beam) which are not continuous for their entire length and do not conform to the current standards.

Item 36d - Approach Guardrail Ends

(Good): The buried end sections of the approach guardrails do not conform to the current standards.

Photo Log

Photo 1 : Worn wearing surface with protruding knots and nail heads. Note also the very tight joint (toe end of bascule span).
Photo 2 : Deterioration of the south curb/traffic rail at the east end of span 8.
Photo 3 : 1 1/2" of misalignment of the north curb/traffic rail between spans 2 and 3.
Photo 4 : Deteriorated utility conduit with exposed wires at bent 7A.
Photo 5 : 1 1/2" of misalignment of the bascule span toe towards the north.
Photo 6 : 4" deep settlement of the northeast approach sidewalk.
Photo 7 : 1/8" wide check in timber stringer S2 of span 10.
Photo 8 : Up to 5/16" checks in timber stringer S9 of span 8.
Photo 9 : Collision damage to the underside of the bascule span (span 8) stringers.
Photo 10 : New bascule span lifting beam.
Photo 11 : Loose and rotated spacer blocks in span 3.
Photo 12 : Failed galvanized coating on the underside of the counterweight steel shell.
Photo 13 : Checks in the north face of the bascule span south king post.
Photo 14 : 3" wide crack in the south end of the west abutment footing/apron.
Photo 15 : 1/4" wide check in the underside of the bent 5 cap.
Photo 16 : Typical condition of timber piles/bracing in the tidal zone (north end of bent 4 shown).
Photo 17 : Collision damage and heavy deterioration to south end of the bent 8 fender.
Photo 18 : 1 1/2" gaps between the southeast approach guardrail posts and the face of the wingwall.

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
CHATHAM	437	C-07-001	C07001-437-MUN-NBI	OCT 7, 2008

PHOTOS

Photo 1: **Worn wearing surface with protruding knots and nail heads. Note also the very tight joint (toe end of bascule span).**

Photo 2: **Deterioration of the south curb/traffic rail at the east end of span 8.**

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
CHATHAM	437	C-07-001	C07001-437-MUN-NBI	OCT 7, 2008

PHOTOS

Photo 3: **1 1/2" of misalignment of the north curb/traffic rail between spans 2 and 3.**

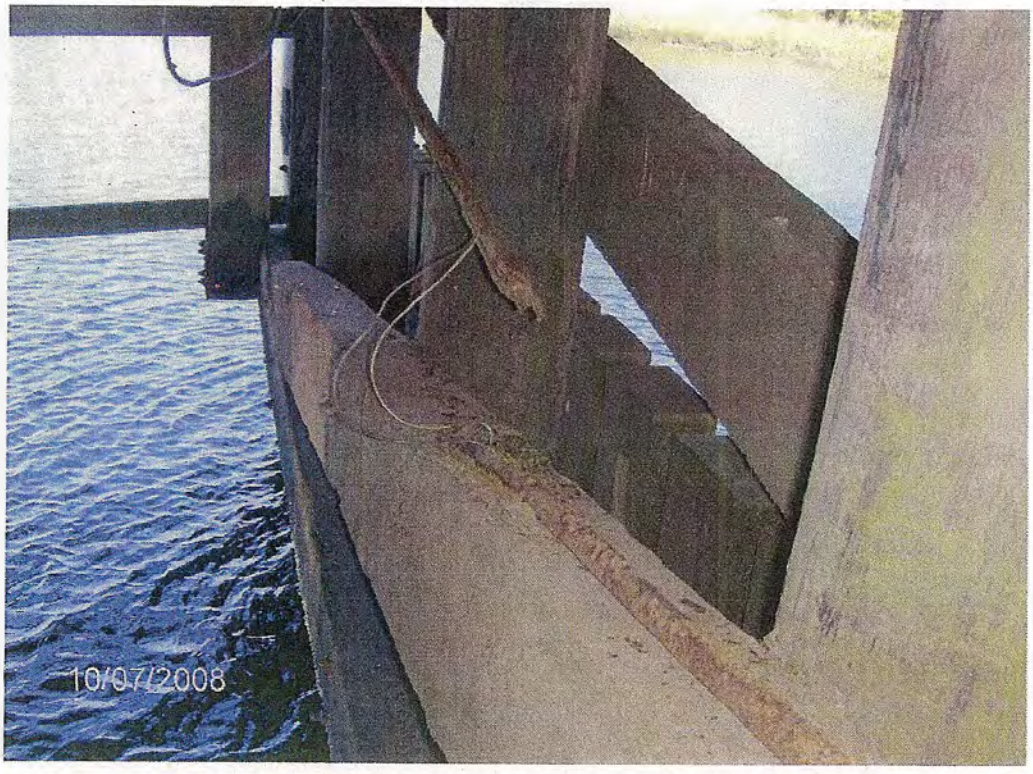

Photo 4: **Deteriorated utility conduit with exposed wires at bent 7A.**

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
CHATHAM	437	C-07-001	C07001-437-MUN-NBI	OCT 7, 2008

PHOTOS

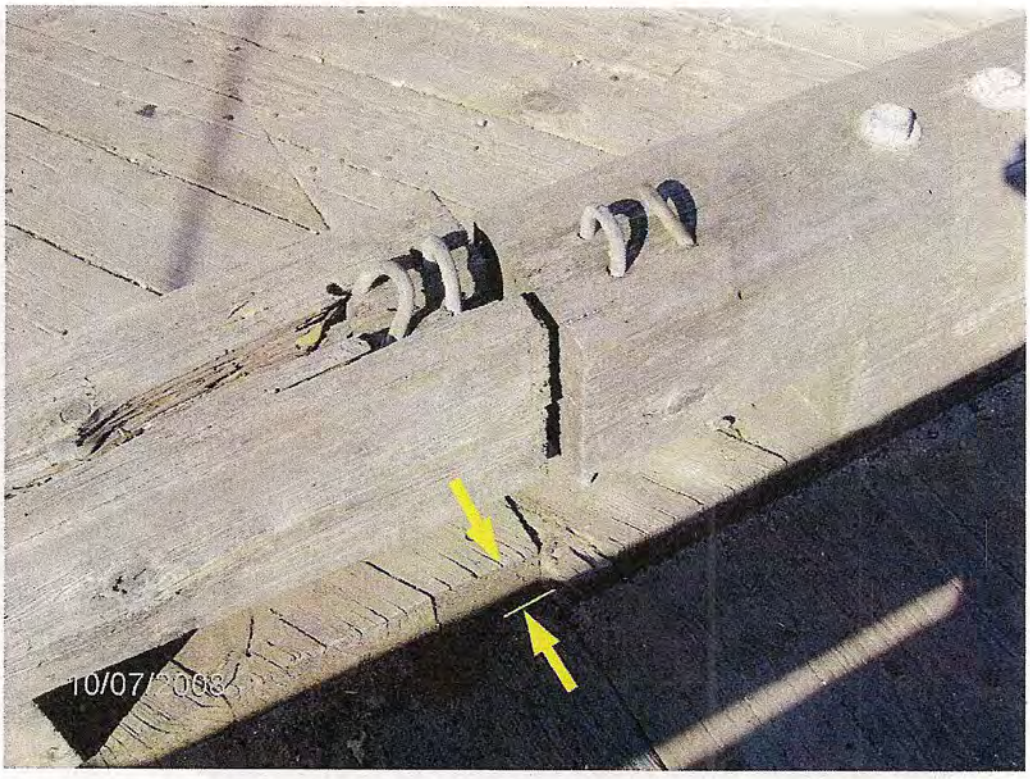

Photo 5: **1 1/2" of misalignment of the bascule span toe towards the north.**

Photo 6: **4" deep settlement of the northeast approach sidewalk.**

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
CHATHAM	437	C-07-001	C07001-437-MUN-NBI	OCT 7, 2008

PHOTOS

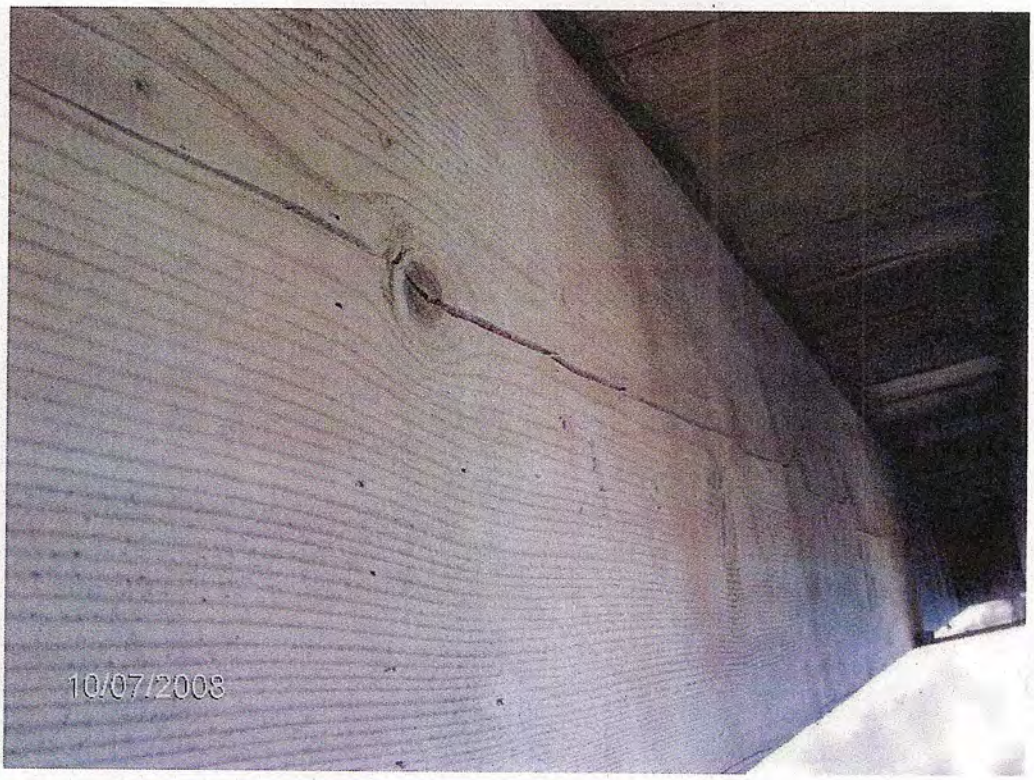

Photo 7: **1/8" wide check in timber stringer S2 of span 10.**

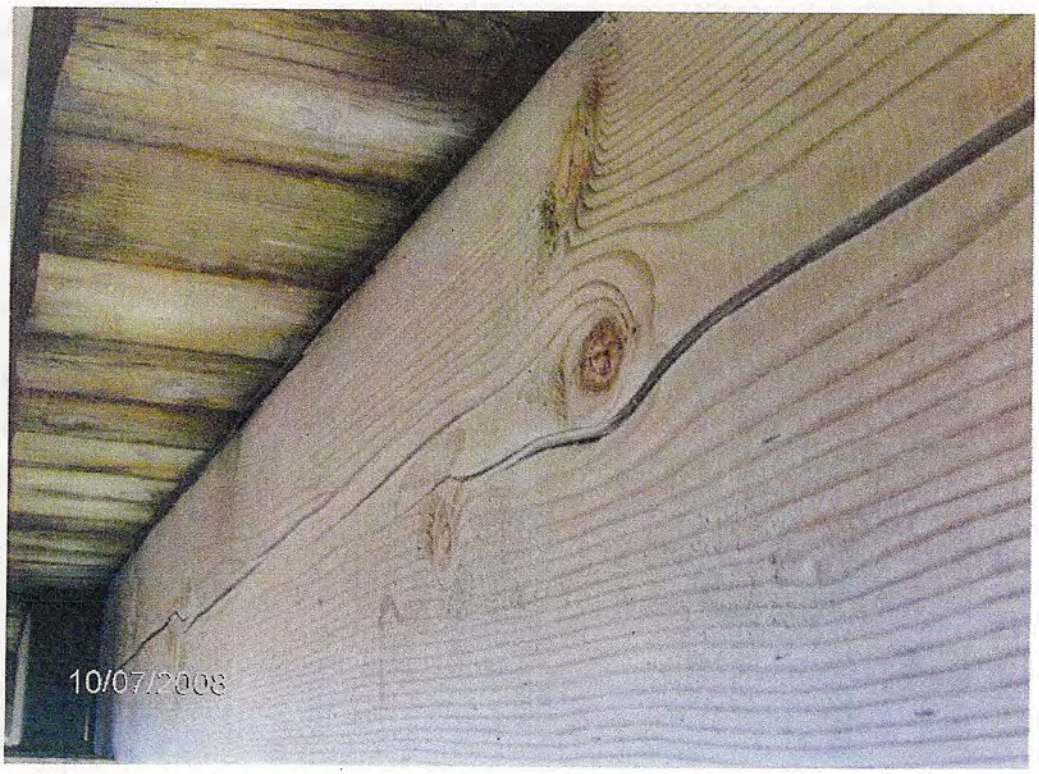

Photo 8: **Up to 5/16" checks in timber stringer S9 of span 8.**

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
CHATHAM	437	C-07-001	C07001-437-MUN-NBI	OCT 7, 2008

PHOTOS

Photo 9: **Collision damage to the underside of the bascule span (span 8) stringers.**

Photo 10: **New bascule span lifting beam.**

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
CHATHAM	437	C-07-001	C07001-437-MUN-NBI	OCT 7, 2008

PHOTOS

Photo 11: Loose and rotated spacer blocks in span 3.

Photo 12: Failed galvanized coating on the underside of the counterweight steel shell.

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
CHATHAM	437	C-07-001	C07001-437-MUN-NBI	OCT 7, 2008

PHOTOS

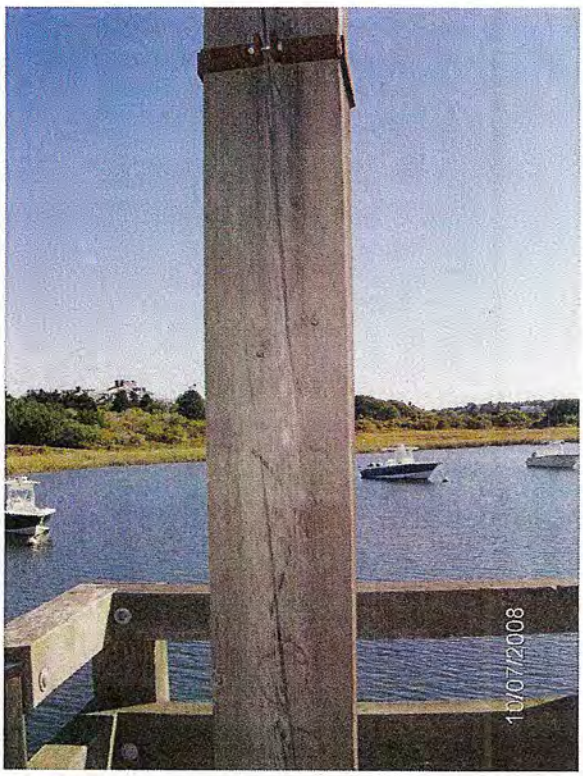

Photo 13: Checks in the north face of the bascule span south king post.

Photo 14: 3" wide crack in the south end of the west abutment footing/apron.

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
CHATHAM	437	C-07-001	C07001-437-MUN-NBI	OCT 7, 2008

PHOTOS

Photo 15: **1/4" wide check in the underside of the bent 5 cap.**

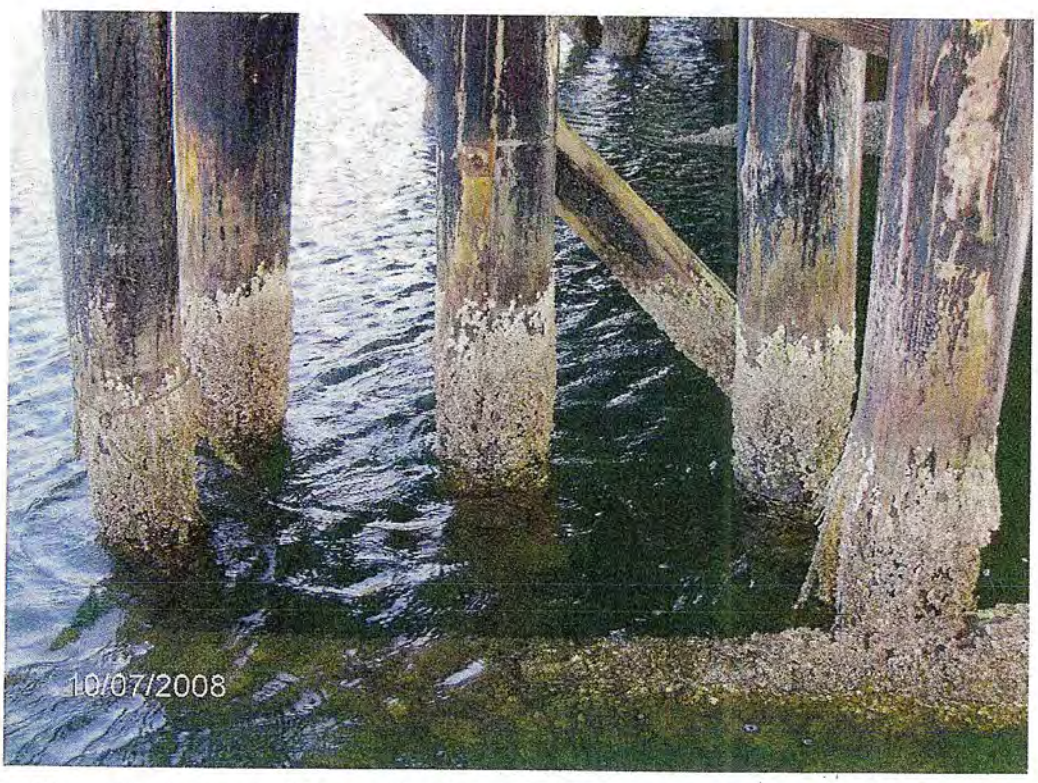

Photo 16: **Typical condition of timber piles/bracing in the tidal zone (north end of bent 4 shown).**

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
CHATHAM	437	C-07-001	C07001-437-MUN-NBI	OCT 7, 2008

PHOTOS

Photo 17: **Collision damage and heavy deterioration to south end of the bent 8 fender.**

Photo 18: **1 1/2" gaps between the southeast approach guardrail posts and the face of the wingwall.**