

February 4, 2002

Mr. Jeff Lechak, P.E.
Ohio Department of Transportation
District 12
5500 Transportation Blvd.
Garfield Heights, Ohio 44125

Re: Agreement No. 9862
PID No. 21390
Project No. CUY-6-1499
2001 Annual Bridge Inspection
Veterans Memorial Bridge

Dear Mr. Lechak:

Submitted herewith are six (6) copies of the seven (7) page 2001 Bridge Inspection Letter Report and six (6) copies of the Lake Erie Diving, Inc. Underwater Bridge Inspection Report for Bridge No. CUY-6-1499, Veterans Memorial Bridge.

PROCEDURE

The Veterans Memorial Bridge was inspected by HNTB personnel between August 22 and November 1, 2001. Inspectors included Byron Sah, P.E. (Team Leader), Bill Vermes, P.E., Chuck Cvitkovich, P.E., Bonnie Buckley, EIT, and Marty Wilczenski. Climbing techniques were utilized for the visual inspection of the steel arch in Span 4 both above the upper deck and below the lower deck. A snooper and manlift were used to provide access to the remaining areas of the main steel span and the concrete approach spans. The visual inspection also included the East and West Stations and Tunnels and Cellular Construction of Span 1A.

INSPECTION FINDINGS

The 2001 Routine Inspection found several changes from the 2000 In-depth Inspection.

- The steel curb plates were repainted recently and the railing base (below the pedestrian fencing) resealed.
- The corners of several pier shafts have spalled and more are delaminated with open cracks. Some are over public areas where vehicles or pedestrians could be struck by falling concrete. (Photos 1 and 2)
- In Span 10, no growth was noted to the existing delaminations to the concrete arches. Overall, the repairs to the concrete arches from the 1995 rehabilitation are still sound.
- Water several feet deep in the pedestrian stairwells and tunnels of the West Station was noted during the 2000 inspection. The water has since been removed and the stairwells and tunnels are now clear of water, except for some minor standing water.

- During the two month long inspection, the embankment west of Pier 3 had slid with some slope failure into the Cuyahoga River. Early observations noted several cracks in the top of the slope with evidence of minor sliding. Cracks in the slope continued to develop followed by heavy sliding (Photo 3). Neither Cuyahoga County nor the State of Ohio owns this property.
- The architectural lighting on the steel arch span was restored. While some fixtures for the architectural lighting of the concrete approach spans lights are not functioning, these spans are generally illuminated.

Brief summaries of additional findings are as follows:

Deck Items

Deck – In the concrete approach and main spans, the upper deck had isolated minor transverse cracks with efflorescence on the bottom surface. There is continued seepage of water and runoff through the utility ducts in the south bay in both the concrete approach slabs and station areas.

Wearing Surface – The wearing surface has minor scaling and spalls adjacent to several expansion joints, particularly at Piers 7 and 9. Transverse cracks extend from the Eastbound travel lanes into the South sidewalk in Span 1A.

Sidewalk, Curb and Railing – There is minor scaling to the sidewalks especially at the face of the railing. The railing below the pedestrian fencing had also been resealed. The sealer behind the fencing (balusters and top rail) is in poor condition. Vertical cracks to the top rail were noted at 2' spacing. Light posts 3 VM 1, 1 VM 1, 4 VM 2 and 4 VM 8 were either missing bolts to the access panel or the access panel itself.

Drainage – The catch basins in the south curblin of the East approach were clogged with dirt and debris. The scuppers on the approach spans were clear.

Superstructure

Steel Arch – There is an accumulation of steel shot and mastic paint at the upper deck level at panel points 5 and 5' (Photo 4). Below the upper deck, water and runoff through the hanger and arch block outs has caused the continued breakdown of the paint system and minor surface rust. Flake rust on the gusset plates above the lower chord was also noted.

Concrete Arches – The spandrel arches of the concrete approach spans are in fair to good condition with no new areas of delamination observed. Rust staining was noted to bleed through the concrete sealer.

Floor System (Beams, Diaphragms and Stringers) – Paint breakdown and minor corrosion on the upper deck stringers adjacent to the arches was noted. During this inspection the pins through the upper deck floorbeams were greased, although several grease fittings refused grease.

Floorbeams – Random soundings of delaminations recorded last year indicated no significant increased in area from previous markings. The floorbeams in span 12 (over Robert Lockwood Jr. Drive) continue to show signs of crumbling patches and possible spalls.

Water and runoff is continuing to pass through the upper deck at hanger and arch locations and on to the main steel span floorbeams. Evidence of further minor corrosion and paint deterioration to the floorbeam web, flanges and stiffeners was noted.

Substructure

Abutments – Minor erosion behind the East Abutment sheeting on the South side was noted. Water draining from the abutment was being outlet into a catch basin near Pier 12.

Piers – The span 4 South steel arch concrete pedestal at Pier 4 is heavily map cracked although sounding of the concrete revealed no areas of delamination.

Approaches

The asphalt patch on the East approach pavement has cracked and settled. Diagonal cracks extend from the West approach slab into the south sidewalk. Impact damage to the light post 4 VM 10 in the south sidewalk was observed (Photo 5).

Stations and Tunnels

East Station – Diagonal cracks in the North concrete block wall adjacent to the East abutment was noted with some minor spalls. Diagonal cracks with efflorescence were noted in the roof slab between floorbeams 17 through 21 near column line B. An open access hatch was noted on the south wall.

West Station – The downspout near column C20 was still clogged with debris. Heavy spalls to the concrete walls in the Detroit Tunnel were noted. Large areas continue to deteriorate and fall. Additional lighting had been added to the West Station.

General

Cellular Construction – No significant changes were noted to the cellular construction in Span 1A and 1B.

Utilities – The utility boxes continue to leak from the upper deck. This is causing corrosion to the box and water to accumulate in the expansion joints of the lower deck. Several utility lines in the South bay of the concrete approach spans remain on the lower deck.

Decorative lights on the lower deck and in the pier shafts below the lower deck were not functioning, which include approximately 85 lights on the lower deck and 115 pier shaft lights between the concrete arches and to the exterior faces of the pier shafts.

Channel – The diving report by Lake Erie Diving, Inc. noted an 8" wide gap between the steel sheep piling and the concrete cap at Pier 4 with loose rubble fill. All navigation lighting was found to be in good and working condition.

If there are any questions regarding this report, please advise.

Respectfully yours,

HNTB Ohio, Inc.

Byron D. Sah, P.E.



Photo 1 - Pier 12 Northwest corner spalled and cracked



Photo 2 - Pier 6, Southeast corner delamination and spall forming



Photo 3 - Span 3 Slope looking West 10/30/01 continued sliding into Cuyahoga River



Photo 4 - Accumulation of steel shot and debris at the North Arch panel point 5'



Photo 5 - Impact damage to light post 4 VM 10 at the South sidewalk of the West approach

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
BRIDGE INSPECTION REPORT

2001

BR-85 REV 02-95
1 8 0 0 9 3 0
STRUCTURE FILE NUMBER

BRIDGE NUMBER CUY 00006 1499
CO ROUTE UNIT

CLEVELAND

YEAR BUILT 1979

DIST 12 BRIDGE TYPE STEEL/ARCH/THRU TYPE SERVICE 1 57 CUYAHOGA RIVER/GCRTA

DECK		OUT/OUT = 85.2	2	1. FLOOR	TRANSVERSE FRAMES CONTINUING THICK = 1.0 WATER STOPPING AND EXPOSED REBAR APPROX 1'-CONC	41	1
1. FLOOR			2	2. WEARING SURFACE	2-CONCRETE MONO W.S. DATE= 00/00/00	41	1
3. CURBS, SIDEWALKS & WALKWAYS		1-CONC/1-CONC	3	4. MEDIAN		42	
5. RAILING		5-CONC POST PNL	10	6. DRAINAGE	3-SCPRS DWN SPT	43	2
7. EXPANSION JOINTS		8-STRIP	11	8. SUMMARY		44	7
SUPERSTRUCTURE		MAX. SPAN=591	12	10. BEAMS/GIRDERS/SLAB	N-N/A	45	
11. DIAPHRAGMS or CROSSFRAMES		TOT. LGTH=2656	13	12. JOISTS/STRINGERS		46	1
13. FLOOR BEAMS			14	14. FLOOR BEAM CONNECTIONS		47	2
15. VERTICALS			15	16. DIAGONALS		48	1
17. END POSTS			16	18. TOP CHORD		49	1
19. LOWER CHORD			17	20. LOWER LATERAL BRACING		50	1
21. TOP LATERAL BRACING			18	22. SWAY BRACING		51	2
23. PORTALS			19	24. BEARING DEVICES	8-ARCH RB	52	1
25. ARCH			20	26. ARCH COLUMNS or HANGERS		53	1
27. SPANDREL WALLS			21	28. PAINT	TYPE: 5 YEAR= 70 CORROSION HAS STARTED	54	2
29. PINS/HANGERS/HINGES			22	30. FATIGUE PRONE CONNECTIONS		55	1
31. LIVE LOAD RESPONSE			23	32. SUMMARY		56	7
SUBSTRUCTURE		2-CONC	24	34. ABUTMENT SEATS		57	1
35. PIERS		2-CONC	25	36. PIER SEATS		58	1
37. BACKWALLS			26	38. WINGWALLS		59	
39. FENDERS and DOLPHINS		SPANS=13 PIERS=12	27	40. SCOUR		60	3 2
41. SLOPE PROTECTION			28	42. SUMMARY	ABUTMENT: NOT ON PILING DIVE DT= 10/20/97	62	7
CULVERTS				44. ALIGNMENT	** SLOPE SLIDING UNDER SPAN 3	63	
43. GENERAL			29	46. SEAMS		64	
45. SHAPE			30	48. SCOUR		65	
47. HEADWALLS or ENDWALLS			31	50. SUMMARY		66	
CHANNEL		SEVERELY SKEWED CHANNEL		52. PROTECTION	3-SHT PILG	67	2
51. ALIGNMENT			33	54. SUMMARY		68	7
53. WATERWAY ADEQUACY			34	56. APPROACH SLABS		69	
55. PAVEMENT		1-CONC	35	58. RELIEF JOINTS		70	
57. GUARDRAIL		0-OTHER	36	60. SUMMARY	PCT. LEGAL=150	71	6
59. EMBANKMENT		BRDG. WIDTH=72	37	62. WARNING SIGNS	MAINT. RESP=3-COUNTY ELEC/TEL/OTH	72	1
61. NAVIGATION LIGHTS			38	64. UTILITIES	LOADING UTILITY BOXES	73	1
63. SIGN SUPPORTS			39	66. GENERAL APPRAISAL & OPERATIONAL STATUS		74	7 A

67. INSPECTED BY Bonnie B. Buckley SIGNED B B B 76 PE 78 INITIALS
 68. REVIEWED BY [Signature] SIGNED PE 81 PE 83 INITIALS

DOT 2852
DECK AREA 226291 DATE 103101
 86 91 92 89 SURVEY 99 DATE 120301
 100 105