

UNDERWATER BRIDGE INSPECTION REPORT

WisDOT ID No.: P-40-794

City ID No.: 202

Date Inspected: 06/03/08



Becher Street Over The Kinnickinnic River

PREPARED FOR:



CITY OF MILWAUKEE

PREPARED BY:

COLLINS
ENGINEERS^{PC}
2033 West Howard Ave
Milwaukee, WI 53221
(414) 282-6905

Collins Job No. 5632-60

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A. NBIS Coding Information (Recommended ratings based on underwater inspection only)

<u>Item #</u>	<u>Description</u>	<u>Rating</u>
60	Substructure	6
Note: Substructure rating based on underwater inspection only.		
61	Channel & Protection	8
92B	Critical Feature Inspection	Y60
93B	Underwater Inspection Date	06/03/08

B. Comprehensive Report of Deficiencies (Selected inspection notes shown on Figure 1)

Bents 1 and 2:

1. All concrete jackets extended into the channel bottom and were in good condition with no notable defects.
2. The channel bottom at Bent 1 consisted of gravel and 6 in. diameter and smaller cobbles with random grout bags with no penetration.
3. The channel bottom at Bent 2 consisted of firm silt with 2 in. of penetration with a standard probe rod.

C. Photographs



Photograph 1: Overall view of bridge P-40-794, looking north.



Photograph 2: Overall view of bridge P-40-794, looking south.



Photograph 3: View of Bent 2, looking northeast.



Photograph 4: View of Bent 1, looking northwest.

D. Recommendations

1. In accordance with the National Bridge Inspection Standards (NBIS), it is recommended that the substructure units be inspected underwater at intervals not to exceed 60 months.
2. In accordance with NBIS it is recommended that soundings at the bridge be taken as part of the biennial inspections and during or soon after flood occurrences.

Respectfully Submitted,

COLLINS ENGINEERS, INC.

Roy A. Forsyth, P.E.
Project Manager

STREAMBED PROFILE INSPECTION REPORT

Wisconsin Department of Transportation
DT2012 7/2003 s.84.17 Wis. Stats.

Structure Number: P-40-794

General	Sounding Equipment	Vertical Control
Date: 06/03/08	Leadline:	Distance to Known Elevation: -8.6'
Location: Becher St. over Kinnickinnic River	Fathometer: Yes	Known Elevation: +7.0' (City of Milwaukee Datum)
County: Milwaukee	Sounding Pole:	Waterline Elevation: -1.6'
Municipality City of Milwaukee	Description of Known Elevation: Top of bent cap, Bent 1	

Streambed Elevations

Location	Upstream			Downstream		
	200'	100'	Fascia	Fascia	100'	200'
¼ Pt.					-3.2 [*]	-3.6 [*]
W. Abut.	Shore	Shore			-9.0'	-3.7'
¼ Pt.	-9.3'	-9.8'			-10.0'	-4.2'
½ Pt.	-7.7'	-9.0'	Shore	Shore	-7.4'	-6.8'
¾ Pt.	-7.2'	-7.9'	-9.4'	-9.1'	-6.6'	-7.0'
Bent 1	-6.3'	-6.5'	-11.6'	-12.0'	-7.7'	-7.1'
¼ Pt.	-5.5'	-5.8'	-10.3'	-12.9'	-9.4'	-11.3'
½ Pt.	-5.0'	-5.6'	-8.9'	-13.1'	-14.0'	-12.1'
¾ Pt.	-5.1'	-5.0'	-7.4'	-13.8'	-15.2'	-12.6'
Bent 2	-5.2'	-5.1'	-6.8'	-8.6'	-14.6'	-12.8'
¼ Pt.	-4.8'	-4.8'	-6.6'	-7.3'	-14.4'	-11.8'
½ Pt.	-4.2'	-4.4'	Shore	Shore	-11.2'	-8.2'
¾ Pt.	Shore	Shore			-7.4'	-5.1'
E. Abut.					-4.1'	-3.6'
¼ Pt.					-2.6 [*]	-3.0 [*]

= Channel bottom elevation per City of Milwaukee datum
* = Channel bottom elevation at dockwall

UNDERWATER BRIDGE INSPECTION - DIVE LOG

DT2013 7/2003 s.84.17 Wis. Stats.

This form may be used as a supplement to form DT2007 for Underwater Bridge Inspections

Structure Number: P-40-794

Inspection Date: 06/03/08	Weather Condition: Cloudy, 52° F	Waterline Elevation: -1.6' (City of Milwaukee Datum)
Safety Concern: Poor Visibility	Water Temperature: 60° F	Total Days on Site: 1
Current: < 1 fps	Visibility: 1 ft	Total Inspection Time (hrs): 2.5

General Site Conditions:				
Scour at Bridge Site	No			
Embankment Erosion/Conditions	Heavy Riprap			
Substructure Unit(s):	West Abutment	Bent 1	Bent 2	East Abutment
Level of Inspection	N/A	I-Cursory/II-Cleaning	I-Cursory/II-Cleaning	N/A
Abutment/Pier Type	Sill Abut.	H-Pile Bent	H-Pile Bent	Sill Abut.

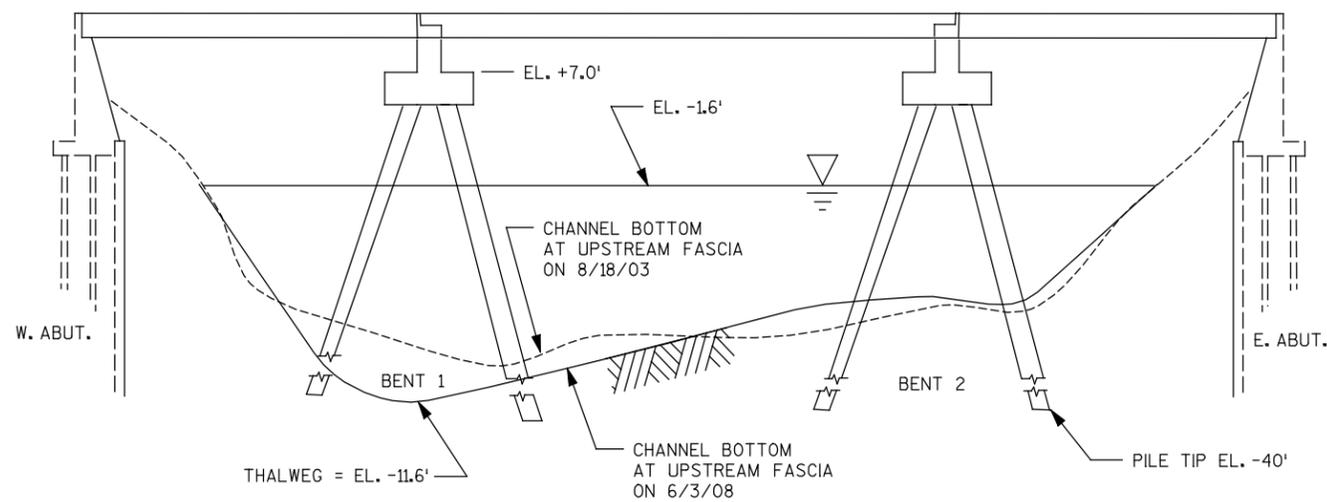
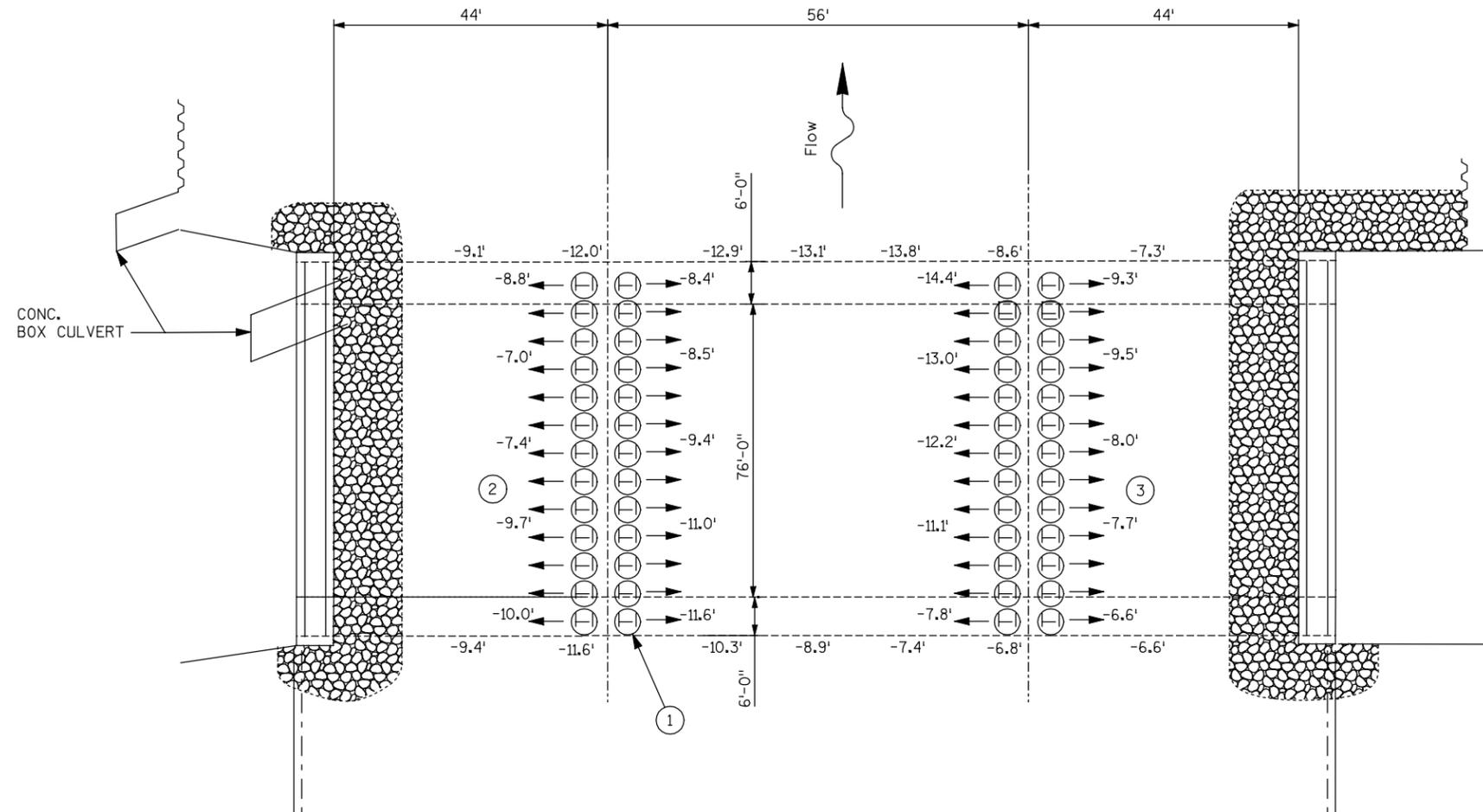
Dive Log:					
Maximum Water Depth, at Unit	0	10.4'	12.8'	0	
Channel Bottom Material, at Unit	Riprap	Gravel / Cobbles	Firm Silt	Riprap	
Scour at Unit	No	No	No	No	
Marine Growth/Cleaning Performed?	No / No	Yes / Yes	Yes / Yes	No / No	
Debris / Clearing Performed?	No / No	No / No	No / No	No / No	
Mode: Wade, Scuba, Surface Supplied Air?	-----	SCUBA	SCUBA	-----	
Inspection Comments:	-----	None	None	-----	

Dive Platform: Shore Boat Other

Location of Boat Access:
Milwaukee County public boat landing at Bruce Street and Water Street.

Conclusions: All repairs were in good condition and no structural deficiencies that warrant immediate attention were found at the time of inspection.

Recommendations:
In accordance with the National Bridge Inspection Standards (NBIS), it is recommended that the substructure units be inspected underwater at intervals not to exceed 60 months.
In accordance with NBIS it is recommended that soundings at the bridge be taken as part of the biennial inspections and during or soon after flood occurrences.



KEY	
	RIP RAP
	NATURAL SHORELINE
	BATTER PATTERN TYP.
	SHEET PILE WALL
-4.2'	CHANNEL BOTTOM ELEVATION PER CITY OF MILWAUKEE DATUM
①	INSPECTION NOTE

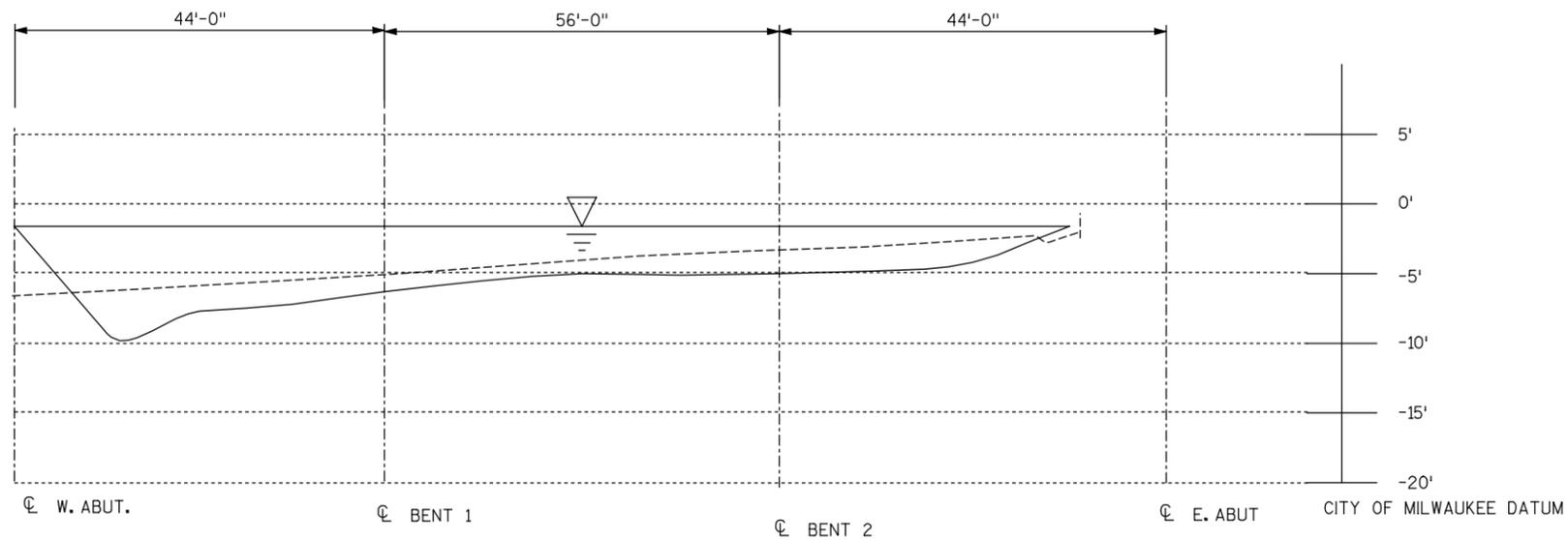
CITY OF MILWAUKEE
DEPARTMENT OF PUBLIC WORKS

BECHER ST. OVER
THE KINNICKINNIC RIVER
STATE BRIDGE NO. P-40-794
CITY I.D. NO. 202

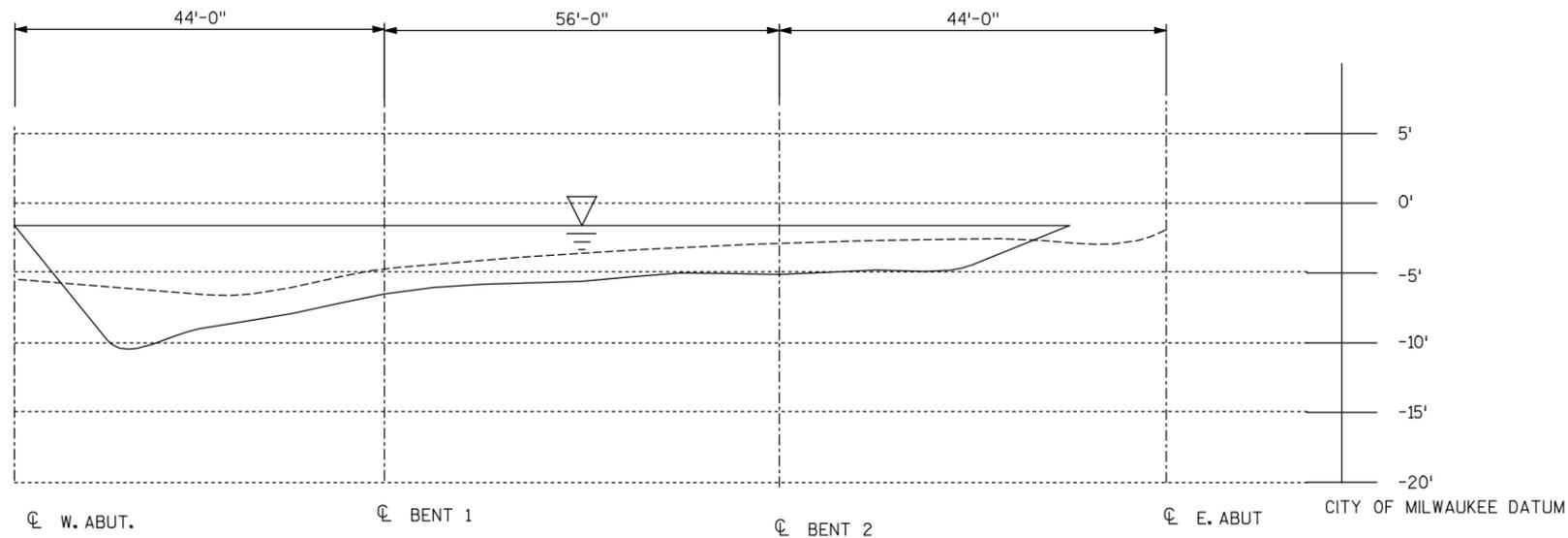
UNDERWATER INSPECTION PLAN

Drawn By: KPW	COLLINS ENGINEERS <small>2033 W. HOWARD AVE MILWAUKEE, WI 53221 (414)282-6905</small>	Date: JUNE 2008
Checked By: RAF		Scale: NTS
Code: 56320202		Figure No.: 1

REFER TO FIGURES 2 THRU 4 FOR DETAILED SOUNDING INFORMATION.
REFER TO PAGE 1 FOR INSPECTION NOTES.



CHANNEL CROSS SECTION 200' UPSTREAM



CHANNEL CROSS SECTION 100' UPSTREAM

DISTANCE TO KNOWN EL. = -8.6'
 KNOWN EL. = 7.0'
 DESCRIPTION OF KNOWN EL.: TOP
 OF BENT CAP AT BENT 1
 WATERLINE EL. = -1.6'

KEY	
-----	CHANNEL BOTTOM 8/18/03
—————	CHANNEL BOTTOM 6/3/08

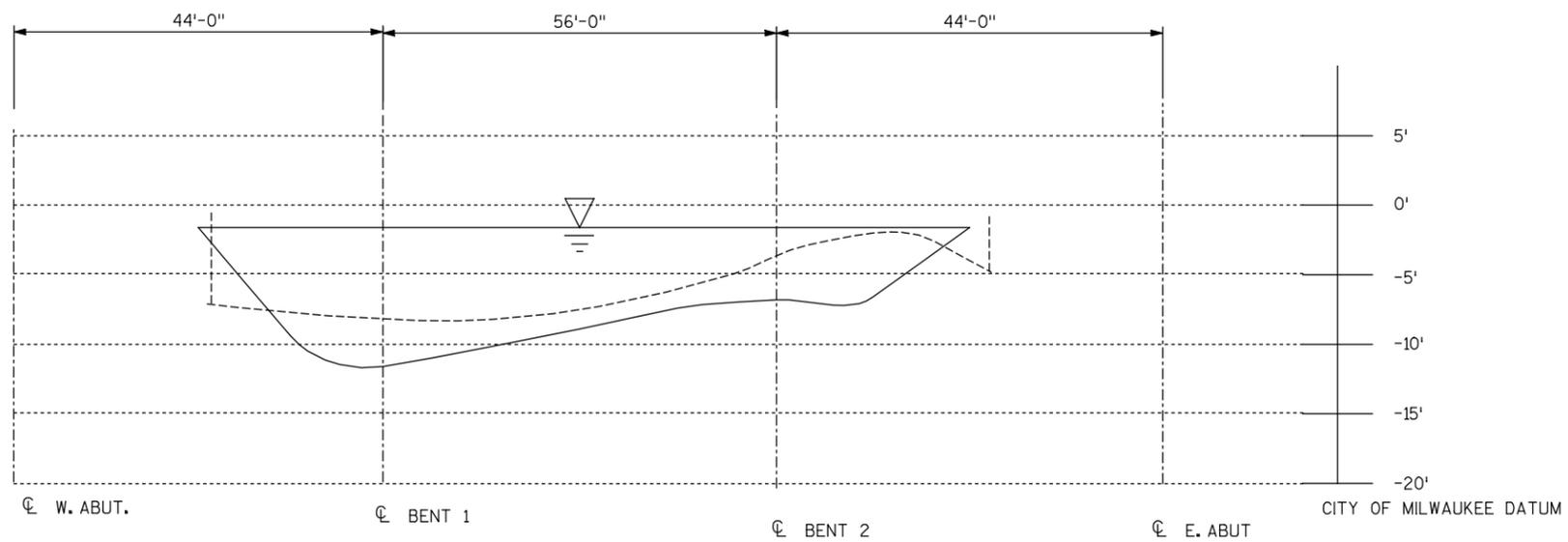
CITY OF MILWAUKEE
 DEPARTMENT OF PUBLIC WORKS

BECHER ST. OVER
 THE KINNICKINNIC RIVER
 STATE BRIDGE NO. P-40-794
 CITY I.D. NO. 202
 CHANNEL CROSS SECTION

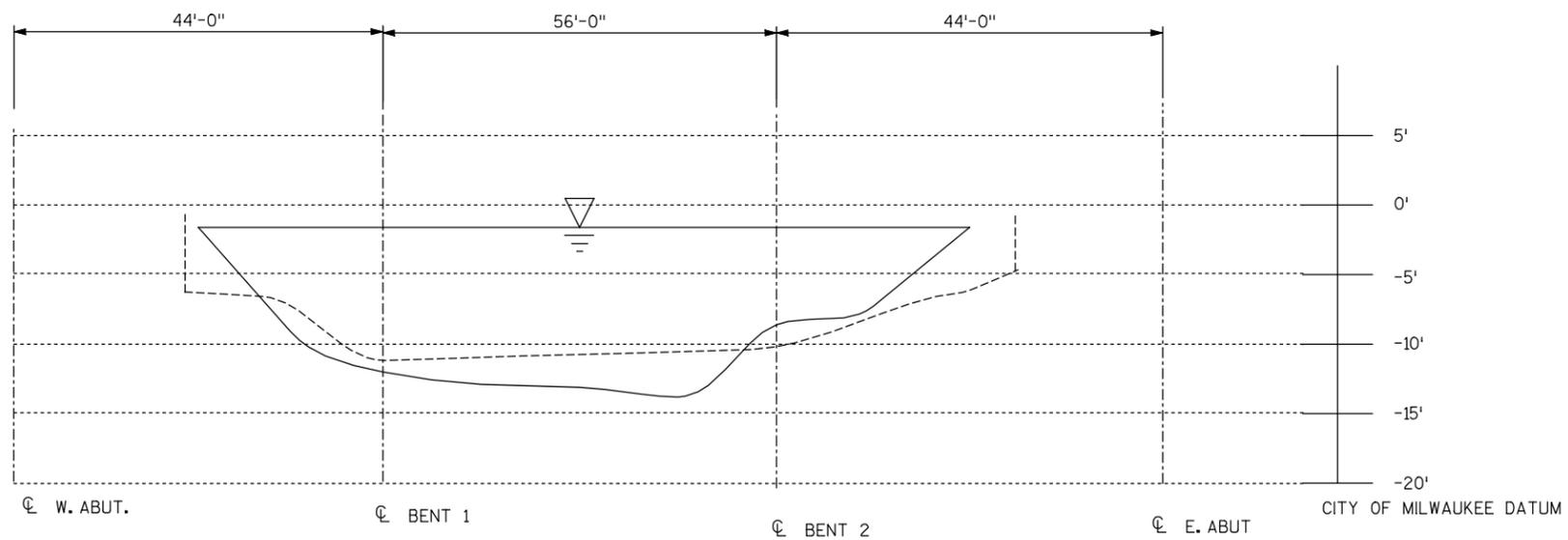
Drawn By: KPW
 Checked By: RAF
 Code: 56320202

COLLINS ENGINEERS
 2033 W. HOWARD AVE
 MILWAUKEE, WI 53221
 (414)282-6905

Date: JUNE 2008
 Scale: NTS
 Figure No.: 2



CHANNEL CROSS SECTION @ UPSTREAM FASCIA



CHANNEL CROSS SECTION @ DOWNSTREAM FASCIA

DISTANCE TO KNOWN EL. = -8.6'
 KNOWN EL. = 7.0'
 DESCRIPTION OF KNOWN EL.: TOP
 OF BENT CAP AT BENT 1
 WATERLINE EL. = -1.6'

KEY	
-----	CHANNEL BOTTOM 8/18/03
—————	CHANNEL BOTTOM 6/3/08

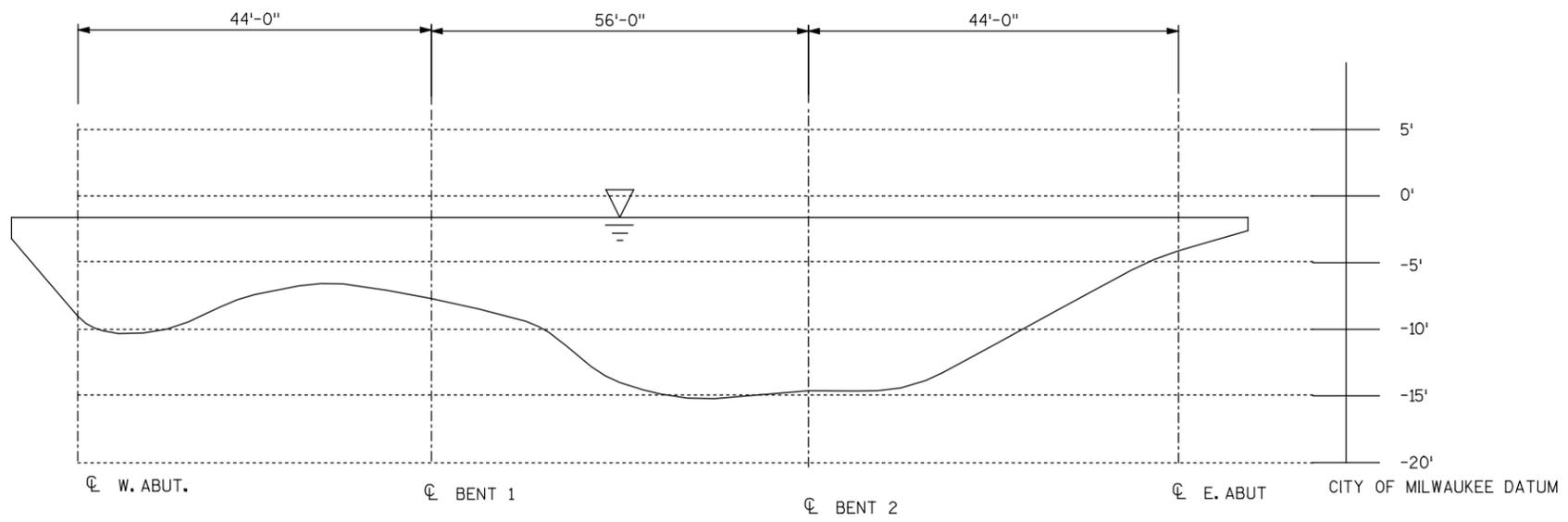
CITY OF MILWAUKEE
 DEPARTMENT OF PUBLIC WORKS

BECHER ST. OVER
 THE KINNICKINNIC RIVER
 STATE BRIDGE NO. P-40-794
 CITY I.D. NO. 202
 CHANNEL CROSS SECTION

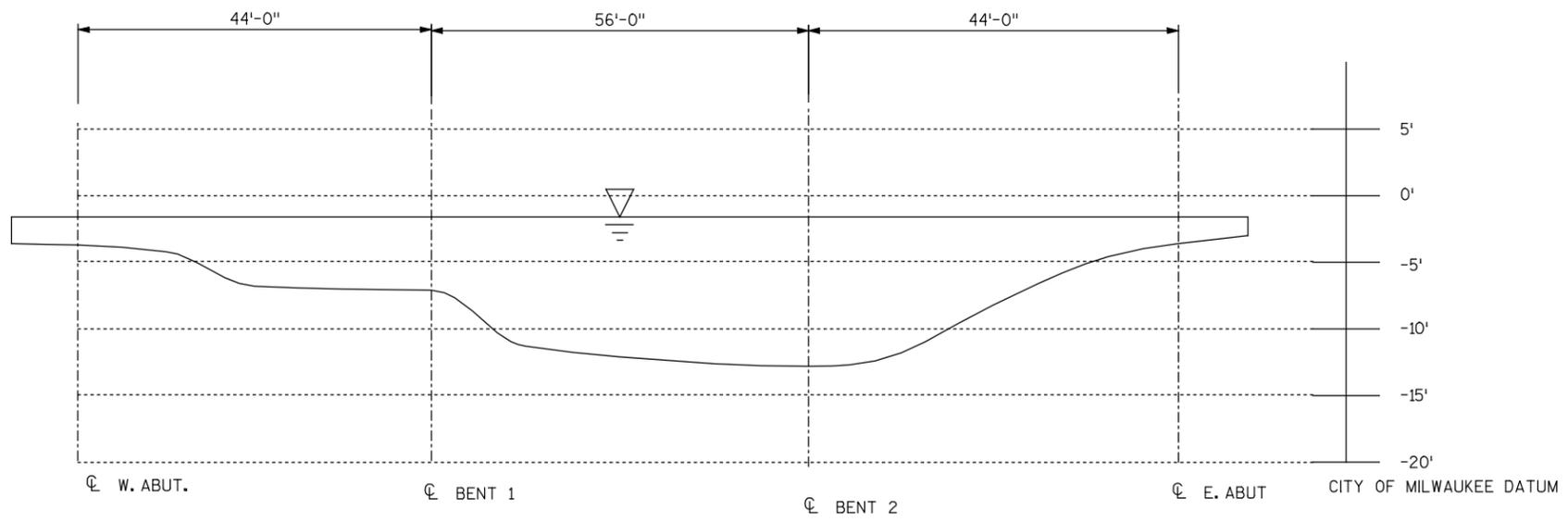
Drawn By: KPW
 Checked By: RAF
 Code: 56320202

COLLINS ENGINEERS
 2033 W. HOWARD AVE
 MILWAUKEE, WI 53221
 (414)282-6905

Date: JUNE 2008
 Scale: NTS
 Figure No.: 3



CHANNEL CROSS SECTION 100' DOWNSTREAM



CHANNEL CROSS SECTION 200' DOWNSTREAM

DISTANCE TO KNOWN EL. = -8.6'
 KNOWN EL. = 7.0'
 DESCRIPTION OF KNOWN EL.: TOP
 OF BENT CAP AT BENT 1
 WATERLINE EL. = -1.6'

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CITY OF MILWAUKEE DEPARTMENT OF PUBLIC WORKS		
BECHER ST. OVER THE KINNICKINNIC RIVER STATE BRIDGE NO. P-40-794 CITY I.D. NO. 202 CHANNEL CROSS SECTION		
Drawn By: KPW	COLLINS ENGINEERS 2033 W. HOWARD AVE MILWAUKEE, WI 53221 (414)282-6905	Date: JUNE 2008
Checked By: RAF		Scale: NTS
Code: 56320202		Figure No.: 4

BRIDGE INSPECTION REPORT
Wisconsin Dept. of Transportation
DT2007 2003 s.84.17 Wis. Stats. Type = UNDERWATER DIVE INSPECTION

page 1

Inventory Data

Feature On: W BECHER ST		Maintainer: CITY		Structure No: P-40-0794	
Feature Under: KINNICKINNIC RIVER		Sect/Twn/Rng: S04 T06N R22E			
Location: 0.2M E JCT STH 38		County: MILWAUKEE	Municipality: CITY-MILWAUKEE (40251)		
Inv Rating: HS24	Rdwy Width (ft): 72.0	Deck Width (ft): 87.5	Existing Posting:		
Oper Rating: HS40	Total Length (ft): 148.0	Deck Area(ft2): 12950	ADT On: 10700	Yr: 2001	ADT Under: Yr:

Inspection Type (* = Supplemental Form Required)

	Routine Visual	Fracture Critical*	In-Depth*	UW-Dive*	UW-Surv*	UW-Probe/Visual*	Movable*
Last Insp.	2006-05-08			2003-08-18		2006-05-08	
Frequency	24			60		24	
Recom. Freq.							
	Initial*	Damage	Interim	Load Posted	SI & A Field Review*		
Last Insp.							
Frequency	N/A						
Recom. Freq.	N/A				Item No. Needing Change		

Load Rating Information

Overburden	Measurement (in): 3.0	Date: 2004-04-20	Deck Surface Type: BITUMINOUS		
Section Loss	File Meas. (%):	File Insp. Date:	Insp. Measurement (%):	Describe:	
Re-rate for load capacity?		Reason:		Date Last Rated:	

Expansion Joints

Location	Type	Temp:			Signing Condition			Comments
		File Insp. Date	File Insp. (in)	New Insp. (in)	Type of Marker	File	Y/N	
					Bridge Markers	N	N	
					Narrow Bridge	N	N	
					One Lane Road	N	N	
					Vertical Clearance	N	N	
					Weight Limit Post	N	N	
					Other(Addl. Sign)			

Clearances(Cardinal = N or E)

	File Meas. (ft.)	File Date	New Meas. (ft.)
Min. Vertical Clearance Under (Cardinal)			
Min. Vertical Clearance Under (non-Cardinal)			
Min. Vertical Clearance On			

Structure Type

Material	Configuration	# of Spans	Overall Length (ft)	Construction/Rehabilitation History			
				Year	Work Performed	Plan	Shop
CONT STEEL	DECK GIRDER	1	44.0	1966	NEW STRUCTURE		
CONT STEEL	DECK GIRDER	1	55.0				
CONT STEEL	DECK GIRDER	1	44.0				

Inspection Information

Special Requirements	Y/N	Comments
Traffic Control		
Access Equipment	Y	boat
Other		

Inspector Information

Team Leader Name and No. Printed: Forsyth, Roy A (9534)		Team Member(s) Name(s) Printed: Todd Demski, Seth Johnson	
Team Leader Signature:		Inspection Date: 2008-06-03	Inspection Agency: CONSULTANT (10)
District/Local Manager and No. Printed:		District/Local Manager Signature:	Review Date:

Element Inspection (X) Check Elements Inspected					Quantity in Condition States				
Ck	Elem./Env.	Description	Unit	Total QTY.	1	2	3	4	5
	13 / 4	Conc Deck/AC Ovl	SF	12950					12950
Map cracking @ AC overlay									
	113 / 2	Paint Stl Stringer	LF	1860		1850	10		
	172 / 2	Painted Steel Diaphr	EA	119		119			
X	202 / 3	Paint Stl Column	EA	52	52				
Concrete jackets have been placed around the piles since the 2003 underwater inspection.									
	215 / 3	R/Conc Abutment	LF	177	177				
Backwall betw girders 1-3 on E & W abuts patched									
	234 / 4	R/Conc Cap	LF	167	167				
	302 / 4	Compressn Joint Seal	LF	174	174				
	311 / 4	Moveable Bearing	EA	39	13	26			
Bearing assemblies on E. & W. abuts are moderately rusted									
	313 / 4	Fixed Bearing	EA	13	13				
Fixed Bearings are located on the East pier.									
	321 / 4	R/Conc Approach Slab	EA	2		2			
Several major cracks indicate settlement on both appr slabs. Spalling									
	334 / 4	Metal Rail Coated	LF	525		505	20		
Minor stain in few areas of hand railing									
X	342 / 2	RipRap Slope Protect	EA	2	2				
At abuts & wingwalls only									
	358 / 4	Deck Cracking SmFlag	EA	1			1		
Numerous cracks of moderate size is on asphalt overlay									
	359 / 4	Und Dk Surf Sm Flag	EA	1		1			
Map cracking in some areas. Some repairs made since last inspection.									

Element Inspection (X) Check Elements Inspected

Element Inspection (X) Check Elements Inspected					Quantity in Condition States				
Ck	Elem./Env.	Description	Unit	Total QTY.	1	2	3	4	5
X	361 / 4	Scour Smart Flag	EA	1	1				
	400 / 3	Concrete Wingwall	EA	4		4			
Cracking & spalling of conc @ NE & SE corners of wingwall									
	405 / 2	Drainage	EA	1	1				
	415 / 4	Sidewalk/Median	LF	295		292	3		
Minor transv cracks and popouts on sidewalks									

General Inspection/Maintenance Notes

Concrete jackets have been placed around the piles since the 2003 underwater inspection. All repairs were in good condition with no notable defects.

Maintenance Recommendations (See standard code items & numbers)

Maintenance Item:
Amount: **Date(YYYY-MM-DD):**
Maintenance item comment:

Maintenance Item:
Amount: **Date(YYYY-MM-DD):**
Maintenance item comment:

NBI Ratings

NBI	File	New	NBI	File	New
Deck	5	5	Culvert	N	N
Superstructure	6	6	Channel	8	8
Substructure	5	5	Waterway	8	8

Maintenance Item:
Amount: **Date(YYYY-MM-DD):**
Maintenance item comment:

**Wisconsin Dept. of Transportation
Underwater Bridge Inspection Report/Dive Log
Emxx-01xx Section 84.17 Wis. Statutes**

This form may be required as a supplement to form EM30-01xx for Underwater Bridge Inspections.

Structure No: P-40-0794

Inspection Date: 2008-06-03 **Weather Condition.:** Cloudy, 52 F **Waterline Elev.(ft):**
Safety Concern: Poor visibility **Water Temp.(F):** 60 **Total Days On Site:** 1
Current (ft/s): 1 **Visibility:** 6 in to 1ft **Total Inspection Hours:** 2
Total Inspection Minutes: 30

Elevation Marker Description: Top of bent cap at Bent 1 (El. 7.0). Waterline Elevation = - 1.6.

General Site Condition	
Scour at Bridge Site	No
Embankment Erosion / Conditions	Heavy Riprap
Dive Platform: Shore, Boat, Other	Boat
Location of Boat Access	Milwaukee County public boat landing at Bruce Street and Water Street.

Substructure Unit(s)	Pier #1	Pier #2
Level of Inspection	Level II	Level II
Abutment / Pier Type	PILE BENT	PILE BENT
Dive Log		
Maximum Water Depth, at Unit (ft)	10.4	12.8
Channel Bottom Material, at Unit	Gravel	Silt
Scour at Unit	No	No
Marine Growth / Cleaning Performed? (Y/N)	Y/Y	Y/Y
Debris / Clearing Performed? (Y/N)	N/N	N/N
Mode: Wade, Scuba, Surface Supplied Air:	Scuba	Scuba
Inspection Comments:	None	None

Substructure Unit(s)	Abutment Cardinal	Abutment Non-Cardinal
Level of Inspection		
Dive Log		
Maximum Water Depth, at Unit (ft)	0.0	0.0
Channel Bottom Material, at Unit	RipRap	RipRap
Scour at Unit	No	No
Marine Growth / Cleaning Performed? (Y/N)	N/N	N/N
Debris / Clearing Performed? (Y/N)	N/N	N/N
Mode: Wade, Scuba, Surface Supplied Air:		
Inspection Comments:		

Conclusions

No repairs are recommended at this time.

Recommendations

In accordance with the National Bridge Inspection Standards (NBIS), it is recommended that the substructure units be inspected at intervals not to exceed 60 months. In accordance with NBIS, it is recommended that soundings at the bridge be taken as part of the biennial inspections and during or soon after flood occurrences.

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