



TRANSMITTAL

- FROM:
- Corporate Office • 4700 Kennedy Drive • East Moline, IL 61244 • (309) 792-9305 • Fax (309) 792-8974
 - Davenport Office • One River Place, Suite 106 • 1225 E. River Drive • Davenport, IA 52803 • (563) 322-2421 • Fax (563) 322-1331
 - Macomb Division • 714 E. Jackson, P.O. Box 593 • Macomb, IL 61455 • (309) 833-4594 • Fax (309) 837-4909
 - Milwaukee Division • 5417 North 118th Court • Milwaukee, WI 53225 • (414) 616-4880 • Fax (414) 616-4885
 - Ottawa Division • 1138 Columbus Street • Ottawa, IL 61350 • (815) 433-2080 • Fax (815) 433-5930
 - Peoria Division • 3004 N. Main Street • East Peoria, IL 61611 • (309) 699-5000 • Fax (309) 699-0234
 - Quad City Division • 4700 Kennedy Drive • East Moline, IL 61244 • (309) 792-9350 • Fax (309) 792-8974
 - Rockford Division • 6838 East State Street, Suite 303 • Rockford, IL 61108 • (815) 398-2332 • Fax (815) 398-2496
 - Waukegan Division • 2728 Grand Avenue • Waukegan, IL 60085 • (847) 336-7100 • Fax (847) 336-7155
 - Des Moines Division • 1118 SE Mallard Creek Drive • Ankeny, IA 50021 • (515) 490-8479 • Fax (515) 965-2564

TO: JEFF TORME
MILWAUKEE DIVISION
5417 NORTH 118TH COURT
MILWAUKEE WI 53225

DATE: 7-7-07
 RE: BUDA HIGH ST BRIDGE
BU-06-30-04-032
DOT # 85381

WE ARE SENDING YOU: Attached Under separate cover

Via: MAIL

| COPIES | DATE | NO. | DESCRIPTION |
|--------|--------|-----|------------------------|
| 1 | 7-6-07 | | Revised Correspondence |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

THESE ARE TRANSMITTED AS CHECKED: (If enclosures are not as listed, please notify us at once.)

- As requested
- For review and comment
- For approval
- For signature
- Approved as submitted
- Approved as noted
- Returned for corrections
- For your use
- Prints returned after loan to us

REMARKS: _____

COPY TO: _____

SIGNED: [Signature]

Steve Kuhn

From: Eric Loomis [eloomis@civilinc.com]
Sent: Monday, July 09, 2007 1:59 PM
To: Kuhn, Steve
Subject: FW: Contract 85381 (Buda) - Load Testing of Beam 4B

From: Michael Johnson [mailto:majohn71@gmail.com]
Sent: Fri 7/6/2007 9:56 AM
To: Eric Loomis
Cc: Chris Newkirk; Andy Keenan; Terry Muntz; Steve Schwarz
Subject: Contract 85381 (Buda) - Load Testing of Beam 4B

Eric,

You should have received the proposed load testing procedure from Steve Schwarz yesterday. I have contacted Central Illinois Scale Co. to facilitate the load test by supplying certified weights of the required amount to the jobsite. Based on your desired schedule and the availability of the scale company, I have tentatively planned to conduct the load test on Wednesday morning, July 11, 2007. Please verify that this date is acceptable and we can set a specific time for the test.

To place the weights as desired for the test will require that either 1) access be such that a standard, over-the-road vehicle can drive onto the deck adjacent to the affected beam, or 2) the truck with the weight have access to the edge of the deck and Civil provides equipment suitable to move the weights across the deck, as necessary. The weights are 1000 lb blocks, approximately 16" on all sides. The scale company will have a hand cart available for transporting the weights, if necessary.

As you mentioned previously, the transverse tie will need to be loosened. Given the skew of the deck, beam 4B is tied separately to each of the adjacent beams. So long as the transverse tie pocket on the outside face of the fascia beam has not been grouted, the nut on the outside edge of the deck can be loosened to effectively "disconnect" 4B from the fascia beam. For the adjacent interior beam, the nut on either end of the tie rod assembly will need to be loosened. To accomplish this will require access though the keyway. Although this gap may be quite narrow (depending upon the fit of the particular beams) it should be possible to access the nut and loosen it sufficiently without the need to fully remove any part of the assembly (either a commercially-available open end wrench or one fabricated from heavy gauge sheet metal should work.) I believe that the keyway to the inside of the adjacent interior beam may have already been grouted. If this is the case then the best access to this tie would be the south edge of beam 4B. It would facilitate the test and PEC would appreciate it if Civil could loosen the transverse ties prior to the day of the test. If this can not be done, please let me know so that PEC can make provisions for loosening the tie the morning of the test.

Please let us know as soon as possible when McClure approves the load testing procedure and if July 11th is acceptable for the test date.

Thank you,

--

Michael A. Johnson, P.E.
Prestress Engineering Corp.
15606 E. 3200 North Road
Blackstone, IL 61313
(815) 586-4239
(815) 586-4653 fax



CIVIL CONSTRUCTORS INC

A heavy civil and industrial contractor

1716-179th Street
PO Box 868
East Moline, Illinois
61244

Tel 309 755 5535
Fax 309 755 7576

July 6, 2007

McClure Engineering Associates, Inc.
1138 Columbus Street
Ottawa, IL 61350

Attn: Mr. Stephen Kuhn

Re: High Street Over BNSF Railroad, Buda, IL
Civil Job No. 8654

Dear Mr. Kuhn,

Enclosed you will find our proposed load test procedure for beam 4b on the above-mentioned project. I have also included a hard copy of the QC reports for the beams furnished. We would like to perform this load test early the week of 7/9/07. Please forward your comments/approval at your earliest convenience.

Thank you for your consideration.

Sincerely,

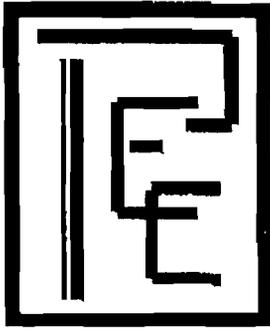
Eric Loomis
Project Manager

Enclosures
Cc: File

OTTAWA
RECEIVED

JUL 26 2007

Bm



PRESTRESS ENGINEERING CORPORATION

CORPORATE OFFICE

2220 Route 176
Prairie Grove, Illinois 60012
(815) 459-4545
Fax: (815) 459-6855
e-mail: info@pre-stress.com
www.pre-stress.com

PRODUCTION OFFICE

15606 E. 3200 North Road
Blackstone, Illinois 61313
(815) 586-4239
Fax: (815) 586-4653
e-mail: prestres@crtelco.com

RECEIVED

JUL 05 2007

Civil Constructors Inc.
1716 179th Street
East Moline, IL 61244

**CIVIL CONSTRUCTORS
EAST MOLINE, ILLINOIS**

June 28, 2007

ATTN: Mr. Eric Loomis

RE: Load testing of bridge beam in Buda IL.

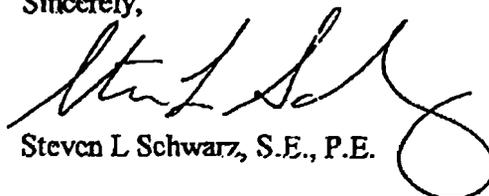
Dear Mr. Loomis:

In response to our meeting two days ago in the Village of Buda, Illinois, Prestress Engineering Corporation will perform a load test on beam 4B to confirm the acceptability of this prestressed deck beam in the field. The deck beam in question is located in the center span, adjacent to the southern fascia beam and has less camber than the beams on either side of it. We believe that the reason for this reduced camber is due to the high release strength (6200+ psi) of the beam as compared with the 4029psi compressive release the other beams were at when the prestressing strands were released.

We propose to show that this beam has adequate strength by placing a load of known weight on the center of this beam and measure the deflection. When the measured deflection is less than the deflection calculated for a beam of design strength (5000 psi), then the beam is acceptable and may be grouted to the adjacent deck beams. A filler of grout will need to be added on top of this beam to even out the surface prior to the application of the waterproofing membrane and wearing surface. Calculations are included showing that this small additional dead load will not have an adverse effect on the structural integrity of this beam.

Please forward this letter and calculations to the proper authorities so that they can approve this procedure and we can begin the test. Please call Mike Johnson at the Blackstone facility to schedule this load test.

Sincerely,



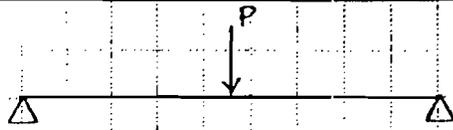
Steven L Schwarz, S.E., P.E.



PRESTRESS ENGINEERING CORPORATION

2220 Route 176
 Prairie Grove, Illinois 60012
 (815) 459-4545 Fax (815) 459-6855

JOB 206370 BUDA BRIDGE
 SHEET NO. 1 OF 2
 CALCULATED BY GLS DATE 6/27/07
 CHECKED BY _____ DATE _____
 SCALE _____



LIVE LOAD DEFLECTION

$$\Delta = \frac{PL^3}{48EI}$$

SAY $P = 1000 \text{ lb}$
 $L = (75' - 10\frac{7}{8}") - 14" = 896.875"$ BEARING LENGTH
 BM LENGTH (2x7")

$I = 80918 \text{ in}^4$ (PER IDOT MANUAL)
 $E = 1.5 \sqrt{f_c} = 150 \sqrt{335000} = 4,286,825 \text{ psi}$

DEAD LOAD = 615 lb/ft (PER IDOT MANUAL)

FOR $P = 1000 \text{ lb}$, $\Delta = \frac{1000 (896.875)^3}{48 (4,286,825) (80918)}$
 $= 0.04" = 0.0036'$

THIS IS TOO SMALL TO MEASURE IN THE FIELD

A WEIGHT OF 10000 lb RESULTS IN A Δ OF 0.4" ($\pm \frac{3}{8}"$)

WHEEL LOAD OF 16,000 lb USED FOR HS-20 > 10,000 (OK)

$M = wL^2/8 + \frac{PL}{4} = 615 (74.74)^2/8 + \frac{10000 (74.74)}{4} = 429.4 \text{ k-ft} + 186.85$
 DEAD LIVE
 $= 616.25 \text{ ft-k SERVICE}$

SERVICE LOAD CAPACITY (FROM IDOT MANUAL, FIG 2.2.36)

$= 1017 \text{ ft-k} > 616 \text{ ft-k}$ (OK)
 BEAM WILL BE LOADED TO 60% CAPACITY.

PRESTRESS ENGINEERING CORPORATION

2220 Route 176
 Prairie Grove, Illinois 60012
 (815) 459-4545 Fax (815) 459-6855

JOB 206370 BUDA BRIDGE

SHEET NO. 2 OF 2

CALCULATED BY _____ DATE _____

CHECKED BY _____ DATE _____

SCALE _____

CALCULATE STRESSES DUE TO ADDITIONAL DEAD LOAD FROM EXTRA TOPPING

FROM BEAM SHOTS TAKEN IN FIELD

EXT. CAMBER = $2\frac{3}{8}$ "

2ND BM = 1"

3RD BM CAMBER = $1\frac{3}{4}$ "

$$\frac{1\frac{3}{4} + 2\frac{3}{8}}{2}$$

$2\frac{1}{16}$ " AVERAGE

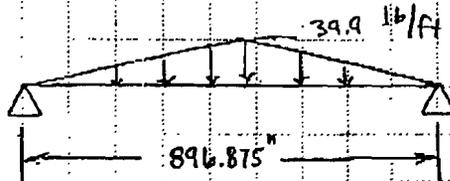
- 1" CAMBER OF BM, IN QUESTION

$1\frac{1}{16}$ " FILLER @ CENTER

$$\frac{1\frac{1}{16}}{12} \times 150 \text{ lb/ft}^3 = 13.3 \text{ lb/ft}^2 \text{ ADDITIONAL DEAD LOAD}$$

X 3' WIDE BEAM

39.9 lb/ft ADDL DEAD LOAD



$$M = \frac{wL^2}{6}$$

$$= \frac{1491 (896.875)}{6}$$

$$w = \frac{39.9/12 \times 896.875}{2} = 1491 \text{ lb}$$

$$= 222,873 \text{ in-lb} = 18,573 \text{ ft-lb} = 18.573 \text{ ft-k} \times 1.3 = 24.14 \text{ ft-k}$$

$$f_b = \frac{M}{S}$$

$$= \frac{222873 \text{ in-lb}}{4964.6} \text{ BOTTOM} = -44.9 \text{ psi bottom}$$

$$= \frac{222873}{4845.1} \text{ TOP} = +46 \text{ psi top}$$

MOMENT CHECK

FROM DESIGN CALCS: FACTORED CONTROLLING MOMENT = $1429 \text{ ft-k} + 24 = 1453 \text{ ft-k} < 1581 \text{ ft-k}$

SHEET 7, DATED 10/6/05

FROM IDOT MANUAL
 FIGURE 2.2.36

Steve Kuhn

From: Blakley, Roger E [Roger.Blakley@illinois.gov]
Sent: Monday, June 18, 2007 3:59 PM
To: Steve Kuhn
Subject: FW: SN 006-6600 Buda Bridge Beam Camber

Steve,

Let me know if you get this.

Roger

From: Blakley, Roger E
Sent: Monday, June 18, 2007 3:34 PM
To: Threadgill, James R
Cc: Kerestes, Lawrence K; Phillips, Wayne L; Jung, Herbert K; Steve Kuhn (S.Kuhn@McClureEngineering.com)
Subject: FW: SN 006-6600 Buda Bridge Beam Camber

Jim,

I will let Steve Kuhn know that he should contact his SE and the SE should determine if the beam is ok (with an approval by the LA) and/or if any remediation is required.

Roger

From: Riechers, Kevin L
Sent: Monday, June 18, 2007 3:05 PM
To: Dirks, Douglas A
Cc: Blakley, Roger E; Jung, Herbert K
Subject: FW: SN 006-6600 Buda Bridge Beam Camber

Doug,

It is our understanding (see e-mail below) that Herb Jung will be requesting that the SE of record look into this matter.

*Kevin L. Riechers, P.E.
Structural Standards Development Group Engineer
Bureau of Bridges and Structures
Illinois Department of Transportation
Phone: (217) 782-9109 ; Fax (217) 782-7960
e-mail: Kevin.Riechers@illinois.gov*

From: Ciccone, John L
Sent: Monday, June 18, 2007 2:37 PM
To: Riechers, Kevin L
Subject: FW: SN 006-6600 Buda Bridge Beam Camber

fyi

From: Klein, James K
Sent: Monday, June 18, 2007 2:32 PM
To: Verhulst, Derek G
Cc: Domagalski, Thomas J; Schiff, Jayme F; Thomson, Mark P; Ciccone, John L
Subject: SN 006-6600 Buda Bridge Beam Camber

Looks great. Thanks, Jim

From: Verhulst, Derek G
Sent: Monday, June 18, 2007 2:20 PM
To: Klein, James K; Ciccone, John L
Cc: Domagalski, Thomas J; Schiff, Jayme F; Thomson, Mark P
Subject: RE: SN 006-6600 Buda Bridge Beam Camber

Jim / John,

I sent the following response to Herb Jung of District 3 this morning in response to the email chain below which found it's way to Mark Thomson and then to me.

Herb.

It appears that there is one beam with significantly less camber than the other beams in the same span. A decrease in camber often indicates a decrease in beam strength. Several things can cause a decrease in beam camber, but not all of them result in decreased beam capacity. At this point, it is difficult to determine the cause. Since this project is a local agency project, the SE of record and the owner will need to make the final decision about the adequacy and acceptability of the beam in question. A couple of years ago, the same issue came up and the beam was rejected by the SE who prepared the plans. In that case also, the beam had been installed and was removed and replaced with a re-fabricated beam. I hope this answers your question.

Derek G. Verhulst, PE, SE

phone (217) 785-2926
fax (217) 782-7960

From: Klein, James K
Sent: Monday, June 18, 2007 2:15 PM
To: Ciccone, John L
Cc: Domagalski, Thomas J; Schiff, Jayme F; Verhulst, Derek G
Subject: SN 006-6600 Buda Bridge Beam Camber

Local Structure. PPCDB where one beam has been constructed and camber is measured as about 1¼", about 1¾" less than the adjacent beams.

Photos at <S:\Local Bridges\0066600-20070615-Buda Bridge Beam Camber.msg>

Derek mentioned this to me late Friday afternoon. It had already filtered through Materials, but my recommendation would have been to leave the decision with the Engineer of Record (McClure) and the Owner, and they could ask us for assistance as necessary. Loss of Camber may generally considered to be a reflection of a loss or deficiency in strength, but there are other factors to be considered from fabrication that I am not so

familiar with.

We had a similar situation in Edgar County 5 years ago that took quite a bit of time and was not pleasant. So with reduction in staff, would try to let their SE be the SE, with assistance from us if he needs it. Understand that this is a Federal Aid project and that we may well be the RE, but would throw it back to Engineer of Record first. I don't know what they expected camber is supposed to be and they should. Jim

-----Original Message-----

From: Schiff, Jayme F
Sent: Monday, June 18, 2007 9:54 AM
To: Klein, James K
Subject: FW: Buda Bridge Beam Camber

Jim,

You may want to take a look at the photos of this beam. I placed the photos in the file. I haven't responded to John's email yet, not sure there is much you can do at this point, I wonder why this happened, did they not pull the strands to the right tension or forget to pull a few of them?

Jayme

-----Original Message-----

From: Blakley, Roger E
Sent: Monday, June 18, 2007 9:48 AM
To: Schiff, Jayme F
Subject: RE: Buda Bridge Beam Camber

006-6600.

-----Original Message-----

From: Schiff, Jayme F
Sent: Monday, June 18, 2007 9:43 AM
To: Blakley, Roger E
Subject: RE: Buda Bridge Beam Camber

Roger,

Do you have a structure number for this bridge?

Jayme F. Schiff, PE SE
Local Bridge Operations Engineer
Bureau of Bridges and Structures
Illinois Department of Transportation
Phone: (217)-785-8748
Fax: (217)-782-7960
Email: Jayme.Schiff@illinois.gov
Please note that our email addresses have changed.

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Looks like a county job. Any comments, thoughts or concerns?

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From: Dirks, Douglas A
Sent: Friday, June 15, 2007 2:01 PM
To: Kowalski, Gary M; Riechers, Kevin L; Ciccone, John L
Cc: Threadgill, James R; Blakley, Roger E; Kerestes, Lawrence K
Subject: FW: Buda Bridge Beam Camber

Any structural concerns? Also, any suggestions to correct problem?

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It is going to receive a asphalt overlay. Is there anything we can do? Should we/could we lay some lev binder in the depression?

Please give us your recommendations/suggestions.

Th.x, roger

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From: Kurt Decker <k.decker@mclureengineering.com>
To: Blakley, Roger E
Sent: Fri Jun 15 10:57:04 2007
Subject: Buda Bridge Beam Camber

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Engineering Technician
1138 Columbus St | Ottawa, IL 61350
Phone: 815.433.2080 | Fax: 815.433.5930

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Sent: Monday, June 18, 2007 2:37 PM
To: Riechers, Kevin L
Subject: FW: SN 006-6600 Buda Bridge Beam Camber

fyi

From: Klein, James K
Sent: Monday, June 18, 2007 2:32 PM
To: Verhulst, Derek G
Cc: Domagalski, Thomas J; Schiff, Jayme F; Thomson, Mark P; Ciccone, John L
Subject: SN 006-6600 Buda Bridge Beam Camber

Looks great. Thanks, Jim

From: Verhulst, Derek G
Sent: Monday, June 18, 2007 2:20 PM
To: Klein, James K; Ciccone, John L
Cc: Domagalski, Thomas J; Schiff, Jayme F; Thomson, Mark P
Subject: RE: SN 006-6600 Buda Bridge Beam Camber

Jim / John,

I sent the following response to Herb Jung of District 3 this morning in response to the email chain below which found it's way to Mark Thomson and then to me.

Herb.

It appears that there is one beam with significantly less camber than the other beams in the same span. A decrease in camber often indicates a decrease in beam strength. Several things can cause a decrease in beam camber, but not all of them result in decreased beam capacity. At this point, it is difficult to determine the cause. Since this project is a local agency project, the SE of record and the owner will need to make the final decision about the adequacy and acceptability of the beam in question. A couple of years ago, the same issue came up and the beam was rejected by the SE who prepared the plans. In that case also, the beam had been installed and was removed and replaced with a re-fabricated beam. I hope this answers your question.

Derek G. Verhulst, PE, SE

phone (217) 785-2926

fax (217) 782-7960

From: Klein, James K
Sent: Monday, June 18, 2007 2:15 PM
To: Ciccone, John L
Cc: Domagalski, Thomas J; Schiff, Jayme F; Verhulst, Derek G
Subject: SN 006-6600 Buda Bridge Beam Camber

Local Structure. PPCDB where one beam has been constructed and camber is measured as about 1¼", about 1¾" less than the adjacent beams.

Photos at S:\Local Bridges\0066600-20070615-Buda Bridge Beam Camber.msg

Derek mentioned this to me late Friday afternoon. It had already filtered through Materials, but my recommendation would have been to leave the decision with the Engineer of Record (McClure) and the Owner, and they could ask us for assistance as necessary. Loss of Camber may generally considered to be a reflection of a loss or deficiency in strength, but there are other factors to be considered from fabrication that I am not so

familiar with.

We had a similar situation in Edgar County 5 years ago that took quite a bit of time and was not pleasant. So with reduction in staff, would try to let their SE be the SE, with assistance from us if he needs it. Understand that this is a Federal Aid project and that we may well be the RE, but would throw it back to Engineer of Record first. I don't know what they expected camber is supposed to be and they should. Jim

-----Original Message-----

From: Schiff, Jayme F
Sent: Monday, June 18, 2007 9:54 AM
To: Klein, James K
Subject: FW: Buda Bridge Beam Camber

Jim,

You may want to take a look at the photos of this beam. I placed the photos in the file. I haven't responded to John's email yet, not sure there is much you can do at this point, I wonder why this happened, did they not pull the strands to the right tension or forget to pull a few of them?

Jayme

-----Original Message-----

From: Blakley, Roger E
Sent: Monday, June 18, 2007 9:48 AM
To: Schiff, Jayme F
Subject: RE: Buda Bridge Beam Camber

006-6600.

-----Original Message-----

From: Schiff, Jayme F
Sent: Monday, June 18, 2007 9:43 AM
To: Blakley, Roger E
Subject: RE: Buda Bridge Beam Camber

Roger,

Do you have a structure number for this bridge?

Jayme F. Schiff, PE SE
Local Bridge Operations Engineer
Bureau of Bridges and Structures
Illinois Department of Transportation
Phone: (217)-785-8748
Fax: (217)-782-7960
Email: Jayme.Schiff@illinois.gov
Please note that our email addresses have changed.

-----Original Message-----

From: Ciccone, John L
Sent: Friday, June 15, 2007 3:14 PM
To: Schiff, Jayme F
Subject: FW: Buda Bridge Beam Camber

Looks like a county job. Any comments, thoughts or concerns?

-----Original Message-----

From: Dirks, Douglas A
Sent: Friday, June 15, 2007 2:01 PM
To: Kowalski, Gary M; Riechers, Kevin L; Ciccone, John L
Cc: Threadgill, James R; Blakley, Roger E; Kerestes, Lawrence K
Subject: FW: Buda Bridge Beam Camber

Any structural concerns? Also, any suggestions to correct problem?

-----Original Message-----

From: Blakley, Roger E
Sent: Friday, June 15, 2007 11:12 AM
To: Dirks, Douglas A
Cc: Threadgill, James R; Kerestes, Lawrence K
Subject: Fw: Buda Bridge Beam Camber

Doug,

We have a bureau county bridge that has a beam with low camber. It is 1 3/4" lower than both beams that are next to it.

It is beam number 4b and the camber was measured at 1 1/4". The other beams measured within 3/4" of this beam. C no. 85381.

It is going to receive a asphalt overlay. Is there anything we can do? Should we/could we lay some lev binder in the depression?

Please give us your recommendations/suggestions.

Th.x, roger

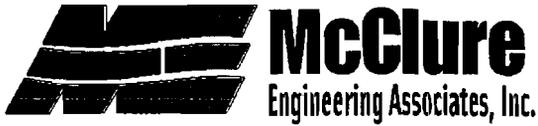
----- Original Message -----

From: Kurt Decker <k.decker@mclureengineering.com>
To: Blakley, Roger E
Sent: Fri Jun 15 10:57:04 2007
Subject: Buda Bridge Beam Camber

Roger,

Here is a couple pictures for you to look at. Please give Steve Kuhn a call as soon as you receive them.

Kurt Decker
Engineering Technician
1138 Columbus St | Ottawa, IL 61350
Phone: 815.433.2080 | Fax: 815.433.5930



June 20 2007

Eric Loomis
Civil Constructors, Inc.
1716-179 Street
East Moline, IL 61244

RE: Buda High St. Bridge
Contract No. 85381
C-92-082-04
Bureau County
Section 01-00008-00-BR
BU 06-50-06-073
Deck Beam #4B

Dear Mr. Loomis,

I have reviewed the camber of the beams in the center span of the subject project and agree with project personnel that beam #206370 4B has significantly less camber than the other beams in the same span. Review of the camber data also indicates a lack of camber growth in beam 4B. Since reduced camber is often an indication of reduced strength, this beam is hereby rejected and shall be removed and replaced.

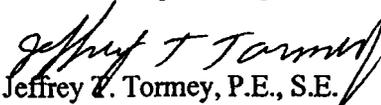
If Civil Constructors Inc. and /or the supplier wishes to propose an alternate method of correcting the problem, other than replacement, it must be approved by me and the Illinois Department of Transportation, Bureau of Bridges and Structures. The cost for review of any such proposal shall be paid by the Contractor.

In addition, the Contractor is reminded that working days will continued to be charged regardless of the chosen method of correction or review time, and the Owner will not be responsible for additional Railroad Insurance due to delays.

Should you have questions or wish to propose an alternative solution please call me.

Sincerely

McClure Engineering Associates, Inc.


Jeffrey Z. Tormey, P.E., S.E.
Senior Structural Engineer

Cc: Illinois Department of Transportation
Village of Buda

FILE 007

Steve Kuhn

Forward to

From: Jeff Tormey [j.tormey@mcclureengineering.com]
Sent: Wednesday, June 20, 2007 2:24 PM
To: 'SteveKuhn'
Subject: High street Bridge

Roger.BlaKley@ILLINOIS.gov



20070620141438198.

pdf

Steve

Here's the letter to Civil Constructors rejecting the beam. Please feel free to print as many copies as needed. I sent the original to Eric Loomis via Fed Ex.

We can develop a table for the top of curb elevations but won't be able to get to it until tomorrow. Hope this is acceptable.

Thanks Steve

Jeff

-----Original Message-----

From: jeff [mailto:j.tormey@mcclureengineering.com]
Sent: Wednesday, June 20, 2007 2:15 PM
To: jeff
Subject:

This E-mail was sent from "RNP87C15D" (Aficio 2027).

Scan Date: 06.20.2007 14:14:37 (-0500)

Queries to: r.moglia@mcclureengineering.com



TRANSMITTAL

- FROM:
- Corporate Office • 4700 Kennedy Drive • East Moline, IL 61244 • (309) 792-9305 • Fax (309) 792-8974
 - Davenport Office • One River Place, Suite 106 • 1225 E. River Drive • Davenport, IA 52803 • (563) 322-2421 • Fax (563) 322-1331
 - Macomb Division • 714 E. Jackson, P.O. Box 593 • Macomb, IL 61455 • (309) 833-4594 • Fax (309) 837-4909
 - Milwaukee Division • 5417 North 118th Court • Milwaukee, WI 53225 • (414) 616-4880 • Fax (414) 616-4885
 - Ottawa Division • 1138 Columbus Street • Ottawa, IL 61350 • (815) 433-2080 • Fax (815) 433-5930
 - Peoria Division • 3004 N. Main Street • East Peoria, IL 61611 • (309) 699-5000 • Fax (309) 699-0234
 - Quad City Division • 4700 Kennedy Drive • East Moline, IL 61244 • (309) 792-9350 • Fax (309) 792-8974
 - Rockford Division • 6838 East State Street, Suite 303 • Rockford, IL 61108 • (815) 398-2332 • Fax (815) 398-2496
 - Waukegan Division • 2728 Grand Avenue • Waukegan, IL 60085 • (847) 336-7100 • Fax (847) 336-7155
 - Des Moines Division • 1118 SE Mallard Creek Drive • Ankeny, IA 50021 • (515) 490-8479 • Fax (515) 965-2564
 -

TO: Jeff Toime
MILWAUKEE DIVISION
5417 North 118th Court
Milwaukee, WI 53225

DATE: 6-26-07
 RE: BUDA HIGH ST
BU 06-50-06-073

WE ARE SENDING YOU: Attached Under separate cover

Via: MAIL/FAX

| COPIES | DATE | NO. | DESCRIPTION |
|--------|---------|-----|-------------------------|
| 1 | 6-25-07 | 5 | BEAM ACCEPTANCE REQUEST |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

THESE ARE TRANSMITTED AS CHECKED: (If enclosures are not as listed, please notify us at once.)

- As requested
- For review and comment
- For approval
- For signature
- Approved as submitted
- Approved as noted
- Returned for corrections
- For your use
- Prints returned after loan to us

REMARKS: JEFF,
HERE IS THE CONTRACTOR'S REQUEST. PLEASE
REVIEW AND TALK TO KUSER.

COPY TO: _____

SIGNED: [Signature]



CIVIL CONSTRUCTORS INC

A heavy civil and industrial contractor

1716-179th Street
PO Box 868
East Moline, Illinois
61244

Tel 309 755 5535
Fax 309 755 7576

June 25, 2007

McClure Engineering Associates, Inc.
1138 Columbus Street
Ottawa, IL 61350

Attn: Mr. Stephen Kuhn

Re: High Street Over BNSF Railroad, Buda, IL
Civil Job No. 8654

Dear Mr. Kuhn,

Attached please find Prestress Engineering's response to your letter of June 21, 2007 concerning beam 4b on the above mentioned project. Prestress Engineering is confident there is no strength loss in the beam and they are prepared to perform a load test in the field to confirm it. They have also suggested three different methods to fix the differential camber issue without removing the beam.

It is our position that it is more prudent to try to correct the beam in place rather than take the chance on replacing the beam with another that may have the same camber measurements. At this stage in the construction adding a faring course of grout to the top of the beam prior to the waterproofing membrane appears to be the most practical and timely solution. Please review the attached letter and inform us if: a) The beam is acceptable based upon the IDOT materials approval, and a faring course of grout can be applied based on structural calculations to be provided by Prestress Engineering, b) A load test is required to prove the structural integrity of the beam. If the beam passes the load test a faring course will be applied per above or if the beam fails it will be removed and replaced, c) The beam must be removed and replaced without any testing and with no guarantee that the replacement may have the same camber as beam 4b.

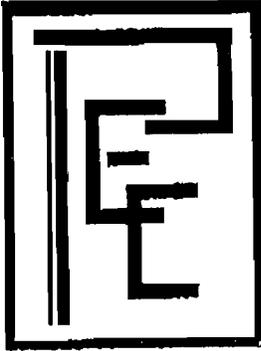
Thank you for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric Loomis", written over a horizontal line.

Eric Loomis
Project Manager

Enclosure
Cc: File



PRESTRESS ENGINEERING CORPORATION

CORPORATE OFFICE
2220 Route 176
Prairie Grove, Illinois 60012
(815)459-4545
Fax: (815)459-6855
e-mail: info@pre-stress.com
www.pre-stress.com

PRODUCTION OFFICE
15606 E. 3200 North Road
Blackstone, Illinois
(815)586-4239
Fax: (815)586-4653
e-mail: pre-stress@hotmail.com

June 25, 2007

Mr. Eric Loomis
Civil Constructors, Inc.
1716 179th Street
East Moline, IL 61244

RE: Camber Issue – Beam 4B
Bureau County – Village of Buda
Section 01-00008-00-BR
IDOT Project No.: C-92-082-04
Contract No.: 85381
Civil Job No. 8654
PEC Job No.: 206370

Dear Mr. Loomis,

Prestress Engineering Corp. (PEC) is in receipt of your letter of June 21, 2007 regarding the above-referenced project that included the letter from McClure Engineering Associates, Inc. (McClure) dated June 20, 2007, which indicates that beam 4B has been rejected.

PEC has visited the jobsite two (2) times to inspect this issue and it was observed that there is a significant difference in the top of beam elevation at the center of span 2 for beam 4B and the two (2) adjacent beams (approximately 1-3/4" maximum.) Based on camber measurements taken on the top of the beams in-place it was confirmed that this difference is largely due to differential camber between these beams.

As I have discussed with you previously, PEC does measure beam cambers and ships the beams in a specific order to minimize the differential camber of adjacent beams. As we have learned, PEC utilizes the setting sequence indicated by the contractor to deliver the beams, however, PEC has not made it a practice to inform the contractor of these actions. As such, the contractor is unaware that changing the erection sequence may have an adverse affect on the fit of the beams, as was the case in this instance.

That being said, it should be noted that there is no tolerance given for camber or differential camber in any IDOT specifications. This is due to the nature of camber, which is a function of a large number of variables and cannot be directly controlled in the manufacturing process.

PEC understands that McClure, which is serving as the Resident Engineer on this project, has the right to reject the beam over concern from the camber despite the fact that there is no specification regarding this issue, however, PEC does take exception to the assertion that the camber issue implies that there is a structural deficiency in the beam. McClure states in their letter "Since reduced camber is often an indication of reduced strength, this beam is hereby rejected and shall be removed and replaced." I am interpreting that statement to mean that "reduced strength" means that the beam has a reduced load carrying capacity, as opposed to something more specific such as low concrete strength or reduced prestressing forces, etc.

Although relatively lower camber could be a sign of low prestressing forces and therefore a reduction in the load carrying capacity of the beam, a much more likely cause would be that the concrete had higher strength at the time of release. Not only is it well established that higher concrete strength at release will lead to less camber, but also, given the high level of inspection provided during stressing operations by PEC and IDOT and the uniformity of the prestressing strand, it is far less likely that there was any significant variation in the prestressing forces that were applied. A review of the compressive strength results for the beams in span 2 confirmed that beam 4B had the highest release strength, while the adjacent beams, 7B and 1W, had the lowest strengths at release.

Furthermore, the IDOT resident inspectors were fully aware of the variation in camber between the various beams cast for this structure and did not, and continue not to feel that this is any indication of a structural deficiency in any of the beams produced for this project. The camber of beam 4B has remained relatively consistent from initial post-pour measurements, pre-shipping measurements, and measurements taken on the beam in-place on the structure. McClure also sites lack of camber growth as justification for rejection of beam 4B. Again, there is no specification governing this criteria and I am unaware of a correlation between camber growth and structural integrity of the beam. There are a number of factors that affect camber in a short-term manner that could obscure any long-term variation (such as temperature, direct sunlight, etc.) and higher concrete strength would again minimize the tendency for camber to increase over time.

Ideally, PEC feels that McClure should accept the approval of beam 4B by the material inspection district (District 3) without requiring any further testing given that there is no evidence that there is a structural deficiency in the beam. The issue of differential camber can be resolved by field adjustments. There are several options for making these adjustments. The simplest method would be to simply make up the difference in the thickness of the asphalt overlay that is already planned for the deck. This may require an additional course over only the affected area to minimize surface variation due to variable compaction of the overlay and would involve additional asphalt. If this option were utilized, PEC would pay the additional costs associated with the added overlay and could provide calculations regarding the affect of the added dead weight, if necessary. Similarly, a faring course of grout could be applied prior to the overlay to eliminate the differential camber. Again, PEC would cover the added cost of placing the faring course and provide any necessary calculations.

Another option for minimizing variations in the surface elevation of the deck would be to shim beam 4B at the ends to "split the difference" in elevation between the center of the span and the ends of the beam. I would only recommend this option if there is a concern over the effect of the added dead weight from utilizing either of the two options listed previously. This option will reduce the amount beam 4B is low at center span but will also make the ends stick up above the adjacent beams a corresponding amount at the ends. This option would also require removal of some grout at one end of the beam and possibly removal of the transverse tie rod. Additionally, the dowel rods, which have already been drilled into the piers and grouted in to the beams, would have to be core drilled so that the beam could be raised sufficiently to place the necessary shims.

If McClure and/or the IDOT Bureau or Bridges and Structures (BBS) are unwilling to accept the approval of the material inspection district, PEC recommends that beam 4B be load tested in-place to determine its current strength. To accomplish this, incremental, known amounts of weight would be applied to the beam and the load-to-deflection response would be monitored. This response would then be compared to the anticipated response as determined by calculations made prior to conducting the test. If this option is desired, PEC will begin immediately to formalize the load testing procedure so that it may be submitted for review by McClure and/or BBS. The load testing procedure would also include the criteria for acceptance or rejection and would need to be review and agreed upon before testing.

If the load testing is performed and the beam is found to be acceptable the same options for correcting the differential camber that were discussed previously would apply.

Finally, if none of the options given above are acceptable to McClure or BBS, or if load testing should confirm that beam 4B is structurally inadequate, the only remaining option would be to remove and replace the affected beam. Although this process is fairly straightforward there are some issues that should be considered before this option is implemented.

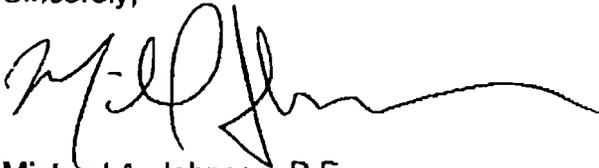
First, the time frame for removal and replacement would necessarily include the IDOT minimum required age of the beam, which would allow the beam to ship on the 5th calendar day (4 days after the beam was cast.)

The second consideration is that the camber of the replacement beam could be the same as the beam to be replaced, or even less. As indicated previously, many variables affect camber and it cannot be directly controlled in the manufacturing process. If the camber of the replacement beam was 1-1/2" or less but the inspection district approved the beam, would this beam again be rejected in the field or would one of the remedies for correcting for the differential camber be utilized?

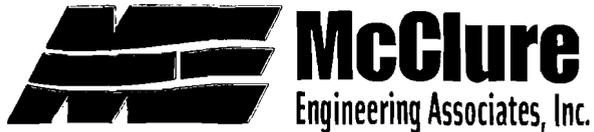
PEC is also aware of the time sensitive nature of completing the structure as McClure has indicated that working days will continue to be charged as we work to resolve this issue. PEC suggests that you seek relief from this requirement given that the beam in question was delivered to the project site and erected on April 12, 2007 and that no notice was given regarding the product being deficient until the initial letter from McClure on June 15, 2007. The two months that the beam was on-site prior to notification would have allowed ample time to resolve this issue.

Please feel free to contact me at your convenience if you wish to discuss the proposed options to remedy this issue or if you feel that more information is needed. You may also forward this information to McClure and/or BBS for consideration, as you see fit.

Sincerely,

A handwritten signature in black ink, appearing to read 'M. Johnson', with a long horizontal flourish extending to the right.

Michael A. Johnson, P.E.
Prestress Engineering Corp.



| | | | | |
|-------------------|--------------|---------|---------|--------------|
| Post-it® Fax Note | 7671 | Date | 6-18-07 | # of pages ▶ |
| To | Loomis | From | | |
| Co./Dept. | | Co. | | |
| Phone # | 309-255-7576 | Phone # | | |
| Fax # | | Fax # | | |

June 15, 2007

Eric Loomis
Civil Constructors, Inc.
1716 - 179 Street
P.O. Box 658
East Moline, IL 61244

RE: Buda High St. Bridge
Contract No. 85381
C-92-082-04
Bureau County
Section 01-00008-00-BR
BU 06-50-06-073

Dear Eric,

Inspection of beam #206370 4B (Sept 16, 2006) shows it to be 1-3/4" lower than the beams on either side. The beam is therefore rejected. Please provide this office and the Bureau of Bridges with your detailed plan of remediation.

Proceeding with construction of this structure will be at your risk.

If you have any questions please contact me.

Very truly yours,

MCCLURE ENGINEERING ASSOC., INC.

Stephen M. Kuhn
Design Engineer

SMK/sga

cc: Village of Buda
IDOT Dist. 3 Materials

FILE COPY