

DEPARTMENT OF TRANSPORTATION
 DIVISION OF ENGINEERING SERVICES
 Office of Structural Materials
 Quality Assurance and Source Inspection



Bay Area Branch
 690 Walnut Ave. St. 150
 Vallejo, CA 94592-1133
 (707) 649-5453
 (707) 649-5493

Contract #: 04-0120F4
 Cty: SF/ALA Rte: 80 PM: 13.2/13.9
 File #: 69.25B

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

Location: Changxing Island, Shanghai, P.R. China

Report No: NCR-000695

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 11-Mar-2010

Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

NCR #: ZPMC-0662

Type of problem:

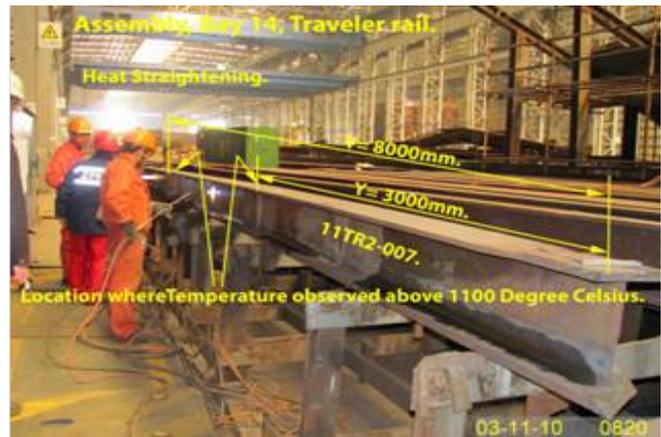
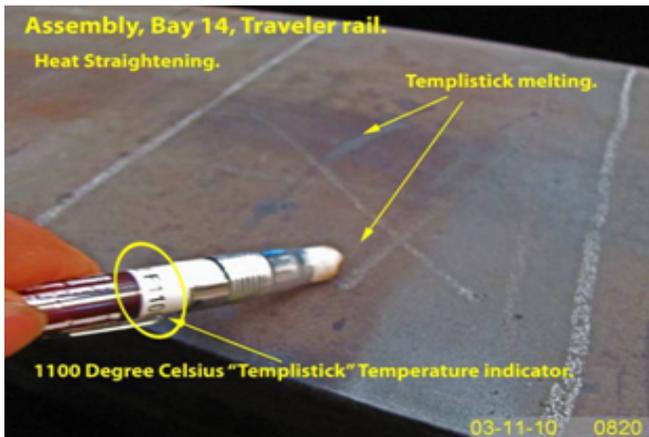
Welding	Concrete	Other	
Welding	Curing	Procedural	Bridge No: 34-0006
Joint fit-up	Coating	Other	Component: Traveler Rail 11TR2-007
Procedural	Procedural	Description: Excessive heat used in heat straightening	

Reference Description: Excessive heat was utilized during heat straightening of the traveler rail 11TR2-007

Description of Non-Conformance:

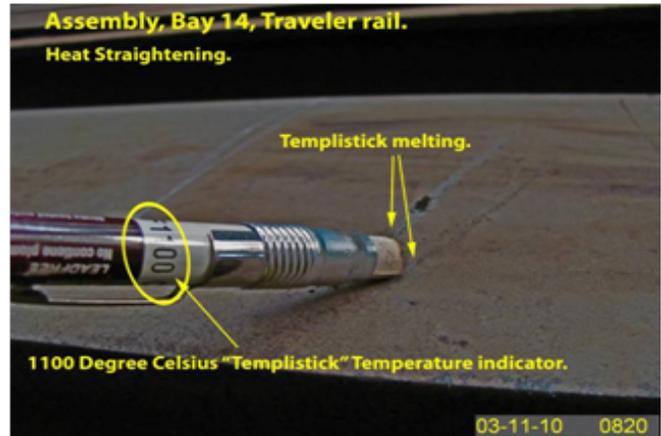
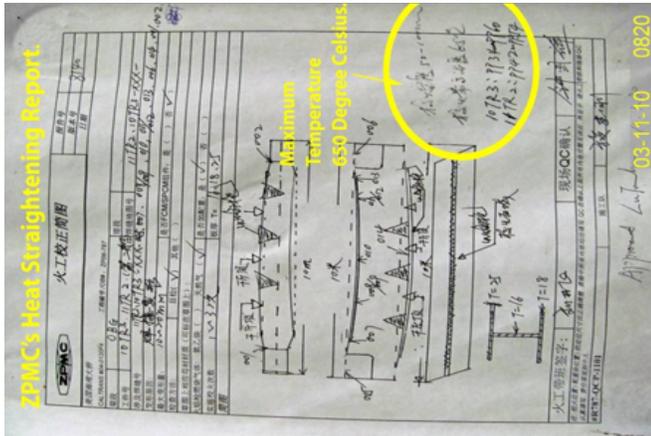
During the Quality Assurance (QA) random in-process visual inspection of OBG traveler rail Heat Straightening, this QA Inspector observed the following:

- Temperature of the heat straightened traveler rail was beyond the allowable 650 Degree Celsius in two locations.
- Per ZPMC heat straightening report (HSR) maximum temperature limit is 650 Degree Celsius.
- The 1100 Degree Celsius rating "templistick" was melted when check was made against the metal surface.
- "Y" location of the spots identified as 3000mm & 8000mm at the flange.
- The Traveler Rail is identified as 11TR2-007.



QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



Applicable reference:

AWS 1.5 WORKMANSHIP, 3.7.3 “Members distorted by welding shall be straightened by mechanical means or by carefully supervised application of a limited amount of localized heat as approved by the Engineer. The temperature of the heated areas as measured by approved methods shall not exceed 600°C [1100°F] for quenched and tempered steel nor 650°C [1200°F] (a dull, red color) for other steels. The part to be heated for straightening shall be substantially free of stress and from external forces, except those stresses resulting from the mechanical straightening method used in conjunction with the application of heat.”

Who discovered the problem: Amit K. Juvekar
Name of individual from Contractor notified: Peter Shaw
Time and method of notification: 0915 Hrs, 03/11/10, Verbal
Name of Caltrans Engineer notified: Bill Howe
Time and method of notification: 1100 Hrs, 03/11/10, Verbal
QC Inspector's Name: Zhang Wen
Was QC Inspector aware of the problem: Yes No
Contractor's proposal to correct the problem:
 N/A

Comments:

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, +(86) 134.7247.7571, who represents the Office of Structural Materials for your project.

Inspected By:	Tsang, Eric	SMR
Reviewed By:	Wahbeh, Mazen	SMR



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
 333 Burma Road
 Oakland CA 94607
 Tel: Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

To: AMERICAN BRIDGE/FLUOR, A JV
 375 BURMA ROAD
 OAKLAND CA 95607

Date: 14-Mar-2010

Contract No: 04-0120F4
 04-SF-80-13.2 / 13.9

Dear: Mr. Charles Kanapicki
Job Name: SAS Superstructure

Attention: Mr. Thomas Nilsson Project/Fabrication Manager
Document No: 05.03.06-000652

Subject: NCR No. ZPMC-0662

Reference Description: Excessive heat was utilized during heat straightening of the traveler rail 11TR2-007

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract document as indicated below:

- Material or Workmanship not in conformance with contract documents.
- Quality Control (QC) not performed in conformance with contract documents.
- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

Material Location: Other **Lift:**

Remarks:

During the Quality Assurance (QA) random in-process visual inspection of OBG traveler rail Heat Straightening, this QA Inspector observed the following:

- Temperature of the heat straightened traveler rail was beyond the allowable 650 Degree Celsius in two locations.
- Per ZPMC heat straightening report (HSR) maximum temperature limit is 650 Degree Celsius.
- The 1100 Degree Celsius rating “templstick” was melted when check was made against the metal surface.
- “Y” location of the spots identified as 3000mm & 8000mm at the flange.
- The Traveler Rail is identified as 11TR2-007.

Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences. A response for the resolution of this issue is expected within 7 days.

Transmitted by: Bill Howe Sr. Transportation Engineer

Attachments: ZPMC-0662

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Tom, Contract Files, Ching Chao

File: 05.03.06

NCR PROPOSED RESOLUTION

To: CALTRANS - SAS Superstructure
333 Burma Road
Oakland CA 94607

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000652

Subject: NCR No. ZPMC-0662

Dated: 12-May-2010

Contract No.: 04-0120F4
04-SF-80-13.2 / 13.9

Job Name: SAS Superstructure

Document No.: ABF-NPR-000655 Rev: 00

Contractor's Proposed Resolution:

Reference Resolution: ZPMC is providing hardness testing results to show that the material that was heated was not compromised. Based on these results, ZPMC requests closure of this NCR.

ZPMC is providing hardness testing results to show that the material that was heated was not compromised. Based on these results, ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000655R00;

Caltrans' comments:

Status: REJ

Date: 12-May-2010

Please provide revised hardness testing data as discussed.

Submitted by: Eagen, Sean

Date: 12-May-2010

Attachment(s):



No. B-753

LETTER OF RESPONSE

TO: American Bridge/Flour

DATE: 2010-5-12

REGARDING: NCR-000695(ZPMC-0662) NCR-000696(ZPMC-0663)

ZPMC acknowledged the heat straightening was performed overheated. ZPMC has written internal NCRs regarding to this issue. The HS areas where were heated to a bright red color have been tested by utilizing hardness testing. ZPMC is providing the hardness testing reports, hoping engineer could take a review and consider closure of these NCRs.

ATTACHMENT:

NCR-000695(ZPMC-0662)

HARDNESS TESTING FOR 11TR2-007

NCR-000696(ZPMC-0663)

HARDNESS TESTING FOR 10TR3-022

JM
5/12/10



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
333 Burma Road
Oakland CA 94607
Tel: Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

To: AMERICAN BRIDGE/FLUOR, A JV
375 BURMA ROAD
OAKLAND CA 95607

Date: 14-Mar-2010

Contract No: 04-0120F4
04-SF-80-13.2 / 13.9

Dear: Mr. Charles Kanapicki
Job Name: SAS Superstructure

Attention: Mr. Thomas Nilsson Project/Fabrication Manager
Document No: 05.03.06-000652

Subject: NCR No. ZPMC-0662

Reference Description: Excessive heat was utilized during heat straightening of the traveler rail 11TR2-007

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- Quality Control (QC) not performed in conformance with contract documents.
- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

Material Location: Other

Lift:

Remarks:

During the Quality Assurance (QA) random in-process visual inspection of OBG traveler rail Heat Straightening, this QA Inspector observed the following:

- Temperature of the heat straightened traveler rail was beyond the allowable 650 Degree Celsius in two locations.
- Per ZPMC heat straightening report (HSR) maximum temperature limit is 650 Degree Celsius.
- The 1100 Degree Celsius rating "templistick" was melted when check was made against the metal surface.
- "Y" location of the spots identified as 3000mm & 8000mm at the flange.
- The Traveler Rail is identified as 11TR2-007.

Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences. A response for the resolution of this issue is expected within 7 days.

Transmitted by: Bill Howe Sr. Transportation Engineer

Attachments: ZPMC-0662

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Tom, Contract Files, Ching Chao
File: 05.03.06

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Contract #: 04-0120F4

Cty: SF/ALA Rte: 80 PM: 13.2/13.9

File #: 69.25B

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

Location: Changxing Island, Shanghai, P.R. China

Report No: NCR-000695

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 11-Mar-2010

Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

NCR #: ZPMC-0662

Type of problem:

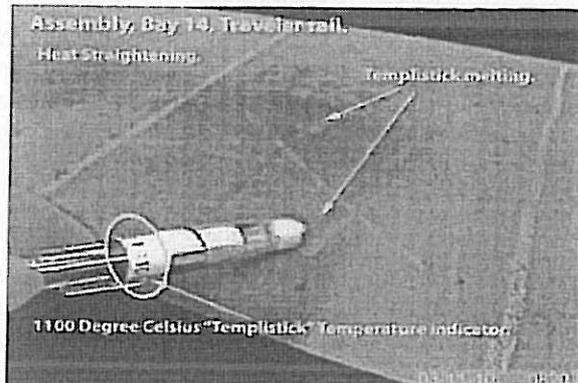
Welding Concrete Other Welding Curing Procedural Bridge No: 34-0006Joint fit-up Coating Other Component: Traveler Rail 11TR2-007Procedural Procedural Description: Excessive heat used in heat straightening

Reference Description: Excessive heat was utilized during heat straightening of the traveler rail 11TR2-007

Description of Non-Conformance:

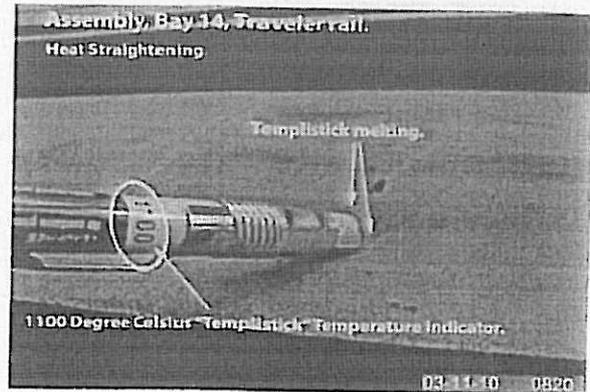
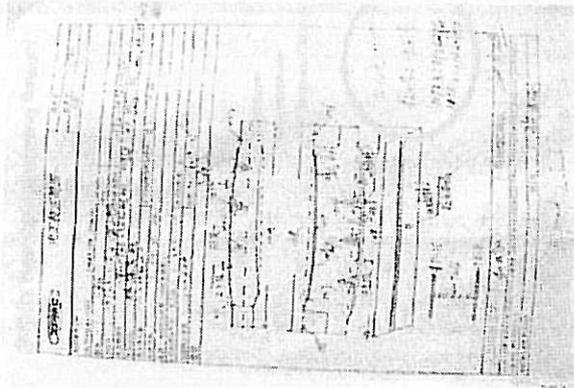
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QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



Applicable reference:

AWS 1.5 WORKMANSHIP, 3.7.3 "Members distorted by welding shall be straightened by mechanical means or by carefully supervised application of a limited amount of localized heat as approved by the Engineer. The temperature of the heated areas as measured by approved methods shall not exceed 600°C [1100°F] for quenched and tempered steel nor 650°C [1200°F] (a dull, red color) for other steels. The part to be heated for straightening shall be substantially free of stress and from external forces, except those stresses resulting from the mechanical straightening method used in conjunction with the application of heat."

Who discovered the problem: Amit K. Juvekar

Name of individual from Contractor notified: Peter Shaw

Time and method of notification: 0915 Hrs, 03/11/10, Verbal

Name of Caltrans Engineer notified: Bill Howe

Time and method of notification: 1100 Hrs, 03/11/10, Verbal

QC Inspector's Name: Zhang Wen

Was QC Inspector aware of the problem: Yes No

Contractor's proposal to correct the problem:

N/A

Comments:

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, +(86) 134.7247.7571, who represents the Office of Structural Materials for your project.

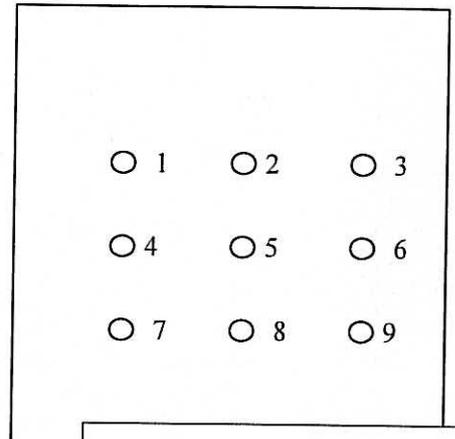
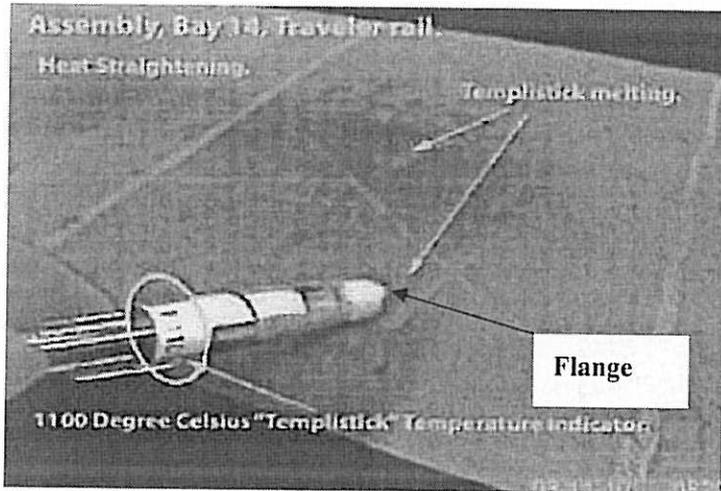
Inspected By: Tsang, Eric

SMR

Reviewed By: Wahbeh, Mazen

SMR

Hardness testing 11TR2-007



Tested points were located by 50mm * 50mm Square on the HS surface & compare area

Flange			
HS Area (3000~3150mm)		No HS Area (1950~2100mm)	
Location	Data	Location	Data
1	148	1	165
2	156	2	171
3	164	3	161
4	134	4	134
5	142	5	140
6	166	6	152
7	151	7	193
8	149	8	158
9	151	9	157

Remark: The compare area what called No HS Areas were located away from the HS Areas at same plate.



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
333 Burma Road
Oakland CA 94607
Tel: Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

To: AMERICAN BRIDGE/FLUOR, A JV
375 BURMA ROAD
OAKLAND CA 95607
Date: 14-Mar-2010
Contract No: 04-0120F4
04-SF-80-13.2 / 13.9
Dear: Mr. Charles Kanapicki
Job Name: SAS Superstructure
Attention: Mr. Thomas Nilsson Project/Fabrication Manager
Document No: 05.03.06-000653
Subject: NCR No. ZPMC-0663

Reference Description: Excessive heat was utilized during heat straightening of the traveler rail 10TR3-022

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract document as indicated below:

- Material or Workmanship not in conformance with contract documents.
- Quality Control (QC) not performed in conformance with contract documents.
- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

Material Location: Other

Lift:

Remarks:

During the Quality Assurance (QA) random in-process visual inspection of OBG traveler rail Heat Straightening, this QA Inspector observed the following:

- Temperature of the heat straightened traveler rail was beyond the allowable 650 Degree Celsius.
- Metal color turns into "cherry red" after it was heat straightened.
- Per ZPMC heat straightening report (HSR) maximum temperature limit is 650 Degree Celsius.
- The 1100 Degree Celsius rating "templstick" was melted when check was made against the metal surface.
- "Y" location of the spot identified was 3890 mm and it is at the flange to web joint.
- The Traveler Rail is identified as 10TR3-022.

Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences. A response for the resolution of this issue is expected within 7 days.

Transmitted by: Bill Howe Sr. Transportation Engineer

Attachments: ZPMC-0663

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Tom, Contract Files, Ching Chao
File: 05.03.06

02.02:15.04
NCT-05.03.06-000653,NCT

Received
NCT-000653 17 Mar 10 Page 1 of 1

DEPARTMENT OF TRANSPORTATION
 DIVISION OF ENGINEERING SERVICES
 Office of Structural Materials
 Quality Assurance and Source Inspection

Bay Area Branch
 690 Walnut Ave. St. 150
 Vallejo, CA 94592-1133
 (707) 649-5453
 (707) 649-5493

Contract #: 04-0120F4

Cty: SF/ALA Rte: 80 PM: 13.2/13.9

File #: 69.25B



QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

Location: Changxing Island, Shanghai, P.R. China

Report No: NCR-000696

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 12-Mar-2010

Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

NCR #: ZPMC-0663

Type of problem:

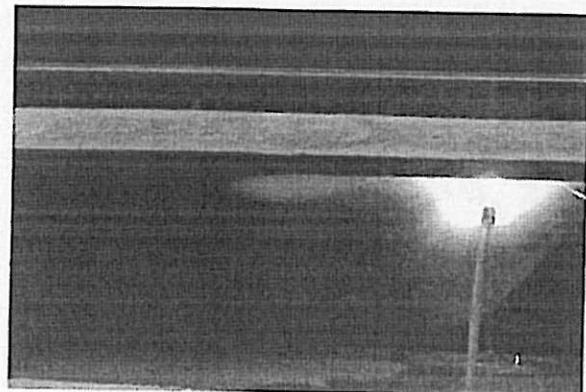
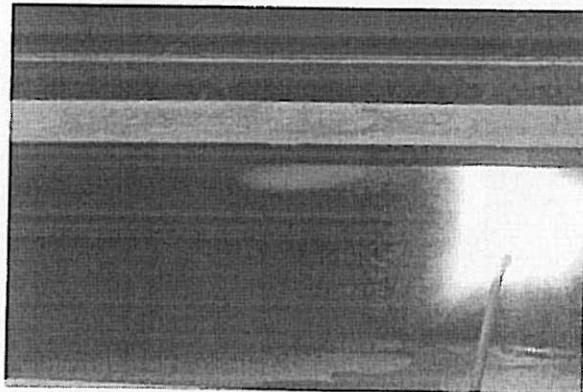
Welding Concrete Other Welding Curing Procedural Bridge No: 34-0006Joint fit-up Coating Other Component: Traveler Rail 10TR3-022Procedural Procedural Description: Excessive heat used in heat straightening

Reference Description: Excessive heat was utilized during heat straightening of the traveler rail 10TR3-022

Description of Non-Conformance:

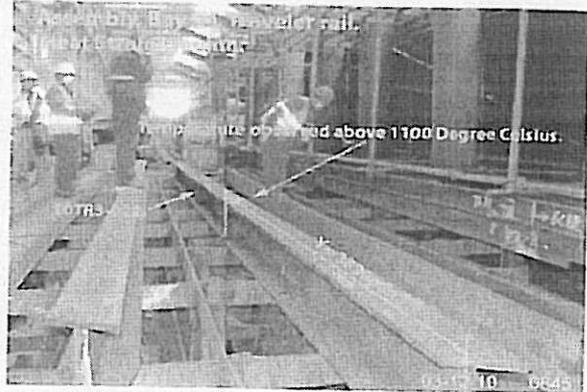
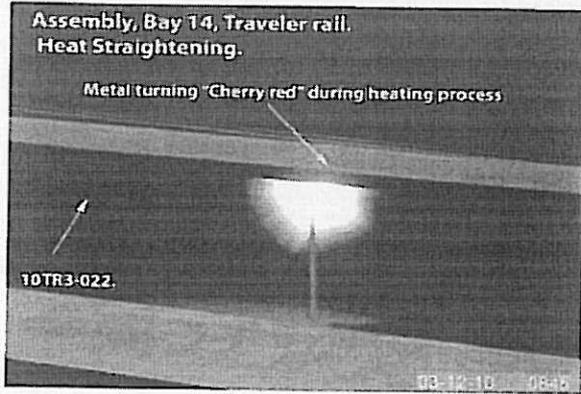
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- Temperature of the heat straightened traveler rail was beyond the allowable 650 Degree Celsius.
- Metal color turns into "cherry red" after it was heat straightened.
- Per ZPMC heat straightening report (HSR) maximum temperature limit is 650 Degree Celsius.
- The 1100 Degree Celsius rating "templistick" was melted when check was made against the metal surface.
- "Y" location of the spot identified was 3890 mm and it is at the flange to web joint.
- The Traveler Rail is identified as 10TR3-022.



QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



Applicable reference:

AWS 1.5 WORKMANSHIP, 3.7.3 "Members distorted by welding shall be straightened by mechanical means or by carefully supervised application of a limited amount of localized heat as approved by the Engineer. The temperature of the heated areas as measured by approved methods shall not exceed 600°C [1100°F] for quenched and tempered steel nor 650°C [1200°F] (a dull, red color) for other steels. The part to be heated for straightening shall be substantially free of stress and from external forces, except those stresses resulting from the mechanical straightening method used in conjunction with the application of heat."

Who discovered the problem: Amit K. Juvekar

Name of individual from Contractor notified: Peter Shaw

Time and method of notification: 0800 Hrs, 03/12/10, Verbal

Name of Caltrans Engineer notified: Bill Howe

Time and method of notification: 1000 Hrs, 03/12/10, Verbal

QC Inspector's Name: Zhang Wei

Was QC Inspector aware of the problem: Yes No

Contractor's proposal to correct the problem:

N/A

Comments:

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, +(86) 134.7247.7571, who represents the Office of Structural Materials for your project.

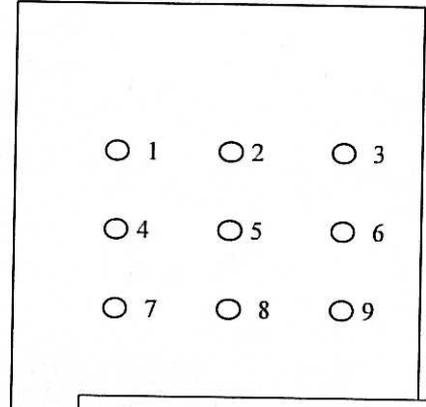
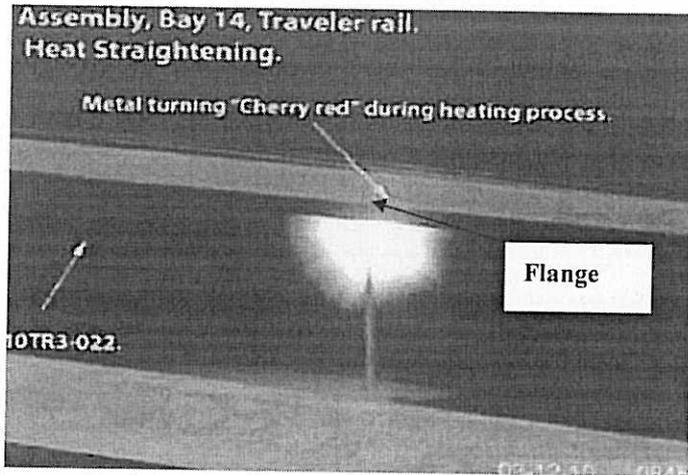
Inspected By: Tsang, Eric

SMR

Reviewed By: Wahbeh, Mazen

SMR

Hardness testing 10TR3-002



Tested points were located by 50mm * 50mm Square on the HS surface & compare area

Flange			
HS Area (3800~4000mm)		No HS Area (3000~3200mm)	
Location	Data	Location	Data
1	157	1	153
2	191	2	146
3	147	3	141
4	160	4	160
5	144	5	144
6	149	6	139
7	148	7	138
8	144	8	153
9	149	9	149

Remark: The compare area what called No HS Area was located away from the HS Areas at same plate.

NCR PROPOSED RESOLUTION

To: CALTRANS - SAS Superstructure
333 Burma Road
Oakland CA 94607

Dated: 21-May-2010

Contract No.: 04-0120F4
04-SF-80-13.2 / 13.9

Attention: Pursell, Gary
Resident Engineer

Job Name: SAS Superstructure

Document No.: ABF-NPR-000655 Rev: 01

Ref: 05.03.06-000652

Subject: NCR No. ZPMC-0662

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has performed hardness testing with the Department's representative present and the results are acceptable based on applicable ASTMs. Based on this, ZPMC requests closure of this NCR.

ZPMC has performed hardness testing with the Department's representative present and the results are acceptable based on applicable ASTMs. Based on this, ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000655R01;

Caltrans' comments:

Status: REJ

Date: 26-May-2010

Provide hardness scale unit for the tested value. (i.e., HV = Vickers Hardness, HB = Brinell Hardness)

Data shall include tested areas that were heated excessively along with control areas for comparison.

ZPMC stated that "after review with ASTM A709 & ASTM A370 what regarding the hardness & tensile requirement, these hardness values were found to be acceptable." Provide analysis to demonstrate how this conclusion is made. (i.e., comparing the actual MTR from the mill) Provide documentation for the Engineer to evaluate acceptance in accordance with the contract requirements.

It should be noted that the scope of ASTM A370 is "for the mechanical testing of wrought and cast steels, stainless steels, and related alloys." Reference such as ASM Metals Reference Book has more relevant approximation of the tensile strength supporting the analysis.

Submitted by: Eagen, Sean

Date: 26-May-2010

Attachment(s):



No. B-766

LETTER OF RESPONSE

TO: American Bridge/Flour

DATE: 2010-5-21

**REGARDING: NCR-000695 (ZPMC-0662) NCR-000696 (ZPMC-0663)
NCR-000713 (ZPMC-0680) NCR-000726 (ZPMC-0689)**

ZPMC acknowledged the heat straightening was performed overheated. Hardness Tests were performed to the affected components under the witness of department's representative. After review with ASTM A709 & ASTM A370 what regarding the hardness & tensile requirement, these hardness values were found to be acceptable. Based on this, ZPMC is providing the hardness testing report and is requesting closures of these NCRs.

ATTACHMENT:

NCR-000695(ZPMC-0662)
HARDNESS TESTING FOR 11TR2-007
NCR-000696(ZPMC-0663)
HARDNESS TESTING FOR 10TR3-022
NCR-000713 (ZPMC-0680)
HARDNESS TESTING FOR FB3014-001
NCR-000726 (ZPMC-0689)
HARDNESS TESTING FOR TR6A-052

A handwritten signature in black ink, appearing to be "J. M. [unclear]", is located below the attachment list.

5/21/10



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
333 Burma Road
Oakland CA 94607
Tel: Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

To: AMERICAN BRIDGE/FLUOR, A JV
375 BURMA ROAD
OAKLAND CA 95607

Date: 14-Mar-2010

Contract No: 04-0120F4
04-SF-80-13.2 / 13.9

Dear: Mr. Charles Kanapicki
Attention: Mr. Thomas Nilsson Project/Fabrication Manager
Subject: NCR No. ZPMC-0662

Job Name: SAS Superstructure
Document No: 05.03.06-000652

Reference Description: Excessive heat was utilized during heat straightening of the traveler rail 11TR2-007

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract document as indicated below:

- Material or Workmanship not in conformance with contract documents.
- Quality Control (QC) not performed in conformance with contract documents.
- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

Material Location: Other

Lift:

Remarks:

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- "Y" location of the spots identified as 3000mm & 8000mm at the flange.
- The Traveler Rail is identified as 11TR2-007.

Action Required and/or Action Taken:

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Transmitted by: Bill Howe Sr. Transportation Engineer

Attachments: ZPMC-0662

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Tom, Contract Files, Ching Chao
File: 05.03.06

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.25B

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

Location: Changxing Island, Shanghai, P.R. China

Report No: NCR-000695

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 11-Mar-2010

Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

NCR #: ZPMC-0662

Type of problem:

Welding Concrete Other

Welding Curing Procedural Bridge No: 34-0006

Joint fit-up Coating Other Component: Traveler Rail 11TR2-007

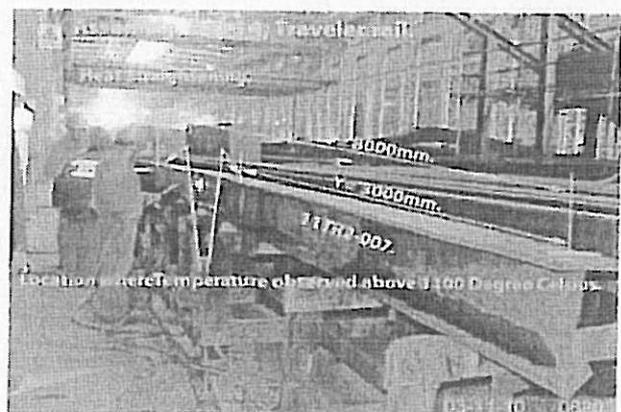
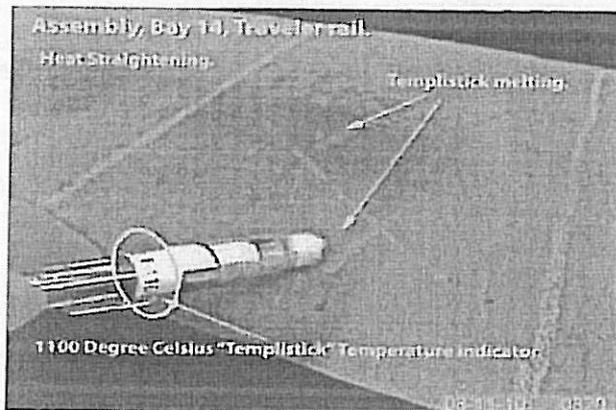
Procedural Procedural Description: Excessive heat used in heat straightening

Reference Description: Excessive heat was utilized during heat straightening of the traveler rail 11TR2-007

Description of Non-Conformance:

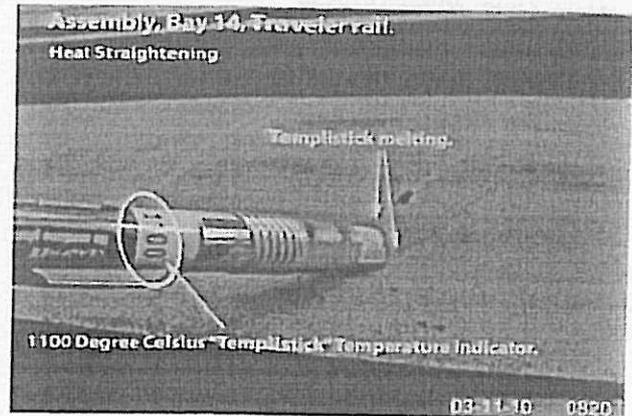
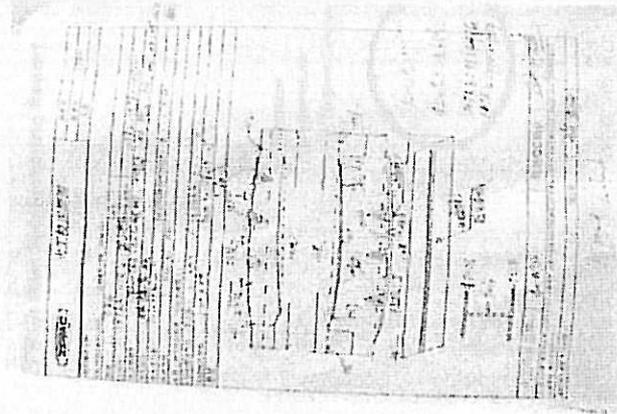
During the Quality Assurance (QA) random in-process visual inspection of OBG traveler rail Heat Straightening, this QA Inspector observed the following:

- Temperature of the heat straightened traveler rail was beyond the allowable 650 Degree Celsius in two locations.
- Per ZPMC heat straightening report (HSR) maximum temperature limit is 650 Degree Celsius.
- The 1100 Degree Celsius rating "templstick" was melted when check was made against the metal surface.
- "Y" location of the spots identified as 3000mm & 8000mm at the flange.
- The Traveler Rail is identified as 11TR2-007.



QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



Applicable reference:

AWS 1.5 WORKMANSHIP, 3.7.3 "Members distorted by welding shall be straightened by mechanical means or by carefully supervised application of a limited amount of localized heat as approved by the Engineer. The temperature of the heated areas as measured by approved methods shall not exceed 600°C [1100°F] for quenched and tempered steel nor 650°C [1200°F] (a dull, red color) for other steels. The part to be heated for straightening shall be substantially free of stress and from external forces, except those stresses resulting from the mechanical straightening method used in conjunction with the application of heat."

Who discovered the problem: Amit K. Juvekar

Name of individual from Contractor notified: Peter Shaw

Time and method of notification: 0915 Hrs, 03/11/10, Verbal

Name of Caltrans Engineer notified: Bill Howe

Time and method of notification: 1100 Hrs, 03/11/10, Verbal

QC Inspector's Name: Zhang Wen

Was QC Inspector aware of the problem: Yes No

Contractor's proposal to correct the problem:

N/A

Comments:

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, +(86) 134.7247.7571, who represents the Office of Structural Materials for your project.

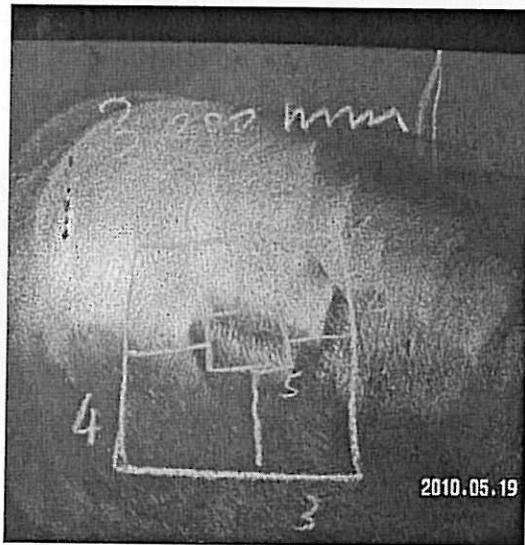
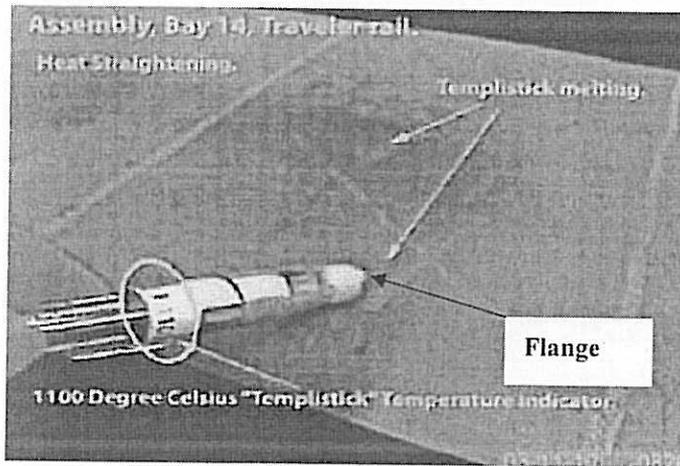
Inspected By: Tsang, Eric

SMR

Reviewed By: Wahbeh, Mazen

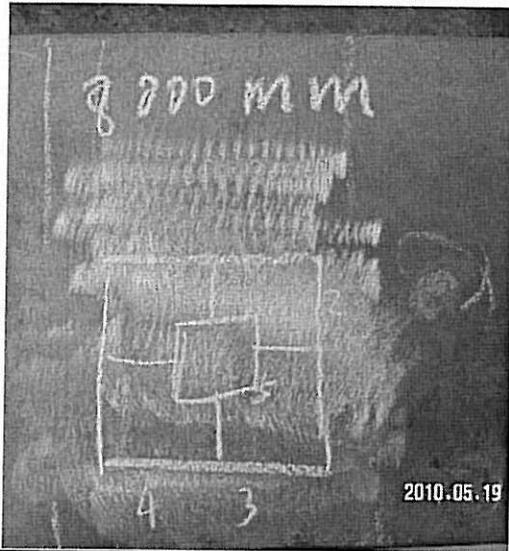
SMR

Hardness testing 11TR2-007



Area \ Value	a	b	c	d	e	Average Value
1	203	242	218	243	208	223
2	184	201	195	193	166	191
3	189	267	219	200	196	205
4	225	197	197	201	208	202
5	239	190	200	200	196	199

11TR2-007 Flange at 3000mm Hardness Testing Result



Area \ Value	a	b	c	d	e	Average Value
1	181	180	191	192	196	188
2	212	213	178	189	196	199
3	216	221	209	194	217	214
4	210	225	198	234	217	217
5	212	199	195	209	194	201

11TR2-007 Flange at 8000mm Hardness Testing Result

Remark: The highest and the lowest readings are discarded when calculating the average value.



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
333 Burma Road
Oakland CA 94607
Tel: Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

To: AMERICAN BRIDGE/FLUOR, A JV
375 BURMA ROAD
OAKLAND CA 95607

Date: 14-Mar-2010

Contract No: 04-0120F4
04-SF-80-13.2 / 13.9

Dear: Mr. Charles Kanapicki
Attention: Mr. Thomas Nilsson Project/Fabrication Manager
Subject: NCR No. ZPMC-0663

Job Name: SAS Superstructure
Document No: 05.03.06-000653

Reference Description: Excessive heat was utilized during heat straightening of the traveler rail 10TR3-022

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract document as indicated below:

- Material or Workmanship not in conformance with contract documents.
- Quality Control (QC) not performed in conformance with contract documents.
- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

Material Location: Other

Lift:

Remarks:

During the Quality Assurance (QA) random in-process visual inspection of OBG traveler rail Heat Straightening, this QA Inspector observed the following:

- Temperature of the heat straightened traveler rail was beyond the allowable 650 Degree Celsius.
- Metal color turns into "cherry red" after it was heat straightened.
- Per ZPMC heat straightening report (HSR) maximum temperature limit is 650 Degree Celsius.
- The 1100 Degree Celsius rating "templstick" was melted when check was made against the metal surface.
- "Y" location of the spot identified was 3890 mm and it is at the flange to web joint.
- The Traveler Rail is identified as 10TR3-022.

Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences. A response for the resolution of this issue is expected within 7 days.

Transmitted by: Bill Howe Sr. Transportation Engineer
Attachments: ZPMC-0663

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Tom, Contract Files, Ching Chao
File: 05.03.06

02.02.15.04
05.03.06-000653.NCT

Received
NCT-000653 17 Mar 10 Page 1 of 1

DEPARTMENT OF TRANSPORTATION
 DIVISION OF ENGINEERING SERVICES
 Office of Structural Materials
 Quality Assurance and Source Inspection



Bay Area Branch
 690 Walnut Ave. St. 150
 Vallejo, CA 94592-1133
 (707) 649-5453
 (707) 649-5493

Contract #: 04-0120F4
 Cty: SF/ALA Rte: 80 PM: 13.2/13.9
 File #: 69.25B

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

Location: Changxing Island, Shanghai, P.R. China

Report No: NCR-000696

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 12-Mar-2010

Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

NCR #: ZPMC-0663

Type of problem:

Welding Concrete Other

Welding Curing Procedural Bridge No: 34-0006

Joint fit-up Coating Other Component: Traveler Rail 10TR3-022

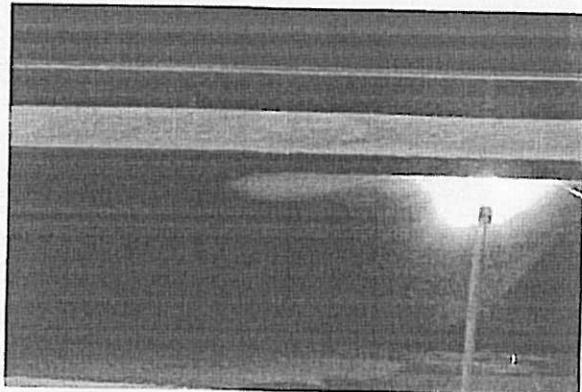
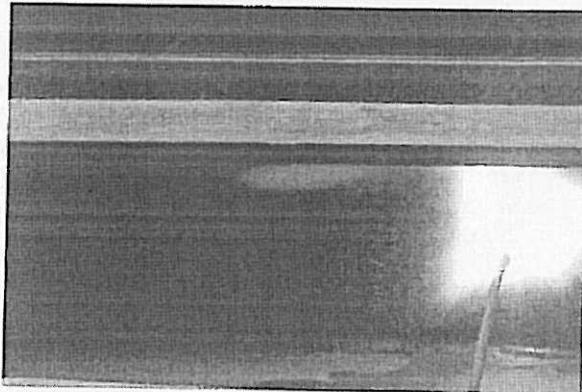
Procedural Procedural Description: Excessive heat used in heat straightening

Reference Description: Excessive heat was utilized during heat straightening of the traveler rail 10TR3-022

Description of Non-Conformance:

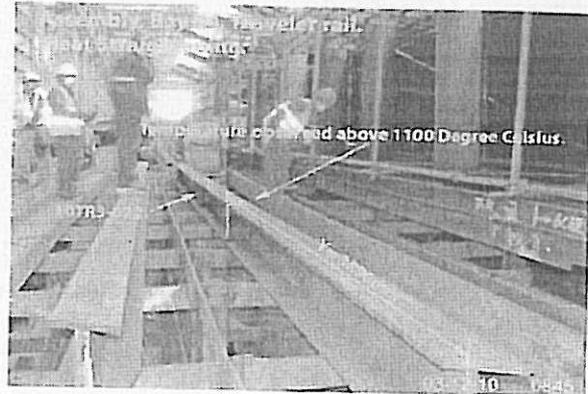
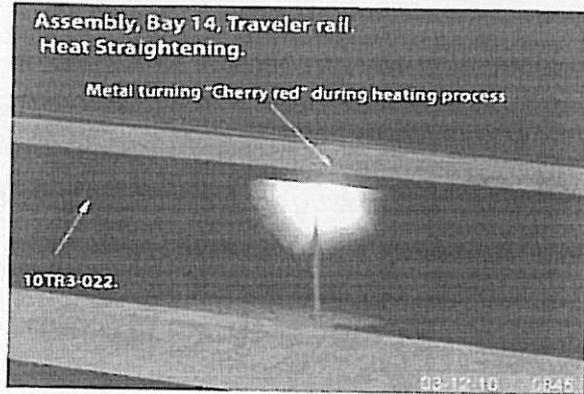
During the Quality Assurance (QA) random in-process visual inspection of OBG traveler rail Heat Straightening, this QA Inspector observed the following:

- Temperature of the heat straightened traveler rail was beyond the allowable 650 Degree Celsius.
- Metal color turns into "cherry red" after it was heat straightened.
- Per ZPMC heat straightening report (HSR) maximum temperature limit is 650 Degree Celsius.
- The 1100 Degree Celsius rating "templstick" was melted when check was made against the metal surface.
- "Y" location of the spot identified was 3890 mm and it is at the flange to web joint.
- The Traveler Rail is identified as 10TR3-022.



QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



Applicable reference:

AWS 1.5 WORKMANSHIP, 3.7.3 "Members distorted by welding shall be straightened by mechanical means or by carefully supervised application of a limited amount of localized heat as approved by the Engineer. The temperature of the heated areas as measured by approved methods shall not exceed 600°C [1100°F] for quenched and tempered steel nor 650°C [1200°F] (a dull, red color) for other steels. The part to be heated for straightening shall be substantially free of stress and from external forces, except those stresses resulting from the mechanical straightening method used in conjunction with the application of heat."

Who discovered the problem: Amit K. Juvekar

Name of individual from Contractor notified: Peter Shaw

Time and method of notification: 0800 Hrs, 03/12/10, Verbal

Name of Caltrans Engineer notified: Bill Howe

Time and method of notification: 1000 Hrs, 03/12/10, Verbal

QC Inspector's Name: Zhang Wei

Was QC Inspector aware of the problem: Yes No

Contractor's proposal to correct the problem:

N/A

Comments:

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, +(86) 134.7247.7571, who represents the Office of Structural Materials for your project.

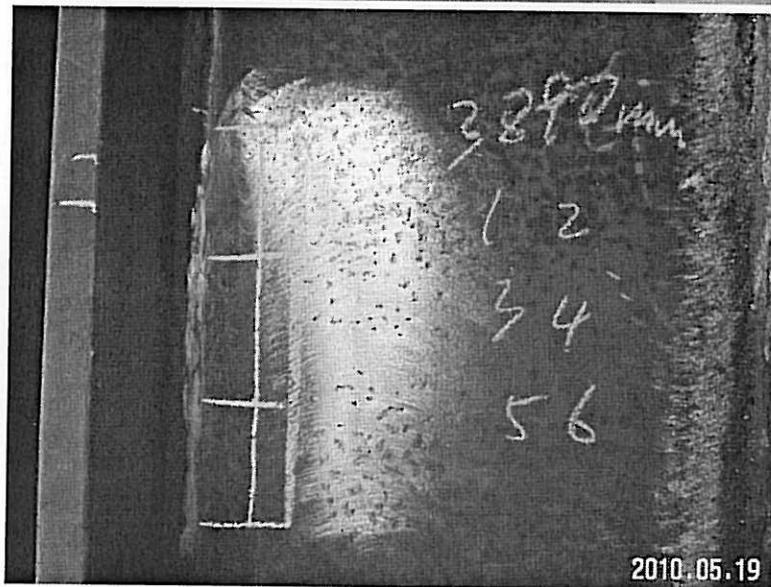
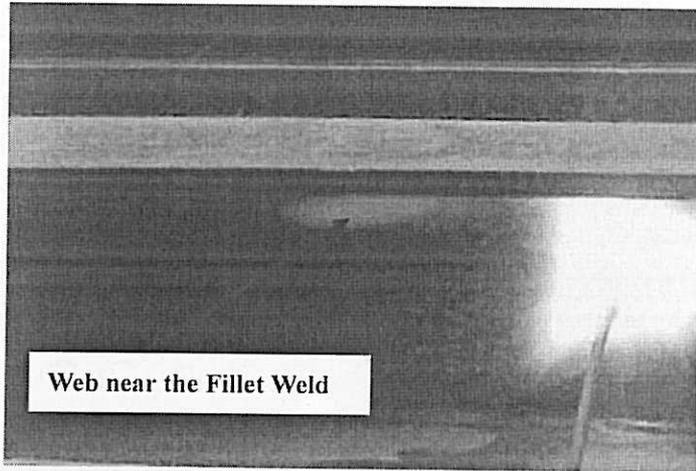
Inspected By: Tsang, Eric

SMR

Reviewed By: Wahbeh, Mazen

SMR

Hardness testing 10TR3-022



Area \ Value	a	b	c	d	e	Average Value
1	175	177	172	175	196	176
2	180	183	185	184	184	184
3	175	180	178	180	181	179
4	186	178	186	179	178	181
5	179	182	172	168	171	174
6	179	182	172	168	171	174

10TR3-022 Web Hardness Testing Result

Remark: The highest and the lowest readings are discarded when calculating the average value.



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
 666 Feng Bin Road Room 708, Changxing Island
 Shanghai 201913 PR China
 Tel: 510-376-8234 Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

To: AMERICAN BRIDGE/FLUOR, A JV
 375 BURMA ROAD
 OAKLAND CA 95607

Date: 23-Apr-2010

Contract No: 04-0120F4
 04-SF-80-13.2 / 13.9

Dear: Mr. Charles Kanapicki
 Attention: Mr. Thomas Nilsson Project/Fabrication Manager

Job Name: SAS Superstructure

Subject: NCR No. ZPMC-0680

Document No: 05.03.06-000670

Reference Description: Heat straightening utilizing excessive heat and performing the work with no written procedure to show QA and QC on Floorbeam

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract document as indicated below:

- Material or Workmanship not in conformance with contract documents.
- Quality Control (QC) not performed in conformance with contract documents.
- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

Material Location: OBG

Lift: 12

Remarks:

During random in process observations of OBG segment 12CE in Bay 14, Caltrans Quality Assurance (QA) Inspector observed the following issues:

- Heat straightening was performed on Floorbeam FB3014-001 without an approved heat straightening document.
- ZPMC had a crane lifting upward with an unknown amount of uplifting force on the Floorbeam while heat straightening the Floorbeam base metal to a bright cherry-red color.
- The AWS D1.5 Section 3.7.3 states that the heated steel shall not exceed 650°C, which gives a dull red color.
- ZPMC QC Certified Welding Inspector (CWI) Geng Wei and the ABF representative Yang Chao were not aware that this heat straightening was taking place.
- ZPMC CWI did not know if a heat straightening document had been submitted for this activity, and no document was issued to record this activity had taken place.
- A temp stick, digital temperature measurement gauge, or other similar means of monitoring the heat input was not utilized by ZPMC personnel and the actual maximum attained temperature was not measured.
- Floorbeam FB3014-001 is welded in place at OBG segment 12CE near panel point PP115.5.

Action Required and/or Action Taken:

Please provide HSR and documentations that demonstrate the over-heated element is acceptable. Propose a resolution for the identified non-conformance to prevent future occurrences. A response for the resolution of this issue is expected within 14 days.

Transmitted by: Stanley Ku Sr. Bridge Engineer

Attachments: ZPMC-0680

cc: Gary Pursell, Peter Siegenthaler, Jason Tom, Bill Casey

File: 05.03.06

02.02.15.04
 HZ 05.03.06-000670.NCT

Received
 NCT-000670 26 Apr 10 Page 1 of 1

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.25B

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

Location: Changxing Island, Shanghai, P.R. China

Report No: NCR-000713

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 21-Apr-2010

Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

NCR #: ZPMC-0680

Type of problem:

Welding Concrete Other

Welding Curing Procedural

Joint fit-up Coating Other

Procedural Procedural Description:

Bridge No: 34-0006

Component: OBG Segment 12CE Floorbeam

Reference Description: Heat straightening utilizing excessive heat and performing the work with no written procedure to show QA and QC on Floorbeam FB3014-001

Description of Non-Conformance:

During random in process observations of OBG segment 12CE in Bay 14, this Caltrans Quality Assurance (QA) Inspector observed the following issues:

- Heat straightening was performed on Floorbeam FB3014-001 without an approved heat straightening document.
- ZPMC had a crane lifting upward with an unknown amount of uplifting force on the Floorbeam while heat straightening the Floorbeam base metal to a bright cherry-red color.
- The AWS D1.5 Section 3.7.3 states that the heated steel shall not exceed 650°C, which gives a dull red color.
- ZPMC QC Certified Welding Inspector (CWI) Geng Wei and the ABF representative Yang Chao were not aware that this heat straightening was taking place.
- ZPMC CWI did not know if a heat straightening document had been submitted for this activity, and no document was issued to record this activity had taken place.
- A temp stick, digital temperature measurement gauge, or other similar means of monitoring the heat input was not utilized by ZPMC personnel and the actual maximum attained temperature was not measured.
- Floorbeam FB3014-001 is welded in place at OBG segment 12CE near panel point PP115.5.

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 3)



Applicable reference:

AWS D1.5 2002, Section 3.7.3 – “Members distorted by welding shall be straightened by mechanical means or by carefully supervised application of a limited amount of localized heat as approved by the Engineer.” The temperature of the heated areas as measured by approved methods shall not exceed 600°C [1100°F] for quenched and tempered steel nor 650°C [1200°F] (a dull, red color) for other steels. The part to be heated for straightening shall be substantially free of stress and from external forces, except those stresses resulting from the mechanical straightening.”

Special Provisions Section 8-3; The Engineer shall be notified in writing when welding problems, deficiencies, base metal repairs, or any other type of repairs not submitted in the WQCP are discovered and also of the proposal repair procedures to correct them.

Who discovered the problem: Paul Dawson

Name of individual from Contractor notified: Yang Chao

Time and method of notification: 2100 hours, 04-21-2010, Verbal

Name of Caltrans Engineer notified: Sean Eagen, Stanley Ku, Aaron Prchlik

Time and method of notification: 0720 hours, 04-22-2010, Verbal

QC Inspector's Name: Gang Wei

Was QC Inspector aware of the problem:

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 3 of 3)

Yes No

Contractor's proposal to correct the problem:

N/A

Comments:

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, +(86) 134.7247.7571, who represents the Office of Structural Materials for your project.

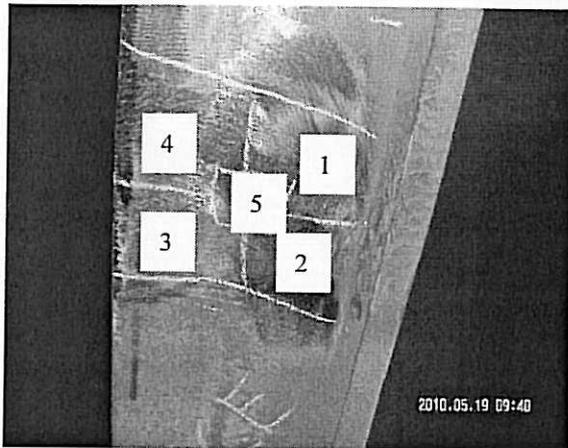
Inspected By: Tsang, Eric

SMR

Reviewed By: Wahbeh, Mazen

SMR

Hardness testing for FB3014-001 @ PP115.5 12CE



Area \ Value	a	b	c	d	e	Average Value
1	161	129	159	181	186	167
2	165	159	152	169	159	161
3	128	151	179	161	166	159
4	166	183	173	173	166	171
5	169	181	179	182	195	181

Floor Beam Lower Flange Hardness Testing Result

Remark: The highest and the lowest readings are discarded when calculating the average value.



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
666 Feng Bin Road Room 708, Changxing Island
Shanghai 201913 PR China
Tel: 021-56856666 ext 207061 Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

To: AMERICAN BRIDGE/FLUOR, A JV
375 BURMA ROAD
OAKLAND CA 95607

Date: 03-May-2010

Contract No: 04-0120F4
04-SF-80-13.2 / 13.9

Dear: Mr. Charles Kanapicki
Attention: Mr. Thomas Nilsson Project/Fabrication Manager

Job Name: SAS Superstructure

Subject: NCR No. ZPMC-0689

Document No: 05.03.06-000684

Reference Description: Excessive heat was utilized during heat straightening of the traveler rail bracket TR6A-052; QC allowed heat straightening to

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract document as indicated below:

- Material or Workmanship not in conformance with contract documents.
- Quality Control (QC) not performed in conformance with contract documents.
- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

Material Location: OBG

Lift: N/A

Remarks:

During the Quality Assurance (QA) random in-process observations of the fabrication of OBG Traveler Rail (TR) brackets, this Caltrans QA Inspector observed the following:

- ZPMC personnel perform heat straightening of traveler rail bracket base plate. The material was heated to a bright red color.
- Per ZPMC Heat Straightening Report identified as HSR1 (B)-8405, the maximum temperature is 650 °C.
- AWS D1.5 2002 defines the color of material heated to 650 °C as a "dull red color".
- A temperature indicating crayon, digital temperature measurement gauge, or other similar means of monitoring the temperature was not utilized by ZPMC QC and the actual maximum attained temperature was not measured.
- ZPMC QC personnel Shen Jian Gao was aware of the on-going heat straightening work performed without any temperature measuring device.
- The Traveler Rail Bracket is identified as TR6A-052.
- The base material thickness measured 30mm.

Action Required and/or Action Taken:

Please provide HSR and documentations that demonstrate the over-heated element is acceptable. Propose a resolution for the identified non-conformance to prevent future occurrences. A response for the resolution of this issue is expected within 7 days.

Transmitted by: Sean Eagen Transportation Engineer

Attachments: ZPMC-0689

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Tom, Contract Files, Ching Chao, Bill Casey

File: 05.03.06

DEPARTMENT OF TRANSPORTATION
 DIVISION OF ENGINEERING SERVICES
 Office of Structural Materials
 Quality Assurance and Source Inspection



Bay Area Branch
 690 Walnut Ave. St. 150
 Vallejo, CA 94592-1133
 (707) 649-5453
 (707) 649-5493

Contract #: 04-0120F4
 Cty: SF/ALA Rte: 80 PM: 13.2/13.9
 File #: 69.25B

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

Location: Changxing Island, Shanghai, P.R. China

Report No: NCR-000726

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 01-May-2010

Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

NCR #: ZPMC-0689

Type of problem:

Welding **Concrete** **Other**

Welding **Curing** **Procedural**

Joint fit-up **Coating** **Other**

Procedural **Procedural** **Description:**

Bridge No: 34-0006

Component: OBG Traveler Rail Bracket

Reference Description: Excessive heat was utilized during heat straightening of the traveler rail bracket TR6A-052; QC allowed heat straightening to be performed without a temperature measuring device

Description of Non-Conformance:

During the Quality Assurance (QA) random in-process observations of the fabrication of OBG Traveler Rail (TR) brackets, this Caltrans QA Inspector observed the following:

-ZPMC personnel perform heat straightening of traveler rail bracket base plate. The material was heated to a bright red color.

-Per ZPMC Heat Straightening Report identified as HSR1 (B)-8405, the maximum temperature is 650 °C.

-AWS D1.5 2002 defines the color of material heated to 650 °C as a "dull red color".

-A temperature indicating crayon, digital temperature measurement gauge, or other similar means of monitoring the temperature was not utilized by ZPMC QC and the actual maximum attained temperature was not measured.

-ZPMC QC personnel Shen Jian Gao was aware of the on-going heat straightening work performed without any temperature measuring device.

-The Traveler Rail Bracket is identified as TR6A-052.

-The base material thickness measured 30mm.

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



Applicable reference:

AWS 1.5 2002 section 3.7.3 "Members distorted by welding shall be straightened by mechanical means or by carefully supervised application of a limited amount of localized heat as approved by the Engineer. The temperature of the heated areas as measured by approved methods shall not exceed 600°C [1100°F] for quenched and tempered steel nor 650°C [1200°F] (a dull, red color) for other steels. The part to be heated for straightening shall be substantially free of stress and from external forces, except those stresses resulting from the mechanical straightening method used in conjunction with the application of heat."

Who discovered the problem: Surendra Prabhu

Name of individual from Contractor notified: Wang Wen Bin

Time and method of notification: 1515 Hrs, 05/01/10, Verbal

Name of Caltrans Engineer notified: Stanley Ku

Time and method of notification: 1030 hours, 05/02/10, Verbal

QC Inspector's Name: Shen Jian Gao

Was QC Inspector aware of the problem: Yes No

Contractor's proposal to correct the problem:

N/A

Comments:

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

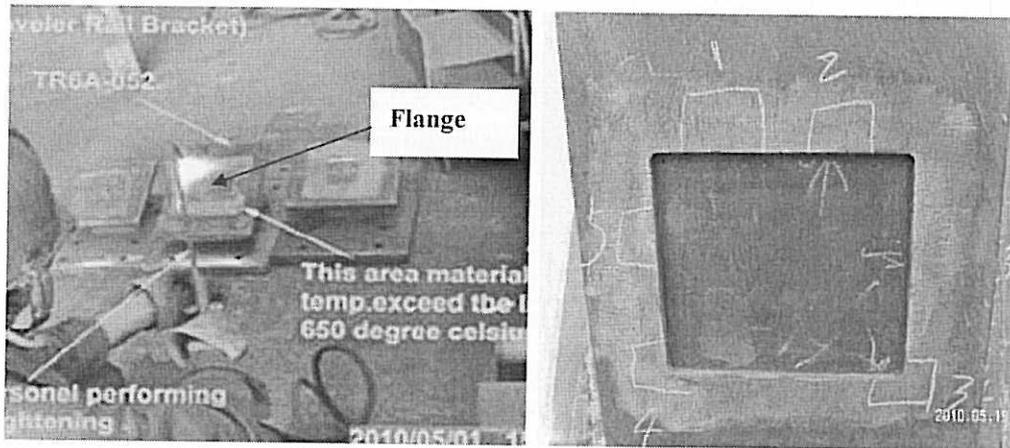
Inspected By: Tsang, Eric

SMR

Reviewed By: Wahbeh, Mazen

SMR

Hardness testing TR6A-052



Area \ Value	a	b	c	d	e	Average Value
1	177	187	184	199	232	190
2	194	186	177	207	177	186
3	188	195	202	196	190	194
4	186	193	208	192	204	196
5	186	201	188	192	181	189

TR6A-052 Flange Hardness Testing Result

Remark: The highest and the lowest readings are discarded when calculating the average value.

NCR PROPOSED RESOLUTION

To: CALTRANS - SAS Superstructure
333 Burma Road
Oakland CA 94607

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000652

Subject: NCR No. ZPMC-0662

Dated: 11-Jun-2010

Contract No.: 04-0120F4
04-SF-80-13.2 / 13.9

Job Name: SAS Superstructure

Document No.: ABF-NPR-000655 Rev: 02

Contractor's Proposed Resolution:

Reference Resolution: Per discussion in China with senior METS personnel, the previously submitted results are acceptable. The hardness scale used is Brinell Hardness testing.

Per discussion in China with senior METS personnel, the previously submitted results are acceptable. The hardness scale used is Brinell Hardness testing. As for the Department's question about the validity of ASTM370, the ASTM is an internationally recognized standard while the ASM is a reference book. If the hardness meets ASTM standards then it should be acceptable. Based on this ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000655R02

Caltrans' comments:

Status: REJ

Date: 18-Jun-2010

- METS personnel previously noted that the Contractor could use hardness testing to help prove the area of concern still fulfills the Contract requirement. However at this time, acceptance of the submitted results is not possible because no analysis has been provided explaining how it is acceptable.

- Provide analysis to show how "the hardness meets ASTM standards."

- Explain why and provide basis of how "if the hardness meets ASTM standards then it should be acceptable."

-The hardness scale unit used shall be provided in the test report.

- Contractor has not demonstrate what action has been taken to mitigate this issue in the future. Please describe what measures are being taken to prevent this type of non-conformance from occurring in the future.

Submitted by: Eagen, Sean

Date: 18-Jun-2010

Attachment(s):

NCR PROPOSED RESOLUTION

To: CALTRANS - SAS Superstructure
333 Burma Road
Oakland CA 94607

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000652

Subject: NCR No. ZPMC-0662

Dated: 28-Jun-2010

Contract No.: 04-0120F4
04-SF-80-13.2 / 13.9

Job Name: SAS Superstructure

Document No.: ABF-NPR-000655 Rev: 03

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has performed the hardness testing and used Table 3 in ASTM370 to determine the approximate tensile values and compared them to minimum required values found in ASTM 709 for Grade 50[345]

ZPMC has performed the hardness testing and used Table 3 in ASTM370 to determine the approximate tensile values and compared them to minimum required values found in ASTM 709 for Grade 50[345] and found they meet the minimum required values. Based on these ZPMC, requests that this NCR be closed.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000655R03;

Caltrans' comments:

Status: REJ

Date: 07-Jul-2010

The average hardness values for the area tested is over 95ksi in tensile strength. Please take a sample from the heated area and perform tensile testing in accordance with ASTM A370.

Submitted by: Woo, Laraine

Date: 07-Jul-2010

Attachment(s):

HARDNESS TESTING RESULTS FOR 11TR2-007

Test ID						11TR2-007 Flange at 3000mm Hardness Testing Analysis				
Area	A*	B*	C*	D*	E*	Average Value**	Corresponding Brinell Hardness Value***	Approximate Tensile Strength (ksi)***	Minimum Tensile Strength (ksi)****	Meets Requirement?
1	203	242	218	243	208	223	222	104	65	YES
2	184	201	195	193	166	191	190	90	65	YES
3	189	267	219	200	196	205	205	98	65	YES
4	225	197	197	201	208	202	200	94	65	YES
5	239	190	200	200	196	199	200	94	65	YES

*All values are Brinell Hardness

**High and low values excluded when determining average value

*** Per Table 3 ASTM A370-07b

**** For Grade 50[345], per Table 1, ASTM A709/A709M-05

Test ID						11TR2-007 Flange at 8000mm Hardness Testing Analysis				
Area	A*	B*	C*	D*	E*	Average Value**	Corresponding Brinell Hardness Value***	Approximate Tensile Strength (ksi)***	Minimum Tensile Strength (ksi)****	Meets Requirement?
1	181	180	191	192	196	188	190	90	65	YES
2	212	213	178	189	196	199	200	94	65	YES
3	216	221	209	194	217	214	216	102	65	YES
4	210	225	198	234	217	217	216	102	65	YES
5	212	199	195	209	194	201	200	94	65	YES

*All values are Brinell Hardness

**High and low values excluded when determining average value

*** Per Table 3 ASTM A370-07b

**** For Grade 50[345], per Table 1, ASTM A709/A709M-05

A 709/A 709M – 05

TABLE 1 Tensile and Hardness Requirements^A

NOTE 1— Where “...” appears in this table, there is no requirement.

Grade	Plate Thickness, in. [mm]	Structural Shape Flange or Leg Thickness, in. [mm]	Yield Point or Yield Strength, ^H ksi [MPa]	Tensile Strength, ksi [MPa]	Minimum Elongation, %				Reduction of Area ^{C,D} min, %	Brinell Hardness Number
					Plates and Bars ^{C,E}		Shapes ^E			
					8 in. or 200 mm	2 in. or 50 mm	8 in. or 200 mm	2 in. or 50 mm		
36 [250]	to 4 [100], incl	to 3 in. [75 mm], incl over 3 in. [75 mm]	36 [250] min	58–80 [400–550]	20	23	20	21 ^F	...	...
50 [345]	to 4 [100], incl	all	36 [250] min 50 [345] min	58 [400] min 65 [450] min	...	...	20	19	...	...
50S [345S]	^G	all	50–65 345–450 ^H 50 [345] min	65 [450] ^H min 70 [485] min	...	...	18	21	...	...
50W [345W] and HPS 50W [HPS 345W]	to 4 [100], incl	all	...	...	18	21	18	21 ^F	...	...
HPS 70W [HPS 485 W]	to 4 [100], incl	^G	70 [485] min ^B	85–110 [585–760]	...	19 ^J	...	...	...	...
100 [690], 100W [690W], and HPS 100W [HPS 690W]	to 2½ [65], incl	^G	100 [690] min ^B	110–130 [760–895]	...	18 ^J	...	...	...	235–293 ^I
100 [690] and 100W [690 W]	over 2½ to 4 [65 to 100]	^G	90 [620] min ^B	100–130 [690–895]	...	16 ^J	...	...	...	...

^A See specimen orientation and preparation subsection in the Tension Tests section of Specification A 6/A 6M.

^B Measured at 0.2 % offset or 0.5 % extension under load as described in Section 13 of Test Methods A 370.

^C Elongation and reduction of area not required to be determined for floor plates.

^D For plates wider than 24 in. [600 mm], the reduction of area requirement, where applicable, is reduced by five percentage points.

^E For plates wider than 24 in. [600 mm], the elongation requirement is reduced by two percentage points. See elongation requirement adjustments in the Tension Tests section of Specification A 6/A 6M.

^F Elongation in 2 in. or 50 mm: 19 % for shapes with flange thickness over 3 in. [75 mm].

^G Not applicable.

^H The yield to tensile ratio shall be 0.85 or less.

^I For wide flange shapes with flange thickness over 3 in. [75 mm], elongation in 2 in. or 50 mm, of 18 % minimum applies.

^J If measured on the Fig. 3 (Test Methods A 370) 1½-in. [40-mm] wide specimen, the elongation is determined in a 2-in. or 50-mm. gage length that includes the fracture and shows the greatest elongation.

^K 40 % minimum applies if measured on the Fig 3 (Test Methods A 370) 1½-in. [40-mm] wide specimen; 50 % minimum applies if measured on the Fig. 4 (Test Methods A 370) ½-in. [12.5-mm] round specimen.

^L Applies only to Grades 100 [690] and 100W [690W] plates that are ¼ in. [10 mm] or less in thickness and are not tension tested (See 8.1).

TABLE 2 Grade 36 [250] Chemical Requirements (Heat Analysis)

NOTE 1— Where “...” appears in this table there is no requirement. The heat analysis for manganese shall be determined and reported as described in the Heat Analysis section of Specification A 6/A 6M.

Product Thickness, in. (mm)	Shapes ^A All	Plates ^B				Bars ^B		
		To ¾ [20], incl	Over ¾ to 1½ [20 to 40], incl	Over 1½ to 2½ [40 to 65], incl	Over 2½ to 4 [65 to 100], incl	To ¾ [20], incl	Over ¾ to 1½ [20 to 40], incl	Over 1½ to 4 [100], incl
Carbon, max, %	0.26	0.25	0.25	0.26	0.27	0.26	0.27	0.28
Manganese, %	...	...	0.80–1.20	0.80–1.20	0.85–1.20	...	0.60–0.90	0.60–0.90
Phosphorus, max, %	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Sulfur, max, %	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Silicon, %	0.40 max	0.40 max	0.40 max	0.15–0.40	0.15–0.40	0.40 max	0.40 max	0.40 max
Copper, min, % when copper steel is specified	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20

^A Manganese content of 0.85 to 1.35 % and silicon content of 0.15 to 0.40 % is required for shapes with flange thickness over 3 in. [75 mm].

^B For each reduction of 0.01 % below the specified carbon maximum, an increase of 0.06 % manganese above the specified maximum will be permitted up to a maximum of 1.35 %.

A 992/A 992M Specification for Structural Steel Shapes
G 101 Guide for Estimating the Atmospheric Corrosion Resistance of Low-Alloy Steels

3.1.1 *fracture critical member*—a main load-carrying tension member or tension component of a bending member whose failure would be expected to cause collapse of a structure or bridge without multiple, redundant load paths.

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

TABLE 3 Approximate Hardness Conversion Numbers for Non-austenitic Steels^A (Rockwell B to Other Hardness Numbers)

Rockwell B Scale, 100-kgf Load 1/16-in. (1.588-mm) Ball	Vickers Hardness Number	Brinell Hardness, 3000-kgf Load, 10-mm Ball	Knoop Hardness, 500-gf Load and Over	Rockwell A Scale, 60-kgf Load, Diamond Penetrator	Rockwell F Scale, 60-kgf Load, 1/16-in. (1.588-mm) Ball	Rockwell Superficial Hardness			Approximate Tensile Strength ksi (MPa)
						15T Scale, 15-kgf Load, 1/16-in. (1.588-mm) Ball	30T Scale, 30-kgf Load, 1/16-in. (1.588-mm) Ball	45T Scale, 45-kgf Load, 1/16-in. (1.588-mm) Ball	
100	240	240	251	61.5	...	93.1	83.1	72.9	116 (800)
99	234	234	246	60.9	...	92.8	82.5	71.9	114 (785)
98	228	228	241	60.2	...	92.5	81.8	70.9	109 (750)
97	222	222	236	59.5	...	92.1	81.1	69.9	104 (715)
96	216	216	231	58.9	...	91.8	80.4	68.9	102 (705)
95	210	210	226	58.3	...	91.5	79.8	67.9	100 (690)
94	205	205	221	57.6	...	91.2	79.1	66.9	98 (675)
93	200	200	216	57.0	...	90.8	78.4	65.9	94 (650)
92	195	195	211	56.4	...	90.5	77.8	64.8	92 (635)
91	190	190	206	55.8	...	90.2	77.1	63.8	90 (620)
90	185	185	201	55.2	...	89.9	76.4	62.8	89 (615)
89	180	180	196	54.6	...	89.5	75.8	61.8	88 (605)
88	176	176	192	54.0	...	89.2	75.1	60.8	86 (590)
87	172	172	188	53.4	...	88.9	74.4	59.8	84 (580)
86	169	169	184	52.8	...	88.6	73.8	58.8	83 (570)
85	165	165	180	52.3	...	88.2	73.1	57.8	82 (565)
84	162	162	176	51.7	...	87.9	72.4	56.8	81 (560)
83	159	159	173	51.1	...	87.6	71.8	55.8	80 (550)
82	156	156	170	50.6	...	87.3	71.1	54.8	77 (530)
81	153	153	167	50.0	...	86.9	70.4	53.8	73 (505)
80	150	150	164	49.5	...	86.6	69.7	52.8	72 (495)
79	147	147	161	48.9	...	86.3	69.1	51.8	70 (485)
78	144	144	158	48.4	...	86.0	68.4	50.8	69 (475)
77	141	141	155	47.9	...	85.6	67.7	49.8	68 (470)
76	139	139	152	47.3	...	85.3	67.1	48.8	67 (460)
75	137	137	150	46.8	99.6	85.0	66.4	47.8	66 (455)
74	135	135	147	46.3	99.1	84.7	65.7	46.8	65 (450)
73	132	132	145	45.8	98.5	84.3	65.1	45.8	64 (440)
72	130	130	143	45.3	98.0	84.0	64.4	44.8	63 (435)
71	127	127	141	44.8	97.4	83.7	63.7	43.8	62 (425)
70	125	125	139	44.3	96.8	83.4	63.1	42.8	61 (420)
69	123	123	137	43.8	96.2	83.0	62.4	41.8	60 (415)
68	121	121	135	43.3	95.6	82.7	61.7	40.8	59 (405)
67	119	119	133	42.8	95.1	82.4	61.0	39.8	58 (400)
66	117	117	131	42.3	94.5	82.1	60.4	38.7	57 (395)
65	116	116	129	41.8	93.9	81.8	59.7	37.7	56 (385)
64	114	114	127	41.4	93.4	81.4	59.0	36.7	...
63	112	112	125	40.9	92.8	81.1	58.4	35.7	...
62	110	110	124	40.4	92.2	80.8	57.7	34.7	...
61	108	108	122	40.0	91.7	80.5	57.0	33.7	...
60	107	107	120	39.5	91.1	80.1	56.4	32.7	...
59	106	106	118	39.0	90.5	79.8	55.7	31.7	...
58	104	104	117	38.6	90.0	79.5	55.0	30.7	...
57	103	103	115	38.1	89.4	79.2	54.4	29.7	...
56	101	101	114	37.7	88.8	78.8	53.7	28.7	...
55	100	100	112	37.2	88.2	78.5	53.0	27.7	...
54	...	...	111	36.8	87.7	78.2	52.4	26.7	...
53	...	...	110	36.3	87.1	77.9	51.7	25.7	...
52	...	...	109	35.9	86.5	77.5	51.0	24.7	...
51	...	...	108	35.5	86.0	77.2	50.3	23.7	...
50	...	...	107	35.0	85.4	76.9	49.7	22.7	...
49	...	...	106	34.6	84.8	76.6	49.0	21.7	...
48	...	...	105	34.1	84.3	76.2	48.3	20.7	...
47	...	...	104	33.7	83.7	75.9	47.7	19.7	...
46	...	...	103	33.3	83.1	75.6	47.0	18.7	...
45	...	...	102	32.9	82.6	75.3	46.3	17.7	...
44	...	...	101	32.4	82.0	74.9	45.7	16.7	...
43	...	...	100	32.0	81.4	74.6	45.0	15.7	...
42	...	...	99	31.6	80.8	74.3	44.3	14.7	...
41	...	...	98	31.2	80.3	74.0	43.7	13.6	...
40	...	...	97	30.7	79.7	73.6	43.0	12.6	...
39	...	...	96	30.3	79.1	73.3	42.3	11.6	...
38	...	...	95	29.9	78.6	73.0	41.6	10.6	...
37	...	...	94	29.5	78.0	72.7	41.0	9.6	...
36	...	...	93	29.1	77.4	72.3	40.3	8.6	...
35	...	...	92	28.7	76.9	72.0	39.6	7.6	...
34	...	...	91	28.2	76.3	71.7	39.0	6.6	...
33	...	...	90	27.8	75.7	71.4	38.3	5.6	...

TABLE 3 Continued

Rockwell B Scale, 100-kgf Load $\frac{1}{16}$ -in. (1.588-mm) Ball	Vickers Hardness Number	Brinell Hardness, 3000-kgf Load, 10-mm Ball	Knoop Hardness, 500-gf Load and Over	Rockwell A Scale, 60-kgf Load, Diamond Penetrator	Rockwell F Scale, 60-kgf Load, $\frac{1}{16}$ -in. (1.588-mm) Ball	Rockwell Superficial Hardness			Approximate Tensile Strength ksi (MPa)
						15T Scale, 15-kgf Load, $\frac{1}{16}$ -in. (1.588-mm) Ball	30T Scale, 30-kgf Load, $\frac{1}{16}$ -in. (1.588-mm) Ball	45T Scale, 45-kgf Load, $\frac{1}{16}$ -in. (1.588-mm) Ball	
32	89	27.4	75.2	71.0	37.6	4.6	...
31	88	27.0	74.6	70.7	37.0	3.6	...
30	87	26.6	74.0	70.4	36.3	2.6	...

^A This table gives the approximate interrelationships of hardness values and approximate tensile strength of steels. It is possible that steels of various compositions and processing histories will deviate in hardness-tensile strength relationship from the data presented in this table. The data in this table should not be used for austenitic stainless steels, but have been shown to be applicable for ferritic and martensitic stainless steels. The data in this table should not be used to establish a relationship between hardness values and tensile strength of hard drawn wire. Where more precise conversions are required, they should be developed specially for each steel composition, heat treatment, and part.

TABLE 4 Approximate Hardness Conversion Numbers for Austenitic Steels (Rockwell C to other Hardness Numbers)

Rockwell C Scale, 150-kgf Load, Diamond Penetrator	Rockwell A Scale, 60-kgf Load, Diamond Penetrator	Rockwell Superficial Hardness		
		15N Scale, 15-kgf Load, Diamond Penetrator	30N Scale, 30-kgf Load, Diamond Penetrator	45N Scale, 45-kgf Load, Diamond Penetrator
48	74.4	84.1	66.2	52.1
47	73.9	83.6	65.3	50.9
46	73.4	83.1	64.5	49.8
45	72.9	82.6	63.6	48.7
44	72.4	82.1	62.7	47.5
43	71.9	81.6	61.8	46.4
42	71.4	81.0	61.0	45.2
41	70.9	80.5	60.1	44.1
40	70.4	80.0	59.2	43.0
39	69.9	79.5	58.4	41.8
38	69.3	79.0	57.5	40.7
37	68.8	78.5	56.6	39.6
36	68.3	78.0	55.7	38.4
35	67.8	77.5	54.9	37.3
34	67.3	77.0	54.0	36.1
33	66.8	76.5	53.1	35.0
32	66.3	75.9	52.3	33.9
31	65.8	75.4	51.4	32.7
30	65.3	74.9	50.5	31.6
29	64.8	74.4	49.6	30.4
28	64.3	73.9	48.8	29.3
27	63.8	73.4	47.9	28.2
26	63.3	72.9	47.0	27.0
25	62.8	72.4	46.2	25.9
24	62.3	71.9	45.3	24.8
23	61.8	71.3	44.4	23.6
22	61.3	70.8	43.5	22.5
21	60.8	70.3	42.7	21.3
20	60.3	69.8	41.8	20.2

17. Rockwell Test

17.1 Description:

17.1.1 In this test a hardness value is obtained by determining the depth of penetration of a diamond point or a steel ball into the specimen under certain arbitrarily fixed conditions. A minor load of 10 kgf is first applied which causes an initial penetration, sets the penetrator on the material and holds it in position. A major load which depends on the scale being used is applied increasing the depth of indentation. The major load is removed and, with the minor load still acting, the Rockwell number, which is proportional to the difference in penetration between the major and minor loads is determined; this is usually done by the machine and shows on a dial, digital

display, printer, or other device. This is an arbitrary number which increases with increasing hardness. The scales most frequently used are as follows:

Scale Symbol	Penetrator	Major Load, kgf	Minor Load, kgf
B	$\frac{1}{16}$ -in. steel ball	100	10
C	Diamond brale	150	10

17.1.2 Rockwell superficial hardness machines are used for the testing of very thin steel or thin surface layers. Loads of 15, 30, or 45 kgf are applied on a hardened steel ball or diamond

TABLE 5 Approximate Hardness Conversion Numbers for Austenitic Steels (Rockwell B to other Hardness Numbers)

Rockwell B Scale, 100-kgf Load, 1/16-in. (1.588-mm) Ball	Brinell Indentation Diameter, mm	Brinell Hardness, 3000-kgf Load, 10-mm Ball	Rockwell A Scale, 60-kgf Load, Diamond Penetrator	Rockwell Superficial Hardness		
				15T Scale, 15-kgf Load, 1/16-in. (1.588-mm) Ball	30T Scale, 30-kgf Load, 1/16-in. (1.588-mm) Ball	45T Scale, 45-kgf Load, 1/16-in. (1.588-mm) Ball
100	3.79	256	61.5	91.5	80.4	70.2
99	3.85	248	60.9	91.2	79.7	69.2
98	3.91	240	60.3	90.8	79.0	68.2
97	3.96	233	59.7	90.4	78.3	67.2
96	4.02	226	59.1	90.1	77.7	66.1
95	4.08	219	58.5	89.7	77.0	65.1
94	4.14	213	58.0	89.3	76.3	64.1
93	4.20	207	57.4	88.9	75.6	63.1
92	4.24	202	56.8	88.6	74.9	62.1
91	4.30	197	56.2	88.2	74.2	61.1
90	4.35	192	55.6	87.8	73.5	60.1
89	4.40	187	55.0	87.5	72.8	59.0
88	4.45	183	54.5	87.1	72.1	58.0
87	4.51	178	53.9	86.7	71.4	57.0
86	4.55	174	53.3	86.4	70.7	56.0
85	4.60	170	52.7	86.0	70.0	55.0
84	4.65	167	52.1	85.6	69.3	54.0
83	4.70	163	51.5	85.2	68.6	52.9
82	4.74	160	50.9	84.9	67.9	51.9
81	4.79	156	50.4	84.5	67.2	50.9
80	4.84	153	49.8	84.1	66.5	49.9

penetrator, to cover the same range of hardness values as for the heavier loads. The superficial hardness scales are as follows:

Scale Symbol	Penetrator	Major Load, kgf	Minor Load, kgf
15T	1/16-in. steel ball	15	3
30T	1/16-in. steel ball	30	3
45T	1/16-in. steel ball	45	3
15N	Diamond brale	15	3
30N	Diamond brale	30	3
45N	Diamond brale	45	3

17.2 Reporting Hardness—In recording hardness values, the hardness number shall always precede the scale symbol, for example: 96 HRB, 40 HRC, 75 HR15N, or 77 HR30T.

17.3 Test Blocks—Machines should be checked to make certain they are in good order by means of standardized Rockwell test blocks.

17.4 Detailed Procedure—For detailed requirements of this test, reference shall be made to the latest revision of Test Methods E 18.

18. Portable Hardness Test

18.1 Although the use of the standard, stationary Brinell or Rockwell hardness tester is generally preferred, it is not always possible to perform the hardness test using such equipment due to the part size or location. In this event, hardness testing using portable equipment as described in Practice A 833 or Test Method E 110 shall be used.

CHARPY IMPACT TESTING

19. Summary

19.1 A Charpy V-notch impact test is a dynamic test in which a notched specimen is struck and broken by a single blow in a specially designed testing machine. The measured

test values may be the energy absorbed, the percentage shear fracture, the lateral expansion opposite the notch, or a combination thereof.

19.2 Testing temperatures other than room (ambient) temperature often are specified in product or general requirement specifications (hereinafter referred to as the specification). Although the testing temperature is sometimes related to the expected service temperature, the two temperatures need not be identical.

20. Significance and Use

20.1 Ductile vs. Brittle Behavior—Body-centered-cubic or ferritic alloys exhibit a significant transition in behavior when impact tested over a range of temperatures. At temperatures above transition, impact specimens fracture by a ductile (usually microvoid coalescence) mechanism, absorbing relatively large amounts of energy. At lower temperatures, they fracture in a brittle (usually cleavage) manner absorbing less energy. Within the transition range, the fracture will generally be a mixture of areas of ductile fracture and brittle fracture.

20.2 The temperature range of the transition from one type of behavior to the other varies according to the material being tested. This transition behavior may be defined in various ways for specification purposes.

20.2.1 The specification may require a minimum test result for absorbed energy, fracture appearance, lateral expansion, or a combination thereof, at a specified test temperature.

20.2.2 The specification may require the determination of the transition temperature at which either the absorbed energy or fracture appearance attains a specified level when testing is performed over a range of temperatures.

20.3 Further information on the significance of impact testing appears in Annex A5.

NCR PROPOSED RESOLUTION

To: CALTRANS - SAS Superstructure
333 Burma Road
Oakland CA 94607

Dated: 13-Jul-2010

Contract No.: 04-0120F4
04-SF-80-13.2 / 13.9

Attention: Pursell, Gary
Resident Engineer

Job Name: SAS Superstructure

Document No.: ABF-NPR-000655 Rev: 04

Ref: 05.03.06-000652

Subject: NCR No. ZPMC-0662

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has rejected this traveler rail and will re-fabricate the sub assembly. Based on this ZPMC requests closure of this NCR.

ZPMC has rejected this traveler rail and will re-fabricate the sub assembly. Based on this ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000655R04

Caltrans' comments:

Status: CLO

Date: 18-Jul-2010

The proposed resolution is acceptable.

Submitted by: Woo, Laraine

Date: 18-Jul-2010

Attachment(s):

NCR PROPOSED RESOLUTION

To: CALTRANS - SAS Superstructure
333 Burma Road
Oakland CA 94607

Attention: Siegenthaler, Peter
Resident Engineer

Ref: 05.03.06-000652

Subject: NCR No. ZPMC-0662

Dated: 13-Oct-2010

Contract No.: 04-0120F4
04-SF-80-13.2 / 13.9

Job Name: SAS Superstructure

Document No.: ABF-NPR-000655 **Rev:** 05

Contractor's Proposed Resolution:

Reference Resolution: ZPMC is providing the weld maps requested in the Department's previous response for the repairs made after testing to the traveler rails in ZPMC-0713 and ZPMC-0662.

ZPMC is providing the weld maps requested in the Department's previous response for the repairs made after testing to the traveler rails in ZPMC-0713 and ZPMC-0662. Previously submitted NDT was labeled post HSR because the parts were heat straightened after the test areas were re welded. Based on this and previously submitted NDT, ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000655R05;

Caltrans' comments:

Status: REJ

Date: 14-Oct-2010

From the previous accepted NPR, ZPMC has rejected this traveler rail and will re-fabricate the sub assembly. Please clarify if repair were performed rather than re-fabrication. Please provide the NDT records (100% UT and MT) of the replaced base metal to the existing member.

Submitted by: Woo, Laraine

Attachment(s):

Date: 14-Oct-2010



No. B-906

LETTER OF RESPONSE

TO: American Bridge/Flour

DATE: 2010-10-12

REGARDING: NCR-000695 (ZPMC-0662) NCR-000750(ZPMC-0713)

Heat Straightenings were performed to these rails after the pieces were replaced. The submitted NDT records in the previously documentation are reflecting to these Heat Straightenings and are labeled post HSR. ZPMC is providing the revised weld maps for engineer's reviewal. Based on this, please consider closure of these NCRs.

ATTACHMENT:

NCR-000695(ZPMC-0662)

NCR-000750(ZPMC-0713)

WELD MAPS OF TR11 & TR20

Handwritten signature
10/12/2010



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
333 Burma Road
Oakland CA 94607
Tel: Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

To: AMERICAN BRIDGE/FLUOR, A JV
375 BURMA ROAD
OAKLAND CA 95607

Date: 14-Mar-2010

Contract No: 04-0120F4
04-SF-80-13.2 / 13.9

Dear: Mr. Charles Kanapicki
Attention: Mr. Thomas Nilsson Project/Fabrication Manager
Subject: NCR No. ZPMC-0662

Job Name: SAS Superstructure
Document No: 05.03.06-000652

Reference Description: Excessive heat was utilized during heat straightening of the traveler rail 11TR2-007

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract document as indicated below:

- Material or Workmanship not in conformance with contract documents.
- Quality Control (QC) not performed in conformance with contract documents.
- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

Material Location: Other

Lift:

Remarks:

During the Quality Assurance (QA) random in-process visual inspection of OBG traveler rail Heat Straightening, this QA Inspector observed the following:

- Temperature of the heat straightened traveler rail was beyond the allowable 650 Degree Celsius in two locations.
- Per ZPMC heat straightening report (HSR) maximum temperature limit is 650 Degree Celsius.
- The 1100 Degree Celsius rating "templstick" was melted when check was made against the metal surface.
- "Y" location of the spots identified as 3000mm & 8000mm at the flange.
- The Traveler Rail is identified as 11TR2-007.

Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences. A response for the resolution of this issue is expected within 7 days.

Transmitted by: Bill Howe Sr. Transportation Engineer

Attachments: ZPMC-0662

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Tom, Contract Files, Ching Chao

File: 05.03.06

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4

Cty: SF/ALA Rte: 80 PM: 13.2/13.9

File #: 69.25B

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

Location: Changxing Island, Shanghai, P.R. China

Report No: NCR-000695

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 11-Mar-2010

Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

NCR #: ZPMC-0662

Type of problem:

Welding Concrete Other Welding Curing Procedural

Bridge No: 34-0006

Joint fit-up Coating Other

Component: Traveler Rail 11TR2-007

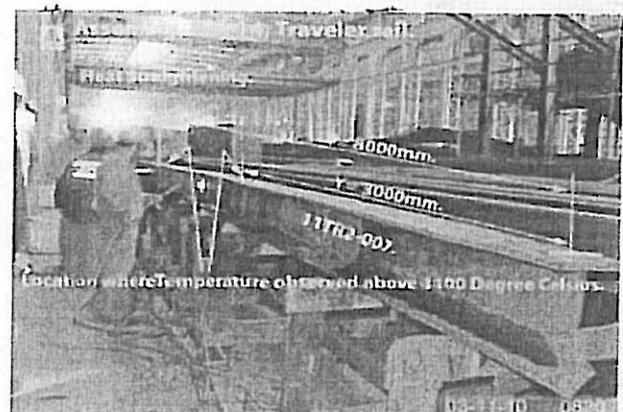
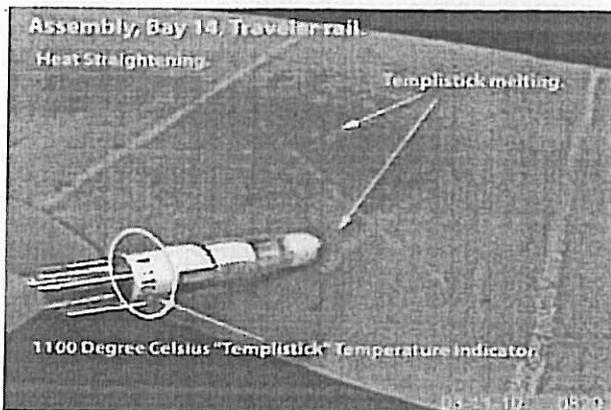
Procedural Procedural Description: Excessive heat used in heat straightening

Reference Description: Excessive heat was utilized during heat straightening of the traveler rail 11TR2-007

Description of Non-Conformance:

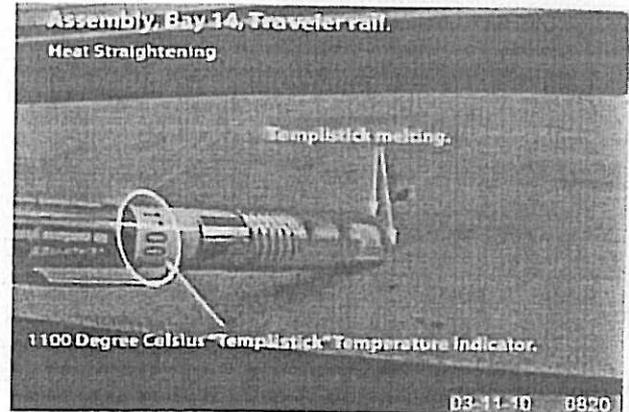
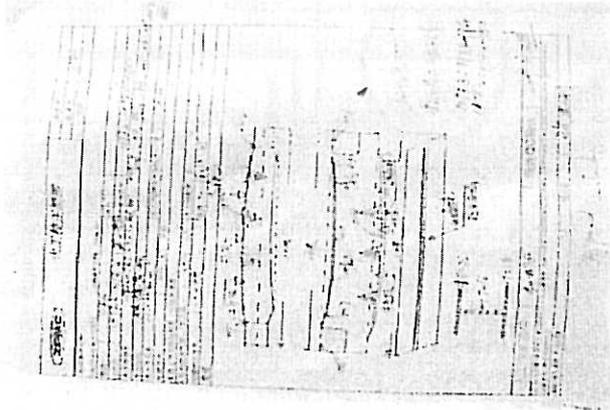
During the Quality Assurance (QA) random in-process visual inspection of OBG traveler rail Heat Straightening, this QA Inspector observed the following:

- Temperature of the heat straightened traveler rail was beyond the allowable 650 Degree Celsius in two locations.
- Per ZPMC heat straightening report (HSR) maximum temperature limit is 650 Degree Celsius.
- The 1100 Degree Celsius rating "templistick" was melted when check was made against the metal surface.
- "Y" location of the spots identified as 3000mm & 8000mm at the flange.
- The Traveler Rail is identified as 11TR2-007.



QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



Applicable reference:

AWS 1.5 WORKMANSHIP, 3.7.3 "Members distorted by welding shall be straightened by mechanical means or by carefully supervised application of a limited amount of localized heat as approved by the Engineer. The temperature of the heated areas as measured by approved methods shall not exceed 600°C [1100°F] for quenched and tempered steel nor 650°C [1200°F] (a dull, red color) for other steels. The part to be heated for straightening shall be substantially free of stress and from external forces, except those stresses resulting from the mechanical straightening method used in conjunction with the application of heat."

Who discovered the problem: Amit K. Juvekar

Name of individual from Contractor notified: Peter Shaw

Time and method of notification: 0915 Hrs, 03/11/10, Verbal

Name of Caltrans Engineer notified: Bill Howe

Time and method of notification: 1100 Hrs, 03/11/10, Verbal

QC Inspector's Name: Zhang Wen

Was QC Inspector aware of the problem: Yes No

Contractor's proposal to correct the problem:

N/A

Comments:

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, +(86) 134.7247.7571, who represents the Office of Structural Materials for your project.

Inspected By: Tsang, Eric

SMR

Reviewed By: Wahbeh, Mazen

SMR



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
666 Feng Bin Road Room 708, Changxing Island
Shanghai 201913 PR China
Tel: 021-56856666 ext 207061 Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

To: AMERICAN BRIDGE/FLUOR, A JV
375 BURMA ROAD
OAKLAND CA 95607

Date: 31-May-2010

Contract No: 04-0120F4
04-SF-80-13.2 / 13.9

Dear: Mr. Charles Kanapicki

Job Name: SAS Superstructure

Attention: Mr. Thomas Nilsson Project/Fabrication Manager

Document No: 05.03.06-000706

Subject: NCR No. ZPMC-0713

Reference Description: Excessive heat was utilized during heat straightening of the traveler rail 20TR2-013

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract document as indicated below:

- Material or Workmanship not in conformance with contract documents.
- Quality Control (QC) not performed in conformance with contract documents.
- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

Material Location: OBG

Lift:

Remarks:

During the Quality Assurance (QA) random in-process observations of the fabrication of OBG Traveler Rail (TR), this Caltrans QA Inspector observed the following:

- ZPMC personnel performed heat straightening of the traveler rail flange base plate. The material was heated to a bright red condition and the temperature is above 650°C.
- Per ZPMC Heat Straightening Report identified as HSR1 (B)-8350, the maximum allowable temperature is 650°C.
- The AWS D1.5 Section 3.7.3 states that the heated steel shall not exceed 650°C, which gives a dull red color.
- This QA Inspector observed the 760°C Tempilstik was melted when struck against the red base metal.
- A temperature indicating crayon, digital temperature measurement gauge, or other similar means of monitoring the temperature was not utilized by ZPMC QC and the actual maximum attained temperature was not measured.
- The Traveler rail is identified as 20TR2-013.
- The affected area was measured at Y location 800mm when measured from nearest leading edge, having a total area 150 x 1200mm.
- Additionally, this QA Inspector observed ZPMC apply a 13 Tons load on the Traveler rail.
- ZPMC HSR1 Report doesn't specify the exact weight or weight range to be applied on the TR during heat straightening process.
- This TR is located in fabrication Bay#5.

Action Required and/or Action Taken:

Please provide HSR and documentations that demonstrate the over-heated element is acceptable. Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences. A response for the resolution of this issue is expected within 7 days.

Transmitted by: Sean Eagen Transportation Engineer
Attachments: ZPMC-0713

NCT

(Continued Page 2 of 2)

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Tom, Contract Files, Ching Chao, Bill Casey
File: 05.03.06

DEPARTMENT OF TRANSPORTATION
 DIVISION OF ENGINEERING SERVICES
 Office of Structural Materials
 Quality Assurance and Source Inspection



Bay Area Branch
 690 Walnut Ave. St. 150
 Vallejo, CA 94592-1133
 (707) 649-5453
 (707) 649-5493

Contract #: 04-0120F4
 Cty: SF/ALA Rte: 80 PM: 13.2/13.9
 File #: 69.25B

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

Location: Changxing Island, Shanghai, P.R. China

Report No: NCR-000750

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 28-May-2010

Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

NCR #: ZPMC-0713

Type of problem:

Welding Concrete Other

Welding Curing Procedural

Bridge No: 34-0006

Joint fit-up Coating Other

Component: OBG Traveler Rail 20TR2-013

Procedural Procedural Description:

Reference Description: Excessive heat was utilized during heat straightening of the traveler rail 20TR2-013

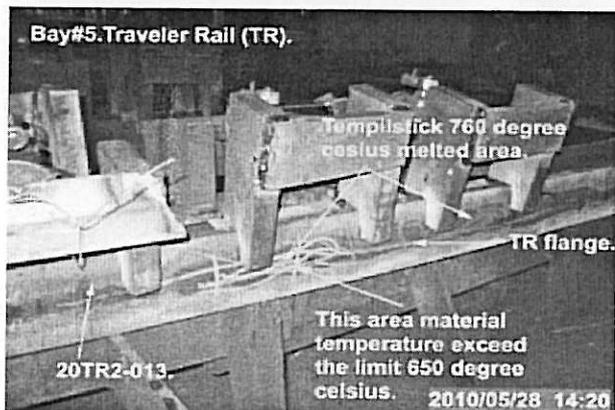
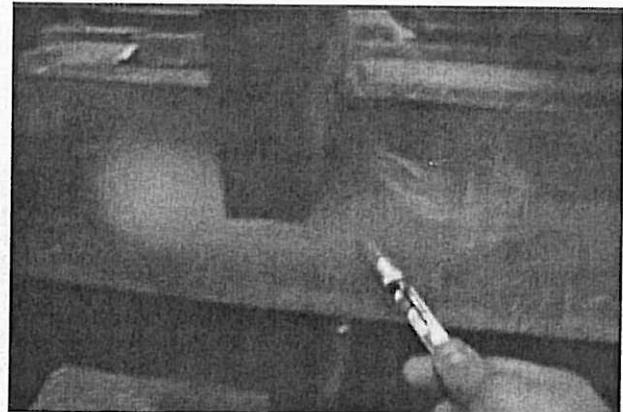
Description of Non-Conformance:

During the Quality Assurance (QA) random in-process observations of the fabrication of OBG Traveler Rail (TR), this Caltrans QA Inspector observed the following:

- ZPMC personnel performed heat straightening of the traveler rail flange base plate. The material was heated to a bright red condition and the temperature is above 650°C.
- Per ZPMC Heat Straightening Report identified as HSR1 (B)-8350, the maximum allowable temperature is 650°C.
- The AWS D1.5 Section 3.7.3 states that the heated steel shall not exceed 650°C, which gives a dull red color.
- This QA Inspector observed the 760°C Tempilstik was melted when struck against the red base metal.
- A temperature indicating crayon, digital temperature measurement gauge, or other similar means of monitoring the temperature was not utilized by ZPMC QC and the actual maximum attained temperature was not measured.
- The Traveler rail is identified as 20TR2-013.
- The affected area was measured at Y location 800mm when measured from nearest leading edge, having a total area 150 x 1200mm.
- Additionally, this QA Inspector observed ZPMC apply a 13 Tons load on the Traveler rail.
- ZPMC HSR1 Report doesn't specify the exact weight or weight range to be applied on the TR during heat straightening process.
- This TR is located in fabrication Bay#5.

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 3)



Applicable reference:

AWS 1.5 2002 section 3.7.3 "Members distorted by welding shall be straightened by mechanical means or by carefully supervised application of a limited amount of localized heat as approved by the Engineer. The temperature of the heated areas as measured by approved methods shall not exceed 600°C [1100°F] for quenched and tempered steel nor 650°C [1200°F] (a dull, red color) for other steels. The part to be heated for straightening shall be substantially free of stress and from external forces, except those stresses resulting from the mechanical straightening method used in conjunction with the application of heat."

Who discovered the problem: Surendra Prabhu.

Name of individual from Contractor notified: Chen Ji Wei

Time and method of notification: 1425 Hrs, 05/28/10, Verbal

Name of Caltrans Engineer notified: Stanley Ku, Sean Eagen

Time and method of notification: 1900 hours, 05/28/10, Email

QC Inspector's Name: Shen Jian Gao

Was QC Inspector aware of the problem: Yes No

Contractor's proposal to correct the problem:

N/A

Comments:

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 3 of 3)

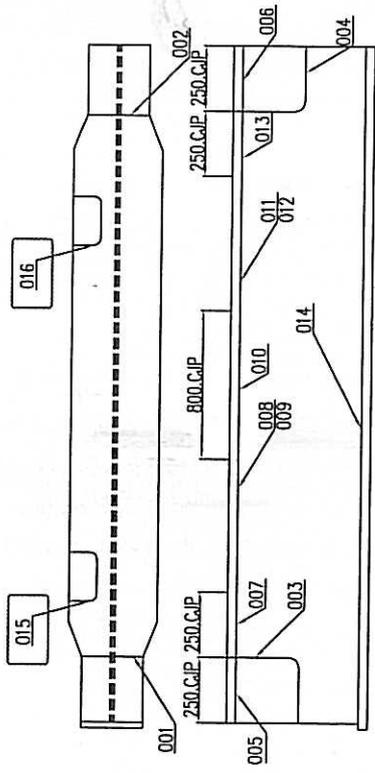
Office of Structural Materials for your project.

Inspected By: Tsang, Eric

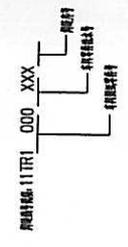
SMR

Reviewed By: Devey, Jim

SMR



- 11TR1
- 11TR2
- 11TR3
- 11TR4
- 11TR5
- 11TR6
- 11TR7
- 11TR8
- 11TR9
- 11TR10
- 11TR11
- 11TR12

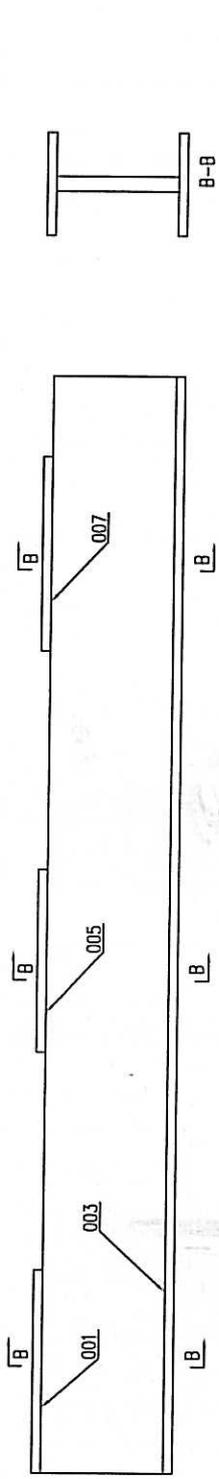


2A 11TR15.16 11TR2-007 11TR

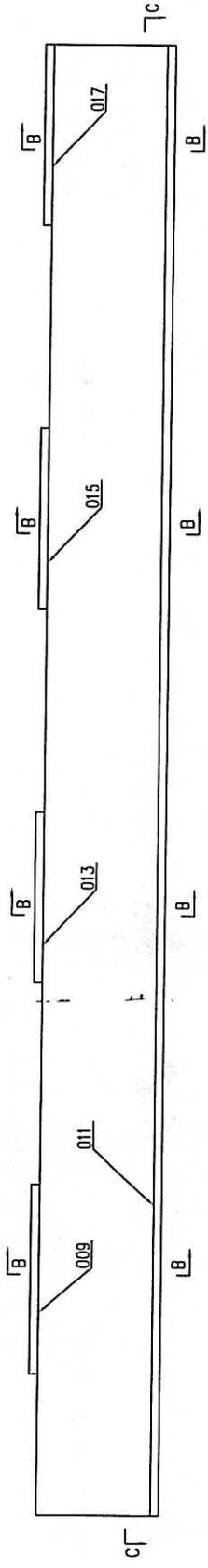
2A 11TR15.16 11TR2-007 11TR

ZPMC
 ZENITH PORT MACHINERY CO., LTD.
 WELDING MAP

DRAWN	11TR11	1/1
CHECKED		



20TR1



20TR2

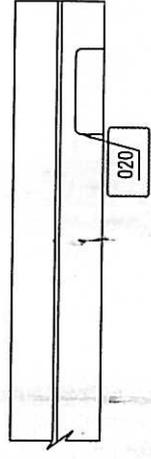


FIGURE 20TR1 000 XXX
 材料
 材料
 材料

20TR20-013

材料

ZPMC
 ZHANGJIANG PORT MACHINERY CO., LTD.
 WELDING MAP
 171

NCR PROPOSED RESOLUTION

To: CALTRANS - SAS Superstructure
333 Burma Road
Oakland CA 94607

Attention: Siegenthaler, Peter
Resident Engineer

Ref: 05.03.06-000652

Subject: NCR No. ZPMC-0662

Dated: 19-Oct-2010

Contract No.: 04-0120F4
04-SF-80-13.2 / 13.9

Job Name: SAS Superstructure

Document No.: ABF-NPR-000655 Rev: 06

Contractor's Proposed Resolution:

Reference Resolution: Per the Department's request, ZPMC has performed tensile testing on a sample of the heated area and found it to be acceptable.

Per the Department's request, ZPMC has performed tensile testing on a sample of the heated area and found it to be acceptable. ZPMC has repaired the area that the sample came from and is providing the acceptable NDT to show the repair was successful and the tensile testing to show the material is acceptable. Based on this ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000655R06;

Caltrans' comments:

Status: CLO

Date: 20-Oct-2010

ZPMC repaired the area with NDT verification. This NCR is closed.

Submitted by: Woo, Laraine

Date: 20-Oct-2010

Attachment(s):



No. B-887

LETTER OF RESPONSE

TO: American Bridge/Flour

DATE: 2010-9-19

REGARDING: NCR-000750(ZPMC-0713) NCR-000695(ZPMC-0662)

As required, ZPMC took the samples from the over heated area and performed both the tensile test and impact test under the witness of CT's representatives. After that, these rails were repaired according to the approved repair procedure. ZPMC is providing the tests' result and the NDT records to engineer for review, hoping these NCRs could be closed based on them.

ATTACHMENT:

NCR-000750(ZPMC-0713)

NCR-000695(ZPMC-0662)

TESTS' RESULT

B787-UT-15317

B787-UT-15316

B787-MT-28130

B787-MT-28129

Handwritten signature

9/19/10



No. B-906

LETTER OF RESPONSE

TO: American Bridge/Flour

DATE: 2010-10-12

REGARDING: NCR-000695 (ZPMC-0662) NCR-000750(ZPMC-0713)

Heat Straightenings were performed to these rails after the pieces were replaced. The submitted NDT records in the previously documentation are reflecting to these Heat Straightenings and are labeled post HSR. ZPMC is providing the revised weld maps for engineer's reviewal. Based on this, please consider closure of these NCRs.

ATTACHMENT:

NCR-000695(ZPMC-0662)

NCR-000750(ZPMC-0713)

WELD MAPS OF TR11 & TR20

Handwritten signature
10/12/2010



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
333 Burma Road
Oakland CA 94607
Tel: Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

To: AMERICAN BRIDGE/FLUOR, A JV
375 BURMA ROAD
OAKLAND CA 95607

Date: 14-Mar-2010

Contract No: 04-0120F4
04-SF-80-13.2 / 13.9

Dear: Mr. Charles Kanapicki
Attention: Mr. Thomas Nilsson Project/Fabrication Manager
Subject: NCR No. ZPMC-0662

Job Name: SAS Superstructure
Document No: 05.03.06-000652

Reference Description: Excessive heat was utilized during heat straightening of the traveler rail 11TR2-007

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract document as indicated below:

- Material or Workmanship not in conformance with contract documents.
- Quality Control (QC) not performed in conformance with contract documents.
- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

Material Location: Other

Lift:

Remarks:

During the Quality Assurance (QA) random in-process visual inspection of OBG traveler rail Heat Straightening, this QA Inspector observed the following:

- Temperature of the heat straightened traveler rail was beyond the allowable 650 Degree Celsius in two locations.
- Per ZPMC heat straightening report (HSR) maximum temperature limit is 650 Degree Celsius.
- The 1100 Degree Celsius rating "templstick" was melted when check was made against the metal surface.
- "Y" location of the spots identified as 3000mm & 8000mm at the flange.
- The Traveler Rail is identified as 11TR2-007.

Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences. A response for the resolution of this issue is expected within 7 days.

Transmitted by: Bill Howe Sr. Transportation Engineer

Attachments: ZPMC-0662

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Tom, Contract Files, Ching Chao

File: 05.03.06

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4

Cty: SF/ALA Rte: 80 PM: 13.2/13.9

File #: 69.25B

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

Location: Changxing Island, Shanghai, P.R. China

Report No: NCR-000695

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 11-Mar-2010

Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

NCR #: ZPMC-0662

Type of problem:

Welding Concrete Other Welding Curing Procedural

Bridge No: 34-0006

Joint fit-up Coating Other

Component: Traveler Rail 11TR2-007

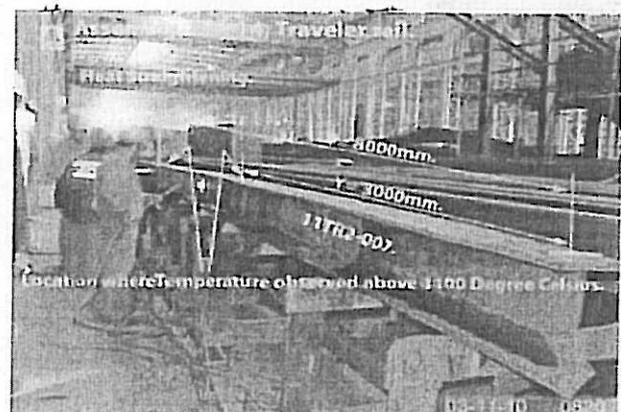
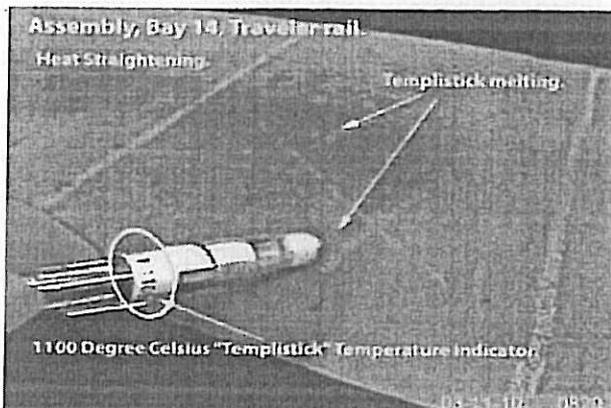
Procedural Procedural Description: Excessive heat used in heat straightening

Reference Description: Excessive heat was utilized during heat straightening of the traveler rail 11TR2-007

Description of Non-Conformance:

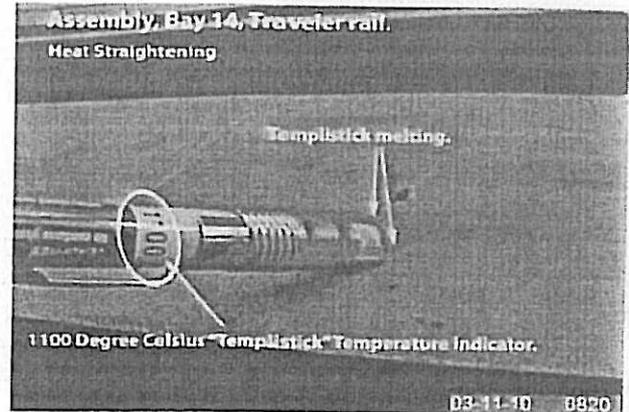
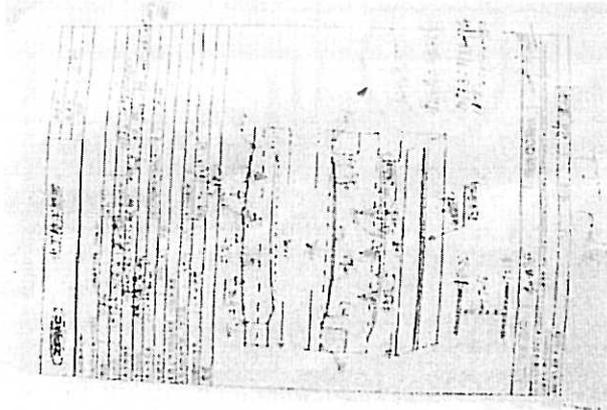
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- Per ZPMC heat straightening report (HSR) maximum temperature limit is 650 Degree Celsius.
- The 1100 Degree Celsius rating "templistick" was melted when check was made against the metal surface.
- "Y" location of the spots identified as 3000mm & 8000mm at the flange.
- The Traveler Rail is identified as 11TR2-007.



QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



Applicable reference:

AWS 1.5 WORKMANSHIP, 3.7.3 "Members distorted by welding shall be straightened by mechanical means or by carefully supervised application of a limited amount of localized heat as approved by the Engineer. The temperature of the heated areas as measured by approved methods shall not exceed 600°C [1100°F] for quenched and tempered steel nor 650°C [1200°F] (a dull, red color) for other steels. The part to be heated for straightening shall be substantially free of stress and from external forces, except those stresses resulting from the mechanical straightening method used in conjunction with the application of heat."

Who discovered the problem: Amit K. Juvekar

Name of individual from Contractor notified: Peter Shaw

Time and method of notification: 0915 Hrs, 03/11/10, Verbal

Name of Caltrans Engineer notified: Bill Howe

Time and method of notification: 1100 Hrs, 03/11/10, Verbal

QC Inspector's Name: Zhang Wen

Was QC Inspector aware of the problem: Yes No

Contractor's proposal to correct the problem:

N/A

Comments:

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, +(86) 134.7247.7571, who represents the Office of Structural Materials for your project.

Inspected By: Tsang, Eric

SMR

Reviewed By: Wahbeh, Mazen

SMR



钢板冲击试验报告

CVN TEST REPORT FOR STEEL PLATE

报告编号 Report No.: G-J-CL-787-20100830-1-1

Testing Centre, Shanghai Zhenhua Heavy Industry Co., Ltd.

项目名称 Project	S. F. O. B. B. Project ZP06-787	样品接收日期 Date of receiving the specimen	August 30, 2010	ASTM A709、ASTM A370
实验员 Operator	邵飞飞 Shao Feifei 殷国华 Yin Guohua	见证 Witnessed by		批准 Approved by

审核
Reviewed by

刘立涛

批准
Approved by

刘立涛

上海振华重工(集团)股份有限公司
检测中心
报告专用章(力学)

试验结果仅对来样而言, 试样在本室保留三个月备查。

The test result are applicable to the specimens submitted only. The specimens tested will be kept in the LAB for 3 months for future reference.

报告盖章有效, 报告严禁涂改。

The report is effective with the stamped only. The report shall not be modified.

Note A: 板厚 $t \leq 11$ mm时, 标准小尺寸冲击试样尺寸mm: 5.0*10.0*65.0; 板厚 $t > 11$ mm时, 标准全尺寸冲击试样尺寸mm: 10.0*10.0*65.0

Note A: If the thickness of plate is equal to or less than 11mm, the standard sub-sized test specimen shall be used. If the thickness of plate is more than 11mm, the standard sized test specimen shall be used. The size of specimen is 10.0mm*10.0mm*65.0mm.

Note B: 1. 冲击试验机的摆锤能量是150J; The energy of pendulum of Charpy machine is 150J;

2. 试验过程中, 如果试样未折断, 呈弯曲形状, 报告中表明未折断; 如果试样未折断, 报告中表明未折断; If a specimen cannot be separated into two pieces in a single bending motion, it shall be reported as unbroken;

3. 当未折断试样的吸收能量低于机器能量的80%时, 取该试样平均值的80%; Unbroken specimens with absorbed energies of less than 80% of the machine capacity may be averaged with values from broken specimens;

4. 如果吸收能量超过机器能量的80%, 并且试样弯曲由试验机钳口中通过时, 报告数值取近似值, 不再取平均值, 用数学符号“ \approx ”表示; If the absorbed energy exceeds 80% of the machine capacity and the specimen passes completely between the anvils, report the value as approximate do not average it with the other values, athematic symbol “ \approx ” shall be used.

5. 如果未折断试样不能从试验机钳口之间通过, 报告数值超过机器最大值, 用数学符号“ $>$ ”表示; If an unbroken specimen does not pass between the machine anvils, (for example, it stops the pendulum), the result shall be reported as exceeding the machine capacity, mathematic symbol “ $>$ ” shall be used.

6. 如果试验结果不符合相关技术要求, 试验结果不合格; If the testing results are not confirm with the relative specifications, it shall be reported as failed.

炉号/批号 Heat No./Batch No.	级别 Grade	钢板编号 I. D	板厚 Thickness mm	拉伸试验 Tensile Test				冲击试验 Impact Test AkV				试验日期 Test date.					
				取向方向 Specimens Orientation	屈服强度 Y. S MPa	抗拉强度 T. S MPa	伸长率 Elongatio n %	取向方向 Specimens Orientation	温度 Test Temp.	吸收功 Absorbed Energy (J)			评定 结果 Result				
										x1	x2			x3	说明 Description		
AB30249	A709M-345T2-X	CX090106Q306	19	Transverse	420	575	40.0	Transverse	4°C	>150	>150	>150	150	Unbroken.	Pass.	1	August 30, 2010
AB30249	A709M-345T2-X	CX090106Q306	19	Transverse	415	570	40.5	Transverse	4°C	>150	>150	>150	150	Unbroken.	Pass.	2	August 30, 2010
B700186-3	A709M-345T2-X	WY070516Q281	20	Transverse	465	610	27.0	-	-	-	-	-	-	-	Pass.	3	August 30, 2010
B700186-3	A709M-345T2-X	WY070516Q281	20	Transverse	-	-	-	Transverse	-4°C	>150	>150	>150	150	Unbroken.	Pass	4	August 30, 2010



REPORT OF ULTRASONIC EXAMINATION

UT探伤报告

REPORT NO. 报告编号 B787-UT-15317 DATE 2010.09.06 PAGE 1 OF 1 Revision No: 0

PROJECT NO.: 工程编号 ZP06-787 CONTRACTOR: CALTRANS

ITEMS NAME: TRAVELER RAIL DRAWING NO.: TR11 CALTRANS CONTRACT NO.: 04-0120F4
 部件名称 图号 加州工程编号

REFERENCING CODE 参考规范 ACCEPTANCE STANDARD 接受标准 PROCEDURE NO. 程序编号
 AWS D1.5-2002 AWS D1.5-2002(Table 6.3) ZPQC-UT-01

WELDING PROCESS 焊接方法 JOINT TYPE 焊缝类型 CALIBRATION DUE DATE 仪器校正有效期
 FCAW BUTT Dec. 28ST, 2010

EQUIPMENT 设备 MANUFACTURER 制造商 MODEL NO. 样式编号 SERIAL NO. 序列编号
 UT SCOPE GE USM33 0612032B

CALIBRATION BLOCK 试块 COUPLANT 耦合剂 MATERIAL/THICKNESS 材料厚度
 AWS IIV BLOCK TYPE II C.M.C A709M-345T2-X 19mm

TRANSDUCER 探头

MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸	MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸
AMERICA	70°	2.5MHz	0.75×0.625in				
Reference Level 参考灵敏度						20dB	

Base metal inspected per AWS D1.5-2002 Section 6.19.5 0° UT OK.

WELD IDENTIFICATION 焊缝部件编号	INDICATION NO. 指示号	PROBE ANGLE 探测角度	FROM FACE 检测面	LEG (次数)	DECIBELS分贝				DISCONTINUITY 不连续性					Discontinuity Evaluation 缺陷估计	Remark 备注
					Indication Level	Reference Level	Attenuation Factor	Indication Rating	LOCATION OF DISCONTINUITY 不连续位置(mm)						
									a	b	c	d	Length 长度		
11TR2-007-015		70.5				40								ACC.	100%
11TR2-007-016		70.5				40								ACC.	100%

AFTER HSR1(B)-9272

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EXAMINED BY 主探 REVIEWED BY 审核
 Jiang yong Jiang Yong 2010.9.6 Jiang Yong 2010.9.6
 LEVEL - II SIGN / DATE LEVEL - II SIGN / DATE

质量经理 / QCM 用户CUSTOMER
 签字 SIGN / 日期 DATE 签字 SIGN / 日期 DATE



REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 B787-MT-28130 DATE日期 2010.09.07 PAGE OF 页码 1/1 Revision No: 0

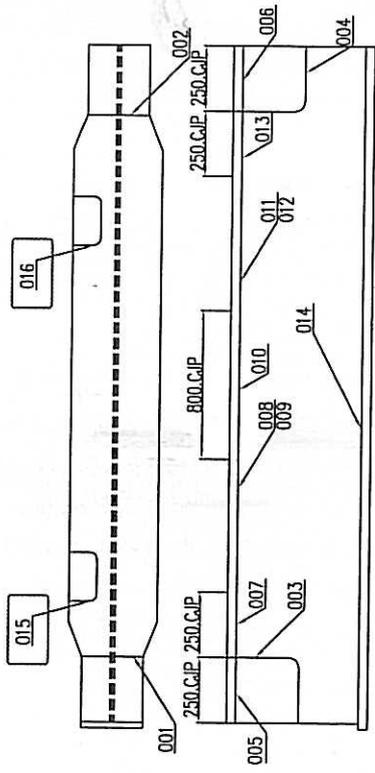
PROJECT NO. 工程编号: ZP06-787		CONTRACTOR: 用户: CALTRANS	
DRAWING NO. 图号: TR11 TRAVELER RAIL		CALTRANS CONTRACT NO.: 加州工程编号: 04-0120F4	
REFERENCING CODE 参考规范编码 AWS D1.5-2002	ACCEPTANCE STANDARD 接受标准 AWS D1.5-2002	PROCEDURE NO. 程序编号 ZPQC-MT-01	CALIBRATION DUE DATE 仪器校正有效期 Dec. 28 ST , 2010
EQUIPMENT 设备 KOREA	MANUFACTURER 制造商 PARKER	MODEL NO. 样式编号 MP-A2L	SERIAL NO. 连续编号 MP1694
MAGNETIZING METHOD 磁化方法	Continuous magnetic yoke 磁轭式连续法	CURRENT 电流	AC
PARTICLE TYPE 磁粉类型	Dry magnet powder 干磁粉	YOKE SPACING 磁轭间距	70~150mm
MATERIAL TO BE EXAMINED 检测材料	<input checked="" type="checkbox"/> WELDING 焊接件 <input type="checkbox"/> CASTING 铸件 <input type="checkbox"/> FORGING 锻造	Material & thickness 母材, 厚度	A709M-345T2-X 16/19mm
WELDING PROCESS 焊接方法	FCAW	TYPE OF JOINT 焊缝类型	T-JOINT/BUTT

WELD I.D. 焊缝编号	DISCONTINUITY 不连续性			ACCEPT 接受	REJECT 拒收	REMARKS 备注
	INDICATION 指示	TYPE 类型	LENGTH IN mm 长度			
11TR2-007-015				ACC		100%MT
11TR2-007-016				ACC		100%MT
11TR2-007-008				ACC		100%MT
11TR2-007-009				ACC		100%MT
11TR2-007-011				ACC		100%MT
11TR2-007-012				ACC		100%MT

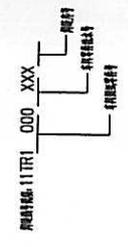
AFTER HSR1(B)-9272

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EXAMINED BY 主探 Jin Jianting LEVEL - II SIGN 签名 / DATE 日期 质量经理 / QCM	REVIEWED BY 审核 Sun Gary cheng LEVEL-II SIGN / DATE 日期 用户 CUSTOMER
签字 SIGN / 日期 DATE	签字 SIGN / 日期 DATE



- 11TR1
- 11TR2
- 11TR3
- 11TR4
- 11TR5
- 11TR6
- 11TR7
- 11TR8
- 11TR9
- 11TR10
- 11TR11
- 11TR12



REVISED 11TR1 000 XXX

REVISED 11TR1 000 XXX

		
ZPMC ZHANGJIANG PORT MACHINERY CO., LTD. WELDING MAP		
DRAWN CHECKED	PROJECT NO. TR11	DRAWING NO. 1/1

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: xx.25A**QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION****Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCS-000723**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 15-Jul-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0662**Type of problem:**

Welding	Concrete	Other	
Welding	Curing	Procedural	Bridge No: 34-0006
Joint fit-up	Coating	Other	Component:
Procedural	Procedural	Description:	

Date the Non-Conformance Report was written: 11-Mar-2010**Description of Non-Conformance:**

During the Quality Assurance (QA) random in-process visual inspection of OBG traveler rail Heat Straightening, this QA Inspector observed the following:

- Temperature of the heat straightened traveler rail was beyond the allowable 650 Degree Celsius in two locations.
- Per ZPMC heat straightening report (HSR) maximum temperature limit is 650 Degree Celsius.
- The 1100 Degree Celsius rating "Tempilstick" was melted when check was made against the metal surface.
- "Y" location of the spots identified as 3000mm & 8000mm at the flange.
- The Traveler Rail is identified as 11TR2-007.

Contractor's proposal to correct the problem:

Refabricate Traveler Rail.

Corrective action taken:

Contractor performed hardness testing of affected area and found questionable correlating tensile strength values. Contractor has elected to reject the affected member and fabricate another in lieu of performing destructive testing of the area in question.

Did corrective action require Engineer's approval? Yes No**If so, name of Engineer providing approval:****Date:****Is Engineer's approval attached?** Yes No**Comments:**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Jim Simonis, who represents the Office of Structural Materials for your project.

QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

(Continued Page 2 of 2)

Inspected By: Simonis,Jim

Quality Assurance Inspector

Reviewed By: Wahbeh,Mazen

QA Reviewer