

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, PRC **Report No:** NCR-000414
Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date:** 21-Sep-2009
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0388

Type of problem:

| | | | |
|---------------------|-------------------|--|------------------------------|
| Welding | Concrete | Other | |
| Welding | Curing | Procedural | Bridge No: 34-0006 |
| Joint fit-up | Coating | Other | Component: East Tower |
| Procedural | Procedural | Description: East Tower, Lift 1 | |

Reference Description: Missed MT indications on East Tower, Lift 1, base-end weld build-up

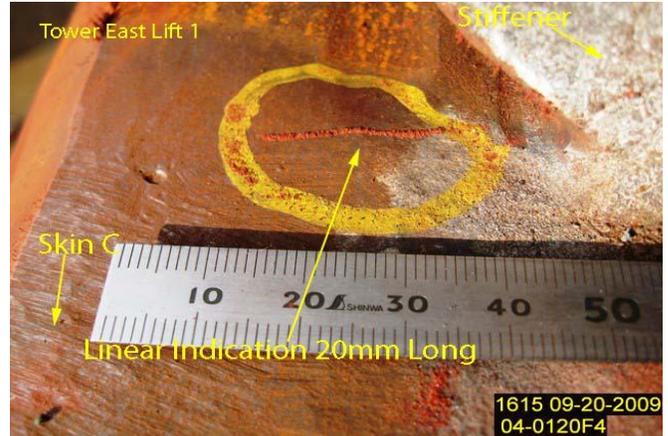
Description of Non-Conformance:

During Magnetic Particle Testing (MT) of East Tower, Lift 1, Skin C base-end weld build-up, QA discovered 20 mm and 5 mm transverse; and 6 mm long longitudinal linear indications. 100% of the weld build-up had been previously tested and accepted by ZPMC Quality Control MT Technicians.



QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



Applicable reference:

Special Provisions Section 8.3 – “Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents.”

AWS D1.5-2002 Section 6.26.2 – “Welds that are subject to MT in addition to visual inspection shall have no cracks.”

Who discovered the problem: Dhanasingh Sukanthan

Name of individual from Contractor notified: Don Walton

Time and method of notification: 9/20/2009, 16:40; Verbal

Name of Caltrans Engineer notified: Scott Kennedy

Time and method of notification: 9/21/2009, 12:00; Verbal

QC Inspector's Name: Zhang Jiadi

Was QC Inspector aware of the problem: Yes No

Contractor's proposal to correct the problem:

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 Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

Inspected By: Sinevod,Serge ASMR

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: 21-Sep-2009

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: 05.03.06-000376

Subject: NCR No. ZPMC-0388

Reference Description: Missed Indications (MT) / East Shaft Lift 1 / Skin C Weld Build-Up / Transverse & Longitudinal Indications

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: Tower **Lift:** 01

Remarks:

During Magnetic Particle Testing (MT) of East Tower, Lift 1, Skin C base-end weld build-up, QA discovered 20 mm and 5 mm transverse; and 6 mm long longitudinal linear indications. 100% of the weld build-up had been previously tested and accepted by ZPMC Quality Control MT Technicians.

Special Provisions Section 8.3 – “Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents.”

AWS D1.5-2002 Section 6.26.2 – “Welds that are subject to MT in addition to visual inspection shall have no cracks.”

Action Required and/or Action Taken:

Propose a resolution for this systematic non-conformance that addresses the failure of Quality Control to identify the linear indications during magnetic particle testing of the welds. Provide documentation of the steps/actions taken by the Quality Control Manager to prevent future occurrences.

In addition to the Quality Control non-conformance, address the material/workmanship for the identified non-conformance including documentation that the deficiencies have been brought into compliance with the contract requirements. Additionally address the probable causes for the indications and the actions that will be taken to limit future occurrences.

Recent failures by Quality Control to identify linear indications (MT) have resulted in the issuance of NCR ZPMC-0358, ZPMC-0359, ZPMC-0371, ZPMC-0372, ZPMC-0373, ZPMC-0375, ZPMC-0376, ZPMC-0377, ZPMC-383, ZPMC-0384, ZPMC 0386 and ZPMC-0387 related to Tower.

Transmitted by: Scott Kennedy Sr. Bridge Engineer

NCT

(Continued Page 2 of 2)

Attachments: ZPMC-0388

cc: Rick Morrow, Gary Pursell, Mark Woods, Doug Coe

File: 05.03.06

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000376

Subject: NCR No. ZPMC-0388

Dated: 16-Oct-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000383 **Rev:** 00

Contractor's Proposed Resolution:

Reference Resolution: ABF JV QCM has implemented training with ZPMC to improve the quality of inspections. ABF JV will provide documentation showing attendance by ZPMC QC inspectors and the subject of training.

ABF JV QCM has implemented training with ZPMC to improve the quality of inspections. ABF JV will provide documentation showing attendance by ZPMC QC inspectors and the subject of training. Topics to be covered during the instruction are: inspection of equipment prior to use, proper conditions for inspection, proper technique for MT, and UT. In addition, ABF JV has committed to perform overchecks in both the Tower and OBG. This will serve two purposes, first to monitor if the training is effective at reducing the number of missed indications and second to ensure missed indications are prevented.

Documentation of repairs and subsequent NDT specific to this report will be transmitted through Daily Welding Reports and will be available in the documentation data base. Based on this course of action, ZPMC is requesting that this proposed resolution be approved with action pending. Once training records are available to be transmitted, ZPMC will request closure of this NCR.

Submitted by:

Attachment(s): ABF-NPR-000383R00

Caltrans' comments:

Status: REJ

Date: 18-Oct-2009

Even though the course of action is acceptable, the department will not consider closure of this NCR (ZPMC-0388) until all the repair documents and training documents are submitted and reviewed.

Submitted by: Lee, Ken

Date: 18-Oct-2009

Attachment(s):

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000376

Subject: NCR No. ZPMC-0388

Dated: 30-Oct-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000383 **Rev:** 01

Contractor's Proposed Resolution:

Reference Resolution: The ABF JV QCM has completed training of ZPMC MT personnel, attached is documentation of the topics covered and personnel who attended.

The ABF JV QCM has completed training of ZPMC MT personnel, attached is documentation of the topics covered and personnel who attended. Specific to this NCR, ZPMC has removed the indication with grinding which was verified by a Caltrans inspector during inspection related to notification 4318. Based on this ZPMC requests closure of this NCR.

Submitted by:

Attachment(s): ABF-NPR-000383R01;

Caltrans' comments:

Status: AAP

Date: 02-Nov-2009

The proposal is acceptable. However, it does not address the probable causes for the indications and actions that will be taken to prevent future occurrences. Please address all items in the transmittal letter.

Submitted by: Lee, Ken

Date: 02-Nov-2009

Attachment(s):



No. T-068

LETTER OF RESPONSE

TO: American Bridge/Flour JV

DATE: 2009-10-29

REGARDING: NCR-000414(ZPMC-0388)

ZPMC received NCR-000414(ZPMC-0388), it mentioned that CT inspector discovered 20mm, 5mm transverse and 6mm long longitudinal linear indications during over-check.

As a reaction to this NCR, ZPMC arranged a MT technician to confirm and removed these indications by grinding. The attached pictures show the mentioned indications were cleaned and confirmed by MT. NDT notification 4318 was submitted for CT inspection and it was passed by CT's retesting. Also these east tower bottom bevel area was tested and accepted by CT inspector previously.

So ZPMC hope Caltrans could take a review and close this NCR.

ATTACHMENT:

NCR-000414(ZPMC-0388)

Picture 1

Picture 2

Notification 4318

Picture 3

Picture 4


2009-10-29



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: 21-Sep-2009

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
Document No: 05.03.06-000376

Subject: NCR No. ZPMC-0388

Reference Description: Missed Indications (MT) / East Shaft Lift 1 / Skin C Weld Build-Up / Transverse & Longitudinal Indications

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Lift: 01

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Transmitted by: Scott Kennedy Sr. Bridge Engineer

NCT

(Continued Page 2 of 2)

Attachments: ZPMC-0388

cc: Rick Morrow, Gary Pursell, Mark Woods, Doug Coe

File: 05.03.06

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 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, PRC **Report No:** NCR-000414
Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date:** 21-Sep-2009
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0388

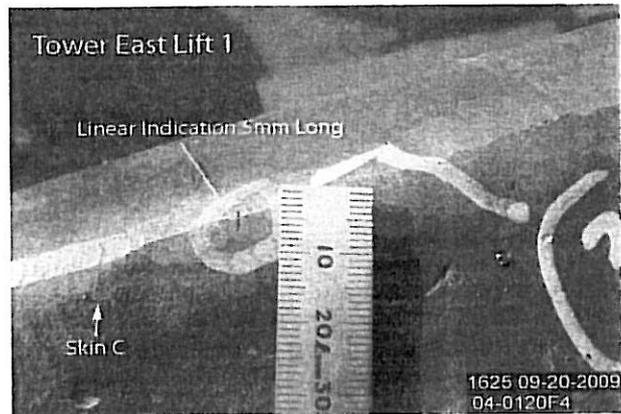
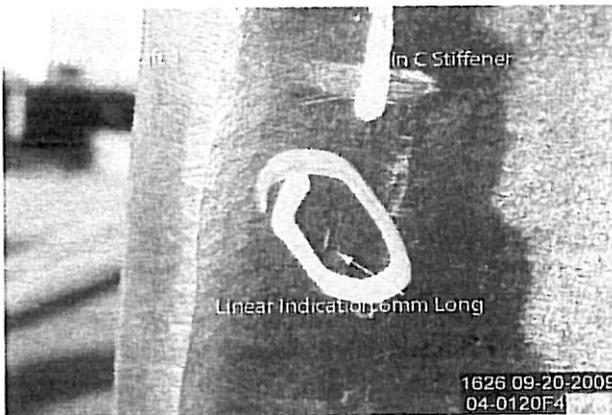
Type of problem:

- Welding Concrete Other
 Welding Curing Procedural **Bridge No:** 34-0006
 Joint fit-up Coating Other **Component:** East Tower
 Procedural Procedural **Description:** East Tower, Lift 1

Reference Description: Missed MT indications on East Tower, Lift 1, base-end weld build-up

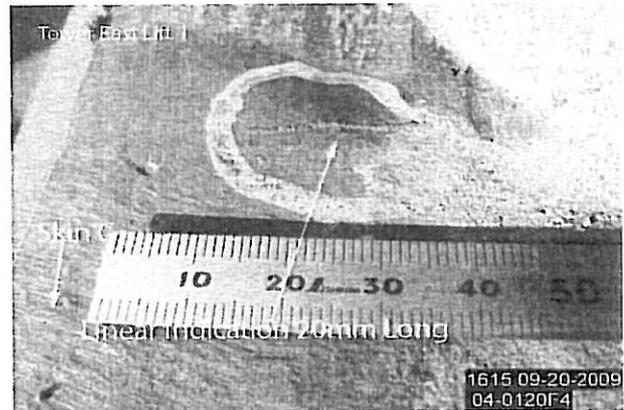
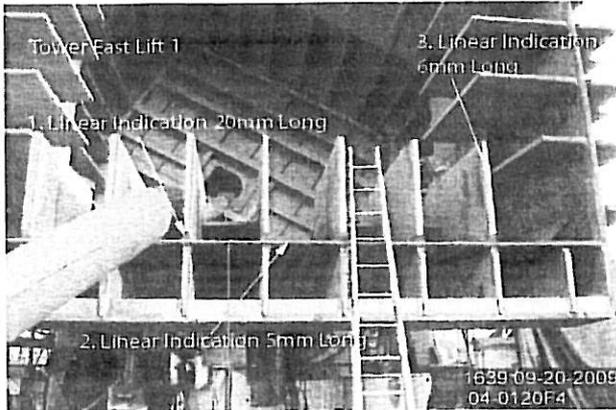
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QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



Applicable reference:

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Who discovered the problem: Dhanasingh Sukanthan

Name of individual from Contractor notified: Don Walton

Time and method of notification: 9/20/2009, 16:40; Verbal

Name of Caltrans Engineer notified: Scott Kennedy

Time and method of notification: 9/21/2009, 12:00; Verbal

QC Inspector's Name: Zhang Jiadi

Was QC Inspector aware of the problem: Yes No

Contractor's proposal to correct the problem:

Comments:

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Inspected By: Sinevod,Serge

ASMR

Reviewed By: Wahbeh,Mazen

SMR



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NDT客户检验通知单

NDT Inspection Notification Sheet

| | | |
|------------------------------|--|--|
| 文件编号: 004318 Document No. | 申请递交时间: Submit time: 2009-9-29 13:19 | CT 计划赴检时间 CT Estimated Inspection Time 1400 hrs |
| 待检验构件 Inspection part | 检验场地 Inspection Place | 计划检验时间 Inspection Time |
| 产品类别 Section | 检验时间 Inspection Time | CT 计划赴检时间 CT Estimated Inspection Time |
| 1 | 2009-9-29 14:00 | 1400 hrs |
| 待检验内容 Inspection | 检验时间 Inspection Time | CT 计划赴检时间 CT Estimated Inspection Time |
| 1 | 2009-9-29 14:00 | 1400 hrs |
| 待检验内容 Inspection | 检验时间 Inspection Time | CT 计划赴检时间 CT Estimated Inspection Time |
| 1 | 2009-9-29 14:00 | 1400 hrs |

1、见证通知发出后，现场等待时间通常不超过35分钟；如有变动，现场通知。
 1、When ZPMC give this table to AB/F, Zpmc will do the inspection in 35 minutes. If we change the plan, we will inform AB/F in the shop.
 2、ZPMC根据自己的检验控制点 (HOLD POINT) 进行日常检验。
 2、ZPMC will do any inspection according to the HOLD POINT.

3、此单为临时试用单，仅适用于完工焊缝的NDT检验见证通知。
 3、This table is a temporary one, just for final NDT inspection notification.
 4、QC检验完成后，QA是否需要复验，由QA自行决定，QC不再另行通知。复验等待时间通常为24小时。
 4、QC inspection completed, QA whether need retest, by QA self decision, QC no longer另行通知. Retest waiting time usually 24 hours.

5、AB/F预约CT后会在同班时间内通知ZPMC具体CT现场报验时间
 5、AB/F to notify ZPMC in the same shift that CT will attend and at what time.
 6、加州现场检验完成后会告知AB/F检验结果，AB/F会在24小时内告知ZPMC加州复检结果。
 6、CT to notify AB/F that the work has been completed and the result. AB/ to notify ZPMC that the work has been completed and the result within 24 hours.

ZPMC 联系人:
Requested By:

Li Xiangyong

AB/F 签收人:
AB/F Receiver:

Candy Li
09-29-2009 13:22

签收时间:
Time:

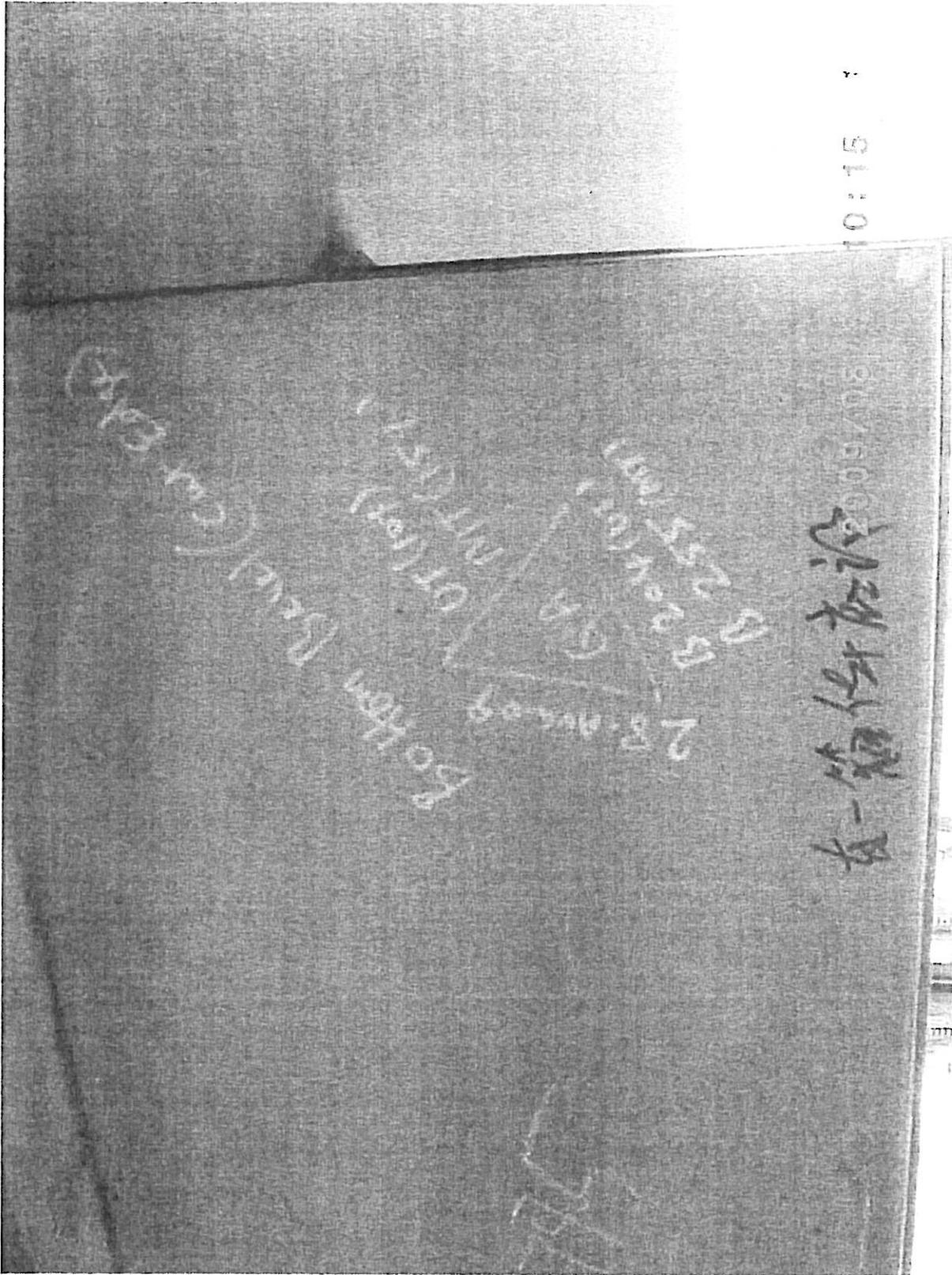
CT 签收人:
CT Receiver:

Albert Carneon
9-29-09 1324 hrs

签收时间:
Time:



③



女一第任在论

10:15

Tool Box Training Agenda

Subject: MT Techniques

Reason for Refresher Training: Several CT NCR's for missed MT indications

1. Safety

- a. Safety Glasses
- b. Gloves (if required)
- c. Knee Pads
- d. Electrical shock

2. Tools

- a. Lighting
- b. MT Powder. Red for ambient, Yellow for High Temperature.
- c. Powder Bulb
- d. Powder Blower
- e. MT Yoke condition

3. Inspection Techniques

- a. Lighting
- b. Position of body (distance of eyes to the weld surface)
- c. Application of Powder
- d. Continuous method
- e. Two directions
- f. Both sides of weld

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000376

Subject: NCR No. ZPMC-0388

Dated: 09-Dec-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000383 Rev: 02

Contractor's Proposed Resolution:

Reference Resolution: ABFJV has reminded ZPMC of the importance of interpass cleaning of the welds and ZPMC acknowledges that interpass cleaning must be a focus.

Per the Department's request, the linear indications discovered are most likely the result of poor interpass cleaning of welds. In other locations these types of linear indications have been found to be the result of poor workmanship. On September 24, 2009 a joint exploration by ABFJV, ZPMC and the Department found indications were similar to these in the fit lug areas and were caused by slag or porosities which were the result of insufficient interpass cleaning. ABFJV has reminded ZPMC of the importance of interpass cleaning of the welds and ZPMC acknowledges that interpass cleaning must be a focus.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000383R02

Caltrans' comments:

Status: CLO

Date: 22-Dec-2009

The proposed resolution is acceptable. The Department concurs that Non-conformance ZPMC-0388 is closed.

Submitted by: Lee, Ken

Attachment(s):

Date: 22-Dec-2009

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, PRC**Report No:** NCS-000318**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 06-Nov-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0388**Type of problem:**

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

Date the Non-Conformance Report was written: 21-Sep-2009**Description of Non-Conformance:**

During Magnetic Particle Testing (MT) of East Tower, Lift 1, Skin C base-end weld build-up, QA discovered 20 mm and 5 mm transverse; and 6 mm long longitudinal linear indications. 100% of the weld build-up had been previously tested and accepted by ZPMC Quality Control MT Technicians.

Contractor's proposal to correct the problem:

Repair affected weld build-up.

Corrective action taken:

The affected weld build-up has been repaired and the repair was verified by QA.

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 Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

Inspected By: Sinevod, Serge

Quality Assurance Inspector

Reviewed By: Wahbeh, Mazen

QA Reviewer