

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 #: 69.25B**QUALITY ASSURANCE -- NON-CONFORMANCE REPORT****Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCR-000436**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 10-Sep-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0410**Type of problem:****Welding****Concrete****Other****Welding****Curing****Procedural****Bridge No:** 34-0006**Joint fit-up****Coating****Other****Component:** Segment 6BW Floorbeam Flange & Deck Diaphragm**Procedural****Procedural****Description:** Missed UT Indication by QC**Reference Description:** Missed UT indications by QC on Floorbeam Flange and Deck Diaphragm in 6BW**Description of Non-Conformance:**

During random verification Ultrasonic Testing (UT) of the deck panel diaphragm splice weld and floor beam flange splice weld at panel point 42 (Segment 6BW), Caltrans Quality Assurance (QA) Inspector discovered a total of (2) two, rejectable defects of up to 30mm in length. The weld designations are as follows: SEG029*-031 (diaphragm splice) and SSD9-PP42-002 (flange splice). These welds have been previously tested and accepted by ZPMC Quality Control UT Technicians. Due to the amplitude and planar characteristics of the ultrasonic response in the deck panel diaphragm splice weld SSD9-PP42-002, this QA inspector carried out Magnetic Particle Testing (MT) on the excavation of the rejected weld and found a linear indication measured 20mm in length.

**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.”

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

-AWS D1.5/2002 Table 6.3

Who discovered the problem: Rodney Patterson

Name of individual from Contractor notified: Peter Shaw

Time and method of notification: 1100 hours, Verbal

Name of Caltrans Engineer notified: Bill Howe

Time and method of notification: 1100 hours, Verbal

QC Inspector's Name: Tao Lei

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: 02-Oct-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: 05.03.06-000401

Subject: NCR No. ZPMC-0410

Reference Description: Missed UT indications by QC on Floorbeam Flange and Deck Diaphragm in 6BW

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:** 06

Remarks:

During random verification Ultrasonic Testing (UT) of the deck panel diaphragm splice weld and floor beam flange splice weld at panel point 42 (Segment 6BW), Caltrans Quality Assurance (QA) Inspector discovered a total of (2) two, rejectable defects of up to 30mm in length. The weld designations are as follows: SEG029*-031 (diaphragm splice) and SSD9-PP42-002 (flange splice). These welds have been previously tested and accepted by ZPMC Quality Control UT Technicians. Due to the amplitude and planar characteristics of the ultrasonic response in the deck panel diaphragm splice weld SSD9-PP42-002, this QA inspector carried out Magnetic Particle Testing (MT) on the excavation of the rejected weld and found a linear indication measured 20mm in length.

Please see attached NCR No. ZPMC-410 for details.

Action Required and/or Action Taken:

Propose a resolution for the identified recurring non-conformance which constitutes a systematic problem on both materials/workmanship and quality control issues with revised procedures to remedy the defected work and to prevent future occurrences. A response for the resolution of this issue is expected within 14 days.

Transmitted by: Ching Chao

Attachments: ZPMC-0410

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

File: 05.03.06

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000401

Subject: NCR No. ZPMC-0410

Dated: 16-Oct-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000396 Rev: 00

Contractor's Proposed Resolution:

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

ABFJV QCM has implemented training with ZPMC to improve the quality of inspections. ABFJV 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, ABFJV 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-000396R00

Caltrans' comments:

Status: REJ

Date: 19-Oct-2009

The proposed resolution for training the QC inspectors is acceptable. However, documentation of repairs and subsequent NDT specific to this NCR should be submitted, along with the training records, for the Department's review prior to closure of the NCR.

Submitted by: Chao, Ching

Date: 19-Oct-2009

Attachment(s):

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000401

Subject: NCR No. ZPMC-0410

Dated: 03-Dec-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000396 Rev: 01

Contractor's Proposed Resolution:

Reference Resolution: The welds referenced in the NCR have been repaired, tested and found acceptable by ABF, ZPMC and Caltrans.

The welds referenced in the NCR have been repaired, tested and found acceptable by ABF, ZPMC and Caltrans. The acceptability of the welds was documented in QA Approval Form #11157 for weld joint SEG029*-031 and QA Approval Form #11160 for weld joint SSD9-PP042-002. These forms were signed after the non conformance was documented. Based on this ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000396R01;

Caltrans' comments:

Status: REJ

Date: 10-Dec-2009

The after-repair NDT documentation needs to be submitted and reviewed by the Engineer prior to the closure of NCR per meeting with the Contractor on 12/7/2009.

Submitted by: Chao, Ching

Attachment(s):

Date: 10-Dec-2009

QA APPROVAL REQUEST FORM

Component: - SEG TAG #1 Date: 2009/10/16

In-Process tag No: N/A

*Attach In-Process tag

Green tag No: 11157

Lift/OBG Segment 塔吊装段/OBG 桥段: 6BW

Weld numbers: See The Attached

Zhang Wei 2009. 10. 16.
 ZPMC Team Representative Date

[Signature] 10-16-09
 ABF Team Representative Date

B-239 10-16-09
 CT Team Representative Date

DOCUMENTATION REVIEW

	Yes	No
NDE complete	<input type="checkbox"/>	<input type="checkbox"/>
Repairs complete	<input type="checkbox"/>	<input type="checkbox"/>
NCR's closed	<input type="checkbox"/>	<input type="checkbox"/>

_____ _____
 ABF QA Manager Date

QA APPROVAL REQUEST FORM

Component: SEG TAG #4 Date: 2009/10/16

In-Process tag No: N/A

*Attach In-Process tag

Green tag No: 11160

Lift/OBG Segment 塔吊装段/OBG 桥段: 6BW

Weld numbers: See The Attached

Zhang Wei 2009.10.16
 ZPMC Team Representative Date

[Signature] 10-16-09
 ABF Team Representative Date

B-239 10-16-09
 CT Team Representative Date

DOCUMENTATION REVIEW

	Yes	No
NDE complete	<input type="checkbox"/>	<input type="checkbox"/>
Repairs complete	<input type="checkbox"/>	<input type="checkbox"/>
NCR's closed	<input type="checkbox"/>	<input type="checkbox"/>

 ABF QA Manager

 Date

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000401

Subject: NCR No. ZPMC-0410

Dated: 25-Jan-2010

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000396 Rev: 02

Contractor's Proposed Resolution:

Reference Resolution: ABF is submitting NDT documentation to show that welds with missed indications are acceptable after repair. In addition, the ABFJV has performed refresher UT training.

Per discussion in China with representatives of the Department, ABF is submitting NDT documentation to show that welds with missed indications are acceptable after repair. In addition, the ABFJV has performed refresher UT training. See attached UT training agenda and attendance roster. The ABF QCM has been discussing missed UT indications with the ZPMC QCM and related NDT supervisory personnel. The ZPMC level III is in the process of assessing personnel, techniques and equipment. ABF has purchased GE Technology transducers to distribute to both ZPMC and ABF UT personnel in a cooperative effort to match the equipment of CT. These transducers will arrive to the job site approximately the end of January 2010 at which time they will be put into immediate use. Based on this ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000396R02;

Caltrans' comments:

Status: CLO

Date: 26-Jan-2010

The documentation submitted by the contractor and the preventative measures taken by the QCM have been reviewed by the Engineer and are found to be acceptable. Based on the discussion in China with the contractor's representatives, other weld repair reports from ZPMC shall be included in the QA Data Base when available.

Submitted by: Chao, Ching

Attachment(s):

Date: 26-Jan-2010



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: 02-Oct-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: 05.03.06-000401

Subject: NCR No. ZPMC-0410

Reference Description: Missed UT indications by QC on Floorbeam Flange and Deck Diaphragm in 6BW

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:** 06

Remarks:

During random verification Ultrasonic Testing (UT) of the deck panel diaphragm splice weld and floor beam flange splice weld at panel point 42 (Segment 6BW), Caltrans Quality Assurance (QA) Inspector discovered a total of (2) two, rejectable defects of up to 30mm in length. The weld designations are as follows: SEG029*-031 (diaphragm splice) and SSD9-PP42-002 (flange splice). These welds have been previously tested and accepted by ZPMC Quality Control UT Technicians. Due to the amplitude and planar characteristics of the ultrasonic response in the deck panel diaphragm splice weld SSD9-PP42-002, this QA inspector carried out Magnetic Particle Testing (MT) on the excavation of the rejected weld and found a linear indication measured 20mm in length.

Please see attached NCR No. ZPMC-410 for details.

Action Required and/or Action Taken:

Propose a resolution for the identified recurring non-conformance which constitutes a systematic problem on both materials/workmanship and quality control issues with revised procedures to remedy the defected work and to prevent future occurrences. A response for the resolution of this issue is expected within 14 days.

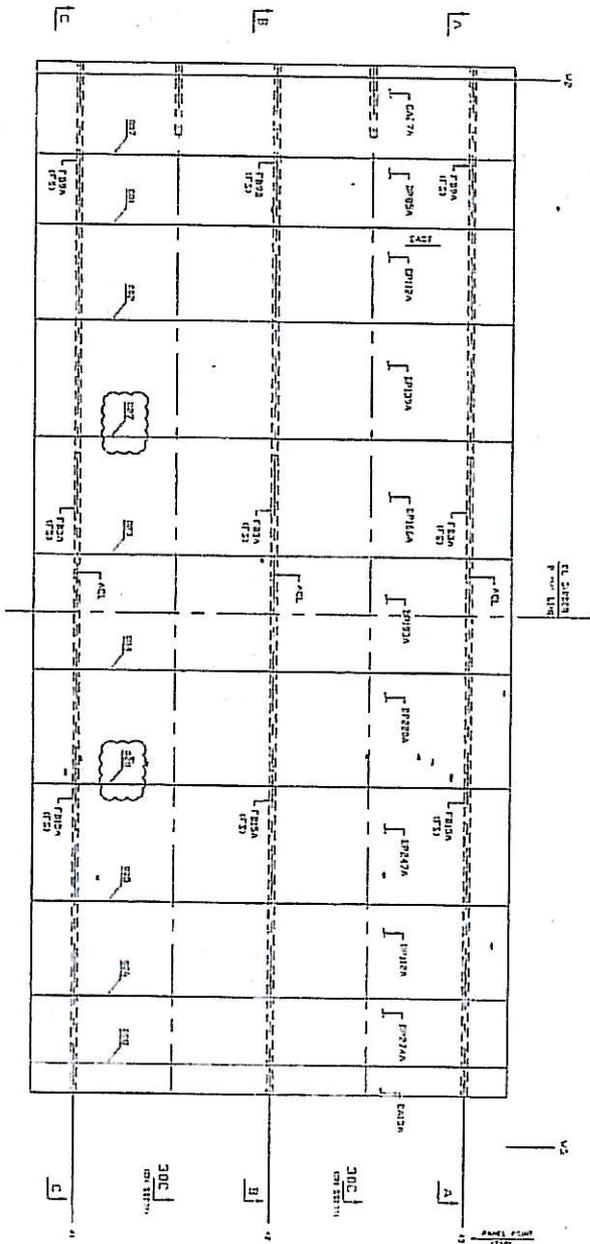
Transmitted by: Ching Chao

Attachments: ZPMC-0410

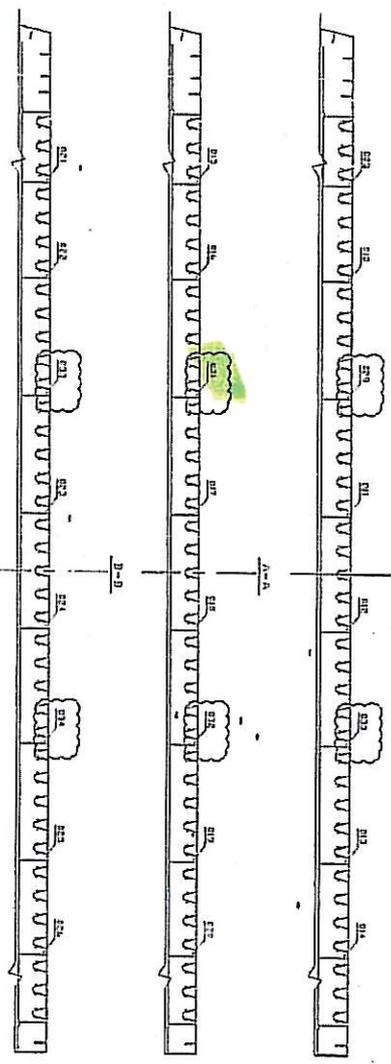
cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Doug Coe, Jason Tom, Contract Files, Ching Chao, Bill Howe

File: 05.03.06

UT-NCR-6BM-001 2/3



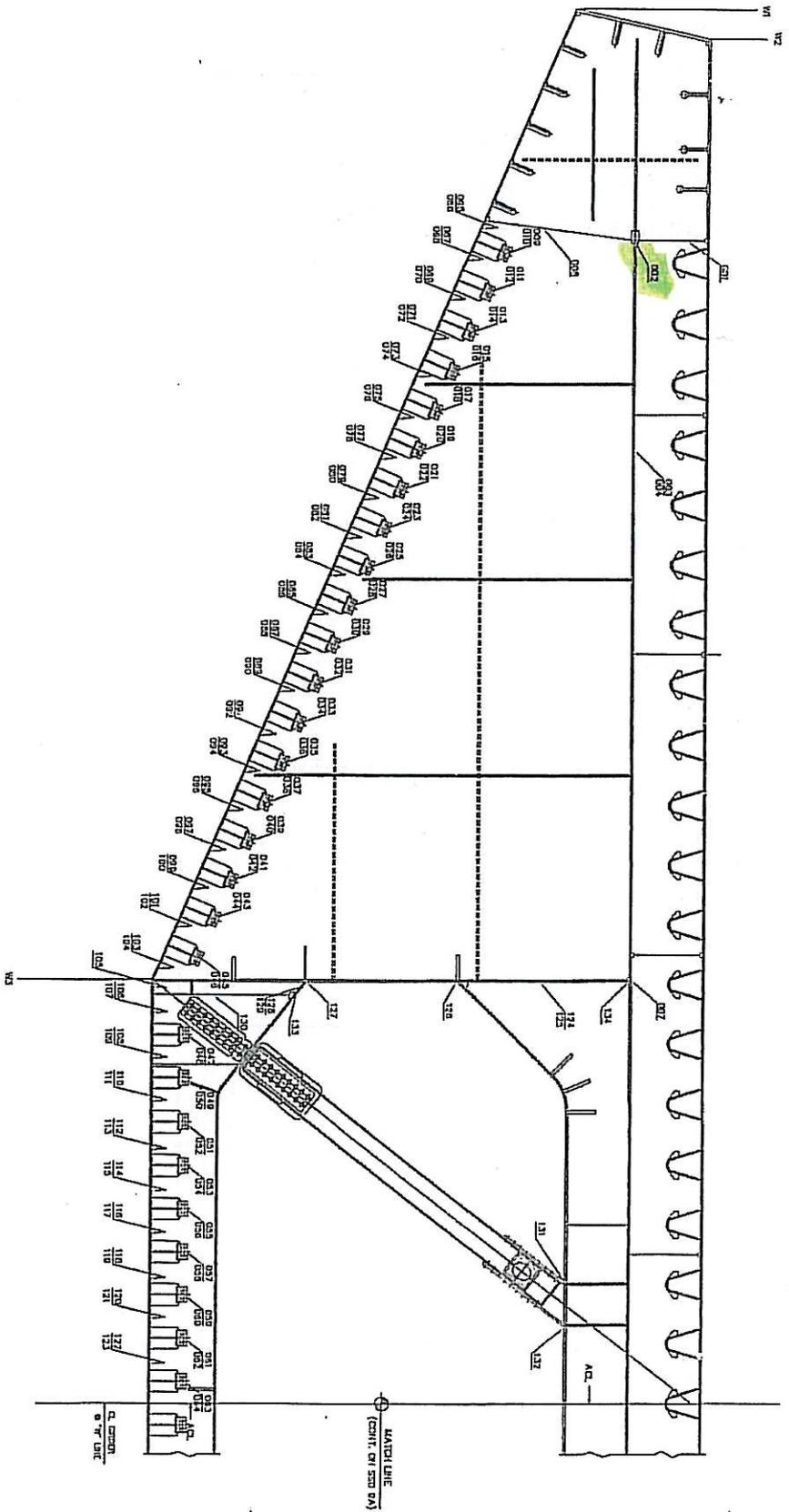
TOP PANEL VIEW
SECTION C-C



- 註:
1. 本圖之尺寸係指在安裝前之尺寸。
 2. 如有變更請洽工程師。

材料說明 SEC029 XXX
材料編號

SPANG
WELDING MAP
SEC 029
171



SECTION 9A-9A
SECTION 9B-9B

注意：
如有埋弧或气焊的焊缝，
请QC人员通知工艺进行特殊处理。

焊缝编号说明：SSD9

PP000 XXX

焊缝序号

焊缝序号

零件号/图号

ZPMC SHANGHAI ZHONGTIAN PORT MACHINERY CO., LTD.		
WELDING MAP		
DESIGNER	SSD 9	DATE
DRAWN		SCALE
CHECKED		REVISION

Handwritten signature



教育培训纪录

培训编号:

培训内容:	UT复习培训教程 UT Techniques
培训对象:	ZPMC UT GUYS
授课人员:	STEVE LAWTON
培训类型:	UT Refresher Training Agenda
培训时间:	2009. 12. 24. 16:30
计划培训地点:	ZPMC NDT OFFICE

人员签到:

姓名	部门	姓名	部门
戴斌 Dai Goud Shen	江江 Jiang Jiang		
薛宇 Xuellamang	黄廷 Huang Ting		
马志长 Majzhang	黄廷 Huang Ting		
谭善 Tanxingshan	李黎明 Li Liming		
马建 Ma Jian	李黎明 Li Liming		
王福 Wang Fu	徐坤 Xu Kun		
沈健 Shen Jian	李黎明 Li Liming		
黄宇 Huang Yu			
金峰 Jin Feng			
吴文 Wu Wen			
解坤 Xie Kun			
周海周 Zhou Hai Zhou			
徐坤 Xu Kun			

UT Refresher Training Agenda

Subject: UT Techniques

Reason for Training: Several CT NCR's for missed UT indications

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

2. **Tools**
 - a. Calibrated UT Machine condition of machine
 - b. Coaxial cable condition of cable
 - c. Transducer condition of transducer
 - d. IIW Block
 - e. Scraper
 - f. UT couplant

3. **Inspection Techniques**
 - a. Surface preparation
 - b. Location of weld UT from beveled plate
 - c. Scanning patterns
 - d. Correct choice of Angles
 - e. Calibration per ZPMC procedure at regular intervals
 - f. Scanning speed
 - g. Know where your sound is at.... First leg, second leg etc...

4. **Inspection Criteria**
 - a. Table 6.3 or Table 6.4
 - b. Are surface inspections complete VT and or MT should always occur before UT
 - c. Scanning Levels
 - d. Criteria dictated by the thinner of the two members
 - e. Planar flaws

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-000492**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:****Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0410**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: 10-Sep-2009**Description of Non-Conformance:**

During random verification Ultrasonic Testing (UT) of the deck panel diaphragm splice weld and floor beam flange splice weld at panel point 42 (Segment 6BW), Caltrans Quality Assurance (QA) Inspector discovered a total of (2) two, rejectable defects of up to 30mm in length. The weld designations are as follows: SEG029*-031 (diaphragm splice) and SSD9-PP42-002 (flange splice). These welds have been previously tested and accepted by ZPMC Quality Control UT Technicians. Due to the amplitude and planar characteristics of the ultrasonic response in the deck panel diaphragm splice weld SSD9-PP42-002, this QA inspector carried out Magnetic Particle Testing (MT) on the excavation of the rejected weld and found a linear indication measured 20mm in length.

Contractor's proposal to correct the problem:

Repair indications and perform the required NDT.

Corrective action taken:

ABF submitted internal NDT documentation verifying the weld is now in conformance with Contract specifications. Per Team China discussions, documentation from ZPMC verifying the repairs were made and NDT was performed by ZPMC technicians will be submitted at a later date and added to the Data Base.

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 152.1675.3703, who represents the Office of Structural Materials for your project.

Inspected By: Simonis, Jim

Quality Assurance Inspector

QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

(Continued Page 2 of 2)

Reviewed By: Wahbeh,Mazen

QA Reviewer