

**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-000973**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 21-Jan-2011**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0932**Type of problem:**

<b>Welding</b>	<b>Concrete</b>	<b>Other</b>	
<b>Welding</b>	<b>Curing</b>	<b>Procedural</b>	<b>Bridge No:</b> 34-0006
<b>Joint fit-up</b>	<b>Coating</b>	<b>Other</b>	<b>Component:</b> 12BW to 12CW Deck Panel
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b>	

**Reference Description:** ZPMC welded at the interior deck plate while the exterior deck plate surface (at the same location) was wet

**Description of Non-Conformance:**

During random in-process visual inspection of welds located on Orthotropic Box Girder (OBG) Segment 12BW and 12CW, this Quality Assurance (QA) Inspector discovered the following issues:

- ZPMC personnel performed Shielded Metal Arc Welding (SMAW) at the interior face of the deck plate splice joint for segments 12BW to 12CW while surfaces are wet on the exterior face of the deck plate (at the same location).
- Before welding started, QA Inspector reminded ZPMC foreman Ghong Ging at 09:15 that the weld area shall be dried prior to performing welding repair.
- At approximately 09:50, vapor was observed at the exterior face of the deck at the repaired area.
- The weld is identified as OBW12A-001.
- The Weld is Complete Joint Penetration (CJP) butt joint repair.
- The Y distance for the exposed area was 13150 mm to 13620mm as measured from edge plate (on the counterweight side).
- The segments are located at the trial assembly area.

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# QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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### Applicable reference:

-AWS D1.5 2002 Section 3.1.3: "Welding shall not be done when the ambient temperature is lower than -20°C [0°F](see 4.2), when surfaces are wet or exposed to rain, snow, or high wind velocities, nor when welders are exposed to inclement conditions."

-AWS D1.5 2002 Section 3.2.1: "Surfaces to be welded and surfaces adjacent to a weld shall also be free from loose or thick scale, slag, rust, moisture, grease, and other foreign material that would prevent proper welding or produce objectionable fumes."

**Who discovered the problem:** Subhasis Bera

**Name of individual from Contractor notified:** Peter Ferguson

**Time and method of notification:** 1245 hours, 01-21-11, Email

**Name of Caltrans Engineer notified:** Sean Eagen

**Time and method of notification:** 1400 hours, 01-21-11, Verbal

**QC Inspector's Name:** Zhou Zhong Hai

**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 Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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**Inspected By:** Tsang, Eric

SMR

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**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:** 22-Jan-2011

**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-0932

**Job Name:** SAS Superstructure  
**Document No:** 05.03.06-000930

**Reference Description:** ZPMC welded at the interior deck plate while the exterior deck plate surface (at the same location) was wet

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 visual inspection of welds located on Orthotropic Box Girder (OBG) Segment 12BW and 12CW, this Quality Assurance (QA) Inspector discovered the following issues:
- ZPMC personnel performed Shielded Metal Arc Welding (SMAW) at the interior face of the deck plate splice joint for segments 12BW to 12CW while surfaces are wet on the exterior face of the deck plate (at the same location).
  - Before welding started, QA Inspector reminded ZPMC foreman Ghong Ging at 09:15 that the weld area shall be dried prior to performing welding repair.
  - At approximately 09:50, vapor was observed at the exterior face of the deck at the repaired area.
  - The weld is identified as OBW12A-001.
  - The Weld is Complete Joint Penetration (CJP) butt joint repair.
  - The Y distance for the exposed area was 13150 mm to 13620mm as measured from edge plate (on the counterweight side).
  - The segments are located at the trial assembly area.

**Action Required and/or Action Taken:**

Propose resolutions for the identified non-conformance items and document that the various deficiencies have been brought in compliance with contract requirements. Also propose a resolution that addresses the apparent failure of Quality Control to identify the non-conformance with the appropriate Welding Procedure Specification (WPS). Provide documentation of the steps taken by the Quality Control Manager to prevent future occurrences.

The response for the resolution of this issue is requested within 7 days.

**Transmitted by:** Sean Eagen Transportation Engineer

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# NCT

( Continued Page 2 of 2 )

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**Attachments:** ZPMC-0932

**cc:** Rick Morrow, Peter Siegenthaler, Stanley Ku, Brian Boal, Contract Files, Ching Chao, Bill Casey

**File:** 05.03.06

## NCR PROPOSED RESOLUTION

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

**Attention:** Siegenthaler, Peter  
Resident Engineer

**Ref:** 05.03.06-000930

**Subject:** NCR No. ZPMC-0932

**Dated:** 14-Mar-2011

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000935 Rev: 00

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**Contractor's Proposed Resolution:**

**Reference Resolution:**

Please see ZPMC's response

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000935R00;

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**Caltrans' comments:**

**Status:** CLO

**Date:** 17-Mar-2011

The welds in question were repaired with subsequent NDT documentation.

**Submitted by:** Chao, Ching

**Date:** 17-Mar-2011

**Attachment(s):**



TRANSMITTAL LETTER

PROJECT: S.F.O.B.B.

DATE:2011-03-14

TO: ROSEMARY/ABF JV QA DEPARTMENT

FROM: ZPMC QA DEPARTMENT

SUBJECT: OBG NCR

SUBMITTED FOR YOUR APPROVAL AND SUBMITTAL TO CALTRANS

ENCLOSED WITH THIS TRANSMITTAL IS ONE COPY OF

(01) LR: No. B-979

(02) NCR-000973(ZPMC-0932)

B787-UT-12W-035R2

B787-MT-36814

PLEASE SIGN THIS TRANSMITTAL AND RETURN TO ME.

ACKNOWLEDGEMENT

PLAN HOLDER:

Rosemary

COMPANY:



PLAN NUMBER:N/A  
#R787-QCP-102

DATE: 15, 20  
RECEIVED 14 March 2011

PHONE NO.



No. B-979

## LETTER OF RESPONSE

**TO: American Bridge/Flour**

**DATE: 2011-03-14**

**REGARDING: NCR-000973(ZPMC-0932)**

ZPMC acknowledged this problem and has issued an internal NCR. ZPMC production department will pay more attention on the removal of water around weld area prior to start welding. ZPMC QA personnel have talked with the CWI in responsibility to instruct the requirement to follow the weld procedure during welding. ZPMC is providing the NDT records to show the acceptability of this weld. Based on this, please consider closure of this NCR.

**ATTACHMENT:**

NCR-000973(ZPMC-0932)

B787-UT-12W-035 R2

B787-MT-36814

*Zhang*  
*3/14/11*





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 Date: 22-Jan-2011  
 375 BURMA ROAD  
 OAKLAND CA 95607 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: 05.03.06-000930  
 Subject: NCR No. ZPMC-0932

Reference Description: ZPMC welded at the interior deck plate while the exterior deck plate surface (at the same location) was wet

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Transmitted by: Sean Eagen Transportation Engineer

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NCT

( Continued Page 2 of 2 )

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Attachments: ZPMC-0932

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

File: 05.03.06

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Contract #: 04-0120F4City: 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-000973**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 21-Jan-2011**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0932**Type of problem:**Welding  Concrete  Other Welding  Curing  Procedural Joint fit-up  Coating  Other Procedural  Procedural  Description:**Bridge No:** 34-0006**Component:** 12BW to 12CW Deck Panel

**Reference Description:** ZPMC welded at the interior deck plate while the exterior deck plate surface (at the same location) was wet

**Description of Non-Conformance:**

During random in-process visual inspection of welds located on Orthotropic Box Girder (OBG) Segment 12BW and 12CW, this Quality Assurance (QA) Inspector discovered the following issues:

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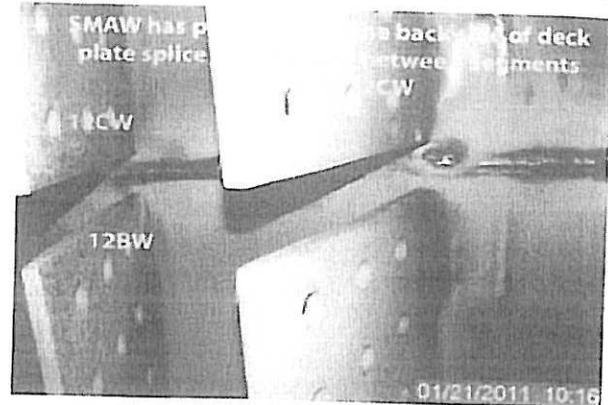
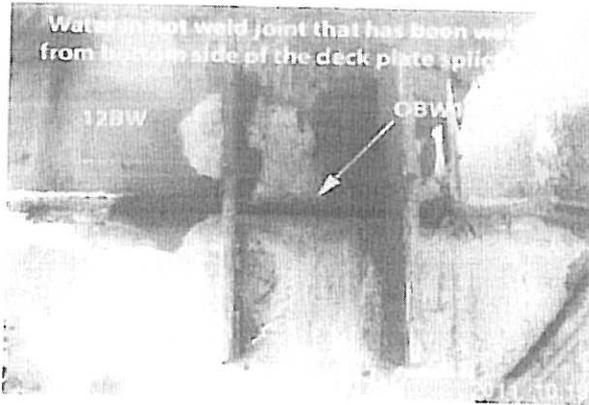
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# QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



### Applicable reference:

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Who discovered the problem: Subhasis Bera  
Name of individual from Contractor notified: Peter Ferguson  
Time and method of notification: 1245 hours, 01-21-11, Email  
Name of Caltrans Engineer notified: Sean Eagen  
Time and method of notification: 1400 hours, 01-21-11, Verbal  
QC Inspector's Name: Zhou Zhong Hai  
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 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

932



REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 B787-MT-36814      DATE日期 2011.03.12      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: OBW12 12BW+12CW		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 <sup>ST</sup> , 2011
EQUIPMENT 设备 MT YOKE	MANUFACTURER 制造商 USA	MODEL NO. 样式编号 #ES-X	SERIAL NO. 连续编号 14243
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 20mm
WELDING PROCESS 焊接方法	FCAW/SAW/MAW	TYPE OF JOINT 焊缝类型	BUTT

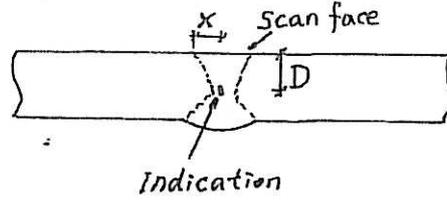
WELD I.D. 焊缝编号	DISCONTINUITY不连续性			ACCEPT 接受	REJECT 拒收	REMARKS 备注
	INDICATION 指示	TYPE 类型	LENGTH IN mm 长度			
CA3012-012				ACC.		100%MT
OBW12A-001				ACC.		100%MT
OBW12A-002				ACC.		100%MT
CA3012-010				ACC.		100%MT
OBW12A-003				ACC.		100%MT
BLANK						

EXAMINED BY主探 Wang Long <u>Wang Long</u> LEVEL - II SIGN 签名 / DATE日期 2011.03.12 质量经理 / QCM <u>[Signature]</u> 签字 SIGN / 日期 DATE	REVIEWED BY 审核 <u>Huang zheng chao</u> LEVEL-II SIGN / DATE日期 2011.03.12 用户CUSTOMER 签字 SIGN / 日期 DATE
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UT Report

Project Name: STOBB SAS Bridge Date: 2011.3.8  
 Lift / Segment No.: 12BW/12CW Report Number: UT-12W-035 R2  
 Drawing Number: CA3012/0BW12A Page Number: 1 of 2  
 Component: A1, A2, A10 (R2) Tower / OBG: OBG  
 Refer to the attached sketch



Material: A709 Thickness: 20/20 Examination Specification: AWS D1.5  
 Surface Condition:  As Welded  Dressed Acceptance Criteria: AWS D1.5 Table 6.3 / 6.4  
 Type of Instrument: H5610e/USNS8L Test Procedure Number: ZPQC-UT-01  
 Serial Number: 61226 / 612540 / 01P8HW  
 Type of Transducer: 2.5P20 ; 2.25 / 1.75 X .625 Reference Block: - IIW  
 Transducer Angle: 0 ; 70 Couplant: CMC Paste  
 Welding Process:  FCAW  SMAW  GMAW  SAW

Weld Number.	Indication No.	Scan Face	Leg	Decibels				Discontinuity Dimensions (mm)			Evaluation	Inspector	Inspection %		
				Indication Level	Reference Level	Attenuation Factor	Indication Rating	Length	Sound Path	Depth				Distance	
														From "X"	From "Y"
a	b	c	d												
OBW12A-001 (A1)	/	outside	/	/	/	/	/	/	/	/	/	ACC. S022 S020	100%		
OBW12A-002 (A10)	/	outside	/	/	/	/	/	/	/	/	/	ACC. S002	100%		
CA3012-012 (A2)	/	outside	/	/	/	/	/	/	/	/	/	ACC. S034	100%		

Observation: Scanning Pattern: A / B / C / D NE Time of Inspection Start: 2011.3.8 13:40  
 Pattern D conducted inline with Transverse Segment Assembly Splice Ultrasonic Testing Procedure. Completed: 2011.3.8 17:00  
 Legend: ACC--Accept, REJ--Reject, TLI--Transverse Linear Indication, LLI--Longitudinal Linear Indication, RI--Rounded Indication, LF--Lack of Fusion.

Prepared By:		Reviewed By:	
Name	<u>Wang zhenhua</u>	Name	<u>Peter Ferguson</u>
Sign	<u>WangZH (S001)</u>	Sign	<u>[Signature]</u>
Position		Position	<u>FABRICATION SUPERINTENDENT</u>

12BW/12CW

UT-12W-035R2 12/21

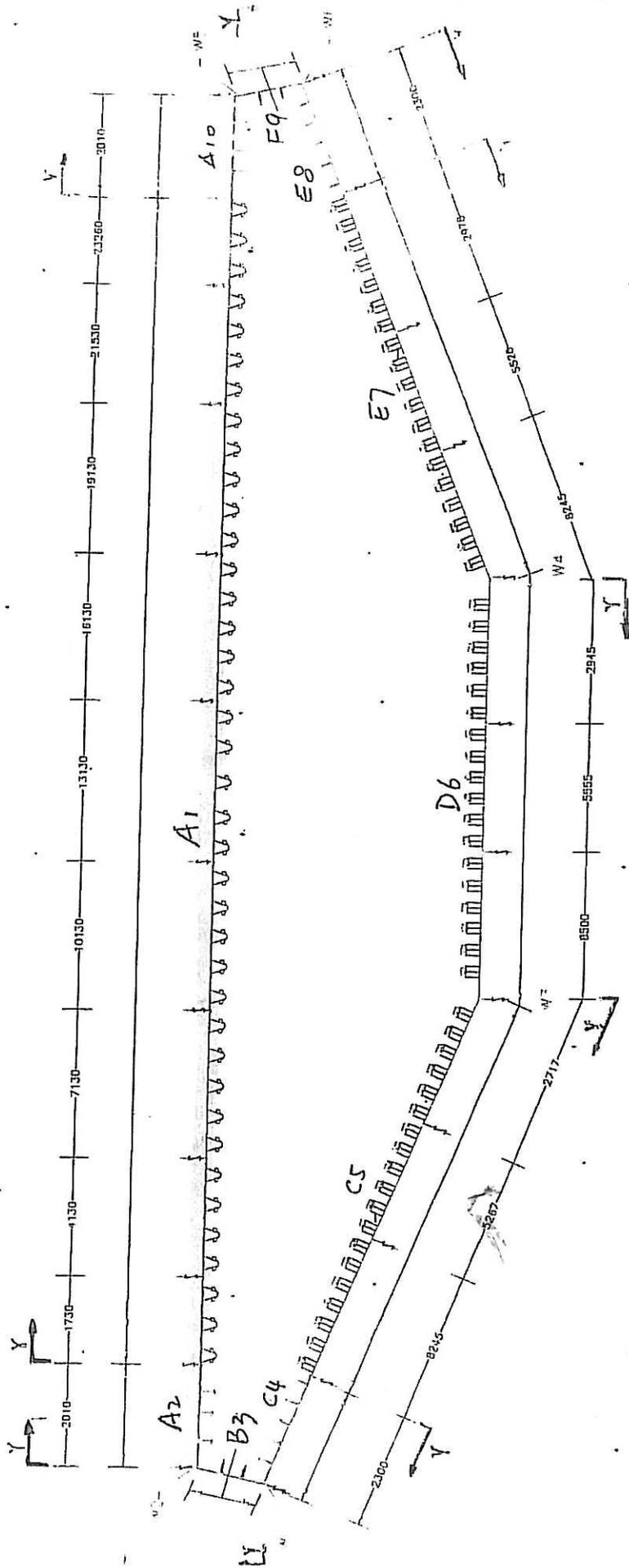
A1.A2.A10

COUNTER WEIGHT

OBW

SPLICE

CROSSBEAM



DATE: SEPTEMBER 2009

SEGMENT:	SPLICE	
DRAWN BY:	R.P.	
JOB #:	04-012004	DATE:
DESCRIPTION:	OBG OUTER SKIN SEAMS (LKG EASTBND)	DATE:
DRAW #:	OBG SEAMS	DATE:
		SEPTEMBER 2009

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

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690 Walnut Ave. St. 150  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: xx.25A


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**QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION**


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**Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCS-000949**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 17-Mar-2011**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0932**Type of problem:**

<b>Welding</b>	<b>Concrete</b>	<b>Other</b>	
<b>Welding</b>	<b>Curing</b>	<b>Procedural</b>	<b>Bridge No:</b> 34-0006
<b>Joint fit-up</b>	<b>Coating</b>	<b>Other</b>	<b>Component:</b>
<b>Procedural</b>	<b>Procedural</b>	<b>Descriptor:</b>	

**Date the Non-Conformance Report was written:** 21-Jan-2011**Description of Non-Conformance:**

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-The segments are located at the trial assembly area.

**Contractor's proposal to correct the problem:**

Contractor will provide the NDT report to prove the weld is acceptable. Contractor will issue an internal NCR to the Production department. QA personnel will reinforce to the CWI's the welding requirements and pay more attention to keep dry up area prior welding.

**Corrective action taken:**

Contractor provided the sufficient NDT reports to prove the weld is acceptable. Internal NCR has been issued to the Production department. QA also instructed the QC regarding the welding requirements and pay specific attention to dry and clean area before welding begins..

**Did corrective action require Engineer's approval?**

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## QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

( Continued Page 2 of 2 )

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Yes    No

**If so, name of Engineer providing approval:**

**Date:**

**Is Engineer's approval attached?**            Yes    No

**Comments:**

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**Inspected By:**    Ng,Michael

Quality Assurance Inspector

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**Reviewed By:**    Wahbeh,Mazen

QA Reviewer