

**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

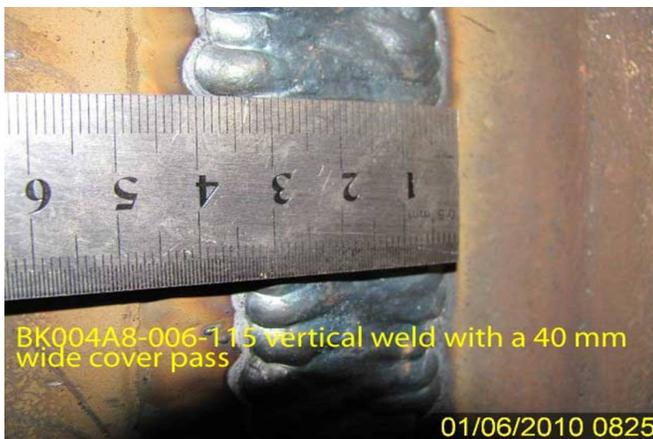
Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.25B**QUALITY ASSURANCE -- NON-CONFORMANCE REPORT****Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCR-000607**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 06-Jan-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0580**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> OBG Bike Path 4
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b>	

**Reference Description:** ZPMC welded a FCAW single pass weld bead wider than the allowed specification**Description of Non-Conformance:**

During the Caltrans Quality Assurance in-process observations of the bike path components in assembly bay 19 this Quality Assurance Inspector (QA) discovered the following issue:

- ZPMC has welded a single cover pass weld bead up to 40 mm in width. This is a non-conformance as the code requires split layer technique to be implemented in welding if the width is over 25 mm.
- The welding process used was Flux Cored Arc Welding (FCAW).
- Welding was performed in the 3G (vertical) position
- The bike path segment is identified as BK004.
- The weld is a Complete Joint Penetration (CJP) T-joint.
- The weld joint is identified as BK004-A8-006-115.
- The part is identified as BKX11L.
- The material thickness is 25 mm.

**Applicable reference:**

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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AWS D1.5/2002, Section 4.14.1.5 FCAW: "... When welding in the vertical position, a split layer technique shall be used when the width of the layer exceeds 25 mm [1 in.].

Approved WPS procedure: WPS-B-T-2233-B-U2a-F-1

**Who discovered the problem:** Larry Viars

**Name of individual from Contractor notified:** Peng Wen Jun

**Time and method of notification:** 0900 hours, 01-06-10, Verbal

**Name of Caltrans Engineer notified:** Bill Howe

**Time and method of notification:** 1700 hours, 01-06-10, Verbal

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

**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.

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**Inspected By:** Carreon,Albert

Lead Reviewer/Task Leader

**Reviewed By:** Wahbeh,Mazen

SMR

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## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000570

**Subject:** NCR No. ZPMC-0580

**Dated:** 10-Jun-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000686 Rev: 00

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**Contractor's Proposed Resolution:**

**Reference Resolution:** ZPMC will repair this oversize weld and provide the repair documentation as well as NDT to show that the weld is acceptable.

ZPMC will repair this oversize weld and provide the repair documentation as well as NDT to show that the weld is acceptable. Based on this proposal ZPMC requests that this NCR be approved, with actions pending.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000686R00

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**Caltrans' comments:**

**Status:** AAP

**Date:** 15-Jun-2010

This proposed resolution is accepted, action pending. Please provide NDT results for these welds upon completion of the repairs.

**Submitted by:** Eagen, Sean

**Attachment(s):**

**Date:** 15-Jun-2010

## NCR PROPOSED RESOLUTION

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

**Attention:** Siegenthaler, Peter  
Resident Engineer

**Ref:** 05.03.06-000570

**Subject:** NCR No. ZPMC-0580

**Dated:** 14-Oct-2010

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000686 Rev: 01

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**Contractor's Proposed Resolution:**

**Reference Resolution:** ZPMC has conducted NDT of this weld to ensure that despite being oversized it is an acceptable weld.

ZPMC has conducted NDT of this weld to ensure that despite being oversized it is an acceptable weld. To prevent oversize welds in the future, ZPMC QA has met with the QC inspector for this area and the work team to discuss this unacceptable situation. As this is not a commonly recurring issue ABFJV and ZPMC is confident that this will remedy the issue and prevent future occurrences. Based on this ZPMC requests closure. In addition, note the weld ID in the NCR was incorrectly identified. The NDT report reflects the correct weld ID and the weld map confirms that.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000686R01;

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**Caltrans' comments:**

**Status:** CLO

**Date:** 15-Oct-2010

The proposed resolution is acceptable. This NCR is considered closed.

**Submitted by:** Woo, Laraine

**Attachment(s):**

**Date:** 15-Oct-2010



No. B-909

## LETTER OF RESPONSE

**TO: American Bridge/Flour**

**DATE: 2010-10-14**

**REGARDING: NCR-000607(ZPMC-0580)**

ZPMC is providing the NDT record to show the soundness of this weld. Please be noticed, ZPMC has revised the weld ID to be BK004A6-006-031. Based on this, ZPMC is requesting closure of this NCR.

**ATTACHMENT:**

NCR-000607(ZPMC-0580)

B787-UT-16065

WELD MAP OF BK004A6

*Lay W*

*10/14/2010*



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:** 07-Jan-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:** 05.03.06-000570

**Subject:** NCR No. ZPMC-0580

**Reference Description:** ZPMC welded a FCAW single pass weld bead wider than the allowed specification

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:** Bike Path

**Lift:** 04

### Remarks:

During the Caltrans Quality Assurance in-process observations of the bike path components in assembly bay 19 this Quality Assurance Inspector (QA) discovered the following issue:

- ZPMC has welded a single cover pass weld bead up to 40 mm in width. This is a non-conformance as the code requires split layer technique to be implemented in welding if the width is over 25 mm.
- The welding process used was Flux Cored Arc Welding (FCAW).
- Welding was performed in the 3G (vertical) position
- The bike path segment is identified as BK004.
- The weld is a Complete Joint Penetration (CJP) T-joint.
- The weld joint is identified as BK004-A8-006-115.
- The part is identified as BKX11L.
- The material thickness is 25 mm.

### 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-0580

**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-000607

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 06-Jan-2010

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

NCR #: ZPMC-0580

### Type of problem:

Welding  Concrete  Other

Welding  Curing  Procedural

Joint fit-up  Coating  Other

Procedural  Procedural  Description:

Bridge No: 34-0006

Component: OBG Bike Path 4

Reference Description: ZPMC welded a FCAW single pass weld bead wider than the allowed specification

### Description of Non-Conformance:

During the Caltrans Quality Assurance in-process observations of the bike path components in assembly bay 19 this Quality Assurance Inspector (QA) discovered the following issue:

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- The material thickness is 25 mm.



### Applicable reference:

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

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AWS D1.5/2002, Section 4.14.1.5 FCAW: "... When welding in the vertical position, a split layer technique shall be used when the width of the layer exceeds 25 mm [1 in.].

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QC Inspector's Name: Zhou Zhong Hai

Was QC Inspector aware of the problem:  Yes  No

Contractor's proposal to correct the problem:

N/A

**Comments:**

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Inspected By: Carreon,Albert

Lead Reviewer/Task Leader

Reviewed By: Wahbeh,Mazen

SMR

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# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 B787-UT-16065      DATE 2010.10.09      PAGE 1 OF 3      Revision No: 0

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

ITEMS NAME: BIKE PATH      DRAWING NO.: BK004-006      CALTRANS CONTRACT NO.: 04-0120F4  
 部件名称      图号      加州工程编号 ZP06-787

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      T-JOINT BUTT      Dec. 28<sup>ST</sup>, 2010

EQUIPMENT 设备      MANUFACTURER 制造商      MODEL NO. 样式编号      SERIAL NO. 序列编号  
 UT SCOPE      HANWEI      H610e      61e1698

CALIBRATION BLOCK 试块      COUPLANT 耦合剂      MATERIAL/THICKNESS 材料厚度  
 AWS IIV BLOCK TYPE II      C.M.C      A709M-345T2      25/16mm

### 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°	2.25MHz	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			Sound Path 声程
BK004A6-006-021		70				60									ACC.	100%
BK004A6-006-023	1	70	A	1	68	60	0	+8	20	25	9	+28	340		REJ.	100%
BK004A6-006-213		70				60									ACC.	100%
BK004A6-006-200		70				60									ACC.	100%
BK004A6-006-201		70				60									ACC.	100%
BK004A6-006-029		70				60									ACC.	100%
BK004A6-006-204		70				60									ACC.	100%

EXAMINED BY 主探 Dong Sheng wei      REVIEWED BY 审核 Wang Zhen hua  
 LEVEL - II SIGN / DATE 20/10/09      LEVEL - II SIGN / DATE 20/10/09

质量经理 / QCM Lu Jianhua      用户 CUSTOMER \_\_\_\_\_  
 签字 SIGN / 日期 DATE 20/10/09      签字 SIGN / 日期 DATE \_\_\_\_\_



# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 B787-UT-16065      DATE 2010.09.16      PAGE 2 OF 3      Revision No: 0

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	Sound Path 声程	Depth from Surface 距表面深度	From'X 距X	From'Y 距Y			
BK004A6-006-031		70				60									ACC.	100%
BK004A6-006-033		70				58									ACC.	100%
BK004A6-006-205		70				58									ACC.	100%
BK004A6-006-041		70				58									ACC.	100%
BK004A6-006-202		70				58									ACC.	100%
BK004A6-006-207	1	70	A	1	61	58	3	0	25	64.6	22.8	+3	210	REJ.	100%	
BK004A6-006-203		70				58									ACC.	100%
BK004A6-006-206		70				58									ACC.	100%
BK004A6-006-043		70				58									ACC.	100%
BK004A8-006-021		70				58									ACC.	100%
BK004A8-006-023		70				58									ACC.	100%
BK004A8-006-213	1	70	A	1	58	49	3	+6	20	60	21.6	+10	690	REJ.	100%	
BK004A8-006-200	1	70	A	1	59	49	2	+8	50	53	19	+10	0	REJ.	100%	
	2	70	A	1	59	49	2	+8	40	53	19	+10	150	REJ.	100%	
BK004A8-006-201		70				49									ACC.	100%
BK004A8-006-029	1	70	A	1	58	49	2	+7	15	48.7	17.7	+5	470	REJ.	100%	
BK004A8-006-204		70				49									ACC.	100%
BK004A8-006-031		70				49									ACC.	100%
BK004A8-006-033		70				49									ACC.	100%
BK004A8-006-205		70				49									ACC.	100%

EXAMINED BY 主探  
*Dermshong Wei*

REVIEWED BY 审核  
*Wang zhen hua*

LEVEL II SIGN / DATE *20/0.10.09*

LEVEL II SIGN I / DATE *20/0.10.09*

质量经理 / QCM  
*Lu Jianhua*

用户 CUSTOMER

签字 SIGN / 日期 DATE *20/0.10.09*

签字 SIGN / 日期 DATE



# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 B787-UT-16065      DATE 2010.09.16      PAGE 3 OF 3      Revision No: 0

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
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BK004A8-006-041		70				49								ACC.	100%
BK004A8-006-202		70				49								ACC.	100%
BK004A8-006-207	1	70	A	1	56	46	2	+8	120	46	17	+18	50	REJ.	100%
	2	70	A	1	56	46	2	+8	230	46	17	+18	300	REJ.	100%
BK004A8-006-203		70				46								ACC.	100%
BK004A8-006-206		70				46								ACC.	100%
BK004A8-006-043		70				46								ACC.	100%

BLANK

EXAMINED BY 主探  
*Dong Sheng wei*

LEVEL-II SIGN / DATE *20/10/09*

质量经理 / QCM  
*Li Jian hua*

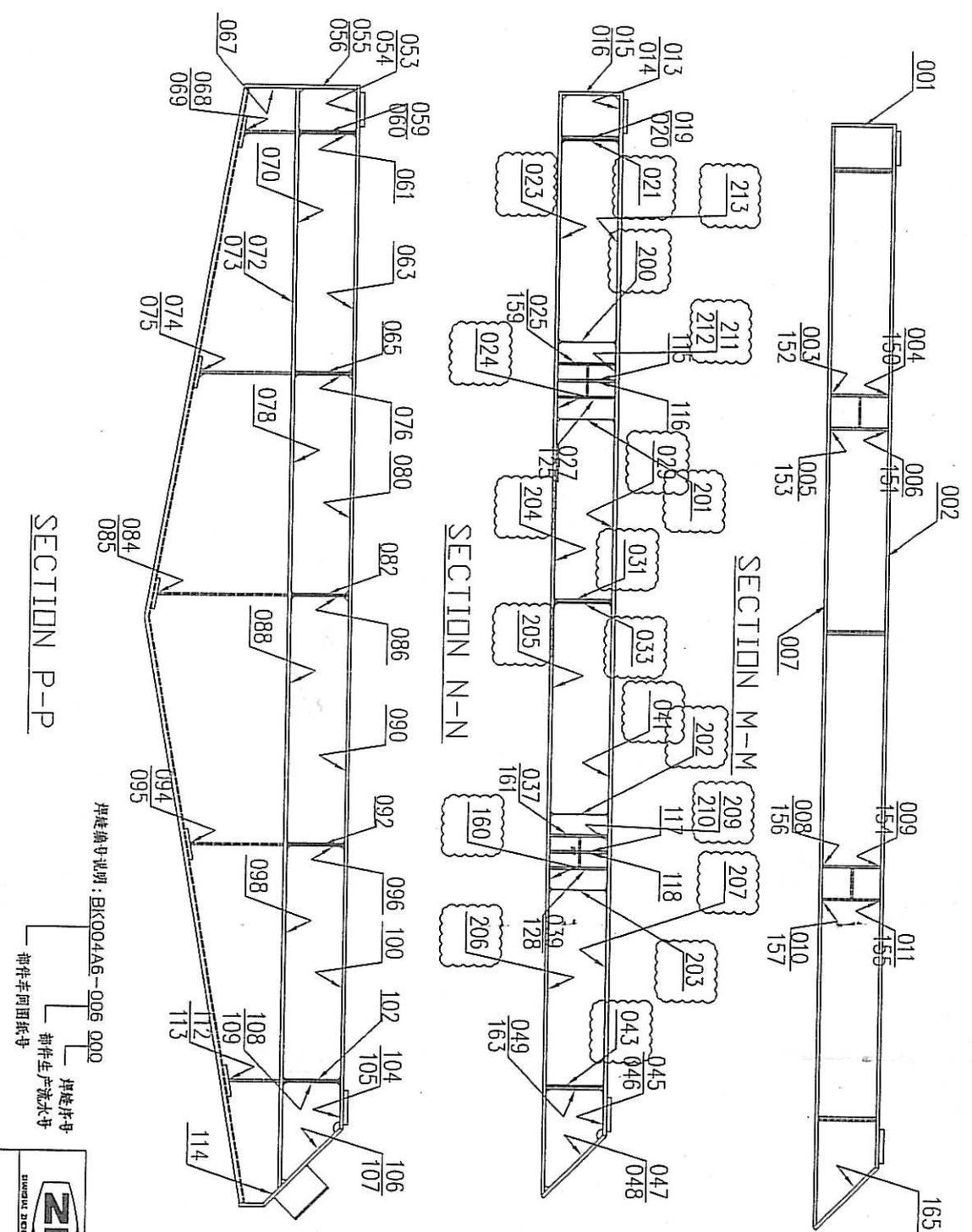
签字 SIGN / 日期 DATE *20/10/09*

REVIEWED BY 审核  
*Wang zhen hua*

LEVEL-II SIGN / DATE *20/10/09*

用户 CUSTOMER

签字 SIGN / 日期 DATE



SECTION P-P

SECTION N-N

SECTION M-M

岸壁编号说明: BK004A6-006 000

焊接井号  
 附件生产流水号  
 附件在图号

注意:  
 1. 如有道阻或重直标注的焊缝, 请QC人  
 贝通知工艺进行补焊或删掉.  
 2. 此张焊接地图仅用于BK004-006

**ZPMC**  
 ZHEJIANG ZHONGYUAN PORT MACHINERY CO., LTD.  
 WELDING MAP  
 SHIP DRAWING FILE: BK004A6  
 PAQUINTURE: 1/1

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

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Quality Assurance and Source Inspection



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(707) 649-5453  
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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-000877**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 16-Oct-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0580**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>Description:</b>	

**Date the Non-Conformance Report was written:** 06-Jan-2010**Description of Non-Conformance:**

During the Caltrans Quality Assurance in-process observations of the bike path components in assembly bay 19 this Quality Assurance Inspector (QA) discovered the following issue:

- ZPMC has welded a single cover pass weld bead up to 40 mm in width. This is a non-conformance as the code requires split layer technique to be implemented in welding if the width is over 25 mm.
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- The weld joint is identified as BK004-A8-006-115.
- The part is identified as BKX11L.
- The material thickness is 25 mm.

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

ZPMC has conducted NDT of this weld to ensure that despite being oversized it is an acceptable weld. To prevent oversized welds in the future, ZPMC QA will meet with the QC inspector.

**Corrective action taken:**

ZPMC has conducted NDT of this weld to ensure that it is an acceptable weld. ZPMC QA spoke with QC to address the issue in preventing future occurrences.

**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 Devey, (86) 150-0002-6784, who represents the Office of Structural Materials for your project.

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# QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

( Continued Page 2 of 2 )

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**Inspected By:** Tsang, Eric

Quality Assurance Inspector

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**Reviewed By:** Wahbeh, Mazen

QA Reviewer