

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-000326
Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date:** 16-Jun-2009
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0300

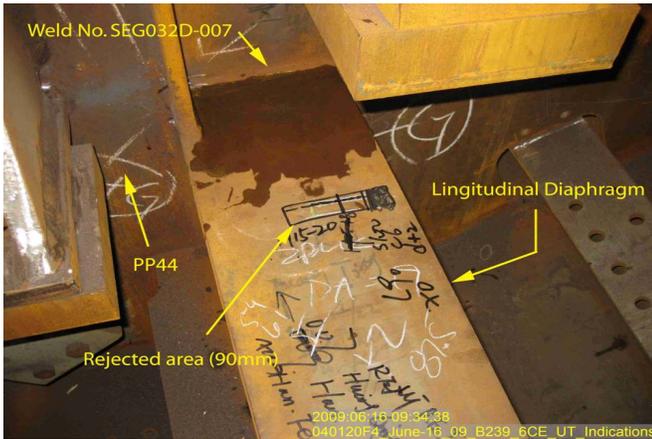
Type of problem:

Welding	Concrete	Other	
Welding	Curing	Procedural	Bridge No: 34-0006
Joint fit-up	Coating	Other	Component: OBG Segment 6CE
Procedural	Procedural	Description:	

Reference Description: Missed UT Indications by QC, Welds SEG032D-007 and SEG033B-020, Segment 6CE

Description of Non-Conformance:

During random verification ultrasonic testing (UT) of longitudinal diaphragm to floor beam weld SEG032D-007 and side panel to bottom panel weld SEG033B-020, Caltrans Quality Assurance (QA) Inspector discovered two (2) rejectable indications measuring 90mm and 20mm in length respectively. These welds have been previously tested, rejected, and the repairs accepted, by ZPMC Quality Control (UT) Technicians.



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 (02) Table 6.3

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Who discovered the problem: Rodney Patterson
Name of individual from Contractor notified: Mankit Lee
Time and method of notification: 06/16/09, 10:00, Verbal
Name of Caltrans Engineer notified: Stanley Ku
Time and method of notification: 06/19/09, 9:00, Verbal
QC Inspector's Name: Wang Lu
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 Skyler Guest, (86) 1500-042-2360, who represents the Office of Structural Materials for your project.

Inspected By:	Guest,Skyler	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: 22-Jun-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: 05.03.06-000290

Subject: NCR No. ZPMC-0300

Reference Description: Missed UT Indications by QC, Welds SEG032D-007 and SEG033B-020, Segment 6CE

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 longitudinal diaphragm to floor beam weld SEG032D-007 and side panel to bottom panel weld SEG033B-020, Caltrans Quality Assurance (QA) Inspector discovered two (2) rejectable indications measuring 90mm and 20mm in length respectively. These welds have been previously tested, rejected, and the repairs accepted, by ZPMC Quality Control (UT) Technicians.

See attached NCR No. ZPMC-300 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 to remedy the defected work and with revised procedures to prevent future occurrences. A response for the resolution of this issue is expected within 14 days.

Transmitted by: Ching Chao

Attachments: ZPMC-0300

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Doug Coe, 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: 05.03.06-000290

Subject: NCR No. ZPMC-0300

Dated: 24-Aug-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000314 Rev: 00

Contractor's Proposed Resolution:

Reference Resolution: ABF has notified ZPMC of the missed MT indications and ZPMC has completed the necessary repairs. ABF is also conducting an investigation of why ZPMC is experiencing cracking of welds.

ABF has notified ZPMC of the missed MT indications and ZPMC has completed the necessary repairs. ABF has taken action by hiring several MT technicians to perform overchecks of several types of welds due to the amount of missed indications. ABF is also conducting an investigation of why ZPMC is experiencing cracking of welds. This investigation is being performed by both onsite ABF personnel as well as welding experts hired by ABF for this purpose. Recently CT has brought in their own welding consultant to discuss ABF findings and preventive actions. Preventive actions such as increased preheats have been discussed with ZPMC. When the investigation is completed, ABF will submit the findings to ZPMC and CT. ABF will continue to perform overchecks until we are sure this issue is corrected and preventive actions are implemented. ZPMC will submit the repair documents at a later date to close this NCR.

Submitted by:

Attachment(s): ABF-NPR-000314R00

Caltrans' comments:

Status: AAP

Date: 31-Aug-2009

The response is acceptable, but the Non-Conformance is not closed. Non-Conformance ZPMC-300 was issued for QC missing indications during Ultrasonic Testing (UT), not MT as mentioned above.

Please provide documentation of the weld repairs that were performed and that the repairs were acceptable. The Department will review the Contractor's proposal to close Non-Conformance ZPMC-0300 at that time.

Submitted by: Wright, Doug

Date: 31-Aug-2009

Attachment(s):

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000290

Subject: NCR No. ZPMC-0300

Dated: 03-Mar-2010

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000314 Rev: 01

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has repaired the missed indications present and retested the welds for acceptability. Attached is documentation showing the welds are sounds. Based on that ZPMC requests closure of this NCR.

ZPMC has repaired the missed indications present and retested the welds for acceptability. Attached is documentation showing the welds are sounds. Based on that ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000314R01;

Caltrans' comments:

Status: CLO
Date: 07-Mar-2010

The documentation received is sufficient to close this NCR.

Submitted by: Howe, Bill

Attachment(s):

Date: 07-Mar-2010



No. B-633

LETTER OF RESPONSE

TO: American Bridge/Flour

DATE: 2010-3-3

REGARDING: NCR-000326 (ZPMC-0300)

With this letter of response, ZPMC requests closure of CT NCR-000326 (ZPMC-0300) what mentioned that CT inspector discovered missed UT indication by QC.

- ZPMC internal NCR was issued to warn this problem.
- Attached documentations show this missed indication in SEG032D-007 has been fixed and accepted finally.
- Another indication was confirmed to be in SEG032B-020 instead of SEG033B-020. And it was removed ^{by} slight grinding on weld's surface.
- The Punch List item 230 what mentioning this NCR has been confirmed and closed by CT inspector.
- The related Green Tag 11171 & 11169 has been signed by three parties.

Based on the taken actions and attached documentations, ZPMC requests closure of this NCR.

ATTACHMENT:

NCR-000326 (ZPMC-0300)

NCR-B-200(ZPMC-0300)

B-WR4475

B787-UT-7129 R1

3/3/10



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
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Date: 22-Jun-2009

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

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Job Name: SAS Superstructure

Attention: Mr. Thomas Nilsson Project/Fabrication Manager

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Transmitted by: Ching Chao

Attachments: ZPMC-0300

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

File: 05.03.06

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 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-000326

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 16-Jun-2009

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

NCR #: ZPMC-0300

Type of problem:

Welding Concrete Other

Welding Curing Procedural

Joint fit-up Coating Other

Procedural Procedural Description:

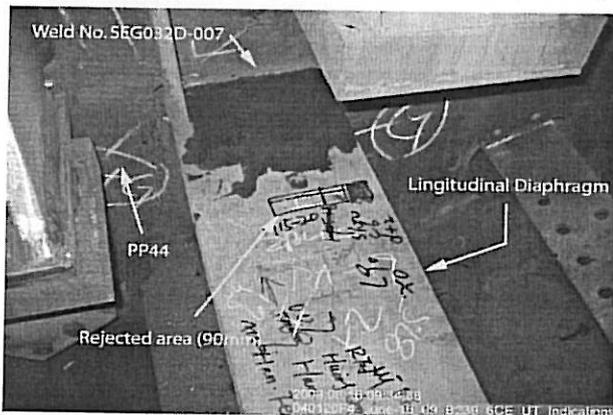
Bridge No: 34-0006

Component: OBG Segment 6CE

Reference Description: Missed UT Indications by QC, Welds SEG032D-007 and SEG033B-020, Segment 6CE

Description of Non-Conformance:

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AWS D1.5 (02) Table 6.3

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

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Time and method of notification: 06/19/09, 9:00, Verbal
QC Inspector's Name: Wang Lu
Was QC Inspector aware of the problem: Yes No
Contractor's proposal to correct the problem:

Comments:

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Inspected By: Guest, Skyler	SMR
Reviewed By: Wahbeh, Mazen	SMR



Nonconformance Report

不符合项报告

Project Name: S.F.O.B.B
 项目名称: 美国加州海湾大桥

NCR Number:
 NCR 编号: NCR-B-200
 (NCR-000326) ZPMC-300

Item: Missed UT Indications
 名称描述: UT 漏检

Item Number:
 件号: N/A

Drawing:
 图号: 6CE

Location: Outside
 位置: 外场

Date:
 日期: 2009-06-30

Description of Nonconformance:
 不符合项状态描述:

During random verification UT of longitudinal diaphragm to floor beam weld SEG032D-007 and side panel to bottom panel weld SEG033B-020, Caltrans inspector discovered two rejectable indications measuring 90mm and 20mm in length respectively. These welds have been previously tested, rejected, and the repairs accepted, by ZPMC QC Technicians.

在对纵桁与横隔板焊缝 SEG032D-007 以及斜底板与底板焊缝 SEG033B-020 的随机 UT 抽检中, 加州检验员发现二处漏检缺陷, 长度分别为 90mm 和 20mm。这些焊缝已经由 ZPMC UT 人员检测、拒收、返修并复探接受合格。

参考标准: 标书章节 8.3 “分包商 QC, 应在焊接前后负起监控职责, 并保证母材或者制作符合合同文件的要求”

Work By: Li Li Prepared by: Li Li Reviewed by QCE: Li Jianhua
 施工方: 准备: 06/30/09 质量工程师批准: 06/26/09

Drawing Error 图纸错误 Material Defect 材料缺陷 Fabrication Error 制作错误 Other 其他原因

Disposition: Use as is 回用 Repair 返修 Reject 拒收

Recommendation:

建议: 打磨, SEG033B-020 给打磨处理掉

Prepared by: Li Li Approved by QCA: _____
 准备: 2010.03.09 质量经理批准

Reason for Nonconformance:

不符合原因: 漏检缺陷

预防措施: 加强返修后处理及检验
 Approved by/批准: Li Li

Technical Justification for Use-As-Is/Repair: Attachment 附件 Non-attachment 无附件

Reviewed /批准: _____

Verification: Acceptable 可接受 Unacceptable 不可接受

Verified by QCI/质检确认: _____ Reviewed by QCA/质检主任审核: _____



焊缝返修报告

版本 Rev. No.

Welding Repair Report

0

项目名称 Project Name	美国海湾大桥 SFOBB	部件图号 Drawing No	SEG032D	报告编号 Report No.	B-WR4475
合同号 Contract No.:	04-0120F4	部件名称 Items Name	OBG PLATE PANEL SPLICE	NDT报告编号 Report No.of NDT	B787-UT-7129
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of welding discontinuity:

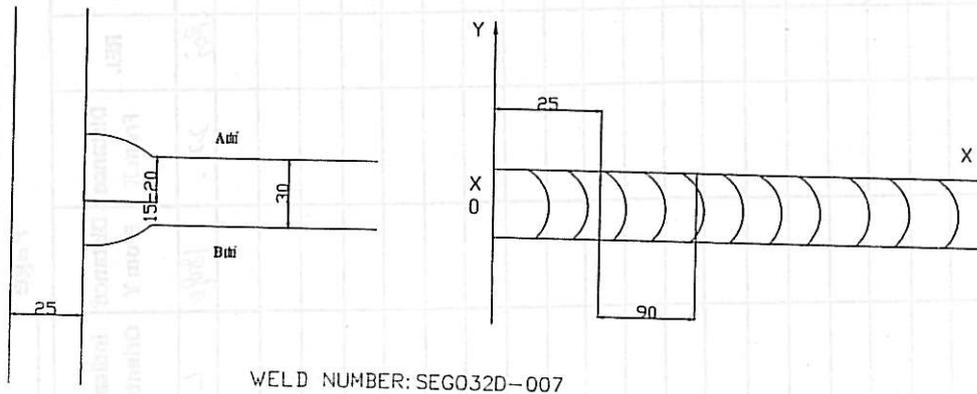
Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

(UT探伤发现的缺陷总长度小于最大允许长度。) SEG032D-007

检验员 (Inspector): Su wei 日期(Date): 09.06.18

焊缝返修位置示意图:

Draft of welding discontinuity:



产生原因:

Caused:

- 1、焊道未及时处理干净。
- 1. Did not clear the weld pass completely in time.

车间负责人(Foreman): *Lizhigang* 日期(Date): *09.06.20*

处理意见

Disposition :

- 1. 从缺陷距离端面较近一侧 ($D \leq 1/2T$, D为缺陷深度, T为板厚) 采用碳刨或打磨的方法去除焊缝缺陷;
 - 2. 参照返修焊接工艺规程 (WPS) 准备正确的接头型式, 预热和焊接;
 - 3. 若返修需要进行多道修补时, 需将前道焊缝清理干净并与周围焊缝平滑过渡再进行后续操作;
 - 4. 焊前对修补区域进行VT检测保证缺陷完全被消除;
 - 5. 将修补区域打磨到与母材或邻近焊缝平齐;
 - 6. 根据批准的车间图纸检查焊缝.
- 1. Gouge or grind from nearer side from metal edge ($D \leq 1/2T$, "D" is depth of defects, "T" is thickness of metal) to remove all defects;
 - 2. Follow repair WPS for joint preparation, preheat, and weld deposit;
 - 3. It is necessary to grind the above repair root welding cleaning and flush with the adjacence weld before go to next working procedure if the repair area need to be repaired by multiple pass.
 - 4. Verify with VT no defects remain in the weld joint prior to welding;
 - 5. Grind the repaired area flush with base metal or the adjacent weld;
 - 6. Check the welds according to the working drawings.

工艺: *NiuTiefeng*
 Technical engineer
09.06.20

审核:
 Approved by

日期
 Date



焊缝返修报告

Welding Repair Report

版本 Rev. No.

0

项目名称 Project Name	美国海湾大桥 SFOBB	部件图号 Drawing No	SEG032D	报告编号 Report No.	B-WR4475
合同号 Contract No.:	04-0120F4	部件名称 Items Name	OBG PLATE PANEL SPLICE	NDT报告编号 Report No. of NDT	B787-UT-7129
项目编号 Project No.:	ZP06-787				

纠正措施:

Correction action to prevent re occurrence:

1. 加强焊接监控和道间清理.
1. Improve monitoring of welding and interpass cleaning.

车间负责人(Foreman): *Lizhiqiang* 日期(Date): *09.06.20*

参照的WPS编号 Repair WPS No.	WPS-345-SMAW-1 G(1F)-FCM-Repair WPS-345-FCAW-1 G(1F)-FCM-Repair -1 WPS-345-SMAW-4 G(4F)-FCM-Repair	工艺员 technologist	<i>Mintiecheng</i> <i>09.06.20</i>
返修(碳刨)前预热温度 Preheat temperature before gouging	<i>NA</i>	返修的缺陷 Description of discontinuity	<i>S.Z</i>
焊前处理检查 Inspection before welding	<i>Acc</i>	焊前预热温度 Preheat temperature before welding	<i>124°C</i>
最大碳刨深度 Max. depth of gouging	<i>11 mm</i>	碳刨总长 Total length of gouging	<i>100 mm</i>
焊工 welder <i>200113</i>	焊接类型 welding type <i>SM4W</i>	焊接位置 position <i>4G</i>	
焊接电流 Current <i>157</i>	焊接电压 Voltage <i>23.1</i>	焊接速度 Speed <i>96</i>	

返修后检查
Inspection After repairing:

外观检查 VT result <i>Acc</i>	检验员 Inspector <i>Li Yanhua</i>	日期 Date <i>09.06.23</i>
NDT复检 NDT result <i>Acc</i>	探伤员 NDT person <i>Feng Jiong</i>	日期 Date <i>2009.6.28</i>
见证: Witness/Review:		
备注: Remark:		



REPORT OF ULTRASONIC EXAMINATION

UT探伤报告

REPORT NO. 报告编号 B787-UT-7129 DATE 2009.06.18 PAGE 1 OF 1 Revision No: 0

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

ITEMS NAME: OBG PLATE PANEL SPLICE DRAWING NO.: SEG032D 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 CORNER JOINT Dec. 28ST, 2009

EQUIPMENT 设备 MANUFACTURER 制造商 MODEL NO. 样式编号 SERIAL NO. 序列编号
 UT SCOPE PANAMETRICS EPOCH-4B 071565311, 061488510,
 061495811, 070152011,

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/A709M-345F2-X 14/25/30 mm

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
Changchao	70°	2.5MHz	18×18mm				
Changchao	0°	2.5MHz	20mm				
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		
SEG032D-007	1	70	A	1	40	32	6	+2	90	100	15-20	0	25	REJ.	100%
BLANK															

EXAMINED BY 主探 Su wei <i>Su Wei 09.06.18</i> LEVEL - II SIGN / DATE	REVIEWED BY 审核 Wu chao <i>Wu Chao 09.06.18</i> LEVEL - II SIGN / DATE
质量经理 / QCM _____ 签字 SIGN / 日期 DATE	用户 CUSTOMER _____ 签字 SIGN / 日期 DATE

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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-000575**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 29-Mar-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0300**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: 16-Jun-2009**Description of Non-Conformance:**

During random verification ultrasonic testing (UT) of longitudinal diaphragm to floor beam weld SEG032D-007 and side panel to bottom panel weld SEG033B-020, Caltrans Quality Assurance (QA) Inspector discovered two (2) rejectable indications measuring 90mm and 20mm in length respectively. These welds have been previously tested, rejected, and the repairs accepted, by ZPMC Quality Control (UT) Technicians.

Contractor's proposal to correct the problem:

Repair said indications and perform NDT required to verify weld quality

Corrective action taken:

Contractor has submitted WRR used to perform repairs along with subsequent NDT reports verifying the welds are in conformance with Contract specifications. It shall be noted that weld ID referenced as SEF032B-020 above should have been referenced as SEG033B-020.

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:**

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Inspected By: Simonis,Jim

Quality Assurance Inspector

Reviewed By: Wahbeh,Mazen

QA Reviewer