

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, PRC**Report No:** NCR-000173**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 08-Aug-2008**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0157**Type of problem:****Welding****Concrete****Other****Welding****Curing****Procedural****Bridge No:** 34-0006**Joint fit-up****Coating****Other****Component:** Tower Type 3B Diaphragm**Procedural****Procedural****Descriptor:** Tower Diaphragm ESD1-SA316 B/B**Reference Description:** 04-0120F4 Special Provisions**Description of Non-Conformance:**

ZPMC was observed welding the root pass of weld joints 3 and 4 of the partial joint penetration connection of 40mm web plate to (bottom) tower diaphragm plate ESD1-SA316 B/B, without tack welding/installing the top tower diaphragm plate. This sequence is not in conformance with steps 2 and 3 on page FP-MUA-20 of the 77m Diaphragm Type 3B Fabrication Procedure which shows the fit up and tack welding of both the top and bottom diaphragms prior to welding the root passes.

**Applicable reference:**

Special Provisions, Section 10-1.59, "Steel Structures", subsection "Fabrication" page 313: "For each mock-up, the Contractor shall prepare a written fabrication and welding sequence. The fabrication and welding sequence shall be submitted for review by the Engineer, and approval shall be given before the mock-up is fabricated.", 77m Diaphragm Type 3B Fabrication Procedure

Who discovered the problem: Joselito P. Lizardo, Quality Assurance Inspector**Name of individual from Contractor notified:** Don Walton, ABF Fabrication Supervisor

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Time and method of notification: 08/07/08;1100; Verbal

Name of Caltrans Engineer notified: Scott Kennedy, Structures Construction

Time and method of notification: 08/07/08;1400; Verbal

QC Inspector's Name: Lu Li Qing

Was QC Inspector aware of the problem: Yes No

Contractor's proposal to correct the problem:

The Contractor has submitted preliminary survey data showing that the change in step did not cause distortion of the web plates. The Contractor plans to submit further data which shows if the bottom diaphragm which recieved the root pass was distorted.

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

Inspected By:	Ishibashi,Josh	SMR
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Reviewed By:	Ishibashi,Josh	SMR
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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: 13-Aug-2008

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

Dear: Mr. Charles Kanapicki

Job Name: SAS Superstructure

Attention: Mr. Dave Williams Consultant

Document No: 05.03.06-000143

Subject: NCR No. ZPMC-0157

Reference Description: Failure to follow Approved Procedure / Weld Sequence / Tower Diaphragm Assembly

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:

ZPMC was observed welding the root pass of weld joints 3 and 4 of the partial joint penetration connection of 40mm web plate to (bottom) tower diaphragm plate ESD1-SA316 B/B, without tack welding/installing the top tower diaphragm plate. This sequence is not in conformance with steps 2 and 3 on page FP-MUA-20 of the 77m Diaphragm Type 3B Fabrication Procedure which shows the fit up and tack welding of both the top and bottom diaphragms prior to welding the root passes.

Action Required and/or Action Taken:

Propose a resolution that ensures that this systematic non-conformance with the approved procedures will not continue to occur and the steps taken by the welding Quality Control Manager to prevent future failures to follow the submitted and approved procedures.

In the event that the Contractor's intent is to modify the procedure, a revised procedure must be submitted for review and approval prior to being implemented.

Transmitted by: Scott Kennedy Sr. Bridge Engineer

Attachments: ZPMC-0157

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: 05.03.06-000143

Subject: NCR No. ZPMC-0157

Dated: 11-Sep-2008

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000145 **Rev:** 00

Contractor's Proposed Resolution:

Reference Resolution: ABF has instructed ZPMC to follow the fabrication procedure. If the fabrication cannot be completed as written ZPMC shall revise the fabrication procedure prior to welding.

ZPMC performed welding out of sequence with the fabrication procedure. ABF has instructed ZPMC to follow the fabrication procedure. If the fabrication cannot be completed as written ZPMC shall revise the fabrication procedure prior to welding.

Submitted by:

Attachment(s): ABF-NPR-000145R00

Caltrans' comments:

Status: CLO

Date: 08-Oct-2008

Documentation that the diaphragm dimensions were not adversely impacted by this deviation from the approved fabrication procedure should be included. This information has been submitted as part of NPR-0162. Therefore, the Department concurs that Non-Conformance ZPMC-0157 is closed.

Submitted by: Wright, Doug

Date: 08-Oct-2008

Attachment(s):

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000143

Subject: NCR No. ZPMC-0157

Dated: 01-Oct-2008

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000162 **Rev:** 00

Contractor's Proposed Resolution:

Reference Resolution: ZPMC acknowledges the nonconformance and has issued an internal NCR.

Please find attached.

Submitted by:

Attachment(s): ABF-NPR-000162R00;

Caltrans' comments:

Status: CLO

Date: 08-Oct-2008

The proposed resolution is acceptable. An internal Non-Conformance was written by ZPMC, and the attached documents show that the fit-up dimensions of the diaphragm are acceptable. The Department concurs that Non-Conformance ZPMC-0157 is closed.

Submitted by: Wright, Doug

Date: 08-Oct-2008

Attachment(s):



PROJECT: SAN FRANCISCO OAKLAND BAY BRIDGE

DATE: 09/26/2008

TO: RUBY/ ABFJV QA DEPARTMENT

FROM: ZPMC QA DEPARTMENT

SUBJECT: NCR-00173(ZPMC-0157)FOR CLOSURE

SUBMITTED FOR YOUR APPROVAL.

ENCLOSED WITH THIS TRANSMITTAL IS ONE

- (1) COPY OF LETTER OF RESPONSE WITH NO.T-018
- (2) COPY OF NCR WITH NUMBER NCR-00173(ZPMC-0157).

PLEASE SIGN THIS TRANSMITTAL AND RETURN TO ME.

ACKNOWLEDGEMENT:



 PLAN HOLDER

RECEIVED 26 SEP 2008
 1325

 DATE



 COMPANY

 PHONE NO.

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



No. T-018

LETTER OF RESPONSE

TO: American Bridge/Flour JV

DATE: 2008-9-12

REGARDING: NCR-000173 (ZPMC-0157)

ZPMC received Caltrans' NCR-000158, it mentioned ZPMC welded the root pass of weld joints 3&4 of the partial joint penetration connection of 40mm web plate to (bottom) tower diaphragm plate ESD1-SA316B/B, without tack welding /installing the top tower diaphragm plate. The sequence is not in conformance with the procedure.

ZPMC acknowledged this nonconformance and issued out the internal NCR to prevent it from happening again. Due to the quick reaction, there was only around 1 or 2 root passes finished which did not result into the big effect to the deformation. The dimension checking report recorded the parameters after the double diaphragm welding finished.

So ZPMC hoped Caltrans can close this NCR.

ATTACHMENT:

NCR-000173 (ZPMC-0157)

NCR-T-009

28M Checking Report

Kujun 2008-9-26

*Thomas W. Pankas
ABE QCM
26 SEPT. 08*



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: 13-Aug-2008

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

Dear: Mr. Charles Kanapicki

Job Name: SAS Superstructure

Attention: Mr. Dave Williams Consultant

Document No: 05.03.06-000143

Subject: NCR No. ZPMC-0157

Reference Description: Failure to follow Approved Procedure / Weld Sequence / Tower Diaphragm Assembly

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:

ZPMC was observed welding the root pass of weld joints 3 and 4 of the partial joint penetration connection of 40mm web plate to (bottom) tower diaphragm plate ESD1-SA316 B/B, without tack welding/installing the top tower diaphragm plate. This sequence is not in conformance with steps 2 and 3 on page FP-MUA-20 of the 77m Diaphragm Type 3B Fabrication Procedure which shows the fit up and tack welding of both the top and bottom diaphragms prior to welding the root passes.

Action Required and/or Action Taken:

Propose a resolution that ensures that this systematic non-conformance with the approved procedures will not continue to occur and the steps taken by the welding Quality Control Manager to prevent future failures to follow the submitted and approved procedures.

In the event that the Contractor's intent is to modify the procedure, a revised procedure must be submitted for review and approval prior to being implemented.

Transmitted by: Scott Kennedy Sr. Bridge Engineer
Attachments: ZPMC-0157

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-000173

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 08-Aug-2008

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

NCR #: ZPMC-0157

Type of problem:

Welding Concrete Other

Welding Curing Procedural **Bridge No:** 34-0006

Joint fit-up Coating Other **Component:** Tower Type 3B Diaphragm

Procedural Procedural **Description:** Tower Diaphragm ESD1-SA316 B/B

Reference Description: 04-0120F4 Special Provisions

Description of Non-Conformance:

ZPMC was observed welding the root pass of weld joints 3 and 4 of the partial joint penetration connection of 40mm web plate to (bottom) tower diaphragm plate ESD1-SA316 B/B, without tack welding/installing the top tower diaphragm plate. This sequence is not in conformance with steps 2 and 3 on page FP-MUA-20 of the 77m Diaphragm Type 3B Fabrication Procedure which shows the fit up and tack welding of both the top and bottom diaphragms prior to welding the root passes.



Applicable reference:

Special Provisions, Section 10-1.59, "Steel Structures", subsection "Fabrication" page 313: "For each mock-up, the Contractor shall prepare a written fabrication and welding sequence. The fabrication and welding sequence shall be submitted for review by the Engineer, and approval shall be given before the mock-up is fabricated.", 77m Diaphragm Type 3B Fabrication Procedure

Who discovered the problem: Joselito P. Lizardo, Quality Assurance Inspector

Name of individual from Contractor notified: Don Walton, ABF Fabrication Supervisor

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Time and method of notification: 08/07/08;1100; Verbal

Name of Caltrans Engineer notified: Scott Kennedy, Structures Construction

Time and method of notification: 08/07/08;1400; Verbal

QC Inspector's Name: Lu Li Qing

Was QC Inspector aware of the problem: Yes No

Contractor's proposal to correct the problem:

The Contractor has submitted preliminary survey data showing that the change in step did not cause distortion of the web plates. The Contractor plans to submit further data which shows if the bottom diaphragm which recieved the root pass was distorted.

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

Inspected By: Ishibashi,Josh

SMR

Reviewed By: Ishibashi,Josh

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-T-009	
Item: welding web plates with diaphragm by the wrong sequence 名称描述: 未按制作工艺进行横隔板与腹板的焊接	Item Number: 件号: SA309	Drawing: 图号: ESD1-SA309	
Location: East Tower 28M Elevation Double Diaphragm 位置: 东塔 28M 双层隔板		Date: 2008-08-07 日期: 2008-08-07	
Description of Nonconformance: 不符合项状态描述: <p>AB/F 和加州监造发现 ZPMC 在实施东塔 28M 双层隔板与腹板焊接时未按制作流程操作。按照制作流程, 施工人员应当先完成双层隔板的装配, 并在装配尺寸确认无误的状态下进行焊缝焊接。但实际施工人员在双层隔板还未装配完成就进行了腹板与下层隔板的打底焊。因此违反了制作工艺。</p> <p>AB/F and Caltrans supervisors found ZPMC didn't follow the diaphragm fabrication procedure during welding the east tower 28M double diaphragm. According to the procedure, ZPMC should fit up the upper and lower diaphragm with web plates first. Then conduct the welding after the fitting dimension was checked. In fact, ZPMC gave the root pass between lower diaphragm and web plates before the top diaphragm fitted up.</p>			
Work By: Ding Chunbin 施工方: <u>丁春斌</u>	Prepared by: <u>Xiyun 2008.8.7</u> 准备: <u>Xiyun 2008.8.7</u>	Reviewed by QCE: <u>Zhao Shuangjie</u> 质量工程师批准: <u>Zhao Shuangjie</u> 8.7	
<input type="checkbox"/> Drawing Error 图纸错误	<input type="checkbox"/> Material Defect 材料缺陷	<input checked="" type="checkbox"/> Fabrication Error 制作错误	<input type="checkbox"/> Other 其他原因
Disposition: <input type="checkbox"/> Use as is 处理措施: 回用	<input type="checkbox"/> Repair 返修	<input type="checkbox"/> Reject 拒收	
Recommendation: 建议: <p><u>严格按照工艺要求进行焊接。</u></p> <p>Assemble and weld according to the technology procedure.</p>			
Prepared by: <u>Qian Yongsheng</u> 准备	Approved by QCA: <u>Hu Gang</u> 质量经理批准 <u>2008.8.11</u>		

Reason for Nonconformance:

不符合原因:

本按工艺要求逐行拼装。
zpmc didn't follow technology fabrication procedure.

Prevention of Re-occurrence:

预防措施:

严格按工艺要求逐行拼装。
Assemble and weld according to the technology procedure.

Approved by/批准: Qian Yongsheng

Technical Justification for Use-As-Is/Repair: Attachment Non-attachment
回用或返修的技术依据: 附件 无附件

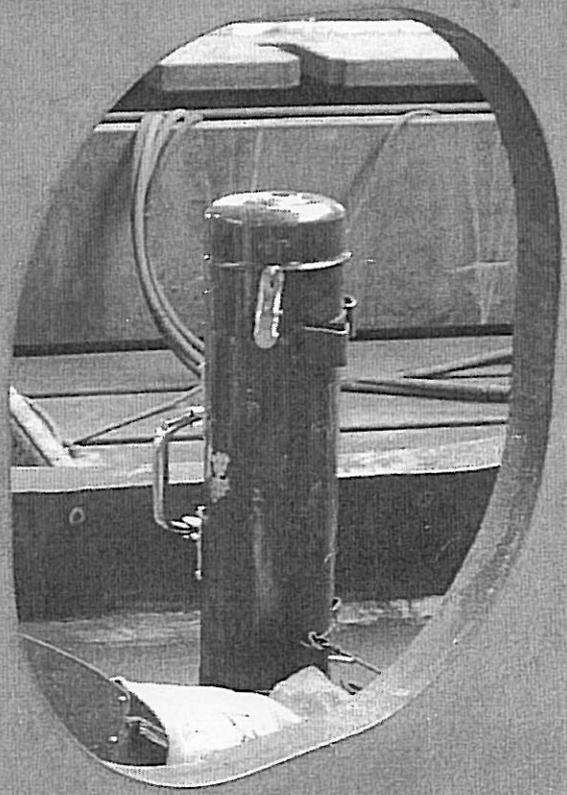
确保装配尺寸符合图纸要求, 可以回用。
The assembly size shall conform drawing requirement, and it can use as it is.

Reviewed /批准: Lu Meng

Verification: Acceptable Unacceptable
确认: 可接受 不可接受

Verified by QCI/质检确认: Ye Yongjun Reviewed by QCA/质检主任审核: Hu Gang

↑
ESTD SA 316 B/B-1



ESTD SA 316 B/B-4
↓

07.08.2008



美国钢桥钢塔面板与面板、纵向筋、横隔板焊后检查记录卡
rib, diaphragm, skin plate checking after welding

塔段名称: 第一层塔段
Section name: 第一层塔段

工程编号: 2706-787
The serial no. of project: 2706-787

图号: ESD-3A31bA/B ESD-3A309
The drawing no.:

构件名称: 塔筒 28mm 厚隔板
The part name:

隔板开槽gap between web plates (mm)

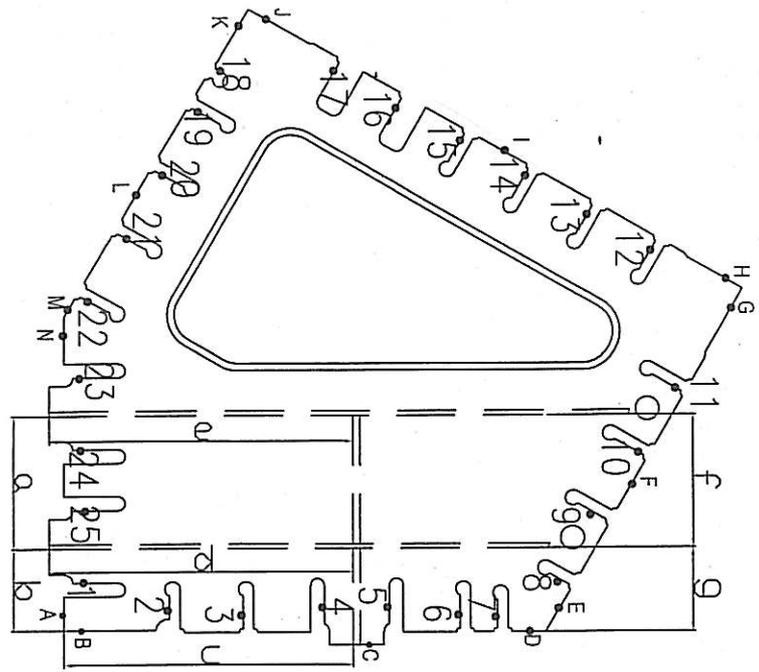
测量点 checking point	a	b	c	d	e	f	g
测量值 Measure result:	142	711.5	262	2340	2590	1146	731

隔板开槽gap between diaphragms (mm)

A	B	C	D	E	F	H	I	J	K	L	M	N
858	858	858.5	859.5	859.5	860	860	859	859	859	859.5	857	857

槽口带边量 groove edge offsetting (mm)

测量点 Checking point:	1	2	3	4	5	6	7	8	9	10	11	12	13
测量值 Measure result:	-1	2	3	4	5	6	7	8	9	10	11	12	13
测量点 Checking point:	14	15	16	17	18	19	20	21	22	23	24	25	26
测量值 Measure result:	1	0.5	0	0.5	0.5	0.5	3.2	1.6	1.8	19.5	1.9	1.5	1
测量点 Checking point:	1	2	3	4	5	6	7	8	9	10	11	12	13
测量值 Measure result:	1	0.5	1	0.5	21.5	0.5	0.5	1	1	1	1.5	1	



五处角带边量 edge offsetting (mm)

测量点 Checking point:	A	B	C	D	E	F	G	H	I	J	K	L	M	N
测量值 Measure result:	21.5	0.5	2	1	31	31.5	32.5	20.5	2.5	21.5	1.5	2	1.5	1.5

Remark:

检验员 (Inspector): Nancy Davis
日期 (Date): 2008.08.16

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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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, PRC**Report No:** NCS-000097**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 30-Sep-2008**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0157**Type of problem:**

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

Date the Non-Conformance Report was written: 08-Aug-2008**Description of Non-Conformance:**

ZPMC was observed welding the root pass of weld joints 3 and 4 of the partial joint penetration connection of 40mm web plate to (bottom) tower diaphragm plate ESD1-SA316 B/B, without tack welding/installing the top tower diaphragm plate. This sequence is not in conformance with steps 2 and 3 on page FP-MUA-20 of the 77m Diaphragm Type 3B Fabrication Procedure which shows the fit up and tack welding of both the top and bottom diaphragms prior to welding the root passes.

Contractor's proposal to correct the problem:

The Contractor has submitted preliminary survey data showing that the change in step did not cause distortion of the web plates. The Contractor plans to submit further data which shows if the bottom diaphragm which received the root pass was distorted.

Corrective action taken:

ZPMC stopped welding the web to diaphragm after the non conformance was identified. ZPMC issued an internal NCR to for the deviation from the fabrication plan. Additionally, ZPMC has submitted survey data which shows that the plate did not distort significantly due to the welding of the web to diaphragm without the top diaphragm in place.

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

Inspected By: Ishibashi, Josh

Quality Assurance Inspector

QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

(Continued Page 2 of 2)

Reviewed By: Smith,Ryan

QA Reviewer