

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-000306**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 10-Jun-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0280**Type of problem:**

Welding	Concrete	Other	
Welding	Curing	Procedural	Bridge No: 34-0006
Joint fit-up	Coating	Other	Component: OBG Segments 5AW & 5BW
Procedural	Procedural	Description:	

Reference Description: Improper Welding/Cleaning, Weld OBW5A-004, 5AW/5BW Segment Splice**Description of Non-Conformance:**

Caltrans Quality Assurance (QA) Inspector observed ZPMC welding personnel stopping and restarting a shielded metal arc weld (SMAW) pass without cleaning the "crater area" of the weld prior to resuming the welding process. This was observed on weld joint OBW5A-004 (5AW to 5BW side panel splice).

Applicable reference:

AWS D1.5 2002 section 3.11.1: "Before welding over previously deposited metal, all slag shall be removed and adjacent base metal shall be brushed clean. This requirement shall apply not only to successive layers but also to successive beads and to the crater area when welding is resumed after any interruption."

Who discovered the problem: Steve Hall**Name of individual from Contractor notified:** Kevin Chen**Time and method of notification:** 06/10/09, 10:00, Verbal**Name of Caltrans Engineer notified:** Stanley Ku**Time and method of notification:** 06/11/09, 18:00, Email**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: 14-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: 05.03.06-000270

Subject: NCR No. ZPMC-0280

Reference Description: Improper Welding/Cleaning, Weld OBW5A-004, 5AW/5BW Segment Splice

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:** 05

Remarks:

Caltrans Quality Assurance (QA) Inspector observed ZPMC welding personnel stopping and restarting a shielded metal arc weld (SMAW) pass without cleaning the "crater area" of the weld prior to resuming the welding process. This was observed on weld joint OBW5A-004 (5AW to 5BW side panel splice).
See NCR report No. ZPMC-280 for details.

Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences.

Transmitted by: Ching Chao

Attachments: ZPMC-0280

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: 05.03.06-000270

Subject: NCR No. ZPMC-0280

Dated: 24-Aug-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000309 Rev: 00

Contractor's Proposed Resolution:

Reference Resolution: ZPMC QA has informed the welder of this nonconformance as well as several other welders about the importance of interpass cleaning.

ZPMC QA has informed the welder of this nonconformance as well as several other welders about the importance of interpass cleaning. ZPMC will submit the necessary inspection reports at a later date to close this NCR.

Submitted by:

Attachment(s): ABF-NPR-000309R00

Caltrans' comments:

Status: AAP

Date: 28-Aug-2009

The response is acceptable, but the Non-Conformance is not closed.

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-0280 at that time.

Submitted by: Wright, Doug

Date: 28-Aug-2009

Attachment(s):

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000270

Subject: NCR No. ZPMC-0280

Dated: 11-Jan-2010

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000309 Rev: 01

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has now included all repair documentation regarding this NCR. ZPMC requests closure of this NCR
ZPMC has now included all repair documentation regarding this NCR. ZPMC requests closure of this NCR

Submitted by: Lawton, Steve

Attachment(s): ABF-NPR-000309R01;

Caltrans' comments:

Status: CLO

Date: 11-Jan-2010

The documentation received is sufficient to close this NCR.

Submitted by: Howe, Bill

Attachment(s):

Date: 11-Jan-2010



No. B-553

LETTER OF RESPONSE

TO: American Bridge/Flour

DATE: 2010-1-6

REGARDING: NCR-000306(ZPMC-0280)

With this letter of response, ZPMC requests closure of CT NCR-000306(ZPMC-0280), what mentioned that QA observed improper cleaning before performing SMAW.

ZPMC acknowledged this problem and has issued internal NCR. According to CT's comments in NPR, ZPMC providing the welding repair report and NDT documentation, hoping CT could take a review and consider close this NCR.

ATTACHMENT:

ABF-NPR-000309 R0.

NCR-B-192(ZPMC-0280)

NCR-000306(ZPMC-0280)

B-WR8045

B787-UT-8991R1-2

[Handwritten signature]
1/6/10



AMERICAN BRIDGE/FLUOR ENTERPRISES, a JV

P.O. BOX 23223 Oakland, CA 94623
Phone (510) 419-0120 / Fax (510) 839-0666

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000270

Subject: NCR No. ZPMC-0280

Dated: 24-Aug-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000309 Rev: 00

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Submitted by:

Attachment(s): ABF-NPR-000309R00

Caltrans' comments:

Status: AAP

Date: 28-Aug-2009

The response is acceptable, but the Non-Conformance is not closed.

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-0280 at that time.

Submitted by: Wright, Doug

Attachment(s):

Date: 28-Aug-2009



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: ZPMC-280
 NCR 编号: NCR-B-192 (~~NCR-0280~~)

Item: Improper Welding/Cleaning

Item Number:

Drawing:

名称描述: 正确焊接准备

件号: N/A

图号: OBW5A-004

Location:
 位置: 5AW&5BW

Date:
 日期: 2009-06-20

Description of Nonconformance:

不符合项状态描述:

Caltrans Quality Assurance Inspector observed ZPMC welding personnel stopping and restarting a shielded metal arc weld(SMAW)pass without cleaning the "crater area" of the weld prior to resuming the welding process. This was observed on weld joint OBW5A-004(5AW to 5BW side panel splice).

加州检验员发现 ZPMC 实施手工焊焊接前未将焊接区域清理干净便开始焊接。焊接接头为 OBW5A-004。

Work By: Xiafa Lin
 施工方: 夏发林

Prepared by: Wang
 准备: 王 2009.6.20

Reviewed by QCE: Zhao Shuang Bao
 质量工程师批准: 赵双宝

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

Disposition: Use as is Repair Reject
 处理措施: 回用 返修 拒收

Recommendation:

建议:

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

Reason for Nonconformance:

不符合原因:

由于焊接前未将焊接区域清理干净便开始焊接。
 Didn't clean the "crater area" of the weld prior to welding.

预防措施:

Enhance supervision and inspection on site.
 加强施工现场监控与检查。

Approved by/批准: Gao Jun 09.06.21

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

回用或返修的技术依据: 根据图纸要求对焊缝进行NDT检测, 若检验合格, 回用. 反之, 返修. 并加强对现场的检查. Perform NDT according to drawing requirement. It is acceptable as it is if weld accepts, it repair if weld rejects.

Reviewed /批准: Tang Yong He

Verification: Acceptable Unacceptable
 确认: 可接受 不可接受

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

Call me

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NON-CONFORMANCE REPORT TRANSMITTAL

To: AMERICAN BRIDGE/FLUOR, A JV
375 BURMA ROAD
OAKLAND CA 95607

Date: 14-Jun-2009

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

Dear: Mr. Charles Kanapicki

Attention: Mr. Thomas Nilsson Project/Fabrication Manager

Job Name: SAS Superstructure

Subject: NCR No. ZPMC-0280

Document No: 05.03.06-000270

Reference Description: Improper Welding/Cleaning, Weld OBW5A-004, 5AW/5BW Segment Splice

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Material Location: OBG

Lift: 05

Remarks:

Caltrans Quality Assurance (QA) Inspector observed ZPMC welding personnel stopping and restarting a shielded metal arc weld (SMAW) pass without cleaning the "crater area" of the weld prior to resuming the welding process. This was observed on weld joint OBW5A-004 (5AW to 5BW side panel splice).

See NCR report No. ZPMC-280 for details.

Action Required and/or Action Taken:

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Transmitted by: Ching Chao

Attachments: ZPMC-0280

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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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-000306

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 10-Jun-2009

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

NCR #: ZPMC-0280

Type of problem:

Welding Concrete Other Welding Curing Procedural Joint fit-up Coating Other Procedural Procedural Description:

Bridge No: 34-0006

Component: OBG Segments 5AW & 5BW

Reference Description: Improper Welding/Cleaning, Weld OBW5A-004, 5AW/5BW Segment Splice

Description of Non-Conformance:

Caltrans Quality Assurance (QA) Inspector observed ZPMC welding personnel stopping and restarting a shielded metal arc weld (SMAW) pass without cleaning the "crater area" of the weld prior to resuming the welding process. This was observed on weld joint OBW5A-004 (5AW to 5BW side panel splice).

Applicable reference:

AWS D1.5 2002 section 3.11.1: "Before welding over previously deposited metal, all slag shall be removed and adjacent base metal shall be brushed clean. This requirement shall apply not only to successive layers but also to successive beads and to the crater area when welding is resumed after any interruption."

Who discovered the problem: Steve Hall

Name of individual from Contractor notified: Kevin Chen

Time and method of notification: 06/10/09, 10:00, Verbal

Name of Caltrans Engineer notified: Stanley Ku

Time and method of notification: 06/11/09, 18:00, Email

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



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	OBW5	报告编号 Report No.	B-WR8045
合同号 Contract No.	04-0120F4	部件名称 Items Name	5AW+5BW	NDT报告编号 Report No.of NDT	B787-UT-8991
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述:

Description of welding discontinuity:

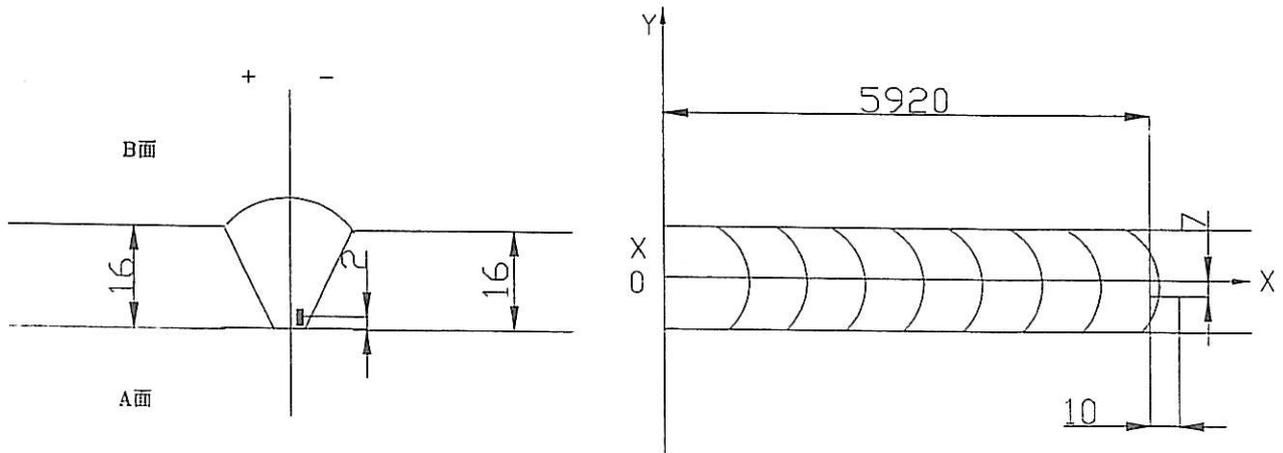
Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

(UT探伤发现的缺陷总长度小于最大允许长度。) OBW5A-004

检验员 (Inspector): Xue Hairong 日期(Date): 09.10.01

焊缝返修位置示意图:

Draft of welding discontinuity:



WELD NUMBER: OBW5A-004

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): *Gao Jun* 日期(Date): *09.10.03*

处理意见

Disposition :

1. 从缺陷距离端面较近一侧 ($D \leq 0.65T$, 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. 焊前对修补区域进行VT检测保证缺陷完全被消除;
4. 将修补区域打磨到与母材或邻近焊缝平齐;
5. 根据批准的车间图纸检查焊缝.

1. Gouge or grind from nearer side from metal edge ($D \leq 0.65T$, "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. Verify with VT no defects remain in the weld joint prior to welding;
4. Grind the repaired area flush with base metal or the adjacent weld;
5. Check the welds according to the working drawings;

工艺: *Tang Yongbo*
Technical engineer

09.10.03

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	OBW5	报告编号 Report No.	B-WR8045
合同号 Contract No.:	04-0120F4	部件名称 Items Name	5AW+5BW	NDT报告编号 Report No. of NDT	B787-UT-8991
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): Gao Jun 日期(Date): 09.10.03

参照的WPS编号 Repair WPS No.	WPS-345-SMAW-1 G(1F)-Repair WPS-345-FCAW-1 G(1F)-Repair-1 WPS-345-SMAW-4 G(4F)-Repair	工艺员 technologist	<u>Tang Yongbo</u> <u>09.10.03</u>
返修(碳刨)前预热温度 Preheat temperature before gouging	<u>650°C</u>	返修的缺陷 Description of discontinuity	<u>无</u>
焊前处理检查 Inspection before welding	<u>ACL</u>	焊前预热温度 Preheat temperature before welding	<u>100°C</u>
最大碳刨深度 Max. depth of gouging	<u>12mm</u>	碳刨总长 Total length of gouging	<u>450mm</u>
焊工 welder	<u>048768</u>	焊接类型 welding type	<u>SMAW</u>
		焊接位置 position	<u>1G</u>
焊接电流 Current	<u>158</u>	焊接电压 Voltage	<u>25</u>
		焊接速度 Speed	<u>115</u>

返修后检查
Inspection After repairing:

外观检查 VT result	<u>无</u>	检验员 Inspector	<u>G Jun</u>	日期 Date	<u>09.11.13</u>
NDT复检 NDT result	<u>ACL</u>	探伤员 NDT person	<u>李洪</u>	日期 Date	<u>09.12.10</u>

见证:
Witness/Review:Huang Jun备注:
Remark:



REPORT OF ULTRASONIC EXAMINATION

UT探伤报告

REPORT NO. 报告编号 B787-UT-8991R1-2 DATE 2009.12.10 PAGE 1 OF 1 Revision No: 0

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

ITEMS NAME: 5AW+5BW DRAWING NO.: OBW5 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
 SMAW BUTT 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-345 20/16/18mm

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			Sound Path 声程
OBW5A-004	1R1	70				34									ACC.	100%

AFTER B-WR8045

BLANK

EXAMINED BY 主探 <u>Huang ting</u> LEVEL - II SIGN / DATE 9.12.10 质量经理 / QCM 签字 SIGN / 日期 DATE	REVIEWED BY 审核 <u>Zhuang</u> LEVEL - II SIGN / DATE 9.12.10 用户 CUSTOMER 签字 SIGN / 日期 DATE
---	--

DEPARTMENT OF TRANSPORTATION

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Office of Structural Materials

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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-000446**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 20-Jan-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0280**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: 10-Jun-2009**Description of Non-Conformance:**

Caltrans Quality Assurance (QA) Inspector observed ZPMC welding personnel stopping and restarting a shielded metal arc weld (SMAW) pass without cleaning the "crater area" of the weld prior to resuming the welding process. This was observed on weld joint OBW5A-004 (5AW to 5BW side panel splice).

Contractor's proposal to correct the problem:

Perform NDT, repair areas with defects, and perform NDT again to verify welds are in conformance with Contract requirements.

Corrective action taken:

Contractor submitted WRR confirming the defects were removed from the weld along with NDT documentation verifying the weld is in conformance with Contract specifications.

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

Inspected By: Simonis, Jim

Quality Assurance Inspector

Reviewed By: Wahbeh, Mazen

QA Reviewer