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-000378
Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date:** 05-Aug-2009
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0352

Type of problem:

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

Reference Description: Missed MT Longitudinal Indication by QC on Longitudinal Diaphragm

Description of Non-Conformance:

During random verification Magnetic Particle Testing (MT) for the OBG Longitudinal Diaphragms at Bay # 3. The Caltrans Quality Assurance Inspector (QA) observed one (1) longitudinal linear indication approximately 11mm in length in the weld metal on LD002-039-011. Linear Indication was discovered after ZPMC QC MT acceptance.

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Applicable reference:
AWS D1.5 (02) Section 6.26.2 – "Welds that are subject to MT in addition to visual inspection shall have no cracks.

Who discovered the problem: Sandeep Kumar Naddi

Name of individual from Contractor notified: Zeng Jian Ping

Time and method of notification: 1100 hours, Verbal

Name of Caltrans Engineer notified: Bill Howe

Time and method of notification: 0700 hours, Verbal

QC Inspector's Name: Zhang Yaxu

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.

Inspected By:	Tsang,Eric	SMR
Reviewed By:	Wahbeh,Mazen	SMR

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:**	16-Aug-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:**	05.03.06-000341
Subject:	NCR No. ZPMC-0352		

Reference Description: Missed MT Longitudinal Indication by QC on Longitudinal Diaphragm

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:**

Remarks:

During random verification Magnetic Particle Testing (MT) for the OBG Longitudinal Diaphragms at Bay # 3. The Caltrans Quality Assurance Inspector (QA) observed one (1) longitudinal linear indication approximately 11mm in length in the weld metal on LD002-039-011. Linear Indication was discovered after ZPMC QC MT acceptance.

Action Required and/or Action Taken:

Submit repair procedure to engineer for approval.

Transmitted by: Bill Howe

Attachments: ZPMC-0352

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

File: 05.03.06

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: 05.03.06-000341

Subject: NCR No. ZPMC-0352

Dated: **24-Aug-2009**

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

Job Name: SAS Superstructure

Document No.: **ABF-NPR-000346 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-000346R00

Caltrans' comments:

Status: AAP

Date: 10-Sep-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-0352 at that time.

Submitted by: Wright, Doug

Date: 10-Sep-2009

Attachment(s):

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: 05.03.06-000341

Subject: NCR No. ZPMC-0352

Dated: **09-Dec-2009**

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

Job Name: SAS Superstructure

Document No.: **ABF-NPR-000346 Rev: 01**

Contractor's Proposed Resolution:

Reference Resolution: Attached is documentation of the weld repairs and the NDT showing the weld is acceptable. Furthermore ABFJV has conducted training with the MT inspectors to improve inspections.

Attached is documentation of the weld repairs and the NDT showing the weld is acceptable. Furthermore ABFJV has conducted training with the MT inspectors to improve inspections. Based on this ZPMC is requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000346R01;

Caltrans' comments:

Status: CLO

Date: 13-Dec-2009

The documentation submitted has been reviewed by the Engineer and is found to be acceptable.

Submitted by: Chao, Ching

Date: 13-Dec-2009

Attachment(s):

No. B-523

LETTER OF RESPONSE

TO: American Bridge/Flour
DATE: 2009-12-08
REGARDING: NCR-000378(ZPMC-0352) NCR-000375(ZPMC-0349)

With this letter of response, ZPMC requests closure for CALTRANS NCR-000378(ZPMC-0352) & NCR-000375(ZPMC-0349), what mentioned that QA observed missed MT indication.
ZPMC acknowledged these issues and has written internal NCRs, CWR & WWR. After the repairing NDT were done to warrant these welds quality.
To enhance our MT inspection, training was performed to all the MT inspectors by ABF's QCM. So ZPMC provide internal NCRs, CWR, WWR, NDT documentations and Training Record, hoping CALTRANS could take a review and consider close these NCRs.

ATTACHMENT:
NCR-B-242
NCR-B-244
NCR-000378(ZPMC-0352)
NCR-000375(ZPMC-0349)
B-CWR-652
B-WR-6628
B787-MT-12728
B787-MT-12728R1
B787-12546R1

12/08/09

ZPMC

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-B-244 NCR 编号: (ZPMC-0349)

Item: Missed MT Indication 名称描述: MT 漏检	Item Number: 件号: N/A	Drawing: 图号: SP3022
Location: BAY 7 位置:	Date: 日期: 2009-08-21	

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

During random MT on weld joint identified as SP3022-001-048 between T-stiffener to Side Plate for OBG Segment 12CE. This QA Inspector discovered one rejected Transverse Indication measuring approximately 5 mm in length. This weld was previously tested and accepted by ZPMC QC MT technicians..

在对斜地板焊缝 SP3022-001-048（OBG 12CE）进行 MT 抽检的过程中，加州检验员发现一处 5mm 长度的 MT 线性缺陷。位于 T 肋筋板与底板的焊缝。

参考标准：AWS D1.5 章节 6.26.2.

Work By: 施工方: 2009.08.26 Prepared by: 准备: 8/21/09 Reviewed by QCE: 质量工程师批准: Zhao Shuang Bao 8.21

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

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

Recommendation:
建议: 确认分报告返修. Confirm and issue repair report.

Prepared by: 准备 2009.08.26 Approved by QCA: 质量经理批准

Reason for Nonconformance:
不符合原因: 漏检测缺陷，在检验范围外.
Discover linear defect out of inspection area.

预防措施: 增加抽检长度，加强检验.
Enlarge inspection length and inspection

Approved by/批准: 2009.08.26

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

Reviewed /批准: _____

Verification: 确认: ☐ 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: _____

#R787-QCP-1300

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: 16-Aug-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-0349

Document No: 05.03.06-000338

Reference Description: Missed MT Transverse Indication by QC on Side Panel 3022 (Seg 12CE)

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:

This Quality Assurance Inspector (QA) performed random verification of Ultrasonic Testing (UT) on weld joint identified as TR1E-PP28-009 for OBG Traveler Rail Bracket. This QA Inspector discovered one (1) class "A" rejectable indication measuring approximately 25 mm in length. This weld was previously tested and accepted by ZPMC QC UT technicians.

Action Required and/or Action Taken:

Submit repair procedure to engineer for review.

Transmitted by: Bill Howe

Attachments: ZPMC-0349

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

File: 05.03.06

STATE OF CALIFORNIA--BUSINESS,TRANSPORTACTION AND HOUSING AGENCY

Arnold Schwarzenegger, Governor

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
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

Report No: NCR-000375
Date: 30-Jul-2009
NCR #: ZPMC-0349

Type of problem:

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

Bridge No: 34-0006
Component: OBG Side Panel

Reference Description: Missed MT Transverse Indication by QC on Side Panel 3022 (Seg 12CE)

Description of Non-Conformance:

This Quality Assurance Inspector (QA) performed random verification of Magnetic Particle Testing (MT) on weld joint identified as SP-3022-001-048 between T-Stiffener to Side Plate for OBG Segment 12CE. This QA Inspector discovered one (1) rejectable Transverse Indication measuring approximately 5 mm in length. This weld was previously tested and accepted by ZPMC QC MT technicians.

Applicable reference:

AWS D1.5 (02) Section 6.26.2 - "Welds that are subject to MT in addition to visual inspection shall have no cracks."

Who discovered the problem: Subhasis Bera
Name of individual from Contractor notified: Hu Guihua
Time and method of notification: 1630 hours, verbal
Name of Caltrans Engineer notified: Bill Howe
Time and method of notification: 0930 hours, verbal

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

QC Inspector's Name: Liu Famen

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.

Inspected By:	Tsang,Eric	SMR
Reviewed By:	Wahbeh,Mazen	SMR

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	SP3022A	报告编号 Report No.	B-WR6628
合同号 Contract No.:	04-0120F4	部件名称 Items Name	OBG SIDE PLATE 12B-D6	NDT报告编号 Report No.of NDT	B787-MT-12546
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述：

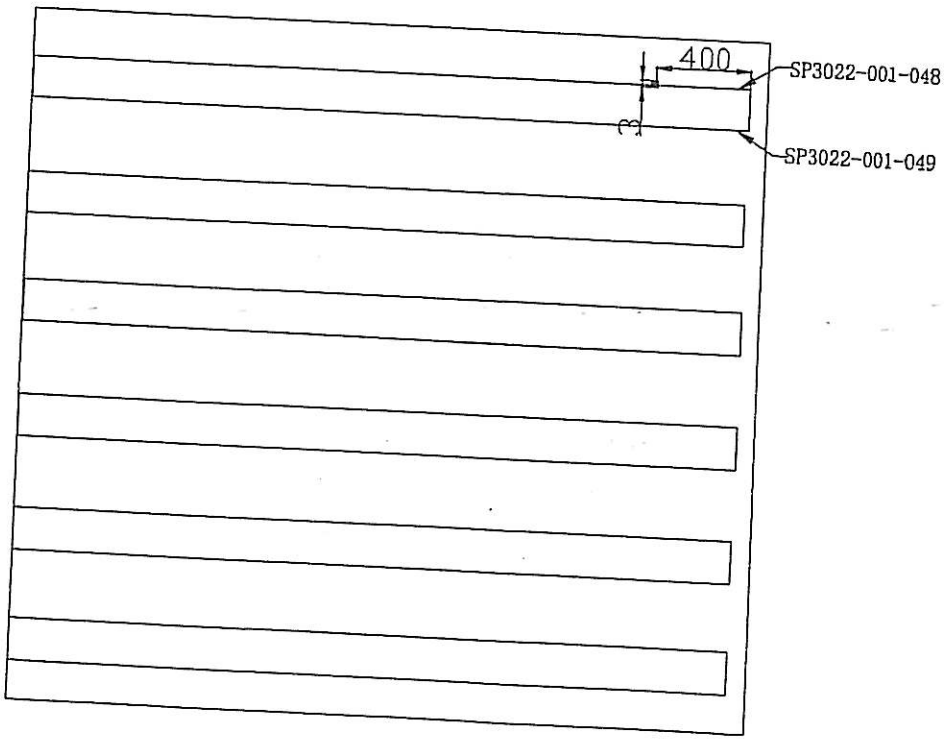
Description of welding discontinuity:

One pore was found by use of MT on SP3022-001-048.
(MT探伤发现1处气孔。)

检验员（Inspector）：Xu Huaxiang 日期(Date)：09.07.29

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): Zhang Guiming 日期(Date): 2009.7.29

处理意见

Disposition :

1. 采用打磨的方法去除气孔;
2. 焊接前按照焊接返修工艺规程(WPS)准备焊缝接头形式;
3. 作100%VT与MT检查，确保缺陷完全去除;
4. 按照批准的焊缝返修工艺规程(WPS)进行预热和焊接;
5. 打磨焊缝区域使其与母材平齐;
6. 对修补区域作100%VT与MT检测;

1. Remove the defects by means of grinding cleanly.
2. Prepare excavation in accordance with an approved repair WPS prior to welding.
3. Perform VT 100% of the repair area to insure removal of the defects.
4. Preheat and weld according to the relevant repair WPS.
5. Following welding grind the weld flush with base metal.
6. Perform 100% VT and MT of repair area.

工 艺: Niutiefeng
Technical engineer
2009.7.29

审核: Lu Jian hua
Approved by

日期
Date 2009.8.11

#R787-QCP-900

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	SP3022A	报告编号 Report No.	B-WR6628
合同号 Contract No.:	04-0120F4	部件名称 Items Name	OBG SIDE PLATE 12B-D6	NDT报告编号 Report No.of NDT	B787-MT-12546
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): Zhang Guining 日期(Date): 2009.7.29

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-2 G(2F)-Repair WPS-345-FCAW-2 G(2F)-Repair-1	工艺员 technologist	Niutiefeng 2009.7.29.
返修（碳刨）前预热温度 Preheat temperature before gouging	NA	返修的缺陷 Description of discontinuity	pore
焊前处理检查 Inspection before welding	AW	焊前预热温度 Preheat temperature before welding	80°C
最大碳刨深度 Max. depth of gouging	2mm	碳刨总长 Total length of gouging	50mm

焊工 welder	066459 Tom xiangbo	焊接类型 welding type	SMAW	焊接位置 position	2F
焊接电流 Current	160A	焊接电压 Voltage	24V	焊接速度 Speed	120mm/min

返修后检查

Inspection After repairing:

外观检查 VT result	Acc	检验员 Inspector	LIU.F.W 08176531	日期 Date	09-08-05
NDT复检 NDT result	Acc	探伤员 NDT person	Xuhai	日期 Date	09.08.05

见证：

Witness/Review:

备注：

Remark：

#R787-QCP-900

REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 B787-MT-12546R1	DATE日期 2009.08.05	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:	SP3022A OBG BOTTOM PLATE 12B-D6	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. 28ST ,2009
EQUIPMENT 设备 MT YOKE	MANUFACTURER 制造商 PARKER	MODEL NO. 样式编号 B310S	SERIAL NO. 连续编号 5395 5617 5620
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	√ WELDING 焊接件 ☐ CASTING 铸件 ☐ FORGING 锻造	Material & thickness 母材,厚度	A709M-345T2-X 10/20/22 mm
WELDING PROCESS 焊接方法	SMAW	TYPE OF JOINT 焊缝类型	T-JOINT

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			
SP3022-001-048	1R1			ACC.		100%MT
AFTER -WR6628						
BLANK						

EXAMINED BY主探 Xu hai Xu Hai LEVEL - II SIGN 签名 / DATE日期 09.08.05	REVIEWED BY 审核 Gaixinxin LEVEL-II SIGN / DATE日期 09.08.05
质量经理 / QCM 签字 SIGN / 日期 DATE	用户CUSTOMER 签字 SIGN / 日期 DATE

(FORM# ZPQC-MT01)

ZPMC

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-242 (ZPMC-0352)
Item: one longitudinal linear indication on LD002-039-011 **名称描述:** 在 LD002-039-011 上发现裂纹 **Item Number:** 件号: OBG Longitudinal Diaphragms	**Drawing:** **图号:** OBG LD002-039-011
Location: OBG LD **位置:** BAY 3	**Date:** **日期:** 2009-8-5

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

During random verification Magnetic Particle Testing (MT) for the OBG Longitudinal Diaphragms at Bay #3. The Caltrans Quality Assurance Inspector (QA) observed one (1) longitudinal linear indication approximately 11 mm in length in the weld metal on LD002-039-011. Linear Indication was discovered after ZPMC QC MT acceptance.

在三车间 OBG 纵桁上随机做 MT 的过程中，加州检验员发现一条 11MM 长的裂纹在 LD002-039-011 上。此裂纹时在 ZPMC QC MT 接受之后发现的。

Work By: 施工方: 2009.08.20 **Prepared by:** 准备: Zhangwei 2009.08.21 **Reviewed by QCE:** 质量工程师批准: ZhuoShuangbao 2009.8.21

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

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

Recommendation:
建议: 确认后报告处理. Confirm and issue repair report.

Prepared by: 准备 2009.08.20 **Approved by QCA:** 质量经理批准

Reason for Nonconformance:
不符合原因: 在检测范围外，线性缺陷未检测到.
Discover linear defect out of inspection area.

Prevention of Re-occurrence:
预防措施: 加强焊接控制，抽检位置随机化.

Enhance supervision welding and random inspection percentage.

Approved by/批准: _____ 2021.08.30

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

Reviewed /批准: _____

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:** _____

#R787-QCP-1300

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: 16-Aug-2009

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

Job Name: SAS Superstructure

Document No: 05.03.06-000341

Dear: Mr. Charles Kanapicki

Attention: Mr. Thomas Nilsson Project/Fabrication Manager

Subject: NCR No. ZPMC-0352

Reference Description: Missed MT Longitudinal Indication by QC on Longitudinal Diaphragm

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:**

Remarks:

During random verification Magnetic Particle Testing (MT) for the OBG Longitudinal Diaphragms at Bay # 3. The Caltrans Quality Assurance Inspector (QA) observed one (1) longitudinal linear indication approximately 11mm in length in the weld metal on LD002-039-011. Linear Indication was discovered after ZPMC QC MT acceptance.

Action Required and/or Action Taken:

Submit repair procedure to engineer for approval.

Transmitted by: Bill Howe

Attachments: ZPMC-0352

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

File: 05.03.06

STATE OF CALIFORNIA--BUSINESS,TRANSPORTACTION AND HOUSING AGENCY

Arnold Schwarzenegger, Governor

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
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

Report No: NCR-000378
Date: 05-Aug-2009
NCR #: ZPMC-0352

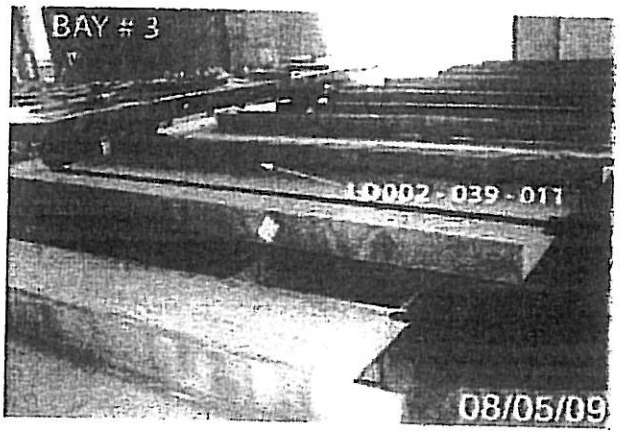
Type of problem:

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

Reference Description: Missed MT Longitudinal Indication by QC on Longitudinal Diaphragm

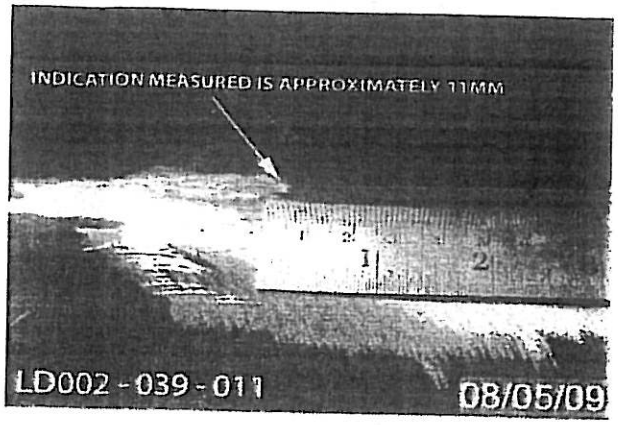
Description of Non-Conformance:

During random verification Magnetic Particle Testing (MT) for the OBG Longitudinal Diaphragms at Bay # 3. The Caltrans Quality Assurance Inspector (QA) observed one (1) longitudinal linear indication approximately 11mm in length in the weld metal on LD002-039-011. Linear Indication was discovered after ZPMC QC MT acceptance.



QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



Applicable reference:

AWS D1.5 (02) Section 6.26.2 – "Welds that are subject to MT in addition to visual inspection shall have no cracks.

Who discovered the problem: Sandeep Kumar Naddi

Name of individual from Contractor notified: Zeng Jian Ping

Time and method of notification: 1100 hours, Verbal

Name of Caltrans Engineer notified: Bill Howe

Time and method of notification: 0700 hours, Verbal

QC Inspector's Name: Zhang Yaxu

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.

Inspected By:	Tsang,Eric	SMR
Reviewed By:	Wahbeh,Mazen	SMR

ZPMC	关键焊缝返修报告 Critical Welding Repair Report (CWR)				版本 Rev. No.: 1
项目名称 Project Name:	美国海湾大桥 SFOBB	部件图号 Drawing No.:	LD2	报告编号 Report No.:	B-CWR652
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	OBG PLATE PANEL SPLICE	NDT 报告编号 NDT Report No.:	B787-MT-12728
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述：

Description of Welding Discontinuity:

We found one longitudinal crack on the LD002-039-011

Y=2200mm L=20mm

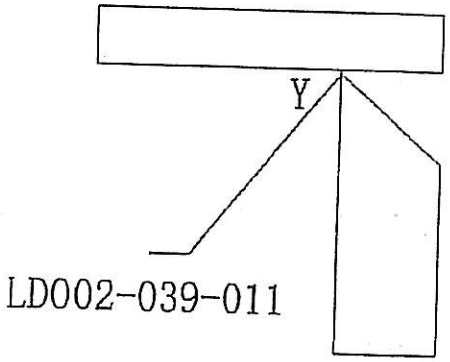
Welder ID No. (焊工编号):208035Position:(位置): 2F

检验员 (Inspector)：Xu Huaxiang Xu hua xiang

日期 (Date)：2009-08.04

焊缝返修位置示意图：

Draft of Welding Discontinuity:



This document is APPROVED
State of California
DEPARTMENT OF TRANSPORTATION
Pursuant to Section 5-1.02 of the
Standard Specifications
Initial SJE Date: 8/12/2009

产生原因:

Cause:

1. 火焰加热时，水汽没有完全的去除或者这个区域预热不够；

1. Moisture wasn't completely removed during drying operation (preheating) or the area wasn't preheated sufficiently.

车间负责人 (Foreman): Li Zhigang 日期 (Date): 09.08.07

处理意见

Disposition :

1. 这次返修时，QC和Leader CWI到现场对打磨，焊接进行指导和监控工作以保证返修按照处理意见进行；
2. 整个返修的过程，QC和Leader CWI应该有批准CWR的复印件；
3. 去除热影响区域上在各个方向上不小于25mm范围内的油漆；
4. 采用打磨的方法去除裂纹，打磨返修范围为沿缺陷焊缝每一端加50mm;
5. 如果打磨时母材损伤，则在返修前将损伤区域打磨干净。如果打磨时或打磨后根部间隙大于5mm，提交CWR报告给加州工程师批准，那么在这个位置的焊缝采用CJP焊缝，并在打磨去除焊缝后对其及进行MT检测；
6. 焊接前按照焊接返修工艺规程(WPS)准备焊缝接头形式；
7. 返修前，VT和MT检测确认返修区域没有裂纹及其他缺陷存在；
8. 返修前，MT确认裂纹没有延伸到母材，如果发现裂纹延伸到母材，提交CWR给工程师批准；
9. 按照批准的焊缝返修工艺规程(WPS)进行预热和焊接；
10. 将修补区域打磨与母材或相邻焊缝平齐；
11. 返修后进行100%VT和MT检测，检测范围包括修补区域（包括沿缺陷焊缝每一端加50mm）的正面及反面焊缝，其中对于CJP焊缝，NDT方法为UT和MT。

1. QC and a Lead CWI shall be present, direct and supervise all grinding and welding operations during this repair to ensure the repair is per the disposition requirements
2. QC and a Lead CWI shall have an approved copy of the CWR in hand prior to the repair.
3. Remove paint≥25mm in all direction of HAZ prior to MT.
4. Remove cracks by grinding, repair area shall extend a minimum of 50mm beyond each end of single crack repairs;
5. If base metal is damaged by grinding, the damaged area shall be ground clean prior to performing weld repair. If gap>5mm is found during or after grinding, a separate CWR to make the weld joint a CJP is required in that location, and perform MT after performing grinding the defects away.
6. Prepare excavation in accordance with an approved repair WPS prior to welding.
7. Before this repair, Verify with VT and MT repair areas are defects free;
8. Perform MT on the weld metal adjacent to the repair area to ensure that crack did not propagate into base metal. If crack is discovered in base metal , approval of a separate CWR is required before continuing with repair work .
9. Preheat and weld according to the approved repair WPS.
10. Grind the repaired area flush with base metal or the adjacent weld.
11. Perform 100%VT and MT inspection to all repaired welds (along with an additional 50mm at each end of the weld repair) which include the near side and far side on the upper Perform UT and MT inspection to CJP weld.

This document is APPROVED
State of California
DEPARTMENT OF TRANSPORTATION
Pursuant to Section 5-1.02 of the
Standard Specifications
Initial SJE Date: 8/12/2009

工 艺:
Technical Engineer: Niu Tefeng

审核:
Approved By: Lujianhua for chenbin

日期:
Date: 09.08.07

#R787-QCP-900

ZPMC	关键焊缝返修报告 Critical Welding Repair Report (CWR)	版本 Rev. No.: 1

项目名称 Project Name:	美国海湾大桥 SFOBB	部件图号 Drawing No.:	LD2	报告编号 Report No.:	B-CWR652
合同号 Contract No.:	04-0120F4	部件名称 Item Name:	OBG PLATE PANEL SPLICE	NDT 报告编号 NDT Report No.:	B787-MT-12728
项目编号 Project No.:	ZP06-787				

纠正措施:

Corrective Action to Prevent Re-occurrence:

1.返修前，QC确认有效的预热，以将水汽全部去除。

1. QC shall verify sufficient preheat has been applied, to remove moisture, prior to welding.

车间负责人 (Foreman): Li zhiqang 日期 (Date): 09.08.07

参照的WPS编号 Repair WPS No.:	WPS-345-SMAW-2 G(2F)-Repair WPS-345-FCAW-2 G(2F)-Repair-1 WPS-345-SMAW-4 G(4F)-Repair	工艺员 Technologist:	Niu Tiefeng 09.08.07
返修（碳刨）前预热温度 Preheat Temperature Before Gouging:	NA	返修的缺陷 Description of Discontinuity:	Crack
焊前处理检查 Inspection Before Welding:	Acc	焊前预热温度 Preheat Temperature Before Welding:	237°c
最大碳刨深度 Max. Depth of Gouge:	NA	碳刨总长 Total Length of Gouge:	NA

焊工 Welder:	044830	焊接类型 Welding Type:	FCAW	焊接位置 Position:	2F
焊接电流 Current:	165	焊接电压 Voltage:	25.2	焊接速度 Speed:	114

返修后检查
Inspection After Repair:

外观检查 VT Result:	Acc	检验员 Inspector:	chen xi	日期 Date:	2009.08.15.
NDT复检 NDT Result:	Acc	探伤员 NDT Person:	Jin Jian ting	日期 Date:	8/15

见证：
Witness/Review:

备注：
Remark：

#R787-QCP-900

This document is APPROVED
State of California
DEPARTMENT OF TRANSPORTATION
Pursuant to Section 5-1.02 of the
Standard Specifications
Initial GJE Date: 8/12/2009

ZPMC

周数	93 #		
日期	2009.08.15		

Visual Weld Inspection Report
焊缝目视检查报告

Girder/ 梁:	OBG Cross Beam		
Tower/ 塔:	NA		
Caltrans Contract No. 加州合同编号	04-0120F4	Quality Control Representative: 质检代表:	
Project No.: 项目名称	San Francisco Oakland Bay Bridge 美国海湾大桥	C W I: 检验员:	clean xi 07072021
Project No.: 项目编号:	ZP06-787	Quality Assurance Manager ~Approval 质量控制经理:	

Weld No. 焊缝编号	Welder I.D.# 焊工识别号	Location 位置	Welding consumables 焊接材料	Undercut 咬边	Porosity 气孔	Over lap 焊瘤	Crater 弧坑	Arc strike 电弧擦伤	Spatters 飞溅	Crack 裂纹	Accept or Reject 接受或拒收	Repair 返修	Accept or Reject after repair 返修后接受或拒收
LD002-039-011	044830	2F	supercordø1.4	√	√	√	√	√	√	√	ACC	NA	NA

☐ After root weld
☑ After CWR or WRR No.: B-CWR612
☑ After cover pass
☐ After HSR No.:
☐ Others

#R787-QCP-603

" √ " is no defects. " X " is defects. "NA" is not applicable.

REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 B787-MT-12726	DATE日期 2009.08.04	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: LD2 PLATE PANEL SPLICE		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. 28ST ,2009
EQUIPMENT 设备 MT YOKE	MANUFACTURER 制造商 PARKER	MODEL NO. 样式编号 B310S	SERIAL NO. 连续编号 5395 5617 5620
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	√WELDING 焊接件 ☐ CASTING 铸件 ☐ FORGING 锻造	Material & thickness 母材,厚度	A709M-345T2-X 14/25mm
WELDING PROCESS 焊接方法	FCAW	TYPE OF JOINT 焊缝类型	T JOINT

WELD I.D. 焊缝编号	DISCONTINUITY不连续性 INDICATION 指示	TYPE 类型	LENGTH IN mm 长度	ACCEPT 接受	REJECT 拒收	REMARKS 备注
LD002-039-001						*
LD002-039-002						*
LD002-039-003				ACC.		10%MT
LD002-039-004				ACC.		10%MT
LD002-039-005				ACC.		100%MT
LD002-039-006						*
LD002-039-007						*
LD002-039-008						*
LD002-039-009				ACC.		100%MT
LD002-039-010						*
LD002-039-012				ACC.		10%MT

*LD002-039-003、LD002-039-004、LD002-039-005、LD002-039-009、LD002-039-012 were MT inspection and ACC, which is the result of required 10% MT.

*LD002-039-003、LD002-039-004、LD002-039-005、LD002-039-009、LD002-039-012 焊缝经MT检测合格，累积检测长度已经达到了此批要求的10%检测长度。

LD002-039-011	1	LONGITUDINALCRACK	20		REJ.	100%MT
AFTER HSR1(B)-7250 BLANK						

EXAMINED BY主探 Xu hua xiang Xu Hua Xiang LEVEL - II SIGN 签名 / DATE日期 4.08.04	REVIEWED BY 审核 Sun Guangchuang LEVEL-II SIGN / DATE日期 4.08.04
质检总理 / QCM Liu Yanhua 8/4/09 签字 SIGN / 日期 DATE	用户CUSTOMER 签字 SIGN / 日期 DATE

(FORM# ZPQC-MT01)

REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 B787-MT-12728R1	DATE日期 2009.08.15	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:	LD2 PLATE PANEL SPLICE	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. 28ST ,2009
EQUIPMENT 设备 MT YOKE	MANUFACTURER 制造商 PARKER	MODEL NO. 样式编号 B310S	SERIAL NO. 连续编号 5395 5617 5620
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	√ WELDING 焊接件 ☐ CASTING 铸件 ☐ FORGING 锻造	Material & thickness 母材,厚度	A709M-345T2-X 14/25mm
WELDING PROCESS 焊接方法	FCAW	TYPE OF JOINT 焊缝类型	T JOINT

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			
LD002-039-011	1R1			ACC.		100%MT
AFTER B-CWR652						
BLANK						

EXAMINED BY主探 Jin jian ting Jin Jianting LEVEL - II SIGN 签名 / DATE日期 09,08,15	REVIEWED BY 审核 Sun Guo chang LEVEL-II SIGN / DATE日期 09,08,15
质量经理 / QCM 签字 SIGN / 日期 DATE	用户CUSTOMER 签字 SIGN / 日期 DATE

(FORM# ZPQC-MT01)

会议签到表

MEETING SIGN IN LIST

ZLJL/403—09 A/0

会议主题	磁粉培训		
时 间	2009.10.21 17:00	地 点 Place	钢桥办公室

姓 名	会议内容:
苏巩韦 Suwei	1. 安全培训
丁阿成 Ding A chen	a 护目镜、护膝
徐华祥 Xu Hua xiang	b 防止电击，特别是在雨天，
赵成功 zhao chen gong	2. 工具
傅志强 Fuzhi qiang	a 照明注意适度，方向，
李振华 Li zhen hua	
周东运 zhou Dong yun	b. 皮老虎吹磁粉要轻，
顾云武 Gu yun wu	c 磁粉机保证提升力，
金建廷 Jin Jian ting	
王贵 wangwei	d. 红黄磁粉温度区别
徐海 Xu Hai	3. 检验技术
孙工 Sun Gongchang	a. 尽量接近焊缝 方便观察；
蔡新鑫 Cai Xin xin	
常杰 Chang Fang jie	b 在检测过程中观察；
[illegible]	c 在磁粉检测的角落部位，用八角试
[illegible]	块测试一下磁粉强度是否足够，
[illegible]	
赵建亨 zhao Jianeng	d 对接缝检测双面
张佳弟 zhang Jia di	

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 #: xx.25A

QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

Location: Changxing Island, Shanghai, P.R. China **Report No:** NCS-000393
Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date:** 25-Dec-2009
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0352

Type of problem:

Welding	☐	**Concrete**	☐	**Other**	☑	
Welding	☐	**Curing**	☐	**Procedural**	☑	**Bridge No:** 34-0006
Joint fit-up	☐	**Coating**	☐	**Other**	☐	**Component:**
Procedural	☐	**Procedural**	☐	**Descripton:**		

Date the Non-Conformance Report was written: 05-Aug-2009

Description of Non-Conformance:
During random verification Magnetic Particle Testing (MT) for the OBG Longitudinal Diaphragms at Bay # 3. The Caltrans Quality Assurance Inspector (QA) observed one (1) longitudinal linear indication approximately 11mm in length in the weld metal on LD002-039-011. Linear Indication was discovered after ZPMC QC MT acceptance.

Contractor's proposal to correct the problem:
ABFJV has conducted training with the MT inspectors to improve inspections. After the repair, the contractor has also provided acceptable NDT report.

Corrective action taken:
The weld in question has been repaired with acceptable NDT result and documentation.

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 Mazen Wahbeh, +(86) 134.7247.7571, who represents the Office of Structural Materials for your project.

Inspected By:	Tsang,Eric	Quality Assurance Inspector
Reviewed By:	Wahbeh,Mazen	QA Reviewer