

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-000638

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 17-Jan-2010

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

NCR #: ZPMC-0611

Type of problem:

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

Reference Description: ZPMC placed 9.7 tons weight on Tower Strut web for the purpose of straightening

Description of Non-Conformance:

During the random Quality Assurance(QA) in process verification of Tower Strut plate, this QA Inspector observed the following issues:

- ZPMC placed a 9.7 ton weight on a 16mm thick Tower Strut web for the purpose of straightening.
- ZPMC CWI Yu Dong Ping referenced heat straightening document HSR1 (T)-11020 Rev. 0 as being the controlling document.
- The referenced document does not indicate any weight and/or mechanical force being used for straightening.
- 65 degree "Tempilstick" did not melt when applied to material.
- The weld numbers are identified as ED1-STSA4-6-131-1-7A/B, 8A/B; ND1-STSA4-6-127M-1-7A/B, 8A/B; ND1-STSA4-6-127M-2-7A/B, 8A/B.
- The material is designated as Seismic Performance Critical Member (SPCM).
- The member is located at Tower Bay No. 11.



QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Applicable reference:

1) 2.12 Straightening, Curving, and Cambering: "Cold bending shall be prohibited for all fracture critical steels."
"

2) HSR1 (T)-11020 Rev. 0

Who discovered the problem: Umesh Gaikwad

Name of individual from Contractor notified: Xie Yan

Time and method of notification: 1615 Hrs, 01/17/10, Verbal

Name of Caltrans Engineer notified: Scott Kennedy

Time and method of notification: 1545 Hrs, 01/18/10, Verbal

QC Inspector's Name: Yu Dong Ping

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 (15000422360), who represents the Office of Structural Materials for your project.

Inspected By: Ng,Michael

QA Inspector

Reviewed By: Wahbeh,Mazen

SMR



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
 333 Burma Road
 Oakland CA 94607
 Tel: 510-808-4618 Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

To:	AMERICAN BRIDGE/FLUOR, A JV 375 BURMA ROAD OAKLAND CA 95607	Date:	19-Jan-2010
Dear:	Mr. Charles Kanapicki	Contract No:	04-0120F4 04-SF-80-13.2 / 13.9
Attention:	Mr. Thomas Nilsson Project/Fabrication Manager	Job Name:	SAS Superstructure
Subject:	NCR No. ZPMC-0611	Document No:	05.03.06-000596
Reference Description:	Cold bending of SPCM Strut/ Tower/ Stut		

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:** N/A

Remarks:

During the random Quality Assurance(QA) in process verification of Tower Strut plate, this QA Inspector observed the following issues:

- ZPMC placed a 9.7 ton weight on a 16mm thick Tower Strut web for the purpose of straightening.
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- The material is designated as Seismic Performance Critical Member (SPCM).
- The member is located at Tower Bay No. 11.

Special Provisions, Section 8-3 Welding, Welding Quality Control - "The welding of seismic performance critical members (SPCM) shall conform to the provisions specified in the Fracture Control Plan (FCP) and the contract."

AWS D1.5-2002 Section 12.12 - "Cold bending shall be prohibited for all fracture critical steels. Bent and distorted material may be corrected prior to assembly and welding by approved upset-shortening methods (heat straightening, curving and cambering)."

Action Required and/or Action Taken:

The above referenced web plate is rejected. In accordance with Section 5-1.09, Removal of Rejected And Unauthorized Work of the Standard Specifications, this plate is to be removed and replaced.

In addition, propose a resolution to the non-conformance that addresses the apparent failure of Quality Control and Production to identify the non-conformance with AWS D1.5. Provide documentation of the steps taken by the Quality Control Manager to prevent future occurrences.

NCT

(Continued Page 2 of 2)

Transmitted by: Ken Lee Transportation Engineer

Attachments: ZPMC-0611

cc: Rick Morrow, Gary Pursell, Mark Woods, Scott Kennedy

File: 05.03.06

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000596

Subject: NCR No. ZPMC-0611

Dated: 09-Feb-2010

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000585 Rev: 00

Contractor's Proposed Resolution:

Reference Resolution: ZPMC is submitting NDT documentation to show that the welds affected by the heat straightening and potentially affected by the use of the weight are acceptable.

When ZPMC QC and QA determined this non conformance had occurred they immediately stopped the production work from continuing. ZPMC is submitting NDT documentation to show that the welds affected by the heat straightening and potentially affected by the use of the weight are acceptable. Based on this ZPMC requests this NCR be closed.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000585R00;

Caltrans' comments:

Status: REJ

Date: 10-Feb-2010

In Non-conformance Report Transmittal (NCT Document No. 05.03.06-000596) dated January 19, 2010, the Department rejected the web plates referenced by this NCR. AWS D1.5-2002 Section 12.12 prohibits cold bending on all fracture critical steels. As such, this material shall be removed and replaced in accordance with Section 5-1.09 of the Standard Specifications.

In addition, please address the failure of Quality Control and Production to identify the non-conformance with AWS D1.5 and provide the documentation of the steps taken by the QCM to prevent future occurrences.

Submitted by: Lee, Ken

Date: 10-Feb-2010

Attachment(s):



No. T-126

LETTER OF RESPONSE

TO: American Bridge/Flour JV

DATE: 2010-2-09

REGARDING: NCR-000638(ZPMC-0611)

ZPMC received NCR-000638(ZPMC-0611), it mentioned that ZPMC placed a 9.7 ton weight on the Tower Strut web for the purpose of straightening, which did not be indicated on HSR1(T)-11020 referenced by ZPMC CWI.

We acknowledged that and immediately informed the site workers to stop the wrong behavior. And now, this member has passed CT and ABF's inspection by NDT. Here attached NDT reports to show the member were sound and HSR as well

So ZPMC hopes Caltrans could take a review and close this NCR.

ATTACHMENT:

NCR-000638(ZPMC-0611)

T-787-MT-8010

T787-UT-2624

T787-UT-2624R1

HSR1(T)-11020

Zhao jianeng

2010-2-09



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
333 Burma Road
Oakland CA 94607
Tel: 510-808-4618 Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

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

Date: 19-Jan-2010

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

Dear: Mr. Charles Kanapicki

Job Name: SAS Superstructure

Attention: Mr. Thomas Nilsson Project/Fabrication Manager

Document No: 05.03.06-000596

Subject: NCR No. ZPMC-0611

Reference Description: Cold bending of SPCM Strut/ Tower/ Stut

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Lift: N/A

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Attachments: ZPMC-0611

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File: 05.03.06

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection

Contract #: 04-0120F4

Bay Area Branch

690 Walnut Ave. St. 150

Vallejo, CA 94592-1133

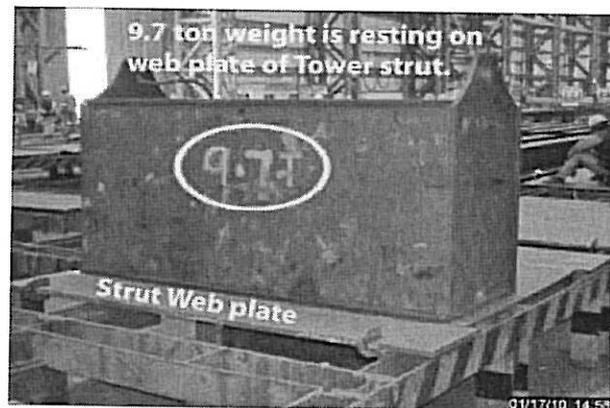
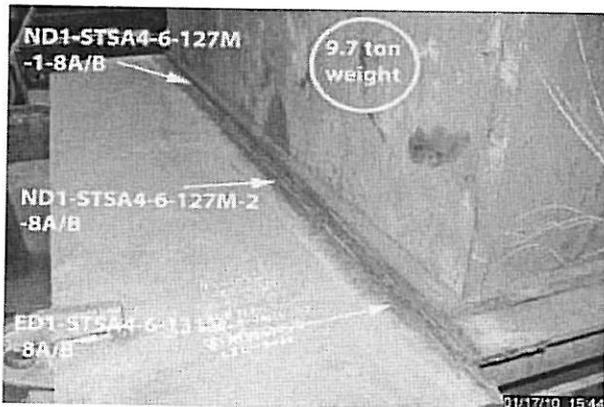
(707) 649-5453

(707) 649-5493

Cty: 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-000638**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 17-Jan-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0611**Type of problem:**Welding Concrete Other Welding Curing Procedural **Bridge No:** 34-0006Joint fit-up Coating Other **Component:** Strut Web PlateProcedural Procedural Description:**Reference Description:** ZPMC placed 9.7 tons weight on Tower Strut web for the purpose of straightening**Description of Non-Conformance:**

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Name of individual from Contractor notified: Xie Yan

Time and method of notification: 1615 Hrs, 01/17/10, Verbal

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Inspected By: Ng, Michael

QA Inspector

Reviewed By: Wahbeh, Mazen

SMR



REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 T787-MT-8010 DATE日期 2010.01.22 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: ED1-STSA4-6/ND1-STSA4-6 FOURTH LIFTING		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. 28 ST , 2010
EQUIPMENT 设备 MT YOKE	MANUFACTURER 制造商 PARKER	MODEL NO. 样式编号 B310S	SERIAL NO. 连续编号 5620 5395 5617
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	<input checked="" type="checkbox"/> WELDING 焊接件 <input type="checkbox"/> CASTING 铸件 <input type="checkbox"/> FORGING 锻造	Material & thickness 母材, 厚度	A709SL-GR345+/485+/345 32/16mm
WELDING PROCESS 焊接方法	SAW	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			
ND1-STSA4-6-127M-1-7A/B				ACC.		100%
ND1-STSA4-6-127M-2-7A/B				ACC.		100%
ED1-STSA4-6-131M-1-7A/B				ACC.		100%
ND1-STSA4-6-127M-1-8A/B				ACC.		100%
ND1-STSA4-6-127M-2-8A/B				ACC.		100%
ED1-STSA4-6-131M-1-8A/B				ACC.		100%
BLANK						

EXAMINED BY 主探 <u>Xu Bing</u>	REVIEWED BY 审核 <u>Cai Lin Lin</u>
LEVEL - II SIGN 签名 / DATE日期 10.01.22	LEVEL-II SIGN / DATE日期 10.01.22
质量经理 / QCM	用户 CUSTOMER
签字 SIGN / 日期 DATE	签字 SIGN / 日期 DATE



REPORT OF ULTRASONIC EXAMINATION

UT探伤报告

REPORT NO. 报告编号 T787-UT-2624 DATE 2010.01.19 PAGE 1 OF 1 Revision No: 0

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

ITEMS NAME: 部件名称 FOURTH LIFTING TOWER DRAWING NO.: 图号 ED1-STSA4-6 ND1-STSA4-6 CALTRANS CONTRACT NO.: 加州工程编号 04-0120F4

REFERENCING CODE 参考规范 AWS D1.5-2002 ACCEPTANCE STANDARD 接受标准 AWS D1.5-2002(Table 6.3) PROCEDURE NO. 程序编号 ZPQC-UT-01

WELDING PROCESS 焊接方法 SAW JOINT TYPE 焊缝类型 BUTT CALIBRATION DUE DATE 仪器校正有效期 Dec. 28ST, 2010

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

CALIBRATION BLOCK 试块 AWS IIW BLOCK TYPE II COUPLANT 耦合剂 C.M.C MATERIAL/THICKNESS 材料厚度 A709SL-Gr345+/A709SL-Gr485+ 32/16mm

TRANSDUCER 探头

MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸	MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸
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	Depth from Surface 距表面深度	From'X 距X	From'Y 距Y			
ND1-STSA4-6-127M-1-7A/B		70				34									ACC.	100%
ND1-STSA4-6-127M-2-7A/B		70				34									ACC.	100%
ED1-STSA4-6-131M-1-7A/B	1	70	A	1	44	34	0	+10	20	25	9	-15	385	REJ.	100%	
ND1-STSA4-6-127M-1-8A/B		70				34									ACC.	100%
ND1-STSA4-6-127M-2-8A/B		70				34									ACC.	100%
ED1-STSA4-6-131M-1-8A/B	1	70	A	2	46	34	4	+8	35	75	5	-10	820	REJ.	100%	

AFTER HSR1(T)-11020

BLANK

EXAMINED BY 主探 <i>[Signature]</i> LEVEL - II SIGN / DATE 10.01.19 质量经理 / QCM	REVIEWED BY 审核 <i>[Signature]</i> LEVEL - II SIGN / DATE 10.01.19 用户 CUSTOMER
签字 SIGN / 日期 DATE	签字 SIGN / 日期 DATE



REPORT OF ULTRASONIC EXAMINATION

UT探伤报告

REPORT NO. 报告编号 T787-UT-2624R1 DATE 2010.01.25 PAGE 1 OF 1 Revision No: 0

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

ITEMS NAME: FOURTH LIFTING TOWER DRAWING NO.: ED1-STSA4-6 ND1-STSA4-6 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, 2010

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 A709SL-Gr345+/A709SL-Gr485+ 32/16mm

TRANSDUCER 探头

MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸	MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸
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
ED1-STSA4-6-131M-1-7A/B	1R1	70						34							ACC.	100%
ED1-STSA4-6-131M-1-8A/B	1R1	70						34							ACC.	100%

AFTER T-WR3026-3027

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EXAMINED BY 主探 <i>[Signature]</i> LEVEL - II SIGN / DATE 2010.1.19	REVIEWED BY 审核 <i>[Signature]</i> LEVEL - II SIGN / DATE 10.31.19
质量经理 / QCM _____ 签字 SIGN / 日期 DATE	用户 CUSTOMER _____ 签字 SIGN / 日期 DATE



火工校正记录

Heat Straightening Record (HSR1)

报告号 Record #

HSR1(T)-11020

版本号 Revision #

0

日期 Date

2010.01.15

美国海湾大桥 San Francisco Oakland Bay Bridge

CALTRANS #04-0120F4

工程编号 JOB#: ZP06-787

装配 Assembly: N/A

质检代表/Quality Control Representative

部装 Sub-Assembly: N/A

梁段 Girder: The 4th lift

质检经理/Quality Assurance Manager-Approval

塔段 Tower: ED1-STSA4-6

焊缝号 Weld No: 7A,7B,8A,8B

焊缝地图号 Weld Map No: ED1-STSA4-6-131m-1/ND1-STSA4-6-127m-1/ND1-STSA4-6-127m-2

情况描述 Description of Condition

Cause原因: Welding distortion 焊接变形

Type of Defect缺陷类型: Welding distortion 焊接变形

Inspection Method检查方法: Visual 目检

处置方法 Disposition

缺陷去除方法(Defect Removal Method): Flame Straightening by natural gas 天然气校火

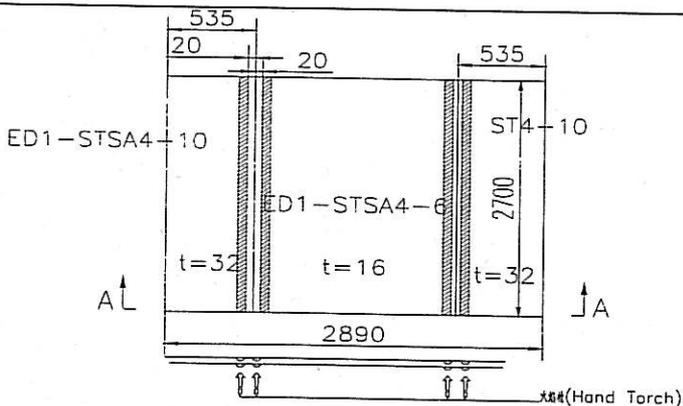
后续NDE(Post-Removal NDE): After finishing heat straightening, the weld of the heat area shall perform NDT according to the approved shop drawing. 校火后, 根据图纸要求对热影响区域焊缝进行NDT检测

纠正措施(Corrective Action(s)): Control current, voltage and weld speed according to relevant WPS. If necessary anti-deformation or hold down device can be added. 依据相应的WPS的要求控制电流, 电压和焊接速度。如有必要, 可使用反变形设施进行校正

实施次数(Number of application): 2~3

最高温度(Maximum temperature): <600°C

简图 Sketch



火焰校火: 校火最大变形量约3mm
 Flame straightening area: the max deformation is about 3mm
 长度: 校火最大长度约2700mm, 宽度50~100mm
 Longitudinal: the max length is about 2700mm, the width is 50~100mm

To be signed when Closing HSR~Verify compliance and all necessary reports are ready to attach

检验员

Inspector:

CWI #

II级探伤NDE Certification:

Level II

质检经理
QC Manager

签字

Signature:

Closing Date:

审核日期

Review Date:

Note: All repair work shall be performed in accordance with applicable CALTRANS approved procedures, contract specifications and AWS D1.5 2002.

#R787--QCP-1101

陈洪萍

Approved by [Signature]

1115

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000596

Subject: NCR No. ZPMC-0611

Dated: 30-Jun-2010

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000585 Rev: 01

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has performed NDT of the welds potentially affected by the heat straightening and found them to be acceptable.

ZPMC has performed NDT of the welds potentially affected by the heat straightening and found them to be acceptable. ZPMC has issued an internal NCR to inform all affected parties that this type of action is unacceptable. In addition, ABFJV has had discussions with the ZPMC QA Manager and he has agreed to increase CWI presence in all areas to prevent lapse in QC oversight in the future. Based on these actions and attached documents, ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000585R01;

Caltrans' comments:

Status: CLO

Date: 04-Jul-2010

This proposed resolution is acceptable. The documentation received is sufficient and the Department concurs that Non-Conformance ZPMC-0611 is closed.

Submitted by: Rizzardo, Gina

Attachment(s):

Date: 04-Jul-2010



No. T-126

LETTER OF RESPONSE

TO: American Bridge/Flour JV

DATE: 2010-2-09

REGARDING: NCR-000638(ZPMC-0611)

ZPMC received NCR-000638(ZPMC-0611), it mentioned that ZPMC placed a 9.7 ton weight on the Tower Strut web for the purpose of straightening, which did not be indicated on HSR1(T)-11020 referenced by ZPMC CWI.

We acknowledged that and immediately informed the site workers to stop the wrong behavior. And now, this member has passed CT and ABF's inspection by NDT. Here attached NDT reports to show the member were sound and HSR as well

So ZPMC hopes Caltrans could take a review and close this NCR.

ATTACHMENT:

NCR-000638(ZPMC-0611)

T-787-MT-8010

T787-UT-2624

T787-UT-2624R1

HSR1(T)-11020

Zhao jianeng

2010-2-09



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
333 Burma Road
Oakland CA 94607
Tel: 510-808-4618 Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

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

Date: 19-Jan-2010

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

Dear: Mr. Charles Kanapicki

Job Name: SAS Superstructure

Attention: Mr. Thomas Nilsson Project/Fabrication Manager

Document No: 05.03.06-000596

Subject: NCR No. ZPMC-0611

Reference Description: Cold bending of SPCM Strut/ Tower/ Stut

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: N/A

Remarks:

During the random Quality Assurance(QA) in process verification of Tower Strut plate, this QA Inspector observed the following issues:

- ZPMC placed a 9.7 ton weight on a 16mm thick Tower Strut web for the purpose of straightening.
- ZPMC CWI Yu Dong Ping referenced heat straightening document HSR1 (T)-11020 Rev. 0 as being the controlling document.
- The referenced document does not indicate any weight and/or mechanical force being used for straightening.
- 65 degree "Tempilstick" did not melt when applied to material.
- The weld numbers are identified as ED1-STSA4-6-131-1-7A/B, 8A/B; ND1-STSA4-6-127M-1-7A/B, 8A/B; ND1-STSA4-6-127M-2-7A/B, 8A/B.
- The material is designated as Seismic Performance Critical Member (SPCM).
- The member is located at Tower Bay No. 11.

Special Provisions, Section 8-3 Welding, Welding Quality Control - "The welding of seismic performance critical members (SPCM) shall conform to the provisions specified in the Fracture Control Plan (FCP) and the contract."

AWS D1.5-2002 Section 12.12 - "Cold bending shall be prohibited for all fracture critical steels. Bent and distorted material may be corrected prior to assembly and welding by approved upset-shortening methods (heat straightening, curving and cambering)."

Action Required and/or Action Taken:

The above referenced web plate is rejected. In accordance with Section 5-1.09, Removal of Rejected And Unauthorized Work of the Standard Specifications, this plate is to be removed and replaced.

In addition, propose a resolution to the non-conformance that addresses the apparent failure of Quality Control and Production to identify the non-conformance with AWS D1.5. Provide documentation of the steps taken by the Quality Control Manager to prevent future occurrences.

NCT

(Continued Page 2 of 2)

Transmitted by: Ken Lee Transportation Engineer

Attachments: ZPMC-0611

cc: Rick Morrow, Gary Pursell, Mark Woods, Scott Kennedy

File: 05.03.06

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection

Contract #: 04-0120F4

Bay Area Branch

690 Walnut Ave. St. 150

Vallejo, CA 94592-1133

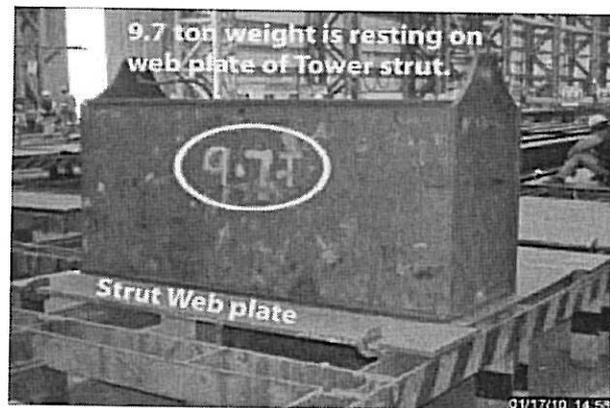
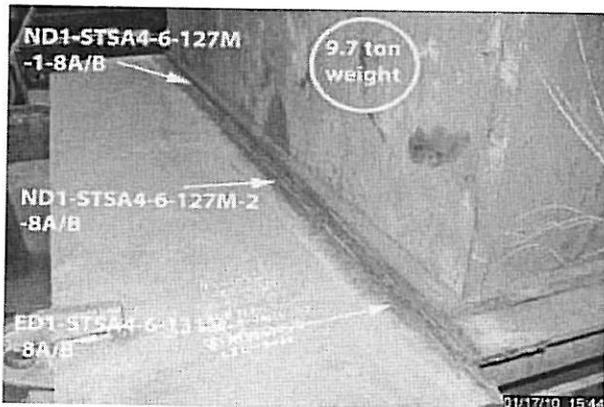
(707) 649-5453

(707) 649-5493

Cty: 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-000638**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 17-Jan-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0611**Type of problem:**Welding Concrete Other Welding Curing Procedural Joint fit-up Coating Other Procedural Procedural Description:**Bridge No:** 34-0006**Component:** Strut Web Plate**Reference Description:** ZPMC placed 9.7 tons weight on Tower Strut web for the purpose of straightening**Description of Non-Conformance:**

During the random Quality Assurance(QA) in process verification of Tower Strut plate, this QA Inspector observed the following issues:

- ZPMC placed a 9.7 ton weight on a 16mm thick Tower Strut web for the purpose of straightening.
- ZPMC CWI Yu Dong Ping referenced heat straightening document HSR1 (T)-11020 Rev. 0 as being the controlling document.
- The referenced document does not indicate any weight and/or mechanical force being used for straightening.
- 65 degree "Tempilstick" did not melt when applied to material.
- The weld numbers are identified as ED1-STSA4-6-131-1-7A/B, 8A/B; ND1-STSA4-6-127M-1-7A/B, 8A/B; ND1-STSA4-6-127M-2-7A/B, 8A/B.
- The material is designated as Seismic Performance Critical Member (SPCM).
- The member is located at Tower Bay No. 11.



QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Applicable reference:

1) 2.12 Straightening, Curving, and Cambering: "Cold bending shall be prohibited for all fracture critical steels."
"

2) HSR1 (T)-11020 Rev. 0

Who discovered the problem: Umesh Gaikwad

Name of individual from Contractor notified: Xie Yan

Time and method of notification: 1615 Hrs, 01/17/10, Verbal

Name of Caltrans Engineer notified: Scott Kennedy

Time and method of notification: 1545 Hrs, 01/18/10, Verbal

QC Inspector's Name: Yu Dong Ping

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 (15000422360), who represents the Office of Structural Materials for your project.

Inspected By: Ng, Michael

QA Inspector

Reviewed By: Wahbeh, Mazen

SMR



REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 T787-MT-8010 DATE日期 2010.01.22 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: ED1-STSA4-6/ND1-STSA4-6 FOURTH LIFTING		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. 28 ST , 2010
EQUIPMENT 设备 MT YOKE	MANUFACTURER 制造商 PARKER	MODEL NO. 样式编号 B310S	SERIAL NO. 连续编号 5620 5395 5617
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	<input checked="" type="checkbox"/> WELDING 焊接件 <input type="checkbox"/> CASTING 铸件 <input type="checkbox"/> FORGING 锻造	Material & thickness 母材, 厚度	A709SL-GR345+/485+/345 32/16mm
WELDING PROCESS 焊接方法	SAW	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			
ND1-STSA4-6-127M-1-7A/B				ACC.		100%
ND1-STSA4-6-127M-2-7A/B				ACC.		100%
ED1-STSA4-6-131M-1-7A/B				ACC.		100%
ND1-STSA4-6-127M-1-8A/B				ACC.		100%
ND1-STSA4-6-127M-2-8A/B				ACC.		100%
ED1-STSA4-6-131M-1-8A/B				ACC.		100%
BLANK						

EXAMINED BY主探 <u>Xu Bing</u>	REVIEWED BY审核 <u>Cai Lin Lin</u>
LEVEL - II SIGN 签名 / DATE日期 10.01.22	LEVEL-II SIGN / DATE日期 10.01.22
质量经理 / QCM	用户CUSTOMER
签字 SIGN / 日期 DATE	签字 SIGN / 日期 DATE



REPORT OF ULTRASONIC EXAMINATION

UT探伤报告

REPORT NO. 报告编号 T787-UT-2624 DATE 2010.01.19 PAGE 1 OF 1 Revision No: 0

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

ITEMS NAME: FOURTH LIFTING TOWER DRAWING NO.: ED1-STSA4-6 ND1-STSA4-6 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
 SAW BUTT Dec. 28ST, 2010

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 IIW BLOCK TYPE II C.M.C A709SL-Gr345+/A709SL-Gr485+ 32/16mm

TRANSDUCER 探头

MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸	MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸
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	Depth from Surface 距表面深度	From'X 距X	From'Y 距Y		
ND1-STSA4-6-127M-1-7A/B		70				34								ACC.	100%
ND1-STSA4-6-127M-2-7A/B		70				34								ACC.	100%
ED1-STSA4-6-131M-1-7A/B	1	70	A	1	44	34	0	+10	20	25	9	-15	385	REJ.	100%
ND1-STSA4-6-127M-1-8A/B		70				34								ACC.	100%
ND1-STSA4-6-127M-2-8A/B		70				34								ACC.	100%
ED1-STSA4-6-131M-1-8A/B	1	70	A	2	46	34	4	+8	35	75	5	-10	820	REJ.	100%

AFTER HSR1(T)-11020

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EXAMINED BY 主探 LEVEL - II SIGN / DATE 10.01.19 质量经理 / QCM	REVIEWED BY 审核 LEVEL - II SIGN / DATE 10.01.19 用户 CUSTOMER
签字 SIGN / 日期 DATE	签字 SIGN / 日期 DATE



REPORT OF ULTRASONIC EXAMINATION

UT探伤报告

REPORT NO. 报告编号 T787-UT-2624R1 DATE 2010.01.25 PAGE 1 OF 1 Revision No: 0

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

ITEMS NAME: FOURTH LIFTING TOWER DRAWING NO.: ED1-STSA4-6 ND1-STSA4-6 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, 2010

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 A709SL-Gr345+/A709SL-Gr485+ 32/16mm

TRANSDUCER 探头

MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸	MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸
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
ED1-STSA4-6-131M-1-7A/B	1R1	70						34							ACC.	100%
ED1-STSA4-6-131M-1-8A/B	1R1	70						34							ACC.	100%

AFTER T-WR3026-3027

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EXAMINED BY 主探 <i>[Signature]</i> LEVEL - II SIGN / DATE 2010.1.19 质量经理 / QCM 签字 SIGN / 日期 DATE	REVIEWED BY 审核 <i>[Signature]</i> LEVEL - II SIGN / DATE 10.5.19 用户 CUSTOMER 签字 SIGN / 日期 DATE
-------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------



火工校正记录

Heat Straightening Record (HSR1)

报告号 Record #

HSR1(T)-11020

版本号 Revision #

0

日期 Date

2010.01.15

美国海湾大桥 San Francisco Oakland Bay Bridge

CALTRANS #04-0120F4

工程编号 JOB#: ZP06-787

装配 Assembly: N/A

质检代表/Quality Control Representative

部装 Sub-Assembly: N/A

梁段 Girder: The 4th lift

质检经理/Quality Assurance Manager-Approval

塔段 Tower: ED1-STSA4-6

焊缝号 Weld No: 7A,7B,8A,8B

焊缝地图号 Weld Map No: ED1-STSA4-6-131m-1/ND1-STSA4-6-127m-1/ND1-STSA4-6-127m-2

情况描述 Description of Condition

Cause 原因: Welding distortion 焊接变形

Type of Defect 缺陷类型: Welding distortion 焊接变形

Inspection Method 检查方法: Visual 目检

处置方法 Disposition

缺陷去除方法 (Defect Removal Method): Flame Straightening by natural gas 天然气校火

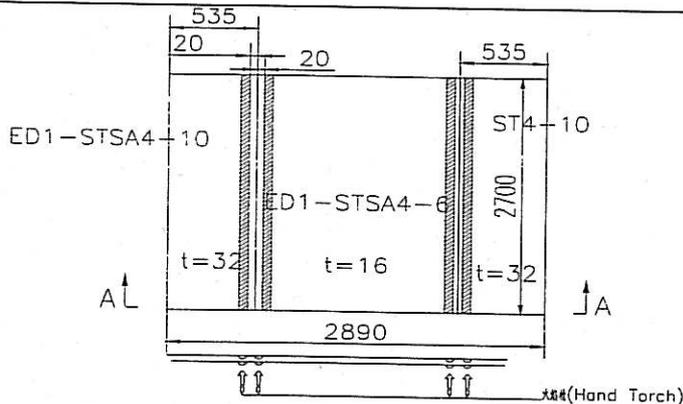
后续NDE (Post-Removal NDE): After finishing heat straightening, the weld of the heat area shall perform NDT according to the approved shop drawing. 校火后, 根据图纸要求对热影响区域焊缝进行NDT检测

纠正措施 (Corrective Action(s)): Control current, voltage and weld speed according to relevant WPS. If necessary anti-deformation or hold down device can be added. 依据相应的WPS的要求控制电流, 电压和焊接速度。如有必要, 可使用反变形设施进行校正

实施次数 (Number of application): 2~3

最高温度 (Maximum temperature): <600°C

简图 Sketch



火焰校火: 校火最大变形量约3mm
 Flame straightening area: the max deformation is about 3mm
 长度: 校火最大长度约2700mm, 宽50~100mm
 Longitudinal: the max length is about 2700mm, the width is 50~100mm

To be signed when Closing HSR~Verify compliance and all necessary reports are ready to attach

检验员

签字

Inspector:

Signature:

CWI #

II 级探伤 NDE Certification:

Level II

Closing Date:

质检经理
QC Manager审核日期
Review Date:

Note: All repair work shall be performed in accordance with applicable CAL TRANS approved procedures, contract specifications and AWS D1.5 2002.

#R787--QCP-1101

陈洪萍

Approved by *(Signature)*

1115

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 #: xx.25A**QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION****Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCS-000734**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 30-Jun-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0611**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: 17-Jan-2010**Description of Non-Conformance:**

During the random Quality Assurance(QA) in process verification of Tower Strut plate, this QA Inspector observed the following issues:

- ZPMC placed a 9.7 ton weight on a 16mm thick Tower Strut web for the purpose of straightening.
- ZPMC CWI Yu Dong Ping referenced heat straightening document HSR1 (T)-11020 Rev. 0 as being the controlling document.
- The referenced document does not indicate any weight and/or mechanical force being used for straightening.
- 65 degree "Tempilstick" did not melt when applied to material.
- The weld numbers are identified as ED1-STSA4-6-131-1-7A/B, 8A/B; ND1-STSA4-6-127M-1-7A/B, 8A/B; ND1-STSA4-6-127M-2-7A/B, 8A/B.
- The material is designated as Seismic Performance Critical Member (SPCM).
- The member is located at Tower Bay No. 11.

Contractor's proposal to correct the problem:

ZPMC to perform NDT of the welds on which may have been affected by the heat straightening and submit documentation to confirm the results meet Contract requirements. Propose and submit relevant documentation regarding actions to prevent future occurrence.

Corrective action taken:

The potential affected has been tested and found satisfactory with confirmation by NDT reports. ABFJV has had discussions with the ZPMC QA Manager and agreed to increase CWI presence in all areas to prevent lapse in QC oversight in the future.

Did corrective action require Engineer's approval? Yes No**If so, name of Engineer providing approval:****Date:****Is Engineer's approval attached?**

QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

(Continued Page 2 of 2)

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

Inspected By: Ng,Michael

Quality Assurance Inspector

Reviewed By: Devey,Jim

QA Reviewer