

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, China**Report No:** NCR-000830**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 31-Aug-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0792**Type of problem:**

| | | | |
|---------------------|-------------------|---------------------|------------------------------------|
| Welding | Concrete | Other | |
| Welding | Curing | Procedural | Bridge No: 34-0006 |
| Joint fit-up | Coating | Other | Component: FB3329A Lift 14W |
| Procedural | Procedural | Description: | |

Reference Description: Missed UT Indication discovered by QA on FB3329A (Lift 14W)**Description of Non-Conformance:**

During the Quality Assurance Ultrasonic Testing (UT) review of welds located on Orthotropic Box Girder (OBG) Floor Beam FB3329A, this Quality Assurance Inspector (QA) discovered the following issues:

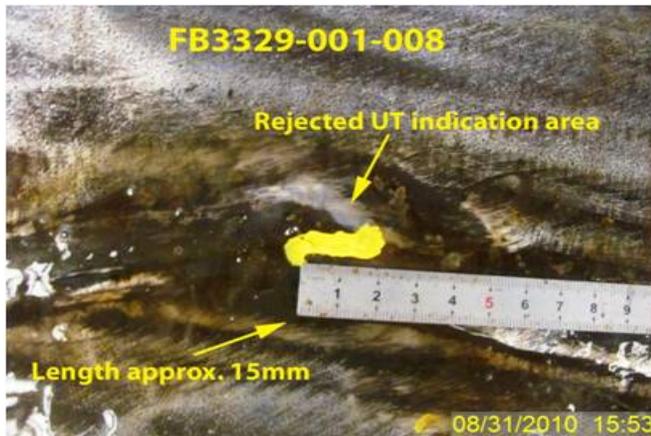
- One longitudinal linear Class "A" rejectable indication measuring approximately 15mm in length.
- The indication dbS rating is a +7.
- Material thickness is 18/22mm.
- The depth of the indication is approximately 11.2mm.
- The weld is identified as FB3329-001-008.
- The weld is Complete Joint Penetration (CJP) butt joint, joining floor beam web X4850B to floor beam web X4848A.
- The weld is designated as Seismic Performance Critical Material (SPCM).
- The indication is clearly marked on or near the weld.
- The Y distance for this indication is 780 mm from edge of the joint.
- Floor Beam FB3329A is located at bay 2.

The Notice of Witness Inspection (NWIT) No. is 006542. The indication is located within an area previously tested and accepted by ZPMC Quality Control (QC) personnel. As per the contract documents, ZPMC's QC personnel are required to perform 100% UT inspection of this weld.

For details see the attached Photo

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



Applicable reference:

AWS D1.5-02 Section 6; Table 6.3 specifies a class "A" indication as having a rating of 10dbs and under for material thicknesses 8mm through 20mm.

Special Provisions Section 8.3; "Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents."

Who discovered the problem: Subhasis Bera

Name of individual from Contractor notified: Chen Jiwei

Time and method of notification: 1630 hours, 08-31-10, Verbal

Name of Caltrans Engineer notified: Laraine Woo

Time and method of notification: 09:00_9/01/10_Email

QC Inspector's Name: Zhu Lin

Was QC Inspector aware of the problem: Yes No

Contractor's proposal to correct the problem:

NA

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,(818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By: Devey,Jim SMR

Reviewed By: Wahbeh,Mazen SMR

NCT

(Continued Page 2 of 2)

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Tom, Contract Files, Ching Chao, Bill Casey
File: 05.03.06

NCR PROPOSED RESOLUTION

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

Attention: Siegenthaler, Peter
Resident Engineer

Ref: 05.03.06-000787

Subject: NCR No. ZPMC-0792

Dated: 20-Sep-2010

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000777 Rev: 00

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has repaired the indication and is providing NDT after to show it is acceptable.

ZPMC has repaired the indication and is providing NDT after to show it is acceptable. ZPMC QA has written an internal NCR to identify and reprimand the inspector for missing the indication and make him aware to prevent future occurrences. Based on this ZPMC is requesting closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000777R00;

Caltrans' comments:

Status: CLO

Date: 26-Sep-2010

The proposed resolution is acceptable. This NCR is considered closed.

Submitted by: Woo, Laraine

Attachment(s):

Date: 26-Sep-2010



No. B-878

LETTER OF RESPONSE

TO: American Bridge/Flour

DATE: 2010-9-16

REGARDING: NCR-000830(ZPMC-0792)

For this case, ZPMC has issue an internal NCR to address this issue and ZPMC QA personnel have talked with the head of the NDT department. The missed indications have been repaired and were tested to be acceptable. ZPMC is providing the WRR and NDT record for review. Based on this, please consider closure of this NCR.

ATTACHMENT:

NCR-000830(ZPMC-0792)

B-WR14904

B787-UT-14868 R1

Zhangwei
9/17/10



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: 01-Sep-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: 05.03.06-000787

Subject: NCR No. ZPMC-0792

Reference Description: Missed UT Indication discovered by QA on FB3329A (Lift 14W)

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: 14

Remarks:

During the Quality Assurance Ultrasonic Testing (UT) review of welds located on Orthotropic Box Girder (OBG) Floor Beam FB3329A, Caltrans Quality Assurance Inspector (QA) discovered the following issues:

- One longitudinal linear Class "A" rejectable indication measuring approximately 15mm in length.
- The indication dbS rating is a +7.
- Material thickness is 18/22mm.
- The depth of the indication is approximately 11.2mm.
- The weld is identified as FB3329-001-008.
- The weld is Complete Joint Penetration (CJP) butt joint, joining floor beam web X4850B to floor beam web X4848A.
- The weld is designated as Seismic Performance Critical Material (SPCM).
- The indication is clearly marked on or near the weld.
- The Y distance for this indication is 780 mm from edge of the joint.
- Floor Beam FB3329A is located at bay 2.

The Notice of Witness Inspection (NWIT) No. is 006542. The indication is located within an area previously tested and accepted by ZPMC Quality Control (QC) personnel. As per the contract documents, ZPMC's QC personnel are required to perform 100% UT inspection of this weld.

Action Required and/or Action Taken:

Proposed a resolution for the identified non-conformance with revised procedures to prevent future occurrences. A response for the resolution of this issue is expected within 7 days.

Transmitted by: Laraine Woo Transportation Engineer

Attachments: ZPMC-0792

NCT

(Continued Page 2 of 2)

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

File: 05.03.06

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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, China

Report No: NCR-000830

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 31-Aug-2010

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

NCR #: ZPMC-0792

Type of problem:

Welding Concrete Other
 Welding Curing Procedural Bridge No: 34-0006
 Joint fit-up Coating Other Component: FB3329A Lift 14W
 Procedural Procedural Description:

Reference Description: Missed UT Indication discovered by QA on FB3329A (Lift 14W)

Description of Non-Conformance:

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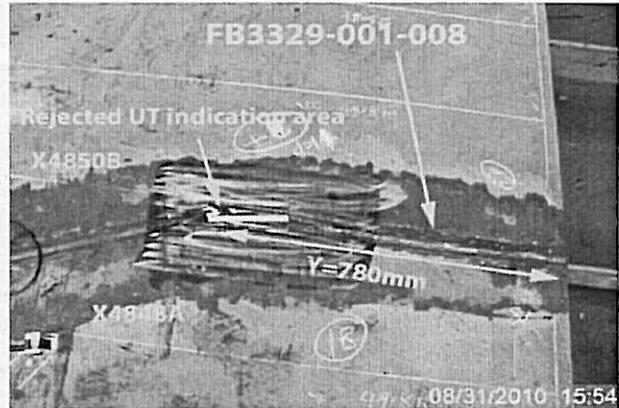
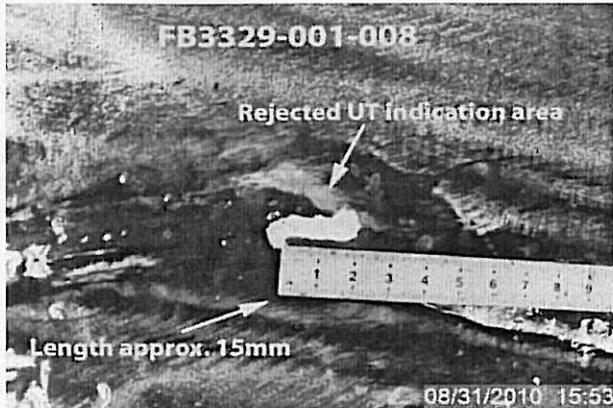
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QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



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Name of individual from Contractor notified: Chen Jiwei

Time and method of notification: 1630 hours, 08-31-10, Verbal

Name of Caltrans Engineer notified: Laraine Woo

Time and method of notification: 09:00_9/01/10_Email

QC Inspector's Name: Zhu Lin

Was QC Inspector aware of the problem: Yes No

Contractor's proposal to correct the problem:

NA

Comments:

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Inspected By: Devey,Jim

SMR

Reviewed By: Wahbeh,Mazen

SMR

0792



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 | FB3329 | 报告编号 Report No. | B-WR14904 |
| 合同号 Contract No. | 04-0120F4 | 部件名称 Items Name | 14TH LIFTING FLOOR | NDT报告编号 Report No.of NDT | B787-UT-14868 |
| 项目编号 Project No.: | ZP06-787 | | BEAM | | |

焊缝缺陷描述：(普通UT探伤发现的缺陷长度小于最大允许长度)
 (Description of welding discontinuity): Rejected indication found by ultrasonic inspection is less than the maximum allowance aggregate length.

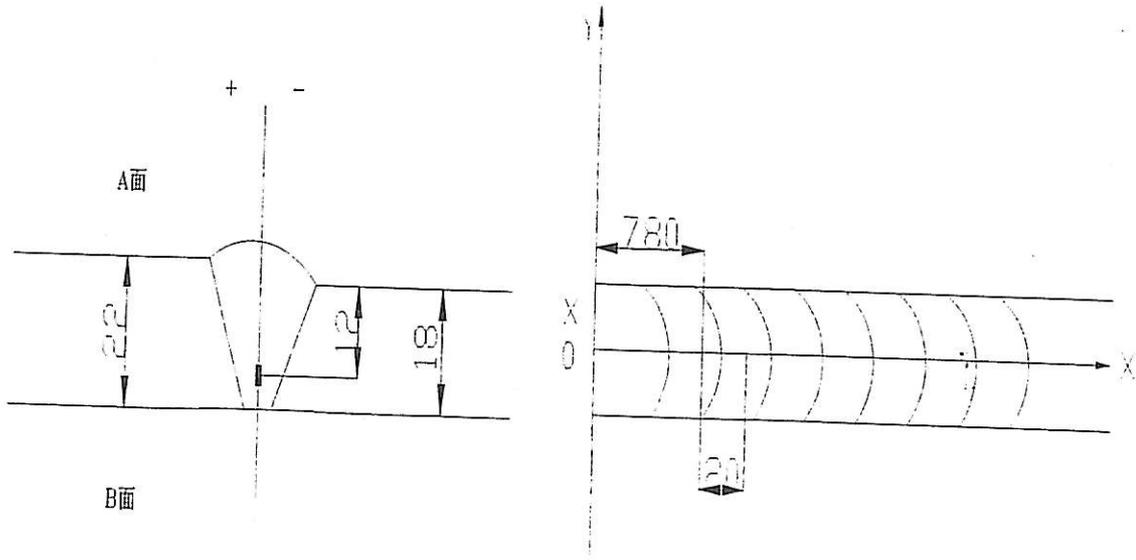
焊缝编号为: FB3329-001-008

检验员 (Inspector): TANG XINGSHAN

日期(Date): 2010.08.31

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):

Hu Junzhang

日期(Date):

10-8-31

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. 将修补区域打磨到与母材或邻近焊缝平齐;
 4. 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. Grind the repaired area flush with base metal or the adjacent weld;
 4. Check the welds according to the working drawings.

工艺:
Technical engineer

Xu Dong Kai

审核:
Approved by

日期
Date

10-9-31



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 | FB3329 | 报告编号 Report No. | B-WR14904 |
| 合同号 Contract No.: | 04-0120F4 | 部件名称 Items Name | 14TH LIFTING FLOOR | NDT报告编号 Report No.of NDT | B787-UT-14868 |
| 项目编号 Project No.: | ZP06-787 | | R BEAM | | |

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):

日期(Date):

Hu Yu Zhong

10.8.31

| | | | |
|----------------------------|---|---------------------|--|
| 参照的WPS编号 Repair WPS No. | <input type="checkbox"/> WPS-345-SMAW-1G(1F)- Repair <input type="checkbox"/> WPS-345-FCAW-1G(1F)- Repair-1 <input type="checkbox"/> WPS-345-SMAW-2G(2F)-Repair <input type="checkbox"/> WPS-345-FCAW-2G(2F)-Repair-1 <input type="checkbox"/> WPS-345-SMAW-3G(3F)- Repair <input type="checkbox"/> WPS-345-SMAW-4G(4F)- Repair <input type="checkbox"/> WPS-345-SMAW-1G(1F)-FCM-Repair <input type="checkbox"/> WPS-345-SMAW-2G(2F)-FCM-Repair <input type="checkbox"/> WPS-345-SMAW-3G(3F)-FCM-Repair <input type="checkbox"/> WPS-345-SMAW-4G(4F)-FCM-Repair <input type="checkbox"/> 其他 | 工艺员 technologist | |
|----------------------------|---|---------------------|--|

| | | | |
|---|-----|--|-------|
| 返修(碳刨)前预热温度 Preheat temperature before gouging | 92° | 返修的缺陷 Description of discontinuity | slag |
| 焊前处理检查 Inspection before welding | Ac | 焊前预热温度 Preheat temperature before welding | 124° |
| 最大碳刨深度 Max. depth of gouging | 8mm | 碳刨总长 Total length of gouging | 100mm |

| | | | | | |
|-----------------|--------|----------------------|------|------------------|-----|
| 焊工 welder | 645240 | 焊接类型 welding type | 7-Aw | 焊接位置 position | (6) |
| 焊接电流 Current | 301 | 焊接电压 Voltage | 30.3 | 焊接速度 Speed | 325 |

返修后检查
Inspection After repairing:

| | | | | | |
|---------------------|-------|-------------------|----------------------|------------|-----------|
| 外观检查 VT result | Ac | 检验员 Inspector | Chen Xi 2010.9.12 | 日期 Date | 2010.9.12 |
| NDT复检 NDT result | W7 Ac | 探伤员 NDT person | Tang Xinyuan | 日期 Date | 2010.9.12 |

见证:

Witness/Review:

备注:

Remark:



REPORT OF ULTRASONIC EXAMINATION

UT探伤报告

REPORT NO. 报告编号 B787-UT-14868R1 DATE 2010.09.12 PAGE 1 OF 1 Revision No: 0

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

| | | |
|--|------------------------------|--|
| ITEMS NAME: 14TH LIFTING FLOOR BEAM 部件名称 | DRAWING NO.: FB3329 图号 | CALTRANS CONTRACT NO.: 04-0120F4 加州工程编号 |
|--|------------------------------|--|

| | | |
|--|--|----------------------------------|
| 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 FCAW | JOINT TYPE 焊缝类型 BUTT | CALIBRATION DUE DATE 仪器校正有效期 Dec. 28 ST , 2010 |
|------------------------------|-------------------------|--|

| | | | |
|--------------------------|---------------------------------|----------------------------|------------------------------|
| EQUIPMENT 设备 UT SCOPE | MANUFACTURER 制造商 PANAMETRICS | MODEL NO. 样式编号 EPOCH-XT | SERIAL NO. 序列编号 070150911 |
|--------------------------|---------------------------------|----------------------------|------------------------------|

| | | |
|---|-----------------------|---|
| CALIBRATION BLOCK 试块 AWS IIV BLOCK TYPE II | COUPLANT 耦合剂 C.M.C | MATERIAL/THICKNESS 材料厚度 A709M-345F2-X 18/22mm |
|---|-----------------------|---|

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 |
|---------------------|-------------|-----------------|----------------|-----------------------|-------------|-----------------|------------|
| GAMMA | 70° | 2.5MHz | 0.75in×0.625in | | | | |
| 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 |
| FB3329-001-008 | 1R1 | 70 | | | | 41 | | | | | | | | | ACC. | 100% |

AFTER B-WR14904

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| EXAMINED BY 主探 <i>Tony X. Shen</i> 20/09.12 LEVEL - II SIGN / DATE | REVIEWED BY 审核 <i>X. Wellman</i> 20/09.12 LEVEL - II SIGN / DATE |
|--|--|

| | |
|-------------------------------------|--------------------------------------|
| 质量经理 / QCM 签字 SIGN / 日期 DATE | 用户 CUSTOMER 签字 SIGN / 日期 DATE |
|-------------------------------------|--------------------------------------|

DEPARTMENT OF TRANSPORTATION

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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, China**Report No:** NCS-000812**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 26-Sep-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0792**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: 31-Aug-2010**Description of Non-Conformance:**

During the Quality Assurance Ultrasonic Testing (UT) review of welds located on Orthotropic Box Girder (OBG) Floor Beam FB3329A, this Quality Assurance Inspector (QA) discovered the following issues:

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For details see the attached Photo

Contractor's proposal to correct the problem:

Contractor will repair the indication, and provide the NDT report to prove the weld is acceptable. Contractor will issue an internal NCR, and educate to the inspector who missed the indication for future occurrences.

Corrective action taken:

Contractor repaired the weld, and NDT is performed. NDT report showed the weld is acceptable. Contractor also issued an internal NCR, and educated the identified inspector.

Did corrective action require Engineer's approval?

QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

(Continued Page 2 of 2)

Yes No

If so, name of Engineer providing approval:

Date:

Is Engineer's approval attached? Yes No

Comments:

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Inspected By: Ng,Michael

Quality Assurance Inspector

Reviewed By: Wahbeh,Mazen

QA Reviewer