

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

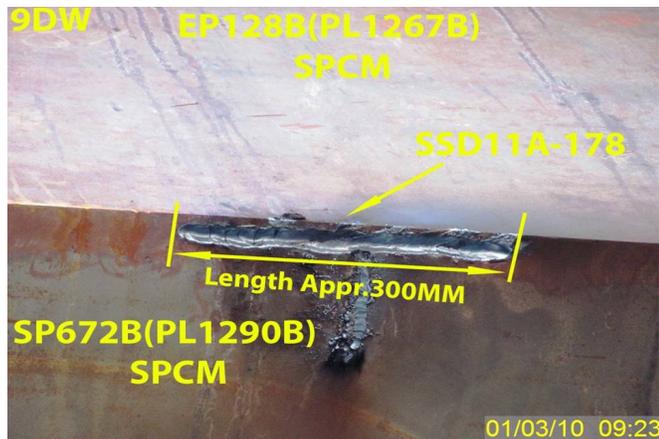
Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.25B**QUALITY ASSURANCE -- NON-CONFORMANCE REPORT****Location:** Changxing Island, Shanghai, P.R. China**Report No:** NCR-000587**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 03-Jan-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0560**Type of problem:****Welding****Concrete****Other****Welding****Curing****Procedural****Bridge No:** 34-0006**Joint fit-up****Coating****Other****Component:** Segment 9DW Corner Joint**Procedural****Procedural****Description:****Reference Description:** ZPMC was observed excavating a SPCM weld without preheating Segment 9DW**Description of Non-Conformance:**

During the Quality Assurance (QA) random in-process visual inspection of Segment 9DW, this QA inspector discovered the following issue:

- ZPMC was observed excavating a weld utilizing the carbon air arc gouge (CAAG) method on a Corner Joint without Preheating.
- This weld being CAAG was identified as: SSD11A-178
- This weld is located between Panel Point 80 (PP80) and PP81 on the Cross Beam side.
- This weld is designated as Seismic Performance Critical Material (SPCM).
- The weld is a Complete Joint Penetration (CJP) corner joint weld joining the Side Plate (SP672B) to Edge Plate (EP128B).
- The excavation length was approximately 300mm.
- No welding procedure specification (WPS) was onsite during the CAAG process.
- The Y location was measured 1650mm from PP80 along the axis of weld SSD11A-178.
- OBG Segment 9DW is located in the outside yard north of Bay 13.
- As per American Weld Society (AWS) D1.5 2002; Preheat for gouging SPCM material shall not be less than 65 degree C.

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)



Applicable reference:

AWS D1.5:2002 Section 12.17.6 (3) Item C: "The preheating temperature prior to air Carbon arc gouging shall be described in the WPS. Preheat for gouging shall not be less than 65 degree C".

AWS D1.5-2002 Section 6.3.1; The inspector shall make certain that all WPS's are qualified in conformance with Section 5 of this code The inspector shall make certain that each welding operation is covered by a written WPS and that such WPS's are available to the welders and inspectors for reference.

Who discovered the problem: Subhasis Bera

Name of individual from Contractor notified: Jai Cai Fang

Time and method of notification: 0930 hours, 01-03-10, Verbal

Name of Caltrans Engineer notified: Bill Howe

Time and method of notification: 2230 hours, 01-03-10, Email

QC Inspector's Name: Li Ping

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: Carreon,Albert

Lead Reviewer/Task Leader

Reviewed By: Wahbeh,Mazen

SMR

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000550

Subject: NCR No. ZPMC-0560

Dated: 14-Jan-2010

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000483 Rev: 00

Contractor's Proposed Resolution:

Reference Resolution: Pre-heat to 65° C before gouging is a requirement for Critical Weld repairs as stated in the WPS. The repair being performed was not a critical weld repair. ZPMC requests closure of this NCR.

This NCR is written because the material was not pre-heated to 65° C before gouging. Per the approved FCM WPS, pre-heat to 65° C before gouging is a requirement for Critical Weld repairs as stated in the WPS. The repair being performed was not a critical weld repair, nor is there a designation within the body of the NCR that this was a Critical Weld Repair. ZPMC requests closure of this NCR. Note, AWS Section 12 defines non-critical and critical repairs.

Submitted by: Lawton, Steve

Attachment(s): ABF-NPR-000483R00;

Caltrans' comments:

Status: CLO

Date: 24-Jan-2010

The documentation submitted by the contractor has been reviewed by the Engineer and is found to be acceptable. Please note that the correct weld ID should be SEG55A-040.

Submitted by: Chao, Ching

Attachment(s):

Date: 24-Jan-2010



No. B-578

LETTER OF RESPONSE

TO: American Bridge/Flour

DATE: 2010-1-12

REGARDING: NCR-00587 (ZPMC-0560)

With this letter of response, ZPMC requests closure of CT NCR-00587 (ZPMC-0560, from the description of non-conformance report we can find the main concern that the SPCM weld gouging excavation without the preheat more than 65 degree, but we have to remind that limit of the preheat temperature just only for the critical weld repair but not include the non-critical weld repair, so please first confirm the type of the weld repair especially for SPCM members.

So base on the above clarification, ZPMC requests to close out this NCR-00587 (ZPMC-0560)

ATTACHMENT:

NCR-00587 (ZPMC-0560)

The FCW repair WPS

Zhao Shuangbo

2010.1.12

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: 05-Jan-2010

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-0560

Document No: 05.03.06-000550

Reference Description: ZPMC was observed excavating a SPCM weld without preheating Segment 9DW

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: 09

Remarks:

During the Quality Assurance (QA) random in-process visual inspection of Segment 9DW, this QA inspector discovered the following issue:

- ZPMC was observed excavating a weld utilizing the carbon air arc gouge (CAAG) method on a Corner Joint without Preheating.
- This weld being CAAG was identified as: SSD11A-178
- This weld is located between Panel Point 80 (PP80) and PP81 on the Cross Beam side.
- This weld is designated as Seismic Performance Critical Material (SPCM).
- The weld is a Complete Joint Penetration (CJP) corner joint weld joining the Side Plate (SP672B) to Edge Plate (EP128B).
- The excavation length was approximately 300mm.
- No welding procedure specification (WPS) was onsite during the CAAG process.
- The Y location was measured 1650mm from PP80 along the axis of weld SSD11A-178.
- OBG Segment 9DW is located in the outside yard north of Bay 13.
- As per American Weld Society (AWS) D1.5 2002; Preheat for gouging SPCM material shall not be less than 65 degree C.

Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences include documentation to show no defects exist prior to re welding. A response for the resolution of this issue is expected within 7 days.

Transmitted by: Bill Howe Sr. Transportation Engineer

Attachments: ZPMC-0560

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

File: 05.03.06

02.02.15.04
05.03.06-000550,NCT

511/507

Received
NCT-000550 06 Jan 10 Page 1 of 1

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICESOffice of Structural Materials
Quality Assurance and Source InspectionBay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493Contract #: 04-0120F4
City: 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-000587

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 03-Jan-2010

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

NCR #: ZPMC-0560

Type of problem:

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

Bridge No: 34-0006

Component: Segment 9DW Corner Joint

Reference Description: ZPMC was observed excavating a SPCM weld without preheating Segment 9DW

Description of Non-Conformance:

During the Quality Assurance (QA) random in-process visual inspection of Segment 9DW, this QA inspector discovered the following issue:

- ZPMC was observed excavating a weld utilizing the carbon air arc gouge (CAAG) method on a Corner Joint without Preheating.
- This weld being CAAG was identified as: SSD11A-178
- This weld is located between Panel Point 80 (PP80) and PP81 on the Cross Beam side.
- This weld is designated as Seismic Performance Critical Material (SPCM).
- The weld is a Complete Joint Penetration (CJP) corner joint weld joining the Side Plate (SP672B) to Edge Plate (EP128B).
- The excavation length was approximately 300mm.
- No welding procedure specification (WPS) was onsite during the CAAG process.
- The Y location was measured 1650mm from PP80 along the axis of weld SSD11A-178.
- OBG Segment 9DW is located in the outside yard north of Bay 13.
- As per American Weld Society (AWS) D1.5 2002; Preheat for gouging SPCM material shall not be less than 65 degree C.

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT
(Continued Page 2 of 2)



Applicable reference:

AWS D1.5:2002 Section 12.17.6 (3) Item C: "The preheating temperature prior to air Carbon arc gouging shall be described in the WPS. Preheat for gouging shall not be less than 65 degree C".

AWS D1.5-2002 Section 6.3.1; The inspector shall make certain that all WPS's are qualified in conformance with Section 5 of this code The inspector shall make certain that each welding operation is covered by a written WPS and that such WPS's are available to the welders and inspectors for reference.

Who discovered the problem: Subhasis Bera

Name of individual from Contractor notified: Jai Cai Fang

Time and method of notification: 0930 hours, 01-03-10, Verbal

Name of Caltrans Engineer notified: Bill Howe

Time and method of notification: 2230 hours, 01-03-10, Email

QC Inspector's Name: Li Ping

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: Carreon, Albert

Lead Reviewer/Task Leader

Reviewed By: Wahbeh, Mazen

SMR



焊接工艺规程 B*
WELDING PROCEDURE SPECIFICATION

编号 No.
WPS-345-SMAW-2G(2F) FCM Repair
(FCM 返修焊接工艺)

有效期 Period of validity
无期限 No Requirement

母材技术条件 (Material specification) ASTM A.709M Gr.345F2

焊接方法 (Welding process) 药皮焊条手工电弧焊(SMAW)

手工或机械 (Manual or machine or semi-auto) 手工(Manual)

焊接位置 (Position of welding) 横焊(2G、2F)

填充金属技术条件 (Filler metal specification) AWS A5.1 填充金属级别 (Filler metal classification) E7018-1

填充金属牌号 (Filler metal brand) THJ506Fe-1 (Φ4.0、Φ5.0)

焊剂 (Flux) N/A

保护气体 (Shielding gas) N/A 流率 (Flow rate) N/A

单焊道或多焊道 (Single or multiple pass) 多道(Multiple Pass)

单弧或多弧 (Single or multiple arc) 单弧(Single arc)

焊接电流 (Welding current) 直流(DC) 极性 (Polarity)

焊丝伸出长度 (Electrode extension) N/A

焊接方向 (Welding progression) N/A

根部处理 (Root treatment) N/A

碳刨前预热温度(Preheat temperature before gouging)

非关键性返修 (Noncritical repair) N/A

关键性返修 (Critical repair) Date 9-19-2007

焊前最低预热温度和道间温度 (Minimum preheat and interpass temperature before welding)

非关键性返修 (Noncritical repair) 40°C [T≤20mm] 60°C [20mm<T≤40mm] 100°C [40mm<T≤60mm] 140°C [60mm<T]

关键性返修 (Critical repair) 160°C [T≤40mm] 200°C [40mm<T]

最高预热和道间温度 (Preheat and interpass temperature Max) 230°C

后热温度(Postheat temperature)

非关键性返修 (Noncritical repair) N/A

关键性返修 (Critical repair) 230°C~315°C 保温时间(Keep temperature time) 1h/25mm [1h minimum, T<25mm]

热输入 (线能量) (Heat input) 最小(Min) 1.50KJ/mm 最大(Max) 3.50KJ/mm

焊接工艺
(Welding procedure)

APPROVED AS NOTED
 NOT APPROVED
Pursuant to Section 5.1.02
of the Standard Specifications
State of California
DEPARTMENT OF TRANSPORTATION
Signed: Rick Moreno
Structure Representative

| 焊道序号 Pass No. | 焊条(丝)规格 Electrode Size (mm) | 焊接电流 Welding Current | | 焊接速度 Travel Speed (mm/min) | 接头详图 Joint Detail |
|------------------|-----------------------------------|-------------------------|--------------------|----------------------------------|----------------------|
| | | 安培 Amp(s) | 伏特 Volts | | |
| 1~n 或 1~n | 4.0 5.0 | 160~210 180~240 | 19~27 20~28 | 52.1~226.8 61.7~268.8 | 见附页(see attached) |

选定适用的电流、电压后在 WPS 焊接参数选用表中查到焊接速度范围。
Refer to WPS parameters table to determine operating parameter to stay within the heat input limit.

该工艺可以因制造工序、装配、焊道尺寸等而变化, 但应在 AASHTO/AWS D1.5 第 5 章给出的变量限值之内。
(This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in section 5.)

修订号(Revision No.) 0

批准(Authorized by) [Signature]

工艺评定记录编号(PQR No.) 免除评定 Prequalification

日期(Date) 2007.9.1

* 本 WPS 符合 AASHTO/AWS D1.5 2002, 用于桥梁结构。

(This WPS is conformable with the current edition of AASHTO/AWS D1.5 2002, used for BRIDGE structure.)

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-000465**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 22-Jan-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0560**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: 03-Jan-2010**Description of Non-Conformance:**

During the Quality Assurance (QA) random in-process visual inspection of Segment 9DW, this QA inspector discovered the following issue:

-ZPMC was observed excavating a weld utilizing the carbon air arc gouge (CAAG) method on a Corner Joint without Preheating.

-This weld being CAAG was identified as: SSD11A-178

-This weld is located between Panel Point 80 (PP80) and PP81 on the Cross Beam side.

-This weld is designated as Seismic Performance Critical Material (SPCM).

-The weld is a Complete Joint Penetration (CJP) corner joint weld joining the Side Plate (SP672B) to Edge Plate (EP128B).

-The excavation length was approximately 300mm.

-No welding procedure specification (WPS) was onsite during the CAAG process.

-The Y location was measured 1650mm from PP80 along the axis of weld SSD11A-178.

-OBG Segment 9DW is located in the outside yard north of Bay 13.

-As per American Weld Society (AWS) D1.5 2002; Preheat for gouging SPCM material shall not be less than 65 degree C.

Contractor's proposal to correct the problem:

N/A

Corrective action taken:

In accordance with AWS D1.5 Section 12.17.2 the length of the gouge noted in this report does not classify the repair as a critical repair, thus preheating was not required.

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 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 |
