

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-004766**Date Inspected:** 04-Nov-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 1330**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2230**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Mr. Zhang Huang**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG Fabrication**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

89M Mock-up

At around 1515 hours the Caltrans QA Inspector observed reviewed ZPMC QC documentation that states ZPMC completed the welding of MUB-MA21-A/J-30 and MUB-MA21-A/J-59 at 1320 hours. ZPMC CWI Inspector Mr. Zhang Huang informed the QA Inspector that he and ABF QC representative Mr. Ma Zhenyi are monitoring the cool down temperature of these two weld joints. The QA Inspector monitored this activity and at 1520 hours the QA Inspector observed the laser temperature indicating device that is being utilized to monitor the weld temperature indicates a temperature of 135°C (Celsius) and Mr. Huang has recorded the temperatures every thirty minutes. The following temperature measurements have been recorded by Mr. Zhang Huang:

Time: Temp: Drop in temperature:

1320: 197°C NA (Welding completed, Start of Cooldown)

1350: 182°C 15°C decrease

1420: 165°C 17°C decrease

1450: 150°C 15°C decrease

1520: 135°C 15°C decrease

1550: 117°C 18°C decrease

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1620: 101°C 16°C decrease
1650: 85°C 16°C decrease
1720: 70°C 15°C decrease
1750: 60°C 10°C decrease
1820: 48°C 12°C decrease
1850: 39°C 9°C decrease
1920: 35°C 4°C decrease
1950: 31°C 4°C decrease
2020: 26°C 5°C decrease

Submittal SUB101R2 allows a maximum heat drop of 40°C per hour and the cooling rate of these two welds appears to comply with the submittal.

ZPMC has one person backgouging weld MUB-MA21-G/J-33

Heavy Bay 3

The QA Inspector performed initial visual inspections of the stiffener welds of deck panels DP085-001, DP112-001 and DP301-001 in heavy tower bay #3. The QA Inspector marked a few additional areas of weld overlap, incomplete fusion and underfill. The QA Inspector documented the initial visual inspection on the yellow inspection status tags that are attached to the deck panels.

OBG Bay #7

The QA Inspector performed random AWS D1.5 visual and ultrasonic inspections of the following OBG component welds in support of the yellow tagging as listed on the ZPMC Notification of Witness Inspection document #1344:

FB012-016-043; QA performed ultrasonic inspections of this weld and the weld appears to comply with project specifications. The QA Inspector wrote lot number B63 on yellow tag 1497A adjacent to ZPMC and ABF signatures.

FB009-021-045; QA performed ultrasonic inspections of this weld and the weld appears to comply with project specifications. Yellow tag was not signed by ZPMC/ABF and QA did not sign the tag.

FB011-019-045; QA performed ultrasonic inspections of this weld and the weld appears to comply with project specifications. Yellow tag was not signed by ZPMC/ABF and QA did not sign the tag

FB012-012-043-; ZPMC QC/UT personnel have marked this weld as a UT Reject and the QA Inspector did not perform ultrasonic inspections of this weld.

OBG Bay #8

The QA Inspector performed random AWS D1.5 visual and ultrasonic inspections of the following tower 65M

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diaphragm welds as listed on the ZPMC Notification of Witness Inspection document #1344:

ESD1-SA415-2AB repair, ESD1-SA415-4AB repair, ESD1-SA415-7AB repair, ESD1-SA415-94AB repair. The QA Inspector performed ultrasonic inspections of these welds and the welds appear to comply with project specifications.

Heavy Bay #2

The QA Inspector performed random AWS D1.5 visual and ultrasonic inspections of the following tower skin plate B weld as listed on the ZPMC Notification of Witness Inspection document #1344:

ESD1-SA384A/D-2AB. The QA Inspector performed ultrasonic inspections of this weld and the weld appears to comply with project specifications.

Summary of Conversations:

See above.

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 Ady Velasco 13816942685, who represents the Office of Structural Materials for your project.

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| Inspected By: | Dawson,Paul | Quality Assurance Inspector |
| Reviewed By: | Carreon,Albert | QA Reviewer |
