

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 #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-022540**Date Inspected:** 14-Apr-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** See Report Below**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:** Orthotropic Box Girders**Summary of Items Observed:**

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below:

- A). Longitudinal "A" Deck Stiffeners
- B). QA Verification

The QA Inspector observed the onsite inspection performed by the contractor's QC Inspection personnel. The inspection was performed on various field fit-up of weld joints and the Complete Joint Penetration (CJP) groove welds of the west Orthotropic Box Girders (OBG's). The welding was performed utilizing the Shielded Metal Arc Welding (SMAW) process as per the Welding Procedure Specifications (WPS's).

A). Longitudinal "A" Deck Stiffeners

The QAI also observed the CJP welding of the longitudinal stiffener located at the deck access hole identified as WN: 6W-PP46.5-W5-LSW. The welding was performed by Xiao Jian Wan ID-9677 utilizing the WPS identified as ABF-WPS-D15-1012-3, Rev. 0. The welding parameters were verified by the QC inspector Gary Ehram and appeared to comply with the contract specifications. The CJP welding was not completed during this shift.

The QAI also observed the excavation of the UT reject of the longitudinal stiffener located at the field splice W7/W8 identified as WN: 7W-8W-A-LS5, repair cycle R1. The excavation was performed by the welder Wai Kitai ID-2953 and the Magnetic Particle Testing (MPT) of the back gouge was performed by Gary Ehram. The

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dimensions were observed and verified by the QAI and were noted as follows; Y=0 mm, L=230 mm, d=15 mm. No welding was performed during this shift.

B). QA Verification

At the request of the Quality Control lead inspector, Bonifacio Daquinag Jr., the QAI randomly verified the QC visual inspection of the CJP weld identified as WN: 5E-PP31-W3-Weld No. 4. The QAI verification was performed to verify the weld and the visual weld inspection performed by the QC inspector meet the requirements of the contract documents. At the conclusion of the QAI verification it appeared that the welds and the QC inspection complies with the contract documents.

Later in the shift the QAI performed a random ultrasonic verification test of the Complete Joint Penetration (CJP) groove weld as mentioned in the preceding paragraph. A total area of approximately 10% was ultrasonically tested to verify the weld and testing by QC meet the requirements of the contract documents. An ultrasonic test report, TL 6027, was generated on this date.

This QA Inspector also performed a daily review and update of the field document control tracking records regarding the Orthotropic Box Girders, Longitudinal and Transverse "A" Deck Stiffeners and Deck Access Holes.

QA Summary

The welding was performed in the vertical (3G) position utilizing the E9018-H4R low hydrogen electrodes. The 3.2 mm electrodes were stored in electrically heated, thermostatically controlled oven after removal from the sealed containers. The exposure limits of the electrodes appeared to comply with the minimum storage oven temperature of 120 degrees Celsius as per the contract documents. The WPS were also utilized by the QC inspector, Gary Ehram as a reference to monitor the welding operation, to verify the welding parameters and verify the minimum preheat and the interpass temperatures. The welding parameters and surface temperatures were verified by the QC inspector's utilizing a Fluke 337 clamp meter for the electrical welding parameters and Tempil Heat Indicators for verifying the preheat and interpass temperatures. At the time of the observation no issues were noted by the QAI.

The digital photographs below illustrate some of the work observed during this scheduled shift.



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Summary of Conversations:

There were general conversations with Quality Control Lead Inspector, Bonifacio Daquinag, Jr., at the start of the shift regarding the location of American Bridge/Fluor welding, inspection and N.D.E. testing personnel scheduled for this shift.

Doug Wright informed this QAI that the Department is requesting the filler metal, E9018-H4R, to be removed entirely from the weld joint identified as BC located at the 83 Meter elevation of the south tower shaft.

In conversation with Leonard Cross, QC Supervisor, informed this QAI in regards to the issue of the incorrect use of the E9018-H4R electrode on the upper interior closure plate splice plate at the lower weld joint identified as BC which is located at the 83 Meter elevation of the south tower shaft that as per WQCM Jim Bowers that the generating of a QC Non Conformance Report (NCR) is pending. Later in the shift Lead Inspector, Bonifacio Daquinag, Jr. informed this QAI that the fillet weld would be removed to resolve this issue.

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 Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Reyes,Danny	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer
