

**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-022375**Date Inspected:** 01-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). Deck Access Hole
- C). Tower Shear Plates
- D). Diverter Plate

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) and the Tower Shear Plates. The welding was performed utilizing the Shielded Metal Arc Welding (SMAW) process as per the Welding Procedure Specifications (WPS's) and was also used by the QC Inspectors to monitor the welding operation and to verify the welding parameters.

- A). Longitudinal "A" Deck Stiffeners

The QA Inspector also observed the CJP welding of the longitudinal stiffeners located at the field splices W7/W8 and W8/W9 identified as WN: 7W-8W-A-LS4 and WN: 8W-9W-A-LS5. The welding was performed by the welders Xiao Jian Wan ID-9677 and Jin Pei Wang ID-7299, accordingly. The CJP welding of was completed during this shift.

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## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

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### B). Deck Access Hole

The QAI observed the welder, Wen Han Yu ID-6317, perform the CJP welding of the Deck Access Hole (DAH) located Panel Point 29.5 and identified as WN: 5W-PP29.5-W5-SW. The CJP welding of the DAH was completed during this shift.

### C). Tower Shear Plates

The QAI observed the field installation, fit-up and welding of the temporary strongbacks to the shear plates located between the base plate elevation and the 13 meter elevation. The welding was performed by Rick Clayborn ID-2773.

### D). Diverter Plate

The QAI observed the QC inspector perform the Magnetic Particle Testing (MPT) of the deck plate after the removal of the diverter plate located at OBG E4, along the E5 grid line between PP24 and PP25.5. The area was ground smooth and visually inspected by the QC inspector. At the conclusion of the MPT the QC inspector marked and noted approximately four areas that revealed linear indications. Additional grinding was performed and a second MPT was performed and no indications were noted. At the conclusion of the testing the welder, Morgan Winters ID-3305, commence the field fit-up and welding of the diverter plate.

### QA Summary

The welding was performed in the flat (1G), vertical (3G) and horizontal (2F) positions utilizing low hydrogen electrodes. The welding parameters were verified and recorded by the QC inspector and observed by the QAI appeared to comply with the WPS identified as ABF-WPS-D15-1012-3, Rev. 0, ABF-WPS-D15-1010, Rev. 1, ABF-WPS-F1200A, Rev. 2 and ABF-WPS-D15-2160-1, Rev. 0. The welders utilized a slag hammer and a wire wheel attached to a 4" high cycle grinder to remove slag after the deposit of each weld pass. The 3.2 mm and 4.0 mm electrodes were stored in electrically heated, thermostatically controlled oven after removal from the sealed containers. The exposure limits of the electrodes identified as E 7018-H4R and E9018-H4R appeared to comply with the minimum storage oven temperature of 120 degrees Celsius as per the contract documents. The WPS's were also utilized by the QC inspectors, Gary Ehram, Steve Jensen, Pat Swain and Steve McConnell 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 welding is in progress except as noted in items A and B.

The digital photographs on page 3 of this report illustrate some of the work observed during this scheduled shift.

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# WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

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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.

## 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.

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**Inspected By:** Reyes, Danny

Quality Assurance Inspector

**Reviewed By:** Levell, Bill

QA Reviewer

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