

**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-024648**Date Inspected:** 27-Jun-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** See 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 Girder & Tower**Summary of Items Observed:**

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the work and the inspection performed by American Bridge/Fluor Enterprises (AB/F) personnel. The inspection was performed on the various field fit-up of weld joints and the Complete Joint Penetration and multi-pass fillet welding. The welding was performed utilizing the Shielded Metal Arc Welding (SMAW) and the Flux Cored Arc Welding (FCAW).

**A). OBG Field Splice E11/E12**

The QAI observed the welding of the deck and bottom plate field splices identified as WN: 11E-12E-A and D accordingly. The CJP welding was performed by the welders Wai Kitlai ID-2953 and Hua Qiang Hwang ID-2930 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-3040A-1 Rev. 0. The WPS was also used by the QC Inspector William Sherwood to monitor the CJP welding, verify the welding parameters, the minimum preheat and the maximum interpass temperatures. The welding and the inspection appeared to comply with the contract specifications.

**B). Tower Shear Plates**

The QAI observed the preliminary Ultrasonic Testing (UT) of the tower shear plates identified as WN: E-042 and E-045. The testing was performed by the QC technicians Jesse Cayabyab and John Pagliero utilizing a G.E. /Krautkramer USM 35X. The examination of the ESW square groove joint was conducted utilizing UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4 which has not been approved as of this date. The QC technicians

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## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

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performed the required the examination for base metal soundness and the shear wave technique for the examination of weld soundness which was performed utilizing a 16mm x 19mm rectangular transducer. The ultrasonic testing was not completed on this date and the QC technicians noted one reject per joint thus far.

The QAI also observed the QC inspectors monitoring the welding and preheat temperatures during the welding of the temporary access ladder attachments to the shear plate located approximately at the weld joint identified as WN: E-043. The welding was performed utilizing the WPS identified as ABF-WPS-D15-F1200A, Rev. 2. There were no issues at the time of the QA observations.

### C). Lifting Lug Holes

The QAI observed the CJP welding of the lifting lug holes located on the east orthotropic box girders identified as WN: 9E-PP76-E4-W2 and WN: 9E-PP77-E4-W3. The welding was performed by Mike Jiminez ID-4671 and Jorge Lopez ID-6149 utilizing the WPS identified as ABF-WPS-D15-1050A-CU, Rev. 0.

The QAI observed the CJP welding of the lifting lug holes located on the west orthotropic box girders identified as WN: 9W-PP79-W4-W1 and W3. The welding was performed by Fred Kaddu ID-2188 utilizing the WPS identified as ABF-WPS-D15-1050A-CU, Rev. 0.

The QAI also observed the QC inspector's perform the visual inspection and verify the welding parameters during the production welding. The inspection's performed by Fred Von Hoff and Pat Swain appeared to comply with the contract specifications. The welding of these weld joints was not completed during this scheduled shift.

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 flat and overhead positions utilizing the E7018-H4R low hydrogen and E71T-1 consumables. 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 appeared to comply with the minimum storage oven temperature of 120 degrees Celsius as per the contract documents. The welding parameters and surface temperatures were verified by the QC inspector's utilizing a Fluke 337 clamp meter to measure 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 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 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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<b>Inspected By:</b>	Reyes,Danny	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

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