

**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:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-026441**Date Inspected:** 26-Sep-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:** Tower & OBG**Summary of Items Observed:**

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the SAS project site and observed the work and the inspection performed by American Bridge/Fluor Enterprises (AB/F) personnel. The inspection was performed as noted below:

## A). OBG E12

The QAI observed the continued Shielded Metal Arc Welding (SMAW) of the Lifting Lug Hole insert plate identified as Weld Number (WN): 12E-PP114-E3-W4 on the "A" deck of the Orthotropic Box Girder (OBG) E12. The welder Fred Kaddu ID-2188 performed the welding of the Complete Joint Penetration (CJP) utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-1050A-CU, Rev. 0. The WPS was also utilized by the QC inspector William Sherwood as a reference to monitor the welding and to verify the welding parameters which was recorded as 127 amps by the QC inspector. The 3.2mm Lincoln electrode was utilized with the welding performed in the flat (1G) position with the work placed in an approximately horizontal plane and the weld metal deposited from the upper side. The groove joint appeared to comply with the AWS joint designation identified as B-U4a. The minimum preheat temperature of 20 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius were verified by the QC inspector. The welding performed during this shift was not completed on this date.

## B). OBG W10

The QAI observed the Shielded Metal Arc Welding (SMAW) of the Lifting Lug Hole insert plate identified as

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Weld Number (WN): 10W-PP92-W4-W3 on the "A" deck of the Orthotropic Box Girder (OBG) W10. The welder Mike Jiminez ID-4671 performed the welding of the Complete Joint Penetration (CJP) utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-1050A-CU, Rev. 0. The WPS was also utilized by the QC inspector Patrick Swain as a reference to monitor the welding and to verify the welding parameters which was recorded as 130 amps by the QC inspector. The 3.2mm and 4.0 mm Lincoln electrode was utilized with the welding performed in the flat (1G) position with the work placed in an approximately horizontal plane and the weld metal deposited from the upper side. The groove joint appeared to comply with the AWS joint designation identified as B-U4a. The minimum preheat temperature of 20 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius were verified by the QC inspector. The welding performed during this shift was not completed on this date.

### C). QA Verification of ESW

This QAI performed a random ultrasonic verification test of the Complete Joint Penetration (CJP) groove weld identified as WN: N-041, joint "N", and WN: W-041, joint "W". The testing was performed on the "A"-side of the shear plate and a total area of approximately 10% was ultrasonically tested to verify the weld and testing by QC meet the requirements of the contract documents. The examination was performed in the first leg as per the contractor's UT procedure SE-UT-D1.5-CT-108-ESW, Rev. 1 with the testing from the "B" side to be conducted at a later date. The verification was performed at the request of the QC Lead Inspector, Bonifacio Daquinag, Jr. for the purpose of removing the scaffolding on the north side of the tower. The testing was not completed on this date and no ultrasonic test report was generated. No rejectable discontinuities were no at the time of the testing.

### D). Document Control Review

This QA Inspector continued the daily review of field inspection reports and update of the field document control tracking records regarding the Orthotropic Box Girders (OBG, Longitudinal and Transverse "A" Deck Stiffeners, Deck Access Holes and the Tower Shear plates. The QAI also updated the tracking records for the pipe welds and the pipe supports.

On this date the QAI commence the review of QA tracking documents for the OBG's identified as E3, E4 and E5.

### QA Summary

The welding was performed in the vertical position utilizing the E7018-H4R. The 3.2 mm and 4.0 mm H4R electrodes were stored in a electrically heated, thermostatically controlled oven after the 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.

### Summary of Conversations:

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There were general conversations with Quality Control Lead Inspector, Bonifacio Daquinag, Jr., at the start of the shift regarding the location of welding, inspection 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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