

**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-025074**Date Inspected:** 06-Jul-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. The welding was performed utilizing the Shielded Metal Arc Welding (SMAW).

## A). OBG 11W/12W

The QAI verified the joint dimensions of the deck plate field splice identified as WN: 11W-12W-A. The QAI verified the planar alignment, root opening and the contact of the backing bar to joint dimensions utilizing the QC inspector, William Sherwood, field notes and the dimensions noted on the deck. At the conclusion of the verification there were two (2) areas of planar misalignment 3 mm and 4 mm accordingly and the locations were verified by the QAI as follows; Y=12, 500 mm to 12,750 mm and Y=27,130 mm to 27, 280 mm. The root opening appeared to be 16 mm to 19 mm and the backing bar contact appeared have complete contact with no gaps. At the conclusion of the survey verification the QAI concurs with the QC inspector's assessment.

## B). Lifting Lug Holes

The QAI observed the CJP welding of the lifting lug holes located on the west orthotropic box girders identified as WN: 9E-PP80-E3-W2 and 9E-PP79-E4-W1. The welding was performed by Jorge Lopez ID-6149 and Mike Jiminez ID-4671 utilizing the WPS identified as ABF-WPS-D15-1050A-CU, Rev. 0.

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The QAI also observed the QC inspector perform the visual inspection and verify the welding parameters during the production welding. The inspections performed by Fred Von Hoff appeared to comply with the contract specifications. The welding of the lifting lug holes was not completed during this scheduled shift.

## C). QC Ultrasonic Testing

The QAI observed the continued Ultrasonic Testing (UT) of the deck plate field splice identified as WN: 11W-12W-A. The testing was performed by the QC technician's John Pagliero and Jesse Cayabyab utilizing a G.E. /Krautkramer USM 35X. The examination was conducted utilizing UT Procedure identified as SE-UT-D1. 5-CT-100 Rev.4 and the applicable contract documents. The QC technician's performed the required longitudinal wave technique, utilizing a 1.0" diameter transducer to perform the examination for base metal soundness and the shear wave technique for the examination of weld soundness which was performed utilizing a .625" x .750" rectangular transducer mounted on a plastic wedge. The QC testing was not completed during this shift.

## D). OBG 11E/12E

The QAI observed the CJP welding of the edge plate field splice identified as Weld Number (WN): 11E-12E-F1. The welding was performed by Wen Han Yu ID-6317 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-1110A-1 Rev. 1. The WPS was also utilized by the QC Inspector Fred Von Hoff as a reference to monitor the welding and to verify the welding parameters. The in process welding and inspection appeared to comply with the contract specifications.

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. 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 work date.

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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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**Inspected By:** Reyes, Danny

Quality Assurance Inspector

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**Reviewed By:** Levell, Bill

QA Reviewer