

**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-025408**Date Inspected:** 02-Aug-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**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 (CJP). The welding was performed utilizing the Flux Cored Arc Welding (FCAW-G) process.

## A). OBG E11/E12

The QAI observed the continued back gouging on the "B" face of the single-v-groove weld identified as Weld Number (WN): 10E-11E-C. This operation was performed by the welding personnel, Fred Kaddu, utilizing the plasma arc cutting method.

## B). OBG W10/W11

The QAI observed the continued CJP welding of the side plate field splice identified as 10W-11W-D utilizing the semi-automatic FCAW-G welding process as per the WPS ABF-WPS-D15-3042A-4 Rev. 0. The welding was performed by the welding operator Jin Pei Wang ID-7299 and the inspection was performed by the QC inspector Pat Swain utilizing the Welding Procedure Specification (WPS) as a reference during the monitoring of the welding and verifying the welding parameters. The welding was performed in the overhead (4G) position with the work placed in a fixed position at an approximate 22 degree incline. The welding was completed during this shift and appeared to comply with the contract documents.

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## C). Tower Shear Plates

The QAI observed the preliminary Ultrasonic Testing (UT) of the tower shear plate identified as WN: W-041 at location "W". The testing was performed by the QC technician Jesse Cayabyab utilizing a G.E./Krautkramer USM 35X. The QC technician 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. The QC testing was completed during this shift and one (1) rejectable indication was noted and was documented as follows; Y=3320 mm, L=125 mm and d=50 mm.

Later in the shift the QAI observed the technician, Mr. Cayabyab, commence the UT on the shear plate identified as WN: N-041 at location "N".

The QAI also observed the preliminary Ultrasonic Testing (UT) of the tower shear plate identified as WN: W-043 at location "V". The testing was performed by the QC technician Steve McConnell utilizing a G.E./Krautkramer USM 35X. The QC technician 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. The QC testing was completed during this shift and no rejectable indications was noted.

The QAI also observed the QC inspection, Steve McConnell, perform the Magnetic Particle Testing (MPT) and the Visual Testing (VT) of the ESW CJP square groove welds identified as WN: E-043 and WN: N-043 located at "Q" and "P" accordingly. At the conclusion of the MPT the QC inspector noted linear indication at both locations at the edge face (run-off area) of the joint. The indications were removed, by grinding, retested and no linear indications were noted. The "A" face and "B" face of the joints were marked for visual repair by the QC inspector for the first 300 mm starting from the 13 Meter Elevation.

The QAI also observed the removal of the temporary attachments and the removal of the run-off blocks located at the top of the shear plate square butt joints.

This QA Inspector also performed a daily review of field inspection reports 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 horizontal positions utilizing the E71T-1 consumable. 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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<b>Inspected By:</b>	Reyes,Danny	Quality Assurance Inspector
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<b>Reviewed By:</b>	Levell,Bill	QA Reviewer
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