

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-026189**Date Inspected:** 22-Aug-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:** Steve Jensen**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:** OBG Sections**Summary of Items Observed:**

This Quality Assurance (QA) Inspector, Craig Hager was on site at the job site between the times noted above. This QA Inspector was on site to randomly observe Quality Control (QC) personnel perform Non-Destructive Testing (NDT) and monitor American Bridge/Fluor (ABF) welding operations. This Quality Assurance (QA) Inspector, Craig Hager observed the following.

Orthotropic Bridge Girder (OBG) Sections: Longitudinal Stiffeners (LS) at 11W/12W

LS-3: This QA Inspector randomly observed ABF welding personnel Hua Qiang Hwang (#2930) using a grinder to back gouge the weld joint prior to continuing with the Shielded Metal Arc Welding (SMAW). Later this shift this QA Inspector randomly observed as Pat Swain performed and accepted the visual inspection and Magnetic Particle Testing of the back gouged weld joint, see photo below. This QA Inspector performed a random visual verification of the back gouged weld joint and the work observed appeared to comply with the contract requirements. This QA Inspector observed an induction heating blanket was positioned behind the weld joint and used to preheat the base metal. This QA Inspector used an electric temperature gauge to verify the preheat temperature was greater than 200°F prior to the start of welding. This QA Inspector observed ABF welding personnel Hua Qiang Hwang (#2930) using the SMAW process and QC Inspector Steve Jensen verify the following parameters; 128 amperes. This QA Inspector verified a 3.2 mm diameter, E9018M-H4R electrode was being used. The welding was being performed in the vertical (3G) position with as upward progression. The welding observed by this QA Inspector appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-1012-3. This QA Inspector observed the welding appeared to have been completed at approximately 1130 hours. This QA Inspector observed the induction heating equipment remained in position and was

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programmed to maintain a temperature greater than 200°F. This QA Inspector used an electronic temperature gauge to verify the post weld heat temperature was greater than 200°F. This QA Inspector observed the induction heating control unit had been set to maintain this temperature for a period of 3 hours. The work observed appeared to comply with the contract requirements.

LS-5: This QA Inspector randomly observed ABF welding personnel Xiao Jian Wan (#9677) using a grinder to back gouge the weld joint prior to continuing with the Shielded Metal Arc Welding (SMAW). Later this shift this QA Inspector randomly observed as Pat Swain performed and accepted the visual inspection and Magnetic Particle Testing of the back gouged weld joint. This QA Inspector performed a random visual verification of the back gouged weld joint and the work observed appeared to comply with the contract requirements. This QA Inspector observed an induction heating blanket was positioned behind the weld joint and used to preheat the base metal. This QA Inspector used an electric temperature gauge to verify the preheat temperature was greater than 200°F prior to the start of welding. This QA Inspector observed ABF welding personnel Xiao Jian Wan (#9677) using the SMAW process and QC Inspector Steve Jensen verify the following parameters; 130 amperes. This QA Inspector verified a 3.2 mm diameter, E9018M-H4R electrode was being used. The welding was being performed in the vertical (3G) position with as upward progression. The welding observed by this QA Inspector appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-1012-3. This QA Inspector observed the welding appeared to have been completed at approximately 1130 hours. This QA Inspector observed the induction heating equipment remained in position and was programmed to maintain a temperature greater than 200°F. This QA Inspector used an electronic temperature gauge to verify the post weld heat temperature was greater than 200°F. This QA Inspector observed the induction heating control unit had been set to maintain this temperature for a period of 3 hours. The work observed appeared to comply with the contract requirements.

This QA Inspector observed this appeared to complete the welding of the Longitudinal Stiffeners at the 11W/12W OBG section. The work appeared to be completed except for removal of run off tabs (last joint as noted above) and final grinding to contour the weld.

Orthotropic Bridge Girder (OBG) Sections:

11W/12W – E: This QA Inspector randomly observed ABF welding personnel Todd Jackson (#4639) and Fred Kaddu (#2188) using a plasma torch to remove the back strap from this weld joint, see photo below.

10W/11W-C-1: This QA Inspector randomly observed QC Inspector Jesse Cayabyab performing Ultrasonic Testing (UT) on this Complete Joint Penetration (CJP) weld joint. This QA Inspector observed a lamination scan was being performed using a longitudinal wave transducer and a shear wave scan using a 70 degree transducer wedge. The scanning patterns and overall technique appeared to comply with the contracts. This was an in process inspection and results were not available at this time.

Summary of Conversations:

This QA Inspector had general conversations with American Bridge/Fluor (ABF) and Caltrans personnel during this shift. Except as described above and noted below there were no notable conversations.

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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.

Inspected By: Hager,Craig

Quality Assurance Inspector

Reviewed By: Levell,Bill

QA Reviewer