

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-027314**Date Inspected:** 13-Mar-2012**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:** jobsite**CWI Name:** Salvador Merino**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:** SAS project**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 /or monitor American Bridge/Fluor (ABF) welding operations. This Quality Assurance (QA) Inspector, Craig Hager observed the following.

Orthotropic Box Girder (OBG) sections:

12W/13W-Longitudinal Stiffener (LS) Bottom Stiffener Flange (BSF): This QA Inspector observed ABF welding apprentice Devon Murphy using a grinder to transition and ends of the plates and grind the face of the welds flush.

Towards the end of the shift the work was approximately 90% complete on LS-4-BSF-North and South, 50% on LS-5 BSF-North and South and 10% on LS-6-BSF-North and South. Grinding had not been started on the BSF plates at 13W/14W LS-4 thru 6.

13E/14E- Longitudinal Stiffener (LS): This QA Inspector randomly observed ABF welding personnel Richard Garcia (#5892) using the Shielded Metal Arc Welding (SMAW) process to complete the welding on the South face of LS-5. This QA Inspector randomly observed QC Inspector Salvador Merino verify the following welding parameters; 118 amperes. This QA Inspector used a temperature indicating marker to verify the preheat temperature was greater than 200°F. This QA Inspector reviewed Welding Procedure Specification (WPS) ABF-WPS-D15-1012-3, being used by QC and observed the welding parameters and preheat temperature were within the specified ranges. This QA Inspector observed ABF welding personnel Richard Garcia using the carbon arc process and a grinder to back gouge the weld joint. This QA Inspector randomly observed QC Inspector

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Salvador Merino perform Magnetic Particle Testing (MT) and perform a visual inspection on the back gouged weld, QC informed this QA Inspector both inspections were accepted. This QA Inspector performed a visual verification of the back gouged weld, see photo below, and observed the work appeared to comply with the contract requirements. This QA Inspector observed the induction heating blankets had been switched to the welded side and the SMAW process was continued until the weld appeared to be completed. QC Inspector Salvador Merino stated the preheating equipment had been set to provide the required 3-hour Post Weld Heat Treatment.

12E/13E- Longitudinal Stiffener (LS) Bottom Stiffener Flange (BSF): In the previous day's report this QA Inspector reported on the planar offset and plate height high/low conditions at the various LS locations. This QA Inspector observed today the fit up of the North and South BSF's at LS-5 and LS-6. This QA Inspector observed ABF welding personnel Rory Hogan (#3186) and Jeremy Dolman (#5042) had tack welded two strips of plate across the LS to hold the BSF plates into position and then tack weld the BSF's to the two strips. This QA Inspector observed as QC Inspector Salvador Merino measured the root opening and planar offset at each location. This QA Inspector observed the following measurements:

LS-5-BSF-North: root opening of 8 mm at centerline of the LS weld tapering down to 5 mm over a length of 235 mm.

LS-5-BSF-South: root opening of 10 mm at the centerline of the LS weld tapering down to 5 mm over a length of 310 mm.

The planar offset for both weld joints was -2 mm at the centerline of the LS weld reaching 0 (flush) approximately 500 mm East of LS welds and slightly greater than flush, up to +10 mm West of the centerline of the LS welds. See photos below.

This QA Inspector spoke with QC Inspectors Salvador Merino and Bonifacio Daquinag Jr. regarding the excessive root opening and areas of planar offset below flush. This QA Inspector was notified a similar issue had occurred at a different location and that QC was directed by Quality Control Manager Jim Bowers to document the specific locations of the issues for a Request For Information (RFI) to be submitted. This QA Inspector was present when QC Inspector Salvador Merino informed ABF welding personnel Rory Hogan (#3186) and Jeremy Dolman (#5042) the fit up inspection was not accepted due to the issue noted above and that an RFI was pending.

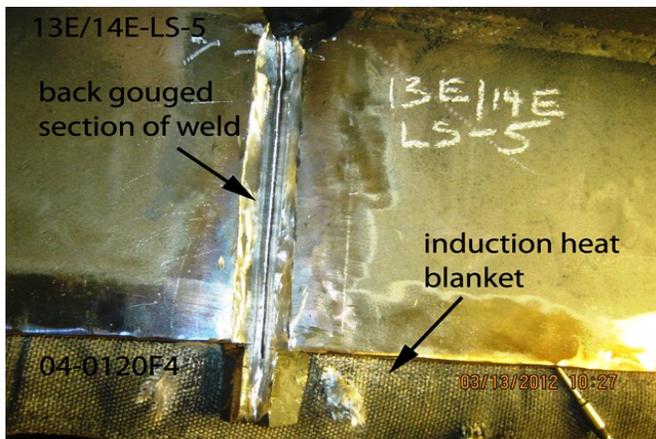
F.W. Spencer: This QA Inspector observed F.W. Spencer personnel were present including welding personnel Damian Llanos. This QA Inspector observed a shelter had been set up due to the inclement weather conditions (rain). This QA Inspector observed F. W. Spencer personnel attempting to fit up several weld joints, but were also fighting to keep the area dry so welding could be performed. Later this shift QC Inspector Steve Jensen informed this QA Inspector that F.W. Spencer welding personnel Damian Llanos informed him that welding would not be performed this date and that F.W. Spencer personnel were leaving the job site due to weather conditions.

Summary of Conversations:

This QA Inspector had general conversations with American Bridge/Fluor (ABF) personnel, QC personnel and Caltrans personnel during the shift. Except as described above 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