

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

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-026315**Date Inspected:** 19-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**Summary of Items Observed:**

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

**A). Tower Shear Plates**

This QAI observed the repair welding of the Electro-Slag Weld (ESW) located at the joint "R" and identified as E-041. The repair welding was performed on the A-Side of the weld joint and the dimensions of the excavation was measured by the QC inspector John Pagliero and noted as 55 mm wide x 330 mm long x 20 mm deep with the Y axis noted as 1400 mm. The welding was performed by Richard Garcia ID-5892 utilizing the Shielded Metal Arc Welding (SMAW) process as per the Welding Procedure Specification (WPS) ABF-WPS-D15-1000 Repair, Rev. 2. The WPS was also used by Mr. Pagliero as a reference during the monitoring of the welding and verifying the welding parameters. The welding parameters were noted by the QC inspector as 132 amps and the minimum preheat temperature of 204 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius appeared to comply with the contract specifications. It was also noted by the QAI that a verbal approval was issued by Construction Representative, Doug Wright, but it appears that ABF/Fluor, JV Welding Quality Control Manager (WQCM) Jim Bowers has not issued or submitted a Request for Weld Repair Approval (RWR). The welding of this repair was not completed during this shift.

This QAI also observed the repair welding and grinding at the following locations; joint "B" and "C", identified accordingly as WN: E-044 and WN: S-044 and joint "A", identified accordingly as WN: N-044. The welding was performed by Rory Hogan ID-3186 and Jeremy Dolman ID-5042. The welding and grinding were not completed

---

---

# WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

---

---

during this shift.

This QAI also observed Mr. Pagliero perform a Visual Inspection (VT), a Magnetic Particle Test (MPT) and a Ultrasonic Test (UT) of the shear plate ESW located at joint "S" and identified as WN: S-041. The VT and MPT appeared to be acceptable but the UT revealed a rejectable discontinuity. The examination of the repaired area was performed by the QC technician Mr. Pagliero utilizing a G.E./Krautkramer USM 35X and UT Procedure identified as SE-UT-D1.5-CT-108 ESW Rev.1. 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 .75" x .75" rectangular transducer. The Y coordinate was 4290 mm and the length and depth were noted accordingly as 50 mm and 51 mm. This reject will be documented as an R2.

## B). 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. 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 consumable. The 3.2 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.

The digital photographs below illustrate some of the work observed during this scheduled work date.



---

---

# WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

---

---

**Summary of Conversations:**

There were general conversations with Quality Control Inspector, Mike Johnson, 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.

---

<b>Inspected By:</b>	Reyes,Danny	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

---