

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-012373**Date Inspected:** 26-Feb-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1500**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

<b>CWI Name:</b>	Mike Johnson, Jesse Cayabayab	<b>CWI Present:</b>	Yes	No
<b>Inspected CWI report:</b>	Yes No N/A	<b>Rod Oven in Use:</b>	Yes	No N/A
<b>Electrode to specification:</b>	Yes No N/A	<b>Weld Procedures Followed:</b>	Yes	No N/A
<b>Qualified Welders:</b>	Yes No N/A	<b>Verified Joint Fit-up:</b>	Yes	No N/A
<b>Approved Drawings:</b>	Yes No N/A	<b>Approved WPS:</b>	Yes	No N/A
		<b>Delayed / Cancelled:</b>	Yes	No N/A
<b>Bridge No:</b>	34-0006	<b>Component:</b>	SAS OBG 1E/2E-A	

**Summary of Items Observed:**

The Quality Assurance (QA) Inspector, Rick Bettencourt was on site at the job site between the times noted above. The QA Inspector was on site to randomly observe the in process joint restoration and welding of the 1E/2E-A. The following observations were made:

**1E/2E-A**

Upon the arrival of the QA Inspector at 0700 on the job site, the QA Inspector randomly observed the ABF welding personnel setting up to perform flux cored arc welding of the above identified weld joint. The QA Inspector observed and noted approximately 8.2 meters of the 1E/2E-A weld joint had been tack welded on the previous day shift. The QA Inspector observed the section of weld joint previously welded was only welded on one side of the joint, the QA Inspector noted the two members were not joined by welding.

Previously the entire length of the 1E/2E-A complete joint penetration (CJP) weld joint was fit up and appeared to be within the dimensional tolerances of AWS D1.5-02. The QA Inspector observed the two members being joined appeared to have as much as 5-6mm of total offset. The ABF welding Foreman Rick Clayborn informed the QA Inspector the fit up will have to be completed again. Mr. Clayborn went on to inform the QA Inspector, ABF personnel attempting to secure the steel backing bar in place under the top deck plate, inadvertently caused the previously fit up members to be off set.

The QA Inspector noted the Smith Emery (SE) Quality Control (QC) Inspector Jesse Cayabayab on site to monitor and record the in process fit up. The QA Inspector randomly observed the QC Inspector performing dimensional measurements of the fit up as the ABF welding personnel performed the fit up tasks. The QA Inspector observed

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the ABF welder Al McDaniel preheat and perform shielded metal arc welding (SMAW) of a fitting aid. The QA Inspector observed Mr. Mc Daniel weld and attach the fitting aid to the top deck plate in the transverse direction of the longitudinal axis of the bridge (pictured below). The QA Inspector observed after the temporary attachment was installed, Mr. Clayborn drove the pin or wedge through the fitting aid to adjust the off set of the two members. The QA Inspector randomly observed the same process was repeated through the full length of the above identified weld joint. During the process of installing the temporary fitting aids, the QA Inspector informed the QC Inspector Mike Johnson and Jesse Cayabayab, as per ABF submittal identified as ABF-SUB-001361 R.2 temporary attachments could not be welded in the transverse direction of the longitudinal axis of the bridge. The QC Inspector Mike Johnson informed the QA Inspector he was unaware of the ABF submittal identified above and was not familiar of such a requirement. Mr. Johnson informed the QA Inspector he would need to consult with the ABF Welding Quality Control Manager (WQCM) Jim Bowers on the issue. The WQCM Jim Bowers later informed the QA Inspector, it is not feasible to utilize the fitting aids in any other fashion and it was necessary to weld them in the manner they have been utilizing them. Mr. Bowers went on to inform the QA Inspector it was unclear as to what exactly was transverse to the longitudinal axis of the bridge and he did not believe it was a complete violation of the above identified submittal. Mr. Bowers went on to inform the QA Inspector that the square nuts utilized in the fit up gear were not to be wrapped when welded as per the above identified submittal. The WQCM went on to inform the QA Inspector the manufacturer of the fit up gear, recommends wrapping the welds of the square nuts do to the applied force to them. The WQCM acknowledged wrapping the welds around the ends of the square nuts is possibly welding in the transverse direction but welding on only two sides could possibly cause additional damage to the base material if a square nut were to rip off during the applied force. The QA Inspector informed Mr. Bowers an Incident Report would be written and submitted for not conforming to the provisions of ABF-SUB-001361 R.2.

1E/2E -A-5

The QA Inspector randomly observed the ABF welder Al McDaniel and Mitch Sittinger preparing to continue to perform the FCAW tack weld started on the previous day shift. The QA Inspector observed the induction heat blankets had achieved the minimum required preheat of 150°F for the given thickness of the top deck plate. The QA Inspector observed the ABF welder to be welding the FCAW tack weld utilizing the given parameters of ABF-WPS-D1.5-F3200-2. The QA Inspector randomly verified the FCAW parameters and they were 242 Amps, 22.7 Volts and a travel speed of 425mm/min. The QA Inspector observed the ABF welder Mitch Sittinger weld the FCAW tack weld on one side of the joint approximately 9 feet long. The QA Inspector noted the welding was stopped due to unpredictable weather.



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**Summary of Conversations:**

As noted above.

**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 Mohammad Fatemi (916)-813-3677, who represents the Office of Structural Materials for your project.

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

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