

**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-016384**Date Inspected:** 20-Aug-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1200**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:****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 Section**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 to monitor American Bridge/Fluor (ABF) welding operations.

The following observations were made:

- 1) At weld joint E5/E6-D1 and D2, outside the OBG section: ABF welding personnel Rory Hogan (#3186) and Jeremy Dolman (#5042) had started removing the backing strap.
- 2) At weld joints E2/E3 - LS-3, inside the OBG section: ABF welding personnel Xiao Jian Wan (#9677) was using the Shielded Metal Arc Welding (SMAW) process to complete welding. QC Inspector John Pagliero was present.
- 3) At weld joints E2/E3 - LS-6, inside the OBG section: ABF welding personnel James Zhen (#6001) was using the Shielded Metal Arc Welding (SMAW) process to complete the build up (buttering) and start welding the groove weld section of the weld joint. QC Inspector John Pagliero was present.

At weld joint E5/E6-E1 and E2, outside the OBG section this QA Inspector observed ABF welding personnel Rory Hogan (#3186) and Jeremy Dolman (#5042) had started removing the backing strap on this weld joint. This QA Inspector observed a plasma arc torch was being used to cut/gouge through the backing material.

At weld joints E2/E3 - LS-3, inside the OBG section this QA Inspector observed ABF welding personnel Xiao

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Jian Wan (#9677) grinding on both faces of the weld and upon completion signal to QC Inspector John Pagliero. This QA Inspector observed QC Inspector John Pagliero perform a visual inspection marking and verbally informing ABF welding personnel Xiao Jian Wan (#9677) areas of undercut, excessive weld reinforcement and contour needed additional work. This QA Inspector performed a random visual verification and the work observed appeared to comply. While ABF welding personnel Xiao Jian Wan (#9677) continued grinding this QA Inspector accompanied QC Inspector John Pagliero to the opposite side of the same OBG section to LS-6 where ABF welding personnel James Zhen (#6001) was about to use the SMAW process to build up (butter) the weld joint. This QA Inspector randomly observed QC Inspector John Pagliero verify the following SMAW welding parameters: 125 amperes using a 3.2 mm diameter E9018H4R electrode on a scrap piece of material. This QA Inspector also observe QC Inspector John Pagliero verify the preheat temperature was greater than 100° C on the side that buttering would be performed. Upon completing these verifications for this welding location this QA Inspector then asked QC Inspector John Pagliero if he had verified the SMAW parameters for ABF welding personnel Xiao Jian Wan (#9677) at LS-3 and was informed he did not need to because welding was not going to be performed anytime soon. This QA Inspector reminded QC Inspector John Pagliero that he had just rejected both weld faces for containing weld undercut and asked how it could be repaired without performing welding. At this time, prior to getting an answer form QC, ABF welding personnel Xiao Jian Wan (#9677) signaled implying he was ready for another visual inspection. This QA Inspector observed as QC Inspector John Pagliero performed a visual inspection on both faces of LS-3. This QA Inspector observed QC Inspector John Pagliero measure the depth of the areas previously marked as having excessive weld undercut. QC Inspector John Pagliero informed this QA Inspector the areas had been ground out to a depth greater than twice the allowable depth of weld undercut for a tension member weld. This QA Inspector and QC Inspector John Pagliero had a discussion regarding the AWS D1.5-02 code requirements for repairing weld undercut, which specifically states depositing additional weld metal as the only way to repair weld undercut. QC Inspector John Pagliero informed ABF welding personnel Xiao Jian Wan (#9677) additional welding would be required to repair the areas previously marked as having weld undercut and that grinding only contoured the areas and that the areas are now under filled. This QA Inspector observed as QC Inspector John Pagliero verified the SMAW welding parameters for ABF welding personnel Xiao Jian Wan (#9677) on a piece of scrap material as being; 123 amperes using a 3.2 mm diameter E9018H4R electrode. The area was preheated using a hand held torch and verified to be greater than 100°C by QC Inspector John Pagliero. The welding observed appeared to comply with ABF-WPS-D15-1012-3. After welding and grinding ABF welding personnel Xiao Jian Wan (#9677) stated he was ready for a visual inspection. This QA Inspector observed as QC Inspector John Pagliero performed and accepted the welding on both faces of LS-3, informing this QA Inspector it was only a preliminary visual inspection due to weld not being of ambient temperature. This QA Inspector performed a random visual verification and the work appeared to comply at this time. During these observations it was also noted the welding electrodes were stored in a heated storage container, greater than 250°F, close to the applicable work station and that both of the ABF welding personnel were using electrodes from insulated dispensers containing a limited number of electrodes.

In general the work observed appeared to comply with the contract requirements.

## **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

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Materials for your project.

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**Inspected By:** Hager,Craig

Quality Assurance Inspector

**Reviewed By:** Levell,Bill

QA Reviewer