

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-022106**Date Inspected:** 21-Mar-2011**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**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:** SAS OBG**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 welding and inspection of the weld joints identified as 6E-pp37.5-E5-NW, 5W-pp29.5-W5-SW 10W/11W-A and the following observations were made:

6E-pp37.5-E5-NW

The QA Inspector was informed by the Smith Emery Quality Control (QC) Inspector identified as Leonard Cross the above identified weld joints were acceptable and ready for QA verification. The QA Inspector performed random visual testing of the completed weld joints and noted they appeared to be in general compliance with the contract requirements. The QA Inspector proceeded to performed random ultrasonic testing (UT) of approximately 10% of the total weld length. The QA Inspector noted no rejectable indications were located at the time of the testing. See TL-6027 for 3.17.11.

Tower temporary welding

South tower leg to shear plate identified as B1E complete joint penetration electro slag weld joint. The QA Inspector randomly observed the ABF Welding Superintendent Dan Ieraci and the ABF welder Kenneth Chapel installing and tack welding the weld joint restraint plates or strong backs to the weld joint identified above. The QA Inspector noted the temporary attachment was identified as a P4 type strong back. The QA Inspector noted the ends of the plate have a single bevel to be welded utilizing a partial joint penetration groove weld at both ends of the attachment from the 2G welding position. The QA Inspector noted for clarification, one end of the plate gets welded to the B1E shear plate and the other end of the plate is welded to the outer skin of the south tower shaft. The QA Inspector noted no weld other than shielded metal arc welding (SMAW) tack welding was performed on

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this date. The QA Inspector observed Mr. Ieraci preheat the isolated area adjacent to the electro slag vertical weld joint to 225°F utilizing a rose bud torch. After the minimum required preheat was achieved, Mr. Ieraci would hold the plate in place while the ABF welder Kenneth Chapel performed SMAW tack weld on the edge of the P4 type strong back and not in the PJP groove to be welded at a later time. The QA Inspector noted the ABF welder was utilizing 1/8" E7018 low hydrogen electrodes with 130 Amps. It was noted the minimum required preheat and SMAW parameters did appear to be in general compliance with the contract requirements. The QA Inspector noted weld joints identified as #19, 20 and 24 were welded on this date. The QA Inspector noted the SE QC Inspector Patrick Swain was on sit to monitor the in process tack welding and fit up. The QA Inspector noted the same process was repeated twice for the above identified weld joint and again for the weld joint identified as shear plate B2E to the east tower shaft outer skin plate. The QA Inspector randomly observed the ABF welder Wai Kit Lai begin performing flux cored arc welding (FCAW) of the partial joint penetration (PJP) P4 type restraints that were previously tack welded. The QA Inspector randomly observed the ABF welder to be utilizing the FCAW process with 370 Amps, 23.4 Volts and a travel speed of 200mm/min. The QA Inspector noted the ABF welder Kenneth Chapel was preheating the isolated areas to 300°F prior to performing the FCAW process. After the weld was completed, the QA Inspector randomly observed the ABF welder peen the P4 plate itself adjacent to the weld and not the weld itself. The QC Inspector informed the QA Inspector the peening would relieve stresses in the plate.

5W-pp29.5-W5-SW

The QA Inspector randomly observed the ABF welder James Zhen preparing the above deck access hole for fit up. The QA Inspector randomly observed the ABF welder and helper grinding bevels of the longitudinal stiffeners and transverse stiffeners under the deck access hole. The QA Inspector randomly observed the ABF welder utilizing a nibbler machine cutting the 45° bevel at the edge of the deck access hole insert. The QA Inspector noted the bevel and bevel angle appeared to meet the general requirements of the contract documents. The QA Inspector randomly observed a gouge on the flame cut edge that appeared to be approximately 12mm deep. The QA Inspector informed the QC Inspector Steve McConnell, approval from the department must be granted to perform the base material repair. The QA Inspector noted no repair welding was performed on this date.

10W/11W-A

The QA Inspector randomly observed the ABF welder Song Tao Huang removing temporary fitting aids from under the "A" deck plate. The QA Inspector noted the welder was removing the attachments and associated welds with a grinding disc. The QA Inspector noted the SE QC Inspector Steve Jensen was present to witness the removal of the attachments.

Summary of Conversations:

The QA Inspector informed the QC Inspector Steve Jensen to make sure the areas are documented so magnetic particle testing can be performed. The QC Inspector informed the QA Inspector he was not MT certified, the QA Inspector informed the QC Inspector to inform his SE Lead Inspector of the removal of the attachments so the MT can be performed by a qualified QC person.

The QA Inspector Robert Mertz informed the QA Inspector that ABF would be allowed to perform the base material repair to the edge of the deck access hole. Mr. Mertz went on to inform the QA Inspector Rick Bettencourt, the repair will be allowed due to the fact the repair will be 100% UT tested after the weld joint is complete. The repair will be made in the area of the bevel preparation and will receive production welding of the

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complete joint penetration groove weld.

The QA Task Lead Inspector Bill Levell informed the QA Inspector the RWR 201103-005 and R4 repair at 8E/9E-A5 was approved by the SMR Nick Havass at 1320.

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:	Bettencourt,Rick	Quality Assurance Inspector
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Reviewed By:	Levell,Bill	QA Reviewer
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