

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:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-013966**Date Inspected:** 06-May-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**CWI Name:** Bernard Docena, Steve McConnell, 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 1W/2W-C, 1W/2W-D/S, 4E/5E**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 1W/2W- C, 1W/2W-D/S and 4E/5E and the following observations were made:

1W/2W-C1

The QA Inspector randomly observed the ABF welders had previously started the induction heating blankets to ensure the minimum required preheat of 150°F was achieved prior to welding. The QA Inspector randomly verified utilizing a 150°F temperature indicating marker and noted the minimum required preheat had been achieved. Upon the arrival of the QA Inspector it was observed the root and hot pass had been completed on the previous day shift. The QA Inspector noted the entire weld segment C1 had been previously completed. The QA Inspector randomly observed the SE QC Inspector identified as Bernard Docena set the FCAW machine to the parameters of the approved WPS. The QA Inspector randomly observed the FCAW parameters were 236 Amps, 22.8 Volts and a travel speed of 225mm/min. The QA Inspector randomly observed the ABF welder Song Toa Huang continue the FCAW fill pass. The QA Inspector noted the ABF welder was performing the FCAW fill/cover passes for the remainder of the QA Inspectors shift.

4E/5E-A

Upon the arrival of the QA Inspector at the above identified location the QA Inspector noted the orthotropic box girder (OBG) 5E was pushed into place. The QA Inspector performed a random visual inspection of the overall fit up and condition of the weld joint. As previously noted the QA Inspector observed the transitions from 20mm-14mm on the top deck plate had been over ground and reduced to approximately 10mm over a small area

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next to the bevel. In addition it was previously discovered the longitudinal deck welds had not been ground sufficiently to allow the steel backing to fit up to the bottom site of the weld joint with intimate contact. After a conversation with the ABF Welding Quality Control Manager (WQCM) Jim Bowers, Mr. Bowers had previously informed the QA Task Lead Inspector Bill Levell the deficiencies identified above would be corrected by welding and grinding. Upon the arrival of the QA Inspector it was observed all of the top deck longitudinal seam weld reinforcement had been ground flush in the areas where the steel backing bar will intersect them. The QA Inspector randomly observed the ABF welder Rick Clayborn had preheated the area next to the top deck plate transition area and began to perform shielded metal arc welding (SMAW) in an attempt to correct the area which had been previously reduced. After several SMAW passes and additional grinding the QA Inspector noted the area had been restored to within the original condition of the material when it was received in Oakland. The QA Inspector noted the SE QC Inspector Barry Drake was on site monitoring the in process welding. After the welding had been completed the QA Inspector observed the QC Inspector perform magnetic particle testing (MT) of the area which was repaired by welding. The QA Inspector noted no relevant indications were located at the time of the testing. The QA Inspector randomly observed the ABF welder Rick Clayborn begin performing additional fitting tasks of the top deck plate identified as "A". The QA Inspector randomly observed the ABF welder install temporary fitting aids and utilized pins to align the top deck plates. The QA Inspector noted the SE QC Inspector Bnifacio Daquinag was on site monitoring and performing dimensional measurements of the fit as the ABF welder performed the fitting tasks. After the completion of the fit up or alignment of the top deck plates the QA Inspector performed a random visual inspection prior to the steel backing bar being installed or fit up. It was observed by the QA Inspector after a preliminary visual inspection it was noted the planar alignment appeared to meet the general requirements of the contract documents. The QA Inspector noted no production welding or tack welding was completed on this date.

1W/2W-D/S

D/S-13

The QA Inspector randomly observed the ABF welder James Zhen performing shielded metal arc welding (SMAW) root/fill passes at the above identified stiffener plates. The QA Inspector noted the ABF welder was utilizing 5/32" E7018 low hydrogen electrodes with 135 Amps. The QA Inspector noted the SMAW parameters appeared to be in general compliance with ABF-WPS-D1.5-1010. The QA Inspector randomly observed the above identified stiffener plate had been previously restored by welding, and the round bar stock removed. The SMAW was in process for the remainder of the QA Inspectors shift.

D/S-3

The QA Inspector randomly observed the ABF welder Chin Fai Tsui had installed round bar stock in the double V-groove opposite the side where joint restoration is being performed. The QA Inspector noted the round bar stock is placed in the groove vertically and SMAW butter passes are performed on the opposite side. The QA Inspector noted once the weld joint has been restored to the original joint configuration, the round bar stock will be removed and welding can be performed as described in the approved WPS identified as ABF-WPS-D1.5-2010-C. The QA Inspector randomly observed the above identified welder was performing SMAW butter passes on all three of the above identified weld joints during the QA Inspectors shift. The QA Inspector randomly observed the ABF welder to be utilizing 1/8" E7018 low hydrogen electrodes with 135 Amps. The QA Inspector noted the SMAW parameters appeared to be in general compliance with the contract requirements.

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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.

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