

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:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-028433**Date Inspected:** 12-Sep-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1700**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

CWI Name:	As noted below		
Inspected CWI report:	Yes	No	N/A
Electrode to specification:	Yes	No	N/A
Qualified Welders:	Yes	No	N/A
Approved Drawings:	Yes	No	N/A

CWI Present:	Yes	No	
Rod Oven in Use:	Yes	No	N/A
Weld Procedures Followed:	Yes	No	N/A
Verified Joint Fit-up:	Yes	No	N/A
Approved WPS:	Yes	No	N/A
Delayed / Cancelled:	Yes	No	N/A
Component:	SAS OBG		

Bridge No: 34-0006**Summary of Items Observed:**

Quality Assurance Inspector (QA) Douglas Frey was at the American Bridge/Fluor (ABF) job site at Yerba Buena Island in California between the times noted above in order to monitor Quality Control functions and the in process work being performed by ABF personnel. The following items were observed:

12E PP111.5-PS3 (Interior)

This QA Inspector randomly observed ABF/JV qualified welder Deli Zhang #4735 perform the ongoing Shielded Metal Arc Welding (SMAW) process in the 2G horizontal position on the plate stiffener located at 12E PP111.5-PS3 on the interior of the OBG. QC Inspector Salvador Merino was observed monitoring the welding on the material the pre-heat and parameters as they pertain to ABF-WPS-D1.5-1040A-CU-Revision 1. The welder was observed drawing 136 amperes with the 3.2mm E7018-H4R electrodes and was noted as cleaning the work between passes utilizing a small disc grinder. Upon completion of PS3, QC Inspector Steve Jensen performed the fit-up operations on the plate stiffener PS1 at the same location. The planar alignment was out of tolerance and the QC Inspector "mapped" it out to report to QC Management.

12E PP116-BW3 (Interior)

This QA Inspector made random observations of ABF/JV qualified welder Guo Wu Chen #1571 performing the continuing SMAW process in the 3G vertical position utilizing E7018-H4R electrodes on the beam web located at 12E PP116-BW3 on the interior of the OBG. QC Inspector Salvador Merino verified the temperature and recorded the parameters as acceptable and within the requirements of ABF-WPS-D1.5-1040A-CU-Revision 1. The welder

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was observed welding the height of the joint followed by grinding and blending of the work utilizing a small disc grinder. On a subsequent observation, this QA Inspector noted that the welding was performed in the 3G vertical position utilizing the E7018-H4R low hydrogen electrodes. The 3.2mm electrodes were stored in electrically heated, thermostatically controlled oven after 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 Tempilstik Heat Indicators for verifying the preheat and inter-pass temperatures. At the time of the observation no issues were noted by the QA. On subsequent observations throughout the shift to monitor quality, it was noted that the work was completed on this date and appeared to be in general conformance with the contract documents.

12E PP113.5-FP1 (Interior)

This QA Inspector randomly observed ABF/JV qualified welder R. Alex Blanco #9650 perform the SMAW process in the 2G horizontal position on the flange plate located at 12E PP113.5-FP1 on the interior of the OBG. QC Inspector Salvador Merino was observed monitoring the welding on the material the pre-heat and parameters as they pertain to ABF-WPS-D1.5-1040A-Revision 1. The welder was observed drawing 135 amperes with the 3.2mm E7018-H4R electrodes and was noted as cleaning the work between passes utilizing a small disc grinder This QA Inspector made subsequent observations throughout the shift to monitor quality and noted that the work was completed on this date and appeared to be in general conformance with the contract specifications.

12E/13E-LS1-DSF (Interior)

This QA inspector observed at random intervals ABF/JV qualified welder Jose Torres #6235 performing SMAW in the 4G Overhead position with E9018-M-HR electrodes drawing amperage of 127 utilizing the Caltrans approved Welding Procedure Specification ABF-WPS-D1.5-1162-4. The welds are Partial Joint Penetration (PJP) butt joint splice Deck Stiffener Flange (DSF) to Longitudinal Stiffener-3 (LS-3). The weld surface and surrounding area was brought to temperature by the use of a gas torch and the preheat temperature was confirmed by ABF personnel prior to welding. The ABF Quality Control (QC) Salvador Merino was noted monitoring the welding parameters during welding. The welding at this location was observed to be in progress prior to the end of the QA inspectors shift.

12E PP112-BW2 (Interior)

This QA Inspector made random observations of ABF/JV qualified welder Jacob Stafford #8020 performing the SMAW process in the 3G vertical position utilizing E7018-H4R electrodes on the beam web located at 12E PP112-BW2 on the interior of the OBG. QC Inspector Salvador Merino verified the temperature and recorded the parameters as acceptable and within the requirements of ABF-WPS-D1.5-1040A-Revision 1. The welder was observed welding the height of the joint followed by grinding and blending of the work utilizing a small disc grinder. On a subsequent observation, this QA Inspector noted that the welding was performed in the 3G vertical position utilizing the E7018-H4R low hydrogen electrodes. The 3.2mm electrodes were stored in electrically heated, thermostatically controlled oven after 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

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utilizing a Fluke 337 clamp meter to measure the electrical welding parameters and Tempilstik Heat Indicators for verifying the preheat and inter-pass temperatures. At the time of the observation no issues were noted by the QA. On subsequent observations throughout the shift to monitor quality, it was noted that the work was in progress and appeared to be in general conformance with the contract documents.

12E/13E-LS2 (Interior)

This QA Inspector randomly observed the excavation operations of Ultrasonic rejectable indications on the Complete Joint Penetration (CJP) joint at 12E/13E-LS2 on the interior of the OBG. This QA Inspector observed ABF/JV qualified welder Wai Kit Lai #2953 performing the Carbon Arc Gouging (CAG) method to remove metal from the material. The welder was observed cleaning up the excavations utilizing a small disc grinder and a de-burring drill. Upon completion of the excavation, Quality Control (QC) Inspector Salvador Merino performed a Magnetic Particle Inspection (MT) of the sites to determine soundness of the metal and observed no indications, QC then measured the dimensions of the excavations for length, width and depth. This QA Inspector recorded the dimensions of the excavations as:

Y=100mm; 90mm in length, 25mm wide and 9mm deep, y=185mm; 40mm in length, 33mm wide and 9mm deep.

Prior to welding, QC Inspector Salvador Merino was observed monitoring and measuring the pre-heat temperatures and parameters as they pertain to ABF-WPS-D1.5-1002-Repair-Revision 0. This QA Inspector made random observations of SMAW in the 3G vertical position and noted no issues with the work at this location and at the time of this repair, an RWR was pending. This QA Inspector made subsequent observations throughout the shift to monitor quality and it was noted that the E7018-H4R electrodes were stored properly in a sealed container after being opened and they were drawing amperage of 136. The welder was observed continuing the in process repair welding and this QA Inspector noted that no issues were present at this location. QC Inspector Salvador Merino was also present to monitor the welding and the parameters in the later stages of the shift. This QA Inspector noted that the work at this location was completed on this date and appeared to be in general conformance with the contract specifications.

Summary of Conversations:

Conversation with Structural Materials Representative (SMR) Bahjat Dagher concerning slip coefficient on faying surfaces.



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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 Gary Thomas 916-764-6027 , who represents the Office of Structural Materials for your project.

Inspected By:	Frey,Doug	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer
