

**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-027790**Date Inspected:** 19-Jun-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1930**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** As noted 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:**

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:

**Pier 7 Traveler Rail Supports**

This QA Inspector randomly observed ABF/JV qualified welders Jason Collins #8128 and Jacob Stafford #8020 performing Shielded Metal Arc Welding (SMAW) on the Complete Joint Penetration (CJP) Traveler Rail Support Base Plates at PP 113, 115 and 117 using 3.2mm" diameter E7018-H4R electrodes and implementing Caltrans approved Welding Procedure Specification's (WPS) ABF-WPS-D1.5-2060A-Revision 1. During welding, ABF Quality Control (QC) Fred Michels was noted monitoring the welding parameters (Amps). This QA Inspector noted that between passes the welder was cleaning the work using a small disc grinder as QC measured the inter-pass temperatures with Tempilstik Heat Indicators. At the time of the observations no welding issues were noted by this QA Inspector. On subsequent observations to monitor quality, it was noted that the work was completed.

Note: This work commenced without approval from the Engineer to proceed. A TL-15 was generated on this date.

**QC NDT CCO233**

This QA Inspector made random observations of QC Inspector William Sherwood performing Magnetic

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## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

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Particle Inspection (MT) on the completed welds on the Stiffener Plates of Section B-B on the Bike Path Extension. The QC Inspector was noted utilizing the yoke in right angles and parallel to the joint axis as well as 45° angles. Upon completion of the testing it was noted that Mr. Sherwood found no rejectable indications. CCO233 was referenced prior to testing.

13E/14E-LS7/LS8 (Interior of the OBG)

This QA Inspector randomly observed the repair welding operations performed by ABF certified welder Richard Garcia #5892 on 13E/14E-LS7/LS8. The welder was observed depositing metal by utilizing the SMAW process in the 3G vertical position employing 3.2mm E9018-H4R electrodes drawing amperage of 138 as pertaining to ABF-WPS-D1.5-1004-Repair. This QA Inspector verified that the electrodes were obtained from a baking oven at the correct temperature and within acceptable exposure limits. The welders were observed cleaning the start/stop edges of the work utilizing small disc grinders and compressed air and restored the base metal to the original surface and ground smooth, and the welds to their specific profiles. Post Weld Heat Treatment (PWHT) was applied to each completed weld surface at 230°C (450°F) for a period of 1 hour in accordance with Section 12.15 of AWS D1.5-2002. The repairs were completed on this date and appeared to be in general conformance to the contract specifications.

This QA Inspector randomly observed the repair welding operations performed by ABF/JV certified welder Edward Brown # 9331 at 13E-E2.8. ProHeat 35 thermal blankets were placed over the welds to pre-heat to 110°C (225°F) prior to excavation with Carbon Arc Gouging (CAG). Upon removal of the discontinuities, QC Inspector Salvador Merino performed Magnetic Particle Testing (MT) to ensure soundness of the metal and observed no relevant indications and recorded the dimensions of the excavations which are listed below. The welder was observed depositing metal by utilizing the SMAW process in the 4G overhead positions employing 3.2mm E7018-H4R electrodes drawing amperage of 127 as pertaining to ABF-WPS-D1.5-1004-Repair. This QA Inspector verified that the electrodes were obtained from a baking oven at the correct temperature and within acceptable exposure limits. The welder was observed cleaning the start/stop edges of the work utilizing small disc grinders and compressed air and restored the base metal to the original surface and ground smooth, and the welds to their specific profiles. Post Weld Heat Treatment (PWHT) was applied to each completed weld surface at 230°C (450°F) for a period of 1 hour in accordance with Section 12.15 of AWS D1.5-2002. The repairs were completed on this date.

Dimensions of the Excavations.

13E-2.8 (Interior)-y+155mm; 70mm in length, 20mm wide and 5mm deep, y+165mm; 30mm in length, 30mm wide and 5mm deep, y+375mm; 40mm in length, 20mm wide and 3mm deep, y+520mm; 55mm in length, 20mm wide and 4mm deep, y+1380mm; 80mm in length, 20mm wide and 6mm deep.

### **Summary of Conversations:**

Conversations were relevant to welding performed and information unique with each location.

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# WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

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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 Nina Choy 510-385-5910 , who represents the Office of Structural Materials for your project.

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

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