

**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-029128**Date Inspected:** 12-Feb-2013**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**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:

This QA observed the following welders working on the OBG at various locations:

ABF welder Mike Jimenez #4716 was observed performing the ongoing SMAW on the Deck Access Hole at 14W PP126.5-W2-DAH. The welder was observed utilizing WPS ABF-D1.5-1040C-CU for SMAW. The welder was observed preheating the welds prior to welding. Other welding parameters as inspected by the QC Inspector were recorded as 135 amperes and appeared to be in compliance with the WPS noted above. The QA Inspector made subsequent observations throughout the shift to monitor quality and noted that the work was in progress and appeared to be in general conformance with the contract documents.

This QA Inspector made random observations of the ongoing SMAW of shear tabs to steel framing next to the East side of the West Shaft of the Tower at the 58 meter elevation. ABF/JV welder Xiao Hua Luo #1291 performed the welding in compliance and conforming to ABF-WPS-D1.5-F1200A for fillet welding utilizing the SMAW process. Upon completion, QC Inspector Fred Mikels tested the welds by means of Magnetic Particle Inspection to verify soundness of the metal. The work and testing was found to be acceptable and appeared to be in general conformance to the contract documents.

This QA Inspector performed an Ultrasonic (UT) inspection on the east and west longitudinal stiffeners at 14E

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PP126.5-E2-DAH-LSE/LSW. These welds were previously accepted by QC Ultrasonic technicians in accordance with AWS D1.5-2002, section 6, table 6.3. This QA generated a TL-6027 UT report on this date. The testing was performed in accordance with AWS.D1.5-2002 Section 6, table 6.3. No rejectable indications were noted at the time of testing.

ABF welder Wai Kit Lai #2953 was observed performing weld repairs on 14E PP126.5-E2-DAH. The dimension of the excavation was recorded as y=2980mm 75L/24W/14D and y=2490mm 75L/18W/13D. The welder was observed utilizing WPS ABF-WPS-D15-1004-Repair-Revision 0 for SMAW. The welder was observed preheating the welds prior to Carbon Arc Gouging and welding. Other welding parameters as inspected by the QC Inspector appeared to be in compliance with the WPS noted above.

This QA Inspector randomly observed ABF welder Richard Clayborn utilize a track mounted motorized cutting torch to trim the edge of the West Blockout on the SAS side of the bridge in accordance with CCO281. This QA Inspector made subsequent observations throughout the shift to monitor quality and noted that the work at this location was in progress and appeared to be in general conformance with CCO281.

This QA Inspector randomly observed ABF welder Wai Kit Lai #2953 pre-heat the complete joint penetration (CJP) weld prior to performing Shielded Metal Arc Welding (SMAW) on the East alignment lug hole #1 on the east end of the skyway. This QA Inspector observed QC Inspector Salvador Merino verify that the temperature was at a minimum of 66° C and the amperage for the 3.4 mm E7018-H4R electrodes was 126. This QA Inspector observed the welder grind and blend the edges of the hole utilizing a small disc grinder and installed the 20 mm plate to make up the B-U4a joint. This QA Inspector observed the QC Inspector measure the planar offset to be within 1 mm and this QA Inspector found it to be acceptable. This QA Inspector observed the QC Inspector verify that the welding parameters were in accordance with ABF-WPS-D15-1050B. This QA Inspector made subsequent observations throughout the shift to monitor quality and noted that the work was in progress and appeared to be in general compliance with the approved WPS and the contract specifications. CCO184 and RFI-3132 was referenced during this observation.

This QA Inspector observed F.W. Spencer welder Damian LLanos # 6645 performing Shielded Metal Arc Welding (SMAW) in all positions on schedule 80 4" compressed air pipe and 2.5" domestic water pipe at 41/2.5/117/NE, 43/4/117/SW and 41/4/117/NE. This QA Inspector verified the fit up of the joints and found it to be satisfactory and randomly observed QC Inspector Steve Jensen monitoring the welding to ensure the welding parameters were in compliance pertaining to WPS-1-12-1 Revision 2 (1.12). The welder was observed utilizing 6010 electrodes in the root pass with the balance using 7018 electrodes. The QA inspector made subsequent observations throughout the shift to monitor quality and noted that the work appears to be in general conformance with the contract documents.

This QA observed QC Inspector Fred Michels and Salvador Merino performing welding parameter checks such as voltage, amps, electrodes and preheats throughout the day. This QA also observed QC Inspector's John Hays performing various Non-Destructive Testing (NDT) on completed weld repairs as they became available for testing. Non-Destructive Testing methods utilized by the QC Inspectors were Visual Testing (VT), Magnetic Particle Testing (MPT) and Ultrasonic Testing Shear Wave (UTSW). QC Inspectors were observed performing inspection per applicable code and or contract criteria. Unless otherwise noted, all work observed on this date appeared to generally comply with the contract documents.

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## Summary of Conversations:

Conversations were relevant to work performed.



## 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.

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

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