

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-027738**Date Inspected:** 05-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:

Orthotropic Box Girder (OBG) section: The QC Documents observed being used by this QA Inspector for the following weld joints appeared to be designated as Seismic Performance Critical Members (SPCM).

13E PP123.5-E2.8-BW1 (Interior)

This QA Inspector randomly observed ABF welder Salvador Sandoval (ID 2202) initiate work on the Beam Web weld at 13E PP123.5-E2.8-BW1 on the interior of the OBG. The Complete Penetration Joint (CJP) was welded in the 3G vertical position by the Shielded Metal Arc Welding (SMAW) process requiring multiple passes to completely fill face "A" of the joint. This QA Inspector observed ABF welding personnel perform back-gouge operations on the web and flange of 13E PP124-E2.8-BW1 and BF1 utilizing the Carbon Arc Gouging (CAG) process from the root side of the joints. QC Inspector Salvador Merino performed Magnetic Particle (MT) testing to ensure soundness of the metal. It was noted that QC found no relevant indications. Welder Salvador Sandoval relocated to the 13E PP124-E2.8-BW1 and BF1 joints which were initiated on 6/4/2012. The welder was observed completing the joints at this location on this date. This QA Inspector observed ABF welding personnel use the CAG process to remove the root from 13E PP123.5-E2.8-BW1. Upon completion of the process QC Inspector Salvador Merino performed MT testing on the back gouge and found the work to be acceptable with no rejectable indications. Upon completion of 13E PP124-E2.8-BW1 and BF1 welder Salvador Sandoval initiated work on 13E

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PP124.5-E2.8-BW1. The welder was observed at this location for the duration of the shift. This QA Inspector observed QC Inspector Sal Merino verify prior to the start of welding operations, that the minimum preheat temperature as per the approved WPS was established; and afterwards verified that the welding parameters (Amps and Travel Speed) were in accordance with ABF-WPS-D1.5-1030. The welder was observed grinding and blending the start/stop edges of the work utilizing a small disc grinder and compressed air in between passes. This QA Inspector noted that 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 observations no issues were noted by the QA.

13E PP123-BF2 (Interior)

This QA Inspector made random observations of ABF welder Steven Davis (ID 7889) performing SMAW in the 2F horizontal position on the Beam Flange joint of 13E PP123-BF2 on the interior of the OBG. The welder was observed pre-heating the Partial Penetration Joint (PJP) by use of a torch to the minimum required temperature. QC Inspector Salvador Merino verified that the welding parameters (Amps and Travel Speed) were in accordance with ABF-WPS-D1.5-F1200A. The welder was observed grinding and blending the start/stop edges of the work utilizing a small disc grinder and compressed air in between passes as QC measured the inter-pass temperatures. At the time of the observations no issues were noted by the QA. This QA Inspector noted the welder was transferred half way through the shift and the work at this location is in progress.

13E PP121.5-BW1 (Interior)

This QA Inspector made random observations of ABF welder Edward Brown (ID 9331) performing the SMAW Process in the 3G vertical position on the CJP Web joint located at 13E PP121.5-BW1 on the interior of the OBG. This QA Inspector observed QC Inspector Sal Merino verify prior to the start of welding operations, that the minimum preheat temperature as per the approved WPS was established; and afterwards verified that the welding parameters (Amps and Travel Speed) were in accordance with ABF-WPS-D1.5-1030. The welder was observed grinding and blending the start/stop edges of the work utilizing a small disc grinder and compressed air in between passes. This QA Inspector noted that 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. Upon completion of the back gouge operation on the root side of the joint, QC Inspector Salvador Sandoval conducted MT testing to verify soundness of the metal. Mr. Merino noted no relevant indications. Welding resumed on face "B" of the joint and progressed throughout the shift to completion at this location. At the time of the observations no issues were noted by the QA and the work appeared to be in general conformance with the contract specifications.

13E-E2.8 (Exterior)

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This QA Inspector randomly observed QC Inspector Steve McConnell performing Ultrasonic Testing (UT) on the completed welds of 13E-E2.8 on the exterior of the OBG. The QC Inspector was observed scanning from each side of the weld and the scanning pattern as described in D1.5 6.24. The QC Inspector was noted as identifying six (6) rejectable indications located at y+6885, y+6660, y+6430, y+6220, y+5865 and y+5650. This QA Inspector noted that the work at this location is ongoing and appeared to be in general conformance with the contract documents and SE-UT-D1.5-CT-100-Revision 4.

13E/14E-LS8 (Interior)

This QA Inspector made random observations of ABF welder Khit Lounechaney (ID 4985) performing SMAW in the 3G vertical position on the longitudinal Stiffener located at 13E/14E-LS8 on the interior of the OBG. The welder was observed pre-heating the B-U3b CJP joint with the ProHeat 35 thermal blankets and QC Inspector Salvador Merino verified the minimum temperature requirements as pertaining to ABF-WPS-D1.5-1012-3. E9018-H4R electrodes were observed in use and were drawing amperage of 132. It was noted that between passes the welder ground the stop/start edges of the work for a smooth transition as QC was present to measure inter-pass temperatures. Upon completion of the back gouging operation, QC inspector Salvador Merino performed MT on the root side of the joint to ensure soundness of the metal and found no relevant indications. This QA Inspector randomly observed the welder commence work on the second side of the joint. On a subsequent observation, the work progressed without incident and was completed on this date. The work at this location was found to be satisfactory and appeared to be in general compliance with the contract specifications.

Summary of Conversations:

This QA Inspector discussed welder assignments and locations in the Drop-In panels with QC Inspector Salvador Merino.



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: Frey,Doug

Quality Assurance Inspector

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Reviewed By: Levell,Bill

QA Reviewer