

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-028019**Date Inspected:** 20-Jul-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:

13E-E2.2 (Interior)

This QA Inspector randomly observed ABF welder Wai Kit Lai #2953 performing the back-gouge operations of R3 ultrasonic rejectable indications on "A" deck Drop-In Panel joint splice located at the locations listed below. This QA Inspector observed QC Inspector Salvador Merino perform a Magnetic Particle Inspection (MT) of the excavation to determine the soundness of the metal. Upon completion of the testing this QA Inspector observed that no rejectable indications were present.

13E/14E-LS8-RWR-201207-032-y+80mm

13E-E2.2-RWR-201207-031- y+4665mm

13E-E2.2-RWR-201207-030- y+4230mm-y+4330mm

This QA Inspector randomly observed ABF welder Wai Kit Lai performing the repair welding operation of R3 indications as per the SMAW process in the 4G overhead and 3G vertical positions on the locations listed above on the interior of the OBG. This QA Inspector observed the welder employ E9018-H4R electrodes for the Longitudinal Stiffener (LS) LS8 and E7018-H4R 3.2mm electrodes for the A deck joints, from a remote backing oven and the QC Inspector verify that the preheat temperature was at the minimum of 200 degrees F. The QC

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Inspector was observed monitoring the welding and the parameters for conformance with ABF-WPS-D1.5-1004-Repair. The welding parameters observed at this location appeared to be in general compliance with approved WPS and the contract specifications. Upon completion of the welding Proheat thermal heat blankets were placed over the joints of 1 hour at between 450°F to 650°F. This QA Inspector noted that the work was completed on this date and appeared to be in general conformance with the contract specifications.

12E-E2.1-C1 (Exterior)

This QA Inspector randomly observed the in progress welding on 12E-E2.1-C1 on the exterior of the OBG. The work at this location was initiated on 7/17/2012. ABF/JV qualified welders Mike Jimenez #4671 and Chau Tran #3139 were observed performing the Shielded Metal Arc Welding (SMAW) process in the 2G horizontal positions. Prior to welding Quality Control (QC) Inspector Salvador Merino was observed monitoring the pre-heating of the joint and the parameters as they pertain to ABF-WPS-D1.5-1040C-CU. This QA Inspector verified that the 3.2mm electrodes were stored in an 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. The welders were 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 with an infra-red temperature gun. This QA noted no issues at the time of the observations. This QA Inspector made subsequent observations throughout the shift to monitor quality and noted that the production welding at this location was in progress on this date and appeared to be in general conformance with the contract documents.

12E/13E-LS2/LS1 (Interior)

This QA Inspector made random observations of ABF/JV qualified welder Todd Jackson #4639 performing SMAW in the 3G vertical position on the Longitudinal Stiffener (LS) of 12E/13E-LS2 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) were in accordance with ABF-WPS-D1.5-1012-3. The BU-2 Complete Joint penetration (CJP) joint was preheated to greater than 200 degrees Fahrenheit using Miller Proheat 35 Induction Heating System with the heater blanket located at the opposite side of the plate prior/during welding. 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 LS2, this QA Inspector verified the fit-up procedure on LS1 by QC and welding commenced upon pre-heat temperature approval. The welder was observed using E9018-H4R electrodes drawing amperage of 132. QC Inspector Slavador Merino was present to monitor the welding and the parameters and followed the same procedure on LS1. At the time of the observations 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.

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13E-K Plate (Interior)

This QA Inspector made random observations of ABF/JV qualified welder Richard Garcia #5892 performing the SMAW process in the 2G horizontal position on 13E-EK-SK3 on the 13E-K Plate on the interior of the OBG. This QA Inspector observed QC Inspector Salvador 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) were in accordance with ABF-WPS-D1.5-1-1072. 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 with an infra-red temperature gun. 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 the contract documents.

12E-E2.1 (Interior)

This QA Inspector randomly observed ABF/JV qualified welder Wen Han Yu #6317 perform the Carbon Arc Gouging (CAC) process on the backing bar and the joint in the 4G overhead position on 12E-E2.1 on the interior of the OBG. The work at this location was initiated on this date and progressed throughout the shift. This QA Inspector verified that the welder was using the proper respiratory apparatus and ventilation was adequate in the bays. This QA Inspector made subsequent observations to monitor quality and noted that the work at this location was in progress and appeared to be in general conformance with the contract documents.

QC NDT

This QA Inspector randomly observed QC Inspector Patrick Swain at 13W PP122.2 on the exterior of the OBG performing Ultrasonic Testing (UT). 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 recordable indications listed below. This QA Inspector noted that the work at these locations is ongoing and appeared to be in general conformance with the contract documents and SE-UT-D1.5-CT-100-Revision 4.

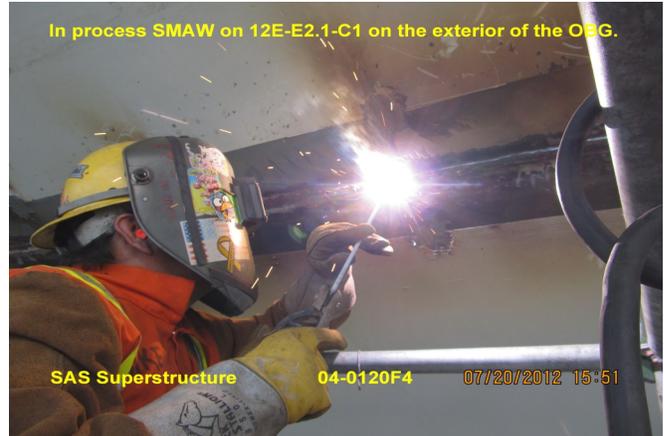
Y+2705mm, 2650mm, 8430mm, 5370mm and 5870mm.

Summary of Conversations:

Discussed welder assignments and locations with Quality Control Inspector Slavador Merino.

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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.

Inspected By: Frey,Doug

Quality Assurance Inspector

Reviewed By: Levell,Bill

QA Reviewer