

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-027955**Date Inspected:** 11-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		
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-E2.1-C (Interior)

This QA Inspector at random intervals, observed the Flux Core Arc Welding (FCAW) process performed by ABF/JV qualified welder Jeremy Dolman #5042 at 12E-E2.1-C on the interior of the OBG. During welding, ABF Quality Control (QC) Salvador Merino was noted monitoring the welding parameters (Amps, Volts and Travel Speed) as they pertain to ABF-WPS-D1.5-1040A-1. 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 issues were noted by this QA Inspector. On subsequent observations to monitor quality, it was noted that the work is in progress and appeared to be in general conformance with the contract documents.

This QA Inspector randomly observed ABF/JV qualified welder Mike Jimenez #4671 performing the Shielded Metal Arc Welding (SMAW) process in the 1G flat position on 12E-E2.1-C on the interior of the OBG. The work at this location was initiated on 7/4/2012. QC Inspector Salvador Merino was observed measuring the preheat temperature and setting the parameters to ensure compliance with the welding procedure specification (WPS) ABF-WPS-D1.5-1040C-CU. The welder was observed using a small disc grinder to blend the start/stop edges of the work to provide a smooth transition. The welder was observed utilizing 3.2mm E7018-H4R electrodes drawing

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amperage of 131. The electrodes were obtained from a baking oven verified by this QA Inspector. On a subsequent observation this QA Inspector monitored the work for quality and noted that it was in progress and appeared to be in general conformance with the contract documents.

This QA Inspector randomly observed ABF/JV qualified welder Richard Garcia #5892 using the FCAW process in the 2G horizontal position on 12E-E2.1-C on the interior of the OBG. Work at this location was initiated on 7/5/2012. 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, Volts and Travel Speed) were in accordance with ABF-WPS-D1.5-1-3040A-1. 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/13E-B (Exterior)

This QA Inspector made random observations of ABF/JV qualified welder Rick Clayborn #2773 performing SMAW in the 3G vertical position on 12E/13E-B on the East Drop-In Panel on the exterior of the OBG. This QA Inspector observed QC Inspector Salvador Merino verify prior to the start of the fillet weld operation, that the minimum preheat temperature as per the approved WPS was established; and afterward's verified that the welding parameters (Amps) were in accordance with ABF-WPS-D1.5-1040A-Revision 1. The welder was observed utilizing E7018-H4R electrodes and this QA Inspector verified that the electrodes were recently obtained from a baking oven. QC was observed measuring the inter-pass temperatures by employing an infra-red temperature gun as well as monitoring the welding and the parameters. It was noted that the welder was drawing amperage of 127 utilizing 3.2mm electrodes. On a subsequent observation, the welder was observed continuing work on the B-U2a Complete penetration Joint (CJP) and was employing the same routine to clean the passes. This QA Inspector made subsequent observations throughout the shift to monitor quality and noted that the work is in progress and appeared to be in general conformance with the contract specifications.

12E PP111.1-C (Interior)

This QA Inspector at random intervals observed ABF/JV qualified welder Roby Smith #4245 placing seal weld passes using the SMAW process in the 1G flat position on 12E PP111.1-C on the interior of the OBG. QC Inspector Salvador Merino was observed measuring the preheat temperature and setting the parameters to ensure compliance with the welding procedure specification (WPS) ABF-WPS-D1.5-F1200A. The welder was observed using a small disc grinder to blend the start/stop edges of the work to provide a smooth transition. The welder was observed utilizing 3.2mm E7018-H4R electrodes drawing amperage of 132. The electrodes were obtained from a baking oven verified by this QA Inspector. On a subsequent observation this QA Inspector monitored the work for quality and noted that it was in progress and appeared to be in general conformance with the contract documents.

12E/13E-A0 (Exterior)

This QA Inspector randomly observed Submerged Arc Welding (SAW) of the Corner Drop-In Plate at

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12E/13E-A0 on the exterior of the OBG. This QA Inspector observed heat induction blankets to provide pre-heat for the single bevel joint and verified the temperature was the required minimum of 150° F. It was also noted that the remote oven for the ESAB EN 760 Flux was in the on position with the dial set at 250° F as ABF welding personnel employed a flux recycling vacuum hose to empty the feeder hopper of the SAW unit. This QA Inspector observed the removal of the electrode spool which was discarded and replaced with a new F7A2-EM12KH8 electrode spool. QC Inspector Salvador Merino measured the parameters for amperage, volts, travel speed and the heat input as ABF welder Todd Jackson #4639 adjusted the controls on the Lincoln track mounted wire feeder. Upon approval for conformity with WPS-D1.5-4042B-1, the welder commenced welding operations on the joint in the 1G flat position. On a subsequent observation, this QA Inspector observed ABF welding personnel recycle the flux utilizing a vacuum hose and cleaning the edge of the work with a chipping hammer between passes. Mr. Zhen was observed adjusting the path of the feeder prior to each consecutive pass during the ongoing process and inspected each completed pass for indications and workmanship. QC was present to monitor the welding and the parameters so they remain within the requirements of the WPS. This QA Inspector made subsequent observations throughout the shift to monitor quality and noted that the work was in process and appeared to be in general conformance with the contract specifications.

QA NDT (Exterior)

This QA Inspector performed Magnetic Particle (MT) testing on the welds listed below. This QA Inspector performed MT testing utilizing the yoke method in conformance with ASTM E 709 and the standard of acceptance with D1.5 section 6.26. This QA Inspector noted that no rejectable indications were found at the time of testing. This QA Inspector generated a TL-6028 MT report on this date. The completed work at this location appeared to be in general conformance with the contract specifications. This QA Inspector performed an Ultrasonic (UT) inspection on approximately 10% of the welds listed below. These welds were previously accepted by QC Ultrasonic technicians in accordance with AWS D1.5-2002, section 6, table 6.3. This QA observed no rejectable indications at the time of testing. This QA generated a TL-6027 UT report on this date. The completed work observed at this location appeared to be in compliance with the contract specifications.

13E/14E-A0 – MT and UT

13E/14E-A1 - MT and UT

13E PP121.2 MT

Summary of Conversations:

Discussed issues concerning the Bike Path Railing with Assitant Structure Representative (ASR) Sebastian Mofor.

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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