

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:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-026155**Date Inspected:** 23-Aug-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** See 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 Tower & OBG**Summary of Items Observed:**

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the work and the inspection performed by American Bridge/Fluor Enterprises (AB/F) personnel. The inspection was performed on the various field fit-up of weld joints and the Complete Joint Penetration (CJP). The welding was performed utilizing the Shielded Metal Arc Welding (SMAW) process and the Flux Cored Arc Welding (FCAW-G) process.

A). Tower Shear Plates

The QAI also observed the excavation of the cycle 1 repair on the shear plate ESW identified as WN: N-041, located at the joint designated as "N". The excavation was performed by Jeremy Dolman ID-5042 utilizing the Air Carbon Arc (ACA) method and prior to the excavation process the area was preheated to a surface temperature of 93 degrees Celsius. The QAI also observed the QC inspector, John Pagliero, monitor the excavation and performed Visual Testing (VT) and the Magnetic Particle Testing (MPT) at random intervals during this task utilizing suitable gages, visual aids and the AC Yoke method. During this operation there were linear indications noted which appeared to be fusion type defects. These indications were removed by grinding, retested and no rejectable indications were noted by the QC inspector as observed by the QAI. Later in the shift the QAI observed the welder preparing excavated area with the Miller Pro-Heat Induction Heating System. The Y coordinate was 2778 millimeters and the dimensions were noted as 45 mm wide x 210 mm long x 40 mm deep.

This QAI was informed on this date by Structures Representative, Douglas Wright, that the Request for Weld Repair Approval was verbally approved in regards to the UT repair described in the above paragraph.

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The QAI also observed the repair welding of the Visual Testing (VT) repair performed by Richard Garica ID-5892 of the joint designated as "R" and identified as WN: E-041. The welding was performed utilizing the SMAW process and the 3.2 E7018-H4R electrode as per the WPS ABF-WPS-D15-1000 Repair, Rev. 2. The welding was performed in the vertical (3G) position with the work placed in an approximately vertical plane with the groove approximately vertical. The welding parameters, the minimum preheat temperature of 204 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius appeared to comply with the contract specifications. The location of the welding was at the Y coordinate dimension of 6460 mm. The welding was not completed during this shift.

B). OBG E11/E12

The QAI observed the continued CJP welding of the bottom plate field splice identified as 11E-12E-D utilizing the semi-automatic FCAW-G welding process as per the WPS ABF-WPS-D15-3042B-1 Rev. 0. The welding was performed by the welding operator James Zhen ID-6001 and the inspection was performed by the QC inspector William Sherwood utilizing the Welding Procedure Specification (WPS) as a reference during the monitoring of the welding and the verifying of the welding parameters. The welding parameters were measured by the QC inspector and were observed as follows; 247 amps, 24.1 volts and 181 mm/m. The welding was performed in the overhead (4G) position with the work placed in an approximately horizontal plane and the weld metal deposited from the underside. The welding was not completed during this shift and appeared to comply with the contract documents.

This QA Inspector also performed a daily review of field inspection reports and update of the field document control tracking records regarding the Orthotropic Box Girders, Longitudinal and Transverse "A" Deck Stiffeners and Deck Access Holes.

QA Summary

The welding was performed in the vertical position utilizing the E7018-H4R and the E71T-1 consumables. The 3.2 mm H4R electrodes were stored in a electrically heated, thermostatically controlled oven after the 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 Tempil Heat Indicators for verifying the preheat and interpass temperatures. At the time of the observation no issues were noted by the QAI.

The digital photographs on page 3 of this report illustrate some of the work observed during this scheduled work date.

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Summary of Conversations:

There were general conversations with Quality Control Lead Inspector, Bonifacio Daquinag, Jr., at the start of the shift regarding the location of welding, inspection and N.D.E. testing personnel scheduled for this shift.

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: Reyes, Danny

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer