

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-024934**Date Inspected:** 05-Jul-2011**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:** 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:** Orthotropic Box Girder & Tower**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. The welding was performed utilizing the Shielded Metal Arc Welding (SMAW), Flux Cored Arc Welding (FCAW-G) and Electro Slag Welding processes.

A). Lifting Lug Holes

The QAI observed the CJP welding of the lifting lug holes located on the west orthotropic box girders identified as WN: 9E-PP80-E3-W4 and 9E-PP77-E4-W4. The welding was performed by Jorge Lopez ID-6149 and Mike Jiminez ID-4671 utilizing the WPS identified as ABF-WPS-D15-1050A-CU, Rev. 0.

The QAI also observed the QC inspector's perform the visual inspection and verify the welding parameters during the production welding. The inspections performed by Fred Von Hoff appeared to comply with the contract specifications. The welding of these weld joints was not completed during this scheduled shift.

B). QC Ultrasonic Testing

The QAI observed the Ultrasonic Testing (UT) of the deck plate field splice identified as WN: 11W-12W-A. The testing was performed by the QC technician John Pagliero utilizing a G.E./Krautkramer USM 35X. The examination was conducted utilizing UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4 and the applicable

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contract documents. The QC technician performed the required longitudinal wave technique, utilizing a 1.0" diameter transducer to perform the examination for base metal soundness and the shear wave technique for the examination of weld soundness which was performed utilizing a .625" x .750" rectangular transducer. The QC testing was not completed during this shift.

C). 11W-12W-A & D, Tack Welding

The QAI observed the fillet welding of the fitting gear to the "A" deck plate field splice to be utilized during the alignment process of the field splice. The work was performed, on the weld joint identified as WN: 11W-12W-A, by Rick Clayborn ID-2773 utilizing the SMAW process during the welding as per the WPS identified as ABF-WPS-D15-F1200A Rev. 2. The WPS was also used by the QC inspector William Sherwood as a reference to monitor the tack welding and verify the welding parameters. Later in the shift and at the request of the QC inspector this QAI will verify the dimensions of the joint scheduled for Wednesday, 07/06/11 at 700.

The QAI also observed the continuous tack welding of the backing bar to the bottom plate splice identified as WN: 11W-12W-D. The welding was performed by Wai Kitlai ID-2953 and Hua Qiang Hwang ID-2930 utilizing the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-F3200-2 Rev. 0 with the welding performed in the horizontal position (2F) and the work placed so that the fillet weld metal appeared to be deposited on the upper side of the horizontal surface and against the vertical surface. The WPS was also used by the QC inspector, William Sherwood, to monitor the in process welding and verify the welding parameters.

D). ESW Shear Plate

The QAI observed the Electro Slag Welding (ESW) of the shear plate butt-joint identified as WN: N-043 as noted per the QC weld map. The butt-joint was located at the northeast corner of the north tower shaft starting at the tower base and extending to the 13 meter elevation. The welding was performed by Dan Ieraci ID-3232 utilizing the WPS identified as ABF-WPS-ESW-80-100TR. The inspection was performed by QC personnel Mike Johnson. The welding commence at 1314 and concluded at 1725. The ESW appeared to comply with the contract specifications.

This QA Inspector also performed a daily review 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 flat, horizontal and vertical positions utilizing the E7018-H4R low hydrogen electrodes, E71T and FES70-EWTG wire consumables. The 3.2 mm and 4.0 mm 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 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 shift.

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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
