

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-024239**Date Inspected:** 01-Jun-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 Report 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 Girders**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) groove welds of the East and West Orthotropic Box Girders (OBG's) and the Tower. The welding was performed utilizing the Shielded Metal Arc Welding (SMAW) process as per the Welding Procedure Specifications (WPS's).

A). Lifting Lug Holes

The QAI observed the CJP welding of the lifting lug holes identified as WN: 9E-PP76-E3-W2 & W4 and 8E-PP64-E4-W2 & W4. The welding was performed by Jorge Lopez ID-6149 and Jason Collins ID-8128 utilizing the WPS's identified as ABF-WPS-D15-1050A-CU, Rev. 0 and 1110A, Rev. 1. The QAI also observed the QC inspector perform the visual inspection and verify the welding parameters during the production welding. The inspection performed by Fred Von Hoff appeared to comply with the contract specifications.

B). Retrofit of Plate "B" @ Barrier Connection

The QAI observed the installation and welding of the 10 mm plate to the underside of plate "B" of the type B barrier connection assembly on the E8 OBG located along grid line E5 at PP68.75 and PP69.25. The welding was performed by Fred Kaddu ID-2188 utilizing the WPS identified as ABF-WPS-D15-F1200A, Rev. 2. The QAI also observed the QC inspector perform the visual inspection and verify the welding parameters during the in process welding. The inspection performed by QC inspector Fred Von Hoff appeared to comply with contract

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documents. The work performed complies with the contract documents and RFI No. ABF-RFI-001985R01. This welding and inspection was completed during this shift.

C). Tower Shear Plates (ESW)

The QAI also observed Pat Swain and Steve McConnell perform a preliminary Ultrasonic Testing (UT) of the T-joint field weld identified as WN: S-045. The testing was performed utilizing the required shear wave technique and the 60/ 70 degree angles, during the testing for weld soundness. The UT procedure has not been approved by the Department at the time of the testing. This preliminary testing of the ESW joint was completed during this shift and one (1) rejectable indication was noted by the QC technicians.

Later in the shift the QAI observed the welder Xiao Jian Wan ID-9677 perform the repair welding of the areas marked by the QC inspector. The welding was performed utilizing the WPS ABF-WPS-D15-1001-Repair, Rev. 0.

The inspection and verification of the welding parameters were performed by the QC inspector Pat Swain and appeared to comply with the contract specifications.

D). Stud Application Qualification

The QAI observed the welding of the 22 mm-9 x 304 mm threaded studs which were applied in the flat position (down hand) to a 660 mm L x 510 mm W x 20 mm thk. plate, positioned in a horizontal plane. There were a total of ten (10) specimens welded and at the conclusion of the welding the specimens were bent 90 degrees. The QC inspector, Mike Johnson, performed the inspection of the welding and the bend test. No rejectable indications were noted by Mr. Johnson and the QAI concurs with the QC inspector's assessment. The welding of the studs was performed by the following personnel; Ian Murphy ID-7268, Jerry Kusala ID-2595, Julian Paulk ID-7796, David Lucero ID-2490 and Rick Clayborn ID-2773. For additional information see Welding Witness Report (WWR) TL-6032.

E). Pipe Supports

The QAI observed the fit-up and tack welding of the pipe supports identified as PS-1 to the sole plates on the E6 OBG located approximately along the grid line E6. The tack welding was performed by Rick Kiikvee utilizing the WPS identified as Fillet Murex. The inspection of the in progress work performed by Steve Jensen appeared to comply with the contract documents.

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, vertical and overhead positions utilizing the E7018-H4R low hydrogen. 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 WPS's were also utilized by the QC inspector's as a reference to monitor the welding operation, verify the welding parameters and verify the

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minimum preheat and the interpass temperatures. The welding parameters and surface temperatures were verified by the QC inspector's utilizing a Fluke 337 clamp meter for 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 below illustrate some of the work observed during this scheduled shift.



Summary of Conversations:

There were general conversations with 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