

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-019157**Date Inspected:** 04-Jan-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1500**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 Girders**Summary of Items Observed:**

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below:

- A). Lifting Lug Holes
- B). Deck Access Holes
- C). QC Inspection Request
- D). Miscellaneous Tasks

A). Lifting Lug Hole

The QAI observed the continued Complete Joint Penetration (CJP) welding of the Lifting Lug Hole (LLH) identified as WN: 1W-PP9.5-W3-Weld No. 4 located along the grid line W3 of the OBG identified as W1. The welding was performed by the welder, Darcel Jackson ID-9967, utilizing the Shielded Metal Arc Welding (SMAW) process and the 4.8 mm, E7018 H4R electrode as per the Welding Procedure Specification (WPS) ABF-WPS-D15-1070A, Rev. 1. The WPS was also utilized by the QC inspector, Mike Johnson, as a reference to monitor the welding and to verify the welding parameters. The QC verification of the welding parameters was observed by the QAI and recorded as 249 amps and the minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius was also verified by the QAI. The welding was performed in the flat (1G) position with the weld joint in an approximately horizontal plane and the weld metal deposited from the upper side. The CJP welding was completed during this shift and appeared to comply with

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contract specifications.

Later in the shift, the QAI noted Mr. Jackson had mobilized Panel Point 17 to perform the CJP groove welding of the LLH identified as WN: 2W-PP17-W3-Weld No. 3 located along the grid line W3 of the OBG identified as W1.

Prior to the welding of the insert plate the QAI observed the QC inspector, William Sherwood, perform the fit-up inspection of the plate to the deck. At the conclusion of the inspection the QC inspector accepted the fit-up and alignment of the insert plate to the deck. The welding was performed utilizing the SMAW process and the 3.2 mm, E7018 H4R electrode as per the Welding Procedure Specification (WPS) ABF-WPS-D15-1070A, Rev. 1. The WPS was also utilized by the QC inspector as a reference to monitor the welding and to verify the welding parameters. The QC verification of the welding parameters and the surface temperatures was observed by the QAI, at random intervals and the welding and inspection appeared to be in compliance with the contract specifications. The welding was performed in the flat (1G) position with the weld joint in an approximately horizontal plane and the weld metal deposited from the upper side. The CJP welding was not completed during this shift.

The QAI also observed the welder, Mr. Jiminez, perform the excavation of the LLH identified as WN: 1W-PP8.5-W4-Weld No. 3 located along the grid line W4 of the OBG identified as W1. The excavation of the rejected weld was performed utilizing the air carbon arc process. The CJP weld was rejected by the UT testing method performed by the QC technician, Mike Johnson. During the excavation process the QAI observed the QC inspector monitor the excavation and at approximately 15 mm deep a fusion type defect was noted by the Mr. Johnson. The defect was removed and grinding was performed to remove the cutting slag and the carbon residue. The grinding was not completed during this shift.

B). Deck Access Hole

The QAI observed the Ultrasonic Testing (UT) on the Deck Access Hole (DAH) identified as WN: 3W-PP19.5-W5-SW. The testing was performed by the QC technician, Gary Erhsam, utilizing a G.E./Krautkramer USM 35X. The examination of the CJP groove welds was conducted utilizing the UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4 and the applicable contract documents. The QC technician performed the required longitudinal wave technique, utilizing a 25.4 mm 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 16 mm x 19 mm rectangular transducer. The testing was not completed during this shift.

C). QC Inspection Request

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, the QAI randomly verified the QC visual inspection of the Complete Joint Penetration (CJP) welding of the following Lifting Lug Holes (LLH); WN: 5E-PP31-E3-W2 and W4, 4E-PP25-E3-W3 and W4, 4E-PP27-E4-W1 and W3, 4E-PP27-E3-W1-W4 and 1W-PP11-W4-Weld No. 3. The QAI verification was performed to verify that the overhead welding (4G) and the visual weld inspection performed by the QC inspector meet the requirements of the contract documents. At the conclusion of the QAI verification it appeared that the welds and the QC inspection complies with the contract documents.

D). Miscellaneous Task

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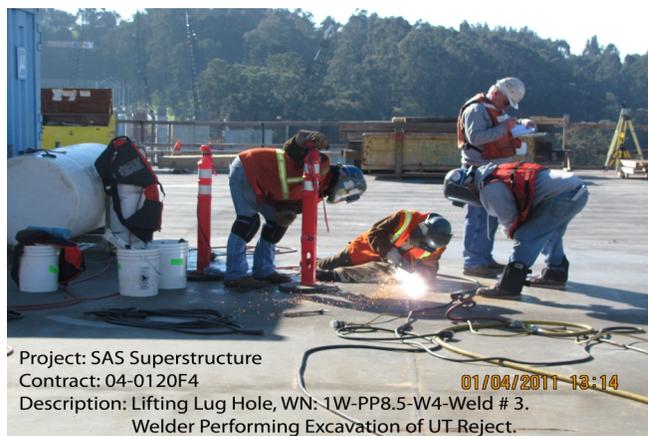
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This QAI also performed a review and update of the project progress utilizing QA field reports and NDT reports. The updated project information was documented into the various QA tracking logs.

QA Observation and Verification Summary

The QA inspector observed the QC activities and the welding of the field splices utilizing the WPS as noted above, which appeared to be posted at the weld station. The welding parameters and surface temperatures were verified by the QC inspector and utilizing a Fluke 337 clamp meter for the electrical welding parameters and a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. The ESAB consumables utilized for the SMAW welding process appeared to comply with the AWS Specification and AWS Classification. The QC inspection, testing and welding performed on this shift appeared to be in general compliance with the contract documents. At random intervals, the QAI verified the QC inspection, testing, welding parameters and the surface temperatures utilizing various inspection equipment and gages which included a Fluke 337 Clamp Meter and Tempilstik Temperature indicators.

The digital photographs below illustrate some of the work observed during this scheduled shift.



Summary of Conversations:

There were general conversations with Quality Control Inspector Bonifacio Daquinag, Jr. at the start of the shift regarding the location of American Bridge/Fluor 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
