

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-029332**Date Inspected:** 16-Mar-2013**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:** Andrew Keech**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:** Tower S-041 #09 "S"**Summary of Items Observed:**

On this date, Quality Assurance Inspector (QAI) Robert A. DeArmond was present at the San Francisco Oakland Bay Bridge job site at Yerba Buena Island to observe erection and welding activities for the San Francisco Oakland Bay Bridge (SFOBB) project. This Quality Assurance Inspector (QAI) observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below:

TOWER Weld Repair Y+7030~7450

S-041 #09

Location: "S"

The QAI observed that welder 3040-Eric Sparks, was welding fill passes for ESW repair located between Y+7030~7450, location "S" (weld No.: S-041 #09). This QAI observed Welding Procedure Specification (WPS) ABF-WPS-D15-1000-Repair-R3 and RWR 201302-11 was utilized. The QC inspector Andrew Keech verified the excavation of the repair area as well as Magnetic Particle Testing of the excavation and found it to be acceptable, this information was relayed to the QAI. The welder performed pre-heat throughout the repair area as well as during the welding operation utilizing heat racks on the back side of the repair area at 170 degrees Celsius (338 degrees F) which was verified using a tempstik and infrared gun by the QC. The welder was using the Shielded Metal Arc Welding (SMAW) electrode E7018 for the Complete Joint Penetration (CJP) weld in the vertical (3G) position with 5/32-inch electrode for the fill passes. The welder utilized a power grinder and power wire wheel for the interpass cleaning. The QC inspector for this location was Andrew Keech and was observed verifying and documenting the welding parameters for this location, along with overseeing the welding operations. At the time METS observation was performed No issues were noted by the QAI.

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The welder was grinding the starts and stops between weld layers to a bright metal. The location was still in process at the end of this QAI's shift.

QA Observation and Verification Summary

The QA inspector observed the QC activities and the welding utilizing the WPS's as noted above, which appeared to be posted at the weld station. The welding parameters and surface temperatures were verified by the QC inspectors 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 consumables utilized for the welding process stated, 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. Unless noted otherwise, all work observed on this date appeared to be in general compliance with the contract documents at the time of observations.

Ultrasonic Testing Tower ESW

Weld No.: S-041 #9

Location: S

Face: "A" (Y+7030~6730 and 7750~7450)

This QAI performed Ultrasonic Testing (UT), in tandem with ABF QC inspector Mr. Andrew Keech, on Complete Joint Penetration Electroslag welds. Weld joint is designated as a 60mm 120-degree T-Joint, Weld No.: S-041 #9 location S. During the QA/QC tandem Ultrasonic Testing, scanning was performed 300 mm each end of the ESW excavation for longitudinal planar and transverse indications; in accordance with supplemental procedure SE-UT-D1.5-CT-108-ESW-R5. The UT inspection was performed using a 70 degree shear wave from face A; (2) transverse and (0) planar recordable indications were discovered at locations noted below. The remaining length of weld tested with indications did not appear to have a rating that qualifies as rejectable or recordable according to AWS D1.5 2002 and supplemental procedure SE-UT-D1.5-CT-108-ESW-Revision: 5.

Transverse Recordable Indications

Face A

Y+ 7750 and 7520

(See Ultrasonic Testing Report for additional information)

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Summary of Conversations:

As mentioned above between QA and QC concerning this project

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 Gary Thomas (916) 764-6027, who represents the Office of Structural Materials for your project.

Inspected By: DeArmond,Robert

Quality Assurance Inspector

Reviewed By: Mertz,Robert

QA Reviewer