

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-027436**Date Inspected:** 11-Apr-2012**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:** Salvador Merino**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:** OBG Components**Summary of Items Observed:**

On this date, Quality Assurance Inspector (QAI) Kenneth Riley 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:

Deck Access Holes (DAH)

This QAI observed welder Salvador Sandoval placing the Shielded Metal Arc Welding (SMAW) root pass at 12W PP109.5 W2 with a 3.0mm diameter E7018 electrode for the Complete Joint Penetration (CJP) weld. The Welding Procedure Specification (WPS) used was ABF-WPS-D15-1040C with a measured welding amp of 128 F. The pre-heat for this location was measured at 65 degrees C (150 degrees F) using a weed burner which were verified using a tempstik and infrared gun by the QC. The welder was also observed by this QAI as using a chipping hammer, power grinder and power wire wheel for the interpass cleaning. Later in the shift the welder had switched to the Flux Cored Arc Welding (FCAW) process for the intermediate weld passes with the E71T-1M, 1.6mm electrode. The WPS for the Complete Joint Penetration was WPS-D1.5-3040A-1. The welding parameters were verified as 255 amps, 24.5 volts. The area for welding was then pre-heated prior to welding at 40 degrees Celsius (150 degrees F) which was verified using a tempstik and infrared gun by the QC. The welder began placing the intermediate weld passes for this location and using a power grinder and power wire wheel for the interpass cleaning. The QC inspector for this location was Salvador Merino and was observed verifying and documenting the welding parameters for this location, along with overseeing the welding operations. At the time of the observations no issues were noted by the QAI.

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This QAI observed that welder Khit Lounechaney was using the Carbon Arc Cutting (CAC) process at 12W PP109.5 W5 (interior) to perform the back gouge on the deck access holes. The welder was observed in the overhead position removing the backing bar first then proceeding with the back gouge. At the end of this QA inspectors shift the welder was still in process of the CAC back gouge. The QC inspector for this location was Salvador Merino and was observed overseeing the welding operations. At the time of the observations no issues were noted by the QAI.

J.W. Spencer

This QAI observed that welder Damien Llanos with J.W. Spencer Mechanical was using the Shielded Metal Arc Welding (SMAW) process, with E6010 1/8" electrode for the root pass and E7018 3/32" electrode. The Welding Procedure Specification (WPS) used for this location was 1-12-1 with a measured welding parameter of 93 amps. The welder was also observed by this QAI as using a chipping hammer, power grinder and power wire wheel for the interpass cleaning. The location of the welding was on the East bound lane for the 65mm domestic water line and 100mm compressed air line. The areas were being welded were the butt joints for the water and air lines located behind the barrier rails at the following locations.

28.5/DW2.5/92.5/NE (50mm domestic water line)

29/DW2.5/93.5/NE (50mm domestic water line)

29/CA4/93.5/NE (100mm compressed air line)

The QC inspector for this location was Steve Jensen and was observed verifying and documenting the welding parameters for these locations, along with overseeing the welding operations. At the time of the observations no issues were noted by the QAI.

NDT

This QAI observed, QC inspector John Pagliero performing Magnetic Particle (MT) and Ultrasonic Testing (UT) on a CJP weld joint in the flat position. Once the QC inspector had completed the MT this QA inspector performed a random verification of approximately 10% of the weld joint at the time of the review the weld appeared to be within the contract documents. The weld joint that was tested is 12E PP109.5 E5 Deck Access Hole (DAH). Once the MT was completed the QC inspector proceeded with the UT inspection of the weld joint. This QA inspector noted that at the end of his shift the QC had noted several reject areas for first time repairs. The weld is still in process with UT inspection. Please see TL- TL-6028 dated today for further information on the QA verification of MT.

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.

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Summary of Conversations:

Basic conversation, fundamental to completion of the tasks at hand, occurred between this QAI and ABF QC personnel.

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:	Riley, Ken	Quality Assurance Inspector
Reviewed By:	Levell, Bill	QA Reviewer
