

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 #: 99.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-002945**Date Inspected:** 09-Jun-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 2230**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 830**Contractor:** Japan Steel Works, Ltd.**Location:** Muroran, Japan**CWI Name:** Makhmud Ashadi**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, Jacking and Deviation Saddles**Summary of Items Observed:**

On this date OSM Quality Assurance (QA) Representative Daniel L. Reyes observed the repair welding on the saddle casting scheduled on this date. The following was observed:

Fabrication Shop # 4

At the start of the shift the QA inspector traveled to the Fabrication Shop # 4 to observe the work scheduled on this shift for the West Deviation Saddle Identified as W2E1. Upon arrival at the fabrication shop the QA inspector observed the in process welding and the Magnetic Particle Testing (MPT) of the root pass. The welding process utilized appeared to be the Shielded Metal Arc Welding (SMAW) and was performed by Japan Steel Works, Ltd. (JSW) welding personnel Mamoru Kubota ID 74-3666 and Tatsuya Naitoh ID 71-27366. The Welding Procedure Specification (WPS) utilized by the welders appeared to be SJ-3011-1 which was also used by the Intertek Testing Service (ITS) Quality Control (QC) Inspector Makhmud Ashadi as a reference during verification of the welding parameters. The welding was performed on the structural steel stem plate to base plate connection which was a Partial Joint Penetration (PJP) groove weld and appeared to comply with the AWS D1.5-2002 joint designation Double-Bevel-Groove weld. The weld identification of the PJP groove weld appeared to be E1S-2L.

The consumable used was a product of Hobart Brothers and was identified as a Hoballoy 9018-M, with a diameter size of 4.8 mm which appeared to comply with the AWS Specification A5.5 and AWS Classification E9018-M H4R

The QA inspector observed the QC inspector, Makhmud Ashadi verify the preheat temperature of 197 degrees Celsius and the welding parameters which were observed as follows, 252 AC amps and 24 AC volts with a travel speed measured at 140 millimeters per minute (mm/m).

The welding parameters were verified utilizing a Hioki 3109 Clamp Meter, Model RMS during the QC

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verification. The QA inspector also observed the calibration dates of the clamp meter which appeared to be as follows; calibration performed on 05/22/08 and calibration due date 08/21/08.

The QA inspector observed and witnessed the MPT performed by the QC technician, Rikuo Kumagai utilizing an AC Yoke, Type A-6 testing unit which appeared to be manufactured by Eishin Kagaku Co., Ltd. The MPT was conducted utilizing the approved MPT procedure SF-MT-01 and was performed on 100% of the root pass. There appeared to be no indications noted by the QC technician during the testing of the root pass. The QA inspector also observed the calibration due date of the AC Yoke, which appeared to be 10/10/08. The MPT was not completed during this shift on this date.

Later in the shift, at random intervals, the QA inspector observed QC inspector, Makhmud Ashadi perform the following QC activities, verification of the preheat temperatures, the welding parameters, performing visual weld inspection and monitoring the MPT.

Fabrication Shop # 4, QA Observation Summary

This QA inspector randomly observed the in process Shielded Metal Arc Welding (SMAW) during the welding of the structural steel components for the West Deviation Saddles identified as W2E1. This QA inspector noted that it appeared the approved and latest revised WPS's were posted at the welding station and that each approved welder was entered in the latest revised Welding Personnel Log issued by Japan Steel Works, Ltd. The welding parameters, preheat and interpass temperatures were verified by the QA inspector utilizing a Fluke 337 clamp meter for the electrical welding parameters and Tempilstik temperature indicators for the preheat temperatures. The filler metal utilized by the JSW welding personnel was also verified. The QC inspector, Mukhmud Ashadi appeared to perform the visual weld examinations, monitoring of the welding and the verification of the welding parameters as per the contract documents.

Foundry Shop

At approximately 00:30 hours of the shift the QA inspector traveled to the Foundry Shop to observe the repair welding on the saddle casting scheduled on this date. The welding was performed utilizing the Shielded Metal Arc Welding (SMAW) process and the Alternate Current (AC) electrical power source as per the Welding Procedure Specification (WPS) SJ-3026-2 which was also used by the QA inspector as a reference during verification of the welding parameters. The welding was performed by Japan Steel Works, Ltd. (JSW) welding personnel, Hitoshi Sato ID 69-2697 which was conducted on the West Deviation Saddle identified as W2E1 and was performed in the horizontal (2G) position with the work in the vertical plane and the axis of the weld horizontal. The repair welding was conducted on the casting rib 3L at the repair area identified as 3-4. The consumable appeared to be identified as LB-106, a product of Hobart Brothers and appeared to comply with the AWS Specification A5.5 and the AWS Classification E10016-G.

The QA inspector verified the preheat temperatures of 195 degrees Celsius. At the conclusion of verifying the preheat temperatures the QA inspector performed the verification of the AC welding parameters which were observed as follows, 215 amps and 23.3 volts with a travel speed measured at 155 millimeters per minute (mm/m). The QA inspector observed and verified the preheat temperatures, interpass temperatures and the welding parameters at random intervals during this shift.

Foundry Shop, QA Observation Summary

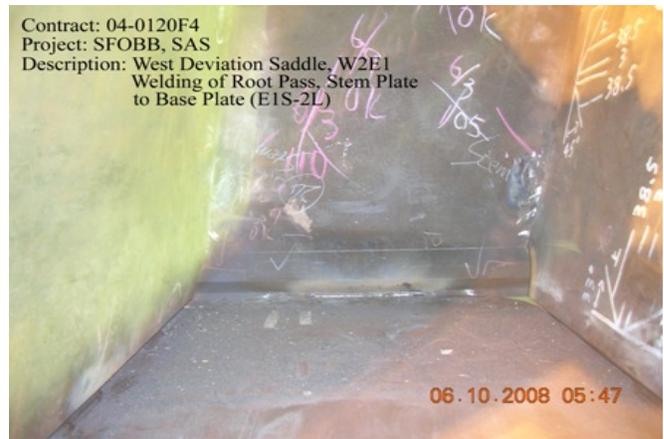
This QA inspector randomly observed the in process Shielded Metal Arc Welding (SMAW) for the repair welding of the ribs on the West Deviation Saddles identified as W2E1. This QA inspector noted that it appeared the

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approved and latest revised WPS's were posted at the appropriate welding station and that each approved welder was entered in the latest revised Welding Personnel Log issued by Japan Steel Works, Ltd. The welding parameters, preheat and interpass temperatures were verified as noted by this QA inspector utilizing a Fluke 337 clamp meter for the electrical welding parameters and Tempilstik temperature indicators for preheat and interpass temperatures. The filler metal utilized at the welding stations was also verified. The welding performed on this shift, on this date appeared to comply with the contract documents. The welding and inspection was not completed during this shift.

The following digital photograph illustrate the observations of the activities performed on this date.



Summary of Conversations:

There were no general conversations relative to this project on this date.

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 Venkatesh Iyer, (858) 967-6363, who represents the Office of Structural Materials for your project.

Inspected By:	Reyes,Danny	Quality Assurance Inspector
Reviewed By:	Lanz,Joe	QA Reviewer
