

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-002949**Date Inspected:** 11-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:** Mahkmud 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 shop welding of the structural steel plate components for the West Deviation Saddle identified as W2E1. The West Deviation Saddle is mounted on a positioner located at Lane B between column lines B3 and B4. The QA inspector observed the welding and the Magnetic Particle Testing (MPT) of the root pass on the rib plate to stem plate connection. The Partial Joint Penetration (PJP) groove weld appeared to comply with the AWS D1.5-2002 joint designation identified as a Double-Bevel-Groove Weld.

The welding was performed by Japan Steel Works, Ltd. (JSW) personnel Yoshito-Nakano ID 08-2011, Mamoru Kubota ID 74-3666 and Hidetaka-Nishikawa ID 08-5162 and utilized the Welding Procedure Specification (WPS) SJ-3011-3 which was also used by the Intertek Testing Services (ITS) Quality Control (QC) Inspector Makhmud Ashadi. The welders utilized the Shielded Metal Arc Welding (SMAW) process and the electrode appeared to be 4.8 millimeters in diameter, which appeared to comply with the AWS Specification A5.5 and the AWS Classification E9018-M H4R.

The MPT was performed by the Nikko Inspection Service (NIS) QC Technician Rikuo Kumagai. The QA inspector observed and witnessed the MPT performed by Rikuo Kumagai on the root pass of the PJP weld identified as weld numbers E1Y-13V and E1Y-14V. The testing was performed utilizing an AC Yoke, Type A-6 testing unit which appeared to be manufactured by Eishin Kagaku Co., Ltd. The MPT was performed on 100% of the root pass and was conducted utilizing the MPT procedure identified as SF-MT-01. There appeared to be no

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indications noted by the QC technician during the testing of the root pass.

The QC inspector was observed by the QA inspector performing the visual weld inspection of the root passes prior to the MPT and no discrepancies were noted. The QA inspector also observed the QC inspector verify the minimum preheat temperatures of 160 degrees Celsius prior to welding and at the conclusion verifying the preheat temperatures the QC inspector verified the Alternating Current (AC) and was observed as follows, 252 amps and 24 volts with a travel speed measured at 140 mm/m.

Later in the shift the SMAW was completed on the A-side of the PJP groove welds identified as E1Y-13V and E1Y-14V. At the conclusion of the welding the JSW welding personnel relocated the welding activities to the rib to stem plate connection, identified as E1Y-15V AND E1Y-16V and commence the welding operation of the PJP groove welds. The QC inspector Makhmud Ashadi verified the preheat temperature and the AC welding parameters during the welding of the root pass. At the conclusion of the welding of the root pass the QC technician performed the MPT and at the completion of the testing no indications were noted. At the conclusion of the testing the JSW welding personnel continued and completed the welding of the subsequent SMAW fill passes of the PJP groove weld.

During the shift the QC inspector was observed performing the in process visual weld inspection and the weld verification. The above QC activities, visual weld inspection and MPT were observed by the QA inspector at periodic intervals.

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 01:30 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 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 rib castings identified as 7L and 8L. 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, 195 amps and 23.0 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.

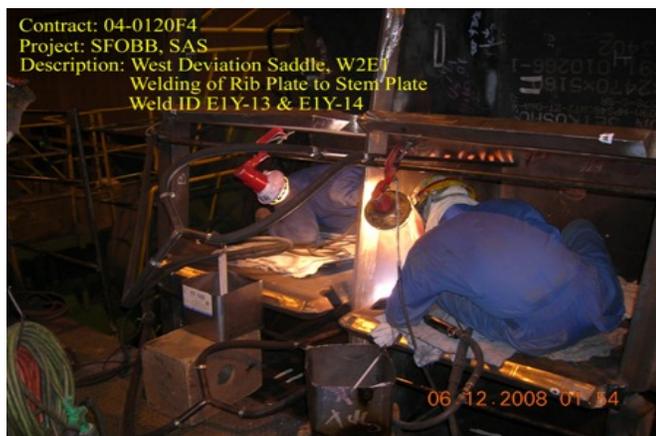
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Foundry Shop/QA Observation Summary

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 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 and inspection was not completed during this shift and appeared to be in general compliance with the contract documents

The following digital photographs 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

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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
