

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-003088**Date Inspected:** 23-Jun-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 2300**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**Contractor:** Japan Steel Works, Ltd.**Location:** Muroran, Japan**CWI Name:** Anthony Carrado**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 was present during the repair welding of the casting and the welding of the structural steel components of the West Deviation Saddles relative to this project. The following was observed:

Fabrication Shop # 4

At the start of the C-shift the QA inspector traveled to the Fabrication Shop # 4 to observe the continued Partial Joint Penetration (PJP) groove welding of the structural steel plate components for the West Deviation Saddle identified as W2E1. The Welding Procedure Specification (WPS) SJ-3011-3 and the Distortion Control Plan Document Number SJ-3109 Rev. 1 was utilized by the Japan Steel Works, Ltd. (JSW) personnel during the performance of the production welding of the rib plate to stem plate connections. The WPS was also used as a reference by the QC inspector during the verification of the welding parameters. The welding was performed in the Flat Position (1G) with the work in the horizontal plane and the weld metal deposited from above. The gas shielded Flux Cored Arc Welding (FCAW-G) process was utilized and the welding performed by JSW personnel Mutuo-Kashiwada ID 08-2008 and Kouzou Kobayashi ID 08-5023. The PJP welding appeared to be performed as per Step 3, Attachment 6 of the JSW Distortion Control Plan Revision 1. The consumable utilized by the welding personnel appeared to be a Hobart Brothers Product and the trade name was identified as TM 95K2 which appeared to comply with the AWS Specification A5.29 and the AWS Classification E90T5-K2C H4. The size of the electrode was 1.6 mm in diameter.

The Quality Control (QC) inspection was performed by Intertek Testing Services personnel Anthony Corrado. The QC inspector verified the preheat temperatures, the Alternating Current (AC) welding parameters and

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performed the in process weld inspection during this shift. The welding parameters were verified utilizing a Hioki 3109 Clamp Meter, Model RMS and the surfaces temperatures were verified utilizing an Anritsu HA 100E digital surface thermometer during the QC verification. The calibration dates of the measuring instruments utilized by the QC inspector were previously verified by this QA inspector. The QC inspector verified the minimum preheat temperatures of 160 degrees Celsius prior to welding. At the conclusion of verifying the preheat temperatures the QC inspector verified the Direct Current (DC) welding parameters and was observed as follows for the welder Kouzou-Kobayashi, 343 amps and 35 volts with a travel speed measured at 280 mm/m and for the welder Mutuo-Kashiwada, 340 amps and 35.5 volts with a travel speed measured at 276 mm/m.

The welding, inspection and the verification tasks were performed on the weld joints identified as E1Y-9V and E1Y-10V. The QA inspector's observations were performed at random intervals during the shift. The 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 surface temperatures. The filler metal utilized by the JSW welding personnel was also verified. The QC inspector ITS personnel, Anthony Corrado appeared to perform the visual weld examinations, monitoring of the welding and the verification of the welding parameters in accordance with the contract documents.

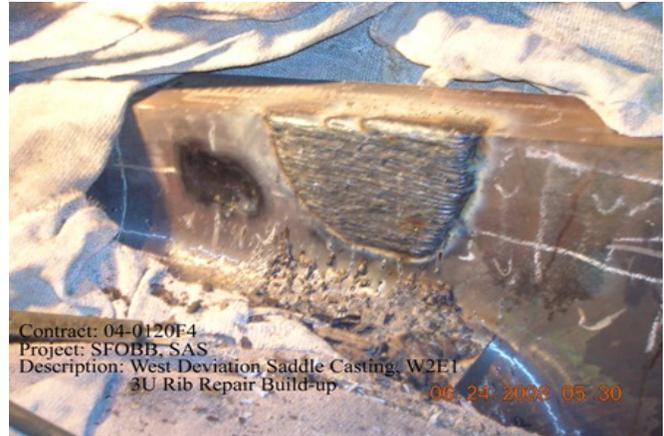
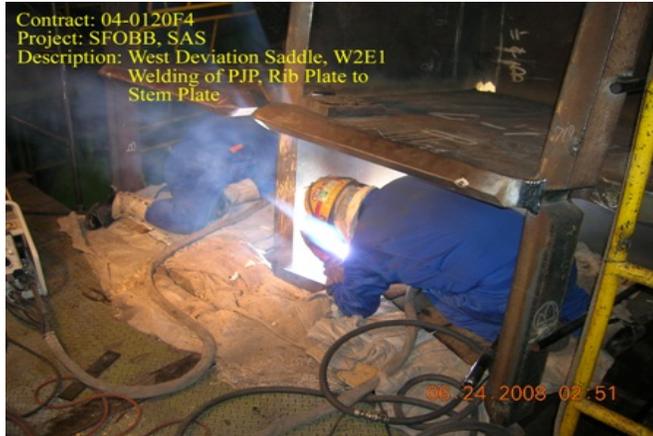
Foundry Shop

Later in 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, Akira-Takenami ID 06-8001 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 3U.

The consumable appeared to be identified as LB-106, a product of Hobart Brothers which appeared to comply with the AWS Specification A5.5 and the AWS Classification E10016-G. The size of the electrode appeared to be 5.0 millimeters in diameter. The QA inspector verified the preheat temperatures of 205 Degrees Celsius and the Alternating Current (AC) welding parameters which were observed as follows; 207 amps and 23 volts with a travel speed measured at 172 mm/m. This QA inspector randomly observed the in process Shielded Metal Arc Welding (SMAW) for the repair welding of the ribs on the West Deviation Saddle Casting 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 was not completed during this shift and appeared to be in general compliance with the contract documents.

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Summary of Conversations:

There were no pertinent conversations relative to the project discussed during this shift 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