

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-002984**Date Inspected:** 14-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 castings and the welding of the structural steel plate components scheduled on this date. 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 Specifications (WPS) SJ-3011-2 and SJ-3011-3 were utilized by the Japan Steel Works, Ltd. (JSW) personnel during the performance of the production welding of the rib plate to base plate and rib plate to stem plate connections.

The Shielded Metal Arc Welding (SMAW) was performed by JSW welding personnel Mamoru-Kubato ID 74-3666 and Yoshito-Nakano ID 08-2011. The consumable utilized by the welding personnel appeared to be a Hobart Brothers Product and the trade name was identified as Hoballoy 9018-M which appeared to comply with the AWS Specification A5.5 and the AWS Classification E9018-M H4R. The size of the electrode was 4.8 mm in diameter.

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

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The 100% Magnetic Particle Testing (MPT) of the root passes was conducted by Nikko Inspection Service personnel Rikuo Kumagai. The testing was performed utilizing an AC Yoke, Type A-6 testing unit which appeared to be manufactured by Eishin Kagaku Co., Ltd. and was conducted utilizing the MPT procedure identified as SF-MT-01. No rejectable indications were noted by the QC technician.

The welding, inspection, verification and MPT were performed on the weld joints identified as E1Y-5L and 5V, E1Y-6L and 6V and E1Y-11L and 12L. The welding was performed in the Flat Position (1G) with the work in the horizontal plane and the weld metal deposited from above.

See Weld Joints in Progress Inspected on Page 3 of 3 of this report regarding the QA verification of the welding parameters recorded during this shift on this date.

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 preheat temperatures. The filler metal utilized by the JSW welding personnel was also verified. The QC inspector ITS personnel, Mukhmud Ashadi and the NIS personnel QC Technician, Rikuo Kumagai appeared to perform the visual weld examinations, monitoring of the welding, the verification of the welding parameters and MPT in accordance with the contract documents.

Foundry Shop

Later in the shift the QA inspector traveled to the Foundry Shop and observed the repair welding on the saddle casting which was not 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 and 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 8U and 1U and 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 QA inspector verified the preheat, interpass temperatures and the Alternating Current (AC) welding parameters at random intervals during this shift.

See Weld Joints in Progress Inspected on Page 3 of 3 of this report regarding the QA observation of the welding parameters recorded during this shift on this date.

This QA inspector randomly observed the in process Shielded Metal Arc Welding (SMAW) for the repair welding of the ribs. 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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The following digital photographs illustrate the observations of the activities performed on this date.



Item	Weld Identification	Applicable WPS	CWI Name	Amperage	Voltage	TravelSpeed	Preheat Temp	Remarks
1	Steel/ W2E1, E1Y-5L	SJ-3011-2	M. Ashadi	255 AC	23.0 AC	142 mm/m	195 Degrees C.	Mamoru-Kubota
2	Steel/ W2E1, E1Y-6V	SJ-3011-2	M. Ashadi	251 AC	24.0 AC	145 mm/m	195 Degrees C.	Yoshito-Nakano
3	Casting/ W2E1, 8U, 2-1	SJ-3026-2	N/A	212 AC	24.0 AC	171 mm/m	200 Degrees C.	Hitoshi-Sato
4	Casting/ W2E1, 1U, 3-9	SJ-3026-2	N/A	205 AC	23.0 AC	176 mm/m	189 Degrees C.	Akria-Takenami

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