

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

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-003085**Date Inspected:** 12-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 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 shift the QA inspector traveled to the Fabrication Shop # 4 to observe the shop welding, weld inspection and testing of the structural steel plate components on the West Deviation Saddle identified as W2E1. The work was performed on the following weld joints which were identified by the following weld numbers E1Y-11L, E1Y-12L, E1Y-13L and E1Y-14L. 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 who utilized the Welding Procedure Specification (WPS) SJ-3011-2 which appeared to be designated for the Partial Joint Penetration (PJP) groove welding of the rib to base plate connection. The PJP groove weld appeared to comply with the AWS D1.5-2002 joint designation identified as a Double-Bevel-Groove Weld.

The WPS was also used by the Intertek Testing Services (ITS) Quality Control (QC) Inspector Makhmud Ashadi as a reference during the verification of the welding parameters.

The welding was performed utilizing the Shielded Metal Arc Welding (SMAW) process. The welding consumable appeared to be a product manufactured by Hobart Brothers identified by the Trade Name Hoballoy 9018-M and appeared to meet the requirement of the AWS Specification A5.5 and the AWS Classification E9018-M H4R.

The QC inspector, Makhmud Ashadi verified the preheat temperatures prior to the welding and at the conclusion

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of the surface temperature verification the welding of the root pass commenced. At this time the QC inspector performed the verification of the AC welding parameters.

At the conclusion of the welding of the root passes the Nikko Inspection Service (NIS) QC Technician Rikuo Kumagai performed 100% Magnetic Particle Testing. The QA inspector observed and witnessed the MPT performed by Rikuo Kumagai on the root pass of the PJP welds. 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 conducted utilizing the MPT procedure identified as SF-MT-01. There appeared to be no indications noted by the QC technician during the testing of the root passes and at the conclusion of the testing the JSW welding personnel continued and completed the welding of the subsequent fill passes of the PJP groove welds.

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 periodical intervals.

See Weld Joints in Progress Inspected, on Page 3 of 3 of this report, in regards to QA verification of the welding parameters recorded for the welding of the structural steel components during this shift on this date.

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 and was conducted on the West Deviation Saddle identified as W2E1 which 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 casting identified as 8U. 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, 233 amps and 25.0 volts with a travel speed measured at 160 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.

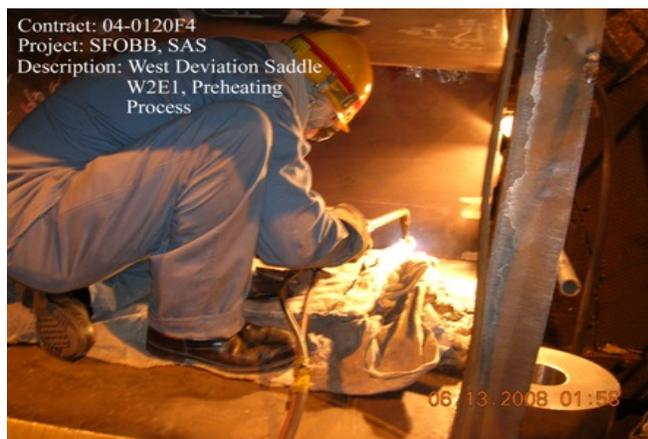
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Foundry Shop, QA Observation Summary

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.



Item	Weld Identification	Applicable WPS	CWI Name	Amperage	Voltage	TravelSpeed	Preheat Temp	Remarks
1	W2E1, E1Y-11L	SJ-3011-2	Makhmud Ashadi	250 AC	25 AC	138 mm/m	195 ° Celsius	Yamashita
2	W2E1, E1Y-12L	SJ-3011-2	Makhmud Ashadi	255 AC	24 AC	143 mm/m	200 ° Celsius	Nakano

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