

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 #: 70.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-003396**Date Inspected:** 07-Aug-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1630**Contractor:** Japan Steel Works**Location:** Muroran, Japan**CWI Name:** M. 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, Deviation and Jacking Saddles**Summary of Items Observed:**

On this date OSM Quality Assurance (QA) Representative Daniel L. Reyes was present during the welding of the structural steel components for the West Deviation Saddles relative to this project. 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 continued Partial Joint Penetration (PJP) groove welding of the structural steel plate components for the West Deviation Saddle identified as W2E2. The Welding Procedure Specification (WPS) SJ-3011-1 and the Distortion Control Plan, identified as Document SJ-3109 Revision 3 was utilized by the Japan Steel Works, Ltd. (JSW) personnel during the performance of the production welding of the stem plate to base plate connection identified as E2S-2L. The WPS and the Distortion Control Plan were also used as a reference during QC verification of the welding parameters and the monitoring of the weld sequence. The production welding sequence was performed as per Attachment 5, Case 2 Step 1 and Attachment 6, Step 5 of the Distortion Control Plan. The welding was performed in the Flat (1G) position with the work in the horizontal plane and the weld metal deposited from above.

The gas shielded Flux Cored Arc Welding (FCAW-G) was performed by JSW welding personnel Satoru Watanabe ID 08-5159. 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.

At approximately 1330 hours the QA inspector observed the welder performance qualification test was performed utilizing a non-standard joint which was conducted by the Japan Steel Works, Ltd. (JSW) Welding Engineer

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Takaaki Maruya. The tests were performed by JSW welding personnel, Naoki Murai ID 97-2118 and Masao Yamashita ID 73-4195 utilizing the Shielded Metal Arc Welding (SMAW) process as noted on the Welding Procedure Specification (WPS) SJ-2983 WP-4. The consumable utilized by the JSW welding personnel was a Hobart Brothers product identified as Hoballoy9018-M and appeared to comply with the AWS Specification A5.5 and Classification E9018M H4R. The tests were performed in the vertical (3G) position with the plate in the vertical plane and the axis of the weld vertical.

The QC inspector verified the Alternating Current (AC) welding parameters and appeared to comply with the WPS as noted above. At the conclusion of the performance test the QC inspector performed a visual weld inspection and the test plate appeared to comply with the contract documents.

Later in the shift the QA inspector observed the Japan Steel Works, Ltd. personnel performing the assembly fit-up, alignment and tack welding of the stem and rib plates on the Tower Saddle identified as T1-1. The minimum preheat temperatures of 160 degrees Celsius was verified by QC inspector prior to the tack welding which was performed by JSW welding personnel Ohta-Yoshihiro, ID 08-2017 utilizing the Shielded Metal Arc Welding (SMAW) process as per the Welding Procedure Specification (WPS) SJ-3012-2 during the tack welding of the stem plate to rib plate connection identified as 7Y-6V (1-2) and 7Y-8V (1-3). The WPS was also used by the QC inspector as a reference during the QC verification of the welding parameters. The tack welding was performed in the vertical (3G) position utilizing the 4.0 mm electrode.

The Quality Control (QC) inspection was performed by Intertek Testing Services (ITS) personnel Makhmud Ashadi. The QC inspector verified the preheat temperatures, welding parameters 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.

Later in the shift this QA inspector observed, at random intervals, the QC inspector performing QC verification of the welding parameters, the minimum preheat and maximum interpass temperatures.

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, Mukhmud Ashadi appeared to perform the visual weld examinations, monitoring of the welding and the verification of the welding parameters in accordance with the contract documents.

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

The digital photographs on Page 3 of this report illustrates the observations of the activities performed on this date.

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Item	Weld Identification	Applicable WPS	CWI Name	Amperage	Voltage	TravelSpeed	Preheat Temp	Remarks
1	E2S-2L	SJ-3011-1	M. Ashadi	342 DC	35 DC	295mm/m	190 Degrees C.	Watanabe
2	7Y-6V (1-2)	SJ-3012-2	M. Ashadi	155 AC	23 AV	101mm/m	160 Degrees C.	Ohta

Summary of Conversations:

There were no pertinent conversations relative to the 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