

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-003258**Date Inspected:** 21-Jul-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 830**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** Japan Steel Works**Location:** Muroran, Japan**CWI Name:** C. Fu-Kuan and 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

The QA inspector traveled to the Fabrication Shop # 4 at approximately 0900 hours to observe the Magnetic Particle Testing (MPT) of the Partial Joint Penetration (PJP) groove welds and the area of the weld extension plates which were removed and ground to a bright metal. The QA inspector observed several areas at the edge face surface that appeared to be ground to remove linear indications. The excavations are located at the rib plate to base plate connections where the weld extension plates were attached. The depth of the excavations appeared to vary from 2 mm to 11 mm deep. The MPT was performed by Nikko Inspection Services (NIS) technician Kazuya Kobayashi used an AC Yoke utilizing the dry, visible continuous inspection method.

The QA inspector also observed Intertek Testing Services (ITS) Quality Control (QC) personnel Chung Fu-Kuan and Makhmud Ashadi performing a visual weld inspection of the PJP groove welds. There appears to be minor weld repair and weld surfaces requiring grinding of the weld profiles. The MPT and Visual Testing (VT) was not completed during this shift on this date.

At approximately 1400 hours the QA inspector observed the welding of the Procedure Qualification Record (PQR) Test of the test plate identified as SW 3-1 which was performed by the Japan Steel Works, Ltd. (JSW) welding personnel Kobayashi-Kouzou ID 08-5023. The test was performed utilizing the gas shielded Flux Cored Arc Welding (FCAW-G) process as per the Welding Procedure Specification (WPS) SW 4-1. The WPS was also used by the Quality Control (QC) Inspector as a reference.

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The consumable utilized by the welding personnel appeared to be a Hobart Brothers Product and the trade name was identified as TM 55 which appeared to comply with the AWS Specification A5.29 and the AWS Classification E70T-5MJ-H4. The size of the electrode was 1.6 mm in diameter and the external shielding appeared to be CO² inert gas.

The Quality Control (QC) inspection was performed by Intertek Testing Services personnel Makhmud Ashadi. The QC inspector verified the preheat temperatures, the Direct Current Electrode Positive (DCEP) welding parameters as per the WPS and the in process visual weld inspection was performed in accordance with the AWS D1.5-2002 Code. The DCEP welding parameters were observed as follows, 330 amps and 34 volts with a travel speed measured at 283 millimeters per minute (mm/m) which was recorded by the QC inspector. The welding parameters were verified utilizing a Hioki 3109 Clamp Meter, Model RMS identified with JSW number CM-13 and the surfaces temperatures were verified utilizing an Anritsu HA 100E digital surface thermometer during the QC verification. The calibration dates were verified and appeared to be current by the QA inspector. The welding of the PQR Test Plate was terminated at approximately 1600 hours and will commence on Tuesday, July 22, 2008.

The following digital photograph illustrates the observations of the activities performed on this date.



Summary of Conversations:

During the QA inspector's observance of the Magnetic Particle Testing (MPT) performed by Nikko Inspection Services (NIS) personnel Kazuya Kobayashi it was noted by the QA inspector that it appeared that the powder utilized was gray in color which makes for a less desirable backing contrast against a surface that has been ground to a bright metal. This may cause relevant indications to be inadvertently overlooked during the testing and evaluation of the welds. The QA inspector informed the QC/ITS inspector Chung Fu-Kuan of this testing condition and the QC inspector responded that he would speak with the NIS supervisor regarding the QA inspector's concern.

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

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Reviewed By: Lanz,Joe

QA Reviewer