

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 #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-018132**Date Inspected:** 10-Nov-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1500**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** See Below**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:** Orthotropic Box Girders**Summary of Items Observed:**

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below:

- A). Field Splice E7/E8
- B). Field Splice E6/E7
- C). Field Splice W6/W7
- D). Pipe Supports

A). Field Splice E7/E8

The QAI observed the Flux Cored Arc Welding (FCAW-G) of the weld joint identified as Weld Number (WN) E7-E8-C1 and C2. The Complete Joint Penetration (CJP) welding was performed by welding personnel Song Tao Huang, ID-3794 utilizing the WPS ABF-D15-3040B, Rev. 1. The WPS was also used by the QC inspector William Sherwood as a reference to monitor the welding and to verify the DC welding parameters which were noted and recorded by the QC as follows: 263 amps, 23.4 volts and 266 mm/m. The welding was performed in vertical position (3G) at approximate incline of 22 degrees. The QC inspector also verified the minimum preheat temperature of 100 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. Later during the shift the QAI observed, at random intervals, the QC inspector monitoring the in process welding, the surface temperatures and verifying the welding parameters. The CJP welding was not complete during this shift.

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

B). Field Splice E6/E7

The QAI observed the excavation of the unacceptable discontinuity on the edge plate field splice identified as WN: 6E-7E-F1, repair cycle # 1 with the Y coordinate noted as 835 mm. The rejectable discontinuity was discovered during the Ultrasonic Testing (UT) performed by the QC technician, Jesse Cayabyab and appeared to run in the transverse direction of the longitudinal weld. The repair welding was performed by Jorge Lopez ID-6149 utilizing the Weld Procedure Specification (WPS) identified as ABF-WPS-D15-1001 Repair, Rev. 0. Mr. Lopez utilized the Shielded Metal Arc Welding (SMAW) process as per the WPS which was also utilized by the QC inspector to monitor the welding and to verify the DC welding parameters. The QC inspector verified the DC welding parameters as 120 amps and the minimum preheat temperature 40 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius which appeared to comply with the contract documents. The welding and the QC inspection was completed during this shift.

The QAI also observed the Ultrasonic Testing (UT) of the Complete Penetration (CJP) groove weld on the bottom plate field splice identified as WN: 6E-7E-D1 and D2. The testing was performed by the QC technician Steve McConnell utilizing a G.E./Krautkramer USM 35X and the examination of the CJP was conducted utilizing the UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4 and the applicable contract documents. The QC technician performed the required longitudinal wave technique, utilizing a 25.4mm diameter transducer, to perform the examination for base metal soundness and the shear wave technique for the examination of weld soundness which was performed utilizing a 16mm x 19mm rectangular transducer. At the conclusion of the welding no rejectable discontinuities were noted in weld segment D1 and two rejectable discontinuities were noted in segment D2 by the QC technician.

C). Field Splice W6/W7

The QAI observed the QC technician, Tom Pasqualone perform Ultrasonic Testing (UT) of the repairs of the deck plate field splice identified as WN: 6W-7W-A3, with the Y coordinates notes as 3810 mm and 3910mm. The testing was performed by the QC technician utilizing the UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4. The QC technician performed the required longitudinal wave technique, utilizing a 25.4 mm diameter transducer, to perform the examination for base metal soundness and the shear wave technique for the examination of weld soundness which was performed utilizing a 16mm x 19mm rectangular transducer. At the conclusion of the testing no rejectable indications were noted by the QC technician and verification by the QAI concurs with QC evaluation.

D). Pipe Supports

The QAI observed the installation and fit-up of the pipe supports identified with the Weld Number 101108-01 and 101108-02 to the embeds of the bent cap located at the W2 line. The tack field welding was performed by David Garcia ID-8789 utilizing a 3.2 mm electrode as per the Welding Procedure Specification (WPS) identified as Fillet Murex. The fillet welding was performed in the overhead (4F) position with the work placed so that weld metal was deposited on the underside of the horizontal surface and against the vertical surface. The inspection was performed by Mike Johnson utilizing the WPS to monitor the welding and to verify the amperage which was noted by Mr. Johnson as 130 amps. The welding of the two pipe supports was completed during this shift. This work

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

was performed by the sub-contractor F.W. Spencer.

QA Observation and Verification Summary

The QA inspector observed the QC activities and the welding of the field splices utilizing the WPS as noted above, which appeared to be posted at the weld station. The welding parameters and surface temperatures were verified by the QC inspector and utilizing a Fluke 337 clamp meter for the electrical welding parameters and a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. The ESAB consumables utilized for the SMAW welding process appeared to comply with the AWS Specification and AWS Classification. The QC inspection, testing and welding performed on this shift appeared to be in general compliance with the contract documents. At random intervals, the QAI verified the QC inspection, testing, welding parameters and the surface temperatures utilizing various inspection equipment and gages which included a Fluke 337 Clamp Meter and Tempilstik Temperature indicators.

The digital photographs below illustrate the work observed during this scheduled shift.



Summary of Conversations:

There were general conversations with Quality Control Inspector Bonifacio Daquinag, Jr. at the start of the shift regarding the location of American Bridge/Fluor welding, inspection and N.D.E. testing personnel scheduled for this shift.

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 Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By: Reyes, Danny

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer
