

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 #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-014984**Date Inspected:** 17-Jun-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1100**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1930**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 W1/W2
- B). Field Splice W2/W3
- C). Field Splice W3/W4
- D). Field Splice W4/W5

A). Field Splice W1/W2

The QAI observed the welder James Zhen ID-6001 continue the repair welding of the longitudinal stiffener field splice identified as WN: 1W-2W-D-S2. The welding was performed utilizing the Flux Cored Arc Welding (FCAW-G) as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-3001-3-Repair Rev. 0.

The WPS was also used by the QC inspector, Tom Pasqualone, as a reference to verify the welding parameters during the welding of the repairs. The welding parameters were noted and recorded by the QC inspector as follows; 253 amps, 23.7 volts with a travel speed measured at 205mm/m.

At the conclusion of the welding of S2, welder James Zhen ID-6001 commence the excavations of the areas marked as UT rejects on the Complete Joint Penetration (CJP) groove welds identified as WN: 1W-2W-D-S5. At the conclusion of the excavations the QC technician Tom Pasqualone performed a Magnetic Particle Test (MPT) of the excavated area and no rejectable indications were noted. The application and evaluation of the MPT

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appeared to comply with the MPT procedure identified as SE-MT-CT-D1.5-101 Rev. 4. The repair welding was performed utilizing the Flux Cored Arc Welding (FCAW-G) process as per the Welding Procedure Specification (WPS) identified as ABF-WPS-3001-3- Repair Rev. 0. The WPS was also used by the QC inspector as a reference to monitor and verify the Direct Current welding parameters which appeared to comply with the WPS. The welding was performed in the vertical position (3G) with the work positioned approximately in the vertical plane with the groove approximately vertical and the weld progression up. A verbal approval was issued by the Department to proceed with the excavation and welding.

B). Field Splice W2/W3

The QAI also observed the Ultrasonic Testing (UT) of the transverse CJP weld on the side plate field splice identified as WN: 2W-3W-C, Segments C1 and C2 which was scanned from Face "A". The testing was performed by the QC technician Jesse Cayabyab utilizing a G.E./Krautkramer USM 35X. Mr. Cayabyab also utilized the UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4 during the examination of the CJP. The QC technician performed the required longitudinal wave utilizing a 1" diameter transducer for base metal soundness and a .63 x .75 rectangular transducer mounted on a 70 degree wedge to perform the shear wave testing during the testing for weld soundness.

C). Field Splice W3/W4

The QAI observed the Magnetic Particle Testing (MPT) on the "B" face backgouged surface of the side plate field splice identified as WN: 3W-4W-C. The MPT was performed by the QC technician James Cunningham utilizing a AC/DC Contour Probe manufactured by Parker Research. The testing appeared to comply with the non-destructive procedure identified as SE-MT-CT-D1.5-101 Rev. 4 and no rejectable indications were noted by the QC inspector. The back gouging was performed by Rory Hogan utilizing the plasma arc cutting method with the backgouged surface ground to a bright metal.

Field Splice W4/W5

The QAI also observed the excavations and the welding of two (2) repairs on the deck plate field splice identified as WN: 4W-5W-A, Segment A5 with the Y dimensions was noted at 1905mm and 4815mm. The Shielded Metal Arc Welding (SMAW) was performed by Fred Kaddu ID-2188 utilizing the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-1000 Repair Rev. 2. At the conclusion of the excavations the QC technician Steve McConnell performed a Magnetic Particle Test (MPT) of the excavated area and no rejectable indications were noted. The application and evaluation of the MPT appeared to comply with the MPT procedure identified as SE-MT-CT-D1.5-101 Rev. 4. The QC inspector monitored the welding and performed the inspection during the welding of the repairs and was observed verifying the DCEP welding parameters and were noted and recorded as 146 amps. The minimum and maximum surface temperatures were also verified by the QC inspector and were noted and recorded as 20 degrees Celsius preheat temperature and a maximum interpass temperature of 230 degrees Celsius.

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,

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which appeared to be posted at the weld station. The welding parameters and surface temperatures were verified by the QC inspector's 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 and FCAW-G processes 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 QAI performed a Magnetic Particle Test (MPT) on the side plate field splice identified as WN: 2W-3W-C. The QAI tested 10% of the weld to verify the weld and testing by QC meet the requirements of the contract documents. The test was performed as per the contract documents and a Magnetic Particle Test report, TL-6028 was generated on this date.

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



Summary of Conversations:

There were no pertinent conversations were discussed in regards to the project.

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
