

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:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-027377**Date Inspected:** 26-Mar-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**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:** Tower**Summary of Items Observed:**

Quality Assurance (QA) Inspector Danny Smith arrived at the new San Francisco Oakland Bay Bridge to observe, document and perform a general visual verification and NDT. Upon arrival as noted above the QA Inspector observed Quality Control (QC) on site performing welding inspection.

FW Spencer-Piping:

Later in the shift the QA Inspector observed the following: At location Panel Point 10W-PP96 at grid line W2, weld I.D. numbers 1-CA2-96-NW and 1-DW1-96-NW the QA randomly observed FW Spencer qualified welder Damian Llanos welder ID#6645 perform Complete Joint Penetration (CJP) 6G (all position) using Shielded Metal Arc Welding (SMAW) on the root pass and cover passes on the 1" weld-o-let to the 2 1/2" diameter air and the 2" weld-o-let to the 4" domestic water lines respectively. The air and water line systems being welded are field welds along the grid line of W2 of the OBG. The welder was noted welding the root pass with 3/32" diameter E6010 electrode and followed by fill pass to cover pass using 3/32" diameter E7018H4R electrode implementing Caltrans approved procedure FW Spencer WPS 1-12-1. The welder was noted preheating and removing the moisture of the joint using a portable torch prior welding. During welding, ABF QC Steve Jensen was noted monitoring the parameters of the welder. At the end of the shift, one drain on each line was completed and was visually accepted by QC.

LSA 12E/13E-@LS4:

The QA Inspector performed a random visual review of the fit up. Upon completion of performing the review the

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

QA Inspector observed the fit up to be within the proper tolerances per the contract documents.

The QA Inspector then observed ABF welding personnel Jeremy Dolman welder ID#5042 utilizing the Shielded Metal Arc Welding (SMAW) process in the overhead (4G) position with Lincoln Excalibur, 1/8 inch diameter electrode to weld the longitudinal stiffener wing plates.

The QA Inspector observed welder Jeremy Dolman welding on the 18mm Wing Plate to the 35mm stiffener plate located on 12E/13E at LS4. The QA Inspector performed a random verification of the welding parameters at this location and were observed and noted at 130 amperes for Partial Joint Penetration (PJP) weld passes per Welding Procedure Specification (WPS) ABF-WPS-D15-1162-4. The QA Inspector verified the pre-heat temperature met the minimum requirement of 225 degrees Fahrenheit, but did not exceed the maximum allowable interpass temperature. The welder was observed using the proper cleaning procedures with slag hammers and wire brushes.

Tower at 13m:

At Tower Base 13 meters diaphragm, weld joint number W106, QA randomly observed ABF certified welder James Zhen ID #6001 continuing to perform 1G (flat position) Submerged Arc Welding (SAW) on the Partial Joint Penetration (PJP) T- joint between the 45mm thick external center diaphragm and 60mm shear plate. The welder was utilizing F7A6-EM12K-H8, 3.2mm electrode with corresponding Esab OK Flux 10.62 flux and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-4062-1. The joint being welded has a 45 degree bevel groove T- joint with an average root opening of 4.2mm and C-channel installed underneath that will serve as the backing bar. The plates were preheated to more than 225 °F using Miller Preheat 35 Induction Heating System with one heater blanket located on top of each plate prior welding and moving it to the side and lifting the other during welding. The QA Inspector observed the QC Inspector perform MT prior to welding for informational purposes. ABF/QC Fred Von Hoff was noted monitoring the welding parameters of the welder with measured working current of 550 amperes, 32.5 volts with travel speed of 375 mm per minute.

Later in the shift the QA Inspector observed ABF/QC Fred Von Hoff was noted monitoring the welding parameters of the welder with measured working current of 550 amperes, 32.5 volts with travel speed of 400 mm per minute. At the end of the shift the welder performed the post weld heat treatment (PWHT) after welding using the same preheat temperature and heating machine and held it for three hours as required.

Work performed appears to be in general compliance with contract documents.

WELDING INSPECTION REPORT

(Continued Page 3 of 3)



Summary of Conversations:

Conversations included welding work being performed 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 Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By: Smith,Danny

Quality Assurance Inspector

Reviewed By: Levell,Bill

QA Reviewer