

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:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-027458**Date Inspected:** 14-Apr-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**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:** OBG/Tower**Summary of Items Observed:**

At the start of the shift this Quality Assurance Lead Inspector (QAI) traveled to the SAS project site and observed the work and the inspection performed by American Bridge/Fluor Enterprises (AB/F) Quality Control (QC) personnel. The observations and inspections were performed as noted below:

A). This Quality Assurance Lead Inspector (QALI) assigned the QA Inspectors to the following, but not limited to the work station(s) listed, to observe the welding and the QC inspection of the following:

Daniel Reyes-OBG W5 (Observation of welding and QC inspection of deck access holes), OBG E6 (Observation of welding and QC inspection of the longitudinal stiffeners) and OBG W6 (Observed the QC MT/UT testing) Tower Shear Plates "J" and "K"(QA/UT verification of ESW).

Joselito Lizardo-Tower, 9 Meter El.(Observed the welding, QC inspection of diaphragm plate to shear plate, drop-in plates, perimeter channels and fit lugs).

Doug Frey-Tower/13 Meter El. (Observation of the welding, QC inspection and testing of the diaphragm plates) and Tower Shear Plates, "L" and "M" (Observation of repair welding, QC inspection and testing of the ESW).

NOTE: See QA daily Weld Inspection Reports (WIR) and NDE reports for additional information and details.

Quality Assurance Lead Inspector (QALI) Summary

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

This QA Lead Inspector (QALI) observed the QA Inspector's Joselito Lizardo and Doug Frey monitor the work performed by the QC inspectors at random intervals and also observed the QA Inspectors verify the welding parameters, the minimum preheat and the maximum interpass temperatures for compliance with the contract specifications. The QAI's utilized a Fluke 337 clamp meter to measure the electrical welding parameters, Tempil Heat Indicators and/or a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. At the conclusion of the shift, this QA Lead Inspector discussed and reviewed the work performed by the QAI's in regards to the various observations and the verifications of the WPS's, consumables, welding parameters, preheat and interpass temperatures. The QAI observations of the QC inspection and verification of the welding parameters performed on this date appeared to comply with the contract specifications and no issues were noted.

OBG W5 and W12/Deck Access Hole

This QAI observed the Shielded Metal Arc Welding (SMAW) of the Deck Access Hole (DAH) plate identified as Weld Number (WN): 12W-PP109.5-W5 on the "A" deck of the Orthotropic Box Girder (OBG) W12. The welding personnel, Kit Lounechany ID-4895 performed the welding of the Complete Joint Penetration (CJP) utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-1110A, Rev. 1. The WPS was also utilized by the QC inspector Sal Merino as a reference to monitor the welding and to verify the welding parameters which was recorded as 134 amps by the QC inspector.

This QA inspector also observed the SMAW of the DAH plate identified as 5W-PP36.5-W2. The welding was performed by the welder Mike Jiminez ID-4671 utilizing the WPS identified as ABF-WPS-D15-1110A, Rev. 1. The QC inspector, Steve Jensen, utilized the WPS to monitor the welding and to verify the welding parameters which appeared to be 131 amps.

The 3.2mm Lincoln electrodes were utilized with the welding performed in the overhead (4G) position with the work placed in an approximately horizontal plane and the weld metal deposited from the bottom side. The groove joint appeared to comply with the AWS joint designation identified as B-U6. The minimum preheat temperature of 20 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius were verified by the QC inspector.

OBG E6/Longitudinal Stiffeners

The QAI observed the welder, Todd Jackson ID-4639, perform the CJP groove welding on the longitudinal stiffener field splice identified as WN: 6E-PP46.5-E5-LSW. The welder utilized the SMAW process as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-1012-3, Rev.0 and was also utilized by the QC inspector Steve Jensen as a reference to monitor and verify the welding parameters. The amperage was recorded as 121 amps and the minimum preheat of 100 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius was verified.

The welding was performed in the vertical (3G) position with the work placed in an approximately vertical plane and the groove approximately vertical. The welder utilized a slag hammer, pneumatic air gun with a attached chisel and a wire wheel attached to a 4" high cycle grinder to remove slag after deposit each fill pass. The electrodes were stored in electrically heated, thermostatically controlled oven after removal from the sealed containers. The exposure limits of the electrodes identified as E9018-H4R and the minimum storage oven

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

temperature of 250 degrees Celsius appeared to be in compliance with the contract documents. The welder completed the correcting of the root opening and the QAI observed the QC inspector perform a dimensional survey of the root opening and the included angle prior to the CJP welding. At the time of the observation no issues were noted by the QAI.

QA/UT Verification

The QAI performed an Ultrasonic Test (UT) of the Tower shear plate identified as "J" and "K". The areas were tested 10% to verify that the welds and testing by QC meet the requirements of the contract documents. The examination was performed as per the contract documents and a ultrasonic test report, TL-6027 was generated on this date.

This QALI continued the daily review of field inspection reports and update of the field document control tracking records regarding the Orthotropic Box Girders (OBG, Longitudinal and Transverse "A" Deck Stiffeners, Deck Access Holes and the Tower Shear plates).

Summary of Conversations:

There were general conversations with Quality Control Lead Inspector, Bonifacio Daquinag, Jr., at the start of the shift regarding the location of welding, inspection personnel scheduled for this shift.

This QAI was informed by METS personnel, Robert Mertz and Structural Materials Representative (SMR), Aaron Prchlik, of the inspection, testing criteria and protocol regarding ESW repairs. The significant change was in regards to the Request for Weld Repair (RWR) to determine at what depth an excavation would justify a RWR to be generated. It was agreed that the depth of 5 mm instead of 20 mm would determine cause to generate an RWR. Also, Mr. Mertz informed this QAI that the at the conclusion of reviewing the shop drawings of the traveler rail weld detail to the bike path bottom panel, that the as-built condition was per the shop drawings and that issue of the linear indication was the interface of the fillet weld joint. Ref.-Weld Inspection Report (WIR) April 11, 2012.

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:	Reyes,Danny	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer
