

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-027277**Date Inspected:** 02-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:** 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:

Joselito Lizardo-Tower, at the 9 Meter (Observed the welding, QC inspection and testing of diaphragm plates and fit-up of the drop-in plates).

Ken Riley-Performed QA/NDE verification at the OBG field splice W13/W14 and OBG W13 Lifting Rod Deck Access Holes.

Skyway-No work

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

Quality Assurance Lead Inspector (QALI) Summary

This QA Lead Inspector (QALI) observed the QA Inspector's Joselito Lizardo and Ken Riley 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

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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.

Tower-QAI Observations

The QAI observed the excavation and repair welding diaphragm plate to tower skin plate Tee Joint identified as Weld Number (WN): 120. The excavation of 304 mm was ground to a bright metal and a Magnetic Particle Testing (MPT) was performed and no rejectable indications were noted by the QC technician Fred Von Hoff. The welding was performed by the welder James Zhen ID-6001 utilizing the Shielded Metal Arc Welding (SMAW) process as per the Welding Procedure Specification (WPS) ABF-WPS-D15-1002-Repair, Rev. 0. The WPS was also used by the Quality Control (QC) Inspector Fred Von Hoff to monitor the welding and perform QC inspection for compliance. The QAI observed Mr. Von Hoff verify the welding parameters and was noted as 135 amps with welding performed in the flat (1G) position. The minimum preheat temperature of 180 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius were observed and verified by this QAI. The completed repair welding appeared to be in compliance with contract specifications identified as RWR-201202-005.

OBG-QAI Observations

Vent Holes

The QAI observed the Shielded Metal Arc Welding (SMAW) of the vent access hole insert plate identified as Weld Number (WN): 13W-PP118.2-W5 AND 13W-PP118.5-W5. The welding was performed by Mike Jiminez ID-4671 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-1110-A, Rev. 1. The WPS was also utilized by the QC inspector Sal Merino as a reference to monitor the welding and verify the welding parameters which was recorded as 126 amps. The 3.2mm Lincoln electrode was 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 underneath side. The minimum preheat temperature of 40 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius appeared to comply with the contract specifications in regards to SPCM requirements.

Deck Access Hole

The QAI observed the Shielded Metal Arc Welding (SMAW) of the Deck Access Hole (DAH) plate located at Panel Point (PP) 29.5 and identified as Weld Number (WN): 5W-PP29.5-W2. The welding was performed by Jason Collins ID-8128 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-1110-A, Rev. 1. The WPS was also utilized by the QC inspector Harry Scharein as a reference to monitor the welding and verify the welding parameters which was recorded as 128 amps. The Shielded Metal Arc Welding (SMAW) process was utilized with the welding performed in the overhead (4G) position. The minimum preheat temperature of 10 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius appeared to comply with the contract specifications.

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Longitudinal "A" Deck Stiffeners

The QAI observed the welders Jeremy Dolman ID-5042 and Richard Garcia ID-5892, perform the Partial Joint Penetration (PJP) groove welding of the longitudinal stiffener field splice identified as WN: 12W-13W-LS4-6, DSF and 13W-14W-LS4-6, DSF. The welders utilized the SMAW process as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-1162-4, Rev.0 and was also utilized by the QC inspector Sal Merino as a reference to monitor the welding and to perform QC inspection for compliance. The amperage was recorded as 128 amps (Dolman) and 120 amps (Garcia). The minimum preheat of 20 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius was verified.

The welding was performed in the overhead (4G) position with the work placed in an approximately horizontal plane and the weld metal deposited from the underneath side. The welders utilized a slag hammer, pneumatic air gun with an attached chisel and a wire wheel attached to a 4" high cycle grinder to remove slag after the deposit of 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 temperature of 120 degrees Celsius observed by this QAI. The welding and the QC inspection appeared to be in compliance with the contract documents.

QC Ultrasonic Testing

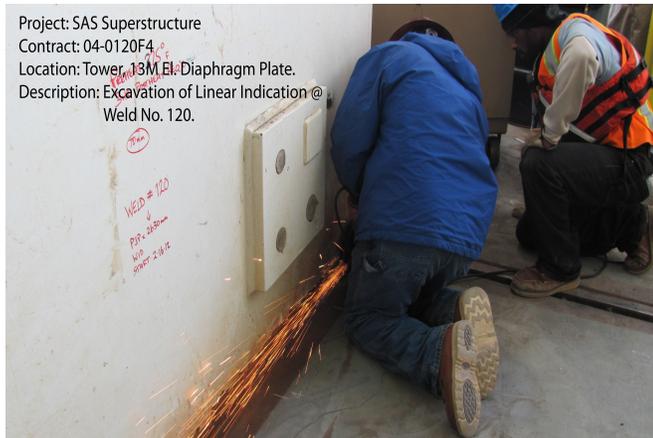
This QAI observed the Ultrasonic Testing (UT) of the Complete Joint Penetration (CJP) weld joint of the Lifting Rod Deck Holes identified as WN: 13E-14E-1-4. The testing was performed by the QC technician John Pagliero utilizing the UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4. This QAI observed the QC technician performed the required longitudinal wave utilizing a 1" diameter transducer for base metal soundness and a .75 x .75 rectangular transducer to perform the shear wave testing for weld soundness. At the conclusion of the testing the QC technician noted that all four (4) insert plates were rejected.

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).

See attached digital photographs, on page four (4) of this report, for some of the work observed during this shift.

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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.

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