

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 #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-004955**Date Inspected:** 25-Nov-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Geng Wei, Zhang Bao Wei**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 Assembly**Summary of Items Observed:**

This report serves to document the events occurring on this date at the following location. Caltrans Quality Assurance (QA) Inspector Robert Vatcher arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

OBG Assembly Bay II

5AE- QA performed green tagging with the AB/F/ ZPMC & Caltrans Team on floor beams FB010-002, FB016-014, FB010-004, FB016-012, FB002-005 & FB016-013 with Warren Buehler and Wang Lu tag numbers 802, 801, 800, 799, 798 & 797 respectively.

No Observed Welding Activity

5BE- QA performed green tagging with the AB/F/ ZPMC & Caltrans Team on floor beams FB012-003 & FB012-004 with Warren Buehler and Wang Lu tag numbers 975 & 974 respectively.

No Observed Welding Activity

5CE- QA performed green tagging with the AB/F/ ZPMC & Caltrans Team on floor beams FB010-005, FB010-001 & FB012-005 with Warren Buehler and Wang Lu tag numbers 1124, 1117 & 1116 respectively.

WELDING INSPECTION REPORT

(Continued Page 2 of 4)

No Observed Welding Activity

3AE- No Observed Welding Activity

No deck panel to deck panel or diaphragm plate to floor beam flange welding occurring as of this time at DP56A & DP55A or DP53A & DP7A. No fit up and tacking as well. These joints are ready to be fit up and tacked.

3BE- No deck panel to deck panel or diaphragm plate to floor beam flange welding occurring as of this time at DP63A & DP64A or DP19A & DP61A. No fit up and tacking as well. These joints are ready to be fit up and tacked.

4AE- No diaphragm plate to floor beam flange welding occurring as of this time at DP31A & DP69A. No fit up and tacking as well however the deck plates are ready for tacking and the ceramic backing is in place. QA also observed that tacking of these deck panels was presently about to commence therefore QA would wait for joining operations to be conducted. QA observed upon donning a welding hood that it appeared that the welder was achieving proper fusion at the root area between both beveled base material walls. QA performed Welding procedure specification verification at this location. QA observed for this operation the FCAW process utilizing 1.4 mm diameter Supercored 71H E71T-1 electrode wire in DCEP mode. Hong Yong Li 044801 the qualified welding operator was observed as well utilizing a stringer bead method for this evolution in the initial root pass per the welding procedure specification WPS-B-T-223(2)1T. QA measured amperage to be 285 (average), voltage at 28.0 and a travel speed of approximately 200 mm per minute. ZPMC QC personnel Shi Lei was present to measure and record this operation.

QA observed that deck panels DP72A & DP30A complete joint penetration welds are partially filled out by the FCAW process and require multiple SAW passes to be complete.

4BE- No deck panel to deck panel or diaphragm plate to floor beam flange welding occurring as of this time at DP79A & DP80A or DOP77A & DP43A. No fit up and tacking as well.

Mid bay-

QA observed the in process joining of SEG010A-005 side plates SP177-001 & SP176-001 by the SAW process. QA measured welding parameters in accordance with welding procedure specification WPS-B-T-2221-B-L2C-S-2 utilizing non corroded or detritus bearing 4.0 mm diameter H14 electrode wire by qualified welding operator Chen Xifeng 052692. Measured amperage at 589.0. Voltage at 31.0, travel speed at 440 mm per minute. Flux was reclaimed and strained through a large rare earth magnet and immediately reused. QA performed a cursory visual examination of the previously joined area prior to further depositing of weld metal. ZPMC QC personnel Huang Shuai was present for this welding evolution. ZPMC QC personnel Chen Chih Ming was available as well ensuring the 20 Celsius minimum preheat was established by way of a Fluke infrared temperature thermometer.

QA observed the in process joining of SEG010A-001 side plates SP181-001 & SP182-001 by the SAW process. QA measured welding parameters in accordance with welding procedure specification WPS-B-T-2221-B-L2C-S-2 utilizing non corroded or detritus bearing 4.0 mm diameter H14 electrode wire by qualified welding operator Wang Min 048296. Measured amperage at 590.0. Voltage at 32.8, travel speed at 600 mm per minute. Flux was

WELDING INSPECTION REPORT

(Continued Page 3 of 4)

reclaimed and strained through a large rare earth magnet and immediately reused. QA performed a cursory visual examination of the previously joined area prior to further depositing of weld metal. ZPMC QC personnel Huang Shuai was present for this welding evolution. ZPMC QC personnel Chen Chih Ming was available as well ensuring the 20 Celsius minimum preheat was established by way of a Fluke infrared temperature thermometer.

Fit-up and tacking being performed at Bottom plates BP038-001 & BP092-001.

QA observed that deck panel U-rib crack repairs continue as well as NPI from Oregon is on station to evaluate said cracks by way of the phased array ultrasonic testing method

5CW- Back gouging being performed at longitudinal diaphragm LD001-005 at the floor beam joint for weld number 002 in the 4G position.

No tack welds installed at diaphragm plate to floor beam flanges at panel point 28.

5BW- QA observed in process joining operation of side plate stiffener SP510-001 weld 061 to side plate SP510B by qualified welding operator Li Xianyou 047866 in the 1G flat position. No ZPMC QC personnel available at time of QA observations.

No tack welds installed at diaphragm plate to floor beam flanges at panel point 28.

5AW- No tack welds installed at diaphragm plate to floor beam flanges at panel point 28.

4BW- Random minimum tack welds installed at diaphragm plate to floor beam flanges at panel point 27.

No tack welds installed at diaphragm plate to floor beam flanges at panel point 26.

QA observed that deck panels DP76A & DP75A complete joint penetration welds are filled out by the FCAW process only in the top portion and require further filling by the SAW process. As well deck panels DP73A and DP39A require the same.

4AW- Tack welds installed at diaphragm plate to floor beam flanges at panel point 25.

QA observed that deck panels DP68A & DP67A complete joint penetration welds are entirely filled out in the top portion by the SAW process. As well deck panels DP27A and DP65A are in the same condition.

3BW-

Random minimum tack welds installed at diaphragm plate to floor beam flanges at panel point 23. Tack welds permanent installation at diaphragm plate to floor beam flanges at panel point 22.

QA observed the in process joining of SEG015A-016 deck plates (situated atop of the segment) DP60A & DP59A by the SAW process. QA measured welding parameters in accordance with welding procedure specification

WELDING INSPECTION REPORT

(Continued Page 4 of 4)

WPS-B-T-2221-B-L2C-S-2 utilizing non corroded or detritus bearing 4.0 mm diameter H14 electrode wire by qualified welding operator Wang Lanying 045265. Measured amperage at 620.0. Voltage at 34.4, travel speed at 500 mm per minute. Flux was reclaimed and strained through a large rare earth magnet and immediately reused. QA performed a cursory visual examination of the previously joined area prior to further depositing of weld metal. ZPMC QC personnel Huang Shuai was present for this welding evolution. ZPMC QC personnel Chen Chih Ming was available as well ensuring the 20 Celsius minimum preheat was established by way of a Fluke infrared temperature thermometer.

QA observed that deck panels DP57A & DP15A complete joint penetration welds are partially filled out by the SAW process and require approximately two more passes to be complete.

3AW-

Tack welds installed at diaphragm plate to floor beam flanges at panel point 21.

QA observed at SSD10-(panel point) PP019-003 diaphragm plate to diaphragm plate at deck panel DP004-001 improper oxy acetylene torch cutting as well as cutting well into the base material where cutting is not required. AB/F representative Li Hao was apprised of this in process situation.

QA observed that deck panels DP52A & DP51A complete joint penetration welds are completely filled out by the SAW process. Also diaphragm plates have been tack welded to the floor beam flanges prior to diaphragm plate to diaphragm plate welding has been performed. As well deck panels DP49A AND DP3A are in the same condition.

North Bay of OBG Assembly-

No observed joining operations

North Sub-Assembly Area (Outside of OBG)

No observed joining operations

Summary of Conversations:

No relevant conversations 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 Peter Dauterman, who represents the Office of Structural Materials for your project.

Inspected By: Vatcher,Robert

Quality Assurance Inspector

Reviewed By: Cuellar,Robert

QA Reviewer