

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 #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-004999**Date Inspected:** 01-Dec-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- No Observed Welding Activity

5BE- No Observed Welding Activity

5CE- No Observed Welding Activity

3AE- QA observed that deck panels DP56A & DP55A, DP53A & DP7A complete joint penetration welds are completely filled out by the SAW process.

No deck panel diaphragm plate to floor beam flange welding occurring as of this time.

3BE- QA observed that deck panels DP63A & DP64A, DP19A & DP61A complete joint penetration welds are completely filled out by the SAW process.

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No deck panel diaphragm plate to floor beam flange welding occurring as of this time.

4AE- QA observed that deck panels DP72A & DP30A, DP31A & DP69A complete joint penetration welds are completely filled out by the SAW process.

No deck panel diaphragm plate to floor beam flange welding occurring as of this time.

4BE- QA observed that deck panels DP79A & DP80A , DP77A & DP43A complete joint penetration welds are completely filled out by the SAW process.

No deck panel diaphragm plate to floor beam flange welding occurring as of this time.

Mid bay-

Multiple locations where diaphragm plate to deck panel installation preparation being performed.

A observed the in process joining of SEG005A-006 side plates BP303A & BP307A 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 Lanying 045265. Qualified welding status was verified by the presence of certification card from the welders pocket Measured amperage at 585.0. Voltage at 32.0, travel speed at 480 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 Zhang Xian Ming was present for this welding evolution. ZPMC QC personnel Chen Chih Ming was available as well. The above mentioned items as observed and documented by QA appears to be in conformance with the contract documents.

Side panels for segment SEG041A-003 SP128A & SP155 have been fit up and tacked. QA performed a cursory visual examination of the bevel angle, root opening and associated tack welds performed at this location. The above mentioned items as observed and documented by QA appears to be in conformance with the contract documents.

Post back gouging initial Submerged Arc Welding being performed at SEG006A-005 bottom panels BP304 & BP306. ZPMC QC personnel Wang Jie mentioned that due to the 35 millimeter thickness that he would elevate the pre heat temperature from 60C to 80C. QA observed the in process joining of SEG006A-005 bottom plates BP304-001 & BP306-001 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. Qualified welding status was verified by the presence of a certification card from the welders pocket Measured amperage at 600.0. Voltage at 32.0, travel speed at 540 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 Wang Jie was present for this welding evolution. ZPMC QC personnel Chen Chih Ming was available as well. The above mentioned items as observed and documented by QA appears to be in conformance

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with the contract documents.

Bottom panels for segment SEG008A-004 BP198 & BP302 are presently being fit up and tacked by qualified welder Sun Lingling 048047. QA performed a cursory visual examination of the bevel angle and root opening at this location. The above mentioned items as observed and documented by QA appears to be in conformance with the contract documents.

Side panels for segment SEG009A-002 SP173 & BSP174 are ready for fit up and tacking operations. Grinding still being performed however at this location. The above mentioned items as observed and documented by QA appear to be in conformance with the contract documents.

QA was tasked with performing welding operation monitoring at locations where diaphragm plates are being joined to deck panels specifically DP351-001 and DOP324-002. QA observed for this operation the FCAW process utilizing 1.4 mm diameter Supercored 71H E71T-1 electrode wire in DCEP mode. Welder Wang Lin Jiang 051356, a qualified welding operator was observed as well utilizing a weave bead method not authorized for this evolution per the welding procedure specification WPS-B-T-2233-TC-U4B-F. PQR QA measured amperage to be 210 (average), voltage at 25.0 and a travel speed of 106 mm per minute however utilizing a narrow weave bead method.

5CW- No Observed Welding Activity

5BW- No Observed Welding Activity

5AW- No deck panel to deck panel or diaphragm plate to floor beam flange welding occurring as of this time. No Observed Welding Activity elsewhere as well.

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

Deck panels DP76A & DP75A, DP73A & DP39A complete joint penetration welds are completely filled out by the SAW process.

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

4AW- Deck panels DP27A & DP65A, DP68A & DP67A complete joint penetration welds are completely filled out by the SAW process.

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

3BW- Deck panels DP60A & DP59A, DP57A & DP15A complete joint penetration welds are completely filled out by the SAW process.

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

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3AW- QA spoke with AB/F representative Peter Shaw who was just back last week from vacation. QA asked how his vacation was and he spoke amicably that it was too short. Mr. Shaw also mentioned that the remaining deck panels on the east and west segments were completely welded out (the ones that have been mentioned previously in this QA's reports. He also spoke about when ultrasonic testing would be performed which was possibly in the next week.

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

Deck panels DP52A & DP51A, DP49A & DP3A complete joint penetration welds are completely filled out by the SAW process.

North Bay of OBG Assembly- QA observed Side Plate to Side Plate fit up and tacking in progress at SEG037A-003 SP126A to SP153A. QA measured in process root openings to be at a maximum of 3.0 to 6.0 millimeters for this in process operation. AB/F QC personnel Li Hanjie is present for this operation.

North Sub-Assembly Area (Outside of OBG)

QA observed no joining operations on this date 12-01-08

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