

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-005030**Date Inspected:** 07-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-

Lift Interior- No Observed Welding Activity

No Observed Welding Activity however QA observed multiple locations where grinding is occurring for breaking edges for paint.

Lift Topside- No Observed Welding Activity

5BE-

Lift Interior- No Observed Welding Activity

No Observed Welding Activity however QA observed multiple locations where grinding is occurring for breaking

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edges for paint.

Lift Topside- No Observed Welding Activity

5CE-

Lift Interior- No Observed Welding Activity

No Observed Welding Activity however QA observed multiple locations where grinding is occurring for breaking edges for paint.

Lift Topside- No Observed Welding Activity

3AE-

Lift Interior- No Observed Welding Activity

Lift Topside- No Observed Welding Activity

3BE-

Lift Interior- No Observed Welding Activity

Lift Topside-

No Observed Welding Activity

4AE-

Lift Interior- No Observed Welding Activity

Lift Topside- No Observed Welding Activity

4BE-

Lift Interior- No Observed Welding Activity

Lift Topside-

QA observed the in process joining of SEG020A*-005 deck plates (situated atop of the segment) DP77A & DP43A 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 Xi Feng 052692. Measured amperage at 680.0. Voltage at 32.0, travel speed at 500 mm per minute. Flux was reclaimed and strained through a large rare earth magnet and

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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 Ji was present for this welding evolution. ZPMC QC personnel Chen Chih Ming was available as well ensuring the 20C minimum preheat was established by way of a Fluke infrared temperature thermometer.

Mid bay-

QA was tasked with performing welding operation monitoring at locations where diaphragm plates are being joined to deck panels specifically DP136-001 and DP109-001. QA observed for this operation the FCAW process utilizing 1.4 mm diameter Supercored 71H E71T-1 electrode wire in DCEP mode. Welder Lv Feng Bao 045175, a qualified welding operator was observed as well utilizing a weave bead per the welding procedure specification WPS-B-T-2233-TC-U4B-F. QA measured amperage to be 207 (average), voltage at 24.8 and a travel speed of 117 mm per minute however utilizing a narrow weave bead method. Preheat was measured at 45.0 degrees celsius. ZPMC QC personnel Zhang Xian Ming was available for this evolution to record & document welding parameters.

QA was tasked with performing welding operation monitoring at locations where diaphragm plates are being joined to deck panels specifically DP136-001 and DP109-001. QA observed for this operation the FCAW process utilizing 1.4 mm diameter Supercored 71H E71T-1 electrode wire in DCEP mode. Welder He Junrong 201215, a qualified welding operator was observed as well utilizing a weave bead per the welding procedure specification WPS-B-T-2233-TC-U4B-F. QA measured amperage to be 204 (average), voltage at 24.6 and a travel speed of 116 mm per minute however utilizing a narrow weave bead method. Preheat was measured at 45.0 degrees celsius. ZPMC QC personnel Zhang Xian Ming was available for this evolution to record & document welding parameters.

Side panels for segment SEG008A-014 side plates SP649B & SP197B have been fit up and are ready to be tacked. QA performed a cursory visual examination of the bevel angle, land area and initial joint cleanliness performed at this location. The above mentioned items as observed and documented by QA appears to be in conformance with the contract documents.

QA observed the in process joining of SEG007A-004 bottom plates BP197A & BP301A 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 certification card from the welders pocket. Measured amperage at 680.0, Voltage at 33.0, travel speed at 500 millimeters per minute. Preheat was measured at 67.0 degrees Celsius. 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. The above mentioned items as observed and documented by QA appears to be in conformance with the contract documents.

QA was tasked with performing welding operation monitoring at locations where bottom plates are being joined to bottom plates specifically BP060-001 and BP114-001. QA observed for this operation the FCAW process utilizing 1.4 mm diameter Supercored 71H E71T-1 electrode wire in DCEP mode. Welder Xie Jin Xia 048038, a

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qualified welding operator was observed as well utilizing a stringer bead method per the welding procedure specification WPS-B-T-2233-TC-U4B-F. QA measured amperage to be 210 (average), voltage at 25.0 and a travel speed of 106 mm per minute.

5CW-

Lift Interior- No Observed Welding Activity

Lift Topside- No Observed Welding Activity

5BW-

Lift Interior- No Observed Welding Activity

Lift Topside- No Observed Welding Activity

5AW-

Lift Interior- No Observed Welding Activity

Lift Topside- No Observed Welding Activity

4BW-

Lift Interior- No Observed Welding Activity

Lift Topside- No Observed Welding Activity

4AW-

Lift Interior- No Observed Welding Activity

Lift Topside- No Observed Welding Activity

3BW-

Lift Interior- No Observed Welding Activity

QA observed diaphragm plate to diaphragm plate welds installed at panel point 23. No Diaphragm plate to floor beam flange full length fillet welds installed at this time. No joining operations occurring at this location at this time as well.

QA observed diaphragm plate to diaphragm plate welds installed at panel point 24. Diaphragm plate to floor beam flange full length fillet welds installed at this time as well with the exception of both ends for the remainder of the

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last diaphragm plate. Also only the north side diaphragm plate to floor beam flange has been joined.

Lift Topside-

QA observed fitting & tacking being performed at CA3A to deck panel DP13A by qualified welder Yang Chang Ming 058242. QA spoke with ZPMC QC personnel Shen Fu You and Zhang Bao Lei concerning the lack of QC presence and initial joint cleanliness inspection and the fact the Mr. You Fu has been requested repeatedly to write more clearly on the components.

3AW-

QA observed 1 operation where diaphragm plate to diaphragm plate joining by the SMAW process is being performed at panel point 19.

QA observed diaphragm plate to diaphragm plate tack welds only at panel point 20. No Diaphragm plate to floor beam flanges full length fillet installed at this time. No joining operations occurring at this location at this time.

QA observed diaphragm plate to diaphragm plate tack welds only at panel point 21. No Diaphragm plate to floor beam flange full length fillet welds installed at this time. No joining operations occurring at this location at this time as well.

QA observed three locations where diaphragm plate to diaphragm plate joining by the FCAW process is being performed at panel point 22. No Diaphragm plate to floor beam flange full length fillet welds installed at this time.

North Bay of OBG Assembly-

No Observed Welding Activity

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 Dautermann, who represents the Office of Structural Materials for your project.

Inspected By:	Vatcher,Robert	Quality Assurance Inspector
Reviewed By:	Cuellar,Robert	QA Reviewer
