

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-002595**Date Inspected:** 15-Apr-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:** 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:**

Caltrans Quality Assurance (QA) Inspector Sherri Brannon arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China to periodically monitor welding and Quality Control (QC) functions. While on site the QA Inspector observed and/or discovered the following.

OBG/Tower Sub Assembly**Bay 7-OBG - Floor Beam Sub Assembly:**

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Yin Guo Qin ID #058081 splice welding various floor beam web plates FB010-009-023 & FB010-008-023. Mr. Yin was observed welding in the 1G (flat) position utilizing a submerged arc welding (SAW) process with a 4.8mm diameter electrode, filler metal brand JW3, class EM12K machine. QA Inspector Brannon observed the ZPMC QC CWI Inspector Hu Wei Qing verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). QA Inspector observed preheat and welding parameters measured by the QC CWI Inspector Hu Wei Qing to be: preheat temperature of 65°C and welding parameters amps of 678, volts of 31.8, and a travel speed of 407 mm/min. Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-T-2221-L2C-S-1.

Bay 7-OBG - Floor Beam Sub Assembly:

QA Inspector Brannon randomly observed ZPMC welder Mr. Wang Chang Fa ID #058102 tack welding various floor beam web splices at FB009-009-021, FB006-009-021 & FB010-008-023. Mr. Wang was observed welding in the 1G (flat) position utilizing a shielded metal arc welding (SMAW) process with a 4.0mm diameter electrode,

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filler metal brand E7018, class TL508, manual. QA Inspector Brannon observed the ZPMC QC CWI Inspector Hu Wei Qing verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). QA Inspector observed preheat and welding parameters measured by the QC CWI Inspector Mr. Hu Wei Qing to be: preheat temperature of 30°C and welding parameters amps of 167. Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-P-2211-B-U2.

Bay 7-OBG - Floor Beam Sub Assembly:

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Hong Shuili ID#044815 and Mr. Zhong Qing Quan ID#044774 repair welding at the weld joint FB018-01-127 and FB025-01-127 respectively. Mr. Hong and Mr. Zhong was observed welding in the 1G (flat) position utilizing a flux corded arc welding (FCAW) process with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H, semi automatic. QA Inspector Brannon observed the ZPMC QC Inspector Mr. Hu Wei Qing verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). QA Inspector Brannon observed preheat and welding parameters measured by the QC CWI Inspector Mr. Hu Wei Qing to be: a minimum preheat temperature of 110°C and welding parameters amps of 282/296, volts of 30.0/29.5, a travel speed of 524/538 mm/min and a gas flow of 22L respectively. Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS-345-FCAW-1G(1F)-FCM-Repair. See also, ZPMC welding repair report #B-WR188 and ZPMC UT report #787-UT-434 and welding repair report #B-WR180 and ZPMC UT report #787-UT-432 for more information.

Bay 7-OBG - Floor Beam Sub Assembly:

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Wu Yong ID#050242 welding root pass at the floor beam FB010-04-023. Mr. Wu was observed welding in the 1G (flat) position utilizing a flux corded arc welding (FCAW) process with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H, semi automatic. QA Inspector Brannon observed the ZPMC QC Inspector Mr. Hu Wei Qing verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). QA Inspector Brannon observed preheat and welding parameters measured by the QC CWI Inspector Mr. Hu Wei Qing to be: a minimum preheat temperature of 110°C and welding parameters amps of 296, volts of 30.6, a travel speed of 524 mm/min and a gas flow of 22L. Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-T-2231-B-U2-F-1.

Bay 7-OBG - Floor Beam Sub Assembly:

ZPMC NDT (UT):

QA Inspector Brannon randomly observed ZPMC Ultrasonic Testing Technician's Mr. Ma Je Long and Mr. Yue Hai Yong performing Lamination Scan with 2.5mhz transducer and shear wave using a 70° transducer on the following floor beam flange splice welds: FB011-001-026 (accept), FB012-001-026 (accept), FB012-006-026 (accept), FB010-001-026 (accept), FB012-005-026 (accept), FB011-002-026 (accept), FB010-002-026 (accept), FB009-002-026 (reject), FB009-003-026 (reject), FB011-007-026 (reject), FB012-003-026 (accept), FB012-002-026 (accept), FB011-003-026 (reject), FB015-009-026 (reject), FB015-005-026 (reject), FB015-006-026 (reject), FB015-007-026 (reject), FB0112-004-026 (reject), FB011-004-026 (reject), FB011-005-026 (accept), FB012-009-026 (accept), FB011-009-026 (accept), FB015-011-026 (reject), and FB011-008-026 (accept). QA Inspector Brannon observed accept and rejected marked on the floor beam web plates.

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Bay 8 – 47.6 Meter Tower Diaphragm Sub Assembly:

QA Inspector Brannon randomly observed ZPMC qualified welder Mrs. Xi Pei Pei ID #048431 groove welding fill pass's joining SA32 (E) to P1424 (E) weld joint ESD1 SA32-10B. Mrs. Xi was observed welding in the 1G (flat) position utilizing a submerged arc welding (SAW) process with a 4.8mm diameter electrode, filler metal brand LA-85, class ENi5 machine. QA Inspector Brannon observed the ZPMC QC CWI Inspector Lv Jiangang verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). QA Inspector observed preheat and welding parameters measured by the QC CWI Inspector Lv Jiangang to be: preheat temperature of 180°C and welding parameters amps of 615, volts of 30.5, and a travel speed of 475 mm/min. Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-T-3221-B-U3c-S-1.

Bay 8 – 18 Meter Tower Diaphragm Sub Assembly:

QA Inspector Brannon randomly observed ZPMC qualified welder Mrs. Ma Ying ID #045270 groove welding joining SA316(N) to P778(N) weld joint NSD1 SA248-1A & 2A. Mrs. Ma was observed welding in the 1G (flat) position utilizing a submerged arc welding (SAW) process with a 4.0mm diameter electrode, filler metal brand LA-85, class MIL800-HPNI, machine. QA Inspector Brannon observed the ZPMC QC CWI Inspector Lv Jiangang verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). QA Inspector observed preheat and welding parameters measured by the QC CWI Inspector Lv Jiangang to be: preheat temperature of 180°C and welding parameters amps of 610, volts of 29.8, and a travel speed of 484. Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-T-3221-B-U3c-S-1.

The following digital photograph below illustrates observation of the activities being performed.



Summary of Conversations:

No relevant conversations to report.

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 Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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