

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-001853**Date Inspected:** 20-Mar-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**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.

Bay 7-OBG - Floor Beam:

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Hong Yong Li ID #044801 welding stiffener to floor beam FB021-02-072. Mr. Hong was observed welding in the 2G (horizontal) 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 CWI Inspector Huang Wen Pong 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 Huang Wen Pong to be: preheat temperature of 80°C and welding parameters amps of 304, volts of 30.1, a travel speed of 322 mm/min and a gas flow of 19L/min. Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-T-2232-Tc-U4b-F.

Bay 7-OBG - Floor Beam:

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Zhang Qingquan ID #044774 fillet welding vertical stiffener to floor beam flange plate for FB021-02-106 and FB021-02-107. Mr. Zhang was observed welding in the 2F (horizontal) 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 CWI Inspector Huang Wen Pong verifying that the welding parameters and pre-heat were

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in accordance with the Welding Procedure Specification (WPS). QA Inspector observed preheat and welding parameters measured by the QC CWI Inspector Mr. Huang Wen Pong to be: preheat temperature of 60°C and welding parameters amps of 303, volts of 29.2, a travel speed of 425 mm/min and a gas flow of 20L/min. Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-T-2132-3.

Bay 7-OBG - Floor Beam:

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Hong Yong Li ID #044801 and Mr. Dan De Yin ID#044795 fillet welding vertical stiffener to floor beam flange plate for FB021-02-106 and 107 and FB021-02-86 and 87. Mr. Hong and Mr. Dan was observed welding in the 2F (horizontal) 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 CWI Inspector Huang Wen Pong 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. Huang Wen Pong to be: preheat temperature of 80°C and welding parameters amps of 300/303, volts of 29.6/29.4, a travel speed of 427/425 mm/min and a gas flow of 20L/min. Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-T-2132-3

Bay 7-OBG - Floor Beam (UT repair)

QA Inspector Brannon randomly observed ZPMC personnel at the following excavating an ultrasonic testing (UT) indication by method of carbon arc gouging on various floor beams. (1)FB007-04-043, See ZPMC report number B-WR116. (2) FB016-02-043, See ZPMC report number B-WR119. (3) FB015-04-045, See ZPMC report number B-WR114. (4) FB002-04-045, See ZPMC report number B-WR115. (5) FB015-03-045, See ZPMC report number B-WR115

Bay 7-OBG - Floor Beam (CWR019 & CWR040)

QA Inspector Brannon randomly observed ZPMC personnel at the following excavating fillet welds by method of carbon arc gouging on various floor beams welds. For the following welds FB001-02-003, FB001-02-007, FB015-04-045 and FB002-04-045.

Bay 7-OBG - Floor Beam (B-WR114 repair):

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Zhang Qingquan ID #044774 repair welding at CJP at FB015-04-045. Mr. Zhang was observed welding in the 2G (vertical) 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 CWI Inspector Huang Wen Pong 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 Huang Wen Pong to be: preheat temperature of 109°C and welding parameters amps of 285, volts of 29.5, a travel speed of 515 mm/min and a gas flow of 20L/min. Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS-345-FCAW-2G-FCM-repair.

Bay 7-NDT (VT/MT):

QA Inspector Brannon performed visual inspection (VT) and magnetic particle testing (MT) on the fillet welds for FB007-002 weld joint 001~012, 015~020, 024~025, 043 & 045. See Caltrans Magnetic Particle Test Report,

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TL-6028 dated March 20, 2008 for additional information.

Bay 8 - Tower 28 Meter Diaphragm Plates:

QA Inspector randomly observed ZPMC personnel performing heat straightening on tower 28 meter bottom piece # SA270 (S), ZPMC report #HSR1 (T)-197 and 28 meter top piece #SA334 (S), ZPMC report #HSR1 (T)-152. ZPMC personnel flame straightening by natural gas. Note: QA Inspector Brannon submitted an Incident Report for the above diaphragm plates and 38 Meter top SA227(S), ZPMC (HS) Report Number HSR1(T)-188 heat straightened on 03-19-08.

Bay 8-Tower Diaphragm 28 Meter:

QA Inspector Brannon randomly observed ZPMC qualified welder Mrs. Ma Ying ID #045270 groove welding joining P249 (N) to SA270 (N); weld joint NSD1-SA270-1A. 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 Xu Bing 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 180°C and welding parameters amps of 580, volts of 30.2, and a travel speed of 464. 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-Tower Diaphragm 47.6 Meter:

QA Inspector Brannon randomly observed ZPMC qualified welder Mrs. Ma Ying ID #045270 groove welding root/fill pass's joining SA226 (E) to P407 (E) weld joint ESD1 SA226-10A. 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 Xu Bing 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 180°C and welding parameters amps of 575/586, volts of 31.1/30.2, and a travel speed of 480/480 respectively. 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.



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Summary of Conversations:

As stated within the 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.

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