

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-001142**Date Inspected:** 29-Dec-2007**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:	Sun Wei, Hu Weiqing, Zhang Zhong			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:** 89M/144 M mockup and OBG floor beam**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 2**114 Meter Mock-Up Strut sub-Assembly MUSB-MA26:**

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Dai Lu ID#046859 groove welding fill passes joining, piece #p1115-7 to p1114-2 weld joint #31A. Mr. Lu was observed welding in the 2G (horizontal) position utilizing shield metal arc welding (SMAW) process with a 4.0mm diameter electrode, filler metal brand E9018M-H4R, class Excalibur9018M MR, manual. QA Inspector Brannon observed the ZPMC QC CWI Inspector Sun Wei 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 Sun Wei to be: preheat temperature of 160°C and welding parameters amps of 198. Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-T-3212-TC-u5b, revision 0.

114 Meter Mockup MUC-MA107 B/C:

QA Inspector Brannon randomly observed ZPMC personnel removing two ultrasonic testing (UT) indications found by ZPMC by method of carbon air arc gouging and grinding. Reference ZPMC UT report #WR058 and NDT report #CT-UT-091 dated 12-26-07.

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Bay 3

OBG side plate SP41:

QA Inspector randomly observed ZPMC personnel performing heat straightening side plate SP41. ZPMC report #HSR1(B)-137, grid 3BE, weld #1~10, weld map SP041-01.

OBG side plates SP001, SP009 and SP025:

QA Inspector randomly observed ZPMC welders tack welding stiffener plates to side plates for SP001 weld #014~015, t-stiffeners to side plate SP009 weld #028~029 and t-stiffeners to side plate SP025 weld # 013~024. ZPMC using weights and hydraulic jacks to assist with alignment.

OBG Side Plate (MT):

QA Inspector, Brannon performing visual inspection (VT) and magnetic particle testing (MT) on the side plate stiffener welds #'s 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27 and 28, on 10 percent of the 6mm fillet welds. See Caltrans Magnetic Particle Test Report, TL-6028 dated December 29, 2007 for additional information.

Bay 7

OBG Floor Beam Sub Assembly FB007-04:

QA Inspector Brannon randomly observed ZPMC qualified welder's Mr. Hong Shuili ID #044815 and Mr. Yuan Wensong ID#055491 fillet welding stiffeners to floor beam FB007-04. Mr. Hong and Mr. Yuan was observed welding in the 2F (horizontal) position utilizing position utilizing flux cored arc welding (FCAW) process utilizing a 1.4mm diameter electrode, filler metal brand Supercored 71H, class E71T-1 semi automatic. QA Inspector Brannon observed the ZPMC QC Inspector Zhang Zhong 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 Zhang Zhong to be: preheat temperature of 20°C and welding parameters amps of 299/295, volts of 29.8/29.6, a travel speed of 459/453 mm/min and a shielding gas flow of 23/22L/min respectively. Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-T-2132.

OBG Floor Beam Sub Assembly FB015:

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Li Haitau ID #044839 groove welding stiffeners to floor beam FB015-02-043. Mr. Li was observed welding in the 2G (horizontal) position utilizing position utilizing a flux cored arc welding (FCAW) process using a 1.4mm diameter electrode, filler metal brand Supercored 71H, class E71T-1 semi automatic. QA Inspector Brannon observed the ZPMC QC Inspector Hu Weiqing 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 Weiqing to be: preheat temperature of 110°C and welding parameters amps of 272, volts of 29.0, a travel speed of 502 mm/min and a shielding gas flow of 17L/min respectively. Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-T-2232-Tc-U4B-F-1.

OBG Floor Beam Sub Assembly FB001-04:

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Liu Longxian ID #044786 groove welding stiffeners to floor beam FB015-02-043. Mr. Li was observed welding in the 2G (horizontal) position utilizing position utilizing a flux cored arc welding (FCAW) process using a 1.4mm diameter electrode, filler metal brand Supercored 71H, class E71T-1 semi automatic. QA Inspector Brannon observed the ZPMC QC Inspector Hu

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Weiqing 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 Weiqing to be: preheat temperature of 110°C and welding parameters amps of 295, volts of 30.0, a travel speed of 409 mm/min and a shielding gas flow of 24L/min respectively. Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-T-2232-Tc-U4B-F-1.

OBG Floor Beam Sub Assembly FB007-05-006:

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Xang Xuhe ID#057795 fillet welding joining, stiffeners plates to stiffeners plates weld joint #001, 002, 005, 006, 007 & 008. Mr. Xang was observed welding in the 3F (vertical) position utilizing shield metal arc welding (SMAW) process with a 5.0mm diameter electrode, filler metal brand E7018, class THJ506-Fe-1, manual. QA Inspector Brannon observed the ZPMC QC CWI Inspector Hu Weiqing 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 Weiqing to be: preheat temperature of 20°C and welding parameters amps of 146. Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-P-2113.

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



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: Carreon, Albert

QA Reviewer