

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

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-001979**Date Inspected:** 16-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:** Hua Yan**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:** Tower Skin Plates**Summary of Items Observed:**

On this date CALTRANS OSM Quality Assurance (QA) Inspector was present during the times noted above for observations relative to the work being performed.

Bay 2- New Tower Building

The QA Inspector randomly observed ZPMC qualified welder Ms. Liu Juan, ID #047481, performing groove welding of weld joint ESD1-SA107B/J-16A filler passes. Ms. Liu 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 MIL800-HPNI, machine. The QA Inspector observed the ZPMC Quality Control (QC) Inspector Zha Zhanghai verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). The QA Inspector observed preheat and welding parameters measured by the QC Inspector Zha Zhanghai and found them to be a preheat temperature of 110°C and welding parameters amps of 686, volts of 32.5, and a travel speed of 662. Welding parameters observed by the QA Inspector appeared to be in general compliance with the approved WPS-B-T-3221-B-U3c-S.

The QA Inspector randomly observed ZPMC qualified welder Ms. Xia Jang Liu, ID #048882, performing groove welding of weld joint ESD1-SA107A/J-18A filler passes. Ms. Xia 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 MIL800-HPNI, machine. The QA Inspector observed the ZPMC QC Inspector Zhu Zhanghai verifying that the welding parameters and pre-heat were in accordance with the WPS. The QA Inspector observed preheat and welding parameters measured by the QC Inspector Zhu Zhanghai and found them to be a preheat temperature of 110°C and welding parameters amps of 675, volts of 32.3, and a travel speed of 667. Welding parameters observed

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

by the QA Inspector appeared to be in general compliance with the approved WPS-B-T-3221-B-U3c-S.

Bay 1- New Tower Building

The QA Inspector randomly observed ZPMC qualified welder Ms. Yun Chuanjin, ID #050360, performing groove welding of weld joint SSD1-SA173A/K-15B filler passes. Ms. Yun 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 MIL800-HPNI, machine. The QA Inspector observed the ZPMC Quality Control (QC) Inspector Yang Qing Feng verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). The QA Inspector observed preheat and welding parameters measured by the QC Inspector Yang Qing Feng and found them to be a preheat temperature of 110°C and welding parameters amps of 685, volts of 33.1, and a travel speed of 661. Welding parameters observed by the QA Inspector appeared to be in general compliance with the approved WPS-B-T-3221-B-U3c-S.

The QA Inspector randomly observed ZPMC qualified welder Ms. Chen Hangxia, ID #040460, performing groove welding of weld joint SSD1-SA16E/G-11A(11B) filler passes. Ms. Chen 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 MIL800-HPNI, machine. The QA Inspector observed the ZPMC QC Inspector Yang Qing Feng verifying that the welding parameters and pre-heat were in accordance with the WPS. The QA Inspector observed preheat and welding parameters measured by the QC Inspector Yang Qing Feng and found them to be a preheat temperature of 110°C and welding parameters amps of 679, volts of 32.3, and a travel speed of 671. Welding parameters observed by the QA Inspector appeared to be in general compliance with the approved WPS-B-T-3221-B-U3c-S.

Bay 3- New Tower Building

The QA Inspector randomly observed ZPMC qualified welder Ms. Yuan Teng Chuan, ID #059355, performing groove welding of weld joint DP329-001-153 filler passes. Ms. Yuan 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 MIL800-HPNI, machine. The QA Inspector observed the ZPMC Quality Control (QC) Inspector Lijie verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). The QA Inspector observed preheat and welding parameters measured by the QC Inspector Lijie and found them to be a preheat temperature of 110°C and welding parameters amps of 460, volts of 30.5, and a travel speed of 382. Welding parameters observed by the QA Inspector appeared to be in general compliance with the approved WPS-B-T-2221-B-L2a-S-1.

The QA Inspector randomly observed ZPMC qualified welder Ms. Yuan Teng Chuan, ID #059355, performing groove welding of weld joint DP113-002-153 filler passes. Ms. Yuan 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 MIL800-HPNI, machine. The QA Inspector observed the ZPMC QC Inspector Lijie verifying that the welding parameters and pre-heat were in accordance with the WPS. The QA Inspector observed preheat and welding parameters measured by the QC Inspector Lijie and found them to be a preheat temperature of 110°C and welding parameters amps of 475, volts of 32.3, and a travel speed of 390. Welding parameters observed by the QA Inspector appeared to be in general compliance with the approved WPS-B-T-2221-B-L2a-S-1.

Carbon Arc Gouging of Reject.

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

The QA Inspector randomly observed ZPMC personnel utilizing the carbon arc gouging method to remove rejectable indications from welds previously discovered during full volumetric Ultrasonic Testing (UT) performed by ZPMC Quality Control (QC) personnel. The applicable weld designations are as follows:
ESD1-SA227A/H-16A, SSD1-159D/J-4A.

Ultrasonic Observation

The QA Inspector observed ZPMC Ultrasonic Testing (UT) Technicians performing full volumetric ultrasonic testing of Complete Joint Penetration (CJP) weld on the tower skin plate splice connection designated ESD1-SA107A/J-16B. The QA Inspector observed ZPMC personnel using a 45 shear wave transducer/plastic wedge combination to examine the top quarter of the weld and a 70 shear wave transducer/plastic wedge combination to examine both the middle half and bottom quarter of the weld respectively. Once the UT was completed, ZPMC personnel documented multiple rejectable indications.

Ultrasonic Observation

The QA Inspector observed ZPMC Ultrasonic Testing (UT) Technicians performing full volumetric ultrasonic testing of Complete Joint Penetration (CJP) weld on the tower skin plate splice connection designated ESD1-SA216A/K-15B. The QA Inspector observed ZPMC personnel using a 45 shear wave transducer/plastic wedge combination to examine the top quarter of the weld and a 70 shear wave transducer/plastic wedge combination to examine both the middle half and bottom quarter of the weld respectively. Once the UT was completed, ZPMC personnel documented multiple rejectable indications.

Summary of Conversations:

The QA Inspector spoke with the ZPMC CWI QC personnel Sun Wei regarding the general location and work scheduled for the day.

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: | Clifford,William | Quality Assurance Inspector |
| Reviewed By: | Cuellar,Robert | QA Reviewer |
