

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-002094**Date Inspected:** 08-Apr-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**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:** Huang Wen pang/Shi Zhi**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:**

The Caltrans Quality Assurance (QA) Inspector Roscoe Dixon was present at the time requested to randomly observe welding and associated operations being performed for the Orthotropic Box Girder (OBG) and Tower.

OBG Assembly Shop:

The QA Inspector randomly observed ZPMC Welding Operator Sun Guo Zuo ID 058100, utilizing the Submerged Arc Welding (SAW Process with ZPMC Weld Procedure Specification (WPS) WPS-B-T-223 (2) 1T- 345-F2 to complete the filler passes for the complete joint penetration (CJP) weld joint SEG014A-023.

The QA Inspector observed that during the shift ZPMC CWI, Chen Chci Ming and various CAWI Inspectors were monitoring the electrical parameters, travel speed and temperatures during the shift.

During the welding the QA Inspector randomly verified the welding machine amperes at 480 amperes and 32 volts utilizing a Fluke Meter.

The QA Inspector visually verified a single electrode was being utilized for the filler passes. The filler metal being used was JW-3 with a diameter of 4.8 millimeters the welding was in progress and appeared to conform with the welding procedure specifications (WPS) and the contract requirements.

The QA Inspector observed ZPMC NDT Technician Zhou Dongyun, utilizing the Magnetic Particle (MT) Method, to examine a cracked tack weld which was identified by ZPMC at weld joint SEG020A-014. The crack was

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removed by grinding, and Mr. Zhou performed the MT, and informed the QA Inspector that no indications were found.

Bay 3 OBG:

The QA Inspector randomly observed ZPMC Welding Operator Jiang Jinfeng, ID 046830 utilizing the Submerged Arc Welding (SAW Process with ZPMC Weld Procedure Specification (WPS) WPS-B-T-2221-B-L2-C-S-1 complete the weld passes for the complete joint penetration (CJP) weld joint EP005-001-001.

The QA Inspector observed that during the shift ZPMC CWI, Wu Ming Kai, and various CAWI Inspectors were monitoring the electrical parameters, travel speed and temperatures during the shift.

During the welding the QA Inspector randomly verified the welding machine amperes at 521 amperes and 29.3 volts utilizing a Fluke Meter.

The QA Inspector visually verified a single electrode was being utilized for the filler passes. The filler metal being used was JW-3 with a diameter of 4.8 millimeters the welding was in progress and appeared to conform with the welding procedure specifications (WPS) and the contract requirement.

Bay 3 OBG:

The QA Inspector randomly observed ZPMC Welders Li uzihong, ID Number 062447 and Xin Meng ID Number, ID 053742 utilizing the FCAW Process with ZPMC Weld Procedure Specification (WPS) WPS-B-T-2132-3 in the 2F (Horizontal Fillet) position utilizing the Automatic Welding Carriages, to weld various WT stiffeners to Side Plate Sub-Assembly SP423-001.

The QA Inspector randomly observed ZPMC CWI Wu Ming Kai, and various CAWI Inspectors monitoring weld parameters.

The QA Inspector also randomly verified welding parameters and they are as follows: 309 amps, 30.4 volts with a travel speed of 450 millimeters (mm) per minute for Mr. Li uzihong and 305 amps, 32 volts with a travel speed of 450 mm per minute for Mr. Wel Xin Meng.

Later during the shift, the QA Inspector made a random visual verification of the welding in progress on the following weld joints: SP423-000-003, 004, 007 and 008. The welding being performed appeared to comply with the above listed Welding Procedure Specifications (WPS), and the contract requirements.

Bay 8:

The QA Inspector observed ZPMC qualified operator Wang Lang Ying 045265 performing the Submerged Arc Welding (SAW) process utilizing WPS) WPS-B-T-3221-BU3-C-S-1 in the 1G (Groove) position to weld fill passes for tower diaphragm sub assembly P963 (W) + SA 370 (W).

The QA Inspector visually verified a single electrode was being utilized for the fill weld passes, and the filler

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metal was LA-85 with a diameter of 4.8 millimeters.

The Flux was verified as MIL800-HPN1, the base material listed on the (WPS) as HPS 485WT2 Shear Link grade 485. The QA Inspector observed and noted that during the welding operation the ZPMC welding operator would before welding over previous deposited weld pass utilized the proper cleaning method to remove slag prior to resuming the welding operation.

The QA Inspector observed that during the shift ZPMC CWI, Ye Yong Jun and various ZPMC CAWI Inspectors monitoring the electrical parameters, travel speed and temperatures at several welding stations in Bay # 8. The work being performed was in progress generally appeared to conform to contract specifications.

The QA Inspector also observed ZPMC qualified Welder Zhang Feng ID 049769 utilizing the Shielded Metal Arc Welding (SMAW) Process with ZPMC Weld Procedure Specification (WPS) WPS-B-P-2112 to weld stiffener side plates RS92C, weld joint's SP422-001-001 and SP422-001-002 piece mark SP 422 A to Non SPCM plate material, and the electrode filler metal was verified as TL-508.

The QA Inspector observed ZPMC qualified Welder Li Zhaoqian ID 048810 utilizing the Flux Cored Arc Welding (FCAW) process with ZPMC Weld Procedure Specification B-T-3221-B-U3C-S-1 to weld a root pass for stiffener EP001-001-001.

During the welding of the root pass the QA Inspector verified the welding machine amperes and voltage utilizing a Fluke meter which registered 280 amperes with 32 volts.

The QA Inspector observed that during the shift ZPMC CWI, Huang Wen Hang and various ZPMC CAWI Inspectors were monitoring the electrical parameters, travel speed and temperatures at several welding stations in Bay # 3. The work being performed was in progress generally appeared to conform to contract specifications.

Bay 8:

The QA Inspector randomly observed ZPMC Welding Operators Ma Ying ID 045270 WPS) WPS-B-T-3221-BU3-C-S-1 in the 1G (Groove) position to weld fill passes for SA309 (E)+P775(E), weld joint ESD1-SA309-11A/12A.

The QA Inspector visually verified a single electrode was being utilized for the filler passes, the filler metal was LA-85 with a diameter of 4.8 millimeters.

The Flux was verified as MIL800-HPN1, the base material listed on the (WPS) as HPS 485WT2 Shear Link grade 485. The QA Inspector observed and noted that during the welding operation the ZPMC welding operator would before welding over previous deposited weld pass utilized the proper cleaning method to remove slag prior to resuming the welding operation.

The QA Inspector observed that during the shift ZPMC CWI, Sha Zhi and various ZPMC CAWI Inspectors monitoring the electrical parameters, travel speed and temperatures at several welding stations in Bay # 8.

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The work being performed was in progress generally appeared to conform to contract specifications. For more detail see Photographs shown below:



Summary of Conversations:

As noted within the report shown above.

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: Dixon, Roscoe

Quality Assurance Inspector

Reviewed By: Hager, Craig

QA Reviewer
