

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-002256**Date Inspected:** 02-May-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 1730**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Xu Le Feng**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**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Mike Hasler was present to observe the fitup, welding and related activities associated with the fabricating of Caltrans Mock-up, 77M, 89M, 114M, Orthotropic Box Girders (OBG) and Tower, for the San Francisco Oakland Bay Self Anchored Suspension Bridge, at Zhenhua Port Machinery Company (ZPMC) facility on Changxing Island.

Item	Description	WBS	Dwg No.	Status
1	Tower Skin Plate	NA	NA	Welding
<p>New Tower Shop Bay 2: Caltrans QA Inspector observed ZPMC performing submerged arc welding (SAW), tower skin plate P850 (E) joining P1568 (E), root pass weld. The weld is identified as ESD1-SA77 A/E- 43B, complete joint penetration (CJP). The welder operator is identified as Ms. Shen Mei, welder stamp 041716, utilizing welding procedures WPS-B-T-2221-B-U3c-S-1. Caltrans QA measured current welding parameters at approximately 515 amps, 29.0 volts and 455mm/min (millimeters per minute) travel speed. Caltrans QA verified preheat and interpass temperatures during the welding of ASTM 709M, Grade 345F2 type materials, 60mm joining 60mm thicknesses. The preheat temperature prior to the start of welding measures more than 110 degrees Celsius but less than 230 degrees Celsius during maximum interpass temperature verification. Caltrans QA observed ZPMC QC/CWI inspector, Mr. Xu Le Feng monitoring the activities at the work station. The following digital picture illustrates welding in progress.</p>				

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- 2 Tower Skin Plate NA NA Welding

New Tower Shop Bay 2: Caltrans QA Inspector observed ZPMC performing shielded metal arc welding (SMAW), tower skin plates subassembly P789, P788, P790, P791 joining subassembly, tack weld. The plates are joined to form one continuous weld. That is identified as ESD1-SA216 K/K- 5, 3, 1, ESD1- SA216-25 and ESD1-SA216 J/K- 9A, 8A, 7A & 15A. The suffix A letter designates that the weld is a complete joint penetration weld (CJP) and the weld number without the A suffix is a partial joint penetration (PJP) weld. The tack welders are identified as Mr. Yang Lei, welder stamp 040690 and Mr. Liu Wei, welder stamp 048532, utilizing welding procedure WPS-B-P-2211-B-U3b. Caltrans QA measured current welding parameters at approximately 510 amps, 30.0 volts and 460mm/min (millimeters per minute) travel speed. Caltrans QA verified preheat and interpass temperatures during the welding of ASTM 709M, Grade 345F2 type materials, 100mm joining 75mm thicknesses. The preheat temperature prior to the start of welding measures more than 110 degrees Celsius but less than 230 degrees Celsius during maximum interpass temperature verification. Caltrans QA observed ZPMC QC/CWI inspector, Mr. Xu Le Feng monitoring the activities at the work station.

- 3 Tower Skin Plate NA NA Heat Straightening

New Tower Shop Bay 2: Caltrans QA ZPMC performing flame heat straightening operations on tower skin plate for mill induced distortion. The tower skin plate and heat straightening procedure are identified as skin plate P853 (W), procedure HSR1 (T)-1235, revision (0). Caltrans QA observed ZPMC heating the plate manually with a rose-bud torch. Caltrans QA observed ZPMC Quality Control Inspector, Mr. Yang Bai Qiang monitoring the heat straightening of the plate using a calibrated infra-red temperature indicating device to monitor the heat. The following digital picture illustrates ZPMC heat straightening in progress.



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4	Tower Skin Plate	NA	NA	Welding
<p>New Tower Shop Bay 1: Caltrans QA Inspector observed ZPMC performing submerged arc welding (SAW), tower skin plate P217 (S) joining P1270 (S), fill pass weld. The weld is identified as SSD1-SA178 C/D- 23A, complete joint penetration (CJP) weld. The welder operator is identified as Ms. Xu Yan, welder stamp 052917, utilizing welding procedures WPS-B-T-2221-B-U3c-S. Caltrans QA measured current welding parameters at approximately 720 amps, 33.0 volts and 610mm/min (millimeters per minute) travel speed. Caltrans QA verified preheat and interpass temperatures during the welding of ASTM 709M, Grade 345F2 type materials, 60mm joining 60mm thicknesses. The preheat temperature prior to the start of welding measures more than 110 degrees Celsius but less than 230 degrees Celsius during maximum interpass temperature verification. Caltrans QA observed American Bridge/Fluor (ABF) inspectors, Mr. Wen Jian Bo and Mr. Li Han Jie monitoring the activities at the work station.</p>				

Summary of Conversations:

As identified within the contents of this 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:	Hasler, Mike	Quality Assurance Inspector
Reviewed By:	Cuellar, Robert	QA Reviewer
