

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-001285**Date Inspected:** 23-Jan-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 930**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:** 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:** Tower and OBG Fabrication**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

Procedure Qualification:

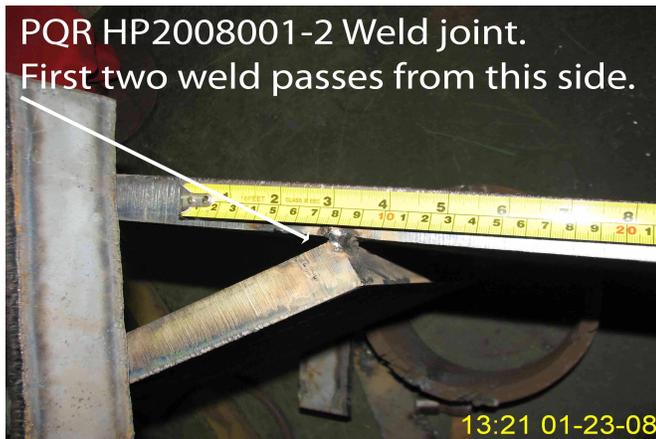
CWI Inspector: Huang Wei (ZPMC) and Craig Knopps (American Bridge/Fluor)

The QA Inspector observed ZPMC welder Mr. Jiang Xiaohu stencil 66155 is using the shielded metal welding process to qualify Procedure Qualification number HP2008001-2. ZPMC has issued preliminary welding procedure specification PWPS-B-T-2213 which details a complete joint penetration groove weld joining two 26 mm thick plates joined at a 30 degree angle and positioned in a 3G orientation. American Bridge CWI Mr. Craig Knopps presented the QA Inspector with a copy of preliminary Welding Procedure Specification PWPS-BH-T2213, a mill certification for welding electrodes TL-508 3.2 mm and 4.0 mm diameters and a mill certificate for a 26 mm thick ASTM A709-50F-2 steel plate, heat number 6103642N, batch number 624174. The QA Inspector confirmed the 26 mm thick plates being welded have batch number 624174 marked on each of the plates and appear to be at a 30 degree angle. Mr. Jiang Xiaohu used a torch to preheat the base materials a minimum of 20°C prior to commencement of the welding operations. The QA Inspector observed THJ506-Fe-1 3.2 mm diameter electrodes with a welding current of approximately 125 amps and a welding travel speed of 50.3

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mm per minute for the first layer of weld material. THJ506-Fe-1 4.0 mm diameter electrodes were used with a welding current of approximately 157 amps and a welding travel speed of 61.5 mm per minute for the second layer of weld material. Both of these welds were made on the acute angle side of the weld joint as shown on the WPS joint detail. The WPS requires the front side of the weld joint, opposite from where the first two welds were made, to be backgouged prior to welding. A review of ZPMC CWI Inspector Mr. Huang Wei's inspection report indicates the first weld passes had a heat input of 338 kJ/mm and the second layer of weld had a heat input of 350 kJ/mm. American Bridge CWI Mr. Craig Knopps stated this PQR #HP2008001-2 is identical to two other PQR's which had not been successfully completed. Mr. Knopps said this weld joint needs to be air carbon arc gouged and ground and that no additional welding will be conducted today. Items observed by the QA Inspector appear to comply with project specifications.



Pass No.	Layer No.	Electrode	Gas	Flow Rate	Preheat & Inter-pass Temp	Welding Current	Voltage	Travel Speed	Time	Heat Input	Note
1	1	THJ2			75	126	23.5	470	477	338	
2	2	THJ4.0			95	156	23	400	296	350	

Summary of Conversations:

See above for summary of conversations.

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: Dawson, Paul

Quality Assurance Inspector

Reviewed By: Cochran, Jim

QA Reviewer