DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-010522
Date Inspected: 13-Nov-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 1900
OSM Departure Time: 700
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: OBG Fabrication

Summary of Items Observed:
CWI Inspectors: Mr. Li Ming, Mr. Wan Wen Zhong

On this date CALTRANS OSM 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. This QA Inspector observed the following:

Assembly Yard

This QA Inspector performed random ultrasonic inspections top deck plate butt weld OBW1-001 repair areas as referenced on NDE request 11132009-1. These ten weld locations had initially been ultrasonically rejected by ZPMC reference UT report UT-1W-015 dated 11-06-2009, and have now been repaired and accepted by ZPMC personnel. This butt weld joins OBG segment 1AAW to segment 1AW. This QA Inspector utilized “A”, “B”, “C” and “D” ultrasonic scans with a 70 degree transducer and the weld repair areas appear to comply with project specifications. For additional information on these inspections see Caltrans the TL6027 Ultrasonic Test Report dated November 13, 2009.

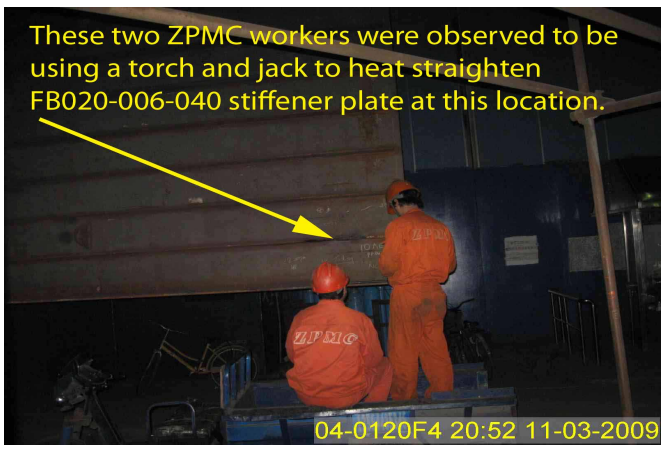
OBG BAY 10

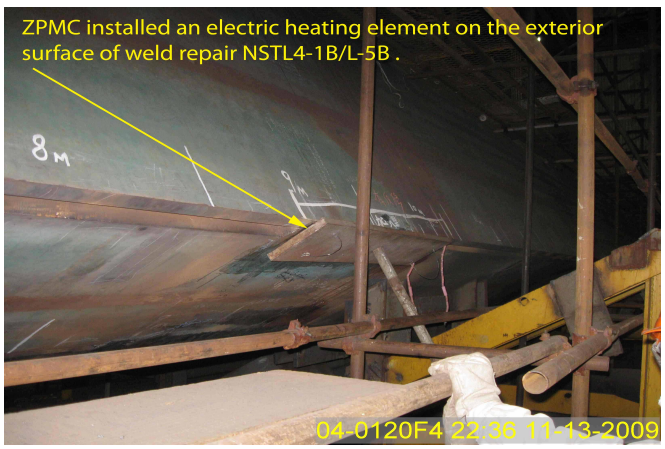
This QA Inspector observed ZPMC welder Ms. Bu Xue Zhen, stencil 052075 is using flux cored welding procedure WPS-B-T-2233-G-U2-F-1 to make tower weld SSTL4-1B/L-3A. This QA Inspector observed a

welding current of approximately 280 amps and 31 volts and Quality Control Inspector Mr. Li Pong Fei had previously recorded a welding current of 312 amps and 30.6. Mr. Li Pong Fei observed this QA Inspector had measured 280 amps and Mr. Li Pong Fei used his own welding current meter to confirm the welding current of 280 amps. Mr. Li Pong Fei then adjusted the welding current to approximately 300 amps. This QA Inspector observed that Ms. Bu Xue Zhen is certified to make this weld and this base material appears to have been preheated to a minimum of 110 degrees Celsius using electric heating elements. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Ms. Ye Xulan, stencil 040581 is using shielded metal arc welding procedure WPS-345-SMSW-4G(4F)-Repair to make repair weld NSTL4-1B/L-2B on the interior surface of North tower lift 4. This QA Inspector measured a welding current of approximately 150 amps and the welding electrodes are being stored in a heated portable electrode storage oven. This QA Inspector observed Mr. Fang Yung Jie is certified to make this weld. This QA Inspector observed that the base material adjacent to where Ms. Ye Xulan was welding on the interior surface of North tower lift 4 melted a 180°C temperature indicating crayon. This QA Inspector used a 180°C temperature indicating crayon on the exterior surface of North tower lift 4 where Ms. Ye Xulan was welding and the 180°C temperature indicating crayon did not melt, which indicates the exterior surface was below the minimum required preheat temperature. This QA Inspector informed ZPMC QC Inspector Mr. Li Peng Fei that the exterior skin plate surface where Ms. Ye Xulan was welding did not appear to be adequately preheated and Mr. Li Peng Fei had an electric heating element installed at this location. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed Mr. Chang Chuan Gang, stencil 053870 is preparing to use flux cored weld procedure WPS-345-FCAW-2G(2F)-Repair to make tower lift 4 skin plate B to skin plate C repair weld NSTL4-1B/L-5B on the interior side of the tower. This QA Inspector observed Mr. Chang Chuan Gang has an electric heater on the inside surface where he is preparing to weld and that the majority of the adjacent base material adjacent to this weld location was melting a 180°C temperature indicating crayon. This QA Inspector used a 180°C temperature indicating crayon on the exterior surface of the skin plates where Mr. Chang Chuan Gang was preparing to weld and that the 180°C temperature indicating crayon did not melt which indicates the base material was not preheated as required by the WPS. This QA Inspector informed ZPMC QC Inspector Mr. Li Peng Fei that the exterior skin plate surface where Mr. Chang Chuan Gang was preparing to weld did not appear to be adequately preheated and Mr. Li Peng Fei had an electric heating element installed at this location. Items observed on this date appeared to generally comply with applicable contract documents. See the photographs below for additional information.





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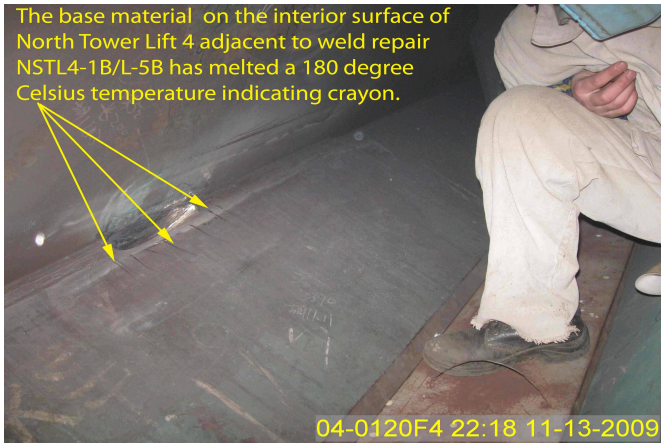

Summary of Conversations:

See 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 Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Carreon,Albert	QA Reviewer