

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:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-018774**Date Inspected:** 19-Dec-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**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:** OBG**Summary of Items Observed:**

CWI Inspector: Mr. Bao Qian

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.

OBG Bay 13

Segment 14E

This QA Inspector observed ZPMC welder Ms. Wang Min, stencil 044771 used submerged arc welding procedure specification WPS-B-T-2221-B-L2C-S-2 to complete OBG segment 14E groove weld DP3159-001-021. This QA Inspector observed ZPMC QC has recorded a welding current of 634 amps, 31.0 volts and a welding travel speed of 528mm per minute. This QA Inspector observed that Ms. Wang Min appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Sun Guzuo, stencil 068100 used submerged arc welding procedure specification WPS-B-T-2221-B-L2C-S-2 to complete OBG segment 14E groove weld DP3158-001-017. This QA Inspector observed ZPMC QC has recorded a welding current of 648 amps, 30.8 volts and a welding travel speed of 581mm per minute. This QA Inspector observed that Mr. Sun Guzuo appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

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OBG Bay 14

Segments 13E and 14E

This QA Inspector observed ZPMC welder Mr. Jian Zhou, stencil 067571 used shielded metal arc welding procedure WPS-B-P-2214-TC-U4B-FCM-1 to make OBG segment 13AE weld SEG3007AD-047. This QA Inspector observed ZPMC QC has recorded a welding current of 158 amps 25.7 volts and a welding travel speed of 118 mm per minute. This QA Inspector measured welding current of approximately 160 amps. This QA Inspector observed Mr. Jian Zhou appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Chen Chuanzong, stencil 044824 used flux cored welding procedure specification WPS-B-T-2232-ESAB to make OBG segment 14E weld SEG3019-001-323. This QA Inspector observed ZPMC QC recorded a welding of 310 amps, 26.5 volts and a welding travel speed of 305mm per minute. This QA Inspector measured welding current of approximately 260 amps and 28 volts. This QA Inspector observed that the maximum welding voltage listed in the welding procedure specification is 26.6 volts and that Mr. Chen Chuanzong had a welding voltage that was approximately 1.5 volts above the maximum limit. Mr. Chen Chuanzong observed the welding voltage and he adjusted the welding machine voltage to approximately 26 volts. Following adjustment of the welding machine, items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wu Hai Jun, stencil 201087 used shielded metal arc welding procedure specification WPS-B-P-2212-TC-U4B-FCM-1 to complete weld SEG3019X-099. This QA Inspector observed ZPMC has recorded a welding current of 240 amps and Mr. Wu Hai Jun appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wang Zhengbin, stencil 216086 used shielded metal arc welding procedure WPS-345-SMAW-2G(2F)-FCM-Repair-1 to make a weld repair of ultrasonic rejections to OBG segment 13AE weld SEG3007K-038. ZPMC has issued weld repair document B-WR-19143 that documents the repair of this weld. QC Inspectors have recorded the depth of this repair was 9mm, and a welding current of 172 amps, 25.3 volts and a welding travels peed of 112mm per minute. This QA Inspector observed Mr. Wang Zhengbin appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Jin Rong, stencil 066471 used flux cored welding procedure WPS-B-T-2232-ESAB to make OBG segment 14E weld SEG3019K-013. ZPMC QC had recorded a welding current of 295 amps, 25.7 volts and a welding travel speed of 274mm per minute. This QA Inspector measured a welding current of approximately 280 amps, 28 volts and Mr. Jin Rong appeared to be certified to make this weld. This QA Inspector observed that the maximum welding voltage listed in the welding procedure specification is 26.6 volts and that Mr. Jin Rong had a welding voltage that was approximately 4.0 volts above the maximum limit. ABF CWI Mr. Bao Qian observed the welding voltage and he adjusted the welding machine voltage to approximately 26 volts. Following adjustment of the welding machine, items observed on this date appeared to generally comply with applicable contract documents.

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This QA Inspector observed ZPMC welder Mr. Han Lin stencil 062782 used flux cored welding procedure WPS-B-T-2232-ESAB to make OBG segment 14E weld SEG3019M-033. This QA Inspector observed ZPMC QC had recorded a welding current of 300 amps, 26.1 volts and a travel speed of 295mm per minute. This QA Inspector measured a welding current of approximately 300 amps, 32.3 volts and Mr. Han Lin appeared to be certified to make this weld. This QA Inspector observed that the maximum welding voltage listed in the welding procedure specification is 26.6 volts and that Mr. Han Lin had a welding voltage that was approximately 5.7 volts above the maximum limit. ABF CWI Mr. Bao Qian observed the welding voltage and he adjusted the welding machine voltage to approximately 26 volts. Following adjustment of the welding machine, items observed on this date appeared to generally comply with applicable contract documents. See the photograph below for additional information.

This QA Inspector observed ZPMC welder Mr. Wang Hai Yang, stencil 068994 used flux cored welding procedure WPS-B-T-2232-ESAB to make OBG segment 13AE weld SA3007K-001. ZPMC QC had recorded a welding current of 290 amps, 25.9 volts and a welding travel speed of 280mm per minute. Mr. Wang Hai Yang appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wang Li, stencil 044772 used shielded metal arc welding procedure specification WPS-B-P-2214-TC-U4B to complete weld SEG3019A-027. This QA Inspector observed ZPMC has recorded a welding current of 154 amps, 25.3 volts a welding travel speed of 116mm per minute and Mr. Wang Li appeared to be certified to make this weld. This QA Inspector measured a welding current of approximately 160 amps. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Sun Lingling, stencil 048047 used shielded metal arc welding procedure specification WPS-B-P-2213-FCM-1 to complete weld SEG3019W-101 and 102. This QA Inspector observed ZPMC has recorded a welding current of 153 amps, 25.1 volts a welding travel speed of 118mm per minute and Mr. Sun Lingling appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zhu Jibo, stencil 055564 used flux cored welding procedure WPS-B-T-2132-ESAB to make OBG segment 14E welds SA3012-107 and 108. ZPMC QC had recorded a welding current of 292 amps, 24.9 volts and a welding travel speed of 305 mm per minute. Mr. Zhu Jibo appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zhang Quin Quan, stencil 044774 used flux cored welding procedure WPS-B-T-2233-ESAB to make OBG segment 14E weld SEG3009D-015. This QA Inspector observed ZPMC QC had recorded a welding current of 259 amps, 25.3 volts and a travel speed of 138mm per minute. This QA Inspector observed Mr. Zhang Quin Quan appeared to be certified to make these welds. Items observed on this date appeared to generally comply with applicable contract documents.

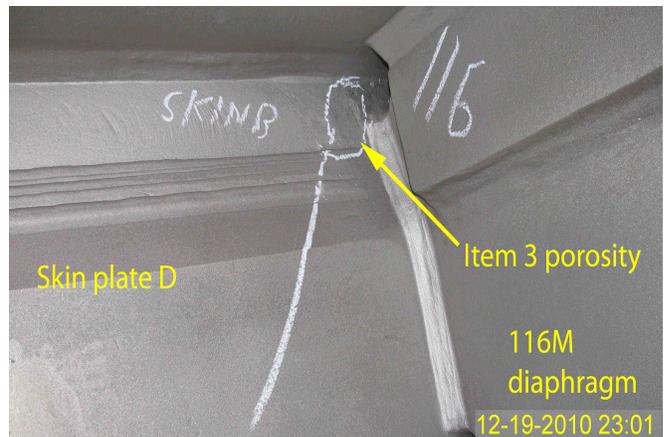
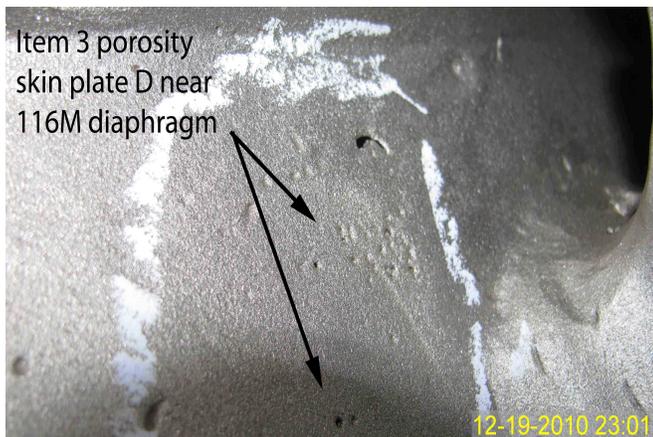
Blast shop 2

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ZPMC requested Caltrans personnel to perform visual inspections of West Tower Lift 4 interior surfaces between 116 meters elevation to 131 meters on December 19, 2010 at around 22:30 hours following the initial pre-blast cleaning of the steel surfaces. This QA Inspector along with other QA Inspectors performed random visual inspections of these areas. This QA Inspector visually observed approximately 30 locations that required grinding to resolve visual weld spatter, arc strikes, shallow nicks, scrapes, and other minor surface rejections and approximately five areas that require magnetic particle inspections. This QA Inspector observed items #3 and #4 as listed below. QA Inspectors observed a total of six locations which require weld repairs. Below are the items that his QA Inspector listed on a "Blast Inspection" incident report dated December 19, 2010.

1. Base metal gouge on skin A elevation 129M near AB corner.
2. N/A
3. Weld porosity skin D near upper side of 116M diaphragm cope hole.
4. Misdrilled grate support bolt hole on 116M diaphragm inner ring on skin plate A side.
5. Porosity in the weld between top of upper 123 diaphragm and skin plate D, near D/E corner
6. Porosity in the weld between lower 127 diaphragm and skin plate D, near D/E corner
7. Porosity in the weld between back side of lower 127 diaphragm and skin plate E, near D/E corner



Summary of Conversations:

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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 James Devey +8615000026784, who represents the Office of Structural Materials for your project.

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