

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-013013**Date Inspected:** 29-Mar-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 Inspectors: Mr. Li Zhi Jiang, Mr. Li Jia, Mr. Li Yan Hua, Mr. Xu Tao

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:

OBG BAY 2

This QA Inspector observed ZPMC welder Ms. Ma Ying stencil 045270 is using submerged arc welding procedure specification WPS-B-T-2221-B-L2C-S-2 to make groove weld FB3090A-079 attaching OBG floor beam FB3090A-001 plates. This QA Inspector observed a welding current of approximately 580 amps and 31.0 volts. This QA Inspector observed that Ms. Ma Ying appears to be monitoring the interpass temperature of the base material and is waiting until the base material cools before making additional weld passes and Ms. Ma Ying appears 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. Yan Shitian, stencil 062708 is using flux cored welding procedure WPS-B-T-2231-U2A-F-1 to make floor beam weld FB3207-001. This QA Inspector observed ZPMC QC Inspector Mr. Zhan Hai Feng is monitoring this welding and Mr. Yan Shitian appears to be certified to make this

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weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Ms. Zhang Sumei, stencil 207464 is using shielded metal arc welding procedure specification WPS-B-P-2211-B-U2 to make tack weld FB3172-002.

This QA Inspector observed a welding current of approximately 180 amps, a torch is being used to preheat the base material and Ms. Zhang Sumei appears to be certified to make this weld. This QA Inspector observed the shielded metal arc welding electrodes are being stored in an electrically heated electrode storage container which is warm to the touch. Items observed on this date appeared to generally comply with applicable contract documents.

OBG BAY 6

This QA Inspector observed ZPMC welder Mr. Xiao Di, stencil 203204 is using shielded metal arc process WPS-B-P-3133-TC-P5 to tack weld run off extension plates on Weld Jacking Frame weld WJF-0-043. This QA Inspector observed This QA Inspector observed ZPMC QC Inspector Mr. Liu Chuan Gang is monitoring this welding and Mr. Xiao Di appears to be certified to make this weld. Items observed by the QA Inspector appear to comply with project specifications.

OBG Bay 14

This QA Inspector observed ZPMC welder Ms. Sun Guzuo, stencil 058100 has recently used submerged arc welding procedure WPS-B-T-2221-B-U2C-S-1 to make groove weld SEG3001*-020 between deck plate DP3005 and deck plate DP3006. This QA Inspector observed QC Inspector Mr. Guo Pan has recorded a welding current of 647 amps and 32.7 volts. This QA Inspector confirmed that Ms. Sun Guzuo appears 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 Ms. Hue Junrong, stencil 201215 is using flux cored welding procedure WPS-B-T-2232-TC-U4b-Fto make OBG weld SEG3026T-041. This weld is located in OBG segment 12CW near panel point 117. This QA Inspector observed ZPMC QC/CWI Inspector Mr. Xu Tao has recorded a welding current of 287 amps and 29.5 volts. This QA Inspector observed Ms. Hue Junrong appears 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. He Hanbi, stencil 202122 is using flux cored welding procedure WPS-B-T-2232-TC-U4b-Fto make OBG weld SEG3006S-129. This weld is located in OBG segment 12CW near panel point 117. This QA Inspector observed ZPMC QC/CWI Inspector Mr. Xu Tao has recorded a welding current of 299 amps and 30.1 volts. This QA Inspector observed Mr. He Hanbi appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

Segment Trial Assembly

This QA Inspector observed ZPMC welder Mr. Zhang Hanming, stencil 220066 has recently used flux cored welding procedure WPS-B-T-2231 to make weld SSD27-PP051-101 and -102 on segment 7BE near panel point PP51 cross beam 7. This QA Inspector observed ZPMC QC has recorded a welding current of 196 amps and 26.0 volts. This QA Inspector observed that Mr. Zhang Hanming appears to be certified to make this weld. Items

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observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Chen Zheng Hua, stencil 220067 has recently used flux cored welding procedure WPS-B-T-2231 to make weld SSD27-PP051-141 and -142 on segment 7BE near panel point PP51 cross beam 7. This QA Inspector observed ZPMC QC has recorded a welding current of 194 amps and 24.0 volts. This QA Inspector observed that Mr. Chen Zheng Hua appears 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. Peng Jian Cheng, stencil 222396 has recently used flux cored welding procedure WPS-B-T-2231 to make weld SSD25-PP051-032 and -048 on segment 7BW near panel point PP51 cross beam 7. This QA Inspector observed ZPMC QC has recorded a welding current of 224 amps and 25.0 volts. This QA Inspector observed that Mr. Peng Jian Cheng appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

ABF issued "Inspection Notification Sheet" number 03282010-1 item #1 informing QA that on 3-29-2010 at 19:00 hours ABF Inspectors will be performing ultrasonic (UT) inspections of repaired weld OBE7B-003 which joins the bottom plates between OBG 7AE and 7BE, BP-D6. This weld is located in the trial assembly area. This QA Inspector was informed by ABF/Sense UT Inspectors that this weld is UT acceptable. This QA Inspector performed ultrasonic inspections at the sixteen weld repair locations as listed on the UT report data sheets for detection of longitudinal and planar transverse indications utilizing scanning patterns A, B, C and D (AWS D1.5 Fig 6.7) and no UT rejections were observed. Items observed on this date appeared to generally comply with applicable contract documents. Note: These inspections are being documented and tracked on "Verification Witness Request" documents and no TL-6027 UT report was issued for these inspections.

ABF issued "Inspection Notification Sheet" number 03282010-2 item #1 informing QA that on 3-29-2010 at 23:00 hours, ABF Inspectors will be performing ultrasonic (UT) inspections of repaired welds OBE7B-005 / OBE7B-004 which joins the side plates on bike path side between OBG 7AE and 7BE, SP-C4-5. These welds are located in the trial assembly area. This QA Inspector was informed by ABF/Sense UT Inspectors that this weld is UT acceptable. This QA Inspector performed ultrasonic inspections at the four weld repair locations as listed on the UT report data sheets for detection of longitudinal and planar transverse indications utilizing scanning patterns A, B, C and D (AWS D1.5 Fig 6.7) and no UT rejections were observed. Items observed on this date appeared to generally comply with applicable contract documents. Note: These inspections are being documented and tracked on "Verification Witness Request" documents and no TL-6027 UT report was issued for these inspections.

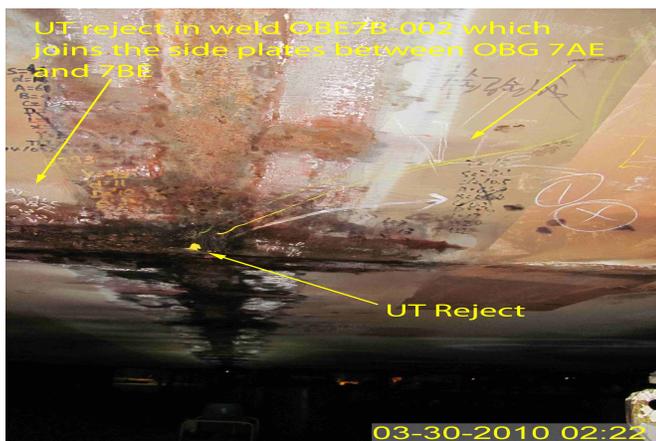
ABF issued "Inspection Notification Sheet" number 03292010-1 R1 item #1 informing QA that on 3-30-2010 at 00:00 hours (midnight) ABF Inspectors will be performing ultrasonic (UT) inspections of repaired weld OBE7B-005 which joins the bikepath edge plates between OBG 7AE and 7BE, EP-B3. This weld is located in the trial assembly area. At around 21:00 hours this QA Inspector was informed by ABF/Sense UT Inspectors that this weld is UT acceptable. Note: ABF performed this UT inspection a minimum of 3 hours prior to the time that was stated on the "Inspection Notification Sheet". This QA Inspector performed ultrasonic inspections at the three weld repair locations as listed on the UT report data sheets for detection of longitudinal and planar transverse indications utilizing scanning patterns A, B, C and D (AWS D1.5 Fig 6.7) and no UT rejections were observed. Items observed on this date appeared to generally comply with applicable contract documents. Note: These inspections are being documented and tracked on "Verification Witness Request" documents and no TL-6027 UT

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report was issued for these inspections.

ABF issued "Inspection Notification Sheet" number 03292010-1 R1 item #1 informing QA that on 3-29-2010 at 19:00 hours ABF Inspectors will be performing ultrasonic (UT) inspections of repaired weld OBE7B-002 which joins the side plates between OBG 7AE and 7BE, SP-E7. This weld is located in the trial assembly area. This QA Inspector was informed by ABF/Sense UT Inspectors that this weld is UT acceptable. This QA Inspector performed ultrasonic inspections at the eight weld repair locations as listed on the UT report data sheets for detection of longitudinal and planar transverse indications utilizing scanning patterns A, B, C and D (AWS D1.5 Fig 6.7) and this QA Inspector observed one class "A" UT reject at Y=20mm. This QA Inspector issued a UT rejection data sheet which was attached to the ABF "Verification Witness Request" document. This QA Inspector had previously been informed that Caltrans management has decided that no incident reports are to be issued for these types of UT inspections. The remainder of the weld repair areas appeared to generally comply with applicable contract documents. Note: These inspections are being documented and tracked on "Verification Witness Request" documents and no TL-6027 UT report was issued for these inspections. See the photograph below for additional information.



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