

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-004407**Date Inspected:** 29-Oct-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 1400**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2300**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai China**CWI Name:** Zhu Zhong Hai**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/OBG**Summary of Items Observed:**

89M Mock-up

Caltrans QA Inspector observed that ZPMC were performing heat straightening with a 10 ton jack at MUB-MA21-A/J-23 due to the root gap being 10mm. Upon the arrival of this QA inspector it was observed that ZPMC had placed the 10 ton jack in place and was using their typical torch set up to heat the fit lug from the back side through the diaphragm while applying pressure from the jack. This process will also take place for the MUB-MA21-A/J-62 fit lug joint due to the root gap also being out of tolerance as outlined within the new weld trial WPS. ZPMC had informed this Caltrans QA inspector that no welding would take place today on swing shift due to inclement weather and the above process for the root gap and that tomorrow 10/30/08 they will weld the fit-lug to diaphragm fillet welds with the new trial procedure ABF-WPS-D15-F1202A for the Shielded Metal Arc Welding (SMAW) process. The welding electrode will be E7018-C3L, 3.2mm diameter. At this time there is no PQR to back up this WPS; Caltrans was informed that if this weld trial passes ABF and ZPMC will run the PQR for this WPS. Also noted on the new WPS is the root gap tolerance which states for plates and shapes less than 75mm the root gap shall not be greater than 5mm. If the root gap is greater than 2mm that weld size shall be increased the same amount as the root gap up to 5mm. Example 4mm root gap the weld size for a 22mm fillet weld will be increased to 24mm (+2mm). This QA Inspector was also informed by ABF that after the welding of the diaphragm to fit lug with the SMAW high nickel electrode tomorrow 10-29-08, that if these welds pass with no cracking or controlled heat cool down problems they will continue at this same location with 2 more trials to achieve 3 consecutive acceptable results. Below are digital photos of the jacking and root gap for the fit-lugs.

Tower Shop Bay 3

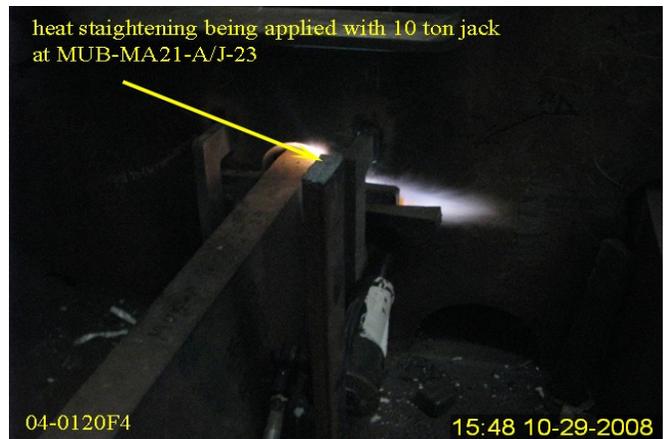
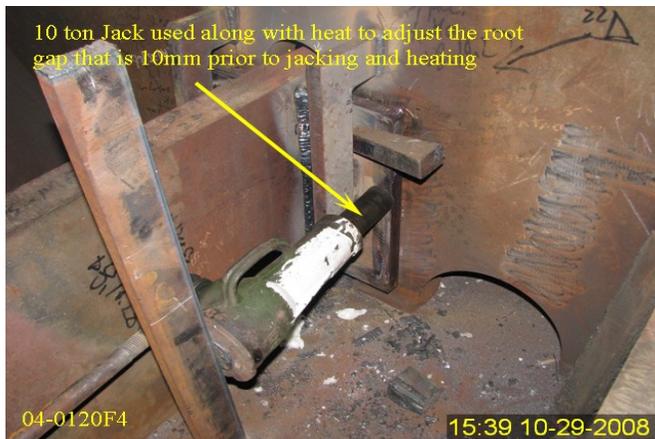
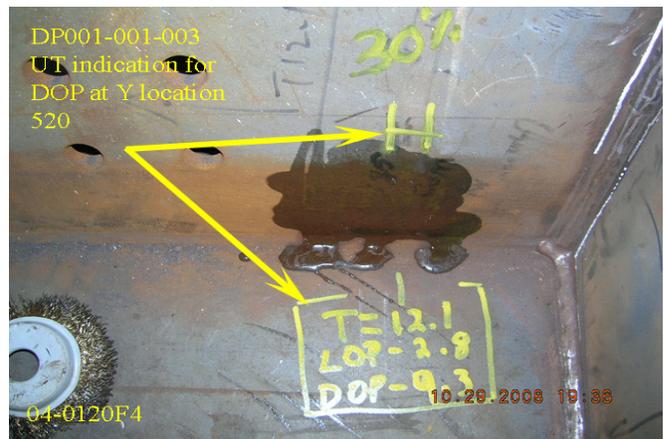
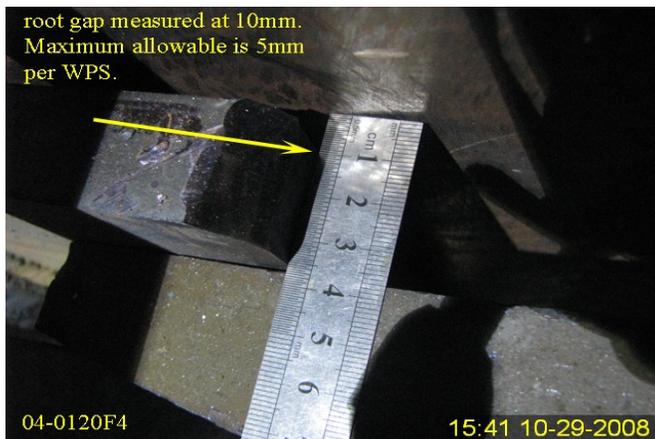
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The QA Inspector randomly observed ZPMC personnel performing grinding of repairs for the Orthotropic Box Girder (OBG) deck panel Partial Joint Penetration (PJP) welds. This QA inspector along with ZPMC and ABF personnel performed the 3 party final visual inspections. All 3 parties agreed that the repaired areas were completed and signed the yellow ABF tracking tag affixed to the deck panel. The deck panels inspected were DP136-001 and DP324-002. Certified Welding Inspector for ZPMC Li Yan Hua (dayshift) and Chen Xi (night shift) were present at this location for the monitoring of the deck repairs and inspection. Also noted in bay 3 to monitor deck panel repairs were ABF personnel Wang Wei.

UT verification of DOP/LOP

This Quality Assurance (QA) inspector arrived at ZPMC for observation of the SAS super structure fabrication. This QA inspector performed Ultrasonic Examination (UT) on the closed rib Partial Joint Penetration (PJP) weld joints. This Verification was performed after ZPMC performed their UT testing. It was noted that on weld DP001-001-003 at the 520 Y location was measured to be 9.3mm DOP. Seven locations were tested by Ultrasonic Testing (UT) out of the seven areas tested 6 appeared to be within compliance of the required 9.6 mm Depth of Penetration (DOP) there were multiple locations that had less than 9.6mm of Depth of Penetration (DOP). The locations are being tracked on a UT report TL-6027 MOD (word document only) that was generated by this QA inspector and sent to the appropriate personnel for review.



Summary of Conversations:

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As noted 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 Josh Ishibashi, 1-376-471-0411, who represents the Office of Structural Materials for your project.

Inspected By:	Riley, Ken	Quality Assurance Inspector
Reviewed By:	Carreon, Albert	QA Reviewer
