

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-029983**Date Inspected:** 07-Sep-2013**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** Bernie Docena, Jesse Cayabyab**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:** SAS Tower**Summary of Items Observed:**

Caltrans Quality Assurance Inspector (QA) Joe Adame arrived at the American Bridge/Fluor (ABF) JV job site between the times noted above in order to monitor ABF Quality Control activities and the in process work being performed by ABF production personnel. The following items were observed:

NDT Inspection of Electroslag Welds (ESW)

RWR-201308-007

ESW N-042, Location "J"- Face A, B:

The QA Inspector observed ABF QC Inspector Jesse Cayabyab performed Ultrasonic Testing (UT) on Tower Electroslag Complete Joint Penetration (CJP) shear plate weld designated as ESW "J" at face A, B. Mr. Cayabyab stated that he was instructed by ABF to perform pulse echo UT to document the depths and indications prior to repair (pre-repair verification). The original "Y" locations were indications identified with pitch/catch UT as rejectable or recordable and designated to be removed and repaired.

Y Location was noted as -1470mm, 1530mm, 1675mm, 3460mm, 3480mm, 3550mm, 3570mm and HAZ areas located 300mm above and below the proposed repair locations.

QC/QA did not observe any rejectable indications with pulse echo UT.

QC/QA observed eight recordable indications with pulse echo UT.

The QA Inspector also performed UT of the above mentioned ESW location in accordance with the ABF approved supplemental procedure for confirmation and evaluation of planar defects. Tandem report for work performed on this date will be completed by QC Inspector Jesse Cayabyab and signed by both QA/QC parties. Items listed on tandem report reflect indications agreed upon by QA/QC. The areas will be reinspected after SMAW repairs. See TL-6027 for additional details on the items inspected on this date.

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## ESW Repair Welding

RWR201308-003

ESW E-043,"Q"-Face A:

The QA Inspector observed ABF welder Rick Clayborn (WID-2773) performing Shield Metal Arc Welding (SMAW) on the repair excavation on Electroslag Weld (ESW) Location "Q" at Face A. The locations and repair information are listed in Request for Weld Repair (RWR) 201308-003 from Ultrasonic Testing indications designated for repair. The repair locations were noted as:

Y= 2500mm~2660mm

L= 160mm

W= 50mm

D= 50mm

Prior to welding, Mr. Clayborn was observed preheating the weld to over 350° Fahrenheit using the Miller ProHeat 35 with heat induction blankets and a propylene torch. The welder was using 4.0mm diameter electrode (E7018-1 HR4) per ABF Welding Procedure Specification (WPS) ABF-WPS-D15-1000-Repair Rev.3. The welding process in use was the Shielded Metal Arc Welding process (SMAW). ABF QC Inspector Bernie Docena performed welding parameters verifications at random intervals throughout the shift. The welding observed appeared to be in compliance with the WPS noted above. The welding at this location was completed on this date. Mr. Clayborn could not finish grinding at this location due to blasting activities. The weld repair was covered with the Proheat thermal blankets and grinding of the weld reinforcement and final inspection of the repair will continue on 9-9-13.

## ESW Repair Welding

RWR-201307-009

ESW E-045, Location "F"-Face A:

The QA Inspector observed ABF welder Wai Kit Lai (WID-2953) performing Shield Metal Arc Welding (SMAW) on the repair excavation on Electroslag Weld (ESW) Location "F", at face A. The locations and repair information are listed in Request for Weld Repair (RWR) 201307-009 from Ultrasonic Testing indications designated for repair. The repair locations were noted as:

Y= 6350mm~6690mm

L= 340mm

W= 60mm

D= 25mm

Prior to welding, Mr. Lai was observed preheating the weld to over 350° Fahrenheit using the Miller ProHeat 35 with heat induction blankets. The welder was using 4.0mm diameter electrode (E7018-1 HR4) per ABF Welding Procedure Specification (WPS) ABF-WPS-D15-1000-Repair Rev.3. The welding process in use was the Shielded Metal Arc Welding process (SMAW). The welding parameters were verified by ABF QC Inspector Bernie Docena with a Fluke 337 current Clampmeter and preheat was verified with temperature indicators. The QC Inspector performed welding parameters verifications at random intervals throughout the shift. The welding observed appeared to be in compliance with the WPS noted above. The welding at this location was completed on this date. Mr. Lai performed grinding of the weld reinforcement the rest of the shift in preparation for final inspection of the repair.

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## Summary of Conversations:

Only general conversations with ABF/JV QC NDT personnel relevant to work and testing performed during this shift.

## 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 Gary Thomas (916) 764-6027, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Adame,Joe	Quality Assurance Inspector
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<b>Reviewed By:</b>	Mertz,Robert	QA Reviewer
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