

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 #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-030037**Date Inspected:** 10-Sep-2013**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**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:

ESW Repair Welding

RWR-201308-008

ESW S-042, Location "L"-Face B:

The QA Inspector was present to observe ABF welder Wai Kit Lai (WID-2953) performing Shield Metal Arc Welding (SMAW) on the repair excavation on Electroslag Weld (ESW) "L", at face B. The locations and repair information are listed in Request for Weld Repair (RWR) 201308-008 from Ultrasonic Testing indications designated for repair. The repair locations were noted as:

Y=6300mm~6570mm

L-270mm

W= 60mm

D= 45mm.

Prior to welding, Mr. Lai was observed preheating the weld to over 350° Fahrenheit prior to welding 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.

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The welding observed appeared to be in compliance with the WPS noted above.

NDT Inspection of Electroslag Welds (ESW)

ESW S-043, Location "T"-Face A, B:

RWR-201308-004

The QA Inspector observed ABF QC Inspector Jesse Cayabyab perform Ultrasonic Testing (UT) on Tower Electroslag Complete Joint Penetration (CJP) weld designated as ESW "T" Face A, B. The inspection was being performed on SMAW repairs. The "Y" Locations were noted as: Y=4260mm,4870mm and additional HAZ areas located 300mm above and below the prosed repair. Mr. Cayabyab was also instructed to perform UT inspection for verification of planar indications using both the "pulse echo" (PE) technique and the "pitch and catch" (PC) technique on any recordable indications in 300mm above and below the repair. The QA Inspector performed joint UT Inspection with Mr. Cayabyab at the locations listed below.

ESW S-043 Location "T" (Face A, B) 80mm, 100mm Thick, 70° Angle (Results below):

SMAW Repair Y: 4260mm, X: N/A

-PEUT: No rejectable indications observed.

SMAW Repair Y: 4870mm, X: N/A

-PEUT: No rejectable indications observed.

Y: 4020mm, X: -5mm, Face B

-PEUT: Ind. Lvl (A): 61, Ref. Lvl (B): 51, Att. Factor(C): 9, Ind. Rating (D): 9, SD (E): 125

-PCUT: Ind. Lvl (A): 79, Ref. Lvl (B): 51, Att. Factor(C): 16, Ind. Rating (D): 12, SPa (E): 180

Y: 4020mm, X: -15mm, Face A

-PEUT: Ind. Lvl (A): 62, Ref. Lvl (B): 51, Att. Factor(C): 7, Ind. Rating (D): 4, SD (E): 100

-PCUT: Ind. Lvl (A): 78, Ref. Lvl (B): 51, Att. Factor(C): 16, Ind. Rating (D): 11, SPa (E): 240

Y: 4630mm, X: -20mm, Face B

-PEUT: Ind. Lvl (A): 66, Ref. Lvl (B): 51, Att. Factor(C): 4, Ind. Rating (D): 11, SD (E): 68

-PCUT: Ind. Lvl (A): 87, Ref. Lvl (B): 51, Att. Factor(C): 16, Ind. Rating (D): 20, SPa (E): 165

Y: 4630mm, X: N/A, Face A

-PEUT: No indication observed.

-PCUT: No indication observed.

The UT inspection was performed in accordance with the per ABF supplemental procedure 1, 2 & 3 Ultrasonic Testing of ESW groove welds. The tandem report for work performed on this date will be completed by Mr. Cayabyab and signed by both QA/QC parties. Items listed on tandem report reflect indications agreed upon by QA/QC. See TL-6027 for additional details on the items inspected on this date.

ESW Repair Welding

ESW S-043, Location "T"- Face B:

RWR-201308-004

The QA Inspector observed ABF welder Mike Jimenez (WID-4671) performing Shield Metal Arc Welding (SMAW) on the repair excavation on Electroslag Weld (ESW) "T" at Face B. The locations and repair information

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are listed in Request for Weld Repair (RWR) 201308-004 from Ultrasonic Testing indications designated for repair. The repair locations were noted as:

Original Y's= 2100mm,2130mm

Excavation Y=1980mm~2230mm

L-250mm

W= 70mm

D= 60mm

Prior to welding, Mr. Jimenez 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.



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.

Inspected By:	Adame,Joe	Quality Assurance Inspector
Reviewed By:	Riley,Ken	QA Reviewer
