

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

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-028181**Date Inspected:** 14-Aug-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1930**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** Andrew Keach**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 OBG**Summary of Items Observed:**

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At Tower Base Electro Slag Weld (ESW), this QA observed ABF welder Han Wen Yu continuing to perform repair excavation at location 'T' face B (S-043) Y=8750mm due to Ultrasonic Testing (UT) detected defect. The repair excavation is being undertaken per Caltrans approved Request for Weld Repair RWR #201208-010. The welder was noted using carbon air arc gouging followed by grinding using a die grinder. The excavation was alternately gouged and ground then Magnetic Particle Testing (MT) tested by ABF QC Andrew Keach and this QA. The following excavation events were noted during the repair excavation;

ESW location Y-dim Depth of excavation Remarks

- | ESW location | Y-dim | Depth of excavation | Remarks |
|-------------------|-------|---------------------|--|
| 1. 'T' (A) 8750mm | | 27mm | No linear indication noted. |
| 2. 'T' (A) 8750mm | | 31mm | No linear indication noted. |
| 3. 'T' (A) 8750mm | | 33mm | 10mm linear indication noted. |
| 4. 'T' (A) 8750mm | | 39mm | Cleared the 10mm linear indication but another 6mm long transverse indication noted. |
| 5. 'T' (A) 8750mm | | 41mm | 6mm transverse indication still noted. |
| 6. 'T' (A) 8750mm | | 43mm | 6mm transverse indication removed. |

After the completion of the excavation, MT acceptance from ABF QC and verification from QA, the welder put in

WELDING INSPECTION REPORT

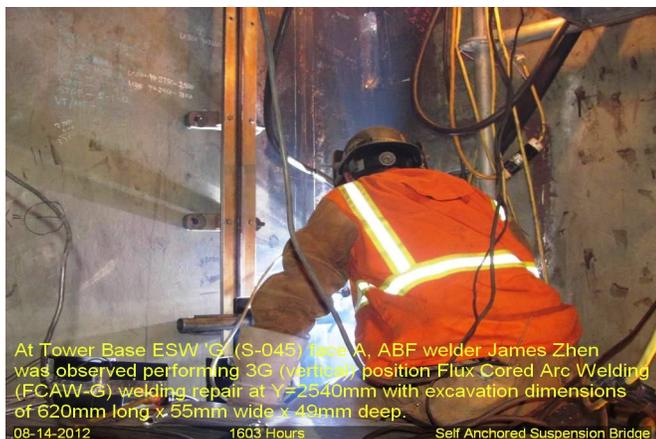
(Continued Page 2 of 3)

place the Miller Proheat 35 Induction Heating System heater blanket for the preheat and maintenance preheat of the weld repair. QA randomly observed ABF/JV qualified welder Han Wen Yu perform CJP groove welding repair. The welder was observed manually welding in the 3G (vertical) position utilizing Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1000 Repair Rev. 2. The repair excavation was preheated and continuously maintained to more than 300 degree Fahrenheit using Miller Proheat 35 Induction Heating System prior/during welding. The ESW repair being welded was located at ESW 'T' face A, Y=8750mm was having dimensions of 175mm long X 45mm wide X 43mm. This repair welding has been approved per Request for Welding Repair (RWR) #201208-010. During the shift, ABF QC Andrew Keach was noted monitoring the welder with measured working current of 122 amperes on a 3.2mm E7018H4R electrode. At the end of the shift, repair welding at location mentioned above was still continuing and should remain tomorrow. The welder held the same preheat of 300°F on the repair for three hours after welding as required.

At Tower Base Electro Slag Weld (ESW), QA randomly observed ABF/JV qualified welder James Zhen perform CJP groove welding repair. The welder was observed manually welding in the 3G (vertical) position utilizing the dual shielded Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3001-3 repair. The repair excavation was preheated and continuously maintained to more than 325 degree Fahrenheit using Miller Proheat 35 Induction Heating System prior/during welding. The ESW repair being welded is located at ESW 'G' face A, Y=2540mm has no Caltrans approved Request for Weld Repair (RWR) and excavated beyond the excavation depth of 2/3 thickness. Due to these two infractions committed by ABF, an Incident Report was generated.

During the shift, ABF QC Andrew Keach was noted monitoring the welder with measured working current of 235 amperes, 23.5 volts which appears in compliance to the contract requirements. At the end of the shift, 3G FCAW-G repair welding at location mentioned above was still continuing and should remain tomorrow. Listed below was the first time repair being welded during the shift;

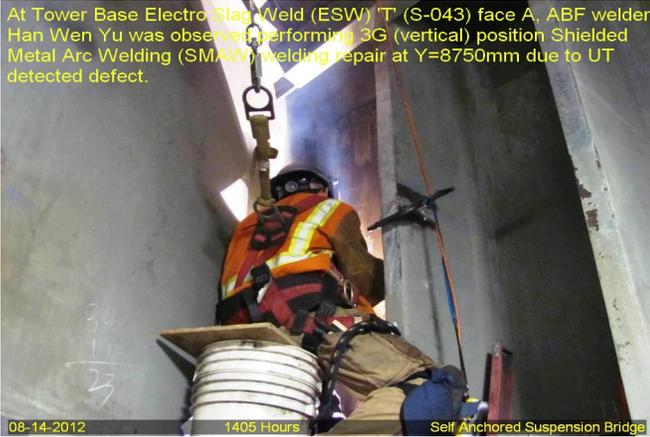
Location	Weld No.	Y-dim.	Length	Width	Depth	Remarks
ESW 'G'	S-045	2540mm	260mm	55mm	49mm	In progress.



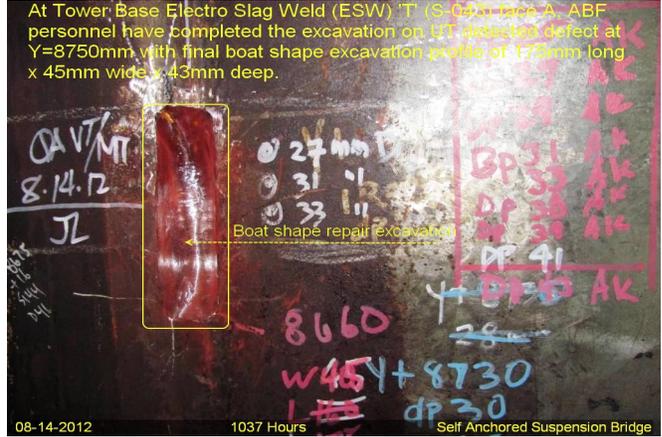
WELDING INSPECTION REPORT

(Continued Page 3 of 3)

At Tower Base Electro Slag Weld (ESW) 'T' (S-043) face A, ABF welder Han Wen Yu was observed performing 3G (vertical) position Shielded Metal Arc Welding (SMAW) welding repair at Y=8750mm due to UT detected defect.



At Tower Base Electro Slag Weld (ESW) 'T' (S-043) face A, ABF personnel have completed the excavation on UT detected defect at Y=8750mm with final boat shape excavation profile of 178mm long x 45mm wide x 43mm deep.



Summary of Conversations:

No significant conversation occurred today.

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 SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By: Lizardo, Joselito

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer