

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-027901**Date Inspected:** 04-Jul-2012**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**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 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) location 'V' face A (W-043), QA randomly observed ABF/JV qualified welder Xiao Jian Wan continuing to 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 welding is being undertaken per Caltrans approved Request for Weld Repair (RWR)#201206-044 and #201206-045 in a combined repair excavations at Y=3950mm and Y=4270mm respectively. The repair excavation was preheated and continuously maintained to more than 350 degree Fahrenheit using Miller Proheat 35 Induction Heating System prior/during welding. The ESW repair being welded is located at ESW 'V' face A, Y=3900mm having dimensions of 560mm long X 70mm wide X 53mm deep. During the shift, ABF QC Bernie Docena was noted monitoring the welder with measured working current of 124 amperes. At the end of the shift, 3G SMAW repair welding at location mentioned above was still continuing and should remain tomorrow. The welder held the same preheat of 350°F on the combined excavation repair for three hours after welding as required.

Location	Weld No.	Y-dim.	Length	Width	Depth	Remarks
1. 'V'	W-043	3900mm	560mm	70mm	53mm	Completed.

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

At Tower Base Electro Slag Weld (ESW) location 'E' face A (N-045), QA randomly observed ABF/JV qualified welder Jin Pei Wang (who took over from James Zhen) continuing to perform CJP groove welding repair. The welder was observed perform automatic welding in the 3G (vertical) position utilizing a Bug –o track mounted dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3000-3 Repair. The repair excavation was preheated and continuously maintained to more than 350 degree Fahrenheit using Miller Proheat 35 Induction Heating System prior/during welding. The ESW repair being welded is located at ESW 'V' face A, Y=7600mm to Y=9850mm having dimensions of 2250mm long X 60mm wide X 40mm deep. During the shift, ABF QC Bernie Docena was noted monitoring the welder with measured working current of 252 amperes, 23 volts with travel speed of 210mm per minute and calculated heat input of 1.66Kjoules per mm. At the end of the shift, 3G FCAW-G repair welding at location mentioned above was still continuing and should remain tomorrow. The welder held the same preheat of 350°F on the combined excavation repair for three hours after welding as required.

Location	Weld No.	Y-dim.	Length	Width	Depth	Remarks
1. 'E'	N-045	7600mm	2250mm	60mm	40mm	In progress.

At Tower Base Electro Slag Weld (ESW) location 'V' face B (W-043), 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 350 degree Fahrenheit using Miller Proheat 35 Induction Heating System prior/during welding. The ESW repair being welded is located at ESW 'V' face B, Y=250mm to Y=620mm was having dimensions of 370mm long X 60mm wide X 50mm deep is a continuation repair from face A due to linear indication that was left during previous MT. This repair has been approved per Request for Welding Repair (RWR) #201206-042. During the shift, ABF QC Bernie Docena was noted monitoring the welder with measured working current of 128 amperes. 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 350°F on the repair for three hours after welding as required.

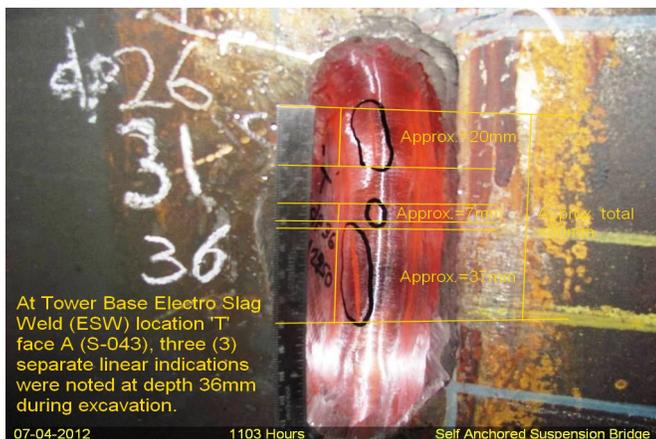
Location	Weld No.	Y-dim.	Length	Width	Depth	Remarks
1. 'V'	W-043	250mm	370mm	60mm	50mm	In progress...

At Tower Base Electro Slag Weld (ESW), this QA observed ABF welder Lou Xiao Hua continuing to perform repair excavation at location 'T' face A (S-043) Y=2850mm due to Ultrasonic Testing (UT) detected defect. The repair excavation is being undertaken per Caltrans approved Request for Weld Repair (RWR) #201206-051. The welder was noted using carbon arc gouging followed by grinding using a die grinder. During the excavation, one linear indication measuring 20mm long was noted at depth 26mm. This was confirmed using Magnetic Particle Testing (MT). The welder continued the excavation at depth 31mm and the indication has increased to 45mm long. The welder continued the excavation at approximate depth 36mm and noted three (3) separate indications measuring 20mm at the top, 7mm at the middle and 37mm at the bottom. The welder continued the excavation at 42mm deep and the top and middle indications were noted removed but the bottom indication has increased to 50mm At 47mm deep excavation, the bottom indication was reduced to 30mm long and ABF QC Bernie Docena instructed the welder to go one more excavation then grind smooth the excavation in preparation

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

for QC and QA visual test (VT) and Magnetic Particle Test (MT). At 52mm deep excavation, ABF QC Bernie Docena has performed the VT and MT on the boat shape repair excavation and noted the bottom indication is gone and there is no more relevant indication during the tests. This QA also performed the same VT and MT on the same excavation and found same result.



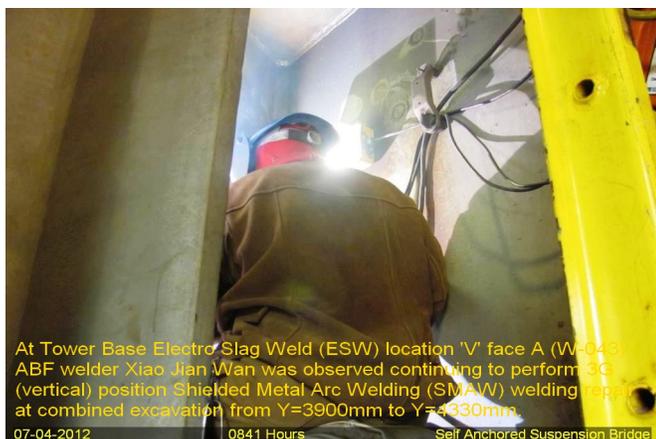
At Tower Base Electro Slag Weld (ESW) location 'T' face A (S-043), three (3) separate linear indications were noted at depth 36mm during excavation.

07-04-2012 1103 Hours Self Anchored Suspension Bridge



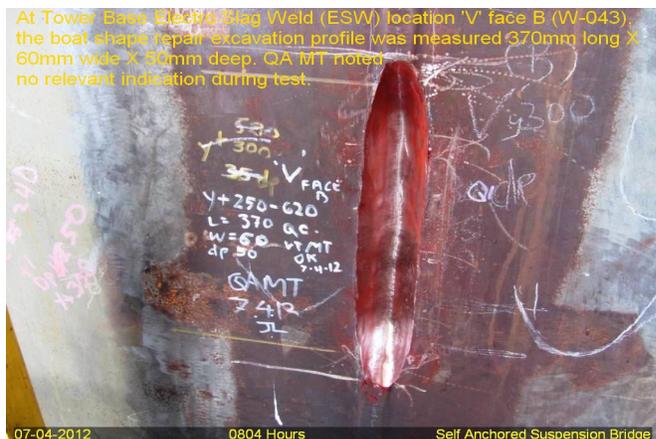
At Tower Base Electro Slag Weld (ESW) location 'V' face B (W-043), ABF QC Bernie Docena was observed performing Magnetic Particle Testing (MT) on boat shape repair excavation at Y=250mm to Y=620mm.

07-04-2012 0755 Hours Self Anchored Suspension Bridge



At Tower Base Electro Slag Weld (ESW) location 'V' face A (W-043), ABF welder Xiao Jian Wan was observed continuing to perform 3G (vertical) position Shielded Metal Arc Welding (SMAW) welding repair at combined excavation from Y=3900mm to Y=4330mm.

07-04-2012 0841 Hours Self Anchored Suspension Bridge



At Tower Base Electro Slag Weld (ESW) location 'V' face B (W-043), the boat shape repair excavation profile was measured 370mm long X 60mm wide X 50mm deep. QA MT noted no relevant indication during test.

07-04-2012 0804 Hours Self Anchored Suspension Bridge

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