

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-027889**Date Inspected:** 02-Jul-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:** 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 Jesse Cayabyab was noted monitoring the welder with measured working current of 122 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	In progress.

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At Tower Base Electro Slag Weld (ESW) location 'T' face A (S-043), QA randomly observed ABF/JV qualified welder Lou Xiao Hua 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 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 'T' face A, Y=4510mm having dimensions of 220mm long X 60mm wide X 54mm deep has been approved per Request for Welding Repair (RWR) #201206-053. During the shift, ABF QC Bernie Docena was noted monitoring the welder with measured working current of 120 amperes. During the shift, the welder has completed the repair mentioned above and has moved to the same ESW weld location but different Y=5170mm. The welder was noted using the same process and implementing the same WPS. This particular repair has an approved RWR #201206-054. The welder performed the vertical repair welding until the end of the shift but was not able to complete the repair. The welder held the same preheat of 350°F on the two (2) repairs for three hours after welding as required.

Location	Weld No.	Y-dim.	Length	Width	Depth	Remarks
2. 'T' S-043		4510mm	220mm	60mm	54mm	Completed.
3. T' S-043		5170mm	160mm	65mm	53mm	In-progress.

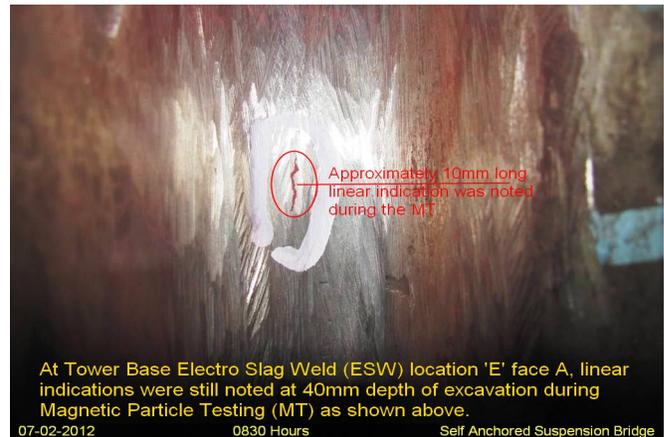
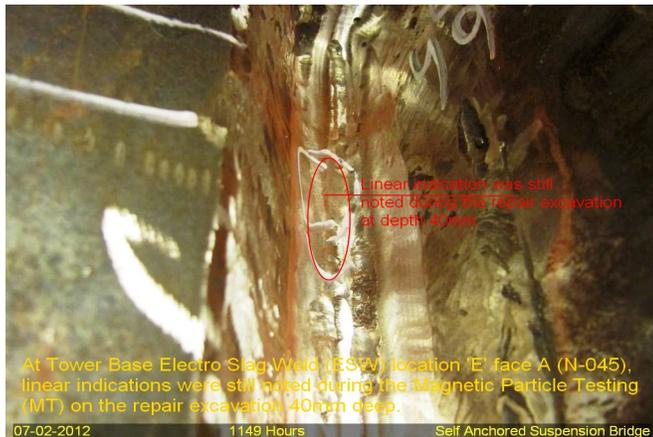
At Tower Base Electro Slag Weld (ESW) location 'E' face A, this QA performed Magnetic Particle Testing (MT) on boat shape repair excavation from Y=7550mm to Y=9850mm. The excavation was having dimensions of 2250mm long x 60mm wide x 40mm deep. During MT, multiple linear indications were noted that most of them have already been marked by ABF QC. But according to ABF QC Jesse Cayabyab, he has rejected the whole area from Y=7550mm to Y=9850mm and that after the welding repair from face A, ABF will have to excavate the remaining linear indications from the other side of the ESW welded T-joint.

At Tower Base Electro Slag Weld (ESW) location 'E' face A (N-045), QA randomly observed ABF/JV qualified welder James Zhen perform CJP groove welding repair. The welder was observed perform automatic welding in the 3G (vertical) position utilizing 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-D15-3300-3 Repair. The repair welding is being undertaken without Caltrans approved Request for Weld Repair (RWR) but according to ABF lead QC Bonifacio Daquinag, the dimensions of the boat shape excavation and result of the MT have been submitted to ABF QC Manager Jim Bowers and that an RWR will be generated by ABF and submitted to Caltrans for approval. 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 250 amperes, 22.5 volts with travel speed of 230mm per minute. 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.

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Summary of Conversations:

1. According to Bonifacio Daquinag, the dimensions of the boat shape excavation and result of the MT at ESW 'E' face A have been submitted to ABF QC Manager Jim Bowers and that an RWR will be generated by ABF and submitted to Caltrans for approval.
2. ABF have started welding the repair at ESW 'E' face A without Caltrans approved RWR / Engineer's approval, and due to this infraction an Incident Report will be issued to ABF.

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