

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-027882**Date Inspected:** 30-Jun-2012**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:** 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 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 123 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 Jesse Cayabyab was noted monitoring the welder with measured working current of 122 amperes. 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 repair for three hours after welding as required.

Location	Weld No.	Y-dim.	Length	Width	Depth	Remarks
1. 'T' S-043		4510mm		220mm	60mm	54mm In-progress.

At Tower Base Electro Slag Weld (ESW), this QA observed ABF welder Wai Kitlai continuing to perform repair excavation at location 'E' face A (N-045) from Y=8560mm to Y=9560mm. This excavation has started from Y=6640mm and ended at Y=9650mm and this was made as part of the demonstration to Caltrans personnel the transverse linear indications that were detected from UT. Originally, there was no Caltrans approved RWR prior to this excavation but according to ABF QC Bonifacio Daquinag through his discussion with ABF QC Manager Jim Bowers, once ABF have excavated all the suspected transverse indications including the longitudinal indications to the allowed depth (2/3 thickness = 40mm) and removed the detected transverse/longitudinal linear indications, an RWR will be generated by ABF for its subsequent repair. As of right now, the welder continues to carbon arc gouge and alternately grinding the excavation to 40mm deep right to the maximum depth of excavation allowed. According to the welder, it should take all this day to grind the whole excavated area and then it should be almost ready for QC and QA inspection by Monday.

At Tower Base Electro Slag Weld (ESW) location 'T' face A (S-043) Y= 4510mm and 'V' face A (W-643) Y=3300 to 4330mm, ABF personnel were noted using the Miller Proheat 35 Induction Heating System to preheat and maintain the required temperature of 350 degrees Fahrenheit during welding of the two (2) repairs.



At Tower Base Electro Slag Weld (ESW) location 'T' face A (S-043) ABF welder Lou Xiao Hua was observed performing 3G (vertical) position Shielded Metal Arc Welding (SMAW) welding repair at Y=4510.



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Summary of Conversations:

According to ABF QC Bonifacio Daquinag through his discussion with ABF QC Manager Jim Bowers, once ABF have excavated all the suspected transverse indications including the longitudinal indications to the allowed depth ($2/3$ thickness = 40mm) and removed the detected transverse/longitudinal linear indications, an RWR will be generated by ABF for its subsequent repair.

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
