

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-027855**Date Inspected:** 26-Jun-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:** 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 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), this QA observed ABF welder Lou Xiao Hua continuing to perform repair excavation at location 'T' face A (S-043) location Y=3980 (R1) due to Ultrasonic Testing (UT) detected defect. The repair excavation is being undertaken per Caltrans approved Request for Weld Repair (RWR)#201206-057. The welder was noted using carbon air arc gouging followed by grinding using a die grinder and it was at the depth of 50mm when the welder has noted that the linear indication no longer exist. The welder grounds smooth the area of the excavation and then called QA/QC for confirmation of the defect removal. ABF QC Andrew Keach was noted performing the visual test (VT) and after completing the VT he performed the Magnetic Particle Testing (MT) wherein he found no relevant indication during the tests. This QA performed the VT and MT verification on the same excavation at depth 50mm and noted same result. After the completion on the removal of the defect, the welder started another excavation at same ESW weld location Y=4130mm. The welder excavated straight up to 35mm deep when the linear indication started to appear. At this depth, the indication looked fine and straight linear and was measured 45mm long. The welder continued the excavation up to 45mm deep and the linear indication became longer to a length of 60mm. The welder again continued the excavation up to 50mm deep when the linear indication disappeared. The area of the excavation was smoothly ground at this depth prior to QA/QC final VT and MT. ABF QC Andrew Keach was noted performing the VT and after completing its VT he performed the Magnetic Particle Testing (MT) wherein he found no relevant indication during his tests. This QA performed the VT and MT verification on the same excavation at depth 50mm and noted

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same result.

At Tower Base Electro Slag (ESW) weld location 'R' face B (E-041), this QA observed ABF welder Wai Kitlai two (2) excavations on welded T-joint due to suspected transverse indications. The excavation is being undertaken as part of the demonstration in showing the transverse indications to Caltrans personnel. There was no approved RWR prior to the excavation but according to our Task Leader Bill Levell, he had a conversation with ASMR Aaron Prchlik and that the RWR is still being finalized by ABF. The first location was at Y=1210mm and the second location was at Y=1690mm. These two excavations were carbon air gouged straight up to 20mm deep before slowly excavated every 2mm up to 35mm deep. From 20mm deep, the excavations were verified using Magnetic Particle Testing (MT) by both QC Jesse Cayabyab and this QA. At every 2mm increments of excavation and subsequent MT, there was no relevant indication noted. Since the reported depth of the UT defect was at 32mm and no whatsoever indication found up to 35mm deep, ABF has stopped the excavation and considered the excavation good enough. The final dimensions of the two excavations after smooth grinding were Y=1210mm to Y=1360 with 150mm deep X 58mm wide X 30mm deep and Y=1670mm to 2060mm with 370mm long x 58mm wide X 42mm deep. Both excavations were MT'd separately and accepted by ABF QC Jesse Cayabyab and this QA.

At Tower Base Electro Slag Welding (ESW) 100mm/80mm transition weld butt joint 'T' face B (S-043), QA randomly observed ABF/JV qualified welder Jin Pei Wang continuing to perform CJP groove welding repair at Y=6000 with excavation dimensions of 260mm long X 55mm wide x 50 mm deep per Caltrans approved Request for Welding Repair (RWR) #201206-055. The welder was observed welding in the 3G (vertical) position utilizing Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1000-Repair Rev. 2. The repair excavation was preheated to more than 300 degree Fahrenheit using Miller Proheat 35 Induction Heating System. During the shift, ABF QC Andrew Keach was noted monitoring the welder with measured working current of 120 amperes during welding. At the end of the shift, the welding repair of weld joint mentioned above was completed.

At Tower Base Electro Slag Weld (ESW), this QA observed ABF welder Xiao Jian Wan perform repair excavation at location 'V' face A (W-043) location Y=1190mm due to Ultrasonic Testing (UT) detected defect. The repair excavation is being undertaken per Caltrans approved Request for Weld Repair (RWR)#201206-043. The welder was noted using carbon air arc gouging followed by grinding using a die grinder. The welder performed the excavation straight up to 32mm and ground smooth the area for inspection. ABF QC Andrew Keach performed the Magnetic Particle Testing (MT) on the excavation but found no relevant indication. This QA also performed the same test on the excavation and noted same result. The ABF QC Inspector instructed the welder to go 5mm deeper and see if the defect could be found. The welder gouged deeper to 37mm and again ground smooth the area. ABF QC Andrew Keach performed the Magnetic Particle Testing (MT) on the excavation but still found no relevant indication. This QA also performed the same test on the excavation and also noted same result. Since the UT defect indication was recorded at 32mm deep and the excavation was already at 37mm, ABF QC Andrew Keach informed this QA that ABF is stopping the excavation and proceed to weld.

At Tower Base Electro Slag Welding (ESW) 100mm/80mm transition weld butt joint 'V' face A (E-041), QA randomly observed ABF/JV qualified welder Xiao Jian Wan continuing to perform CJP groove welding repair at Y=1190 with excavation dimensions of 135mm long X 58mm wide x 37 mm deep per Caltrans approved Request for Welding Repair (RWR) #201206-043. The welder was observed welding in the 3G (vertical) position utilizing

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Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1000-Repair Rev. 2. The repair excavation was preheated to more than 300 degree Fahrenheit using Miller Proheat 35 Induction Heating System. During the shift, ABF QC Andrew Keach was noted monitoring the welder with measured working current of 125 amperes during welding. At the end of the shift, the welding repair of weld joint mentioned above was still continuing and should remain tomorrow.



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