

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-027602**Date Inspected:** 14-May-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 13 meter outer West external diaphragm, ABF welder Xiao Jian Wan was observed perform buttering on the one side of the PJP T-joint W110 due to excessive root gap as previously reported. The welder was noted buttering the North side of the weld joint where the maximum measure root opening was 9.5mm. The welder was noted buttering at overhead position using Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15- F1200A. The diaphragm plate being buttered was noted preheated to more than 150°F using Miller Proheat 35 Induction Heating System. During the shift, buttering on the PJP T-joint W110 was completed. After the buttering completion, ABF QC Bernie Docena was observed performing visual test (VT) and informs this QA that he will perform the Magnetic Particle Testing (MT) first thing in the morning.

At Tower Base 13 meter outer West external diaphragm, ABF welder Luo Xiao Hua was also observed perform buttering on one side of the PJP T-joint W110 due to excessive root gap as previously reported. The welder was noted buttering the South side of the weld joint where the maximum measured root opening was 18.5mm. The welder was noted buttering at overhead position using Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15- F1200A. The diaphragm plate being buttered was noted preheated to more than 150°F using Miller Proheat 35 Induction Heating System. During the shift, buttering on the PJP T-joint W110 was completed.

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After the buttering completion, ABF QC Bernie Docena was observed performing visual test (VT) and found it acceptable.

At Tower Base shear plate above 9 meter between inner West and center external diaphragms, this QA Inspector randomly observed ABF personnel Jin Pei Wang perform multiple position fillet welding on the 450mm wide X 50mm thick square shaped wall penetration doubler plate P-937 @ A28 below 9 meter diaphragm. The welder was noted fillet welding the doubler plate to the 60 mm thick shear plate using Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-F1200A. This QA Inspector observed ABF personnel using propylene gas torch to preheat the plates to more than 150°F prior welding. This QA Inspector observed QC Inspector Bernie Docena using a Fluke infra red temperature gauge to verify the preheat temperature of more than 150°F and measured the welding parameters to 135 amperes. At the end of the shift, SMAW fillet welding on doubler plate mentioned above was completed.

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC VT/MT of the fillet weld joints on various locations. The QA verification was performed to verify that the welding and the VT/MT inspection performed by the QC inspector meet the requirements of the contract documents. At the conclusion of the QA verification it appeared that the weld and the QC inspection complied with the contract documents.

1. Stiffener plate fillet weld P440-7 – weld cover QA verified
2. Wall penetration doubler plate fillet weld P638-1 – weld cover QA verified
3. Wall penetration doubler plate fillet weld P638-3 – weld cover QA verified
4. Perimeter C10 channel to diaphragm fillet weld W098-3 & 4 - weld cover QA verified

This QA also performed Magnetic Particle Testing (MT) on the excavation of Electro Slag Weld (ESW) CJP butt joint N-043 location 'P'. The MT was performed as part of verification on the surface excavation due to visual defect that was visually detected by ABF QC. The first location was at Y=5400mm having excavation dimensions of 1500mm long X 25mm wide X 14mm deep. The second location was at Y=2400mm having excavation dimensions of 1490mm long X 11mm wide X 7mm deep. Both excavations revealed no relevant indication during MT. According to ABF QC, Request for Welding Repair (RWR) for these two excavations will be forwarded to Caltrans for approval.

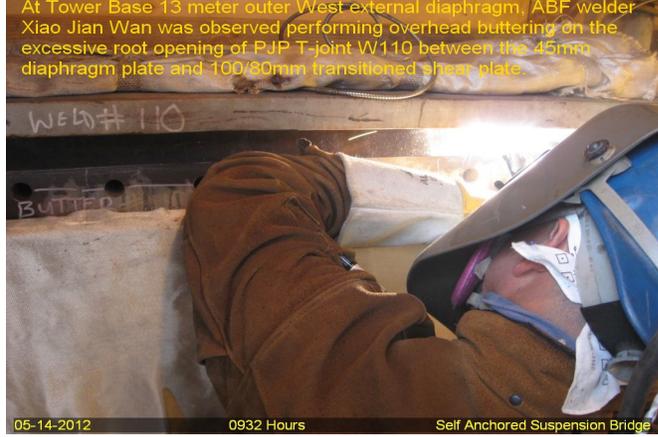
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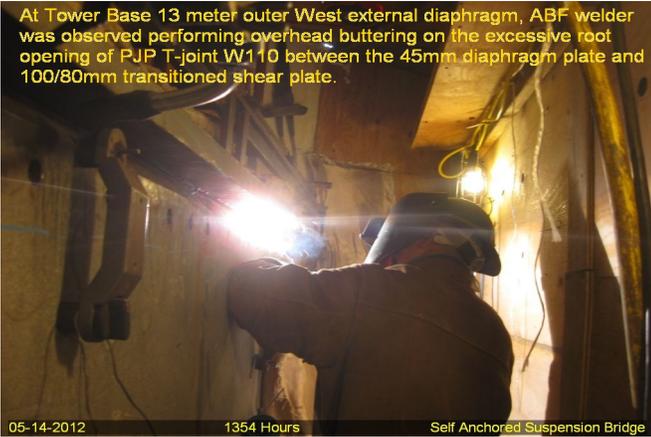
At Tower Base Electro Slag Weld (ESW) Butt joint N-043 location 'P' face B, surface profile of the excavation was noted at Y=5400mm with dimensions 1500mm long X 25mm wide X 14mm deep.



At Tower Base 13 meter outer West external diaphragm, ABF welder Xiao Jian Wan was observed performing overhead buttering on the excessive root opening of PJP T-joint W110 between the 45mm diaphragm plate and 100/80mm transitioned shear plate.



At Tower Base 13 meter outer West external diaphragm, ABF welder was observed performing overhead buttering on the excessive root opening of PJP T-joint W110 between the 45mm diaphragm plate and 100/80mm transitioned shear plate.



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