

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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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-027953  
**Date Inspected:** 12-Jul-2012

**Project Name:** SAS Superstructure  
**Prime Contractor:** American Bridge/Fluor Enterprises, a JV  
**Contractor:** American Bridge/Fluor Enterprises, a JV

**OSM Arrival Time:** 700  
**OSM Departure Time:** 1830  
**Location:** Job Site

<b>CWI Name:</b>	Bernie Docena	<b>CWI Present:</b>	Yes	No
<b>Inspected CWI report:</b>	Yes No N/A	<b>Rod Oven in Use:</b>	Yes	No N/A
<b>Electrode to specification:</b>	Yes No N/A	<b>Weld Procedures Followed:</b>	Yes	No N/A
<b>Qualified Welders:</b>	Yes No N/A	<b>Verified Joint Fit-up:</b>	Yes	No N/A
<b>Approved Drawings:</b>	Yes No N/A	<b>Approved WPS:</b>	Yes	No N/A
		<b>Delayed / Cancelled:</b>	Yes	No N/A
<b>Bridge No:</b>	34-0006	<b>Component:</b>	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 Luo Xiao Hua ( who took over from 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 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=4900mm to Y=5200mm was having dimensions of 300mm long X 70mm wide X 55mm deep and approved per Request for Welding Repair (RWR) #201206-047. During the shift, ABF QC Bernie Docena was noted monitoring the welder with measured working current of 115 amperes. During 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	4930mm	300mm	70mm	55mm	Completed.

At Tower Base Electro Slag Weld (ESW) location 'P' face B, this QA observed ABF welder Wai Kitlai continuing

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to perform repair excavation at location Y=4080mm and Y=4230mm per Caltrans approved Request for Weld Repair (RWR) #201206-072 and (RWR) #201206-073 respectively . Since the separation between the two (2) UT defects were just around 100mm, ABF QC Bernie Docena instructed the welder to combine the two defects into one. The welder was noted using carbon air arc gouging followed by grinding using a die grinder. The following excavation events were noted during the repair excavation;

ESW location Y-dim Depth of excavation Noted defect

1. 'P' (B) 4080/4230mm 55mm All linear indications removed.

After the excavation completion of the ESW and Y location mentioned above, the welder started another location at Y=3400mm and Y=3700mm of the same ESW weld joint per Caltrans approved Request for Weld Repair (RWR) #201206-070 and (RWR) #201206-071 respectively . The two (2) UT defects are being excavated at the same time. The welder was noted using carbon air arc gouging followed by grinding using a die grinder. The following excavation events were noted during the repair excavation;

ESW location Y-dim Depth of excavation Noted defect

1. 'P' (B) 3400mm 30mm 1-25mm long linear indication noted.
2. 'P' (B) 3700mm 30mm 1-25mm long linear indication noted.
3. 'P' (B) 3400mm 40mm 1-65mm long linear indication noted.
4. 'P' (B) 3700mm 40mm 1-35mm long linear indication noted.
5. 'P' (B) 3400mm >40mm Excavation in progress.
6. 'P' (B) 3700mm >40mm Excavation in progress.

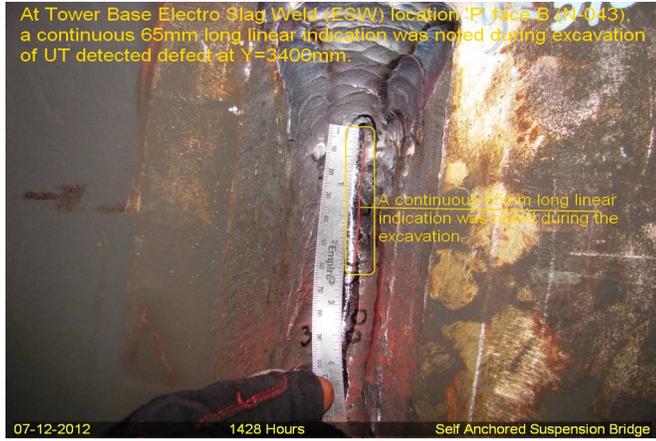
At Tower Base Electro Slag Weld (ESW), this QA observed ABF welder James Zhen perform repair excavation at location 'Q' face B (E-043) Y=4060mm due to Ultrasonic Testing (UT) detected defect. The repair excavation is being undertaken per Caltrans approved Request for Weld Repair (RWR) #201206-083. The welder was noted using carbon air arc gouging followed by grinding using a die grinder. The following excavation events were noted during the repair excavation;

ESW location Y-dim Depth of excavation Noted defect

1. 'Q' (B) 4060mm 45mm 1-70mm long linear indication noted.  
1-30mm long linear indication noted.  
1-25mm long linear indication noted.
2. 'Q' (B) 4060mm >45mm Excavation in progress.

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## 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