

**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-027775  
**Date Inspected:** 15-Jun-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:** 1730  
**Location:** Job Site

<b>CWI Name:</b>	As noted below.	<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>	Tower Component	

**Summary of Items Observed:**

Quality Assurance Inspector (QA) William Clifford was at the American Bridge/Fluor (ABF) job site at Yerba Buena Island in California between the times noted above in order to monitor Quality Control functions and the in process work being performed by ABF personnel. The following items were observed:

**Electroslag Weld Repairs**

This QA randomly observed ABF/JV qualified welder Jin Pei Wang #7299 performing Shielded Metal Arc Welding (SMAW) with 3.2mm" diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification's (WPS) ABF-WPS-D15-1001-R. The joint being welded was tower shear plate designated as ESW weld, location "R" from face B.

Dimensions excavated for these repairs were:

Weld "R" – Y=540mm, L=240mm, W50mm, D=40mm

Before repair welding was initiated this QA and QC Jesse Cayabyab performed Magnetic Particle Testing (MT) and Visual Confirmation of this excavation. Rejectable linear indications were discovered and recorded on 06-14-12.

During welding, ABF Quality Control (QC) Jesse Cayabyab was noted monitoring the welding parameters. Welding parameters were recorded as (A=122).

Note: An Incident Report for the excavation of ESW R was submitted by this QA on 06-14-12. ABF/JV welding personnel did not excavate this weld per agreed weld excavations procedure. Please see Incident Report issued on 06-14-12 for pertinent information.

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This QA randomly observed ABF/JV qualified welder Xiao Hua Luo #1291 performing Shielded Metal Arc Welding (SMAW) with 3.2mm" diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification's (WPS) ABF-WPS-D15-1001-R. The joint being welded was tower shear plate designated as ESW weld, location "F" from face B.

Dimensions excavated for these repairs were:

Weld "F" – Y=8600mm, L=190mm, W=35mm, D=40mm

During welding, ABF Quality Control (QC) Jesse Cayabyab was noted monitoring the welding parameters. Welding parameters were recorded as (A=123).

This QA observed, at random intervals, ABF/JV qualified welder Xiao Jian Wan #9677 performing Flux Core Arc Welding (FCAW) implementing Caltrans approved Welding Procedure Specification Specification (WPS) ABF-WPS-D15-3000-3Repair. The joint being welded was tower shear plate designated as ESW weld, location "T" from face A.

Dimensions excavated for this repair were:

Weld "T" – Y=9420mm, L=300mm, W=50mm, D=25mm

During welding, ABF Quality Control (QC) Jesse Cayabyab was noted monitoring the welding parameters. Welding parameters were recorded as (A=250, V=23.3).

## Electroslag Weld Excavation

This QA observed ABF/JV welding personnel Wai Kit Li #2953 performing excavation of an Electroslag Weld (ESW) previously Ultrasonic Tested (UT) by Quality Control (QC) technicians.

The UT discovered indication was found to be oriented in the longitudinal position. The indication was found to be rejectable per AWS D1.5 Table 6.4).

The weld being excavated is designated as "ESW J" and was excavated at locations:

Weld "J" – Y=3960mm, D=30mm

The carbon arc gouging process, as well as machine grinding, were used to excavated approximately 5mm at a time. In between excavation passes both QA and QC performed Magnetic Particle Testing (MT) and photographed the discovered indications.

Throughout this excavation this QA observed and photographed one (1) longitudinal linear indication approximately 20mm in length. This excavation is still in progress. Final measurements have not been made.

Please see attached photographs for representative samples of indication observed.

QC MT and data recording was performed by Jesse Cayabyab.

This QA observed ABF/JV welding personnel Jin Pei Wang #7299 performing excavation of an Electroslag Weld (ESW) previously Ultrasonic Tested (UT) by Quality Control (QC) technicians.

The UT discovered indication was found to be oriented in the longitudinal position. The indication was found to be rejectable per AWS D1.5 Table 6.4).

The weld being excavated is designated as "ESW F" and was excavated at locations:

Weld "F" – Y=8600mm, L=190mm, W=35mm, D=40mm

The carbon arc gouging process, as well as machine grinding, were used to excavated approximately 2mm-5mm

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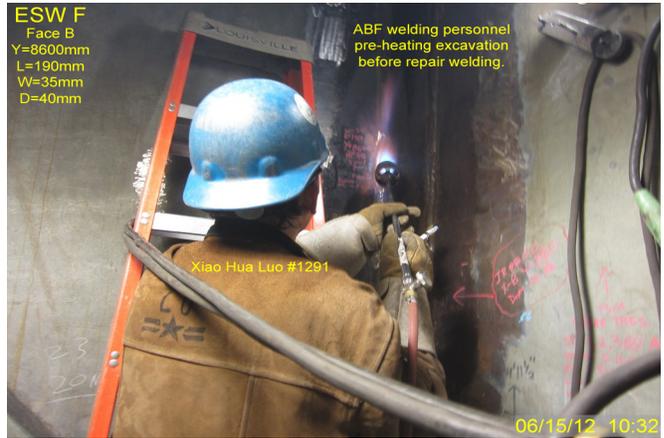
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at a time. In between excavation passes both QA and QC performed Magnetic Particle Testing (MT) and photographed the removal of discovered indications.

Throughout this excavation this QA observed and photographed one (1) longitudinal linear indication approximately 40mm in length.

QC MT and data recording was performed by Jesse Cayabyab.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.



### Summary of Conversations:

Conversations were relevant to testing performed and indications discovered during excavation.

### 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.

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<b>Inspected By:</b>	Clifford, William	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell, Bill	QA Reviewer

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