

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-027066
Date Inspected: 16-Jan-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

CWI Name: Salvador Merino
Inspected CWI report: Yes No N/A
Electrode to specification: Yes No N/A
Qualified Welders: Yes No N/A
Approved Drawings: Yes No N/A

CWI Present: Yes No
Rod Oven in Use: Yes No N/A
Weld Procedures Followed: Yes No N/A
Verified Joint Fit-up: Yes No N/A
Approved WPS: Yes No N/A
Delayed / Cancelled: Yes No N/A

Bridge No: 34-0006**Component:** OBG Components**Summary of Items Observed:**

On this date, Quality Assurance Inspector (QAI) Kenneth Riley was present at the San Francisco Oakland Bay Bridge job site at Yerba Buena Island to observe erection and welding activities for the San Francisco Oakland Bay Bridge (SFOBB) project. This Quality Assurance Inspector (QAI) observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below:

- A) Temporary Attachments, Jacking Frames
- B) Lifting Lug Holes Repairs
- C) Field Splice Repairs for D3

A). Temporary Attachments, Jacking Frames

This QAI observed QC personnel Salvador Merino performing Magnetic particle on the top deck of CB19 and OBG lift 14 at Panel Points PP126 south of the W6 line. At this location the contractor was performing excavations and weld repairs of the MT indications found by the QC inspector. The weld repair procedure followed was ABF-WPS-D15-1004. Welder Rick Clayborn was observed as performing these weld repairs with a pre-heat of 325 degrees F. The pre-heat was verified using a tempstik. For the location south of the W6 line at PP125 (jacking frame #3 from the west) where this QAI had discovered the linear indication, QC inspector Jessie Cayabyab was observed performing UT to identify the depth of the indication prior to excavation. It was observed that the indication was 6-8mm in depth from the surface of the cross beam. The contractor was observed

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performing the excavation with a power grinder after the location was heated to 150 degrees F. The dimensions of the excavation were, depth 9mm, length 150mm and width 23mm. this includes the additional 50mm required for repairs on each side of the defect location. The QC was observed performing MT to verify that the linear indication was completely removed from the weld zone and the excavation was to sound weld metal. The contractor then pre-heated the location to 325 degrees F and proceeded welding the cavity. After the completion of the welding the contractor then performed a post weld heat treatment for 1 hour with the temperature being between 450 degrees F and 600 degrees F as required by the contract documents. The QC inspector for this location was Salvador Merino and was observed verifying and documenting the welding parameters for this location, along with overseeing the welding operations.

The contractor proceeded with the weld repair at this location without having the approval of the engineer through a Weld Repair Report (WRR) the QC inspector has informed this QAI that he will be generating a Non-Compliance Report (NCR) for this infraction.

B). Lifting Lug Holes

The QAI observed that welder Mike Jimenez, was pre-heating the area prior to welding at 12W-PP114-W4-W2 lifting lug hole. The temperature required as outlined in the WPS is 20 degrees Celsius (50 degrees F) that was verified using a tempstik and infrared gun by the QC. The welder was using the Shielded Metal Arc Welding (SMAW) using electrode E7018 under Welding Procedure Specification (WPS) ABF-WPS-D15-1050A-CU for the Complete Joint Penetration weld with copper backing. The electrode used for the root pass was 4.0mm (5/32") diameter with welding amps verified as 194. The welder was observed using chipping hammer, power grinder and power wire wheel for the interpass cleaning. The QC inspector for this location was Salvador Merino and was observed verifying and documenting the welding parameters for this location, along with overseeing the welding operations. At the time of the observations no issues were noted by the QAI.

Later in the shift the welder was observed as completing the welding for hole W2 and proceeded to hole W4. The fit up was verified by the QC inspector onsite and was accepted. The welder then placed the root pass and hot pass using the 3.2mm electrode then switched to the 4.0mm electrode for the intermediate weld passes. The QC inspector for this location was Salvador Merino and was observed continuing the verifying and documentation of the welding parameters for this location, along with overseeing the welding operations.

The QAI observed that welder Rick Clayborn was observed welding of lifting lug holes, 12W-PP114-W4-W4. The welder back gouged the weld in the overhead (4G) position and the MT of the back gouged area was performed by QC inspector Salvador Merino with acceptable results for sound weld metal. The welder then proceeded to place the welds using the Shielded Metal Arc Welding (SMAW) process using electrode E7018 under Welding Procedure Specification (WPS) ABF-WPS-D15-1110A for the Complete Joint Penetration weld at this location. The pre-heat was observed as being a minimum of 40 degrees Celsius with the welding current observed at; 133 amps for the 3.2mm electrode. Later in the shift the welder had completed this location and was grinding the welds flush in preparations of a final Visual Inspection and MT inspection. The welder was observed moving and setting up for the hole W1 at the 12W-PP114 where the Carbon Arc Cutting (CAC) process was being performed. The QC inspector was observed onsite overseeing the operations, along with verifying, and documenting the welding parameters for this location. At the time of the observations no issues were noted by the QAI.

C). Field Splice Repairs for D3

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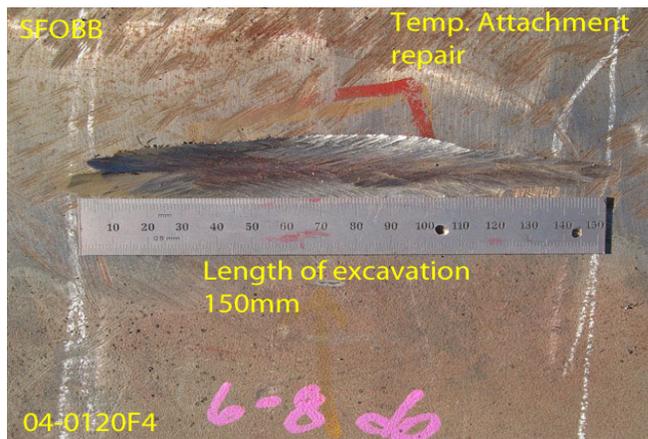
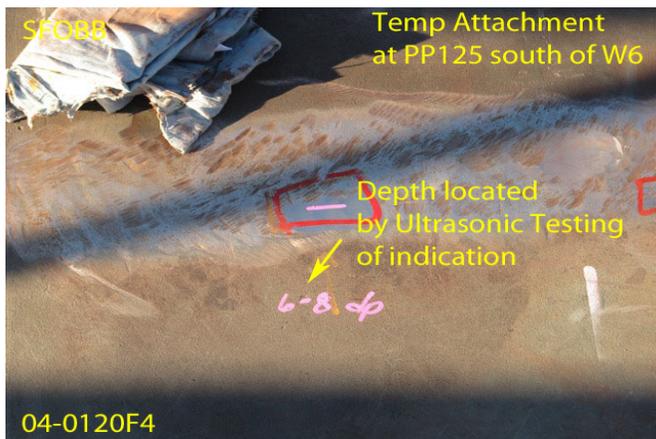
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D3

The QAI observed welder Rich Garcia, performing Shielded Metal Arc Welding (SMAW) using electrode E7018 under Welding Procedure Specification (WPS) ABF-WPS-D15-1001R for the Complete Joint Penetration weld repair. The preheat was observed as being a minimum of 60 degrees Celsius (125 Degrees Fahrenheit) with the welding current observed at 125 amps. The welder was observed using the 3.2mm electrode for this repair. The location of the welding was on the west bound lane (WB) at field splice bottom plate 12w/13w located at D3 this repair is an R2 with dimensions as follows; Length 150mm, depth-16mm and width 25mm (length 940mm). This repair location was completed and the welder proceeded to excavate 3 indications in one excavation with multiple depths. The location was at the D3 bottom plate with a Y location of 40, and depths of 14mm, 20mm, and 15mm, the accumulative length was 300mm and width of 25 mm. The QC inspector Salvador Merino was observed onsite overseeing the welding operations for this location. Mr. Merino was observed verifying and documenting the welding parameters for this location.

QA Observation and Verification Summary

The QA inspector observed the QC activities and the welding utilizing the WPS's as noted above, which appeared to be posted at the weld station. The welding parameters and surface temperatures were verified by the QC inspectors utilizing a Fluke 337 clamp meter for the electrical welding parameters and a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. The consumables utilized for the welding process stated appeared to comply with the AWS Specification and AWS Classification. The QC inspection, testing and welding performed on this shift appeared to be in general compliance with the contract documents. At random intervals, the QAI verified the QC inspection, testing, welding parameters and the surface temperatures utilizing various inspection equipment and gages which included a Fluke 337 Clamp Meter and Tempilstik Temperature indicators. Unless noted otherwise, all work observed on this date appeared to be in general compliance with the contract documents at the time of observations.



Summary of Conversations:

Basic conversation, fundamental to completion of the tasks at hand, occurred between this QAI and ABF QC personnel.

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 Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

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Inspected By:	Riley, Ken	Quality Assurance Inspector
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Reviewed By:	Levell, Bill	QA Reviewer
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