

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-028532
Date Inspected: 06-Oct-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: 1530
Location: Job Site

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|------------------------------------|----------------|-----------|------------|----------------------------------|------------|-----------|------------|
| CWI Name: | As noted below | | | 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 OBG | | |

Summary of Items Observed:

Quality Assurance Inspector (QA) Douglas Frey 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:

QA NDT (Interior)

This QA Inspector performed Magnetic Particle (MT) testing on the beam webs 1 & 2 and the plate stiffener at 12E PP115-BW1/BW2/PS1. This QA Inspector performed MT testing utilizing the yoke method in conformance with ASTM E 709 and the standard of acceptance with D1.5 section 6.26.2.1. This QA Inspector noted that no rejectable indications were found at the time of testing. This QA Inspector generated a TL-6028 MT report on this date. The completed work at this location appeared to be in general conformance with the contract specifications.

This QA Inspector performed an Ultrasonic (UT) inspection on 100% of the welds on the beam webs 1 & 2 and the plate stiffener at 12E PP115-BW1/BW2/PS1. These welds were previously accepted by QC Ultrasonic technicians in accordance with AWS D1.5-2002, section 6, table 6.3. This QA observed no indications at the time of testing. This QA generated a TL-6027 UT report on this date. The completed work observed at this location appeared to be in compliance with the contract specifications.

12E PP116.5-BW3 (Interior)

This QA Inspector randomly observed the excavation operations of Ultrasonic rejectable indications on the

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Complete Joint Penetration (CJP) joint on the beam web at 12E PP116.5-BW3 on the interior of the OBG. This QA Inspector observed ABF/JV qualified welder Jose Torres #6235 performing the Carbon Arc Gouging (CAG) method to remove metal from the material. The welder was observed cleaning up the excavations utilizing a small disc grinder and a de-burring drill. Upon completion of the excavation, Quality Control (QC) Inspector William Sherwood performed a Magnetic Particle Inspection (MT) of the site to determine soundness of the metal and observed no indications, QC then measured the dimensions of the excavations for length, width and depth. This QA Inspector recorded the dimensions of the excavations as:

Y=100mm; 100mm in length, 30mm wide and 10mm deep, y=410mm; 85mm in length, 30mm wide and 9mm deep, y=500mm; 85mm in length, 30mm wide and 10mm deep, y=590mm; 75mm in length, 30mm wide and 10mm deep.

Prior to welding, QC Inspector William Sherwood was observed monitoring and measuring the pre-heat temperatures and parameters as they pertain to ABF-WPS-D1.5-1000-Repair-Revision 2. This QA Inspector made random observations of SMAW in the 3G vertical position and noted no issues with the work at this location and at the time of this repair, no RWR was required for this first time weld repair. This QA Inspector made subsequent observations throughout the shift to monitor quality and it was noted that the E7018-H4R electrodes were stored properly in a sealed container after being opened and they were drawing amperage of 136. The welder was observed continuing the in process repair welding and this QA Inspector noted that no issues were present at this location. QC Inspector William Sherwood was also present to monitor the welding and the parameters in the later stages of the shift. This QA Inspector noted that the work at this location was completed on this date and appeared to be in general conformance with the contract specifications.

12E PP111.5-BW1 (Interior)

This QA Inspector randomly observed the excavation operations of Ultrasonic rejectable indications on the Complete Joint Penetration (CJP) joint on the longitudinal deck seam at 12E PP111.5-BW1 on the interior of the OBG. This QA Inspector observed ABF/JV qualified welder Xiao Hua Luo #1291 performing the Carbon Arc Gouging (CAG) method to remove metal from the material. The welder was observed cleaning up the excavations utilizing a small disc grinder and a de-burring drill. Upon completion of the excavation, Quality Control (QC) Inspector William Sherwood performed a Magnetic Particle Inspection (MT) of the site to determine soundness of the metal and observed no indications, QC then measured the dimensions of the excavations for length, width and depth. This QA Inspector recorded the dimensions of the excavations as:

Y=180mm; 120mm in length, 23mm wide and 7mm deep.

Prior to welding, QC Inspector William Sherwood was observed monitoring and measuring the pre-heat temperatures and parameters as they pertain to ABF-WPS-D1.5-1000-Repair-Revision 2. This QA Inspector made random observations of SMAW in the 3G vertical position and noted no issues with the work at this location and at the time of this repair, no RWR was required for this first time weld repair. This QA Inspector made subsequent observations throughout the shift to monitor quality and it was noted that the E7018-H4R electrodes were stored properly in a sealed container after being opened and they were drawing amperage of 135. The welder was observed continuing the in process repair welding and this QA Inspector noted that no issues were present at this location. QC Inspector William Sherwood was also present to monitor the welding and the parameters in the later

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stages of the shift. This QA Inspector noted that the work at this location was completed on this date and appeared to be in general conformance with the contract specifications.

12E PP114.5- BW1 (Interior)

This QA Inspector randomly observed the Visual Testing (VT) indication repairs conducted by ABF/JV qualified welder James Zhen #6001 on the beam web at 12E PP114.5-BW1 on the interior of the OBG. The welder performed SMAW to fill low spots followed by grinding and blending to provide a smooth consistent surface area. QC Tony Sherwood verified the temperature and recorded the parameters as acceptable and within the requirements of ABF-WPS-D1.5-1000-Repair-Revision 2. The welder was observed welding the joint followed by grinding and blending of the work utilizing a small disc grinder. On a subsequent observation, this QA Inspector noted that the welding was performed in the 3G vertical position utilizing the E7018-H4R low hydrogen electrodes. The 3.2mm electrodes were stored in electrically heated, thermostatically controlled oven after removal from the sealed containers. The exposure limits of the electrodes appeared to comply with the minimum storage oven temperature of 120 degrees Celsius as per the contract documents. The welding parameters and surface temperatures were verified by the QC inspector's utilizing a Fluke 337 clamp meter to measure the electrical welding parameters and Tempilstik Heat Indicators for verifying the preheat and inter-pass temperatures. At the time of the observation no issues were noted by the QA. On subsequent observations throughout the shift to monitor quality, it was noted that the work was in progress and appeared to be in general conformance with the contract documents.

Summary of Conversations:

Conversations relevant to work performed.

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 Gary Thomas 916-764-6027 , who represents the Office of Structural Materials for your project.

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| Inspected By: | Frey,Doug | Quality Assurance Inspector |
| Reviewed By: | Reyes,Danny | QA Reviewer |
