

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 13.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-006546**Date Inspected:** 30-Apr-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Oregon Iron Works Clackamas, Or.**Location:** Clackamas, OR**CWI Name:** Mike Gregson, Rob Walters**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:** Hinge K Pipe Beams**Summary of Items Observed:**

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

OIW Fabrication Shop-Bay 3

Hinge-K Pipe Beam Assembly 102A-1: 4/30/09

a111-1 Forging to a110-1 Base Plate

QA Inspector randomly witnessed OIW welder #T23, Mr. John Tellone perform submerged arc welding (SAW), multi-pass 25mm fillet welds, on 75mm thick a107 stiffener plate to 100mm thick a110-1 base plate, weld joint identified as W2-15, in the flat position (1F).

QA Inspector spoke with QC Inspector Mike Gregson and Mr. Gregson explained that Mr. John Tellone was performing submerged arc welding in accordance with the OIW approved welding procedure specification (WPS 4020) and QA Inspector noticed QC Inspector Rob Walters was present and monitoring in-process welding parameters (amps/volts) and pre-heat temperatures.

QA Inspector verified Mr. John Tellone was currently qualified for this welding process/position and performed a random pre-heat temperature verification and recorded approximately 350 degrees Fahrenheit, which is in accordance with the applicable welding procedure specification.

QA Inspector noticed Mr. John Tellone would complete this weld joint #W2-15, by end of shift.

WELDING INSPECTION REPORT

(Continued Page 2 of 4)

Hinge-K Pipe Beam Assembly 102A-2: 4/30/09

a111-2 Forging to a110-2 Base Plate

QA Inspector noticed that QC Inspector Rob Walters had previously performed 100% ultrasonic weld inspection on the CJP (AWS D1.5 TC-U9a-S) a111-2 pipe forging to a110-2 base plate, identified as weld joints #W2-12 & W2-13 and found one rejectable indication, per AWS D1.5 Tension Criteria. QA Inspector reviewed Mr. Rob Walters completed ultrasonic testing report (UT-2244-28-R1) and noted Mr. Walters had performed the inspection with a 60 degree transducer angle and the rejectable indication was approximately 140mm in length, 54 mm in depth and Mr. Walters calculated a decibel (Db) rating of -1, which is rejectable per AWS D1.5 tension criteria. QA Inspector noted the indication was at the weld root location and Mr. Walters had subtracted 4 decibels from the initial indication rating, which is compliance with AWS D1.5 inspection criteria.

QA Inspector performed approximately 20% ultrasonic weld inspection in two random locations on this (AWS D1.5 TC-U9a-S) a111-2 pipe forging to a110-2 base plate, identified as weld joints #W2-12 & W2-13 and found no rejectable indications and completed the applicable ultrasonic testing report (TL6027). QA Inspector noted that once this non-critical weld repair was complete and OIW QC Inspectors perform the applicable visual and ultrasonic testing on this weld repair and find the final results to be acceptable, QA Inspector would perform 100% ultrasonic weld inspection on the weld repair.

Hinge-K Pipe Beam Assembly 102A-3: 4/30/09

a111-3 Forging to a110-3 Base Plate

QA Inspector noticed the welding on the CJP (AWS D1.5 TC-U9a-S) a111-3 pipe forging to a110-3 base plate, for pipe beam assembly 102A-3 was complete and sitting idle in the OIW South storage yard, pending 100% final ultrasonic weld inspection.

Hinge-K Pipe Beam Assembly 102A-4: 4/30/09

a111-4 Forging to a110-4 Base Plate

QA Inspector noticed the welding on the CJP (AWS D1.5 TC-U9a-S) a111-4 pipe forging to a110-4 base plate, for pipe beam assembly 102A-4 was complete and was sitting idle in the OIW South storage yard, pending 100% final ultrasonic weld inspection.

Hinge-K Pipe Beam Fuse Assembly 120A-1: 4/30/09

a124-6 Half Fuse to a124-7 Half Fuse

A & G Machining:

QA Inspector noted the completed fuse assembly 120A-1 would be arriving at OIW fabrication shop on this date and QA Lead Inspector Joe Adame would be present at A&G Machining to witness the in-process transfer of this fuse assembly 120A-1.

QA Inspector later spoke with QA Lead Inspector Joe Adame and Mr. Adame explained that A&G had loaded this fuse assembly on a flat truck bed, utilizing a crane and two rigging chokers, as shown in pictures below.

QA Inspector later noticed this fuse assembly 120A-1, had arrived at OIW fabrication shop and had been transferred to Bay 3, in preparation for 100% magnetic particle testing on the outside of the rough machined surfaced, by qualified OIW QC personnel.

QA Inspector spoke with QC Inspector Mike Gregson and Mr. Gregson explained that QC Inspector Steve Barnett would be performing this magnetic particle testing on the scheduled swing shift, on this date.

Hinge-K Pipe Beam Fuse Assembly 120A-2: 4/30/09

WELDING INSPECTION REPORT

(Continued Page 3 of 4)

a124-3 Half Fuse to a124-11 Half Fuse

QA Inspector noticed this completed fuse assembly 120A-2 was sitting idle, pending transport to A&G Machining, for the rough machining process.

Hinge-K Pipe Beam Fuse Assembly 120A-3: 4/30/09

a124-12 Half Fuse to a124-10 Half Fuse

QA Inspector noticed this completed fuse assembly 120A-3 was in-process of being loaded on a flatbed truck, for transport to A&G Machining for rough machining. QA Lead Inspector Joe Adame later informed the QA Inspector that the fuse had been delivered to A&G Machining and was set in the lathe for future rough machining.

Hinge-K Pipe Beam Fuse Assembly 120A-4: 4/30/09

a124-13 Half Fuse to a124-4 Half Fuse

QA Inspector randomly witnessed welder #S53, Mr. Jerry Shepherd, perform submerged arc welding (SAW) on CJP (AWS D1.5 B-U3c-S), half fuse pipe assembly, (piece mark identified as a124-13), to half fuse pipe assembly, (piece mark identified as a124-4), in the flat position (1G).

QA Inspector spoke with QC Inspector Mike Gregson and Mr. Gregson explained that the OIW welder #S53, was performing submerged arc welding in accordance with the OIW approved welding procedure specification (WPS 4020).

QA Inspector noticed QC Inspector's Mike Gregson and Rob Walters were present and monitoring in-process welding parameters (amps/volts) and pre-heat temperatures, verifying Mr. Jerry Shepherd was in compliance with the applicable welding procedure specification (WPS 4020).

QA Inspector verified Mr. Jerry Shepherd was currently qualified for this welding process/position and performed a random pre-heat check and recorded temperatures of approximately 350 degrees Fahrenheit, which is in compliance with the OIW welding procedure specification (WPS 4020).

Hinge-K Pipe Beam Sub-Assembly a124-2: 4/30/09

a125 & b125 Ring Stiffeners to a124-2 Half Fuse

QA Inspector randomly witnessed OIW welder #O6, Mr. Tim O'Brian perform submerged arc welding (SAW) on PJP (AWS D1.5 TC-P5-S) weld joint #WM3-09 internal ring stiffener, (piece mark identified as a125), to half fuse pipe sub-assembly, (piece mark identified as a124-2), in the flat position (1G).

QA Inspector spoke with QC Inspector Mike Gregson and Mr. Gregson explained that Mr. Tim O'Brian was performing submerged arc welding in accordance with the OIW approved welding procedure specification (WPS 4020).

QA Inspector also noticed Mr. Mike Gregson and QC Inspector Rob Walters were present and monitoring in-process welding parameters (amps/volts) and pre-heat temperatures, verifying Mr. Tim O'Brian was in compliance with the applicable welding procedure specification (WPS 4020).

QA Inspector verified Mr. Tim O'Brian was currently qualified for this welding process/position and performed a random pre-heat check and recorded temperatures of approximately 350 degrees Fahrenheit, which is in compliance with the OIW welding procedure specification (WPS 4020).

Hinge-K Pipe Beam Sub-Assembly a124-14: 4/30/09

a125 & b125 Ring Stiffeners to a124-14 Half Fuse

QA Inspector noticed this a fuse sub-assembly a124-14 had been previously transferred from the OIW South storage yard to OIW fabrication shop and QA Inspector witnessed a helper grinding on the inside diameter of the

WELDING INSPECTION REPORT

(Continued Page 4 of 4)

half fuse sub assembly, in preparation for fitting of the internal ring stiffeners a125 and b125.

Material, Equipment, and Labor Tracking

QA Inspector Sean Vance performed a verification of personnel at Oregon Iron Works, Inc. and witnessed 6 OIW production personnel and 2 QC. The following was observed at A&G Machining: 1 A&G Machine Supervisor, 2 A&G Workers assisting with fuse change out. 2 Gresham transfer workers (deliver & haul back a fuse). 2 Metro Machinery workers using a hydraulic wheeled lift to offload, and load the fuses.



Summary of Conversations:

As noted above.

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 Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By: Vance,Sean

Quality Assurance Inspector

Reviewed By: Adame,Joe

QA Reviewer
