

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 #: 70.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-005095**Date Inspected:** 18-Dec-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 830**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1830**Contractor:** Japan Steel Works**Location:** Muroran, Japan**CWI Name:** Chung Kuan**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:** Tower, Jacking and Deviation Saddles**Summary of Items Observed:**

Steel Structure Welding Shop:

Tower Saddle Steel Structure T1-3: Caltrans Quality Assurance Inspector (QAI) representative Mr. Wai Pau, travel to Japan Steel Works (JSW) Muroran plant to observe two welders perform Flux Cored Arc Welding (FCAW) process on a rib # 9Y-9V and # 9Y-10V of T1-3 tower saddle steel structure. The weld numbered 9Y-9V (3-2) and 9Y-10V(3-2). The two welds start welding from 70% weld metal to 100%. The material used for grillage was reported by CWI Mr. Chung Kuan as ASTM 709 Gr345 plate having a thickness measurement of 120mm. The weld joint design used, double-V groove partial joint penetration groove weld (PJP). The filler metal and shield gas used for FCAW welding is Hoballoy wire TM-95K2, 1.6 diameter made by Hobart Brothers, USA with 100% CO₂. The parameters used for FCAW welding of assemblies were conducted in accordance with Caltrans approved WPS #SJ-3012-3. The FCAW welding process and parameters were monitored and recorded by CWI inspector Mr. Chung Kuan. Based on Caltrans QA observation, the FCAW welding operation appeared to be in general compliance with requirements of AWS D1.5 2002 and Caltrans contract documents.

Tower Saddle Steel Structure T1-2: The QAI observed Nikko Inspection Service (NIS) NDT technicians perform dry MT testing on all the production weld surfaces of tower saddle steel structure T1-2. The dry MT was performed and evaluated in accordance with ASTM standard E709 and Caltrans Special Provisions, using the yoke method. The yoke utilized appeared to be model UM 3BF, serial numbers 93-05. The yoke light output was verified with a Hioki model 3408 light. The magnetic field was verified with a field indicating gauge (pie gauge). Visible dry red magnetic particles were utilized and made by Magnotron, Japan. During MT test do not found any relevant indication on the surface. The MT test will continue to 2nd shift. Based on Caltrans QA observation, the MT test operation appeared to be in general compliance with requirements of AWS D1.5 2002 and Caltrans

WELDING INSPECTION REPORT

(Continued Page 2 of 2)

contract documents.

Casting Shop:

West Deviation Saddle casting W2E3 and Tower Saddle casting T1-3: Caltrans QAI observed two NIS NDT level II technicians perform straight beam UT test on rib side of West Deviation Saddle W2E3 and rib side of Tower Saddle T1-3. The thickness of saddle segment is 150mm to 500mm and both saddle test surface have been Magnetic Particle Test (MT) prior UT test. First, a 500mm range reflection was calibrated on a Krautkramer Branson USM 3 "A scan" tube display instrument. A straight beam method has be apply test UT test and the search unit is a 24mm x 2 MHz single transducer applied a source of compression waves, and penetrated into segment W2E3 and T1-3 for discontinuities scanning. The distance and sensitivity of straight beam is calibrated with the 3.0mm and 6.4mm diameter FBH reference block and an additional test reference block made by same casting metrical. The liquid glycerin is be used to couple the search unit to the test surface. Base on Caltrans observation, no discrepancies were noted. The UT test for both saddle will be continue to tomorrow.

West Deviation Saddle casing W2W3:- Caltrans QAI observed two welders performed carbon-arc-gouging process on exterior rough surface of rib side for west deviation saddle W2W3 after rough machining. The gouging areas are not uniform surface and not able to use machining. The equipment used is manual troche with 10mm gouging electrode all made in Japan. The gouging process will schedule to Dec-26-08. Base on Caltrans observation, no discrepancies were noted.

West Deviation Saddle casting W2W2: Caltrans QAI observed two welders perform shaping process on exterior rough surface of rib side for west deviation saddle W2W2 after arc-gouging. Shaping is grinding process to remove all the excess metal, oxide film and slag caused by gouging. The purpose for shaping is prepared for NDT test. The gouging process is scheduled to December 26, 2008. Based on Caltrans observation, no discrepancies were noted.

Summary of Conversations:

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

Inspected By:	Pau,Wai	Quality Assurance Inspector
Reviewed By:	Lanz,Joe	QA Reviewer
