

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 #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-002807**Date Inspected:** 16-May-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Zhang Bao Lei and Lvliqing**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:** OBG and SAS Tower**Summary of Items Observed:**

On this date, Caltrans Office of Structural Material (OSM) Quality Assurance (QA) Inspector Joselito Lizardo was present as requested to perform observations on the fabrication of Orthotropic Box Girder (OBG) and SAS Tower at Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China.

The QA Inspector has randomly observed the following activities on these Bays mentioned below;

1. Bay # 2: 77 and 114M Tower Mock-ups, Plate Cutting, Rolling

This QA Inspector observed Tower Mock-up was idle so with the cutting machine. On separate location, this QA observed rolling of 60mm thick plate with item mark P393A. Also on horizontal milling machine, three 75mm thick plate one without visible marking and two with mark 23M SA333 and 33M SA317 were seen in-progress on beveling. These plates appear to be intended for Tower diaphragm.

2. Bay 3-OBG side/bottom panel:

QA Inspector Lizardo randomly observed ZPMC qualified welder ID# 037779, tack welding WT rib stiffener plates to bottom panel BP115-001-003 using a shielded metal arc welding (SMAW) process and utilizing THJ506Fe with 4.0mm diameter electrode and welder ID# 037779 tack welding open rib stiffener plate to side panel SP088-001-031 and SP083-001-029/031 using electrode TL-508.

This QA Inspector observed Flux Cored Arc Welding of complete penetration joint (CPJ) on flange splice of WT rib stiffener on bottom panel BP032-001-005. This CPJ is being welded by qualified welder Li Shugian ID# 053609 and was using a WPS-B-T-2233-B-U2-F. This QA Inspector noted ZPMC QC Inspector at the vicinity of

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

the welder monitoring the parameters. The welding parameters observed were as follows; 206Amps, 25.6Volts with travel speed of 118mm/minute.

At gantry #1, this QA Inspector observed setting up/clamping on bottom plate marked BP034-001 and BP061-001 to gantry welding table and getting ready for FCAW fillet welding. While at gantry number 2, this QA Inspector randomly observed ZPMC welder operator ID Number 051246, utilizing the FCAW Process in the 2F (Horizontal Fillet) position with gantry mounted welding apparatus and ZPMC WPS WPS-B-T-2132-3, to weld WT-Ribs on Side Plate SP309-001. The QA Inspector randomly observed ZPMC CWI Zhang Bao Lei monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 298 amps, 30.2 volts and 435mm/minute travel speed.

One of the ABF Inspector informed this QA Inspector about one tack weld of having crack that was noted on bottom panel BP034-001-011. This QA went to the scene and verified the existence of weld defect with the aid of Magnetic Particle Testing. Upon confirming, this QA observed ZPMC personnel removing the crack tack weld through grinding up to the base metal. ZPMC/QC-NDT personnel verified the complete removal visually and thru Magnetic Particle testing. This QA observation on the tack removal deemed acceptable. See attached photo below.

3. Bay 4 Tower Diaphragm

This QA Inspector also observed hot bending using natural gas on heavy plates marked P654B(N)-4/26(K) and P252(E)-4/26 with the aid of hydraulic ram and welded jig. These plates are intended for diaphragm ring that will be spliced together. The procedures HSR1(T)-1156 and HSR1(T) 1160 are being followed respectively and heat input is monitored by ZPMC QC of less than 650 degree C.

4. Bay #7: Orthotropic Box Girder (OBG) Floor Beams

This QA Inspector observed ZPMC welder Hu Yacheng ID# 049339 tack welding/fit-up on flange to web on floor beams marked FB014-014 and FB013-005 using electrode THJ508Fe-1. Welder Li Zhong Xu was also observed tack welding/fit-up on plate splice butt joint on floor beam FB032-001-108. Flux Cored Arc Welding on fillet weld of web to flange was also observed on floor beam marked FB003-054 being welded by Liu Long Xian ID# 044786 using procedure WPS-B-T-2132-3. Welding parameters observed were 311Amps, 30.2 Volts with 433 travel speed.

This QA observed heat straightening of floor beam FB019-001 weld #080 using procedure HSR1(B)-895 of less than 600 degree C thermal heat input with oxy-acetylene. This straightening is done due to weld distortion induced during welding and was monitored by ZPMC CWI Inspector.

Pre-assembly of Floor Beam to 300mm X 300mm diagonal bracing was noted in this bay.

5. Bay #8: Tower Diaphragms

The QA Inspector randomly observed ZPMC welder ID Number 045270, utilizing the Submerged Arc Welding (SAW) Process in the 1G Position (Flat Groove) with ZPMC WPS WPS-B-T-2221-B-U3c-S, to weld fill pass in SD1-A4-9A Tower Diaphragm Sub-Assembly. The QA Inspector randomly observed ZPMC CWI Lvliqing monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 700 amps, 32.5 volts with a travel speed of 540 mm per minute. The weld parameters appeared to comply with contract requirements.

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

This QA Inspector also observed hot bending using natural gas on heavy plate marked P654B(E)-4/28(B) with the aid of hydraulic ram and welded jig. These plates are intended for diaphragm ring that will be spliced together. The procedure HSR1(T)-1646 is being implemented and heat input is monitored by ZPMC QC of less than 650 degree C. Bevel cutting on various heavy plates (without visible marking) intended for diaphragm ring is also continuing in this bay.



Summary of Conversations:

There is no significant conversation occurred today.

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 Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Lizardo, Joselito	Quality Assurance Inspector
Reviewed By:	Cochran, Jim	QA Reviewer
