DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 99.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-019192
Date Inspected: 07-Jan-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC)

OSM Arrival Time: 700
OSM Departure Time: 1900
Location: Shanghai, China

CWI Name: N/A

Inspected CWI report:	☐ Yes	☐ No	☑ N/A	**CWI Present:**	☐ Yes	☑ No	
Electrode to specification:	☐ Yes	☐ No	☑ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A
Qualified Welders:	☐ Yes	☐ No	☑ N/A	**Weld Procedures Followed:**	☐ Yes	☐ No	☑ N/A
Approved Drawings:	☐ 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 Trial Assembly

Summary of Items Observed:

On this date Caltrans OSM Quality Assurance (QA) Inspector Mr. S. Manjunath Math was present during the time noted above for observations relative to the work being performed.

This QA Inspector randomly observed the following work in progress:

Orthotropic Box Girder (OBG) at Trial Assembly Areas

Tower Grillage (Lift 5) - East

This QA Inspector witnessed final bolt tension verification on bolts connecting the Angles to the Tower Grillage East, Transverse and Longitudinal Stiffeners at the Top Face. Inspected the bolt tensioning on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00600 Dated January 07, 2011.

The bolt sizes used were M27 x 160 RC Lot # DHGM270022 and the final torque value established was 847 N-m.

The bolt sizes used were M27 x 130 RC Lot # DHGM270022 and the final torque value established was 887 N-m.

The bolt sizes used were M27 x 120 RC Lot # DHGM270029 and the final torque value established was 647 N-m.

The Manual Torque wrench used was Serial No. XO2-779.

Tower Grillage (Lift 5) - West

This QA Inspector witnessed final bolt tension verification on bolts connecting the Angles to the Tower Grillage West, Transverse and Longitudinal Stiffeners at the Top Face. Inspected the bolt tensioning on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00600 Dated January 07, 2011.

The bolt sizes used were M27 x 160 RC Lot # DHGM270022 and the final torque value established was 847 N-m.

The bolt sizes used were M27 x 130 RC Lot # DHGM270022 and the final torque value established was 887 N-m.

The bolt sizes used were M27 x 120 RC Lot # DHGM270029 and the final torque value established was 647 N-m.

The Manual Torque wrench used was Serial No. XO2-779.

Tower Grillage (Lift 5) - South

This QA Inspector witnessed final bolt tension verification on bolts connecting the Angles to the Tower Grillage South, Transverse and Longitudinal Stiffeners at the Top Face. Inspected the bolt tensioning on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00600 Dated January 07, 2011.

The bolt sizes used were M27 x 160 RC Lot # DHGM270022 and the final torque value established was 847 N-m.

The bolt sizes used were M27 x 130 RC Lot # DHGM270022 and the final torque value established was 887 N-m.

The bolt sizes used were M27 x 120 RC Lot # DHGM270029 and the final torque value established was 647 N-m.

The Manual Torque wrench used was Serial No. XO2-779.

Tower Grillage (Lift 5) - North

This QA Inspector witnessed final bolt tension verification on bolts connecting the Angles to the Tower Grillage North, Transverse and Longitudinal Stiffeners at the Top Face. Inspected the bolt tensioning on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00600 Dated January 07, 2011.

The bolt sizes used were M27 x 160 RC Lot # DHGM270022 and the final torque value established was 847 N-m.

The bolt sizes used were M27 x 130 RC Lot # DHGM270022 and the final torque value established was 887 N-m.

The bolt sizes used were M27 x 120 RC Lot # DHGM270029 and the final torque value established was 647 N-m.

The Manual Torque wrench used was Serial No. XO2-779.

Please reference the pictures attached for more comprehensive details.

Tower Lift 4 West

This Quality Assurance (QA) Inspector witnessed final bolt tension verification for Tower Lift 4 West. Bolts are installed between Double Diaphragm Flange to Galvanized Tower Ladder. Inspected 10% on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00601 dated January 07, 2011.

Tower Ladder bolts are installed at Double Diaphragm and elevations are identified as 119 meter.

The bolt sizes used were M22 x 65 RC Lot # DHGM220105 and final torque required was 380 N-m.

The Manual Torque wrench used was Serial No. XO2-666.

Note: Please reference the pictures attached for more comprehensive details(common pictures for Lift 5 Grillage-East+West+South+North).

BAY 11 – (Skid More Test)

This QA Inspector witnessed Bolt Testing for ASTM A490 Grade. Observed ZPMC QC Mr. Hu Hua Cheng performing bolts testing and ZPMC QA Inspector Mr. Zhang Jia Di was present during the course of Bolt Testing.

The testing of bolts was performed to determining Nut Rotation from Snug-Tight condition for Turn-of-Nut Pre-tensioning and High Tension bolt capability verification test.

Bolt assembly identified as ASTM A490 (High Strength Bolt), Bolt Assembly comprises of (a Bolt, a Nut and a Washer).

Bolt testing was performed on a Unit: Skidmore-Wilhelm; Model: HT; Serial Number: 1014 (Calibration Expiration due date on April 29, 2011) and Torque Wrench identified as XO-326 and Torque Wrench with Dial gauge on it is identified as XO-2 (Calibration Expiration due date on April 14, 2011).

Tested bolt sizes were identified as M27x210 RC Set# DH4DM270001.

Tested bolt sizes were identified as M27x220 RC Set# DH4DM270002.

5 bolt assemblies were tested per lot.

After determining Nut Rotation from Snug-Tight condition for Turn-of-Nut Pre-tensioning Inspection Report # 1 for bolt size M27x210 was generated by ZPMC QA.

After determining High Tension bolt capability verification test Inspection Report # 280 for bolt size M27x210 was generated by ZPMC QA.

After determining Nut Rotation from Snug-Tight condition for Turn-of-Nut Pre-tensioning Inspection Report # 2 for bolt size M27x220 was generated by ZPMC QA.

After determining High Tension bolt capability verification test Inspection Report # 281 for bolt size M27x220 was generated by ZPMC QA.

The generated reports were submitted to the Caltrans Lead Inspector Mr. Mark Miller and Caltrans Engineer Mr. Aaron Prchlik for review and disposition.

Lift 11 West (X37B Brackets, Road Barrier)

This QA Inspector performed Dimension Control Inspection for the Segment 11AW, Segment 11BW, Segment 11CW, Segment 11DW and Segment 11EW after installing the Retro-fit plates and measured the distance between Road Barrier bolt holes drilled at X37B from deck panel to the cope hole at X37B bracket installed at Corner Assembly at east and west side of the X37B brackets at Cross Beam side for the following locations. ZPMC personnel's performed this rectification work against the Request for Information(RFI) Report # ABF-RFI-001985R01 dated August 18, 2010.

At Panel Points(PP) PP 97.25(Retro-fit plate installed at East side of X37B Bracket) and PP 97.75 (Retro-fit plate installed at East side of X37B Bracket) Cross Beam side.

At Panel Point(PP) 98.75(Retro-fit plate installed at East side of X37B Bracket), Cross Beam side.

At Panel Points(PP) 99.25(Retro-fit plate installed at East side of X37B Bracket) and PP 99.75(Retro-fit plate installed at East side of X37B Bracket), Cross Beam side.

At Panel Point(PP) 100.25(Retro-fit plate installed at East side of X37B Bracket), Cross Beam side.

At Panel Point(PP) 102.75(Retro-fit plate installed at East side of X37B Bracket), Cross Beam side.

At Panel Points(PP) 103.25(Retro-fit plate installed at East side of X37B Bracket) and PP 103.75(Retro-fit plate installed at East side of X37B Bracket), Cross Beam side.

At Panel Points(PP) 104.25(Retro-fit plate installed at East side of X37B Bracket) and PP 104.75(Retro-fit plate installed at East side of X37B Bracket), Cross Beam side.

At Panel Point(PP) 105.75(Retro-fit plate installed at East side of X37B Bracket), Cross Beam side.

At Panel Points(PP) 106.25(Retro-fit plate installed at West side of X37B Bracket) and PP 106.75(Retro-fit plate installed at West side of X37B Bracket), Cross Beam side.

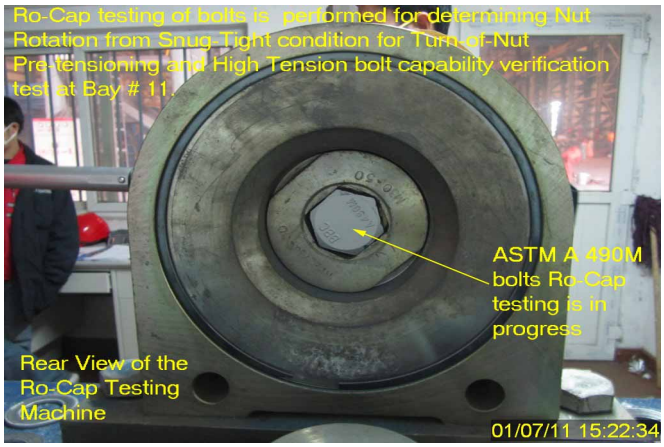
At Panel Point(PP) 107.75(Retro-fit plate installed at West side of X37B Bracket), Cross Beam side.

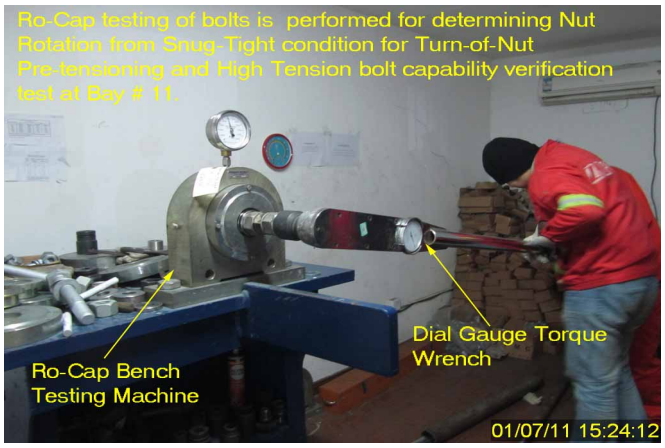
At Panel Points(PP) 108.25 (Retro-fit plate installed at East side of X37B Bracket)and PP 108.75(Retro-fit plate installed at East side of X37B Bracket), Cross Beam side.

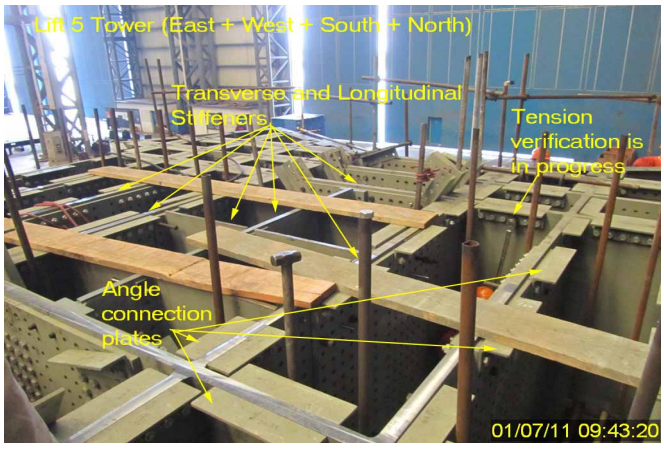
Note: Observed 17(Seventeen) locations retro-fit plates for X37B Brackets are installed in total for Lift 11 West.

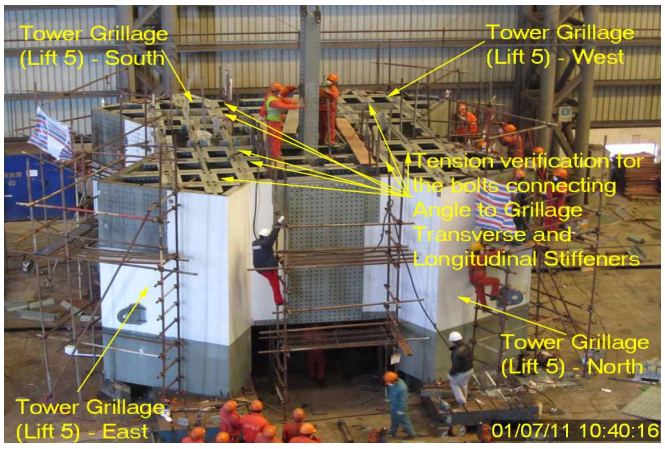
The observations were informed to Lead Inspector Mr. Mark Miller and Structural Steel Material Representative (SMR) Mr. Eric Tsang for closing out the punch list.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.









WELDING INSPECTION REPORT

(Continued Page 6 of 6)

Summary of Conversations:

No relevant conversations were reported on this date.

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 Eric Tsang 150000422372, who represents the Office of Structural Materials for your project.

Inspected By:	Math,Manjunath	Quality Assurance Inspector
Reviewed By:	Dsouza,Christopher	QA Reviewer