



Daily Diary Report by Bid Item

Contract No.: 04-0120F4

Diary #: 827 Const Calendar Day: 317 Date: 17-Apr-2013 Wednesday

Inspector Name: Bruce, Matt Title: Transportation Engineer

Inspection Type: Continuous

Shift Hours: 07:00 am 03:30 pm Break: 00:30 Over Time:

Federal ID:

Location:

Reviewer: Schmitt, Alex Approved Date: Status: Submit

04-0120F4
 04-SF-80-13.2/13.9
 Self-Anchored
 Suspension Bridge

Weather

Temperature 7 AM 40 - 50 12 PM 50 - 60 4PM 50 - 60

Precipitation 0.00"

Condition Mostly sunny to partly cloudy w/moderate PM winds

Working Day If no, explain:

Diary:

Dispute

Work description.

- Checked on the status of the W2 cap beam Class 1 finish and crack repair before removal of the suspended platform. As of today these tasks have not been performed by ABF or their subcontractors.

- Performed miscellaneous informal inspections around the jobsite today.

- Inspected the stressing operation to verify the Pjack load in tower foundation anchor rods with Sami Daouk, see his diary for the ABF ironworker names. At the start of stressing operations Boltight pump number 59836-0577000106, gauge number 29901041/18 was used along with Boltight jack number RN7194 for this stressing operation. Stressing operations began at 12:20pm today as a crew of ironworkers wasn't available at the start of shift.

The first task was to stress anchor rods W60 and W61 together, see photos below for more details. It was decided between ABF engineer Andre Markarian, Sami, and myself to stress these two rods in steps. Anchor rod W61 was stressed to 2.0ksi with the Boltight system. Then W60 was "snugged" tight followed by 1/2 turn at a pressure of 2.4ksi of the nut using the Hydratight hydraulic torque wrench. The gauge number of the Hydratight torque wrench pump was 25564-38B21 which had a calibration sticker denoting the last test was done on 03-01-13. Once the 1/2 turn was completed on anchor rod W60, three more cycles with the Boltight system at 7.2ksi, 12.5ksi, and 13.2ksi were executed on anchor rod W61 to achieve the required 105% Pjack force. Then the Hydratight torque wrench completed the full turn of the nut on anchor rod W60 at a pressure of 5.6ksi. Sami took the measurement on these two anchor rods stressed today. The elongation of anchor rod W61 was 190mm - 206mm = 16mm, and the match marks were acceptable for the 1 whole turn on anchor rod W60.

As the pressure was being verified on anchor rod W73 (around 1:15pm) the Boltight pump mentioned above stopped working. A new pump from the Pier 7 warehouse was shipped to Pier T1 at 2:00pm and force verification operations for the tower anchor rods resumed. The second Boltight pump was number 70254-2222000757, gauge number 12906134/8. The first tower anchor rod force verification/determination where the nut seized on the rod threads was W13, located on the outer perimeter of the tower shaft. ABF engineer Andre Markarian had an dial gauge used to measure anchor rod lift off. It was agreed that the anchor rod lift off was 1/2 turn of the dial or 0.05" (1.27mm). The estimated measured gauge length of 0.05" is the estimated amount of rod elongation in the jack puller prior to lift-off of the nut on the washer/bearing plate. The lift off pressure of anchor rod W13 was found to be 11.0ksi, similarly the lift off load for W73 and W75 was 9.0ksi. As in previous days the jack ram was monitored for movement at lift-off by Sami. The lift-off load/pressure is difficult to observe on the Boltight pump gauge since the dial undergoes oscillating back and forth inflections as the pressure is increased.

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After work in the West tower shaft was completed, a final attempt to stress anchor rod b2(W)01 was done. The nut on the rod was removed and cleaned prior to stressing. Three attempts were made to bring up the pressure on this anchor rod where at 3.5ksi, 3.5ksi, and 3.2ksi a popping noise was heard prior to the pressure on the pump gauge going back to 0.0ksi. The final assessment on this anchor rod was that there was no prestress load in the member due to a problem at the dead end nut keeper. It is unclear what damage has occurred at the dead end since it is embedded into the tower foundation. In order to completely remove this anchor rod, it would have to be intentionally broken or unfastened (turning the rod) from the dead end nut. In my opinion and recommendation this anchor rod could be used for additional metallurgical and destructive (tensile) tests. It should be noted that the cut threaded portion of tower anchor rod W60 was retrieved and given to Mohammed Awal for potential future metallurgical tests.

Tower anchor rod force verification was completed at 3:00pm as ABF engineer Andre Markarian was present for the entire stressing operation today. All decisions were agreed upon with Andre today to complete the assessment for the anchor rods in question.

Attachment



Tower anchor rods W60 and W61 with the Hydratight torque wrench placed on anchor rod W60.



Dial gauge used to assess the moment of lift off on the top of the tower anchor rod (W73 in the photo).



Hydratight pump used for turning the nut on tower anchor rod W60 one full turn.



ABF ironworkers preparing to remove bracing of the T1 erection tower.