Daily Diary Report by Bid Item

Contract No.: **04-0120F4**
Diary #: **493** **Const Calendar Day:** 876 **Date:** **01-Feb-2012** **Wednesday**
Inspector Name: **Bruce, Matt** **Title:** **Transportation Engineer**
Inspection Type: Continuous
Shift Hours: 05:30 am 06:00 pm **Break:** 00:30 **Over Time:** 04:00
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** Overcast in the AM to partly overcast in the PM

Working Day ☐ If no, explain:

Diary: Dispute ☐

Work description.

- The tasks completed today by the Alta Vista surveyors included the following:

1.) Dave continued to process the surveying data for all of the Hinge K tie down surveys done to date. He also resumed drafting up the exhibits for the first cable strand survey done January 6th, 2012. I gave him the final numbers yesterday for the main and sidespans to incorporate into the report drawings. Yesterday we discussed displaying the station, offset, and elevation deltas as a vector in the 3 dimensional drawing.

2.) Chris continued to process the raw data from the Trimble S8 total station of the 24 deflection monitoring points on the W-Line YBITS bridge.

3.) Erol continued to compile all of the Alta Vista reports done for the OBG and Tower fabrication at ZPMC in China.

- The following is the hours worked by the Alta Vista consultants today:

Dave Garrett (survey party chief) = 8hrs
Chris Ferrucci (instrumentman) = 8hrs
Erol Schaller (rodman) = 8hrs

- Continued to obtain quotes on the Trimble S8 total station and TSC3 data collector.

- Alex Schmitt, John Lyons, and myself all checked the out to out distance between the following cable strands at a given span tabulated below. The information below is my raw data which was given to Alex to inform ABF engineer Zach Lauria which cable strands were either adjusted properly (accepted) or if the cable strand required more adjusting (rejected). I used the Maletic modified calipers (gauge - Yellow #1) to take the out to out measurements of the cable strands. Ambient temperatures were taken with the red temperature gauge. Wind speeds were obtained from weather.com at the time of the measurements. For steel temperature measurements, the infrared temperature gun probe was wedged in between the cable strand wires to obtain the steel temperature. See Alex Schmitt's diary on the discussions with ABF engineer Zach Lauria and the decision for acceptance or rejection. The official sunrise time per weather.com for San Francisco today was at 7:14am. The following measurements were taken in order at the given times of the adjusted cable strand:

// South Mainspan //
Time = 5:40am
Ambient Temperature = 47F
Condition = Cloudy with light drizzle and moderate steady winds
Wind = SE @ 8mph

ABF Engineer(s) = Not present
Caltrans Engineer (s) = Matt Bruce

Cable Strand	Out-to-Out Measurement (mm)	Theor(mm) / Delta (mm)	Steel Temperature (F)
1	Baseline or Zero	76 / 0	46
9	139, 142, 142 - Ave = 141	142 / -1	46
10	194, 194 - Ave = 194	201/ -7	46
11	279*, 266, 266, 264 - Ave = 265	259 / +6	47

Comments: The cable strands at this location at the time were oscillating in every direction. When the readings were taken with the laser, the observed oscillation magnitude was +/- 10mm. Due to this condition the laser point was set to the 10mm gradation to account for the cable strand oscillations. The maximum vertical change from the 10mm line was at the 0mm mark. Similarly the minimum vertical change for the laser went down to the 20mm mark. Hence the +/- oscillation of the cable strand. Using the Maletic calipers/gauge laser is similar to using an automatic level when reading three wires or stadia. When the center wire oscillates, the most accurate way to account for the movement of the rod reading is take the center point or stadia. Preliminary measurements weren't taken on cable strands 12, 13, 14, and 15 due to the extreme oscillations and because ABF was only requesting that cable strands 9, 10, and 11 be accepted. Time is of the essence to record these measurements prior to the cable strand steel being exposed to sunlight, therefore I moved to the next location. The * denotes that this number wasn't used in the average value.

// South Sidespan //
Time = 6:32am
Ambient Temperature = 47F
Condition = Cloudy with light drizzle and moderate steady winds
Wind = SSE @ 8mph
ABF Engineer(s) = Eric Blue and Levi Gatsos
Caltrans Engineer (s) = Matt Bruce, Alex Schmitt, Brian Boal, and John Lyons

Comments: After I finished taking measurements on the South Mainspan, I proceeded to measure the cable strands at this location. My assessment when I arrived was that the Maletic calipers (Yellow #1 - gauge) wouldn't work at this location during this time. The catwalk is too low and there is no platform is to measure the cable strands. Also the oscillations were significant at this location and I called Alex for assistance to use the Victor tree calipers (Blue #2). See Alex's diary for the measurements and pertinent data at this location. We finished our measurements by 7:10am which is when ABF engineer Eric Blue showed up at this location. Brian Boal assisted us measuring cable strands at this location and to observe the techniques (which are questionable) used by ABF engineers measuring the cable strands. Brian was taking notes of the techniques applied by Eric and we observed ABF engineer Andre Markarian measuring cable strands at the North Sidespan. Eric had a surface thermometer which he used on each of the cable strands measured. For one of the strands used Levi held a tape measure on the tree caliper blade and cable strand #1 for a measurement. The ABF engineers appeared to be applying better techniques today than in previous days. However they still were making some mistakes similar to other days. No measurements were shared at this location amongst engineers. It also should be noted that ABF laborers also came to this location and began building a platform to measure the out to out distance of the cable strands.

Before me and John left this location we measured the ambient and steel temperatures for Alex to present to Zach for the measurements taken prior to 7:10am. We also got preliminary measurements for cable strands # 15 and 16, see the data below:

// South Sidespan //
Time = 7:50am
Ambient Temperature = 47F
Condition = Cloudy with moderate steady winds
Wind = S @ 9mph

ABF Engineer(s) = Eric Blue and Levi Gatsos
Caltrans Engineer (s) = Matt Bruce and John Lyons

Cable Strand	Steel Temperature (F)
1	46
12	47
13	47
14	47

Time = 8:01am
Ambient Temperature = 47F
Condition = Cloudy with light drizzle and moderate steady winds
Wind = S @ 8mph
ABF Engineer(s) = Eric Blue and Levi Gatsos
Caltrans Engineer (s) = Matt Bruce and John Lyons

Cable Strand	Out-to-Out Measurement (mm)	Theor(mm) / Delta (mm)	Steel Temperature (F)
1	Baseline or Zero	78 / 0	47
15	236 - 61* = 175	147 / +28	47
16	279 - 61* = 218	214 / +4	47

Comments: I was coaching John how to use the Maletic calipers at this time. These two cable strands were for taking preliminary measurements only. The * denotes that a deduction is taken for the height (61mm) of a wood block used to access cable strand number 1.

// North Sidespan //
Time = 8:56am
Ambient Temperature = 49F
Condition = Cloudy
Wind = Calm
ABF Engineer(s) = Zach Lauria and Eric Blue
Caltrans Engineer (s) = Matt Bruce, Alex Schmitt, and John Lyons

Cable Strand	Out-to-Out Measurement (mm)	Theor(mm) / Delta (mm)	Steel Temperature (F)
1	Baseline or Zero	78 / 0	49
15	179	148 / +31	49
16	277	213 / +64	49
17	451	278 / +173	49

Comments: I was coaching John how to use the Maletic calipers at this time. These three cable strands were for preliminary measurements only. All measurements taken at this time with the Maletic calipers (Yellow #1 - gauge) were done by inverting the calipers due to the catwalk being too low. Alex, Zach, and Eric were discussing other cable strand measurements at this location for acceptance. See Alex's diary for more details, also the measurements at the North Sidespan taken by me and John were completed at 9:40am.

John and myself went to the west loop after the North Sidespan and checked to see if any cable strands needed to be measured for acceptance. ABF ironworkers were in the process of putting the strand adjusters on cable strand #17. I measured up to cable strand #16 yesterday, so we went to continue taking preliminary measurements elsewhere.

// South Mainspan //
Time = 10:21am
Ambient Temperature = 52F
Condition = Cloudy (before sun came out approximately at 11:15am)
Wind = WNW @ 9mph

ABF Engineer(s) = Not present
Caltrans Engineer (s) = Matt Bruce and John Lyons

Cable Strand	Out-to-Out Measurement (mm)	Theor(mm) / Delta (mm)	Steel Temperature (F)
1	Baseline or Zero	78 / 0	51
8*	97, 97	83 / +14	52
9	140, 141	142 / -1	52
10	191, 191	201/ -10	51
11	259, 259	259 / 0	52
12	512, 512	318 / +194	54
13	690	377 / 313	53
14	321, 317 (John)	91 / +230	52
15	431	150 / +281	53
16	425	208 / +217	53

Comments: At the time of measuring the cable strands in this span didn't oscillate at all, unlike earlier this morning. At 11:11am we went to the check and see if measuring preliminary cable strands was possible at the north mainspan. As we were walking up the catwalk cable strand #17 was dropped onto the catwalk from approximately 1.5' to 2' above the catwalk mesh and treads. Within a few minutes cable strand #18 was gradually lowered onto the catwalk. It was determined that it wasn't safe to conduct preliminary measurements on the cable strands at this time. I spoke with Bob Brignano about this issue and apparently the twist in the cable strands was being taken out when the cable strand was dropped.

- Attended weekly Team Cable Safety Tailgate meeting at 12:00pm in the Caltrans connex box located on the E-Line OBG between the tower and east end of the bridge.
- Attended a meeting at 12:30pm with Alex, John, Roman Granados, and Warren Collins regarding cable strand adjustment.
- Began to write outstanding diaries.

Attachment

ABF engineer Eric Blue in the process of taking out-to-out measurements at the south sidespan while being observed on how he measures the strands.

ABF engineer Andre Markarian taking out-to-out measurements at the north sidespan while being observed on how he measures the strands.

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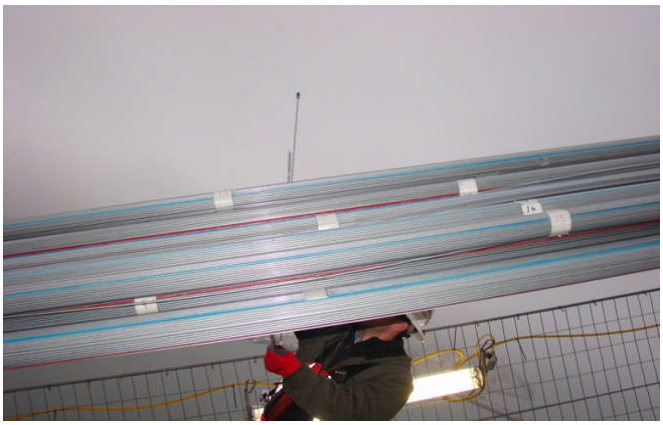
Slender bubble level of the ABF calipers which is difficult to see.

ABF engineer Eric Blue in the process of taking out-to-out measurements at the south sidespan while ABF laborers were building a measuring platform.

East end of the bridge on the north side where ABF ironworkers were busy floating cable strands #17 and 18 while me and John were on the catwalk.



Meausuring the cable strands at an incorrect angle which isn't normal to the cable cross section.