



SAS Superstructure

Location: 04-SF-80-13.2 / 13.9

Client Name: CalTrans

Run date 21-Nov-14

Time 11:35 PM

Daily Diary Report by Bid Item

Contract No.: 04-0120F4

Diary #: 471 Const Calendar Day: 849 Date: 05-Jan-2012 Thursday

Inspector Name: Bruce, Matt Title: Transportation Engineer

Inspection Type: Continuous

Shift Hours: 07:00 am 03:30 am Break: 01:30 Over Time: 11:00

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 Mostly sunny with few clouds

Working Day [] If no, explain:

Diary:

Dispute

Work description.

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

- 1.) Stake-out cable strand #1 on the North/South mainspan and backspans at the midpoint. This was done to check the current position of the cable strand, since ABF engineers wanted to perform a "rough" adjustment during the daytime shift tomorrow. It should be noted that the prism was rested on top of the cable strand at most locations. This was done since the cable strand was too high to hold the rod plumb on top of the cable strand. Therefore the measurements taken were not as accurate but the whole intent was to get a rough number to check the sag adjustment measurements to be performed by the daytime crew. The following conditions were observed during the day for this survey at a given location:

Started @ 10:25am, End @ 11:40am
Ta = 51F (Mostly sunny w/a few clouds)
Ts = 64F South Backspan, 56F North Backspan
W = E @ 3mph
P = 30.32"Hg

Started @ 11:55am, End @ 12:35pm
Ta = 53F (Sunny)
Ts = 72F North Mainspan, 70F South Mainspan
W = NNW @ 4mph
P = 30.30"Hg

- 2.) Assist me with surveying the sag of cable strand #1 at the west loop. The average sag measured for the south loop was 94mm and the north loop was 88mm. The following conditions were observed during the survey at the west loop:

Started @ 08:15pm, End @ 09:00pm
Ta = 51F to 49F (Few clouds mostly clear)
Ts = 47F
W = WNW @ 11mph

- 3.) Stake-out cable strand #1 on the North/South mainspan and backspans at the midpoint. This was done to determine the elevation difference for rough adjustment of the cable strand during tomorrows daytime shift. This survey was conducted at

night

and just like during the day, the prism was rested on top of the cable strand. To reiterate the measurements taken were not as accurate. For the final survey a rod

must

be held plumb on top of the cable strand which is where the theoretical values are



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calculated. The following conditions were observed during the night survey at a given location shot in the following order :

Started @ 09:20pm, End @11:00pm

Ta = 51F to 50F (Few clouds mostly clear)

Ts = 41F South Mainspan

43F North Mainspan

47F South Backspan

47F North Backspan

W = W @ 13mph to NW @ 12mph

P = 30.18"Hg

The following numbers were measured when the midpoint was staked-out by Alta Vista surveyors:

80S: Elev = 78.172m, Design Elev. = 77.827m, Delta = 0.345m (Cut)

80N: Elev = 79.413m, Design Elev. = 78.636m, Delta = 0.777m

(Cut)

24S: Elev = 97.518m, Design Elev. = 97.810m, Delta = 0.292m (Fill)

24N: Elev = 99.458m, Design Elev. = 99.203m, Delta = 0.255m (Cut)

The steel temperature was measured with an infrared temperature gun probe that was wedged in between the center of the cable strand wires where the survey measurement was taken. Initially ABF engineer Zach Lauria informed us that the backspan would be surveyed after the west loop. Instead his surveyors began on the mainspans causing a delay in our survey. Therefore our shots were not taken at the same time as ABF surveyors on the main and backspans. Chris Ferrucci used the Trimble total station occupying MB007 and set the stake out points. The elevations shot by Chris were used since the prism was held on top of the cable strand and then rotated towards me and Dave. Turning the prism changed the elevation but the trig level was a rough check and to familiarize Dave with the Nikon total station. Myself and Dave were on the SAS deck using the Nikon total station to trig level the elevations. Erol Schaller and Victor Altamirano were the rodmen for the south spans and Roman Granados and John Lyons were the rodmen on the north spans.

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

Dave Garrett (survey party chief) = 15hrs

Chris Ferrucci (instrumentman) = 15hrs

Erol Schaller (rodman) = 15hrs

The consultants began their shift at 7:00am and left at 3:30pm. They returned for the night shift at 6:00pm and worked until 1:00am early Friday morning.

- Spent most of the day preparing to survey, surveying, and reviewing the results with the Alta Vista surveyors for the first cable strand surveys. The numbers were reviewed and distributed to ABF for comparison.

- Measured the additional length of the replacement wire to be cut with ABF engineer Ankur Singh. The replacement wire is for the broken wire in cable strand number 2 that failed in tension during the hauling of that strand last Friday. The replacement wire will be spliced in the cable shroud area and in the west loop. The area in the west loop where the splice will terminate is between the W-Line west deviation and jacking saddles but outside of the cable bands in this area. Ankur used his 300' long nylon tape to measure the wire at increments of 15'-15'-5', he verified these lengths with a pocket tape. After the wire was cut the length of the wire was 124.94'. At the time of measurement the ambient temperature was 59F and the steel temperature of the wire was 78F.

- Observed the operation to remove and splice the replacement wire approximately 1/3 down the W-Line west deviation saddle before the end of shift. See the photos below for more details and my comments regarding the operation. See other inspector diaries in the Team Cable group for labor, equipment, and additional observations for this operation.

- Inspected the adjustment of cable strand #1 at the west loop for surveying purposes. During the jacking operation I noticed the failure of a threaded rod of the north strand adjuster. After this discovery of the failure in the threaded rod the operation was stopped per the ABF superintendents. See the photos below for more details and my comments related to the failure of the north strand adjuster.

- Gave ESC representative Chuck Madrid the Topcon GRS-1 GPS equipment for a software upgrade and



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replace the RTK engine (enables a quicker "fix" to the ESC network) inside the data collector. It should be noted that this was done at no cost to the State.

Attachment



ABF ironworkers using the strand adjuster jacking assembly to set the sag of cable strand #1 at the north section of the west loop.



Floating cable strand #2 at the north section of the west loop between the jacking and W2W west deviation saddle.



Floating cable strand #2 at the W2E west deviation saddle.



Deformed threaded bar bearing against the bottom trough of the W2W west deviation saddle while adjusting cable strand #1.



Cut portion of the plate which caused an eccentric load of the strand adjuster where the failure of the threaded rod occurred.



View of the north strand adjuster jacking assembly for the west loop which failed in bending when adjusting the sag of cable strand number 1.

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Specialty jack used to create the wedge providing friction to resist the tensile forces applied to the wire.



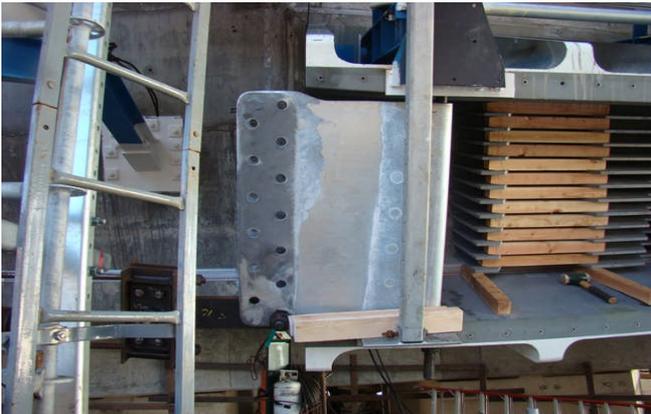
Broken wire on strand #2 seen at the bottom of the preformed west loop rectangular section.



Conditions in which the ABF surveyors had to shoot the North backspan for initial measurements on cable strand #1.



Cable strand #2 at the W2W west deviation saddle placed on the guide frames.



The south strand adjuster jacking assembly for the west loop seen after the incident.



Position of the cables at the time of the daytime survey of cable strand number one prior to rough adjustments scheduled for tomorrow.

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Straight longitudinal groove seen for a properly field fabricated ferrule splice connection.



The specialty jack biting down on the ferrule to create 5 wedge grooves.



Cutting the broken wire near the W2W west deviation saddle shroud area.



Measuring the bite marks to verify that the proper deformations were applied by the specialty jack to the ferrule.



The threaded rod of the north strand adjuster jacking assembly inelastically deformed 17mm before the operation to adjust the sag was stopped.



Measuring the replacement wire to be cut again prior to splicing on the north side of the W2 cap beam.

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Attaching the ferrule to the wire to be spliced.