

# Transportation: Bridges

*Team Members: Kleinfelder Team with Zia Zafir and Bill McCormick*

## Questions for South Napa Earthquake Field Team

Group:

1. Please broadly summarize what you saw today in the field. What conclusions can you draw from what you've seen?  
Most of the large bridge decks (First and Third Streets) show apparent movement of the decks towards the northeast on the order of 1.5"–2". North side of Napa River Channel at Third Street had abundant sand boils, fissures, and long linear lateral spread cracks. Also, subsidence of soil at North bent 3"–6".
2. What in this area should investigators study tomorrow? Are there obstacles that we need to overcome (i.e. access) to study this area or topic tomorrow?  
Coombs Street Pedestrian Bridge: Deck bolts sheared off on southwest corner (2 of 4). All other corner bolts are distorted. Large retaining wall apparent outward movement at top. Subsidence of fill several inches.
3. What future research needs do you see from this area? What comprehensive studies would be helpful? What data would be useful for these studies?
4. Have you seen items in other areas or disciplines that need further study or investigation new or as a longer term topic?  
Ground cracks across Highway 29 and Old Sonoma Road relatively broad & discontinuous (i.e. nonlinear)

PROJECT NAPA EQ PROJECT NO. \_\_\_\_\_  
 SUBJECT BRIDGE INSPECTION BY MCCORMICK / ZAFIR DATE 8-25-14  
 REVIEWED BY \_\_\_\_\_ DATE \_\_\_\_\_

① COORDED SLOT PER BOLDS

DO NOT  
ALLOW  
USE

DATA

SW BRIDGE BOLTS SHEARED OFF  
 2 OF 4 , 2 OTHER LOOSE & DISTORTED

SE BRIDGE BOLTS  
 MINOR DISTORTION OF BOLTS  
 & ANCHOR PLATES

NE & NW BOLTS DISTORTED BUT NOT SHEARED OFF

SOUTH  
SIDE

HIGH RETAINING WALL HAS TOP MOVEMENT OUT  
 CREATING CRACK AND MOST LIKELY FULL SETTLEMENT  
 BEHIND WALL OF 1"-3", MINOR CRACKS IN  
 WALL & MINOR 1/10" OFFSET OF EXPANDED JOINT

PARTIAL TO WEST, NATURAL SLOPE HAS CRACKS  
 NEAR CREST

NO OBVIOUS SIGNS OF LIQUEFACTION

\* DOWN LINE OF SITE, NO BRIDGE ELEMENTS ARE  
 TOTALLY LINEAR, APPEARS TWISTED ACROSS SPAN.

PROJECT NARA EQ PROJECT NO. \_\_\_\_\_  
 SUBJECT Bridge Inspection BY McCormick / ZAFIR DATE 8/25/14  
 REVIEWED BY \_\_\_\_\_ DATE \_\_\_\_\_

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Upper ST / NARA River Bridges

SOUTH SIDE

DECK APPEARS TO HAVE BEEN SHIPPED TO NE 1 1/2-2", FIRM FORMS UNDER DECK DISPLACED

- SOME NARROW CRACKS IN WALL AND ACROSS UNDERSIDE SIDEWALK
- LARGE CAST IRON PIPE MAY BE MISALIGNED
- GUARD RAIL DISPLACED

NORTH SIDE

SAME, EXCEPT ABUTMENTS LOOK LIKE THEY MOVED NE INSTEAD OF DECK, AGAIN FORMS DISPLACED

\* LATERAL SPREAD, SAND BOILS AND SOIL COLLAPSE FEATURES AROUND NORTH BENT IN REVERSED (LOW TIDE) FISSURE, OPEN CRACKS MANY OF TENS OF FEET LONG GROUND SETTLEMENT AROUND BENT 3-6"