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2018 Spring Convention | **seismic**solutions | April 11-13 | San Francisco

Companion undamaged concrete box culvert









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Strain gauges on reinforcement & concrete





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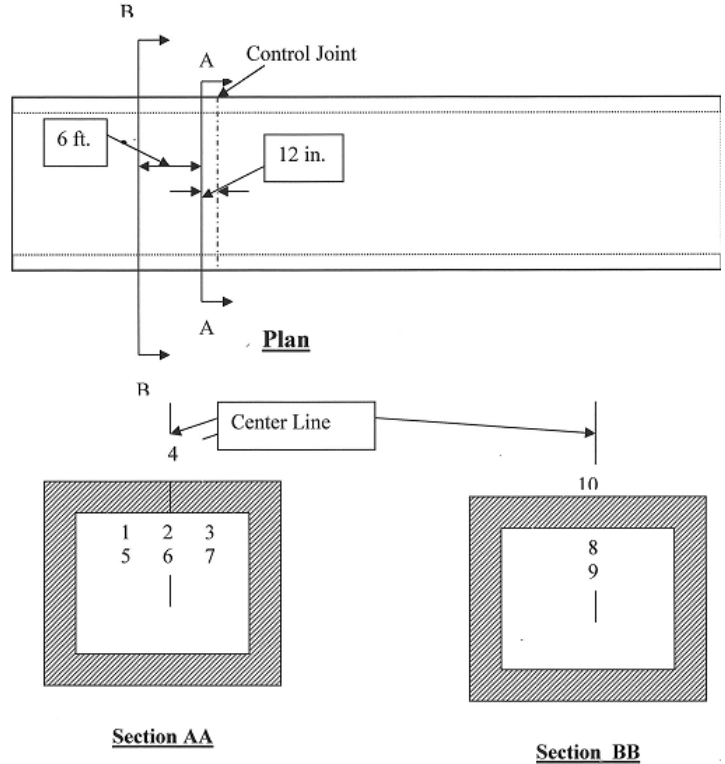
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Strain Gages Layout



Load Testing





Fig. 2 a. EMPTY TRUCK - LOAD ON AXLES



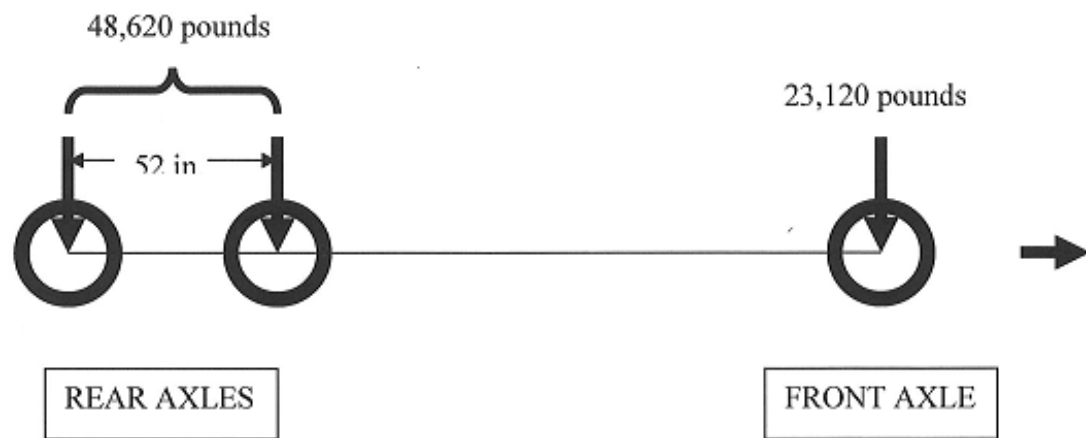


Fig. 2 b. FULL TRUCK - LOAD ON AXLES



Loading Sequence

- 1. Empty Truck
- 2. Truck with 1/3rd load
- 3. Truck with 2/3rd load
- 4. Truck with Full load
- 5. Empty Truck





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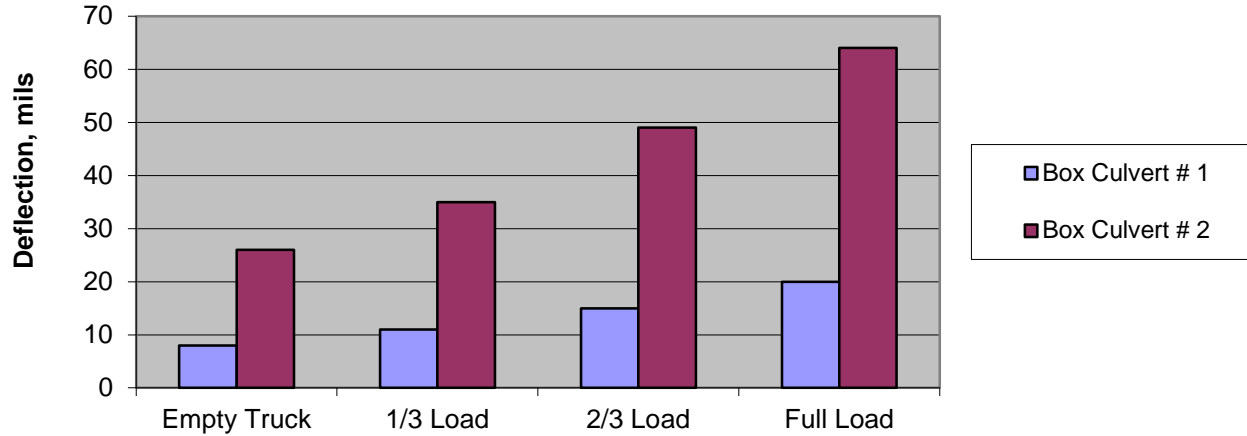
Load Test Results



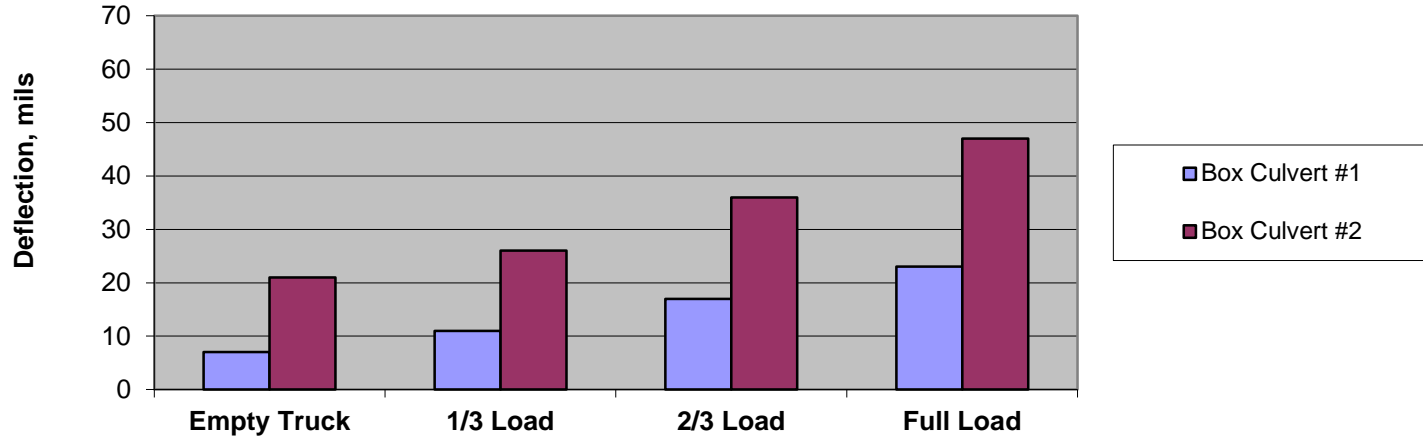
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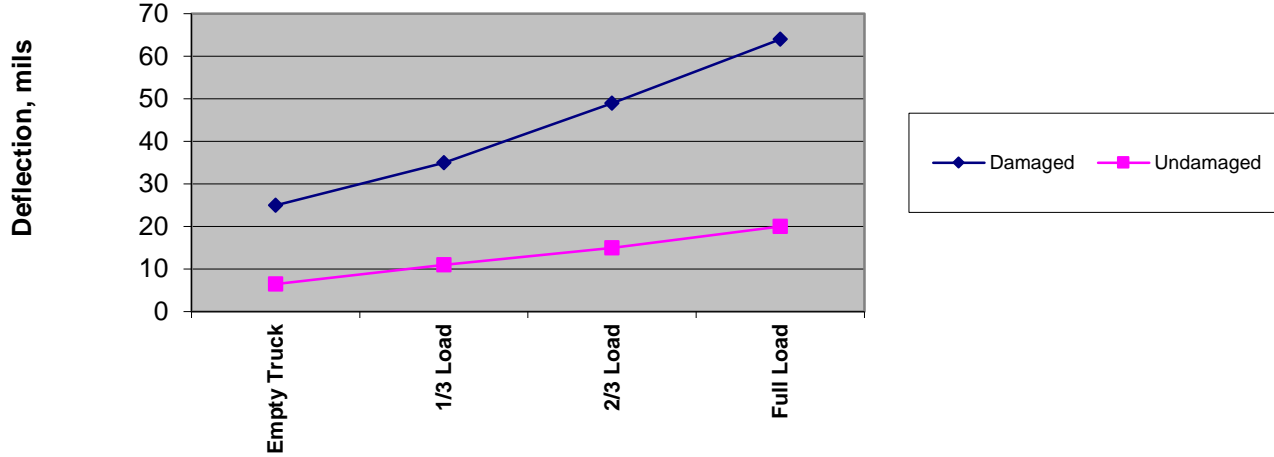
Graph 1. Deflection Comparison at Dial Gage # 2



Graph 2. Deflection Comparison at Dial Gage # 4



Box Culvert Load Test



Repair Recommendations

- 1. Perform non-structural repairs and then perform structural analysis to determine safe load for the existing deflection, or
- 2. Perform Structural Repairs to lower the deflection and increase the long-term durability and performance.



Thank You Questions?

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