

SPECIAL COLLISION DAMAGE INSPECTION OF RAMP F OVER I 95 BRIDGE # 5807 – AUGUSTA – OCTOBER 3, 2017

On Tuesday, October 3, 2017 Kevin McLaggan and Brent Snowden conducted an inspection of the collision damage that occurred sometime in the last week as determined by shiny spots on the steel beam (rust typically will cover shiny spots from a collision within a week of impact). The inspection was from ground level only, but will be followed up with a “hands on” inspection. The exterior beam on the southerly side of the northbound travel lane was hit at a point approximately over the centerline of the northbound travel lanes (in span 3 of the structure, approximately 20’ easterly of the centerline of bearings at pier 2, see end of report for sketch). The exterior beam is a 30 WF x 124 lbs./ft. steel rolled beam that now has a sweep of approximately 12” at one of the points of contact. The impact also bent the front of the flange down so much that it is almost vertical now. A second area had shiny steel approximately 3’ +/- to the right of the other collision point, however the distortion of the beam was not as much. This sweep extends beyond the diaphragms on both sides of the impact location. There is also a 1” +/- notch in the bottom flange between the two locations that had the areas of shiny steel that is new damage to the exterior beam. There was one location on the top flange that may have pulled away from the concrete slab that will be investigated further during the “hands on” inspection. The connection plate on the exterior girder that attaches to the diaphragm closest to pier 2 is severely bent. At the time of inspection, we also noticed that the diaphragm connection plate to the northerly exterior beam over the north bound lanes is broken away from the beam due to a bridge hit, but we can’t determine if that collision damage is from the same hit until we do the “hands on” inspection discussed earlier. The northerly exterior beam also has a sweep from collision damage that is approximately 4” or more (9-12-2016 inspection photos show sweep in this beam from prior impact). We do not know who hit the structure, during the inspection we looked over the area around the impact and we were not able to find any debris or any markings that might indicate what vehicle may have collided with the bridge. However, with this severe damage to the exterior beam or beams it is obvious that they would have known they collided with the structure and it would have damaged whatever load or vehicle that hit the beams. Measurements were taken of the flange that was bent down and on other areas of the beam and the distance measured 14’ – 5” from roadway to flange. This is consistent with the warning sign that states a height of 14’ – 3” which would be the lowest point minus 2”, the typical way we post underclearance on structures. The damage noted from this latest collision will need to be repaired, but does not pose an imminent threat to the traveling public over or under the bridge, at this time, barrels were placed along the curb on top of the structure to push traffic out over the interior beams more and to lighten the load that the exterior beam takes.

Summary of Collision Damage determined from Tuesday, October 3, 2017 Inspection, due to collision impact):

- **Sweep in southerly exterior beam over Northbound I 95 is approximately 12” and has caused the bottom flange to rotate to an almost vertical position**
- **1” notch created in bottom flange on exterior side of southerly exterior beam between the two areas of “shiny” steel**
- **Possible separation of top flange of southerly exterior beam from concrete haunch near contact area**
- **Diaphragm attachment to connection plate at location of contact is severely bent**
- **Diaphragm nearest the contact point had bent the web of the exterior beam**
- **Damage to the northerly exterior beam that may have been hit in the same collision**
 - **Diaphragm attachment plate is disconnected from the web of the exterior beam almost full height**
 - **4” plus sweep in exterior beam**

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Photos Follow:

Approximate 12” sweep in southerly exterior beam



Point of contact ("shiny steel")

Notch in bottom flange

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Approximate 12” sweep in beam



Bend in web due to diaphragm

Point of contact (“shiny steel”)

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Bent diaphragm connection plate



Bent diaphragm connection plate

4" plus sweep in northerly exterior beam



Sweep in beam

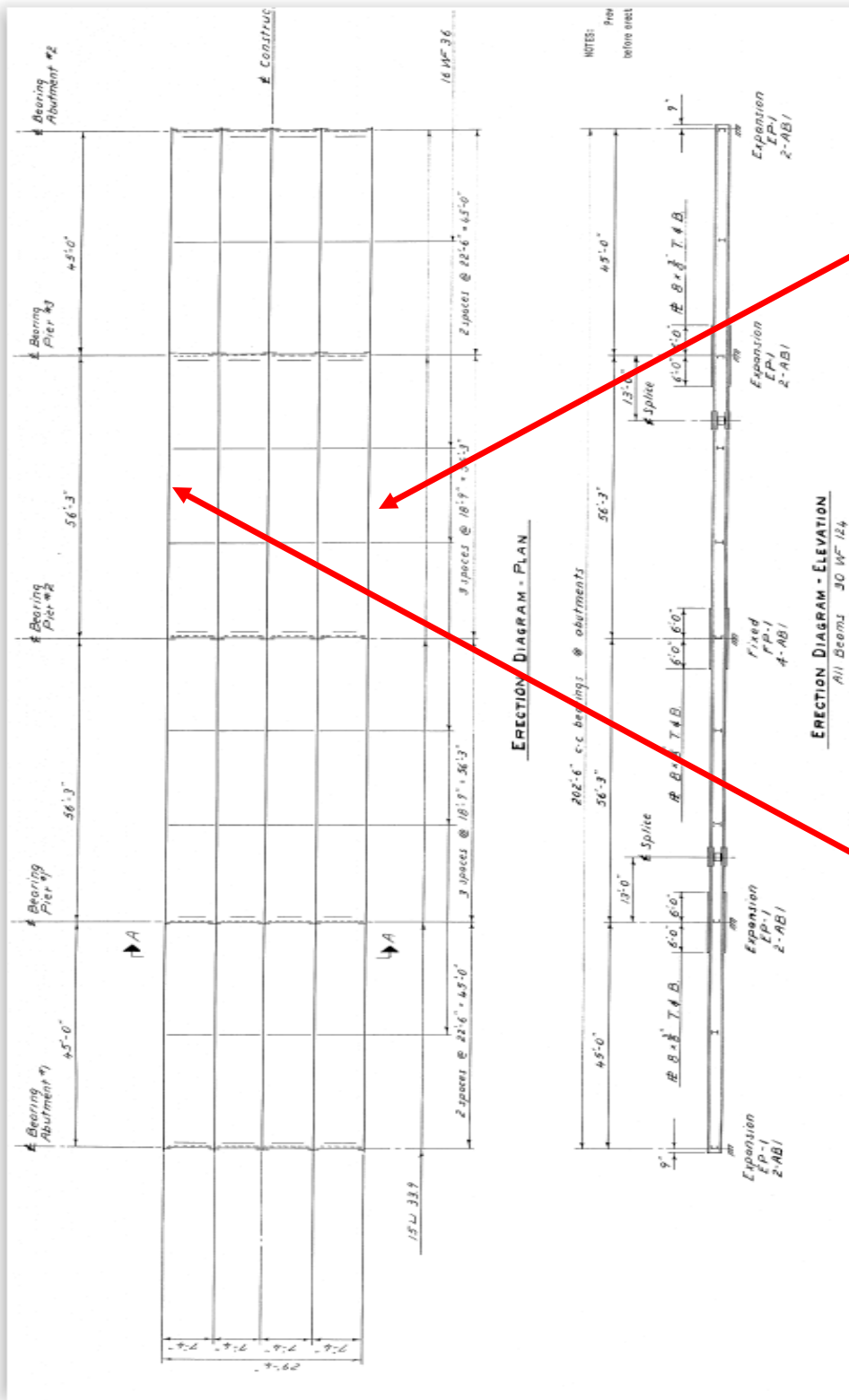
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Diaphragm connection plate pulled away from beam on northerly exterior beam



Connection plate
pulled from beam

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Location of points of contact from hit

Location of possible hit on northerly exterior beam