**6-13-2023 Collision Damage Details**

Bridges A0630 EB & A0630 WB – I-44 over MO 59, I-49

Jasper County

Vehicle was travelling northbound on MO 59 and struck the bottom of the girders under I-44 impacting all 10 girders for both twin bridges. This impact location is approximately 16’ west of the center of Bent 4. This is located just a few inches east of the Span 3 splice plate which has the center of splice plate 17.5’ west of Bent 4. Unless otherwise specified this is the intended splice plate of damage listed below.

A0630 EB – Span 3 Girder 5:

* Bottom flange bent up 7/8” over 18” located 8” west of splice plate
* Bottom flange bent up ½” over 12” located 100” west of splice plate
* Diaphragm between Girders 4 & 5 near splice plate bottom bolt torn out
* Diaphragm between Girders 4 & 5 near splice plate caused ¼” dimple into web of Girder 5
* Stiffener on north side at diaphragm near splice plate bent 1.2” to west at bottom bolt
* Bottom flange twisted up 1” to north over 21 LF from splice plate to west

A0630 EB – Span 3 Girder 4:

* Bottom flange scrapes with shallow gouges just east of splice plate

A0630 EB – Span 3 Girder 3:

* Concrete deck spalled on top of splice plate up to 5” each side (measured north to south)
* (2) 1/8” deep gouges in bottom flange splice plate
* Bottom bolt missing from diaphragm stiffener near splice plate

A0630 EB – Span 3 Girder 2:

* (2) gouges 1/16” & ¼” deep in bottom flange just east of splice plate
* 1 bolt missing from bottom flange splice plate

A0630 EB – Span 3 Girder 1:

* Stiffeners connecting diaphragms to girder 1 torn away from girder and sheared through at bottom bolt at all 3 diaphragm locations in Span 3 (not the cross frames at Bents 3 & 4).
* Bottom of girder pushed 6” to north over about 30 LF on both sides of the splice plate
* 5/8” deck lifting near splice plate
* 1 bolt missing from bottom flange splice plate
* Bottom flange bent up 1.8” and to the north over 20’ – 30’
* Girder deflects from live load traffic over middle of bridge (over Girder 3)

A0630 WB – Span 3 Girder 5:

* (2) gouges in bottom flange ¼” – ½” deep near splice plate
* Bottom flange bent up 7/8” just east of splice plate

A0630 WB – Span 3 Girder 4:

* Concrete spalled on top of splice plate
* Bottom flange bent up 1” at splice plate
* Tip of splice plate for bottom flange curled down
* Stiffener on south side at diaphragm near splice plate cracked at bottom bolt
* Girder bent ½” to north
* Web indentation 1/16” at north side stiffener at diaphragm near splice plate
* South side of web indentation does not appear to be cracked but no dye penetrant test available to use, appears to be rub mark.

A0630 WB – Span 3 Girder 3:

* Bottom flange bent down ¾” on north side and bent up 1.2” on south side just east of splice plate for a distance of about 38”
* Concrete spalled on top of splice plate

A0630 WB – Span 3 Girder 2:

* Concrete spalled on top of splice plate
* Bottom flange bent up 2.25” on south side and bent down 1.25” on north side over 38” in length just east of splice plate
* Deck lifted ½” at splice plate
* Middle diaphragm of Span 3 missing bottom bolt and web pushed north about ½” at this location

A0630 WB – Span 3 Girder 1:

* Girder bottom pushed north and up about 11” out of plane over distance of 32 LF.
* Stiffeners connecting diaphragms to girder 1 torn away from girder and sheared through at bottom bolt at all 3 diaphragm locations in Span 3 (not the cross frames at Bents 3 & 4).