

Historic Bridge Load Rating Report

07/02/03

SJW

San Angelo District
Tom Green County
Lone Wolf Bridge @ Concho River
CSJ: 0907-24-902
Date Built: 1922

Notes on the Load Rating Analyses: Load ratings were calculated at both the inventory and operating levels for H and HS loading. These ratings are based on the original plans and include a 2% section reduction of the truss members due to corrosion. The exterior beams on the approach spans were severely corroded and a 30% loss of steel area was assumed. Both allowable stress design (ASD) and load factor design (LFD) methods were used to determine the ratings for the truss section of the bridge.

Components analyzed for the rating include the 150 ft riveted steel truss, steel floor stringers, steel floor beams, and concrete T beam approach spans.

Assumptions:

- Members and dimensions indicated on original plans that could not be measured in the field are correct. (i.e. floor beams, stringers, and top chord members)
- Dead load includes a 6" concrete deck w/ curb and 2.5" asphalt overlay.
- Substructure members will have higher ratings than the superstructure.
- Pedestrian rating is given in permissible load (PSF) for a 19 ft width.

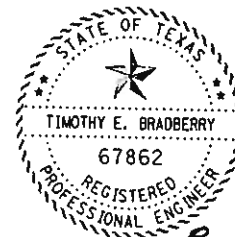
Load Rating:

<u>Member</u>	<u>Inventory</u>	<u>Operating</u>	<u>Pedestrian</u>
Truss	HS 12.9	HS 22.9	P 89.5
Stringer	HS 12.8	HS 19.7	P 241.9
Floor Beam	HS 12.3	HS 20.1	P 152.9
Approach Spans	HS 10.2	HS 17.1	P 215.5

Overall Rating:

Inventory: HS 10.2 Operating: HS 17.1 Pedestrian: P 89.5

Considerations: The overall highway load rating for the structure is based on controlling members in the concrete T beam approach spans. See summary on the following page. The limiting member for the truss section is the floor beam, and the load rating for the truss alone is **HS 12.3**. For the use of this bridge as a pedestrian bridge, the controlling member is in the top chord of the truss and the load rating is **P 89.5**.



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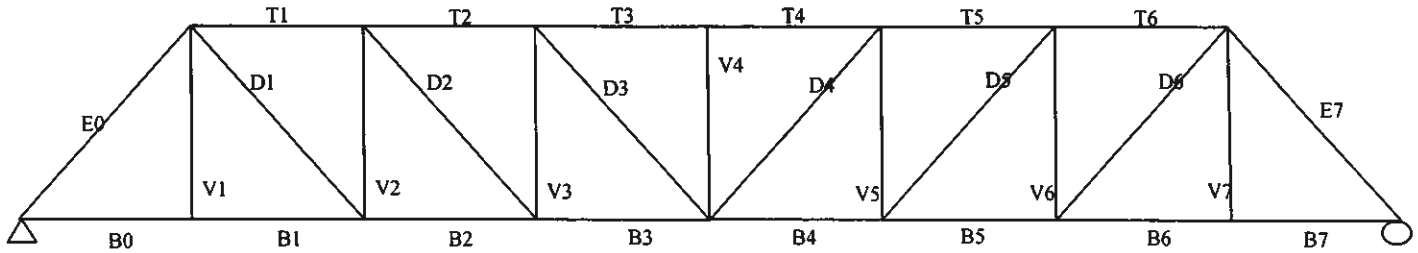
Load Rating Final Report

Tom Green County
Lone Wolf Bridge @ Concho River
Structure Number: B003-15-031

A.) Load Rating on Truss Members:

	Rating Level	Inventory		Operating	
	Method of Analysis	Allow. Stress	Load Factor	Allow. Stress	Load Factor
H-20 Truck	Controlling Rating	H 19.4	H 24.0	H 34.4	H 40.1
	Controlling Member	T3	D3	T3	D3
HS-20 Truck	Controlling Rating	HS 12.9	HS 15.2	HS 22.9	HS 25.4
	Controlling Member	T3	D3	T3	D3
Pedestrian	Controlling Rating	P 89.5	P 113.7	P 153.7	P 189.8
	Controlling Member	T3	T3	T3	T3

2 Dimensional Truss Diagram:

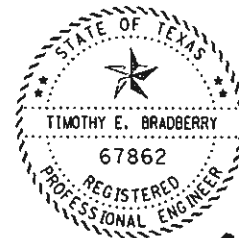


B.) Load Rating on Stringers and Floor Beams:

	Rating Level	Inventory		Operating	
	Method of Analysis	Allow Stress	Load Factor	Allow Stress	Load Factor
H-20 Truck	Stringer	H 12.9	H 12.8	H 19.7	H 21.4
HS-20 Truck	Stringer	HS 12.9	HS 12.8	HS 19.7	HS 21.4
Pedestrian	Stringer	P 243.1	P 241.9	P 372.5	P 404.0
H-20 Truck	Floor Beam	H 15.2	H 16.2	H 24.9	H 27.0
HS-20 Truck	Floor Beam	HS 12.3	HS 13.2	HS 20.1	HS 22.1
Pedestrian	Floor Beam	P 152.9	P 164.6	P 250.4	P 275.0

C.) Load Rating for Concrete T Beam Approach Spans:

	Load Factor	
	Inventory	Operating
H-20 Truck	H 11.7	H 19.5
HS-20 Truck	HS 10.2	HS 17.1
Pedestrian	P 215.5	P 359.7



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