**FERRY COUNTY**
**RESOLUTION NO. 2013-39**

**IN THE MATTER OF**
**LOAD RESTRICTIONS ON**
**COUNTY BRIDGES**

WHEREAS, an engineering study was conducted which reviewed the ratings on many bridges in Ferry County and

WHEREAS, the annual inspection of Bridges in Ferry County has been completed in addition to a review of current records revealed some incorrect load restrictions.

NOW, THEREFORE BE IT RESOLVED, that Resolution No. 627 dated April 20, 1971, be replaced by this resolution.

BE IT FURTHER RESOLVED, that the following gross load limits be established on the following bridge until further evaluation reveals the restriction is no longer appropriate.

| | | LOAD LIMITS | | |
|---|---|---|---|---|
| BRIDGE NO. | ROAD NO. | TYPE 3 | TYPE 3S2 | TYPE 3-3 |
| | | TANDEM | TRACTOR/TRAILER | TRACTOR/TRAILER w/PUP |
| Curlew Bridge No. 2 | 6200 | 18.8 TON | 23.8 TON | 26.4 TON |

DATED at Republic, Washington this 5th day of AUGUST, 2013.

BOARD OF COUNTY COMMISSIONERS
FERRY COUNTY, WASHINGTON

Brad Miller. Chair

Brian Dansel, Vice-Chair

Mike Blankenship, Member

ATTEST:

Hayley Aubertin
Clerk of the Board of County
Commissioners

Ex. #10

FERRY COUNTY
DEPARTMENT OF PUBLIC WORKS
350 E. DELAWARE #8 • REPUBLIC, WA 99166
(509) 775-5225 • FAX: (509) 775-5226

TROY REYNOLDS, DIRECTOR
ROBERT BRESHEARS, P.E., COUNTY ENGINEER

DATE: July 1, 2013
MEMO TO: Ferry County Board of Commissioners
Troy Reynolds, Director
FROM: Robert Breshears, P.E., Ferry County Engineer
SUBJECT: Bridge Status

The biannual bridge inspections were done on half of the counties bridges on inventory in June 2013. Ferry County currently has twenty-seven bridges on system. Five are shared with Stevens County. Most of the bridges are in adequate condition, listed below are some structures with minor problems.

The Curlew Bridge has spalling concrete under the beams seats on the approach span on the Curlew side approach; we have been in contact with a consultant for a permanent fix to address the situation and expect to have the bridge repaired in the next few months. We continue to monitor the situation while repairs progress.

A review of all bridges reveals that there is only one bridge in need of weight restrictions being imposed, as follows:

| | | | |
|---|---|---|---|
| Curlew Bridge No. 2 | Should be posted as follows: | AASHTO Type 3 Truck | 18.8 Tons |
| | | AASHTO Type 3S-2 Truck | 23.8 Tons |
| | | AASHTO Type 3-3 Truck | 26.4 Tons |

A resolution for the Board to renew this posting is attached.

The Kiwanis Bridge, Adams Bridge and the Boulder Creek (Hodgson) Bridge all need painting. The painting of these bridges can be placed on hold, as it is not a serious concern at this time.

Several bridges have damaged approach rail not affecting the structural integrity of the bridge or non-existent railings needing replacement or repair.

If there are significant changes in status after the final review of inspections, I will bring them to your attention.

As a result of the termination of the WSDOT agreements for high cost bridge inspections Ferry County is responsible for securing the high-cost inspections either by contracting with the WSDOT BPO or through contracting with a consultant, in either case the costs associated with future bridge inspections will be increasing substantially.

Attached is a listing of the high-cost bridge inspections required for Ferry County bridges.

Sincerely

Robert Breshears, P.E.

Robert Breshears P.E.
Ferry County Engineer

| Ferry County – Required High-Cost Bridge Inspections | | | |
|---|---|---|---|
| **Structure No.** | **Name and ID No.** | **Inspection Type** | **Next Inspection Due** |
| 08371000 | Toroda Bridge - 1 | Fracture Critical/UBIT | 5/22/2014 |
| 08166500 | Curlew Bridge - 2 | Fracture Critical/UBIT | 11/26/2013 |
| 08086200 | Lone Ranch Bridge – 3 | UBIT | 4/19/2014 |
| 07973400 | Boulder Creek Bridge - 20 | UBIT | 6/22/2016 |
| 08571700 | Danville Bridge - 4 | UBIT | 6/20/2014 |

# BRIDGE RATING SUMMARY

GERARD G. NAVARRA
STATE OF WASHINGTON
28243
REGISTERED
PROFESSIONAL ENGINEER

EXPIRES: 12/29/08

| | |
|---|---|
| Bridge Name: | **CURLEW BRIDGE** |
| Bridge Number: | 02 Ferry County |
| Structure Ident. | 8166500 |
| Type: | Main Span, Steel Parker Truss w/ Timber Deck<br>East Approach, Steel Stringers w/Timber Deck |
| Bridge Length: | 200 ft bridge, no skew |
| Spans: | 180 ft, 20ft |
| Design Load: | **H15** |
| Rating By: | Thomas, Dean & Hoskins Inc., Gerard G. Navarra, PE, SE |
| Date: | January 2007 |

## Rating Results

| Truck | RF | $\gamma L$ | Controlling Point |
|---|---|---|---|
| HS-20 | 0.55 | 1.65 | Truss Vertical Web:Compression + Bending |
| AASHTO 1 (Type 3) | 0.75 | 1.65 | Truss Vertical Web:Compression + Bending |
| AASHTO 2 (Type 3-S2) | 0.66 | 1.65 | Truss Vertical Web:Compression + Bending |
| AASHTO 3 (Type 3-3) | 0.66 | 1.65 | Truss Vertical Web:Compression + Bending |
| H15 | 1.08 | 1.65 | Truss Vertical Web:Compression + Bending |

| Allowable Loads: | Tons (US) |
|---|---|
| Truck (T-3) | 18.8 |
| Truck & Semi (T-3-S2) | 23.8 |
| Truck Trailer (T-3-3) | 26.4 |

| NBI Rating (HS-20) | RF | Tons (US) | Controlling Point |
|---|---|---|---|
| Operating | 0.89 | 31.9 | Truss Vertical Web:Compression + Bending |
| Inventory | 0.53 | 19.1 | Truss Vertical Web:Compression + Bending |

| | | RF | RATING TONS |
|---|---|---|---|
| | HS20 | 0.55 | 19.8 |
| LEGAL | T3 | 0.75 | 18.8 |
| LEGAL | T3-S2 | 0.66 | 23.8 |
| LEGAL | T3-3 | 0.66 | 26.4 |
| | OL-1 | - | |
| | OL-2 | - | |
| | H15 | 1.08 | 16.2 |

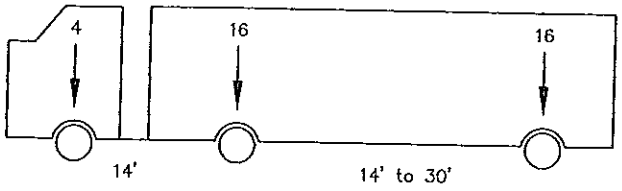
| NBI HS20 | RF | RATING TONS |
|---|---|---|
| OPER | 0.79 | 28.4 |
| INV | 0.47 | 16.9 |

**Reference Documents**

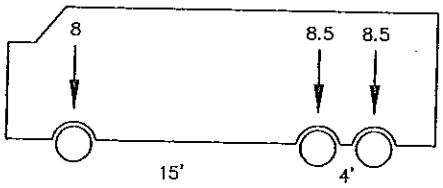
WSDOT 2006 Bridge Design Manual 2006, Chapter 13
AASHTO Guide Specification for Strength Evaluation of Existing Steel and Concrete Bridges, 1989
AASHTO Guide Specification for Strength Designof Truss Bridges, 1985

# STANDARD AASHTO RATING VEHICLES

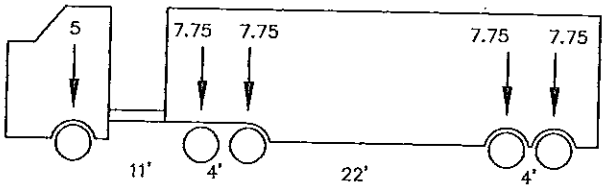
HS–20 (36 TONS)



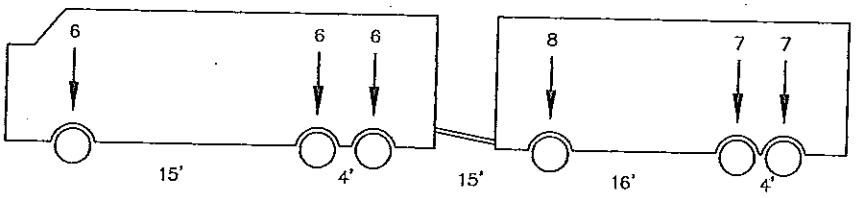

TYPE 3 (25 TONS)



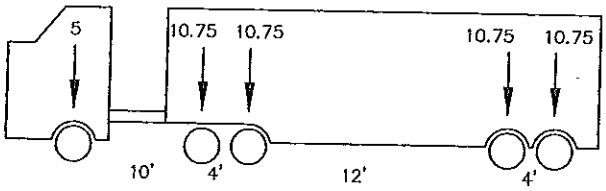

TYPE 3S2 (36 TONS)



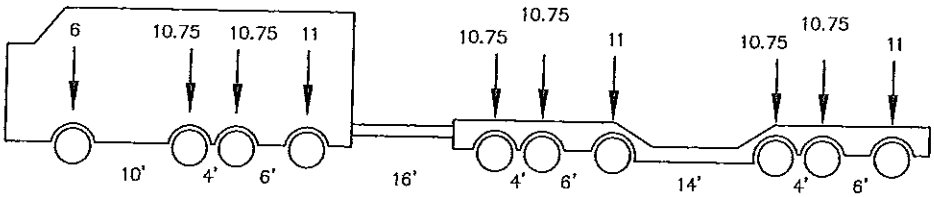

TYPE 3–3 (40 TONS)




OVERLOAD 1 (48 TONS)




OVERLOAD 2 (103.5 TONS)




ALL WEIGHTS ARE IN TONS PER AXLE OR KIPS PER WHEEL LINE