

Calamus River near Harrop, Nebraska 06787000

LOCATION

Latitude and Longitude

41.94685, -99.38615

Road Log

The streamgaging station is located on the right upstream bank, adjacent to U.S. Highway 183, 12.2 miles north of Taylor, 0.36 miles north of the U.S. Hwy. 183 & Hwy. 96 junction, or 46 miles south of Bassett, NE; all routes on U.S. Highway 183.

Nearby Features

The Calamus Reservoir and Highway 96 bridge over the Calamus River are 4.7 miles downstream.

Equipment Details

Recording Gage

The instruments include a Sutron SatLink3 data logger with Goes transmitter, Ott RLS radar, Dome antenna with GPS receiver, 12v battery, voltage regulator, and a solar panel in a 5' x 5' metal shelter. The radar is mounted on the upstream guardrail 6' right of the wire weight gage.

External Gage

The reference gage is a wire-weight gage on the upstream side of the bridge. Elevation of check bar is 14.19 ft., gage datum as determined by levels of 09-29-22.

Bench Mark and Reference Marks

BR.M. Nos. 1, 2, 3, 4, 5 and RP have been destroyed

R.M. #6 is standard USGS tablet set in concrete shelter base located 34 ft. upstream and shoreward from right upstream corner of bridge and 42 ft. from centerline of highway. Elevation 10.13 ft., gage datum, levels of 09-29-22 (Origin).

R.M. #7 is a chiseled square on upstream wingwall 24 ft. from right end of concrete guardrail. Elevation 12.75 ft., gage datum, levels of 09-29-22.

R.M. #8 is a $1\2$ " steel rebar on downstream wingwall 24ft. streamward from right end of concrete guardrail. Elevation 12.65 ft., gage datum, levels of 09-29-22.

R.M. #9 is a brass Nebraska Roads pin set in the left upstream concrete guardrail 2 ft. streamward from left end of guardrail. Elevation is 16.73 ft., gage datum, levels of 09-29-22.

The datum of the gage is 2,259.36 ft. above North American Vertical Datum of 1988, established by GPS from 1st order N.G.S. station (A 18) on 08-04-2014 by the NDNR Survey Crew. Previously the datum of the gage was 2,260 ft. above National Geodetic Vertical Datum of 1929, from topographic map.

Hydrology

Drainage Area

693 square miles, most of which does not contribute directly to surface runoff.

Channel and Control

Normal low-water channel is about 80 ft. wide with a sharp bend to the right immediately below bridge and mostly straight upstream for about 600 ft. High flow control is the channel constriction due to old highway road fill and present highway bridge. The right bank is a low meadow with willows and grass cover subject to over flow. The left bank is high and grass covered above the bridge, while below the bridge there is a high, steep slough area extending several hundred feet downstream. The low-water streambed is composed of fine sand which shifts readily.

Discharge Measurements

Low-stage measurements can be made by wading upstream or downstream from the bridge. Higher stages can be measured from downstream side of Highway Bridge.

Floods

Not determined.

Extremes for Period of Record

Peak discharge 3,260 cubic feet per second June 12, 2010, gage height 7.75 feet; maximum gage height 7.75 feet June 10, 2010 due to a flood; minimum daily discharge 90 cubic feet per second January 7, 1980.

Point of Zero Flow

Variable. Changes with conditions of scour and fill.

Winter Flow

The flow at this station remains quite constant because it is spring fed. The stagedischarge relation will be affected by ice for only short periods during the most severe winter weather.

Regulation and Diversions

Five minor diversions for irrigation above station.

Accuracy

Records good, except for short periods of backwater from ice, which are poor.

https://nednr.nebraska.gov/RealTime/

Establishment and History

Established March 15, 1932, by L. F. Hanks and S. C. Moore. Staff gage on downstream bridge pile at datum 1.0 ft. higher.

July 22, 1966, R. P. established (chiseled arrow) on downstream handrail of new bridge 25 ft. from left end of handrail at datum 1.0 ft. higher.

On June 5, 1978, servo-manometer and digital A-35 recorders were put into operation at present datum.

On December 30, 1985, Stevens telemark (Ph # 1-942-3105) installed.

The Nebraska Department of Water Resources assumed operation of the gage as of Oct. 1, 1997.

On October 30, 1997, servo-manometer, Fisher-Porter Digital Recorder, and Stevens A-35 water stage recorder were removed.

On October 30, 1997, Water Gage II -25, and Stevens A-71 water-stage recorder was installed.

On October 20, 1998, a new Type-A wire- weight gage was installed on concrete guard rail.

The Nebraska Department of Water Resources name was changed to Nebraska Department of Natural Resources as of July 1, 2000.

On September 28, 2005, the Design Analysis Waterlog Series Model H-500XL was installed.

On May 8, 2006, the Goes Transmitter Model H-222 was installed.

On October 12, 2006, the Stevens telemark II encoder was removed.

On July 5, 2013, the Stevens A-71, Water gage II - 25, Waterlog H-330 Shaft Encoder, Safe Purge, and Nitrogen Tank were removed, and a Waterlog H-3553 Compact Bubbler was installed.

On August 4, 2014, the NDNR Survey Crew established the datum of the gage to NGVD 88.

On September 29, 2022, The Waterlog H-500XL, H-222, H-3553, Yagi antenna, and GPS receiver were removed. A Sutron SL3-ENC-DISP-1, Ott RLS, and Ott dome antenna with GPS were installed.

Revision History

Original description prepared: 08-22-1932 by M.C. Boyer

Revised: 05-15-1979 by H. D. Stevens

Revised: 04-15-1986 by R.B. Swanson

Revised: 04-22-1988 by R.B. Swanson

Revised: 02-08-1991 by D.L. Studnicka

Revised: 05-23-1991 by T. L. Klanecky

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Streamgage Description Calamus River near Harrop, Nebraska 06787000

Revised: 05-02-1996 by R.A. Drudik

Revised: 04-28-1997 by R.A. Drudik

Revised: 03-08-1999 by D.L. Studnicka

Revised: 02-23-2000 by H.W. Turek

Revised: 03-30-2001 by D.L. Studnicka

Revised: 10-19-2001 by D.L. Studnicka

Revised: 03-05-2002 by H.W. Turek

Revised: 11-21-2003 by D.L. Studnicka

- Revised: 09-28-2005 by D.L. Studnicka
- Revised: 12-14-2006 by D.L. Studnicka
- Revised: 05-20-2010 by D.L. Studnicka

Revised: 07-03-2012 by S.R. Kolar

Revised: 01-16-2014 by P.J. Breitkreutz

- Revised: 11-17-2015 by P.J. Breitkreutz
- Revised: 11-17-2016 by P.J. Breitkreutz
- Revised: 10-01-2019 by P.J. Breitkreutz
- Revised: 09-29-2022 by P.J. Breitkreutz