

LD-293  
(3/20/07)

DEPARTMENT OF TRANSPORTATION  
LOCATION AND DESIGN  
HYDROLOGIC AND HYDRAULIC ANALYSIS REPORT

LOCATION

Project :  
Route :  
UPC :  
City/County :  
Waterway :

PREPARED BY

Name :  
Organization :  
Date :

STRUCTURE DESCRIPTION

Abutment A Station: Finished Grade Elevation \_\_\_\_\_ ft. (m)

Abutment B Station: Finished Grade Elevation \_\_\_\_\_ ft. (m)

Minimum Low Chord Elevation \_\_\_\_\_ ft. (m)

Skew \_\_\_\_\_ to centerline \_\_\_\_\_ to flood flow

Span Length

Abutment Type

Number/Type Piers

HYDROLOGIC/HYDRAULIC DATA

Drainage Area \_\_\_\_\_ Sq. Mi. (km<sup>2</sup>)

HISTORICAL DATA

High Water Elevation \_\_\_\_\_ ft. (m) Date of Occurrence

Estimated Discharge \_\_\_\_\_ cfs. (m<sup>3</sup>/s)

Estimated Exceedence Probability %

**HYDRAULIC PERFORMANCE**

The data presented herein is the result of statistical analysis and indicates an approximate estimate of the performance of this facility.

Discharge Cfs (m <sup>3</sup> /s)	Estimated Exceedence Probability (%)	Change in existing flood levels ft. (m)	Flood stage upstream of bridge ft. (m)	Velocity thru Bridge Structure ft/s (m/s)
	50%			
	20%			
	10%			
	4%			
	2%			
	1% Natural			
	1% Floodway			
	0.2%			

**DESIGN SUMMARY**

	Exceedence Probability (%)	Stage Elevation ft.(m)	
Design Flood			
Overtopping Flood			
Base Flood			
Ordinary High Water			

**DEBRIS POTENTIAL**

**ABUTMENT SLOPE PROTECTION RECOMMENDATIONS**

26" Class I Dry Riprap over 4" no. 25 or 26 aggregate over filter cloth will be hydraulically satisfactory.

38" Class II Dry Riprap over 6" no. 25 or 26 aggregate over filter cloth will be hydraulically satisfactory.

650 mm Class I Dry Riprap over 100 mm no. 25 or 26 aggregate over filter cloth will be hydraulically satisfactory.

950 mm Class II Dry Riprap over 150 mm no. 25 or 26 aggregate over filter cloth will be hydraulically satisfactory.

**Appendix 12B-3 LD-293 Hydraulic Analysis Report**

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**SCOUR PLOTS**

A sketch of the final scoured bed profile and the check scoured bed profile is attached. If scour countermeasures are required, a request must be submitted to the Hydraulics Unit for their design and documentation.

**CAUSEWAYS**

The use of causeways for temporary construction access was not considered in this analysis. If it is subsequently found necessary to use causeways, they must be submitted to the Hydraulics Unit for analysis and documentation.

Temporary construction access causeways for this project should be composed of <<specify>>.

The ordinary highwater will be increased by \_\_\_\_\_ ft. (m)

The high flow profiles will not be affected.

The causeway will not affect the water surface profile.

The maximum causeway elevation is \_\_\_\_\_ ft. (m)

From abutment A to station

From station \_\_\_\_\_ to abutment B.

Only one will be in place at a time.

**STREAM BANK STABILIZATION**

The banks should reestablish themselves to the natural conditions.

The Riprap should be placed on all areas that will not support vegetation.

Disturbed areas outside the bridge should be seeded.

**COMMENTS**

Note any channel modifications, flood plain impacts and impact mitigation measures as well as other data pertinent to the design. Also comment on the feasibility of using a smaller structure.

This analysis is only applicable to the structures(s) and approaches described. Any changes in these conditions may invalidate this analysis and should be reviewed by this office.

This design represents the smallest structure practicable for use at this site.

The existing structure and the existing approach roadways from station: to station: are to be removed and the land is to be regraded to its natural contour.

If this project is an interstate or other NHS project and is expected to be in excess of \$1,000,000.00, please notify the FHWA that (1) no hydraulic impacts are anticipated or (2) the following hydraulic impacts are anticipated:

If you have any questions or need additional information, please contact \_\_\_\_\_ at \_\_\_\_\_ or via electronic mail at \_\_\_\_\_. The completed

"CONFIRMATION OF DESIGN" should be sent to \_\_\_\_\_.

**HYDROLOGIC DATA SHEET**

The information presented hereon is to be transcribed to the Hydrologic Data sheet contained in the plan assembly.

**LOCATION**

Project :  
Route :  
UPC :  
City/County :  
Waterway :

**DESCRIPTION**

Sheet No. \_\_\_\_\_ Station

Drainage Area \_\_\_\_\_ sq. mi (km<sup>2</sup>)

Structure Size

**BASE FLOOD**

Discharge \_\_\_\_\_ cfs (m<sup>3</sup>/s)

Stage Elevation \_\_\_\_\_ ft. (m)

**DESIGN FLOOD**

Discharge \_\_\_\_\_ cfs (m<sup>3</sup>/s)

Estimated Exceedence Probability \_\_\_\_\_ %

Stage Elevation \_\_\_\_\_ ft. (m)

**OVERTOPPING FLOOD**

Stage Elevation \_\_\_\_\_ ft. (m)

Estimated Exceedence Probability \_\_\_\_\_ %

**HISTORICAL DATA**

Date

Stage Elevation \_\_\_\_\_ ft. (m)

Estimated Exceedence Probability \_\_\_\_\_ %

**REMARKS**

**Appendix 12B-3 LD-293 Hydraulic Analysis Report**

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**CONFIRMATION OF DESIGN**

The bridge designer will complete this form and forward it to the Hydraulics Unit confirming that the design that was analyzed is being used.

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