

STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION - DIVISION OF STRUCTURES

HYDRAULIC REPORT

Date: _____ Designer: _____

A. SITE DATA

1. LOCATION

a. Name of Stream:	_____	Channel Mile:	_____
b. Route Name:	_____	P.E. No.:	_____
c. Route No.:	_____	Project No.:	_____
d. County:	_____	USGS Quad #:	_____
e. City:	_____	Name:	_____

2. VICINITY

a. See attached location map or bridge survey.

b. Nature of Stream Bed: _____

c. Bank subject to Erosion: _____ Severe = 10 Stable = 0

d. Should Drift be a consideration: _____ Extreme = 10 No = 0

3. EXISTING BRIDGE DATA

a. Bridge Location No.:	_____	_____
b. Bridge Selection No.:	_____	_____
b. Drawing No.:	_____	_____
c. Bridge Length:	_____ ft.	_____ ft.
d. Bridge Width:	_____ ft.	_____ ft.
e. Bridge Type:	_____	_____
f. Bridge Skew:	____°	____°
g. Drainage Area:	_____ sq. mi.	_____ sq.mi.
h. Design Discharge:	_____ cfs	_____ cfs
i. Design Frequency:	_____ year	_____ year
j. Design Water Area:	_____ ft. ²	_____ ft. ²
k. Design Elevation:	_____ ft.	_____ ft.
l. Design Backwater:	_____ ft.	_____ ft.
m. Design Velocity:	_____ fps	_____ fps
n. Overtopping El.:	_____ ft.	_____ ft.

4. EXISTING WATER STAGES AT PROPOSED BRIDGE SITE

a. Maximum High Water El.:	_____	Date:	___/___/___
Frequency:	_____	year	Source: _____
b. _____	Year High Water Elevation:	_____	ft.
c. Datum Elevation:	_____	ft.	Ordinary High Water Elevation: _____
d. In Reservoir (Y/N):	_____		Reservoir Name: _____
Normal Pool Elevation:	_____	ft.	Minimum Pool Elevation: _____
e. Backwater Elevation:	_____	ft.	From: _____

B. HYDROLOGICAL ANALYSIS

1. FLOOD RECORDS

- a. Floods in Tennessee - Magnitude and Frequency - 1992 [] U.S.G.S. []
Corps of Engineers [] TVA [] Other [] _____
- b. Stream Gage No.: _____ At Site [] In Vicinity []
- c. None Available []

2. DRAINAGE AREA

- a. _____ sq. mi. Calculated: _____ Published: _____

3. DISCHARGE

- a. Magnitude: _____
Frequency: 2 yr _____ 5 yr _____ 10 yr _____ 25 yr _____ 50 yr _____ 100 yr _____ 500 yr _____
- b. Proposed Overtopping: _____ Frequency _____ year & Discharge _____ cfs
- c. Source _____ Floods in Tennessee - Magnitude and Frequency – 1993
_____ Corps of Engineers
_____ TVA
_____ Federal Insurance Study _____ County or City
_____ Other _____

4. STREAM SLOPE

- a. From U.S.G.S. Quad Map: _____ ft./ft.
- b. From Site Survey Data: _____ ft./ft.
- c. From Flood Flow Profiles: _____

C. HYDRAULIC ANALYSIS OF PROPOSED BRIDGE

1. PROPOSED STRUCTURE _____

- a. Station: _____ Drainage Area: _____ sq. mi.
Design Frequency: _____ year Design Discharge: _____ cfs
Design Velocity: _____ fps Design Bridge Backwater: _____ ft.
Design Bridge Backwater El: _____ ft. Roadway Overtopping Elevation: _____ ft.
Design Waterway Area: _____ ft.² below elev. _____ ft.
- b. Is Bridge Backwater a consideration? (Y/N) : _____
_____ Year Bridge Backwater: _____ ft.
_____ Year Bridge Backwater Elevation: _____ ft.
Describe Control: _____
- c. Are Spur Dikes Needed (Y/N) : _____
Describe Reason: _____
- d. Is Channel Transitioning Involved (Y/N) : _____ See attached detail.
- e. Is Channel Change Involved (Y/N) : _____ See attached detail.
- f. Is Bank Protection Needed (Y/N) : _____ See attached detail.
- g. Final Layout: See Drawing No. _____

D. SCOUR ANALYSIS OF PROPOSED BRIDGE

1. CHANNEL CHARACTERISTICS

- a. USGS/TDOT "observed" scour ranking at existing bridge is _____, or at nearest bridge upstream [] /downstream [] is _____ (Br. No. _____).
- b. USGS/TDOT "potential" scour ranking at existing bridge is _____, or at nearest bridge upstream []/downstream [] is _____ (Br. No. _____).
- c. Current stage of channel evolution : Stable [] Degrading [] Widening [] Aggrading []
- d. Streambed material type: silt/sand []; coarse gravely sand []; gravel/cobbles []; gravel and cobbles on rock []; slab rock []

2. COMPUTED SCOUR DEPTH

- a. Design discharge (_____ yr.) = _____ cfs
- b. Design velocity (_____ yr.) = _____ fps
- c. Estimated degradation [] /aggradation [] = _____ ft.
- d. Estimated contraction scour = _____ ft.
- e. Estimated pier scour = _____ ft.
- f. Estimated total scour depth = _____ ft.
- g. Preliminary ftg. and/or pile tip elev. (based on soils report? Y/N): _____
- h. Comments : _____

E. OTHER AGENCY REVIEW and/or APPROVAL

YES	NO	
_____	_____	Corps of Engineers – Individual
_____	_____	Corps of Engineers - Nationwide
_____	_____	Tennessee Valley Authority
_____	_____	U. S. Coast Guard
_____	_____	Tennessee Wildlife Resource Agency
_____	_____	State Water Quality Control
_____	_____	Federal Highway Administration
_____	_____	Federal Emergency Management Agency
_____	_____	Local Government, if participating in FEMA Program
_____	_____	Individual ARAP required
_____	_____	General ARAP required
_____	_____	National Pollutant Discharge Elimination System (NPDES)

Is the location governed by the National Flood Insurance Program Regulations?(Y/N): _____

Has the TDOT policy on selection of Design Flood Frequency been satisfied? (Y/N): _____

F. REMARKS
