NH000-0575-01(028)
Cherokee County, Georgia
P.I. No. 713640

I-575 over Noonday Creek North

Hydraulic and Hydrological Study

February 2009

COMMUNITY COORDINATION REQUIRED

Hatch Mott MacDonald

GEORGIA REGISTERED No. 32724 PROFESSIONAL 2-16-09 ENGINEER HERNAN RICARDO NAVARRO

TABLE OF CONTENTS

Section I **Hydraulic/Hydrologic Report**
Introduction
Hydraulic Site Inspection
Procedure
General Modeling Considerations
Historic Drainage Patterns
Proposed Drainage Patterns
Summary
References
Engineering "No-Rise" Certification
Plots of Proposed Sections and Locations

Section II **Hydraulic Tables**
50-, 100- and 500-year Storm
Clearance Determination
FEMA Flood Elevation Table

Section III **Peak Flow Summary**
USGS Regression Equation Flows and Slope Calculation

Section IV **Hydraulic Engineering Field Data**
Hydraulic Engineering Field Report
Risk Assessment

Section V **HEC-RAS Computer Model Output**
Full Valley Model for 2, 5, 10, 25, 50, 100, 500-year Storms
Existing Bridge Model for 2, 5, 10, 25, 50, 100, 500-year Storms
Proposed Bridge Model for 2, 5, 10, 25, 50, 100, 500-year Storms

Section VI **HEC-2 Computer Model Output**
Duplicate Effective Model (DE) Floodway
Corrected Effective Model (CE) Floodway
Existing Effective Model (CE) Floodway
Proposed Conditions Model (PR) Floodway
HEC-2 Check Files for Floodway Runs

Section VII **Scour Summary and Riprap Calculations**
Proposed Bridge Scour Results
Existing Bridge Scour Results
Rip Rap Design

TABLE OF CONTENTS (continued)

Section VIII **Appendix**

Location Maps
Project Photographs
FEMA Data
Miscellaneous Project Data
Roadway Plan, Profile and Typical Sections
Preliminary Bridge Plan and Elevation Section

Section I
Hydraulic/Hydrologic Report

December 2008

NH000-0575-01(028) Cherokee County
I-575 over Noonday Creek North
PI# 713640

Introduction

J.B. Trimble, Inc. (JBT) prepared this report to provide engineering calculations showing that the proposed bridge widening at the crossing of I-575 over Noonday Creek (North) in Cherokee County, Georgia will meet the Georgia Department of Transportation's (GDOT) hydraulic and hydrologic requirements. Noonday Creek is a FEMA studied waterway with a regulatory floodway. The proposed construction will not encroach vertically or horizontally on the current regulatory floodway elevation or width. Therefore, the proposed construction is consistent with the regulatory floodway due to bridging and excluding fill from the floodway. In accordance with section NS 23 CFR 650A of the Federal Policy Guide, coordination with FEMA is not required. However, since this site is located in the developing area of Cherokee County, a "no-rise" was obtained and coordination will be done with the community. The design storm is the 50-year storm per the GDOT Drainage Design Manual for an Interstate. The drainage area at the proposed crossing, delineated from the United States Geological Survey (USGS) quadrangle maps for the area, is 43.2 square miles with a 50-year storm flow of 7774 cfs and a 100-year storm flow of 9108 cfs. The flows are calculated using the USGS Region 1 Rural Regression equations for Georgia.

The existing bridges at this crossing consist of parallel 210 ft long bridges on concrete bents with spillthrough abutments. The existing bridges are skewed approximately 45 degrees. The existing northbound bridge width varies with a maximum of 110 ft gutter to gutter. The existing southbound bridge width is 60 ft gutter to gutter. The proposed construction will widen to fill in the middle section between the bridges as well as

widening to the outside. This outside widening will be tapered to accommodate the ramps for the Towne Lake Parkway interchange. The resulting proposed gutter to gutter width will vary with a maximum width of 380 ft. The northeastern corner of the northbound bridge will be skewed 20 degrees to avoid placing fill in the stream channel.

The upstream structure on Dupree Rd. is located approximately 1300 ft from the proposed bridge and is included in the hydraulic modeling. This structure is a 144 ft long bridge, consisting of 4 spans and concrete bents. The downstream structure is located just 250 ft from the bridge site and is also included in the modeling. This structure is a 210 ft long bridge similar to the bridges that will be widened. This bridge is the access ramp to I-575 southbound and is skewed 45 degrees.

Incorporated in the hydraulic models is the latest research on expanded and contracted flow for locating exit and approach sections. These locations are based on channel slope, main channel and overbank Manning's "n" values and the ratio of the bridge opening to the floodplain width. This information is used to locate the exit and approach sections. This process is discussed in the *General Modeling Considerations* section in this report. HEC-RAS models were developed for this study and the WSPRO bridge routine was selected for the proposed model. HEC-RAS version, 4.0 was used for the study.

Hydraulic Site Inspection

A hydraulic site visit was made at the existing crossing of I-575 over Noonday Creek (North) on May 30, 2008. The upstream and downstream floodplains consist of some trees and underbrush. This crossing is located in a developed area of Cherokee County and there are residential developments located in the southeast and southwest quadrants. The Noonday Creek channel width varies from approximately 50-60 ft. The channel bottom of this urbanized stream has degraded resulting in a widening of the channel and banks that are generally unstable and approximately 6 ft high. Evidence of the degradation is the exposed foundations. In the appendix, there are pictures of the

exposed bridge footings. Upstream of the I-575 crossing, the stream flows south to north parallel to I-575. It turns after Dupree Rd and crosses under I-575 flowing east to west and parallel to Towne Lake Pkwy.

The existing bridges are three span PSC beam bridges on concrete bents and spillthrough abutments consisting of three 70 ft long spans. The existing northbound bridge includes the exit ramp from I-575 North to Towne Lake Pkwy.

Procedure

JBT Inc. personnel visited and photographed the site. A GDOT Hydraulic Engineering Field Report was completed. The drainage area and Manning's "n" values were determined and storm flows were determined for this Region 1 site. HEC-RAS computer models were developed for the natural, existing and proposed conditions using survey data and proposed roadway improvements.

General Modeling Considerations

The FEMA discharges for this site are very similar to the USGS generated discharges for region 1. The 100-year FEMA flow given in the FIS is 8780 cfs while the USGS flow is 9108 cfs. For the USGS flows, even though it was considered to use the urbanized equations, the rural equations are being used for the following reasons. Current aerial photography was observed and significant impervious area can be calculated, but the area of 43.2 square miles is more than twice the maximum applicable area. Also, stream gages were analyzed and there is storage effect in this basin. In an effort to resolve the issue of the similitude in the FEMA flows from the south crossing and the north crossing, the USGS was contacted along with a consultant with experience in the calculation of the FEMA flows for the Cobb County FIS. The USGS recommends the use of the current rural regression equations. The GDOT Office of Bridge Hydraulics was also consulted and concurred with the approach presented in this study. See appendix for reference.

An eyewitness, who has lived in the area for several years, has seen the closure of the ramp from Towne Lake Pkwy to I-575 southbound only once. This closure happened in July 2005. This account together with stream gage information and USGS recommendations were used to calibrate the model to more closely reproduce the highwater.

To fulfill FEMA requirements, the Regulatory FIS HEC-2 Computer models were obtained and duplicated for the Duplicate Effective (DE) models. They were then corrected for obvious errors, thereby creating the Corrected Effective (CE) models. The CE models were modified to reflect the Existing Conditions at these bridges based on survey data. These Existing Conditions models were used as the foundation to create the Proposed Conditions models.

In locating the approach and exit sections, new research detailed in the HEC-RAS Hydraulic Reference Manual, Version 3.1, dated November 2002, Appendix B is utilized. The expansion and contraction ratios used to locate the exit and approach sections are applicable to HEC-2, HEC-RAS and WSPRO models. The resulting coefficients are in the 0.8:1 to 2.0:1 range for expansion and 0.8:1 to 1.5:1 for contraction. These ranges were applied to the average floodplain constriction for both the proposed and existing conditions, yielding an expansion reach length range of 342 ft. to 856 ft. and a contraction reach length range of 342 ft. to 642 ft. The resulting coefficients for the main bridges were used with the resulting coefficients for the upstream and downstream structures to come up with the best locations of the approach and exit sections. The actual approach section is located at river station 36148, approximately 450 ft. upstream of the roadway. This location corresponds to the most fully expanded flow, which is where the projected expansion lines of the upstream structure (Dupree Rd) intersect the projected contraction lines of the upstream I-575 bridge. This location is inside the range of acceptable values. The actual exit section is located at river station 34412, approximately 600 ft. downstream of the downstream structure. This particular location is chosen

because the flow is not able to fully expand in between the I-575 bridge and the downstream structure (Ramp to south I-575).

Historic Drainage Patterns

The existing channel velocities at the project site for the 50-year and 100-year storm flows are 7.44 ft/s and 8.01 ft/s, respectively. The existing backwater for the 50-year and 100-year storms 1.53 ft and 1.58 ft, respectively. The existing southbound bridge does not clear the 100-year flood. The Manning's "n" values for the project site were developed using methods described in the USGS publication, *Guide for Selecting Manning's Roughness Coefficients for Natural Channels and Flood Plains,* by George J. Arcement, Jr. and Verne R. Schneider.

Proposed Drainage Patterns

As previously stated the existing southbound bridge does not clear the 100-year flood. The proposed construction includes approximately 48 ft of widening on a 7% cross slope effectively lowering the bottom of beam approximately 3ft. This is not desirable, particularly for an interstate bridge. In addition, a FEMA "No-Rise" would not be possible. The decision was made to jack the existing southbound bridge so that the proposed lowest bottom of beam elevation of the widened bridge will not be lower than the existing lowest bottom of beam elevation. This means that the proposed lowest bottom of beam elevation shall be no lower than elevation 885.93. The GDOT Office of Bridge Design was consulted on this issue and concurred with this approach (see correspondence in appendix). Also, the jacking shall not modify the existing abutment geometry. The proposed channel velocities for the 50-year and 100-year floods are 7.33 ft/s and 7.74 ft/s, respectively. The associated backwaters for proposed conditions during the 50-year and 100-year floods are 1.37 ft. and 1.58 ft., respectively. The maximum calculated contraction plus local scour depth in the channel is 47.6 ft for the 500-year flood. Although the calculated scour is deep, according to the Bridge Foundation

Investigation Report partially weathered rock is located near elevation 850, which will limit the scour depth. See report in appendix.

Riprap calculations were performed in accordance with the procedures outlined in Hydraulic Engineering Circular No. 23 *Bridge Scour and Stream Instability Countermeasures*. GDOT Type I riprap 24-inches thick is specified in this situation. Guide banks were not considered at this site.

Summary

The appropriate hydraulic and hydrological procedures were used in this study's development. Noonday Creek is FEMA studied waterway with an established floodway at the crossing and community coordination is required. The widening and jacking of this bridge was designed to meet FEMA's "No-Rise" condition of no increase in flood elevations or floodway widths at any location outside of the right-of-way at I-575.

References

JBT utilized the following for this study:

- The Current Georgia Department of Transportation Drainage Manual for Highways with Supplemental guidelines for Hydraulic and Hydrological Studies.

- The United States Geological Survey (USGS) publication, *Techniques for Estimating Magnitude and Frequency of Floods in Rural Basins of Georgia*-- 1993, Water Resources Investigations Report 93-4016.

- Hydrologic Engineering Center (HEC) River Analysis System (HEC-RAS), Water- Surface Computational Model Version 4.0, dated March 2008.

- Hydrologic Engineering Center (HEC) River Analysis System (HEC-RAS) Users Manual Version 3.1, dated November 2002.

- Hydrologic Engineering Center (HEC) River Analysis System (HEC-RAS) Hydraulic Reference Manual Version 3.1, dated November 2002.

- Hydraulic Engineering Circular No. 18 (HEC-18) *Evaluating Scour at Bridges,* (FHWA-NHI-01-001), dated May 2001, Fourth Edition.

- Hydraulic Engineering Circular No. 20 (HEC-20) *Stream Stability at Highway Structures* (FHWA-NHI-01-002) dated March 2001, Third Edition.

- Hydraulic Engineering Circular No. 23 (HEC-23) *Bridge Scour and Stream Instability Countermeasures* (FHWA-NHI-01-003) dated March 2001, Second Edition.

- The United States Geological Survey (USGS) publication, *Roughness Characteristics of Natural Channels,* Harry H. Barnes, Jr.—1987 (3rd Printing), Water-Supply Paper 1849.

- The United States Geological Survey (USGS) publication, *Guide for selecting Manning's Roughness Coefficients for Natural Channels and Flood Plains,* George J. Arcement, Jr., and Verne R. Schneider—1992 (2nd Printing); Water-Supply Paper 2339.

- *Computer Assisted Floodplain Hydrology & Hydraulics*, Daniel H. Hoggan, McGraw-Hill, New York, 1989.

Engineering "No-Rise" Certification

Proposed Bridge Widening over Noonday Creek

NH000-0575-01(028) / P.I. No. 713640

I-575 over Noonday Creek North, Cherokee County, Georgia

This is to certify that I am a duly qualified engineer licensed to practice in the State of Georgia. It is to further certify that the attached technical data supports the fact that the proposed construction of the widening of the bridges over Noonday Creek will not create any increase to the 100-Year Regulatory flood elevations, Regulatory floodway elevations, and Regulatory floodway widths within acceptable tolerances on Noonday Creek at published sections in the Current Flood Insurance Study for Cherokee County, Georgia, and will not create any increase in the Regulatory 100-Year flood and floodway elevations and floodway widths within acceptable tolerances at unpublished cross-sections in the vicinity of the project outside the GDOT R-O-W.

December 10, 2008

Date

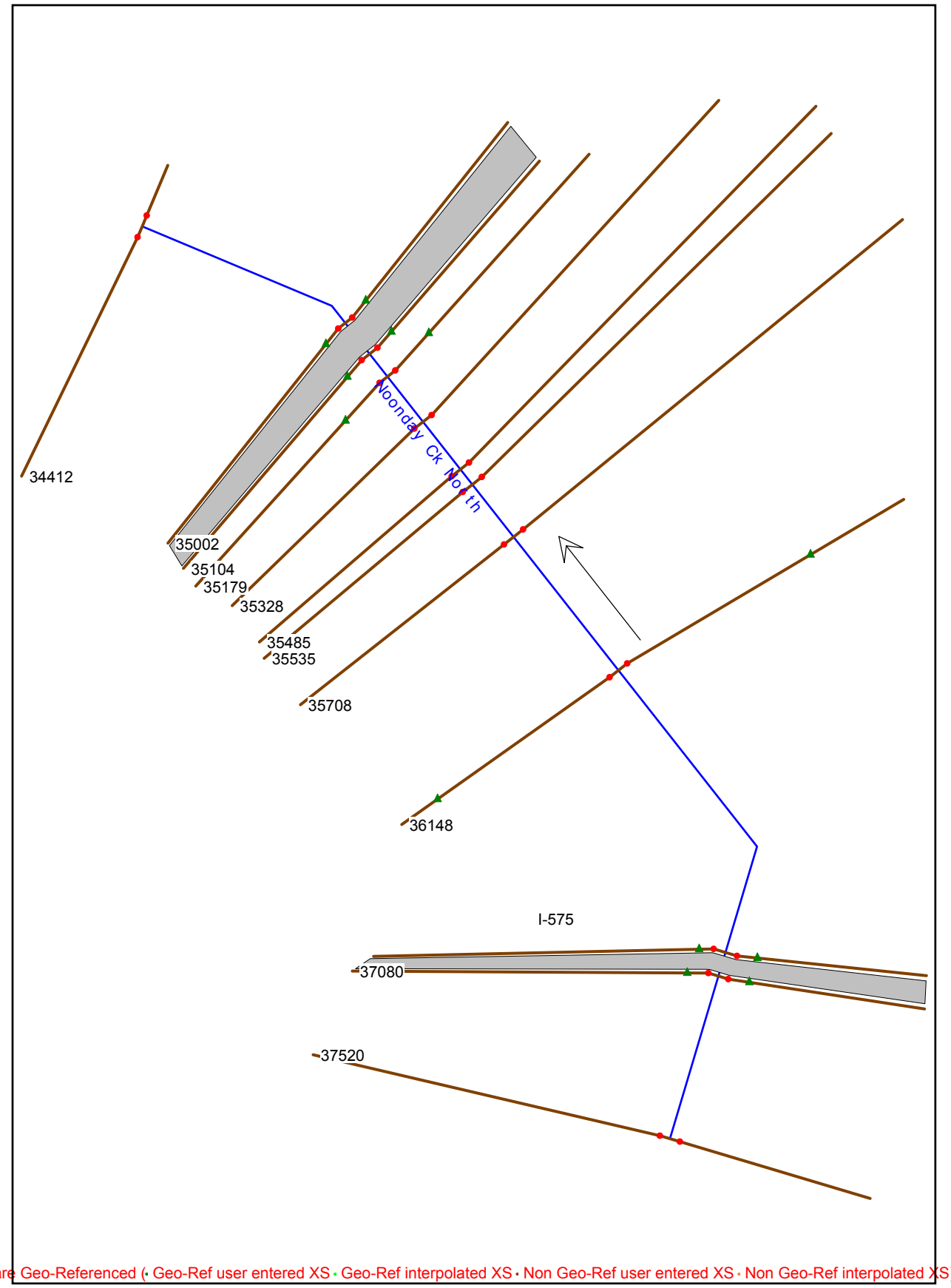
Signature

Seal:

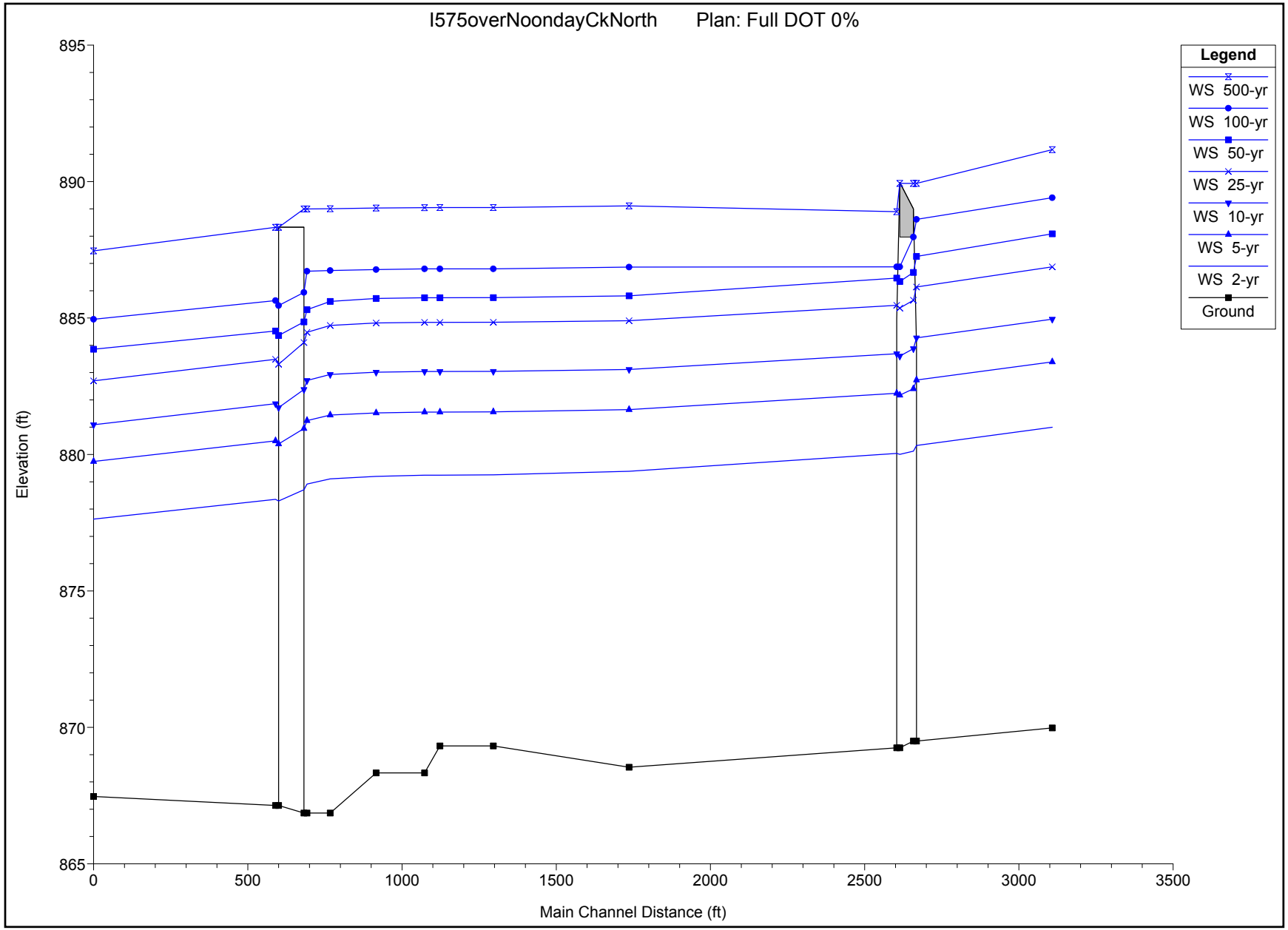
Hernán Ricardo Navarro, P.E.
Project Engineer

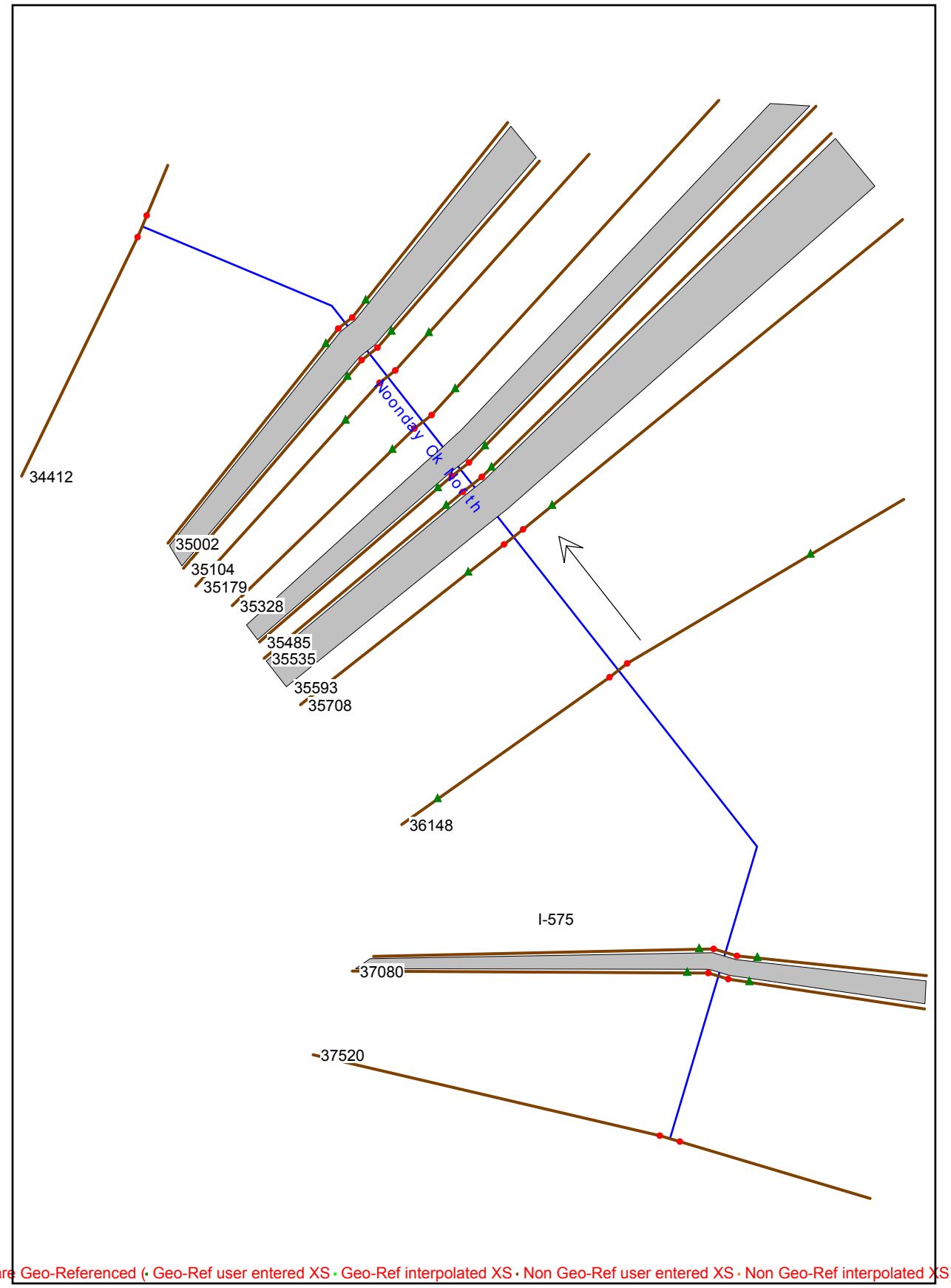
J.B. Trimble, Inc.
2550 Heritage Court, SE
Suite 250
Atlanta, Georgia 30339-3062

HEC-RAS PLOTS

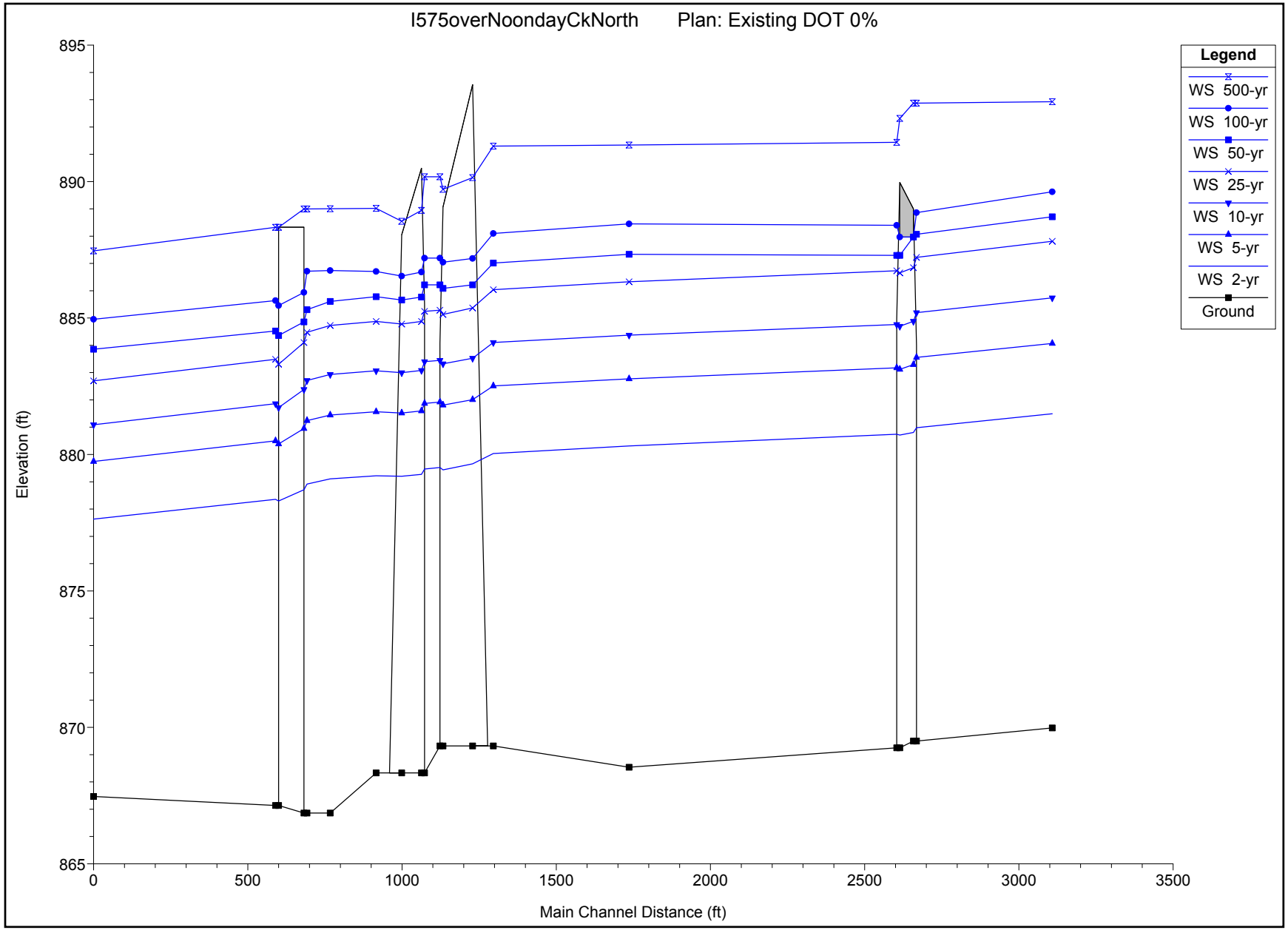


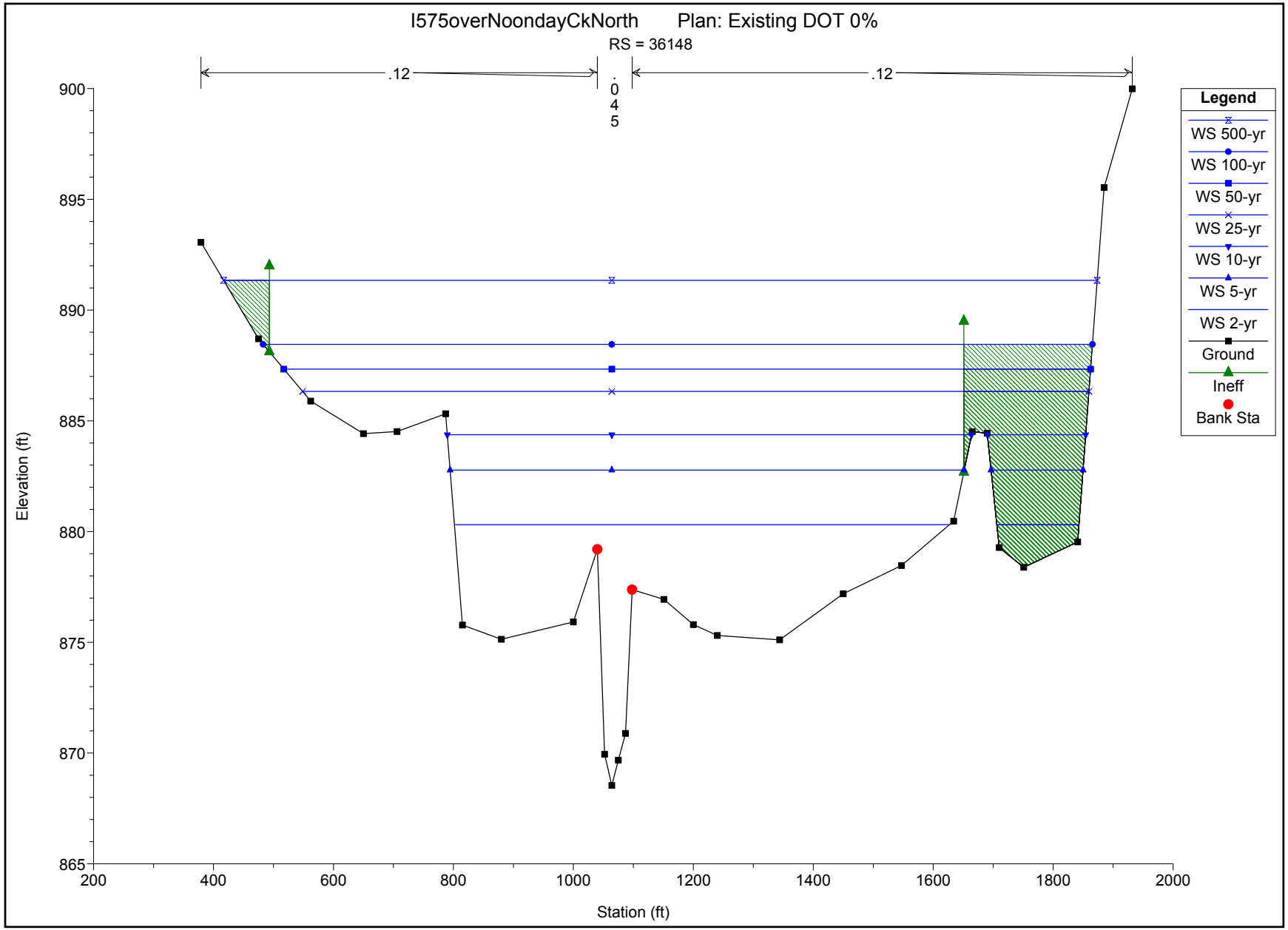
None of the XS's are Geo-Referenced (• Geo-Ref user entered XS • Geo-Ref interpolated XS • Non Geo-Ref user entered XS • Non Geo-Ref interpolated XS)

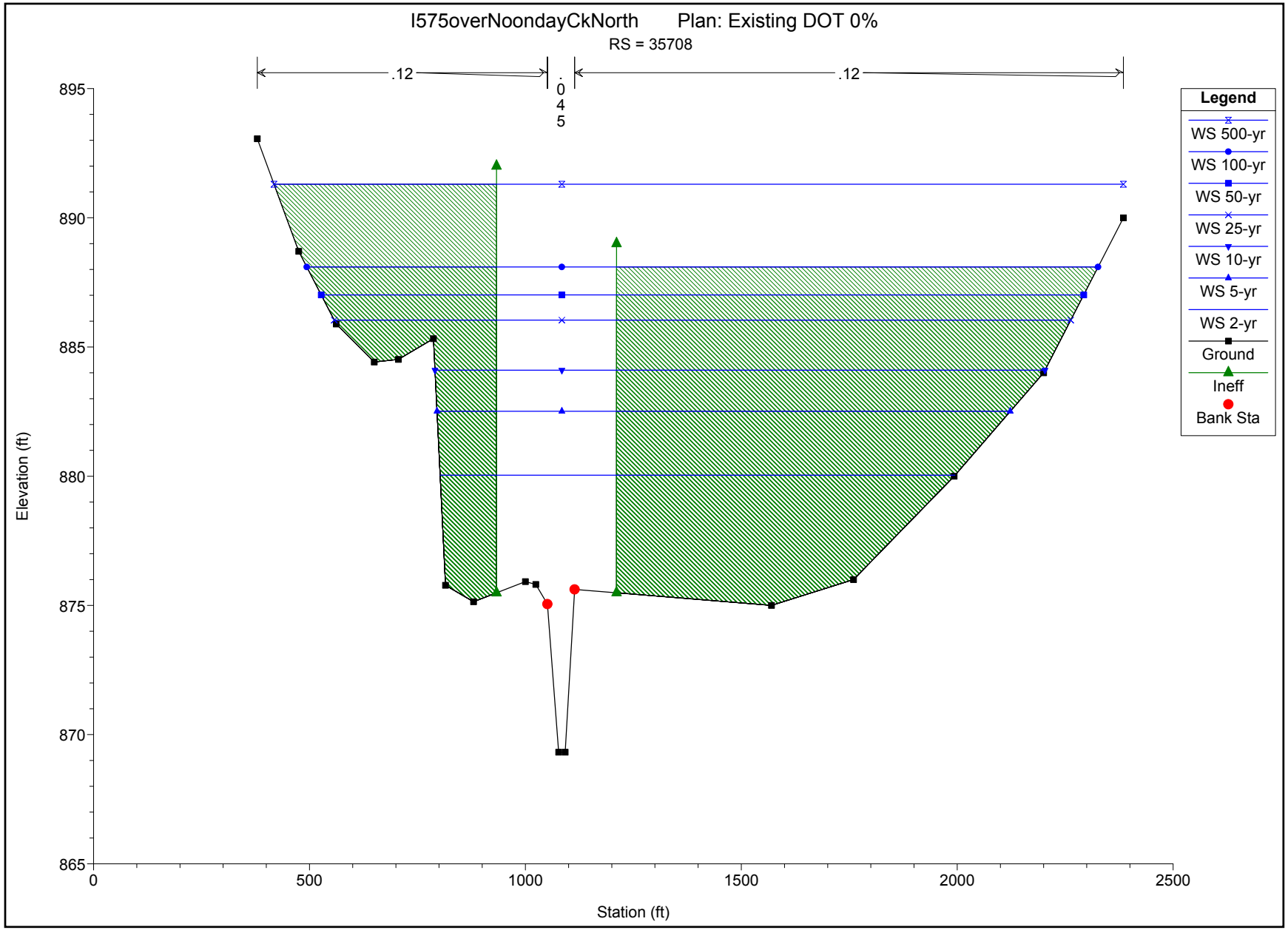

I575overNoondayCkNorth Plan: Full DOT 0%
Legend
WS 500-yr
WS 100-yr
WS 50-yr
WS 25-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground
Elevation (ft)
895
890
885
880
875
870
865
0
500
1000
1500
2000
2500
3000
3500
Main Channel Distance (ft)

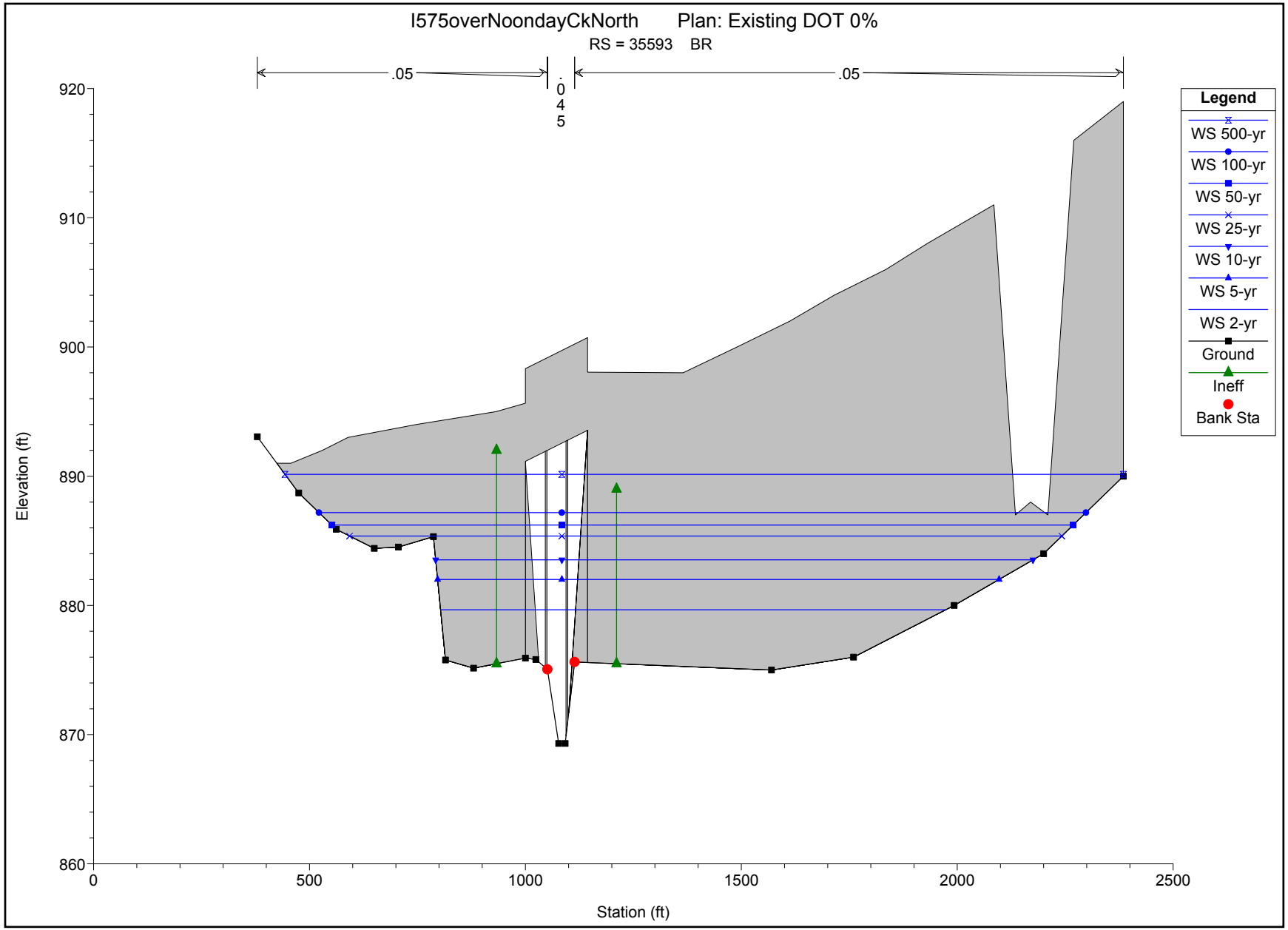


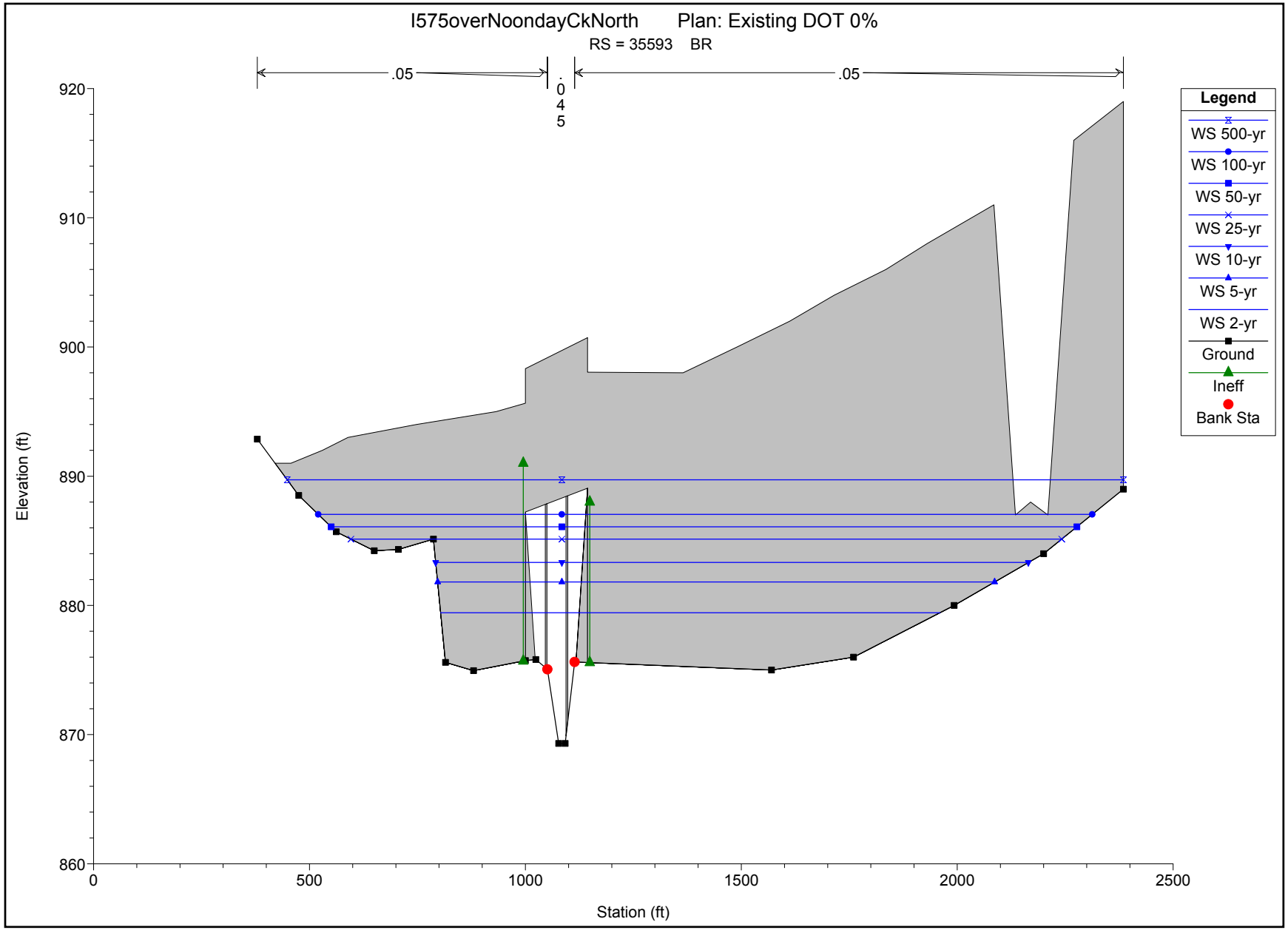
None of the XS's are Geo-Referenced (• Geo-Ref user entered XS • Geo-Ref interpolated XS • Non Geo-Ref user entered XS • Non Geo-Ref interpolated XS)

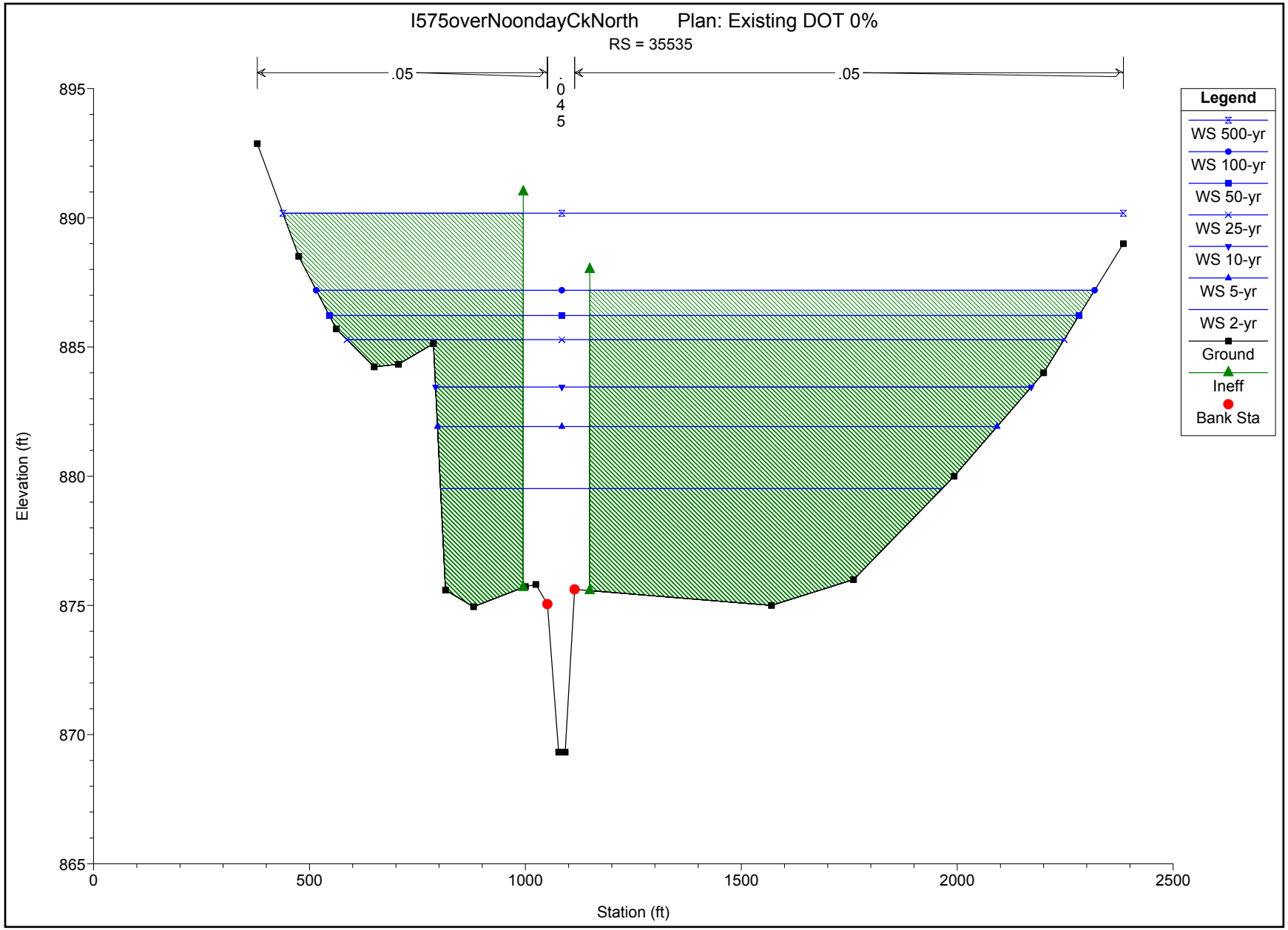

I575overNoondayCkNorth Plan: Existing DOT 0%
Elevation (ft)
895
890
885
880
875
870
865
0
500
1000
1500
2000
2500
3000
3500
Main Channel Distance (ft)
Legend
WS 500-yr
WS 100-yr
WS 50-yr
WS 25-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground

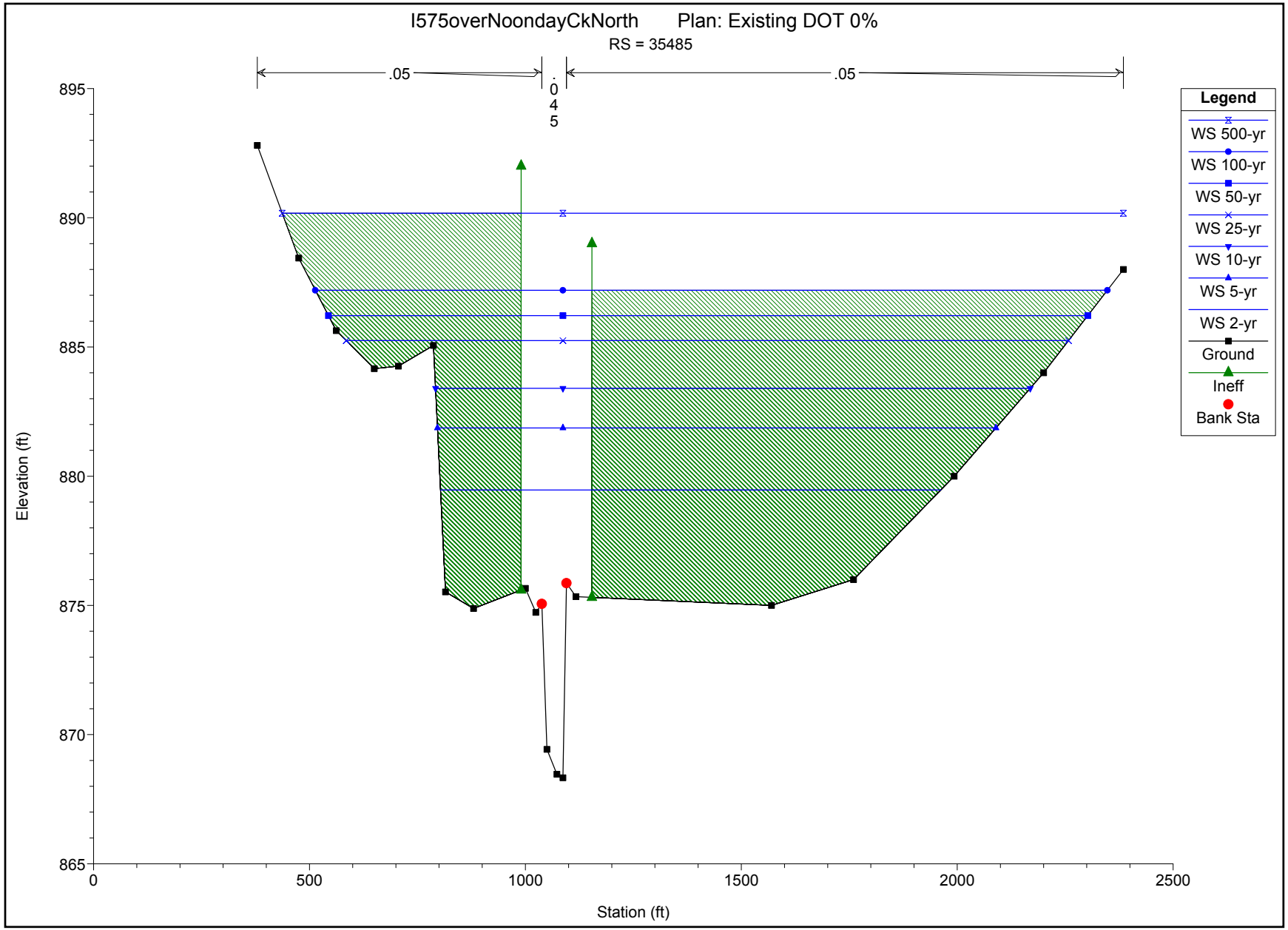

I575overNoondayCkNorth Plan: Existing DOT 0%
RS = 36148
.12
.045
.12
Legend
WS 500-yr
WS 100-yr
WS 50-yr
WS 25-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
900
895
890
885
880
875
870
865
200
400
600
800
1000
1200
1400
1600
1800
2000

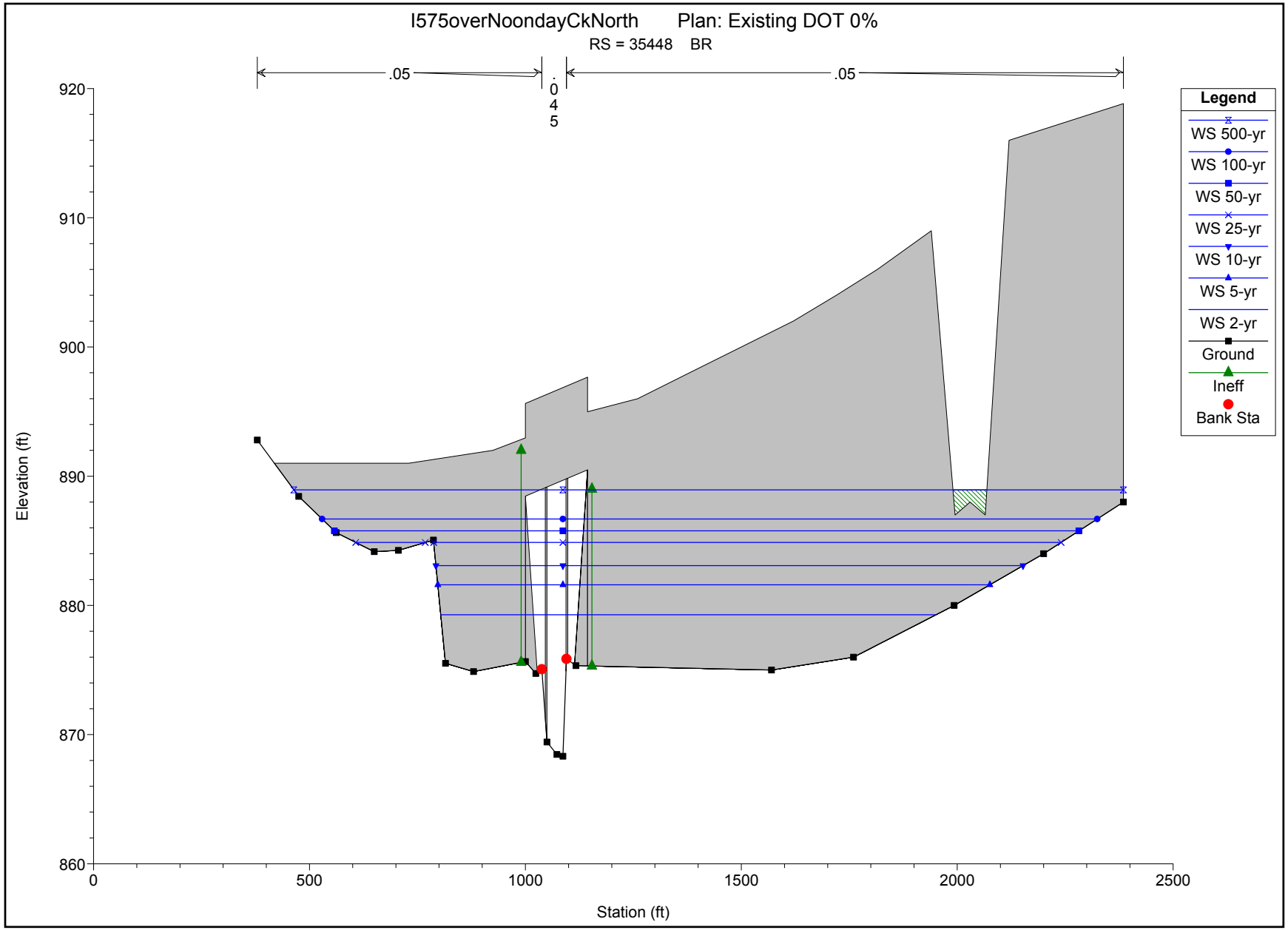

I575overNoondayCkNorth Plan: Existing DOT 0%
RS = 35708
.12
.045
.12
Legend
WS 500-yr
WS 100-yr
WS 50-yr
WS 25-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
895
890
885
880
875
870
865
0
500
1000
1500
2000
2500
Station (ft)

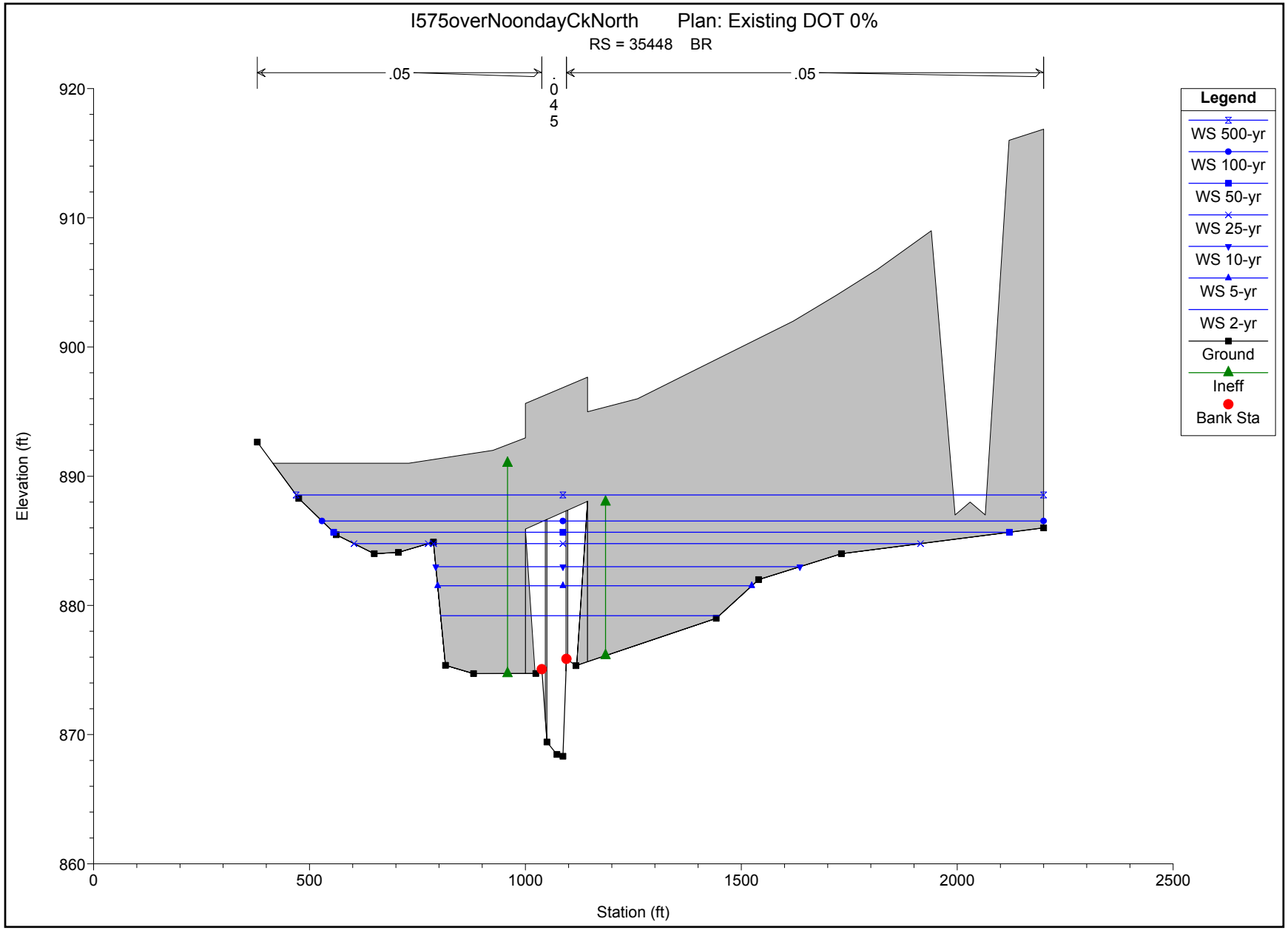

I575overNoondayCkNorth Plan: Existing DOT 0%
RS = 35593 BR
.05
.045
.05
Legend
WS 500-yr
WS 100-yr
WS 50-yr
WS 25-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
920
910
900
890
880
870
860
0
500
1000
1500
2000
2500
Station (ft)

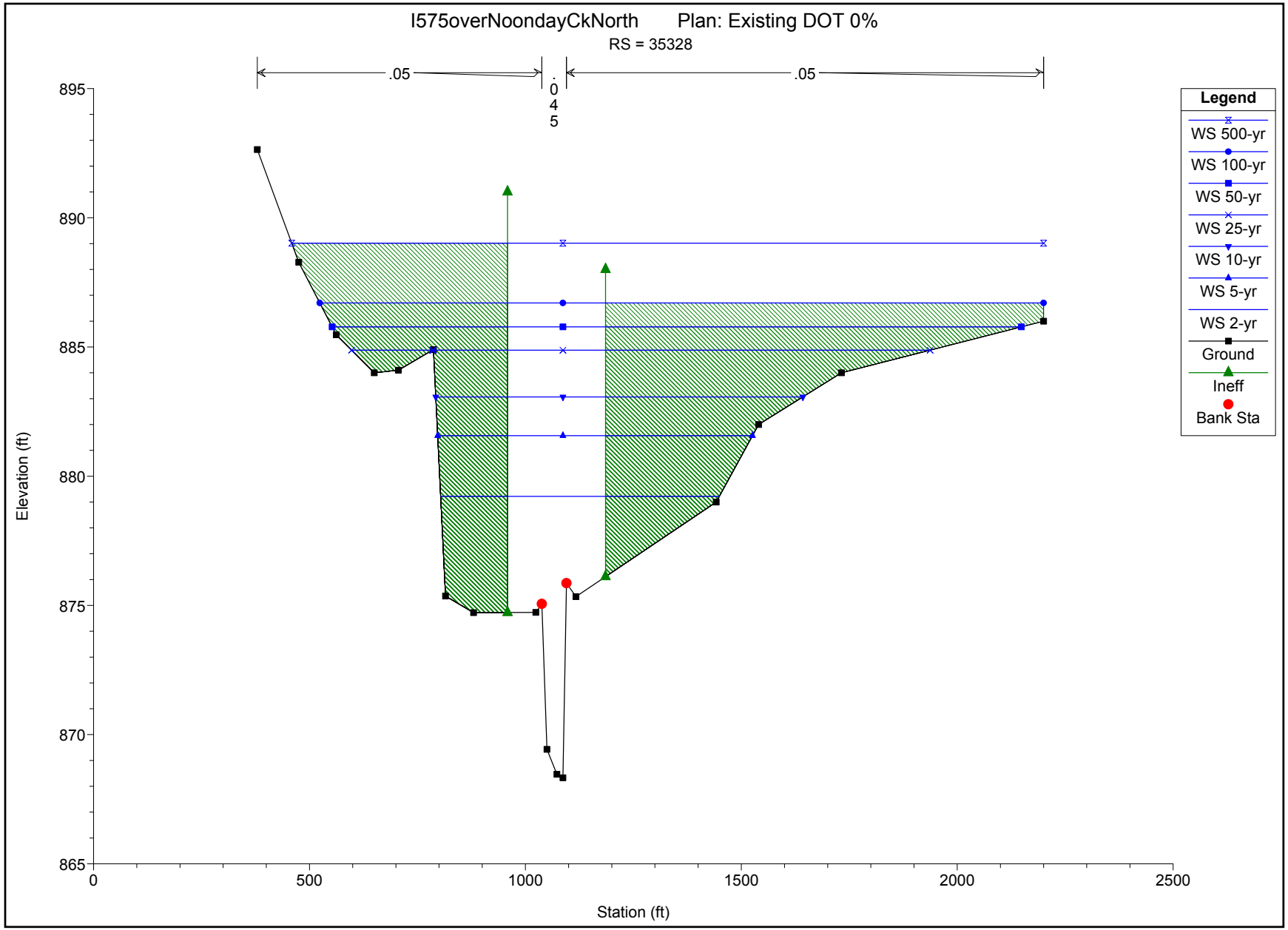

I575overNoondayCkNorth Plan: Existing DOT 0%
RS = 35593 BR
.05
.045
.05
Legend
WS 500-yr
WS 100-yr
WS 50-yr
WS 25-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
920
910
900
890
880
870
860
0
500
1000
1500
2000
2500

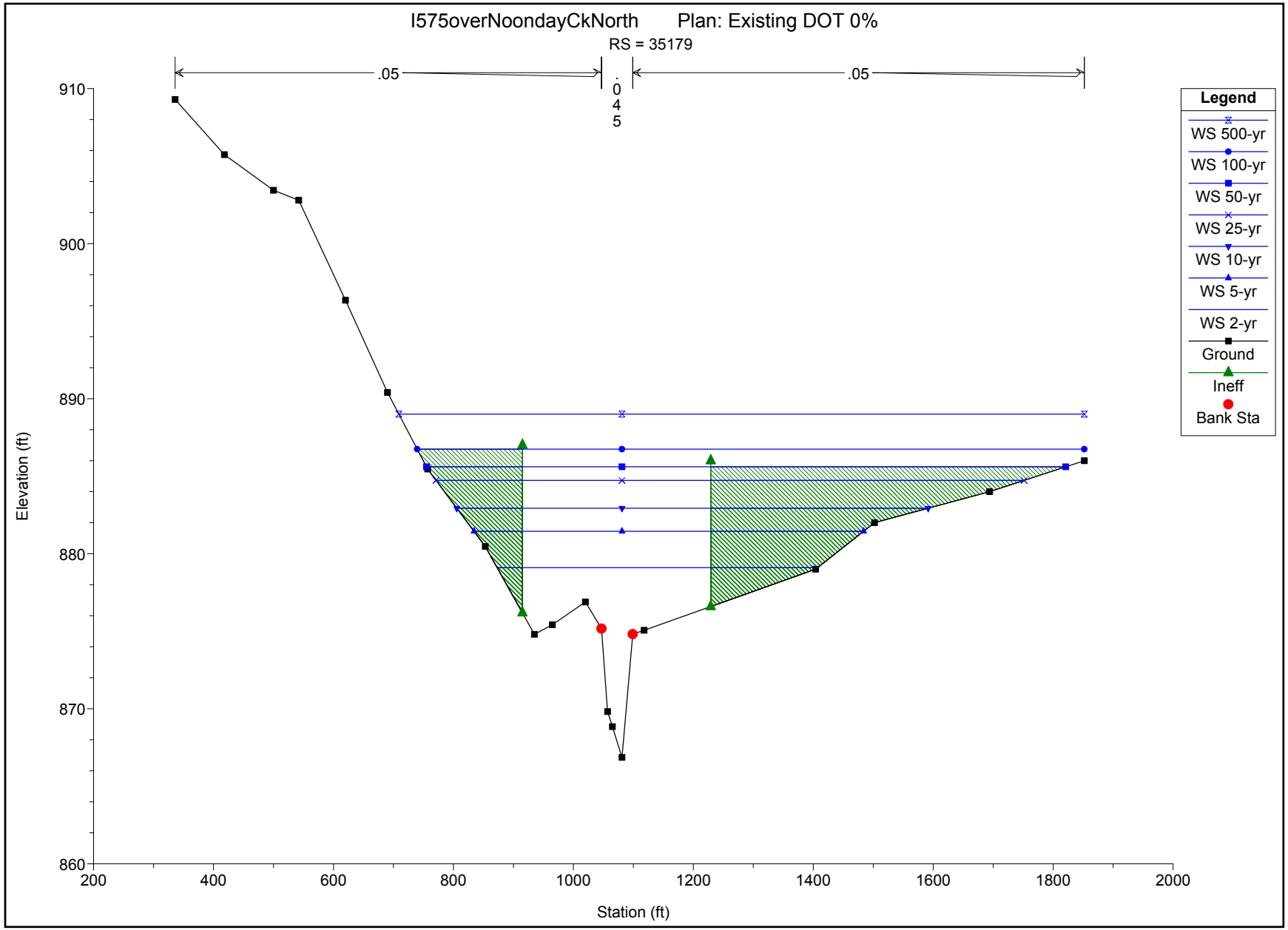

I575overNoondayCkNorth Plan: Existing DOT 0%
RS = 35535
.05
.045
.05
Legend
WS 500-yr
WS 100-yr
WS 50-yr
WS 25-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
895
890
885
880
875
870
865
0
500
1000
1500
2000
2500
Station (ft)

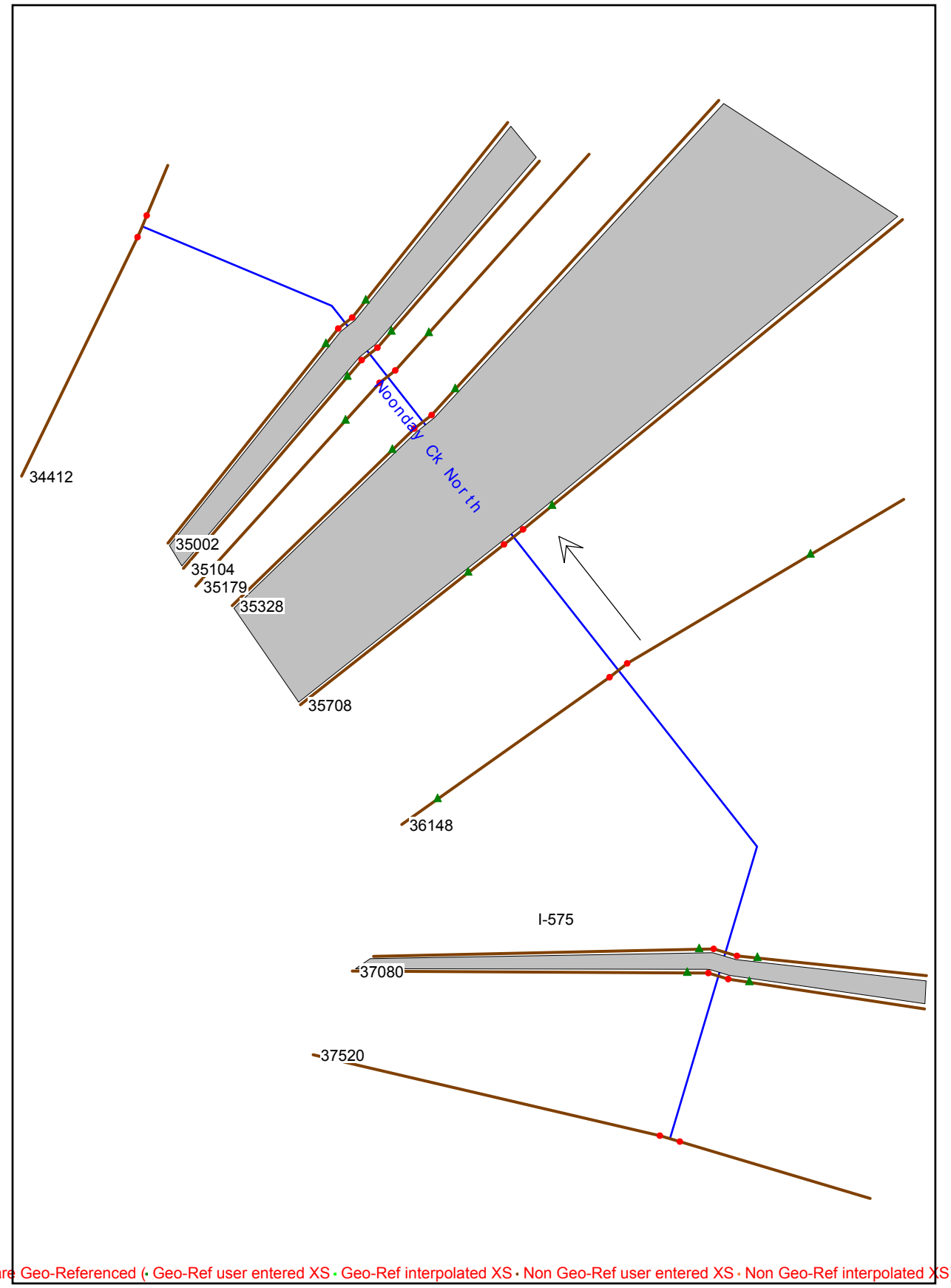

I575overNoondayCkNorth Plan: Existing DOT 0%
RS = 35485
.05
.045
.05
Legend
WS 500-yr
WS 100-yr
WS 50-yr
WS 25-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
895
890
885
880
875
870
865
0
500
1000
1500
2000
2500
Station (ft)


I575overNoondayCkNorth Plan: Existing DOT 0%
RS = 35448 BR
.05
.045
.05
Legend
WS 500-yr
WS 100-yr
WS 50-yr
WS 25-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
920
910
900
890
880
870
860
0
500
1000
1500
2000
2500

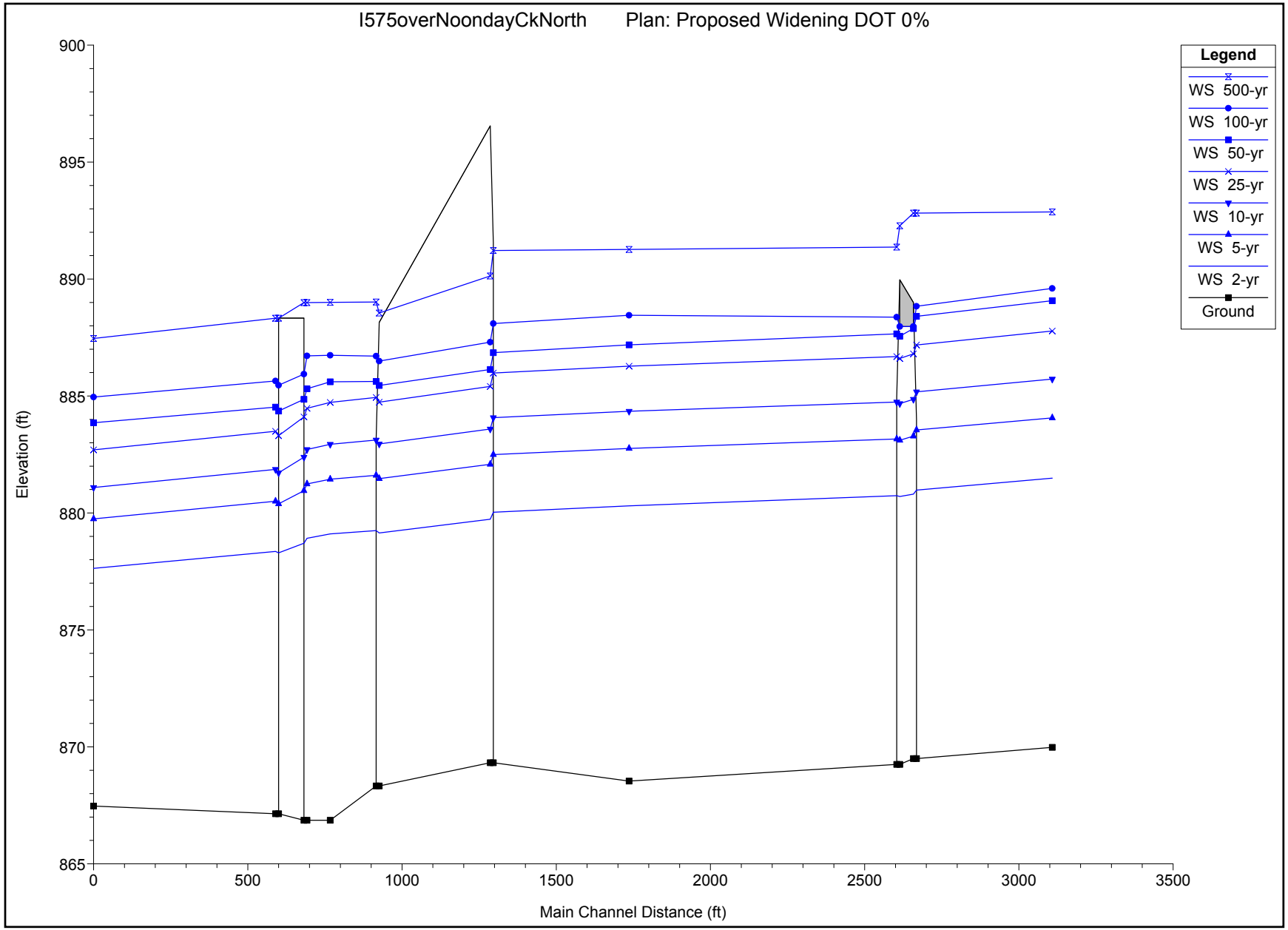

I575overNoondayCkNorth Plan: Existing DOT 0%
RS = 35448 BR
.05
.045
.05
Legend
WS 500-yr
WS 100-yr
WS 50-yr
WS 25-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
920
910
900
890
880
870
860
0
500
1000
1500
2000
2500

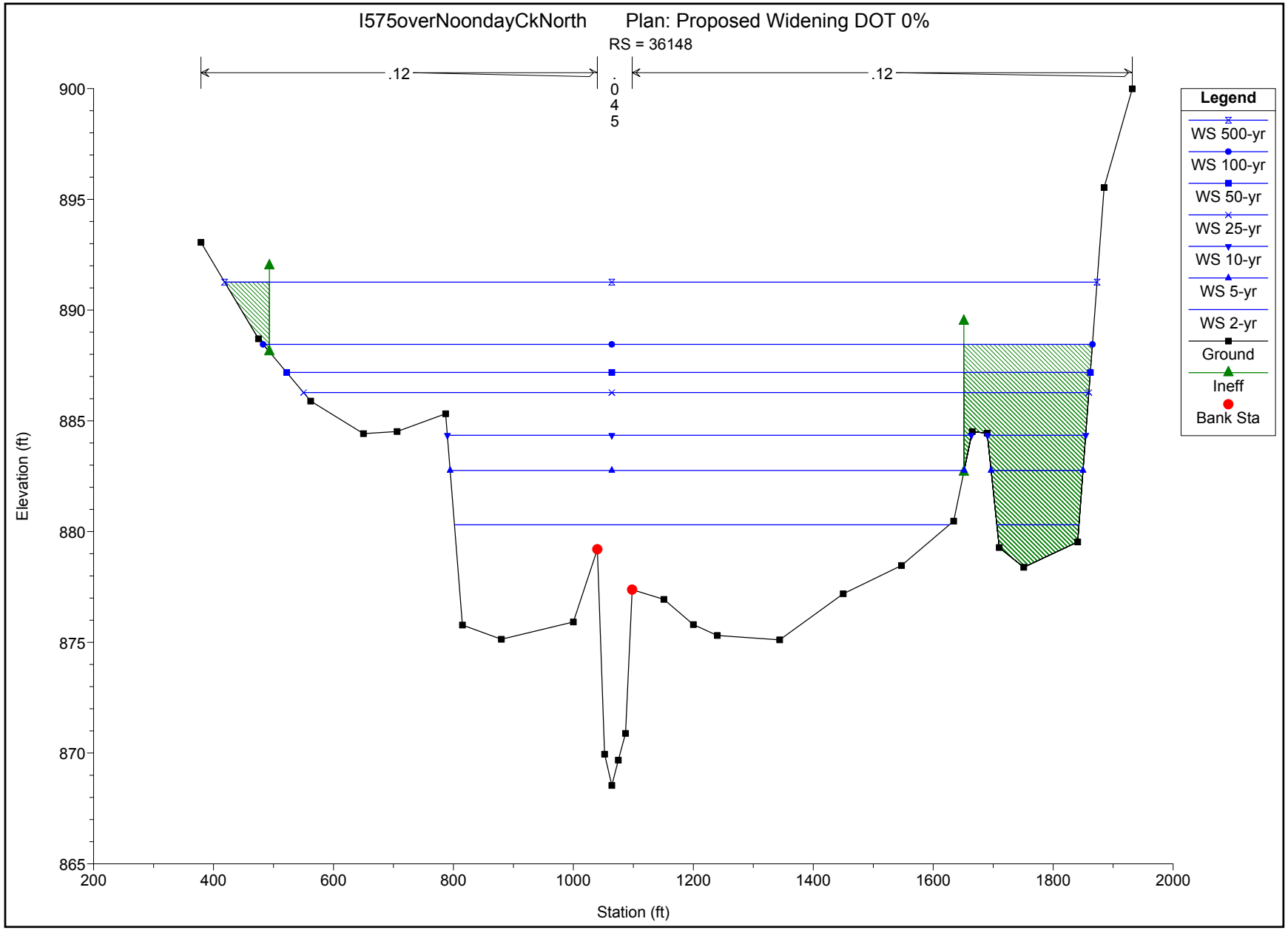

I575overNoondayCkNorth Plan: Existing DOT 0%
RS = 35328
.05
.045
.05
Legend
WS 500-yr
WS 100-yr
WS 50-yr
WS 25-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
895
890
885
880
875
870
865
0
500
1000
1500
2000
2500

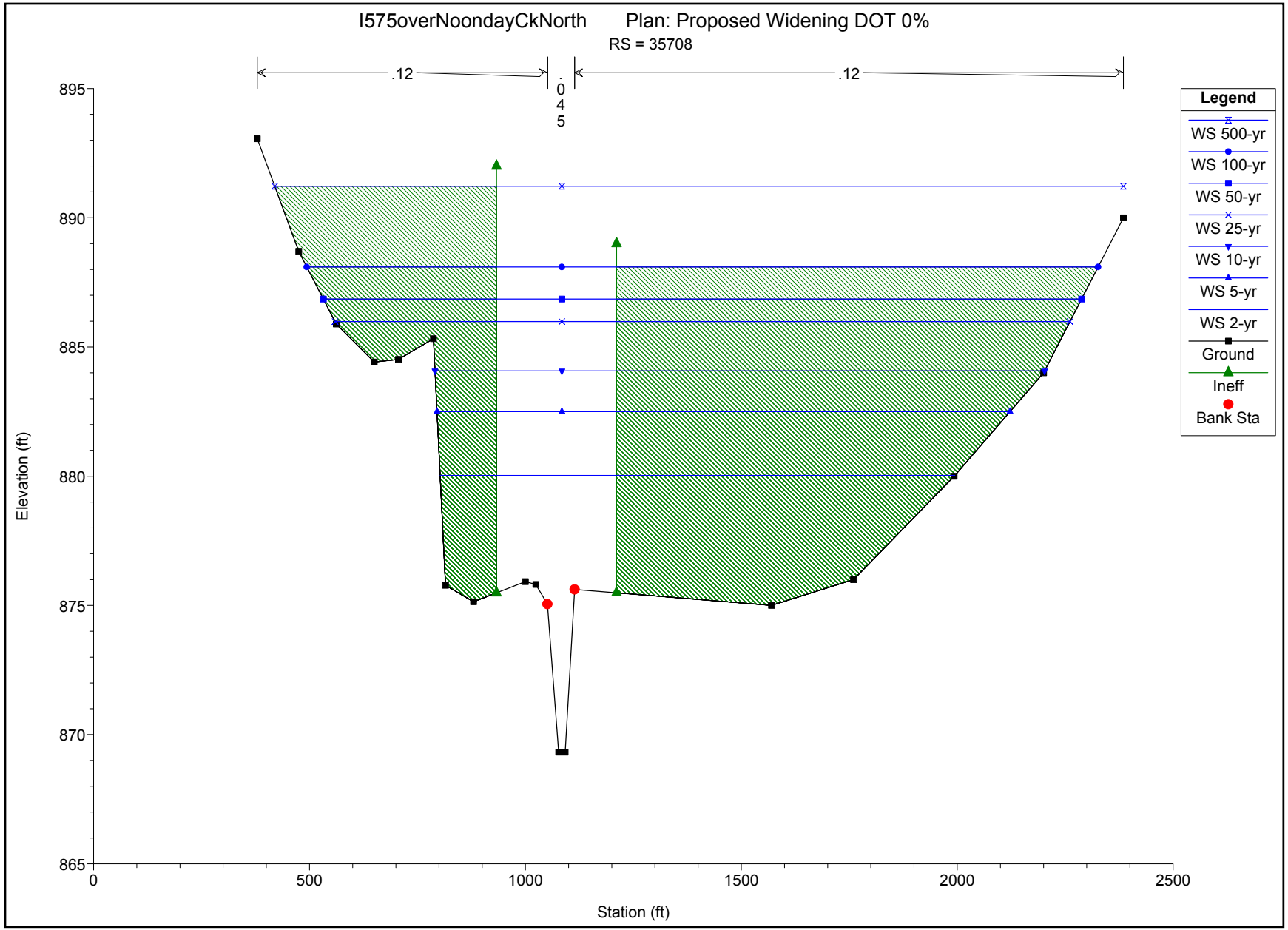

I575overNoondayCkNorth Plan: Existing DOT 0%
RS = 35179
.05
.045
.05
Legend
WS 500-yr
WS 100-yr
WS 50-yr
WS 25-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
910
900
890
880
870
860
200
400
600
800
1000
1200
1400
1600
1800
2000

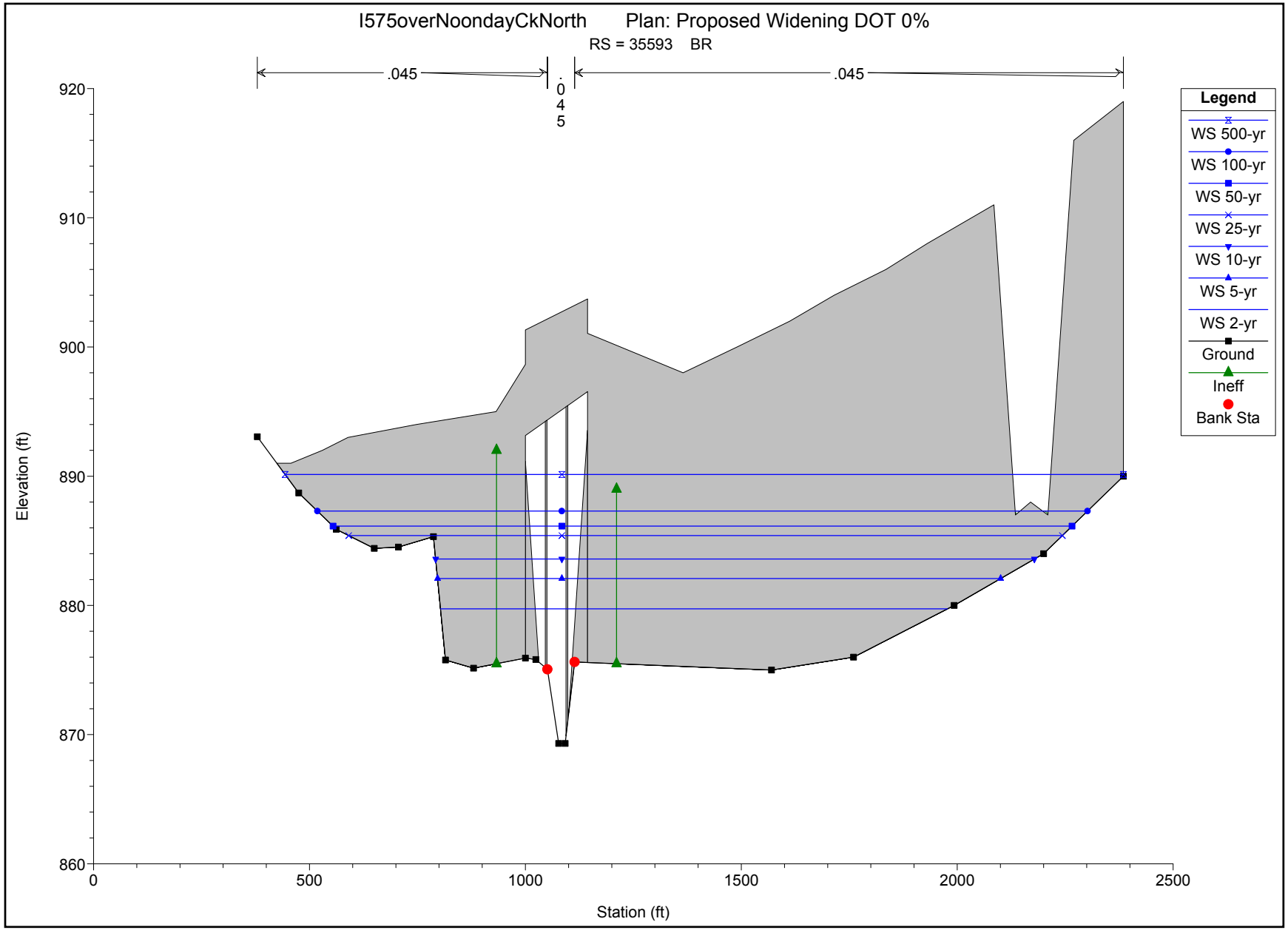


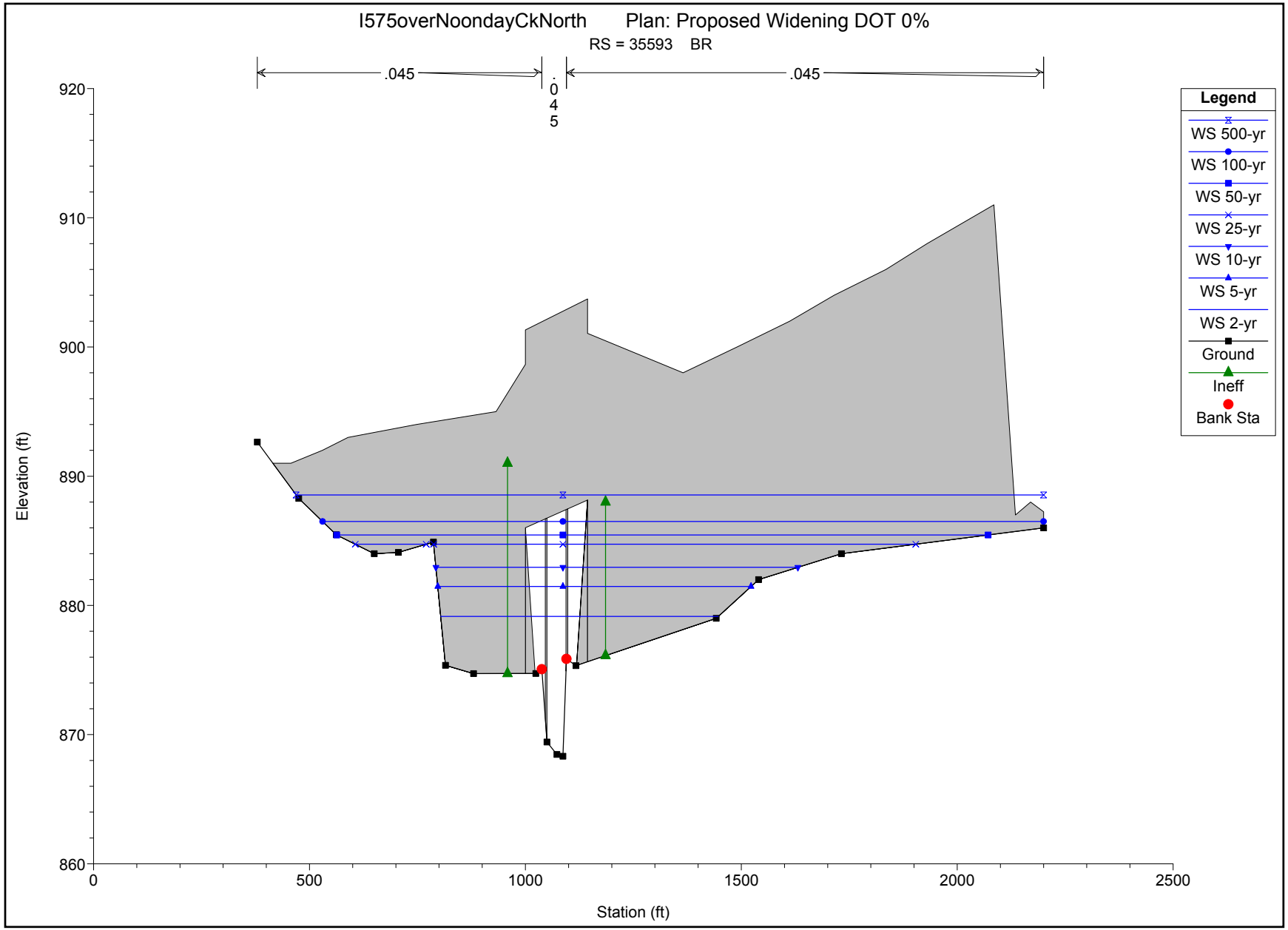
None of the XS's are Geo-Referenced (• Geo-Ref user entered XS • Geo-Ref interpolated XS • Non Geo-Ref user entered XS • Non Geo-Ref interpolated XS)

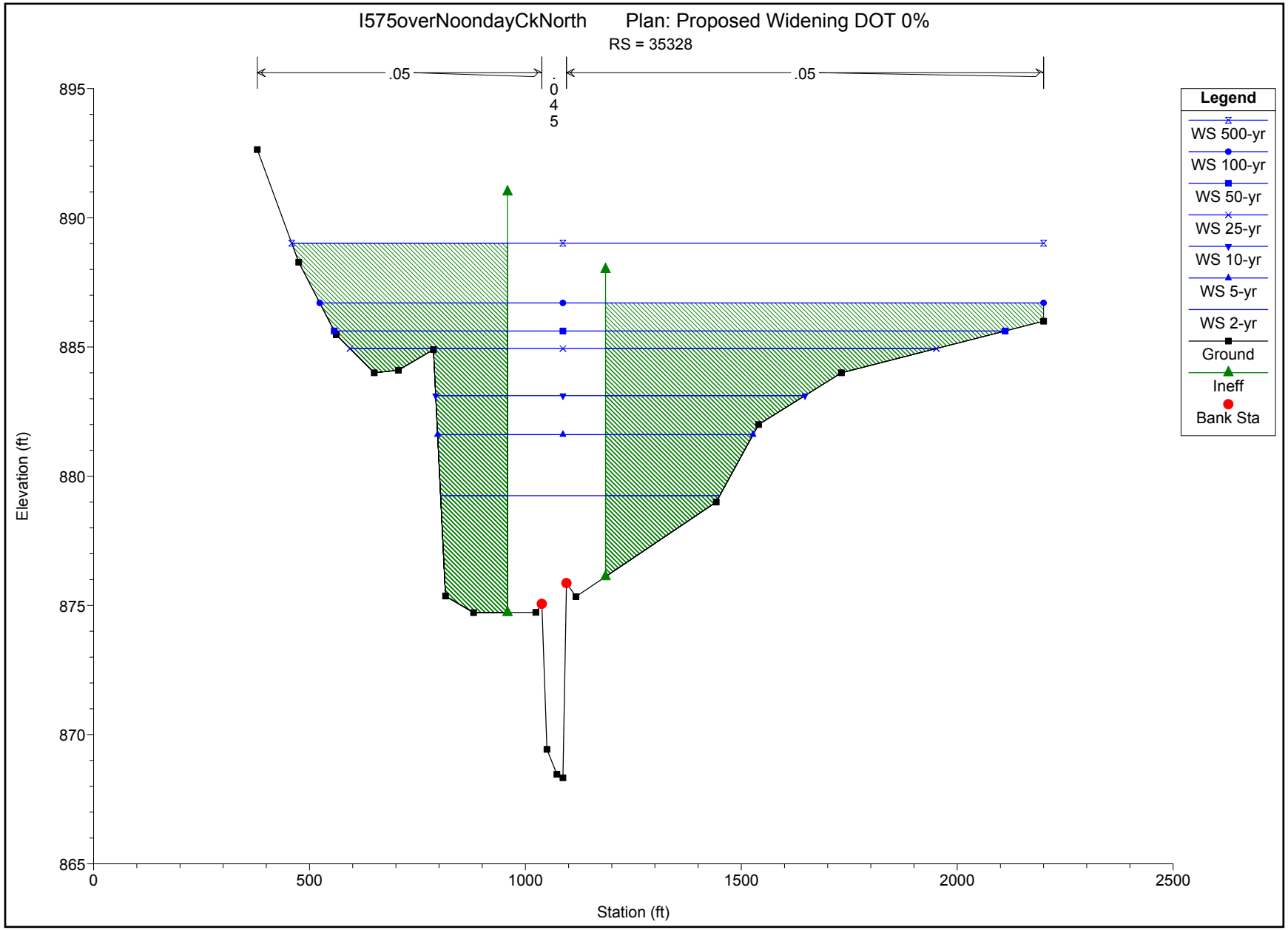

I575overNoondayCkNorth Plan: Proposed Widening DOT 0%
Legend
WS 500-yr
WS 100-yr
WS 50-yr
WS 25-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground
Elevation (ft)
900
895
890
885
880
875
870
865
0
500
1000
1500
2000
2500
3000
3500
Main Channel Distance (ft)

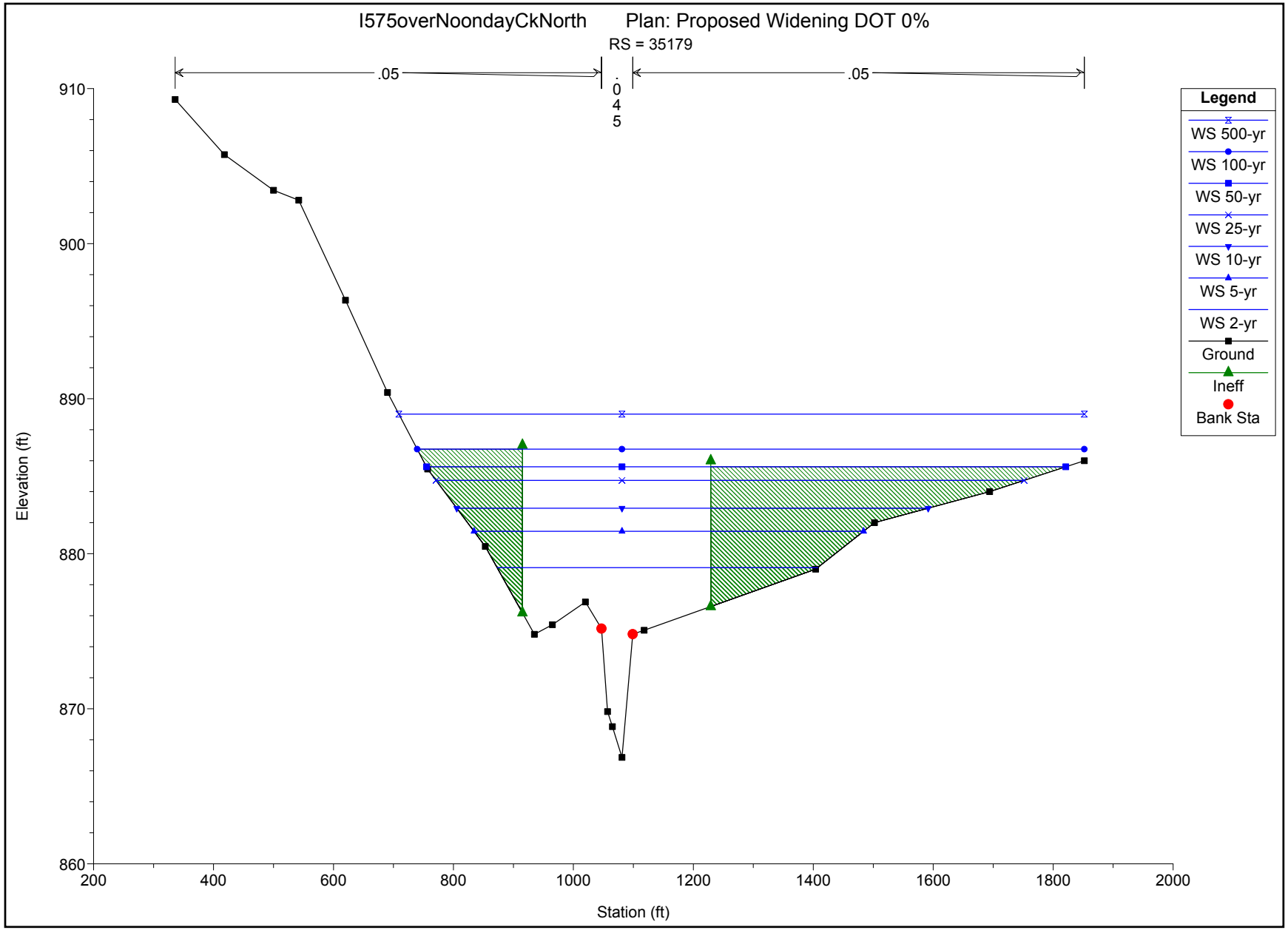

I575overNoondayCkNorth Plan: Proposed Widening DOT 0%
RS = 36148
.12
.045
.12
Legend
WS 500-yr
WS 100-yr
WS 50-yr
WS 25-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
900
895
890
885
880
875
870
865
200
400
600
800
1000
1200
1400
1600
1800
2000


I575overNoondayCkNorth Plan: Proposed Widening DOT 0%
RS = 35708
.12
.045
.12
Legend
WS 500-yr
WS 100-yr
WS 50-yr
WS 25-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
895
890
885
880
875
870
865
0
500
1000
1500
2000
2500
Station (ft)


I575overNoondayCkNorth Plan: Proposed Widening DOT 0%
RS = 35593 BR
.045
.045
.045
Legend
WS 500-yr
WS 100-yr
WS 50-yr
WS 25-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
920
910
900
890
880
870
860
0
500
1000
1500
2000
2500


I575overNoondayCkNorth Plan: Proposed Widening DOT 0%
RS = 35593 BR
.045
.045
.045
Legend
WS 500-yr
WS 100-yr
WS 50-yr
WS 25-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
920
910
900
890
880
870
860
0
500
1000
1500
2000
2500


I575overNoondayCkNorth Plan: Proposed Widening DOT 0%
RS = 35328
.05
.045
.05
Legend
WS 500-yr
WS 100-yr
WS 50-yr
WS 25-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
895
890
885
880
875
870
865
0
500
1000
1500
2000
2500


I575overNoondayCkNorth Plan: Proposed Widening DOT 0%
RS = 35179
.05
.045
.05
Legend
WS 500-yr
WS 100-yr
WS 50-yr
WS 25-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
910
900
890
880
870
860
200
400
600
800
1000
1200
1400
1600
1800
2000

Section II
Hydraulic Tables

HYDRAULIC TABLE (50-YEAR STORM)

NH000-0575-01(028)
I-575 over Noonday Creek North, Cherokee County, Georgia
P.I. No. 713640

	FULL VALLEY	***EXISTING BRIDGE*** *Parallel Bridges DS/US*	***PROPOSED BRIDGE*** *Widening*
	(ft)	***(ft)***	***(ft)***
FLOODSTAGE ELEVATION DOWNSTREAM BR SECTION 35328	885.72	885.78	885.62
FLOODSTAGE ELEVATION APPROACH SECTION 36148	885.81	887.34	887.18
AREA OF OPENING UNDER FLOODSTAGE (SF)	**********	1181	1173
DISCHARGE THROUGH BRIDGE (CFS)	**********	7774.0	7774.0
DISCHARGE OVER ROADWAY (CFS)	**********	0.0	0.0
MEAN VELOCITY AT BRIDGE SECTION (FT/S)	0.96	6.58	6.63
CHANNEL VELOCITY AT BRIDGE SECTION (FT/S)	1.93	7.44	7.33
2 - YEAR FLOODSTAGE ELEVATION BRIDGE SECTION 35328	879.20	879.22	879.25
BACKWATER HEIGHT	**********	1.53	1.37
BR. SEL. METHOD	**********	WSPRO/Energy only	Energy only

HYDRAULIC TABLE (100-YEAR STORM)

NH000-0575-01(028)
I-575 over Noonday Creek North, Cherokee County, Georgia
P.I. No. 713640

	FULL VALLEY	***EXISTING BRIDGE*** *Parallel Bridges DS/US*	***PROPOSED BRIDGE*** *Widening*
	(ft)	***(ft)***	***(ft)***
FLOODSTAGE ELEVATION DOWNSTREAM BR SECTION 35328	886.78	886.71	886.71
FLOODSTAGE ELEVATION APPROACH SECTION 36148	886.87	888.45	888.45
AREA OF OPENING UNDER FLOODSTAGE (SF)	**********	1290	1305
DISCHARGE THROUGH BRIDGE (CFS)	**********	9108.0	9108.0
DISCHARGE OVER ROADWAY (CFS)	**********	0.0	0.0
MEAN VELOCITY AT BRIDGE SECTION (FT/S)	0.92	7.06	6.98
CHANNEL VELOCITY AT BRIDGE SECTION (FT/S)	1.82	8.01	7.74
2 - YEAR FLOODSTAGE ELEVATION BRIDGE SECTION 35328	879.20	879.22	879.25
BACKWATER HEIGHT	**********	1.58	1.58
BR. SEL. METHOD	**********	Energy only/Energy only	Energy only

HYDRAULIC TABLE (500-YEAR STORM)

NH000-0575-01(028)
I-575 over Noonday Creek North, Cherokee County, Georgia
P.I. No. 713640

	FULL VALLEY ***(ft)***	***EXISTING BRIDGE*** *Parallel Bridges DS/US* ***(ft)***	***PROPOSED BRIDGE*** *Widening* ***(ft)***
FLOODSTAGE ELEVATION DOWNSTREAM BR SECTION 35328	889.03	889.02	889.02
FLOODSTAGE ELEVATION APPROACH SECTION 36148	889.11	891.34	891.26
AREA OF OPENING UNDER FLOODSTAGE (SF)	**********	1680	1675
DISCHARGE THROUGH BRIDGE (CFS)	**********	12749.0	12749.0
DISCHARGE OVER ROADWAY (CFS)	**********	0.0	0.0
MEAN VELOCITY AT BRIDGE SECTION (FT/S)	0.93	7.59	7.61
CHANNEL VELOCITY AT BRIDGE SECTION (FT/S)	1.70	9.14	8.76
2 - YEAR FLOODSTAGE ELEVATION BRIDGE SECTION 35328	879.20	879.22	879.25
BACKWATER HEIGHT	**********	2.23	2.15
BR. SEL. METHOD	**********	Energy only/Energy only	Energy only

NH000-0575-01(028)
I-575 over Noonday Creek North, Cherokee County, Georgia
P.I. No. 713640

PROPOSED BRIDGE CLEARANCE

Widening Bridge

	English Units
MINIMUM PROFILE GRADE ELEVATION	
DEPTH OF CROSS SLOPE	
DEPTH OF SLAB AND BEAM	
BOTTOM OF BEAM ELEVATION	885.93
MINIMUM BOTTOM OF BEAM ELEVATION	885.93
50 YEAR FLOODSTAGE ELEVATION*	885.62
CLEARANCE (2 ft Required)	0.31
MINIMUM BOTTOM OF BEAM ELEVATION	885.93
100 YEAR FLOODSTAGE ELEVATION*	886.71
CLEARANCE (1 ft Required)	-0.78

*Floodstage taken from Downstream Bridge Section

TABLE OF 100 YR FLOODWAY ELEVATIONS
EXISTING FLOWS - NOONDAY CREEK

	A	*B*	*C*	*D*	*E*	
CROSS SECTION	**PUBLISHED FIS ELEVATION**	**DUPLICATE EFFECTIVE ELEVATION**	**CORRECTED EFFECTIVE ELEVATION**	**EXISTING ELEVATION**	**PROPOSED ELEVATION**	**DELTA ELEVATION (E-D)**
30185	882.00	881.85	881.85	881.85	881.85	0.00
32495	885.70	885.62	885.62	885.62	885.62	0.00
32995 (100)		886.30	886.30	886.30	886.30	0.00
33215 (200)		886.75	886.75	886.75	886.75	0.00
33275 (300)		886.83	886.83	886.83	886.83	0.00
33340 (400)		886.89	886.89	886.89	886.89	0.00
34950	887.50	887.42	887.42	887.42	887.42	0.00
35050		887.32	887.32	887.32	887.32	0.00
35100		887.36	887.36	887.39	887.39	0.00
35410 (35333 PR)		887.56	887.56	887.84	887.72	-0.12
35480		887.61	887.61	887.96	-	-
35530		887.61	887.61	887.99	-	-
35650 (35703 PR)		887.73	887.73	888.15	888.18	0.03
35750	888.20	888.14	888.14	888.55	888.55	0.00
36895		888.43	888.43	888.81	888.81	0.00
36950		888.37	888.37	888.77	888.77	0.00
37000		888.66	888.66	888.98	888.98	0.00
37100	889.50	889.34	889.33	889.63	889.63	0.00
38110	889.70	889.63	889.61	889.89	889.89	0.00
40790	891.60	891.42	891.41	891.57	891.57	0.00
40820		891.43	891.42	891.58	891.58	0.00
40865		891.79	891.79	891.88	891.88	0.00
41025		891.92	891.91	892.01	892.01	0.00
41165		892.01	892.00	892.09	892.09	0.00
41605		892.36	892.36	892.44	892.44	0.00
42070	892.60	892.48	892.47	892.55	892.56	0.01
44040	893.10	893.04	893.03	893.10	893.10	0.00
45890		895.21	895.21	895.24	895.24	0.00
46650		895.38	895.38	895.41	895.41	0.00

Highlighted row Highlighted rows indicate cross-sections within the R-O-W and bridge.

These cross-se These cross-sections are subject to complex flow due to overtopping.

TABLE OF 100 YR FLOOD ELEVATIONS
EXISTING FLOWS - NOONDAY CREEK

	A	*B*	*C*	*D*	*E*	
CROSS SECTION	**PUBLISHED FIS ELEVATION**	**DUPLICATE EFFECTIVE ELEVATION**	**CORRECTED EFFECTIVE ELEVATION**	**EXISTING ELEVATION**	**PROPOSED ELEVATION**	**DELTA ELEVATION (E-D)**
30185	881.00	880.87	880.87	880.87	880.87	0.00
32495	885.00	884.93	884.93	884.93	884.93	0.00
32995 (100)		885.71	885.71	885.71	885.71	0.00
33215 (200)		886.22	886.22	886.22	886.22	0.00
33275 (300)		886.28	886.28	886.28	886.28	0.00
33340 (400)		886.32	886.32	886.32	886.32	0.00
34950	886.90	886.80	886.80	886.80	886.80	0.00
35050		886.73	886.74	886.74	886.74	0.00
35100		886.76	886.76	886.76	886.76	0.00
35410 (35333 PR)		886.92	886.92	886.95	886.89	-0.06
35480		886.97	886.97	887.04	-	-
35530		886.96	886.96	887.04	-	-
35650 (35703 PR)		887.09	887.09	887.17	887.20	0.03
35750	887.60	887.48	887.48	887.56	887.56	0.00
36895		887.65	887.65	887.72	887.72	0.00
36950		887.59	887.60	887.67	887.67	0.00
37000		887.80	887.80	887.87	887.87	0.00
37100	888.70	888.59	888.57	888.63	888.63	0.00
38110	889.00	888.85	888.84	888.89	888.89	0.00
40790	890.70	890.56	890.55	890.58	890.58	0.00
40820		890.57	890.56	890.58	890.59	0.01
40865		891.16	891.16	891.17	891.17	0.00
41025		891.28	891.27	891.29	891.29	0.00
41165		891.34	891.34	891.35	891.35	0.00
41605		891.50	891.50	891.51	891.51	0.00
42070	891.70	891.59	891.59	891.60	891.60	0.00
44040	892.10	892.04	892.04	892.05	892.05	0.00
45890		894.20	894.20	894.21	894.21	0.00
46650		894.39	894.39	894.40	894.40	0.00

Highlighted row Highlighted rows indicate cross-sections within the R-O-W and bridge.

These cross-se These cross-sections are subject to complex flow due to overtopping.

Section III
Peak Flow Summary

NH000-0575-01(028)
I-575 over Noonday Creek North, Cherokee County, Georgia
P.I. No. 713640

Discharge and Slope Calculations

Drainage Area (sq. mi.)	43.2
Region No.	1
Impervious Area (%)	0.0
USGS Gage No.	None
Drainage Area @ Gage	0
Q2	
Q5	
Q10	
Q25	
Q50	
Q100	
Q500	

Discharge (cfs)

	Regional	Urbanized	Qu(w) Weighted Discharge	FEMA
Q2	2430	0	0	
Q5	3857	0	0	
Q10	4959	0	0	5110
Q25	6500	0	0	
Q50	7774	0	0	8045
Q100	9108	0	0	8780
Q500	12749	0	0	9905

Hydraulic Slope Calculation

Based on National Elevation Dataset - U.S. Geological Survey (USGS), EROS Data Center

Upstream Elevation =	-
Downstream Elevation =	-
Horizontal Distance =	-

Slope = 0.0011 ft/ft
5.81 ft/mi

National Water Information System: Web Interface

USGS Water Resources

Data Category: Surface Water | Geographic Area: Georgia | GO

New! Subscribe to NWISWeb notifications

Peak Streamflow for Georgia

- All times for Georgia stations are Eastern Standard Time.
- Additional information:
  - **NEW!** Instantaneous Data Archive for additional intra-day data
  - Georgia DroughtWatch
  - Low-flow statistics for selected stations
  - Flood-frequency information for selected stations
  - USGS Water Resources of Georgia
- Sign up for Georgia Water Science Center E-mail Notices: publication releases, gage shutdown notifications, and other general USGS news

---

Site Selection Results -- 4 sites found

Site name contains string = Noonday
Minimum number of observations = 1

Save file of selected sites to local disk for future upload

Data for individual sites can be obtained by selecting the site number below

Agency	Site Number	Site Name	Period of Record		
			Begin Date	End Date	Peaks
USGS	02392890	NOONDAY CREEK AT ROBERTS ROAD, NEAR MARIETTA, GA	2000-09-01	2002-05-04	3
USGS	02392925	NOONDAY CREEK AT BELLS FERRY ROAD, NR WOODSTOCK,GA	2000-09-01	2002-05-04	3
USGS	02392950	NOONDAY CREEK AT HAWKINS STORE RD, NR WOODSTOCK,GA	1999-06-30	2006-11-15	9
USGS	02392975	NOONDAY CREEK AT SHALLOWFORD ROAD, NR WOODSTOCK,GA	1999-06-30	2006-11-15	9

National Water Information System: Web Interface

USGS Water Resources

Data Category: Surface Water | Geographic Area: Georgia | GO

New! Subscribe to NWISWeb notifications

Peak Streamflow for Georgia

- All times for Georgia stations are Eastern Standard Time.
- Additional information:
  - **NEW!** Instantaneous Data Archive for additional intra-day data
  - Georgia DroughtWatch
  - Low-flow statistics for selected stations
  - Flood-frequency information for selected stations
  - USGS Water Resources of Georgia
- Sign up for Georgia Water Science Center E-mail Notices: publication releases, gage shutdown notifications, and other general USGS news

USGS 02392950 NOONDAY CREEK AT HAWKINS STORE RD, NR WOODSTOCK,GA

Available data for this site | Surface-water: Peak streamflow | GO

	Output formats
Cobb County, Georgia Hydrologic Unit Code 03150104 Latitude 34°03'23", Longitude 84°32'08" NAD83 Drainage area 24.3 square miles Contributing drainage area 24.3 square miles	Table Graph Tab-separated file

Gage datum 895.00 feet above sea level NGVD29

WATSTORE formatted file

Reselect output format

Water Year	Date	Gage Height (feet)	Stream-flow (cfs)	Water Year	Date	Gage Height (feet)	Stream-flow (cfs)
1999	Jun. 30, 1999	7.86	1,520[C]	2003	May 06, 2003	10.07	1,800[C]
2000	Sep. 01, 2000	8.96	1,490[C]	2004	Sep. 16, 2004	11.45	2,160[C]
2001	Nov. 09, 2000	9.41	1,610[C]	2005	Jul. 11, 2005	14.16	6,470[C]
2002	Mar. 30, 2002	9.42	1,620[C]	2006	Mar. 21, 2006	7.13	971[C]
				2007	Nov. 15, 2006	8.18	1,250

Peak Streamflow Qualification Codes.

- C -- All or part of the record affected by Urbanization, Mining, Agricultural changes, Channelization, or other

---

National Water Information System: Web Interface

USGS Water Resources

Data Category: Surface Water | Geographic Area: Georgia | GO

New! Subscribe to NWISWeb notifications

Peak Streamflow for Georgia

- All times for Georgia stations are Eastern Standard Time.
- Additional information:
  - **NEW!** Instantaneous Data Archive for additional intra-day data
  - Georgia DroughtWatch
  - Low-flow statistics for selected stations
  - Flood-frequency information for selected stations
  - USGS Water Resources of Georgia
- Sign up for Georgia Water Science Center E-mail Notices: publication releases, gage shutdown notifications, and other general USGS news

USGS 02392975 NOONDAY CREEK AT SHALLOWFORD ROAD, NR WOODSTOCK,GA

Available data for this site | Surface-water: Peak streamflow | GO

	Output formats
Cobb County, Georgia Hydrologic Unit Code 03150104 Latitude 34°04'06", Longitude 84°32'08" NAD83 Drainage area 33.6 square miles Contributing drainage area 33.6 square miles	Table Graph Tab-separated file

Gage datum 890.00 feet above sea level NGVD29

WATSTORE formatted file

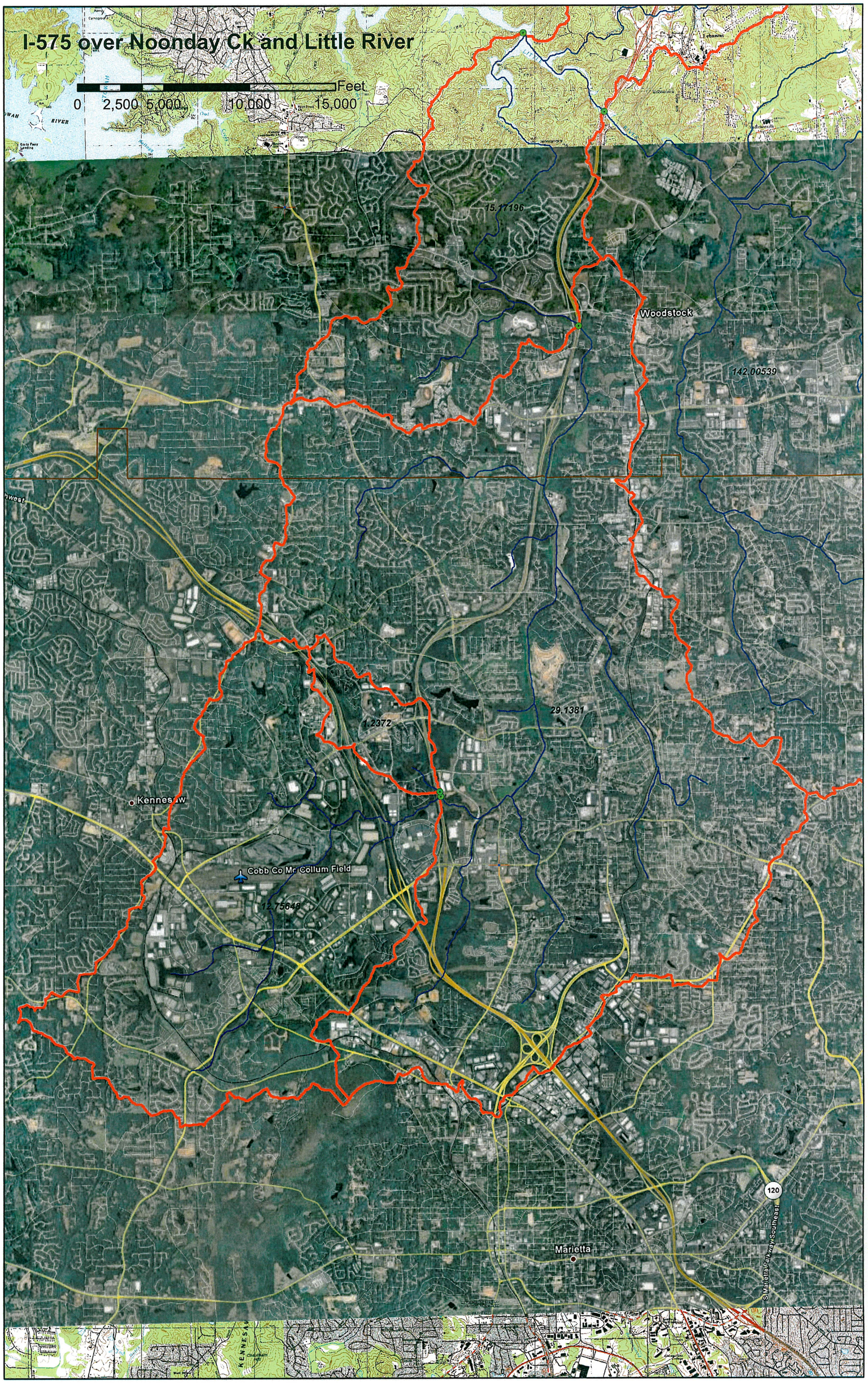
Reselect output format

Water Year	Date	Gage Height (feet)	Stream-flow (cfs)	Water Year	Date	Gage Height (feet)	Stream-flow (cfs)
1999	Jun. 30, 1999	7.56	1,270[C]	2003	Mar. 06, 2003	11.07	2,030[C]
2000	Sep. 01, 2000	9.05	1,490[C]	2004	Sep. 16, 2004	13.77	2,740[C]
2001	Jan. 19, 2001	9.18	1,520[C]	2005	Jul. 11, 2005	16.30	6,320[C]
2002	Mar. 30, 2002	10.08	1,770[C]	2006	Mar. 21, 2006	7.57	1,080[C]
				2007	Nov. 15, 2006	8.39	1,300[C]

Peak Streamflow Qualification Codes.

- C -- All or part of the record affected by Urbanization, Mining, Agricultural changes, Channelization, or other

---


I-575 over Noonday Ck and Little River
Feet
0
2,500
5,000
10,000
15,000
15.17196
Woodstock
142.00539
29.1381
1.2372
Kennesaw
Cobb Co Mc Collum Field
12.75649
120
Marietta
S Marietta Parkway Southeast

Expansion and Contraction Reach Length Computation

I-575 over Noonday Creek North, Cherokee County, Georgia
EXISTING BRIDGE

Expansion Reach Length Computation

b - bridge opening width*	150
B - floodplain width**	1500
b/B	**0.10**
(B-b)/2 avg. obs. length	675
n(ob)	0.120
n(mc)	0.045
n(ob)/n(mc)	**2.67**
S (ft/ft)	0.00110
S (ft/mile)	**5.81**

Ranges of Expansion Ratios

		n(ob)/n(mc)=1	n(ob)/n(mc)=2	n(ob)/n(mc)=4
b/B=0.10	**S=1 ft/mile**	1.4-3.6	1.3-3.0	1.2-2.1
	5 ft/mile	1.0-2.5	0.8-2.0	0.8-2.0
	10 ft/mile	1.0-2.2	0.8-2.0	0.8-2.0
b/B=0.25	**S=1 ft/mile**	1.6-3.0	1.4-2.5	1.2-2.0
	5 ft/mile	1.5-2.5	1.3-2.0	1.3-2.0
	10 ft/mile	1.5-2.0	1.3-2.0	1.3-2.0
b/B=0.50	**S=1 ft/mile**	1.4-2.6	1.3-1.9	1.2-1.4
	5 ft/mile	1.3-2.1	1.2-1.6	1.0-1.4
	10 ft/mile	1.3-2.0	1.2-1.5	1.0-1.4

			Average
Er-Exp. rate from chart	0.8	2.0	
Exp. Reach Length	**540**	**1350**	1.4
			945

Contraction Reach Length Computation

Ranges of Contraction Ratios

	n(ob)/n(mc)=1	n(ob)/n(mc)=2	n(ob)/n(mc)=4
S=1 ft/mile	1.0-2.3	0.8-1.7	0.7-1.3
5 ft/mile	1.0-1.9	0.8-1.5	0.7-1.2
10 ft/mile	1.0-1.9	0.8-1.4	0.7-1.2

			Average
Cr-Contr. rate from chart	0.8	1.5	
Contr. Reach Length	**540**	**1013**	1.2
			776

WIDTHS BASED ON TOP WIDTH FROM HEC-RAS OUTPUT ~ 100 YEAR PROFILE
*UPSTREAM INSIDE BRIDGE SECTION
**UPSTREAM BRIDGE SECTION

Reference : Hydrologic Engineering Center (HEC) Research Document No. 42 ***Flow Transitions in Bridge Backwater Analysis*** , John H. Hunt and Gary Brunner, dated September 1995.

Expansion and Contraction Reach Length Computation

Dupree Rd over Noonday Creek North, Cherokee County, Georgia
EXISTING BRIDGE

Expansion Reach Length Computation

b - bridge opening width*	144
B - floodplain width**	1000
b/B	**0.14**
(B-b)/2 avg. obs. length	428
n(ob)	0.120
n(mc)	0.045
n(ob)/n(mc)	**2.67**
S (ft/ft)	0.00110
S (ft/mile)	**5.81**

Ranges of Expansion Ratios

		n(ob)/n(mc)=1	n(ob)/n(mc)=2	n(ob)/n(mc)=4
b/B=0.10	**S=1 ft/mile**	1.4-3.6	1.3-3.0	1.2-2.1
	5 ft/mile	1.0-2.5	0.8-2.0	0.8-2.0
	10 ft/mile	1.0-2.2	0.8-2.0	0.8-2.0
b/B=0.25	**S=1 ft/mile**	1.6-3.0	1.4-2.5	1.2-2.0
	5 ft/mile	1.5-2.5	1.3-2.0	1.3-2.0
	10 ft/mile	1.5-2.0	1.3-2.0	1.3-2.0
b/B=0.50	**S=1 ft/mile**	1.4-2.6	1.3-1.9	1.2-1.4
	5 ft/mile	1.3-2.1	1.2-1.6	1.0-1.4
	10 ft/mile	1.3-2.0	1.2-1.5	1.0-1.4

			Average
Er-Exp. rate from chart	0.8	2.0	
Exp. Reach Length	**342**	**856**	1.4
			599

Contraction Reach Length Computation

Ranges of Contraction Ratios

	n(ob)/n(mc)=1	n(ob)/n(mc)=2	n(ob)/n(mc)=4
S=1 ft/mile	1.0-2.3	0.8-1.7	0.7-1.3
5 ft/mile	1.0-1.9	0.8-1.5	0.7-1.2
10 ft/mile	1.0-1.9	0.8-1.4	0.7-1.2

			Average
Cr-Contr. rate from chart	0.8	1.5	
Contr. Reach Length	**342**	**642**	1.2
			492

WIDTHS BASED ON TOP WIDTH FROM HEC-RAS OUTPUT ~ 100 YEAR PROFILE
*UPSTREAM INSIDE BRIDGE SECTION
**UPSTREAM BRIDGE SECTION

Reference : Hydrologic Engineering Center (HEC) Research Document No. 42 ***Flow Transitions in Bridge Backwater Analysis*** , John H. Hunt and Gary Brunner, dated September 1995.

Section IV
Hydraulic Engineering Field Data

HYDRAULIC ENGINEERING FIELD REPORT

I. Hydraulic and Hydrologic Data Required for all Bridge Stream Crossing Projects.
See Appendix A of the Georgia DOT Drainage Manual for required survey information.

A. Project Location

Location Description:	**I-575 over Noonday Ck North**	Date:	**05-30-2008**
Reported by:	**JBT Personnel**	JBT Project No.:	***31-800902***
Client:	**PBS&J**	Project No.:	**NH000-0575-01(028)**
County:	**Cherokee**	GDOT District:	**1**
Stream Name:	**Noonday Creek**	Route:	**I-575**

B. Site Location

Floodplain Description:
a) Flat, rolling, mountainous etc.: **Flat to rolling**
b) Wooded, heavily vegetated, pasture, swampy etc.: **Vegetated to pasture**

Stream Channel Description:
a) Banks stable, unstable etc.: **well-defined; small instability at banks upstream and downstream**
b) Stream meandering, straight etc.: **Bend upstream bridge; straight downstream bridge**
c) Debris: **No debris witnessed**
d) Is there any fill in the upstream or downstream floodplains that will affect the natural drainage or limit floodplain width at this site? **Yes. Site surrounded by roadway embankments and urbanization.**

C. Required Existing Bridge Data at Project Site

Bridge ID #:	**057-0040-0 & 057-0041-0**
Date Built:	**1982**
Skew angle of bridge or bents :	**50°**

Substructure Description:

a)	column type (concrete, steel, pile, etc.):	**Concrete**
b)	size of column:	**4'x4'**
c)	number of columns per bent:	**7**
d)	height of curb, parapet or barrier:	**2.67'**
	spurdike length:	**n/a**
	spurdike elevation:	**n/a**
	spurdike location:	**n/a**
e)	scour problems at intermediate bents:	**Yes. Exposed foundation.**
f)	scour problems at abutments:	**Yes. Upstream right abutment. Outflow ditch eroding.**

D. Normal Water Surface Data

a) Water Surface elevation 500 ft upstream of the survey centerline: **n/a**
b) Water Surface elevation at the roadway centerline: **n/a**
c) Water Surface elevation 500 ft downstream of the survey centerline: **n/a**
d) Is site affected by tides: **No**
e) Normal high tide: **n/a** Normal low tide: **n/a**

E. Historical Flood Data

a) Extreme high-water elevation at Site: **~885.0** Date: **July 11, 2005**
b) Highest tide elevation observed at Site: **n/a** Date: **n/a**
c) Location where taken (upstream, downstream, centerline): **Ramp to south I-575**
c) Source of high-water information: **Eyewitness**
e) Are there any houses that have been flooded: **No**
f) House location and floor elevation: **No**
g) Number of times house has been flooded, elevations and dates of floods: **No**
h) Additional houses that may be flooded? (with floor elevations within 2 ft of the flood of record): **No**

F. Miscellaneous Information

a) Are water surface elevations at the site affected by other factors such as high-water from other stream, reservoirs etc.: **No**

b) Length, width, and elevations of dam and spillway if applicable: **n/a**

Note: if the project site is affected by the above factors, additional floodplain cross sections may be required. The Engineer should be contacted during the survey phase to identify the additional cross sections required.

G. Upstream and Downstream Stream Crossings

The below information is required for all bridges or box culverts within 1 mile upstream and downstream of the project site. Additional survey information is required for all hydraulic structures within 2000 ft of the project site.

Upstream Structure

Distance and direction from proposed structure:	**1300 ft**
Railroad or highway structure:	**Highway**
Route # if highway bridge:	**Dupree Rd**
Length of bridge or culvert size	**144' long**

Substructure Information:

a) column type (concrete, steel, pile):	**Concrete**
b) column size:	**3' x 3'**
c) number of columns of bent:	**2**
d) length of over flow bridge or culvert size:	**N/A**

Downstream Structure

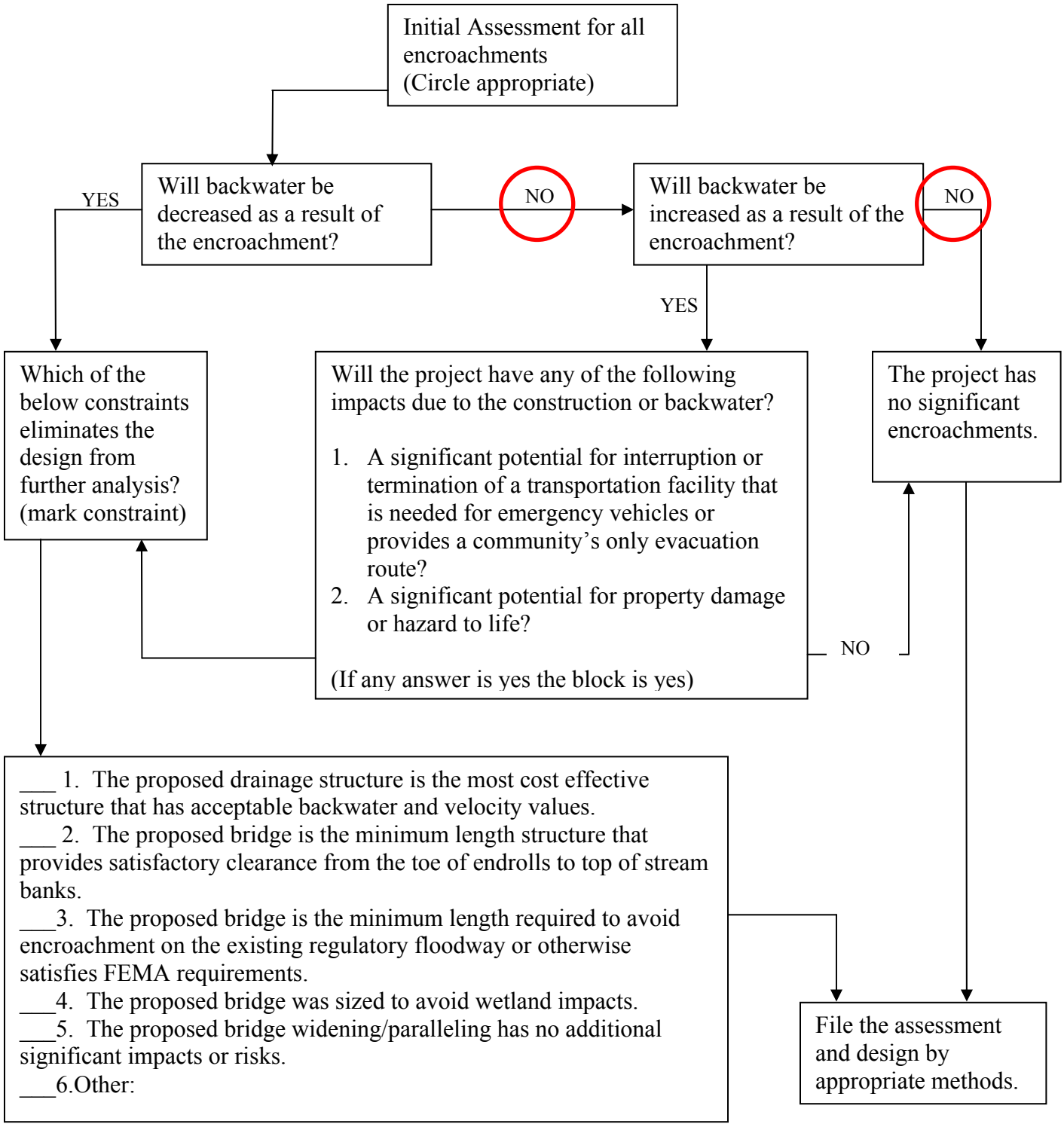
Distance and direction from proposed structure:	**250 ft**
Railroad or highway structure:	**Highway**
Route # if highway bridge:	**Ramp to south I-575**
Length of bridge or culvert size	**210' long**

Substructure Information:

a) column type (concrete, steel, pile):	**Concrete**
b) column size:	**4' x 4'**
c) number of columns of bent:	**4**
d) length of over flow bridge or culvert size:	**N/A**

RISK ASSESSMENT

NH000-0575-01(028)
Cherokee County, Georgia
P.I. No. 713640
I-575 over Noonday Creek North



Section V
HEC-RAS Computer Model Output

HEC-RAS FULL VALLEY MODEL

HEC-RAS Version 4.0.0 March 2008
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X    X  XXXXXX   XXXX       XXXX      XX     XXXX
X    X  X       X   X      X  X    X  X   X
X    X  X       X          X  X   X   X  X
XXXXXX  XXXX    X      XXX XXXX    XXXXX   XXXX
X    X  X       X          X X    X   X       X
X    X  X       X   X      X  X   X   X       X
X    X  XXXXXX   XXXX      X   X  X   X  XXXXX
```

PROJECT DATA
Project Title: I575overNoondayCkNorth
Project File : I575NoondayCkNorth.prj
Run Date and Time: 6/11/2008 5:38:52 PM

Project in English units

PLAN DATA

Plan Title: Full DOT 0%
Plan File : m:\TRA\31-6036 02 I-575\Hydraulics\Noonday Creek North\HEC-RAS\2\I575NoondayCkNorth.p04

Geometry Title: Full DOT
Geometry File : m:\TRA\31-6036 02 I-575\Hydraulics\Noonday Creek North\HEC-RAS\2\I575NoondayCkNorth.g03

Flow Title : Regression 0% impervious flows
Flow File : m:\TRA\31-6036 02 I-575\Hydraulics\Noonday Creek North\HEC-RAS\2\I575NoondayCkNorth.f03

Plan Summary Information:

Number of:	Cross Sections =	12	Multiple Openings =	0
	Culverts =	0	Inline Structures =	0
	Bridges =	2	Lateral Structures =	0

Computational Information

Water surface calculation tolerance	= 0.01
Critical depth calculation tolerance	= 0.01
Maximum number of iterations	= 20
Maximum difference tolerance	= 0.3
Flow tolerance factor	= 0.001

Computation Options

Critical depth computed at all cross sections	
Conveyance Calculation Method:	At breaks in n values only
Friction Slope Method:	Average Conveyance
Computational Flow Regime:	Mixed Flow

FLOW DATA

Flow Title: Regression 0% impervious flows
Flow File : m:\TRA\31-6036 02 I-575\Hydraulics\Noonday Creek North\HEC-RAS\2\I575NoondayCkNorth.f03

Flow Data (cfs)

River	Reach	RS	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr
Noonday Ck North	I-575	37520	2430	3857	4959	6500	7774	9108	12749

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Noonday Ck North	I-575	2-yr	Normal S = 0.0011	Normal S = 0.0011

Noonday Ck NorthI-575	5-yr	Normal S = 0.0011	Normal S = 0.0011
Noonday Ck NorthI-575	10-yr	Normal S = 0.0011	Normal S = 0.0011
Noonday Ck NorthI-575	25-yr	Normal S = 0.0011	Normal S = 0.0011
Noonday Ck NorthI-575	50-yr	Normal S = 0.0011	Normal S = 0.0011
Noonday Ck NorthI-575	100-yr	Normal S = 0.0011	Normal S = 0.0011
Noonday Ck NorthI-575	500-yr	Normal S = 0.0011	Normal S = 0.0011

GEOMETRY DATA

Geometry Title: Full DOT
Geometry File : m:\TRA\31-6036 02 I-575\Hydraulics\Noonday Creek North\HEC-RAS\2\I575NoondayCkNorth.g03

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 37520

INPUT
Description: Approach
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
121	893	172	891.48	268	882.81	379	882.16	700	877.24
802	876.01	926	876.6	1000	877.24	1045	877.67	1058	871.55
1075	869.98	1093	871.37	1099	879.08	1170	877.79	1262	877.75
1334	878.44	1473	897.12	1614	893.21				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
121	.12	1045	.05	1099	.12

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1045	1099	440	440	440	.3	.5

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 37080

INPUT
Description: US Dupree Rd
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
121	892.52	172	891	268	882.33	379	881.68	484	888.91
508	888.28	568	883.3	700	876.76	802	875.53	926	876.12
1000	876.76	1045	877.19	1058	871.07	1075	869.5	1093	870.89
1099	878.6	1170	877.31	1262	877.27	1334	877.96	1473	896.64
1614	892.73								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
121	.12	1045	.05	1099	.12

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1045	1099	64	64	64	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
121	990	890.73	F
1154	1614	891.55	F

BRIDGE

RIVER: Noonday Ck North
REACH: I-575 RS: 37048

INPUT
Description: Dupree Rd
Distance from Upstream XS = 10
Deck/Roadway Width = 44
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates

num= 25

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
50	891		105	891		124	889	
143	891		206	890		213	889	
216	889		300	916.14		360	913.44	
513	905.78		616	900.3		747	894.98	
827	894.01		929	892.78		1000	890.23	
1000	892.9	887.15	1144	893.72	887.97	1144	891.05	
1222	891.64		1278	892.26		1362	893.69	
1464	897.28		1548	899.79		1584	900.87	
1660	903.01							

Upstream Bridge Cross Section Data
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
121	892.52	172	891	268	882.33	379	881.68	484	888.91
508	888.28	568	883.3	700	876.76	802	875.53	926	876.12
1000	876.76	1045	877.19	1058	871.07	1075	869.5	1093	870.89
1099	878.6	1170	877.31	1262	877.27	1334	877.96	1473	896.64
1614	892.73								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
121	.12	1045	.05	1099	.12

Bank Sta: Left	Right	Coeff Contr.	Expan.
1045	1099	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
121	990	890.73	F
1154	1614	891.55	F

Downstream Deck/Roadway Coordinates
num= 25

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
50	891		105	891		124	889	
143	891		206	890		213	889	
216	889		300	916.14		360	913.44	
513	905.78		616	900.3		747	894.98	
827	894.01		929	892.78		1000	890.23	
1000	892.9	887.15	1144	893.72	887.97	1144	891.05	
1222	891.64		1278	892.26		1362	893.69	
1464	897.28		1548	899.79		1584	900.87	
1660	903.01							

Downstream Bridge Cross Section Data
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
150	889.73	214	890	271	891.93	376	888.57	486	885.47
621	885.23	700	885.98	736	886.65	819	875.58	952	877.82
1033	877.87	1045	869.25	1066	869.65	1085	869.36	1096	879.58
1152	885.21	1195	890.45	1304	892.18	1435	900.84	1525	902.28
1590	910.63								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
150	.12	1033	.05	1096	.12

Bank Sta: Left	Right	Coeff Contr.	Expan.
1033	1096	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
150	995	889.98	F
1149	1590	890.55	F

Upstream Embankment side slope = 2 horiz. to 1.0 vertical
Downstream Embankment side slope = 2 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Abutments = 2

Abutment Data

```
Upstream     num=       2
     Sta    Elev     Sta    Elev
    1000  887.15    1040  867.15
Downstream     num=       2
     Sta    Elev     Sta    Elev
    1000  887.15    1040  867.15

Abutment Data
Upstream     num=       2
     Sta    Elev     Sta    Elev
    1104  867.97    1144  887.97
Downstream     num=       2
     Sta    Elev     Sta    Elev
    1104  867.97    1144  887.97

Number of Piers =  3

Pier Data
Pier Station     Upstream=    1036    Downstream=    1036
Upstream     num=       2
    Width   Elev    Width   Elev
       1     860       1     900
Downstream     num=       2
    Width   Elev    Width   Elev
       1     860       1     900

Pier Data
Pier Station     Upstream=    1072    Downstream=    1072
Upstream     num=       2
    Width   Elev    Width   Elev
       3     860       3     900
Downstream     num=       2
    Width   Elev    Width   Elev
       3     860       3     900

Pier Data
Pier Station     Upstream=    1108    Downstream=    1108
Upstream     num=       2
    Width   Elev    Width   Elev
       3     860       3     900
Downstream     num=       2
    Width   Elev    Width   Elev
       3     860       3     900

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
       Momentum              Cd   =       2
       Yarnell               KVal =    1.25
       W.S. Pro Method

  W.S.Pro Data
    Left Embankment
       El of the top of the embankment = 892.43
       El of the toe of the abutment   = 877.19
    Right Embankment
       El of the top of the embankment = 891.25
       El of the toe of the abutment   = 878.6
    Abtument Type                      = 3 Sloping abutments and sloping embankments
    Slope of abutments                 = 2
    Top with of embankment             = 44
    Centroid station of bridge opening = 1075
    Wing Wall Type                     = No wing walls present
       Width                           =
       Angle                           =
       Radius                          =
    Guide Banks Type                   = No Guide Bank present
       Length                          =
       Offset                          =
       Angle                           =
    Optional Contraction and expansion coefficients
      At approach Section
      At upstream outside
      At upstream inside (BU)
      At downstream inside (BD)
```

Use Geometric mean as Friction Slope Method

Selected Low Flow Methods = W.S.Pro Method

High Flow Method
Pressure and Weir flow
Submerged Inlet Cd =
Submerged Inlet + Outlet Cd = .8
Max Low Cord =

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 37016

INPUT
Description: DS Dupree Rd
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
150	889.73	214	890	271	891.93	376	888.57	486	885.47
621	885.23	700	885.98	736	886.65	819	875.58	952	877.82
1033	877.87	1045	869.25	1066	869.65	1085	869.36	1096	879.58
1152	885.21	1195	890.45	1304	892.18	1435	900.84	1525	902.28
1590	910.63								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
150	.12	1033	.05	1096	.12

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1033	1096	1150	868	550	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
150	995	889.98	F
1149	1590	890.55	F

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 36148

INPUT
Description: Approach I-575
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
379	893.06	475	888.7	562	885.89	650	884.42	706	884.52
787	885.32	815	875.78	880	875.14	1000	875.92	1040	879.2
1052	869.95	1064	868.54	1075	869.68	1087	870.89	1098	877.38
1151	876.94	1200	875.8	1240	875.31	1344	875.11	1450	877.19
1547	878.47	1634	880.47	1665	884.51	1690	884.44	1710	879.28
1751	878.39	1841	879.53	1885	895.53	1932	899.99		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
379	.12	1040	.045	1098	.12

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1040	1098	250	440	650	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
379	493	891	F
1651	1932	887	F

CROSS SECTION

RIVER: Noonday Ck North

REACH: I-575 RS: 35708

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
379	893.06	475	888.7	562	885.89	650	884.42	706	884.52
787	885.32	815	875.78	880	875.14	1000	875.92	1024	875.81
1051	875.05	1077	869.32	1092	869.32	1114	875.62	1570	875
1760	876	1993	880	2200	884	2385	890		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
379	.12	1051	.045	1114	.12

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1051	1114	148	173	198	.3	.5

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 35535

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
379	892.87	475	888.51	562	885.7	650	884.23	706	884.33
787	885.13	815	875.59	880	874.95	1000	875.73	1024	875.81
1051	875.05	1077	869.32	1092	869.32	1114	875.62	1570	875
1760	876	1993	880	2200	884	2385	889		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
379	.05	1051	.045	1114	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1051	1114	50	50	50	.3	.5

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 35485

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
379	892.8	475	888.44	562	885.63	650	884.16	706	884.26
787	885.06	815	875.52	880	874.88	1000	875.66	1024	874.73
1038	875.06	1050	869.43	1073	868.47	1087	868.33	1095	875.86
1117	875.34	1570	875	1760	876	1993	880	2200	884
2385	888								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
379	.05	1038	.045	1095	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1038	1095	157	157	157	.3	.5

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 35328

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
379	892.64	475	888.28	562	885.47	650	884	706	884.1
787	884.9	815	875.36	880	874.72	1024	874.73	1038	875.06
1050	869.43	1073	868.47	1087	868.33	1095	875.86	1117	875.34

```
    1442     879    1540     882    1732     884    2200     886

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     379     .05    1038    .045    1095     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          1038    1095             100     149     200             .3       .5

CROSS SECTION


RIVER: Noonday Ck North
REACH: I-575              RS: 35179

INPUT
Description:
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     336   909.3     418  905.74     500  903.44     542   902.8     620  896.35
     690   890.4     757  885.46     853  880.47     935   874.8     965  875.42
    1020  876.89    1047  875.17    1057  869.82    1065  868.85    1081  866.86
    1099  874.81    1118  875.06    1404     879    1502     882    1694     884
    1852     886

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     336     .05    1047    .045    1099     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          1047    1099              50      75     100             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
     336     915     887       F
    1229    1852     886       F

CROSS SECTION


RIVER: Noonday Ck North
REACH: I-575              RS: 35104

INPUT
Description:
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     336  909.22     418  905.66     500  903.36     542  902.72     620  896.27
     690  890.32     757  885.38     853  880.39     935  874.72     965  875.34
    1020  876.89    1047  875.17    1057  869.82    1065  868.85    1081  866.86
    1099  874.81    1118  875.06    1404     879    1502     882    1694     884
    1740     885

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     336     .05    1047    .045    1099     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          1047    1099             102     102     102             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
     336     990     887       F
    1154    1740     886       F

BRIDGE


RIVER: Noonday Ck North
REACH: I-575              RS: 35078

INPUT
Description:
Distance from Upstream XS =      10
Deck/Roadway Width        =      82
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      23
```

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	891		90	890		255	888	
350	887		410	886		465	885	
535	886		600	887		770	888	
815	889		925	891		1000	892.1	
1000	894.77	887.22	1144	895.5	888.33	1144	892.83	
1200	892		1275	891		1375	890	
1450	889		1520	888		1585	887	
1640	886		1740	885				

Upstream Bridge Cross Section Data
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
336	909.22	418	905.66	500	903.36	542	902.72	620	896.27
690	890.32	757	885.38	853	880.39	935	874.72	965	875.34
1020	876.89	1047	875.17	1057	869.82	1065	868.85	1081	866.86
1099	874.81	1118	875.06	1404	879	1502	882	1694	884
1740	885								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
336	.05	1047	.045	1099	.05

Bank Sta: Left Right Coeff Contr. Expan.
1047 1099 .3 .5
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
336	990	887	F
1154	1740	886	F

Downstream Deck/Roadway Coordinates
num= 23

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	891		90	890		255	888	
350	887		410	886		465	885	
535	886		600	887		770	888	
815	889		925	891		1000	892.1	
1000	894.77	887.22	1144	895.5	888.33	1144	892.83	
1200	892		1275	891		1375	890	
1450	889		1520	888		1585	887	
1640	886		1740	885				

Downstream Bridge Cross Section Data
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
336	909.11	418	905.55	500	903.25	542	902.61	620	896.16
690	890.21	757	885.27	853	880.28	935	874.61	965	875.23
1018	876.56	1038	877.4	1047	875	1049	867.14	1066	867.42
1083	868.1	1093	876.91	1116	875.97	1190	889.14	1227	889.39
1284	887.64	1322	887.73	1372	883.84	1519	884.78	1740	885

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
336	.05	1047	.045	1093	.05

Bank Sta: Left Right Coeff Contr. Expan.
1047 1093 .3 .5
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
336	995	886	F
1149	1740	885	F

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Abutments = 2

Abutment Data
Upstream num= 2

Sta	Elev	Sta	Elev
1000	887.22	1040	867.22

```
Downstream     num=       2
     Sta    Elev     Sta    Elev
    1000  887.22    1040  867.22

Abutment Data
Upstream     num=       2
     Sta    Elev     Sta    Elev
    1104  868.33    1144  888.33
Downstream     num=       2
     Sta    Elev     Sta    Elev
    1104  868.33    1144  888.33

Number of Piers =  2

Pier Data
Pier Station     Upstream=    1048    Downstream=    1048
Upstream     num=       2
    Width   Elev    Width   Elev
       4     860       4     900
Downstream     num=       2
    Width   Elev    Width   Elev
       4     860       4     900

Pier Data
Pier Station     Upstream=    1096    Downstream=    1096
Upstream     num=       2
    Width   Elev    Width   Elev
       4     860       4     900
Downstream     num=       2
    Width   Elev    Width   Elev
       4     860       4     900

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
       Momentum              Cd   =       2
       Yarnell               KVal =    1.25
       W.S. Pro Method

  W.S.Pro Data
    Left Embankment
       El of the top of the embankment = 892.1
       El of the toe of the abutment   = 875.17
    Right Embankment
       El of the top of the embankment = 892.83
       El of the toe of the abutment   = 874.81
    Abtument Type                      = 3 Sloping abutments and sloping embankments
    Slope of abutments                 = 2
    Top with of embankment             = 82
    Centroid station of bridge opening = 1072
    Wing Wall Type                     = No wing walls present
       Width                           =
       Angle                           =
       Radius                          =
    Guide Banks Type                   = No Guide Bank present
       Length                          =
       Offset                          =
       Angle                           =
    Optional Contraction and expansion coefficients
      At approach Section
      At upstream outside
      At upstream inside (BU)
      At downstream inside (BD)
    Use Geometric mean as Friction Slope Method

Selected Low Flow Methods = W.S.Pro Method

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
```

Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 35002

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
336	909.11	418	905.55	500	903.25	542	902.61	620	896.16
690	890.21	757	885.27	853	880.28	935	874.61	965	875.23
1018	876.56	1038	877.4	1047	875	1049	867.14	1066	867.42
1083	868.1	1093	876.91	1116	875.97	1190	889.14	1227	889.39
1284	887.64	1322	887.73	1372	883.84	1519	884.78	1740	885

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
336	.05	1047	.045	1093	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1047	1093	590	590	590	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
336	995	886	F
1149	1740	885	F

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 34412

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
336	909.11	418	905.55	500	903.25	542	902.61	620	896.16
690	890.21	757	885.27	853	880.28	935	874.61	965	875.23
1025	875.94	1037	868.18	1057	867.47	1078	867.88	1086	875.49
1190	889.14	1227	889.39						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
336	.12	1025	.045	1086	.12

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1025	1086	0	0	0	.1	.3

SUMMARY OF MANNING'S N VALUES

River:Noonday Ck North

Reach	River Sta.	n1	n2	n3
I-575	37520	.12	.05	.12
I-575	37080	.12	.05	.12
I-575	37048	Bridge		
I-575	37016	.12	.05	.12
I-575	36148	.12	.045	.12
I-575	35708	.12	.045	.12
I-575	35535	.05	.045	.05
I-575	35485	.05	.045	.05
I-575	35328	.05	.045	.05
I-575	35179	.05	.045	.05
I-575	35104	.05	.045	.05
I-575	35078	Bridge		
I-575	35002	.05	.045	.05
I-575	34412	.12	.045	.12

SUMMARY OF REACH LENGTHS

River: Noonday Ck North

Reach	River Sta.	Left	Channel	Right
I-575	37520	440	440	440
I-575	37080	64	64	64
I-575	37048	Bridge		
I-575	37016	1150	868	550
I-575	36148	250	440	650
I-575	35708	148	173	198
I-575	35535	50	50	50
I-575	35485	157	157	157
I-575	35328	100	149	200
I-575	35179	50	75	100
I-575	35104	102	102	102
I-575	35078	Bridge		
I-575	35002	590	590	590
I-575	34412	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Noonday Ck North

Reach	River Sta.	Contr.	Expan.
I-575	37520	.3	.5
I-575	37080	.3	.5
I-575	37048	Bridge	
I-575	37016	.3	.5
I-575	36148	.3	.5
I-575	35708	.3	.5
I-575	35535	.3	.5
I-575	35485	.3	.5
I-575	35328	.3	.5
I-575	35179	.3	.5
I-575	35104	.3	.5
I-575	35078	Bridge	
I-575	35002	.3	.5
I-575	34412	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
I-575	34412	2-yr	2430.00	867.47	877.63	872.33	877.90	0.001101	4.32	807.19	211.00	0.26
I-575	34412	5-yr	3857.00	867.47	879.74	873.87	880.08	0.001102	5.01	1302.45	257.67	0.27
I-575	34412	10-yr	4959.00	867.47	881.09	874.97	881.46	0.001101	5.42	1670.53	291.24	0.28
I-575	34412	25-yr	6500.00	867.47	882.70	876.80	883.11	0.001100	5.90	2174.33	334.48	0.28
I-575	34412	50-yr	7774.00	867.47	883.86	877.61	884.30	0.001101	6.23	2579.67	365.59	0.29
I-575	34412	100-yr	9108.00	867.47	884.95	878.35	885.42	0.001100	6.53	2996.83	395.04	0.29
I-575	34412	500-yr	12749.00	867.47	887.46	880.06	887.99	0.001102	7.21	4057.93	449.93	0.30
I-575	35002	2-yr	2430.00	867.14	878.36	872.78	878.68	0.001406	4.94	596.46	248.58	0.28
I-575	35002	5-yr	3857.00	867.14	880.50	874.60	880.82	0.001320	5.47	897.57	292.69	0.28
I-575	35002	10-yr	4959.00	867.14	881.86	875.85	882.19	0.001270	5.77	1102.29	326.55	0.28
I-575	35002	25-yr	6500.00	867.14	883.49	878.43	883.82	0.001209	6.09	1352.85	367.00	0.28
I-575	35002	50-yr	7774.00	867.14	884.52	879.17	885.01	0.001240	6.45	1512.19	508.52	0.29
I-575	35002	100-yr	9108.00	867.14	885.64	879.83	886.09	0.001153	6.52	2106.94	809.51	0.28
I-575	35002	500-yr	12749.00	867.14	888.32	881.32	888.42	0.000306	3.70	5995.34	948.14	0.15
I-575	35078		Bridge									
I-575	35104	2-yr	2430.00	866.86	878.92	873.90	879.10	0.000789	3.83	820.21	523.59	0.23
I-575	35104	5-yr	3857.00	866.86	881.24	876.26	881.43	0.000657	4.08	1201.33	640.52	0.21
I-575	35104	10-yr	4959.00	866.86	882.71	877.28	882.92	0.000619	4.30	1442.58	761.91	0.21

I-575	35104	25-yr	6500.00	866.86	884.47	878.05	884.72	0.000599	4.61	1731.82	941.41	0.21
I-575	35104	50-yr	7774.00	866.86	885.31	878.61	885.61	0.000673	5.08	1868.31	981.59	0.23
I-575	35104	100-yr	9108.00	866.86	886.71	879.12	886.76	0.000152	2.56	5881.80	1001.09	0.11
I-575	35104	500-yr	12749.00	866.86	888.99	880.34	889.02	0.000085	2.08	9957.00	1032.02	0.08
I-575	35179	2-yr	2430.00	866.86	879.10	873.90	879.18	0.000381	2.70	1353.81	534.68	0.16
I-575	35179	5-yr	3857.00	866.86	881.44	876.72	881.51	0.000263	2.61	2088.43	649.59	0.14
I-575	35179	10-yr	4959.00	866.86	882.93	877.26	883.00	0.000231	2.66	2556.11	786.04	0.13
I-575	35179	25-yr	6500.00	866.86	884.73	877.79	884.80	0.000210	2.76	3119.58	980.46	0.13
I-575	35179	50-yr	7774.00	866.86	885.61	878.13	885.70	0.000229	3.00	3395.40	1065.92	0.13
I-575	35179	100-yr	9108.00	866.86	886.74	878.47	886.78	0.000115	2.22	6922.08	1112.37	0.10
I-575	35179	500-yr	12749.00	866.86	889.00	879.24	889.03	0.000084	2.07	10369.07	1143.06	0.08
I-575	35328	2-yr	2430.00	868.33	879.20	873.56	879.23	0.000170	1.81	2262.04	644.72	0.10
I-575	35328	5-yr	3857.00	868.33	881.52	876.06	881.55	0.000100	1.61	3858.62	727.56	0.08
I-575	35328	10-yr	4959.00	868.33	883.02	876.51	883.04	0.000085	1.61	5015.51	844.95	0.08
I-575	35328	25-yr	6500.00	868.33	884.82	876.97	884.84	0.000075	1.65	6834.18	1313.69	0.08
I-575	35328	50-yr	7774.00	868.33	885.72	877.29	885.74	0.000096	1.93	8139.34	1579.15	0.09
I-575	35328	100-yr	9108.00	868.33	886.78	877.63	886.80	0.000078	1.82	9894.51	1678.49	0.08
I-575	35328	500-yr	12749.00	868.33	889.03	878.27	889.05	0.000057	1.70	13750.06	1741.50	0.07
I-575	35485	2-yr	2430.00	868.33	879.24	873.56	879.25	0.000051	0.99	4385.54	1144.58	0.06
I-575	35485	5-yr	3857.00	868.33	881.55	876.11	881.56	0.000030	0.89	7189.39	1276.04	0.05
I-575	35485	10-yr	4959.00	868.33	883.04	876.36	883.05	0.000025	0.87	9149.72	1357.45	0.04
I-575	35485	25-yr	6500.00	868.33	884.84	876.57	884.85	0.000021	0.87	11747.45	1607.04	0.04
I-575	35485	50-yr	7774.00	868.33	885.74	876.75	885.75	0.000024	0.97	13256.38	1722.11	0.04
I-575	35485	100-yr	9108.00	868.33	886.80	876.92	886.81	0.000023	0.98	15119.13	1803.70	0.04
I-575	35485	500-yr	12749.00	868.33	889.05	877.33	889.05	0.000022	1.04	19339.41	1923.35	0.04
I-575	35535	2-yr	2430.00	869.32	879.24	875.96	879.25	0.000059	0.97	4223.15	1144.54	0.06
I-575	35535	5-yr	3857.00	869.32	881.55	876.24	881.56	0.000033	0.86	7025.33	1275.92	0.05
I-575	35535	10-yr	4959.00	869.32	883.04	876.41	883.05	0.000026	0.85	8985.07	1357.31	0.04
I-575	35535	25-yr	6500.00	869.32	884.84	876.69	884.85	0.000022	0.85	11568.63	1587.98	0.04
I-575	35535	50-yr	7774.00	869.32	885.74	876.82	885.75	0.000025	0.95	13061.65	1703.90	0.04
I-575	35535	100-yr	9108.00	869.32	886.80	876.98	886.81	0.000023	0.96	14899.89	1775.71	0.04
I-575	35535	500-yr	12749.00	869.32	889.05	877.35	889.05	0.000023	1.04	19059.45	1921.83	0.04
I-575	35708	2-yr	2430.00	869.32	879.25	876.04	879.27	0.000216	1.85	4196.38	1144.66	0.12
I-575	35708	5-yr	3857.00	869.32	881.56	876.57	881.58	0.000134	1.74	6991.87	1275.67	0.10
I-575	35708	10-yr	4959.00	869.32	883.05	876.90	883.06	0.000112	1.74	8949.16	1356.98	0.09
I-575	35708	25-yr	6500.00	869.32	884.85	877.23	884.86	0.000095	1.77	11504.06	1552.20	0.09
I-575	35708	50-yr	7774.00	869.32	885.75	877.48	885.76	0.000108	1.98	12972.62	1683.33	0.09
I-575	35708	100-yr	9108.00	869.32	886.80	877.73	886.82	0.000104	2.03	14788.99	1752.72	0.09
I-575	35708	500-yr	12749.00	869.32	889.05	878.30	889.07	0.000103	2.22	18880.86	1888.38	0.09
I-575	36148	2-yr	2430.00	868.54	879.38	874.69	879.44	0.000461	2.66	2632.14	902.00	0.17
I-575	36148	5-yr	3857.00	868.54	881.64	876.94	881.68	0.000288	2.49	4493.56	991.16	0.14
I-575	36148	10-yr	4959.00	868.54	883.11	877.51	883.15	0.000235	2.46	5749.20	1016.54	0.13
I-575	36148	25-yr	6500.00	868.54	884.90	878.03	884.94	0.000198	2.48	7326.58	1191.33	0.12
I-575	36148	50-yr	7774.00	868.54	885.81	878.40	885.86	0.000233	2.82	8280.87	1291.77	0.13
I-575	36148	100-yr	9108.00	868.54	886.87	878.75	886.91	0.000223	2.88	9441.51	1329.43	0.13
I-575	36148	500-yr	12749.00	868.54	889.11	879.46	889.15	0.000181	2.85	13815.50	1401.41	0.12
I-575	37016	2-yr	2430.00	869.25	880.04	874.07	880.17	0.001250	4.22	645.33	314.98	0.25
I-575	37016	5-yr	3857.00	869.25	882.24	875.62	882.35	0.001406	5.18	902.01	353.41	0.27
I-575	37016	10-yr	4959.00	869.25	883.69	876.65	883.81	0.001471	5.75	1097.09	378.68	0.29
I-575	37016	25-yr	6500.00	869.25	885.47	878.12	885.61	0.001524	6.40	1363.45	567.65	0.30
I-575	37016	50-yr	7774.00	869.25	886.46	879.19	886.64	0.001679	7.02	1516.58	699.91	0.32
I-575	37016	100-yr	9108.00	869.25	886.88	880.09	887.74	0.002077	7.95	1580.33	729.54	0.35
I-575	37016	500-yr	12749.00	869.25	888.90	882.20	890.10	0.002543	9.53	1891.87	816.53	0.40
I-575	37048		Bridge									
I-575	37080	2-yr	2430.00	869.50	880.33	875.35	880.61	0.001496	4.55	776.82	723.65	0.27
I-575	37080	5-yr	3857.00	869.50	882.73	877.32	883.06	0.001370	5.13	1170.44	920.60	0.27
I-575	37080	10-yr	4959.00	869.50	884.27	878.65	884.64	0.001331	5.52	1423.77	994.89	0.27
I-575	37080	25-yr	6500.00	869.50	886.14	879.76	886.56	0.001319	6.02	1729.37	1078.90	0.28
I-575	37080	50-yr	7774.00	869.50	887.26	880.47	887.75	0.001407	6.54	1912.85	1129.34	0.29
I-575	37080	100-yr	9108.00	869.50	888.61	881.16	889.15	0.001396	6.88	2135.42	1199.20	0.29
I-575	37080	500-yr	12749.00	869.50	889.93	882.75	890.79	0.002048	8.76	2351.72	1239.25	0.36
I-575	37520	2-yr	2430.00	869.98	881.00	875.80	881.03	0.000336	2.19	3137.51	898.05	0.13
I-575	37520	5-yr	3857.00	869.98	883.39	878.18	883.41	0.000200	1.98	5549.40	1109.26	0.10
I-575	37520	10-yr	4959.00	869.98	884.96	878.66	884.98	0.000156	1.91	7313.21	1138.32	0.09
I-575	37520	25-yr	6500.00	869.98	886.88	879.23	886.89	0.000125	1.88	9529.52	1173.81	0.09
I-575	37520	50-yr	7774.00	869.98	888.09	879.54	888.10	0.000119	1.93	10962.61	1196.20	0.09

I-575	37520	100-yr	9108.00	869.98	889.41	879.86	889.42	0.000109	1.95	12559.45	1220.67	0.08
I-575	37520	500-yr	12749.00	869.98	891.17	880.58	891.19	0.000143	2.38	14736.89	1253.26	0.10

Profile Output Table - Standard Table 2

Reach	River Sta	Profile	E.G. Elev (ft)	W.S. Elev (ft)	Vel Head (ft)	Frctn Loss (ft)	C & E Loss (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Top Width (ft)
I-575	34412	2-yr	877.90	877.63	0.27			177.25	2245.28	7.47	211.00
I-575	34412	5-yr	880.08	879.74	0.33			560.31	3250.07	46.62	257.67
I-575	34412	10-yr	881.46	881.09	0.37			900.82	3961.26	96.92	291.24
I-575	34412	25-yr	883.11	882.70	0.41			1422.60	4887.27	190.13	334.48
I-575	34412	50-yr	884.30	883.86	0.44			1888.09	5602.96	282.95	365.59
I-575	34412	100-yr	885.42	884.95	0.47			2402.04	6313.09	392.87	395.04
I-575	34412	500-yr	887.99	887.46	0.53			3942.64	8070.65	735.71	449.93
I-575	35002	2-yr	878.68	878.36	0.37	0.73	0.10	157.18	2179.75	93.07	248.58
I-575	35002	5-yr	880.82	880.50	0.45	0.71	0.16	556.04	2954.98	345.98	292.69
I-575	35002	10-yr	882.19	881.86	0.50	0.70	0.21	891.99	3480.70	586.32	326.55
I-575	35002	25-yr	883.82	883.49	0.59	0.68	0.28	1356.99	4128.59	1014.42	367.00
I-575	35002	50-yr	885.01	884.52	0.49	0.69	0.02	1730.94	4680.45	1362.61	508.52
I-575	35002	100-yr	886.09	885.64	0.45	0.66	0.00	2076.15	5060.01	1971.85	809.51
I-575	35002	500-yr	888.42	888.32	0.10	0.31	0.13	6337.85	3333.44	3077.71	948.14
I-575	35078		Bridge								
I-575	35104	2-yr	879.10	878.92	0.18	0.01	0.05	242.17	1774.70	413.13	523.59
I-575	35104	5-yr	881.43	881.24	0.19	0.01	0.06	630.02	2382.97	844.02	640.52
I-575	35104	10-yr	882.92	882.71	0.21	0.01	0.07	941.60	2840.31	1177.09	761.91
I-575	35104	25-yr	884.72	884.47	0.25	0.01	0.08	1385.74	3470.02	1644.25	941.41
I-575	35104	50-yr	885.61	885.31	0.30	0.01	0.10	1725.32	4037.86	2010.82	981.59
I-575	35104	100-yr	886.76	886.71	0.05	0.00	0.18	1042.28	2219.79	5845.94	1001.09
I-575	35104	500-yr	889.02	888.99	0.03			3683.60	2051.67	7013.73	1032.02
I-575	35179	2-yr	879.18	879.10	0.07	0.05	0.03	568.50	1276.47	585.03	534.68
I-575	35179	5-yr	881.51	881.44	0.06	0.04	0.04	1144.47	1554.18	1158.35	649.59
I-575	35179	10-yr	883.00	882.93	0.07	0.03	0.04	1581.35	1785.53	1592.12	786.04
I-575	35179	25-yr	884.80	884.73	0.07	0.03	0.05	2189.66	2114.86	2195.49	980.46
I-575	35179	50-yr	885.70	885.61	0.09	0.03	0.06	2668.96	2431.60	2673.44	1065.92
I-575	35179	100-yr	886.78	886.74	0.04	0.01	0.00	2268.30	1935.98	4903.72	1112.37
I-575	35179	500-yr	889.03	889.00	0.03	0.01	0.00	3635.88	2044.46	7068.66	1143.06
I-575	35328	2-yr	879.23	879.20	0.03	0.04	0.01	1010.39	952.09	467.52	644.72
I-575	35328	5-yr	881.55	881.52	0.02	0.02	0.01	1589.06	1063.91	1204.03	727.56
I-575	35328	10-yr	883.04	883.02	0.02	0.02	0.01	2046.06	1195.63	1717.32	844.95
I-575	35328	25-yr	884.84	884.82	0.02	0.02	0.02	2707.67	1395.86	2396.47	1313.69
I-575	35328	50-yr	885.74	885.72	0.02	0.02	0.02	2717.20	1738.55	3318.24	1579.15
I-575	35328	100-yr	886.80	886.78	0.02	0.01	0.01	3112.51	1746.74	4248.75	1678.49
I-575	35328	500-yr	889.05	889.03	0.02	0.01	0.00	4152.09	1846.37	6750.54	1741.50
I-575	35485	2-yr	879.25	879.24	0.01	0.01	0.01	482.73	525.60	1421.66	1144.58
I-575	35485	5-yr	881.56	881.55	0.01	0.01	0.00	796.50	586.41	2474.09	1276.04
I-575	35485	10-yr	883.05	883.04	0.01	0.01	0.00	1025.78	647.66	3285.56	1357.45
I-575	35485	25-yr	884.85	884.84	0.01	0.01	0.00	1337.74	735.70	4426.56	1607.04
I-575	35485	50-yr	885.75	885.74	0.01	0.01	0.00	1274.96	871.22	5627.81	1722.11
I-575	35485	100-yr	886.81	886.80	0.01	0.01	0.00	1590.03	945.50	6572.47	1803.70
I-575	35485	500-yr	889.05	889.05	0.01	0.01	0.00	2436.34	1135.33	9177.33	1923.35
I-575	35535	2-yr	879.25	879.24	0.01	0.00	0.00	517.05	467.65	1445.31	1144.54
I-575	35535	5-yr	881.56	881.55	0.01	0.00	0.00	845.16	541.53	2470.31	1275.92
I-575	35535	10-yr	883.05	883.04	0.01	0.00	0.00	1085.35	610.51	3263.13	1357.31
I-575	35535	25-yr	884.85	884.84	0.01	0.00	0.00	1407.59	706.17	4386.25	1587.98
I-575	35535	50-yr	885.75	885.74	0.01	0.00	0.00	1345.56	843.61	5584.84	1703.90
I-575	35535	100-yr	886.81	886.80	0.01	0.00	0.00	1668.64	922.61	6516.75	1775.71
I-575	35535	500-yr	889.05	889.05	0.01	0.00	0.00	2572.87	1142.02	9034.12	1921.83
I-575	35708	2-yr	879.27	879.25	0.02	0.02	0.01	384.36	892.89	1152.75	1144.66
I-575	35708	5-yr	881.58	881.56	0.02	0.01	0.01	681.40	1094.26	2081.34	1275.67
I-575	35708	10-yr	883.06	883.05	0.01	0.01	0.00	899.40	1257.66	2801.94	1356.98
I-575	35708	25-yr	884.86	884.85	0.01	0.01	0.00	1190.02	1476.80	3833.18	1552.20
I-575	35708	50-yr	885.76	885.75	0.02	0.01	0.01	1128.79	1761.88	4883.33	1683.33
I-575	35708	100-yr	886.82	886.80	0.02	0.01	0.01	1409.87	1943.45	5754.68	1752.72
I-575	35708	500-yr	889.07	889.05	0.02	0.01	0.01	2216.70	2440.59	8091.71	1888.38
I-575	36148	2-yr	879.44	879.38	0.06	0.15	0.02	488.80	1222.51	718.69	902.00

I-575	36148	5-yr	881.68	881.64	0.04	0.09	0.01	887.45	1467.32	1502.23	991.16
I-575	36148	10-yr	883.15	883.11	0.04	0.08	0.01	1173.71	1659.48	2125.81	1016.54
I-575	36148	25-yr	884.94	884.90	0.03	0.07	0.01	1566.10	1933.81	3000.09	1191.33
I-575	36148	50-yr	885.86	885.81	0.04	0.08	0.01	1518.40	2343.64	3911.95	1291.77
I-575	36148	100-yr	886.91	886.87	0.04	0.08	0.01	1917.09	2576.16	4614.76	1329.43
I-575	36148	500-yr	889.15	889.11	0.04	0.07	0.01	2842.69	2916.54	6989.78	1401.41
I-575	37016	2-yr	880.17	880.04	0.31	0.65	0.26	60.97	2368.86	0.17	314.98
I-575	37016	5-yr	882.35	882.24	0.45	0.54	0.47	207.11	3630.17	19.72	353.41
I-575	37016	10-yr	883.81	883.69	0.52	0.49	0.57	340.94	4553.80	64.26	378.68
I-575	37016	25-yr	885.61	885.47	0.61	0.46	0.68	540.78	5779.64	179.59	567.65
I-575	37016	50-yr	886.64	886.46	0.72	0.51	0.80	696.44	6782.52	295.04	699.91
I-575	37016	100-yr	887.74	886.88	0.86	0.42	0.41	837.77	7886.63	383.60	729.54
I-575	37016	500-yr	890.10	888.90	1.20	0.37	0.58	1298.91	10673.56	776.52	816.53
I-575	37048		Bridge								
I-575	37080	2-yr	880.61	880.33	0.28	0.02	0.04	202.55	2127.33	100.12	723.65
I-575	37080	5-yr	883.06	882.73	0.33	0.02	0.07	471.97	3061.09	323.94	920.60
I-575	37080	10-yr	884.64	884.27	0.37	0.02	0.09	689.67	3753.20	516.13	994.89
I-575	37080	25-yr	886.56	886.14	0.42	0.02	0.11	1000.70	4701.84	797.46	1078.90
I-575	37080	50-yr	887.75	887.26	0.49	0.03	0.13	1251.35	5499.05	1023.60	1129.34
I-575	37080	100-yr	889.15	888.61	0.53			1530.78	6293.84	1283.38	1199.20
I-575	37080	500-yr	890.79	889.93	0.85			2216.25	8639.53	1893.22	1239.25
I-575	37520	2-yr	881.03	881.00	0.03	0.34	0.07	1058.04	1044.81	327.15	898.05
I-575	37520	5-yr	883.41	883.39	0.02	0.26	0.09	1957.04	1202.51	697.45	1109.26
I-575	37520	10-yr	884.98	884.96	0.02	0.23	0.10	2679.53	1319.27	960.20	1138.32
I-575	37520	25-yr	886.89	886.88	0.02	0.21	0.12	3686.10	1493.85	1320.05	1173.81
I-575	37520	50-yr	888.10	888.09	0.02	0.22	0.14	4502.26	1660.32	1611.41	1196.20
I-575	37520	100-yr	889.42	889.41	0.02	0.12	0.15	5369.08	1817.45	1921.47	1220.67
I-575	37520	500-yr	891.19	891.17	0.02	0.16	0.25	7584.89	2444.51	2719.60	1253.26

Profile Output Table - Bridge Only

Reach	River Sta	Profile	E.G. US. (ft)	Min El Prs (ft)	BR Open Area (sq ft)	Prs O WS (ft)	Q Total (cfs)	Min El Weir Flow (ft)	Q Weir (cfs)	Delta EG (ft)
I-575	35078	2-yr	879.10	888.33	1609.66		2430.00	886.01		0.42
I-575	35078	5-yr	881.43	888.33	1609.66		3857.00	886.01		0.61
I-575	35078	10-yr	882.92	888.33	1609.66		4959.00	886.01		0.73
I-575	35078	25-yr	884.72	888.33	1609.66		6500.00	886.01		0.90
I-575	35078	50-yr	885.61	888.33	1609.66		7774.00	886.01		0.60
I-575	35078	100-yr	886.76	888.33	1609.66		9108.00	886.01	393.89	0.67
I-575	35078	500-yr	889.02	888.33	1609.66	889.46	12749.00	886.01	2863.11	0.60
I-575	37048	2-yr	880.61	887.97	1433.80		2430.00	890.24		0.44
I-575	37048	5-yr	883.06	887.97	1433.80		3857.00	890.24		0.71
I-575	37048	10-yr	884.64	887.97	1433.80		4959.00	890.24		0.83
I-575	37048	25-yr	886.56	887.97	1433.80		6500.00	890.24		0.95
I-575	37048	50-yr	887.75	887.97	1433.80		7774.00	890.24		1.11
I-575	37048	100-yr	889.15	887.97	1433.80	888.61	9108.00	890.24		1.41
I-575	37048	500-yr	890.79	887.97	1433.80		12749.00	890.24	94.46	0.69

Profile Output Table - Bridge Comparison

Reach	River Sta	Profile	E.G. US. (ft)	W.S. US. (ft)	Br Sel Method	Energy EG (ft)	Momen. EG (ft)	Yarnell EG (ft)	WSPRO EG (ft)	Prs O EG (ft)	Prs/Wr EG (ft)	Energy/Wr EG (ft)
I-575	35078	2-yr	879.10	878.92	WSPRO	878.99	879.11		879.10			
I-575	35078	5-yr	881.43	881.24	WSPRO	881.24	881.13		881.43			
I-575	35078	10-yr	882.92	882.71	WSPRO	882.66			882.92			
I-575	35078	25-yr	884.72	884.47	WSPRO	884.37			884.72			
I-575	35078	50-yr	885.61	885.31	Energy only	885.61						
I-575	35078	100-yr	886.76	886.71	Energy/Weir	886.85						886.76
I-575	35078	500-yr	889.02	888.99	Press/Weir	889.44				889.48	889.02	
I-575	37048	2-yr	880.61	880.33	WSPRO	880.48	881.30	880.27	880.61			
I-575	37048	5-yr	883.06	882.73	WSPRO	882.74		882.40	883.06			
I-575	37048	10-yr	884.64	884.27	WSPRO	884.24		883.83	884.64			
I-575	37048	25-yr	886.56	886.14	WSPRO	886.10			886.56			

I-575	37048	50-yr	887.75	887.26	WSPRO	887.22		887.75		
I-575	37048	100-yr	889.15	888.61	Press Only	888.39			889.15	
I-575	37048	500-yr	890.79	889.93	Press/Weir	892.06			890.82	890.79

Profile Output Table - HydTable

Reach	River Sta	Profile	Q Total (cfs)	E.G. Elev (ft)	W.S. Elev (ft)	Crit W.S. (ft)	Vel Total (ft/s)	Vel Chnl (ft/s)	Area (sq ft)	Top Width (ft)	Froude # Chl
I-575	34412	2-yr	2430.00	877.90	877.63	872.33	3.01	4.32	807.19	211.00	0.26
I-575	34412	5-yr	3857.00	880.08	879.74	873.87	2.96	5.01	1302.45	257.67	0.27
I-575	34412	10-yr	4959.00	881.46	881.09	874.97	2.97	5.42	1670.53	291.24	0.28
I-575	34412	25-yr	6500.00	883.11	882.70	876.80	2.99	5.90	2174.33	334.48	0.28
I-575	34412	50-yr	7774.00	884.30	883.86	877.61	3.01	6.23	2579.67	365.59	0.29
I-575	34412	100-yr	9108.00	885.42	884.95	878.35	3.04	6.53	2996.83	395.04	0.29
I-575	34412	500-yr	12749.00	887.99	887.46	880.06	3.14	7.21	4057.93	449.93	0.30
I-575	35002	2-yr	2430.00	878.68	878.36	872.78	4.07	4.94	883.51	248.58	0.28
I-575	35002	5-yr	3857.00	880.82	880.50	874.60	4.30	5.47	1462.81	292.69	0.28
I-575	35002	10-yr	4959.00	882.19	881.86	875.85	4.50	5.77	1884.57	326.55	0.28
I-575	35002	25-yr	6500.00	883.82	883.49	878.43	4.80	6.09	2448.78	367.00	0.28
I-575	35002	50-yr	7774.00	885.01	884.52	879.17	5.14	6.45	2881.46	508.52	0.29
I-575	35002	100-yr	9108.00	886.09	885.64	879.83	4.32	6.52	3677.66	809.51	0.28
I-575	35002	500-yr	12749.00	888.42	888.32	881.32	2.13	3.70	5995.34	948.14	0.15
I-575	35078 BR D	2-yr	2430.00	878.83	878.29	872.95	4.85	5.52	500.71	98.08	0.31
I-575	35078 BR D	5-yr	3857.00	881.10	880.39	874.82	5.40	6.49	714.80	106.45	0.33
I-575	35078 BR D	10-yr	4959.00	882.55	881.72	876.17	5.77	7.05	859.86	111.77	0.34
I-575	35078 BR D	25-yr	6500.00	884.29	883.31	878.56	6.23	7.72	1042.52	118.13	0.36
I-575	35078 BR D	50-yr	7774.00	885.21	884.36	879.44	6.65	8.28	1169.10	122.34	0.37
I-575	35078 BR D	100-yr	9108.00	886.31	885.46	880.25	6.67	8.35	1305.91	126.73	0.36
I-575	35078 BR D	500-yr	12749.00	888.94	888.32	882.12	5.48	7.86	2075.88	312.45	0.24
I-575	35078 BR U	2-yr	2430.00	879.04	878.71	873.86	4.25	4.92	572.30	99.72	0.28
I-575	35078 BR U	5-yr	3857.00	881.36	880.95	875.96	4.78	5.58	806.27	108.71	0.29
I-575	35078 BR U	10-yr	4959.00	882.84	882.38	877.26	5.13	5.95	965.97	114.43	0.29
I-575	35078 BR U	25-yr	6500.00	884.63	884.10	878.36	5.56	6.38	1168.74	121.31	0.29
I-575	35078 BR U	50-yr	7774.00	885.49	884.86	879.17	6.16	7.04	1261.26	124.33	0.32
I-575	35078 BR U	100-yr	9108.00	886.58	885.94	879.88	6.23	7.06	1397.86	128.65	0.31
I-575	35078 BR U	500-yr	12749.00	889.02	888.99	881.62	5.42	7.12	2342.60	396.39	0.20
I-575	35104	2-yr	2430.00	879.10	878.92	873.90	2.96	3.83	1554.46	523.59	0.23
I-575	35104	5-yr	3857.00	881.43	881.24	876.26	3.21	4.08	2907.87	640.52	0.21
I-575	35104	10-yr	4959.00	882.92	882.71	877.28	3.44	4.30	3922.29	761.91	0.21
I-575	35104	25-yr	6500.00	884.72	884.47	878.05	3.75	4.61	5439.58	941.41	0.21
I-575	35104	50-yr	7774.00	885.61	885.31	878.61	4.16	5.08	6243.53	981.59	0.23
I-575	35104	100-yr	9108.00	886.76	886.71	879.12	1.55	2.56	7638.48	1001.09	0.11
I-575	35104	500-yr	12749.00	889.02	888.99	880.34	1.28	2.08	9957.00	1032.02	0.08
I-575	35179	2-yr	2430.00	879.18	879.10	873.90	1.79	2.70	1645.01	534.68	0.16
I-575	35179	5-yr	3857.00	881.51	881.44	876.72	1.85	2.61	3027.16	649.59	0.14
I-575	35179	10-yr	4959.00	883.00	882.93	877.26	1.94	2.66	4079.88	786.04	0.13
I-575	35179	25-yr	6500.00	884.80	884.73	877.79	2.08	2.76	5671.46	980.46	0.13
I-575	35179	50-yr	7774.00	885.70	885.61	878.13	2.29	3.00	6570.55	1065.92	0.13
I-575	35179	100-yr	9108.00	886.78	886.74	878.47	1.32	2.22	7817.39	1112.37	0.10
I-575	35179	500-yr	12749.00	889.03	889.00	879.24	1.23	2.07	10369.07	1143.06	0.08
I-575	35328	2-yr	2430.00	879.23	879.20	873.56	1.07	1.81	2262.04	644.72	0.10
I-575	35328	5-yr	3857.00	881.55	881.52	876.06	1.00	1.61	3858.62	727.56	0.08
I-575	35328	10-yr	4959.00	883.04	883.02	876.51	0.99	1.61	5015.51	844.95	0.08
I-575	35328	25-yr	6500.00	884.84	884.82	876.97	0.95	1.65	6834.18	1313.69	0.08
I-575	35328	50-yr	7774.00	885.74	885.72	877.29	0.96	1.93	8139.34	1579.15	0.09
I-575	35328	100-yr	9108.00	886.80	886.78	877.63	0.92	1.82	9894.51	1678.49	0.08
I-575	35328	500-yr	12749.00	889.05	889.03	878.27	0.93	1.70	13750.06	1741.50	0.07
I-575	35485	2-yr	2430.00	879.25	879.24	873.56	0.55	0.99	4385.54	1144.58	0.06
I-575	35485	5-yr	3857.00	881.56	881.55	876.11	0.54	0.89	7189.39	1276.04	0.05
I-575	35485	10-yr	4959.00	883.05	883.04	876.36	0.54	0.87	9149.72	1357.45	0.04
I-575	35485	25-yr	6500.00	884.85	884.84	876.57	0.55	0.87	11747.45	1607.04	0.04
I-575	35485	50-yr	7774.00	885.75	885.74	876.75	0.59	0.97	13256.38	1722.11	0.04
I-575	35485	100-yr	9108.00	886.81	886.80	876.92	0.60	0.98	15119.13	1803.70	0.04
I-575	35485	500-yr	12749.00	889.05	889.05	877.33	0.66	1.04	19339.41	1923.35	0.04
I-575	35535	2-yr	2430.00	879.25	879.24	875.96	0.58	0.97	4223.15	1144.54	0.06
I-575	35535	5-yr	3857.00	881.56	881.55	876.24	0.55	0.86	7025.33	1275.92	0.05

I-575	35535		10-yr	4959.00	883.05	883.04	876.41	0.55	0.85	8985.07	1357.31	0.04
I-575	35535		25-yr	6500.00	884.85	884.84	876.69	0.56	0.85	11568.63	1587.98	0.04
I-575	35535		50-yr	7774.00	885.75	885.74	876.82	0.60	0.95	13061.65	1703.90	0.04
I-575	35535		100-yr	9108.00	886.81	886.80	876.98	0.61	0.96	14899.89	1775.71	0.04
I-575	35535		500-yr	12749.00	889.05	889.05	877.35	0.67	1.04	19059.45	1921.83	0.04
I-575	35708		2-yr	2430.00	879.27	879.25	876.04	0.58	1.85	4196.38	1144.66	0.12
I-575	35708		5-yr	3857.00	881.58	881.56	876.57	0.55	1.74	6991.87	1275.67	0.10
I-575	35708		10-yr	4959.00	883.06	883.05	876.90	0.55	1.74	8949.16	1356.98	0.09
I-575	35708		25-yr	6500.00	884.86	884.85	877.23	0.57	1.77	11504.06	1552.20	0.09
I-575	35708		50-yr	7774.00	885.76	885.75	877.48	0.60	1.98	12972.62	1683.33	0.09
I-575	35708		100-yr	9108.00	886.82	886.80	877.73	0.62	2.03	14788.99	1752.72	0.09
I-575	35708		500-yr	12749.00	889.07	889.05	878.30	0.68	2.22	18880.86	1888.38	0.09
I-575	36148		2-yr	2430.00	879.44	879.38	874.69	0.92	2.66	2693.48	902.00	0.17
I-575	36148		5-yr	3857.00	881.68	881.64	876.94	0.86	2.49	4866.95	991.16	0.14
I-575	36148		10-yr	4959.00	883.15	883.11	877.51	0.86	2.46	6345.46	1016.54	0.13
I-575	36148		25-yr	6500.00	884.94	884.90	878.03	0.89	2.48	8239.86	1191.33	0.12
I-575	36148		50-yr	7774.00	885.86	885.81	878.40	0.94	2.82	9381.89	1291.77	0.13
I-575	36148		100-yr	9108.00	886.91	886.87	878.75	0.96	2.88	10762.19	1329.43	0.13
I-575	36148		500-yr	12749.00	889.15	889.11	879.46	0.92	2.85	13830.00	1401.41	0.12
I-575	37016		2-yr	2430.00	880.17	880.04	874.07	3.77	4.22	1258.58	314.98	0.25
I-575	37016		5-yr	3857.00	882.35	882.24	875.62	4.28	5.18	1994.83	353.41	0.27
I-575	37016		10-yr	4959.00	883.81	883.69	876.65	4.52	5.75	2525.07	378.68	0.29
I-575	37016		25-yr	6500.00	885.61	885.47	878.12	4.77	6.40	3244.49	567.65	0.30
I-575	37016		50-yr	7774.00	886.64	886.46	879.19	5.13	7.02	3881.77	699.91	0.32
I-575	37016		100-yr	9108.00	887.74	886.88	880.09	5.76	7.95	4178.98	729.54	0.35
I-575	37016		500-yr	12749.00	890.10	888.90	882.20	6.74	9.53	5743.96	816.53	0.40
I-575	37048	BR D	2-yr	2430.00	880.41	880.01	874.28	4.34	4.58	560.13	81.94	0.27
I-575	37048	BR D	5-yr	3857.00	882.80	882.17	875.85	5.06	5.69	761.58	104.83	0.30
I-575	37048	BR D	10-yr	4959.00	884.35	883.60	876.95	5.37	6.32	923.99	121.18	0.32
I-575	37048	BR D	25-yr	6500.00	886.23	885.36	878.41	5.69	7.01	1143.35	128.22	0.33
I-575	37048	BR D	50-yr	7774.00	887.36	886.34	879.46	6.12	7.70	1269.98	132.11	0.35
I-575	37048	BR D	100-yr	9108.00	887.74	886.88	880.43	6.79	8.62	1341.71	134.26	0.38
I-575	37048	BR D	500-yr	12749.00	890.79	889.93	882.85	8.68	11.57	1433.80		0.34
I-575	37048	BR U	2-yr	2430.00	880.55	880.12	875.66	4.42	5.39	550.32	107.25	0.33
I-575	37048	BR U	5-yr	3857.00	882.97	882.41	877.53	4.79	6.35	805.70	116.38	0.34
I-575	37048	BR U	10-yr	4959.00	884.53	883.88	878.78	5.05	6.95	981.25	122.27	0.35
I-575	37048	BR U	25-yr	6500.00	886.43	885.65	880.05	5.40	7.69	1204.49	129.36	0.36
I-575	37048	BR U	50-yr	7774.00	887.59	886.67	880.93	5.81	8.41	1338.81	133.45	0.38
I-575	37048	BR U	100-yr	9108.00	889.15	887.97	881.76	6.25	9.25	1457.99		0.26
I-575	37048	BR U	500-yr	12749.00	890.79	889.93	883.77	8.51	12.85	1457.99		0.34
I-575	37080		2-yr	2430.00	880.61	880.33	875.35	3.13	4.55	2683.92	723.65	0.27
I-575	37080		5-yr	3857.00	883.06	882.73	877.32	3.30	5.13	4589.56	920.60	0.27
I-575	37080		10-yr	4959.00	884.64	884.27	878.65	3.48	5.52	6071.23	994.89	0.27
I-575	37080		25-yr	6500.00	886.56	886.14	879.76	3.76	6.02	8003.39	1078.90	0.28
I-575	37080		50-yr	7774.00	887.75	887.26	880.47	4.06	6.54	9238.72	1129.34	0.29
I-575	37080		100-yr	9108.00	889.15	888.61	881.16	4.27	6.88	10814.33	1199.20	0.29
I-575	37080		500-yr	12749.00	890.79	889.93	882.75	5.42	8.76	12430.37	1239.25	0.36
I-575	37520		2-yr	2430.00	881.03	881.00	875.80	0.77	2.19	3137.51	898.05	0.13
I-575	37520		5-yr	3857.00	883.41	883.39	878.18	0.70	1.98	5549.40	1109.26	0.10
I-575	37520		10-yr	4959.00	884.98	884.96	878.66	0.68	1.91	7313.21	1138.32	0.09
I-575	37520		25-yr	6500.00	886.89	886.88	879.23	0.68	1.88	9529.52	1173.81	0.09
I-575	37520		50-yr	7774.00	888.10	888.09	879.54	0.71	1.93	10962.61	1196.20	0.09
I-575	37520		100-yr	9108.00	889.42	889.41	879.86	0.73	1.95	12559.44	1220.67	0.08
I-575	37520		500-yr	12749.00	891.19	891.17	880.58	0.87	2.38	14736.89	1253.26	0.10

ERRORS WARNINGS AND NOTES

Errors Warnings and Notes for Plan : FullDOT0%

River: Noonday Ck North Reach: I-575 RS: 37520 Profile: 2-yr

Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.

River: Noonday Ck North Reach: I-575 RS: 37520 Profile: 5-yr

Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.

River: Noonday Ck North Reach: I-575 RS: 37520 Profile: 10-yr

Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 37520 Profile: 25-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 37520 Profile: 50-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 37520 Profile: 500-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 2-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 5-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 10-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 25-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 50-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 100-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 500-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 2-yr
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the energy inside of the bridge deck. This is not physically possible. Please review your bridge data and results for reasonableness.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 2-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 2-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 5-yr
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 5-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 5-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 10-yr
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 10-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 10-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 25-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 25-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 25-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 50-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 50-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 50-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 100-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used for pressure flow.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 100-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 100-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 500-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation was used for pressure flow.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 500-yr Upstream
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 500-yr Downstream
Note: For the cross section inside the bridge at the downstream end, the water surface and energy have been projected from the downstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 2-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 5-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 10-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 25-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 50-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 500-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 36148 Profile: 2-yr
Warning:Divided flow computed for this cross-section.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
River: Noonday Ck North Reach: I-575 RS: 36148 Profile: 5-yr
Warning:Divided flow computed for this cross-section.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
River: Noonday Ck North Reach: I-575 RS: 36148 Profile: 10-yr
Warning:Divided flow computed for this cross-section.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
River: Noonday Ck North Reach: I-575 RS: 36148 Profile: 25-yr
Warning:Divided flow computed for this cross-section.

Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
River: Noonday Ck North Reach: I-575 RS: 36148 Profile: 50-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
River: Noonday Ck North Reach: I-575 RS: 36148 Profile: 100-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
River: Noonday Ck North Reach: I-575 RS: 36148 Profile: 500-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 2-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 5-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 10-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 25-yr
Warning:Divided flow computed for this cross-section.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 50-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 100-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 500-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35535 Profile: 25-yr
Warning:Divided flow computed for this cross-section.
River: Noonday Ck North Reach: I-575 RS: 35535 Profile: 500-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
River: Noonday Ck North Reach: I-575 RS: 35485 Profile: 2-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35485 Profile: 5-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35485 Profile: 10-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35485 Profile: 25-yr
Warning:Divided flow computed for this cross-section.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35485 Profile: 50-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35485 Profile: 100-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35485 Profile: 500-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 2-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 5-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 10-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 25-yr

Warning:Divided flow computed for this cross-section.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 50-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 100-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 500-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 2-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 5-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 10-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 25-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 50-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 100-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 500-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 2-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 5-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 10-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 25-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 50-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 100-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 500-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 2-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the energy inside of the bridge deck. This is not physically possible. Please review your bridge data and results for reasonableness.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 2-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 2-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 5-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.

Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the energy inside of the bridge deck. This is not physically possible. Please review your bridge data and results for reasonableness.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 5-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 5-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 10-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 10-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 10-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 25-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 25-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 25-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 50-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 50-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 50-yr Downstream
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 100-yr
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 100-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
Note: Notes(60): This is an inside cross section of a perched bridge that has energy, low flow inside of the bridge and weir flow over the embankment. The reported hydraulics are based on the flow and area inside of the bridge.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 100-yr Downstream
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
Note: Notes(60): This is an inside cross section of a perched bridge that has energy, low flow inside of the bridge and weir flow over the embankment. The reported hydraulics are based on the flow and area inside of the bridge.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 500-yr
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used for pressure flow.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 500-yr Upstream
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 500-yr Downstream
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Note: For the cross section inside the bridge at the downstream end, the energy is based on critical depth over the weir.
The water surface has been projected.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 2-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 5-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 10-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 25-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 50-yr
Warning:Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 500-yr
Warning:Divided flow computed for this cross-section.
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

HEC-RAS EXISTING BRIDGE MODEL

HEC-RAS Version 4.0.0 March 2008
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X    X  XXXXXX   XXXX       XXXX      XX     XXXX
X    X  X       X   X      X  X    X  X   X
X    X  X       X          X  X   X   X  X
XXXXXX  XXXX    X      XXX XXXX    XXXXX   XXXX
X    X  X       X          X X    X   X       X
X    X  X       X   X      X  X   X   X       X
X    X  XXXXXX   XXXX      X   X  X   X  XXXXX
```

PROJECT DATA
Project Title: I575overNoondayCkNorth
Project File : I575NoondayCkNorth.prj
Run Date and Time: 6/11/2008 5:38:46 PM

Project in English units

PLAN DATA

Plan Title: Existing DOT 0%
Plan File : m:\TRA\31-6036 02 I-575\Hydraulics\Noonday Creek North\HEC-RAS\2\I575NoondayCkNorth.p03

Geometry Title: Existing DOT
Geometry File : m:\TRA\31-6036 02 I-575\Hydraulics\Noonday Creek North\HEC-RAS\2\I575NoondayCkNorth.g02

Flow Title : Regression 0% impervious flows
Flow File : m:\TRA\31-6036 02 I-575\Hydraulics\Noonday Creek North\HEC-RAS\2\I575NoondayCkNorth.f03

Plan Summary Information:

Number of:	Cross Sections =	12	Multiple Openings =	0
	Culverts =	0	Inline Structures =	0
	Bridges =	4	Lateral Structures =	0

Computational Information

Water surface calculation tolerance	= 0.01
Critical depth calculation tolerance	= 0.01
Maximum number of iterations	= 20
Maximum difference tolerance	= 0.3
Flow tolerance factor	= 0.001

Computation Options

Critical depth computed at all cross sections	
Conveyance Calculation Method:	At breaks in n values only
Friction Slope Method:	Average Conveyance
Computational Flow Regime:	Mixed Flow

FLOW DATA

Flow Title: Regression 0% impervious flows
Flow File : m:\TRA\31-6036 02 I-575\Hydraulics\Noonday Creek North\HEC-RAS\2\I575NoondayCkNorth.f03

Flow Data (cfs)

River	Reach	RS	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr
Noonday Ck North	I-575	37520	2430	3857	4959	6500	7774	9108	12749

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Noonday Ck North	I-575	2-yr	Normal S = 0.0011	Normal S = 0.0011

Noonday Ck NorthI-575	5-yr	Normal S = 0.0011	Normal S = 0.0011
Noonday Ck NorthI-575	10-yr	Normal S = 0.0011	Normal S = 0.0011
Noonday Ck NorthI-575	25-yr	Normal S = 0.0011	Normal S = 0.0011
Noonday Ck NorthI-575	50-yr	Normal S = 0.0011	Normal S = 0.0011
Noonday Ck NorthI-575	100-yr	Normal S = 0.0011	Normal S = 0.0011
Noonday Ck NorthI-575	500-yr	Normal S = 0.0011	Normal S = 0.0011

GEOMETRY DATA

Geometry Title: Existing DOT
Geometry File : m:\TRA\31-6036 02 I-575\Hydraulics\Noonday Creek North\HEC-RAS\2\I575NoondayCkNorth.g02

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 37520

INPUT
Description: Approach
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
121	893	172	891.48	268	882.81	379	882.16	700	877.24
802	876.01	926	876.6	1000	877.24	1045	877.67	1058	871.55
1075	869.98	1093	871.37	1099	879.08	1170	877.79	1262	877.75
1334	878.44	1473	897.12	1614	893.21				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
121	.12	1045	.05	1099	.12

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1045	1099	440	440	440	.3	.5

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 37080

INPUT
Description: US Dupree Rd
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
121	892.52	172	891	268	882.33	379	881.68	484	888.91
508	888.28	568	883.3	700	876.76	802	875.53	926	876.12
1000	876.76	1045	877.19	1058	871.07	1075	869.5	1093	870.89
1099	878.6	1170	877.31	1262	877.27	1334	877.96	1473	896.64
1614	892.73								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
121	.12	1045	.05	1099	.12

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1045	1099	64	64	64	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
121	990	890.73	F
1154	1614	891.55	F

BRIDGE

RIVER: Noonday Ck North
REACH: I-575 RS: 37048

INPUT
Description: Dupree Rd
Distance from Upstream XS = 10
Deck/Roadway Width = 44
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates

num= 25

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
50	891		105	891		124	889	
143	891		206	890		213	889	
216	889		300	916.14		360	913.44	
513	905.78		616	900.3		747	894.98	
827	894.01		929	892.78		1000	890.23	
1000	892.9	887.15	1144	893.72	887.97	1144	891.05	
1222	891.64		1278	892.26		1362	893.69	
1464	897.28		1548	899.79		1584	900.87	
1660	903.01							

Upstream Bridge Cross Section Data
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
121	892.52	172	891	268	882.33	379	881.68	484	888.91
508	888.28	568	883.3	700	876.76	802	875.53	926	876.12
1000	876.76	1045	877.19	1058	871.07	1075	869.5	1093	870.89
1099	878.6	1170	877.31	1262	877.27	1334	877.96	1473	896.64
1614	892.73								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
121	.12	1045	.05	1099	.12

Bank Sta: Left	Right	Coeff Contr.	Expan.
1045	1099	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
121	990	890.73	F
1154	1614	891.55	F

Downstream Deck/Roadway Coordinates
num= 25

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
50	891		105	891		124	889	
143	891		206	890		213	889	
216	889		300	916.14		360	913.44	
513	905.78		616	900.3		747	894.98	
827	894.01		929	892.78		1000	890.23	
1000	892.9	887.15	1144	893.72	887.97	1144	891.05	
1222	891.64		1278	892.26		1362	893.69	
1464	897.28		1548	899.79		1584	900.87	
1660	903.01							

Downstream Bridge Cross Section Data
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
150	889.73	214	890	271	891.93	376	888.57	486	885.47
621	885.23	700	885.98	736	886.65	819	875.58	952	877.82
1033	877.87	1045	869.25	1066	869.65	1085	869.36	1096	879.58
1152	885.21	1195	890.45	1304	892.18	1435	900.84	1525	902.28
1590	910.63								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
150	.12	1033	.05	1096	.12

Bank Sta: Left	Right	Coeff Contr.	Expan.
1033	1096	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
150	995	890.23	F
1149	1590	891.05	F

Upstream Embankment side slope = 2 horiz. to 1.0 vertical
Downstream Embankment side slope = 2 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Abutments = 2

Abutment Data

```
Upstream     num=       2
     Sta    Elev     Sta    Elev
    1000  887.15    1040  867.15
Downstream     num=       2
     Sta    Elev     Sta    Elev
    1000  887.15    1040  867.15

Abutment Data
Upstream     num=       2
     Sta    Elev     Sta    Elev
    1104  867.97    1144  887.97
Downstream     num=       2
     Sta    Elev     Sta    Elev
    1104  867.97    1144  887.97

Number of Piers =  3

Pier Data
Pier Station     Upstream=    1036    Downstream=    1036
Upstream     num=       2
    Width   Elev    Width   Elev
       1     860       1     900
Downstream     num=       2
    Width   Elev    Width   Elev
       1     860       1     900

Pier Data
Pier Station     Upstream=    1072    Downstream=    1072
Upstream     num=       2
    Width   Elev    Width   Elev
       3     860       3     900
Downstream     num=       2
    Width   Elev    Width   Elev
       3     860       3     900

Pier Data
Pier Station     Upstream=    1108    Downstream=    1108
Upstream     num=       2
    Width   Elev    Width   Elev
       3     860       3     900
Downstream     num=       2
    Width   Elev    Width   Elev
       3     860       3     900

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
       Momentum              Cd   =       2
       Yarnell               KVal =    1.25
       W.S. Pro Method

  W.S.Pro Data
    Left Embankment
       El of the top of the embankment = 892.43
       El of the toe of the abutment   = 877.19
    Right Embankment
       El of the top of the embankment = 891.25
       El of the toe of the abutment   = 878.6
    Abtument Type                      = 3 Sloping abutments and sloping embankments
    Slope of abutments                 = 2
    Top with of embankment             = 44
    Centroid station of bridge opening = 1075
    Wing Wall Type                     = No wing walls present
       Width                           =
       Angle                           =
       Radius                          =
    Guide Banks Type                   = No Guide Bank present
       Length                          =
       Offset                          =
       Angle                           =
    Optional Contraction and expansion coefficients
      At approach Section
      At upstream outside
      At upstream inside (BU)
      At downstream inside (BD)
```

Use Geometric mean as Friction Slope Method

Selected Low Flow Methods = W.S.Pro Method

High Flow Method
Pressure and Weir flow
Submerged Inlet Cd =
Submerged Inlet + Outlet Cd = .8
Max Low Cord =

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 37016

INPUT
Description: DS Dupree Rd
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
150	889.73	214	890	271	891.93	376	888.57	486	885.47
621	885.23	700	885.98	736	886.65	819	875.58	952	877.82
1033	877.87	1045	869.25	1066	869.65	1085	869.36	1096	879.58
1152	885.21	1195	890.45	1304	892.18	1435	900.84	1525	902.28
1590	910.63								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
150	.12	1033	.05	1096	.12

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1033	1096	1150	868	550	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
150	995	890.23	F
1149	1590	891.05	F

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 36148

INPUT
Description: Approach I-575
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
379	893.06	475	888.7	562	885.89	650	884.42	706	884.52
787	885.32	815	875.78	880	875.14	1000	875.92	1040	879.2
1052	869.95	1064	868.54	1075	869.68	1087	870.89	1098	877.38
1151	876.94	1200	875.8	1240	875.31	1344	875.11	1450	877.19
1547	878.47	1634	880.47	1665	884.51	1690	884.44	1710	879.28
1751	878.39	1841	879.53	1885	895.53	1932	899.99		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
379	.12	1040	.045	1098	.12

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1040	1098	250	440	650	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
379	493	892	F
1651	1932	889.5	F

CROSS SECTION

RIVER: Noonday Ck North

REACH: I-575 RS: 35708

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
379	893.06	475	888.7	562	885.89	650	884.42	706	884.52
787	885.32	815	875.78	880	875.14	1000	875.92	1024	875.81
1051	875.05	1077	869.32	1092	869.32	1114	875.62	1570	875
1760	876	1993	880	2200	884	2385	890		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
379	.12	1051	.045	1114	.12

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1051	1114	148	173	198	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
379	933	892	F
1211	2385	889	F

BRIDGE

RIVER: Noonday Ck North
REACH: I-575 RS: 35593

INPUT
Description: I-575 Nothbound
Distance from Upstream XS = 67
Deck/Roadway Width = 96
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 23

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	891		302	891		457	891	
530	892		589	893		747	894	
932	895		1000	895.65		1000	898.32	891.15
1144	900.72	893.55	1144	898.05		1365	898	
1490	900		1612	902		1715	904	
1835	906		1930	908		2085	911	
2135	887		2170	888		2210	887	
2270	916		2385	919				

Upstream Bridge Cross Section Data
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
379	893.06	475	888.7	562	885.89	650	884.42	706	884.52
787	885.32	815	875.78	880	875.14	1000	875.92	1024	875.81
1051	875.05	1077	869.32	1092	869.32	1114	875.62	1570	875
1760	876	1993	880	2200	884	2385	890		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
379	.05	1051	.045	1114	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
1051	1114	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
379	933	892	F
1211	2385	889	F

Downstream Deck/Roadway Coordinates
num= 23

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	891		302	891		457	891	
530	892		589	893		747	894	
932	895		1000	895.65		1000	898.32	887.23
1144	900.72	889.07	1144	898.05		1365	898	
1490	900		1612	902		1715	904	
1835	906		1930	908		2085	911	
2135	887		2170	888		2210	887	
2270	916		2385	919				

```
Downstream Bridge Cross Section Data
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     379  892.87     475  888.51     562   885.7     650  884.23     706  884.33
     787  885.13     815  875.59     880  874.95    1000  875.73    1024  875.81
    1051  875.05    1077  869.32    1092  869.32    1114  875.62    1570     875
    1760     876    1993     880    2200     884    2385     889

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     379     .05    1051    .045    1114     .05

Bank Sta: Left   Right    Coeff Contr.   Expan.
          1051    1114            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
     379     995     891       F
    1149    2385     888       F

Upstream Embankment side slope              =      2 horiz. to 1.0 vertical
Downstream Embankment side slope            =      2 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Abutments =  2

Abutment Data
Upstream     num=       2
     Sta    Elev     Sta    Elev
    1000  891.15    1040  871.15
Downstream     num=       2
     Sta    Elev     Sta    Elev
    1000  887.23    1040  867.23

Abutment Data
Upstream     num=       2
     Sta    Elev     Sta    Elev
    1084  863.55    1144  893.55
Downstream     num=       2
     Sta    Elev     Sta    Elev
    1084  859.07    1144  889.07

Number of Piers =  2

Pier Data
Pier Station     Upstream=    1048    Downstream=    1048
Upstream     num=       2
    Width   Elev    Width   Elev
        4     860       4     900
Downstream     num=       2
    Width   Elev    Width   Elev
        4     860       4     900

Pier Data
Pier Station     Upstream=    1096    Downstream=    1096
Upstream     num=       2
    Width   Elev    Width   Elev
        4     860       4     900
Downstream     num=       2
    Width   Elev    Width   Elev
        4     860       4     900

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
       Momentum              Cd   =       2
       Yarnell               KVal =    1.25
       W.S. Pro Method

  W.S.Pro Data
    Left Embankment
       El of the top of the embankment = 895.65
```

```
      El of the toe of the abutment   = 875.94
   Right Embankment
      El of the top of the embankment = 898.05
      El of the toe of the abutment   = 877.01
   Abtument Type                      = 3 Sloping abutments and sloping embankments
   Slope of abutments                 = 2
   Top with of embankment             = 96
   Centroid station of bridge opening = 1072
   Wing Wall Type                     = No wing walls present
      Width                           =
      Angle                           =
      Radius                          =
   Guide Banks Type                   = No Guide Bank present
      Length                          =
      Offset                          =
      Angle                           =
   Optional Contraction and expansion coefficients
     At approach Section
     At upstream outside
     At upstream inside (BU)
     At downstream inside (BD)
   Use Geometric mean as Friction Slope Method

Selected Low Flow Methods = W.S.Pro Method

High Flow Method
      Pressure and Weir flow
          Submerged Inlet Cd          =
          Submerged Inlet + Outlet Cd =      .8
          Max Low Cord                =

Additional Bridge Parameters
      Add Friction component to Momentum
      Do not add Weight component to Momentum
      Class B flow critical depth computations use critical depth
          inside the bridge at the upstream end
      Criteria to check for pressure flow = Upstream water surface

CROSS SECTION


RIVER: Noonday Ck North
REACH: I-575             RS: 35535

INPUT
Description:
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     379  892.87     475  888.51     562   885.7     650  884.23     706  884.33
     787  885.13     815  875.59     880  874.95    1000  875.73    1024  875.81
    1051  875.05    1077  869.32    1092  869.32    1114  875.62    1570     875
    1760     876    1993     880    2200     884    2385     889

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     379     .05    1051    .045    1114     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          1051    1114              50      50      50             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
     379     995     891       F
    1149    2385     888       F

CROSS SECTION


RIVER: Noonday Ck North
REACH: I-575             RS: 35485

INPUT
Description:
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     379   892.8     475  888.44     562  885.63     650  884.16     706  884.26
     787  885.06     815  875.52     880  874.88    1000  875.66    1024  874.73
```

1038	875.06	1050	869.43	1073	868.47	1087	868.33	1095	875.86
1117	875.34	1570	875	1760	876	1993	880	2200	884
2385	888								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
379	.05	1038	.045	1095	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1038	1095	157	157	157	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
379	990	892	F
1154	2385	889	F

BRIDGE

RIVER: Noonday Ck North
REACH: I-575 RS: 35448

INPUT
Description: I-575 Southbound
Distance from Upstream XS = 10
Deck/Roadway Width = 64
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 20

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	891		280	891		730	891	
925	892		1000	892.96		1000	895.63	888.46
1144	897.66	890.49	1144	894.99		1260	896	
1380	898		1500	900		1620	902	
1720	904		1815	906		1940	909	
1995	887		2030	888		2065	887	
2120	916		2400	919				

Upstream Bridge Cross Section Data
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
379	892.8	475	888.44	562	885.63	650	884.16	706	884.26
787	885.06	815	875.52	880	874.88	1000	875.66	1024	874.73
1038	875.06	1050	869.43	1073	868.47	1087	868.33	1095	875.86
1117	875.34	1570	875	1760	876	1993	880	2200	884
2385	888								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
379	.05	1038	.045	1095	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
1038	1095	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
379	990	892	F
1154	2385	889	F

Downstream Deck/Roadway Coordinates
num= 20

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	891		280	891		730	891	
925	892		1000	892.96		1000	895.63	885.91
1144	897.66	888.05	1144	894.99		1260	896	
1380	898		1500	900		1620	902	
1720	904		1815	906		1940	909	
1995	887		2030	888		2065	887	
2120	916		2400	919				

Downstream Bridge Cross Section Data
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
379	892.64	475	888.28	562	885.47	650	884	706	884.1
787	884.9	815	875.36	880	874.72	1024	874.73	1038	875.06
1050	869.43	1073	868.47	1087	868.33	1095	875.86	1117	875.34
1442	879	1540	882	1732	884	2200	886		

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     379     .05    1038    .045    1095     .05

Bank Sta: Left   Right    Coeff Contr.   Expan.
          1038    1095            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
     379   958.5     891       F
  1185.5    2200     888       F

Upstream Embankment side slope             =      2 horiz. to 1.0 vertical
Downstream Embankment side slope           =      2 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins        =
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Abutments =  2

Abutment Data
Upstream     num=       2
     Sta    Elev     Sta    Elev
    1000  888.46    1040  868.46
Downstream     num=       2
     Sta    Elev     Sta    Elev
    1000  885.91    1040  865.91

Abutment Data
Upstream     num=       2
     Sta    Elev     Sta    Elev
    1104  870.49    1144  890.49
Downstream     num=       2
     Sta    Elev     Sta    Elev
    1104  868.05    1144  888.05

Number of Piers =  2

Pier Data
Pier Station     Upstream=    1048    Downstream=    1048
Upstream     num=       2
    Width   Elev    Width   Elev
        4     860       4     895
Downstream     num=       2
    Width   Elev    Width   Elev
        4     860       4     895

Pier Data
Pier Station     Upstream=    1096    Downstream=    1096
Upstream     num=       2
    Width   Elev    Width   Elev
        4     860       4     895
Downstream     num=       2
    Width   Elev    Width   Elev
        4     860       4     895

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
       Momentum              Cd   =       2
       Yarnell               KVal =    1.25
       W.S. Pro Method

  W.S.Pro Data
    Left Embankment
       El of the top of the embankment = 892.96
       El of the toe of the abutment   = 875.06
    Right Embankment
       El of the top of the embankment = 894.99
       El of the toe of the abutment   = 875.86
    Abtument Type                      = 3 Sloping abutments and sloping embankments
    Slope of abutments                 = 2
    Top with of embankment             = 64
    Centroid station of bridge opening = 1072
```

```
    Wing Wall Type                    = No wing walls present
       Width                          =
       Angle                          =
       Radius                         =
    Guide Banks Type                  = No Guide Bank present
       Length                         =
       Offset                         =
       Angle                          =
    Optional Contraction and expansion coefficients
      At approach Section
      At upstream outside
      At upstream inside (BU)
      At downstream inside (BD)
    Use Geometric mean as Friction Slope Method

Selected Low Flow Methods = W.S.Pro Method

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd         =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord               =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream water surface

CROSS SECTION


RIVER: Noonday Ck North
REACH: I-575              RS: 35328

INPUT
Description:
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     379  892.64     475  888.28     562  885.47     650     884     706   884.1
     787   884.9     815  875.36     880  874.72    1024  874.73    1038  875.06
    1050  869.43    1073  868.47    1087  868.33    1095  875.86    1117  875.34
    1442     879    1540     882    1732     884    2200     886

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     379     .05    1038    .045    1095     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          1038    1095             100     149     200             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
     379   958.5     891       F
  1185.5    2200     888       F

CROSS SECTION


RIVER: Noonday Ck North
REACH: I-575              RS: 35179

INPUT
Description:
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     336   909.3     418  905.74     500  903.44     542   902.8     620  896.35
     690   890.4     757  885.46     853  880.47     935   874.8     965  875.42
    1020  876.89    1047  875.17    1057  869.82    1065  868.85    1081  866.86
    1099  874.81    1118  875.06    1404     879    1502     882    1694     884
    1852     886

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     336     .05    1047    .045    1099     .05
```

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

1047	1099	50	75	100	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
336	915	887	F
1229	1852	886	F

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 35104

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
336	909.22	418	905.66	500	903.36	542	902.72	620	896.27
690	890.32	757	885.38	853	880.39	935	874.72	965	875.34
1020	876.89	1047	875.17	1057	869.82	1065	868.85	1081	866.86
1099	874.81	1118	875.06	1404	879	1502	882	1694	884
1740	885								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
336	.05	1047	.045	1099	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

1047	1099	102	102	102	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
336	990	887	F
1154	1740	886	F

BRIDGE

RIVER: Noonday Ck North
REACH: I-575 RS: 35078

INPUT
Description:
Distance from Upstream XS = 10
Deck/Roadway Width = 82
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 23

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	891		90	890		255	888	
350	887		410	886		465	885	
535	886		600	887		770	888	
815	889		925	891		1000	892.1	
1000	894.77	887.22	1144	895.5	888.33	1144	892.83	
1200	892		1275	891		1375	890	
1450	889		1520	888		1585	887	
1640	886		1740	885				

Upstream Bridge Cross Section Data
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
336	909.22	418	905.66	500	903.36	542	902.72	620	896.27
690	890.32	757	885.38	853	880.39	935	874.72	965	875.34
1020	876.89	1047	875.17	1057	869.82	1065	868.85	1081	866.86
1099	874.81	1118	875.06	1404	879	1502	882	1694	884
1740	885								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
336	.05	1047	.045	1099	.05

Bank Sta: Left Right Coeff Contr. Expan.

1047	1099	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
336	990	887	F
1154	1740	886	F

Downstream Deck/Roadway Coordinates
num= 23

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	891		90	890		255	888	
350	887		410	886		465	885	
535	886		600	887		770	888	
815	889		925	891		1000	892.1	
1000	894.77	887.22	1144	895.5	888.33	1144	892.83	
1200	892		1275	891		1375	890	
1450	889		1520	888		1585	887	
1640	886		1740	885				

Downstream Bridge Cross Section Data
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
336	909.11	418	905.55	500	903.25	542	902.61	620	896.16
690	890.21	757	885.27	853	880.28	935	874.61	965	875.23
1018	876.56	1038	877.4	1047	875	1049	867.14	1066	867.42
1083	868.1	1093	876.91	1116	875.97	1190	889.14	1227	889.39
1284	887.64	1322	887.73	1372	883.84	1519	884.78	1740	885

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
336	.05	1047	.045	1093	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
1047	1093	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
336	995	886	F
1149	1740	885	F

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Abutments = 2

Abutment Data
Upstream num= 2

Sta	Elev	Sta	Elev
1000	887.22	1040	867.22

Downstream num= 2

Sta	Elev	Sta	Elev
1000	887.22	1040	867.22

Abutment Data
Upstream num= 2

Sta	Elev	Sta	Elev
1104	868.33	1144	888.33

Downstream num= 2

Sta	Elev	Sta	Elev
1104	868.33	1144	888.33

Number of Piers = 2

Pier Data
Pier Station Upstream= 1048 Downstream= 1048
Upstream num= 2

Width	Elev	Width	Elev
4	860	4	900

Downstream num= 2

Width	Elev	Width	Elev
4	860	4	900

Pier Data
Pier Station Upstream= 1096 Downstream= 1096
Upstream num= 2

Width	Elev	Width	Elev
4	860	4	900

Downstream num= 2

```
    Width   Elev    Width   Elev
       4     860       4     900

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
       Momentum              Cd   =       2
       Yarnell               KVal =    1.25
       W.S. Pro Method

  W.S.Pro Data
    Left Embankment
       El of the top of the embankment = 892.1
       El of the toe of the abutment   = 875.17
    Right Embankment
       El of the top of the embankment = 892.83
       El of the toe of the abutment   = 874.81
    Abtument Type                      = 3 Sloping abutments and sloping embankments
    Slope of abutments                 = 2
    Top with of embankment             = 82
    Centroid station of bridge opening = 1072
    Wing Wall Type                     = No wing walls present
       Width                           =
       Angle                           =
       Radius                          =
    Guide Banks Type                   = No Guide Bank present
       Length                          =
       Offset                          =
       Angle                           =
    Optional Contraction and expansion coefficients
      At approach Section
      At upstream outside
      At upstream inside (BU)
      At downstream inside (BD)
    Use Geometric mean as Friction Slope Method

Selected Low Flow Methods = W.S.Pro Method

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd         =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord               =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION


RIVER: Noonday Ck North
REACH: I-575             RS: 35002

INPUT
Description:
Station Elevation Data    num=      25
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     336  909.11     418  905.55     500  903.25     542  902.61     620  896.16
     690  890.21     757  885.27     853  880.28     935  874.61     965  875.23
    1018  876.56    1038   877.4    1047     875    1049  867.14    1066  867.42
    1083   868.1    1093  876.91    1116  875.97    1190  889.14    1227  889.39
    1284  887.64    1322  887.73    1372  883.84    1519  884.78    1740     885

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     336     .05    1047    .045    1093     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          1047   1093             590     590     590             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
```

336	995	886	F
1149	1740	885	F

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 34412

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
336	909.11	418	905.55	500	903.25	542	902.61	620	896.16
690	890.21	757	885.27	853	880.28	935	874.61	965	875.23
1025	875.94	1037	868.18	1057	867.47	1078	867.88	1086	875.49
1190	889.14	1227	889.39						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
336	.12	1025	.045	1086	.12

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff Contr.	Expan.
	1025	1086		0	0	0	.1	.3

SUMMARY OF MANNING'S N VALUES

River:Noonday Ck North

Reach	River Sta.	n1	n2	n3
I-575	37520	.12	.05	.12
I-575	37080	.12	.05	.12
I-575	37048	Bridge		
I-575	37016	.12	.05	.12
I-575	36148	.12	.045	.12
I-575	35708	.12	.045	.12
I-575	35593	Bridge		
I-575	35535	.05	.045	.05
I-575	35485	.05	.045	.05
I-575	35448	Bridge		
I-575	35328	.05	.045	.05
I-575	35179	.05	.045	.05
I-575	35104	.05	.045	.05
I-575	35078	Bridge		
I-575	35002	.05	.045	.05
I-575	34412	.12	.045	.12

SUMMARY OF REACH LENGTHS

River: Noonday Ck North

Reach	River Sta.	Left	Channel	Right
I-575	37520	440	440	440
I-575	37080	64	64	64
I-575	37048	Bridge		
I-575	37016	1150	868	550
I-575	36148	250	440	650
I-575	35708	148	173	198
I-575	35593	Bridge		
I-575	35535	50	50	50
I-575	35485	157	157	157
I-575	35448	Bridge		
I-575	35328	100	149	200
I-575	35179	50	75	100
I-575	35104	102	102	102
I-575	35078	Bridge		
I-575	35002	590	590	590
I-575	34412	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Noonday Ck North

Reach	River Sta.	Contr.	Expan.
I-575	37520	.3	.5
I-575	37080	.3	.5
I-575	37048	Bridge	
I-575	37016	.3	.5
I-575	36148	.3	.5
I-575	35708	.3	.5
I-575	35593	Bridge	
I-575	35535	.3	.5
I-575	35485	.3	.5
I-575	35448	Bridge	
I-575	35328	.3	.5
I-575	35179	.3	.5
I-575	35104	.3	.5
I-575	35078	Bridge	
I-575	35002	.3	.5
I-575	34412	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
I-575	34412	2-yr	2430.00	867.47	877.63	872.33	877.90	0.001101	4.32	807.19	211.00	0.26
I-575	34412	5-yr	3857.00	867.47	879.74	873.87	880.08	0.001102	5.01	1302.45	257.67	0.27
I-575	34412	10-yr	4959.00	867.47	881.09	874.97	881.46	0.001101	5.42	1670.53	291.24	0.28
I-575	34412	25-yr	6500.00	867.47	882.70	876.80	883.11	0.001100	5.90	2174.33	334.48	0.28
I-575	34412	50-yr	7774.00	867.47	883.86	877.61	884.30	0.001101	6.23	2579.67	365.59	0.29
I-575	34412	100-yr	9108.00	867.47	884.95	878.35	885.42	0.001100	6.53	2996.83	395.04	0.29
I-575	34412	500-yr	12749.00	867.47	887.46	880.06	887.99	0.001102	7.21	4057.93	449.93	0.30
I-575	35002	2-yr	2430.00	867.14	878.36	872.78	878.68	0.001406	4.94	596.46	248.58	0.28
I-575	35002	5-yr	3857.00	867.14	880.50	874.60	880.82	0.001320	5.47	897.57	292.69	0.28
I-575	35002	10-yr	4959.00	867.14	881.86	875.85	882.19	0.001270	5.77	1102.29	326.55	0.28
I-575	35002	25-yr	6500.00	867.14	883.49	878.43	883.82	0.001209	6.09	1352.85	367.00	0.28
I-575	35002	50-yr	7774.00	867.14	884.52	879.17	885.01	0.001240	6.45	1512.19	508.52	0.29
I-575	35002	100-yr	9108.00	867.14	885.64	879.83	886.09	0.001153	6.52	2106.94	809.51	0.28
I-575	35002	500-yr	12749.00	867.14	888.32	881.32	888.42	0.000306	3.70	5995.34	948.14	0.15
I-575	35078		Bridge									
I-575	35104	2-yr	2430.00	866.86	878.92	873.90	879.10	0.000789	3.83	820.21	523.59	0.23
I-575	35104	5-yr	3857.00	866.86	881.24	876.26	881.43	0.000657	4.08	1201.33	640.52	0.21
I-575	35104	10-yr	4959.00	866.86	882.71	877.28	882.92	0.000619	4.30	1442.58	761.91	0.21
I-575	35104	25-yr	6500.00	866.86	884.47	878.05	884.72	0.000599	4.61	1731.82	941.41	0.21
I-575	35104	50-yr	7774.00	866.86	885.31	878.61	885.61	0.000673	5.08	1868.31	981.59	0.23
I-575	35104	100-yr	9108.00	866.86	886.71	879.12	886.76	0.000152	2.56	5881.80	1001.09	0.11
I-575	35104	500-yr	12749.00	866.86	888.99	880.34	889.02	0.000085	2.08	9957.00	1032.02	0.08
I-575	35179	2-yr	2430.00	866.86	879.10	873.90	879.18	0.000381	2.70	1353.81	534.68	0.16
I-575	35179	5-yr	3857.00	866.86	881.44	876.72	881.51	0.000263	2.61	2088.43	649.59	0.14
I-575	35179	10-yr	4959.00	866.86	882.93	877.26	883.00	0.000231	2.66	2556.11	786.04	0.13
I-575	35179	25-yr	6500.00	866.86	884.73	877.79	884.80	0.000210	2.76	3119.58	980.46	0.13
I-575	35179	50-yr	7774.00	866.86	885.61	878.13	885.70	0.000229	3.00	3395.40	1065.92	0.13
I-575	35179	100-yr	9108.00	866.86	886.74	878.47	886.78	0.000115	2.22	6922.08	1112.37	0.10
I-575	35179	500-yr	12749.00	866.86	889.00	879.24	889.03	0.000084	2.07	10369.07	1143.06	0.08
I-575	35328	2-yr	2430.00	868.33	879.22	873.57	879.24	0.000385	2.72	1202.11	645.50	0.16
I-575	35328	5-yr	3857.00	868.33	881.57	876.04	881.57	0.000319	2.88	1735.04	729.09	0.15
I-575	35328	10-yr	4959.00	868.33	883.07	876.74	883.06	0.000299	3.03	2075.68	850.15	0.15
I-575	35328	25-yr	6500.00	868.33	884.88	877.38	884.86	0.000289	3.24	2486.23	1337.16	0.15
I-575	35328	50-yr	7774.00	868.33	885.78	877.80	885.76	0.000320	3.55	2691.42	1596.26	0.16
I-575	35328	100-yr	9108.00	868.33	886.71	878.22	886.87	0.000344	3.82	2901.37	1676.25	0.16
I-575	35328	500-yr	12749.00	868.33	889.02	879.20	889.05	0.000091	2.15	10235.39	1741.22	0.09
I-575	35448		Bridge									

I-575	35485	2-yr	2430.00	868.33	879.47	873.57	879.58	0.000483	3.10	985.41	1158.44	0.18
I-575	35485	5-yr	3857.00	868.33	881.87	876.07	882.01	0.000438	3.44	1379.60	1293.35	0.18
I-575	35485	10-yr	4959.00	868.33	883.40	876.83	883.56	0.000427	3.68	1630.97	1377.17	0.18
I-575	35485	25-yr	6500.00	868.33	885.25	877.59	885.44	0.000427	4.01	1933.46	1672.65	0.18
I-575	35485	50-yr	7774.00	868.33	886.21	878.12	886.45	0.000473	4.39	2092.17	1758.47	0.19
I-575	35485	100-yr	9108.00	868.33	887.20	878.61	887.47	0.000511	4.75	2253.14	1834.25	0.20
I-575	35485	500-yr	12749.00	868.33	890.18	879.82	890.19	0.000022	1.09	17081.30	1948.23	0.04
I-575	35535	2-yr	2430.00	869.32	879.52	875.13	879.63	0.000716	3.46	855.72	1161.62	0.22
I-575	35535	5-yr	3857.00	869.32	881.92	876.90	882.05	0.000591	3.75	1225.54	1296.06	0.21
I-575	35535	10-yr	4959.00	869.32	883.45	877.48	883.61	0.000558	3.99	1460.92	1379.64	0.20
I-575	35535	25-yr	6500.00	869.32	885.29	878.18	885.48	0.000542	4.33	1743.51	1660.76	0.21
I-575	35535	50-yr	7774.00	869.32	886.22	878.70	886.50	0.000599	4.76	1887.02	1736.07	0.22
I-575	35535	100-yr	9108.00	869.32	887.20	879.21	887.52	0.000640	5.13	2037.58	1802.51	0.23
I-575	35535	500-yr	12749.00	869.32	890.18	880.42	890.19	0.000023	1.09	16765.16	1946.71	0.04
I-575	35593		Bridge									
I-575	35708	2-yr	2430.00	869.32	880.04	875.16	880.15	0.000554	3.17	1481.14	1192.40	0.19
I-575	35708	5-yr	3857.00	869.32	882.51	876.92	882.63	0.000479	3.50	2168.77	1327.67	0.19
I-575	35708	10-yr	4959.00	869.32	884.10	877.53	884.24	0.000457	3.74	2611.83	1412.64	0.19
I-575	35708	25-yr	6500.00	869.32	886.04	878.23	886.20	0.000446	4.07	3149.93	1705.53	0.19
I-575	35708	50-yr	7774.00	869.32	887.02	878.73	887.20	0.000496	4.48	3421.16	1765.82	0.20
I-575	35708	100-yr	9108.00	869.32	888.10	879.23	888.31	0.000525	4.82	3721.97	1832.68	0.21
I-575	35708	500-yr	12749.00	869.32	891.30	880.35	891.32	0.000070	1.99	19196.61	1967.23	0.08
I-575	36148	2-yr	2430.00	868.54	880.31	874.67	880.34	0.000230	2.03	3378.87	962.55	0.12
I-575	36148	5-yr	3857.00	868.54	882.77	876.94	882.80	0.000158	1.97	5456.17	1010.65	0.10
I-575	36148	10-yr	4959.00	868.54	884.37	877.51	884.40	0.000135	2.00	6831.03	1038.24	0.10
I-575	36148	25-yr	6500.00	868.54	886.33	878.02	886.35	0.000117	2.04	8842.13	1311.24	0.09
I-575	36148	50-yr	7774.00	868.54	887.34	878.39	887.36	0.000122	2.18	9969.63	1345.23	0.10
I-575	36148	100-yr	9108.00	868.54	888.45	878.76	888.48	0.000136	2.40	11252.71	1382.86	0.10
I-575	36148	500-yr	12749.00	868.54	891.34	879.47	891.36	0.000098	2.27	16886.43	1456.63	0.09
I-575	37016	2-yr	2430.00	869.25	880.74	874.07	880.80	0.000950	3.87	722.15	327.27	0.22
I-575	37016	5-yr	3857.00	869.25	883.18	875.62	883.24	0.001041	4.71	1025.52	369.72	0.24
I-575	37016	10-yr	4959.00	869.25	884.76	876.65	884.84	0.001078	5.20	1255.40	397.44	0.25
I-575	37016	25-yr	6500.00	869.25	886.73	878.12	886.81	0.001097	5.74	1558.14	723.24	0.26
I-575	37016	50-yr	7774.00	869.25	887.30	879.19	887.88	0.001365	6.56	1645.44	748.01	0.29
I-575	37016	100-yr	9108.00	869.25	888.40	880.09	889.06	0.001451	7.06	1814.65	796.02	0.30
I-575	37016	500-yr	12749.00	869.25	891.44	882.20	891.59	0.000472	4.49	8105.07	1077.61	0.18
I-575	37048		Bridge									
I-575	37080	2-yr	2430.00	869.50	880.98	875.35	881.21	0.001106	4.11	883.76	741.67	0.24
I-575	37080	5-yr	3857.00	869.50	883.56	877.32	883.82	0.001021	4.65	1305.95	962.50	0.24
I-575	37080	10-yr	4959.00	869.50	885.20	878.65	885.50	0.001003	5.02	1575.27	1036.54	0.24
I-575	37080	25-yr	6500.00	869.50	887.22	879.76	887.57	0.000992	5.48	1907.56	1127.89	0.24
I-575	37080	50-yr	7774.00	869.50	888.07	880.47	888.49	0.001155	6.12	2045.91	1165.92	0.27
I-575	37080	100-yr	9108.00	869.50	888.86	881.16	889.38	0.001319	6.75	2176.49	1217.01	0.29
I-575	37080	500-yr	12749.00	869.50	892.88	882.75	892.90	0.000110	2.25	16196.73	1329.24	0.09
I-575	37520	2-yr	2430.00	869.98	881.49	875.83	881.52	0.000241	1.92	3592.15	934.12	0.11
I-575	37520	5-yr	3857.00	869.98	884.07	878.18	884.09	0.000142	1.74	6308.18	1121.85	0.09
I-575	37520	10-yr	4959.00	869.98	885.74	878.66	885.75	0.000112	1.69	8207.19	1152.77	0.08
I-575	37520	25-yr	6500.00	869.98	887.81	879.23	887.83	0.000091	1.67	10635.92	1191.13	0.07
I-575	37520	50-yr	7774.00	869.98	888.71	879.54	888.72	0.000098	1.80	11711.64	1207.74	0.08
I-575	37520	100-yr	9108.00	869.98	889.62	879.86	889.64	0.000103	1.91	12824.82	1224.68	0.08
I-575	37520	500-yr	12749.00	869.98	892.93	880.58	892.94	0.000097	2.07	16992.29	1318.31	0.08

Profile Output Table - Standard Table 2

Reach	River Sta	Profile	E.G. Elev (ft)	W.S. Elev (ft)	Vel Head (ft)	Frctn Loss (ft)	C & E Loss (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Top Width (ft)
I-575	34412	2-yr	877.90	877.63	0.27			177.25	2245.28	7.47	211.00
I-575	34412	5-yr	880.08	879.74	0.33			560.31	3250.07	46.62	257.67
I-575	34412	10-yr	881.46	881.09	0.37			900.82	3961.26	96.92	291.24
I-575	34412	25-yr	883.11	882.70	0.41			1422.60	4887.27	190.13	334.48
I-575	34412	50-yr	884.30	883.86	0.44			1888.09	5602.96	282.95	365.59
I-575	34412	100-yr	885.42	884.95	0.47			2402.04	6313.09	392.87	395.04
I-575	34412	500-yr	887.99	887.46	0.53			3942.64	8070.65	735.71	449.93
I-575	35002	2-yr	878.68	878.36	0.37	0.73	0.10	157.18	2179.75	93.07	248.58
I-575	35002	5-yr	880.82	880.50	0.45	0.71	0.16	556.04	2954.98	345.98	292.69

I-575	35002	10-yr	882.19	881.86	0.50	0.70	0.21	891.99	3480.70	586.32	326.55
I-575	35002	25-yr	883.82	883.49	0.59	0.68	0.28	1356.99	4128.59	1014.42	367.00
I-575	35002	50-yr	885.01	884.52	0.49	0.69	0.02	1730.94	4680.45	1362.61	508.52
I-575	35002	100-yr	886.09	885.64	0.45	0.66	0.00	2076.15	5060.01	1971.85	809.51
I-575	35002	500-yr	888.42	888.32	0.10	0.31	0.13	6337.85	3333.44	3077.71	948.14
I-575	35078		Bridge								
I-575	35104	2-yr	879.10	878.92	0.18	0.01	0.05	242.17	1774.70	413.13	523.59
I-575	35104	5-yr	881.43	881.24	0.19	0.01	0.06	630.02	2382.97	844.02	640.52
I-575	35104	10-yr	882.92	882.71	0.21	0.01	0.07	941.60	2840.31	1177.09	761.91
I-575	35104	25-yr	884.72	884.47	0.25	0.01	0.08	1385.74	3470.02	1644.25	941.41
I-575	35104	50-yr	885.61	885.31	0.30	0.01	0.10	1725.32	4037.86	2010.82	981.59
I-575	35104	100-yr	886.76	886.71	0.05	0.00	0.18	1042.28	2219.79	5845.94	1001.09
I-575	35104	500-yr	889.02	888.99	0.03			3683.60	2051.67	7013.73	1032.02
I-575	35179	2-yr	879.18	879.10	0.07	0.05	0.03	568.50	1276.47	585.03	534.68
I-575	35179	5-yr	881.51	881.44	0.06	0.04	0.04	1144.47	1554.18	1158.35	649.59
I-575	35179	10-yr	883.00	882.93	0.07	0.03	0.04	1581.35	1785.53	1592.12	786.04
I-575	35179	25-yr	884.80	884.73	0.07	0.03	0.05	2189.66	2114.86	2195.49	980.46
I-575	35179	50-yr	885.70	885.61	0.09	0.03	0.06	2668.96	2431.60	2673.44	1065.92
I-575	35179	100-yr	886.78	886.74	0.04	0.01	0.00	2268.30	1935.98	4903.72	1112.37
I-575	35179	500-yr	889.03	889.00	0.03	0.01	0.00	3635.88	2044.46	7068.66	1143.06
I-575	35328	2-yr	879.24	879.22	0.07	0.06	0.05	560.44	1439.04	430.52	645.50
I-575	35328	5-yr	881.57	881.57	0.08	0.04	0.10	1031.73	1907.86	917.41	729.09
I-575	35328	10-yr	883.06	883.07	0.10	0.04	0.13	1394.13	2265.05	1299.82	850.15
I-575	35328	25-yr	884.86	884.88	0.12	0.04	0.15	1901.03	2758.87	1840.10	1337.16
I-575	35328	50-yr	885.76	885.78	0.14	0.04	0.19	2307.21	3202.26	2264.53	1596.26
I-575	35328	100-yr	886.87	886.71	0.16	0.03	0.06	2737.36	3651.61	2719.03	1676.25
I-575	35328	500-yr	889.05	889.02	0.03	0.01	0.00	1894.58	2334.52	8519.90	1741.22
I-575	35448		Bridge								
I-575	35485	2-yr	879.58	879.47	0.12	0.01	0.04	351.80	1683.93	394.27	1158.44
I-575	35485	5-yr	882.01	881.87	0.14	0.01	0.06	705.33	2333.89	817.78	1293.35
I-575	35485	10-yr	883.56	883.40	0.16	0.01	0.07	983.88	2821.63	1153.49	1377.17
I-575	35485	25-yr	885.44	885.25	0.19	0.01	0.08	1378.11	3491.89	1630.00	1672.65
I-575	35485	50-yr	886.45	886.21	0.23	0.01	0.10	1691.95	4073.95	2008.10	1758.47
I-575	35485	100-yr	887.47	887.20	0.27	0.01	0.12	2027.08	4668.06	2412.86	1834.25
I-575	35485	500-yr	890.19	890.18	0.01	0.00	0.28	604.42	1254.25	10890.33	1948.23
I-575	35535	2-yr	879.63	879.52	0.18	0.03	0.09	434.00	1724.16	271.84	1161.62
I-575	35535	5-yr	882.05	881.92	0.22	0.03	0.11	874.32	2435.46	547.22	1296.06
I-575	35535	10-yr	883.61	883.45	0.26	0.02	0.12	1218.46	2978.12	762.42	1379.64
I-575	35535	25-yr	885.48	885.29	0.32	0.02	0.15	1703.86	3730.20	1065.94	1660.76
I-575	35535	50-yr	886.50	886.22	0.28	0.03	0.02	2088.85	4378.63	1306.52	1736.07
I-575	35535	100-yr	887.52	887.20	0.33	0.03	0.03	2501.03	5042.71	1564.26	1802.51
I-575	35535	500-yr	890.19	890.18	0.01	0.00	0.00	692.62	1276.67	10779.71	1946.71
I-575	35593		Bridge								
I-575	35708	2-yr	880.15	880.04	0.11	0.07	0.07	400.78	1684.63	344.59	1192.40
I-575	35708	5-yr	882.63	882.51	0.12	0.07	0.10	787.31	2403.56	666.13	1327.67
I-575	35708	10-yr	884.24	884.10	0.14	0.07	0.12	1091.34	2949.27	918.39	1412.64
I-575	35708	25-yr	886.20	886.04	0.16	0.07	0.14	1521.51	3703.65	1274.84	1705.53
I-575	35708	50-yr	887.20	887.02	0.19	0.07	0.17	1862.88	4352.79	1558.33	1765.82
I-575	35708	100-yr	888.31	888.10	0.22	0.07	0.20	2230.73	5014.03	1863.23	1832.68
I-575	35708	500-yr	891.32	891.30	0.02	0.01	0.26	1196.33	2466.24	9086.43	1967.23
I-575	36148	2-yr	880.34	880.31	0.03	0.17	0.02	525.71	1039.38	864.92	962.55
I-575	36148	5-yr	882.80	882.77	0.02	0.13	0.03	906.09	1294.48	1656.43	1010.65
I-575	36148	10-yr	884.40	884.37	0.02	0.12	0.03	1192.66	1495.27	2271.07	1038.24
I-575	36148	25-yr	886.35	886.33	0.02	0.11	0.04	1636.59	1761.60	3101.81	1311.24
I-575	36148	50-yr	887.36	887.34	0.02	0.11	0.05	2027.86	2003.70	3742.44	1345.23
I-575	36148	100-yr	888.48	888.45	0.03	0.11	0.06	2124.29	2365.99	4617.72	1382.86
I-575	36148	500-yr	891.36	891.34	0.02	0.04	0.00	3169.02	2617.56	6962.42	1456.63
I-575	37016	2-yr	880.80	880.74	0.25	0.41	0.24	84.74	2343.48	1.78	327.27
I-575	37016	5-yr	883.24	883.18	0.36	0.35	0.38	245.94	3573.20	37.86	369.72
I-575	37016	10-yr	884.84	884.76	0.41	0.33	0.45	386.95	4469.82	102.23	397.44
I-575	37016	25-yr	886.81	886.73	0.47	0.32	0.53	592.57	5643.03	264.41	723.24
I-575	37016	50-yr	887.88	887.30	0.58	0.24	0.28	732.98	6681.35	359.67	748.01
I-575	37016	100-yr	889.06	888.40	0.66	0.26	0.32	907.85	7685.48	514.67	796.02
I-575	37016	500-yr	891.59	891.44	0.15	0.16	0.06	6512.72	5745.42	490.86	1077.61

I-575	37048		Bridge								
I-575	37080	2-yr	881.21	880.98	0.22	0.02	0.04	233.31	2064.64	132.05	741.67
I-575	37080	5-yr	883.82	883.56	0.27	0.02	0.06	508.78	2980.45	367.78	962.50
I-575	37080	10-yr	885.50	885.20	0.30	0.02	0.07	729.14	3664.77	565.09	1036.54
I-575	37080	25-yr	887.57	887.22	0.34	0.02	0.08	1045.06	4600.64	854.29	1127.89
I-575	37080	50-yr	888.49	888.07	0.43			1285.62	5420.35	1068.03	1165.92
I-575	37080	100-yr	889.38	888.86	0.51			1541.46	6269.17	1297.37	1217.01
I-575	37080	500-yr	892.90	892.88	0.02			7040.95	2572.71	3135.34	1329.24
I-575	37520	2-yr	881.52	881.49	0.03	0.25	0.06	1099.72	969.28	361.00	934.12
I-575	37520	5-yr	884.09	884.07	0.02	0.19	0.07	2018.12	1116.81	722.08	1121.85
I-575	37520	10-yr	885.75	885.74	0.01	0.17	0.09	2740.50	1236.47	982.04	1152.77
I-575	37520	25-yr	887.83	887.81	0.01	0.16	0.10	3748.31	1410.00	1341.69	1191.13
I-575	37520	50-yr	888.72	888.71	0.01	0.11	0.12	4542.62	1605.73	1625.66	1207.74
I-575	37520	100-yr	889.64	889.62	0.02	0.12	0.15	5382.53	1799.09	1926.38	1224.68
I-575	37520	500-yr	892.94	892.93	0.02	0.05	0.00	7634.33	2326.05	2788.62	1318.31

Profile Output Table - Bridge Only

Reach	River Sta	Profile	E.G. US. (ft)	Min El Prs (ft)	BR Open Area (sq ft)	Prs O WS (ft)	Q Total (cfs)	Min El Weir Flow (ft)	Q Weir (cfs)	Delta EG (ft)
I-575	35078	2-yr	879.10	888.33	1609.66		2430.00	886.01		0.42
I-575	35078	5-yr	881.43	888.33	1609.66		3857.00	886.01		0.61
I-575	35078	10-yr	882.92	888.33	1609.66		4959.00	886.01		0.73
I-575	35078	25-yr	884.72	888.33	1609.66		6500.00	886.01		0.90
I-575	35078	50-yr	885.61	888.33	1609.66		7774.00	886.01		0.60
I-575	35078	100-yr	886.76	888.33	1609.66		9108.00	886.01	393.89	0.67
I-575	35078	500-yr	889.02	888.33	1609.66	889.46	12749.00	886.01	2863.11	0.60
I-575	35448	2-yr	879.58	890.49	1600.48		2430.00	889.01		0.34
I-575	35448	5-yr	882.01	890.49	1600.48		3857.00	889.01		0.44
I-575	35448	10-yr	883.56	890.49	1600.48		4959.00	889.01		0.50
I-575	35448	25-yr	885.44	890.49	1600.48		6500.00	889.01		0.58
I-575	35448	50-yr	886.45	890.49	1600.48		7774.00	889.01		0.68
I-575	35448	100-yr	887.47	890.49	1600.48		9108.00	889.01		0.60
I-575	35448	500-yr	890.19	890.49	1600.48		12749.00	889.01		1.14
I-575	35593	2-yr	880.15	893.55	1623.89		2430.00	889.01		0.52
I-575	35593	5-yr	882.63	893.55	1623.89		3857.00	889.01		0.58
I-575	35593	10-yr	884.24	893.55	1623.89		4959.00	889.01		0.63
I-575	35593	25-yr	886.20	893.55	1623.89		6500.00	889.01		0.71
I-575	35593	50-yr	887.20	893.55	1623.89		7774.00	889.01		0.70
I-575	35593	100-yr	888.31	893.55	1623.89		9108.00	889.01		0.79
I-575	35593	500-yr	891.32	893.55	1623.89		12749.00	889.01		1.13
I-575	37048	2-yr	881.21	887.97	1433.80		2430.00	890.24		0.40
I-575	37048	5-yr	883.82	887.97	1433.80		3857.00	890.24		0.58
I-575	37048	10-yr	885.50	887.97	1433.80		4959.00	890.24		0.65
I-575	37048	25-yr	887.57	887.97	1433.80		6500.00	890.24		0.76
I-575	37048	50-yr	888.49	887.97	1433.80	888.07	7774.00	890.24		0.61
I-575	37048	100-yr	889.38	887.97	1433.80	888.86	9108.00	890.24		0.32
I-575	37048	500-yr	892.90	887.97	1433.80		12749.00	890.24	1637.79	1.31

Profile Output Table - Bridge Comparison

Reach	River Sta	Profile	E.G. US. (ft)	W.S. US. (ft)	Br Sel Method	Energy EG (ft)	Momen. EG (ft)	Yarnell EG (ft)	WSPRO EG (ft)	Prs O EG (ft)	Prs/Wr EG (ft)	Energy/Wr EG (ft)
I-575	35078	2-yr	879.10	878.92	WSPRO	878.99	879.11		879.10			
I-575	35078	5-yr	881.43	881.24	WSPRO	881.24	881.13		881.43			
I-575	35078	10-yr	882.92	882.71	WSPRO	882.66			882.92			
I-575	35078	25-yr	884.72	884.47	WSPRO	884.37			884.72			
I-575	35078	50-yr	885.61	885.31	Energy only	885.61						
I-575	35078	100-yr	886.76	886.71	Energy/Weir	886.85						886.76
I-575	35078	500-yr	889.02	888.99	Press/Weir	889.44				889.48	889.02	
I-575	35448	2-yr	879.58	879.47	WSPRO	879.53	879.54	879.30	879.58			
I-575	35448	5-yr	882.01	881.87	WSPRO	881.92		881.64	882.01			
I-575	35448	10-yr	883.56	883.40	WSPRO	883.46		883.15	883.56			

I-575	35448	25-yr	885.44	885.25	WSPRO	885.31		884.97	885.44		
I-575	35448	50-yr	886.45	886.21	WSPRO	886.29		885.89	886.45		
I-575	35448	100-yr	887.47	887.20	Energy only	887.47		887.02			
I-575	35448	500-yr	890.19	890.18	Energy only	890.19					
I-575	35593	2-yr	880.15	880.04	WSPRO	880.08		879.65	880.15		
I-575	35593	5-yr	882.63	882.51	WSPRO	882.56		882.06	882.63		
I-575	35593	10-yr	884.24	884.10	WSPRO	884.16			884.24		
I-575	35593	25-yr	886.20	886.04	WSPRO	886.09			886.20		
I-575	35593	50-yr	887.20	887.02	Energy only	887.20					
I-575	35593	100-yr	888.31	888.10	Energy only	888.31					
I-575	35593	500-yr	891.32	891.30	Energy only	891.32					
I-575	37048	2-yr	881.21	880.98	WSPRO	881.04	881.81	880.86	881.21		
I-575	37048	5-yr	883.82	883.56	WSPRO	883.53		883.25	883.82		
I-575	37048	10-yr	885.50	885.20	WSPRO	885.17			885.50		
I-575	37048	25-yr	887.57	887.22	WSPRO	887.18			887.57		
I-575	37048	50-yr	888.49	888.07	Press Only	888.38				888.49	
I-575	37048	100-yr	889.38	888.86	Press Only	889.93				889.38	
I-575	37048	500-yr	892.90	892.88	Press/Weir	893.98				893.36	892.90

Profile Output Table - HydTable

Reach	River Sta		Profile	Q Total (cfs)	E.G. Elev (ft)	W.S. Elev (ft)	Crit W.S. (ft)	Vel Total (ft/s)	Vel Chnl (ft/s)	Area (sq ft)	Top Width (ft)	Froude # Chl
I-575	34412		2-yr	2430.00	877.90	877.63	872.33	3.01	4.32	807.19	211.00	0.26
I-575	34412		5-yr	3857.00	880.08	879.74	873.87	2.96	5.01	1302.45	257.67	0.27
I-575	34412		10-yr	4959.00	881.46	881.09	874.97	2.97	5.42	1670.53	291.24	0.28
I-575	34412		25-yr	6500.00	883.11	882.70	876.80	2.99	5.90	2174.33	334.48	0.28
I-575	34412		50-yr	7774.00	884.30	883.86	877.61	3.01	6.23	2579.67	365.59	0.29
I-575	34412		100-yr	9108.00	885.42	884.95	878.35	3.04	6.53	2996.83	395.04	0.29
I-575	34412		500-yr	12749.00	887.99	887.46	880.06	3.14	7.21	4057.93	449.93	0.30
I-575	35002		2-yr	2430.00	878.68	878.36	872.78	4.07	4.94	883.51	248.58	0.28
I-575	35002		5-yr	3857.00	880.82	880.50	874.60	4.30	5.47	1462.81	292.69	0.28
I-575	35002		10-yr	4959.00	882.19	881.86	875.85	4.50	5.77	1884.57	326.55	0.28
I-575	35002		25-yr	6500.00	883.82	883.49	878.43	4.80	6.09	2448.78	367.00	0.28
I-575	35002		50-yr	7774.00	885.01	884.52	879.17	5.14	6.45	2881.46	508.52	0.29
I-575	35002		100-yr	9108.00	886.09	885.64	879.83	4.32	6.52	3677.66	809.51	0.28
I-575	35002		500-yr	12749.00	888.42	888.32	881.32	2.13	3.70	5995.34	948.14	0.15
I-575	35078	BR D	2-yr	2430.00	878.83	878.29	872.95	4.85	5.52	500.71	98.08	0.31
I-575	35078	BR D	5-yr	3857.00	881.10	880.39	874.82	5.40	6.49	714.80	106.45	0.33
I-575	35078	BR D	10-yr	4959.00	882.55	881.72	876.17	5.77	7.05	859.86	111.77	0.34
I-575	35078	BR D	25-yr	6500.00	884.29	883.31	878.56	6.23	7.72	1042.52	118.13	0.36
I-575	35078	BR D	50-yr	7774.00	885.21	884.36	879.44	6.65	8.28	1169.10	122.34	0.37
I-575	35078	BR D	100-yr	9108.00	886.31	885.46	880.25	6.67	8.35	1305.91	126.73	0.36
I-575	35078	BR D	500-yr	12749.00	888.94	888.32	882.12	5.48	7.86	2075.88	312.45	0.24
I-575	35078	BR U	2-yr	2430.00	879.04	878.71	873.86	4.25	4.92	572.30	99.72	0.28
I-575	35078	BR U	5-yr	3857.00	881.36	880.95	875.96	4.78	5.58	806.27	108.71	0.29
I-575	35078	BR U	10-yr	4959.00	882.84	882.38	877.26	5.13	5.95	965.97	114.43	0.29
I-575	35078	BR U	25-yr	6500.00	884.63	884.10	878.36	5.56	6.38	1168.74	121.31	0.29
I-575	35078	BR U	50-yr	7774.00	885.49	884.86	879.17	6.16	7.04	1261.26	124.33	0.32
I-575	35078	BR U	100-yr	9108.00	886.58	885.94	879.88	6.23	7.06	1397.86	128.65	0.31
I-575	35078	BR U	500-yr	12749.00	889.02	888.99	881.62	5.42	7.12	2342.60	396.39	0.20
I-575	35104		2-yr	2430.00	879.10	878.92	873.90	2.96	3.83	1554.46	523.59	0.23
I-575	35104		5-yr	3857.00	881.43	881.24	876.26	3.21	4.08	2907.87	640.52	0.21
I-575	35104		10-yr	4959.00	882.92	882.71	877.28	3.44	4.30	3922.29	761.91	0.21
I-575	35104		25-yr	6500.00	884.72	884.47	878.05	3.75	4.61	5439.58	941.41	0.21
I-575	35104		50-yr	7774.00	885.61	885.31	878.61	4.16	5.08	6243.53	981.59	0.23
I-575	35104		100-yr	9108.00	886.76	886.71	879.12	1.55	2.56	7638.48	1001.09	0.11
I-575	35104		500-yr	12749.00	889.02	888.99	880.34	1.28	2.08	9957.00	1032.02	0.08
I-575	35179		2-yr	2430.00	879.18	879.10	873.90	1.79	2.70	1645.01	534.68	0.16
I-575	35179		5-yr	3857.00	881.51	881.44	876.72	1.85	2.61	3027.16	649.59	0.14
I-575	35179		10-yr	4959.00	883.00	882.93	877.26	1.94	2.66	4079.88	786.04	0.13
I-575	35179		25-yr	6500.00	884.80	884.73	877.79	2.08	2.76	5671.46	980.46	0.13
I-575	35179		50-yr	7774.00	885.70	885.61	878.13	2.29	3.00	6570.55	1065.92	0.13
I-575	35179		100-yr	9108.00	886.78	886.74	878.47	1.32	2.22	7817.39	1112.37	0.10
I-575	35179		500-yr	12749.00	889.03	889.00	879.24	1.23	2.07	10369.07	1143.06	0.08
I-575	35328		2-yr	2430.00	879.24	879.22	873.57	2.02	2.72	2276.25	645.50	0.16

I-575	35328		5-yr	3857.00	881.57	881.57	876.04	2.22	2.88	3889.83	729.09	0.15
I-575	35328		10-yr	4959.00	883.06	883.07	876.74	2.39	3.03	5060.11	850.15	0.15
I-575	35328		25-yr	6500.00	884.86	884.88	877.38	2.61	3.24	6912.34	1337.16	0.15
I-575	35328		50-yr	7774.00	885.76	885.78	877.80	2.89	3.55	8241.87	1596.26	0.16
I-575	35328		100-yr	9108.00	886.87	886.71	878.22	3.14	3.82	9773.30	1676.25	0.16
I-575	35328		500-yr	12749.00	889.05	889.02	879.20	1.25	2.15	13727.85	1741.22	0.09
I-575	35448	BR D	2-yr	2430.00	879.42	879.20	873.72	3.65	4.14	666.12	104.89	0.24
I-575	35448	BR D	5-yr	3857.00	881.82	881.52	875.73	4.19	4.76	919.45	114.15	0.25
I-575	35448	BR D	10-yr	4959.00	883.35	883.00	876.87	4.54	5.13	1092.77	120.07	0.25
I-575	35448	BR D	25-yr	6500.00	885.21	884.78	877.93	4.95	5.55	1313.48	127.21	0.25
I-575	35448	BR D	50-yr	7774.00	886.17	885.66	878.68	5.45	6.09	1427.01	130.73	0.27
I-575	35448	BR D	100-yr	9108.00	887.16	886.54	879.40	5.96	7.03	1529.19	90.86	0.25
I-575	35448	BR D	500-yr	12749.00	889.57	888.55	881.10	7.59	9.14	1678.98	76.80	0.30
I-575	35448	BR U	2-yr	2430.00	879.53	879.27	873.74	3.85	4.29	631.27	95.19	0.25
I-575	35448	BR U	5-yr	3857.00	881.94	881.60	875.56	4.47	5.03	863.18	104.48	0.26
I-575	35448	BR U	10-yr	4959.00	883.48	883.08	876.81	4.85	5.46	1022.92	110.43	0.26
I-575	35448	BR U	25-yr	6500.00	885.34	884.87	877.96	5.30	5.95	1227.27	117.60	0.27
I-575	35448	BR U	50-yr	7774.00	886.34	885.77	878.76	5.83	6.53	1334.12	121.18	0.29
I-575	35448	BR U	100-yr	9108.00	887.34	886.69	879.55	6.29	7.04	1446.96	124.85	0.30
I-575	35448	BR U	500-yr	12749.00	889.90	888.94	881.40	7.37	8.69	1730.31	98.67	0.29
I-575	35485		2-yr	2430.00	879.58	879.47	873.57	2.47	3.10	4646.35	1158.44	0.18
I-575	35485		5-yr	3857.00	882.01	881.87	876.07	2.80	3.44	7596.11	1293.35	0.18
I-575	35485		10-yr	4959.00	883.56	883.40	876.83	3.04	3.68	9642.77	1377.17	0.18
I-575	35485		25-yr	6500.00	885.44	885.25	877.59	3.36	4.01	12412.34	1672.65	0.18
I-575	35485		50-yr	7774.00	886.45	886.21	878.12	3.72	4.39	14075.86	1758.47	0.19
I-575	35485		100-yr	9108.00	887.47	887.20	878.61	4.04	4.75	15839.00	1834.25	0.20
I-575	35485		500-yr	12749.00	890.19	890.18	879.82	0.75	1.09	21527.10	1948.23	0.04
I-575	35535		2-yr	2430.00	879.63	879.52	875.13	2.84	3.46	4545.06	1161.62	0.22
I-575	35535		5-yr	3857.00	882.05	881.92	876.90	3.15	3.75	7499.02	1296.06	0.21
I-575	35535		10-yr	4959.00	883.61	883.45	877.48	3.39	3.99	9543.85	1379.64	0.20
I-575	35535		25-yr	6500.00	885.48	885.29	878.18	3.73	4.33	12289.94	1660.76	0.21
I-575	35535		50-yr	7774.00	886.50	886.22	878.70	4.12	4.76	13875.77	1736.07	0.22
I-575	35535		100-yr	9108.00	887.52	887.20	879.21	4.47	5.13	15605.64	1802.51	0.23
I-575	35535		500-yr	12749.00	890.19	890.18	880.42	0.76	1.09	21245.30	1946.71	0.04
I-575	35593	BR D	2-yr	2430.00	879.81	879.44	875.46	4.10	4.58	592.36	101.14	0.29
I-575	35593	BR D	5-yr	3857.00	882.27	881.81	876.99	4.57	5.18	843.80	110.64	0.29
I-575	35593	BR D	10-yr	4959.00	883.86	883.32	877.81	4.88	5.56	1015.53	116.69	0.29
I-575	35593	BR D	25-yr	6500.00	885.78	885.13	878.77	5.27	6.03	1233.53	123.93	0.29
I-575	35593	BR D	50-yr	7774.00	886.65	886.09	879.51	5.74	6.59	1353.27	127.74	0.31
I-575	35593	BR D	100-yr	9108.00	887.70	887.05	880.22	6.16	7.08	1477.85	131.58	0.32
I-575	35593	BR D	500-yr	12749.00	890.65	889.72	881.96	7.06	8.73	1805.58	86.29	0.28
I-575	35593	BR U	2-yr	2430.00	880.00	879.66	875.57	4.53	4.89	536.27	85.23	0.31
I-575	35593	BR U	5-yr	3857.00	882.47	882.01	877.10	5.16	5.67	747.88	94.64	0.32
I-575	35593	BR U	10-yr	4959.00	884.06	883.53	878.02	5.53	6.16	896.04	100.71	0.32
I-575	35593	BR U	25-yr	6500.00	885.99	885.37	879.09	5.97	6.72	1088.58	108.08	0.32
I-575	35593	BR U	50-yr	7774.00	886.97	886.22	879.90	6.58	7.44	1181.39	111.47	0.35
I-575	35593	BR U	100-yr	9108.00	888.05	887.18	880.70	7.06	8.01	1290.96	115.33	0.36
I-575	35593	BR U	500-yr	12749.00	891.04	890.15	882.67	6.82	8.43	1869.38	215.25	0.35
I-575	35708		2-yr	2430.00	880.15	880.04	875.16	1.64	3.17	5112.88	1192.40	0.19
I-575	35708		5-yr	3857.00	882.63	882.51	876.92	1.78	3.50	8229.58	1327.67	0.19
I-575	35708		10-yr	4959.00	884.24	884.10	877.53	1.90	3.74	10414.89	1412.64	0.19
I-575	35708		25-yr	6500.00	886.20	886.04	878.23	2.06	4.07	13468.51	1705.53	0.19
I-575	35708		50-yr	7774.00	887.20	887.02	878.73	2.27	4.48	15161.92	1765.82	0.20
I-575	35708		100-yr	9108.00	888.31	888.10	879.23	2.45	4.82	17108.76	1832.68	0.21
I-575	35708		500-yr	12749.00	891.32	891.30	880.35	0.66	1.99	23236.99	1967.23	0.08
I-575	36148		2-yr	2430.00	880.34	880.31	874.67	0.72	2.03	3563.92	962.55	0.12
I-575	36148		5-yr	3857.00	882.80	882.77	876.94	0.71	1.97	5998.90	1010.65	0.10
I-575	36148		10-yr	4959.00	884.40	884.37	877.51	0.73	2.00	7638.79	1038.24	0.10
I-575	36148		25-yr	6500.00	886.35	886.33	878.02	0.74	2.04	10049.80	1311.24	0.09
I-575	36148		50-yr	7774.00	887.36	887.34	878.39	0.78	2.18	11389.15	1345.23	0.10
I-575	36148		100-yr	9108.00	888.48	888.45	878.76	0.81	2.40	12911.71	1382.86	0.10
I-575	36148		500-yr	12749.00	891.36	891.34	879.47	0.75	2.27	17015.98	1456.63	0.09
I-575	37016		2-yr	2430.00	880.80	880.74	874.07	3.36	3.87	1484.78	327.27	0.22
I-575	37016		5-yr	3857.00	883.24	883.18	875.62	3.76	4.71	2332.85	369.72	0.24
I-575	37016		10-yr	4959.00	884.84	884.76	876.65	3.95	5.20	2942.35	397.44	0.25
I-575	37016		25-yr	6500.00	886.81	886.73	878.12	4.17	5.74	4074.30	723.24	0.26
I-575	37016		50-yr	7774.00	887.88	887.30	879.19	4.72	6.56	4491.32	748.01	0.29

I-575	37016		100-yr	9108.00	889.06	888.40	880.09	5.02	7.06	5339.58	796.02	0.30
I-575	37016		500-yr	12749.00	891.59	891.44	882.20	1.57	4.49	8105.07	1077.61	0.18
I-575	37048	BR D	2-yr	2430.00	881.05	880.71	874.28	3.91	4.21	620.92	89.62	0.24
I-575	37048	BR D	5-yr	3857.00	883.62	883.12	875.85	4.45	5.16	866.35	116.16	0.26
I-575	37048	BR D	10-yr	4959.00	885.27	884.70	876.95	4.68	5.69	1059.01	125.56	0.27
I-575	37048	BR D	25-yr	6500.00	887.32	886.65	878.41	4.95	6.27	1311.89	133.37	0.28
I-575	37048	BR D	50-yr	7774.00	887.88	887.30	879.46	5.57	7.28	1396.88	109.62	0.23
I-575	37048	BR D	100-yr	9108.00	889.06	887.97	880.43	6.35	8.32	1433.80		0.26
I-575	37048	BR D	500-yr	12749.00	892.84	892.32	882.85	6.68	10.16	1733.53	271.55	0.27
I-575	37048	BR U	2-yr	2430.00	881.15	880.81	875.66	3.89	4.89	624.87	109.99	0.29
I-575	37048	BR U	5-yr	3857.00	883.75	883.29	877.53	4.24	5.75	910.74	119.94	0.30
I-575	37048	BR U	10-yr	4959.00	885.41	884.88	878.78	4.48	6.30	1106.07	126.28	0.31
I-575	37048	BR U	25-yr	6500.00	887.47	886.84	880.05	4.77	6.93	1361.76	134.14	0.31
I-575	37048	BR U	50-yr	7774.00	888.49	887.97	880.93	5.33	7.90	1457.99		0.22
I-575	37048	BR U	100-yr	9108.00	889.38	887.97	881.76	6.25	9.25	1457.99		0.26
I-575	37048	BR U	500-yr	12749.00	892.90	892.88	883.77	6.54	11.29	1940.62	356.09	0.24
I-575	37080		2-yr	2430.00	881.21	880.98	875.35	2.75	4.11	3161.69	741.67	0.24
I-575	37080		5-yr	3857.00	883.82	883.56	877.32	2.95	4.65	5368.16	962.50	0.24
I-575	37080		10-yr	4959.00	885.50	885.20	878.65	3.15	5.02	7009.52	1036.54	0.24
I-575	37080		25-yr	6500.00	887.57	887.22	879.76	3.41	5.48	9202.28	1127.89	0.24
I-575	37080		50-yr	7774.00	888.49	888.07	880.47	3.80	6.12	10169.84	1165.92	0.27
I-575	37080		100-yr	9108.00	889.38	888.86	881.16	4.18	6.75	11116.87	1217.01	0.29
I-575	37080		500-yr	12749.00	892.90	892.88	882.75	0.79	2.25	16196.73	1329.24	0.09
I-575	37520		2-yr	2430.00	881.52	881.49	875.83	0.68	1.92	3592.15	934.12	0.11
I-575	37520		5-yr	3857.00	884.09	884.07	878.18	0.61	1.74	6308.18	1121.85	0.09
I-575	37520		10-yr	4959.00	885.75	885.74	878.66	0.60	1.69	8207.19	1152.77	0.08
I-575	37520		25-yr	6500.00	887.83	887.81	879.23	0.61	1.67	10635.92	1191.13	0.07
I-575	37520		50-yr	7774.00	888.72	888.71	879.54	0.66	1.80	11711.64	1207.74	0.08
I-575	37520		100-yr	9108.00	889.64	889.62	879.86	0.71	1.91	12824.82	1224.68	0.08
I-575	37520		500-yr	12749.00	892.94	892.93	880.58	0.75	2.07	16992.29	1318.31	0.08

ERRORS WARNINGS AND NOTES

Errors Warnings and Notes for Plan : ExistDOT0%

River: Noonday Ck North Reach: I-575 RS: 37520 Profile: 2-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 37520 Profile: 5-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 37520 Profile: 10-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 37520 Profile: 25-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 2-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 5-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 10-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 25-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 50-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 100-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 500-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 2-yr
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the energy inside of the
bridge deck. This is not physically possible. Please review your bridge data and results for reasonableness.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 2-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 2-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 5-yr
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This

is not physically possible, the momentum answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 5-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 5-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 10-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 10-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 10-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 25-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 25-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 25-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 50-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used for pressure flow.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 50-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 50-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 100-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation was used for pressure flow.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 100-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 100-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 500-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation was used for pressure flow.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 500-yr Upstream

Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 500-yr Downstream
Note: For the cross section inside the bridge at the downstream end, the water surface and energy are based on critical depth over the weir.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 2-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 5-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 10-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 25-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 50-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 500-yr
Warning:Divided flow computed for this cross-section.
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 36148 Profile: 2-yr
Warning:Divided flow computed for this cross-section.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 36148 Profile: 5-yr
Warning:Divided flow computed for this cross-section.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 36148 Profile: 10-yr
Warning:Divided flow computed for this cross-section.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 36148 Profile: 25-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 36148 Profile: 100-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
River: Noonday Ck North Reach: I-575 RS: 36148 Profile: 500-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 2-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 5-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 10-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 25-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 50-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 500-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 2-yr
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 2-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 2-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 5-yr
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 5-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 5-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 10-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 10-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 10-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 25-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 25-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 25-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 50-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 50-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 50-yr Downstream
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 100-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 100-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 100-yr Downstream
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 500-yr
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 500-yr Upstream
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 500-yr Downstream
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35535 Profile: 2-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35535 Profile: 5-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35535 Profile: 10-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35535 Profile: 25-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35535 Profile: 500-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35485 Profile: 2-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35485 Profile: 5-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35485 Profile: 10-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35485 Profile: 25-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35485 Profile: 50-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35485 Profile: 100-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35485 Profile: 500-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 2-yr
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the energy inside of the bridge deck. This is not physically possible. Please review your bridge data and results for reasonableness.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 2-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 2-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 5-yr
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 5-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 5-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 10-yr
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 10-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 10-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 25-yr
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 25-yr Upstream

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 25-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 50-yr
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 50-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 50-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 100-yr
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 100-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 100-yr Downstream
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 500-yr
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 500-yr Upstream
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35448 Profile: 500-yr Downstream
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 2-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 5-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 10-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 25-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 50-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 100-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 500-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 2-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 5-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 10-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 25-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 50-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 100-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 500-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 2-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 5-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 10-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 25-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 50-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 100-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 500-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 2-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the energy inside of the bridge deck. This is not physically possible. Please review your bridge data and results for reasonableness.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 2-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 2-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 5-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the energy inside of the bridge deck. This is not physically possible. Please review your bridge data and results for reasonableness.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 5-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 5-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 10-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 10-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 10-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 25-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 25-yr Upstream

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 25-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 50-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 50-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 50-yr Downstream
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 100-yr
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 100-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
Note: Notes(60): This is an inside cross section of a perched bridge that has energy, low flow inside of the bridge and weir flow over the embankment. The reported hydraulics are based on the flow and area inside of the bridge.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 100-yr Downstream
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
Note: Notes(60): This is an inside cross section of a perched bridge that has energy, low flow inside of the bridge and weir flow over the embankment. The reported hydraulics are based on the flow and area inside of the bridge.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 500-yr
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used for pressure flow.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 500-yr Upstream
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 500-yr Downstream
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: For the cross section inside the bridge at the downstream end, the energy is based on critical depth over the weir. The water surface has been projected.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 2-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 5-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 10-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 25-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 50-yr
Warning:Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 500-yr
Warning:Divided flow computed for this cross-section.
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

HEC-RAS PROPOSED BRIDGE MODEL

HEC-RAS Version 4.0.0 March 2008
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X    X  XXXXXX   XXXX       XXXX      XX     XXXX
X    X  X       X   X      X  X    X  X   X
X    X  X       X          X  X   X   X  X
XXXXXX  XXXX    X      XXX XXXX    XXXXX   XXXX
X    X  X       X          X X    X   X       X
X    X  X       X   X      X  X   X   X       X
X    X  XXXXXX   XXXX      X   X  X   X  XXXXX
```

PROJECT DATA
Project Title: I575overNoondayCkNorth
Project File : I575NoondayCkNorth.prj
Run Date and Time: 6/11/2008 5:39:10 PM

Project in English units

PLAN DATA

Plan Title: Proposed Widening DOT 0%
Plan File : m:\TRA\31-6036 02 I-575\Hydraulics\Noonday Creek North\HEC-RAS\2\I575NoondayCkNorth.p05

Geometry Title: Proposed Widening DOT
Geometry File : m:\TRA\31-6036 02 I-575\Hydraulics\Noonday Creek North\HEC-RAS\2\I575NoondayCkNorth.g04

Flow Title : Regression 0% impervious flows
Flow File : m:\TRA\31-6036 02 I-575\Hydraulics\Noonday Creek North\HEC-RAS\2\I575NoondayCkNorth.f03

Plan Summary Information:

Number of:	Cross Sections =	10	Multiple Openings =	0
	Culverts =	0	Inline Structures =	0
	Bridges =	3	Lateral Structures =	0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed at all cross sections
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Regression 0% impervious flows
Flow File : m:\TRA\31-6036 02 I-575\Hydraulics\Noonday Creek North\HEC-RAS\2\I575NoondayCkNorth.f03

Flow Data (cfs)

River	Reach	RS	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr
Noonday Ck North	I-575	37520	2430	3857	4959	6500	7774	9108	12749

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Noonday Ck North	I-575	2-yr	Normal S = 0.0011	Normal S = 0.0011

Noonday Ck NorthI-575	5-yr	Normal S = 0.0011	Normal S = 0.0011
Noonday Ck NorthI-575	10-yr	Normal S = 0.0011	Normal S = 0.0011
Noonday Ck NorthI-575	25-yr	Normal S = 0.0011	Normal S = 0.0011
Noonday Ck NorthI-575	50-yr	Normal S = 0.0011	Normal S = 0.0011
Noonday Ck NorthI-575	100-yr	Normal S = 0.0011	Normal S = 0.0011
Noonday Ck NorthI-575	500-yr	Normal S = 0.0011	Normal S = 0.0011

GEOMETRY DATA

Geometry Title: Proposed Widening DOT
Geometry File : m:\TRA\31-6036 02 I-575\Hydraulics\Noonday Creek North\HEC-RAS\2\I575NoondayCkNorth.g04

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 37520

INPUT
Description: Approach
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
121	893	172	891.48	268	882.81	379	882.16	700	877.24
802	876.01	926	876.6	1000	877.24	1045	877.67	1058	871.55
1075	869.98	1093	871.37	1099	879.08	1170	877.79	1262	877.75
1334	878.44	1473	897.12	1614	893.21				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
121	.12	1045	.05	1099	.12

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1045	1099	440	440	440	.3	.5

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 37080

INPUT
Description: US Dupree Rd
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
121	892.52	172	891	268	882.33	379	881.68	484	888.91
508	888.28	568	883.3	700	876.76	802	875.53	926	876.12
1000	876.76	1045	877.19	1058	871.07	1075	869.5	1093	870.89
1099	878.6	1170	877.31	1262	877.27	1334	877.96	1473	896.64
1614	892.73								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
121	.12	1045	.05	1099	.12

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1045	1099	64	64	64	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
121	990	890.73	F
1154	1614	891.55	F

BRIDGE

RIVER: Noonday Ck North
REACH: I-575 RS: 37048

INPUT
Description: Dupree Rd
Distance from Upstream XS = 10
Deck/Roadway Width = 44
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates

num= 25

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
50	891		105	891		124	889	
143	891		206	890		213	889	
216	889		300	916.14		360	913.44	
513	905.78		616	900.3		747	894.98	
827	894.01		929	892.78		1000	890.23	
1000	892.9	887.15	1144	893.72	887.97	1144	891.05	
1222	891.64		1278	892.26		1362	893.69	
1464	897.28		1548	899.79		1584	900.87	
1660	903.01							

Upstream Bridge Cross Section Data
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
121	892.52	172	891	268	882.33	379	881.68	484	888.91
508	888.28	568	883.3	700	876.76	802	875.53	926	876.12
1000	876.76	1045	877.19	1058	871.07	1075	869.5	1093	870.89
1099	878.6	1170	877.31	1262	877.27	1334	877.96	1473	896.64
1614	892.73								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
121	.12	1045	.05	1099	.12

Bank Sta: Left	Right	Coeff Contr.	Expan.
1045	1099	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
121	990	890.73	F
1154	1614	891.55	F

Downstream Deck/Roadway Coordinates
num= 25

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
50	891		105	891		124	889	
143	891		206	890		213	889	
216	889		300	916.14		360	913.44	
513	905.78		616	900.3		747	894.98	
827	894.01		929	892.78		1000	890.23	
1000	892.9	887.15	1144	893.72	887.97	1144	891.05	
1222	891.64		1278	892.26		1362	893.69	
1464	897.28		1548	899.79		1584	900.87	
1660	903.01							

Downstream Bridge Cross Section Data
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
150	889.73	214	890	271	891.93	376	888.57	486	885.47
621	885.23	700	885.98	736	886.65	819	875.58	952	877.82
1033	877.87	1045	869.25	1066	869.65	1085	869.36	1096	879.58
1152	885.21	1195	890.45	1304	892.18	1435	900.84	1525	902.28
1590	910.63								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
150	.12	1033	.05	1096	.12

Bank Sta: Left	Right	Coeff Contr.	Expan.
1033	1096	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
150	995	889.98	F
1149	1590	890.55	F

Upstream Embankment side slope = 2 horiz. to 1.0 vertical
Downstream Embankment side slope = 2 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Abutments = 2

Abutment Data

```
Upstream     num=       2
     Sta    Elev     Sta    Elev
    1000  887.15    1040  867.15
Downstream     num=       2
     Sta    Elev     Sta    Elev
    1000  887.15    1040  867.15

Abutment Data
Upstream     num=       2
     Sta    Elev     Sta    Elev
    1104  867.97    1144  887.97
Downstream     num=       2
     Sta    Elev     Sta    Elev
    1104  867.97    1144  887.97

Number of Piers =  3

Pier Data
Pier Station     Upstream=    1036    Downstream=    1036
Upstream     num=       2
    Width   Elev    Width   Elev
       1     860       1     900
Downstream     num=       2
    Width   Elev    Width   Elev
       1     860       1     900

Pier Data
Pier Station     Upstream=    1072    Downstream=    1072
Upstream     num=       2
    Width   Elev    Width   Elev
       3     860       3     900
Downstream     num=       2
    Width   Elev    Width   Elev
       3     860       3     900

Pier Data
Pier Station     Upstream=    1108    Downstream=    1108
Upstream     num=       2
    Width   Elev    Width   Elev
       3     860       3     900
Downstream     num=       2
    Width   Elev    Width   Elev
       3     860       3     900

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
       Momentum              Cd   =       2
       Yarnell               KVal =    1.25
       W.S. Pro Method

  W.S.Pro Data
    Left Embankment
       El of the top of the embankment = 892.43
       El of the toe of the abutment   = 877.19
    Right Embankment
       El of the top of the embankment = 891.25
       El of the toe of the abutment   = 878.6
    Abtument Type                      = 3 Sloping abutments and sloping embankments
    Slope of abutments                 = 2
    Top with of embankment             = 44
    Centroid station of bridge opening = 1075
    Wing Wall Type                     = No wing walls present
       Width                           =
       Angle                           =
       Radius                          =
    Guide Banks Type                   = No Guide Bank present
       Length                          =
       Offset                          =
       Angle                           =
    Optional Contraction and expansion coefficients
      At approach Section
      At upstream outside
      At upstream inside (BU)
      At downstream inside (BD)
```

Use Geometric mean as Friction Slope Method

Selected Low Flow Methods = W.S.Pro Method

High Flow Method
Pressure and Weir flow
Submerged Inlet Cd =
Submerged Inlet + Outlet Cd = .8
Max Low Cord =

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 37016

INPUT
Description: DS Dupree Rd
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
150	889.73	214	890	271	891.93	376	888.57	486	885.47
621	885.23	700	885.98	736	886.65	819	875.58	952	877.82
1033	877.87	1045	869.25	1066	869.65	1085	869.36	1096	879.58
1152	885.21	1195	890.45	1304	892.18	1435	900.84	1525	902.28
1590	910.63								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
150	.12	1033	.05	1096	.12

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1033	1096	1150	868	550	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
150	995	889.98	F
1149	1590	890.55	F

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 36148

INPUT
Description: Approach I-575
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
379	893.06	475	888.7	562	885.89	650	884.42	706	884.52
787	885.32	815	875.78	880	875.14	1000	875.92	1040	879.2
1052	869.95	1064	868.54	1075	869.68	1087	870.89	1098	877.38
1151	876.94	1200	875.8	1240	875.31	1344	875.11	1450	877.19
1547	878.47	1634	880.47	1665	884.51	1690	884.44	1710	879.28
1751	878.39	1841	879.53	1885	895.53	1932	899.99		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
379	.12	1040	.045	1098	.12

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1040	1098	250	440	650	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
379	493	892	F
1651	1932	889.5	F

CROSS SECTION

RIVER: Noonday Ck North

REACH: I-575 RS: 35708

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
379	893.06	475	888.7	562	885.89	650	884.42	706	884.52
787	885.32	815	875.78	880	875.14	1000	875.92	1024	875.81
1051	875.05	1077	869.32	1092	869.32	1114	875.62	1570	875
1760	876	1993	880	2200	884	2385	890		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
379	.12	1051	.045	1114	.12

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1051	1114	355	380	405	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
379	933	892	F
1211	2385	889	F

BRIDGE

RIVER: Noonday Ck North
REACH: I-575 RS: 35593

INPUT
Description: I-575 Nothbound
Distance from Upstream XS = 10
Deck/Roadway Width = 360
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 23

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	891		302	891		457	891	
530	892		589	893		747	894	
932	895		1000	898.65		1000	901.32	893.15
1144	903.72	896.55	1144	901.05		1365	898	
1490	900		1612	902		1715	904	
1835	906		1930	908		2085	911	
2135	887		2170	888		2210	887	
2270	916		2385	919				

Upstream Bridge Cross Section Data
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
379	893.06	475	888.7	562	885.89	650	884.42	706	884.52
787	885.32	815	875.78	880	875.14	1000	875.92	1024	875.81
1051	875.05	1077	869.32	1092	869.32	1114	875.62	1570	875
1760	876	1993	880	2200	884	2385	890		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
379	.045	1051	.045	1114	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
1051	1114	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
379	933	892	F
1211	2385	889	F

Downstream Deck/Roadway Coordinates
num= 23

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	891		302	891		457	891	
530	892		589	893		747	894	
932	895		1000	898.65		1000	901.32	886.01
1144	903.72	888.15	1144	901.05		1365	898	
1490	900		1612	902		1715	904	
1835	906		1930	908		2085	911	
2135	887		2170	888		2210	887	
2270	916		2385	919				

Downstream Bridge Cross Section Data
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
379	892.64	475	888.28	562	885.47	650	884	706	884.1
787	884.9	815	875.36	880	874.72	1024	874.73	1038	875.06
1050	869.43	1073	868.47	1087	868.33	1095	875.86	1117	875.34
1442	879	1540	882	1732	884	2200	886		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
379	.045	1038	.045	1095	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
1038	1095	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
379	958.5	891	F
1185.5	2200	888	F

Upstream Embankment side slope = 2 horiz. to 1.0 vertical
Downstream Embankment side slope = 2 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Abutments = 2

Abutment Data
Upstream num= 2

Sta	Elev	Sta	Elev
1000	891.15	1060	861.15

Downstream num= 2

Sta	Elev	Sta	Elev
1000	886.01	1040	866.01

Abutment Data
Upstream num= 2

Sta	Elev	Sta	Elev
1084	863.55	1144	893.55

Downstream num= 2

Sta	Elev	Sta	Elev
1104	868.15	1144	888.15

Number of Piers = 2

Pier Data
Pier Station Upstream= 1048 Downstream= 1048
Upstream num= 2

Width	Elev	Width	Elev
4	860	4	900

Downstream num= 2

Width	Elev	Width	Elev
4	860	4	900

Pier Data
Pier Station Upstream= 1096 Downstream= 1096
Upstream num= 2

Width	Elev	Width	Elev
4	860	4	900

Downstream num= 2

Width	Elev	Width	Elev
4	860	4	900

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data
Energy
Momentum Cd = 2
Yarnell KVal = 1.25
W.S. Pro Method

W.S.Pro Data
Left Embankment
El of the top of the embankment = 895.65

```
      El of the toe of the abutment   = 875.94
   Right Embankment
      El of the top of the embankment = 898.05
      El of the toe of the abutment   = 877.01
   Abtument Type                      = 3 Sloping abutments and sloping embankments
   Slope of abutments                 = 2
   Top with of embankment             = 360
   Centroid station of bridge opening = 1072
   Wing Wall Type                     = No wing walls present
      Width                           =
      Angle                           =
      Radius                          =
   Guide Banks Type                   = No Guide Bank present
      Length                          =
      Offset                          =
      Angle                           =
   Optional Contraction and expansion coefficients
     At approach Section
     At upstream outside
     At upstream inside (BU)
     At downstream inside (BD)
   Use Geometric mean as Friction Slope Method

Selected Low Flow Methods = W.S.Pro Method

High Flow Method
      Pressure and Weir flow
          Submerged Inlet Cd          =
          Submerged Inlet + Outlet Cd =      .8
          Max Low Cord                =

Additional Bridge Parameters
      Add Friction component to Momentum
      Do not add Weight component to Momentum
      Class B flow critical depth computations use critical depth
          inside the bridge at the upstream end
      Criteria to check for pressure flow = Upstream water surface

CROSS SECTION


RIVER: Noonday Ck North
REACH: I-575             RS: 35328

INPUT
Description:
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     379  892.64     475  888.28     562  885.47     650     884     706   884.1
     787   884.9     815  875.36     880  874.72    1024  874.73    1038  875.06
    1050  869.43    1073  868.47    1087  868.33    1095  875.86    1117  875.34
    1442     879    1540     882    1732     884    2200     886

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     379     .05    1038    .045    1095     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          1038    1095              100     149     200              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
     379   958.5     891       F
  1185.5    2200     888       F

CROSS SECTION


RIVER: Noonday Ck North
REACH: I-575             RS: 35179

INPUT
Description:
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     336   909.3     418  905.74     500  903.44     542   902.8     620  896.35
     690   890.4     757  885.46     853  880.47     935   874.8     965  875.42
```

1020	876.89	1047	875.17	1057	869.82	1065	868.85	1081	866.86
1099	874.81	1118	875.06	1404	879	1502	882	1694	884
1852	886								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
336	.05	1047	.045	1099	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1047	1099	50	75	100	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
336	915	887	F
1229	1852	886	F

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 35104

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
336	909.22	418	905.66	500	903.36	542	902.72	620	896.27
690	890.32	757	885.38	853	880.39	935	874.72	965	875.34
1020	876.89	1047	875.17	1057	869.82	1065	868.85	1081	866.86
1099	874.81	1118	875.06	1404	879	1502	882	1694	884
1740	885								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
336	.05	1047	.045	1099	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1047	1099	102	102	102	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
336	990	887	F
1154	1740	886	F

BRIDGE

RIVER: Noonday Ck North
REACH: I-575 RS: 35078

INPUT
Description:
Distance from Upstream XS = 10
Deck/Roadway Width = 82
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 23

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	891		90	890		255	888	
350	887		410	886		465	885	
535	886		600	887		770	888	
815	889		925	891		1000	892.1	
1000	894.77	887.22	1144	895.5	888.33	1144	892.83	
1200	892		1275	891		1375	890	
1450	889		1520	888		1585	887	
1640	886		1740	885				

Upstream Bridge Cross Section Data
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
336	909.22	418	905.66	500	903.36	542	902.72	620	896.27
690	890.32	757	885.38	853	880.39	935	874.72	965	875.34
1020	876.89	1047	875.17	1057	869.82	1065	868.85	1081	866.86
1099	874.81	1118	875.06	1404	879	1502	882	1694	884
1740	885								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

336	.05	1047	.045	1099	.05

Bank Sta: Left Right Coeff Contr. Expan.
1047 1099 .3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
336	990	887	F
1154	1740	886	F

Downstream Deck/Roadway Coordinates
num= 23

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	891		90	890		255	888	
350	887		410	886		465	885	
535	886		600	887		770	888	
815	889		925	891		1000	892.1	
1000	894.77	887.22	1144	895.5	888.33	1144	892.83	
1200	892		1275	891		1375	890	
1450	889		1520	888		1585	887	
1640	886		1740	885				

Downstream Bridge Cross Section Data
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
336	909.11	418	905.55	500	903.25	542	902.61	620	896.16
690	890.21	757	885.27	853	880.28	935	874.61	965	875.23
1018	876.56	1038	877.4	1047	875	1049	867.14	1066	867.42
1083	868.1	1093	876.91	1116	875.97	1190	889.14	1227	889.39
1284	887.64	1322	887.73	1372	883.84	1519	884.78	1740	885

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
336	.05	1047	.045	1093	.05

Bank Sta: Left Right Coeff Contr. Expan.
1047 1093 .3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
336	995	886	F
1149	1740	885	F

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Abutments = 2

Abutment Data
Upstream num= 2

Sta	Elev	Sta	Elev
1000	887.22	1040	867.22

Downstream num= 2

Sta	Elev	Sta	Elev
1000	887.22	1040	867.22

Abutment Data
Upstream num= 2

Sta	Elev	Sta	Elev
1104	868.33	1144	888.33

Downstream num= 2

Sta	Elev	Sta	Elev
1104	868.33	1144	888.33

Number of Piers = 2

Pier Data
Pier Station Upstream= 1048 Downstream= 1048
Upstream num= 2

Width	Elev	Width	Elev
4	860	4	900

Downstream num= 2

Width	Elev	Width	Elev

```
       4     860       4     900

Pier Data
Pier Station     Upstream=    1096    Downstream=    1096
Upstream     num=       2
    Width   Elev    Width   Elev
       4     860       4     900
Downstream     num=       2
    Width   Elev    Width   Elev
       4     860       4     900

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
       Momentum              Cd   =       2
       Yarnell               KVal =    1.25
       W.S. Pro Method

  W.S.Pro Data
    Left Embankment
       El of the top of the embankment = 892.1
       El of the toe of the abutment   = 875.17
    Right Embankment
       El of the top of the embankment = 892.83
       El of the toe of the abutment   = 874.81
    Abtument Type                      = 3 Sloping abutments and sloping embankments
    Slope of abutments                 = 2
    Top with of embankment             = 82
    Centroid station of bridge opening = 1072
    Wing Wall Type                     = No wing walls present
       Width                           =
       Angle                           =
       Radius                          =
    Guide Banks Type                   = No Guide Bank present
       Length                          =
       Offset                          =
       Angle                           =
    Optional Contraction and expansion coefficients
      At approach Section
      At upstream outside
      At upstream inside (BU)
      At downstream inside (BD)
    Use Geometric mean as Friction Slope Method

Selected Low Flow Methods = W.S.Pro Method

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION


RIVER: Noonday Ck North
REACH: I-575             RS: 35002

INPUT
Description:
Station Elevation Data    num=      25
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     336  909.11     418  905.55     500  903.25     542  902.61     620  896.16
     690  890.21     757  885.27     853  880.28     935  874.61     965  875.23
    1018  876.56    1038   877.4    1047     875    1049  867.14    1066  867.42
    1083   868.1    1093  876.91    1116  875.97    1190  889.14    1227  889.39
    1284  887.64    1322  887.73    1372  883.84    1519  884.78    1740     885
```

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
336	.05	1047	.045	1093	.05

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff Contr.	Expan.
	1047	1093		590	590	590	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
336	995	886	F
1149	1740	885	F

CROSS SECTION

RIVER: Noonday Ck North
REACH: I-575 RS: 34412

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
336	909.11	418	905.55	500	903.25	542	902.61	620	896.16
690	890.21	757	885.27	853	880.28	935	874.61	965	875.23
1025	875.94	1037	868.18	1057	867.47	1078	867.88	1086	875.49
1190	889.14	1227	889.39						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
336	.12	1025	.045	1086	.12

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff Contr.	Expan.
	1025	1086		0	0	0	.1	.3

SUMMARY OF MANNING'S N VALUES

River:Noonday Ck North

Reach	River Sta.	n1	n2	n3
I-575	37520	.12	.05	.12
I-575	37080	.12	.05	.12
I-575	37048	Bridge		
I-575	37016	.12	.05	.12
I-575	36148	.12	.045	.12
I-575	35708	.12	.045	.12
I-575	35593	Bridge		
I-575	35328	.05	.045	.05
I-575	35179	.05	.045	.05
I-575	35104	.05	.045	.05
I-575	35078	Bridge		
I-575	35002	.05	.045	.05
I-575	34412	.12	.045	.12

SUMMARY OF REACH LENGTHS

River: Noonday Ck North

Reach	River Sta.	Left	Channel	Right
I-575	37520	440	440	440
I-575	37080	64	64	64
I-575	37048	Bridge		
I-575	37016	1150	868	550
I-575	36148	250	440	650
I-575	35708	355	380	405
I-575	35593	Bridge		
I-575	35328	100	149	200
I-575	35179	50	75	100
I-575	35104	102	102	102
I-575	35078	Bridge		
I-575	35002	590	590	590

I-575	34412	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Noonday Ck North

Reach	River Sta.	Contr.	Expan.
I-575	37520	.3	.5
I-575	37080	.3	.5
I-575	37048	Bridge	
I-575	37016	.3	.5
I-575	36148	.3	.5
I-575	35708	.3	.5
I-575	35593	Bridge	
I-575	35328	.3	.5
I-575	35179	.3	.5
I-575	35104	.3	.5
I-575	35078	Bridge	
I-575	35002	.3	.5
I-575	34412	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
I-575	34412	2-yr	2430.00	867.47	877.63	872.33	877.90	0.001101	4.32	807.19	211.00	0.26
I-575	34412	5-yr	3857.00	867.47	879.74	873.87	880.08	0.001102	5.01	1302.45	257.67	0.27
I-575	34412	10-yr	4959.00	867.47	881.09	874.97	881.46	0.001101	5.42	1670.53	291.24	0.28
I-575	34412	25-yr	6500.00	867.47	882.70	876.80	883.11	0.001100	5.90	2174.33	334.48	0.28
I-575	34412	50-yr	7774.00	867.47	883.86	877.61	884.30	0.001101	6.23	2579.67	365.59	0.29
I-575	34412	100-yr	9108.00	867.47	884.95	878.35	885.42	0.001100	6.53	2996.83	395.04	0.29
I-575	34412	500-yr	12749.00	867.47	887.46	880.06	887.99	0.001102	7.21	4057.93	449.93	0.30
I-575	35002	2-yr	2430.00	867.14	878.36	872.78	878.68	0.001406	4.94	596.46	248.58	0.28
I-575	35002	5-yr	3857.00	867.14	880.50	874.60	880.82	0.001320	5.47	897.57	292.69	0.28
I-575	35002	10-yr	4959.00	867.14	881.86	875.85	882.19	0.001270	5.77	1102.29	326.55	0.28
I-575	35002	25-yr	6500.00	867.14	883.49	878.43	883.82	0.001209	6.09	1352.85	367.00	0.28
I-575	35002	50-yr	7774.00	867.14	884.52	879.17	885.01	0.001240	6.45	1512.19	508.52	0.29
I-575	35002	100-yr	9108.00	867.14	885.64	879.83	886.09	0.001153	6.52	2106.94	809.51	0.28
I-575	35002	500-yr	12749.00	867.14	888.32	881.32	888.42	0.000306	3.70	5995.34	948.14	0.15
I-575	35078		Bridge									
I-575	35104	2-yr	2430.00	866.86	878.92	873.90	879.10	0.000789	3.83	820.21	523.59	0.23
I-575	35104	5-yr	3857.00	866.86	881.24	876.26	881.43	0.000657	4.08	1201.33	640.52	0.21
I-575	35104	10-yr	4959.00	866.86	882.71	877.28	882.92	0.000619	4.30	1442.58	761.91	0.21
I-575	35104	25-yr	6500.00	866.86	884.47	878.05	884.72	0.000599	4.61	1731.82	941.41	0.21
I-575	35104	50-yr	7774.00	866.86	885.31	878.61	885.61	0.000673	5.08	1868.31	981.59	0.23
I-575	35104	100-yr	9108.00	866.86	886.71	879.12	886.76	0.000152	2.56	5881.80	1001.09	0.11
I-575	35104	500-yr	12749.00	866.86	888.99	880.34	889.02	0.000085	2.08	9957.00	1032.02	0.08
I-575	35179	2-yr	2430.00	866.86	879.10	873.90	879.18	0.000381	2.70	1353.81	534.68	0.16
I-575	35179	5-yr	3857.00	866.86	881.44	876.72	881.51	0.000263	2.61	2088.43	649.59	0.14
I-575	35179	10-yr	4959.00	866.86	882.93	877.26	883.00	0.000231	2.66	2556.11	786.04	0.13
I-575	35179	25-yr	6500.00	866.86	884.73	877.79	884.80	0.000210	2.76	3119.58	980.46	0.13
I-575	35179	50-yr	7774.00	866.86	885.61	878.13	885.70	0.000229	3.00	3395.40	1065.92	0.13
I-575	35179	100-yr	9108.00	866.86	886.74	878.47	886.78	0.000115	2.22	6922.08	1112.37	0.10
I-575	35179	500-yr	12749.00	866.86	889.00	879.24	889.03	0.000084	2.07	10369.07	1143.06	0.08
I-575	35328	2-yr	2430.00	868.33	879.25	873.57	879.24	0.000379	2.71	1208.24	646.47	0.16
I-575	35328	5-yr	3857.00	868.33	881.61	876.04	881.57	0.000313	2.86	1744.65	730.59	0.15
I-575	35328	10-yr	4959.00	868.33	883.12	876.74	883.06	0.000294	3.01	2087.18	855.16	0.15
I-575	35328	25-yr	6500.00	868.33	884.94	877.38	884.86	0.000284	3.22	2500.55	1358.14	0.15
I-575	35328	50-yr	7774.00	868.33	885.62	877.80	885.76	0.000334	3.60	2655.00	1553.74	0.16
I-575	35328	100-yr	9108.00	868.33	886.71	878.22	886.87	0.000344	3.82	2901.37	1676.25	0.16
I-575	35328	500-yr	12749.00	868.33	889.02	879.20	889.05	0.000091	2.15	10235.39	1741.22	0.09
I-575	35593		Bridge									
I-575	35708	2-yr	2430.00	869.32	880.03	875.16	880.14	0.000556	3.17	1478.96	1191.97	0.19

I-575	35708	5-yr	3857.00	869.32	882.50	876.92	882.62	0.000481	3.50	2165.06	1326.94	0.19
I-575	35708	10-yr	4959.00	869.32	884.08	877.53	884.21	0.000462	3.76	2604.06	1411.70	0.19
I-575	35708	25-yr	6500.00	869.32	885.98	878.23	886.14	0.000453	4.09	3134.49	1702.10	0.19
I-575	35708	50-yr	7774.00	869.32	886.85	878.73	887.05	0.000517	4.54	3376.03	1755.78	0.21
I-575	35708	100-yr	9108.00	869.32	888.10	879.23	888.31	0.000525	4.83	3721.46	1832.57	0.21
I-575	35708	500-yr	12749.00	869.32	891.22	880.35	891.24	0.000072	2.00	19082.29	1965.50	0.08
I-575	36148	2-yr	2430.00	868.54	880.30	874.67	880.33	0.000231	2.03	3373.23	962.18	0.12
I-575	36148	5-yr	3857.00	868.54	882.76	876.94	882.78	0.000158	1.98	5445.72	1010.44	0.10
I-575	36148	10-yr	4959.00	868.54	884.35	877.51	884.37	0.000137	2.00	6808.69	1037.79	0.10
I-575	36148	25-yr	6500.00	868.54	886.28	878.02	886.30	0.000119	2.06	8784.83	1309.49	0.09
I-575	36148	50-yr	7774.00	868.54	887.18	878.39	887.21	0.000128	2.21	9798.23	1340.12	0.10
I-575	36148	100-yr	9108.00	868.54	888.45	878.76	888.48	0.000121	2.26	11250.74	1382.80	0.10
I-575	36148	500-yr	12749.00	868.54	891.26	879.47	891.29	0.000100	2.29	16778.84	1454.70	0.09
I-575	37016	2-yr	2430.00	869.25	880.74	874.07	880.80	0.000952	3.87	721.52	327.17	0.22
I-575	37016	5-yr	3857.00	869.25	883.17	875.62	883.23	0.001044	4.71	1024.08	369.54	0.24
I-575	37016	10-yr	4959.00	869.25	884.74	876.65	884.82	0.001085	5.21	1251.90	397.04	0.25
I-575	37016	25-yr	6500.00	869.25	886.68	878.12	886.76	0.001109	5.76	1550.99	721.21	0.26
I-575	37016	50-yr	7774.00	869.25	887.66	879.19	887.75	0.001253	6.38	1700.73	763.70	0.28
I-575	37016	100-yr	9108.00	869.25	888.37	880.09	889.04	0.001459	7.08	1810.86	794.94	0.30
I-575	37016	500-yr	12749.00	869.25	891.36	882.20	891.52	0.000482	4.52	8023.54	1068.20	0.18
I-575	37048		Bridge									
I-575	37080	2-yr	2430.00	869.50	880.98	875.35	881.20	0.001108	4.11	882.92	741.52	0.24
I-575	37080	5-yr	3857.00	869.50	883.55	877.32	883.81	0.001024	4.65	1304.39	962.07	0.24
I-575	37080	10-yr	4959.00	869.50	885.18	878.65	885.48	0.001009	5.03	1571.93	1035.62	0.24
I-575	37080	25-yr	6500.00	869.50	887.18	879.76	887.53	0.001002	5.50	1900.79	1126.03	0.25
I-575	37080	50-yr	7774.00	869.50	888.41	880.47	888.81	0.001066	5.97	2101.48	1184.48	0.26
I-575	37080	100-yr	9108.00	869.50	888.84	881.16	889.35	0.001327	6.77	2172.10	1215.11	0.29
I-575	37080	500-yr	12749.00	869.50	892.82	882.75	892.84	0.000112	2.26	16122.40	1326.81	0.09
I-575	37520	2-yr	2430.00	869.98	881.49	875.83	881.51	0.000242	1.92	3588.33	933.82	0.11
I-575	37520	5-yr	3857.00	869.98	884.06	878.18	884.08	0.000142	1.74	6299.07	1121.70	0.09
I-575	37520	10-yr	4959.00	869.98	885.72	878.66	885.74	0.000113	1.69	8186.86	1152.44	0.08
I-575	37520	25-yr	6500.00	869.98	887.78	879.23	887.79	0.000092	1.68	10592.68	1190.46	0.07
I-575	37520	50-yr	7774.00	869.98	889.07	879.54	889.09	0.000088	1.73	12153.09	1214.49	0.07
I-575	37520	100-yr	9108.00	869.98	889.60	879.86	889.62	0.000104	1.91	12796.27	1224.25	0.08
I-575	37520	500-yr	12749.00	869.98	892.87	880.58	892.89	0.000098	2.08	16919.54	1316.05	0.08

Profile Output Table - Standard Table 2

Reach	River Sta	Profile	E.G. Elev (ft)	W.S. Elev (ft)	Vel Head (ft)	Frctn Loss (ft)	C & E Loss (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Top Width (ft)
I-575	34412	2-yr	877.90	877.63	0.27			177.25	2245.28	7.47	211.00
I-575	34412	5-yr	880.08	879.74	0.33			560.31	3250.07	46.62	257.67
I-575	34412	10-yr	881.46	881.09	0.37			900.82	3961.26	96.92	291.24
I-575	34412	25-yr	883.11	882.70	0.41			1422.60	4887.27	190.13	334.48
I-575	34412	50-yr	884.30	883.86	0.44			1888.09	5602.96	282.95	365.59
I-575	34412	100-yr	885.42	884.95	0.47			2402.04	6313.09	392.87	395.04
I-575	34412	500-yr	887.99	887.46	0.53			3942.64	8070.65	735.71	449.93
I-575	35002	2-yr	878.68	878.36	0.37	0.73	0.10	157.18	2179.75	93.07	248.58
I-575	35002	5-yr	880.82	880.50	0.45	0.71	0.16	556.04	2954.98	345.98	292.69
I-575	35002	10-yr	882.19	881.86	0.50	0.70	0.21	891.99	3480.70	586.32	326.55
I-575	35002	25-yr	883.82	883.49	0.59	0.68	0.28	1356.99	4128.59	1014.42	367.00
I-575	35002	50-yr	885.01	884.52	0.49	0.69	0.02	1730.94	4680.45	1362.61	508.52
I-575	35002	100-yr	886.09	885.64	0.45	0.66	0.00	2076.15	5060.01	1971.85	809.51
I-575	35002	500-yr	888.42	888.32	0.10	0.31	0.13	6337.85	3333.44	3077.71	948.14
I-575	35078		Bridge								
I-575	35104	2-yr	879.10	878.92	0.18	0.01	0.05	242.17	1774.70	413.13	523.59
I-575	35104	5-yr	881.43	881.24	0.19	0.01	0.06	630.02	2382.97	844.02	640.52
I-575	35104	10-yr	882.92	882.71	0.21	0.01	0.07	941.60	2840.31	1177.09	761.91
I-575	35104	25-yr	884.72	884.47	0.25	0.01	0.08	1385.74	3470.02	1644.25	941.41
I-575	35104	50-yr	885.61	885.31	0.30	0.01	0.10	1725.32	4037.86	2010.82	981.59
I-575	35104	100-yr	886.76	886.71	0.05	0.00	0.18	1042.28	2219.79	5845.94	1001.09
I-575	35104	500-yr	889.02	888.99	0.03			3683.60	2051.67	7013.73	1032.02
I-575	35179	2-yr	879.18	879.10	0.07	0.05	0.03	568.50	1276.47	585.03	534.68
I-575	35179	5-yr	881.51	881.44	0.06	0.04	0.04	1144.47	1554.18	1158.35	649.59
I-575	35179	10-yr	883.00	882.93	0.07	0.03	0.04	1581.35	1785.53	1592.12	786.04

I-575	35179	25-yr	884.80	884.73	0.07	0.03	0.05	2189.66	2114.86	2195.49	980.46
I-575	35179	50-yr	885.70	885.61	0.09	0.03	0.06	2668.96	2431.60	2673.44	1065.92
I-575	35179	100-yr	886.78	886.74	0.04	0.01	0.00	2268.30	1935.98	4903.72	1112.37
I-575	35179	500-yr	889.03	889.00	0.03	0.01	0.00	3635.88	2044.46	7068.66	1143.06
I-575	35328	2-yr	879.24	879.25	0.09	0.06	0.10	561.91	1435.30	432.79	646.47
I-575	35328	5-yr	881.57	881.61	0.11	0.04	0.17	1033.50	1903.00	920.50	730.59
I-575	35328	10-yr	883.06	883.12	0.13	0.04	0.21	1396.02	2259.73	1303.25	855.16
I-575	35328	25-yr	884.86	884.94	0.16	0.04	0.26	1903.15	2752.76	1844.09	1358.14
I-575	35328	50-yr	885.76	885.62	0.14	0.04	0.03	2301.65	3218.46	2253.89	1553.74
I-575	35328	100-yr	886.87	886.71	0.16	0.03	0.06	2737.36	3651.61	2719.03	1676.25
I-575	35328	500-yr	889.05	889.02	0.03	0.01	0.00	1894.58	2334.52	8519.90	1741.22
I-575	35593		Bridge								
I-575	35708	2-yr	880.14	880.03	0.11	0.01	0.07	400.38	1685.35	344.27	1191.97
I-575	35708	5-yr	882.62	882.50	0.12	0.01	0.09	786.71	2404.64	665.65	1326.94
I-575	35708	10-yr	884.21	884.08	0.14	0.01	0.11	1090.16	2951.39	917.46	1411.70
I-575	35708	25-yr	886.14	885.98	0.16	0.01	0.13	1519.29	3707.60	1273.11	1702.10
I-575	35708	50-yr	887.05	886.85	0.19	0.01	0.16	1856.14	4364.79	1553.08	1755.78
I-575	35708	100-yr	888.31	888.10	0.22	0.01	0.18	2230.66	5014.17	1863.18	1832.57
I-575	35708	500-yr	891.24	891.22	0.02	0.00	0.25	1197.57	2473.09	9078.34	1965.50
I-575	36148	2-yr	880.33	880.30	0.03	0.17	0.02	525.49	1040.25	864.26	962.18
I-575	36148	5-yr	882.78	882.76	0.02	0.13	0.03	905.88	1295.70	1655.42	1010.44
I-575	36148	10-yr	884.37	884.35	0.02	0.12	0.03	1192.30	1497.53	2269.17	1037.79
I-575	36148	25-yr	886.30	886.28	0.02	0.11	0.04	1633.71	1766.37	3099.93	1309.49
I-575	36148	50-yr	887.21	887.18	0.02	0.12	0.05	2016.96	2018.33	3738.71	1340.12
I-575	36148	100-yr	888.48	888.45	0.02	0.11	0.06	2471.96	2231.22	4404.82	1382.80
I-575	36148	500-yr	891.29	891.26	0.02	0.05	0.00	3159.38	2626.21	6963.41	1454.70
I-575	37016	2-yr	880.80	880.74	0.25	0.41	0.24	84.56	2343.69	1.76	327.17
I-575	37016	5-yr	883.23	883.17	0.36	0.35	0.39	245.53	3573.84	37.63	369.54
I-575	37016	10-yr	884.82	884.74	0.41	0.33	0.45	386.05	4471.60	101.35	397.04
I-575	37016	25-yr	886.76	886.68	0.48	0.32	0.54	590.83	5647.79	261.37	721.21
I-575	37016	50-yr	887.75	887.66	0.58	0.35	0.67	747.37	6640.26	386.37	763.70
I-575	37016	100-yr	889.04	888.37	0.67	0.24	0.32	906.83	7688.51	512.66	794.94
I-575	37016	500-yr	891.52	891.36	0.15	0.17	0.07	6488.34	5769.28	491.38	1068.20
I-575	37048		Bridge								
I-575	37080	2-yr	881.20	880.98	0.23	0.02	0.04	233.08	2065.11	131.81	741.52
I-575	37080	5-yr	883.81	883.55	0.27	0.02	0.06	508.39	2981.31	367.30	962.07
I-575	37080	10-yr	885.48	885.18	0.30	0.02	0.07	728.34	3666.58	564.09	1035.62
I-575	37080	25-yr	887.53	887.18	0.35	0.02	0.08	1043.51	4604.21	852.29	1126.03
I-575	37080	50-yr	888.81	888.41	0.40	0.03	0.11	1298.81	5389.94	1085.25	1184.48
I-575	37080	100-yr	889.35	888.84	0.51			1540.34	6271.77	1295.90	1215.11
I-575	37080	500-yr	892.84	892.82	0.02			7032.99	2579.27	3136.74	1326.81
I-575	37520	2-yr	881.51	881.49	0.03	0.25	0.06	1099.41	969.85	360.74	933.82
I-575	37520	5-yr	884.08	884.06	0.02	0.19	0.07	2017.45	1117.74	721.82	1121.70
I-575	37520	10-yr	885.74	885.72	0.01	0.17	0.09	2739.24	1238.17	981.59	1152.44
I-575	37520	25-yr	887.79	887.78	0.01	0.16	0.10	3746.11	1412.97	1340.92	1190.46
I-575	37520	50-yr	889.09	889.07	0.01	0.16	0.12	4564.16	1576.49	1633.36	1214.49
I-575	37520	100-yr	889.62	889.60	0.02	0.12	0.15	5381.11	1801.03	1925.86	1224.25
I-575	37520	500-yr	892.89	892.87	0.02	0.05	0.00	7633.21	2329.29	2786.50	1316.05

Profile Output Table - Bridge Only

Reach	River Sta	Profile	E.G. US. (ft)	Min El Prs (ft)	BR Open Area (sq ft)	Prs O WS (ft)	Q Total (cfs)	Min El Weir Flow (ft)	Q Weir (cfs)	Delta EG (ft)
I-575	35078	2-yr	879.10	888.33	1609.66		2430.00	886.01		0.42
I-575	35078	5-yr	881.43	888.33	1609.66		3857.00	886.01		0.61
I-575	35078	10-yr	882.92	888.33	1609.66		4959.00	886.01		0.73
I-575	35078	25-yr	884.72	888.33	1609.66		6500.00	886.01		0.90
I-575	35078	50-yr	885.61	888.33	1609.66		7774.00	886.01		0.60
I-575	35078	100-yr	886.76	888.33	1609.66		9108.00	886.01	393.89	0.67
I-575	35078	500-yr	889.02	888.33	1609.66	889.46	12749.00	886.01	2863.11	0.60
I-575	35593	2-yr	880.14	896.55	1609.30		2430.00	889.01		0.90
I-575	35593	5-yr	882.62	896.55	1609.30		3857.00	889.01		1.05
I-575	35593	10-yr	884.21	896.55	1609.30		4959.00	889.01		1.16
I-575	35593	25-yr	886.14	896.55	1609.30		6500.00	889.01		1.28
I-575	35593	50-yr	887.05	896.55	1609.30		7774.00	889.01		1.28

I-575	35593	100-yr	888.31	896.55	1609.30		9108.00	889.01		1.44
I-575	35593	500-yr	891.24	896.55	1609.30		12749.00	889.01		2.19
I-575	37048	2-yr	881.20	887.97	1433.80		2430.00	890.24		0.41
I-575	37048	5-yr	883.81	887.97	1433.80		3857.00	890.24		0.59
I-575	37048	10-yr	885.48	887.97	1433.80		4959.00	890.24		0.66
I-575	37048	25-yr	887.53	887.97	1433.80		6500.00	890.24		0.77
I-575	37048	50-yr	888.81	887.97	1433.80	888.06	7774.00	890.24		1.06
I-575	37048	100-yr	889.35	887.97	1433.80	888.84	9108.00	890.24		0.31
I-575	37048	500-yr	892.84	887.97	1433.80		12749.00	890.24	1550.84	1.32

Profile Output Table - Bridge Comparison

Reach	River Sta	Profile	E.G. US. (ft)	W.S. US. (ft)	Br Sel Method	Energy EG (ft)	Momen. EG (ft)	Yarnell EG (ft)	WSPRO EG (ft)	Prs O EG (ft)	Prs/Wr EG (ft)	Energy/Wr EG (ft)
I-575	35078	2-yr	879.10	878.92	WSPRO	878.99	879.11		879.10			
I-575	35078	5-yr	881.43	881.24	WSPRO	881.24	881.13		881.43			
I-575	35078	10-yr	882.92	882.71	WSPRO	882.66			882.92			
I-575	35078	25-yr	884.72	884.47	WSPRO	884.37			884.72			
I-575	35078	50-yr	885.61	885.31	Energy only	885.61						
I-575	35078	100-yr	886.76	886.71	Energy/Weir	886.85						886.76
I-575	35078	500-yr	889.02	888.99	Press/Weir	889.44				889.48	889.02	
I-575	35593	2-yr	880.14	880.03	WSPRO	880.06		879.33	880.14			
I-575	35593	5-yr	882.62	882.50	WSPRO	882.50		881.66	882.62			
I-575	35593	10-yr	884.21	884.08	WSPRO	884.07		883.15	884.21			
I-575	35593	25-yr	886.14	885.98	WSPRO	885.97		884.96	886.14			
I-575	35593	50-yr	887.05	886.85	Energy only	887.05		885.88				
I-575	35593	100-yr	888.31	888.10	Energy only	888.31		887.00				
I-575	35593	500-yr	891.24	891.22	Energy only	891.24						
I-575	37048	2-yr	881.20	880.98	WSPRO	881.03	881.81	880.85	881.20			
I-575	37048	5-yr	883.81	883.55	WSPRO	883.52		883.24	883.81			
I-575	37048	10-yr	885.48	885.18	WSPRO	885.15			885.48			
I-575	37048	25-yr	887.53	887.18	WSPRO	887.14			887.53			
I-575	37048	50-yr	888.81	888.41	WSPRO	888.22			888.81	888.49		
I-575	37048	100-yr	889.35	888.84	Press Only	889.90				889.35		
I-575	37048	500-yr	892.84	892.82	Press/Weir	893.92				893.28	892.84	

Profile Output Table - HydTable

Reach	River Sta		Profile	Q Total (cfs)	E.G. Elev (ft)	W.S. Elev (ft)	Crit W.S. (ft)	Vel Total (ft/s)	Vel Chnl (ft/s)	Area (sq ft)	Top Width (ft)	Froude # Chl
I-575	34412		2-yr	2430.00	877.90	877.63	872.33	3.01	4.32	807.19	211.00	0.26
I-575	34412		5-yr	3857.00	880.08	879.74	873.87	2.96	5.01	1302.45	257.67	0.27
I-575	34412		10-yr	4959.00	881.46	881.09	874.97	2.97	5.42	1670.53	291.24	0.28
I-575	34412		25-yr	6500.00	883.11	882.70	876.80	2.99	5.90	2174.33	334.48	0.28
I-575	34412		50-yr	7774.00	884.30	883.86	877.61	3.01	6.23	2579.67	365.59	0.29
I-575	34412		100-yr	9108.00	885.42	884.95	878.35	3.04	6.53	2996.83	395.04	0.29
I-575	34412		500-yr	12749.00	887.99	887.46	880.06	3.14	7.21	4057.93	449.93	0.30
I-575	35002		2-yr	2430.00	878.68	878.36	872.78	4.07	4.94	883.51	248.58	0.28
I-575	35002		5-yr	3857.00	880.82	880.50	874.60	4.30	5.47	1462.81	292.69	0.28
I-575	35002		10-yr	4959.00	882.19	881.86	875.85	4.50	5.77	1884.57	326.55	0.28
I-575	35002		25-yr	6500.00	883.82	883.49	878.43	4.80	6.09	2448.78	367.00	0.28
I-575	35002		50-yr	7774.00	885.01	884.52	879.17	5.14	6.45	2881.46	508.52	0.29
I-575	35002		100-yr	9108.00	886.09	885.64	879.83	4.32	6.52	3677.66	809.51	0.28
I-575	35002		500-yr	12749.00	888.42	888.32	881.32	2.13	3.70	5995.34	948.14	0.15
I-575	35078	BR D	2-yr	2430.00	878.83	878.29	872.95	4.85	5.52	500.71	98.08	0.31
I-575	35078	BR D	5-yr	3857.00	881.10	880.39	874.82	5.40	6.49	714.80	106.45	0.33
I-575	35078	BR D	10-yr	4959.00	882.55	881.72	876.17	5.77	7.05	859.86	111.77	0.34
I-575	35078	BR D	25-yr	6500.00	884.29	883.31	878.56	6.23	7.72	1042.52	118.13	0.36
I-575	35078	BR D	50-yr	7774.00	885.21	884.36	879.44	6.65	8.28	1169.10	122.34	0.37
I-575	35078	BR D	100-yr	9108.00	886.31	885.46	880.25	6.67	8.35	1305.91	126.73	0.36
I-575	35078	BR D	500-yr	12749.00	888.94	888.32	882.12	5.48	7.86	2075.88	312.45	0.24
I-575	35078	BR U	2-yr	2430.00	879.04	878.71	873.86	4.25	4.92	572.30	99.72	0.28
I-575	35078	BR U	5-yr	3857.00	881.36	880.95	875.96	4.78	5.58	806.27	108.71	0.29

I-575	35078	BR U	10-yr	4959.00	882.84	882.38	877.26	5.13	5.95	965.97	114.43	0.29
I-575	35078	BR U	25-yr	6500.00	884.63	884.10	878.36	5.56	6.38	1168.74	121.31	0.29
I-575	35078	BR U	50-yr	7774.00	885.49	884.86	879.17	6.16	7.04	1261.26	124.33	0.32
I-575	35078	BR U	100-yr	9108.00	886.58	885.94	879.88	6.23	7.06	1397.86	128.65	0.31
I-575	35078	BR U	500-yr	12749.00	889.02	888.99	881.62	5.42	7.12	2342.60	396.39	0.20
I-575	35104		2-yr	2430.00	879.10	878.92	873.90	2.96	3.83	1554.46	523.59	0.23
I-575	35104		5-yr	3857.00	881.43	881.24	876.26	3.21	4.08	2907.87	640.52	0.21
I-575	35104		10-yr	4959.00	882.92	882.71	877.28	3.44	4.30	3922.29	761.91	0.21
I-575	35104		25-yr	6500.00	884.72	884.47	878.05	3.75	4.61	5439.58	941.41	0.21
I-575	35104		50-yr	7774.00	885.61	885.31	878.61	4.16	5.08	6243.53	981.59	0.23
I-575	35104		100-yr	9108.00	886.76	886.71	879.12	1.55	2.56	7638.48	1001.09	0.11
I-575	35104		500-yr	12749.00	889.02	888.99	880.34	1.28	2.08	9957.00	1032.02	0.08
I-575	35179		2-yr	2430.00	879.18	879.10	873.90	1.79	2.70	1645.01	534.68	0.16
I-575	35179		5-yr	3857.00	881.51	881.44	876.72	1.85	2.61	3027.16	649.59	0.14
I-575	35179		10-yr	4959.00	883.00	882.93	877.26	1.94	2.66	4079.88	786.04	0.13
I-575	35179		25-yr	6500.00	884.80	884.73	877.79	2.08	2.76	5671.46	980.46	0.13
I-575	35179		50-yr	7774.00	885.70	885.61	878.13	2.29	3.00	6570.55	1065.92	0.13
I-575	35179		100-yr	9108.00	886.78	886.74	878.47	1.32	2.22	7817.39	1112.37	0.10
I-575	35179		500-yr	12749.00	889.03	889.00	879.24	1.23	2.07	10369.07	1143.06	0.08
I-575	35328		2-yr	2430.00	879.24	879.25	873.57	2.01	2.71	2293.72	646.47	0.16
I-575	35328		5-yr	3857.00	881.57	881.61	876.04	2.21	2.86	3920.74	730.59	0.15
I-575	35328		10-yr	4959.00	883.06	883.12	876.74	2.38	3.01	5103.30	855.16	0.15
I-575	35328		25-yr	6500.00	884.86	884.94	877.38	2.60	3.22	6997.43	1358.14	0.15
I-575	35328		50-yr	7774.00	885.76	885.62	877.80	2.93	3.60	7989.14	1553.74	0.16
I-575	35328		100-yr	9108.00	886.87	886.71	878.22	3.14	3.82	9773.30	1676.25	0.16
I-575	35328		500-yr	12749.00	889.05	889.02	879.20	1.25	2.15	13727.85	1741.22	0.09
I-575	35593	BR D	2-yr	2430.00	879.45	879.15	873.72	3.69	4.11	658.39	104.26	0.24
I-575	35593	BR D	5-yr	3857.00	881.88	881.47	875.85	4.23	4.67	911.15	113.55	0.24
I-575	35593	BR D	10-yr	4959.00	883.43	882.95	876.89	4.58	5.01	1083.81	119.47	0.24
I-575	35593	BR D	25-yr	6500.00	885.32	884.73	877.90	4.99	5.40	1303.64	126.62	0.25
I-575	35593	BR D	50-yr	7774.00	885.95	885.45	878.65	5.57	6.00	1395.35	129.48	0.27
I-575	35593	BR D	100-yr	9108.00	887.10	886.49	879.34	5.98	6.82	1524.33	100.20	0.25
I-575	35593	BR D	500-yr	12749.00	889.52	888.55	880.99	7.61	8.76	1676.29	68.23	0.30
I-575	35593	BR U	2-yr	2430.00	880.06	879.73	875.55	4.48	4.78	542.65	85.53	0.30
I-575	35593	BR U	5-yr	3857.00	882.52	882.08	877.11	5.11	5.54	754.66	94.93	0.31
I-575	35593	BR U	10-yr	4959.00	884.09	883.59	878.01	5.50	6.01	902.10	100.95	0.31
I-575	35593	BR U	25-yr	6500.00	886.00	885.41	879.07	5.95	6.56	1092.56	108.23	0.32
I-575	35593	BR U	50-yr	7774.00	886.87	886.13	879.86	6.63	7.33	1172.30	111.14	0.34
I-575	35593	BR U	100-yr	9108.00	888.12	887.30	880.65	6.98	7.74	1304.89	115.81	0.35
I-575	35593	BR U	500-yr	12749.00	890.98	890.13	882.62	6.83	8.17	1866.59	215.15	0.34
I-575	35708		2-yr	2430.00	880.14	880.03	875.16	1.64	3.17	5103.56	1191.97	0.19
I-575	35708		5-yr	3857.00	882.62	882.50	876.92	1.78	3.50	8211.84	1326.94	0.19
I-575	35708		10-yr	4959.00	884.21	884.08	877.53	1.90	3.76	10375.41	1411.70	0.19
I-575	35708		25-yr	6500.00	886.14	885.98	878.23	2.07	4.09	13373.88	1702.10	0.19
I-575	35708		50-yr	7774.00	887.05	886.85	878.73	2.30	4.54	14876.04	1755.78	0.21
I-575	35708		100-yr	9108.00	888.31	888.10	879.23	2.45	4.83	17105.40	1832.57	0.21
I-575	35708		500-yr	12749.00	891.24	891.22	880.35	0.67	2.00	23082.17	1965.50	0.08
I-575	36148		2-yr	2430.00	880.33	880.30	874.67	0.72	2.03	3557.34	962.18	0.12
I-575	36148		5-yr	3857.00	882.78	882.76	876.94	0.71	1.98	5986.56	1010.44	0.10
I-575	36148		10-yr	4959.00	884.37	884.35	877.51	0.73	2.00	7611.87	1037.79	0.10
I-575	36148		25-yr	6500.00	886.30	886.28	878.02	0.74	2.06	9981.66	1309.49	0.09
I-575	36148		50-yr	7774.00	887.21	887.18	878.39	0.79	2.21	11185.74	1340.12	0.10
I-575	36148		100-yr	9108.00	888.48	888.45	878.76	0.81	2.26	12909.34	1382.80	0.10
I-575	36148		500-yr	12749.00	891.29	891.26	879.47	0.76	2.29	16902.52	1454.70	0.09
I-575	37016		2-yr	2430.00	880.80	880.74	874.07	3.37	3.87	1482.96	327.17	0.22
I-575	37016		5-yr	3857.00	883.23	883.17	875.62	3.77	4.71	2328.95	369.54	0.24
I-575	37016		10-yr	4959.00	884.82	884.74	876.65	3.96	5.21	2933.24	397.04	0.25
I-575	37016		25-yr	6500.00	886.76	886.68	878.12	4.19	5.76	4040.75	721.21	0.26
I-575	37016		50-yr	7774.00	887.75	887.66	879.19	4.57	6.38	4762.68	763.70	0.28
I-575	37016		100-yr	9108.00	889.04	888.37	880.09	5.03	7.08	5320.01	794.94	0.30
I-575	37016		500-yr	12749.00	891.52	891.36	882.20	1.59	4.52	8023.54	1068.20	0.18
I-575	37048	BR D	2-yr	2430.00	881.05	880.71	874.28	3.92	4.21	620.42	89.61	0.24
I-575	37048	BR D	5-yr	3857.00	883.61	883.11	875.85	4.46	5.16	865.10	116.03	0.26
I-575	37048	BR D	10-yr	4959.00	885.25	884.68	876.95	4.70	5.70	1056.09	125.46	0.27
I-575	37048	BR D	25-yr	6500.00	887.28	886.61	878.41	4.98	6.29	1305.59	133.18	0.28
I-575	37048	BR D	50-yr	7774.00	888.39	887.56	879.46	5.48	7.06	1419.63	66.67	0.23
I-575	37048	BR D	100-yr	9108.00	889.04	887.97	880.43	6.35	8.32	1433.80		0.26

I-575	37048	BR D	500-yr	12749.00	892.79	892.28	882.85	6.75	10.23	1723.05	268.07	0.27
I-575	37048	BR U	2-yr	2430.00	881.15	880.80	875.66	3.89	4.89	624.28	109.97	0.29
I-575	37048	BR U	5-yr	3857.00	883.74	883.28	877.53	4.24	5.75	909.53	119.90	0.30
I-575	37048	BR U	10-yr	4959.00	885.39	884.86	878.78	4.49	6.31	1103.31	126.20	0.31
I-575	37048	BR U	25-yr	6500.00	887.43	886.80	880.05	4.79	6.96	1355.78	133.96	0.32
I-575	37048	BR U	50-yr	7774.00	888.67	887.88	880.93	5.33	7.82	1457.32	15.20	0.22
I-575	37048	BR U	100-yr	9108.00	889.35	887.97	881.76	6.25	9.25	1457.99		0.26
I-575	37048	BR U	500-yr	12749.00	892.84	892.82	883.77	6.61	11.37	1920.92	347.99	0.24
I-575	37080		2-yr	2430.00	881.20	880.98	875.35	2.75	4.11	3157.89	741.52	0.24
I-575	37080		5-yr	3857.00	883.81	883.55	877.32	2.96	4.65	5358.99	962.07	0.24
I-575	37080		10-yr	4959.00	885.48	885.18	878.65	3.15	5.03	6988.46	1035.62	0.24
I-575	37080		25-yr	6500.00	887.53	887.18	879.76	3.42	5.50	9155.78	1126.03	0.25
I-575	37080		50-yr	7774.00	888.81	888.41	880.47	3.70	5.97	10567.66	1184.48	0.26
I-575	37080		100-yr	9108.00	889.35	888.84	881.16	4.19	6.77	11084.29	1215.11	0.29
I-575	37080		500-yr	12749.00	892.84	892.82	882.75	0.79	2.26	16122.40	1326.81	0.09
I-575	37520		2-yr	2430.00	881.51	881.49	875.83	0.68	1.92	3588.33	933.82	0.11
I-575	37520		5-yr	3857.00	884.08	884.06	878.18	0.61	1.74	6299.07	1121.70	0.09
I-575	37520		10-yr	4959.00	885.74	885.72	878.66	0.61	1.69	8186.86	1152.44	0.08
I-575	37520		25-yr	6500.00	887.79	887.78	879.23	0.61	1.68	10592.68	1190.46	0.07
I-575	37520		50-yr	7774.00	889.09	889.07	879.54	0.64	1.73	12153.09	1214.49	0.07
I-575	37520		100-yr	9108.00	889.62	889.60	879.86	0.71	1.91	12796.27	1224.25	0.08
I-575	37520		500-yr	12749.00	892.89	892.87	880.58	0.75	2.08	16919.54	1316.05	0.08

ERRORS WARNINGS AND NOTES

Errors Warnings and Notes for Plan : ProWideDOT0%

River: Noonday Ck North Reach: I-575 RS: 37520 Profile: 2-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 37520 Profile: 5-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 37520 Profile: 10-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 37520 Profile: 25-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 37520 Profile: 50-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 2-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 5-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 10-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 25-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 50-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 100-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37080 Profile: 500-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 2-yr
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the energy inside of the bridge deck. This is not physically possible. Please review your bridge data and results for reasonableness.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 2-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 2-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 5-yr
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 5-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 5-yr Downstream

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 10-yr
Warning: The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning: For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 10-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 10-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 25-yr
Warning: The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning: For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 25-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 25-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 50-yr
Warning: The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning: For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used for pressure flow.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 50-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 50-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 100-yr
Warning: The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation was used for pressure flow.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 100-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 100-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 500-yr
Warning: The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation was used for pressure flow.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 500-yr Upstream
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37048 Profile: 500-yr Downstream
Note: For the cross section inside the bridge at the downstream end, the water surface and energy are based on critical depth over the weir.

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 2-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 5-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 10-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 25-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 50-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 37016 Profile: 500-yr
Warning:Divided flow computed for this cross-section.
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 36148 Profile: 2-yr
Warning:Divided flow computed for this cross-section.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 36148 Profile: 5-yr
Warning:Divided flow computed for this cross-section.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 36148 Profile: 10-yr
Warning:Divided flow computed for this cross-section.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 36148 Profile: 25-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 36148 Profile: 500-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 2-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 5-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 10-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 25-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 50-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35708 Profile: 500-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 2-yr
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 2-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 2-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 5-yr
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.

Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 5-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 5-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 10-yr
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 10-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 10-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 25-yr
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 25-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 25-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 50-yr
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 50-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 50-yr Downstream
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 100-yr
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 100-yr Upstream
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 100-yr Downstream
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 500-yr
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 500-yr Upstream
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35593 Profile: 500-yr Downstream
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 2-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 5-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 10-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 25-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 50-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 100-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35328 Profile: 500-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 2-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 5-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 10-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 25-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 50-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 100-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
River: Noonday Ck North Reach: I-575 RS: 35179 Profile: 500-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 2-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 5-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 10-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 25-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 50-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 100-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35104 Profile: 500-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 2-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the energy inside of the bridge deck. This is not physically possible. Please review your bridge data and results for reasonableness.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 2-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 2-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 5-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the energy inside of the bridge deck. This is not physically possible. Please review your bridge data and results for reasonableness.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 5-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 5-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 10-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program

defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 10-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 10-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 25-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Warning:For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream energy. This is not physically possible, the momentum answer has been disregarded.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 25-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 25-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 50-yr
Warning:The Yarnell method gave an invalid answer. The upstream energy was less than the downstream energy. The program defaulted to the next valid (user selected) method. If the Yarnell method was the only one selected, the program will default to an energy based solution.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 50-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 50-yr Downstream
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 100-yr
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 100-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
Note: Notes(60): This is an inside cross section of a perched bridge that has energy, low flow inside of the bridge and weir flow over the embankment. The reported hydraulics are based on the flow and area inside of the bridge.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 100-yr Downstream
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
Note: Notes(60): This is an inside cross section of a perched bridge that has energy, low flow inside of the bridge and weir flow over the embankment. The reported hydraulics are based on the flow and area inside of the bridge.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 500-yr
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used for pressure flow.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 500-yr Upstream
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35078 Profile: 500-yr Downstream
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: For the cross section inside the bridge at the downstream end, the energy is based on critical depth over the weir. The water surface has been projected.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 2-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 5-yr

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 10-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 25-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 50-yr
Warning:Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Noonday Ck North Reach: I-575 RS: 35002 Profile: 500-yr
Warning:Divided flow computed for this cross-section.
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

Section VI
FEMA Computer Model Output

DUPLICATE EFFECTIVE (DE) MODEL
FLOODWAY

```
1*********************************************                                        ***************************************
 *  HEC-2 WATER SURFACE PROFILES            *                                        *  U.S. ARMY CORPS OF ENGINEERS       *
 *                                          *                                        *  HYDROLOGIC ENGINEERING CENTER      *
 *  Version   4.6.2;  May 1991              *                                        *  609 SECOND STREET, SUITE D         *
 *                                          *                                        *  DAVIS, CALIFORNIA 95616-4687       *
 *  RUN DATE    05JUN08    TIME   06:28:21  *                                        *          (916) 756-1104             *
 *********************************************                                        ***************************************



                                          X     X  XXXXXXX   XXXXX            XXXXX
                                          X     X  X        X     X          X     X
                                          X     X  X        X                      X
                                          XXXXXXX  XXXX     X         XXXXX   XXXXX
                                          X     X  X        X                X
                                          X     X  X        X     X          X
                                          X     X  XXXXXXX   XXXXX           XXXXXXX
1
   05JUN08      06:28:21                                                                                    PAGE    1



                                                                                  THIS RUN EXECUTED 05JUN08    06:28:21
 *************************************
  HEC-2 WATER SURFACE PROFILES

  Version   4.6.2;  May 1991
 *************************************


 T1      CHEROKEE COUNTY, GEORGIA FIS
 T2      100-YEAR FLOODWAY (CROSS SECTIONS ADDED)
 T3      NOONDAY CREEK

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       -1         4         0         0         0         0         0         0    855.17

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN       ALLDC     IBW       CHNIM     ITRACE

       1         0        -1


 J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     110        200        150

 J5  LPRNT    NUMSEC                    ********REQUESTED SECTION NUMBERS********

     -10       -10

 NC     .120       .120       .075       .100       .300       .000       .000       .000       .000
 QT     5.00       5455       8590       9370      10575       9370
 ET                                                           10.4
 X1     6275         32        435        505
 GR      902          0      896.4         15      887.2         43      878.2         87      871.6        124
 GR    865.2        152      856.4        193      847.8        211      839.7        227      839.1        264
 GR    839.0        324      839.2        362      840.3        408      843.4        426      842.3        435
 GR    833.2        436      833.2        486      838.5        492      840.4        505      841.6        536
 GR    841.1        576      842.3        596      850.3        623      855.6        645      863.7        686
 GR    872.1        715      876.2        746      882.7        768      888.4        796      896.9        832
 GR    901.7        859      909.8        902

 X1     9890         28        144        192       3615       3615       3615
 GR      902          0      898.4          8        891         33      883.3         53      873.2         72
 GR    866.2         85      858.5        103      849.1        120      842.3        128      843.6        129
 GR    842.8        144      837.2        144      837.2        186      842.4        192      842.3        201
 GR    842.3        228      843.4        269      845.2        293        848        314        853        334
 GR    857.4        344      861.7        365      869.9        407      878.3        447      883.8        491
 GR    888.2        519      894.4        559        902        592
```

```
X1    17180       31      312      370     7290     7290     7290
GR      902        0    896.6        7      895       41    891.6       56    883.7       70
GR    872.5      105    857.9      140    849.9      156    848.5      168    850.6      173
GR    850.9      192    850.8      246    851.6      292    851.2      312    846.2      318
GR    846.2      364    850.4      370    850.4      405    850.1      494    850.3      558
GR    851.4      617    856.1      650    862.6      653    871.6      677    878.2      708
1
   05JUN08     06:28:21                                                                    PAGE    2


GR    882.4      726    886.2      742    890.5      759      894      771    897.4      792
GR    902.0      825

ET                                                  7.4
X1    20120       31      153      222     2340     2130     2940
GR      902        0    898.3       21    889.3       56    873.5       94    861.2      131
GR    855.7      141    855.2      153    853.6      158    849.2      166    849.2      200
GR    853.3      211    857.5      222    855.7      268    854.5      324    855.7      388
GR    855.4      450    853.5      503      855      586    855.1      660    857.5      793
GR    856.0      858    855.6      906    862.9    929.0    863.1      954    864.7     1035
GR    866.4     1101    873.3     1164      883     1219    892.5     1253    896.3     1271
GR      902     1282

X1    23410       28      513      574     3290     3290     3290
GR      902        0    896.2       14    889.3       56    877.9      133    871.6      178
GR    868.4      234    864.3      277    861.1      322    857.5      365    858.2      390
GR    858.0      401    858.8      435    860.3      486    860.6      513    857.9      513
GR    853.5      522    853.5      563    858.3      574    856.1      617    861.6      659
GR    864.5      679    868.2      721    887.9      766    880.4      788    889.1      828
GR    893.0      852    896.6      890      902      930

X1    26945       21      168      247     3535     3535     3535
GR      900        0    895.7       19    889.1       37    881.3       65    875.5       82
GR    867.4       98    863.7      119    861.1      139    865.8      147    865.7      168
GR    864.0      172    857.1      181    857.1      214    860.9      216    864.5      247
GR    871.8      262    880.4      282    889.6      305    894.9      318    898.9      329
GR    902.0      354

NC       .1       .1     .065       .3       .5
ET                                                  6.4
X1    27500       10     1181     1210      555      555      555
GR    893.5      900    889.5     1000    866.5     1118    867.8     1181    859.4     1185
GR    859.1     1190      859     1200    859.4     1208    865.5     1210    910.5     1400

NC     .080      .08
X1    27620       38     1026     1182      120      120      120
X2        0        0        0    879.2    882.5
BT        6     1000    882.5      880     1026      883    879.2     1147    885.5    882.7
BT    1226.    888.5    884.8     1226    888.5    885.7     1250    889.5    886.6
GR    891.8      500      883      800    882.5      900    882.5     1000      878     1000
GR    871.0     1025      880     1025      880     1026      870     1026    867.5     1040
GR    865.5     1065    880.5     1065    880.5     1066    865.2     1066    861.5     1090
GR    860.5     1106    881.5     1106    881.7     1108    856.5     1108    857.5     1130
GR    857.5     1145    882.5     1145    882.8     1147    857.5     1147    867.1     1180
GR    883.5     1180    883.7     1182    869.1     1182    869.9     1210      875     1225
GR    884.6     1225    884.8     1226      875     1226    884.5     1250    889.5     1250
GR    897.5     1400    897.5     1500      903     1560

QT        5     5250     8270     9025    10180     9025
X1    27700       38     1026     1182       80       80       80
X2        0        0        0    879.2    882.5
BT        6     1000    882.5      880     1026      883    879.2     1147    885.5    882.7
BT     1226    888.5    884.8     1226    888.5    885.7     1250    889.5    886.6
GR    891.8      500      883      800    882.5      900    882.5     1000      878     1000
1
   05JUN08     06:28:21                                                                    PAGE    3


GR    871.0     1025      880     1025      880     1026      870     1026    867.5     1040
GR    865.5     1065    880.5     1065    880.5     1066    865.2     1066    861.5     1090
GR    860.5     1106    881.5     1106    881.7     1108    856.5     1108    857.5     1130
GR    857.5     1145    882.5     1145    882.8     1147    857.5     1147    867.1     1180
GR    883.5     1180    883.7     1182    869.1     1182    869.9     1210      875     1225
GR    884.6     1225    884.8     1226      875     1226    884.5     1250    889.5     1250
GR    897.5     1400    897.5     1500      903     1560
```

```
NC      .12       .12       .07        .1         .3
ET                                                      10.4
X1    27805        15      1000      1050       108.       108       108
GR    882.5       500     874.5       600      870.8       700     870.5       800     868.5       900
GR    866.5      1000       861      1005      859.5      1010     859.1      1030     858.6      1040
GR    860.0      1045       867      1050      867.5      1100     898.5      1300     907.5      1400

X1    30185        21       178       208       2380      2280      2380
GR      922         0     907.2        17      893.7        39     880.7        52     871.6        70
GR      868        83     868.5       102      867.1       133     865.7       166     865.3       178
GR      863       179       863       208      868.7       208     870.8       221       875       234
GR    880.3       254     888.4       276      896.1       299     905.6       321     916.4       350
GR    922.0       391

QT        5      5110      8045      8780       9905      8780
ET                                                       0.4
X1    32495        30       164       222       2300      2300      2310
GR     932.         0       930        11      919.9        34     909.5        60     902.3        84
GR    889.7       114     880.6       134      873.9       142       870       152     869.9       164
GR    865.2       175     865.2       221      869.1       222     868.3       237     869.8       245
GR    874.3       257       880       279      886.1       295     891.5       306     898.7       315
GR    899.5       323     898.7       339      907.9       350     914.4       358     914.1       371
GR    918.9       388       923       403      928.1       416       930       428       932       441

ET                                                       8.1                  35       215
X1      100        11        73       119        500       500       500
GR      890         0       880        30        872        56       870        73       867        80
GR      867       104       872       119        872       150       874       165       880       193
GR      890       230

ET                                                       8.1                 110       300
X1      200        19       212       264        220       220       220
GR    893.6         0     884.6        60      878.7       100     872.3       103       873       146
GR      873       147     872.7       150        872       200     872.7       205     872.7       206
GR    873.3       212     867.9       216      867.4       258     874.6       264     874.6       266
GR    874.6       267     874.5       300      875.9       308     894.1       345

ET                                                       8.1                 110       300
X1      300        19       212       264         60        60        60
GR    893.6         0     884.6        60      878.7       100     872.3       103       873       146
GR      873       147     872.7       150        872       200     872.7       205     872.7       206
GR    873.3       212     867.9       216      867.4       258     874.6       264     874.6       266
GR    874.6       267     874.5       300      875.9       308     894.1       345
1
   05JUN08      06:28:21                                                                          PAGE    4


ET                                                       8.1                  90       295
X1      400        15       214       257         65        65        65
GR   885.62         0    884.54        25     882.17        51    881.61        69    877.10       112
GR   872.61       157    873.20       178     873.42       214    867.02       220    865.47       254
GR   870.39       257    875.90       269     877.32       293    884.83       308    892.85       320

NC      .05       .05      .045        .3         .5
ET                                                       8.1               1110.11   1650.48
X1    34950        26      1130      1170       1105      1605      1610
GR    900.2         0     891.4       100      889.2       200     888.7       300       889       400
GR    889.5       500     889.5       700      890.5       800     889.4       900     886.5      1000
GR    874.5      1100       876      1130        868      1135     867.4      1140       868      1150
GR    868.0      1156     868.7      1166        875      1170     874.5      1200     874.2      1300
GR    873.5      1400     874.5      1500      879.5      1600     884.1      1800     881.5      1900
GR    897.0      2070

ET                                                       8.1               1028.25   1181.25
X1    35050        31      1072    1137.5        100       100       100
X2        0         0         0     887.5      891.5
BT        2      1000     891.5     887.5       1203     892.5     888.2
GR    890.5         0     890.4       100      888.2       200     886.4       400       886       500
GR    886.4       600     891.5      1000      885.5      1001     883.5      1010     876.5      1030
GR    874.3      1060     873.6    1068.5      887.7    1068.5     887.7      1072       873      1072
GR    869.4      1080     867.3      1100      868.4      1120     873.9    1137.5       888    1137.5
GR    888.0      1141       874      1141      873.4      1170     875.5      1180     880.5      1190
GR    884.5      1202     892.6      1203      890.5      1400     884.5      1800     884.5      1900
GR    897.0      2160
```

```
ET                                                      8.1                1028.25    1181.25
X1    35100        31      1072    1137.5        50        50        50
X2        0         0         0     887.5     891.5
BT        2      1000     891.5     887.5      1203     892.5      888.    2
GR    890.5         0     890.4       100     888.2       200     886.4       400       886       500
GR    886.4       600     891.5      1000     885.5      1001     883.5      1010     876.5      1030
GR    874.3      1060     873.6    1068.5     887.7    1068.5     887.7      1072       873      1072
GR    869.4      1080     867.3      1100     868.4      1120     873.9    1137.5       888    1137.5
GR    888.0      1141       874      1141     873.4      1170     875.5      1180     880.5      1190
GR    884.5      1202     892.6      1203     890.5      1400     884.5      1800     884.5      1900
GR      897      2160

ET                                                      8.1                1018.5     1171.5
X1    35410        32      1060      1130       310       310       310
X2        0         0         0     888.2       890
BT        2      1000     891.4     888.2      1203     893.2     890.4
GR    891.2         0     890.4       300       890       500     890.3       700     891.3       900
GR    891.4      1000     885.1      1001     883.3      1010     876.5      1030     874.5      1040
GR    874.5      1050       874      1060     870.5      1068       889      1068       889    1071.5
GR    869.8    1071.5     868.5      1090       868      1110     869.1      1120     875.1      1130
GR    874.5    1138.5     889.7    1138.5     889.7      1142     874.2      1142     874.7      1160
GR    876.7      1170     882.2      1190     886.6      1200     887.4      1203     893.2      1203
GR    895.2      1300     900.7      1650
1
   05JUN08      06:28:21                                                                                PAGE    5


ET                                                      8.1                1018.5     1171.5
X1    35480        32      1060      1130        70        70        70
X2        0         0         0     888.2       890
BT        2      1000     891.4     888.2      1203     893.2     890.4
GR    891.2         0     890.4       300       890       500     890.3       700     891.3       900
GR    891.4      1000     885.1      1001     883.3      1010     876.5      1030     874.5      1040
GR    874.5      1050       874      1060     870.5      1068       889      1068       889    1071.5
GR    869.8    1071.5     868.5      1090     868.1      1110     869.1      1120     875.1      1130
GR    874.5    1138.5     889.7    1138.5     889.7      1142     874.2      1142     874.7      1160
GR    876.7      1170     882.2      1190     886.6      1200     887.4      1203     893.2      1203
GR    895.2      1300     900.7      1650

ET                                                      8.1                1028.5     1181.5
X1    35530        37      1070      1140        50        50        50
X2        0         0         0     890.8     890.3
BT        2      1000     893.5     890.8      1186       895     893.5
GR    891.6         0     890.5       200     890.3       400     890.6       500     892.4       600
GR    893.2       700     893.8       900     893.5      1000       888      1001     886.3      1010
GR    881.0      1020     876.5      1040       874    1060.5     891.7    1060.5     891.7      1064
GR    874.0      1064     874.5      1070     870.6      1080     869.6      1090     868.3      1110
GR    868.3      1120       869      1124     892.6      1124     892.6    1127.5     869.8    1127.5
GR    870.0      1130     874.5      1140     875.4      1150     878.4      1160       889      1180
GR    890.5      1185       895      1186     895.2      1233       898      1300       898      1400
GR    898.6      1500     901.8      1700

ET                                                      8.1                1028.5     1181.5
X1    35650        37      1070      1140       120       120       120
X2        0         0         0     890.8     890.3
BT        2      1000     893.5     890.8      1186       895     893.5
GR    891.6         0     890.5       200     890.3       400     890.6       500     892.4       600
GR    893.2       700     893.8       900     893.5      1000       888      1001     886.3      1010
GR    881.0      1020     876.5      1040       874    1060.5     891.7    1060.5     891.7      1064
GR    874.0      1064     874.5      1070     870.6      1080     869.6      1090     868.5      1110
GR    868.5      1120       869      1124     892.6      1124     892.6    1127.5     869.8    1127.5
GR    870.0      1130     874.5      1140     875.4      1150     878.4      1160       889      1180
GR    890.5      1185       895      1186     895.2      1233       898      1300       898      1400
GR    898.6      1500     901.8      1700

NC      .12       .12      .075        .1        .3
ET                                                      7.1       750      1550
X1    35750        24      1060      1105       100       100       100
GR    905.5       150     893.5       175     885.5       400     886.5       500     881.8       600
GR    881.5       700       880       900     875.5      1000     875.5      1060     874.1      1070
GR    874.1      1080     874.5      1085     868.6      1090     868.6      1097     875.5      1105
GR    874.5      1200     875.4      1300     874.5      1400     875.8      1500     875.8      1600
GR    880.5      2100     886.4      2200     894.4      2300     900.5      2310

QT        5      5050      7955      8680      9790      8680
```

ET						7.1	625	1140		

1

X1	36895	17	1030	1070	600	1500	1215			
GR	889	300	888.7	400	887.5	500	882.8	700	875.8	800
GR	875.8	900	878.2	1030	870.3	1035	868.8	1060	869	1065
GR	877.8	1070	878.2	1100	888	1200	894.5	1400	899	1500
GR	907	1600	909.7	1700						
NC	.07	.07	.05	.5	.8					
ET						7.1	1005	1135		
X1	36950	30	1050	1100	55	55	55			
X2	0	0	0	888	891					
X4	2	874.1	1100	888	1144					
BT	2	1000	892.3	889.3	1144	891	888			
GR	916.2	300	900.8	600	896.9	700	894.2	800	893.2	900
GR	892.3	1000	886	1003	875.8	1030	875.8	1034	892	1034
GR	892.0	1035	875.8	1035	873.2	1050	869	1060	869.5	1070
GR	891.6	1070	891.5	1073	869.7	1073	871.4	1090	875.5	1107
GR	891.3	1107	891.3	1110	876.5	1110	884.5	1130	887.4	1143
GR	891.0	1144	893.4	1300	898	1500	901.2	1600	906	1700
ET						7.1	1005	1135		
X1	37000	30	1050	1100	50	50	50			
X2	0	0	0	888	891					
X4	2	874.1	1100	888	1144					
BT	2	1000	892.3	889.3	1144	891	888			
GR	916.2	300	900.8	600	896.9	700	894.2	800	893.2	900
GR	892.3	1000	886	1003	875.8	1030	875.8	1034	892	1034
GR	892.0	1035	875.8	1035	873.2	1050	869	1060	869.5	1070
GR	891.6	1070	891.5	1073	869.7	1073	871.4	1090	875.5	1107
GR	891.3	1107	891.3	1110	876.5	1110	884.5	1130	887.4	1143
GR	891.0	1144	893.4	1300	898	1500	901.2	1600	906	1700
NC	.12	.1	.07	.1	.3					
ET						7.1	625.78	1271.76		
X1	37100	19	1050	1090	100	100	100			
GR	891.3	400	889.5	500	877.5	600	876	700	877.2	800
GR	876.2	900	876.2	1000	877	1050	871.3	1055	868.3	1060
GR	868.2	1065	869.5	1070	870.8	1090	877	1090	875	1100
GR	878.6	1200	881	1300	885.5	1400	899	1600		
ET						7.1	1764.4	2229.91		
X1	38110	67	2011	2046	950	970	1010			
GR	917.8	791	920.4	837	920.7	869	919.4	914	918.2	943
GR	916.0	997	914.4	1025	913.5	1043	912.3	1089	910.7	1096
GR	902.3	1120	893.1	1150	893.1	1156	896.8	1164	897.8	1178
GR	897.7	1185	897.6	1197	897.6	1211	896.4	1229	894.9	1237
GR	896.5	1249	896.8	1260	897.4	1273	897.7	1285	898.4	1297
GR	897.9	1310	895.7	1331	894.9	1337	898	1350	894.2	1381
GR	890.9	1431	886.5	1472	886.9	1522	885.3	1555	885.9	1611
GR	886.8	1660	887.1	1702	884.3	1729	877.6	1788	877.6	1839
GR	877.4	1895	879.7	1937	881	1964	882.5	1981	882.4	2000
GR	881.1	2011	870.5	2016	870.5	2046	879.1	2046	880.3	2056
GR	879.9	2103	879.7	2152	879.2	2208	881.4	2257	882.2	2292
GR	883.3	2295	889	2311	892.3	2340	896.2	2374	903	2401
GR	90935	2455	915.3	2492	921.1	2531	924.1	2542	928	2573

1

GR	930.0	2600	932	2617						
NC				.3	.5					
NH	3	.2	1000	.06	1160	.25	2200			
ET						7.1	1000	1600		
X1	40790	24	1055	1105	2700	2550	2680			
X2										15
GR	905.3	0	899.2	100	892	300	890	400	889.1	600
GR	889.1	700	889.0	800	888.5	985	882.2	1000	883	1055
GR	877.0	1060	874.2	1070	874.9	1075	874.2	1085	874.7	1090
GR	877.0	1100	882	1105	882.7	1160	882.2	1300	882.5	1500
GR	884.0	1700	891.5	1900	902.8	2000	911	2200		

```
NH        3        .2      1000       .06      1160       .25      2200
ET                                                     7.11      1000      1600
X1    40820         0         0         0        10        10        10
X2                                                                                                  15

SB     1.05       2.0       3.0         0        30         4      1130      5.56       876       876
NH        3        .2      1000       .06      1160       .25      2200
ET                                                     7.11      1000      1600
X1    40865         0         0         0        85        85        85
X2        0         0         1       888     889.5                                                 15
BT       12       680     891.4         0       860     890.2         0       980     889.6         0
BT     1000     889.6         0      1001     891.6         0      1160     891.6         0      1161
BT    889.5         0      1290     889.6         0      1440     889.8         0      1570     889.8
BT        0      1700     891.1         0      1800       892         0

NC      .12       .12       .06        .1        .3
ET                                                       7.1       320       630
X1    41025        15       375       435       100       350       160
GR      892         0     889.4        50     885.8       100     886.4       150     884.7       200
GR    881.2       250     881.6       300     881.4       350     882.2       375       872       385
GR      872       420       883       435     880.8       505       882       650       896       800

NH        7       .15       196       .15       260       .06       335       .05       390       .06
NH      450       .15       700       .50       950
ET                                                       7.1       310       600
X1    41165        14       335       390        90       150       140
GR      892         0     889.4        50    885.20       100     886.8       150     884.2       196
GR      881       260       884       335       873       350       873       385     883.3       390
GR    880.6       450       882       700       884       850       896       950

NH        6       .15       170       .06       215       .05       275       .06       375       .15
NH      925       .50      1400
ET                                                       7.1       190       800
X1    41605        14       215       275       420       550       440
X4        1       882       170
GR      896         0     881.4        50     880.7       100     880.8       150     883.2       200
GR    883.4       215       874       230       874       270     883.7       275     881.5       375
GR      881       675       884       925       888      1200       896      1400
1
   05JUN08      06:28:21                                                                                PAGE    8


NH        5       .12       783       .06       848       .05       904       .12      1550       .50
NH     3151
ET                                                       7.1       770      1550
X1    42070        68       848       904       400       400       400
GR    931.6         0       930        45     928.3        64     926.8        82     917.5       126
GR    910.8       138     909.5       149     909.5       164     914.4       175     912.9       192
GR    912.2       223     914.5       254     913.8       296     910.2       327     905.3       374
GR    901.4       412     895.8       470       892       502     887.5       530     884.3       592
GR    881.9       617     882.4       631     884.7       645     882.2       664     880.6       667
GR    878.2       668     878.2       675     881.9       681     882.6       701     882.5       720
GR    885.1       748     883.6       783     883.6       807     883.9       848     876.2       858
GR    876.2       893     885.5       904     885.1       922     882.8       948     881.5      1026
GR    883.2      1121     881.4      1182     881.2      1231     880.5      1240     881.5      1246
GR    881.0      1352       881      1550     882.9      1714     886.3      1820     888.8      1992
GR    891.2      2108       895      2243     900.9      2348     902.5      2491     901.4      2586
GR    899.8      2649     897.8      2731     905.5      2764       906      2798     905.5      2822
GR    907.2      2850     911.5      2905     917.2      2950     922.1      3015     928.4      3054
GR    928.6      3096       930      3114     932.6      3151

NC      .12       .08      .055        .1        .3
QT        5      4880      7680      8380      9460      8380
ET                                                       7.1    1697.1   1937.79
X1    44040        22      1858      1933      2030      1850      1970
GR    896.5      1603     896.1      1625     895.2      1640     890.7      1670     885.3      1697
GR    886.8      1719     885.8      1738     881.2      1747     885.6      1767     887.8      1802
GR    887.4      1830     887.4      1858     878.5      1860     878.5      1923       885      1933
GR    895.5      1993     909.5      2029     919.8      2060     919.4      2064     924.6      2080
GR      930      2105     933.1      2111

NC      .12       .12      .065        .1        .3
ET                                                       7.1      1380      2150
X1    45890        42      1564      1669      1860      1800      1850
GR    904.4      1331     903.3      1341       896      1382     890.2      1414       889      1443
```

```
GR    889.6      1473      891.7      1502      891.7      1536       889       1564      885.4      1572
GR    880.7      1588      880.7      1642      887.5      1656      889.7      1669      888.4      1731
GR    888.0      1812      888.1      1899      888.2      1997      887.1      2072      887.1      2120
GR    887.8      2216      888.2      2302      887.3      2381      889.4      2481      891.9      2557
GR    902.3      2630      906.2      2700      909.3      2806      914.9      2922      920.2      3018
GR    921.7      3082      920.1      3158      918.3      3174      919.2      3222      923.4      3259
GR    923.6      3313      923.8      3369      930.4      3384      929.9      3424      929.9      3461
GR    930.0      3465      932.7      3468

NC      .12       .12       .065        .1         .3
ET                                                          7.1     136.27     327.98
X1    46650        22       262       320        720       745       760
GR    908.0         0       904        20        900        50       896        67       892        72
GR    890.0       130       892       180        893       225       892       262      882.2       280
GR    882.2       305       884       320        888       343       892       347       896       380
GR    900.0       430       904       500        908       590       911       770       912       850
GR    916.0      1060       920      1210
1
   05JUN08      06:28:21                                                                          PAGE    9


     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WIN       ELMIN     SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


 FLOW DISTRIBUTION FOR SECNO=  40790.00          CWSEL=    890.56

 STA=     372.    1000.    1055.    1105.    1160.    1300.    1500.    1700.    1875.
   PER Q=      3.2     14.2     32.6     14.9      8.9     13.0     10.7      2.5
    AREA=    916.1    437.5    725.2    451.2   1134.6   1640.8   1460.8    572.7
     VEL=       .3      2.8      3.9      2.9       .7       .7       .6       .4
   DEPTH=      1.5      8.0     14.5      8.2      8.1      8.2      7.3      3.3

 FLOW DISTRIBUTION FOR SECNO=  40820.00          CWSEL=    890.57

 STA=     372.    1000.    1055.    1105.    1160.    1300.    1500.    1700.    1875.
   PER Q=      3.2     14.2     32.6     14.9      8.9     13.0     10.7      2.5
    AREA=    921.9    438.0    725.7    451.7   1135.9   1642.7   1462.7    574.4
     VEL=       .3      2.8      3.9      2.9       .7       .7       .6       .4
   DEPTH=      1.5      8.0     14.5      8.2      8.1      8.2      7.3      3.3

 FLOW DISTRIBUTION FOR SECNO=  40865.00          CWSEL=    891.16

 STA=     342.     985.    1055.    1105.    1160.    1300.    1500.    1700.    1891.
   PER Q=      4.2     14.7     30.9     14.8      8.9     12.9     10.8      2.8
    AREA=   1218.8    558.0    755.5    484.6   1219.5   1762.1   1582.1    683.6
     VEL=       .3      2.3      3.5      2.7       .6       .6       .6       .3
   DEPTH=      1.9      8.0     15.1      8.8      8.7      8.8      7.9      3.6

1
   05JUN08      06:28:21                                                                          PAGE   10


 T1      CHEROKEE COUNTY
 T2      100-YEAR FLOODWAY
 T3      NOONDAY CREEK

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       -1        6                                                                   856.17

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      15                  -1



 FLOW DISTRIBUTION FOR SECNO=  40790.00          CWSEL=    891.42

 STA=    1000.    1055.    1105.    1160.    1300.    1500.    1600.
   PER Q=     15.0     35.5     17.4     10.4     15.2      6.5
    AREA=    484.8    768.3    498.6   1255.1   1813.0    854.0
     VEL=      2.7      4.0      3.0       .7       .7       .7
```

```
  DEPTH=      8.8     15.4      9.1      9.0      9.1      8.5

FLOW DISTRIBUTION FOR SECNO=  40820.00          CWSEL=    891.43

STA=    1000.    1055.    1105.    1160.    1300.    1500.    1600.
  PER Q=     15.0     35.5     17.4     10.4     15.2      6.5
   AREA=    485.4    768.8    499.2   1256.6   1815.2    855.1
    VEL=      2.7      4.0      3.0       .7       .7       .7
  DEPTH=      8.8     15.4      9.1      9.0      9.1      8.6

FLOW DISTRIBUTION FOR SECNO=  40865.00          CWSEL=    891.79

STA=    1000.    1055.    1105.    1160.    1300.    1500.    1600.
  PER Q=     15.1     34.9     17.6     10.5     15.3      6.6
   AREA=    505.5    787.1    519.3   1307.8   1888.3    891.6
    VEL=      2.6      3.8      2.9       .7       .7       .6
  DEPTH=      9.2     15.7      9.4      9.3      9.4      8.9
```



```
**************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
**************************************
```

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

NOONDAY CREEK

SUMMARY PRINTOUT TABLE 110

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	6275.000	855.17	.00	855.21	447.64	4368.50	3264.42	1737.07	.00	.00	435.00	505.00	.00
	6275.000	856.17	1.00	856.22	358.18	4362.61	3530.46	1476.94	.10	230.30	435.00	505.00	588.48
*	9890.000	856.94	.00	857.14	237.15	771.48	4326.25	4272.26	.00	.00	144.00	192.00	.00
*	9890.000	857.93	.98	858.15	177.76	351.85	4700.22	4317.93	.10	129.74	144.00	192.00	307.49
*	17180.000	862.37	.00	862.41	523.60	2588.37	2345.86	4435.77	.00	.00	312.00	370.00	.00
*	17180.000	863.37	1.00	863.42	435.58	2331.00	2597.81	4441.19	.12	173.22	312.00	370.00	608.80
	20120.000	863.62	.00	863.67	856.51	168.58	2214.56	6986.86	.00	.00	153.00	222.00	.00
	20120.000	864.60	.98	864.65	658.53	.00	2256.53	7113.46	.12	153.00	153.00	222.00	811.53
*	23410.000	866.95	.00	867.14	457.53	3703.79	3663.59	2002.62	.00	.00	513.00	574.00	.00
*	23410.000	867.76	.81	867.97	306.50	3711.07	3992.58	1666.35	.12	331.00	513.00	574.00	637.50
	26945.000	875.03	.00	875.44	186.57	2295.65	6846.75	227.61	.00	.00	168.00	247.00	.00
	26945.000	875.99	.96	876.43	134.58	2115.47	7254.53	.00	.08	112.42	168.00	247.00	247.00
*	27500.000	876.85	.00	877.63	193.05	3950.29	4484.92	934.78	.00	.00	1181.00	1210.00	.00
	27500.000	877.83	.97	878.67	122.62	4023.49	4759.94	586.57	.09	1102.34	1181.00	1210.00	1224.96
*	27620.000	877.91	.00	878.11	224.05	116.85	8503.16	750.00	.00	.00	1026.00	1182.00	.00
*	27620.000	878.96	1.05	879.15	175.39	.00	8823.16	546.84	.04	1026.00	1026.00	1182.00	1208.39
	27700.000	878.05	.00	878.23	224.71	117.30	8174.92	732.78	.00	.00	1026.00	1182.00	.00
	27700.000	879.09	1.04	879.27	175.99	.00	8480.21	544.79	.04	1026.00	1026.00	1182.00	1208.99
	27805.000	878.25	.00	878.34	616.26	4527.13	3232.02	1265.85	.00	.00	1000.00	1050.00	.00
	27805.000	879.27	1.02	879.37	402.88	4721.50	3538.71	764.79	.14	690.36	1000.00	1050.00	1093.24
*	30185.000	880.87	.00	881.18	203.73	5039.56	3237.94	747.50	.00	.00	178.00	208.00	.00
*	30185.000	881.85	.98	882.19	143.00	5048.30	3491.30	485.39	.11	78.38	178.00	208.00	221.39

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	32495.000	884.93	.00	885.27	167.44	926.30	6065.29	1788.41	.00	.00	164.00	222.00	.00
	32495.000	885.62	.69	885.93	160.91	946.26	6007.28	1826.46	.00	127.35	164.00	222.00	288.26
	100.000	885.71	.00	886.07	201.25	1433.28	4907.50	2439.23	.00	.00	73.00	119.00	.00
	100.000	886.30	.59	886.65	180.00	1273.18	4961.66	2545.16	180.00	35.00	73.00	119.00	215.00
	200.000	886.22	.00	886.39	279.77	3608.85	4028.07	1143.08	.00	.00	212.00	264.00	.00
	200.000	886.75	.53	886.97	190.00	3382.80	4575.63	821.56	190.00	110.00	212.00	264.00	300.00
	300.000	886.28	.00	886.45	280.32	3612.81	4021.46	1145.73	.00	.00	212.00	264.00	.00
	300.000	886.83	.54	887.04	190.00	3385.78	4571.28	822.95	190.00	110.00	212.00	264.00	300.00
	400.000	886.32	.00	886.54	310.22	3653.85	4197.12	929.03	.00	.00	214.00	257.00	.00
	400.000	886.89	.57	887.13	205.00	3494.17	4375.36	910.47	205.00	90.00	214.00	257.00	295.00
*	34950.000	886.80	.00	886.82	968.32	853.63	1057.70	6868.67	.00	.00	1130.00	1170.00	.00
*	34950.000	887.42	.62	887.45	540.37	212.93	1219.33	7347.74	540.37	1110.11	1130.00	1170.00	1650.48
*	35050.000	886.73	.00	886.91	753.48	1798.82	4645.96	2335.22	.00	.00	1072.00	1137.50	.00
*	35050.000	887.32	.59	887.58	146.00	1665.38	5270.37	1844.25	153.00	1028.25	1072.00	1137.50	1181.25
	35100.000	886.76	.00	886.94	759.45	1802.20	4636.98	2340.83	.00	.00	1072.00	1137.50	.00
	35100.000	887.36	.59	887.61	146.00	1666.90	5268.06	1845.04	153.00	1028.25	1072.00	1137.50	1181.25
	35410.000	886.92	.00	887.16	193.51	1938.96	5035.56	1805.48	.00	.00	1060.00	1130.00	.00
	35410.000	887.56	.64	887.83	146.00	1925.86	5380.12	1474.01	153.00	1018.50	1060.00	1130.00	1171.50
	35480.000	886.97	.00	887.21	193.65	1944.76	5024.92	1810.32	.00	.00	1060.00	1130.00	.00
	35480.000	887.61	.64	887.88	146.00	1931.77	5370.96	1477.27	153.00	1018.50	1060.00	1130.00	1171.50
	35530.000	886.96	.00	887.31	162.61	1730.87	5851.44	1197.68	.00	.00	1070.00	1140.00	.00
	35530.000	887.61	.65	887.96	141.87	1424.80	6047.92	1307.28	153.00	1028.50	1070.00	1140.00	1181.50
	35650.000	887.09	.00	887.43	163.56	1749.78	5818.29	1211.93	.00	.00	1070.00	1140.00	.00
	35650.000	887.73	.65	888.08	142.11	1433.68	6023.27	1323.05	153.00	1028.50	1070.00	1140.00	1181.50
*	35750.000	887.48	.00	887.49	1869.27	1834.84	681.04	6264.13	.00	.00	1060.00	1105.00	.00
*	35750.000	888.14	.65	888.15	800.00	2275.90	1083.99	5420.11	800.00	750.00	1060.00	1105.00	1550.00
*	36895.000	887.65	.00	887.71	708.69	5721.53	2097.31	861.16	.00	.00	1030.00	1070.00	.00
*	36895.000	888.43	.78	888.48	515.00	5818.61	2044.07	817.32	515.00	625.00	1030.00	1070.00	1140.00
*	36950.000	887.59	.00	888.31	133.81	1799.97	6064.23	815.81	.00	.00	1050.00	1100.00	.00
*	36950.000	888.37	.78	889.04	123.00	1873.58	6130.47	675.95	130.00	1005.00	1050.00	1100.00	1135.00
	37000.000	887.80	.00	888.49	133.97	1819.62	6028.71	831.67	.00	.00	1050.00	1100.00	.00
	37000.000	888.66	.86	889.25	123.00	2170.14	5786.78	723.09	130.00	1005.00	1050.00	1100.00	1135.00
*	37100.000	888.59	.00	888.60	938.14	4980.77	1259.60	2439.63	.00	.00	1050.00	1090.00	.00
*	37100.000	889.34	.75	889.36	645.98	5081.92	1406.92	2191.15	645.98	625.78	1050.00	1090.00	1271.76

1

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
*	38110.000	888.85	.00	888.89	860.47	3868.97	1618.60	3192.43	.00	.00	2011.00	2046.00	.00
*	38110.000	889.63	.78	889.68	465.51	3846.49	1843.15	2990.36	465.51	1764.40	2011.00	2046.00	2229.91
	40790.000	890.56	.00	890.64	1502.48	1505.11	2832.47	4342.42	.00	.00	1055.00	1105.00	.00
	40790.000	891.42	.86	891.53	600.00	1299.75	3080.79	4299.46	600.00	1000.00	1055.00	1105.00	1600.00
	40820.000	890.57	.00	890.65	1503.19	1507.15	2830.02	4342.83	.00	.00	1055.00	1105.00	.00
	40820.000	891.43	.86	891.54	600.00	1300.05	3079.20	4300.75	600.00	1000.00	1055.00	1105.00	1600.00
	40865.000	891.16	.00	891.23	1548.97	1640.92	2678.69	4360.39	.00	.00	1055.00	1105.00	.00
	40865.000	891.79	.63	891.89	600.00	1309.87	3026.76	4343.36	600.00	1000.00	1055.00	1105.00	1600.00
	41025.000	891.28	.00	891.35	735.48	2504.11	3313.04	2862.85	.00	.00	375.00	435.00	.00
	41025.000	891.92	.64	892.09	310.00	837.19	4606.23	3236.58	310.00	320.00	375.00	435.00	630.00

	41165.000	891.34	.00	891.40	898.63	2163.10	2880.80	3636.10	.00	.00	335.00	390.00	.00
	41165.000	892.01	.67	892.20	290.00	470.95	4343.85	3865.20	290.00	310.00	335.00	390.00	600.00
	41605.000	891.50	.00	891.53	1272.17	1481.56	2301.57	4896.87	.00	.00	215.00	275.00	.00
*	41605.000	892.36	.86	892.41	610.00	343.61	2906.96	5429.44	610.00	190.00	215.00	275.00	800.00
	42070.000	891.59	.00	891.61	1617.24	1951.10	1591.59	5137.32	.00	.00	848.00	904.00	.00
	42070.000	892.48	.89	892.51	780.00	909.43	1932.57	5838.00	780.00	770.00	848.00	904.00	1550.00
*	44040.000	892.04	.00	892.52	312.17	1903.54	6199.28	277.18	.00	.00	1858.00	1933.00	.00
*	44040.000	893.04	1.00	893.48	240.69	1985.35	6335.75	58.90	240.69	1697.10	1858.00	1933.00	1937.79
*	45890.000	894.20	.00	894.25	1181.26	426.47	2988.91	4964.62	.00	.00	1564.00	1669.00	.00
*	45890.000	895.21	1.01	895.28	763.64	687.82	3773.80	3918.37	770.00	1380.00	1564.00	1669.00	2150.00
*	46650.000	894.39	.00	895.60	297.75	1260.20	6113.66	1006.15	.00	.00	262.00	320.00	.00
*	46650.000	895.38	.99	896.86	191.71	1084.61	7016.42	278.96	191.71	136.27	262.00	320.00	327.98

1

NOONDAY CREEK

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	6275.000	.00	.00	.00	833.20	9370.00	855.17	.00	855.21	2.81	2.27	6447.25	5586.65
	6275.000	.00	.00	.00	833.20	9370.00	856.17	.00	856.22	2.81	2.34	6127.57	5592.09
*	9890.000	3615.00	.00	.00	837.20	9370.00	856.94	.00	857.14	12.77	4.64	3069.48	2622.04
*	9890.000	3615.00	.00	.00	837.20	9370.00	857.93	.00	858.15	12.79	4.80	2867.15	2620.32
*	17180.000	7290.00	.00	.00	846.20	9370.00	862.37	.00	862.41	4.62	2.58	6115.78	4358.67
*	17180.000	7290.00	.00	.00	846.20	9370.00	863.37	.00	863.42	4.61	2.68	5783.28	4362.82
	20120.000	2940.00	.00	.00	849.20	9370.00	863.62	.00	863.67	6.16	2.57	6679.59	3774.97
	20120.000	2940.00	.00	.00	849.20	9370.00	864.60	.00	864.65	5.85	2.43	6343.65	3874.97
*	23410.000	3290.00	.00	.00	853.50	9370.00	866.95	.00	867.14	21.29	4.73	3369.77	2030.71
*	23410.000	3290.00	.00	.00	853.50	9370.00	867.76	.00	867.97	20.55	4.85	3078.54	2067.03
	26945.000	3535.00	.00	.00	857.10	9370.00	875.03	.00	875.44	25.61	5.82	2088.30	1851.51
	26945.000	3535.00	.00	.00	857.10	9370.00	875.99	.00	876.43	27.70	5.79	1916.25	1780.35
*	27500.000	555.00	.00	.00	859.00	9370.00	876.85	.00	877.63	54.72	9.17	1647.49	1266.65
	27500.000	555.00	.00	.00	859.00	9370.00	877.83	.00	878.67	51.12	9.20	1501.37	1310.46
*	27620.000	120.00	882.50	879.20	856.50	9370.00	877.91	.00	878.11	15.03	3.67	2728.80	2416.84
*	27620.000	120.00	882.50	879.20	856.50	9370.00	878.96	.00	879.15	14.18	3.57	2721.94	2488.07
	27700.000	80.00	882.50	879.20	856.50	9025.00	878.05	.00	878.23	13.56	3.50	2759.70	2450.63
	27700.000	80.00	882.50	879.20	856.50	9025.00	879.09	.00	879.27	12.83	3.40	2750.31	2519.40
	27805.000	108.00	.00	.00	858.60	9025.00	878.25	.00	878.34	7.03	3.57	5185.69	3404.86
	27805.000	108.00	.00	.00	858.60	9025.00	879.27	.00	879.37	7.02	3.71	4571.14	3406.42
*	30185.000	2380.00	.00	.00	863.00	9025.00	880.87	.00	881.18	23.24	6.05	2384.22	1872.10
*	30185.000	2380.00	.00	.00	863.00	9025.00	881.85	.00	882.19	22.61	6.19	2186.96	1897.83
	32495.000	2310.00	.00	.00	865.20	8780.00	884.93	.00	885.27	13.87	5.43	2235.80	2357.36
	32495.000	2310.00	.00	.00	865.20	8780.00	885.62	.00	885.93	12.10	5.19	2342.40	2524.03
	100.000	500.00	.00	.00	867.00	8780.00	885.71	.00	886.07	18.32	6.04	2283.84	2051.49
	100.000	500.00	.00	.00	867.00	8780.00	886.30	.00	886.65	16.78	5.91	2308.67	2143.32
	200.000	220.00	.00	.00	867.40	8780.00	886.22	.00	886.39	10.18	4.31	3266.15	2751.75
	200.000	220.00	.00	.00	867.40	8780.00	886.75	.00	886.97	11.92	4.76	2850.35	2543.53
	300.000	60.00	.00	.00	867.40	8780.00	886.28	.00	886.45	10.03	4.29	3283.72	2772.35
	300.000	60.00	.00	.00	867.40	8780.00	886.83	.00	887.04	11.72	4.73	2865.53	2564.32
	400.000	65.00	.00	.00	865.47	8780.00	886.32	.00	886.54	12.68	5.03	3057.72	2465.90

400.000	65.00	.00	.00	865.47	8780.00	886.89	.00	887.13	12.49	5.09	2803.99	2484.61

1

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	34950.000	1610.00	.00	.00	867.40	8780.00	886.80	.00	886.82	.54	1.47	8407.82	11938.89
*	34950.000	1610.00	.00	.00	867.40	8780.00	887.42	.00	887.45	.64	1.64	6777.62	10962.56
*	35050.000	100.00	891.50	887.50	867.30	8780.00	886.73	.00	886.91	5.41	4.07	2945.05	3773.58
*	35050.000	100.00	891.50	887.50	867.30	8780.00	887.32	.00	887.58	6.34	4.46	2208.76	3486.22
	35100.000	50.00	891.50	887.50	867.30	8780.00	886.76	.00	886.94	5.37	4.05	2961.35	3787.51
	35100.000	50.00	891.50	887.50	867.30	8780.00	887.36	.00	887.61	6.31	4.45	2212.42	3494.59
	35410.000	310.00	890.00	888.20	868.00	8780.00	886.92	.00	887.16	6.97	4.37	2296.98	3325.69
	35410.000	310.00	890.00	888.20	868.00	8780.00	887.56	.00	887.83	7.18	4.51	2160.70	3276.07
	35480.000	70.00	890.00	888.20	868.10	8780.00	886.97	.00	887.21	6.93	4.36	2302.54	3335.90
	35480.000	70.00	890.00	888.20	868.10	8780.00	887.61	.00	887.88	7.13	4.49	2166.90	3288.91
	35530.000	50.00	890.30	890.80	868.30	8780.00	886.96	.00	887.31	10.39	5.21	1926.27	2724.50
	35530.000	50.00	890.30	890.80	868.30	8780.00	887.61	.00	887.96	9.94	5.19	1925.66	2784.93
	35650.000	120.00	890.30	890.80	868.50	8780.00	887.09	.00	887.43	10.16	5.16	1943.41	2753.93
	35650.000	120.00	890.30	890.80	868.50	8780.00	887.73	.00	888.08	9.77	5.15	1939.01	2808.26
*	35750.000	100.00	.00	.00	868.60	8780.00	887.48	.00	887.49	.87	1.03	15990.42	9409.28
*	35750.000	100.00	.00	.00	868.60	8780.00	888.14	.00	888.15	1.91	1.57	9425.09	6356.56
*	36895.000	1215.00	.00	.00	868.80	8680.00	887.65	.00	887.71	7.21	3.06	5333.27	3232.33
*	36895.000	1215.00	.00	.00	868.80	8680.00	888.43	.00	888.48	5.90	2.86	5376.60	3572.62
*	36950.000	55.00	891.00	888.00	869.00	8680.00	887.59	.00	888.31	34.27	7.71	1463.77	1482.71
*	36950.000	55.00	891.00	888.00	869.00	8680.00	888.37	.00	889.04	30.87	7.45	1541.43	1562.37
	37000.000	50.00	891.00	888.00	869.00	8680.00	887.80	.00	888.49	32.71	7.57	1491.79	1517.64
	37000.000	50.00	891.00	888.00	869.00	8680.00	888.66	.00	889.25	38.30	6.95	1564.25	1402.61
*	37100.000	100.00	.00	.00	868.20	8680.00	888.59	.00	888.60	1.80	1.71	9444.83	6471.90
*	37100.000	100.00	.00	.00	868.20	8680.00	889.34	.00	889.36	1.96	1.84	8300.31	6195.51
*	38110.000	1010.00	.00	.00	870.50	8680.00	888.85	.00	888.89	5.44	2.63	6166.73	3722.59
*	38110.000	1010.00	.00	.00	870.50	8680.00	889.63	.00	889.68	6.11	2.87	5075.40	3512.59
	40790.000	2680.00	.00	.00	874.20	8680.00	890.56	.00	890.64	8.10	3.91	7338.97	3049.14
	40790.000	2680.00	.00	.00	874.20	8680.00	891.42	.00	891.53	7.91	4.01	5673.83	3086.22
	40820.000	10.00	.00	.00	874.20	8680.00	890.57	.00	890.65	8.07	3.90	7352.82	3055.01
	40820.000	10.00	.00	.00	874.20	8680.00	891.43	.00	891.54	7.88	4.01	5680.24	3091.39
	40865.000	85.00	889.50	888.00	874.20	8680.00	891.16	.00	891.23	6.32	3.55	8264.24	3452.00
	40865.000	85.00	889.50	888.00	874.20	8680.00	891.79	.00	891.89	7.04	3.85	5899.64	3270.59
	41025.000	160.00	.00	.00	872.00	8680.00	891.28	.00	891.35	4.59	3.24	5971.25	4050.78
	41025.000	160.00	.00	.00	872.00	8680.00	891.92	.00	892.09	7.85	4.34	3654.34	3098.24

1

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	41165.000	140.00	.00	.00	873.00	8680.00	891.34	.00	891.40	3.48	3.20	7450.54	4651.63
	41165.000	140.00	.00	.00	873.00	8680.00	892.01	.00	892.20	6.93	4.63	3402.57	3296.79
	41605.000	440.00	.00	.00	874.00	8680.00	891.50	.00	891.53	1.96	2.41	10665.96	6198.52
*	41605.000	440.00	.00	.00	874.00	8680.00	892.36	.00	892.41	2.63	2.89	6868.64	5353.31
	42070.000	400.00	.00	.00	876.20	8680.00	891.59	.00	891.61	1.67	2.06	12888.89	6722.26
	42070.000	400.00	.00	.00	876.20	8680.00	892.48	.00	892.51	2.00	2.35	8428.08	6144.18
*	44040.000	1970.00	.00	.00	878.50	8380.00	892.04	.00	892.52	21.15	6.36	2162.61	1822.28
*	44040.000	1970.00	.00	.00	878.50	8380.00	893.04	.00	893.48	17.26	6.04	2176.83	2016.86

*	45890.000	1850.00	.00	.00	880.70	8380.00	894.20	.00	894.25	5.10	2.54	7131.93	3709.44
*	45890.000	1850.00	.00	.00	880.70	8380.00	895.21	.00	895.28	6.11	2.94	5541.05	3389.85
*	46650.000	760.00	.00	.00	882.20	8380.00	894.39	.00	895.60	90.57	10.09	1365.61	880.55
*	46650.000	760.00	.00	.00	882.20	8380.00	895.38	.00	896.86	88.30	10.59	1170.49	891.80

NOONDAY CREEK

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	6275.000	9370.00	855.17	.00	.00	.00	447.64	.00
	6275.000	9370.00	856.17	1.00	.00	1.00	358.18	.00
*	9890.000	9370.00	856.94	.00	1.77	.00	237.15	3615.00
*	9890.000	9370.00	857.93	.98	1.76	.98	177.76	3615.00
*	17180.000	9370.00	862.37	.00	5.42	.00	523.60	7290.00
*	17180.000	9370.00	863.37	1.00	5.44	1.00	435.58	7290.00
	20120.000	9370.00	863.62	.00	1.26	.00	856.51	2940.00
	20120.000	9370.00	864.60	.98	1.24	.98	658.53	2940.00
*	23410.000	9370.00	866.95	.00	3.33	.00	457.53	3290.00
*	23410.000	9370.00	867.76	.81	3.16	.81	306.50	3290.00
	26945.000	9370.00	875.03	.00	8.07	.00	186.57	3535.00
	26945.000	9370.00	875.99	.96	8.22	.96	134.58	3535.00
*	27500.000	9370.00	876.85	.00	1.83	.00	193.05	555.00
	27500.000	9370.00	877.83	.97	1.84	.97	122.62	555.00
*	27620.000	9370.00	877.91	.00	1.06	.00	224.05	120.00
*	27620.000	9370.00	878.96	1.05	1.14	1.05	175.39	120.00
	27700.000	9025.00	878.05	.00	.14	.00	224.71	80.00
	27700.000	9025.00	879.09	1.04	.13	1.04	175.99	80.00
	27805.000	9025.00	878.25	.00	.20	.00	616.26	108.00
	27805.000	9025.00	879.27	1.02	.17	1.02	402.88	108.00
*	30185.000	9025.00	880.87	.00	2.62	.00	203.73	2380.00
*	30185.000	9025.00	881.85	.98	2.58	.98	143.00	2380.00
	32495.000	8780.00	884.93	.00	4.06	.00	167.44	2310.00
	32495.000	8780.00	885.62	.69	3.77	.69	160.91	2310.00
	100.000	8780.00	885.71	.00	.78	.00	201.25	500.00
	100.000	8780.00	886.30	.59	.68	.59	180.00	500.00
	200.000	8780.00	886.22	.00	.51	.00	279.77	220.00
	200.000	8780.00	886.75	.53	.45	.53	190.00	220.00
	300.000	8780.00	886.28	.00	.06	.00	280.32	60.00
	300.000	8780.00	886.83	.54	.07	.54	190.00	60.00
	400.000	8780.00	886.32	.00	.03	.00	310.22	65.00
	400.000	8780.00	886.89	.57	.06	.57	205.00	65.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	34950.000	8780.00	886.80	.00	.49	.00	968.32	1610.00
*	34950.000	8780.00	887.42	.62	.53	.62	540.37	1610.00
*	35050.000	8780.00	886.73	.00	-.07	.00	753.48	100.00

*	35050.000	8780.00	887.32	.59	-.10	.59	146.00	100.00
	35100.000	8780.00	886.76	.00	.03	.00	759.45	50.00
	35100.000	8780.00	887.36	.59	.03	.59	146.00	50.00
	35410.000	8780.00	886.92	.00	.15	.00	193.51	310.00
	35410.000	8780.00	887.56	.64	.20	.64	146.00	310.00
	35480.000	8780.00	886.97	.00	.05	.00	193.65	70.00
	35480.000	8780.00	887.61	.64	.05	.64	146.00	70.00
	35530.000	8780.00	886.96	.00	-.01	.00	162.61	50.00
	35530.000	8780.00	887.61	.65	.00	.65	141.87	50.00
	35650.000	8780.00	887.09	.00	.13	.00	163.56	120.00
	35650.000	8780.00	887.73	.65	.13	.65	142.11	120.00
*	35750.000	8780.00	887.48	.00	.40	.00	1869.27	100.00
*	35750.000	8780.00	888.14	.65	.40	.65	800.00	100.00
*	36895.000	8680.00	887.65	.00	.17	.00	708.69	1215.00
*	36895.000	8680.00	888.43	.78	.29	.78	515.00	1215.00
*	36950.000	8680.00	887.59	.00	-.06	.00	133.81	55.00
*	36950.000	8680.00	888.37	.78	-.06	.78	123.00	55.00
	37000.000	8680.00	887.80	.00	.21	.00	133.97	50.00
	37000.000	8680.00	888.66	.86	.29	.86	123.00	50.00
*	37100.000	8680.00	888.59	.00	.79	.00	938.14	100.00
*	37100.000	8680.00	889.34	.75	.68	.75	645.98	100.00
*	38110.000	8680.00	888.85	.00	.26	.00	860.47	1010.00
*	38110.000	8680.00	889.63	.78	.28	.78	465.51	1010.00
	40790.000	8680.00	890.56	.00	1.71	.00	1502.48	2680.00
	40790.000	8680.00	891.42	.86	1.79	.86	600.00	2680.00
	40820.000	8680.00	890.57	.00	.01	.00	1503.19	10.00
	40820.000	8680.00	891.43	.86	.01	.86	600.00	10.00
	40865.000	8680.00	891.16	.00	.60	.00	1548.97	85.00
	40865.000	8680.00	891.79	.63	.36	.63	600.00	85.00
	41025.000	8680.00	891.28	.00	.12	.00	735.48	160.00
	41025.000	8680.00	891.92	.64	.13	.64	310.00	160.00

1

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	41165.000	8680.00	891.34	.00	.07	.00	898.63	140.00
	41165.000	8680.00	892.01	.67	.09	.67	290.00	140.00
	41605.000	8680.00	891.50	.00	.16	.00	1272.17	440.00
*	41605.000	8680.00	892.36	.86	.35	.86	610.00	440.00
	42070.000	8680.00	891.59	.00	.09	.00	1617.24	400.00
	42070.000	8680.00	892.48	.89	.12	.89	780.00	400.00
*	44040.000	8380.00	892.04	.00	.45	.00	312.17	1970.00
*	44040.000	8380.00	893.04	1.00	.56	1.00	240.69	1970.00
*	45890.000	8380.00	894.20	.00	2.16	.00	1181.26	1850.00
*	45890.000	8380.00	895.21	1.01	2.17	1.01	763.64	1850.00
*	46650.000	8380.00	894.39	.00	.19	.00	297.75	760.00
*	46650.000	8380.00	895.38	.99	.17	.99	191.71	760.00

1

SUMMARY OF ERRORS AND SPECIAL NOTES

```
WARNING SECNO=   9890.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=   9890.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  17180.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  17180.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  23410.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  23410.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  27500.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  27620.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  27620.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  30185.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  30185.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  34950.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  34950.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  35050.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  35050.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  35750.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  35750.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  36895.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  36895.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  36950.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  36950.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  37100.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  37100.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  38110.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  38110.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  41605.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  44040.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  44040.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  45890.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  45890.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  46650.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  46650.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
```


FLOODWAY DATA, NOONDAY CREEK
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
6275.000	358.	6128.	1.5	856.2	855.2	1.0
9890.000	178.	2867.	3.3	857.9	856.9	1.0
17180.000	436.	5783.	1.6	863.4	862.4	1.0
20120.000	659.	6344.	1.5	864.6	863.6	1.0
23410.000	307.	3079.	3.0	867.8	867.0	.8
26945.000	135.	1916.	4.9	876.0	875.0	1.0
27500.000	123.	1501.	6.2	877.9	876.9	1.0
27620.000	182.	2722.	3.4	878.9	877.9	1.0
27700.000	183.	2750.	3.3	879.1	878.1	1.0

27805.000	403.	4571.	2.0	879.3	878.3	1.0
30185.000	143.	2187.	4.1	881.9	880.9	1.0
32495.000	161.	2342.	3.7	885.6	884.9	.7
100.000	180.	2309.	3.8	886.3	885.7	.6
200.000	190.	2850.	3.1	886.7	886.2	.5
300.000	190.	2866.	3.1	886.8	886.3	.5
400.000	205.	2804.	3.1	886.9	886.3	.6
34950.000	540.	6778.	1.3	887.4	886.8	.6
35050.000	153.	2209.	4.0	887.3	886.7	.6
35100.000	153.	2212.	4.0	887.4	886.8	.6
35410.000	153.	2161.	4.1	887.5	886.9	.6
35480.000	153.	2167.	4.1	887.6	887.0	.6
35530.000	149.	1926.	4.6	887.7	887.0	.7
35650.000	149.	1939.	4.5	887.7	887.1	.6
35750.000	800.	9425.	.9	888.2	887.5	.7
36895.000	515.	5377.	1.6	888.4	887.6	.8
36950.000	130.	1541.	5.6	888.4	887.6	.8
37000.000	130.	1564.	5.5	888.7	887.8	.9
37100.000	646.	8300.	1.0	889.4	888.6	.8
38110.000	466.	5075.	1.7	889.7	888.9	.8
40790.000	600.	5674.	1.5	891.5	890.6	.9
40820.000	600.	5680.	1.5	891.5	890.6	.9
40865.000	600.	5900.	1.5	891.8	891.2	.6
41025.000	310.	3654.	2.4	891.9	891.3	.6
41165.000	290.	3403.	2.6	892.0	891.3	.7
41605.000	610.	6869.	1.3	892.4	891.5	.9
42070.000	780.	8428.	1.0	892.5	891.6	.9
44040.000	241.	2177.	3.8	893.0	892.0	1.0
45890.000	764.	5541.	1.5	895.2	894.2	1.0
46650.000	192.	1170.	7.2	895.4	894.4	1.0

CORRECTED EFFECTIVE (CE) MODEL FLOODWAY

```
1*********************************************                                          ***************************************
 *  HEC-2 WATER SURFACE PROFILES            *                                          *  U.S. ARMY CORPS OF ENGINEERS       *
 *                                          *                                          *  HYDROLOGIC ENGINEERING CENTER      *
 *  Version   4.6.2;  May 1991              *                                          *  609 SECOND STREET, SUITE D         *
 *                                          *                                          *  DAVIS, CALIFORNIA 95616-4687       *
 *  RUN DATE    05JUN08    TIME   12:31:36  *                                          *          (916) 756-1104             *
 *********************************************                                          ***************************************



                                                X     X  XXXXXXX   XXXXX            XXXXX
                                                X     X  X        X     X          X     X
                                                X     X  X        X                      X
                                                XXXXXXX  XXXX     X         XXXXX   XXXXX
                                                X     X  X        X                X
                                                X     X  X        X     X          X
                                                X     X  XXXXXXX   XXXXX           XXXXXXX
1
   05JUN08      12:31:36                                                                                                  PAGE    1



                                                                                                THIS RUN EXECUTED 05JUN08    12:31:36
 *************************************
  HEC-2 WATER SURFACE PROFILES

  Version   4.6.2;  May 1991
 *************************************


 T1      CHEROKEE COUNTY, GEORGIA FIS
 T2      100-YEAR FLOODWAY (CROSS SECTIONS ADDED)
 T3      NOONDAY CREEK

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       -1         4         0         0         0         0         0         0    855.17

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN       ALLDC     IBW       CHNIM     ITRACE

       1         0        -1


 J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     110        200        150

 J5  LPRNT    NUMSEC                    ********REQUESTED SECTION NUMBERS********

     -10       -10

 NC     .120       .120       .075       .100        .300        .000        .000        .000        .000
 QT     5.00       5455       8590       9370       10575       9370
 ET                                                            10.4
 X1     6275         32        435        505
 GR      902          0      896.4         15       887.2          43       878.2          87       871.6         124
 GR    865.2        152      856.4        193       847.8         211       839.7         227       839.1         264
 GR    839.0        324      839.2        362       840.3         408       843.4         426       842.3         435
 GR    833.2        436      833.2        486       838.5         492       840.4         505       841.6         536
 GR    841.1        576      842.3        596       850.3         623       855.6         645       863.7         686
 GR    872.1        715      876.2        746       882.7         768       888.4         796       896.9         832
 GR    901.7        859      909.8        902

 X1     9890         28        144        192        3615        3615        3615
 GR      902          0      898.4          8         891          33       883.3          53       873.2          72
 GR    866.2         85      858.5        103       849.1         120       842.3         128       843.6         129
 GR    842.8        144      837.2        144       837.2         186       842.4         192       842.3         201
 GR    842.3        228      843.4        269       845.2         293         848         314         853         334
 GR    857.4        344      861.7        365       869.9         407       878.3         447       883.8         491
 GR    888.2        519      894.4        559         902         592
```

```
X1    17180       31      312      370     7290     7290     7290
GR      902        0    896.6        7      895       41    891.6       56    883.7       70
GR    872.5      105    857.9      140    849.9      156    848.5      168    850.6      173
GR    850.9      192    850.8      246    851.6      292    851.2      312    846.2      318
GR    846.2      364    850.4      370    850.4      405    850.1      494    850.3      558
GR    851.4      617    856.1      650    862.6      653    871.6      677    878.2      708
1
   05JUN08     12:31:36                                                                    PAGE    2


GR    882.4      726    886.2      742    890.5      759      894      771    897.4      792
GR    902.0      825

ET                                                  7.4
X1    20120       31      153      222     2340     2130     2940
GR      902        0    898.3       21    889.3       56    873.5       94    861.2      131
GR    855.7      141    855.2      153    853.6      158    849.2      166    849.2      200
GR    853.3      211    857.5      222    855.7      268    854.5      324    855.7      388
GR    855.4      450    853.5      503      855      586    855.1      660    857.5      793
GR    856.0      858    855.6      906    862.9    929.0    863.1      954    864.7     1035
GR    866.4     1101    873.3     1164      883     1219    892.5     1253    896.3     1271
GR      902     1282

X1    23410       28      513      574     3290     3290     3290
GR      902        0    896.2       14    889.3       56    877.9      133    871.6      178
GR    868.4      234    864.3      277    861.1      322    857.5      365    858.2      390
GR    858.0      401    858.8      435    860.3      486    860.6      513    857.9      513
GR    853.5      522    853.5      563    858.3      574    856.1      617    861.6      659
GR    864.5      679    868.2      721    887.9      766    880.4      788    889.1      828
GR    893.0      852    896.6      890      902      930

X1    26945       21      168      247     3535     3535     3535
GR      900        0    895.7       19    889.1       37    881.3       65    875.5       82
GR    867.4       98    863.7      119    861.1      139    865.8      147    865.7      168
GR    864.0      172    857.1      181    857.1      214    860.9      216    864.5      247
GR    871.8      262    880.4      282    889.6      305    894.9      318    898.9      329
GR    902.0      354

NC       .1       .1     .065       .3       .5
ET                                                  6.4
X1    27500       10     1181     1210      555      555      555
GR    893.5      900    889.5     1000    866.5     1118    867.8     1181    859.4     1185
GR    859.1     1190      859     1200    859.4     1208    865.5     1210    910.5     1400

NC     .080      .08
X1    27620       38     1026     1182      120      120      120
X2        0        0        0    879.2    882.5
BT        6     1000    882.5      880     1026      883    879.2     1147    885.5    882.7
BT    1226.    888.5    884.8     1226    888.5    885.7     1250    889.5    886.6
GR    891.8      500      883      800    882.5      900    882.5     1000      878     1000
GR    871.0     1025      880     1025      880     1026      870     1026    867.5     1040
GR    865.5     1065    880.5     1065    880.5     1066    865.2     1066    861.5     1090
GR    860.5     1106    881.7     1106    881.7     1108    856.5     1108    857.5     1130
GR    857.5     1145    882.8     1145    882.8     1147    857.5     1147    867.1     1180
GR    883.7     1180    883.7     1182    869.1     1182    869.9     1210      875     1225
GR    884.6     1225    884.8     1226      875     1226    884.5     1250    889.5     1250
GR    897.5     1400    897.5     1500      903     1560

QT        5     5250     8270     9025    10180     9025
X1    27700       38     1026     1182       80       80       80
X2        0        0        0    879.2    882.5
BT        6     1000    882.5      880     1026      883    879.2     1147    885.5    882.7
BT     1226    888.5    884.8     1226    888.5    885.7     1250    889.5    886.6
GR    891.8      500      883      800    882.5      900    882.5     1000      878     1000
1
   05JUN08     12:31:36                                                                    PAGE    3


GR    871.0     1025      880     1025      880     1026      870     1026    867.5     1040
GR    865.5     1065    880.5     1065    880.5     1066    865.2     1066    861.5     1090
GR    860.5     1106    881.7     1106    881.7     1108    856.5     1108    857.5     1130
GR    857.5     1145    882.8     1145    882.8     1147    857.5     1147    867.1     1180
GR    883.7     1180    883.7     1182    869.1     1182    869.9     1210      875     1225
GR    884.6     1225    884.8     1226      875     1226    884.5     1250    889.5     1250
GR    897.5     1400    897.5     1500      903     1560
```

```
NC      .12       .12       .07        .1         .3
ET                                                      10.4
X1    27805        15      1000      1050       108.       108       108
GR    882.5       500     874.5       600      870.8       700     870.5       800     868.5       900
GR    866.5      1000       861      1005      859.5      1010     859.1      1030     858.6      1040
GR    860.0      1045       867      1050      867.5      1100     898.5      1300     907.5      1400

X1    30185        21       178       208       2380      2280      2380
GR      922         0     907.2        17      893.7        39     880.7        52     871.6        70
GR      868        83     868.5       102      867.1       133     865.7       166     865.3       178
GR      863       179       863       208      868.7       208     870.8       221       875       234
GR    880.3       254     888.4       276      896.1       299     905.6       321     916.4       350
GR    922.0       391

QT        5      5110      8045      8780       9905      8780
ET                                                       0.4
X1    32495        30       164       222       2300      2300      2310
GR     932.         0       930        11      919.9        34     909.5        60     902.3        84
GR    889.7       114     880.6       134      873.9       142       870       152     869.9       164
GR    865.2       175     865.2       221      869.1       222     868.3       237     869.8       245
GR    874.3       257       880       279      886.1       295     891.5       306     898.7       315
GR    899.5       323     898.7       339      907.9       350     914.4       358     914.1       371
GR    918.9       388       923       403      928.1       416       930       428       932       441

ET                                                       8.1                  35       215
X1      100        11        73       119        500       500       500
GR      890         0       880        30        872        56       870        73       867        80
GR      867       104       872       119        872       150       874       165       880       193
GR      890       230

ET                                                       8.1                 110       300
X1      200        19       212       264        220       220       220
GR    893.6         0     884.6        60      878.7       100     872.3       103       873       146
GR      873       147     872.7       150        872       200     872.7       205     872.7       206
GR    873.3       212     867.9       216      867.4       258     874.6       264     874.6       266
GR    874.6       267     874.5       300      875.9       308     894.1       345

ET                                                       8.1                 110       300
X1      300        19       212       264         60        60        60
GR    893.6         0     884.6        60      878.7       100     872.3       103       873       146
GR      873       147     872.7       150        872       200     872.7       205     872.7       206
GR    873.3       212     867.9       216      867.4       258     874.6       264     874.6       266
GR    874.6       267     874.5       300      875.9       308     894.1       345
```



```
ET                                                       8.1                  90       295
X1      400        15       214       257         65        65        65
GR   885.62         0    884.54        25     882.17        51    881.61        69    877.10       112
GR   872.61       157    873.20       178     873.42       214    867.02       220    865.47       254
GR   870.39       257    875.90       269     877.32       293    884.83       308    892.85       320

NC      .05       .05      .045        .3         .5
ET                                                       8.1               1110.11   1650.48
X1    34950        26      1130      1170       1105      1605      1610
GR    900.2         0     891.4       100      889.2       200     888.7       300       889       400
GR    889.5       500     889.5       700      890.5       800     889.4       900     886.5      1000
GR    874.5      1100       876      1130        868      1135     867.4      1140       868      1150
GR    868.0      1156     868.7      1166        875      1170     874.5      1200     874.2      1300
GR    873.5      1400     874.5      1500      879.5      1600     884.1      1800     881.5      1900
GR    897.0      2070

ET                                                       8.1               1028.25   1181.25
X1    35050        31      1072    1137.5        100       100       100
X2        0         0         0     887.5      891.5
BT        2      1000     891.5     887.5       1203     892.5     888.2
GR    890.5         0     890.4       100      888.2       200     886.4       400       886       500
GR    886.4       600     891.5      1000      885.5      1000     883.5      1010     876.5      1030
GR    874.3      1060     873.6    1068.5      887.7    1068.5     887.7      1072       873      1072
GR    869.4      1080     867.3      1100      868.4      1120     873.9    1137.5       888    1137.5
GR    888.0      1141       874      1141      873.4      1170     875.5      1180     880.5      1190
GR    884.5      1203     892.5      1203      890.5      1400     884.5      1800     884.5      1900
GR    897.0      2160
```

ET						8.1		1028.25	1181.25	
X1	35100	31	1072	1137.5	50	50	50			
X2	0	0	0	887.5	891.5					
BT	2	1000	891.5	887.5	1203	892.5	888.2			
GR	890.5	0	890.4	100	888.2	200	886.4	400	886	500
GR	886.4	600	891.5	1000	885.5	1000	883.5	1010	876.5	1030
GR	874.3	1060	873.6	1068.5	887.7	1068.5	887.7	1072	873	1072
GR	869.4	1080	867.3	1100	868.4	1120	873.9	1137.5	888	1137.5
GR	888.0	1141	874	1141	873.4	1170	875.5	1180	880.5	1190
GR	884.5	1203	892.5	1203	890.5	1400	884.5	1800	884.5	1900
GR	897	2160								

ET						8.1		1018.5	1171.5	
X1	35410	32	1060	1130	310	310	310			
X2	0	0	0	888.2	890					
BT	2	1000	891.4	888.2	1203	893.2	890.4			
GR	891.2	0	890.4	300	890	500	890.3	700	891.3	900
GR	891.4	1000	885.1	1000	883.3	1010	876.5	1030	874.5	1040
GR	874.5	1050	874	1060	870.5	1068	889	1068	889	1071.5
GR	869.8	1071.5	868.5	1090	868	1110	869.1	1120	875.1	1130
GR	874.5	1138.5	889.7	1138.5	889.7	1142	874.2	1142	874.7	1160
GR	876.7	1170	882.2	1190	886.6	1200	887.4	1203	893.2	1203
GR	895.2	1300	900.7	1650						

1

ET						8.1		1018.5	1171.5	
X1	35480	32	1060	1130	70	70	70			
X2	0	0	0	888.2	890					
BT	2	1000	891.4	888.2	1203	893.2	890.4			
GR	891.2	0	890.4	300	890	500	890.3	700	891.3	900
GR	891.4	1000	885.1	1000	883.3	1010	876.5	1030	874.5	1040
GR	874.5	1050	874	1060	870.5	1068	889	1068	889	1071.5
GR	869.8	1071.5	868.5	1090	868.1	1110	869.1	1120	875.1	1130
GR	874.5	1138.5	889.7	1138.5	889.7	1142	874.2	1142	874.7	1160
GR	876.7	1170	882.2	1190	886.6	1200	887.4	1203	893.2	1203
GR	895.2	1300	900.7	1650						

ET						8.1		1028.5	1181.5	
X1	35530	37	1070	1140	50	50	50			
X2	0	0	0	890.8	890.3					
BT	2	1000	893.5	890.8	1186	895	893.5			
GR	891.6	0	890.5	200	890.3	400	890.6	500	892.4	600
GR	893.2	700	893.8	900	893.5	1000	888	1000	886.3	1010
GR	881.0	1020	876.5	1040	874	1060.5	891.8	1060.5	891.8	1064
GR	874.0	1064	874.5	1070	870.6	1080	869.6	1090	868.3	1110
GR	868.3	1120	869	1124	892.6	1124	892.6	1127.5	869.8	1127.5
GR	870.0	1130	874.5	1140	875.4	1150	878.4	1160	889	1180
GR	890.5	1186	895	1186	895.2	1233	898	1300	898	1400
GR	898.6	1500	901.8	1700						

ET						8.1		1028.5	1181.5	
X1	35650	37	1070	1140	120	120	120			
X2	0	0	0	890.8	890.3					
BT	2	1000	893.5	890.8	1186	895	893.5			
GR	891.6	0	890.5	200	890.3	400	890.6	500	892.4	600
GR	893.2	700	893.8	900	893.5	1000	888	1000	886.3	1010
GR	881.0	1020	876.5	1040	874	1060.5	891.8	1060.5	891.8	1064
GR	874.0	1064	874.5	1070	870.6	1080	869.6	1090	868.5	1110
GR	868.5	1120	869	1124	892.6	1124	892.6	1127.5	869.8	1127.5
GR	870.0	1130	874.5	1140	875.4	1150	878.4	1160	889	1180
GR	890.5	1186	895	1186	895.2	1233	898	1300	898	1400
GR	898.6	1500	901.8	1700						

NC	.12	.12	.075	.1	.3					
ET						7.1	750	1550		
X1	35750	24	1060	1105	100	100	100			
GR	905.5	150	893.5	175	885.5	400	886.5	500	881.8	600
GR	881.5	700	880	900	875.5	1000	875.5	1060	874.1	1070
GR	874.1	1080	874.5	1085	868.6	1090	868.6	1097	875.5	1105
GR	874.5	1200	875.4	1300	874.5	1400	875.8	1500	875.8	1600
GR	880.5	2100	886.4	2200	894.4	2300	900.5	2310		

QT	5	5050	7955	8680	9790	8680

```
ET                                                  7.1       625      1140
1
   05JUN08     12:31:36                                                                    PAGE    6


X1   36895        17      1030      1070       600      1500      1215
GR     889       300     888.7       400     887.5       500     882.8       700     875.8       800
GR   875.8       900     878.2      1030     870.3      1035     868.8      1060       869      1065
GR   877.8      1070     878.2      1100       888      1200     894.5      1400       899      1500
GR     907      1600     909.7      1700

NC     .07       .07       .05        .5        .8
ET                                                  7.1      1005      1135
X1   36950        30      1050      1100        55        55        55
X2       0         0         0       888       891
X4       2     874.1      1100       888      1144
BT       2      1000     892.3     889.3      1144       891       888
GR   916.2       300     900.8       600     896.9       700     894.2       800     893.2       900
GR   892.3      1000       886      1000     875.8      1030     875.8      1034       892      1034
GR   892.0      1035     875.8      1035     873.2      1050       869      1060     869.5      1070
GR   891.6      1070     891.5      1073     869.7      1073     871.4      1090     875.5      1107
GR   891.3      1107     891.3      1110     876.5      1110     884.5      1130     887.4      1143
GR   891.0      1144     893.4      1300       898      1500     901.2      1600       906      1700

ET                                                  7.1      1005      1135
X1   37000        30      1050      1100        50        50        50
X2       0         0         0       888       891
X4       2     874.1      1100       888      1144
BT       2      1000     892.3     889.3      1144       891       888
GR   916.2       300     900.8       600     896.9       700     894.2       800     893.2       900
GR   892.3      1000       886      1000     875.8      1030     875.8      1034       892      1034
GR   892.0      1035     875.8      1035     873.2      1050       869      1060     869.5      1070
GR   891.6      1070     891.5      1073     869.7      1073     871.4      1090     875.5      1107
GR   891.3      1107     891.3      1110     876.5      1110     884.5      1130     887.4      1143
GR   891.0      1144     893.4      1300       898      1500     901.2      1600       906      1700

NC     .12        .1       .07        .1        .3
ET                                                  7.1     625.78    1271.76
X1   37100        19      1050      1090       100       100       100
GR   891.3       400     889.5       500     877.5       600       876       700     877.2       800
GR   876.2       900     876.2      1000       877      1050     871.3      1055     868.3      1060
GR   868.2      1065     869.5      1070     870.8      1090       877      1090       875      1100
GR   878.6      1200       881      1300     885.5      1400       899      1600

ET                                                  7.1     1764.4    2229.91
X1   38110        67      2011      2046       950       970      1010
GR   917.8       791     920.4       837     920.7       869     919.4       914     918.2       943
GR   916.0       997     914.4      1025     913.5      1043     912.3      1089     910.7      1096
GR   902.3      1120     893.1      1150     893.1      1156     896.8      1164     897.8      1178
GR   897.7      1185     897.6      1197     897.6      1211     896.4      1229     894.9      1237
GR   896.5      1249     896.8      1260     897.4      1273     897.7      1285     898.4      1297
GR   897.9      1310     895.7      1331     894.9      1337       898      1350     894.2      1381
GR   890.9      1431     886.5      1472     886.9      1522     885.3      1555     885.9      1611
GR   886.8      1660     887.1      1702     884.3      1729     877.6      1788     877.6      1839
GR   877.4      1895     879.7      1937       881      1964     882.5      1981     882.4      2000
GR   881.1      2011     870.5      2016     870.5      2046     879.1      2046     880.3      2056
GR   879.9      2103     879.7      2152     879.2      2208     881.4      2257     882.2      2292
GR   883.3      2295       889      2311     892.3      2340     896.2      2374       903      2401
GR   909.3      2455     915.3      2492     921.1      2531     924.1      2542       928      2573
1
   05JUN08     12:31:36                                                                    PAGE    7


GR   930.0      2600       932      2617

NC                                   .3        .5
NH       3        .2      1000       .06      1160       .25      2200
ET                                                  7.1      1000      1600
X1   40790        24      1055      1105      2700      2550      2680
X2                                                                                        15
GR   905.3         0     899.2       100       892       300       890       400     889.1       600
GR   889.1       700     889.0       800     888.5       985     882.2      1000       883      1055
GR   877.0      1060     874.2      1070     874.9      1075     874.2      1085     874.7      1090
GR   877.0      1100       882      1105     882.7      1160     882.2      1300     882.5      1500
GR   884.0      1700     891.5      1900     902.8      2000       911      2200
```

```
NH        3        .2      1000       .06      1160       .25      2200
ET                                                     7.11      1000      1600
X1    40820         0         0         0        10        10        10
X2                                                                                                  15

SB     1.05       2.0       3.0         0        30         4      1130      5.56       876       876
NH        3        .2      1000       .06      1160       .25      2200
ET                                                     7.11      1000      1600
X1    40865         0         0         0        85        85        85
X2        0         0         1       888     889.5                                                 15
BT       12       680     891.4         0       860     890.2         0       980     889.6         0
BT     1000     889.6         0      1001     891.6         0      1160     891.6         0      1161
BT    889.5         0      1290     889.6         0      1440     889.8         0      1570     889.8
BT        0      1700     891.1         0      1800       892         0

NC      .12       .12       .06        .1        .3
ET                                                      7.1       320       630
X1    41025        15       375       435       100       350       160
GR      892         0     889.4        50     885.8       100     886.4       150     884.7       200
GR    881.2       250     881.6       300     881.4       350     882.2       375       872       385
GR      872       420       883       435     880.8       505       882       650       896       800

NH        7       .15       196       .15       260       .06       335       .05       390       .06
NH      450       .15       700       .50       950
ET                                                      7.1       310       600
X1    41165        14       335       390        90       150       140
GR      892         0     889.4        50    885.20       100     886.8       150     884.2       196
GR      881       260       884       335       873       350       873       385     883.3       390
GR    880.6       450       882       700       884       850       896       950

NH        6       .15       170       .06       215       .05       275       .06       375       .15
NH      925       .50      1400
ET                                                      7.1       190       800
X1    41605        14       215       275       420       550       440
X4        1       882       170
GR      896         0     881.4        50     880.7       100     880.8       150     883.2       200
GR    883.4       215       874       230       874       270     883.7       275     881.5       375
GR      881       675       884       925       888      1200       896      1400
1
   05JUN08      12:31:36                                                                                PAGE    8


NH        5       .12       783       .06       848       .05       904       .12      1550       .50
NH     3151
ET                                                      7.1       770      1550
X1    42070        68       848       904       400       400       400
GR    931.6         0       930        45     928.3        64     926.8        82     917.5       126
GR    910.8       138     909.5       149     909.5       164     914.4       175     912.9       192
GR    912.2       223     914.5       254     913.8       296     910.2       327     905.3       374
GR    901.4       412     895.8       470       892       502     887.5       530     884.3       592
GR    881.9       617     882.4       631     884.7       645     882.2       664     880.6       667
GR    878.2       668     878.2       675     881.9       681     882.6       701     882.5       720
GR    885.1       748     883.6       783     883.6       807     883.9       848     876.2       858
GR    876.2       893     885.5       904     885.1       922     882.8       948     881.5      1026
GR    883.2      1121     881.4      1182     881.2      1231     880.5      1240     881.5      1246
GR    881.0      1352       881      1550     882.9      1714     886.3      1820     888.8      1992
GR    891.2      2108       895      2243     900.9      2348     902.5      2491     901.4      2586
GR    899.8      2649     897.8      2731     905.5      2764       906      2798     905.5      2822
GR    907.2      2850     911.5      2905     917.2      2950     922.1      3015     928.4      3054
GR    928.6      3096       930      3114     932.6      3151

NC      .12       .08      .055        .1        .3
QT        5      4880      7680      8380      9460      8380
ET                                                      7.1    1697.1   1937.79
X1    44040        22      1858      1933      2030      1850      1970
GR    896.5      1603     896.1      1625     895.2      1640     890.7      1670     885.3      1697
GR    886.8      1719     885.8      1738     881.2      1747     885.6      1767     887.8      1802
GR    887.4      1830     887.4      1858     878.5      1860     878.5      1923       885      1933
GR    895.5      1993     909.5      2029     919.8      2060     919.4      2064     924.6      2080
GR      930      2105     933.1      2111

NC      .12       .12      .065        .1        .3
ET                                                      7.1      1380      2150
X1    45890        42      1564      1669      1860      1800      1850
GR    904.4      1331     903.3      1341       896      1382     890.2      1414       889      1443
```

```
GR    889.6      1473      891.7      1502      891.7      1536       889       1564      885.4      1572
GR    880.7      1588      880.7      1642      887.5      1656      889.7      1669      888.4      1731
GR    888.0      1812      888.1      1899      888.2      1997      887.1      2072      887.1      2120
GR    887.8      2216      888.2      2302      887.3      2381      889.4      2481      891.9      2557
GR    902.3      2630      906.2      2700      909.3      2806      914.9      2922      920.2      3018
GR    921.7      3082      920.1      3158      918.3      3174      919.2      3222      923.4      3259
GR    923.6      3313      923.8      3369      930.4      3384      929.9      3424      929.9      3461
GR    930.0      3465      932.7      3468

NC      .12       .12       .065        .1         .3
ET                                                          7.1     136.27     327.98
X1    46650        22       262       320        720       745       760
GR    908.0         0       904        20        900        50       896        67       892        72
GR    890.0       130       892       180        893       225       892       262      882.2       280
GR    882.2       305       884       320        888       343       892       347       896       380
GR    900.0       430       904       500        908       590       911       770       912       850
GR    916.0      1060       920      1210
1
   05JUN08      12:31:36                                                                          PAGE    9


     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WIN       ELMIN     SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


 FLOW DISTRIBUTION FOR SECNO=  40790.00          CWSEL=    890.55

 STA=     373.    1000.    1055.    1105.    1160.    1300.    1500.    1700.    1875.
   PER Q=      3.2     14.2     32.7     14.9      8.9     13.0     10.7      2.5
    AREA=    911.4    437.1    724.8    450.8   1133.5   1639.3   1459.3    571.4
     VEL=       .3      2.8      3.9      2.9       .7       .7       .6       .4
   DEPTH=      1.5      7.9     14.5      8.2      8.1      8.2      7.3      3.3

 FLOW DISTRIBUTION FOR SECNO=  40820.00          CWSEL=    890.56

 STA=     372.    1000.    1055.    1105.    1160.    1300.    1500.    1700.    1875.
   PER Q=      3.2     14.2     32.6     14.9      8.9     13.0     10.7      2.5
    AREA=    917.2    437.6    725.3    451.3   1134.8   1641.2   1461.2    573.0
     VEL=       .3      2.8      3.9      2.9       .7       .7       .6       .4
   DEPTH=      1.5      8.0     14.5      8.2      8.1      8.2      7.3      3.3

 FLOW DISTRIBUTION FOR SECNO=  40865.00          CWSEL=    891.16

 STA=     342.     985.    1055.    1105.    1160.    1300.    1500.    1700.    1891.
   PER Q=      4.2     14.7     30.9     14.8      8.9     12.9     10.8      2.8
    AREA=   1216.3    557.7    755.3    484.4   1218.9   1761.3   1581.3    682.9
     VEL=       .3      2.3      3.5      2.7       .6       .6       .6       .3
   DEPTH=      1.9      8.0     15.1      8.8      8.7      8.8      7.9      3.6

1
   05JUN08      12:31:36                                                                          PAGE   10


 T1      CHEROKEE COUNTY
 T2      100-YEAR FLOODWAY
 T3      NOONDAY CREEK

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       -1        6                                                                   856.17

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      15                  -1



 FLOW DISTRIBUTION FOR SECNO=  40790.00          CWSEL=    891.41

 STA=    1000.    1055.    1105.    1160.    1300.    1500.    1600.
   PER Q=     15.0     35.5     17.4     10.4     15.2      6.5
    AREA=    484.4    767.9    498.1   1254.0   1811.4    853.2
     VEL=      2.7      4.0      3.0       .7       .7       .7
```

```
  DEPTH=      8.8     15.4      9.1      9.0      9.1      8.5

FLOW DISTRIBUTION FOR SECNO=  40820.00          CWSEL=    891.42

STA=    1000.    1055.    1105.    1160.    1300.    1500.    1600.
  PER Q=     15.0     35.5     17.4     10.4     15.2      6.5
   AREA=    485.0    768.4    498.7   1255.5   1813.5    854.3
    VEL=      2.7      4.0      3.0       .7       .7       .7
  DEPTH=      8.8     15.4      9.1      9.0      9.1      8.5

FLOW DISTRIBUTION FOR SECNO=  40865.00          CWSEL=    891.79

STA=    1000.    1055.    1105.    1160.    1300.    1500.    1600.
  PER Q=     15.1     34.9     17.6     10.5     15.3      6.6
   AREA=    505.2    786.8    519.0   1307.1   1887.2    891.1
    VEL=      2.6      3.8      2.9       .7       .7       .6
  DEPTH=      9.2     15.7      9.4      9.3      9.4      8.9
```


THIS RUN EXECUTED 05JUN08 12:31:36

```
**************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
**************************************
```

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

NOONDAY CREEK

SUMMARY PRINTOUT TABLE 110

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	6275.000	855.17	.00	855.21	447.64	4368.50	3264.42	1737.07	.00	.00	435.00	505.00	.00
	6275.000	856.17	1.00	856.22	358.18	4362.61	3530.46	1476.94	.10	230.30	435.00	505.00	588.48
*	9890.000	856.94	.00	857.14	237.15	771.48	4326.25	4272.26	.00	.00	144.00	192.00	.00
*	9890.000	857.93	.98	858.15	177.76	351.85	4700.22	4317.93	.10	129.74	144.00	192.00	307.49
*	17180.000	862.37	.00	862.41	523.60	2588.37	2345.86	4435.77	.00	.00	312.00	370.00	.00
*	17180.000	863.37	1.00	863.42	435.58	2331.00	2597.81	4441.19	.12	173.22	312.00	370.00	608.80
	20120.000	863.62	.00	863.67	856.51	168.58	2214.56	6986.86	.00	.00	153.00	222.00	.00
	20120.000	864.60	.98	864.65	658.53	.00	2256.53	7113.46	.12	153.00	153.00	222.00	811.53
*	23410.000	866.95	.00	867.14	457.53	3703.79	3663.59	2002.62	.00	.00	513.00	574.00	.00
*	23410.000	867.76	.81	867.97	306.50	3711.07	3992.58	1666.35	.12	331.00	513.00	574.00	637.50
	26945.000	875.03	.00	875.44	186.57	2295.65	6846.75	227.61	.00	.00	168.00	247.00	.00
	26945.000	875.99	.96	876.43	134.58	2115.47	7254.53	.00	.08	112.42	168.00	247.00	247.00
*	27500.000	876.85	.00	877.63	193.05	3950.29	4484.92	934.78	.00	.00	1181.00	1210.00	.00
	27500.000	877.83	.97	878.67	122.62	4023.49	4759.94	586.57	.09	1102.34	1181.00	1210.00	1224.96
*	27620.000	877.91	.00	878.11	224.05	116.85	8503.16	750.00	.00	.00	1026.00	1182.00	.00
*	27620.000	878.96	1.05	879.15	175.39	.00	8823.16	546.84	.04	1026.00	1026.00	1182.00	1208.39
	27700.000	878.05	.00	878.23	224.71	117.30	8174.92	732.78	.00	.00	1026.00	1182.00	.00
	27700.000	879.09	1.04	879.27	175.99	.00	8480.21	544.79	.04	1026.00	1026.00	1182.00	1208.99
	27805.000	878.25	.00	878.34	616.26	4527.13	3232.02	1265.85	.00	.00	1000.00	1050.00	.00
	27805.000	879.27	1.02	879.37	402.88	4721.50	3538.71	764.79	.14	690.36	1000.00	1050.00	1093.24
*	30185.000	880.87	.00	881.18	203.73	5039.56	3237.94	747.50	.00	.00	178.00	208.00	.00
*	30185.000	881.85	.98	882.19	143.00	5048.30	3491.30	485.39	.11	78.38	178.00	208.00	221.39

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	32495.000	884.93	.00	885.27	167.44	926.30	6065.29	1788.41	.00	.00	164.00	222.00	.00
	32495.000	885.62	.69	885.93	160.91	946.26	6007.28	1826.46	.00	127.35	164.00	222.00	288.26
	100.000	885.71	.00	886.07	201.25	1433.28	4907.50	2439.23	.00	.00	73.00	119.00	.00
	100.000	886.30	.59	886.65	180.00	1273.18	4961.66	2545.16	180.00	35.00	73.00	119.00	215.00
	200.000	886.22	.00	886.39	279.77	3608.85	4028.07	1143.08	.00	.00	212.00	264.00	.00
	200.000	886.75	.53	886.97	190.00	3382.80	4575.63	821.56	190.00	110.00	212.00	264.00	300.00
	300.000	886.28	.00	886.45	280.32	3612.81	4021.46	1145.73	.00	.00	212.00	264.00	.00
	300.000	886.83	.54	887.04	190.00	3385.78	4571.28	822.95	190.00	110.00	212.00	264.00	300.00
	400.000	886.32	.00	886.54	310.22	3653.85	4197.12	929.03	.00	.00	214.00	257.00	.00
	400.000	886.89	.57	887.13	205.00	3494.17	4375.36	910.47	205.00	90.00	214.00	257.00	295.00
*	34950.000	886.80	.00	886.82	968.32	853.63	1057.70	6868.67	.00	.00	1130.00	1170.00	.00
*	34950.000	887.42	.62	887.45	540.37	212.93	1219.33	7347.74	540.37	1110.11	1130.00	1170.00	1650.48
*	35050.000	886.74	.00	886.91	755.01	1799.73	4646.33	2333.94	.00	.00	1072.00	1137.50	.00
*	35050.000	887.32	.59	887.58	146.00	1665.38	5270.37	1844.25	153.00	1028.25	1072.00	1137.50	1181.25
	35100.000	886.76	.00	886.94	761.00	1803.12	4637.38	2339.50	.00	.00	1072.00	1137.50	.00
	35100.000	887.36	.59	887.61	146.00	1666.90	5268.06	1845.04	153.00	1028.25	1072.00	1137.50	1181.25
	35410.000	886.92	.00	887.16	194.22	1938.87	5035.61	1805.52	.00	.00	1060.00	1130.00	.00
	35410.000	887.56	.64	887.83	146.00	1925.86	5380.12	1474.01	153.00	1018.50	1060.00	1130.00	1171.50
	35480.000	886.97	.00	887.21	194.35	1944.61	5025.01	1810.38	.00	.00	1060.00	1130.00	.00
	35480.000	887.61	.64	887.88	146.00	1931.77	5370.96	1477.27	153.00	1018.50	1060.00	1130.00	1171.50
	35530.000	886.96	.00	887.31	163.00	1730.94	5851.37	1197.69	.00	.00	1070.00	1140.00	.00
	35530.000	887.61	.65	887.96	141.87	1424.80	6047.92	1307.28	153.00	1028.50	1070.00	1140.00	1181.50
	35650.000	887.09	.00	887.43	164.02	1749.86	5818.21	1211.92	.00	.00	1070.00	1140.00	.00
	35650.000	887.73	.65	888.08	142.11	1433.68	6023.27	1323.05	153.00	1028.50	1070.00	1140.00	1181.50
*	35750.000	887.48	.00	887.49	1869.27	1834.84	681.04	6264.13	.00	.00	1060.00	1105.00	.00
*	35750.000	888.14	.65	888.15	800.00	2275.90	1083.99	5420.11	800.00	750.00	1060.00	1105.00	1550.00
*	36895.000	887.65	.00	887.71	708.69	5721.53	2097.31	861.16	.00	.00	1030.00	1070.00	.00
*	36895.000	888.43	.78	888.48	515.00	5818.61	2044.07	817.32	515.00	625.00	1030.00	1070.00	1140.00
*	36950.000	887.59	.00	888.30	136.05	1850.35	6019.58	810.07	.00	.00	1050.00	1100.00	.00
*	36950.000	888.37	.78	889.03	123.00	1929.32	6082.35	668.32	130.00	1005.00	1050.00	1100.00	1135.00
	37000.000	887.80	.00	888.47	136.11	1868.03	5986.31	825.66	.00	.00	1050.00	1100.00	.00
	37000.000	888.66	.86	889.24	123.00	2228.73	5734.60	716.67	130.00	1005.00	1050.00	1100.00	1135.00
*	37100.000	888.57	.00	888.59	937.75	4981.07	1260.82	2438.12	.00	.00	1050.00	1090.00	.00
*	37100.000	889.33	.76	889.35	645.98	5081.63	1407.73	2190.65	645.98	625.78	1050.00	1090.00	1271.76

1

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
*	38110.000	888.84	.00	888.88	860.29	3867.07	1620.88	3192.05	.00	.00	2011.00	2046.00	.00
*	38110.000	889.61	.78	889.67	465.51	3846.04	1844.54	2989.42	465.51	1764.40	2011.00	2046.00	2229.91
	40790.000	890.55	.00	890.64	1501.90	1503.44	2834.48	4342.08	.00	.00	1055.00	1105.00	.00
	40790.000	891.41	.86	891.52	600.00	1299.52	3081.99	4298.49	600.00	1000.00	1055.00	1105.00	1600.00
	40820.000	890.56	.00	890.64	1502.61	1505.49	2832.02	4342.49	.00	.00	1055.00	1105.00	.00
	40820.000	891.42	.86	891.53	600.00	1299.82	3080.41	4299.77	600.00	1000.00	1055.00	1105.00	1600.00
	40865.000	891.16	.00	891.22	1548.67	1640.04	2679.63	4360.33	.00	.00	1055.00	1105.00	.00
	40865.000	891.79	.63	891.89	600.00	1309.74	3027.49	4342.77	600.00	1000.00	1055.00	1105.00	1600.00
	41025.000	891.27	.00	891.35	735.37	2503.59	3313.81	2862.60	.00	.00	375.00	435.00	.00
	41025.000	891.91	.64	892.09	310.00	837.06	4606.91	3236.03	310.00	320.00	375.00	435.00	630.00

	41165.000	891.34	.00	891.40	898.53	2162.65	2881.41	3635.93	.00	.00	335.00	390.00	.00
	41165.000	892.00	.67	892.19	290.00	470.84	4344.49	3864.67	290.00	310.00	335.00	390.00	600.00
	41605.000	891.50	.00	891.53	1272.06	1481.48	2302.02	4896.50	.00	.00	215.00	275.00	.00
*	41605.000	892.36	.86	892.41	610.00	343.55	2907.46	5428.98	610.00	190.00	215.00	275.00	800.00
	42070.000	891.58	.00	891.60	1617.09	1950.84	1591.88	5137.28	.00	.00	848.00	904.00	.00
	42070.000	892.47	.89	892.50	780.00	909.28	1932.86	5837.86	780.00	770.00	848.00	904.00	1550.00
*	44040.000	892.04	.00	892.52	312.14	1902.97	6200.00	277.03	.00	.00	1858.00	1933.00	.00
*	44040.000	893.03	1.00	893.47	240.69	1984.73	6336.37	58.89	240.69	1697.10	1858.00	1933.00	1937.79
*	45890.000	894.20	.00	894.25	1181.25	426.38	2989.22	4964.40	.00	.00	1564.00	1669.00	.00
*	45890.000	895.21	1.01	895.28	763.63	687.64	3774.21	3918.15	770.00	1380.00	1564.00	1669.00	2150.00
*	46650.000	894.39	.00	895.60	297.74	1259.77	6114.09	1006.14	.00	.00	262.00	320.00	.00
*	46650.000	895.38	.99	896.86	191.71	1084.19	7016.82	278.99	191.71	136.27	262.00	320.00	327.98

1

NOONDAY CREEK

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	6275.000	.00	.00	.00	833.20	9370.00	855.17	.00	855.21	2.81	2.27	6447.25	5586.65
	6275.000	.00	.00	.00	833.20	9370.00	856.17	.00	856.22	2.81	2.34	6127.57	5592.09
*	9890.000	3615.00	.00	.00	837.20	9370.00	856.94	.00	857.14	12.77	4.64	3069.48	2622.04
*	9890.000	3615.00	.00	.00	837.20	9370.00	857.93	.00	858.15	12.79	4.80	2867.15	2620.32
*	17180.000	7290.00	.00	.00	846.20	9370.00	862.37	.00	862.41	4.62	2.58	6115.78	4358.67
*	17180.000	7290.00	.00	.00	846.20	9370.00	863.37	.00	863.42	4.61	2.68	5783.28	4362.82
	20120.000	2940.00	.00	.00	849.20	9370.00	863.62	.00	863.67	6.16	2.57	6679.59	3774.97
	20120.000	2940.00	.00	.00	849.20	9370.00	864.60	.00	864.65	5.85	2.43	6343.65	3874.97
*	23410.000	3290.00	.00	.00	853.50	9370.00	866.95	.00	867.14	21.29	4.73	3369.77	2030.71
*	23410.000	3290.00	.00	.00	853.50	9370.00	867.76	.00	867.97	20.55	4.85	3078.54	2067.03
	26945.000	3535.00	.00	.00	857.10	9370.00	875.03	.00	875.44	25.61	5.82	2088.30	1851.51
	26945.000	3535.00	.00	.00	857.10	9370.00	875.99	.00	876.43	27.70	5.79	1916.25	1780.35
*	27500.000	555.00	.00	.00	859.00	9370.00	876.85	.00	877.63	54.72	9.17	1647.49	1266.65
	27500.000	555.00	.00	.00	859.00	9370.00	877.83	.00	878.67	51.12	9.20	1501.37	1310.46
*	27620.000	120.00	882.50	879.20	856.50	9370.00	877.91	.00	878.11	15.03	3.67	2728.80	2416.84
*	27620.000	120.00	882.50	879.20	856.50	9370.00	878.96	.00	879.15	14.18	3.57	2721.94	2488.07
	27700.000	80.00	882.50	879.20	856.50	9025.00	878.05	.00	878.23	13.56	3.50	2759.70	2450.63
	27700.000	80.00	882.50	879.20	856.50	9025.00	879.09	.00	879.27	12.83	3.40	2750.31	2519.40
	27805.000	108.00	.00	.00	858.60	9025.00	878.25	.00	878.34	7.03	3.57	5185.69	3404.86
	27805.000	108.00	.00	.00	858.60	9025.00	879.27	.00	879.37	7.02	3.71	4571.14	3406.42
*	30185.000	2380.00	.00	.00	863.00	9025.00	880.87	.00	881.18	23.24	6.05	2384.22	1872.10
*	30185.000	2380.00	.00	.00	863.00	9025.00	881.85	.00	882.19	22.61	6.19	2186.96	1897.83
	32495.000	2310.00	.00	.00	865.20	8780.00	884.93	.00	885.27	13.87	5.43	2235.80	2357.36
	32495.000	2310.00	.00	.00	865.20	8780.00	885.62	.00	885.93	12.10	5.19	2342.40	2524.03
	100.000	500.00	.00	.00	867.00	8780.00	885.71	.00	886.07	18.32	6.04	2283.84	2051.49
	100.000	500.00	.00	.00	867.00	8780.00	886.30	.00	886.65	16.78	5.91	2308.67	2143.32
	200.000	220.00	.00	.00	867.40	8780.00	886.22	.00	886.39	10.18	4.31	3266.15	2751.75
	200.000	220.00	.00	.00	867.40	8780.00	886.75	.00	886.97	11.92	4.76	2850.35	2543.53
	300.000	60.00	.00	.00	867.40	8780.00	886.28	.00	886.45	10.03	4.29	3283.72	2772.35
	300.000	60.00	.00	.00	867.40	8780.00	886.83	.00	887.04	11.72	4.73	2865.53	2564.32
	400.000	65.00	.00	.00	865.47	8780.00	886.32	.00	886.54	12.68	5.03	3057.72	2465.90

400.000	65.00	.00	.00	865.47	8780.00	886.89	.00	887.13	12.49	5.09	2803.99	2484.61

1

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	34950.000	1610.00	.00	.00	867.40	8780.00	886.80	.00	886.82	.54	1.47	8407.82	11938.89
*	34950.000	1610.00	.00	.00	867.40	8780.00	887.42	.00	887.45	.64	1.64	6777.62	10962.56
*	35050.000	100.00	891.50	887.50	867.30	8780.00	886.74	.00	886.91	5.41	4.07	2951.13	3773.29
*	35050.000	100.00	891.50	887.50	867.30	8780.00	887.32	.00	887.58	6.34	4.46	2208.76	3486.22
	35100.000	50.00	891.50	887.50	867.30	8780.00	886.76	.00	886.94	5.37	4.05	2967.51	3787.22
	35100.000	50.00	891.50	887.50	867.30	8780.00	887.36	.00	887.61	6.31	4.45	2212.42	3494.59
	35410.000	310.00	890.00	888.20	868.00	8780.00	886.92	.00	887.16	6.97	4.37	2299.48	3325.71
	35410.000	310.00	890.00	888.20	868.00	8780.00	887.56	.00	887.83	7.18	4.51	2160.70	3276.07
	35480.000	70.00	890.00	888.20	868.10	8780.00	886.97	.00	887.21	6.93	4.36	2305.08	3335.91
	35480.000	70.00	890.00	888.20	868.10	8780.00	887.61	.00	887.88	7.13	4.49	2166.90	3288.91
	35530.000	50.00	890.30	890.80	868.30	8780.00	886.96	.00	887.31	10.38	5.21	1926.43	2724.57
	35530.000	50.00	890.30	890.80	868.30	8780.00	887.61	.00	887.96	9.94	5.19	1925.66	2784.93
	35650.000	120.00	890.30	890.80	868.50	8780.00	887.09	.00	887.43	10.16	5.16	1943.61	2753.98
	35650.000	120.00	890.30	890.80	868.50	8780.00	887.73	.00	888.08	9.77	5.15	1939.01	2808.26
*	35750.000	100.00	.00	.00	868.60	8780.00	887.48	.00	887.49	.87	1.03	15990.42	9409.28
*	35750.000	100.00	.00	.00	868.60	8780.00	888.14	.00	888.15	1.91	1.57	9425.09	6356.56
*	36895.000	1215.00	.00	.00	868.80	8680.00	887.65	.00	887.71	7.21	3.06	5333.27	3232.33
*	36895.000	1215.00	.00	.00	868.80	8680.00	888.43	.00	888.48	5.90	2.86	5376.60	3572.62
*	36950.000	55.00	891.00	888.00	869.00	8680.00	887.59	.00	888.30	33.75	7.65	1483.61	1494.05
*	36950.000	55.00	891.00	888.00	869.00	8680.00	888.37	.00	889.03	30.37	7.39	1553.47	1575.04
	37000.000	50.00	891.00	888.00	869.00	8680.00	887.80	.00	888.47	32.26	7.52	1511.48	1528.17
	37000.000	50.00	891.00	888.00	869.00	8680.00	888.66	.00	889.24	37.62	6.89	1575.78	1415.16
*	37100.000	100.00	.00	.00	868.20	8680.00	888.57	.00	888.59	1.81	1.72	9428.92	6455.71
*	37100.000	100.00	.00	.00	868.20	8680.00	889.33	.00	889.35	1.97	1.84	8290.58	6183.85
*	38110.000	1010.00	.00	.00	870.50	8680.00	888.84	.00	888.88	5.47	2.63	6153.50	3711.93
*	38110.000	1010.00	.00	.00	870.50	8680.00	889.61	.00	889.67	6.13	2.87	5068.84	3505.44
	40790.000	2680.00	.00	.00	874.20	8680.00	890.55	.00	890.64	8.13	3.91	7327.60	3044.33
	40790.000	2680.00	.00	.00	874.20	8680.00	891.41	.00	891.52	7.93	4.01	5669.04	3082.35
	40820.000	10.00	.00	.00	874.20	8680.00	890.56	.00	890.64	8.10	3.90	7341.54	3050.23
	40820.000	10.00	.00	.00	874.20	8680.00	891.42	.00	891.53	7.90	4.01	5675.37	3087.46
	40865.000	85.00	889.50	888.00	874.20	8680.00	891.16	.00	891.22	6.33	3.55	8258.19	3449.30
	40865.000	85.00	889.50	888.00	874.20	8680.00	891.79	.00	891.89	7.05	3.85	5896.49	3267.99
	41025.000	160.00	.00	.00	872.00	8680.00	891.27	.00	891.35	4.60	3.24	5968.56	4048.39
	41025.000	160.00	.00	.00	872.00	8680.00	891.91	.00	892.09	7.86	4.34	3652.79	3096.33

1

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	41165.000	140.00	.00	.00	873.00	8680.00	891.34	.00	891.40	3.49	3.20	7447.30	4648.94
	41165.000	140.00	.00	.00	873.00	8680.00	892.00	.00	892.19	6.94	4.64	3401.15	3294.73
	41605.000	440.00	.00	.00	874.00	8680.00	891.50	.00	891.53	1.96	2.41	10661.46	6195.00
*	41605.000	440.00	.00	.00	874.00	8680.00	892.36	.00	892.41	2.63	2.89	6865.92	5350.01
	42070.000	400.00	.00	.00	876.20	8680.00	891.58	.00	891.60	1.67	2.06	12883.27	6718.22
	42070.000	400.00	.00	.00	876.20	8680.00	892.47	.00	892.50	2.00	2.35	8424.66	6140.17
*	44040.000	1970.00	.00	.00	878.50	8380.00	892.04	.00	892.52	21.17	6.37	2161.81	1821.47
*	44040.000	1970.00	.00	.00	878.50	8380.00	893.03	.00	893.47	17.28	6.04	2175.99	2015.82

*	45890.000	1850.00	.00	.00	880.70	8380.00	894.20	.00	894.25	5.11	2.54	7130.56	3708.41
*	45890.000	1850.00	.00	.00	880.70	8380.00	895.21	.00	895.28	6.12	2.94	5539.70	3388.67
*	46650.000	760.00	.00	.00	882.20	8380.00	894.39	.00	895.60	90.61	10.10	1365.32	880.35
*	46650.000	760.00	.00	.00	882.20	8380.00	895.38	.00	896.86	88.34	10.59	1170.23	891.58

NOONDAY CREEK

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	6275.000	9370.00	855.17	.00	.00	.00	447.64	.00
	6275.000	9370.00	856.17	1.00	.00	1.00	358.18	.00
*	9890.000	9370.00	856.94	.00	1.77	.00	237.15	3615.00
*	9890.000	9370.00	857.93	.98	1.76	.98	177.76	3615.00
*	17180.000	9370.00	862.37	.00	5.42	.00	523.60	7290.00
*	17180.000	9370.00	863.37	1.00	5.44	1.00	435.58	7290.00
	20120.000	9370.00	863.62	.00	1.26	.00	856.51	2940.00
	20120.000	9370.00	864.60	.98	1.24	.98	658.53	2940.00
*	23410.000	9370.00	866.95	.00	3.33	.00	457.53	3290.00
*	23410.000	9370.00	867.76	.81	3.16	.81	306.50	3290.00
	26945.000	9370.00	875.03	.00	8.07	.00	186.57	3535.00
	26945.000	9370.00	875.99	.96	8.22	.96	134.58	3535.00
*	27500.000	9370.00	876.85	.00	1.83	.00	193.05	555.00
	27500.000	9370.00	877.83	.97	1.84	.97	122.62	555.00
*	27620.000	9370.00	877.91	.00	1.06	.00	224.05	120.00
*	27620.000	9370.00	878.96	1.05	1.14	1.05	175.39	120.00
	27700.000	9025.00	878.05	.00	.14	.00	224.71	80.00
	27700.000	9025.00	879.09	1.04	.13	1.04	175.99	80.00
	27805.000	9025.00	878.25	.00	.20	.00	616.26	108.00
	27805.000	9025.00	879.27	1.02	.17	1.02	402.88	108.00
*	30185.000	9025.00	880.87	.00	2.62	.00	203.73	2380.00
*	30185.000	9025.00	881.85	.98	2.58	.98	143.00	2380.00
	32495.000	8780.00	884.93	.00	4.06	.00	167.44	2310.00
	32495.000	8780.00	885.62	.69	3.77	.69	160.91	2310.00
	100.000	8780.00	885.71	.00	.78	.00	201.25	500.00
	100.000	8780.00	886.30	.59	.68	.59	180.00	500.00
	200.000	8780.00	886.22	.00	.51	.00	279.77	220.00
	200.000	8780.00	886.75	.53	.45	.53	190.00	220.00
	300.000	8780.00	886.28	.00	.06	.00	280.32	60.00
	300.000	8780.00	886.83	.54	.07	.54	190.00	60.00
	400.000	8780.00	886.32	.00	.03	.00	310.22	65.00
	400.000	8780.00	886.89	.57	.06	.57	205.00	65.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	34950.000	8780.00	886.80	.00	.49	.00	968.32	1610.00
*	34950.000	8780.00	887.42	.62	.53	.62	540.37	1610.00
*	35050.000	8780.00	886.74	.00	-.07	.00	755.01	100.00

*	35050.000	8780.00	887.32	.59	-.10	.59	146.00	100.00
	35100.000	8780.00	886.76	.00	.03	.00	761.00	50.00
	35100.000	8780.00	887.36	.59	.03	.59	146.00	50.00
	35410.000	8780.00	886.92	.00	.15	.00	194.22	310.00
	35410.000	8780.00	887.56	.64	.20	.64	146.00	310.00
	35480.000	8780.00	886.97	.00	.05	.00	194.35	70.00
	35480.000	8780.00	887.61	.64	.05	.64	146.00	70.00
	35530.000	8780.00	886.96	.00	-.01	.00	163.00	50.00
	35530.000	8780.00	887.61	.65	.00	.65	141.87	50.00
	35650.000	8780.00	887.09	.00	.13	.00	164.02	120.00
	35650.000	8780.00	887.73	.65	.13	.65	142.11	120.00
*	35750.000	8780.00	887.48	.00	.39	.00	1869.27	100.00
*	35750.000	8780.00	888.14	.65	.40	.65	800.00	100.00
*	36895.000	8680.00	887.65	.00	.17	.00	708.69	1215.00
*	36895.000	8680.00	888.43	.78	.29	.78	515.00	1215.00
*	36950.000	8680.00	887.59	.00	-.05	.00	136.05	55.00
*	36950.000	8680.00	888.37	.78	-.06	.78	123.00	55.00
	37000.000	8680.00	887.80	.00	.20	.00	136.11	50.00
	37000.000	8680.00	888.66	.86	.29	.86	123.00	50.00
*	37100.000	8680.00	888.57	.00	.77	.00	937.75	100.00
*	37100.000	8680.00	889.33	.76	.67	.76	645.98	100.00
*	38110.000	8680.00	888.84	.00	.26	.00	860.29	1010.00
*	38110.000	8680.00	889.61	.78	.29	.78	465.51	1010.00
	40790.000	8680.00	890.55	.00	1.71	.00	1501.90	2680.00
	40790.000	8680.00	891.41	.86	1.80	.86	600.00	2680.00
	40820.000	8680.00	890.56	.00	.01	.00	1502.61	10.00
	40820.000	8680.00	891.42	.86	.01	.86	600.00	10.00
	40865.000	8680.00	891.16	.00	.60	.00	1548.67	85.00
	40865.000	8680.00	891.79	.63	.37	.63	600.00	85.00
	41025.000	8680.00	891.27	.00	.12	.00	735.37	160.00
	41025.000	8680.00	891.91	.64	.13	.64	310.00	160.00

1

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	41165.000	8680.00	891.34	.00	.07	.00	898.53	140.00
	41165.000	8680.00	892.00	.67	.09	.67	290.00	140.00
	41605.000	8680.00	891.50	.00	.16	.00	1272.06	440.00
*	41605.000	8680.00	892.36	.86	.35	.86	610.00	440.00
	42070.000	8680.00	891.58	.00	.09	.00	1617.09	400.00
	42070.000	8680.00	892.47	.89	.12	.89	780.00	400.00
*	44040.000	8380.00	892.04	.00	.45	.00	312.14	1970.00
*	44040.000	8380.00	893.03	1.00	.56	1.00	240.69	1970.00
*	45890.000	8380.00	894.20	.00	2.16	.00	1181.25	1850.00
*	45890.000	8380.00	895.21	1.01	2.18	1.01	763.63	1850.00
*	46650.000	8380.00	894.39	.00	.19	.00	297.74	760.00
*	46650.000	8380.00	895.38	.99	.17	.99	191.71	760.00

1

SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= 9890.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 9890.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 17180.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 17180.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 23410.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 23410.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 27500.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 27620.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 27620.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 30185.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 30185.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 34950.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 34950.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 35050.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 35050.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 35750.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 35750.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 36895.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 36895.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 36950.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 36950.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 37100.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 37100.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 38110.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 38110.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 41605.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 44040.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 44040.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 45890.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 45890.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 46650.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 46650.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

FLOODWAY DATA, NOONDAY CREEK
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
6275.000	358.	6128.	1.5	856.2	855.2	1.0
9890.000	178.	2867.	3.3	857.9	856.9	1.0
17180.000	436.	5783.	1.6	863.4	862.4	1.0
20120.000	659.	6344.	1.5	864.6	863.6	1.0
23410.000	307.	3079.	3.0	867.8	867.0	.8
26945.000	135.	1916.	4.9	876.0	875.0	1.0
27500.000	123.	1501.	6.2	877.9	876.9	1.0
27620.000	182.	2722.	3.4	878.9	877.9	1.0
27700.000	183.	2750.	3.3	879.1	878.1	1.0

27805.000	403.	4571.	2.0	879.3	878.3	1.0
30185.000	143.	2187.	4.1	881.9	880.9	1.0
32495.000	161.	2342.	3.7	885.6	884.9	.7
100.000	180.	2309.	3.8	886.3	885.7	.6
200.000	190.	2850.	3.1	886.7	886.2	.5
300.000	190.	2866.	3.1	886.8	886.3	.5
400.000	205.	2804.	3.1	886.9	886.3	.6
34950.000	540.	6778.	1.3	887.4	886.8	.6
35050.000	153.	2209.	4.0	887.3	886.7	.6
35100.000	153.	2212.	4.0	887.4	886.8	.6
35410.000	153.	2161.	4.1	887.5	886.9	.6
35480.000	153.	2167.	4.1	887.6	887.0	.6
35530.000	149.	1926.	4.6	887.7	887.0	.7
35650.000	149.	1939.	4.5	887.7	887.1	.6
35750.000	800.	9425.	.9	888.2	887.5	.7
36895.000	515.	5377.	1.6	888.4	887.6	.8
36950.000	130.	1553.	5.6	888.4	887.6	.8
37000.000	130.	1576.	5.5	888.7	887.8	.9
37100.000	646.	8291.	1.0	889.4	888.6	.8
38110.000	466.	5069.	1.7	889.6	888.8	.8
40790.000	600.	5669.	1.5	891.4	890.5	.9
40820.000	600.	5675.	1.5	891.5	890.6	.9
40865.000	600.	5896.	1.5	891.8	891.2	.6
41025.000	310.	3653.	2.4	891.9	891.3	.6
41165.000	290.	3401.	2.6	892.0	891.3	.7
41605.000	610.	6866.	1.3	892.4	891.5	.9
42070.000	780.	8425.	1.0	892.5	891.6	.9
44040.000	241.	2176.	3.9	893.0	892.0	1.0
45890.000	764.	5540.	1.5	895.2	894.2	1.0
46650.000	192.	1170.	7.2	895.4	894.4	1.0

EXISTING CONDITIONS MODEL
FLOODWAY

```
1*********************************************                                          ***************************************
 *  HEC-2 WATER SURFACE PROFILES            *                                          *  U.S. ARMY CORPS OF ENGINEERS       *
 *                                          *                                          *  HYDROLOGIC ENGINEERING CENTER      *
 *  Version   4.6.2;  May 1991              *                                          *  609 SECOND STREET, SUITE D         *
 *                                          *                                          *  DAVIS, CALIFORNIA 95616-4687       *
 *  RUN DATE    05JUN08    TIME   13:16:25  *                                          *          (916) 756-1104             *
 *********************************************                                          ***************************************



                                                X     X  XXXXXXX   XXXXX            XXXXX
                                                X     X  X        X     X          X     X
                                                X     X  X        X                      X
                                                XXXXXXX  XXXX     X         XXXXX   XXXXX
                                                X     X  X        X                X
                                                X     X  X        X     X          X
                                                X     X  XXXXXXX   XXXXX           XXXXXXX
1
   05JUN08      13:16:25                                                                                                  PAGE    1



                                                                                  THIS RUN EXECUTED 05JUN08    13:16:25
 *************************************
  HEC-2 WATER SURFACE PROFILES

  Version   4.6.2;  May 1991
 *************************************


 T1      CHEROKEE COUNTY, GEORGIA FIS
 T2      100-YEAR FLOODWAY (CROSS SECTIONS ADDED)
 T3      NOONDAY CREEK

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       -1         4         0         0         0         0         0         0    855.17

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN       ALLDC     IBW       CHNIM     ITRACE

       1         0        -1


 J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     110        200        150

 J5  LPRNT    NUMSEC                    ********REQUESTED SECTION NUMBERS********

     -10       -10

 NC     .120       .120       .075       .100        .300        .000        .000        .000        .000
 QT     5.00       5455       8590       9370       10575       9370
 ET                                                            10.4
 X1     6275         32        435        505
 GR      902          0      896.4         15       887.2          43       878.2          87       871.6         124
 GR    865.2        152      856.4        193       847.8         211       839.7         227       839.1         264
 GR    839.0        324      839.2        362       840.3         408       843.4         426       842.3         435
 GR    833.2        436      833.2        486       838.5         492       840.4         505       841.6         536
 GR    841.1        576      842.3        596       850.3         623       855.6         645       863.7         686
 GR    872.1        715      876.2        746       882.7         768       888.4         796       896.9         832
 GR    901.7        859      909.8        902

 X1     9890         28        144        192        3615        3615        3615
 GR      902          0      898.4          8         891          33       883.3          53       873.2          72
 GR    866.2         85      858.5        103       849.1         120       842.3         128       843.6         129
 GR    842.8        144      837.2        144       837.2         186       842.4         192       842.3         201
 GR    842.3        228      843.4        269       845.2         293         848         314         853         334
 GR    857.4        344      861.7        365       869.9         407       878.3         447       883.8         491
 GR    888.2        519      894.4        559         902         592
```

```
X1    17180       31      312      370     7290     7290     7290
GR      902        0    896.6        7      895       41    891.6       56    883.7       70
GR    872.5      105    857.9      140    849.9      156    848.5      168    850.6      173
GR    850.9      192    850.8      246    851.6      292    851.2      312    846.2      318
GR    846.2      364    850.4      370    850.4      405    850.1      494    850.3      558
GR    851.4      617    856.1      650    862.6      653    871.6      677    878.2      708
1
   05JUN08     13:16:25                                                                    PAGE    2


GR    882.4      726    886.2      742    890.5      759      894      771    897.4      792
GR    902.0      825

ET                                                  7.4
X1    20120       31      153      222     2340     2130     2940
GR      902        0    898.3       21    889.3       56    873.5       94    861.2      131
GR    855.7      141    855.2      153    853.6      158    849.2      166    849.2      200
GR    853.3      211    857.5      222    855.7      268    854.5      324    855.7      388
GR    855.4      450    853.5      503      855      586    855.1      660    857.5      793
GR    856.0      858    855.6      906    862.9    929.0    863.1      954    864.7     1035
GR    866.4     1101    873.3     1164      883     1219    892.5     1253    896.3     1271
GR      902     1282

X1    23410       28      513      574     3290     3290     3290
GR      902        0    896.2       14    889.3       56    877.9      133    871.6      178
GR    868.4      234    864.3      277    861.1      322    857.5      365    858.2      390
GR    858.0      401    858.8      435    860.3      486    860.6      513    857.9      513
GR    853.5      522    853.5      563    858.3      574    856.1      617    861.6      659
GR    864.5      679    868.2      721    887.9      766    880.4      788    889.1      828
GR    893.0      852    896.6      890      902      930

X1    26945       21      168      247     3535     3535     3535
GR      900        0    895.7       19    889.1       37    881.3       65    875.5       82
GR    867.4       98    863.7      119    861.1      139    865.8      147    865.7      168
GR    864.0      172    857.1      181    857.1      214    860.9      216    864.5      247
GR    871.8      262    880.4      282    889.6      305    894.9      318    898.9      329
GR    902.0      354

NC       .1       .1     .065       .3       .5
ET                                                  6.4
X1    27500       10     1181     1210      555      555      555
GR    893.5      900    889.5     1000    866.5     1118    867.8     1181    859.4     1185
GR    859.1     1190      859     1200    859.4     1208    865.5     1210    910.5     1400

NC     .080      .08
X1    27620       38     1026     1182      120      120      120
X2        0        0        0    879.2    882.5
BT        6     1000    882.5      880     1026      883    879.2     1147    885.5    882.7
BT    1226.    888.5    884.8     1226    888.5    885.7     1250    889.5    886.6
GR    891.8      500      883      800    882.5      900    882.5     1000      878     1000
GR    871.0     1025      880     1025      880     1026      870     1026    867.5     1040
GR    865.5     1065    880.5     1065    880.5     1066    865.2     1066    861.5     1090
GR    860.5     1106    881.7     1106    881.7     1108    856.5     1108    857.5     1130
GR    857.5     1145    882.8     1145    882.8     1147    857.5     1147    867.1     1180
GR    883.7     1180    883.7     1182    869.1     1182    869.9     1210      875     1225
GR    884.6     1225    884.8     1226      875     1226    884.5     1250    889.5     1250
GR    897.5     1400    897.5     1500      903     1560

QT        5     5250     8270     9025    10180     9025
X1    27700       38     1026     1182       80       80       80
X2        0        0        0    879.2    882.5
BT        6     1000    882.5      880     1026      883    879.2     1147    885.5    882.7
BT     1226    888.5    884.8     1226    888.5    885.7     1250    889.5    886.6
GR    891.8      500      883      800    882.5      900    882.5     1000      878     1000
1
   05JUN08     13:16:25                                                                    PAGE    3


GR    871.0     1025      880     1025      880     1026      870     1026    867.5     1040
GR    865.5     1065    880.5     1065    880.5     1066    865.2     1066    861.5     1090
GR    860.5     1106    881.7     1106    881.7     1108    856.5     1108    857.5     1130
GR    857.5     1145    882.8     1145    882.8     1147    857.5     1147    867.1     1180
GR    883.7     1180    883.7     1182    869.1     1182    869.9     1210      875     1225
GR    884.6     1225    884.8     1226      875     1226    884.5     1250    889.5     1250
GR    897.5     1400    897.5     1500      903     1560
```

```
NC      .12       .12       .07        .1        .3
ET                                                        10.4
X1    27805        15      1000      1050       108.      108       108
GR    882.5       500     874.5       600     870.8       700     870.5       800     868.5       900
GR    866.5      1000       861      1005     859.5      1010     859.1      1030     858.6      1040
GR    860.0      1045       867      1050     867.5      1100     898.5      1300     907.5      1400

X1    30185        21       178       208      2380      2280      2380
GR      922         0     907.2        17     893.7        39     880.7        52     871.6        70
GR      868        83     868.5       102     867.1       133     865.7       166     865.3       178
GR      863       179       863       208     868.7       208     870.8       221       875       234
GR    880.3       254     888.4       276     896.1       299     905.6       321     916.4       350
GR    922.0       391

QT        5      5110      8045      8780      9905      8780
ET                                                         0.4
X1    32495        30       164       222      2300      2300      2310
GR     932.         0       930        11     919.9        34     909.5        60     902.3        84
GR    889.7       114     880.6       134     873.9       142       870       152     869.9       164
GR    865.2       175     865.2       221     869.1       222     868.3       237     869.8       245
GR    874.3       257       880       279     886.1       295     891.5       306     898.7       315
GR    899.5       323     898.7       339     907.9       350     914.4       358     914.1       371
GR    918.9       388       923       403     928.1       416       930       428       932       441

ET                                                         8.1                  35       215
X1      100        11        73       119       500       500       500
GR      890         0       880        30       872        56       870        73       867        80
GR      867       104       872       119       872       150       874       165       880       193
GR      890       230

ET                                                         8.1                 110       300
X1      200        19       212       264       220       220       220
GR    893.6         0     884.6        60     878.7       100     872.3       103       873       146
GR      873       147     872.7       150       872       200     872.7       205     872.7       206
GR    873.3       212     867.9       216     867.4       258     874.6       264     874.6       266
GR    874.6       267     874.5       300     875.9       308     894.1       345

ET                                                         8.1                 110       300
X1      300        19       212       264        60        60        60
GR    893.6         0     884.6        60     878.7       100     872.3       103       873       146
GR      873       147     872.7       150       872       200     872.7       205     872.7       206
GR    873.3       212     867.9       216     867.4       258     874.6       264     874.6       266
GR    874.6       267     874.5       300     875.9       308     894.1       345
```



```
ET                                                         8.1                  90       295
X1      400        15       214       257        65        65        65
GR   885.62         0    884.54        25    882.17        51    881.61        69    877.10       112
GR   872.61       157    873.20       178    873.42       214    867.02       220    865.47       254
GR   870.39       257    875.90       269    877.32       293    884.83       308    892.85       320

NC      .05       .05      .045        .3        .5
ET                                                         8.1                1110.11    1650.48
X1    34950        26      1130      1170      1105      1605      1610
GR    900.2         0     891.4       100     889.2       200     888.7       300       889       400
GR    889.5       500     889.5       700     890.5       800     889.4       900     886.5      1000
GR    874.5      1100       876      1130       868      1135     867.4      1140       868      1150
GR    868.0      1156     868.7      1166       875      1170     874.5      1200     874.2      1300
GR    873.5      1400     874.5      1500     879.5      1600     884.1      1800     881.5      1900
GR    897.0      2070

ET                                                         8.1                1028.25    1181.25
X1    35050        31      1072    1137.5       100       100       100
X2        0         0         0    887.03     891.5
BT        2      1000     891.5    887.22      1203     892.5    887.03
GR    890.5         0     890.4       100     888.2       200     886.4       400       886       500
GR    886.4       600     891.5      1000     885.5      1000     883.5      1010     876.5      1030
GR    874.3      1060     873.6    1068.5     887.7    1068.5     887.7      1072       873      1072
GR    869.4      1080     867.3      1100     868.4      1120     873.9    1137.5       888    1137.5
GR    888.0      1141       874      1141     873.4      1170     875.5      1180     880.5      1190
GR    884.5      1203     892.5      1203     890.5      1400     884.5      1800     884.5      1900
GR    897.0      2160
```

ET						8.1		1028.25	1181.25	
X1	35100	31	1072	1137.5	50	50	50			
X2	0	0	0	887.03	891.5					
BT	2	1000	891.5	887.22	1203	892.5	887.03			
GR	890.5	0	890.4	100	888.2	200	886.4	400	886	500
GR	886.4	600	891.5	1000	885.5	1000	883.5	1010	876.5	1030
GR	874.3	1060	873.6	1068.5	887.7	1068.5	887.7	1072	873	1072
GR	869.4	1080	867.3	1100	868.4	1120	873.9	1137.5	888	1137.5
GR	888.0	1141	874	1141	873.4	1170	875.5	1180	880.5	1190
GR	884.5	1203	892.5	1203	890.5	1400	884.5	1800	884.5	1900
GR	897	2160								

ET						8.1		1018.5	1171.5	
X1	35410	32	1060	1130	310	310	310			
X2	0	0	0	885.91	890					
BT	2	1000	891.4	885.91	1203	893.2	888.05			
GR	891.2	0	890.4	300	890	500	890.3	700	891.3	900
GR	891.4	1000	885.1	1000	883.3	1010	876.5	1030	874.5	1040
GR	874.5	1050	874	1060	870.5	1068	889	1068	889	1071.5
GR	869.8	1071.5	868.5	1090	868	1110	869.1	1120	875.1	1130
GR	874.5	1138.5	889.7	1138.5	889.7	1142	874.2	1142	874.7	1160
GR	876.7	1170	882.2	1190	886.6	1200	887.4	1203	893.2	1203
GR	895.2	1300	900.7	1650						

1

ET						8.1		1018.5	1171.5	
X1	35480	32	1060	1130	70	70	70			
X2	0	0	0	885.91	890					
BT	2	1000	891.4	885.91	1203	893.2	888.05			
GR	891.2	0	890.4	300	890	500	890.3	700	891.3	900
GR	891.4	1000	885.1	1000	883.3	1010	876.5	1030	874.5	1040
GR	874.5	1050	874	1060	870.5	1068	889	1068	889	1071.5
GR	869.8	1071.5	868.5	1090	868.1	1110	869.1	1120	875.1	1130
GR	874.5	1138.5	889.7	1138.5	889.7	1142	874.2	1142	874.7	1160
GR	876.7	1170	882.2	1190	886.6	1200	887.4	1203	893.2	1203
GR	895.2	1300	900.7	1650						

ET						8.1		1028.5	1181.5	
X1	35530	37	1070	1140	50	50	50			
X2	0	0	0	887.23	890.3					
BT	2	1000	893.5	887.23	1186	895	889.07			
GR	891.6	0	890.5	200	890.3	400	890.6	500	892.4	600
GR	893.2	700	893.8	900	893.5	1000	887.23	1000	886.3	1010
GR	881.0	1020	876.5	1040	874	1060.5	891.8	1060.5	891.8	1064
GR	874.0	1064	874.5	1070	870.6	1080	869.6	1090	868.3	1110
GR	868.3	1120	869	1124	892.6	1124	892.6	1127.5	869.8	1127.5
GR	870.0	1130	874.5	1140	875.4	1150	878.4	1160	889	1180
GR	889.07	1186	895	1186	895.2	1233	898	1300	898	1400
GR	898.6	1500	901.8	1700						

ET						8.1		1028.5	1181.5	
X1	35650	37	1070	1140	120	120	120			
X2	0	0	0	887.23	890.3					
BT	2	1000	893.5	887.23	1186	895	889.07			
GR	891.6	0	890.5	200	890.3	400	890.6	500	892.4	600
GR	893.2	700	893.8	900	893.5	1000	887.23	1000	886.3	1010
GR	881.0	1020	876.5	1040	874	1060.5	891.8	1060.5	891.8	1064
GR	874.0	1064	874.5	1070	870.6	1080	869.6	1090	868.5	1110
GR	868.5	1120	869	1124	892.6	1124	892.6	1127.5	869.8	1127.5
GR	870.0	1130	874.5	1140	875.4	1150	878.4	1160	889	1180
GR	889.07	1186	895	1186	895.2	1233	898	1300	898	1400
GR	898.6	1500	901.8	1700						

NC	.12	.12	.075	.1	.3					
ET						7.1	750	1550		
X1	35750	24	1060	1105	100	100	100			
GR	905.5	150	893.5	175	885.5	400	886.5	500	881.8	600
GR	881.5	700	880	900	875.5	1000	875.5	1060	874.1	1070
GR	874.1	1080	874.5	1085	868.6	1090	868.6	1097	875.5	1105
GR	874.5	1200	875.4	1300	874.5	1400	875.8	1500	875.8	1600
GR	880.5	2100	886.4	2200	894.4	2300	900.5	2310		

QT	5	5050	7955	8680	9790	8680

```
ET                                                  7.1       625      1140
1
   05JUN08      13:16:25                                                                    PAGE    6


X1    36895        17      1030      1070       600      1500      1215
GR      889       300     888.7       400     887.5       500     882.8       700     875.8       800
GR    875.8       900     878.2      1030     870.3      1035     868.8      1060       869      1065
GR    877.8      1070     878.2      1100       888      1200     894.5      1400       899      1500
GR      907      1600     909.7      1700

NC      .07       .07       .05        .5        .8
ET                                                  7.1      1005      1135
X1    36950        30      1050      1100        55        55        55
X2        0         0         0       888       891
X4        2     874.1      1100       888      1144
BT        2      1000     892.3     889.3      1144       891       888
GR    916.2       300     900.8       600     896.9       700     894.2       800     893.2       900
GR    892.3      1000       886      1000     875.8      1030     875.8      1034       892      1034
GR    892.0      1035     875.8      1035     873.2      1050       869      1060     869.5      1070
GR    891.6      1070     891.5      1073     869.7      1073     871.4      1090     875.5      1107
GR    891.3      1107     891.3      1110     876.5      1110     884.5      1130     887.4      1143
GR    891.0      1144     893.4      1300       898      1500     901.2      1600       906      1700

ET                                                  7.1      1005      1135
X1    37000        30      1050      1100        50        50        50
X2        0         0         0       888       891
X4        2     874.1      1100       888      1144
BT        2      1000     892.3     889.3      1144       891       888
GR    916.2       300     900.8       600     896.9       700     894.2       800     893.2       900
GR    892.3      1000       886      1000     875.8      1030     875.8      1034       892      1034
GR    892.0      1035     875.8      1035     873.2      1050       869      1060     869.5      1070
GR    891.6      1070     891.5      1073     869.7      1073     871.4      1090     875.5      1107
GR    891.3      1107     891.3      1110     876.5      1110     884.5      1130     887.4      1143
GR    891.0      1144     893.4      1300       898      1500     901.2      1600       906      1700

NC      .12        .1       .07        .1        .3
ET                                                  7.1     625.78    1271.76
X1    37100        19      1050      1090       100       100       100
GR    891.3       400     889.5       500     877.5       600       876       700     877.2       800
GR    876.2       900     876.2      1000       877      1050     871.3      1055     868.3      1060
GR    868.2      1065     869.5      1070     870.8      1090       877      1090       875      1100
GR    878.6      1200       881      1300     885.5      1400       899      1600

ET                                                  7.1     1764.4    2229.91
X1    38110        67      2011      2046       950       970      1010
GR    917.8       791     920.4       837     920.7       869     919.4       914     918.2       943
GR    916.0       997     914.4      1025     913.5      1043     912.3      1089     910.7      1096
GR    902.3      1120     893.1      1150     893.1      1156     896.8      1164     897.8      1178
GR    897.7      1185     897.6      1197     897.6      1211     896.4      1229     894.9      1237
GR    896.5      1249     896.8      1260     897.4      1273     897.7      1285     898.4      1297
GR    897.9      1310     895.7      1331     894.9      1337       898      1350     894.2      1381
GR    890.9      1431     886.5      1472     886.9      1522     885.3      1555     885.9      1611
GR    886.8      1660     887.1      1702     884.3      1729     877.6      1788     877.6      1839
GR    877.4      1895     879.7      1937       881      1964     882.5      1981     882.4      2000
GR    881.1      2011     870.5      2016     870.5      2046     879.1      2046     880.3      2056
GR    879.9      2103     879.7      2152     879.2      2208     881.4      2257     882.2      2292
GR    883.3      2295       889      2311     892.3      2340     896.2      2374       903      2401
GR    909.3      2455     915.3      2492     921.1      2531     924.1      2542       928      2573
1
   05JUN08      13:16:25                                                                    PAGE    7


GR    930.0      2600       932      2617

NC                                    .3        .5
NH        3        .2      1000       .06      1160       .25      2200
ET                                                  7.1      1000      1600
X1    40790        24      1055      1105      2700      2550      2680
X2                                                                                          15
GR    905.3         0     899.2       100       892       300       890       400     889.1       600
GR    889.1       700     889.0       800     888.5       985     882.2      1000       883      1055
GR    877.0      1060     874.2      1070     874.9      1075     874.2      1085     874.7      1090
GR    877.0      1100       882      1105     882.7      1160     882.2      1300     882.5      1500
GR    884.0      1700     891.5      1900     902.8      2000       911      2200
```

```
NH        3        .2      1000       .06      1160       .25      2200
ET                                                     7.11      1000      1600
X1    40820         0         0         0        10        10        10
X2                                                                                                  15

SB     1.05       2.0       3.0         0        30         4      1130      5.56       876       876
NH        3        .2      1000       .06      1160       .25      2200
ET                                                     7.11      1000      1600
X1    40865         0         0         0        85        85        85
X2        0         0         1       888     889.5                                                 15
BT       12       680     891.4         0       860     890.2         0       980     889.6         0
BT     1000     889.6         0      1001     891.6         0      1160     891.6         0      1161
BT    889.5         0      1290     889.6         0      1440     889.8         0      1570     889.8
BT        0      1700     891.1         0      1800       892         0

NC      .12       .12       .06        .1        .3
ET                                                      7.1       320       630
X1    41025        15       375       435       100       350       160
GR      892         0     889.4        50     885.8       100     886.4       150     884.7       200
GR    881.2       250     881.6       300     881.4       350     882.2       375       872       385
GR      872       420       883       435     880.8       505       882       650       896       800

NH        7       .15       196       .15       260       .06       335       .05       390       .06
NH      450       .15       700       .50       950
ET                                                      7.1       310       600
X1    41165        14       335       390        90       150       140
GR      892         0     889.4        50    885.20       100     886.8       150     884.2       196
GR      881       260       884       335       873       350       873       385     883.3       390
GR    880.6       450       882       700       884       850       896       950

NH        6       .15       170       .06       215       .05       275       .06       375       .15
NH      925       .50      1400
ET                                                      7.1       190       800
X1    41605        14       215       275       420       550       440
X4        1       882       170
GR      896         0     881.4        50     880.7       100     880.8       150     883.2       200
GR    883.4       215       874       230       874       270     883.7       275     881.5       375
GR      881       675       884       925       888      1200       896      1400
1
   05JUN08      13:16:25                                                                                PAGE    8


NH        5       .12       783       .06       848       .05       904       .12      1550       .50
NH     3151
ET                                                      7.1       770      1550
X1    42070        68       848       904       400       400       400
GR    931.6         0       930        45     928.3        64     926.8        82     917.5       126
GR    910.8       138     909.5       149     909.5       164     914.4       175     912.9       192
GR    912.2       223     914.5       254     913.8       296     910.2       327     905.3       374
GR    901.4       412     895.8       470       892       502     887.5       530     884.3       592
GR    881.9       617     882.4       631     884.7       645     882.2       664     880.6       667
GR    878.2       668     878.2       675     881.9       681     882.6       701     882.5       720
GR    885.1       748     883.6       783     883.6       807     883.9       848     876.2       858
GR    876.2       893     885.5       904     885.1       922     882.8       948     881.5      1026
GR    883.2      1121     881.4      1182     881.2      1231     880.5      1240     881.5      1246
GR    881.0      1352       881      1550     882.9      1714     886.3      1820     888.8      1992
GR    891.2      2108       895      2243     900.9      2348     902.5      2491     901.4      2586
GR    899.8      2649     897.8      2731     905.5      2764       906      2798     905.5      2822
GR    907.2      2850     911.5      2905     917.2      2950     922.1      3015     928.4      3054
GR    928.6      3096       930      3114     932.6      3151

NC      .12       .08      .055        .1        .3
QT        5      4880      7680      8380      9460      8380
ET                                                      7.1    1697.1   1937.79
X1    44040        22      1858      1933      2030      1850      1970
GR    896.5      1603     896.1      1625     895.2      1640     890.7      1670     885.3      1697
GR    886.8      1719     885.8      1738     881.2      1747     885.6      1767     887.8      1802
GR    887.4      1830     887.4      1858     878.5      1860     878.5      1923       885      1933
GR    895.5      1993     909.5      2029     919.8      2060     919.4      2064     924.6      2080
GR      930      2105     933.1      2111

NC      .12       .12      .065        .1        .3
ET                                                      7.1      1380      2150
X1    45890        42      1564      1669      1860      1800      1850
GR    904.4      1331     903.3      1341       896      1382     890.2      1414       889      1443
```

```
GR    889.6      1473      891.7      1502      891.7      1536       889       1564      885.4      1572
GR    880.7      1588      880.7      1642      887.5      1656      889.7      1669      888.4      1731
GR    888.0      1812      888.1      1899      888.2      1997      887.1      2072      887.1      2120
GR    887.8      2216      888.2      2302      887.3      2381      889.4      2481      891.9      2557
GR    902.3      2630      906.2      2700      909.3      2806      914.9      2922      920.2      3018
GR    921.7      3082      920.1      3158      918.3      3174      919.2      3222      923.4      3259
GR    923.6      3313      923.8      3369      930.4      3384      929.9      3424      929.9      3461
GR    930.0      3465      932.7      3468

NC      .12       .12       .065       .1         .3
ET                                                          7.1     136.27     327.98
X1    46650        22       262       320        720       745       760
GR    908.0         0       904        20        900        50       896        67       892        72
GR    890.0       130       892       180        893       225       892       262      882.2       280
GR    882.2       305       884       320        888       343       892       347       896       380
GR    900.0       430       904       500        908       590       911       770       912       850
GR    916.0      1060       920      1210
1
   05JUN08      13:16:25                                                                          PAGE    9


     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WIN       ELMIN     SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


 FLOW DISTRIBUTION FOR SECNO=  40790.00          CWSEL=    890.58

 STA=     371.    1000.    1055.    1105.    1160.    1300.    1500.    1700.    1875.
   PER Q=      3.2     14.2     32.6     14.9      8.9     13.0     10.7      2.5
    AREA=    928.2    438.5    726.2    452.3   1137.3   1644.7   1464.7    576.1
     VEL=       .3      2.8      3.9      2.9       .7       .7       .6       .4
   DEPTH=      1.5      8.0     14.5      8.2      8.1      8.2      7.3      3.3

 FLOW DISTRIBUTION FOR SECNO=  40820.00          CWSEL=    890.58

 STA=     371.    1000.    1055.    1105.    1160.    1300.    1500.    1700.    1876.
   PER Q=      3.3     14.2     32.5     14.9      8.9     13.0     10.7      2.5
    AREA=    934.0    439.0    726.6    452.8   1138.5   1646.5   1466.5    577.7
     VEL=       .3      2.8      3.9      2.9       .7       .7       .6       .4
   DEPTH=      1.5      8.0     14.5      8.2      8.1      8.2      7.3      3.3

 FLOW DISTRIBUTION FOR SECNO=  40865.00          CWSEL=    891.17

 STA=     341.     985.    1055.    1105.    1160.    1300.    1500.    1700.    1891.
   PER Q=      4.2     14.7     30.8     14.8      8.9     12.9     10.8      2.8
    AREA=   1225.2    558.7    756.0    485.1   1220.8   1764.1   1584.1    685.5
     VEL=       .3      2.3      3.5      2.7       .6       .6       .6       .3
   DEPTH=      1.9      8.0     15.1      8.8      8.7      8.8      7.9      3.6

1
   05JUN08      13:16:25                                                                          PAGE   10


 T1      CHEROKEE COUNTY
 T2      100-YEAR FLOODWAY
 T3      NOONDAY CREEK

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       -1        6                                                                   856.17

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      15                  -1



 FLOW DISTRIBUTION FOR SECNO=  40790.00          CWSEL=    891.57

 STA=    1000.    1055.    1105.    1160.    1300.    1500.    1600.
   PER Q=     15.0     35.2     17.5     10.5     15.2      6.6
    AREA=    493.4    776.0    507.1   1276.9   1844.1    869.5
     VEL=      2.6      3.9      3.0       .7       .7       .7
```

```
  DEPTH=      9.0     15.5      9.2      9.1      9.2      8.7

FLOW DISTRIBUTION FOR SECNO=  40820.00          CWSEL=    891.58

STA=    1000.    1055.    1105.    1160.    1300.    1500.    1600.
  PER Q=     15.0     35.2     17.5     10.5     15.2      6.6
   AREA=    493.9    776.5    507.7   1278.2   1846.0    870.5
    VEL=      2.6      3.9      3.0       .7       .7       .7
  DEPTH=      9.0     15.5      9.2      9.1      9.2      8.7

FLOW DISTRIBUTION FOR SECNO=  40865.00          CWSEL=    891.88

STA=    1000.    1055.    1105.    1160.    1300.    1500.    1600.
  PER Q=     15.1     34.7     17.6     10.6     15.4      6.6
   AREA=    510.6    791.7    524.4   1320.7   1906.8    900.9
    VEL=      2.6      3.8      2.9       .7       .7       .6
  DEPTH=      9.3     15.8      9.5      9.4      9.5      9.0
```



```
                                                                                THIS RUN EXECUTED 05JUN08    13:16:25
*************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
*************************************


NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST


NOONDAY CREEK

SUMMARY PRINTOUT TABLE  110
```

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	6275.000	855.17	.00	855.21	447.64	4368.50	3264.42	1737.07	.00	.00	435.00	505.00	.00
	6275.000	856.17	1.00	856.22	358.18	4362.61	3530.46	1476.94	.10	230.30	435.00	505.00	588.48
*	9890.000	856.94	.00	857.14	237.15	771.48	4326.25	4272.26	.00	.00	144.00	192.00	.00
*	9890.000	857.93	.98	858.15	177.76	351.85	4700.22	4317.93	.10	129.74	144.00	192.00	307.49
*	17180.000	862.37	.00	862.41	523.60	2588.37	2345.86	4435.77	.00	.00	312.00	370.00	.00
*	17180.000	863.37	1.00	863.42	435.58	2331.00	2597.81	4441.19	.12	173.22	312.00	370.00	608.80
	20120.000	863.62	.00	863.67	856.51	168.58	2214.56	6986.86	.00	.00	153.00	222.00	.00
	20120.000	864.60	.98	864.65	658.53	.00	2256.53	7113.46	.12	153.00	153.00	222.00	811.53
*	23410.000	866.95	.00	867.14	457.53	3703.79	3663.59	2002.62	.00	.00	513.00	574.00	.00
*	23410.000	867.76	.81	867.97	306.50	3711.07	3992.58	1666.35	.12	331.00	513.00	574.00	637.50
	26945.000	875.03	.00	875.44	186.57	2295.65	6846.75	227.61	.00	.00	168.00	247.00	.00
	26945.000	875.99	.96	876.43	134.58	2115.47	7254.53	.00	.08	112.42	168.00	247.00	247.00
*	27500.000	876.85	.00	877.63	193.05	3950.29	4484.92	934.78	.00	.00	1181.00	1210.00	.00
	27500.000	877.83	.97	878.67	122.62	4023.49	4759.94	586.57	.09	1102.34	1181.00	1210.00	1224.96
*	27620.000	877.91	.00	878.11	224.05	116.85	8503.16	750.00	.00	.00	1026.00	1182.00	.00
*	27620.000	878.96	1.05	879.15	175.39	.00	8823.16	546.84	.04	1026.00	1026.00	1182.00	1208.39
	27700.000	878.05	.00	878.23	224.71	117.30	8174.92	732.78	.00	.00	1026.00	1182.00	.00
	27700.000	879.09	1.04	879.27	175.99	.00	8480.21	544.79	.04	1026.00	1026.00	1182.00	1208.99
	27805.000	878.25	.00	878.34	616.26	4527.13	3232.02	1265.85	.00	.00	1000.00	1050.00	.00
	27805.000	879.27	1.02	879.37	402.88	4721.50	3538.71	764.79	.14	690.36	1000.00	1050.00	1093.24
*	30185.000	880.87	.00	881.18	203.73	5039.56	3237.94	747.50	.00	.00	178.00	208.00	.00
*	30185.000	881.85	.98	882.19	143.00	5048.30	3491.30	485.39	.11	78.38	178.00	208.00	221.39

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	32495.000	884.93	.00	885.27	167.44	926.30	6065.29	1788.41	.00	.00	164.00	222.00	.00
	32495.000	885.62	.69	885.93	160.91	946.26	6007.28	1826.46	.00	127.35	164.00	222.00	288.26
	100.000	885.71	.00	886.07	201.25	1433.28	4907.50	2439.23	.00	.00	73.00	119.00	.00
	100.000	886.30	.59	886.65	180.00	1273.18	4961.66	2545.16	180.00	35.00	73.00	119.00	215.00
	200.000	886.22	.00	886.39	279.77	3608.85	4028.07	1143.08	.00	.00	212.00	264.00	.00
	200.000	886.75	.53	886.97	190.00	3382.80	4575.63	821.56	190.00	110.00	212.00	264.00	300.00
	300.000	886.28	.00	886.45	280.32	3612.81	4021.46	1145.73	.00	.00	212.00	264.00	.00
	300.000	886.83	.54	887.04	190.00	3385.78	4571.28	822.95	190.00	110.00	212.00	264.00	300.00
	400.000	886.32	.00	886.54	310.22	3653.85	4197.12	929.03	.00	.00	214.00	257.00	.00
	400.000	886.89	.57	887.13	205.00	3494.17	4375.36	910.47	205.00	90.00	214.00	257.00	295.00
*	34950.000	886.80	.00	886.82	968.32	853.63	1057.70	6868.67	.00	.00	1130.00	1170.00	.00
*	34950.000	887.42	.62	887.45	540.37	212.93	1219.33	7347.74	540.37	1110.11	1130.00	1170.00	1650.48
*	35050.000	886.74	.00	886.91	755.01	1799.73	4646.33	2333.94	.00	.00	1072.00	1137.50	.00
*	35050.000	887.32	.58	887.59	146.00	1588.01	5380.17	1811.82	153.00	1028.25	1072.00	1137.50	1181.25
	35100.000	886.76	.00	886.94	761.00	1803.12	4637.38	2339.50	.00	.00	1072.00	1137.50	.00
	35100.000	887.39	.62	887.66	146.00	1588.01	5380.17	1811.82	153.00	1028.25	1072.00	1137.50	1181.25
	35410.000	886.95	.00	887.21	194.32	1376.52	5138.05	2265.43	.00	.00	1060.00	1130.00	.00
	35410.000	887.84	.89	888.14	146.00	1591.76	5584.81	1603.42	153.00	1018.50	1060.00	1130.00	1171.50
	35480.000	887.04	.00	887.29	194.64	1400.98	5042.84	2336.18	.00	.00	1060.00	1130.00	.00
	35480.000	887.96	.92	888.26	146.00	1593.91	5580.50	1605.59	153.00	1018.50	1060.00	1130.00	1171.50
	35530.000	887.04	.00	887.39	167.28	1739.17	5837.15	1203.68	.00	.00	1070.00	1140.00	.00
	35530.000	887.99	.95	888.35	142.60	1121.23	6212.32	1446.45	153.00	1028.50	1070.00	1140.00	1181.50
	35650.000	887.17	.00	887.51	168.91	1758.02	5804.40	1217.59	.00	.00	1070.00	1140.00	.00
	35650.000	888.15	.98	888.49	142.91	1186.53	6022.52	1570.95	153.00	1028.50	1070.00	1140.00	1181.50
*	35750.000	887.56	.00	887.57	1872.44	1843.69	678.08	6258.23	.00	.00	1060.00	1105.00	.00
*	35750.000	888.55	.99	888.56	800.00	2306.66	1072.30	5401.03	800.00	750.00	1060.00	1105.00	1550.00
*	36895.000	887.72	.00	887.78	715.57	5728.92	2086.29	864.79	.00	.00	1030.00	1070.00	.00
*	36895.000	888.81	1.09	888.86	515.00	5848.83	2005.56	825.61	515.00	625.00	1030.00	1070.00	1140.00
*	36950.000	887.67	.00	888.36	136.07	1856.79	6007.52	815.69	.00	.00	1050.00	1100.00	.00
*	36950.000	888.77	1.10	889.33	123.00	2344.63	5593.14	742.23	130.00	1005.00	1050.00	1100.00	1135.00
	37000.000	887.87	.00	888.53	136.13	1873.89	5975.17	830.94	.00	.00	1050.00	1100.00	.00
	37000.000	888.98	1.12	889.54	123.00	2244.15	5652.05	783.80	130.00	1005.00	1050.00	1100.00	1135.00
*	37100.000	888.63	.00	888.65	939.13	4980.04	1256.57	2443.40	.00	.00	1050.00	1090.00	.00
*	37100.000	889.63	1.00	889.65	645.98	5087.39	1392.08	2200.54	645.98	625.78	1050.00	1090.00	1271.76

1

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
*	38110.000	888.89	.00	888.93	860.95	3873.80	1612.83	3193.38	.00	.00	2011.00	2046.00	.00
*	38110.000	889.89	1.00	889.94	465.51	3854.78	1817.58	3007.64	465.51	1764.40	2011.00	2046.00	2229.91
	40790.000	890.58	.00	890.66	1503.96	1509.37	2827.36	4343.27	.00	.00	1055.00	1105.00	.00
	40790.000	891.57	1.00	891.68	600.00	1304.06	3057.99	4317.95	600.00	1000.00	1055.00	1105.00	1600.00
	40820.000	890.58	.00	890.67	1504.66	1511.38	2824.95	4343.67	.00	.00	1055.00	1105.00	.00
	40820.000	891.58	1.00	891.69	600.00	1304.32	3056.59	4319.09	600.00	1000.00	1055.00	1105.00	1600.00
	40865.000	891.17	.00	891.24	1549.73	1643.14	2676.31	4360.55	.00	.00	1055.00	1105.00	.00
	40865.000	891.88	.71	891.98	600.00	1312.20	3014.11	4353.69	600.00	1000.00	1055.00	1105.00	1600.00
	41025.000	891.29	.00	891.36	735.76	2505.43	3311.06	2863.50	.00	.00	375.00	435.00	.00
	41025.000	892.01	.72	892.18	310.00	839.41	4594.37	3246.22	310.00	320.00	375.00	435.00	630.00

	41165.000	891.35	.00	891.41	898.88	2164.22	2879.25	3636.53	.00	.00	335.00	390.00	.00
	41165.000	892.09	.74	892.28	290.00	472.89	4332.61	3874.50	290.00	310.00	335.00	390.00	600.00
	41605.000	891.51	.00	891.54	1272.42	1481.77	2300.43	4897.81	.00	.00	215.00	275.00	.00
*	41605.000	892.44	.93	892.49	610.00	344.50	2898.03	5437.47	610.00	190.00	215.00	275.00	800.00
	42070.000	891.60	.00	891.61	1617.59	1951.70	1590.89	5137.41	.00	.00	848.00	904.00	.00
	42070.000	892.55	.96	892.58	780.00	912.19	1927.42	5840.39	780.00	770.00	848.00	904.00	1550.00
*	44040.000	892.05	.00	892.53	312.26	1905.14	6197.28	277.58	.00	.00	1858.00	1933.00	.00
*	44040.000	893.10	1.05	893.53	240.69	1996.50	6324.55	58.96	240.69	1697.10	1858.00	1933.00	1937.79
*	45890.000	894.21	.00	894.25	1181.30	426.72	2988.09	4965.19	.00	.00	1564.00	1669.00	.00
*	45890.000	895.24	1.04	895.31	763.81	691.04	3766.61	3922.34	770.00	1380.00	1564.00	1669.00	2150.00
*	46650.000	894.40	.00	895.60	297.78	1261.19	6112.66	1006.15	.00	.00	262.00	320.00	.00
*	46650.000	895.41	1.01	896.87	191.71	1092.52	7009.00	278.48	191.71	136.27	262.00	320.00	327.98

1

NOONDAY CREEK

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	6275.000	.00	.00	.00	833.20	9370.00	855.17	.00	855.21	2.81	2.27	6447.25	5586.65
	6275.000	.00	.00	.00	833.20	9370.00	856.17	.00	856.22	2.81	2.34	6127.57	5592.09
*	9890.000	3615.00	.00	.00	837.20	9370.00	856.94	.00	857.14	12.77	4.64	3069.48	2622.04
*	9890.000	3615.00	.00	.00	837.20	9370.00	857.93	.00	858.15	12.79	4.80	2867.15	2620.32
*	17180.000	7290.00	.00	.00	846.20	9370.00	862.37	.00	862.41	4.62	2.58	6115.78	4358.67
*	17180.000	7290.00	.00	.00	846.20	9370.00	863.37	.00	863.42	4.61	2.68	5783.28	4362.82
	20120.000	2940.00	.00	.00	849.20	9370.00	863.62	.00	863.67	6.16	2.57	6679.59	3774.97
	20120.000	2940.00	.00	.00	849.20	9370.00	864.60	.00	864.65	5.85	2.43	6343.65	3874.97
*	23410.000	3290.00	.00	.00	853.50	9370.00	866.95	.00	867.14	21.29	4.73	3369.77	2030.71
*	23410.000	3290.00	.00	.00	853.50	9370.00	867.76	.00	867.97	20.55	4.85	3078.54	2067.03
	26945.000	3535.00	.00	.00	857.10	9370.00	875.03	.00	875.44	25.61	5.82	2088.30	1851.51
	26945.000	3535.00	.00	.00	857.10	9370.00	875.99	.00	876.43	27.70	5.79	1916.25	1780.35
*	27500.000	555.00	.00	.00	859.00	9370.00	876.85	.00	877.63	54.72	9.17	1647.49	1266.65
	27500.000	555.00	.00	.00	859.00	9370.00	877.83	.00	878.67	51.12	9.20	1501.37	1310.46
*	27620.000	120.00	882.50	879.20	856.50	9370.00	877.91	.00	878.11	15.03	3.67	2728.80	2416.84
*	27620.000	120.00	882.50	879.20	856.50	9370.00	878.96	.00	879.15	14.18	3.57	2721.94	2488.07
	27700.000	80.00	882.50	879.20	856.50	9025.00	878.05	.00	878.23	13.56	3.50	2759.70	2450.63
	27700.000	80.00	882.50	879.20	856.50	9025.00	879.09	.00	879.27	12.83	3.40	2750.31	2519.40
	27805.000	108.00	.00	.00	858.60	9025.00	878.25	.00	878.34	7.03	3.57	5185.69	3404.86
	27805.000	108.00	.00	.00	858.60	9025.00	879.27	.00	879.37	7.02	3.71	4571.14	3406.42
*	30185.000	2380.00	.00	.00	863.00	9025.00	880.87	.00	881.18	23.24	6.05	2384.22	1872.10
*	30185.000	2380.00	.00	.00	863.00	9025.00	881.85	.00	882.19	22.61	6.19	2186.96	1897.83
	32495.000	2310.00	.00	.00	865.20	8780.00	884.93	.00	885.27	13.87	5.43	2235.80	2357.36
	32495.000	2310.00	.00	.00	865.20	8780.00	885.62	.00	885.93	12.10	5.19	2342.40	2524.03
	100.000	500.00	.00	.00	867.00	8780.00	885.71	.00	886.07	18.32	6.04	2283.84	2051.49
	100.000	500.00	.00	.00	867.00	8780.00	886.30	.00	886.65	16.78	5.91	2308.67	2143.32
	200.000	220.00	.00	.00	867.40	8780.00	886.22	.00	886.39	10.18	4.31	3266.15	2751.75
	200.000	220.00	.00	.00	867.40	8780.00	886.75	.00	886.97	11.92	4.76	2850.35	2543.53
	300.000	60.00	.00	.00	867.40	8780.00	886.28	.00	886.45	10.03	4.29	3283.72	2772.35
	300.000	60.00	.00	.00	867.40	8780.00	886.83	.00	887.04	11.72	4.73	2865.53	2564.32
	400.000	65.00	.00	.00	865.47	8780.00	886.32	.00	886.54	12.68	5.03	3057.72	2465.90

	400.000	65.00	.00	.00	865.47	8780.00	886.89	.00	887.13	12.49	5.09	2803.99	2484.61

1

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	34950.000	1610.00	.00	.00	867.40	8780.00	886.80	.00	886.82	.54	1.47	8407.82	11938.89
*	34950.000	1610.00	.00	.00	867.40	8780.00	887.42	.00	887.45	.64	1.64	6777.62	10962.56
*	35050.000	100.00	891.50	887.03	867.30	8780.00	886.74	.00	886.91	5.41	4.07	2951.13	3773.29
*	35050.000	100.00	891.50	887.03	867.30	8780.00	887.32	.00	887.59	13.76	4.61	2179.52	2366.98
	35100.000	50.00	891.50	887.03	867.30	8780.00	886.76	.00	886.94	5.37	4.05	2967.51	3787.22
	35100.000	50.00	891.50	887.03	867.30	8780.00	887.39	.00	887.66	13.76	4.61	2179.52	2366.98
	35410.000	310.00	890.00	885.91	868.00	8780.00	886.95	.00	887.21	10.88	4.48	2254.44	2662.29
	35410.000	310.00	890.00	885.91	868.00	8780.00	887.84	.00	888.14	16.62	4.85	2066.56	2153.75
	35480.000	70.00	890.00	885.91	868.10	8780.00	887.04	.00	887.29	11.27	4.39	2260.91	2615.80
	35480.000	70.00	890.00	885.91	868.10	8780.00	887.96	.00	888.26	16.66	4.85	2065.06	2150.84
	35530.000	50.00	890.30	887.23	868.30	8780.00	887.04	.00	887.39	10.18	5.18	1941.94	2751.57
	35530.000	50.00	890.30	887.23	868.30	8780.00	887.99	.00	888.35	10.75	5.22	1969.12	2677.66
	35650.000	120.00	890.30	887.23	868.50	8780.00	887.17	.00	887.51	9.97	5.13	1959.19	2780.30
	35650.000	120.00	890.30	887.23	868.50	8780.00	888.15	.00	888.49	12.04	5.04	1979.41	2530.31
*	35750.000	100.00	.00	.00	868.60	8780.00	887.56	.00	887.57	.85	1.02	16136.46	9534.09
*	35750.000	100.00	.00	.00	868.60	8780.00	888.55	.00	888.56	1.71	1.51	9755.07	6715.95
*	36895.000	1215.00	.00	.00	868.80	8680.00	887.72	.00	887.78	7.03	3.04	5385.64	3272.73
*	36895.000	1215.00	.00	.00	868.80	8680.00	888.81	.00	888.86	5.30	2.74	5572.77	3771.36
*	36950.000	55.00	891.00	888.00	869.00	8680.00	887.67	.00	888.36	33.21	7.60	1493.65	1506.31
*	36950.000	55.00	891.00	888.00	869.00	8680.00	888.77	.00	889.33	40.35	6.70	1582.97	1366.43
	37000.000	50.00	891.00	888.00	869.00	8680.00	887.87	.00	888.53	31.78	7.47	1520.93	1539.81
	37000.000	50.00	891.00	888.00	869.00	8680.00	888.98	.00	889.54	45.00	6.77	1591.62	1293.97
*	37100.000	100.00	.00	.00	868.20	8680.00	888.63	.00	888.65	1.78	1.71	9484.71	6512.52
*	37100.000	100.00	.00	.00	868.20	8680.00	889.63	.00	889.65	1.83	1.79	8484.99	6418.29
*	38110.000	1010.00	.00	.00	870.50	8680.00	888.89	.00	888.93	5.36	2.61	6200.41	3749.77
*	38110.000	1010.00	.00	.00	870.50	8680.00	889.89	.00	889.94	5.66	2.79	5198.86	3648.13
	40790.000	2680.00	.00	.00	874.20	8680.00	890.58	.00	890.66	8.04	3.89	7367.97	3061.43
	40790.000	2680.00	.00	.00	874.20	8680.00	891.57	.00	891.68	7.54	3.94	5767.04	3161.79
	40820.000	10.00	.00	.00	874.20	8680.00	890.58	.00	890.67	8.01	3.89	7381.65	3067.24
	40820.000	10.00	.00	.00	874.20	8680.00	891.58	.00	891.69	7.51	3.94	5772.86	3166.54
	40865.000	85.00	889.50	888.00	874.20	8680.00	891.17	.00	891.24	6.30	3.54	8279.47	3458.81
	40865.000	85.00	889.50	888.00	874.20	8680.00	891.88	.00	891.98	6.85	3.81	5955.08	3316.52
	41025.000	160.00	.00	.00	872.00	8680.00	891.29	.00	891.36	4.58	3.23	5978.16	4056.92
	41025.000	160.00	.00	.00	872.00	8680.00	892.01	.00	892.18	7.68	4.31	3681.85	3132.26

1

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	41165.000	140.00	.00	.00	873.00	8680.00	891.35	.00	891.41	3.47	3.19	7458.71	4658.45
	41165.000	140.00	.00	.00	873.00	8680.00	892.09	.00	892.28	6.78	4.60	3427.58	3333.27
	41605.000	440.00	.00	.00	874.00	8680.00	891.51	.00	891.54	1.96	2.41	10677.22	6207.34
*	41605.000	440.00	.00	.00	874.00	8680.00	892.44	.00	892.49	2.57	2.87	6916.85	5412.03
	42070.000	400.00	.00	.00	876.20	8680.00	891.60	.00	891.61	1.66	2.06	12902.51	6732.06
	42070.000	400.00	.00	.00	876.20	8680.00	892.55	.00	892.58	1.95	2.33	8488.17	6214.56
*	44040.000	1970.00	.00	.00	878.50	8380.00	892.05	.00	892.53	21.10	6.36	2164.84	1824.54
*	44040.000	1970.00	.00	.00	878.50	8380.00	893.10	.00	893.53	16.95	6.00	2191.99	2035.62

*	45890.000	1850.00	.00	.00	880.70	8380.00	894.21	.00	894.25	5.10	2.54	7135.54	3712.13
*	45890.000	1850.00	.00	.00	880.70	8380.00	895.24	.00	895.31	6.04	2.93	5564.97	3410.83
*	46650.000	760.00	.00	.00	882.20	8380.00	894.40	.00	895.60	90.48	10.09	1366.29	881.01
*	46650.000	760.00	.00	.00	882.20	8380.00	895.41	.00	896.87	87.47	10.55	1175.27	896.00

1

NOONDAY CREEK

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	6275.000	9370.00	855.17	.00	.00	.00	447.64	.00
	6275.000	9370.00	856.17	1.00	.00	1.00	358.18	.00
*	9890.000	9370.00	856.94	.00	1.77	.00	237.15	3615.00
*	9890.000	9370.00	857.93	.98	1.76	.98	177.76	3615.00
*	17180.000	9370.00	862.37	.00	5.42	.00	523.60	7290.00
*	17180.000	9370.00	863.37	1.00	5.44	1.00	435.58	7290.00
	20120.000	9370.00	863.62	.00	1.26	.00	856.51	2940.00
	20120.000	9370.00	864.60	.98	1.24	.98	658.53	2940.00
*	23410.000	9370.00	866.95	.00	3.33	.00	457.53	3290.00
*	23410.000	9370.00	867.76	.81	3.16	.81	306.50	3290.00
	26945.000	9370.00	875.03	.00	8.07	.00	186.57	3535.00
	26945.000	9370.00	875.99	.96	8.22	.96	134.58	3535.00
*	27500.000	9370.00	876.85	.00	1.83	.00	193.05	555.00
	27500.000	9370.00	877.83	.97	1.84	.97	122.62	555.00
*	27620.000	9370.00	877.91	.00	1.06	.00	224.05	120.00
*	27620.000	9370.00	878.96	1.05	1.14	1.05	175.39	120.00
	27700.000	9025.00	878.05	.00	.14	.00	224.71	80.00
	27700.000	9025.00	879.09	1.04	.13	1.04	175.99	80.00
	27805.000	9025.00	878.25	.00	.20	.00	616.26	108.00
	27805.000	9025.00	879.27	1.02	.17	1.02	402.88	108.00
*	30185.000	9025.00	880.87	.00	2.62	.00	203.73	2380.00
*	30185.000	9025.00	881.85	.98	2.58	.98	143.00	2380.00
	32495.000	8780.00	884.93	.00	4.06	.00	167.44	2310.00
	32495.000	8780.00	885.62	.69	3.77	.69	160.91	2310.00
	100.000	8780.00	885.71	.00	.78	.00	201.25	500.00
	100.000	8780.00	886.30	.59	.68	.59	180.00	500.00
	200.000	8780.00	886.22	.00	.51	.00	279.77	220.00
	200.000	8780.00	886.75	.53	.45	.53	190.00	220.00
	300.000	8780.00	886.28	.00	.06	.00	280.32	60.00
	300.000	8780.00	886.83	.54	.07	.54	190.00	60.00
	400.000	8780.00	886.32	.00	.03	.00	310.22	65.00
	400.000	8780.00	886.89	.57	.06	.57	205.00	65.00

1

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	34950.000	8780.00	886.80	.00	.49	.00	968.32	1610.00
*	34950.000	8780.00	887.42	.62	.53	.62	540.37	1610.00
*	35050.000	8780.00	886.74	.00	-.07	.00	755.01	100.00

*	35050.000	8780.00	887.32	.58	-.10	.58	146.00	100.00
	35100.000	8780.00	886.76	.00	.03	.00	761.00	50.00
	35100.000	8780.00	887.39	.62	.07	.62	146.00	50.00
	35410.000	8780.00	886.95	.00	.19	.00	194.32	310.00
	35410.000	8780.00	887.84	.89	.45	.89	146.00	310.00
	35480.000	8780.00	887.04	.00	.08	.00	194.64	70.00
	35480.000	8780.00	887.96	.92	.12	.92	146.00	70.00
	35530.000	8780.00	887.04	.00	.01	.00	167.28	50.00
	35530.000	8780.00	887.99	.95	.04	.95	142.60	50.00
	35650.000	8780.00	887.17	.00	.13	.00	168.91	120.00
	35650.000	8780.00	888.15	.98	.16	.98	142.91	120.00
*	35750.000	8780.00	887.56	.00	.39	.00	1872.44	100.00
*	35750.000	8780.00	888.55	.99	.40	.99	800.00	100.00
*	36895.000	8680.00	887.72	.00	.16	.00	715.57	1215.00
*	36895.000	8680.00	888.81	1.09	.26	1.09	515.00	1215.00
*	36950.000	8680.00	887.67	.00	-.05	.00	136.07	55.00
*	36950.000	8680.00	888.77	1.10	-.04	1.10	123.00	55.00
	37000.000	8680.00	887.87	.00	.20	.00	136.13	50.00
	37000.000	8680.00	888.98	1.12	.21	1.12	123.00	50.00
*	37100.000	8680.00	888.63	.00	.76	.00	939.13	100.00
*	37100.000	8680.00	889.63	1.00	.64	1.00	645.98	100.00
*	38110.000	8680.00	888.89	.00	.26	.00	860.95	1010.00
*	38110.000	8680.00	889.89	1.00	.26	1.00	465.51	1010.00
	40790.000	8680.00	890.58	.00	1.69	.00	1503.96	2680.00
	40790.000	8680.00	891.57	1.00	1.68	1.00	600.00	2680.00
	40820.000	8680.00	890.58	.00	.01	.00	1504.66	10.00
	40820.000	8680.00	891.58	1.00	.01	1.00	600.00	10.00
	40865.000	8680.00	891.17	.00	.59	.00	1549.73	85.00
	40865.000	8680.00	891.88	.71	.30	.71	600.00	85.00
	41025.000	8680.00	891.29	.00	.12	.00	735.76	160.00
	41025.000	8680.00	892.01	.72	.12	.72	310.00	160.00

1

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	41165.000	8680.00	891.35	.00	.07	.00	898.88	140.00
	41165.000	8680.00	892.09	.74	.09	.74	290.00	140.00
	41605.000	8680.00	891.51	.00	.16	.00	1272.42	440.00
*	41605.000	8680.00	892.44	.93	.35	.93	610.00	440.00
	42070.000	8680.00	891.60	.00	.09	.00	1617.59	400.00
	42070.000	8680.00	892.55	.96	.12	.96	780.00	400.00
*	44040.000	8380.00	892.05	.00	.45	.00	312.26	1970.00
*	44040.000	8380.00	893.10	1.05	.55	1.05	240.69	1970.00
*	45890.000	8380.00	894.21	.00	2.16	.00	1181.30	1850.00
*	45890.000	8380.00	895.24	1.04	2.14	1.04	763.81	1850.00
*	46650.000	8380.00	894.40	.00	.19	.00	297.78	760.00
*	46650.000	8380.00	895.41	1.01	.16	1.01	191.71	760.00

1

SUMMARY OF ERRORS AND SPECIAL NOTES

```
WARNING SECNO=   9890.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=   9890.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  17180.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  17180.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  23410.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  23410.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  27500.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  27620.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  27620.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  30185.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  30185.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  34950.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  34950.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  35050.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  35050.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  35750.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  35750.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  36895.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  36895.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  36950.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  36950.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  37100.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  37100.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  38110.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  38110.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  41605.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  44040.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  44040.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  45890.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  45890.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  46650.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  46650.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
```


FLOODWAY DATA, NOONDAY CREEK
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
6275.000	358.	6128.	1.5	856.2	855.2	1.0
9890.000	178.	2867.	3.3	857.9	856.9	1.0
17180.000	436.	5783.	1.6	863.4	862.4	1.0
20120.000	659.	6344.	1.5	864.6	863.6	1.0
23410.000	307.	3079.	3.0	867.8	867.0	.8
26945.000	135.	1916.	4.9	876.0	875.0	1.0
27500.000	123.	1501.	6.2	877.9	876.9	1.0
27620.000	182.	2722.	3.4	878.9	877.9	1.0
27700.000	183.	2750.	3.3	879.1	878.1	1.0

27805.000	403.	4571.	2.0	879.3	878.3	1.0
30185.000	143.	2187.	4.1	881.9	880.9	1.0
32495.000	161.	2342.	3.7	885.6	884.9	.7
100.000	180.	2309.	3.8	886.3	885.7	.6
200.000	190.	2850.	3.1	886.7	886.2	.5
300.000	190.	2866.	3.1	886.8	886.3	.5
400.000	205.	2804.	3.1	886.9	886.3	.6
34950.000	540.	6778.	1.3	887.4	886.8	.6
35050.000	153.	2180.	4.0	887.3	886.7	.6
35100.000	153.	2180.	4.0	887.4	886.8	.6
35410.000	153.	2067.	4.2	887.9	887.0	.9
35480.000	153.	2065.	4.3	887.9	887.0	.9
35530.000	150.	1969.	4.5	888.0	887.0	1.0
35650.000	150.	1979.	4.4	888.2	887.2	1.0
35750.000	800.	9755.	.9	888.6	887.6	1.0
36895.000	515.	5573.	1.6	888.8	887.7	1.1
36950.000	130.	1583.	5.5	888.8	887.7	1.1
37000.000	130.	1592.	5.5	889.0	887.9	1.1
37100.000	646.	8485.	1.0	889.6	888.6	1.0
38110.000	466.	5199.	1.7	889.9	888.9	1.0
40790.000	600.	5767.	1.5	891.6	890.6	1.0
40820.000	600.	5773.	1.5	891.6	890.6	1.0
40865.000	600.	5955.	1.5	891.9	891.2	.7
41025.000	310.	3682.	2.4	892.0	891.3	.7
41165.000	290.	3428.	2.5	892.1	891.4	.7
41605.000	610.	6917.	1.3	892.4	891.5	.9
42070.000	780.	8488.	1.0	892.6	891.6	1.0
44040.000	241.	2192.	3.8	893.1	892.0	1.1
45890.000	764.	5565.	1.5	895.2	894.2	1.0
46650.000	192.	1175.	7.1	895.4	894.4	1.0

PROPOSED CONDITIONS MODEL
FLOODWAY

```
1*********************************************                                    ***************************************
 *  HEC-2 WATER SURFACE PROFILES            *                                    *  U.S. ARMY CORPS OF ENGINEERS       *
 *                                          *                                    *  HYDROLOGIC ENGINEERING CENTER      *
 *  Version   4.6.2;  May 1991              *                                    *  609 SECOND STREET, SUITE D         *
 *                                          *                                    *  DAVIS, CALIFORNIA 95616-4687       *
 *  RUN DATE    06JUN08    TIME   10:33:29  *                                    *          (916) 756-1104             *
 *********************************************                                    ***************************************



                                          X     X  XXXXXXX   XXXXX            XXXXX
                                          X     X  X        X     X          X     X
                                          X     X  X        X                      X
                                          XXXXXXX  XXXX     X         XXXXX   XXXXX
                                          X     X  X        X                X
                                          X     X  X        X     X          X
                                          X     X  XXXXXXX   XXXXX           XXXXXXX
1
   06JUN08      10:33:29                                                                                    PAGE    1



                                                                                THIS RUN EXECUTED 06JUN08    10:33:29
 *************************************
  HEC-2 WATER SURFACE PROFILES

  Version   4.6.2;  May 1991
 *************************************


 T1      CHEROKEE COUNTY, GEORGIA FIS
 T2      100-YEAR FLOODWAY (CROSS SECTIONS ADDED)
 T3      NOONDAY CREEK

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       -1         4         0         0         0         0         0         0    855.17

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN       ALLDC     IBW       CHNIM     ITRACE

       1         0        -1


 J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     110        200        150

 J5  LPRNT    NUMSEC                    ********REQUESTED SECTION NUMBERS********

     -10       -10

 NC     .120       .120       .075       .100       .300       .000       .000       .000       .000
 QT     5.00       5455       8590       9370      10575       9370
 ET                                                           10.4
 X1     6275         32        435        505
 GR      902          0      896.4         15      887.2         43      878.2         87      871.6        124
 GR    865.2        152      856.4        193      847.8        211      839.7        227      839.1        264
 GR    839.0        324      839.2        362      840.3        408      843.4        426      842.3        435
 GR    833.2        436      833.2        486      838.5        492      840.4        505      841.6        536
 GR    841.1        576      842.3        596      850.3        623      855.6        645      863.7        686
 GR    872.1        715      876.2        746      882.7        768      888.4        796      896.9        832
 GR    901.7        859      909.8        902

 X1     9890         28        144        192       3615       3615       3615
 GR      902          0      898.4          8        891         33      883.3         53      873.2         72
 GR    866.2         85      858.5        103      849.1        120      842.3        128      843.6        129
 GR    842.8        144      837.2        144      837.2        186      842.4        192      842.3        201
 GR    842.3        228      843.4        269      845.2        293        848        314        853        334
 GR    857.4        344      861.7        365      869.9        407      878.3        447      883.8        491
 GR    888.2        519      894.4        559        902        592
```

```
X1    17180       31      312      370     7290     7290     7290
GR      902        0    896.6        7      895       41    891.6       56    883.7       70
GR    872.5      105    857.9      140    849.9      156    848.5      168    850.6      173
GR    850.9      192    850.8      246    851.6      292    851.2      312    846.2      318
GR    846.2      364    850.4      370    850.4      405    850.1      494    850.3      558
GR    851.4      617    856.1      650    862.6      653    871.6      677    878.2      708
1
   06JUN08     10:33:29                                                                    PAGE    2


GR    882.4      726    886.2      742    890.5      759      894      771    897.4      792
GR    902.0      825

ET                                                  7.4
X1    20120       31      153      222     2340     2130     2940
GR      902        0    898.3       21    889.3       56    873.5       94    861.2      131
GR    855.7      141    855.2      153    853.6      158    849.2      166    849.2      200
GR    853.3      211    857.5      222    855.7      268    854.5      324    855.7      388
GR    855.4      450    853.5      503      855      586    855.1      660    857.5      793
GR    856.0      858    855.6      906    862.9    929.0    863.1      954    864.7     1035
GR    866.4     1101    873.3     1164      883     1219    892.5     1253    896.3     1271
GR      902     1282

X1    23410       28      513      574     3290     3290     3290
GR      902        0    896.2       14    889.3       56    877.9      133    871.6      178
GR    868.4      234    864.3      277    861.1      322    857.5      365    858.2      390
GR    858.0      401    858.8      435    860.3      486    860.6      513    857.9      513
GR    853.5      522    853.5      563    858.3      574    856.1      617    861.6      659
GR    864.5      679    868.2      721    887.9      766    880.4      788    889.1      828
GR    893.0      852    896.6      890      902      930

X1    26945       21      168      247     3535     3535     3535
GR      900        0    895.7       19    889.1       37    881.3       65    875.5       82
GR    867.4       98    863.7      119    861.1      139    865.8      147    865.7      168
GR    864.0      172    857.1      181    857.1      214    860.9      216    864.5      247
GR    871.8      262    880.4      282    889.6      305    894.9      318    898.9      329
GR    902.0      354

NC       .1       .1     .065       .3       .5
ET                                                  6.4
X1    27500       10     1181     1210      555      555      555
GR    893.5      900    889.5     1000    866.5     1118    867.8     1181    859.4     1185
GR    859.1     1190      859     1200    859.4     1208    865.5     1210    910.5     1400

NC     .080      .08
X1    27620       38     1026     1182      120      120      120
X2        0        0        0    879.2    882.5
BT        6     1000    882.5      880     1026      883    879.2     1147    885.5    882.7
BT    1226.    888.5    884.8     1226    888.5    885.7     1250    889.5    886.6
GR    891.8      500      883      800    882.5      900    882.5     1000      878     1000
GR    871.0     1025      880     1025      880     1026      870     1026    867.5     1040
GR    865.5     1065    880.5     1065    880.5     1066    865.2     1066    861.5     1090
GR    860.5     1106    881.7     1106    881.7     1108    856.5     1108    857.5     1130
GR    857.5     1145    882.8     1145    882.8     1147    857.5     1147    867.1     1180
GR    883.7     1180    883.7     1182    869.1     1182    869.9     1210      875     1225
GR    884.6     1225    884.8     1226      875     1226    884.5     1250    889.5     1250
GR    897.5     1400    897.5     1500      903     1560

QT        5     5250     8270     9025    10180     9025
X1    27700       38     1026     1182       80       80       80
X2        0        0        0    879.2    882.5
BT        6     1000    882.5      880     1026      883    879.2     1147    885.5    882.7
BT     1226    888.5    884.8     1226    888.5    885.7     1250    889.5    886.6
GR    891.8      500      883      800    882.5      900    882.5     1000      878     1000
1
   06JUN08     10:33:29                                                                    PAGE    3


GR    871.0     1025      880     1025      880     1026      870     1026    867.5     1040
GR    865.5     1065    880.5     1065    880.5     1066    865.2     1066    861.5     1090
GR    860.5     1106    881.7     1106    881.7     1108    856.5     1108    857.5     1130
GR    857.5     1145    882.8     1145    882.8     1147    857.5     1147    867.1     1180
GR    883.7     1180    883.7     1182    869.1     1182    869.9     1210      875     1225
GR    884.6     1225    884.8     1226      875     1226    884.5     1250    889.5     1250
GR    897.5     1400    897.5     1500      903     1560
```

```
NC      .12       .12       .07        .1        .3
ET                                                          10.4
X1    27805        15      1000      1050       108.       108       108
GR    882.5       500     874.5       600     870.8       700     870.5       800     868.5       900
GR    866.5      1000       861      1005     859.5      1010     859.1      1030     858.6      1040
GR    860.0      1045       867      1050     867.5      1100     898.5      1300     907.5      1400

X1    30185        21       178       208      2380      2280      2380
GR      922         0     907.2        17     893.7        39     880.7        52     871.6        70
GR      868        83     868.5       102     867.1       133     865.7       166     865.3       178
GR      863       179       863       208     868.7       208     870.8       221       875       234
GR    880.3       254     888.4       276     896.1       299     905.6       321     916.4       350
GR    922.0       391

QT        5      5110      8045      8780      9905      8780
ET                                                           0.4
X1    32495        30       164       222      2300      2300      2310
GR     932.         0       930        11     919.9        34     909.5        60     902.3        84
GR    889.7       114     880.6       134     873.9       142       870       152     869.9       164
GR    865.2       175     865.2       221     869.1       222     868.3       237     869.8       245
GR    874.3       257       880       279     886.1       295     891.5       306     898.7       315
GR    899.5       323     898.7       339     907.9       350     914.4       358     914.1       371
GR    918.9       388       923       403     928.1       416       930       428       932       441

ET                                                           8.1                  35       215
X1      100        11        73       119       500       500       500
GR      890         0       880        30       872        56       870        73       867        80
GR      867       104       872       119       872       150       874       165       880       193
GR      890       230

ET                                                           8.1                 110       300
X1      200        19       212       264       220       220       220
GR    893.6         0     884.6        60     878.7       100     872.3       103       873       146
GR      873       147     872.7       150       872       200     872.7       205     872.7       206
GR    873.3       212     867.9       216     867.4       258     874.6       264     874.6       266
GR    874.6       267     874.5       300     875.9       308     894.1       345

ET                                                           8.1                 110       300
X1      300        19       212       264        60        60        60
GR    893.6         0     884.6        60     878.7       100     872.3       103       873       146
GR      873       147     872.7       150       872       200     872.7       205     872.7       206
GR    873.3       212     867.9       216     867.4       258     874.6       264     874.6       266
GR    874.6       267     874.5       300     875.9       308     894.1       345
```



```
ET                                                           8.1                  90       295
X1      400        15       214       257        65        65        65
GR   885.62         0    884.54        25    882.17        51    881.61        69    877.10       112
GR   872.61       157    873.20       178    873.42       214    867.02       220    865.47       254
GR   870.39       257    875.90       269    877.32       293    884.83       308    892.85       320

NC      .05       .05      .045        .3        .5
ET                                                           8.1               1110.11   1650.48
X1    34950        26      1130      1170      1105      1605      1610
GR    900.2         0     891.4       100     889.2       200     888.7       300       889       400
GR    889.5       500     889.5       700     890.5       800     889.4       900     886.5      1000
GR    874.5      1100       876      1130       868      1135     867.4      1140       868      1150
GR    868.0      1156     868.7      1166       875      1170     874.5      1200     874.2      1300
GR    873.5      1400     874.5      1500     879.5      1600     884.1      1800     881.5      1900
GR    897.0      2070

ET                                                           8.1               1028.25   1181.25
X1    35050        31      1072    1137.5       100       100       100
X2        0         0         0    887.03     891.5
BT        2      1000     891.5    887.22      1203    892.5    887.03
GR    890.5         0     890.4       100     888.2       200     886.4       400       886       500
GR    886.4       600     891.5      1000     885.5      1000     883.5      1010     876.5      1030
GR    874.3      1060     873.6    1068.5     887.7    1068.5     887.7      1072       873      1072
GR    869.4      1080     867.3      1100     868.4      1120     873.9    1137.5       888    1137.5
GR    888.0      1141       874      1141     873.4      1170     875.5      1180     880.5      1190
GR    884.5      1203     892.5      1203     890.5      1400     884.5      1800     884.5      1900
GR    897.0      2160
```

```
ET                                                      8.1                1028.25    1181.25
X1    35100        31      1072    1137.5        50        50        50
X2        0         0         0    887.03     891.5
BT        2      1000     891.5    887.22      1203     892.5    887.03
GR    890.5         0     890.4       100     888.2       200     886.4       400       886       500
GR    886.4       600     891.5      1000     885.5      1000     883.5      1010     876.5      1030
GR    874.3      1060     873.6    1068.5     887.7    1068.5     887.7      1072       873      1072
GR    869.4      1080     867.3      1100     868.4      1120     873.9    1137.5       888    1137.5
GR    888.0      1141       874      1141     873.4      1170     875.5      1180     880.5      1190
GR    884.5      1203     892.5      1203     890.5      1400     884.5      1800     884.5      1900
GR      897      2160

NC     .045      .045      .045        .3        .5
ET                                                      8.1                1018.5     1171.5
X1    35333        32      1060      1130       233       233       233
X2        0         0         0    885.91       890
BT        2      1000     891.4    885.91      1203     893.2    888.05
GR    891.2         0     890.4       300       890       500     890.3       700     891.3       900
GR    891.4      1000     885.1      1000     883.3      1010     876.5      1030     874.5      1040
GR    874.5      1050       874      1060     870.5      1068       889      1068       889    1071.5
GR    869.8    1071.5     868.5      1090       868      1110     869.1      1120     875.1      1130
GR    874.5    1138.5     889.7    1138.5     889.7      1142     874.2      1142     874.7      1160
GR    876.7      1170     882.2      1190     886.6      1200     887.4      1203     893.2      1203
GR    895.2      1300     900.7      1650
1
   06JUN08      10:33:29                                                                          PAGE    5


ET                                                      8.1                1028.5     1181.5
X1    35703        37      1070      1140       370       370       370
X2        0         0         0    887.23     890.3
BT        2      1000     893.5    887.23      1186       895    889.07
GR    891.6         0     890.5       200     890.3       400     890.6       500     892.4       600
GR    893.2       700     893.8       900     893.5      1000    887.23      1000     886.3      1010
GR    881.0      1020     876.5      1040       874    1060.5     891.8    1060.5     891.8      1064
GR    874.0      1064     874.5      1070     870.6      1080     869.6      1090     868.5      1110
GR    868.5      1120       869      1124     892.6      1124     892.6    1127.5     869.8    1127.5
GR    870.0      1130     874.5      1140     875.4      1150     878.4      1160       889      1180
GR   889.07      1186       895      1186     895.2      1233       898      1300       898      1400
GR    898.6      1500     901.8      1700

NC      .12       .12      .075        .1        .3
ET                                                      7.1       750      1550
X1    35750        24      1060      1105        47        47        47
GR    905.5       150     893.5       175     885.5       400     886.5       500     881.8       600
GR    881.5       700       880       900     875.5      1000     875.5      1060     874.1      1070
GR    874.1      1080     874.5      1085     868.6      1090     868.6      1097     875.5      1105
GR    874.5      1200     875.4      1300     874.5      1400     875.8      1500     875.8      1600
GR    880.5      2100     886.4      2200     894.4      2300     900.5      2310

QT        5      5050      7955      8680      9790      8680
ET                                                      7.1       625      1140
X1    36895        17      1030      1070       600      1500      1215
GR      889       300     888.7       400     887.5       500     882.8       700     875.8       800
GR    875.8       900     878.2      1030     870.3      1035     868.8      1060       869      1065
GR    877.8      1070     878.2      1100       888      1200     894.5      1400       899      1500
GR      907      1600     909.7      1700

NC      .07       .07       .05        .5        .8
ET                                                      7.1      1005      1135
X1    36950        30      1050      1100        55        55        55
X2        0         0         0       888       891
X4        2     874.1      1100       888      1144
BT        2      1000     892.3     889.3      1144       891       888
GR    916.2       300     900.8       600     896.9       700     894.2       800     893.2       900
GR    892.3      1000       886      1000     875.8      1030     875.8      1034       892      1034
GR    892.0      1035     875.8      1035     873.2      1050       869      1060     869.5      1070
GR    891.6      1070     891.5      1073     869.7      1073     871.4      1090     875.5      1107
GR    891.3      1107     891.3      1110     876.5      1110     884.5      1130     887.4      1143
GR    891.0      1144     893.4      1300       898      1500     901.2      1600       906      1700

ET                                                      7.1      1005      1135
X1    37000        30      1050      1100        50        50        50
X2        0         0         0       888       891
X4        2     874.1      1100       888      1144
```

```
BT       2      1000      892.3      889.3       1144        891        888
GR   916.2       300      900.8        600      896.9        700      894.2        800      893.2        900
GR   892.3      1000        886       1000      875.8       1030      875.8       1034        892       1034
GR   892.0      1035      875.8       1035      873.2       1050        869       1060      869.5       1070
GR   891.6      1070      891.5       1073      869.7       1073      871.4       1090      875.5       1107
GR   891.3      1107      891.3       1110      876.5       1110      884.5       1130      887.4       1143
1
   06JUN08     10:33:29                                                                                PAGE    6


GR   891.0      1144      893.4       1300        898       1500      901.2       1600        906       1700

NC     .12        .1        .07         .1         .3
ET                                                          7.1     625.78    1271.76
X1   37100        19       1050       1090        100       100        100
GR   891.3       400      889.5        500      877.5       600        876        700      877.2        800
GR   876.2       900      876.2       1000        877      1050      871.3       1055      868.3       1060
GR   868.2      1065      869.5       1070      870.8       1090        877       1090        875       1100
GR   878.6      1200        881       1300      885.5       1400        899       1600

ET                                                          7.1    1764.4    2229.91
X1   38110        67       2011       2046        950       970       1010
GR   917.8       791      920.4        837      920.7       869      919.4        914      918.2        943
GR   916.0       997      914.4       1025      913.5       1043     912.3       1089      910.7       1096
GR   902.3      1120      893.1       1150      893.1       1156     896.8       1164      897.8       1178
GR   897.7      1185      897.6       1197      897.6       1211     896.4       1229      894.9       1237
GR   896.5      1249      896.8       1260      897.4       1273     897.7       1285      898.4       1297
GR   897.9      1310      895.7       1331      894.9       1337       898       1350      894.2       1381
GR   890.9      1431      886.5       1472      886.9       1522     885.3       1555      885.9       1611
GR   886.8      1660      887.1       1702      884.3       1729     877.6       1788      877.6       1839
GR   877.4      1895      879.7       1937        881       1964     882.5       1981      882.4       2000
GR   881.1      2011      870.5       2016      870.5       2046     879.1       2046      880.3       2056
GR   879.9      2103      879.7       2152      879.2       2208     881.4       2257      882.2       2292
GR   883.3      2295        889       2311      892.3       2340     896.2       2374        903       2401
GR   909.3      2455      915.3       2492      921.1       2531     924.1       2542        928       2573
GR   930.0      2600        932       2617

NC                                      .3         .5
NH       3        .2       1000        .06       1160        .25      2200
ET                                                          7.1      1000       1600
X1   40790        24       1055       1105       2700       2550      2680
X2                                                                                                      15
GR   905.3         0      899.2        100        892        300       890        400      889.1        600
GR   889.1       700      889.0        800      888.5        985     882.2       1000        883       1055
GR   877.0      1060      874.2       1070      874.9       1075     874.2       1085      874.7       1090
GR   877.0      1100        882       1105      882.7       1160     882.2       1300      882.5       1500
GR   884.0      1700      891.5       1900      902.8       2000       911       2200

NH       3        .2       1000        .06       1160        .25      2200
ET                                                         7.11      1000       1600
X1   40820         0          0          0         10         10        10
X2                                                                                                      15

SB    1.05       2.0        3.0          0         30          4      1130       5.56        876        876
NH       3        .2       1000        .06       1160        .25      2200
ET                                                         7.11      1000       1600
X1   40865         0          0          0         85         85        85
X2       0         0          1        888      889.5                                                  15
BT      12       680      891.4          0        860      890.2         0        980      889.6          0
BT    1000     889.6          0       1001      891.6          0      1160      891.6          0       1161
BT   889.5         0       1290      889.6          0       1440     889.8          0       1570      889.8
BT       0      1700      891.1          0       1800        892         0
1
   06JUN08     10:33:29                                                                                PAGE    7


NC     .12       .12        .06         .1         .3
ET                                                          7.1       320        630
X1   41025        15        375        435        100        350       160
GR     892         0      889.4         50      885.8        100     886.4        150      884.7        200
GR   881.2       250      881.6        300      881.4        350     882.2        375        872        385
GR     872       420        883        435      880.8        505       882        650        896        800

NH       7       .15        196        .15        260        .06       335        .05        390        .06
NH     450       .15        700        .50        950
```

```
ET                                                      7.1       310       600
X1   41165       14       335       390        90       150       140
GR     892        0     889.4        50    885.20       100     886.8       150     884.2       196
GR     881      260       884       335       873       350       873       385     883.3       390
GR   880.6      450       882       700       884       850       896       950

NH       6      .15       170       .06       215       .05       275       .06       375       .15
NH     925      .50      1400
ET                                                      7.1       190       800
X1   41605       14       215       275       420       550       440
X4       1      882       170
GR     896        0     881.4        50     880.7       100     880.8       150     883.2       200
GR   883.4      215       874       230       874       270     883.7       275     881.5       375
GR     881      675       884       925       888      1200       896      1400

NH       5      .12       783       .06       848       .05       904       .12      1550       .50
NH    3151
ET                                                      7.1       770      1550
X1   42070       68       848       904       400       400       400
GR   931.6        0       930        45     928.3        64     926.8        82     917.5       126
GR   910.8      138     909.5       149     909.5       164     914.4       175     912.9       192
GR   912.2      223     914.5       254     913.8       296     910.2       327     905.3       374
GR   901.4      412     895.8       470       892       502     887.5       530     884.3       592
GR   881.9      617     882.4       631     884.7       645     882.2       664     880.6       667
GR   878.2      668     878.2       675     881.9       681     882.6       701     882.5       720
GR   885.1      748     883.6       783     883.6       807     883.9       848     876.2       858
GR   876.2      893     885.5       904     885.1       922     882.8       948     881.5      1026
GR   883.2     1121     881.4      1182     881.2      1231     880.5      1240     881.5      1246
GR   881.0     1352       881      1550     882.9      1714     886.3      1820     888.8      1992
GR   891.2     2108       895      2243     900.9      2348     902.5      2491     901.4      2586
GR   899.8     2649     897.8      2731     905.5      2764       906      2798     905.5      2822
GR   907.2     2850     911.5      2905     917.2      2950     922.1      3015     928.4      3054
GR   928.6     3096       930      3114     932.6      3151

NC     .12      .08      .055        .1        .3
QT       5     4880      7680      8380      9460      8380
ET                                                      7.1    1697.1   1937.79
X1   44040       22      1858      1933      2030      1850      1970
GR   896.5     1603     896.1      1625     895.2      1640     890.7      1670     885.3      1697
GR   886.8     1719     885.8      1738     881.2      1747     885.6      1767     887.8      1802
GR   887.4     1830     887.4      1858     878.5      1860     878.5      1923       885      1933
GR   895.5     1993     909.5      2029     919.8      2060     919.4      2064     924.6      2080
GR     930     2105     933.1      2111
1
   06JUN08     10:33:29                                                                          PAGE    8


NC     .12      .12      .065        .1        .3
ET                                                      7.1      1380      2150
X1   45890       42      1564      1669      1860      1800      1850
GR   904.4     1331     903.3      1341       896      1382     890.2      1414       889      1443
GR   889.6     1473     891.7      1502     891.7      1536       889      1564     885.4      1572
GR   880.7     1588     880.7      1642     887.5      1656     889.7      1669     888.4      1731
GR   888.0     1812     888.1      1899     888.2      1997     887.1      2072     887.1      2120
GR   887.8     2216     888.2      2302     887.3      2381     889.4      2481     891.9      2557
GR   902.3     2630     906.2      2700     909.3      2806     914.9      2922     920.2      3018
GR   921.7     3082     920.1      3158     918.3      3174     919.2      3222     923.4      3259
GR   923.6     3313     923.8      3369     930.4      3384     929.9      3424     929.9      3461
GR   930.0     3465     932.7      3468

NC     .12      .12      .065        .1        .3
ET                                                      7.1    136.27    327.98
X1   46650       22       262       320       720       745       760
GR   908.0        0       904        20       900        50       896        67       892        72
GR   890.0      130       892       180       893       225       892       262     882.2       280
GR   882.2      305       884       320       888       343       892       347       896       380
GR   900.0      430       904       500       908       590       911       770       912       850
GR   916.0     1060       920      1210
1
   06JUN08     10:33:29                                                                          PAGE    9


     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WIN       ELMIN     SSTA
```

```
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


 FLOW DISTRIBUTION FOR SECNO=  40790.00          CWSEL=    890.58

 STA=     371.    1000.    1055.    1105.    1160.    1300.    1500.    1700.    1875.
   PER Q=      3.2     14.2     32.6     14.9      8.9     13.0     10.7      2.5
    AREA=    929.1    438.6    726.2    452.4   1137.5   1644.9   1464.9    576.4
     VEL=       .3      2.8      3.9      2.9       .7       .7       .6       .4
   DEPTH=      1.5      8.0     14.5      8.2      8.1      8.2      7.3      3.3

 FLOW DISTRIBUTION FOR SECNO=  40820.00          CWSEL=    890.59

 STA=     371.    1000.    1055.    1105.    1160.    1300.    1500.    1700.    1876.
   PER Q=      3.3     14.2     32.5     14.9      8.9     13.0     10.7      2.5
    AREA=    934.8    439.1    726.7    452.9   1138.7   1646.7   1466.7    577.9
     VEL=       .3      2.8      3.9      2.9       .7       .7       .6       .4
   DEPTH=      1.5      8.0     14.5      8.2      8.1      8.2      7.3      3.3

 FLOW DISTRIBUTION FOR SECNO=  40865.00          CWSEL=    891.17

 STA=     341.     985.    1055.    1105.    1160.    1300.    1500.    1700.    1891.
   PER Q=      4.2     14.7     30.8     14.8      8.9     12.9     10.8      2.8
    AREA=   1225.5    558.7    756.0    485.2   1220.9   1764.2   1584.2    685.6
     VEL=       .3      2.3      3.5      2.7       .6       .6       .6       .3
   DEPTH=      1.9      8.0     15.1      8.8      8.7      8.8      7.9      3.6

1
    06JUN08      10:33:29                                                                                    PAGE   10


 T1      CHEROKEE COUNTY
 T2      100-YEAR FLOODWAY
 T3      NOONDAY CREEK

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       -1         6                                                                  856.17

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      15                  -1



 FLOW DISTRIBUTION FOR SECNO=  40790.00          CWSEL=    891.57

 STA=    1000.    1055.    1105.    1160.    1300.    1500.    1600.
   PER Q=     15.0     35.2     17.5     10.5     15.2      6.6
    AREA=    493.4    776.1    507.2   1277.0   1844.3    869.6
     VEL=      2.6      3.9      3.0       .7       .7       .7
   DEPTH=      9.0     15.5      9.2      9.1      9.2      8.7

 FLOW DISTRIBUTION FOR SECNO=  40820.00          CWSEL=    891.58

 STA=    1000.    1055.    1105.    1160.    1300.    1500.    1600.
   PER Q=     15.0     35.2     17.5     10.5     15.2      6.6
    AREA=    494.0    776.5    507.7   1278.3   1846.2    870.6
     VEL=      2.6      3.9      3.0       .7       .7       .7
   DEPTH=      9.0     15.5      9.2      9.1      9.2      8.7

 FLOW DISTRIBUTION FOR SECNO=  40865.00          CWSEL=    891.88

 STA=    1000.    1055.    1105.    1160.    1300.    1500.    1600.
   PER Q=     15.1     34.7     17.6     10.6     15.4      6.6
    AREA=    510.6    791.7    524.4   1320.8   1906.9    900.9
     VEL=      2.6      3.8      2.9       .7       .7       .6
   DEPTH=      9.3     15.8      9.5      9.4      9.5      9.0

1
    06JUN08      10:33:29                                                                                    PAGE   11
```

THIS RUN EXECUTED 06JUN08 10:33:29

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

NOONDAY CREEK

SUMMARY PRINTOUT TABLE 110

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	6275.000	855.17	.00	855.21	447.64	4368.50	3264.42	1737.07	.00	.00	435.00	505.00	.00
	6275.000	856.17	1.00	856.22	358.18	4362.61	3530.46	1476.94	.10	230.30	435.00	505.00	588.48
*	9890.000	856.94	.00	857.14	237.15	771.48	4326.25	4272.26	.00	.00	144.00	192.00	.00
*	9890.000	857.93	.98	858.15	177.76	351.85	4700.22	4317.93	.10	129.74	144.00	192.00	307.49
*	17180.000	862.37	.00	862.41	523.60	2588.37	2345.86	4435.77	.00	.00	312.00	370.00	.00
*	17180.000	863.37	1.00	863.42	435.58	2331.00	2597.81	4441.19	.12	173.22	312.00	370.00	608.80
	20120.000	863.62	.00	863.67	856.51	168.58	2214.56	6986.86	.00	.00	153.00	222.00	.00
	20120.000	864.60	.98	864.65	658.53	.00	2256.53	7113.46	.12	153.00	153.00	222.00	811.53
*	23410.000	866.95	.00	867.14	457.53	3703.79	3663.59	2002.62	.00	.00	513.00	574.00	.00
*	23410.000	867.76	.81	867.97	306.50	3711.07	3992.58	1666.35	.12	331.00	513.00	574.00	637.50
	26945.000	875.03	.00	875.44	186.57	2295.65	6846.75	227.61	.00	.00	168.00	247.00	.00
	26945.000	875.99	.96	876.43	134.58	2115.47	7254.53	.00	.08	112.42	168.00	247.00	247.00
*	27500.000	876.85	.00	877.63	193.05	3950.29	4484.92	934.78	.00	.00	1181.00	1210.00	.00
	27500.000	877.83	.97	878.67	122.62	4023.49	4759.94	586.57	.09	1102.34	1181.00	1210.00	1224.96
*	27620.000	877.91	.00	878.11	224.05	116.85	8503.16	750.00	.00	.00	1026.00	1182.00	.00
*	27620.000	878.96	1.05	879.15	175.39	.00	8823.16	546.84	.04	1026.00	1026.00	1182.00	1208.39
	27700.000	878.05	.00	878.23	224.71	117.30	8174.92	732.78	.00	.00	1026.00	1182.00	.00
	27700.000	879.09	1.04	879.27	175.99	.00	8480.21	544.79	.04	1026.00	1026.00	1182.00	1208.99
	27805.000	878.25	.00	878.34	616.26	4527.13	3232.02	1265.85	.00	.00	1000.00	1050.00	.00
	27805.000	879.27	1.02	879.37	402.88	4721.50	3538.71	764.79	.14	690.36	1000.00	1050.00	1093.24
*	30185.000	880.87	.00	881.18	203.73	5039.56	3237.94	747.50	.00	.00	178.00	208.00	.00
*	30185.000	881.85	.98	882.19	143.00	5048.30	3491.30	485.39	.11	78.38	178.00	208.00	221.39

1

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	32495.000	884.93	.00	885.27	167.44	926.30	6065.29	1788.41	.00	.00	164.00	222.00	.00
	32495.000	885.62	.69	885.93	160.91	946.26	6007.28	1826.46	.00	127.35	164.00	222.00	288.26
	100.000	885.71	.00	886.07	201.25	1433.28	4907.50	2439.23	.00	.00	73.00	119.00	.00
	100.000	886.30	.59	886.65	180.00	1273.18	4961.66	2545.16	180.00	35.00	73.00	119.00	215.00
	200.000	886.22	.00	886.39	279.77	3608.85	4028.07	1143.08	.00	.00	212.00	264.00	.00
	200.000	886.75	.53	886.97	190.00	3382.80	4575.63	821.56	190.00	110.00	212.00	264.00	300.00
	300.000	886.28	.00	886.45	280.32	3612.81	4021.46	1145.73	.00	.00	212.00	264.00	.00
	300.000	886.83	.54	887.04	190.00	3385.78	4571.28	822.95	190.00	110.00	212.00	264.00	300.00
	400.000	886.32	.00	886.54	310.22	3653.85	4197.12	929.03	.00	.00	214.00	257.00	.00
	400.000	886.89	.57	887.13	205.00	3494.17	4375.36	910.47	205.00	90.00	214.00	257.00	295.00
*	34950.000	886.80	.00	886.82	968.32	853.63	1057.70	6868.67	.00	.00	1130.00	1170.00	.00
*	34950.000	887.42	.62	887.45	540.37	212.93	1219.33	7347.74	540.37	1110.11	1130.00	1170.00	1650.48
*	35050.000	886.74	.00	886.91	755.01	1799.73	4646.33	2333.94	.00	.00	1072.00	1137.50	.00

*	35050.000	887.32	.58	887.59	146.00	1588.01	5380.17	1811.82	153.00	1028.25	1072.00	1137.50	1181.25
	35100.000	886.76	.00	886.94	761.00	1803.12	4637.38	2339.50	.00	.00	1072.00	1137.50	.00
	35100.000	887.39	.62	887.66	146.00	1588.01	5380.17	1811.82	153.00	1028.25	1072.00	1137.50	1181.25
	35333.000	886.89	.00	887.14	194.09	1444.27	4982.26	2353.46	.00	.00	1060.00	1130.00	.00
	35333.000	887.72	.83	888.01	146.00	1699.68	5367.09	1713.24	153.00	1018.50	1060.00	1130.00	1171.50
	35703.000	887.20	.00	887.53	169.30	1885.33	5588.70	1305.97	.00	.00	1070.00	1140.00	.00
	35703.000	888.18	.98	888.52	142.95	1281.90	5794.91	1703.20	153.00	1028.50	1070.00	1140.00	1181.50
*	35750.000	887.56	.00	887.57	1872.59	1844.11	677.94	6257.95	.00	.00	1060.00	1105.00	.00
*	35750.000	888.55	.99	888.56	800.00	2306.74	1072.28	5400.99	800.00	750.00	1060.00	1105.00	1550.00
*	36895.000	887.72	.00	887.78	715.88	5729.25	2085.80	864.95	.00	.00	1030.00	1070.00	.00
*	36895.000	888.81	1.09	888.86	515.00	5848.91	2005.45	825.64	515.00	625.00	1030.00	1070.00	1140.00
*	36950.000	887.67	.00	888.36	136.07	1857.07	6006.99	815.93	.00	.00	1050.00	1100.00	.00
*	36950.000	888.77	1.10	889.33	123.00	2345.89	5591.59	742.52	130.00	1005.00	1050.00	1100.00	1135.00
	37000.000	887.87	.00	888.54	136.13	1874.17	5974.65	831.19	.00	.00	1050.00	1100.00	.00
	37000.000	888.98	1.11	889.54	123.00	2243.30	5652.80	783.90	130.00	1005.00	1050.00	1100.00	1135.00
*	37100.000	888.63	.00	888.65	939.19	4979.99	1256.36	2443.65	.00	.00	1050.00	1090.00	.00
*	37100.000	889.63	1.00	889.65	645.98	5087.41	1392.01	2200.58	645.98	625.78	1050.00	1090.00	1271.76
*	38110.000	888.89	.00	888.93	860.98	3874.12	1612.44	3193.44	.00	.00	2011.00	2046.00	.00
*	38110.000	889.89	1.00	889.95	465.51	3854.81	1817.48	3007.71	465.51	1764.40	2011.00	2046.00	2229.91
	40790.000	890.58	.00	890.66	1504.06	1509.67	2827.00	4343.33	.00	.00	1055.00	1105.00	.00
	40790.000	891.57	1.00	891.68	600.00	1304.08	3057.87	4318.05	600.00	1000.00	1055.00	1105.00	1600.00

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
40820.000	890.59	.00	890.67	1504.75	1511.67	2824.61	4343.72	.00	.00	1055.00	1105.00	.00
40820.000	891.58	1.00	891.69	600.00	1304.34	3056.49	4319.17	600.00	1000.00	1055.00	1105.00	1600.00
40865.000	891.17	.00	891.24	1549.77	1643.27	2676.17	4360.56	.00	.00	1055.00	1105.00	.00
40865.000	891.88	.71	891.98	600.00	1312.21	3014.05	4353.74	600.00	1000.00	1055.00	1105.00	1600.00
41025.000	891.29	.00	891.36	735.77	2505.50	3310.96	2863.54	.00	.00	375.00	435.00	.00
41025.000	892.01	.72	892.18	310.00	839.42	4594.33	3246.25	310.00	320.00	375.00	435.00	630.00
41165.000	891.35	.00	891.41	898.90	2164.30	2879.15	3636.55	.00	.00	335.00	390.00	.00
41165.000	892.09	.74	892.28	290.00	472.90	4332.55	3874.55	290.00	310.00	335.00	390.00	600.00
41605.000	891.51	.00	891.54	1272.43	1481.78	2300.36	4897.86	.00	.00	215.00	275.00	.00
* 41605.000	892.44	.93	892.49	610.00	344.50	2897.98	5437.51	610.00	190.00	215.00	275.00	800.00
42070.000	891.60	.00	891.61	1617.61	1951.74	1590.84	5137.41	.00	.00	848.00	904.00	.00
42070.000	892.56	.96	892.58	780.00	912.21	1927.39	5840.41	780.00	770.00	848.00	904.00	1550.00
* 44040.000	892.05	.00	892.53	312.26	1905.24	6197.16	277.61	.00	.00	1858.00	1933.00	.00
* 44040.000	893.10	1.05	893.54	240.69	1996.56	6324.48	58.96	240.69	1697.10	1858.00	1933.00	1937.79
* 45890.000	894.21	.00	894.25	1181.30	426.73	2988.05	4965.22	.00	.00	1564.00	1669.00	.00
* 45890.000	895.24	1.04	895.31	763.81	691.06	3766.59	3922.36	770.00	1380.00	1564.00	1669.00	2150.00
* 46650.000	894.40	.00	895.60	297.78	1261.24	6112.61	1006.15	.00	.00	262.00	320.00	.00
* 46650.000	895.41	1.01	896.87	191.71	1092.56	7008.96	278.48	191.71	136.27	262.00	320.00	327.98

NOONDAY CREEK

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K

	6275.000	.00	.00	.00	833.20	9370.00	855.17	.00	855.21	2.81	2.27	6447.25	5586.65
	6275.000	.00	.00	.00	833.20	9370.00	856.17	.00	856.22	2.81	2.34	6127.57	5592.09
*	9890.000	3615.00	.00	.00	837.20	9370.00	856.94	.00	857.14	12.77	4.64	3069.48	2622.04
*	9890.000	3615.00	.00	.00	837.20	9370.00	857.93	.00	858.15	12.79	4.80	2867.15	2620.32
*	17180.000	7290.00	.00	.00	846.20	9370.00	862.37	.00	862.41	4.62	2.58	6115.78	4358.67
*	17180.000	7290.00	.00	.00	846.20	9370.00	863.37	.00	863.42	4.61	2.68	5783.28	4362.82
	20120.000	2940.00	.00	.00	849.20	9370.00	863.62	.00	863.67	6.16	2.57	6679.59	3774.97
	20120.000	2940.00	.00	.00	849.20	9370.00	864.60	.00	864.65	5.85	2.43	6343.65	3874.97
*	23410.000	3290.00	.00	.00	853.50	9370.00	866.95	.00	867.14	21.29	4.73	3369.77	2030.71
*	23410.000	3290.00	.00	.00	853.50	9370.00	867.76	.00	867.97	20.55	4.85	3078.54	2067.03
	26945.000	3535.00	.00	.00	857.10	9370.00	875.03	.00	875.44	25.61	5.82	2088.30	1851.51
	26945.000	3535.00	.00	.00	857.10	9370.00	875.99	.00	876.43	27.70	5.79	1916.25	1780.35
*	27500.000	555.00	.00	.00	859.00	9370.00	876.85	.00	877.63	54.72	9.17	1647.49	1266.65
	27500.000	555.00	.00	.00	859.00	9370.00	877.83	.00	878.67	51.12	9.20	1501.37	1310.46
*	27620.000	120.00	882.50	879.20	856.50	9370.00	877.91	.00	878.11	15.03	3.67	2728.80	2416.84
*	27620.000	120.00	882.50	879.20	856.50	9370.00	878.96	.00	879.15	14.18	3.57	2721.94	2488.07
	27700.000	80.00	882.50	879.20	856.50	9025.00	878.05	.00	878.23	13.56	3.50	2759.70	2450.63
	27700.000	80.00	882.50	879.20	856.50	9025.00	879.09	.00	879.27	12.83	3.40	2750.31	2519.40
	27805.000	108.00	.00	.00	858.60	9025.00	878.25	.00	878.34	7.03	3.57	5185.69	3404.86
	27805.000	108.00	.00	.00	858.60	9025.00	879.27	.00	879.37	7.02	3.71	4571.14	3406.42
*	30185.000	2380.00	.00	.00	863.00	9025.00	880.87	.00	881.18	23.24	6.05	2384.22	1872.10
*	30185.000	2380.00	.00	.00	863.00	9025.00	881.85	.00	882.19	22.61	6.19	2186.96	1897.83
	32495.000	2310.00	.00	.00	865.20	8780.00	884.93	.00	885.27	13.87	5.43	2235.80	2357.36
	32495.000	2310.00	.00	.00	865.20	8780.00	885.62	.00	885.93	12.10	5.19	2342.40	2524.03
	100.000	500.00	.00	.00	867.00	8780.00	885.71	.00	886.07	18.32	6.04	2283.84	2051.49
	100.000	500.00	.00	.00	867.00	8780.00	886.30	.00	886.65	16.78	5.91	2308.67	2143.32
	200.000	220.00	.00	.00	867.40	8780.00	886.22	.00	886.39	10.18	4.31	3266.15	2751.75
	200.000	220.00	.00	.00	867.40	8780.00	886.75	.00	886.97	11.92	4.76	2850.35	2543.53
	300.000	60.00	.00	.00	867.40	8780.00	886.28	.00	886.45	10.03	4.29	3283.72	2772.35
	300.000	60.00	.00	.00	867.40	8780.00	886.83	.00	887.04	11.72	4.73	2865.53	2564.32
	400.000	65.00	.00	.00	865.47	8780.00	886.32	.00	886.54	12.68	5.03	3057.72	2465.90
	400.000	65.00	.00	.00	865.47	8780.00	886.89	.00	887.13	12.49	5.09	2803.99	2484.61

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	34950.000	1610.00	.00	.00	867.40	8780.00	886.80	.00	886.82	.54	1.47	8407.82	11938.89
*	34950.000	1610.00	.00	.00	867.40	8780.00	887.42	.00	887.45	.64	1.64	6777.62	10962.56
*	35050.000	100.00	891.50	887.03	867.30	8780.00	886.74	.00	886.91	5.41	4.07	2951.13	3773.29
*	35050.000	100.00	891.50	887.03	867.30	8780.00	887.32	.00	887.59	13.76	4.61	2179.52	2366.98
	35100.000	50.00	891.50	887.03	867.30	8780.00	886.76	.00	886.94	5.37	4.05	2967.51	3787.22
	35100.000	50.00	891.50	887.03	867.30	8780.00	887.39	.00	887.66	13.76	4.61	2179.52	2366.98
	35333.000	233.00	890.00	885.91	868.00	8780.00	886.89	.00	887.14	9.70	4.35	2248.03	2819.32
	35333.000	233.00	890.00	885.91	868.00	8780.00	887.72	.00	888.01	15.35	4.66	2066.55	2241.12
	35703.000	370.00	890.30	887.23	868.50	8780.00	887.20	.00	887.53	9.20	4.93	1964.41	2895.18
	35703.000	370.00	890.30	887.23	868.50	8780.00	888.18	.00	888.52	11.38	4.85	1981.20	2602.29
*	35750.000	47.00	.00	.00	868.60	8780.00	887.56	.00	887.57	.85	1.02	16143.32	9539.96
*	35750.000	47.00	.00	.00	868.60	8780.00	888.55	.00	888.56	1.71	1.51	9755.90	6716.86
*	36895.000	1215.00	.00	.00	868.80	8680.00	887.72	.00	887.78	7.03	3.03	5388.00	3274.54
*	36895.000	1215.00	.00	.00	868.80	8680.00	888.81	.00	888.86	5.30	2.74	5573.34	3771.94
*	36950.000	55.00	891.00	888.00	869.00	8680.00	887.67	.00	888.36	33.18	7.60	1494.09	1506.85

*	36950.000	55.00	891.00	888.00	869.00	8680.00	888.77	.00	889.33	40.38	6.70	1583.03	1365.90
	37000.000	50.00	891.00	888.00	869.00	8680.00	887.87	.00	888.54	31.75	7.47	1521.37	1540.36
	37000.000	50.00	891.00	888.00	869.00	8680.00	888.98	.00	889.54	45.01	6.77	1591.64	1293.79
*	37100.000	100.00	.00	.00	868.20	8680.00	888.63	.00	888.65	1.77	1.70	9487.40	6515.27
*	37100.000	100.00	.00	.00	868.20	8680.00	889.63	.00	889.65	1.83	1.79	8485.86	6419.35
*	38110.000	1010.00	.00	.00	870.50	8680.00	888.89	.00	888.93	5.35	2.61	6202.67	3751.60
*	38110.000	1010.00	.00	.00	870.50	8680.00	889.89	.00	889.95	5.66	2.79	5199.37	3648.70
	40790.000	2680.00	.00	.00	874.20	8680.00	890.58	.00	890.66	8.03	3.89	7369.98	3062.29
	40790.000	2680.00	.00	.00	874.20	8680.00	891.57	.00	891.68	7.53	3.94	5767.55	3162.21
	40820.000	10.00	.00	.00	874.20	8680.00	890.59	.00	890.67	8.00	3.89	7383.58	3068.06
	40820.000	10.00	.00	.00	874.20	8680.00	891.58	.00	891.69	7.51	3.94	5773.30	3166.90
	40865.000	85.00	889.50	888.00	874.20	8680.00	891.17	.00	891.24	6.30	3.54	8280.41	3459.23
	40865.000	85.00	889.50	888.00	874.20	8680.00	891.88	.00	891.98	6.85	3.81	5955.34	3316.73
	41025.000	160.00	.00	.00	872.00	8680.00	891.29	.00	891.36	4.58	3.23	5978.52	4057.24
	41025.000	160.00	.00	.00	872.00	8680.00	892.01	.00	892.18	7.68	4.31	3681.95	3132.37
	41165.000	140.00	.00	.00	873.00	8680.00	891.35	.00	891.41	3.47	3.19	7459.26	4658.90
	41165.000	140.00	.00	.00	873.00	8680.00	892.09	.00	892.28	6.78	4.60	3427.72	3333.48
	41605.000	440.00	.00	.00	874.00	8680.00	891.51	.00	891.54	1.96	2.41	10677.84	6207.82
*	41605.000	440.00	.00	.00	874.00	8680.00	892.44	.00	892.49	2.57	2.87	6917.11	5412.35

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	42070.000	400.00	.00	.00	876.20	8680.00	891.60	.00	891.61	1.66	2.06	12903.40	6732.70
	42070.000	400.00	.00	.00	876.20	8680.00	892.56	.00	892.58	1.95	2.33	8488.55	6215.01
*	44040.000	1970.00	.00	.00	878.50	8380.00	892.05	.00	892.53	21.09	6.36	2164.98	1824.68
*	44040.000	1970.00	.00	.00	878.50	8380.00	893.10	.00	893.54	16.95	6.00	2192.08	2035.73
*	45890.000	1850.00	.00	.00	880.70	8380.00	894.21	.00	894.25	5.10	2.54	7135.75	3712.29
*	45890.000	1850.00	.00	.00	880.70	8380.00	895.24	.00	895.31	6.04	2.93	5565.06	3410.91
*	46650.000	760.00	.00	.00	882.20	8380.00	894.40	.00	895.60	90.47	10.09	1366.32	881.03
*	46650.000	760.00	.00	.00	882.20	8380.00	895.41	.00	896.87	87.47	10.55	1175.30	896.02

NOONDAY CREEK

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	6275.000	9370.00	855.17	.00	.00	.00	447.64	.00
	6275.000	9370.00	856.17	1.00	.00	1.00	358.18	.00
*	9890.000	9370.00	856.94	.00	1.77	.00	237.15	3615.00
*	9890.000	9370.00	857.93	.98	1.76	.98	177.76	3615.00
*	17180.000	9370.00	862.37	.00	5.42	.00	523.60	7290.00
*	17180.000	9370.00	863.37	1.00	5.44	1.00	435.58	7290.00
	20120.000	9370.00	863.62	.00	1.26	.00	856.51	2940.00
	20120.000	9370.00	864.60	.98	1.24	.98	658.53	2940.00
*	23410.000	9370.00	866.95	.00	3.33	.00	457.53	3290.00
*	23410.000	9370.00	867.76	.81	3.16	.81	306.50	3290.00
	26945.000	9370.00	875.03	.00	8.07	.00	186.57	3535.00
	26945.000	9370.00	875.99	.96	8.22	.96	134.58	3535.00

*	27500.000	9370.00	876.85	.00	1.83	.00	193.05	555.00
	27500.000	9370.00	877.83	.97	1.84	.97	122.62	555.00
*	27620.000	9370.00	877.91	.00	1.06	.00	224.05	120.00
*	27620.000	9370.00	878.96	1.05	1.14	1.05	175.39	120.00
	27700.000	9025.00	878.05	.00	.14	.00	224.71	80.00
	27700.000	9025.00	879.09	1.04	.13	1.04	175.99	80.00
	27805.000	9025.00	878.25	.00	.20	.00	616.26	108.00
	27805.000	9025.00	879.27	1.02	.17	1.02	402.88	108.00
*	30185.000	9025.00	880.87	.00	2.62	.00	203.73	2380.00
*	30185.000	9025.00	881.85	.98	2.58	.98	143.00	2380.00
	32495.000	8780.00	884.93	.00	4.06	.00	167.44	2310.00
	32495.000	8780.00	885.62	.69	3.77	.69	160.91	2310.00
	100.000	8780.00	885.71	.00	.78	.00	201.25	500.00
	100.000	8780.00	886.30	.59	.68	.59	180.00	500.00
	200.000	8780.00	886.22	.00	.51	.00	279.77	220.00
	200.000	8780.00	886.75	.53	.45	.53	190.00	220.00
	300.000	8780.00	886.28	.00	.06	.00	280.32	60.00
	300.000	8780.00	886.83	.54	.07	.54	190.00	60.00
	400.000	8780.00	886.32	.00	.03	.00	310.22	65.00
	400.000	8780.00	886.89	.57	.06	.57	205.00	65.00

1

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	34950.000	8780.00	886.80	.00	.49	.00	968.32	1610.00
*	34950.000	8780.00	887.42	.62	.53	.62	540.37	1610.00
*	35050.000	8780.00	886.74	.00	-.07	.00	755.01	100.00
*	35050.000	8780.00	887.32	.58	-.10	.58	146.00	100.00
	35100.000	8780.00	886.76	.00	.03	.00	761.00	50.00
	35100.000	8780.00	887.39	.62	.07	.62	146.00	50.00
	35333.000	8780.00	886.89	.00	.13	.00	194.09	233.00
	35333.000	8780.00	887.72	.83	.33	.83	146.00	233.00
	35703.000	8780.00	887.20	.00	.31	.00	169.30	370.00
	35703.000	8780.00	888.18	.98	.46	.98	142.95	370.00
*	35750.000	8780.00	887.56	.00	.36	.00	1872.59	47.00
*	35750.000	8780.00	888.55	.99	.37	.99	800.00	47.00
*	36895.000	8680.00	887.72	.00	.16	.00	715.88	1215.00
*	36895.000	8680.00	888.81	1.09	.26	1.09	515.00	1215.00
*	36950.000	8680.00	887.67	.00	-.05	.00	136.07	55.00
*	36950.000	8680.00	888.77	1.10	-.04	1.10	123.00	55.00
	37000.000	8680.00	887.87	.00	.20	.00	136.13	50.00
	37000.000	8680.00	888.98	1.11	.21	1.11	123.00	50.00
*	37100.000	8680.00	888.63	.00	.76	.00	939.19	100.00
*	37100.000	8680.00	889.63	1.00	.64	1.00	645.98	100.00
*	38110.000	8680.00	888.89	.00	.26	.00	860.98	1010.00
*	38110.000	8680.00	889.89	1.00	.26	1.00	465.51	1010.00
	40790.000	8680.00	890.58	.00	1.68	.00	1504.06	2680.00
	40790.000	8680.00	891.57	1.00	1.68	1.00	600.00	2680.00
	40820.000	8680.00	890.59	.00	.01	.00	1504.75	10.00
	40820.000	8680.00	891.58	1.00	.01	1.00	600.00	10.00
	40865.000	8680.00	891.17	.00	.59	.00	1549.77	85.00

	40865.000	8680.00	891.88	.71	.30	.71	600.00	85.00
	41025.000	8680.00	891.29	.00	.12	.00	735.77	160.00
	41025.000	8680.00	892.01	.72	.12	.72	310.00	160.00
	41165.000	8680.00	891.35	.00	.07	.00	898.90	140.00
	41165.000	8680.00	892.09	.74	.09	.74	290.00	140.00
	41605.000	8680.00	891.51	.00	.16	.00	1272.43	440.00
*	41605.000	8680.00	892.44	.93	.35	.93	610.00	440.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	42070.000	8680.00	891.60	.00	.09	.00	1617.61	400.00
	42070.000	8680.00	892.56	.96	.12	.96	780.00	400.00
*	44040.000	8380.00	892.05	.00	.45	.00	312.26	1970.00
*	44040.000	8380.00	893.10	1.05	.55	1.05	240.69	1970.00
*	45890.000	8380.00	894.21	.00	2.16	.00	1181.30	1850.00
*	45890.000	8380.00	895.24	1.04	2.14	1.04	763.81	1850.00
*	46650.000	8380.00	894.40	.00	.19	.00	297.78	760.00
*	46650.000	8380.00	895.41	1.01	.16	1.01	191.71	760.00

SUMMARY OF ERRORS AND SPECIAL NOTES

```
WARNING SECNO=   9890.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=   9890.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  17180.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  17180.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  23410.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  23410.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  27500.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  27620.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  27620.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  30185.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  30185.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  34950.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  34950.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  35050.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  35050.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  35750.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  35750.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  36895.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  36895.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  36950.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  36950.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  37100.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  37100.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  38110.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  38110.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
```

WARNING SECNO= 41605.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 44040.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 44040.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 45890.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 45890.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 46650.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 46650.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

FLOODWAY DATA, NOONDAY CREEK
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
6275.000	358.	6128.	1.5	856.2	855.2	1.0
9890.000	178.	2867.	3.3	857.9	856.9	1.0
17180.000	436.	5783.	1.6	863.4	862.4	1.0
20120.000	659.	6344.	1.5	864.6	863.6	1.0
23410.000	307.	3079.	3.0	867.8	867.0	.8
26945.000	135.	1916.	4.9	876.0	875.0	1.0
27500.000	123.	1501.	6.2	877.9	876.9	1.0
27620.000	182.	2722.	3.4	878.9	877.9	1.0
27700.000	183.	2750.	3.3	879.1	878.1	1.0
27805.000	403.	4571.	2.0	879.3	878.3	1.0
30185.000	143.	2187.	4.1	881.9	880.9	1.0
32495.000	161.	2342.	3.7	885.6	884.9	.7
100.000	180.	2309.	3.8	886.3	885.7	.6
200.000	190.	2850.	3.1	886.7	886.2	.5
300.000	190.	2866.	3.1	886.8	886.3	.5
400.000	205.	2804.	3.1	886.9	886.3	.6
34950.000	540.	6778.	1.3	887.4	886.8	.6
35050.000	153.	2180.	4.0	887.3	886.7	.6
35100.000	153.	2180.	4.0	887.4	886.8	.6
35333.000	153.	2067.	4.2	887.7	886.9	.8
35703.000	150.	1981.	4.4	888.2	887.2	1.0
35750.000	800.	9756.	.9	888.6	887.6	1.0
36895.000	515.	5573.	1.6	888.8	887.7	1.1
36950.000	130.	1583.	5.5	888.8	887.7	1.1
37000.000	130.	1592.	5.5	889.0	887.9	1.1
37100.000	646.	8486.	1.0	889.6	888.6	1.0
38110.000	466.	5199.	1.7	889.9	888.9	1.0
40790.000	600.	5768.	1.5	891.6	890.6	1.0
40820.000	600.	5773.	1.5	891.6	890.6	1.0
40865.000	600.	5955.	1.5	891.9	891.2	.7
41025.000	310.	3682.	2.4	892.0	891.3	.7
41165.000	290.	3428.	2.5	892.1	891.4	.7
41605.000	610.	6917.	1.3	892.4	891.5	.9
42070.000	780.	8489.	1.0	892.6	891.6	1.0
44040.000	241.	2192.	3.8	893.1	892.0	1.1
45890.000	764.	5565.	1.5	895.2	894.2	1.0
46650.000	192.	1175.	7.1	895.4	894.4	1.0

CHECK FILES FOR FLOODWAY RUNS

```
                                        DECORFW
1*************************************
 *                                   *
 *              E D I T 2            *
 *                                   *
 *  HEC-2 DATA CHECKER               *
 *  May 1991                         *
 *  FOR THE IBM PC/XT/AT             *
 *                                   *
 *  U.S. ARMY CORPS OF ENGINEERS     *
 *  HYDROLOGIC ENGINEERING CENTER    *
 *  609 SECOND STREET                *
 *  DAVIS, CALIFORNIA 95616-4687     *
 *  (916) 756-1104                   *
 *  RUN DATE 05JUN08  TIME 06:25:40  *
 *                                   *
 *************************************
```

```
T1      CHEROKEE COUNTY, GEORGIA FIS
T2      100-YEAR FLOODWAY (CROSS SECTIONS ADDED)
T3      NOONDAY CREEK
J1    -1       4       0       0       0       0       0       0  855.17

J2     1       0      -1
J3   110     200     150
J5   -10     -10
NC  .120    .120    .075    .100    .300    .000    .000    .000    .000
QT  5.00    5455    8590    9370   10575    9370
ET                                          10.4
X1  6275      32     435     505
GR   902       0   896.4      15   887.2      43   878.2      87   871.6     124
GR 865.2     152   856.4     193   847.8     211   839.7     227   839.1     264
GR 839.0     324   839.2     362   840.3     408   843.4     426   842.3     435
GR 833.2     436   833.2     486   838.5     492   840.4     505   841.6     536
GR 841.1     576   842.3     596   850.3     623   855.6     645   863.7     686
GR 872.1     715   876.2     746   882.7     768   888.4     796   896.9     832
GR 901.7     859   909.8     902
X1  9890      28     144     192    3615    3615    3615
GR   902       0   898.4       8     891      33   883.3      53   873.2      72
GR 866.2      85   858.5     103   849.1     120   842.3     128   843.6     129
GR 842.8     144   837.2     144   837.2     186   842.4     192   842.3     201
GR 842.3     228   843.4     269   845.2     293     848     314     853     334
GR 857.4     344   861.7     365   869.9     407   878.3     447   883.8     491
GR 888.2     519   894.4     559     902     592
X1 17180      31     312     370    7290    7290    7290
GR   902       0   896.6       7     895      41   891.6      56   883.7      70
GR 872.5     105   857.9     140   849.9     156   848.5     168   850.6     173
GR 850.9     192   850.8     246   851.6     292   851.2     312   846.2     318
GR 846.2     364   850.4     370   850.4     405   850.1     494   850.3     558
GR 851.4     617   856.1     650   862.6     653   871.6     677   878.2     708
GR 882.4     726   886.2     742   890.5     759     894     771   897.4     792
GR 902.0     825
ET                                           7.4
X1 20120      31     153     222    2340    2130    2940
GR   902       0   898.3      21   889.3      56   873.5      94   861.2     131
GR 855.7     141   855.2     153   853.6     158   849.2     166   849.2     200
GR 853.3     211   857.5     222   855.7     268   854.5     324   855.7     388
GR 855.4     450   853.5     503     855     586   855.1     660   857.5     793
```

```
GR 856.0     858   855.6     906   862.9   929.0   863.1     954   864.7    1035
GR 866.4    1101   873.3    1164     883    1219   892.5    1253   896.3    1271
GR   902    1282
X1 23410      28     513     574    3290    3290    3290
GR   902       0   896.2      14   889.3      56   877.9     133   871.6     178
GR 868.4     234   864.3     277   861.1     322   857.5     365   858.2     390
GR 858.0     401   858.8     435   860.3     486   860.6     513   857.9     513
GR 853.5     522   853.5     563   858.3     574   856.1     617   861.6     659
GR 864.5     679   868.2     721   887.9     766   880.4     788   889.1     828
GR 893.0     852   896.6     890     902     930
X1 26945      21     168     247    3535    3535    3535
GR   900       0   895.7      19   889.1      37   881.3      65   875.5      82
GR 867.4      98   863.7     119   861.1     139   865.8     147   865.7     168
GR 864.0     172   857.1     181   857.1     214   860.9     216   864.5     247
GR 871.8     262   880.4     282   889.6     305   894.9     318   898.9     329
GR 902.0     354

NC    .1      .1    .065      .3      .5
ET                                     6.4
X1 27500      10    1181    1210     555     555     555
GR 893.5     900   889.5    1000   866.5    1118   867.8    1181   859.4    1185
GR 859.1    1190     859    1200   859.4    1208   865.5    1210   910.5    1400

NC  .080     .08
X1 27620      38    1026    1182     120     120     120
X2     0       0       0   879.2   882.5
BT     6    1000   882.5     880    1026     883   879.2    1147   885.5   882.7
BT 1226.   888.5   884.8    1226   888.5   885.7    1250   889.5   886.6
GR 891.8     500     883     800   882.5     900   882.5    1000     878    1000
GR 871.0    1025     880    1025     880    1026     870    1026   867.5    1040
GR 865.5    1065   880.5    1065   880.5    1066   865.2    1066   861.5    1090
GR 860.5    1106   881.5    1106   881.7    1108   856.5    1108   857.5    1130
GR 857.5    1145   882.5    1145   882.8    1147   857.5    1147   867.1    1180
GR 883.5    1180   883.7    1182   869.1    1182   869.9    1210     875    1225
GR 884.6    1225   884.8    1226     875    1226   884.5    1250   889.5    1250
GR 897.5    1400   897.5    1500     903    1560

QT     5    5250    8270    9025   10180    9025
X1 27700      38    1026    1182      80      80      80
X2     0       0       0   879.2   882.5
BT     6    1000   882.5     880    1026     883   879.2    1147   885.5   882.7
BT  1226   888.5   884.8    1226   888.5   885.7    1250   889.5   886.6
GR 891.8     500     883     800   882.5     900   882.5    1000     878    1000
GR 871.0    1025     880    1025     880    1026     870    1026   867.5    1040
GR 865.5    1065   880.5    1065   880.5    1066   865.2    1066   861.5    1090
GR 860.5    1106   881.5    1106   881.7    1108   856.5    1108   857.5    1130
GR 857.5    1145   882.5    1145   882.8    1147   857.5    1147   867.1    1180
GR 883.5    1180   883.7    1182   869.1    1182   869.9    1210     875    1225
GR 884.6    1225   884.8    1226     875    1226   884.5    1250   889.5    1250
GR 897.5    1400   897.5    1500     903    1560

NC   .12     .12     .07      .1      .3
ET                                    10.4
X1 27805      15    1000    1050    108.     108     108
GR 882.5     500   874.5     600   870.8     700   870.5     800   868.5     900
GR 866.5    1000     861    1005   859.5    1010   859.1    1030   858.6    1040
GR 860.0    1045     867    1050   867.5    1100   898.5    1300   907.5    1400
X1 30185      21     178     208    2380    2280    2380
GR   922       0   907.2      17   893.7      39   880.7      52   871.6      70
GR   868      83   868.5     102   867.1     133   865.7     166   865.3     178
GR   863     179     863     208   868.7     208   870.8     221     875     234
GR 880.3     254   888.4     276   896.1     299   905.6     321   916.4     350
GR 922.0     391
```

```
QT      5    5110    8045    8780    9905    8780
ET                                            0.4
X1  32495      30     164     222    2300    2300    2310
GR   932.       0     930      11   919.9      34   909.5      60   902.3      84
GR  889.7     114   880.6     134   873.9     142     870     152   869.9     164
GR  865.2     175   865.2     221   869.1     222   868.3     237   869.8     245
GR  874.3     257     880     279   886.1     295   891.5     306   898.7     315
GR  899.5     323   898.7     339   907.9     350   914.4     358   914.1     371
GR  918.9     388     923     403   928.1     416     930     428     932     441
ET                                            8.1              35     215
X1    100      11      73     119     500     500     500
GR    890       0     880      30     872      56     870      73     867      80
GR    867     104     872     119     872     150     874     165     880     193
GR    890     230
ET                                            8.1             110     300
X1    200      19     212     264     220     220     220
GR  893.6       0   884.6      60   878.7     100   872.3     103     873     146
GR    873     147   872.7     150     872     200   872.7     205   872.7     206
GR  873.3     212   867.9     216   867.4     258   874.6     264   874.6     266
GR  874.6     267   874.5     300   875.9     308   894.1     345
ET                                            8.1             110     300
X1    300      19     212     264      60      60      60
GR  893.6       0   884.6      60   878.7     100   872.3     103     873     146
GR    873     147   872.7     150     872     200   872.7     205   872.7     206
GR  873.3     212   867.9     216   867.4     258   874.6     264   874.6     266
GR  874.6     267   874.5     300   875.9     308   894.1     345
ET                                            8.1              90     295
X1    400      15     214     257      65      65      65
GR885.62       0  884.54      25  882.17      51  881.61      69  877.10     112
GR872.61     157  873.20     178  873.42     214  867.02     220  865.47     254
GR870.39     257  875.90     269  877.32     293  884.83     308  892.85     320

NC    .05     .05    .045      .3      .5
ET                                            8.1         1110.11 1650.48
X1  34950      26    1130    1170    1105    1605    1610
GR  900.2       0   891.4     100   889.2     200   888.7     300     889     400
GR  889.5     500   889.5     700   890.5     800   889.4     900   886.5    1000
GR  874.5    1100     876    1130     868    1135   867.4    1140     868    1150
GR  868.0    1156   868.7    1166     875    1170   874.5    1200   874.2    1300
GR  873.5    1400   874.5    1500   879.5    1600   884.1    1800   881.5    1900
GR  897.0    2070
ET                                            8.1         1028.25 1181.25
X1  35050      31    1072  1137.5     100     100     100
X2      0       0       0   887.5   891.5
BT      2    1000   891.5   887.5    1203   892.5   888.2
GR  890.5       0   890.4     100   888.2     200   886.4     400     886     500
GR  886.4     600   891.5    1000   885.5    1001   883.5    1010   876.5    1030
GR  874.3    1060   873.6  1068.5   887.7  1068.5   887.7    1072     873    1072
GR  869.4    1080   867.3    1100   868.4    1120   873.9  1137.5     888  1137.5
GR  888.0    1141     874    1141   873.4    1170   875.5    1180   880.5    1190
GR  884.5    1202   892.6    1203   890.5    1400   884.5    1800   884.5    1900
GR  897.0    2160
ET                                            8.1         1028.25 1181.25
X1  35100      31    1072  1137.5      50      50      50
X2      0       0       0   887.5   891.5
BT      2    1000   891.5   887.5    1203   892.5   888.2
GR  890.5       0   890.4     100   888.2     200   886.4     400     886     500
GR  886.4     600   891.5    1000   885.5    1001   883.5    1010   876.5    1030
GR  874.3    1060   873.6  1068.5   887.7  1068.5   887.7    1072     873    1072
GR  869.4    1080   867.3    1100   868.4    1120   873.9  1137.5     888  1137.5
GR  888.0    1141     874    1141   873.4    1170   875.5    1180   880.5    1190
GR  884.5    1202   892.6    1203   890.5    1400   884.5    1800   884.5    1900
```

```
GR   897    2160
ET                                          8.1          1018.5  1171.5
X1 35410      32    1060    1130     310     310     310
X2     0       0       0   888.2     890
BT     2    1000   891.4   888.2    1203   893.2   890.4
GR 891.2       0   890.4     300     890     500   890.3     700   891.3     900
GR 891.4    1000   885.1    1001   883.3    1010   876.5    1030   874.5    1040
GR 874.5    1050     874    1060   870.5    1068     889    1068     889  1071.5
GR 869.8  1071.5   868.5    1090     868    1110   869.1    1120   875.1    1130
GR 874.5  1138.5   889.7  1138.5   889.7    1142   874.2    1142   874.7    1160
GR 876.7    1170   882.2    1190   886.6    1200   887.4    1203   893.2    1203
GR 895.2    1300   900.7    1650
ET                                          8.1          1018.5  1171.5
X1 35480      32    1060    1130      70      70      70
X2     0       0       0   888.2     890
BT     2    1000   891.4   888.2    1203   893.2   890.4
GR 891.2       0   890.4     300     890     500   890.3     700   891.3     900
GR 891.4    1000   885.1    1001   883.3    1010   876.5    1030   874.5    1040
GR 874.5    1050     874    1060   870.5    1068     889    1068     889  1071.5
GR 869.8  1071.5   868.5    1090   868.1    1110   869.1    1120   875.1    1130
GR 874.5  1138.5   889.7  1138.5   889.7    1142   874.2    1142   874.7    1160
GR 876.7    1170   882.2    1190   886.6    1200   887.4    1203   893.2    1203
GR 895.2    1300   900.7    1650
ET                                          8.1          1028.5  1181.5
X1 35530      37    1070    1140      50      50      50
X2     0       0       0   890.8   890.3
BT     2    1000   893.5   890.8    1186     895   893.5
GR 891.6       0   890.5     200   890.3     400   890.6     500   892.4     600
GR 893.2     700   893.8     900   893.5    1000     888    1001   886.3    1010
GR 881.0    1020   876.5    1040     874  1060.5   891.7  1060.5   891.7    1064
GR 874.0    1064   874.5    1070   870.6    1080   869.6    1090   868.3    1110
GR 868.3    1120     869    1124   892.6    1124   892.6  1127.5   869.8  1127.5
GR 870.0    1130   874.5    1140   875.4    1150   878.4    1160     889    1180
GR 890.5    1185     895    1186   895.2    1233     898    1300     898    1400
GR 898.6    1500   901.8    1700
ET                                          8.1          1028.5  1181.5
X1 35650      37    1070    1140     120     120     120
X2     0       0       0   890.8   890.3
BT     2    1000   893.5   890.8    1186     895   893.5
GR 891.6       0   890.5     200   890.3     400   890.6     500   892.4     600
GR 893.2     700   893.8     900   893.5    1000     888    1001   886.3    1010
GR 881.0    1020   876.5    1040     874  1060.5   891.7  1060.5   891.7    1064
GR 874.0    1064   874.5    1070   870.6    1080   869.6    1090   868.5    1110
GR 868.5    1120     869    1124   892.6    1124   892.6  1127.5   869.8  1127.5
GR 870.0    1130   874.5    1140   875.4    1150   878.4    1160     889    1180
GR 890.5    1185     895    1186   895.2    1233     898    1300     898    1400
GR 898.6    1500   901.8    1700

NC   .12     .12    .075      .1      .3
ET                                          7.1     750    1550
X1 35750      24    1060    1105     100     100     100
GR 905.5     150   893.5     175   885.5     400   886.5     500   881.8     600
GR 881.5     700     880     900   875.5    1000   875.5    1060   874.1    1070
GR 874.1    1080   874.5    1085   868.6    1090   868.6    1097   875.5    1105
GR 874.5    1200   875.4    1300   874.5    1400   875.8    1500   875.8    1600
GR 880.5    2100   886.4    2200   894.4    2300   900.5    2310

QT     5    5050    7955    8680    9790    8680
ET                                          7.1     625    1140
X1 36895      17    1030    1070     600    1500    1215
GR   889     300   888.7     400   887.5     500   882.8     700   875.8     800
GR 875.8     900   878.2    1030   870.3    1035   868.8    1060     869    1065
GR 877.8    1070   878.2    1100     888    1200   894.5    1400     899    1500
```

```
GR   907    1600   909.7    1700

NC   .07     .07     .05      .5      .8
ET                                     7.1    1005    1135
X1 36950      30    1050    1100      55      55      55
X2     0       0       0     888     891
X4     2   874.1    1100     888    1144
BT     2    1000   892.3   889.3    1144     891     888
GR 916.2     300   900.8     600   896.9     700   894.2     800   893.2     900
GR 892.3    1000     886    1003   875.8    1030   875.8    1034     892    1034
GR 892.0    1035   875.8    1035   873.2    1050     869    1060   869.5    1070
GR 891.6    1070   891.5    1073   869.7    1073   871.4    1090   875.5    1107
GR 891.3    1107   891.3    1110   876.5    1110   884.5    1130   887.4    1143
GR 891.0    1144   893.4    1300     898    1500   901.2    1600     906    1700
ET                                     7.1    1005    1135
X1 37000      30    1050    1100      50      50      50
X2     0       0       0     888     891
X4     2   874.1    1100     888    1144
BT     2    1000   892.3   889.3    1144     891     888
GR 916.2     300   900.8     600   896.9     700   894.2     800   893.2     900
GR 892.3    1000     886    1003   875.8    1030   875.8    1034     892    1034
GR 892.0    1035   875.8    1035   873.2    1050     869    1060   869.5    1070
GR 891.6    1070   891.5    1073   869.7    1073   871.4    1090   875.5    1107
GR 891.3    1107   891.3    1110   876.5    1110   884.5    1130   887.4    1143
GR 891.0    1144   893.4    1300     898    1500   901.2    1600     906    1700

NC   .12      .1     .07      .1      .3
ET                                     7.1  625.78 1271.76
X1 37100      19    1050    1090     100     100     100
GR 891.3     400   889.5     500   877.5     600     876     700   877.2     800
GR 876.2     900   876.2    1000     877    1050   871.3    1055   868.3    1060
GR 868.2    1065   869.5    1070   870.8    1090     877    1090     875    1100
GR 878.6    1200     881    1300   885.5    1400     899    1600
ET                                     7.1  1764.4 2229.91
X1 38110      67    2011    2046     950     970    1010
GR 917.8     791   920.4     837   920.7     869   919.4     914   918.2     943
GR 916.0     997   914.4    1025   913.5    1043   912.3    1089   910.7    1096
GR 902.3    1120   893.1    1150   893.1    1156   896.8    1164   897.8    1178
GR 897.7    1185   897.6    1197   897.6    1211   896.4    1229   894.9    1237
GR 896.5    1249   896.8    1260   897.4    1273   897.7    1285   898.4    1297
GR 897.9    1310   895.7    1331   894.9    1337     898    1350   894.2    1381
GR 890.9    1431   886.5    1472   886.9    1522   885.3    1555   885.9    1611
GR 886.8    1660   887.1    1702   884.3    1729   877.6    1788   877.6    1839
GR 877.4    1895   879.7    1937     881    1964   882.5    1981   882.4    2000
GR 881.1    2011   870.5    2016   870.5    2046   879.1    2046   880.3    2056
GR 879.9    2103   879.7    2152   879.2    2208   881.4    2257   882.2    2292
GR 883.3    2295     889    2311   892.3    2340   896.2    2374     903    2401
GR 90935    2455   915.3    2492   921.1    2531   924.1    2542     928    2573
GR 930.0    2600     932    2617

NC                            .3      .5
NH     3      .2    1000     .06    1160     .25    2200
ET                                     7.1    1000    1600
X1 40790      24    1055    1105    2700    2550    2680
X2                                                                          15
GR 905.3       0   899.2     100     892     300     890     400   889.1     600
GR 889.1     700   889.0     800   888.5     985   882.2    1000     883    1055
GR 877.0    1060   874.2    1070   874.9    1075   874.2    1085   874.7    1090
GR 877.0    1100     882    1105   882.7    1160   882.2    1300   882.5    1500
GR 884.0    1700   891.5    1900   902.8    2000     911    2200

NH     3      .2    1000     .06    1160     .25    2200
ET                                    7.11    1000    1600
```

```
X1 40820       0       0       0      10      10      10
X2                                                                      15
SB  1.05     2.0     3.0       0      30       4    1130    5.56     876     876

NH     3      .2    1000     .06    1160     .25    2200
ET                                           7.11    1000    1600
X1 40865       0       0       0      85      85      85
X2     0       0       1     888   889.5                                      15
BT    12     680   891.4       0     860   890.2       0     980   889.6       0
BT  1000   889.6       0    1001   891.6       0    1160   891.6       0    1161
BT 889.5       0    1290   889.6       0    1440   889.8       0    1570   889.8
BT     0    1700   891.1       0    1800     892       0

NC   .12     .12     .06      .1      .3
ET                                            7.1     320     630
X1 41025      15     375     435     100     350     160
GR   892       0   889.4      50   885.8     100   886.4     150   884.7     200
GR 881.2     250   881.6     300   881.4     350   882.2     375     872     385
GR   872     420     883     435   880.8     505     882     650     896     800

NH     7     .15     196     .15     260     .06     335     .05     390     .06
NH   450     .15     700     .50     950
ET                                            7.1     310     600
X1 41165      14     335     390      90     150     140
GR   892       0   889.4      50  885.20     100   886.8     150   884.2     196
GR   881     260     884     335     873     350     873     385   883.3     390
GR 880.6     450     882     700     884     850     896     950

NH     6     .15     170     .06     215     .05     275     .06     375     .15
NH   925     .50    1400
ET                                            7.1     190     800
X1 41605      14     215     275     420     550     440
X4     1     882     170
GR   896       0   881.4      50   880.7     100   880.8     150   883.2     200
GR 883.4     215     874     230     874     270   883.7     275   881.5     375
GR   881     675     884     925     888    1200     896    1400

NH     5     .12     783     .06     848     .05     904     .12    1550     .50
NH  3151
ET                                            7.1     770    1550
X1 42070      68     848     904     400     400     400
GR 931.6       0     930      45   928.3      64   926.8      82   917.5     126
GR 910.8     138   909.5     149   909.5     164   914.4     175   912.9     192
GR 912.2     223   914.5     254   913.8     296   910.2     327   905.3     374
GR 901.4     412   895.8     470     892     502   887.5     530   884.3     592
GR 881.9     617   882.4     631   884.7     645   882.2     664   880.6     667
GR 878.2     668   878.2     675   881.9     681   882.6     701   882.5     720
GR 885.1     748   883.6     783   883.6     807   883.9     848   876.2     858
GR 876.2     893   885.5     904   885.1     922   882.8     948   881.5    1026
GR 883.2    1121   881.4    1182   881.2    1231   880.5    1240   881.5    1246
GR 881.0    1352     881    1550   882.9    1714   886.3    1820   888.8    1992
GR 891.2    2108     895    2243   900.9    2348   902.5    2491   901.4    2586
GR 899.8    2649   897.8    2731   905.5    2764     906    2798   905.5    2822
GR 907.2    2850   911.5    2905   917.2    2950   922.1    3015   928.4    3054
GR 928.6    3096     930    3114   932.6    3151

NC   .12     .08    .055      .1      .3
QT     5    4880    7680    8380    9460    8380
ET                                            7.1  1697.1 1937.79
X1 44040      22    1858    1933    2030    1850    1970
GR 896.5    1603   896.1    1625   895.2    1640   890.7    1670   885.3    1697
GR 886.8    1719   885.8    1738   881.2    1747   885.6    1767   887.8    1802
GR 887.4    1830   887.4    1858   878.5    1860   878.5    1923     885    1933
```

```
 GR 895.5    1993   909.5    2029   919.8    2060   919.4    2064   924.6    2080
 GR   930    2105   933.1    2111

 NC   .12     .12    .065      .1      .3
 ET                                          7.1    1380    2150
 X1 45890      42    1564    1669    1860    1800    1850
 GR 904.4    1331   903.3    1341     896    1382   890.2    1414     889    1443
 GR 889.6    1473   891.7    1502   891.7    1536     889    1564   885.4    1572
 GR 880.7    1588   880.7    1642   887.5    1656   889.7    1669   888.4    1731
 GR 888.0    1812   888.1    1899   888.2    1997   887.1    2072   887.1    2120
 GR 887.8    2216   888.2    2302   887.3    2381   889.4    2481   891.9    2557
 GR 902.3    2630   906.2    2700   909.3    2806   914.9    2922   920.2    3018
 GR 921.7    3082   920.1    3158   918.3    3174   919.2    3222   923.4    3259
 GR 923.6    3313   923.8    3369   930.4    3384   929.9    3424   929.9    3461
 GR 930.0    3465   932.7    3468

 NC   .12     .12    .065      .1      .3
 ET                                          7.1  136.27  327.98
 X1 46650      22     262     320     720     745     760
 GR 908.0       0     904      20     900      50     896      67     892      72
 GR 890.0     130     892     180     893     225     892     262   882.2     280
 GR 882.2     305     884     320     888     343     892     347     896     380
 GR 900.0     430     904     500     908     590     911     770     912     850
 GR 916.0    1060     920    1210
 EJ

 T1      CHEROKEE COUNTY
 T2      100-YEAR FLOODWAY
 T3      NOONDAY CREEK
 J1    -1       6                                                     856.17

 J2    15              -1



 ER
1SUMMARY OF ERRORS
0
 T1      CHEROKEE COUNTY, GEORGIA FIS
 T2      100-YEAR FLOODWAY (CROSS SECTIONS ADDED)
 T3      NOONDAY CREEK
  27620.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

  27620.000 - ERROR - GR RECORD - STA =  1106.000  1108.000 BT LOW CORD
                        DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

  27620.000 - ERROR - GR RECORD - STA =  1145.000  1147.000 BT LOW CORD
                        DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

  27620.000 - ERROR - GR RECORD - STA =  1180.000  1182.000 BT LOW CORD
                        DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

  27700.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

  27700.000 - ERROR - GR RECORD - STA =  1106.000  1108.000 BT LOW CORD
                        DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

  27700.000 - ERROR - GR RECORD - STA =  1145.000  1147.000 BT LOW CORD
                        DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

  27700.000 - ERROR - GR RECORD - STA =  1180.000  1182.000 BT LOW CORD
```

```
                    DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

**          - WARNING - ET RECORD - ENCFP =  1110.110
             POSSIBLE METHOD 1 FIELD REFERENCE ERROR

 35050.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                    X2 AND BT RECORDS

 35050.000 - ERROR - GR RECORD - STA =  1000.000  1001.000 BT LOW CORD
                      DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

 35050.000 - ERROR - GR RECORD - STA =  1202.000  1203.000 BT LOW CORD
                      DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

 35050.000 - ERROR - GR RECORD - STA =  1202.000  1203.000 BT TOP OF ROAD
                     DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

 35100.000 - ERROR - BT RECORD - NRD =    2 DOES NOT EQUAL NUMBER OF
                     RDST READ =    3

 35100.000 - ERROR - BT RECORD - NUMBER OF RDST READ =    3 DOES NOT EQUAL
                     NUMBER OF RDEL READ =    2

 35100.000 - ERROR - BT RECORD - STATIONS DO NOT INCREASE  1203.000     2.000

 35100.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                    X2 AND BT RECORDS

 35100.000 - ERROR - GR RECORD - STA =  1000.000  1001.000 BT LOW CORD
                      DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

 35100.000 - ERROR - GR RECORD - STA =  1202.000  1203.000 BT LOW CORD
                      DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

 35100.000 - ERROR - GR RECORD - STA =  1202.000  1203.000 BT TOP OF ROAD
                     DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

 35410.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                    X2 AND BT RECORDS

 35410.000 - ERROR - GR RECORD - STA =  1000.000  1001.000 BT LOW CORD
                      DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

 35480.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                    X2 AND BT RECORDS

 35480.000 - ERROR - GR RECORD - STA =  1000.000  1001.000 BT LOW CORD
                      DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

 35530.000 - NOTE - X2 RECORD - IBRID =    0 ELTRD =   890.300 OUGHT TO BE
                       GREATER THAN ELLC =   890.800

 35530.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                    X2 AND BT RECORDS

 35530.000 - ERROR - GR RECORD - STA =  1000.000  1001.000 BT LOW CORD
                      DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

 35530.000 - ERROR - GR RECORD - STA =  1060.500  1064.000 BT LOW CORD
                      DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

 35530.000 - ERROR - GR RECORD - STA =  1185.000  1186.000 BT LOW CORD
                      DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT
```

```
 35650.000 - NOTE - X2 RECORD - IBRID =    0 ELTRD =   890.300 OUGHT TO BE
                      GREATER THAN ELLC =   890.800

 35650.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                    X2 AND BT RECORDS

 35650.000 - ERROR - GR RECORD - STA =  1000.000  1001.000 BT LOW CORD
                       DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

 35650.000 - ERROR - GR RECORD - STA =  1060.500  1064.000 BT LOW CORD
                       DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

 35650.000 - ERROR - GR RECORD - STA =  1185.000  1186.000 BT LOW CORD
                       DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

 36950.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                    X2 AND BT RECORDS

 36950.000 - ERROR - GR RECORD - STA =  1000.000  1003.000 BT LOW CORD
                       DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

 37000.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                    X2 AND BT RECORDS

 37000.000 - ERROR - GR RECORD - STA =  1000.000  1003.000 BT LOW CORD
                       DOES NOT INTERSECT GR PROFILE AT DEFINED GR POINT

 38110.000 - NOTE - GR RECORD - ELEVATION DIFFERENCE = 90064.500 GREATER THAN
                    TEST RANGE   150.000

 40865.000 - CAUTION - X3 RECORD OMITTED AT DOWNSTREAM XSEC OF SPECIAL BRIDGE

 40865.000 - CAUTION - X3 RECORD OMITTED AT UPSTREAM XSEC OF SPECIAL BRIDGE

 40865.000 UNABLE TO EDIT SPECIAL BRIDGE MODEL DUE TO INSUFFICIENT DATA

 41165.000 - NOTE - NH RECORD - VALN =      .500 MAY NOT BE A REASONABLE VALUE

 41605.000 - NOTE - NH RECORD - VALN =      .500 MAY NOT BE A REASONABLE VALUE

 42070.000 - NOTE - NH RECORD - VALN =      .500 MAY NOT BE A REASONABLE VALUE

**          - WARNING - ET RECORD - ENCFP =  1697.100
             POSSIBLE METHOD 1 FIELD REFERENCE ERROR

T1      CHEROKEE COUNTY
T2      100-YEAR FLOODWAY
T3      NOONDAY CREEK
```

```
                                        CECORFW
1*************************************
 *                                   *
 *              E D I T 2            *
 *                                   *
 *  HEC-2 DATA CHECKER               *
 *  May 1991                         *
 *  FOR THE IBM PC/XT/AT             *
 *                                   *
 *  U.S. ARMY CORPS OF ENGINEERS     *
 *  HYDROLOGIC ENGINEERING CENTER    *
 *  609 SECOND STREET                *
 *  DAVIS, CALIFORNIA 95616-4687     *
 *  (916) 756-1104                   *
 *  RUN DATE 05JUN08  TIME 12:30:26  *
 *                                   *
 *************************************
```

```
T1      CHEROKEE COUNTY, GEORGIA FIS
T2      100-YEAR FLOODWAY (CROSS SECTIONS ADDED)
T3      NOONDAY CREEK
J1    -1       4       0       0       0       0       0       0  855.17

J2     1       0      -1
J3   110     200     150
J5   -10     -10
NC  .120    .120    .075    .100    .300    .000    .000    .000    .000
QT  5.00    5455    8590    9370   10575    9370
ET                                          10.4
X1  6275      32     435     505
GR   902       0   896.4      15   887.2      43   878.2      87   871.6     124
GR 865.2     152   856.4     193   847.8     211   839.7     227   839.1     264
GR 839.0     324   839.2     362   840.3     408   843.4     426   842.3     435
GR 833.2     436   833.2     486   838.5     492   840.4     505   841.6     536
GR 841.1     576   842.3     596   850.3     623   855.6     645   863.7     686
GR 872.1     715   876.2     746   882.7     768   888.4     796   896.9     832
GR 901.7     859   909.8     902
X1  9890      28     144     192    3615    3615    3615
GR   902       0   898.4       8     891      33   883.3      53   873.2      72
GR 866.2      85   858.5     103   849.1     120   842.3     128   843.6     129
GR 842.8     144   837.2     144   837.2     186   842.4     192   842.3     201
GR 842.3     228   843.4     269   845.2     293     848     314     853     334
GR 857.4     344   861.7     365   869.9     407   878.3     447   883.8     491
GR 888.2     519   894.4     559     902     592
X1 17180      31     312     370    7290    7290    7290
GR   902       0   896.6       7     895      41   891.6      56   883.7      70
GR 872.5     105   857.9     140   849.9     156   848.5     168   850.6     173
GR 850.9     192   850.8     246   851.6     292   851.2     312   846.2     318
GR 846.2     364   850.4     370   850.4     405   850.1     494   850.3     558
GR 851.4     617   856.1     650   862.6     653   871.6     677   878.2     708
GR 882.4     726   886.2     742   890.5     759     894     771   897.4     792
GR 902.0     825
ET                                           7.4
X1 20120      31     153     222    2340    2130    2940
GR   902       0   898.3      21   889.3      56   873.5      94   861.2     131
GR 855.7     141   855.2     153   853.6     158   849.2     166   849.2     200
GR 853.3     211   857.5     222   855.7     268   854.5     324   855.7     388
GR 855.4     450   853.5     503     855     586   855.1     660   857.5     793
```

```
GR 856.0     858   855.6     906   862.9   929.0   863.1     954   864.7    1035
GR 866.4    1101   873.3    1164     883    1219   892.5    1253   896.3    1271
GR   902    1282
X1 23410      28     513     574    3290    3290    3290
GR   902       0   896.2      14   889.3      56   877.9     133   871.6     178
GR 868.4     234   864.3     277   861.1     322   857.5     365   858.2     390
GR 858.0     401   858.8     435   860.3     486   860.6     513   857.9     513
GR 853.5     522   853.5     563   858.3     574   856.1     617   861.6     659
GR 864.5     679   868.2     721   887.9     766   880.4     788   889.1     828
GR 893.0     852   896.6     890     902     930
X1 26945      21     168     247    3535    3535    3535
GR   900       0   895.7      19   889.1      37   881.3      65   875.5      82
GR 867.4      98   863.7     119   861.1     139   865.8     147   865.7     168
GR 864.0     172   857.1     181   857.1     214   860.9     216   864.5     247
GR 871.8     262   880.4     282   889.6     305   894.9     318   898.9     329
GR 902.0     354

NC    .1      .1    .065      .3      .5
ET                                     6.4
X1 27500      10    1181    1210     555     555     555
GR 893.5     900   889.5    1000   866.5    1118   867.8    1181   859.4    1185
GR 859.1    1190     859    1200   859.4    1208   865.5    1210   910.5    1400

NC  .080     .08
X1 27620      38    1026    1182     120     120     120
X2     0       0       0   879.2   882.5
BT     6    1000   882.5     880    1026     883   879.2    1147   885.5   882.7
BT 1226.   888.5   884.8    1226   888.5   885.7    1250   889.5   886.6
GR 891.8     500     883     800   882.5     900   882.5    1000     878    1000
GR 871.0    1025     880    1025     880    1026     870    1026   867.5    1040
GR 865.5    1065   880.5    1065   880.5    1066   865.2    1066   861.5    1090
GR 860.5    1106   881.7    1106   881.7    1108   856.5    1108   857.5    1130
GR 857.5    1145   882.8    1145   882.8    1147   857.5    1147   867.1    1180
GR 883.7    1180   883.7    1182   869.1    1182   869.9    1210     875    1225
GR 884.6    1225   884.8    1226     875    1226   884.5    1250   889.5    1250
GR 897.5    1400   897.5    1500     903    1560

QT     5    5250    8270    9025   10180    9025
X1 27700      38    1026    1182      80      80      80
X2     0       0       0   879.2   882.5
BT     6    1000   882.5     880    1026     883   879.2    1147   885.5   882.7
BT  1226   888.5   884.8    1226   888.5   885.7    1250   889.5   886.6
GR 891.8     500     883     800   882.5     900   882.5    1000     878    1000
GR 871.0    1025     880    1025     880    1026     870    1026   867.5    1040
GR 865.5    1065   880.5    1065   880.5    1066   865.2    1066   861.5    1090
GR 860.5    1106   881.7    1106   881.7    1108   856.5    1108   857.5    1130
GR 857.5    1145   882.8    1145   882.8    1147   857.5    1147   867.1    1180
GR 883.7    1180   883.7    1182   869.1    1182   869.9    1210     875    1225
GR 884.6    1225   884.8    1226     875    1226   884.5    1250   889.5    1250
GR 897.5    1400   897.5    1500     903    1560

NC   .12     .12     .07      .1      .3
ET                                    10.4
X1 27805      15    1000    1050    108.     108     108
GR 882.5     500   874.5     600   870.8     700   870.5     800   868.5     900
GR 866.5    1000     861    1005   859.5    1010   859.1    1030   858.6    1040
GR 860.0    1045     867    1050   867.5    1100   898.5    1300   907.5    1400
X1 30185      21     178     208    2380    2280    2380
GR   922       0   907.2      17   893.7      39   880.7      52   871.6      70
GR   868      83   868.5     102   867.1     133   865.7     166   865.3     178
GR   863     179     863     208   868.7     208   870.8     221     875     234
GR 880.3     254   888.4     276   896.1     299   905.6     321   916.4     350
GR 922.0     391
```

```
QT      5    5110    8045    8780    9905    8780
ET                                            0.4
X1  32495      30     164     222    2300    2300    2310
GR   932.       0     930      11   919.9      34   909.5      60   902.3      84
GR  889.7     114   880.6     134   873.9     142     870     152   869.9     164
GR  865.2     175   865.2     221   869.1     222   868.3     237   869.8     245
GR  874.3     257     880     279   886.1     295   891.5     306   898.7     315
GR  899.5     323   898.7     339   907.9     350   914.4     358   914.1     371
GR  918.9     388     923     403   928.1     416     930     428     932     441
ET                                            8.1              35     215
X1    100      11      73     119     500     500     500
GR    890       0     880      30     872      56     870      73     867      80
GR    867     104     872     119     872     150     874     165     880     193
GR    890     230
ET                                            8.1             110     300
X1    200      19     212     264     220     220     220
GR  893.6       0   884.6      60   878.7     100   872.3     103     873     146
GR    873     147   872.7     150     872     200   872.7     205   872.7     206
GR  873.3     212   867.9     216   867.4     258   874.6     264   874.6     266
GR  874.6     267   874.5     300   875.9     308   894.1     345
ET                                            8.1             110     300
X1    300      19     212     264      60      60      60
GR  893.6       0   884.6      60   878.7     100   872.3     103     873     146
GR    873     147   872.7     150     872     200   872.7     205   872.7     206
GR  873.3     212   867.9     216   867.4     258   874.6     264   874.6     266
GR  874.6     267   874.5     300   875.9     308   894.1     345
ET                                            8.1              90     295
X1    400      15     214     257      65      65      65
GR885.62       0  884.54      25  882.17      51  881.61      69  877.10     112
GR872.61     157  873.20     178  873.42     214  867.02     220  865.47     254
GR870.39     257  875.90     269  877.32     293  884.83     308  892.85     320

NC    .05     .05    .045      .3      .5
ET                                            8.1         1110.11 1650.48
X1  34950      26    1130    1170    1105    1605    1610
GR  900.2       0   891.4     100   889.2     200   888.7     300     889     400
GR  889.5     500   889.5     700   890.5     800   889.4     900   886.5    1000
GR  874.5    1100     876    1130     868    1135   867.4    1140     868    1150
GR  868.0    1156   868.7    1166     875    1170   874.5    1200   874.2    1300
GR  873.5    1400   874.5    1500   879.5    1600   884.1    1800   881.5    1900
GR  897.0    2070
ET                                            8.1         1028.25 1181.25
X1  35050      31    1072  1137.5     100     100     100
X2      0       0       0   887.5   891.5
BT      2    1000   891.5   887.5    1203   892.5   888.2
GR  890.5       0   890.4     100   888.2     200   886.4     400     886     500
GR  886.4     600   891.5    1000   885.5    1000   883.5    1010   876.5    1030
GR  874.3    1060   873.6  1068.5   887.7  1068.5   887.7    1072     873    1072
GR  869.4    1080   867.3    1100   868.4    1120   873.9  1137.5     888  1137.5
GR  888.0    1141     874    1141   873.4    1170   875.5    1180   880.5    1190
GR  884.5    1203   892.5    1203   890.5    1400   884.5    1800   884.5    1900
GR  897.0    2160
ET                                            8.1         1028.25 1181.25
X1  35100      31    1072  1137.5      50      50      50
X2      0       0       0   887.5   891.5
BT      2    1000   891.5   887.5    1203   892.5   888.2
GR  890.5       0   890.4     100   888.2     200   886.4     400     886     500
GR  886.4     600   891.5    1000   885.5    1000   883.5    1010   876.5    1030
GR  874.3    1060   873.6  1068.5   887.7  1068.5   887.7    1072     873    1072
GR  869.4    1080   867.3    1100   868.4    1120   873.9  1137.5     888  1137.5
GR  888.0    1141     874    1141   873.4    1170   875.5    1180   880.5    1190
GR  884.5    1203   892.5    1203   890.5    1400   884.5    1800   884.5    1900
```

```
GR   897    2160
ET                                          8.1          1018.5  1171.5
X1 35410      32    1060    1130     310     310     310
X2     0       0       0   888.2     890
BT     2    1000   891.4   888.2    1203   893.2   890.4
GR 891.2       0   890.4     300     890     500   890.3     700   891.3     900
GR 891.4    1000   885.1    1000   883.3    1010   876.5    1030   874.5    1040
GR 874.5    1050     874    1060   870.5    1068     889    1068     889  1071.5
GR 869.8  1071.5   868.5    1090     868    1110   869.1    1120   875.1    1130
GR 874.5  1138.5   889.7  1138.5   889.7    1142   874.2    1142   874.7    1160
GR 876.7    1170   882.2    1190   886.6    1200   887.4    1203   893.2    1203
GR 895.2    1300   900.7    1650
ET                                          8.1          1018.5  1171.5
X1 35480      32    1060    1130      70      70      70
X2     0       0       0   888.2     890
BT     2    1000   891.4   888.2    1203   893.2   890.4
GR 891.2       0   890.4     300     890     500   890.3     700   891.3     900
GR 891.4    1000   885.1    1000   883.3    1010   876.5    1030   874.5    1040
GR 874.5    1050     874    1060   870.5    1068     889    1068     889  1071.5
GR 869.8  1071.5   868.5    1090   868.1    1110   869.1    1120   875.1    1130
GR 874.5  1138.5   889.7  1138.5   889.7    1142   874.2    1142   874.7    1160
GR 876.7    1170   882.2    1190   886.6    1200   887.4    1203   893.2    1203
GR 895.2    1300   900.7    1650
ET                                          8.1          1028.5  1181.5
X1 35530      37    1070    1140      50      50      50
X2     0       0       0   890.8   890.3
BT     2    1000   893.5   890.8    1186     895   893.5
GR 891.6       0   890.5     200   890.3     400   890.6     500   892.4     600
GR 893.2     700   893.8     900   893.5    1000     888    1000   886.3    1010
GR 881.0    1020   876.5    1040     874  1060.5   891.8  1060.5   891.8    1064
GR 874.0    1064   874.5    1070   870.6    1080   869.6    1090   868.3    1110
GR 868.3    1120     869    1124   892.6    1124   892.6  1127.5   869.8  1127.5
GR 870.0    1130   874.5    1140   875.4    1150   878.4    1160     889    1180
GR 890.5    1186     895    1186   895.2    1233     898    1300     898    1400
GR 898.6    1500   901.8    1700
ET                                          8.1          1028.5  1181.5
X1 35650      37    1070    1140     120     120     120
X2     0       0       0   890.8   890.3
BT     2    1000   893.5   890.8    1186     895   893.5
GR 891.6       0   890.5     200   890.3     400   890.6     500   892.4     600
GR 893.2     700   893.8     900   893.5    1000     888    1000   886.3    1010
GR 881.0    1020   876.5    1040     874  1060.5   891.8  1060.5   891.8    1064
GR 874.0    1064   874.5    1070   870.6    1080   869.6    1090   868.5    1110
GR 868.5    1120     869    1124   892.6    1124   892.6  1127.5   869.8  1127.5
GR 870.0    1130   874.5    1140   875.4    1150   878.4    1160     889    1180
GR 890.5    1186     895    1186   895.2    1233     898    1300     898    1400
GR 898.6    1500   901.8    1700

NC   .12     .12    .075      .1      .3
ET                                          7.1     750    1550
X1 35750      24    1060    1105     100     100     100
GR 905.5     150   893.5     175   885.5     400   886.5     500   881.8     600
GR 881.5     700     880     900   875.5    1000   875.5    1060   874.1    1070
GR 874.1    1080   874.5    1085   868.6    1090   868.6    1097   875.5    1105
GR 874.5    1200   875.4    1300   874.5    1400   875.8    1500   875.8    1600
GR 880.5    2100   886.4    2200   894.4    2300   900.5    2310

QT     5    5050    7955    8680    9790    8680
ET                                          7.1     625    1140
X1 36895      17    1030    1070     600    1500    1215
GR   889     300   888.7     400   887.5     500   882.8     700   875.8     800
GR 875.8     900   878.2    1030   870.3    1035   868.8    1060     869    1065
GR 877.8    1070   878.2    1100     888    1200   894.5    1400     899    1500
```

```
GR   907    1600   909.7    1700

NC   .07     .07     .05      .5      .8
ET                                     7.1    1005    1135
X1 36950      30    1050    1100      55      55      55
X2     0       0       0     888     891
X4     2   874.1    1100     888    1144
BT     2    1000   892.3   889.3    1144     891     888
GR 916.2     300   900.8     600   896.9     700   894.2     800   893.2     900
GR 892.3    1000     886    1000   875.8    1030   875.8    1034     892    1034
GR 892.0    1035   875.8    1035   873.2    1050     869    1060   869.5    1070
GR 891.6    1070   891.5    1073   869.7    1073   871.4    1090   875.5    1107
GR 891.3    1107   891.3    1110   876.5    1110   884.5    1130   887.4    1143
GR 891.0    1144   893.4    1300     898    1500   901.2    1600     906    1700
ET                                     7.1    1005    1135
X1 37000      30    1050    1100      50      50      50
X2     0       0       0     888     891
X4     2   874.1    1100     888    1144
BT     2    1000   892.3   889.3    1144     891     888
GR 916.2     300   900.8     600   896.9     700   894.2     800   893.2     900
GR 892.3    1000     886    1000   875.8    1030   875.8    1034     892    1034
GR 892.0    1035   875.8    1035   873.2    1050     869    1060   869.5    1070
GR 891.6    1070   891.5    1073   869.7    1073   871.4    1090   875.5    1107
GR 891.3    1107   891.3    1110   876.5    1110   884.5    1130   887.4    1143
GR 891.0    1144   893.4    1300     898    1500   901.2    1600     906    1700

NC   .12      .1     .07      .1      .3
ET                                     7.1  625.78 1271.76
X1 37100      19    1050    1090     100     100     100
GR 891.3     400   889.5     500   877.5     600     876     700   877.2     800
GR 876.2     900   876.2    1000     877    1050   871.3    1055   868.3    1060
GR 868.2    1065   869.5    1070   870.8    1090     877    1090     875    1100
GR 878.6    1200     881    1300   885.5    1400     899    1600
ET                                     7.1  1764.4 2229.91
X1 38110      67    2011    2046     950     970    1010
GR 917.8     791   920.4     837   920.7     869   919.4     914   918.2     943
GR 916.0     997   914.4    1025   913.5    1043   912.3    1089   910.7    1096
GR 902.3    1120   893.1    1150   893.1    1156   896.8    1164   897.8    1178
GR 897.7    1185   897.6    1197   897.6    1211   896.4    1229   894.9    1237
GR 896.5    1249   896.8    1260   897.4    1273   897.7    1285   898.4    1297
GR 897.9    1310   895.7    1331   894.9    1337     898    1350   894.2    1381
GR 890.9    1431   886.5    1472   886.9    1522   885.3    1555   885.9    1611
GR 886.8    1660   887.1    1702   884.3    1729   877.6    1788   877.6    1839
GR 877.4    1895   879.7    1937     881    1964   882.5    1981   882.4    2000
GR 881.1    2011   870.5    2016   870.5    2046   879.1    2046   880.3    2056
GR 879.9    2103   879.7    2152   879.2    2208   881.4    2257   882.2    2292
GR 883.3    2295     889    2311   892.3    2340   896.2    2374     903    2401
GR 909.3    2455   915.3    2492   921.1    2531   924.1    2542     928    2573
GR 930.0    2600     932    2617

NC                            .3      .5
NH     3      .2    1000     .06    1160     .25    2200
ET                                     7.1    1000    1600
X1 40790      24    1055    1105    2700    2550    2680
X2                                                                          15
GR 905.3       0   899.2     100     892     300     890     400   889.1     600
GR 889.1     700   889.0     800   888.5     985   882.2    1000     883    1055
GR 877.0    1060   874.2    1070   874.9    1075   874.2    1085   874.7    1090
GR 877.0    1100     882    1105   882.7    1160   882.2    1300   882.5    1500
GR 884.0    1700   891.5    1900   902.8    2000     911    2200

NH     3      .2    1000     .06    1160     .25    2200
ET                                    7.11    1000    1600
```

```
X1 40820       0       0       0      10      10      10
X2                                                                      15
SB  1.05     2.0     3.0       0      30       4    1130    5.56     876     876

NH     3      .2    1000     .06    1160     .25    2200
ET                                           7.11    1000    1600
X1 40865       0       0       0      85      85      85
X2     0       0       1     888   889.5                                      15
BT    12     680   891.4       0     860   890.2       0     980   889.6       0
BT  1000   889.6       0    1001   891.6       0    1160   891.6       0    1161
BT 889.5       0    1290   889.6       0    1440   889.8       0    1570   889.8
BT     0    1700   891.1       0    1800     892       0

NC   .12     .12     .06      .1      .3
ET                                            7.1     320     630
X1 41025      15     375     435     100     350     160
GR   892       0   889.4      50   885.8     100   886.4     150   884.7     200
GR 881.2     250   881.6     300   881.4     350   882.2     375     872     385
GR   872     420     883     435   880.8     505     882     650     896     800

NH     7     .15     196     .15     260     .06     335     .05     390     .06
NH   450     .15     700     .50     950
ET                                            7.1     310     600
X1 41165      14     335     390      90     150     140
GR   892       0   889.4      50  885.20     100   886.8     150   884.2     196
GR   881     260     884     335     873     350     873     385   883.3     390
GR 880.6     450     882     700     884     850     896     950

NH     6     .15     170     .06     215     .05     275     .06     375     .15
NH   925     .50    1400
ET                                            7.1     190     800
X1 41605      14     215     275     420     550     440
X4     1     882     170
GR   896       0   881.4      50   880.7     100   880.8     150   883.2     200
GR 883.4     215     874     230     874     270   883.7     275   881.5     375
GR   881     675     884     925     888    1200     896    1400

NH     5     .12     783     .06     848     .05     904     .12    1550     .50
NH  3151
ET                                            7.1     770    1550
X1 42070      68     848     904     400     400     400
GR 931.6       0     930      45   928.3      64   926.8      82   917.5     126
GR 910.8     138   909.5     149   909.5     164   914.4     175   912.9     192
GR 912.2     223   914.5     254   913.8     296   910.2     327   905.3     374
GR 901.4     412   895.8     470     892     502   887.5     530   884.3     592
GR 881.9     617   882.4     631   884.7     645   882.2     664   880.6     667
GR 878.2     668   878.2     675   881.9     681   882.6     701   882.5     720
GR 885.1     748   883.6     783   883.6     807   883.9     848   876.2     858
GR 876.2     893   885.5     904   885.1     922   882.8     948   881.5    1026
GR 883.2    1121   881.4    1182   881.2    1231   880.5    1240   881.5    1246
GR 881.0    1352     881    1550   882.9    1714   886.3    1820   888.8    1992
GR 891.2    2108     895    2243   900.9    2348   902.5    2491   901.4    2586
GR 899.8    2649   897.8    2731   905.5    2764     906    2798   905.5    2822
GR 907.2    2850   911.5    2905   917.2    2950   922.1    3015   928.4    3054
GR 928.6    3096     930    3114   932.6    3151

NC   .12     .08    .055      .1      .3
QT     5    4880    7680    8380    9460    8380
ET                                            7.1  1697.1 1937.79
X1 44040      22    1858    1933    2030    1850    1970
GR 896.5    1603   896.1    1625   895.2    1640   890.7    1670   885.3    1697
GR 886.8    1719   885.8    1738   881.2    1747   885.6    1767   887.8    1802
GR 887.4    1830   887.4    1858   878.5    1860   878.5    1923     885    1933
```

```
 GR 895.5    1993   909.5    2029   919.8    2060   919.4    2064   924.6    2080
 GR   930    2105   933.1    2111

 NC   .12     .12    .065      .1      .3
 ET                                          7.1    1380    2150
 X1 45890      42    1564    1669    1860    1800    1850
 GR 904.4    1331   903.3    1341     896    1382   890.2    1414     889    1443
 GR 889.6    1473   891.7    1502   891.7    1536     889    1564   885.4    1572
 GR 880.7    1588   880.7    1642   887.5    1656   889.7    1669   888.4    1731
 GR 888.0    1812   888.1    1899   888.2    1997   887.1    2072   887.1    2120
 GR 887.8    2216   888.2    2302   887.3    2381   889.4    2481   891.9    2557
 GR 902.3    2630   906.2    2700   909.3    2806   914.9    2922   920.2    3018
 GR 921.7    3082   920.1    3158   918.3    3174   919.2    3222   923.4    3259
 GR 923.6    3313   923.8    3369   930.4    3384   929.9    3424   929.9    3461
 GR 930.0    3465   932.7    3468

 NC   .12     .12    .065      .1      .3
 ET                                          7.1  136.27  327.98
 X1 46650      22     262     320     720     745     760
 GR 908.0       0     904      20     900      50     896      67     892      72
 GR 890.0     130     892     180     893     225     892     262   882.2     280
 GR 882.2     305     884     320     888     343     892     347     896     380
 GR 900.0     430     904     500     908     590     911     770     912     850
 GR 916.0    1060     920    1210
 EJ

 T1      CHEROKEE COUNTY
 T2      100-YEAR FLOODWAY
 T3      NOONDAY CREEK
 J1    -1       6                                                     856.17

 J2    15              -1



 ER
1SUMMARY OF ERRORS
0
 T1      CHEROKEE COUNTY, GEORGIA FIS
 T2      100-YEAR FLOODWAY (CROSS SECTIONS ADDED)
 T3      NOONDAY CREEK
  27620.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

  27700.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

 **          - WARNING - ET RECORD - ENCFP =  1110.110
              POSSIBLE METHOD 1 FIELD REFERENCE ERROR

  35050.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

  35100.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

  35410.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

  35480.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

  35530.000 - NOTE - X2 RECORD - IBRID =    0 ELTRD =   890.300 OUGHT TO BE
```

```
                    GREATER THAN ELLC =   890.800

 35530.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                    X2 AND BT RECORDS

 35650.000 - NOTE - X2 RECORD - IBRID =    0 ELTRD =   890.300 OUGHT TO BE
                      GREATER THAN ELLC =   890.800

 35650.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                    X2 AND BT RECORDS

 36950.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                    X2 AND BT RECORDS

 37000.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                    X2 AND BT RECORDS

 40865.000 - CAUTION - X3 RECORD OMITTED AT DOWNSTREAM XSEC OF SPECIAL BRIDGE

 40865.000 - CAUTION - X3 RECORD OMITTED AT UPSTREAM XSEC OF SPECIAL BRIDGE

 40865.000 UNABLE TO EDIT SPECIAL BRIDGE MODEL DUE TO INSUFFICIENT DATA

 41165.000 - NOTE - NH RECORD - VALN =      .500 MAY NOT BE A REASONABLE VALUE

 41605.000 - NOTE - NH RECORD - VALN =      .500 MAY NOT BE A REASONABLE VALUE

 42070.000 - NOTE - NH RECORD - VALN =      .500 MAY NOT BE A REASONABLE VALUE

**          - WARNING - ET RECORD - ENCFP =  1697.100
             POSSIBLE METHOD 1 FIELD REFERENCE ERROR

T1      CHEROKEE COUNTY
T2      100-YEAR FLOODWAY
T3      NOONDAY CREEK
```

```
1*************************************
 *                                   *
 *              E D I T 2            *
 *                                   *
 *  HEC-2 DATA CHECKER               *
 *  May 1991                         *
 *  FOR THE IBM PC/XT/AT             *
 *                                   *
 *  U.S. ARMY CORPS OF ENGINEERS     *
 *  HYDROLOGIC ENGINEERING CENTER    *
 *  609 SECOND STREET                *
 *  DAVIS, CALIFORNIA 95616-4687     *
 *  (916) 756-1104                   *
 *  RUN DATE 05JUN08  TIME 13:14:59  *
 *                                   *
 *************************************
```

```
T1      CHEROKEE COUNTY, GEORGIA FIS
T2      100-YEAR FLOODWAY (CROSS SECTIONS ADDED)
T3      NOONDAY CREEK
J1    -1       4       0       0       0       0       0       0  855.17

J2     1       0      -1
J3   110     200     150
J5   -10     -10
NC  .120    .120    .075    .100    .300    .000    .000    .000    .000
QT  5.00    5455    8590    9370   10575    9370
ET                                          10.4
X1  6275      32     435     505
GR   902       0   896.4      15   887.2      43   878.2      87   871.6     124
GR 865.2     152   856.4     193   847.8     211   839.7     227   839.1     264
GR 839.0     324   839.2     362   840.3     408   843.4     426   842.3     435
GR 833.2     436   833.2     486   838.5     492   840.4     505   841.6     536
GR 841.1     576   842.3     596   850.3     623   855.6     645   863.7     686
GR 872.1     715   876.2     746   882.7     768   888.4     796   896.9     832
GR 901.7     859   909.8     902
X1  9890      28     144     192    3615    3615    3615
GR   902       0   898.4       8     891      33   883.3      53   873.2      72
GR 866.2      85   858.5     103   849.1     120   842.3     128   843.6     129
GR 842.8     144   837.2     144   837.2     186   842.4     192   842.3     201
GR 842.3     228   843.4     269   845.2     293     848     314     853     334
GR 857.4     344   861.7     365   869.9     407   878.3     447   883.8     491
GR 888.2     519   894.4     559     902     592
X1 17180      31     312     370    7290    7290    7290
GR   902       0   896.6       7     895      41   891.6      56   883.7      70
GR 872.5     105   857.9     140   849.9     156   848.5     168   850.6     173
GR 850.9     192   850.8     246   851.6     292   851.2     312   846.2     318
GR 846.2     364   850.4     370   850.4     405   850.1     494   850.3     558
GR 851.4     617   856.1     650   862.6     653   871.6     677   878.2     708
GR 882.4     726   886.2     742   890.5     759     894     771   897.4     792
GR 902.0     825
ET                                           7.4
X1 20120      31     153     222    2340    2130    2940
GR   902       0   898.3      21   889.3      56   873.5      94   861.2     131
GR 855.7     141   855.2     153   853.6     158   849.2     166   849.2     200
GR 853.3     211   857.5     222   855.7     268   854.5     324   855.7     388
GR 855.4     450   853.5     503     855     586   855.1     660   857.5     793
```

```
GR 856.0     858   855.6     906   862.9   929.0   863.1     954   864.7    1035
GR 866.4    1101   873.3    1164     883    1219   892.5    1253   896.3    1271
GR   902    1282
X1 23410      28     513     574    3290    3290    3290
GR   902       0   896.2      14   889.3      56   877.9     133   871.6     178
GR 868.4     234   864.3     277   861.1     322   857.5     365   858.2     390
GR 858.0     401   858.8     435   860.3     486   860.6     513   857.9     513
GR 853.5     522   853.5     563   858.3     574   856.1     617   861.6     659
GR 864.5     679   868.2     721   887.9     766   880.4     788   889.1     828
GR 893.0     852   896.6     890     902     930
X1 26945      21     168     247    3535    3535    3535
GR   900       0   895.7      19   889.1      37   881.3      65   875.5      82
GR 867.4      98   863.7     119   861.1     139   865.8     147   865.7     168
GR 864.0     172   857.1     181   857.1     214   860.9     216   864.5     247
GR 871.8     262   880.4     282   889.6     305   894.9     318   898.9     329
GR 902.0     354

NC    .1      .1    .065      .3      .5
ET                                     6.4
X1 27500      10    1181    1210     555     555     555
GR 893.5     900   889.5    1000   866.5    1118   867.8    1181   859.4    1185
GR 859.1    1190     859    1200   859.4    1208   865.5    1210   910.5    1400

NC  .080     .08
X1 27620      38    1026    1182     120     120     120
X2     0       0       0   879.2   882.5
BT     6    1000   882.5     880    1026     883   879.2    1147   885.5   882.7
BT 1226.   888.5   884.8    1226   888.5   885.7    1250   889.5   886.6
GR 891.8     500     883     800   882.5     900   882.5    1000     878    1000
GR 871.0    1025     880    1025     880    1026     870    1026   867.5    1040
GR 865.5    1065   880.5    1065   880.5    1066   865.2    1066   861.5    1090
GR 860.5    1106   881.7    1106   881.7    1108   856.5    1108   857.5    1130
GR 857.5    1145   882.8    1145   882.8    1147   857.5    1147   867.1    1180
GR 883.7    1180   883.7    1182   869.1    1182   869.9    1210     875    1225
GR 884.6    1225   884.8    1226     875    1226   884.5    1250   889.5    1250
GR 897.5    1400   897.5    1500     903    1560

QT     5    5250    8270    9025   10180    9025
X1 27700      38    1026    1182      80      80      80
X2     0       0       0   879.2   882.5
BT     6    1000   882.5     880    1026     883   879.2    1147   885.5   882.7
BT  1226   888.5   884.8    1226   888.5   885.7    1250   889.5   886.6
GR 891.8     500     883     800   882.5     900   882.5    1000     878    1000
GR 871.0    1025     880    1025     880    1026     870    1026   867.5    1040
GR 865.5    1065   880.5    1065   880.5    1066   865.2    1066   861.5    1090
GR 860.5    1106   881.7    1106   881.7    1108   856.5    1108   857.5    1130
GR 857.5    1145   882.8    1145   882.8    1147   857.5    1147   867.1    1180
GR 883.7    1180   883.7    1182   869.1    1182   869.9    1210     875    1225
GR 884.6    1225   884.8    1226     875    1226   884.5    1250   889.5    1250
GR 897.5    1400   897.5    1500     903    1560

NC   .12     .12     .07      .1      .3
ET                                    10.4
X1 27805      15    1000    1050    108.     108     108
GR 882.5     500   874.5     600   870.8     700   870.5     800   868.5     900
GR 866.5    1000     861    1005   859.5    1010   859.1    1030   858.6    1040
GR 860.0    1045     867    1050   867.5    1100   898.5    1300   907.5    1400
X1 30185      21     178     208    2380    2280    2380
GR   922       0   907.2      17   893.7      39   880.7      52   871.6      70
GR   868      83   868.5     102   867.1     133   865.7     166   865.3     178
GR   863     179     863     208   868.7     208   870.8     221     875     234
GR 880.3     254   888.4     276   896.1     299   905.6     321   916.4     350
GR 922.0     391
```

```
QT      5    5110    8045    8780    9905    8780
ET                                            0.4
X1  32495      30     164     222    2300    2300    2310
GR   932.       0     930      11   919.9      34   909.5      60   902.3      84
GR  889.7     114   880.6     134   873.9     142     870     152   869.9     164
GR  865.2     175   865.2     221   869.1     222   868.3     237   869.8     245
GR  874.3     257     880     279   886.1     295   891.5     306   898.7     315
GR  899.5     323   898.7     339   907.9     350   914.4     358   914.1     371
GR  918.9     388     923     403   928.1     416     930     428     932     441
ET                                            8.1              35     215
X1    100      11      73     119     500     500     500
GR    890       0     880      30     872      56     870      73     867      80
GR    867     104     872     119     872     150     874     165     880     193
GR    890     230
ET                                            8.1             110     300
X1    200      19     212     264     220     220     220
GR  893.6       0   884.6      60   878.7     100   872.3     103     873     146
GR    873     147   872.7     150     872     200   872.7     205   872.7     206
GR  873.3     212   867.9     216   867.4     258   874.6     264   874.6     266
GR  874.6     267   874.5     300   875.9     308   894.1     345
ET                                            8.1             110     300
X1    300      19     212     264      60      60      60
GR  893.6       0   884.6      60   878.7     100   872.3     103     873     146
GR    873     147   872.7     150     872     200   872.7     205   872.7     206
GR  873.3     212   867.9     216   867.4     258   874.6     264   874.6     266
GR  874.6     267   874.5     300   875.9     308   894.1     345
ET                                            8.1              90     295
X1    400      15     214     257      65      65      65
GR885.62       0  884.54      25  882.17      51  881.61      69  877.10     112
GR872.61     157  873.20     178  873.42     214  867.02     220  865.47     254
GR870.39     257  875.90     269  877.32     293  884.83     308  892.85     320

NC    .05     .05    .045      .3      .5
ET                                            8.1         1110.11 1650.48
X1  34950      26    1130    1170    1105    1605    1610
GR  900.2       0   891.4     100   889.2     200   888.7     300     889     400
GR  889.5     500   889.5     700   890.5     800   889.4     900   886.5    1000
GR  874.5    1100     876    1130     868    1135   867.4    1140     868    1150
GR  868.0    1156   868.7    1166     875    1170   874.5    1200   874.2    1300
GR  873.5    1400   874.5    1500   879.5    1600   884.1    1800   881.5    1900
GR  897.0    2070
ET                                            8.1         1028.25 1181.25
X1  35050      31    1072  1137.5     100     100     100
X2      0       0       0  887.03   891.5
BT      2    1000   891.5  887.22    1203   892.5  887.03
GR  890.5       0   890.4     100   888.2     200   886.4     400     886     500
GR  886.4     600   891.5    1000   885.5    1000   883.5    1010   876.5    1030
GR  874.3    1060   873.6  1068.5   887.7  1068.5   887.7    1072     873    1072
GR  869.4    1080   867.3    1100   868.4    1120   873.9  1137.5     888  1137.5
GR  888.0    1141     874    1141   873.4    1170   875.5    1180   880.5    1190
GR  884.5    1203   892.5    1203   890.5    1400   884.5    1800   884.5    1900
GR  897.0    2160
ET                                            8.1         1028.25 1181.25
X1  35100      31    1072  1137.5      50      50      50
X2      0       0       0  887.03   891.5
BT      2    1000   891.5  887.22    1203   892.5  887.03
GR  890.5       0   890.4     100   888.2     200   886.4     400     886     500
GR  886.4     600   891.5    1000   885.5    1000   883.5    1010   876.5    1030
GR  874.3    1060   873.6  1068.5   887.7  1068.5   887.7    1072     873    1072
GR  869.4    1080   867.3    1100   868.4    1120   873.9  1137.5     888  1137.5
GR  888.0    1141     874    1141   873.4    1170   875.5    1180   880.5    1190
GR  884.5    1203   892.5    1203   890.5    1400   884.5    1800   884.5    1900
```

```
GR   897    2160
ET                                          8.1          1018.5  1171.5
X1 35410      32    1060    1130     310     310     310
X2     0       0       0  885.91     890
BT     2    1000   891.4  885.91    1203   893.2  888.05
GR 891.2       0   890.4     300     890     500   890.3     700   891.3     900
GR 891.4    1000   885.1    1000   883.3    1010   876.5    1030   874.5    1040
GR 874.5    1050     874    1060   870.5    1068     889    1068     889  1071.5
GR 869.8  1071.5   868.5    1090     868    1110   869.1    1120   875.1    1130
GR 874.5  1138.5   889.7  1138.5   889.7    1142   874.2    1142   874.7    1160
GR 876.7    1170   882.2    1190   886.6    1200   887.4    1203   893.2    1203
GR 895.2    1300   900.7    1650
ET                                          8.1          1018.5  1171.5
X1 35480      32    1060    1130      70      70      70
X2     0       0       0  885.91     890
BT     2    1000   891.4  885.91    1203   893.2  888.05
GR 891.2       0   890.4     300     890     500   890.3     700   891.3     900
GR 891.4    1000   885.1    1000   883.3    1010   876.5    1030   874.5    1040
GR 874.5    1050     874    1060   870.5    1068     889    1068     889  1071.5
GR 869.8  1071.5   868.5    1090   868.1    1110   869.1    1120   875.1    1130
GR 874.5  1138.5   889.7  1138.5   889.7    1142   874.2    1142   874.7    1160
GR 876.7    1170   882.2    1190   886.6    1200   887.4    1203   893.2    1203
GR 895.2    1300   900.7    1650
ET                                          8.1          1028.5  1181.5
X1 35530      37    1070    1140      50      50      50
X2     0       0       0  887.23   890.3
BT     2    1000   893.5  887.23    1186     895  889.07
GR 891.6       0   890.5     200   890.3     400   890.6     500   892.4     600
GR 893.2     700   893.8     900   893.5    1000  887.23    1000   886.3    1010
GR 881.0    1020   876.5    1040     874  1060.5   891.8  1060.5   891.8    1064
GR 874.0    1064   874.5    1070   870.6    1080   869.6    1090   868.3    1110
GR 868.3    1120     869    1124   892.6    1124   892.6  1127.5   869.8  1127.5
GR 870.0    1130   874.5    1140   875.4    1150   878.4    1160     889    1180
GR889.07    1186     895    1186   895.2    1233     898    1300     898    1400
GR 898.6    1500   901.8    1700
ET                                          8.1          1028.5  1181.5
X1 35650      37    1070    1140     120     120     120
X2     0       0       0  887.23   890.3
BT     2    1000   893.5  887.23    1186     895  889.07
GR 891.6       0   890.5     200   890.3     400   890.6     500   892.4     600
GR 893.2     700   893.8     900   893.5    1000  887.23    1000   886.3    1010
GR 881.0    1020   876.5    1040     874  1060.5   891.8  1060.5   891.8    1064
GR 874.0    1064   874.5    1070   870.6    1080   869.6    1090   868.5    1110
GR 868.5    1120     869    1124   892.6    1124   892.6  1127.5   869.8  1127.5
GR 870.0    1130   874.5    1140   875.4    1150   878.4    1160     889    1180
GR889.07    1186     895    1186   895.2    1233     898    1300     898    1400
GR 898.6    1500   901.8    1700

NC   .12     .12    .075      .1      .3
ET                                          7.1     750    1550
X1 35750      24    1060    1105     100     100     100
GR 905.5     150   893.5     175   885.5     400   886.5     500   881.8     600
GR 881.5     700     880     900   875.5    1000   875.5    1060   874.1    1070
GR 874.1    1080   874.5    1085   868.6    1090   868.6    1097   875.5    1105
GR 874.5    1200   875.4    1300   874.5    1400   875.8    1500   875.8    1600
GR 880.5    2100   886.4    2200   894.4    2300   900.5    2310

QT     5    5050    7955    8680    9790    8680
ET                                          7.1     625    1140
X1 36895      17    1030    1070     600    1500    1215
GR   889     300   888.7     400   887.5     500   882.8     700   875.8     800
GR 875.8     900   878.2    1030   870.3    1035   868.8    1060     869    1065
GR 877.8    1070   878.2    1100     888    1200   894.5    1400     899    1500
```

```
GR   907    1600   909.7    1700

NC   .07     .07     .05      .5      .8
ET                                     7.1    1005    1135
X1 36950      30    1050    1100      55      55      55
X2     0       0       0     888     891
X4     2   874.1    1100     888    1144
BT     2    1000   892.3   889.3    1144     891     888
GR 916.2     300   900.8     600   896.9     700   894.2     800   893.2     900
GR 892.3    1000     886    1000   875.8    1030   875.8    1034     892    1034
GR 892.0    1035   875.8    1035   873.2    1050     869    1060   869.5    1070
GR 891.6    1070   891.5    1073   869.7    1073   871.4    1090   875.5    1107
GR 891.3    1107   891.3    1110   876.5    1110   884.5    1130   887.4    1143
GR 891.0    1144   893.4    1300     898    1500   901.2    1600     906    1700
ET                                     7.1    1005    1135
X1 37000      30    1050    1100      50      50      50
X2     0       0       0     888     891
X4     2   874.1    1100     888    1144
BT     2    1000   892.3   889.3    1144     891     888
GR 916.2     300   900.8     600   896.9     700   894.2     800   893.2     900
GR 892.3    1000     886    1000   875.8    1030   875.8    1034     892    1034
GR 892.0    1035   875.8    1035   873.2    1050     869    1060   869.5    1070
GR 891.6    1070   891.5    1073   869.7    1073   871.4    1090   875.5    1107
GR 891.3    1107   891.3    1110   876.5    1110   884.5    1130   887.4    1143
GR 891.0    1144   893.4    1300     898    1500   901.2    1600     906    1700

NC   .12      .1     .07      .1      .3
ET                                     7.1  625.78 1271.76
X1 37100      19    1050    1090     100     100     100
GR 891.3     400   889.5     500   877.5     600     876     700   877.2     800
GR 876.2     900   876.2    1000     877    1050   871.3    1055   868.3    1060
GR 868.2    1065   869.5    1070   870.8    1090     877    1090     875    1100
GR 878.6    1200     881    1300   885.5    1400     899    1600
ET                                     7.1  1764.4 2229.91
X1 38110      67    2011    2046     950     970    1010
GR 917.8     791   920.4     837   920.7     869   919.4     914   918.2     943
GR 916.0     997   914.4    1025   913.5    1043   912.3    1089   910.7    1096
GR 902.3    1120   893.1    1150   893.1    1156   896.8    1164   897.8    1178
GR 897.7    1185   897.6    1197   897.6    1211   896.4    1229   894.9    1237
GR 896.5    1249   896.8    1260   897.4    1273   897.7    1285   898.4    1297
GR 897.9    1310   895.7    1331   894.9    1337     898    1350   894.2    1381
GR 890.9    1431   886.5    1472   886.9    1522   885.3    1555   885.9    1611
GR 886.8    1660   887.1    1702   884.3    1729   877.6    1788   877.6    1839
GR 877.4    1895   879.7    1937     881    1964   882.5    1981   882.4    2000
GR 881.1    2011   870.5    2016   870.5    2046   879.1    2046   880.3    2056
GR 879.9    2103   879.7    2152   879.2    2208   881.4    2257   882.2    2292
GR 883.3    2295     889    2311   892.3    2340   896.2    2374     903    2401
GR 909.3    2455   915.3    2492   921.1    2531   924.1    2542     928    2573
GR 930.0    2600     932    2617

NC                            .3      .5
NH     3      .2    1000     .06    1160     .25    2200
ET                                     7.1    1000    1600
X1 40790      24    1055    1105    2700    2550    2680
X2                                                                          15
GR 905.3       0   899.2     100     892     300     890     400   889.1     600
GR 889.1     700   889.0     800   888.5     985   882.2    1000     883    1055
GR 877.0    1060   874.2    1070   874.9    1075   874.2    1085   874.7    1090
GR 877.0    1100     882    1105   882.7    1160   882.2    1300   882.5    1500
GR 884.0    1700   891.5    1900   902.8    2000     911    2200

NH     3      .2    1000     .06    1160     .25    2200
ET                                    7.11    1000    1600
```

```
X1 40820       0       0       0      10      10      10
X2                                                                      15
SB  1.05     2.0     3.0       0      30       4    1130    5.56     876     876

NH     3      .2    1000     .06    1160     .25    2200
ET                                           7.11    1000    1600
X1 40865       0       0       0      85      85      85
X2     0       0       1     888   889.5                                      15
BT    12     680   891.4       0     860   890.2       0     980   889.6       0
BT  1000   889.6       0    1001   891.6       0    1160   891.6       0    1161
BT 889.5       0    1290   889.6       0    1440   889.8       0    1570   889.8
BT     0    1700   891.1       0    1800     892       0

NC   .12     .12     .06      .1      .3
ET                                            7.1     320     630
X1 41025      15     375     435     100     350     160
GR   892       0   889.4      50   885.8     100   886.4     150   884.7     200
GR 881.2     250   881.6     300   881.4     350   882.2     375     872     385
GR   872     420     883     435   880.8     505     882     650     896     800

NH     7     .15     196     .15     260     .06     335     .05     390     .06
NH   450     .15     700     .50     950
ET                                            7.1     310     600
X1 41165      14     335     390      90     150     140
GR   892       0   889.4      50  885.20     100   886.8     150   884.2     196
GR   881     260     884     335     873     350     873     385   883.3     390
GR 880.6     450     882     700     884     850     896     950

NH     6     .15     170     .06     215     .05     275     .06     375     .15
NH   925     .50    1400
ET                                            7.1     190     800
X1 41605      14     215     275     420     550     440
X4     1     882     170
GR   896       0   881.4      50   880.7     100   880.8     150   883.2     200
GR 883.4     215     874     230     874     270   883.7     275   881.5     375
GR   881     675     884     925     888    1200     896    1400

NH     5     .12     783     .06     848     .05     904     .12    1550     .50
NH  3151
ET                                            7.1     770    1550
X1 42070      68     848     904     400     400     400
GR 931.6       0     930      45   928.3      64   926.8      82   917.5     126
GR 910.8     138   909.5     149   909.5     164   914.4     175   912.9     192
GR 912.2     223   914.5     254   913.8     296   910.2     327   905.3     374
GR 901.4     412   895.8     470     892     502   887.5     530   884.3     592
GR 881.9     617   882.4     631   884.7     645   882.2     664   880.6     667
GR 878.2     668   878.2     675   881.9     681   882.6     701   882.5     720
GR 885.1     748   883.6     783   883.6     807   883.9     848   876.2     858
GR 876.2     893   885.5     904   885.1     922   882.8     948   881.5    1026
GR 883.2    1121   881.4    1182   881.2    1231   880.5    1240   881.5    1246
GR 881.0    1352     881    1550   882.9    1714   886.3    1820   888.8    1992
GR 891.2    2108     895    2243   900.9    2348   902.5    2491   901.4    2586
GR 899.8    2649   897.8    2731   905.5    2764     906    2798   905.5    2822
GR 907.2    2850   911.5    2905   917.2    2950   922.1    3015   928.4    3054
GR 928.6    3096     930    3114   932.6    3151

NC   .12     .08    .055      .1      .3
QT     5    4880    7680    8380    9460    8380
ET                                            7.1  1697.1 1937.79
X1 44040      22    1858    1933    2030    1850    1970
GR 896.5    1603   896.1    1625   895.2    1640   890.7    1670   885.3    1697
GR 886.8    1719   885.8    1738   881.2    1747   885.6    1767   887.8    1802
GR 887.4    1830   887.4    1858   878.5    1860   878.5    1923     885    1933
```

```
 GR 895.5    1993   909.5    2029   919.8    2060   919.4    2064   924.6    2080
 GR   930    2105   933.1    2111

 NC   .12     .12    .065      .1      .3
 ET                                          7.1    1380    2150
 X1 45890      42    1564    1669    1860    1800    1850
 GR 904.4    1331   903.3    1341     896    1382   890.2    1414     889    1443
 GR 889.6    1473   891.7    1502   891.7    1536     889    1564   885.4    1572
 GR 880.7    1588   880.7    1642   887.5    1656   889.7    1669   888.4    1731
 GR 888.0    1812   888.1    1899   888.2    1997   887.1    2072   887.1    2120
 GR 887.8    2216   888.2    2302   887.3    2381   889.4    2481   891.9    2557
 GR 902.3    2630   906.2    2700   909.3    2806   914.9    2922   920.2    3018
 GR 921.7    3082   920.1    3158   918.3    3174   919.2    3222   923.4    3259
 GR 923.6    3313   923.8    3369   930.4    3384   929.9    3424   929.9    3461
 GR 930.0    3465   932.7    3468

 NC   .12     .12    .065      .1      .3
 ET                                          7.1  136.27  327.98
 X1 46650      22     262     320     720     745     760
 GR 908.0       0     904      20     900      50     896      67     892      72
 GR 890.0     130     892     180     893     225     892     262   882.2     280
 GR 882.2     305     884     320     888     343     892     347     896     380
 GR 900.0     430     904     500     908     590     911     770     912     850
 GR 916.0    1060     920    1210
 EJ

 T1      CHEROKEE COUNTY
 T2      100-YEAR FLOODWAY
 T3      NOONDAY CREEK
 J1    -1       6                                                     856.17

 J2    15              -1



 ER
1SUMMARY OF ERRORS
0
 T1      CHEROKEE COUNTY, GEORGIA FIS
 T2      100-YEAR FLOODWAY (CROSS SECTIONS ADDED)
 T3      NOONDAY CREEK
  27620.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

  27700.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

 **          - WARNING - ET RECORD - ENCFP =  1110.110
              POSSIBLE METHOD 1 FIELD REFERENCE ERROR

  35050.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

  35100.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

  35410.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

  35480.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

  35530.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
```

```
                    X2 AND BT RECORDS

 35650.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                    X2 AND BT RECORDS

 36950.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                    X2 AND BT RECORDS

 37000.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                    X2 AND BT RECORDS

 40865.000 - CAUTION - X3 RECORD OMITTED AT DOWNSTREAM XSEC OF SPECIAL BRIDGE

 40865.000 - CAUTION - X3 RECORD OMITTED AT UPSTREAM XSEC OF SPECIAL BRIDGE

 40865.000 UNABLE TO EDIT SPECIAL BRIDGE MODEL DUE TO INSUFFICIENT DATA

 41165.000 - NOTE - NH RECORD - VALN =      .500 MAY NOT BE A REASONABLE VALUE

 41605.000 - NOTE - NH RECORD - VALN =      .500 MAY NOT BE A REASONABLE VALUE

 42070.000 - NOTE - NH RECORD - VALN =      .500 MAY NOT BE A REASONABLE VALUE

**          - WARNING - ET RECORD - ENCFP =  1697.100
             POSSIBLE METHOD 1 FIELD REFERENCE ERROR

T1      CHEROKEE COUNTY
T2      100-YEAR FLOODWAY
T3      NOONDAY CREEK
```

```
                                        PRCORFW
1*************************************
 *                                   *
 *              E D I T 2            *
 *                                   *
 *  HEC-2 DATA CHECKER               *
 *  May 1991                         *
 *  FOR THE IBM PC/XT/AT             *
 *                                   *
 *  U.S. ARMY CORPS OF ENGINEERS     *
 *  HYDROLOGIC ENGINEERING CENTER    *
 *  609 SECOND STREET                *
 *  DAVIS, CALIFORNIA 95616-4687     *
 *  (916) 756-1104                   *
 *  RUN DATE 11JUN08  TIME 18:54:39  *
 *                                   *
 *************************************
```

```
T1      CHEROKEE COUNTY, GEORGIA FIS
T2      100-YEAR FLOODWAY (CROSS SECTIONS ADDED)
T3      NOONDAY CREEK
J1    -1       4       0       0       0       0       0       0  855.17

J2     1       0      -1
J3   110     200     150
J5   -10     -10
NC  .120    .120    .075    .100    .300    .000    .000    .000    .000
QT  5.00    5455    8590    9370   10575    9370
ET                                          10.4
X1  6275      32     435     505
GR   902       0   896.4      15   887.2      43   878.2      87   871.6     124
GR 865.2     152   856.4     193   847.8     211   839.7     227   839.1     264
GR 839.0     324   839.2     362   840.3     408   843.4     426   842.3     435
GR 833.2     436   833.2     486   838.5     492   840.4     505   841.6     536
GR 841.1     576   842.3     596   850.3     623   855.6     645   863.7     686
GR 872.1     715   876.2     746   882.7     768   888.4     796   896.9     832
GR 901.7     859   909.8     902
X1  9890      28     144     192    3615    3615    3615
GR   902       0   898.4       8     891      33   883.3      53   873.2      72
GR 866.2      85   858.5     103   849.1     120   842.3     128   843.6     129
GR 842.8     144   837.2     144   837.2     186   842.4     192   842.3     201
GR 842.3     228   843.4     269   845.2     293     848     314     853     334
GR 857.4     344   861.7     365   869.9     407   878.3     447   883.8     491
GR 888.2     519   894.4     559     902     592
X1 17180      31     312     370    7290    7290    7290
GR   902       0   896.6       7     895      41   891.6      56   883.7      70
GR 872.5     105   857.9     140   849.9     156   848.5     168   850.6     173
GR 850.9     192   850.8     246   851.6     292   851.2     312   846.2     318
GR 846.2     364   850.4     370   850.4     405   850.1     494   850.3     558
GR 851.4     617   856.1     650   862.6     653   871.6     677   878.2     708
GR 882.4     726   886.2     742   890.5     759     894     771   897.4     792
GR 902.0     825
ET                                           7.4
X1 20120      31     153     222    2340    2130    2940
GR   902       0   898.3      21   889.3      56   873.5      94   861.2     131
GR 855.7     141   855.2     153   853.6     158   849.2     166   849.2     200
GR 853.3     211   857.5     222   855.7     268   854.5     324   855.7     388
GR 855.4     450   853.5     503     855     586   855.1     660   857.5     793
```

```
GR 856.0     858   855.6     906   862.9   929.0   863.1     954   864.7    1035
GR 866.4    1101   873.3    1164     883    1219   892.5    1253   896.3    1271
GR   902    1282
X1 23410      28     513     574    3290    3290    3290
GR   902       0   896.2      14   889.3      56   877.9     133   871.6     178
GR 868.4     234   864.3     277   861.1     322   857.5     365   858.2     390
GR 858.0     401   858.8     435   860.3     486   860.6     513   857.9     513
GR 853.5     522   853.5     563   858.3     574   856.1     617   861.6     659
GR 864.5     679   868.2     721   887.9     766   880.4     788   889.1     828
GR 893.0     852   896.6     890     902     930
X1 26945      21     168     247    3535    3535    3535
GR   900       0   895.7      19   889.1      37   881.3      65   875.5      82
GR 867.4      98   863.7     119   861.1     139   865.8     147   865.7     168
GR 864.0     172   857.1     181   857.1     214   860.9     216   864.5     247
GR 871.8     262   880.4     282   889.6     305   894.9     318   898.9     329
GR 902.0     354

NC    .1      .1    .065      .3      .5
ET                                     6.4
X1 27500      10    1181    1210     555     555     555
GR 893.5     900   889.5    1000   866.5    1118   867.8    1181   859.4    1185
GR 859.1    1190     859    1200   859.4    1208   865.5    1210   910.5    1400

NC  .080     .08
X1 27620      38    1026    1182     120     120     120
X2     0       0       0   879.2   882.5
BT     6    1000   882.5     880    1026     883   879.2    1147   885.5   882.7
BT 1226.   888.5   884.8    1226   888.5   885.7    1250   889.5   886.6
GR 891.8     500     883     800   882.5     900   882.5    1000     878    1000
GR 871.0    1025     880    1025     880    1026     870    1026   867.5    1040
GR 865.5    1065   880.5    1065   880.5    1066   865.2    1066   861.5    1090
GR 860.5    1106   881.7    1106   881.7    1108   856.5    1108   857.5    1130
GR 857.5    1145   882.8    1145   882.8    1147   857.5    1147   867.1    1180
GR 883.7    1180   883.7    1182   869.1    1182   869.9    1210     875    1225
GR 884.6    1225   884.8    1226     875    1226   884.5    1250   889.5    1250
GR 897.5    1400   897.5    1500     903    1560

QT     5    5250    8270    9025   10180    9025
X1 27700      38    1026    1182      80      80      80
X2     0       0       0   879.2   882.5
BT     6    1000   882.5     880    1026     883   879.2    1147   885.5   882.7
BT  1226   888.5   884.8    1226   888.5   885.7    1250   889.5   886.6
GR 891.8     500     883     800   882.5     900   882.5    1000     878    1000
GR 871.0    1025     880    1025     880    1026     870    1026   867.5    1040
GR 865.5    1065   880.5    1065   880.5    1066   865.2    1066   861.5    1090
GR 860.5    1106   881.7    1106   881.7    1108   856.5    1108   857.5    1130
GR 857.5    1145   882.8    1145   882.8    1147   857.5    1147   867.1    1180
GR 883.7    1180   883.7    1182   869.1    1182   869.9    1210     875    1225
GR 884.6    1225   884.8    1226     875    1226   884.5    1250   889.5    1250
GR 897.5    1400   897.5    1500     903    1560

NC   .12     .12     .07      .1      .3
ET                                    10.4
X1 27805      15    1000    1050    108.     108     108
GR 882.5     500   874.5     600   870.8     700   870.5     800   868.5     900
GR 866.5    1000     861    1005   859.5    1010   859.1    1030   858.6    1040
GR 860.0    1045     867    1050   867.5    1100   898.5    1300   907.5    1400
X1 30185      21     178     208    2380    2280    2380
GR   922       0   907.2      17   893.7      39   880.7      52   871.6      70
GR   868      83   868.5     102   867.1     133   865.7     166   865.3     178
GR   863     179     863     208   868.7     208   870.8     221     875     234
GR 880.3     254   888.4     276   896.1     299   905.6     321   916.4     350
GR 922.0     391
```

```
QT      5    5110    8045    8780    9905    8780
ET                                            0.4
X1  32495      30     164     222    2300    2300    2310
GR   932.       0     930      11   919.9      34   909.5      60   902.3      84
GR  889.7     114   880.6     134   873.9     142     870     152   869.9     164
GR  865.2     175   865.2     221   869.1     222   868.3     237   869.8     245
GR  874.3     257     880     279   886.1     295   891.5     306   898.7     315
GR  899.5     323   898.7     339   907.9     350   914.4     358   914.1     371
GR  918.9     388     923     403   928.1     416     930     428     932     441
ET                                            8.1              35     215
X1    100      11      73     119     500     500     500
GR    890       0     880      30     872      56     870      73     867      80
GR    867     104     872     119     872     150     874     165     880     193
GR    890     230
ET                                            8.1             110     300
X1    200      19     212     264     220     220     220
GR  893.6       0   884.6      60   878.7     100   872.3     103     873     146
GR    873     147   872.7     150     872     200   872.7     205   872.7     206
GR  873.3     212   867.9     216   867.4     258   874.6     264   874.6     266
GR  874.6     267   874.5     300   875.9     308   894.1     345
ET                                            8.1             110     300
X1    300      19     212     264      60      60      60
GR  893.6       0   884.6      60   878.7     100   872.3     103     873     146
GR    873     147   872.7     150     872     200   872.7     205   872.7     206
GR  873.3     212   867.9     216   867.4     258   874.6     264   874.6     266
GR  874.6     267   874.5     300   875.9     308   894.1     345
ET                                            8.1              90     295
X1    400      15     214     257      65      65      65
GR885.62       0  884.54      25  882.17      51  881.61      69  877.10     112
GR872.61     157  873.20     178  873.42     214  867.02     220  865.47     254
GR870.39     257  875.90     269  877.32     293  884.83     308  892.85     320

NC    .05     .05    .045      .3      .5
ET                                            8.1         1110.11 1650.48
X1  34950      26    1130    1170    1105    1605    1610
GR  900.2       0   891.4     100   889.2     200   888.7     300     889     400
GR  889.5     500   889.5     700   890.5     800   889.4     900   886.5    1000
GR  874.5    1100     876    1130     868    1135   867.4    1140     868    1150
GR  868.0    1156   868.7    1166     875    1170   874.5    1200   874.2    1300
GR  873.5    1400   874.5    1500   879.5    1600   884.1    1800   881.5    1900
GR  897.0    2070
ET                                            8.1         1028.25 1181.25
X1  35050      31    1072  1137.5     100     100     100
X2      0       0       0  887.03   891.5
BT      2    1000   891.5  887.22    1203   892.5  887.03
GR  890.5       0   890.4     100   888.2     200   886.4     400     886     500
GR  886.4     600   891.5    1000   885.5    1000   883.5    1010   876.5    1030
GR  874.3    1060   873.6  1068.5   887.7  1068.5   887.7    1072     873    1072
GR  869.4    1080   867.3    1100   868.4    1120   873.9  1137.5     888  1137.5
GR  888.0    1141     874    1141   873.4    1170   875.5    1180   880.5    1190
GR  884.5    1203   892.5    1203   890.5    1400   884.5    1800   884.5    1900
GR  897.0    2160
ET                                            8.1         1028.25 1181.25
X1  35100      31    1072  1137.5      50      50      50
X2      0       0       0  887.03   891.5
BT      2    1000   891.5  887.22    1203   892.5  887.03
GR  890.5       0   890.4     100   888.2     200   886.4     400     886     500
GR  886.4     600   891.5    1000   885.5    1000   883.5    1010   876.5    1030
GR  874.3    1060   873.6  1068.5   887.7  1068.5   887.7    1072     873    1072
GR  869.4    1080   867.3    1100   868.4    1120   873.9  1137.5     888  1137.5
GR  888.0    1141     874    1141   873.4    1170   875.5    1180   880.5    1190
GR  884.5    1203   892.5    1203   890.5    1400   884.5    1800   884.5    1900
```

```
GR   897    2160

NC  .045    .045    .045      .3      .5
ET                                     8.1          1018.5  1171.5
X1 35333      32    1060    1130     233     233     233
X2     0       0       0  885.91     890
BT     2    1000   891.4  885.91    1203   893.2  888.05
GR 891.2       0   890.4     300     890     500   890.3     700   891.3     900
GR 891.4    1000   885.1    1000   883.3    1010   876.5    1030   874.5    1040
GR 874.5    1050     874    1060   870.5    1068     889    1068     889  1071.5
GR 869.8  1071.5   868.5    1090     868    1110   869.1    1120   875.1    1130
GR 874.5  1138.5   889.7  1138.5   889.7    1142   874.2    1142   874.7    1160
GR 876.7    1170   882.2    1190   886.6    1200   887.4    1203   893.2    1203
GR 895.2    1300   900.7    1650
ET                                     8.1          1028.5  1181.5
X1 35703      37    1070    1140     370     370     370
X2     0       0       0  887.23   890.3
BT     2    1000   893.5  887.23    1186     895  889.07
GR 891.6       0   890.5     200   890.3     400   890.6     500   892.4     600
GR 893.2     700   893.8     900   893.5    1000  887.23    1000   886.3    1010
GR 881.0    1020   876.5    1040     874  1060.5   891.8  1060.5   891.8    1064
GR 874.0    1064   874.5    1070   870.6    1080   869.6    1090   868.5    1110
GR 868.5    1120     869    1124   892.6    1124   892.6  1127.5   869.8  1127.5
GR 870.0    1130   874.5    1140   875.4    1150   878.4    1160     889    1180
GR889.07    1186     895    1186   895.2    1233     898    1300     898    1400
GR 898.6    1500   901.8    1700

NC   .12     .12    .075      .1      .3
ET                                     7.1     750    1550
X1 35750      24    1060    1105      47      47      47
GR 905.5     150   893.5     175   885.5     400   886.5     500   881.8     600
GR 881.5     700     880     900   875.5    1000   875.5    1060   874.1    1070
GR 874.1    1080   874.5    1085   868.6    1090   868.6    1097   875.5    1105
GR 874.5    1200   875.4    1300   874.5    1400   875.8    1500   875.8    1600
GR 880.5    2100   886.4    2200   894.4    2300   900.5    2310

QT     5    5050    7955    8680    9790    8680
ET                                     7.1     625    1140
X1 36895      17    1030    1070     600    1500    1215
GR   889     300   888.7     400   887.5     500   882.8     700   875.8     800
GR 875.8     900   878.2    1030   870.3    1035   868.8    1060     869    1065
GR 877.8    1070   878.2    1100     888    1200   894.5    1400     899    1500
GR   907    1600   909.7    1700

NC   .07     .07     .05      .5      .8
ET                                     7.1    1005    1135
X1 36950      30    1050    1100      55      55      55
X2     0       0       0     888     891
X4     2   874.1    1100     888    1144
BT     2    1000   892.3   889.3    1144     891     888
GR 916.2     300   900.8     600   896.9     700   894.2     800   893.2     900
GR 892.3    1000     886    1000   875.8    1030   875.8    1034     892    1034
GR 892.0    1035   875.8    1035   873.2    1050     869    1060   869.5    1070
GR 891.6    1070   891.5    1073   869.7    1073   871.4    1090   875.5    1107
GR 891.3    1107   891.3    1110   876.5    1110   884.5    1130   887.4    1143
GR 891.0    1144   893.4    1300     898    1500   901.2    1600     906    1700
ET                                     7.1    1005    1135
X1 37000      30    1050    1100      50      50      50
X2     0       0       0     888     891
X4     2   874.1    1100     888    1144
BT     2    1000   892.3   889.3    1144     891     888
GR 916.2     300   900.8     600   896.9     700   894.2     800   893.2     900
GR 892.3    1000     886    1000   875.8    1030   875.8    1034     892    1034
```

```
GR 892.0    1035   875.8    1035   873.2    1050     869    1060   869.5    1070
GR 891.6    1070   891.5    1073   869.7    1073   871.4    1090   875.5    1107
GR 891.3    1107   891.3    1110   876.5    1110   884.5    1130   887.4    1143
GR 891.0    1144   893.4    1300     898    1500   901.2    1600     906    1700

NC   .12      .1     .07      .1      .3
ET                                          7.1  625.78 1271.76
X1 37100      19    1050    1090     100     100     100
GR 891.3     400   889.5     500   877.5     600     876     700   877.2     800
GR 876.2     900   876.2    1000     877    1050   871.3    1055   868.3    1060
GR 868.2    1065   869.5    1070   870.8    1090     877    1090     875    1100
GR 878.6    1200     881    1300   885.5    1400     899    1600
ET                                          7.1 1764.4 2229.91
X1 38110      67    2011    2046     950     970    1010
GR 917.8     791   920.4     837   920.7     869   919.4     914   918.2     943
GR 916.0     997   914.4    1025   913.5    1043   912.3    1089   910.7    1096
GR 902.3    1120   893.1    1150   893.1    1156   896.8    1164   897.8    1178
GR 897.7    1185   897.6    1197   897.6    1211   896.4    1229   894.9    1237
GR 896.5    1249   896.8    1260   897.4    1273   897.7    1285   898.4    1297
GR 897.9    1310   895.7    1331   894.9    1337     898    1350   894.2    1381
GR 890.9    1431   886.5    1472   886.9    1522   885.3    1555   885.9    1611
GR 886.8    1660   887.1    1702   884.3    1729   877.6    1788   877.6    1839
GR 877.4    1895   879.7    1937     881    1964   882.5    1981   882.4    2000
GR 881.1    2011   870.5    2016   870.5    2046   879.1    2046   880.3    2056
GR 879.9    2103   879.7    2152   879.2    2208   881.4    2257   882.2    2292
GR 883.3    2295     889    2311   892.3    2340   896.2    2374     903    2401
GR 909.3    2455   915.3    2492   921.1    2531   924.1    2542     928    2573
GR 930.0    2600     932    2617

NC                             .3      .5
NH     3      .2    1000     .06    1160     .25    2200
ET                                          7.1    1000    1600
X1 40790      24    1055    1105    2700    2550    2680
X2                                                                              15
GR 905.3       0   899.2     100     892     300     890     400   889.1     600
GR 889.1     700   889.0     800   888.5     985   882.2    1000     883    1055
GR 877.0    1060   874.2    1070   874.9    1075   874.2    1085   874.7    1090
GR 877.0    1100     882    1105   882.7    1160   882.2    1300   882.5    1500
GR 884.0    1700   891.5    1900   902.8    2000     911    2200

NH     3      .2    1000     .06    1160     .25    2200
ET                                         7.11    1000    1600
X1 40820       0       0       0      10      10      10
X2                                                                              15
SB  1.05     2.0     3.0       0      30       4    1130    5.56     876     876

NH     3      .2    1000     .06    1160     .25    2200
ET                                         7.11    1000    1600
X1 40865       0       0       0      85      85      85
X2     0       0       1     888   889.5                                        15
BT    12     680   891.4       0     860   890.2       0     980   889.6       0
BT  1000   889.6       0    1001   891.6       0    1160   891.6       0    1161
BT 889.5       0    1290   889.6       0    1440   889.8       0    1570   889.8
BT     0    1700   891.1       0    1800     892       0

NC   .12     .12     .06      .1      .3
ET                                          7.1     320     630
X1 41025      15     375     435     100     350     160
GR   892       0   889.4      50   885.8     100   886.4     150   884.7     200
GR 881.2     250   881.6     300   881.4     350   882.2     375     872     385
GR   872     420     883     435   880.8     505     882     650     896     800

NH     7     .15     196     .15     260     .06     335     .05     390     .06
```

```
NH   450      .15      700      .50      950
ET                                         7.1      310      600
X1 41165       14      335      390       90      150      140
GR   892        0    889.4       50   885.20      100    886.8      150    884.2      196
GR   881      260      884      335      873      350      873      385    883.3      390
GR 880.6      450      882      700      884      850      896      950

NH     6      .15      170      .06      215      .05      275      .06      375      .15
NH   925      .50     1400
ET                                         7.1      190      800
X1 41605       14      215      275      420      550      440
X4     1      882      170
GR   896        0    881.4       50    880.7      100    880.8      150    883.2      200
GR 883.4      215      874      230      874      270    883.7      275    881.5      375
GR   881      675      884      925      888     1200      896     1400

NH     5      .12      783      .06      848      .05      904      .12     1550      .50
NH  3151
ET                                         7.1      770     1550
X1 42070       68      848      904      400      400      400
GR 931.6        0      930       45    928.3       64    926.8       82    917.5      126
GR 910.8      138    909.5      149    909.5      164    914.4      175    912.9      192
GR 912.2      223    914.5      254    913.8      296    910.2      327    905.3      374
GR 901.4      412    895.8      470      892      502    887.5      530    884.3      592
GR 881.9      617    882.4      631    884.7      645    882.2      664    880.6      667
GR 878.2      668    878.2      675    881.9      681    882.6      701    882.5      720
GR 885.1      748    883.6      783    883.6      807    883.9      848    876.2      858
GR 876.2      893    885.5      904    885.1      922    882.8      948    881.5     1026
GR 883.2     1121    881.4     1182    881.2     1231    880.5     1240    881.5     1246
GR 881.0     1352      881     1550    882.9     1714    886.3     1820    888.8     1992
GR 891.2     2108      895     2243    900.9     2348    902.5     2491    901.4     2586
GR 899.8     2649    897.8     2731    905.5     2764      906     2798    905.5     2822
GR 907.2     2850    911.5     2905    917.2     2950    922.1     3015    928.4     3054
GR 928.6     3096      930     3114    932.6     3151

NC   .12      .08     .055       .1       .3
QT     5     4880     7680     8380     9460     8380
ET                                         7.1   1697.1  1937.79
X1 44040       22     1858     1933     2030     1850     1970
GR 896.5     1603    896.1     1625    895.2     1640    890.7     1670    885.3     1697
GR 886.8     1719    885.8     1738    881.2     1747    885.6     1767    887.8     1802
GR 887.4     1830    887.4     1858    878.5     1860    878.5     1923      885     1933
GR 895.5     1993    909.5     2029    919.8     2060    919.4     2064    924.6     2080
GR   930     2105    933.1     2111

NC   .12      .12     .065       .1       .3
ET                                         7.1     1380     2150
X1 45890       42     1564     1669     1860     1800     1850
GR 904.4     1331    903.3     1341      896     1382    890.2     1414      889     1443
GR 889.6     1473    891.7     1502    891.7     1536      889     1564    885.4     1572
GR 880.7     1588    880.7     1642    887.5     1656    889.7     1669    888.4     1731
GR 888.0     1812    888.1     1899    888.2     1997    887.1     2072    887.1     2120
GR 887.8     2216    888.2     2302    887.3     2381    889.4     2481    891.9     2557
GR 902.3     2630    906.2     2700    909.3     2806    914.9     2922    920.2     3018
GR 921.7     3082    920.1     3158    918.3     3174    919.2     3222    923.4     3259
GR 923.6     3313    923.8     3369    930.4     3384    929.9     3424    929.9     3461
GR 930.0     3465    932.7     3468

NC   .12      .12     .065       .1       .3
ET                                         7.1   136.27   327.98
X1 46650       22      262      320      720      745      760
GR 908.0        0      904       20      900       50      896       67      892       72
GR 890.0      130      892      180      893      225      892      262    882.2      280
```

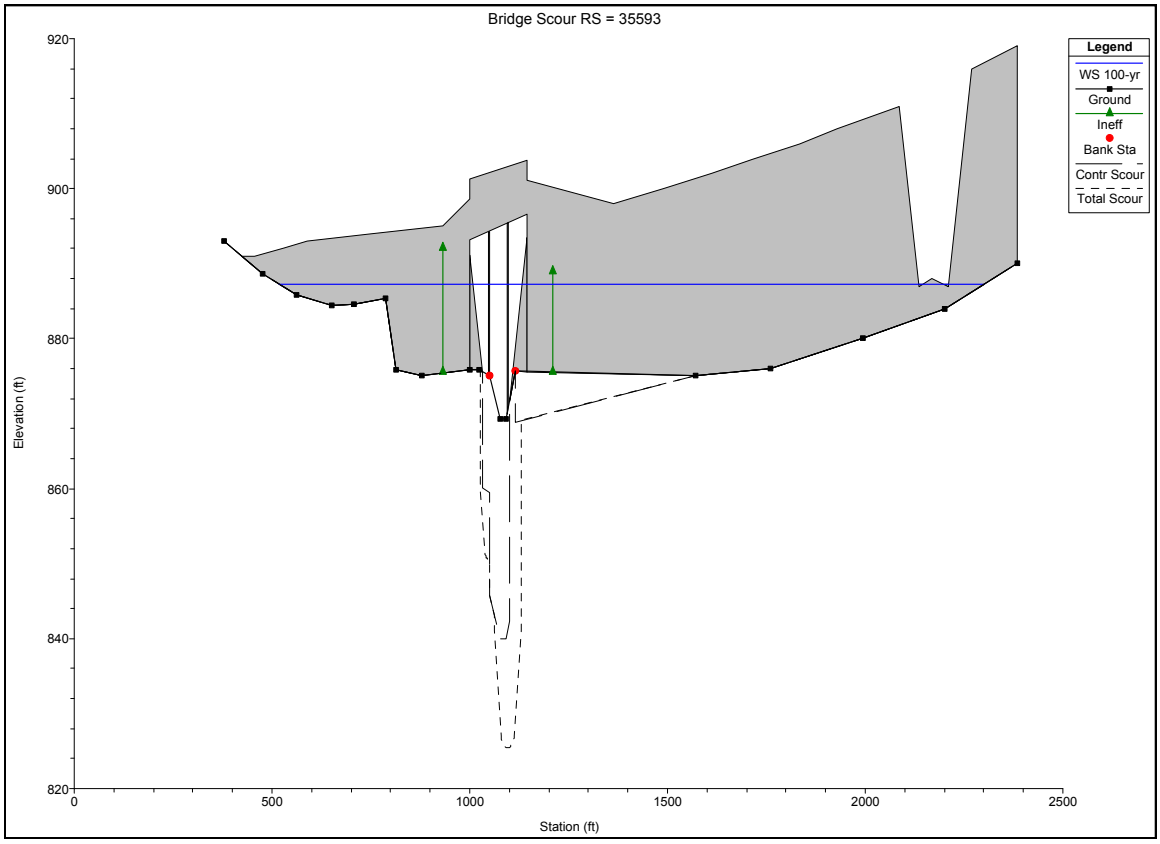
```
                                        PRCORFW
 GR 882.2     305     884     320     888     343     892     347     896     380
 GR 900.0     430     904     500     908     590     911     770     912     850
 GR 916.0    1060     920    1210
 EJ

 T1      CHEROKEE COUNTY
 T2      100-YEAR FLOODWAY
 T3      NOONDAY CREEK
 J1    -1       6                                                     856.17

 J2    15              -1



 ER
1SUMMARY OF ERRORS
0
 T1      CHEROKEE COUNTY, GEORGIA FIS
 T2      100-YEAR FLOODWAY (CROSS SECTIONS ADDED)
 T3      NOONDAY CREEK
  27620.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

  27700.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

 **          - WARNING - ET RECORD - ENCFP =  1110.110
              POSSIBLE METHOD 1 FIELD REFERENCE ERROR

  35050.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

  35100.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

  35333.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

  35703.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

  36950.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

  37000.000 - NOTE - NORMAL BRIDGE SHOULD NOT BE SPECIFIED ON BOTH
                     X2 AND BT RECORDS

  40865.000 - CAUTION - X3 RECORD OMITTED AT DOWNSTREAM XSEC OF SPECIAL BRIDGE

  40865.000 - CAUTION - X3 RECORD OMITTED AT UPSTREAM XSEC OF SPECIAL BRIDGE

  40865.000 UNABLE TO EDIT SPECIAL BRIDGE MODEL DUE TO INSUFFICIENT DATA

  41165.000 - NOTE - NH RECORD - VALN =      .500 MAY NOT BE A REASONABLE VALUE

  41605.000 - NOTE - NH RECORD - VALN =      .500 MAY NOT BE A REASONABLE VALUE

  42070.000 - NOTE - NH RECORD - VALN =      .500 MAY NOT BE A REASONABLE VALUE

 **          - WARNING - ET RECORD - ENCFP =  1697.100
              POSSIBLE METHOD 1 FIELD REFERENCE ERROR

 T1      CHEROKEE COUNTY
```

T2 100-YEAR FLOODWAY
T3 NOONDAY CREEK

Section VII
Scour Summary and Riprap Calculations

PROPOSED MODEL BRIDGE SCOUR

Proposed 100-yr



Hydraulic Design Data
Contraction Scour

	Left	Channel	Right
Input Data			
Average Depth (ft):	7.22	16.99	11.42
Approach Velocity (ft/s):	0.63	2.26	0.70
Br Average Depth (ft):	8.31	15.28	4.38
BR Opening Flow (cfs):	1796.07	6982.97	328.96
BR Top WD (ft):	39.31	59.00	17.51
Grain Size D50 (mm):	0.24	0.24	0.24
Approach Flow (cfs):	2471.96	2231.22	4404.82
Approach Top WD (ft):	547.00	58.00	553.00
K1 Coefficient:	0.640	0.690	0.640
Results			
Scour Depth Ys (ft):	15.55	29.36	6.75
Critical Velocity (ft/s):	1.44	1.66	1.55
Equation:	Clear	Live	Clear

Pier Scour

Pier: #1 (CL = 1048)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	4.00
Grain Size D50 (mm):	0.24000
Depth Upstream (ft):	12.96
Velocity Upstream (ft/s):	1.53
K1 Nose Shape:	1.00
Pier Angle:	10.00
Pier Length (ft):	48.00
K2 Angle Coef:	2.07
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	4.75000
K4 Armouring Coef:	1.00

Set K1 value to 1.0 because angle > 5 degrees

Results

Scour Depth Ys (ft):	9.02
Froude #:	0.07
Equation:	CSU equation

Pier: #2 (CL = 1096)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	4.00
Grain Size D50 (mm):	0.24000
Depth Upstream (ft):	17.63
Velocity Upstream (ft/s):	4.99
K1 Nose Shape:	1.00
Pier Angle:	10.00
Pier Length (ft):	48.00
K2 Angle Coef:	2.07
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	4.75000
K4 Armouring Coef:	1.00

Set K1 value to 1.0 because angle > 5 degrees

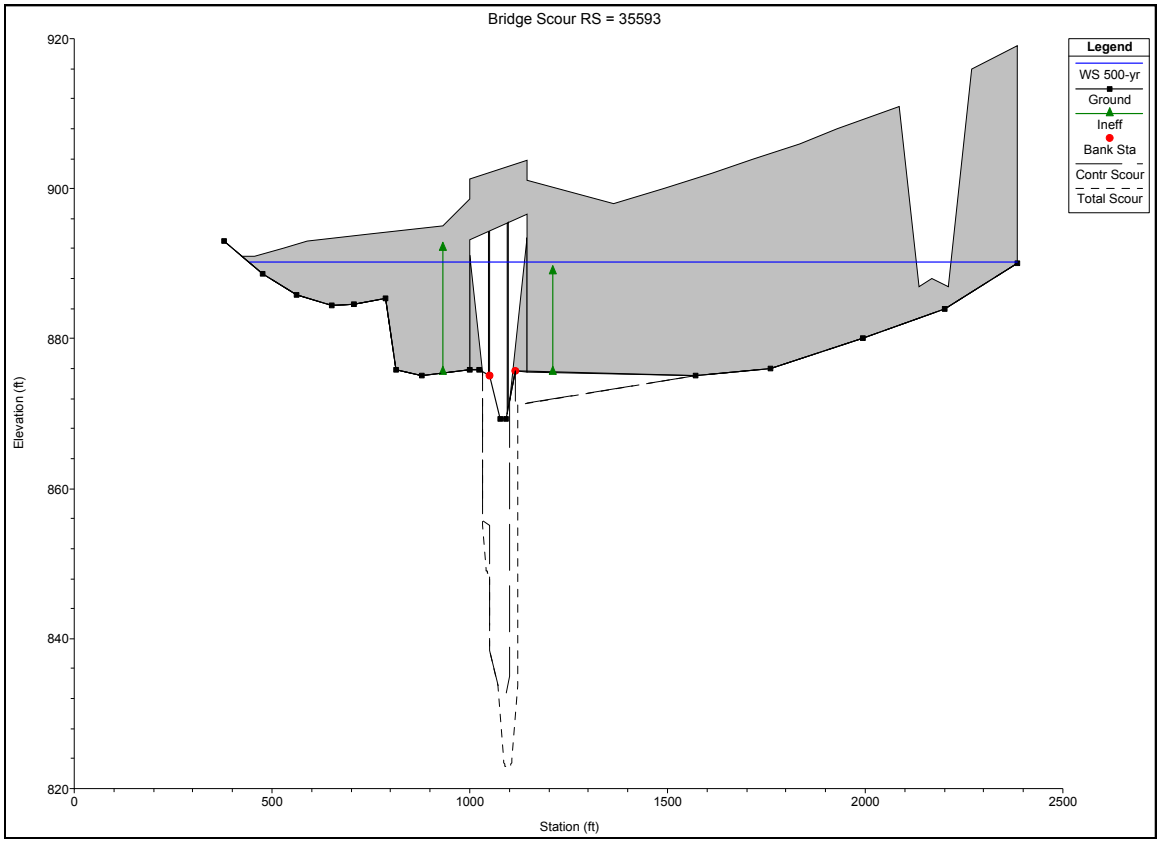
Results

Scour Depth Ys (ft):	15.64
Froude #:	0.21
Equation:	CSU equation

Combined Scour Depths

Pier : #1 (CL = 1048) (Contr + Pier) (ft):	29.4 + 9.0 = 38.4
Pier : #2 (CL = 1096) (Contr + Pier) (ft):	29.4 + 15.6 = 45.0

Proposed 500-yr



Hydraulic Design Data
Contraction Scour

	Left	Channel	Right
Input Data			
Average Depth (ft):	10.03	19.80	13.08
Approach Velocity (ft/s):	0.58	2.29	0.69
Br Average Depth (ft):	9.91	18.11	3.17
BR Opening Flow (cfs):	2669.14	8732.33	1347.53
BR Top WD (ft):	44.97	59.00	111.18
Grain Size D50 (mm):	0.24	0.24	0.24
Approach Flow (cfs):	3159.38	2626.21	6963.41
Approach Top WD (ft):	547.00	58.00	775.27
K1 Coefficient:	0.640	0.690	0.640
Results			
Scour Depth Ys (ft):	19.96	36.68	4.47
Critical Velocity (ft/s):	1.52	1.70	1.59
Equation:	Clear	Live	Clear

Pier Scour

Pier: #1 (CL = 1048)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	4.00
Grain Size D50 (mm):	0.24000
Depth Upstream (ft):	16.09
Velocity Upstream (ft/s):	0.66
K1 Nose Shape:	1.00
Pier Angle:	10.00
Pier Length (ft):	48.00
K2 Angle Coef:	2.07
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	4.75000
K4 Armouring Coef:	1.00

Set K1 value to 1.0 because angle > 5 degrees

Results

Scour Depth Ys (ft):	6.45
Froude #:	0.03
Equation:	CSU equation

Pier: #2 (CL = 1096)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	4.00
Grain Size D50 (mm):	0.24000
Depth Upstream (ft):	20.75
Velocity Upstream (ft/s):	2.06
K1 Nose Shape:	1.00
Pier Angle:	10.00
Pier Length (ft):	48.00
K2 Angle Coef:	2.07
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	4.75000
K4 Armouring Coef:	1.00

Set K1 value to 1.0 because angle > 5 degrees

Results

Scour Depth Ys (ft):	10.92
Froude #:	0.08
Equation:	CSU equation

Combined Scour Depths

Pier : #1 (CL = 1048) (Contr + Pier) (ft):	36.7 + 6.5 = 43.2
Pier : #2 (CL = 1096) (Contr + Pier) (ft):	36.7 + 10.9 = 47.6

NH000-0575-01(028)
I-575 over Noonday Creek North, Cherokee County, Georgia
P.I. No. 713640

General and Local Scour Calculations - 100 Year
Pier Width = 4.0 ft

Q100 Total=	9108	k_1 =	0.69
Pier Width in Channel=	0.0	D50 (ft) =	0.00078

Bridge Section*

WSEL = 887.30

	Left Overbank	Channel	Right Overbank
Flow (ft^3/s)	1796.07	6982.97	328.96
Top Width (ft)	39.31	59.00	17.51
Avg. Velocity (ft/s)	5.50	7.74	4.29
Hydr. Depth (ft)	8.31	15.28	4.38
Critical Velocity V_c=	**1.43**	**1.65**	**1.55**

Approach Section*

WSEL = 888.45

	Left Overbank	Channel	Right Overbank
Flow (ft^3/s)	2471.96	2231.22	4404.82
Top Width (ft)	557.27	58.00	767.53
Avg. Velocity (ft/s)	0.63	2.26	0.70
Hydr. Depth (ft)	7.22	16.99	11.42

Summary of Data (General Scour)

	Left OB	Channel	Right OB	
Q (Approach) =	2471.96	2231.22	4404.82	
Q (Bridge) =	1796.07	6982.97	328.96	
W(Approach) =	557.27	58.00	767.53	
W(Bridge) =	39.31	59.00	17.51	
Y1(Approach) =	7.22	16.99	11.42	
GENERAL SCOUR (ft)	15.49	29.37	6.73	Use 1.0 ft min.
SCOUR MODE	CLEAR	LIVE	CLEAR	

Local Scour Calculation and General Scour Summary for the 100-Year Storm

Q100 =	9108	Pressure scour factor =	1.0
WSEL=	887.30	Angle of Attack, q, deg =	10.0

Bent	Pier Width (a)	Pier Length (L)	V1	Fr1	K1	K2	K3	GR Elev	Y1	Pier Scour YS p	General Scour**	Local Scour	Total Scour
2	4	48.0	1.53	0.07	1.0	2.07	1.1	875.1	12.96	9.02	**29.4**	**9.0**	**38.4**
3	4	48.0	4.99	0.21	1.0	2.07	1.1	870.6	17.63	15.63	**29.4**	**15.6**	**45.0**

* All input data obtained from HEC-RAS cross section output.
** Channel scour values were used.

NH000-0575-01(028)
I-575 over Noonday Creek North, Cherokee County, Georgia
P.I. No. 713640

General and Local Scour Calculations - 500 Year
Pier Width = 4.0 ft

Q500 Total=	12749	k_1 =	0.69
Pier Width in Channel=	0.0	D50 (ft) =	0.00078

Bridge Section*

WSEL = 890.13

	Left Overbank	Channel	Right Overbank
Flow (ft^3/s)	2669.14	8732.33	1347.53
Top Width (ft)	44.97	59.00	111.18
Avg. Velocity (ft/s)	5.99	8.17	3.83
Hydr. Depth (ft)	9.91	18.11	3.17
Critical Velocity V_c=	**1.51**	**1.69**	**1.58**

Approach Section*

WSEL = 891.26

	Left Overbank	Channel	Right Overbank
Flow (ft^3/s)	3159.38	2626.21	6963.41
Top Width (ft)	621.43	58.00	775.27
Avg. Velocity (ft/s)	0.58	2.29	0.69
Hydr. Depth (ft)	10.03	19.80	13.08

Summary of Data (General Scour)

	Left OB	Channel	Right OB	
Q (Approach) =	3159.38	2626.21	6963.41	
Q (Bridge) =	2669.14	8732.33	1347.53	
W(Approach) =	621.43	58.00	775.27	
W(Bridge) =	44.97	59.00	111.18	
Y1(Approach) =	10.03	19.80	13.08	
GENERAL SCOUR (ft)	19.87	36.69	4.46	Use 1.0 ft min.
SCOUR MODE	CLEAR	LIVE	CLEAR	

Local Scour Calculation and General Scour Summary for the 500-Year Storm

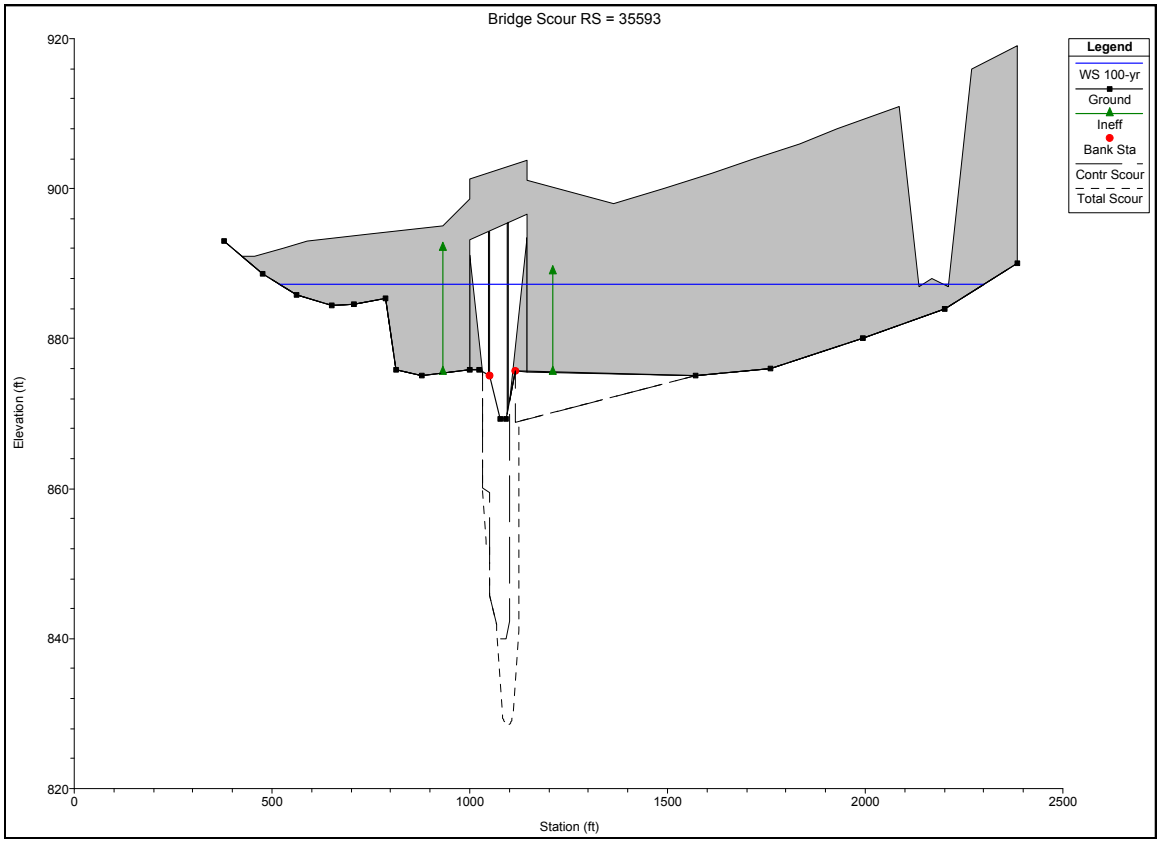
Q500 = 12749 Pressure scour factor = 1.0
WSEL= 890.13 Angle of Attack, q, deg = 10.0

Bent	Pier Width (a)	Pier Length (L)	V1	Fr1	K1	K2	K3	GR Elev	Y1	Pier Scour YS p	General Scour**	Local Scour	Total Scour
2	4	48.0	0.66	0.03	1.0	2.07	1.1	875.1	16.09	6.47	**36.7**	**6.5**	**43.2**
3	4	48.0	2.06	0.08	1.0	2.07	1.1	870.6	20.75	10.92	**36.7**	**10.9**	**47.6**

* All input data obtained from HEC-RAS cross section output.
** Channel scour values were used.

EXISTING MODEL BRIDGE SCOUR

Existing 100-yr



Hydraulic Design Data
Contraction Scour

	Left	Channel	Right
Input Data			
Average Depth (ft):	7.22	16.99	11.42
Approach Velocity (ft/s):	0.63	2.26	0.70
Br Average Depth (ft):	8.31	15.28	4.38
BR Opening Flow (cfs):	1796.07	6982.97	328.96
BR Top WD (ft):	39.31	59.00	17.51
Grain Size D50 (mm):	0.24	0.24	0.24
Approach Flow (cfs):	2471.96	2231.22	4404.82
Approach Top WD (ft):	547.00	58.00	553.00
K1 Coefficient:	0.640	0.690	0.640
Results			
Scour Depth Ys (ft):	15.55	29.36	6.75
Critical Velocity (ft/s):	1.44	1.66	1.55
Equation:	Clear	Live	Clear

Pier Scour

Pier: #1 (CL = 1048)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	4.00
Grain Size D50 (mm):	0.24000
Depth Upstream (ft):	12.96
Velocity Upstream (ft/s):	1.53
K1 Nose Shape:	1.00
Pier Angle:	10.00
Pier Length (ft):	28.00
K2 Angle Coef:	1.67
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	4.75000
K4 Armouring Coef:	1.00

Set K1 value to 1.0 because angle > 5 degrees

Results

Scour Depth Ys (ft):	7.28
Froude #:	0.07
Equation:	CSU equation

Pier: #2 (CL = 1096)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	4.00
Grain Size D50 (mm):	0.24000
Depth Upstream (ft):	17.63
Velocity Upstream (ft/s):	4.99
K1 Nose Shape:	1.00
Pier Angle:	10.00
Pier Length (ft):	28.00
K2 Angle Coef:	1.67
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	4.75000
K4 Armouring Coef:	1.00

Set K1 value to 1.0 because angle > 5 degrees

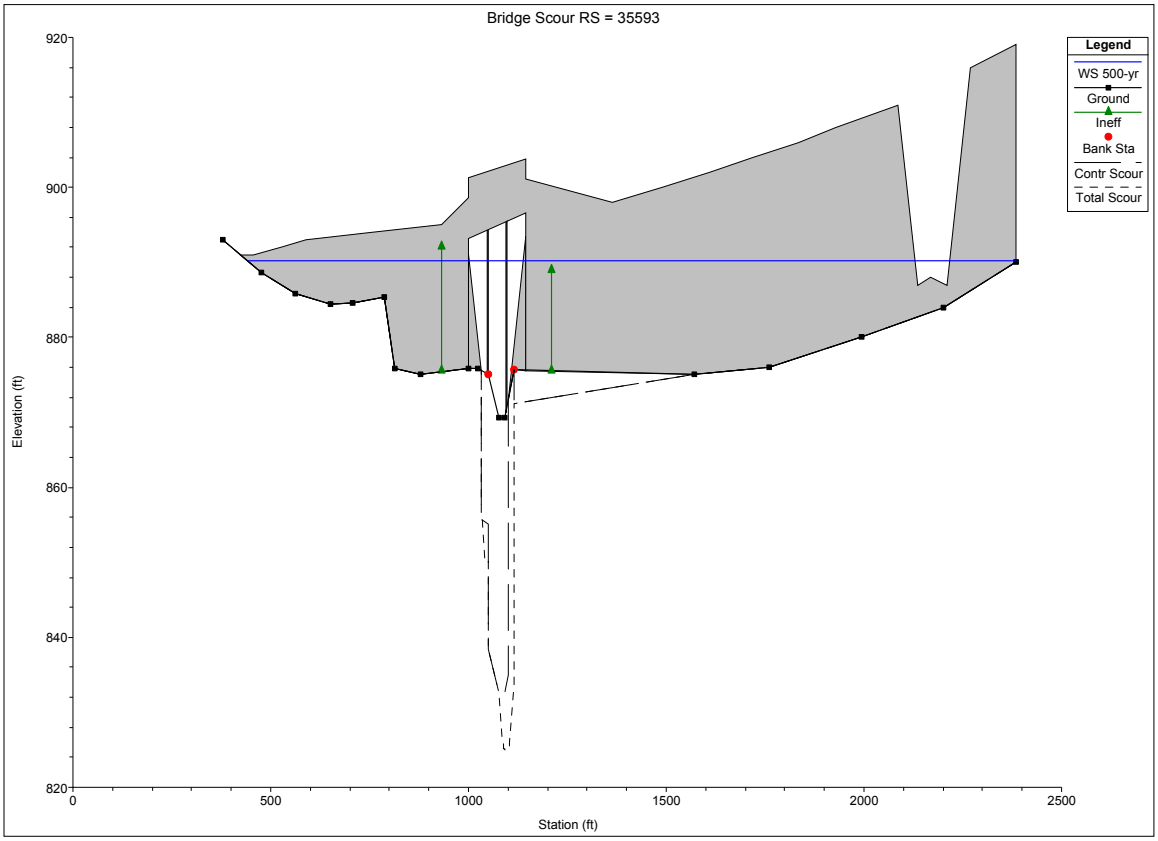
Results

Scour Depth Ys (ft):	12.62
Froude #:	0.21
Equation:	CSU equation

Combined Scour Depths

Pier : #1 (CL = 1048) (Contr + Pier) (ft):	29.4 + 7.3 = 36.7
Pier : #2 (CL = 1096) (Contr + Pier) (ft):	29.4 + 12.6 = 42.0

Existing 500-yr



Hydraulic Design Data
Contraction Scour

	Left	Channel	Right
Input Data			
Average Depth (ft):	10.03	19.80	13.08
Approach Velocity (ft/s):	0.58	2.29	0.69
Br Average Depth (ft):	9.91	18.11	3.17
BR Opening Flow (cfs):	2669.14	8732.33	1347.53
BR Top WD (ft):	44.97	59.00	111.18
Grain Size D50 (mm):	0.24	0.24	0.24
Approach Flow (cfs):	3159.38	2626.21	6963.41
Approach Top WD (ft):	547.00	58.00	775.27
K1 Coefficient:	0.640	0.690	0.640
Results			
Scour Depth Ys (ft):	19.96	36.68	4.47
Critical Velocity (ft/s):	1.52	1.70	1.59
Equation:	Clear	Live	Clear

Pier Scour

Pier: #1 (CL = 1048)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	4.00
Grain Size D50 (mm):	0.24000
Depth Upstream (ft):	16.09
Velocity Upstream (ft/s):	0.66
K1 Nose Shape:	1.00
Pier Angle:	10.00
Pier Length (ft):	28.00
K2 Angle Coef:	1.67
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	4.75000
K4 Armouring Coef:	1.00

Set K1 value to 1.0 because angle > 5 degrees

Results

Scour Depth Ys (ft):	5.20
Froude #:	0.03
Equation:	CSU equation

Pier: #2 (CL = 1096)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	4.00
Grain Size D50 (mm):	0.24000
Depth Upstream (ft):	20.75
Velocity Upstream (ft/s):	2.06
K1 Nose Shape:	1.00
Pier Angle:	10.00
Pier Length (ft):	28.00
K2 Angle Coef:	1.67
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	4.75000
K4 Armouring Coef:	1.00

Set K1 value to 1.0 because angle > 5 degrees

Results

Scour Depth Ys (ft):	8.81
Froude #:	0.08
Equation:	CSU equation

Combined Scour Depths

Pier : #1 (CL = 1048) (Contr + Pier) (ft):	36.7 + 5.2 = 41.9
Pier : #2 (CL = 1096) (Contr + Pier) (ft):	36.7 + 8.8 = 45.5

RIPRAP CALCULATIONS

NH000-0575-01(028)

I-575 over Noonday Creek North, Cherokee County, Georgia

P.I. No. 713640

ENDROLL RIPRAP CALCULATIONS

100 YEAR STORM
METHOD IN HEC-18,"EVALUATING SCOUR AT BRIDGES" (Nov. 1995)

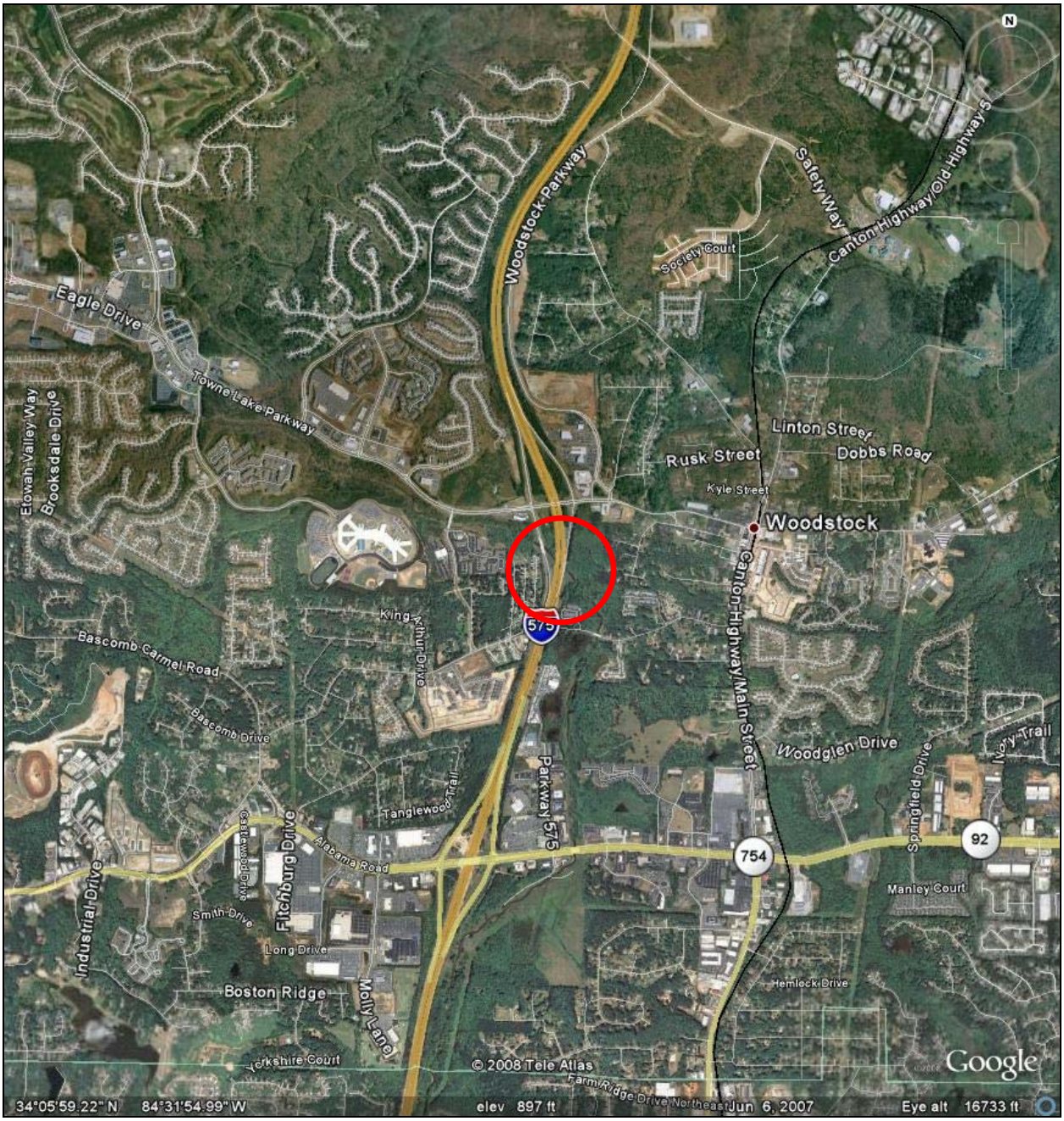
Widening Bridge

BRIDGE ABUTMENT LOCATION	0010+21	0010+96
SET BACK LENGTH (ft)=	17	21
MAIN CHANNEL AREA @ BRIDGE (sq. ft) =	1039	1039
TOP WIDTH OF MAIN CHANNEL @ BRIDGE (ft)=	63	63
AVERAGE DEPTH OF MAIN CHANNEL @ BR (ft)=	16.49	16.49
SET BACK RATIO =	1.031	1.273
CHARACTERISTIC AVG VELOCITY CALCULATIONS (SEE PAGE 114)		
DISCHARGE (cfs) =	9108	9108
AREA @ ABUTMENT (sq. ft) =	17105.4	17105.4
AVERAGE VELOCITY, V (ft/s) =	0.53	0.53
AREA OF OVERBANK FLOW (sq. ft)=	326.56	76.62
LENGTH OF OVERBANK FLOW (ft)=	39.31	17.51
AVERAGE DEPTH OF OVERBANK FLOW(ft) =	8.31	4.38
FROUDE NUMBER =	0.033	0.045
For Spill Through Abutments:		
IF FROUDE NUMBER <= 0.80, THEN D50 (FT) =	0.005	0.005
IF FROUDE NUMBER > 0.80, THEN D50 (FT) =	1.177	0.678
MEDIAN STONE DIAMETER REQUIRED, D50 (ft)=	0.005	0.005
TYPE OF RIPRAP REQUIRED =	TYPE 3	TYPE 3
EXTENT OF RIPRAP REQUIRED =	17 FT	10 FT

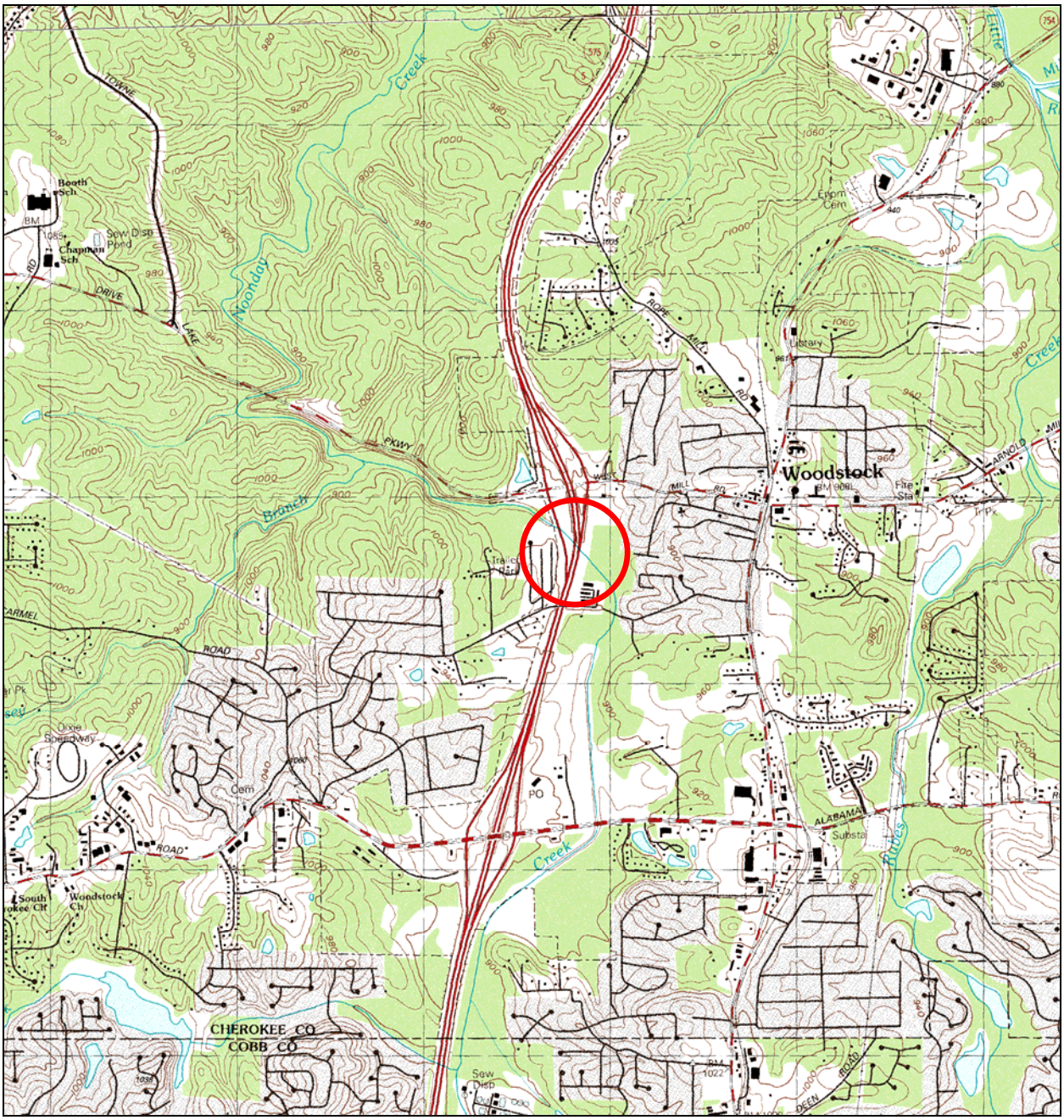
Note: Type I Rip Rap will be used.

Section VIII
Appendix

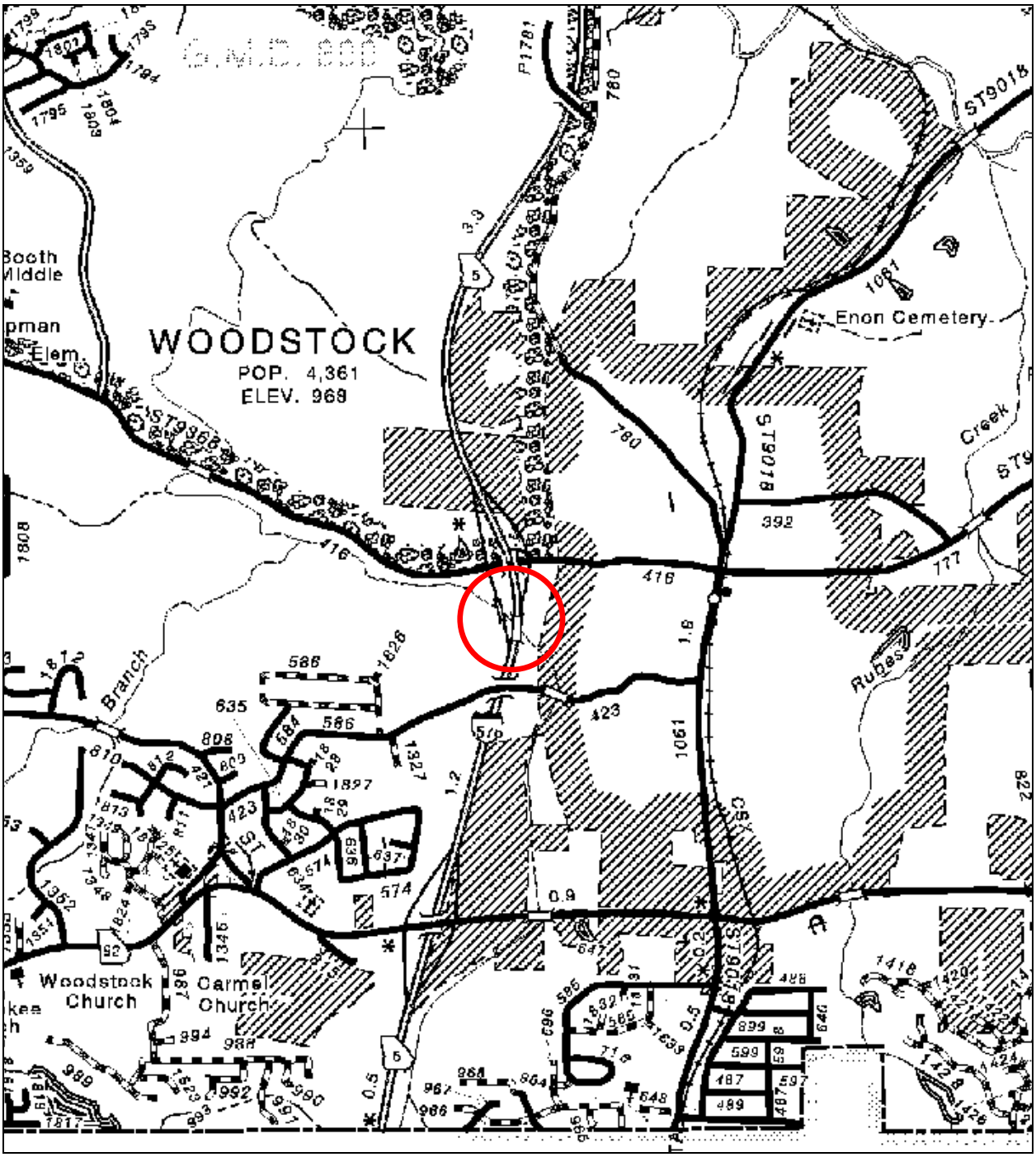
LOCATION MAPS



NH000-0575-01(028)
PI No. 713640
Cherokee County, Georgia
I-575 over Noonday Creek North



NH000-0575-01(028)
PI No. 713640
Cherokee County, Georgia
I-575 over Noonday Creek North



NH000-0575-01(028)
PI No. 713640
Cherokee County, Georgia
I-575 over Noonday Creek North

PROJECT PHOTOGRAPHS

Looking north from I-575 northbound bridge

Looking south along I-575 northbound bridge

Looking at southbound deck from northbound deck

Looking upstream from underneath northbound bridge

Looking downstream from underneath northbound bridge

Looking at ditch located upstream of northeastern abutment of northbound bridge

Outlet ditch just upstream of northbound bridge

Bank instability caused by the outflow from ditch

Bank instability caused by the outflow from ditch

Southern abutment northbound bridge

Bent #2 southbound bridge

Bent #3 southbound bridge

Looking upstream from underneath southbound bridge

Looking downstream from underneath southbound bridge

Foundation bent #3 southbound bridge

Southern abutment southbound bridge

Northern floodplain between southbound bridge and downstream ramp bridge

Looking upstream from underneath ramp to south I-575 bridge

Looking downstream from underneath ramp to south I-575 bridge

Bank instability downstream ramp to south I-575 bridge

Southern abutment ramp to south I-575 bridge

Northwestern floodplain

Looking downstream from ramp to south I-575 bridge

Looking south along ramp to south I-575

Looking upstream from ramp to south I-575 bridge

Looking north along ramp to south I-575

Looking north along southbound I-575

Looking downstream from southbound I-575 bridge

Looking south along southbound I-575

Looking south along northbound I-575

Looking downstream from northbound bridge

Looking upstream from northbound bridge

Southeastern floodplain

Southwestern floodplain

Looking west along Dupree Rd (upstream structure)

Looking downstream from Dupree Rd bridge

Looking upstream from Dupree Rd bridge

Looking upstream through Dupree Rd Bridge

Western abutment Dupree Rd bridge

Debris at bent #3 Dupree Rd bridge

Looking downstream from Stone Bridge Pkwy (Downstream of ramp to south I-575 bridge)

Looking upstream from Stone Bridge Pkwy bridge

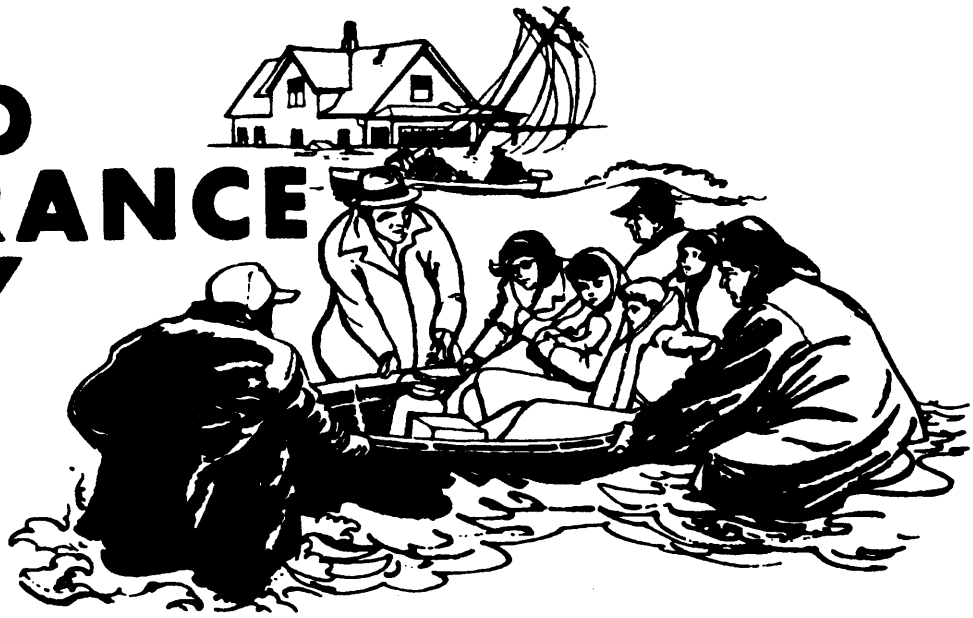
Looking downstream at Stone Bridge Pkwy bridge

Looking downstream at Stone Bridge Pkwy bridge

Looking north along Stone Bridge Pkwy

FEMA DATA

FLOOD INSURANCE STUDY

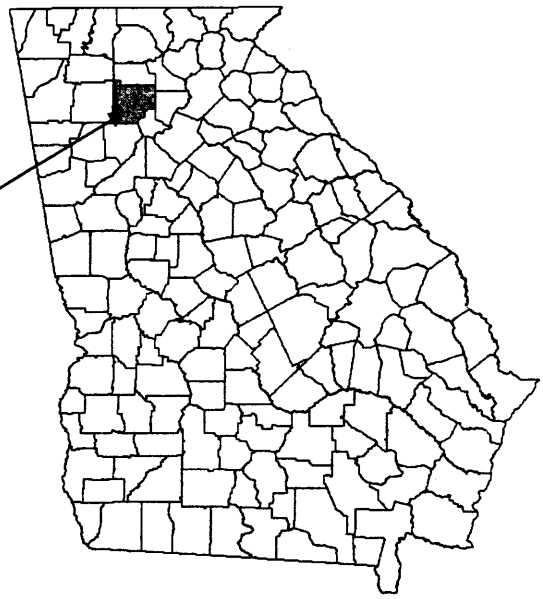


CHEROKEE COUNTY, GEORGIA

AND INCORPORATED AREAS

Community Name	*Community Number*
*BALL GROUND, CITY OF	130423
CANTON, CITY OF	130039
CHEROKEE COUNTY (UNINCORPORATED AREAS)	130424
HOLLY SPRINGS, CITY OF	130425
WALESKA, CITY OF	130031
WOODSTOCK, CITY OF	130264

*No Flood Hazard Areas Identified



Revised: September 29, 2006

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
13057CV000A

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) report may not contain all data available within the Community Map Repository. Please contact the Community Map Repository for any additional data.

The Federal Emergency Management Agency (FEMA) may revise and republish part or all of this FIS report at any time. In addition, FEMA may revise part of this FIS report by the Letter of Map Revision process, which does not involve republication or redistribution of the FIS report. Therefore, users should consult with community officials and check the Community Map Repository to obtain the most current FIS report components.

Initial Countywide FIS Effective Date:	July 15, 1988
Revision Dates:	September 14, 1990
	September 29, 2006

TABLE OF CONTENTS

1.0 INTRODUCTION 1

1.1 Purpose of Study 1

1.2 Authority and Acknowledgments 1

1.3 Coordination 2

2.0 AREA STUDIED 2

2.1 Scope of Study 2

2.2 Community Description 7

2.3 Principal Flood Problems 7

2.4 Flood Protection Measures 8

3.0 ENGINEERING METHODS 8

3.1 Hydrologic Analyses 8

3.2 Hydraulic Analyses 13

3.3 Vertical Datum 15

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS 17

4.1 Floodplain Boundaries 17

4.2 Floodways 18

5.0 INSURANCE APPLICATIONS 34

6.0 FLOOD INSURANCE RATE MAP 35

7.0 OTHER STUDIES 35

8.0 LOCATION OF DATA 37

9.0 BIBLIOGRAPHY AND REFERENCES 37

TABLE OF CONTENTS (*Continued*)

FIGURES

Figure 1 - Floodway Schematic 34

TABLES

Table 1 – Streams Studied by Detailed Methods 3
Table 2 – Redelineated Streams 5
Table 3 – Streams Studied by Limited Detailed Methods 6
Table 4 – Summary of Discharges 11
Table 5 – Summary of Stillwater Elevations 12
Table 6 – Vertical Datum Conversion 16
Table 7 – Floodway Data Table 19
Table 8 – Community Map History 36

EXHIBITS

Exhibit 1 - Flood Profiles

Avery Creek	Panels 01P-03P
Canton Creek	Panel 04P
Clark Creek	Panels 05P-09P
Etowah River	Panels 10P-14P
Kellogg Creek	Panels 15P-16P
Little River	Panels 17P-20P
Mill Creek	Panels 21P-22P
Noonday Creek	Panels 23P-24P
Owl Creek	Panels 25P-31P
Rocky Creek	Panels 32P-33P
Rubes Creek	Panels 34P-37P
Rubes Creek Tributary	Panels 38P-39P
Smithwick Creek	Panel 40P
Tate Creek	Panel 41P
Toonigh Creek	Panels 42P-44P
Tributary L	Panels 45P-47P
Tributary M	Panels 48P-49P
Unnamed Tributary to Smithwick Creek	Panel 50P

Exhibit 2 - Flood Insurance Rate Map Index
Flood Insurance Rate Map

FLOOD INSURANCE STUDY
CHEROKEE COUNTY, GEORGIA AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and updates information on the existence and severity of flood hazards in the geographic area of Cherokee County, including the Cities of Ball Ground, Canton, Holly Springs, Waleska, Woodstock; and the unincorporated areas of Cherokee County (referred to collectively herein as Cherokee County), and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood-risk data for various areas of the community that will be used to establish actuarial flood insurance rates and to assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

Please note that the majority of the Cities of Mountain Park and Nelson are geographically located in Fulton and Pickens Counties, respectively. Therefore they were not included in this FIS report. See the separately printed FIS report and Flood Insurance Rate Maps (FIRMs) for flood hazard information.

Please note that the City of Ball Ground does not have any flood hazard areas identified.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the State (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgments

The sources of authority for this FIS are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for the initial countywide study (Reference 1) were performed by the U.S. Army Corps of Engineers (USACE), Mobile District, for the Federal Emergency Management Agency (FEMA), under Interagency Agreement No. EMW-E-1153, Project Order No. 1. The work was completed in July 1985.

The hydraulic analyses for the September 14, 1990, revision (Reference 2) were performed by Browning Engineering Associates, Inc., by the USACE, Charleston District, and by Braswell Engineering, Inc.

For this revision, the work done for the redelineated streams and the streams studied by limited detailed methods were performed by PBS&J, for the Georgia Department of Natural Resources (DNR), under Contract No. EMA-2003-GR-5369 with FEMA. The work was completed in April 2005.

The hydrologic and hydraulic analyses for Tate Creek was performed by PBS&J, for FEMA, under Contract No. EMW-88-C-2614. The study was completed in May 1989 (Reference 3).

1.3 Coordination

The initial coordination meeting for the initial countywide FIS report was held on August 9, 1983, and attended by representatives of FEMA, the USACE, Mobile District, and Cherokee County. The purpose of the initial meeting was to discuss the scope of the FIS.

The results of the study were reviewed at the final meeting held on December 11, 1986, and attended by representatives of FEMA, the USACE, Mobile District, and Cherokee County. All problems raised at that meeting were addressed.

For this countywide FIS report, a scoping meeting was held on September 22, 2004, and attended by representatives of Cherokee County, the City of Canton, the Georgia DNR, FEMA, Black and Veatch, and PBS&J. The purpose of this meeting was to discuss the scope of the FIS. A final coordination meeting was held on December 8, 2005. Attending the meeting were representatives of Cherokee County, the Georgia DNR, FEMA, and PBS&J. All problems raised at that meeting have been addressed.

2.0 AREA STUDIED

2.1 Scope of Study

For this revision the FIS covers the geographic area of Cherokee County, Georgia, including the incorporated communities listed in Section 1.1. The areas studied by detailed methods were selected with priority given to all known flood hazards and areas of projected development or proposed construction through July 1990. Table 1 lists the streams studied by detailed methods in this FIS report.

Table 1 – Streams Studied by Detailed Methods

Stream	Limits of Detailed Study
Avery Creek	From the confluence with Mill Creek to approximately 4,000 feet upstream of Hickory Road
Canton Creek	From the confluence with Etowah River to approximately 4,650 feet upstream of Georgia Northeastern Railroad
Clark Creek	From approximately 1,450 downstream of State Highway 92/Cherokee Road to approximately 2,250 feet upstream of Dunnwood Drive
Etowah River	From approximately 4,300 feet downstream of State Highway 20/Knox Bridge Highway to approximately 40,200 feet upstream of Georgia Northeastern Railroad
Kellogg Creek	From the confluence with Allatoona Lake to approximately 2,320 feet upstream of Woodstock Road
Little River	From Interstate Highway 575/State Highway 5 to approximately 6,150 feet upstream of the confluence of Rocky Creek
Mill Creek	From the confluence with Little River to approximately 1,200 feet upstream of Hickory Flat Highway/State Highway 140
Noonday Creek	From the confluence with Little River to the county boundary
Owl Creek	From the confluence with Allatoona Lake to approximately 150 feet upstream of Dogwood Lane
Rocky Creek	From the confluence with Little River to approximately 3,200 feet upstream of Cox Road
Rubes Creek	From the confluence with Little River to approximately 5,150 feet upstream of Alabama Road/State Highway 92
Rubes Creek Tributary	From the confluence with Rubes Creek to approximately 550 feet upstream of Justin Drive
Smithwick Creek	From approximately 5,000 feet upstream of Old Darnell Road to approximately 9,100 feet upstream of Old Darnell Road

Table 1 – Streams Studied by Detailed Methods

Stream	Limits of Detailed Study
Tate Creek	From approximately 250 feet upstream of Interstate Highway 575/State Highway 5 to approximately 5,100 feet upstream of Flooding Retarding Structure No. 17
Toonigh Creek	From the confluence with Little River to approximately 1,650 feet upstream of Hickory Road
Tributary L	From the confluence with Little River to approximately 1,350 feet upstream of Cherecobb Drive
Tributary M	From the confluence with Mill Creek to approximately 450 feet upstream of South Holly Spings Road
Unnamed Tributary to Smithwick Creek	From the confluence with Smithwick Creek to approximately 710 feet upstream of the confluence with Smithwick Creek

Initial Countywide FIS Report (July 15, 1988)

In the initial countywide FIS report, flooding caused by the overflow of Avery Creek, Canton Creek, Clark Creek, the Etowah River, Kellogg Creek, the Little River, Mill Creek, Mill Creek Tributary, Noonday Creek, Owl Creek, Rocky Creek, Rubes Creek, Tate Creek, Toonigh Creek, Tributary L, and Tributary M were studied by detailed methods.

First Countywide FIS Revision (September 14, 1990)

For the September 14, 1990, FIS report, portions of the following flooding sources were restudied: Little River, Rocky Creek, Etowah River, and Noonday Creek.

The Little River was restudied from the confluence of Rocky Creek to a point located about 1.3 miles upstream. Rocky Creek was restudied from its mouth to a point located about 1.3 miles upstream. The restudy was performed in order to delineate new 1-percent and 0.2-percent-annual-chance flood boundaries, as well as a floodway boundary, in areas of the Little River and Rocky Creek where the Settindown Creek Golf Course has been constructed. These areas had been previously studied by detailed methods.

The Etowah River was restudied from about 0.85 mile downstream of Interstate Highway 575 to about 8.4 miles upstream of Interstate Highway 575, to account

for the effects of fill placed in the overbank areas downstream of Interstate Highway 575 for the Cherokee County Industrial Park. Revised 1-percent-annual-chance flood and floodway boundaries were developed for this reach, which was previously studied by detailed methods.

Noonday Creek was restudied from 0.5 mile downstream of Alabama Road to the upstream county boundary to account for the effects of fill placed in the overbank areas just downstream and upstream of Alabama Road. Revised 1-percent-annual-chance flood and floodway boundaries were developed for this reach, which was previously studied by detailed methods.

This Countywide Revision

Tate Creek is in both Cherokee and Cobb Counties. For this countywide revision, flooding information for Tate Creek was updated with the more recent Tate Creek analysis from the Cobb County FIS report (Reference 3).

For this countywide revision, reaches of streams that have been studied by detailed methods were selected for redelineation based on more recent topography. The topographic mapping was provided by the City of Canton and was produced in 2004 (Reference 4). The topographic data is comprised of 55 square miles mapped at a 2 foot contour interval (in parts of the city), and another 56 square miles mapped at a 5 foot contour interval (outside of the city). This data has a vertical accuracy within 1 foot (for the 2 foot contour mapped area) and 2.5 feet (for the 5 foot contour mapped area). The City of Canton also provided orthophotos produced at 3 inch-pixel for the 2 foot mapping areas and 0.8 inch-pixel for the 5 foot mapping area. The reaches that were redelineated in this revision are shown in Table 2, "Redelineated Streams".

Table 2- Redelineated Streams

Stream	Reach Description
Canton Creek	From the confluence with the Etowah River to approximately 4,500 feet upstream of Georgia Northeastern Railroad
Etowah River	From the confluence with Allatoona Lake to approximately 2.5 miles upstream of miles upstream of Georgia Northeastern Railroad

The areas studied by limited detailed methods were selected with priority given to all known flood hazards and areas of projected development or proposed construction through February 2004. The streams studied by limited detailed methods are listed in Table 3, "Streams Studied by Limited Detailed Methods".

Table 3- Streams Studied by Limited Detailed Methods

Stream	Reach Description
Etowah River	From approximately 19,080 feet downstream of East Cherokee Drive to approximately 8,170 feet upstream of East Cherokee Drive
Hickory Creek	From the confluence with Etowah River to approximately 2,000 feet upstream of Interstate Highway 575/State Highway 5

Rubes Creek Tributary was studied by detailed methods as part of Letter of Map Revision (LOMR) Case No. 99-04-353P, dated May 9, 2000. LOMR Case No. 98-04-353P, dated August 3, 1999, revised a portion of Noonday Creek. Smithwick Creek and an Unnamed Tributary to Smithwick Creek were studied by detailed methods as part of LOMR Case No. 04-04-145P, dated October 20, 2004. The Hollis Q. Lathem Reservoir was studied by approximate methods as part of LOMR Case NO. 00-04-137P, dated November 1, 2000. Blankets Creek was studied by approximate methods as part of LOMR Case No. 02-04-423P, dated October 29, 2002. All of these LOMRs were incorporated into this revision.

Please note that as a result of this countywide revision, the paneling scheme has changed. Therefore, the flood hazards revised in the September 14, 1990, revision now fall on different panels, as shown below:

Previous FIRM Number	Current FIRM Number
13057C0230C	13057C0251D
	13057C0252D
	13057C0253D
	13057C0254D
13057C0308C	13057C0333D
13057C0310C	13057C0331D
	13057C0332D
	13057C0334D
13057C0335C	13057C0356D
	13057C0358D
	13057C0360D

Approximate analyses were used to study those areas having low development potential or minimal flood hazards. The scope and methods of study were proposed to and agreed upon by FEMA and Cherokee County.

2.2 Community Description

Cherokee County lies in the northwest part of Georgia, on the northern fringe of the Atlanta metropolitan area. It is bordered by Pickens County to the north, Dawson and Forsyth Counties to the east, Fulton and Cobb Counties to the south, and Bartow County to the west. The county is bisected by the Etowah River, which runs southwesterly through the county and eventually empties into Allatoona Lake, southwest of Canton. Railroad service to the county is provided by the Georgia Northeastern Railroad. The main highways servicing Cherokee County are State Highways 205, 92, 5, 20, 108, 140 and 372 and Interstate Highways 575 and 75. According to the 2000 Census, the population of Cherokee County was 141,903 (Reference 5).

Cherokee County offers a unique balance between the three main branches of economic activity: agriculture, industry and commerce. The county seat, Canton, has been a focal point for agriculture and industry. Canton was incorporated under the name of Etowah in 1833, and its present name was approved by the legislature the following year. The leading industry since 1899 has been Canton Textile Mills. Some of the minerals produced in the county are granite, marble, copper, iron, asbestos, graphite, talc, mica and soapstone.

The terrain may be characterized as typical foothill country. It consists mainly of well-defined floodplains with relatively steep sides rising to the surrounding hills.

The climate of Cherokee County consists of long, warm summers, with the highest mean monthly temperature of 89 degrees Fahrenheit (°F), occurring in July. While summer temperatures are frequently quite warm, prolonged periods of hot weather are rare. The winters are short and mild, with the lowest mean monthly temperature of 30°F, occurring in January (Reference 6).

The average annual rainfall in Cherokee County is 48 inches. The wettest month is March with an average of 6.87 inches while October is the driest with 3.23 inches. The average annual snowfall is about 1.5 inches. However, a snow of 4 inches or more occurs about once every five years (Reference 7).

2.3 Principal Flood Problems

Portions of Cherokee County are subject to periodic flooding from storms causing disruptions to vehicular traffic and inconveniences to residents.

2.4 Flood Protection Measures

The Natural Resource Conservation Service (NRCS), formerly the Soil Conservation Service, completed watershed work-plans for streams in Cherokee County, ultimately constructing flood retarding reservoirs in both the Avery and Tate Creek watersheds. These projects are designed to provide significant flood peak attenuation.

3.0 ENGINEERING METHODS

For the flooding sources studied by detailed methods in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that are expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10-, 2-, 1-, and 0.2-percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long-term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 1-percent-annual-chance (100-year) flood in any 50-year period is approximately 40 percent (4 in 10); for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish peak discharge-frequency relationships for each flooding source studied by detailed methods affecting the community.

Initial Countywide FIS Report (July 15, 1988)

The analyses were accomplished by using the following three methods: (1) a regional discharge-frequency study published by the U.S. Geological Survey (USGS) for the State of Georgia (Reference 8); (2) discharge–frequency analyses using USGS river gaging records; and (3) discharges from FIS reports for adjoining counties that had been computed for streams that flow into Cherokee County.

Stream gaging records were available for the Etowah River and the Little River and provided the basis for discharge–frequency analyses performed to determine discharges for those streams.

The regional study, "Floods in Georgia, Magnitude and Frequency" (Reference 8), was used to determine discharges for Avery Creek, Canton Creek, Clark Creek, Etowah River, Kellogg Creek, Little River, Mill Creek, Owl Creek, Smithwick Creek, Toonigh Creek, Tributary L, and Tributary M. Since the boundary line between Region 1 and Region 2 of the regional study follows the Etowah River, bisecting Cherokee County, frequency discharges for the two regions were averaged to arrive at discharges applicable to the county's streams.

Discharges for Noonday Creek at the county line were taken from the FIS report for Cobb County (Reference 9).

Discharges for the upstream portion of Rubes Creek covered in this study were taken from the FIS report for Cobb County. Discharges for the downstream portion were obtained from the regional discharge–frequency study.

The Avery Creek basin contains three flood retarding reservoirs: Bradshaw Lake, Soil Conservation Service (SCS) Dam No. 2, located on Avery Creek at the upper limit of the study area; SCS Dam No. 6, located on Avery Creek just downstream of Bradshaw Lake; and SCS Dam No. 12, located on a tributary that enters Avery Creek between SCS Dam No. 6 and the mouth.

A HEC-1 runoff model (Reference 10) of the basin was developed to determine the storage effects of the reservoirs. SCS unit hydrographs and SCS infiltration rate curve numbers were used in the model. Frequency rainfall was taken from the National Weather Service Technical Papers 40 (Reference 11) and 49 (Reference 12) and applied to the runoff model. The resulting discharges were considerably higher than those computed using the regional equations. To obtain discharges more consistent with the rest of the study, the HEC-1 runoff model was used to model the storage routing through the reservoirs. The outflows from the routing were then added to the discharges computed with the regional equation for the uncontrolled area below Dams No. 6 and 12.

Discharges for Rocky Creek at Lake Cherful Dam were taken from the FIS report for Fulton County (Reference 13) and the FIS report for the City of Mountain Park (Reference 14). Discharges at the mouth were obtained by taking the difference in regional frequency discharges (discharge at the mouth less the discharge at the dam), and combining those with the corresponding discharges at the dam.

First Countywide FIS Revision (September 14, 1990)

The hydrologic analyses for the September 14, 1990, FIS revision used the same flow rates as those used in the original study.

This Countywide Revision

Discharge-frequency relationships for Tate Creek were determined using the HEC-1 computer program. Runoff hydrographs entered into HEC-1 were developed according to methods outlined by USGS (References 15 and 16).

Hickory Creek and a portion of the Etowah River were the 2 streams studied by limited detailed methods. For Hickory Creek, regression equations were used to compute the peak discharges for the 1-percent-annual chance flood (Reference 17). The watershed area for Hickory Creek was calculated using USGS 30 meter resolution Digital Elevation Models (DEMs) gathered from the National Elevation Dataset (NED). The limited detailed study for the Etowah River used effective discharges from the existing FIS.

The LOMRs listed in Section 2.1 should be consulted to identify the hydrologic methods used for those streams.

Peak discharge-drainage area relationships for the 10-, 2-, 1-, and 0.2-percent annual chance floods of each flooding source studied in detail in the community are presented in Table 4.

Table 4 - Summary of Discharges

Flooding Source and Location	Drainage Area (square miles)	Peak Discharges (cubic feet per second) 10-Percent-Annual-Chance	2-Percent-Annual-Chance	1-Percent-Annual-Chance	0.2-Percent-Annual-Chance
AVERY CREEK					
At the confluence with Mill Creek	9.0	1,120	2,140	2,720	5,250
CANTON CREEK					
Approximately 1,300 feet upstream of Marietta Road/State Highway 20	*	2,550	4,100	4,800	6,250
CLARK CREEK					
At the confluence with Allatoona Lake	7.6	1,425	2,250	2,600	3,600
ETOWAH RIVER					
Just downstream of State Highway 20/Knox Bridge Highway	723.7	25,320	39,115	45,960	63,890
Just downstream of Marietta Highway/State Highway 140	613.0	23,300	36,000	42,300	58,800
KELLOGG CREEK					
At the confluence with Allatoona Lake	2.1	630	1,000	1,175	1,610
LITTLE RIVER					
Just downstream of Rope Mill Road	139.9	5,310	8,200	9,570	13,070
Approximately 16,465 feet upstream of the confluence of Rocky Creek	60.0	3,480	5,370	6,270	8,560
MILL CREEK					
At the confluence with Little River	37.0	3,900	6,050	7,000	9,700
NOONDAY CREEK					
At the confluence with Little River	49.3	5,454	8,588	9,372	10,575
OWL CREEK					
At the confluence with Allatoona Lake	2.3	660	1,050	1,225	1,700
ROCKY CREEK					
At the confluence with Little River	7.9	440	850	1,280	2,410
RUBES CREEK					
At the confluence with Little River	14.7	2,190	3,400	3,900	5,400

* Data not available

Table 4 - Summary of Discharges (Cont'd)

Flooding Source and Location	Drainage Area (square miles)	Peak Discharges (cubic feet per second) 10-Percent-Annual-Chance	2-Percent-Annual-Chance	1-Percent-Annual-Chance	0.2-Percent-Annual-Chance
RUBES CREEK TRIBUTARY					
At the confluence with Rubes Creek	1.2	690	1,030	1,200	1,570
Approximately 500 feet upstream of Independence Way	0.9	560	840	970	1,280
SMITHWICK CREEK					
Approximately 5,015 feet upstream of Old Darnell Road	8.1	*	*	3,433	*
TATE CREEK					
At confluence with Noonday Creek	5.09	742	1,246	1,471	2,240
TOONIGH CREEK					
At the confluence with Little River	6.7	1,325	2,080	2,425	3,350
TRIBUTARY L					
At the confluence with Little River	3.8	920	1,450	1,700	2,325
TRIBUTARY M					
At the confluence with Mill Creek	2.9	770	1,210	1,430	1,975
UNNAMED TRIBUTARY TO SMITHWICK CREEK					
At the confluence with Smithwick Creek	0.3	*	*	225	*

* Data not available

The stillwater elevation for the 1-percent-annual-chance flood event for Allatoona Lake is shown in Table 5.

Table 5 - Summary of Stillwater Elevations

Flooding Source	Water Surface Elevations (Feet NAVD88[1]) 10-Percent-Annual-Chance	2-Percent-Annual-Chance	1-Percent-Annual-Chance	0.2-Percent-Annual-Chance
ALLATOONA LAKE				
At Allatoona Lake Dam	*	*	861.1	*

[1]North American Vertical Datum of 1988

* Data not available

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Users should be aware that flood elevations shown on the FIRM represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles or in the Floodway Data Table in the FIS report. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS report in conjunction with the data shown on the FIRM.

Initial Countywide FIS Report (July 15, 1988)

Cross sections were compiled by photogrammetric methods (Reference 18), and were located at close intervals above and below bridges in order to compute the backwater effects of these structures. Bridge opening geometry was established by field measurements.

Water surface elevations (WSELs) of floods of the selected recurrence intervals were computed through the use of the USACE's HEC-2 step-backwater computer program (Reference 19). Starting WSELs were determined using the slope/area method. The elevation was then compared with the Allatoona Lake normal pool level, and the higher of the two was adopted as starting WSEL.

First Countywide FIS Revision (September 14, 1990)

The hydraulic analyses for the Little River and Rocky Creek were revised to reflect changes in topography due to the construction of a golf course. The hydraulic analyses for the Etowah River were revised to reflect fill in the overbanks for the Cherokee County Industrial Park. The hydraulic analyses for Noonday Creek were revised to reflect fill in the overbanks just upstream and downstream of Alabama Road.

Cross sections for Little River and Rocky Creek in the area from the original FIS were resurveyed, and additional new cross sections were surveyed. New cross sections were also added for two golf cart bridges on the Little River. For Etowah River, additional cross sections were inserted into the analysis based on mass grading plans for the Industrial Park, which were prepared at a scale of 1:1,200 with a contour interval of 2 feet (Reference 20). For Noonday Creek, additional cross sections were used in conjunction with revised bridge and valley sections to refine the floodplain.

The revised hydraulic analyses for the 10-, 2-, 1-, and 0.2-percent chance floods for the Little River and Rocky Creek were performed using the HEC-2 step-backwater computer program (Reference 21). The revised hydraulic analyses for

Noonday Creek is contained in a report prepared by Braswell Engineering, Inc. (Reference 22).

The starting WSELs for Little River and Rocky Creek were not revised from the original hydraulic analyses used for the initial countywide FIS (July 15, 1988).

This Revision

For this revision, cross sections for the flooding sources studied by limited detailed methods were obtained using digital topography and field measurements. The 1-percent-annual-chance WSELs were computed using the USACE's HEC-RAS hydraulic model, version 3.1.2 (Reference 23), and HEC-GeoRAS was used to delineate the 1-percent-annual-chance floodplain (Reference 24). The hydraulic model was prepared using digital elevation data (Reference 4), without surveying bathymetric data. Where bridge or culvert data were readily available, these data were reflected in the hydraulic model. Where these structural data were not readily available, field measurements of these structures were made to approximate their geometry in the hydraulic models. This model does not include field surveys that determine specifics on channel and floodplain characteristics. A limited detailed study is a "buildable" product that can be upgraded to a full detailed study at a later date by verifying stream channel characteristics, bridge and culvert opening geometry, and by analyzing multiple recurrence intervals.

Flood profiles have been developed for streams studied by limited detailed methods to be used for floodplain management and flood insurance rating purposes. The flood profiles for the streams studied by limited detailed methods were published separately from this FIS report. Please contact your local floodplain administrator for more information.

For Tate Creek, the water surface elevations of floods of the selected recurrence intervals were computed using HEC-2 step back-water computer program (Reference 25).

The LOMRs listed in Section 2.1 should be consulted to identify the hydraulic analyses that were used.

The channel and overbank "n" values for the streams studied by detailed methods are shown in the following tabulation, "Summary of Roughness Coefficients".

Summary of Roughness Coefficients

Stream	Channel "n"	Overbank "n"
Avery Creek	0.045-0.09	0.05-0.16
Canton Creek	0.045-0.09	0.05-0.16
Clark Creek	0.045-0.09	0.05-0.16
Etowah River	0.06	0.07-0.10
Kellogg Creek	0.045-0.09	0.05-0.16
Little River	0.06-0.07	0.06-0.12
Mill Creek	0.045-0.09	0.05-0.16
Noonday Creek	0.045-0.09	0.05-0.16
Owl Creek	0.045-0.09	0.05-0.16
Rocky Creek	0.06-0.08	0.08-0.16
Rubes Creek	0.045-0.09	0.05-0.16
Rubes Creek Tributary	0.045-0.09	0.05-0.16
Smithwick Creek	0.045-0.09	0.05-0.16
Tate Creek	0.045-0.09	0.05-0.16
Toonigh Creek	0.045-0.09	0.05-0.16
Tributary L	0.045-0.09	0.05-0.16
Tributary M	0.045-0.09	0.05-0.16
Unnamed Tributary to Smithwick Creek	0.045-0.09	0.05-0.16

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross section locations are also shown on the FIRM (Exhibit 2).

Flood profiles were drawn showing the computed WSELs for floods of the selected recurrence intervals. In cases where the 2-percent and 1-percent annual chance flood elevations were close together, only the 1-percent annual chance flood profile has been shown due to limitations of the profile scale.

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the Flood Profiles (Exhibit 1) are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

3.3 Vertical Datum

All FIS reports and FIRMs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum in use for newly created or revised FIS reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD29). With the finalization of the North American Vertical Datum of 1988 (NAVD88), many FIS reports and FIRMs are being prepared using NAVD88 as the referenced vertical datum.

All flood elevations shown in this FIS report and on the FIRM are referenced to NAVD88. Structure and ground elevations in the community must, therefore, be referenced to NAVD88. It is important to note that adjacent communities may be referenced to NGVD29. This may result in differences in Base Flood Elevations (BFEs) across the corporate limits between the communities. The average conversion factor that was used to convert the data in this FIS report to NAVD88 was calculated using the National Geodetic Survey's VERTCON online utility (Reference 26). The data points used to determine the conversion factor are listed in Table 6 "Vertical Datum Conversion".

Table 6 – Vertical Datum Conversion

Quad Name	Corner	Longitude	Latitude	Conversion from NGVD29 to NAVD88
Fairmount	SE	84.625	34.374	0.108 feet
Ludville	SE	84.500	34.374	0.115 feet
Jasper	SE	84.375	34.374	0.066 feet
Nelson	SE	84.251	34.374	0.046 feet
Ball Ground East	SE	84.251	34.251	0.115 feet
Ball Ground East	SW	84.375	34.251	0.108 feet
Waleska	SE	84.500	34.251	0.079 feet
Waleska	SW	84.625	34.251	0.115 feet
South Canton	SE	84.500	34.126	0.131 feet
South Canton	SW	84.625	34.126	0.095 feet
Canton	SE	84.375	34.126	0.141 feet
			Average	0.102 feet

For more information on NAVD88, see the FEMA publication entitled *Converting the National Flood Insurance Program to the North American Vertical Datum of 1988* (FEMA, June 1992), or contact the Vertical Network Branch, National Geodetic Survey, Coast and Geodetic Survey, National Oceanic and Atmospheric Administration, Silver Spring, Maryland 20910 (Internet address http://www.ngs.noaa.gov).

Temporary vertical monuments are often established during the preparation of a flood hazard analysis for the purpose of establishing local vertical control. Although these monuments are not shown on the FIRM, they may be found in the Technical Support Data Notebook associated with the FIS report and FIRM for this community. Interested individuals may contact FEMA to access these data.

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. Therefore, each FIS provides 1-percent-annual-chance (100-year) flood elevations and delineations of the 1- and 0.2-percent-annual-chance (500-year) floodplain boundaries and 1-percent-annual-chance floodway to assist communities in developing floodplain management measures. This information is presented on the FIRM and in many components of the FIS report, including Flood Profiles, Floodway Data Table, and Summary of Stillwater Elevations Table. Users should reference the data presented in the FIS report as well as additional information that may be available at the local map repository before making flood elevation and/or floodplain boundary determinations.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent-annual-chance flood is employed to indicate additional areas of flood risk in the community.

Initial Countywide FIS Report (July 15, 1988)

For each stream studied by detailed methods, the 1- and 0.2-percent-annual-chance floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:4,800, with a contour interval of 4 feet (Reference 27).

First Countywide FIS Revision (September 14, 1990)

The 1- and 0.2-percent-annual-chance floodplain boundaries for Little River and Rocky Creek were revised using topographic mapping at a scale of 1:1,200 photoreduced to 1:2,400, with a contour interval of 2 feet (Reference 28).

This Revision

For this revision, the City of Canton submitted 2 foot and 5 foot contour interval topographic data (Reference 4). The Etowah River and Canton Creek were redelineated using the 2 foot contour interval topographic data. For the streams studied by limited detailed methods, Hickory Creek used the 2 foot contour interval data, and the limited detailed portion of the Etowah River used 5 foot contour interval data.

The 1- and 0.2-percent-annual-chance floodplain boundaries are shown on the FIRM (Exhibit 2). On this map, the 1-percent-annual-chance floodplain

boundary corresponds to the boundary of the areas of special flood hazards (Zones A and AE), and the 0.2-percent-annual-chance floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 1- and 0.2-percent-annual-chance floodplain boundaries are close together, only the 1-percent-annual-chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

For the streams studied by approximate methods and limited detailed methods, only the 1-percent-annual-chance floodplain boundary is shown on the FIRM (Exhibit 2).

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1-percent-annual-chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 1-percent-annual-chance flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways presented in this FIS report and on the FIRM were computed for certain stream segments on the basis of equal-conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations have been tabulated for selected cross sections and are shown in Table 7, Floodway Data. In cases where the floodway and 1-percent-annual-chance floodplain boundaries are either close together or collinear, only the floodway boundary has been shown. Portions of the floodways for the Little River, Rock Creek, Rubes Creek, Tate Creek, and Clark Creek lie outside the county boundary.

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
MILL CREEK (CONT'D)								
U	40,750	217	1,452	2.7	920.7	920.7	921.4	0.7
V	41,920	415	1,637	2.4	923.0	923.0	924.0	1.0
W	42,195	81	722	5.4	927.5	927.5	927.5	0.0
X	43,250	91	996	3.9	930.2	930.2	931.0	0.8
NOONDAY CREEK								
A	6,275	358	6,128	1.5	861.1	855.3[2]	856.3	1.0
B	9,890	178	2,867	3.3	861.1	857.0[2]	858.0	1.0
C	17,180	436	5,783	1.6	862.5	862.5	863.5	1.0
D	20,120	659	6,344	1.5	863.7	863.7	864.7	1.0
E	23,410	307	3,078	3.0	867.1	867.1	867.9	0.8
F	26,945	135	1,916	4.9	875.1	875.1	876.1	1.0
G	30,185	143	2,188	4.1	881.0	881.0	882.0	1.0
H	32,495	161	2,342	3.7	885.0	885.0	885.7	0.7
I	34,950	540	6,776	1.3	886.9	886.9	887.5	0.6
J	35,750	560	9,423	0.9	887.6	887.6	888.2	0.6
K	37,100	580	8,299	1.0	888.7	888.7	889.5	0.8
L	38,110	466	5,075	1.7	889.0	889.0	889.7	0.7
M	40,790	600	5,673	1.5	890.7	890.7	891.6	0.9
N	42,070	780	8,428	1.0	891.7	891.7	892.6	0.9
O	44,040	241	2,177	3.8	892.1	892.1	893.1	1.0

[1]Feet above confluence with Little River
[2]Elevation computed without consideration of backwater effects from Allatoona Lake

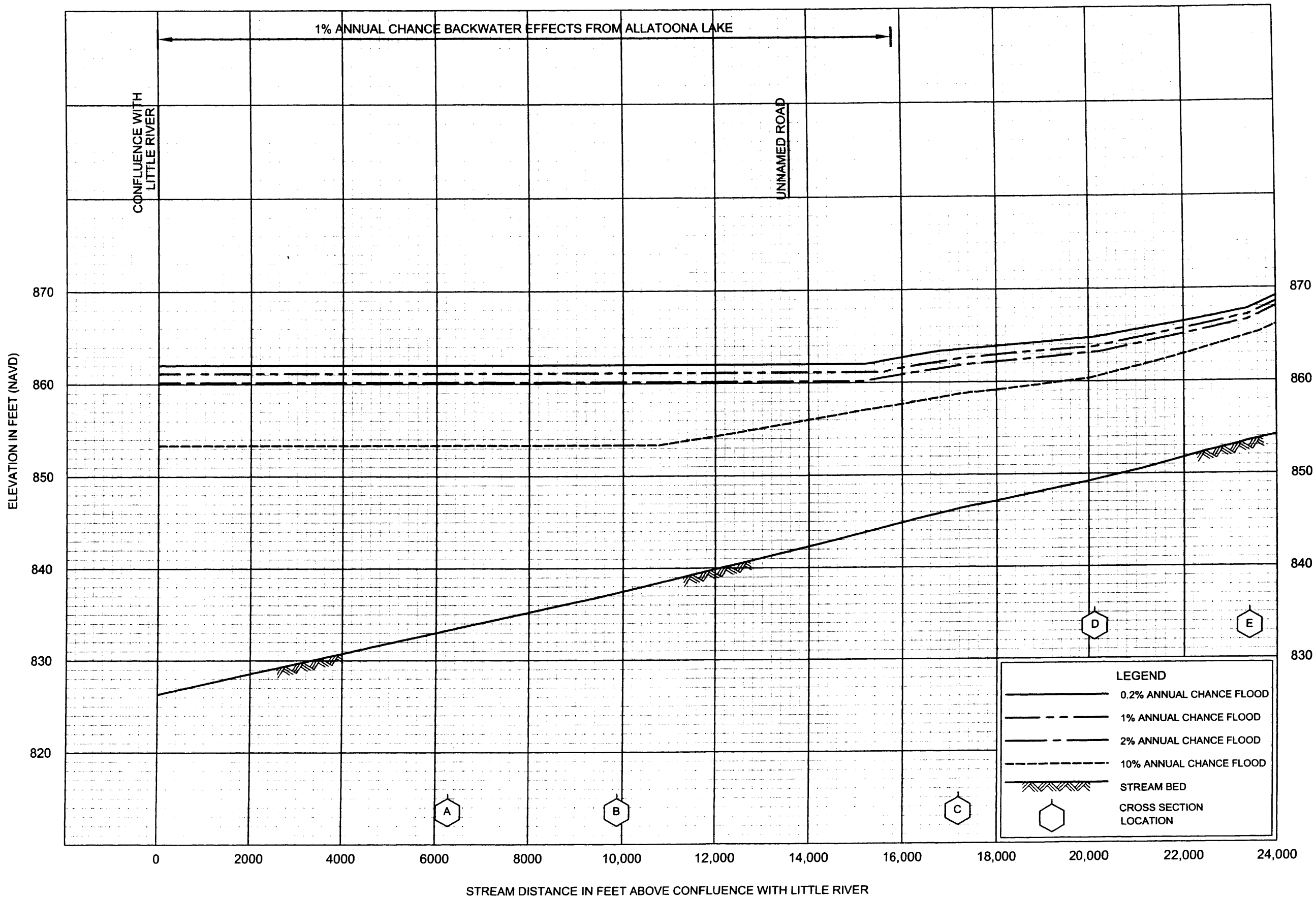
TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHEROKEE COUNTY, GA
AND INCORPORATED AREAS

FLOODWAY DATA

MILL CREEK – NOONDAY CREEK



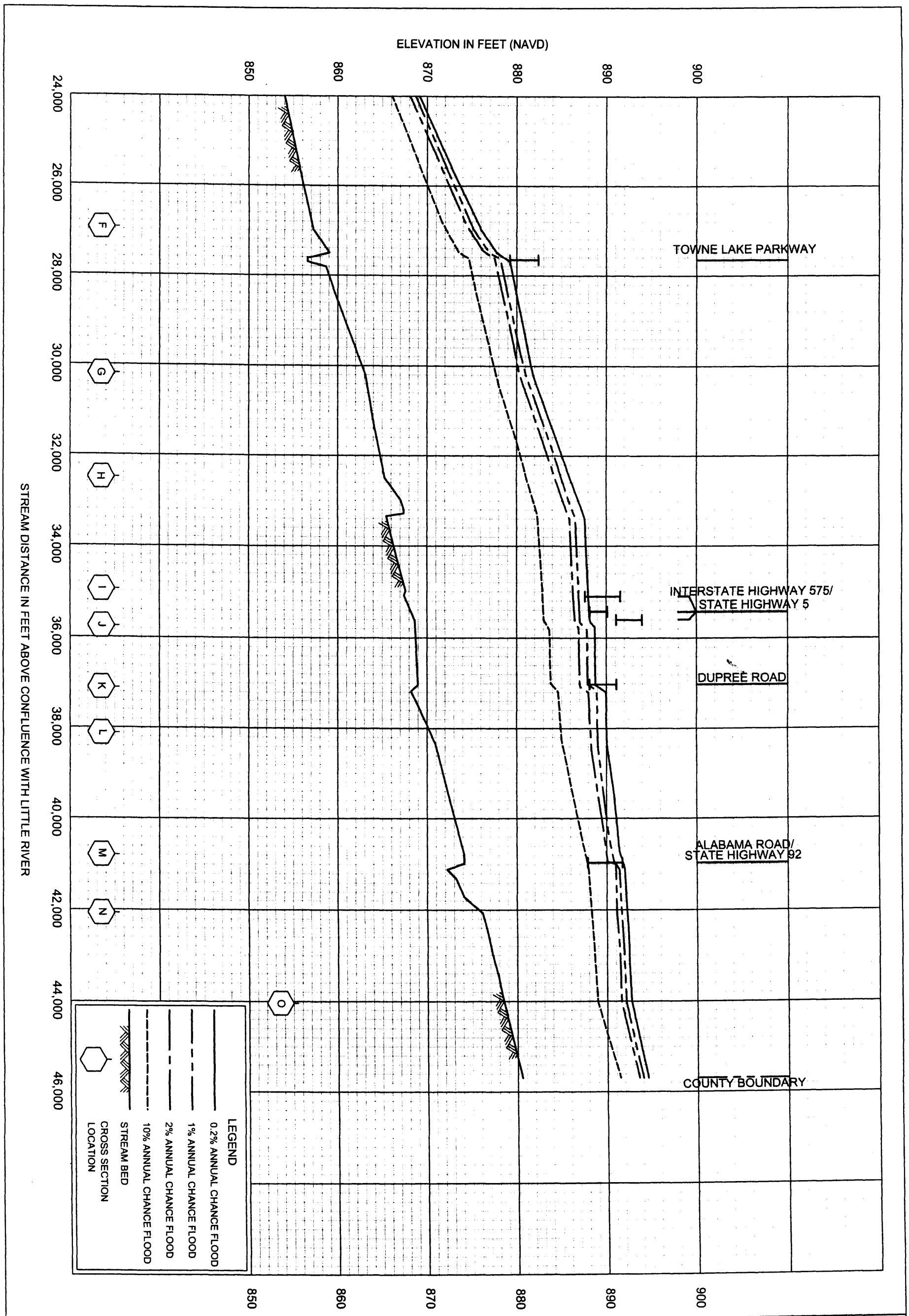
FLOOD PROFILES

NOONDAY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHEROKEE COUNTY, GA

AND INCORPORATED AREAS



24P

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHEROKEE COUNTY, GA

AND INCORPORATED AREAS

FLOOD PROFILES

NOONDAY CREEK

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

The **projection** used in the preparation of this map was Georgia State Plane West Zone (FIPS zone 1002). The **horizontal datum** was NAD 83, GRS 80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

Spatial Reference System Division
National Geodetic Survey, NOAA
Silver Spring Metro Center
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

To obtain current elevation, description, and/or location information about the **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713- 3242**, or visit their website at www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from Digital Orthophotos produced by the Georgia Institute of Technology Center for GIS at a scale of 1:12,000 Images were produced from National Aerial Photography Program (NAPP) Color Infra-red photography dated 1999. Additional orthophotography was provided by Stewart Geo Technologies in 2004 at a scale of 1:1600 at a minimum, for the City of Canton and its vicinity.

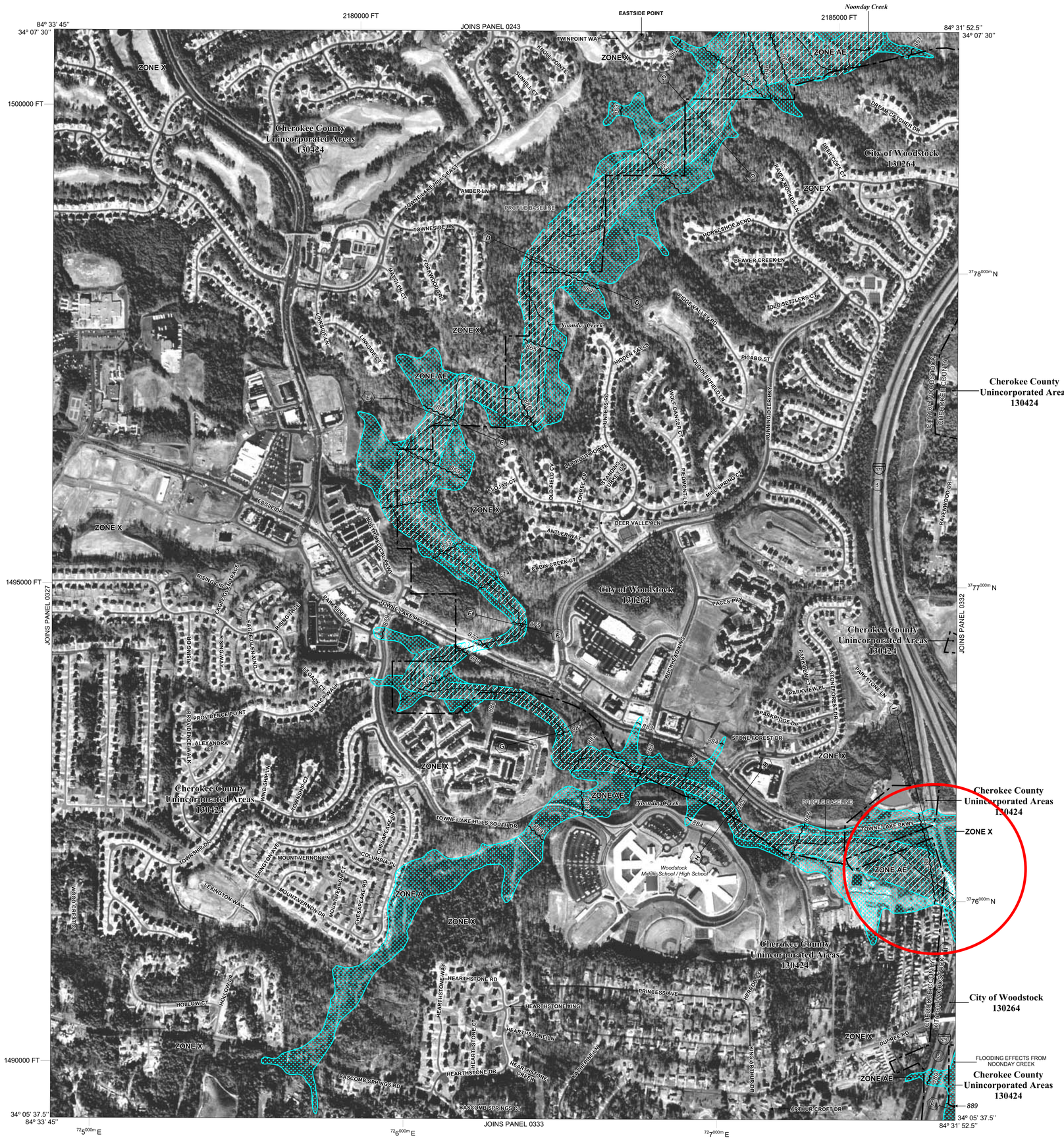
The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the Flood Insurance Study report. As a result of improved topographic data, the profile baseline, in some cases, may deviate significantly from the channel centerline or appear outside the Special Flood Hazard Area.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and their website at www.fema.gov/msc.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1- 877- FEMA MAP** (1-877-336-2627) or visit the FEMA website at www.fema.gov.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% annual chance floodplain boundary
	0.2% annual chance floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A — A	Cross section line
23 - - - - 23	Transect line
45° 02' 08", 93° 02' 12"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4989000 FT	5000-foot grid ticks: Georgia State Plane coordinate system, West zone (FIPS Zone 1002), Transverse Mercator
$^{49}89^{000m}$N	1000-meter Universal Transverse Mercator grid values, zone 16
DX5510$_X$	Bench mark (see explanation in Notes to Users section of this FIRM panel)
● M1.5	River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
JULY 15, 1988

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

SEPTEMBER 29, 2006 - to add Special Flood Hazard Areas, roads and road names; to increase Base Flood Elevations; to change Special Flood Hazard Areas; to update corporate limits and map format; to incorporate previously issued Letters of Map Revision; and to reflect updated topographic information.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0331D

FIRM

FLOOD INSURANCE RATE MAP

CHEROKEE COUNTY, GEORGIA
AND INCORPORATED AREAS

PANEL 331 OF 380

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

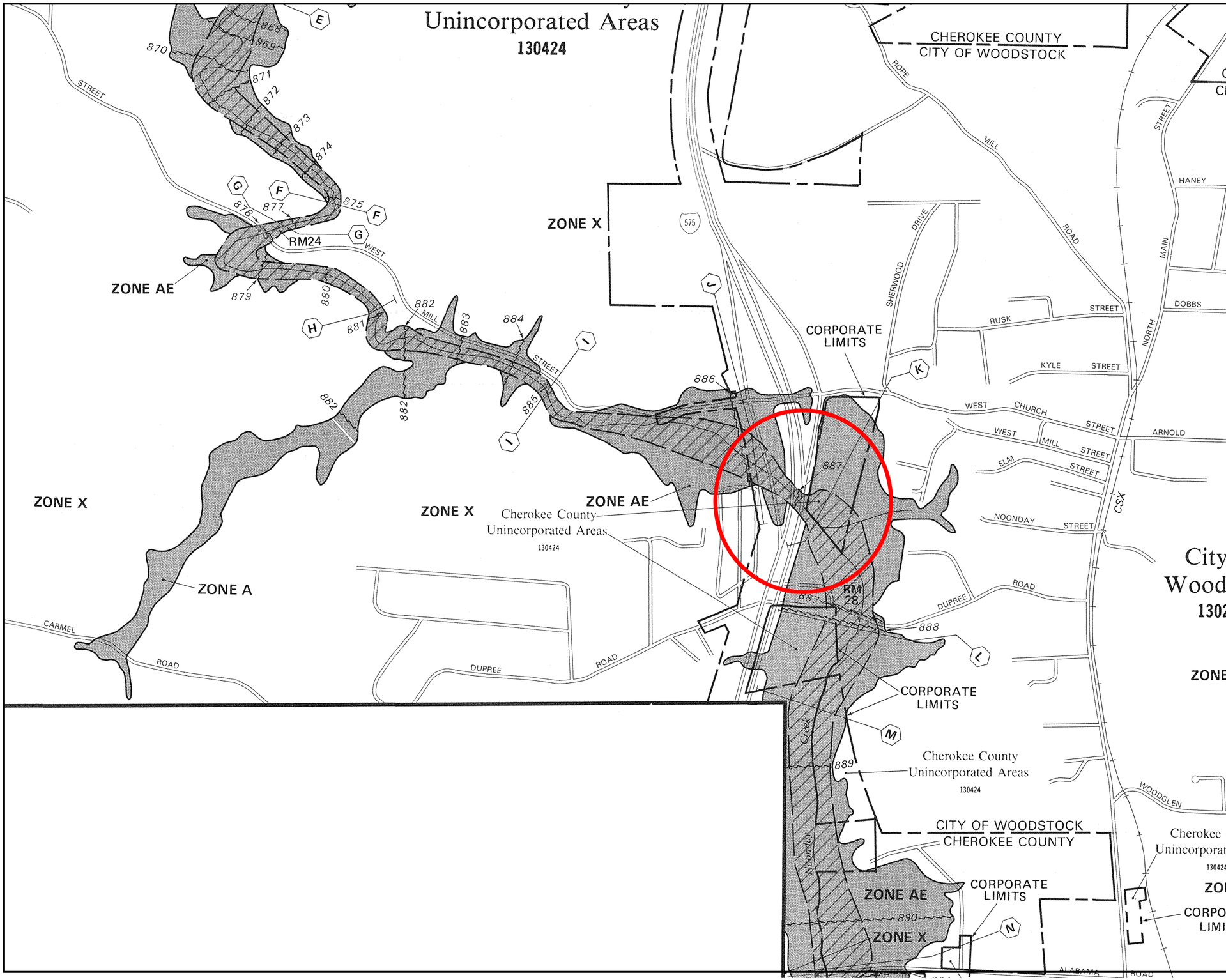
COMMUNITY	NUMBER	PANEL	SUFFIX
CHEROKEE COUNTY	130424	0331	D
WOODSTOCK, CITY OF	130264	0331	D

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
13057C0331D

MAP REVISED
SEPTEMBER 29, 2006

Federal Emergency Management Agency



APPROXIMATE SCALE IN FEET

1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

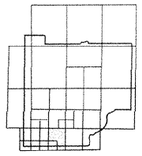
CHEROKEE COUNTY, GEORGIA AND INCORPORATED AREAS

PANEL 310 OF 335

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
WOODSTOCK, CITY OF	130264	0310	C
UNINCORPORATED AREAS	130424	0310	C

PANEL LOCATION



MAP NUMBER:
13057C0310 C
MAP REVISED:
SEPTEMBER 14, 1990

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

MISCELLANEOUS PROJECT DATA

John McWhorter

Subject:	Updated: Noonday North Bridge
Location:	PBSJ Office - 4th floor
Start:	Tue 6/17/2008 1:30 PM
End:	Tue 6/17/2008 2:30 PM
Recurrence:	(none)
Meeting Status:	Accepted

Agenda

1. Profile impacts to raising Noonday North 3 ft
2. Construction impacts of jacking bridge 3 ft
3. Bridge replacement verses jacking - feasibility, cost
4. Schedule and Costing Plans impacts

John: Be ready to discuss any other options than raising bridge 3 feet.

At end of meeting brief discussion about SO 24 approach

Call Steve Curtis for questions (this week at 703-852-6065)

John McWhorter

From: Moseley, Michael R [mrmoseley@pbsj.com]
.t: Tuesday, June 17, 2008 10:59 AM
To: John McWhorter
Subject: RE: FW: Noonday Creek Discharges - I-575
Attachments: I-575_SBprofile.txt

John,

I already ran a profile with SW corner of 890.6 and NW corner of 892.4. I can modify it but this profile keeps both of my tangents on either side of the bridge the same. Let me know what you think.

Thanks,
Mike

Michael R. Moseley Jr., PE
PBS&J
5665 New Northside Dr., Suite 400
Atlanta, GA 30328
770 933-0280

From: John McWhorter [mailto:jmcwhorter@JBTrimble.com]
Sent: Tuesday, June 17, 2008 10:55 AM
To: Moseley, Michael R
Subject: RE: FW: Noonday Creek Discharges - I-575

Mike

The target for the NW corner along the proposed gutterline is 892.8. This will maintain the existing grade across the bridge.

Let me know if you need anything else.....

John

From: Moseley, Michael R [mailto:mrmoseley@pbsj.com]
Sent: Tuesday, June 17, 2008 10:23 AM
To: John McWhorter
Subject: RE: FW: Noonday Creek Discharges - I-575

John,

What is the existing longitudinal slope on the SB Noonday Creek Bridge? Or if you have a target height for the NW corner that will work also.

Thanks,
Mike

Michael R. Moseley Jr., PE
PBS&J
5665 New Northside Dr., Suite 400
Atlanta, GA 30328
770 933-0280

From: John McWhorter [mailto:jmcwhorter@JBTrimble.com]
Sent: Tuesday, June 17, 2008 9:44 AM
To: Moseley, Michael R
Cc: Garrick L. Edwards; John Rosslow; Robbie Frizzell

Subject: FW: FW: Noonday Creek Discharges - I-575

Mike,

W ıve updated our Geomath file with your latest profile and the gutterline elevations you referenced match ours in Geomath. Hc. ɔver, the resulting bottom of beam is about 1.2 ft higher than it has to be. We are trying to set the proposed bottom of beam at ~885.9 (SW corner). Add to this the approximate superstructure depth of 4.6 ft = 890.50. This would be the required minimum deck elevation at that location (CL beam). The gutterline is ~1'-7.5" from the centerline of the beam. If you used 890.50 as the target elevation along the proposed gutterline at the SW corner, the requirement at the beam would be met.

Please take another look at the profile and see if you can get close to the criteria above. Also, are you able to tie in the profile without impacting the Towne Lake and Dupree bridges?

Thanks for your help,

John

From: John Rosslow
Sent: Monday, June 16, 2008 3:38 PM
To: John McWhorter
Subject: RE: FW: Noonday Creek Discharges - I-575

John McWhorter,

I have revised our Geomath file with the new SB profile information. The proposed bottom of beam elevation is 887.14 at bent 1 for the furthest left proposed beam.
Using the plans for the existing bridge, I calculate the existing bridge bottom of beam elevation as 885.77.

Jc Rosslow
Project Engineer
J.B. TRIMBLE, INC.
www.jbtrimble.com
phone: (770) 200-1722

From: John McWhorter
Sent: Monday, June 16, 2008 12:13 PM
To: Garrick L. Edwards; John Rosslow
Cc: Robbie Frizzell
Subject: FW: FW: Noonday Creek Discharges - I-575

Guys,

Can you put this profile in Geomath to get your proposed bottom of beam? The elevations Mike states below still look high to me. Hopefully, we can make a point of this and sort out the profile discrepancies we have observed.

Thanks,

John

From: Moseley, Michael R [mailto:mrmoseley@pbsj.com]
Se Monday, June 16, 2008 11:21 AM
To. ɔohn McWhorter
Cc: Garrick L. Edwards; John Rosslow
Subject: RE: FW: Noonday Creek Discharges - I-575

John,

I have attached the profile. Let me know if you need anything else.

Thanks,
M

Michael R. Moseley Jr., PE
PBS&J
5665 New Northside Dr., Suite 400
Atlanta, GA 30328
770 933-0280

From: John McWhorter [mailto:jmcwhorter@JBTrimble.com]
Sent: Monday, June 16, 2008 10:34 AM
To: Moseley, Michael R
Cc: Garrick L. Edwards; John Rosslow
Subject: RE: FW: Noonday Creek Discharges - I-575

Thanks Mike. Would you mind sending me the grade data? We can update the bridge in Geomath to verify.

Thanks,

John

From: Moseley, Michael R [mailto:mrmoseley@pbsj.com]
Sent: Monday, June 16, 2008 10:21 AM
To: John McWhorter
Subject: RE: FW: Noonday Creek Discharges - I-575

Jc ,

I have tentatively modified our I-575 SB profile. I have a proposed guttlerline elevation of the widened bridge to be:
SW=891.71
NW=893.62
Will this work? Let me know if you need more information.

Thanks,
Mike

Michael R. Moseley Jr., PE
PBS&J
5665 New Northside Dr., Suite 400
Atlanta, GA 30328
770 933-0280

From: John McWhorter [mailto:jmcwhorter@JBTrimble.com]
Sent: Tuesday, June 10, 2008 7:27 AM
To: Curtis, Steven; Moseley, Michael R
Cc: Morris, Ron H; Larry Cook; Horen, Dick; Blank, Bill; Mcmahon, Pete; Garrick L. Edwards
Subject: RE: FW: Noonday Creek Discharges - I-575

Steve/Mike,

The existing left gutterline elevations are 890.41 on the SW corner and 892.55 on the NW corner of the existing southbound bridge. These elevations would need to be raised by three feet to 893.41 (SW) and 895.55 (NW). If Mike can set a profile that meets this cr a, we will verify by checking the bottom of beam elevation of the proposed widened section.

I take Susan's email below (with stated concurrence from Bill DuVall) as clear direction to proceed with the jacking. We won't need any further direction unless other complications arise as we continue to develop the preliminary design.

Please let me know if you need anything else from me at this time.

Thanks,

Jo...

From: Curtis, Steven [mailto:sacurtis@bechtel.com]
Sent: Tuesday, June 10, 2008 6:27 AM
To: John McWhorter
Cc: Garrick L. Edwards; Morris, Ron H; Moseley, Michael R; Larry Cook; Horen, Dick; Blank, Bill; Mcmahon, Pete
Subject: RE: FW: Noonday Creek Discharges - I-575

John:

Do we need to be more specific when we say jack the bridge by three feet? Can we be given a bottom of beam elevation? or profile grade elevation?
Also, will we get anything formal from GDOT providing direction for the jacking (letter/email)?

Mike:

Once you know the controlling elevation, can you check impacts on adjacent bridges?

Thanks

Steve

Fr: John McWhorter [mailto:jmcwhorter@JBTrimble.com]
S: Monday, June 09, 2008 6:15 PM
To: Moseley, Michael R
Cc: Garrick L. Edwards; Curtis, Steven; Larry Cook; Robbie Frizzell; John Rosslow; Hernan Ricardo Navarro
Subject: FW: FW: Noonday Creek Discharges - I-575

Mike,

We have a recommendation from the Bridge Office to jack the southbound bridge by approximately 3 ft to avoid reducing the vertical clearance with the widening. I'm not sure what the protocol will be on this, but we will need to know if the grade can be tied in without impacting the Towne Lake Parkway and Dupree Road bridges. I'm not familiar with the "plans for changes" that Susan refers to below, but someone at PBS&J should be aware. Please check with Barry, Ron and/or Denny if necessary. Let me know if you need anything from me.

Steve, it seems prudent to go ahead and make sure that the roadway geometrics (profile tie-in) will allow the jacking. Please chime in with any additional direction you wish to provide. We will proceed with the hydraulic study development based on the jacking.

Thanks,

John

From: Beck, Susan [mailto:sbeck@dot.ga.gov]
Sent: Monday, June 09, 2008 3:25 PM
To: John McWhorter
Cc: Robbie Frizzell; Hernan Ricardo Navarro; Garrick L. Edwards; Curtis, Steven; Larry Cook
S ct: RE: FW: Noonday Creek Discharges - I-575

John,
Based on the information you provided, I recommend jacking the existing southbound bridge approximately 3 ft in order to maintain the existing opening. Depending on the results of your final analysis, we may not get the clearances over the floodstage

elevations that are required in the Drainage Manual, but this will allow us to maintain the bottom of beam at its current elevation and avoid encroaching on the floodstage elevations further. I discussed this situation with Bill DuVall and he concurred with this recommendation. His concern was the effect this jacking would have on the crossings over Towne Lake Parkway to the north and at Dupree Road to the south. He stated that he has met with PBS&J previously about plans for changes along this corridor at these cr ngs so you will need to make sure that the jacking is feasible with regard to the existing and/or proposed clearances at these bridges.

Concerning the issue with the discharges, we spoke about this earlier on the phone today and I concur with your approach. This seems to be reasonable based on the guidance provided by USGS and the information you have gathered.

Please let me know if you have any additional questions.

Susan T. Beck
Office of Bridge Hydraulics
(404) 656-5285
sbeck@dot.ga.gov

From: John McWhorter [mailto:jmcwhorter@JBTrimble.com]
Sent: Monday, June 09, 2008 6:23 AM
To: Beck, Susan
Cc: Robbie Frizzell; Hernan Ricardo Navarro; Garrick L. Edwards; Curtis, Steven; Larry Cook
Subject: FW: FW: Noonday Creek Discharges - I-575

Hey Susan. We are now under contract for the three bridge widenings along I-575 that we have previously discussed (two over Noonday Creek and one over Little River). We have settled on our approach to the discharges for the Noonday Creek crossings and would like to ask you for your concurrence. For reference, the email chain below recaps the input received from the USGS and the attached email includes the viewpoint from a contact we have with Dewberry who does a lot of the FEMA modeling.

Tl SGS recommends the use of the urban regression and that is what we propose to use for the southern Noonday Creek crossing (12.8 sq. mi.). Using Cobb Counties future land use map in addition to the previously utilized aerial photography, we have revised our impervious area calculation to be 25%. This yields a 100-year flow of 7649 cfs verses the 100-year FEMA flow of 11917 cfs (see attached file).

The urban equations, using 25% impervious, yield discharges that are a lot higher than the FEMA flows for the north Noonday crossing. The gage data for Noonday Creek at Shallowford Rd (33.6 sq mi) and Hawkins Store Rd (24.3 sq mi) indicate that storage is present due to the fact that all of the recorded peaks for these two gages have similar discharges regardless of the difference in drainage area. In several cases the reported flow is higher for the smaller area. The aerial photography confirms the presence of storage.

We have an eyewitness account of the closure of the ramp from Towne Lake Parkway to I-575 SB in July of 2005. The two aforementioned gages recorded a flow of approximately 6500 cfs on July 11, 2005. If the rural equations are used for this northern Noonday Creek crossing (43.2 sq mi), the 25 year storm produces a flow of 6500 cfs. For comparison, using just 5% impervious area, a flow of ~6500 cfs becomes the 5 year storm. The highwater source is an engineer who has lived in the area for years and has only seen this highwater this one time. In addition, by using the rural equations here (43.2 sq mi), the flows are only marginally higher than the flows at the southern Noonday crossing with an area of 12.8 square miles, which is consistent with the storage information discussed above. The USGS recommended the FEMA flows here. Since they are slightly lower than the rural, we'll use the rural equations.

In summary, based on the information obtained from all outside sources and engineering judgment, we will be using 25% impervious at the 12.8 square mile site and the rural equations for the 43.2 square mile site.

All of this leads up to the big issue, which is how to complete the proposed construction without further vertical encroachment into the flood elevations. The existing minimum bottom of beam is ~885.9 and is located at the southwest corner of the I-575 SB bridge. The proposed construction involves approximately 48 ft of widening to the west along a 7% superelevation. The 50 yr and 100 yr flc are above this elevation. We previously discussed that at a minimum, we should not lower the bottom of beam with the proposed construction. This would involve either jacking the existing southbound bridge by approximately 3 ft or maintaining the existing bridge and building the widened portion on a separate structure and at a higher elevation (it remains to be seen if this the feasible from a roadway perspective). Maintaining the existing bottom of beam may be the best course of action since the Towne Lake Parkway overpass is only about 800 ft away and with enough profile change, this bridge could be impacted as well. The first

step will be to determine whether or not the Bridge Office will consider jacking an interstate bridge by 3 ft. I've attached a pdf of the layout for your use. The interior bridges either side of the I-575 centerline are HOV ramps to and from Towne Lake Parkway. The westernmost bridge section is the only one currently being considered for jacking. The attached aerial photo will give you a view of the big picture.

S to throw all of this out at once. We would be happy to come down to your office to go over this if necessary. Feel free to call me with any questions you have. I'll follow up with a phone call after you have had a chance to digest this.

Thanks for your willingness to participate and help address these issues up front on this project. It is a huge help!

Thanks again,

John

From: Anthony J Gotvald [mailto:agotvald@usgs.gov]
Sent: Friday, May 30, 2008 10:58 AM
To: John McWhorter
Cc: Garrick L. Edwards; Robbie Frizzell; Hernan Ricardo Navarro; Beck, Susan
Subject: Re: FW: Noonday Creek Discharges - I-575

John,

Sorry, I have been busy all this week and haven't had a chance to reply. The 42 sq mi site is out of range of the urban equations so there is large uncertainty in the values computed using the urban equations. I would go with the FEMA values over the urban equations because of the large uncertainty. I would not lower your impervious area. However, your impervious areas seem high. You should recheck the computations. We are getting 30% impervious areas for sites inside Atlanta city limits.

T Gotvald, Hydrologist
USGS Georgia Water Science Center
3039 Amwiler Road, Suite 130
Atlanta, GA 30360
(770) 903-9310

"John McWhorter" <jmcwhorter@JBTrimble.com>

05/30/2008 09:42 AM

To <agotvald@usgs.gov>
cc "Hernan Ricardo Navarro" <rnavarro@JBTrimble.com>, "Garrick L. Edwards" <gledwards@JBTrimble.com>, "Beck, Susan" <sbeck@dot.ga.gov>, "Robbie Frizzell" <rfrizzell@JBTrimble.com>
Subject FW: Noonday Creek Discharges - I-575

Tony,

I just wanted to follow up with you on this. Do you have any additional input on this issue? I need to settle on the discharges we intend to use so that I can request concurrence from GDOT and move ahead with our hydraulic analysis. Your input is very beneficial.

Thanks for all your help,

Jo

From: John McWhorter

Sent: Tuesday, May 27, 2008 5:16 AM
To: 'Anthony J Gotvald'
Cc: Garrick L. Edwards; Larry Cook; Robbie Frizzell; Curtis, Steven; Beck, Susan; Hernan Ricardo Navarro
Subject: RE: Noonday Creek Discharges - I-575

Tony,

We have developed an impervious area for the two crossings of Noonday Creek previously discussed. The calculated impervious area for the 12.8 square mile area is 39% (will use 40%) and the impervious area for the 43.2 square mile area is 33% (will use 35%). The resulting 100-year flow comparison for the 12.8 sq. mi. DA is: 8285 cfs (USGS Urban) vs. 11917 cfs (FEMA). For the northern Noonday crossing with a DA of 43.2 square miles, the 100-year flow comparison is: 18747 cfs (USGS Urban) vs. 8780 cfs (FEMA). We are concerned about the USGS flow being more than twice the FEMA flow at this location and would like to get your comment on whether or not we should consider using a lower impervious area here given the size of the drainage area and the intended range of use for the urban equations.

I've placed the HEC-1 model on our ftp site and attached a pdf of our impervious area calculation here for your use.

Thanks again for your help with this, and our ftp info is below for your use.

John

ftp://jbtrimble.com

Username: jbtrimble

Password: JBtrimble

Look for folder "Tony Gotvald"

From: Anthony J Gotvald [mailto:agotvald@usgs.gov]
Sent: Monday, April 28, 2008 9:57 AM
To: John McWhorter
Cc: Garrick L. Edwards; Larry Cook; Robbie Frizzell; Curtis, Steven; Beck, Susan
Subject: RE: Noonday Creek Discharges - I-575

John,

Do you know of any websites that explain the FEMA modeling in general. I am not very familiar with the FEMA modeling and would like to learn more. I am more familiar with the HEC modeling, and I would not mind looking at the HEC-1 model if it is not too much trouble to put it on an ftp site. As a rule of thumb, the rural equations can be used for sites that have impervious area less than 10 percent. 10-15% is kind of a grey area, and anything above 15% is definitely affected by urbanization and the urban equations should be used. If there is anyway you can calculate the impervious area for these sites, then I strongly recommend doing so. With the information that is available, I would recommend using the urban equations for both the 12.8 and 43.2 sq. mi sites. The impervious area is more than likely greater than 10 % and is only going to increase, so the urban equations would be more applicable. Of course, the 43.2 sq miles is out of the range of the urban equations, but if the impervious area is above 10% then this site is beyond the limitations of the rural equations as well. We are actually in the process of putting together a proposal to update the urban equations. We plan to use a multi-state approach where we would pool together urban sites from VA, TN, NC, SC, GA, AL, and FL. This way the ranges in drainage areas would increase for the urban equations. We are finishing up a similar multi-state approach for the rural equations. The new rural equations will be out at the end of the calendar year. As for the 2005 peaks for both 02[illegible]975 and 02392950, keep in mind those peaks have an accuracy of +/- 5 percent. So this is the reason for the slight difference (-2 percent). These sites are very close together and there is no major inflows between them, so the values of the two peaks are almost the same value if you consider the 10 percent uncertainty range.

Tony Gotvald, Hydrologist

USGS Georgia Water Science Center
3039 Amwiler Road, Suite 130
Atlanta, GA 30360
(770) 903-9310

"J McWhorter"
<jmcwhorter@JBTrimble.com>

04/26/2008 09:57 PM

To "Anthony J Gotvald" <agotvald@usgs.gov>
cc "Garrick L. Edwards" <gledwards@JBTrimble.com>, "Larry Cook" <lcook@JBTrimble.com>, "Robbie Frizzell" <rfrizzell@JBTrimble.com>, "Curtis, Steven" <sacurtis@bechtel.com>, "Beck, Susan" <sbeck@dot.ga.gov>
Subject RE: Noonday Creek Discharges - I-575

Thanks Tony. I agree that the FEMA flows seem high for the 12.8 square mile area. Since they are in the regulatory model, we are probably stuck with them for the FEMA modeling. However, for projects that are reviewed by GDOT, we develop a separate HEC-RAS model using the project survey and our calculated discharges.

Using an impervious area of 15% for the Southern Noonday Creek crossing (12.8 sq mi) the Q100 = 7012 cfs, which equates to about 60% of the FEMA flow. For the northern Noonday crossing (43.2 sq mi), the 15% impervious area generates a Q100 = 16232 cfs, which is much greater than the FEMA flow. As you know, this drainage area size is outside of the range of use for the urban equations. Although Tim Stamey once told me that the urban equations could be used outside of their recommended range (standard error just won't apply), they may be excessive in this case. The rural equations here produce a Q100 = 9108 cfs.

Based on a 15% impervious area at the Hawkins Store Road gage (02392950), the 2005 event (6470 cfs) produced a 10 year storm al Noonday Creek (10 yr @ 15% imp = 6674 cfs). An interesting point to note is that the downstream Shallowford Road gage (0 2975, DA = 33.6 sq mi) recorded a lower discharge for the same flood event in 2005.

Would you agree that using 15% +/- impervious and the urban equations for the 12.8 square mile site and just the rural equations for the 43.2 square mile site is a reasonable approach to the discharges for these sites?

There is a HEC-1 model. I can provide this to you if you would like. It's probably too big for email (5 meg) so let me know and I'll post it to our ftp site.

I really appreciate your help with this. This is a hot project and determining reasonable discharges for these sites is critical. This is particularly the case with the northern Noonday crossing since that bridge will likely be jacked to address a clearance issue.

Thanks again,

John

From: Anthony J Gotvald [mailto:agotvald@usgs.gov]
Sent: Fri 4/25/2008 2:44 PM
To: John McWhorter
Cc: Garrick L. Edwards; Larry Cook; Robbie Frizzell; Curtis, Steven; Beck, Susan
Subject: Re: Noonday Creek Discharges - I-575

Jc

The Q100 values of 11,917 and 12,874 cfs at the I-575 crossing seem high for a drainage area of only 12.8 square miles. Are the data used for these FEMA analyses available? It would be interesting to see the data that were used in the analysis. I am a little confused on the study dates you mentioned. Cherokee County had a study done in 1988 and then 2006, and Cobb County had a study done in 1992 and then in 2008. Is this correct? Do any of these recent studies include the large event that occurred in July of

2005? I would estimate that the % impervious area for the Noonday Creek watershed is somewhere between 5-15%. Between the rural and urban equations, the urban equations would serve as a better estimate of the Q100 for this site. However, these FEMA studies may have additional information that would lead to a better estimate of the Q100 for this site.

Tc Gotvald, Hydrologist
U. Georgia Water Science Center
3039 Amwiler Road, Suite 130
Atlanta, GA 30360
(770) 903-9310

"John McWhorter"
<jmcwhorter@JBTrimble.com>

04/25/2008 11:38 AM

To <agotvald@usgs.gov>
cc "Robbie Frizzell" <rfrizzell@JBTrimble.com>, "Beck, Susan" <sbeck@dot.ga.gov>, "Garrick L. Edwards" <gledwards@JBTrimble.com>, "Larry Cook" <lcook@JBTrimble.com>, "Curtis, Steven" <sacurtis@bechtel.com>
Subject Noonday Creek Discharges - I-575

Tony,

We are working on plans to widen I-575 over two crossings of Noonday Creek, which flows from south to north in Cobb and Cherokee Counties. The southern crossing is in Cobb County and the northern crossing is in Cherokee county. Since Noonday Creek is a FEMA studied stream, I was comparing discharges between the regression equations and FEMA and due to the large diff ences, I would like to get your comments.

The Cherokee County FEMA study is dated September 29, 2006. It appears that the discharges used for Noonday Creek in this study remain unchanged from the original study done in 1988. There is a "preliminary" study for Cobb County that is slated for a December 2008 effective date. This study includes new hydrology for Noonday Creek and the discharges are ~2.5 times the rural regression equations. This area is certainly urbanized and the use of the urban regression equations is easily warranted. However, even an impervious area of 100% will not approach the FEMA flows. At the southern (Cobb County) crossing of I-575 over Noonday Creek, the drainage area is 12.8 square miles. The USGS rural Q100 = 4468 cfs and the Dec. '08 FEMA flow is 11917 cfs. With an impervious area of 100%, the USGS urban regression Q100 = 9681cfs. For reference, the previous 100 year FEMA flow from the 1992 study = 12874 cfs.

There are gages on Noonday Creek at Shallowford Road (02392975) and Hawkins Store Road (02392950), which are in the area at 33.6 and 24.3 square miles, respectively. However, these gages only have about seven years of record.

The northern I-575 crossing over Noonday Creek in Cherokee County has a drainage area of 43.2 square miles. The current 2006 Flood Insurance Study for Cherokee County has a 100 year discharge of 9372 cfs at the confluence with Little River (drainage area 49.3 square miles). The 100 year rural discharge is 9108 cfs at the bridge site (43.2 sq mi) and 9839 cfs at the confluence (49.2 sq mi). In this case, the discharges correlate fairly well between USGS and FEMA except that some urbanization should be considered.

As you can see, the downstream crossing has ~3.4 times the drainage area (43.2 vs. 12.8) and approximately 75% of the discharge based on the FEMA flows. There appears to be some storage available between the two I-575 crossings over Noonday Creek that could partially explain the reduction. If you would, please comment on this issue and provide your recommendations for the discharge calculations for both the north and south crossings of I-575 over Noonday Creek. I've attached an excerpt from the quad map for your use.

Thank you for your time.

John McWhorter, P.E.
J.B. Trimble, Inc.
770-200-1713 direct

770-952-1022 office
770-952-1041 fax
jmcwhorter@jbtrimble.com

Help GDOT serve you better. Visit http://www.howsmyservice.dot.ga.gov and rate the service you received from Team GDOT.

John McWhorter

From: Beck, Susan [sbeck@dot.ga.gov]
t: Monday, June 09, 2008 3:25 PM
To: John McWhorter
Cc: Robbie Frizzell; Hernan Ricardo Navarro; Garrick L. Edwards; Curtis, Steven; Larry Cook
Subject: RE: FW: Noonday Creek Discharges - I-575

John,
Based on the information you provided, I recommend jacking the existing southbound bridge approximately 3 ft in order to maintain the existing opening. Depending on the results of your final analysis, we may not get the clearances over the floodstage elevations that are required in the Drainage Manual, but this will allow us to maintain the bottom of beam at its current elevation and avoid encroaching on the floodstage elevations further. I discussed this situation with Bill DuVall and he concurred with this recommendation. His concern was the effect this jacking would have on the crossings over Towne Lake Parkway to the north and at Dupree Road to the south. He stated that he has met with PBS&J previously about plans for changes along this corridor at these crossings so you will need to make sure that the jacking is feasible with regard to the existing and/or proposed clearances at these bridges.

Concerning the issue with the discharges, we spoke about this earlier on the phone today and I concur with your approach. This seems to be reasonable based on the guidance provided by USGS and the information you have gathered.

Please let me know if you have any additional questions.

Susan T. Beck
Office of Bridge Hydraulics
(4 656-5285
sbeck@dot.ga.gov

From: John McWhorter [mailto:jmcwhorter@JBTrimble.com]
Sent: Monday, June 09, 2008 6:23 AM
To: Beck, Susan
Cc: Robbie Frizzell; Hernan Ricardo Navarro; Garrick L. Edwards; Curtis, Steven; Larry Cook
Subject: FW: FW: Noonday Creek Discharges - I-575

Hey Susan. We are now under contract for the three bridge widenings along I-575 that we have previously discussed (two over Noonday Creek and one over Little River). We have settled on our approach to the discharges for the Noonday Creek crossings and would like to ask you for your concurrence. For reference, the email chain below recaps the input received from the USGS and the attached email includes the viewpoint from a contact we have with Dewberry who does a lot of the FEMA modeling.

The USGS recommends the use of the urban regression and that is what we propose to use for the southern Noonday Creek crossing (12.8 sq. mi.). Using Cobb Counties future land use map in addition to the previously utilized aerial photography, we have revised our impervious area calculation to be 25%. This yields a 100-year flow of 7649 cfs verses the 100-year FEMA flow of 11917 cfs (see attached file).

The urban equations, using 25% impervious, yield discharges that are a lot higher than the FEMA flows for the north Noonday crossing. The gage data for Noonday Creek at Shallowford Rd (33.6 sq mi) and Hawkins Store Rd (24.3 sq mi) indicate that storage is present due to the fact that all of the recorded peaks for these two gages have similar discharges regardless of the difference in drainage area. In several cases the reported flow is higher for the smaller area. The aerial photography confirms the presence of storage.

W ave an eyewitness account of the closure of the ramp from Towne Lake Parkway to I-575 SB in July of 2005. The two at nentioned gages recorded a flow of approximately 6500 cfs on July 11, 2005. If the rural equations are used for this northern Noonday Creek crossing (43.2 sq mi), the 25 year storm produces a flow of 6500 cfs. For comparison, using just 5% impervious area, a flow of ~6500 cfs becomes the 5 year storm. The highwater source is an engineer who has lived in the area for years and has only seen this highwater this one time. In addition, by using the rural equations here (43.2 sq mi), the flows are only marginally higher than the flows at the southern Noonday crossing with an area of 12.8 square miles, which is consistent with the storage information

discussed above. The USGS recommended the FEMA flows here. Since they are slightly lower than the rural, we'll use the rural equations.

In summary, based on the information obtained from all outside sources and engineering judgment, we will be using 25% impervious at ' ' 12.8 square mile site and the rural equations for the 43.2 square mile site.

All of this leads up to the big issue, which is how to complete the proposed construction without further vertical encroachment into the flood elevations. The existing minimum bottom of beam is ~885.9 and is located at the southwest corner of the I-575 SB bridge. The proposed construction involves approximately 48 ft of widening to the west along a 7% superelevation. The 50 yr and 100 yr floods are above this elevation. We previously discussed that at a minimum, we should not lower the bottom of beam with the proposed construction. This would involve either jacking the existing southbound bridge by approximately 3 ft or maintaining the existing bridge and building the widened portion on a separate structure and at a higher elevation (it remains to be seen if this the feasible from a roadway perspective). Maintaining the existing bottom of beam may be the best course of action since the Towne Lake Parkway overpass is only about 800 ft away and with enough profile change, this bridge could be impacted as well. The first step will be to determine whether or not the Bridge Office will consider jacking an interstate bridge by 3 ft. I've attached a pdf of the layout for your use. The interior bridges either side of the I-575 centerline are HOV ramps to and from Towne Lake Parkway. The westernmost bridge section is the only one currently being considered for jacking. The attached aerial photo will give you a view of the big picture.

Sorry to throw all of this out at once. We would be happy to come down to your office to go over this if necessary. Feel free to call me with any questions you have. I'll follow up with a phone call after you have had a chance to digest this.

Thanks for your willingness to participate and help address these issues up front on this project. It is a huge help!

Thanks again,

John

Fr **:** Anthony J Gotvald [mailto:agotvald@usgs.gov]
S **.** Friday, May 30, 2008 10:58 AM
To: John McWhorter
Cc: Garrick L. Edwards; Robbie Frizzell; Hernan Ricardo Navarro; Beck, Susan
Subject: Re: FW: Noonday Creek Discharges - I-575

John,

Sorry, I have been busy all this week and haven't had a chance to reply. The 42 sq mi site is out of range of the urban equations so there is large uncertainty in the values computed using the urban equations. I would go with the FEMA values over the urban equations because of the large uncertainty. I would not lower your impervious area. However, your impervious areas seem high. You should recheck the computations. We are getting 30% impervious areas for sites inside Atlanta city limits.

Tony Gotvald, Hydrologist
USGS Georgia Water Science Center
3039 Amwiler Road, Suite 130
Atlanta, GA 30360
(770) 903-9310

"John McWhorter" <jmcwhorter@JBTrimble.com>

05/30/2008 09:42 AM

To <agotvald@usgs.gov>

cc "Hernan Ricardo Navarro" <rnavarro@JBTrimble.com>, "Garrick L. Edwards" <gledwards@JBTrimble.com>, "Beck, Susan" <sbeck@dot.ga.gov>, "Robbie Frizzell" <rfrizzell@JBTrimble.com>

Subject FW: Noonday Creek Discharges - I-575

Tony,

I just wanted to follow up with you on this. Do you have any additional input on this issue? I need to settle on the discharges we in' ' to use so that I can request concurrence from GDOT and move ahead with our hydraulic analysis. Your input is very be..ıcial.

Thanks for all your help,

John

From: John McWhorter
Sent: Tuesday, May 27, 2008 5:16 AM
To: 'Anthony J Gotvald'
Cc: Garrick L. Edwards; Larry Cook; Robbie Frizzell; Curtis, Steven; Beck, Susan; Hernan Ricardo Navarro
Subject: RE: Noonday Creek Discharges - I-575

Tony,

We have developed an impervious area for the two crossings of Noonday Creek previously discussed. The calculated impervious area for the 12.8 square mile area is 39% (will use 40%) and the impervious area for the 43.2 square mile area is 33% (will use 35%). The resulting 100-year flow comparison for the 12.8 sq. mi. DA is: 8285 cfs (USGS Urban) vs. 11917 cfs (FEMA). For the northern Noonday crossing with a DA of 43.2 square miles, the 100-year flow comparison is: 18747 cfs (USGS Urban) vs. 8780 cfs (FEMA). We are concerned about the USGS flow being more than twice the FEMA flow at this location and would like to get your comment on whether or not we should consider using a lower impervious area here given the size of the drainage area and the intended range of use for the urban equations.

I've placed the HEC-1 model on our ftp site and attached a pdf of our impervious area calculation here for your use.

Thanks again for your help with this, and our ftp info is below for your use.

John

ftp://jbtrimble.com

Username: jbtrimble

Password: JBtrimble

Look for folder "Tony Gotvald"

From: Anthony J Gotvald [mailto:agotvald@usgs.gov]
Sent: Monday, April 28, 2008 9:57 AM
To: John McWhorter
Cc: Garrick L. Edwards; Larry Cook; Robbie Frizzell; Curtis, Steven; Beck, Susan
Subject: RE: Noonday Creek Discharges - I-575

Jc

Do you know of any websites that explain the FEMA modeling in general. I am not very familiar with the FEMA modeling and would like to learn more. I am more familiar with the HEC modeling, and I would not mind looking at the HEC-1 model if it is not too much trouble to put it on an ftp site. As a rule of thumb, the rural equations can be used for sites that have impervious area less than 10

percent. 10-15% is kind of a grey area, and anything above 15% is definitely affected by urbanization and the urban equations should be used. If there is anyway you can calculate the impervious area for these sites, then I strongly recommend doing so. With the information that is available, I would recommend using the urban equations for both the 12.8 and 43.2 sq. mi sites. The impervious area is more than likely greater than 10 % and is only going to increase, so the urban equations would be more applicable. Of course, the 43.2 sq miles is out of the range of the urban equations, but if the impervious area is above 10% then this si beyond the limitations of the rural equations as well. We are actually in the process of putting together a proposal to update the urban equations. We plan to use a multi-state approach where we would pool together urban sites from VA, TN, NC, SC, GA, AL, and FL. This way the ranges in drainage areas would increase for the urban equations. We are finishing up a similar multi-state approach for the rural equations. The new rural equations will be out at the end of the calendar year. As for the 2005 peaks for both 02392975 and 02392950, keep in mind those peaks have an accuracy of +/- 5 percent. So this is the reason for the slight difference (-2 percent). These sites are very close together and there is no major inflows between them, so the values of the two peaks are almost the same value if you consider the 10 percent uncertainty range.

Tony Gotvald, Hydrologist
USGS Georgia Water Science Center
3039 Amwiler Road, Suite 130
Atlanta, GA 30360
(770) 903-9310

"John McWhorter"
<jmcwhorter@JBTrimble.com>

04/26/2008 09:57 PM

To "Anthony J Gotvald" <agotvald@usgs.gov>
cc "Garrick L. Edwards" <gledwards@JBTrimble.com>, "Larry Cook" <lcook@JBTrimble.com>, "Robbie Frizzell" <rfrizzell@JBTrimble.com>, "Curtis, Steven" <sacurtis@bechtel.com>, "Beck, Susan" <sbeck@dot.ga.gov>
Subject RE: Noonday Creek Discharges - I-575

Thanks Tony. I agree that the FEMA flows seem high for the 12.8 square mile area. Since they are in the regulatory model, we are probably stuck with them for the FEMA modeling. However, for projects that are reviewed by GDOT, we develop a separate HEC-RAS model using the project survey and our calculated discharges.

Using an impervious area of 15% for the Southern Noonday Creek crossing (12.8 sq mi) the Q100 = 7012 cfs, which equates to about 60% of the FEMA flow. For the northern Noonday crossing (43.2 sq mi), the 15% impervious area generates a Q100 = 16232 cfs, which is much greater than the FEMA flow. As you know, this drainage area size is outside of the range of use for the urban equations. Although Tim Stamey once told me that the urban equations could be used outside of their recommended range (standard error just won't apply), they may be excessive in this case. The rural equations here produce a Q100 = 9108 cfs.

Based on a 15% impervious area at the Hawkins Store Road gage (02392950), the 2005 event (6470 cfs) produced a 10 year storm along Noonday Creek (10 yr @ 15% imp = 6674 cfs). An interesting point to note is that the downstream Shallowford Road gage (02392975, DA = 33.6 sq mi) recorded a lower discharge for the same flood event in 2005.

Would you agree that using 15% +/- impervious and the urban equations for the 12.8 square mile site and just the rural equations for the 43.2 square mile site is a reasonable approach to the discharges for these sites?

There is a HEC-1 model. I can provide this to you if you would like. It's probably too big for email (5 meg) so let me know and I'll post it to our ftp site.

I really appreciate your help with this. This is a hot project and determining reasonable discharges for these sites is critical. This is particularly the case with the northern Noonday crossing since that bridge will likely be jacked to address a clearance issue.

Th ks again,

John

From: Anthony J Gotvald [mailto:agotvald@usgs.gov]
Sent: Fri 4/25/2008 2:44 PM
To: John McWhorter
C `arrick L. Edwards; Larry Cook; Robbie Frizzell; Curtis, Steven; Beck, Susan
Su_ject: Re: Noonday Creek Discharges - I-575

John,

The Q100 values of 11,917 and 12,874 cfs at the I-575 crossing seem high for a drainage area of only 12.8 square miles. Are the data used for these FEMA analyses available? It would be interesting to see the data that were used in the analysis. I am a little confused on the study dates you mentioned. Cherokee County had a study done in 1988 and then 2006, and Cobb County had a study done in 1992 and then in 2008. Is this correct? Do any of these recent studies include the large event that occurred in July of 2005? I would estimate that the % impervious area for the Noonday Creek watershed is somewhere between 5-15%. Between the rural and urban equations, the urban equations would serve as a better estimate of the Q100 for this site. However, these FEMA studies may have additional information that would lead to a better estimate of the Q100 for this site.

Tony Gotvald, Hydrologist
USGS Georgia Water Science Center
3039 Amwiler Road, Suite 130
Atlanta, GA 30360
(770) 903-9310

"John McWhorter"
<jmcwhorter@JBTrimble.com>

04/25/2008 11:38 AM

To <agotvald@usgs.gov>
cc "Robbie Frizzell" <rfrizzell@JBTrimble.com>, "Beck, Susan" <sbeck@dot.ga.gov>, "Garrick L. Edwards" <gledwards@JBTrimble.com>, "Larry Cook" <lcook@JBTrimble.com>, "Curtis, Steven" <sacurtis@bechtel.com>
Subject Noonday Creek Discharges - I-575

Tony,

We are working on plans to widen I-575 over two crossings of Noonday Creek, which flows from south to north in Cobb and Cherokee Counties. The southern crossing is in Cobb County and the northern crossing is in Cherokee county. Since Noonday Creek is a FEMA studied stream, I was comparing discharges between the regression equations and FEMA and due to the large differences, I would like to get your comments.

The Cherokee County FEMA study is dated September 29, 2006. It appears that the discharges used for Noonday Creek in this study remain unchanged from the original study done in 1988. There is a "preliminary" study for Cobb County that is slated for a December 2008 effective date. This study includes new hydrology for Noonday Creek and the discharges are ~2.5 times the rural regression equations. This area is certainly urbanized and the use of the urban regression equations is easily warranted. However, even an impervious area of 100% will not approach the FEMA flows. At the southern (Cobb County) crossing of I-575 over Noonday Creek, the drainage area is 12.8 square miles. The USGS rural Q100 = 4468 cfs and the Dec. '08 FEMA flow is 11917 cfs. With an impervious area of 100%, the USGS urban regression Q100 = 9681cfs. For reference, the previous 100 year FEMA flow from the 1992 study = 12874 cfs.

There are gages on Noonday Creek at Shallowford Road (02392975) and Hawkins Store Road (02392950), which are in the area at 33.6 and 24.3 square miles, respectively. However, these gages only have about seven years of record.

T' orthern I-575 crossing over Noonday Creek in Cherokee County has a drainage area of 43.2 square miles. The current 2006 Flood Insurance Study for Cherokee County has a 100 year discharge of 9372 cfs at the confluence with Little River (drainage area 49.3 square miles). The 100 year rural discharge is 9108 cfs at the bridge site (43.2 sq mi) and 9839 cfs at the confluence (49.2 sq mi). In this case, the discharges correlate fairly well between USGS and FEMA except that some urbanization should be considered.

As you can see, the downstream crossing has ~3.4 times the drainage area (43.2 vs. 12.8) and approximately 75% of the discharge based on the FEMA flows. There appears to be some storage available between the two I-575 crossings over Noonday Creek that could partially explain the reduction. If you would, please comment on this issue and provide your recommendations for the discharge calculations for both the north and south crossings of I-575 over Noonday Creek. I've attached an excerpt from the quad m~ for your use.

Thank you for your time.

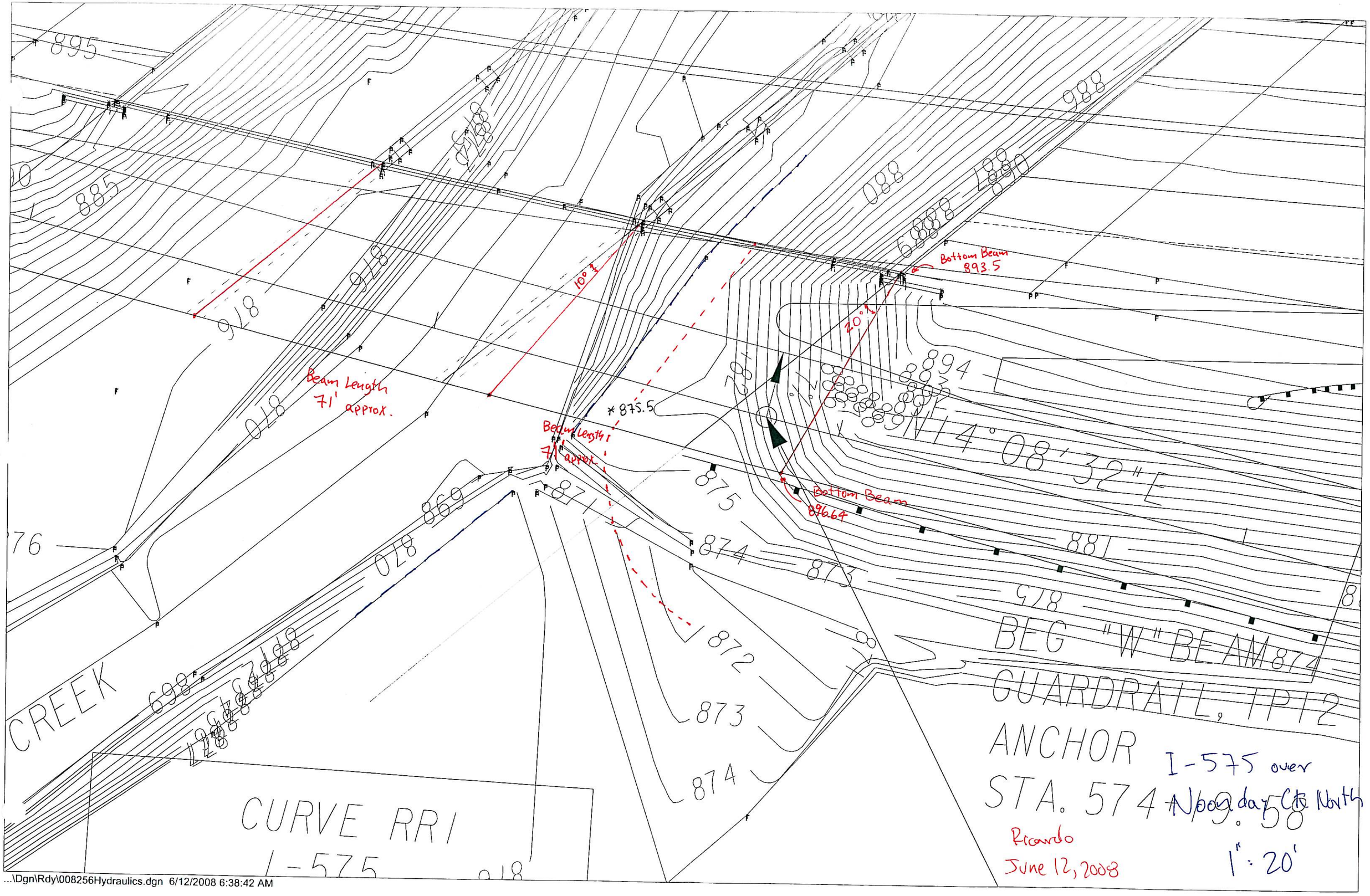
John McWhorter, P.E.
J.B. Trimble, Inc.
770-200-1713 direct
770-952-1022 office
770-952-1041 fax
jmcwhorter@jbtrimble.com

Help GDOT serve you better. Visit http://www.howsmyservice.dot.ga.gov and rate the service you received from Team GDOT.

Survey Existing Bottom of Beams

Calculated Existing Bottom of Beams

...\Preliminary\NoondayN_LO.dgn 6/4/2008 7:56:35 AM



...\Dgn\Rdy\008256Hydraulics.dgn 6/12/2008 6:38:42 AM

BRIDGE INVENTORY DATA LISTING GEO' .A DEPARTMENT OF TRANSPORTATION

Structure 057-0040-0 ... rokee SUFF. RATING 90.97

Location & Geography

*	Structure I.D.No:	057-0040-0	
	200 Bridge Information	01	
*	6A Feature Int:	NOONDAY CREEK	
*	6B Critical Bridge:	0	
*	7A Route Number Carried:	SR00417	
*	7B Facility Carried:	I-575 (NBL)	
*	9 Location:	.6 MI W OF WOODSTOCK	
	2 DOT District:	6	
	207 Year Photo:	2006	
*	91 Inspection Frequency:	24	Date: 03/29/2006
	92A Fract Crit Insp Freq:	00	Date: 02/01/1901
	92B Underwater Insp Freq:	00	Date: 02/01/1901
	92C Other Spc. Insp Freq:	00	Date: 02/01/1901
*	4 Place Code:	00000	
*	5 Inventory Route (O/U):	1	
	Type:	1	
	Designation:	1	
	Number:	00575	
	Direction:	0	
*	16 Latitude: 34-06.0	MMS Prefix: SR	
*	17 Longitude: 84-31.9	MMS Suffix: 00	MP: 24.79
	98 Border Bridge: 000	%Shared: 00	
	99 ID Number:	000000000000000	
*	100 STRAHNET:	1	
	12 Base Highway Network:	1	
	13A LRS Inventory Route:	571041700	
	13B Sub Inventory Route:	0	
*	101 Parallel Structure:	R	
*	102 Direction of Traffic:	1	
*	264 Road Inventory Mile Post:	001.71	
*	208 Inspection Area: 09	Initials: JMC	
	Engineer's Initial:	sgm	

* Location I.D. No.: 057-00417D-007.93N

*	104 Highway System:	1	
*	26 Functional Classification:	11	
*	204 Federal Route Type:	I	No.: 05751
	105 Federal Lands Highway:	0	
*	110 Truck Route:	1	
	206 School Bus Route:	0	
	217 Benchmark Elevation:	0000.00	
	218 Datum:	0	
*	19 Bypass Length:	01	
*	20 Toll:	3	
*	21 Maintenance:	01	
*	22 Owner:	01	
*	31 Design Load:	6	
	37 Historical Significance:	5	
	205 Congressional District:	06	
	27 Year Constructed:	1982	
	106 Year Reconstructed:	0000	
	33 Bridge Median:	1	
	34 Skew:	45	
	35 Structure Flared:	1	
	38 Navigation Control:	0	
	213 Special Steel Design:	0	
	267 Type of Paint:	0	
*	42 Type of Service on:	1	
		5	
	214 Movable Bridge:	0	
	203 Type Bridge:	A-O-O-O	
	259 Pile Encasement:	3	
*	43 Structure Type Main:	5 02	
	45 No. Spans Main:	003	
	44 Structure Type Appr:	0 00	
	46 No. Spans Appr:	0000	
	226 Bridge Curve Horz:	1	Vert: 0
	111 Pier Protection:	0	
	107 Deck Structure Type:	1	
	108 Wearing Surface Type:	1	
	M	0	
	F	1	

Signs & Attachments

	225 Expansion Joint Type:	15	
	242 Deck Drains:	1	
	243 Parapet Location:	0	
	Height:		0.00
	Width:		0.00
	238 Curb:		0.00 0
	239 Handrail:	9	9
*	240 Median Barrier Rail:	0	
	241 Bridge Median Height:		0.00
	Width:		0.00
*	230 Guardrail Loc Dir Rear:	6	
	Fwrd:	5	
	Oppo Dir Rear:	0	
	Fwrd:	0	
	244 Approach Slab:	3	
	224 Retaining Wall:	0	
	233 Posted Speed Limit:	65	
	236 Warning Sign:	0	
	234 Delineator:	1	
	235 Hazard Boards:	0	
	237 Utilities Gas:	00	
	W	00	
	Ele	00	
	Telephone:	00	
	S	00	
	247 Lighting Street:	0	
	Naviagtion:	0	
	Aerial:	0	
*	248 County Continuity No.:	02	

BRIDGE INVENTORY DATA LISTING GEO[illegible] DEPARTMENT OF TRANSPORTATION

Structure 057-0040-0 Cherokee SUFF. RATING 90.97

Programming Data

201 Project No.: I-575-1 (6) 07 CT.5
202 Plans Available: 4
249 Prop. Proj. No. 0000000000000000
250 Approval Status: 0000
251 P.I. No.: 0000000
252 Contract Date: 02/01/1901
260 Seismic No.: 00011
75 Type Work: 00 0
94 Bridge Imp. Cost: $ 0
95 Roadway Imp. Cost: $ 0
96 Total Imp Cost: $ 0
76 Imp. Length: 000000
97 Imp. Year: 0000
114 Future ADT: 140610 Year: 2025

Hydraulic Data

215 Waterway Data
Highwater Elev.: 0000.0 Year: 1900
Avg. Streambed Elev.: 0883.8 Freq.: 050
Drainage Area: 00043
Area Of Opening: 001510
113 Scour Critical: 5
216 Water Depth: 02.2 Br. Height: 26.0
222 Slope Protection: 1
221 Spur Dikes Rear: 0 Fwrd: 0
219 Fender System: 0
220 Dolphin: 0
223 Culvert Cover: 000
Type: 0
No. Barrels: 0
Width: 0.00 Height: 0.00
Length: 0 Apron: 0
* 265 U/W Insp. Area: 0 Diver: ZZZ

* Location I.D. No.: 057-00417D-007.93N

Measurements

* 29 ADT: 093740 Year: 2005
109 % Trucks: 0
* 28 Lanes On: 03 Under: 00
210 No. Tracks On: 00 Under: 00
* 48 Max. Span Length: 0070
* 49 Structure Length: 210
51 Br. Rwdy. Width: 63.20
52 Deck Width: 66.40
* 47 Tot. Horz. Cl: 63.20
50 Curb/Sdewlk Width: 0.00/0.00
32 Approach Rdwy Width: 038
* 229 Shoulder Width:
Rear Lt: 4.00 Type: 2 Rt: 10.00
Fwrd Lt: 4.00 Type: 2 Rt: 10.00
Pavement Width:
Rear: 24.00 Type: 2
Fwrd: 24.00 Type: 2
Intersection Rear: 0 Fwrd: 1
36 Safety Features Br. Rail: 1
Transition: 1
App. G. Rail: 1
App. Rail End: 1
53 Minimum Cl.Over: 99 ' 99 "
Under: N 00 ' 00 "
* 228 Min. Vertical Cl
Act. Odm Dir: 99 ' 99 "
Oppo. Dir: 99 ' 99 "
Posted Odm. Dir: 00 ' 00 "
Oppo. Dir: 00 ' 00 "
55 Lateral Undercl. Rt: N 99.90
56 Lateral Undercl. Lt: 0.00
* 10 Max Min Vert Cl: 99 ' 99 " Dir: 0
39 Nav Vert Cl: 000 Horz: 0000
116 Nav Vert Cl Closed: 000
245 Deck Thickness Main: 8.00
Deck Thick Approach: 0.00
246 Overlay Thickness: 0.00
212 Year Last Painted: Sup: 0000 Sub: 0000

Ratings

65 Inventory Rating Method: 1
63 Inventory Rating Method: 1
66 Inventory Type: 2 Rating: 36
64 Operating Type: 2 Rating: 96
231 Calculated Loads
H-Modified: 20 0
HS-Modified: 25 0
Type 3: 28 0
Type 3s2: 40 0
Timber: 36 0
Piggyback: 40 0
261 H Inventory Rating: 20
262 H Operating Rating: 28
67 Structural Evaluation: 8
58 Deck Condition: 7
59 Superstructure Condition: 8
* 227 Collision Damage: 0
60A Substructure Condition: 8
60B Scour Condition: 7
60C Underwater Condition: N
71 Waterway Adequacy: 9
61 Channel Protection Cond: 7
68 Deck Geometry: 9
69 UnderClr. Horz/Vert: N
72 Appr. Alignment: 8
62 Culvert: N

Posting Data

70 Bridge Posting Required: 5
41 Struct Open, Posted, Cl: A
* 103 Temporary Structure: 0
232 Posted Loads H-Modified: 00
HS-Modified: 00
Type 3: 00
Type3s2: 00
Timber: 00
Piggyback: 00
253 Notification Date 02/01/1901
253 Fed Notify Date: 02/01/1901 0

GEORGIA DEPARTMENT OF TRANSPORTATION

Bridge Inspection Report

District: 6
Bridge Inspector: Jerry Cooper
Location ID: 057-00417D-007.93N
Structure ID: 057-0040-0

Inspection Date: 3/29/2006
Over: NOONDAY CREEK
County: Cherokee
Road Name: I-575 (NBL)

Inspection Area: 09
Bridge Status: 01

EVALUATION & DEFICIENCIES

SubStructure:

Year Painted: 0000

Concrete caps at both abutments.
Bents 2, and 3 have a concrete cap and 4 concrete columns per bent.
Very minor cracks in both abutment caps.

SuperStructure:

Year Painted: 0000

3 span p.s.c. "I" beam - 12 beams per span.
Neoprene bearings.
Good except for minor edge beam cracks .

Deck:

8" concrete slab poured continuous.
Concrete S.I.P. deck forms.
Evazote joints at both abutments.
Remaining joints are silicone covered with Sand epoxy.
Some type of Sand epoxy has been added to the deck.

General:

Built in 1982 - Project # I-575-1 (6) 07 CT.5
The inventory load capacity = HS-20+M. <-- Design.
Hand tools and ladder used.

Condition Rating

Component	Material	Rating
Substructure	Concrete	8
Superstructure	Concrete	8
Deck	Concrete	7

Temp Shored: **No**

Truck Type	Gross/H-Mod	HSMod	Tand	3-S-2	Log	Piggy
Calculated Posting	20	25	28	40	36	40
Posting Required	No	No	No	No	No	No
Existing Posting	00	00	00	00	00	00

Not a School Bus Route.

Structure Does Not Require Posting

GEORGIA DEPARTM . OF TRANSPORTATION

Bridge Component Report

District: 6
Bridge Inspector: Jerry Cooper
Location ID: 057-00417D-007.93N
Structure ID: 057-0040-0

Inspection Date: 3/29/2006
Over: NOONDAY CREEK
County: Cherokee
Road Name: I-575 (NBL)

Inspection Area: 09

SubStructure Data

Bent#	Type	Foundation	Col	#Cols	Piling	#Piles	Sway	CAP	Remarks
1	A	DP		0		0		C	
2	B	SF	C	4		0		C	
3	B	SF	C	4		0		C	
4	A	DP		0		0		C	

SuperStructure Data

Span#	Beam Type	Spacing	Length	#Beams	Remarks
1	Concrete "I" Beam	6.40	70.00	12	P. S. C. Type III
2	Concrete "I" Beam	6.40	70.00	12	P. S. C. Type III
3	Concrete "I" Beam	6.40	70.00	12	P. S. C. Type III

Bearing Data

Span#	Rear Type Bearing	FWD Type Bearing	Remarks
1	03 - Elastomeric	03 - Elastomeric	
2	03 - Elastomeric	03 - Elastomeric	
3	03 - Elastomeric	03 - Elastomeric	

GEORGIA DEPARTM I OF TRANSPORTATION

Waterway Report

District: 6
Bridge Inspector: Jerry Cooper
Location ID: 057-00417D-007.93N
Structure ID: 057-0040-0

Inspection Date: 3/29/2006
Over: NOONDAY CREEK
County: Cherokee
Road Name: I-575 (NBL)

Inspection Area: 09

Skew: 45

Span #:	1	2	3
Length:	70.0	70.0	70.0

Upstream -
Upstream +

		1	2	3	4
04/22/1998	DEM		20.70	28.20	7.40
03/09/2000	JMC-WBR		20.70	28.60	7.40
05/28/2002	JMC-WBR		20.80	28.90	7.50
03/17/2004	JMC-WBR		20.80	28.90	7.50
03/29/2006	JMC-WBR		20.90	28.20	7.50

Downstream -
Downstream +

		1	2	3	4
04/22/1998	DEM		19.40	22.10	6.80
03/09/2000	JMC-WBR		22.20	22.00	6.80
05/28/2002	JMC-WBR		22.40	22.00	7.00
03/17/2004	JMC-WBR		22.40	22.00	7.00
03/29/2006	JMC-WBR		22.40	22.20	7.00

Report Date: 7/11/2006

GEORGIA DEPARTM. .1 OF TRANSPORTATION

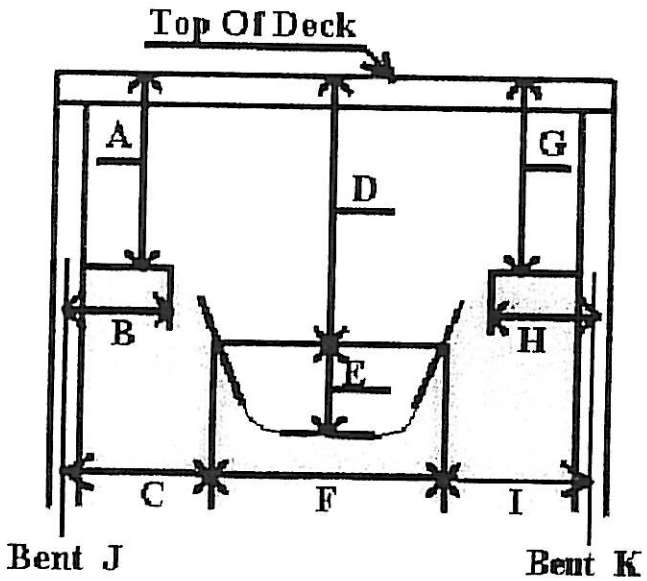
Waterway Report

District: 6
Bridge Inspector: Jerry Cooper
Location ID: 057-00417D-007.93N
Structure ID: 057-0040-0

Inspection Date: 3/29/2006
Over: NOONDAY CREEK
County: Cherokee
Road Name: I-575 (NBL)

Inspection Area: 09

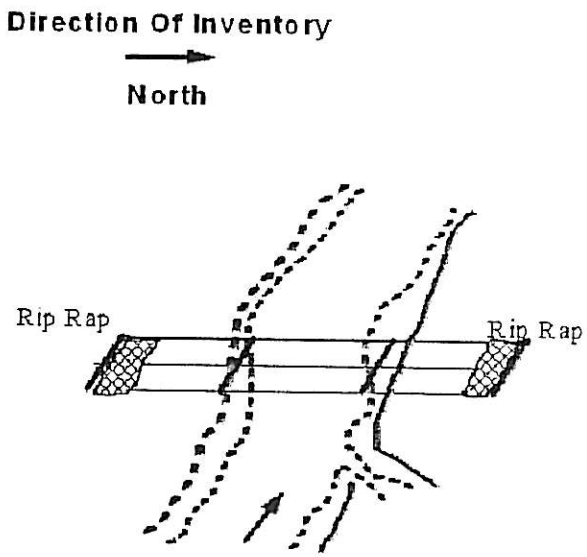
Skew: 45



Side view at the Channel.

B, C, H, & I are measured to center of bent or B.F.P.R.

A:	22
B:	0
C:	12
D:	26.0
E:	02.2
F:	55
G:	22
H:	64
I:	73
J:	2
K:	4



1 2 3 4

Location of Bridge Height -5' From bent #3

Scour Condition: 7 **Waterway Adequacy:** 9 **Channel Protection:** 7

45 = SubStructure
45 = Channel Skew

0 = Stream Angle

Comments:
Bridge in super elevated curve upstream high side.

Report Date: 7/11/2006

BRIDGE INVENTORY DATA LISTING GEO' A DEPARTMENT OF TRANSPORTATION

Structure 057-0041-0 ... rokee SUFF. RATING 90.97

Location & Geography

*	Structure I.D.No:	057-0041-0
	200 Bridge Information	01
*	6A Feature Int:	NOONDAY CREEK
*	6B Critical Bridge:	0
*	7A Route Number Carried:	SR00417
*	7B Facility Carried:	I-575 (SBL)
*	9 Location:	.6 MI W OF WOODSTOCK
	2 DOT District:	6
	207 Year Photo:	2006
*	91 Inspection Frequency:	24 Date: 03/29/2006
	92A Fract Crit Insp Freq:	00 Date: 02/01/1901
	92B Underwater Insp Freq:	00 Date: 02/01/1901
	92C Other Spc. Insp Freq:	00 Date: 02/01/1901
*	4 Place Code:	00000
*	5 Inventory Route (O/U):	1
	Type:	1
	Designation:	1
	Number:	00575
	Direction:	0
*	16 Latitude: 34-06.0	MMS Prefix: SR
*	17 Longitude: 84-31.9	MMS Suffix: 00 MP: 24.80
	98 Border Bridge: 000	%Shared: 00
	99 ID Number:	000000000000000
*	100 STRAHNET: 1	
	12 Base Highway Network:	1
	13A LRS Inventory Route:	571041700
	13B Sub Inventory Route:	0
*	101 Parallel Structure:	L
*	102 Direction of Traffic:	1
*	264 Road Inventory Mile Post:	001.72
*	208 Inspection Area: 09	Initials: JMC
	Engineer's Initial: sgm	

* Location I.D. No.: 057-00417D-007.94N

*	104 Highway System:	1
*	26 Functional Classification:	11
*	204 Federal Route Type:	I No.: 05751
	105 Federal Lands Highway:	0
*	110 Truck Route:	1
	206 School Bus Route:	0
	217 Benchmark Elevation:	0000.00
	218 Datum:	0
*	19 Bypass Length:	01
*	20 Toll:	3
*	21 Maintenance:	01
*	22 Owner:	01
*	31 Design Load:	6
	37 Historical Significance:	5
	205 Congressional District:	06
	27 Year Constructed:	1982
	106 Year Reconstructed:	0000
	33 Bridge Median:	1
	34 Skew:	45
	35 Structure Flared:	0
	38 Navigation Control:	0
	213 Special Steel Design:	0
	267 Type of Paint:	0
*	42 Type of Service on:	1
		5
	214 Movable Bridge:	0
	203 Type Bridge:	J-O-O-O
	259 Pile Encasement:	3
*	43 Structure Type Main:	5 02
	45 No. Spans Main:	003
	44 Structure Type Appr:	0 00
	46 No. Spans Appr:	0000
	226 Bridge Curve Horz:	1 Vert: 0
	111 Pier Protection:	0
	107 Deck Structure Type:	1
	108 Wearing Surface Type:	1
	M	0
	F	1

Signs & Attachments

	225 Expansion Joint Type:	15	
	242 Deck Drains:	1	
	243 Parapet Location:	0	
	Height:		0.00
	Width:		0.00
	238 Curb:		0.00 0
	239 Handrail:	9	9
*	240 Median Barrier Rail:	0	
	241 Bridge Median Height:		0.00
	Width:		0.00
*	230 Guardrail Loc Dir Rear:	6	
	Fwrd:	0	
	Oppo Dir Rear:	0	
	Fwrd:	0	
	244 Approach Slab:	3	
	224 Retaining Wall:	0	
	233 Posted Speed Limit:	65	
	236 Warning Sign:	0	
	234 Delineator:	1	
	235 Hazard Boards:	0	
	237 Utilities Gas:	00	
	W	00	
	Ele	00	
	Telephone:	00	
	Sc	00	
	247 Lighting Street:	0	
	Naviagtion:	0	
	Aerial:	0	
*	248 County Continuity No.:	02	

BRIDGE INVENTORY DATA LISTING GEO' A DEPARTMENT OF TRANSPORTATION

Structure 057-0041-0 C..rokee SUFF. RATING 90.97

Programming Data

201 Project No.: I-575-1 (6) 07 CT.5
202 Plans Available: 4
249 Prop. Proj. No. 0000000000000000
250 Approval Status: 0000
251 P.I. No.: 0000000
252 Contract Date: 02/01/1901
260 Seismic No.: 00011
75 Type Work: 00 0
94 Bridge Imp. Cost: $ 0
95 Roadway Imp. Cost: $ 0
96 Total Imp Cost: $ 0
76 Imp. Length: 000000
97 Imp. Year: 0000
114 Future ADT: 140610 Year: 2025

Hydraulic Data

215 Waterway Data
Highwater Elev.: 0000.0 Year: 1900
Avg. Streambed Elev.: 0883.8 Freq.: 050
Drainage Area: 00043
Area Of Opening: 001510
113 Scour Critical: 5
216 Water Depth: 02.1 Br. Height: 23.8
222 Slope Protection: 1
221 Spur Dikes Rear: 0 Fwrd: 0
219 Fender System: 0
220 Dolphin: 0
223 Culvert Cover: 000
Type: 0
No. Barrels: 0
Width: 0.00 Height: 0.00
Length: 0 Apron: 0
* 265 U/W Insp. Area: 0 Diver: ZZZ

* Location I.D. No.: 057-00417D-007.94N

Measurements

* 29 ADT: 093740 Year: 2005
109 % Trucks: 0
* 28 Lanes On: 02 Under: 00
210 No. Tracks On: 00 Under: 00
* 48 Max. Span Length: 0070
* 49 Structure Length: 210
51 Br. Rwdy. Width: 42.00
52 Deck Width: 45.20
* 47 Tot. Horz. Cl: 42.00
50 Curb/Sdewlk Width: 0.00/0.00
32 Approach Rdwy Width: 038
* 229 Shoulder Width:
Rear Lt: 4.00 Type: 2 Rt: 10.00
Fwrd Lt: 4.00 Type: 2 Rt: 10.00
Pavement Width:
Rear: 24.00 Type: 2
Fwrd: 24.00 Type: 2
Intersection Rear: 1 Fwrd: 1
36 Safety Features Br. Rail: 1
Transition: 1
App. G. Rail: 1
App. Rail End: 1
53 Minimum Cl.Over: 99 ' 99 "
Under: N 00 ' 00 "
* 228 Min. Vertical Cl
Act. Odm Dir: 99 ' 99 "
Oppo. Dir: 99 ' 99 "
Posted Odm. Dir: 00 ' 00 "
Oppo. Dir: 00 ' 00 "
55 Lateral Undercl. Rt: N 99.90
56 Lateral Undercl. Lt: 0.00
* 10 Max Min Vert Cl: 99 ' 99 " Dir: 0
39 Nav Vert Cl: 000 Horz: 0000
116 Nav Vert Cl Closed: 000
245 Deck Thickness Main: 7.40
Deck Thick Approach: 0.00
246 Overlay Thickness: 0.00
212 Year Last Painted: Sup: 0000 Sub: 0000

Ratings

65 Inventory Rating Method: 1
63 Inventory Rating Method: 1
66 Inventory Type: 2 Rating: 45
64 Operating Type: 2 Rating: 99
231 Calculated Loads
H-Modified: 20 0
HS-Modified: 25 0
Type 3: 28 0
Type 3s2: 40 0
Timber: 36 0
Piggyback: 40 0
261 H Inventory Rating: 20
262 H Operating Rating: 28
67 Structural Evaluation: 6
58 Deck Condition: 7
59 Superstructure Condition: 8
* 227 Collision Damage: 0
60A Substructure Condition: 6
60B Scour Condition: 5
60C Underwater Condition: N
71 Waterway Adequacy: 9
61 Channel Protection Cond: 7
68 Deck Geometry: 8
69 UnderClr. Horz/Vert: N
72 Appr. Alignment: 8
62 Culvert: N

Posting Data

70 Bridge Posting Required: 5
41 Struct Open, Posted, Cl: A
* 103 Temporary Structure: 0
232 Posted Loads H-Modified: 00
HS-Modified: 00
Type 3: 00
Type3s2: 00
Timber: 00
Piggyback: 00
253 Notification Date 02/01/1901
253 Fed Notify Date: 02/01/1901 0

GEORGIA DEPARTMI JF TRANSPORTATION

Bridge Component Report

District: 6
Bridge Inspector: Jerry Cooper
Location ID: 057-00417D-007.94N
Structure ID: 057-0041-0

Inspection Date: 3/29/2006
Over: NOONDAY CREEK
County: Cherokee
Road Name: I-575 (SBL)

Inspection Area: 09

SubStructure Data

Bent#	Type	Foundation	Col	#Cols	Piling	#Piles	Sway	CAP	Remarks
1	A	DP		0		0		C	
2	B	DP	C	3		0		C	
3	B	DP	C	3		0		C	
4	A	DP		0		0		C	

SuperStructure Data

Span#	Beam Type	Spacing	Length	#Beams	Remarks
1	Concrete "I" Beam	6.40	70.00	7	P. S. C. Type III
2	Concrete "I" Beam	6.40	70.00	7	P. S. C. Type III
3	Concrete "I" Beam	6.40	70.00	7	P. S. C. Type III

Bearing Data

Span#	Rear Type Bearing	FWD Type Bearing	Remarks
1	03 - Elastomeric	03 - Elastomeric	
2	03 - Elastomeric	03 - Elastomeric	
3	03 - Elastomeric	03 - Elastomeric	

GEORGIA DEPARTMENT OF TRANSPORTATION

Bridge Inspection Report

District: 6
Bridge Inspector: Jerry Cooper
ocation ID: 057-00417D-007.94N
Structure ID: 057-0041-0

Inspection Date: 3/29/2006
Over: NOONDAY CREEK
County: Cherokee
Road Name: I-575 (SBL)

Inspection Area: 09
Bridge Status: 01

EVALUATION & DEFICIENCIES

SubStructure:

Year Painted: 0000

Concrete caps at both abutments.
Bents 2, and 3 have a concrete cap and 3 concrete columns .
Minor cracks in both abutment caps.
Bank scour exposing footings at bent 2 and 3 .
The footings are beginning to undermine 1.1' at the present time.

SuperStructure:

Year Painted: 0000

3 span p.s.c. "I" beam - 7 beams per span.
Neoprene bearings.
Minor edge beam cracks .

Deck:

7.4" concrete slab poured continuous.
Evazote joints at both abutments.
Remaining joints are silicone covered with epoxy.
Concrete s.i.p. deck forms.
Some type of Sand epoxy has been added to the deck.

General:

ilt in 1982 - Project # I-575-1 (6) 07 CT.5.
The inventory load capacity = HS-20+M. <-- Design.
Hand tools and ladder used.

Condition Rating

Component	Material	Rating
Substructure	Concrete	6
Superstructure	Concrete	8
Deck	Concrete	7

Temp Shored: **No**

Truck Type	Gross/H-Mod	HSMod	Tand	3-S-2	Log	Piggy
Calculated Posting	20	25	28	40	36	40
Posting Required	No	No	No	No	No	No
Existing Posting	00	00	00	00	00	00

Not a School Bus Route.

Structure Does Not Require Posting

Report Date: 7/11/2006

GEORGIA DEPARTM .1 OF TRANSPORTATION

Waterway Report

District: 6
Bridge Inspector: Jerry Cooper
Location ID: 057-00417D-007.94N
Structure ID: 057-0041-0

Inspection Date: 3/29/2006
Over: NOONDAY CREEK
County: Cherokee
Road Name: I-575 (SBL)

Inspection Area: 09

Skew: 45

Span #:	1	2	3
Length:	**70.0**	**70.0**	**70.0**

Upstream -
Upstream +

		1	2	3	4
04/22/1998	DEM		23.00	19.90	7.70
03/09/2000	JMC-WBR		24.00	21.60	7.70
05/28/2002	JMC-WBR		24.10	21.70	7.70
03/17/2004	JMC-WBR		24.00	21.70	7.70
03/29/2006	JMC-WBR		24.00	21.90	7.70

Downstream -
Downstream +

		1	2	3	4
04/22/1998	DEM		20.00	15.70	5.90
03/09/2000	JMC-WBR		20.00	21.00	6.00
05/28/2002	JMC-WBR		20.20	21.50	6.00
03/17/2004	JMC-WBR		20.20	21.50	6.00
03/29/2006	JMC-WBR		20.20	21.80	6.00

GEORGIA DEPARTM ı OF TRANSPORTATION

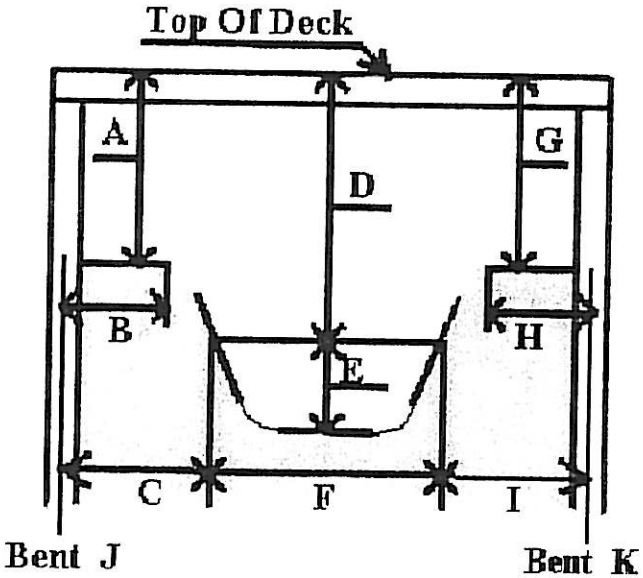
Waterway Report

District: 6
Bridge Inspector: Jerry Cooper
Location ID: 057-00417D-007.94N
Structure ID: 057-0041-0

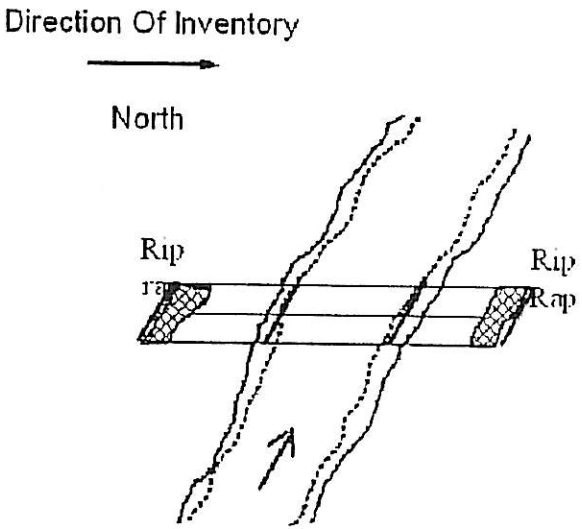
Inspection Date: 3/29/2006
Over: NOONDAY CREEK
County: Cherokee
Road Name: I-575 (SBL)

Inspection Area: 09

Skew: 45



A:	17
B:	59
C:	66
D:	23.8
E:	02.1
F:	63
G:	17
H:	0
I:	11
J:	1
K:	3



Side view at the Channel.

B, C, H, & I are measured to center of bent or B.F.P.R.

Footings exposed at bt. 2 and 3 with 1.1' undermining

1 2 3 4

Location of Bridge Height +5' from bent #2

Scour Condition: 5 **Waterway Adequacy:** 9 **Channel Protection:** 7

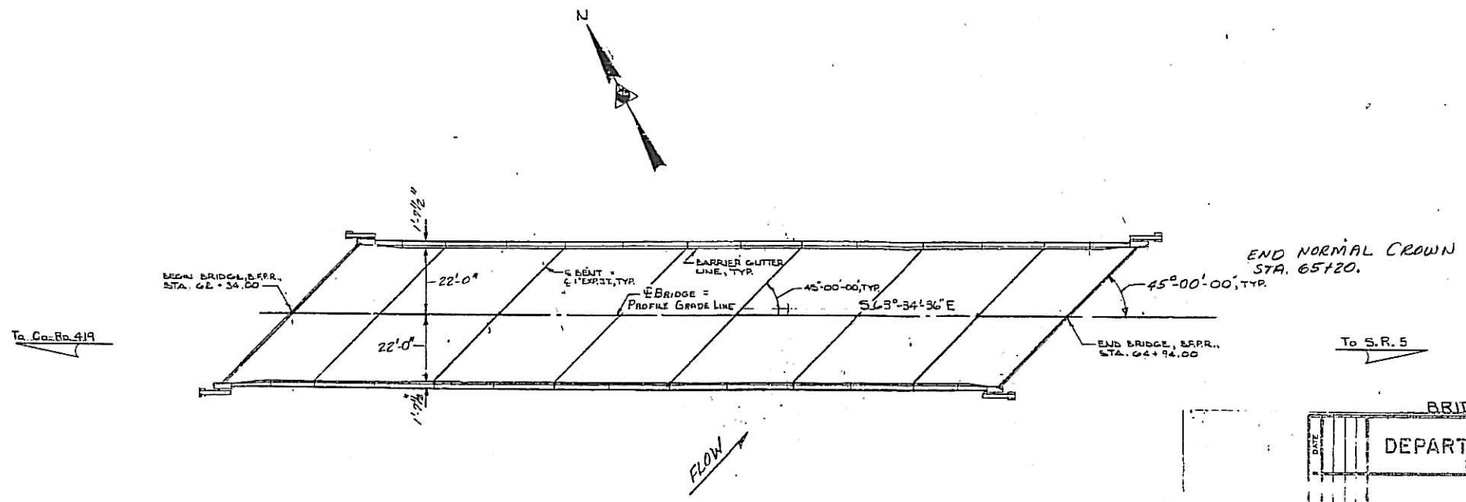
45 = SubStructure
45 = Channel Skew

0 = Stream Angle

Comments:
Bridge in super elevated curve upstream high side.

STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
GA.	LAB-7-416-3(057)	6	26

Rev. 4-8-81
Rev. 5-27-81



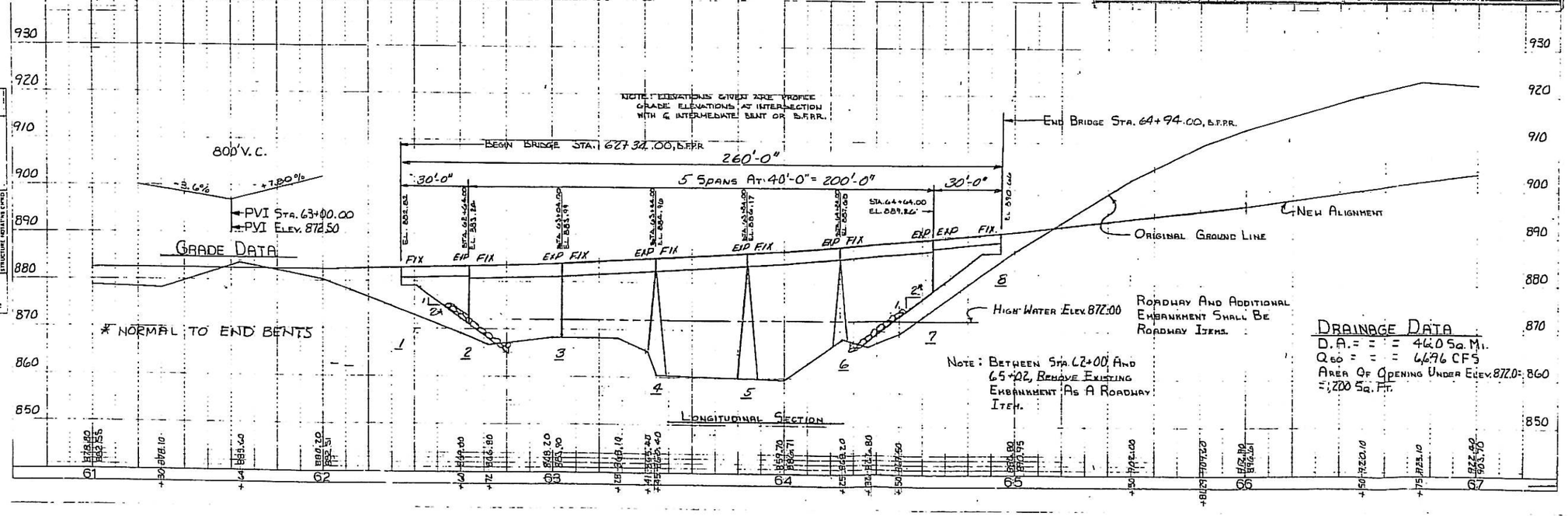
BRIDGE NO. 1

GEORGIA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION - BRIDGE DESIGN

PLAN AND LONG. SECTION
CO. RD. NO. 416 OVER NOONDAY CREEK
CHEROKEE CO. LAB - 7-416-3 (057)
NO SCALE MAY 1980

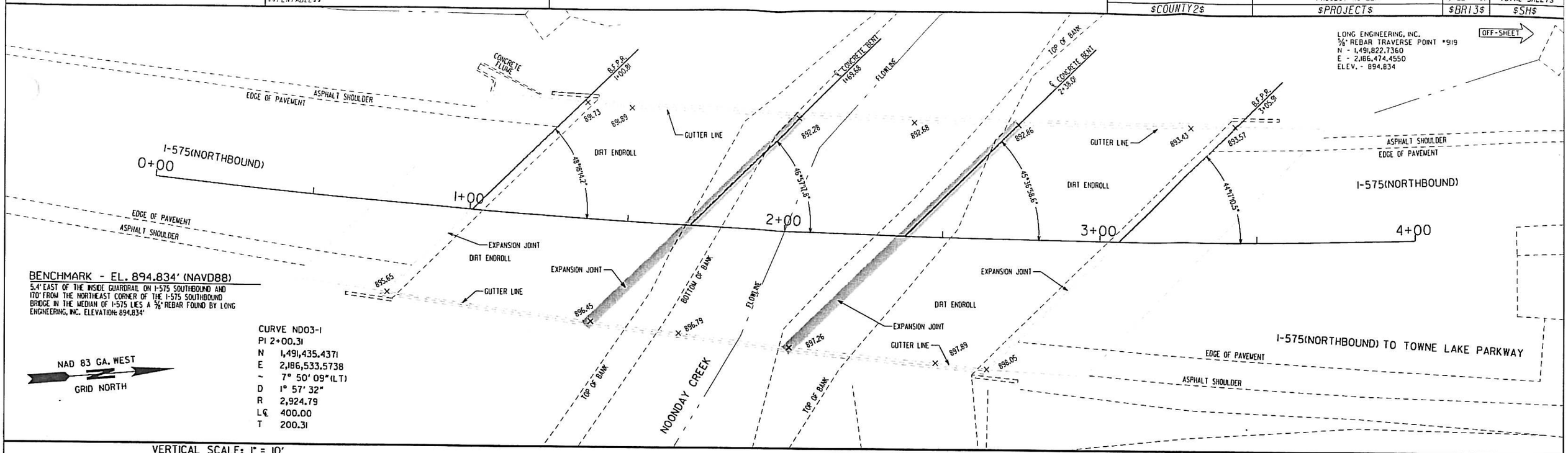
BRIDGE SHEET 1 OF 9

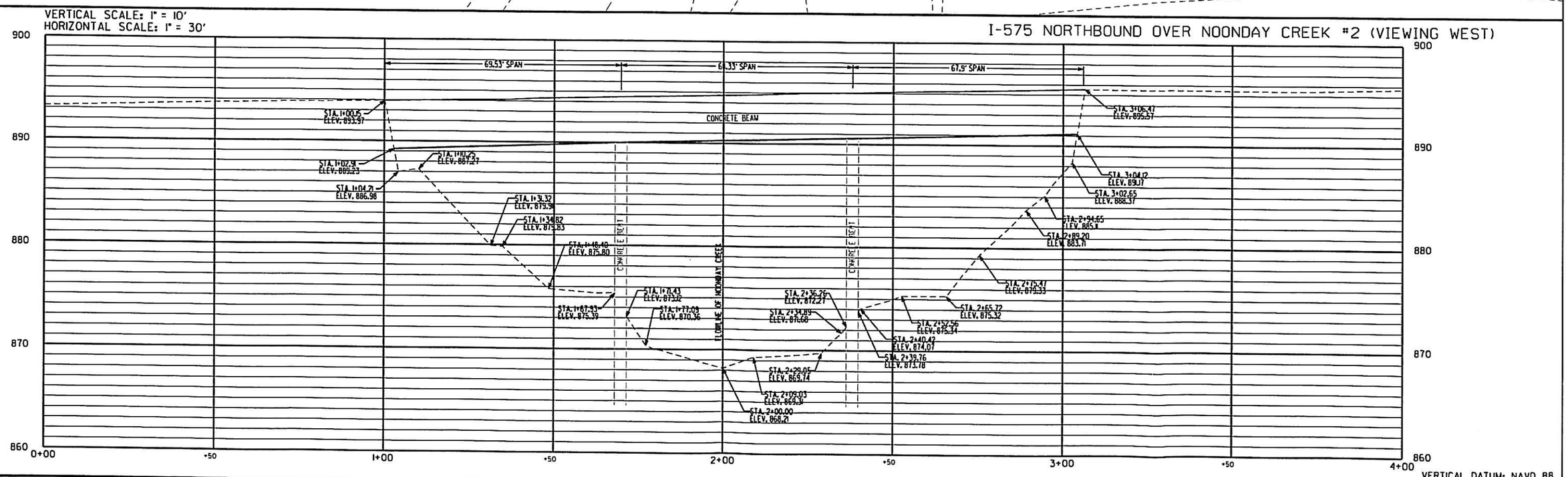
DESIGNED STD.-MOD. TRACED REVIEWED LRP
DRAWN DPM-RHC CHECKED JET APPROVED W.B.L.



DRAINAGE DATA
D.A. = = = 46.0 SQ. MI.
Q_{50} = = = 6,696 CFS
AREA OF OPENING UNDER ELEV. 872.0 = 1,200 SQ. FT.

DATE$$$ $USER$	TIME$$$	PRF $$PENTABLE$$	DGN	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
				$COUNTY2$	$PROJECT$	$BR13$	SH





NOTE: THIS PROFILE INDICATES ELEVATIONS ALONG THE CENTERLINE OF I-575 NORTHBOUND.

P.I. NO. $PROJECT$	LONG JOB NO. $LEI JOB$
DRAWN BY $DRAWN$	DATE DATE$$$
CHECKED BY $CHECKED$	SCALE 1" = 30'

LONG ENGINEERING, INC.

1780 Corporate Drive
Suite 400
Norcross, Georgia 30093
Tel 770.931.8005
Fax 770.931.8555
www.longeng.com

SCALE IN FEET
0 15 30 60

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

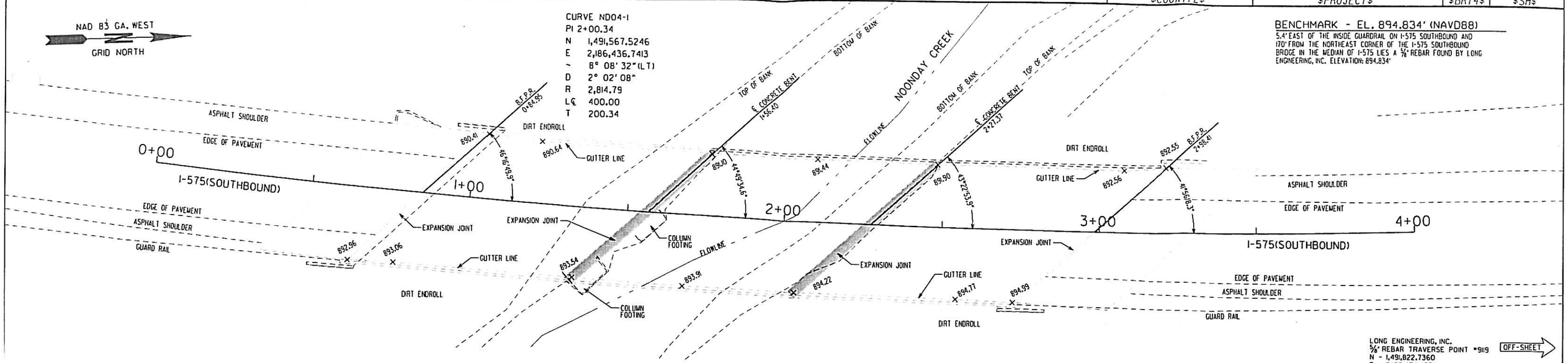
BRIDGE DETAIL

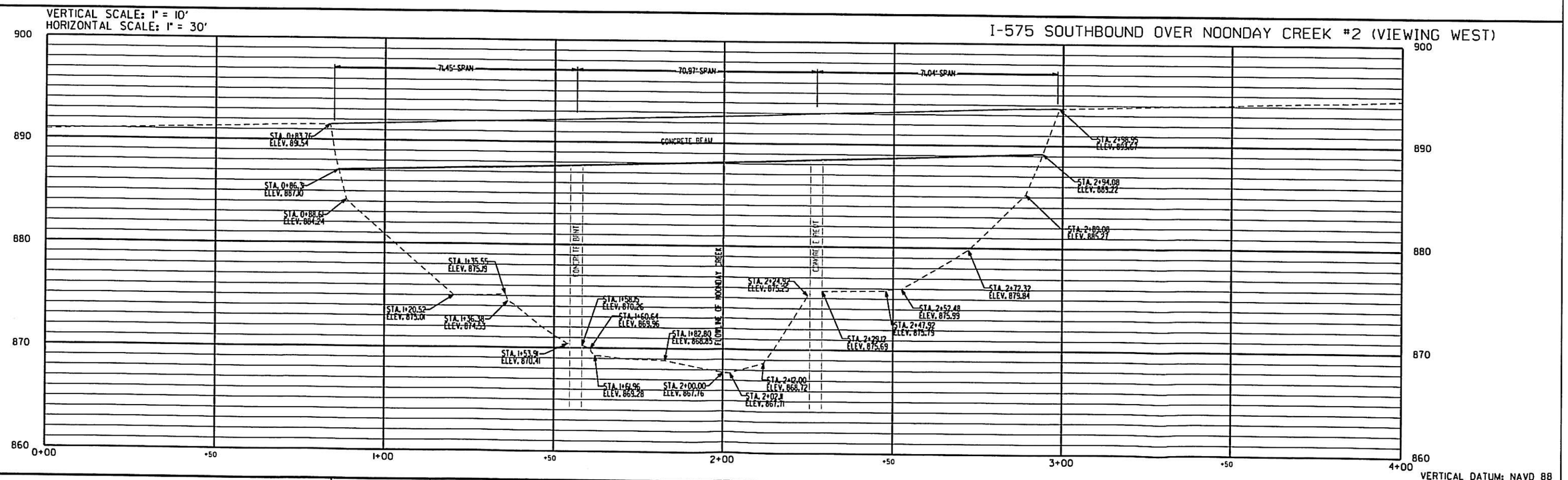
I-575 FROM BARRETT PARKWAY TO SIXES ROAD

I-575 (NORTHBOUND) OVER NOONDAY CREEK #2

DRAWING No. $BR13$

DATE$$$	TIME$$$	PRF	DGN	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
$USER$		$$PENTABLE$$		$COUNTY2$	$PROJECT$	$BR14$	SH





: THIS PROFILE INDICATES ELEVATIONS ALONG THE CENTERLINE OF I-575 SOUTHBOUND.

P. I. NO.	LONG JOB NO.
$PROJECT$	$LEI JOB$
DRAWN BY $DRAWN$	DATE DATE$$$
CHECKED BY $CHECKED$	SCALE 1" = 30'

LONG ENGINEERING, INC.

1780 Corporate Drive
Suite 400
Norcross, Georgia 30093
Tel 770.931.8005
Fax 770.931.8555
www.longeng.com

SCALE IN FEET
0 15 30 60

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

BRIDGE DETAIL

I-575 FROM BARRETT PARKWAY TO SIXES ROAD

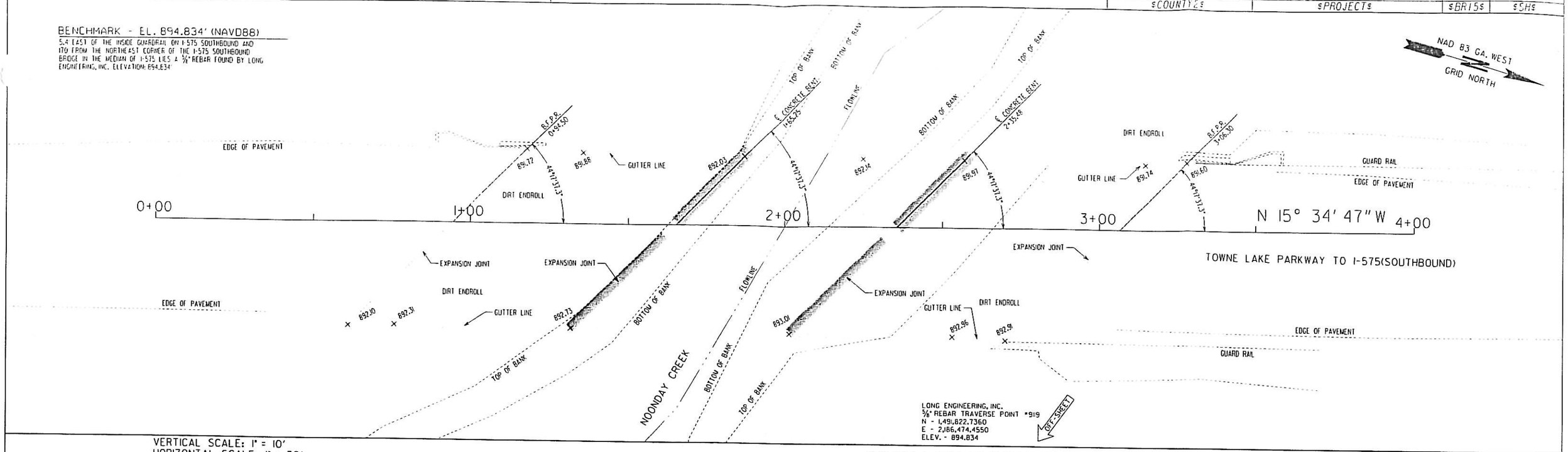
I-575(SOUTHBOUND) OVER NOONDAY CREEK #2

DRAWING No. $BR14$

DATE$$$	TIME$$$	PRF	DGN	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
$USER$		$$PENTABLE$$		$COUNTY2$	$PROJECT$	$BR15$	SH

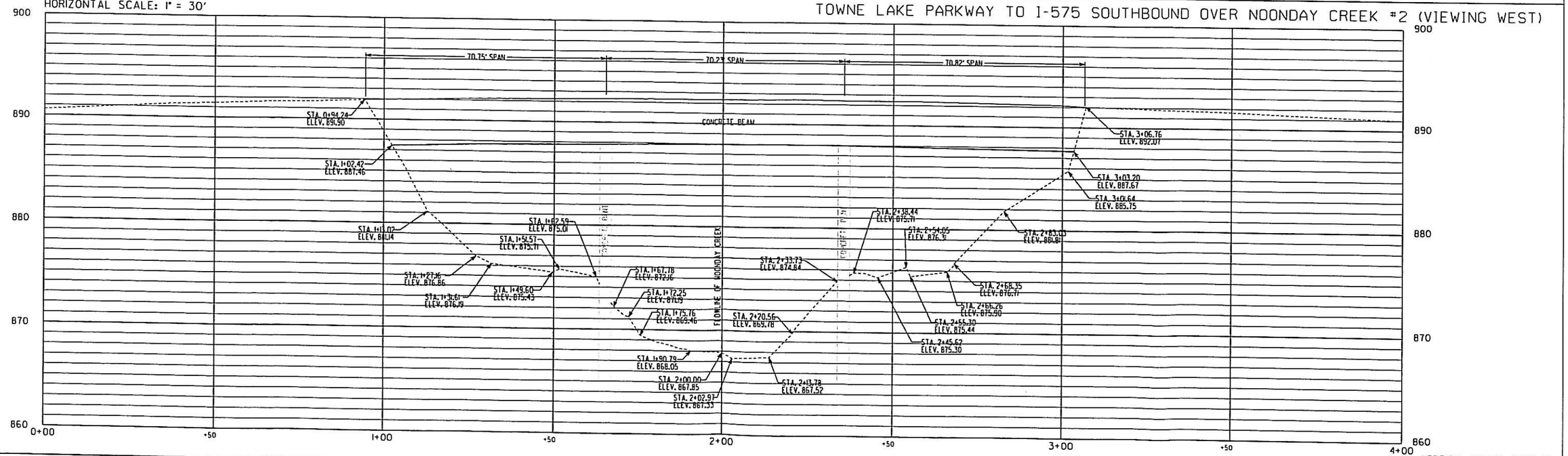
BENCHMARK - EL. 894.834' (NAVD88)

5.4' EAST OF THE INSIDE GUARDRAIL ON I-575 SOUTHBOUND AND 170' FROM THE NORTHEAST CORNER OF THE I-575 SOUTHBOUND BRIDGE IN THE MEDIAN OF I-575 LIES A 5/8" REBAR FOUND BY LONG ENGINEERING, INC. ELEVATION: 894.834'



VERTICAL SCALE: 1" = 10'
HORIZONTAL SCALE: 1" = 30'

TOWNE LAKE PARKWAY TO I-575 SOUTHBOUND OVER NOONDAY CREEK #2 (VIEWING WEST)



VERTICAL DATUM: NAVD 88

TE: THIS PROFILE INDICATES ELEVATIONS ALONG THE CENTERLINE OF THE TOWNE LAKE PARKWAY TO I-575 SOUTHBOUND ON-RAMP.

P. I. NO. $PROJECT$	LONG JOB NO. $LEI JOB$
DRAWN BY $DRAWN$	DATE DATE$$$
CHECKED BY $CHECKED$	SCALE 1" = 30'

LONG ENGINEERING, INC.
1780 Corporate Drive
Suite 400
Norcross, Georgia 30093
Tel 770.931.8005
Fax 770.931.8555
www.longeng.com

SCALE IN FEET
0 15 30 60

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

BRIDGE DETAIL
I-575/BARRETT PARKWAY TO SIXES ROAD
TOWNE LAKE PARKWAY
TO I-575(SOUTHBOUND)
OVER NOONDAY CREEK #2

DRAWING No. $BR15$

FED. RD DIV. NO.	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	GA.	I-575-1(6)07			

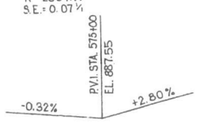
Rev. 7-13-82

ELEVATIONS **					
LEFT BRIDGE			RIGHT BRIDGE		
LOCATION	STATION	ELEVATION	LOCATION	STATION	ELEVATION
BFPR BENT 1	570+20.11	892.45	BFPR BENT 1	571+60.83	892.04
℄ BENT 2	572+91.64	893.11	℄ BENT 2	572+29.38	892.57
℄ BENT 3	573+63.24	893.80	℄ BENT 3	572+97.87	893.16
BFPR BENT 4	574+34.93	894.58	BFPR BENT 4	573+66.28	893.83

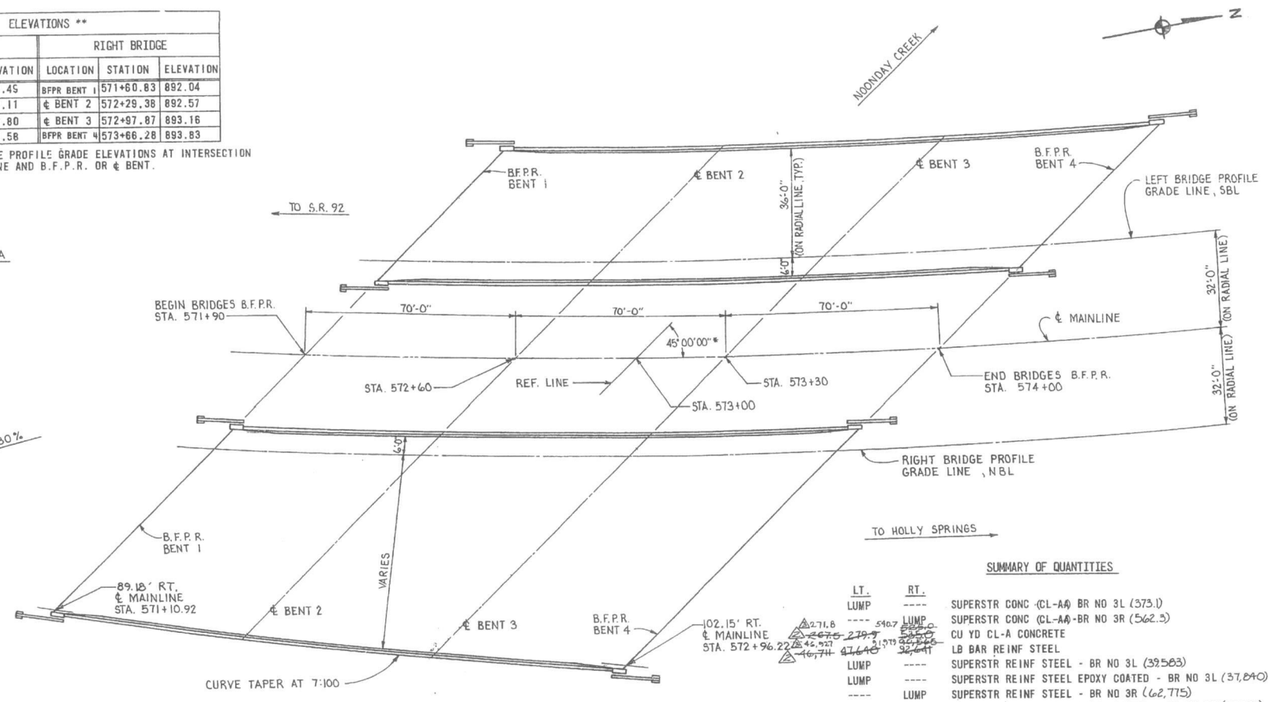
** ELEVATIONS GIVEN ARE PROFILE GRADE ELEVATIONS AT INTERSECTION OF PROFILE GRADE LINE AND B.F.P.R. OR ℄ BENT.

HORIZONTAL CURVE DATA

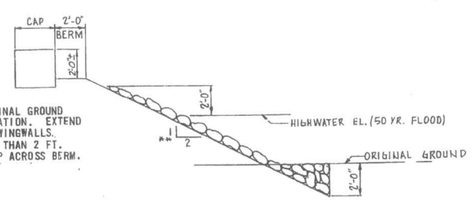
P.I. STA. 577+54.45
Δ= 40° 49' 18" LT.
D= 2° 00' 00"
T= 1066.02'
L= 2041.08'
E= 191.91'
R= 2864.79'
S.E.= 0.07%



GRADE DATA

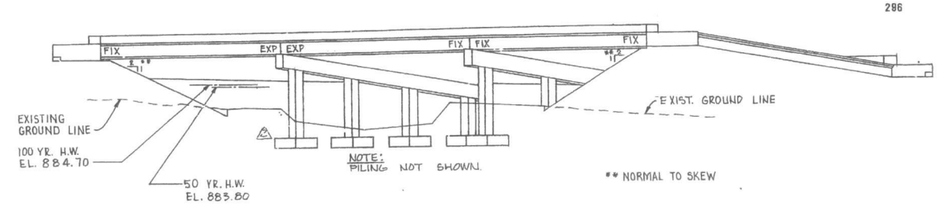


* ALL BENTS ARE PARALLEL TO REFERENCE LINE. 45° SKEW ANGLE MEASURED BETWEEN REFERENCE LINE AND TANGENT TO ℄ MAINLINE AT STA. 573+00.



RIP-RAP FROM 2 FT. BELOW ORIGINAL GROUND TO 2 FT. ABOVE HIGHWATER ELEVATION. EXTEND RIP-RAP 20 FT. BEYOND END OF WINGWALLS. WHERE BERM ELEVATION IS LOWER THAN 2 FT. ABOVE HIGHWATER EXTEND RIP RAP ACROSS BERM.

SECTION AT END BENT



ELEVATION-RIGHT BRIDGE

SUMMARY OF QUANTITIES

LT.	RT.	
LUMP	----	SUPERSTR CONC (CL-AA) BR NO 3L (373.1)
----	540.7 LUMP	SUPERSTR CONC (CL-AA)-BR NO 3R (562.3)
△271.8	~~5675~~ 2797	CU YD CL-A CONCRETE
△~~45675~~ 21979	~~5550~~ 22070	LB BAR REINF STEEL
△~~46,711~~ 21640	~~32,641~~ 32,641	SUPERSTR REINF STEEL - BR NO 3L (32,583)
LUMP	----	SUPERSTR REINF STEEL EPOXY COATED - BR NO 3L (37,840)
LUMP	----	SUPERSTR REINF STEEL - BR NO 3R (62,775)
----	LUMP	SUPERSTR REINF STEEL EPOXY COATED - BR NO 3R (62,971)
----	LUMP	LIN FT PILING IN PLACE 12 BP 53
830	1218	LIN FT PILING IN PLACE 10 BP 42
700	1329	LIN FT PILOT HOLES
160	224	CU YD BR EXCAV, STREAM CROSSING - BR NO 3L
△462 ~~560~~	△~~1,[illegible]~~ 1,[illegible]	CU YD BR EXCAV, STREAM CROSSING - BR NO 3R
----	LUMP	PSC BEAMS AASHO TYPE III-16 BR NO 3R (254.8)
----	LUMP	PSC BEAMS AASHO TYPE III-18 BR NO 3R (194.8)
----	LUMP	PSC BEAMS AASHO TYPE III-24 BR NO 3R (605.5)
LUMP	LUMP	PSC BEAMS AASHO TYPE III-26 BR NO 3L & 3R (493.7L & 1144.4R)
LUMP	----	PSC BEAMS AASHO TYPE III-28 BR NO 3L (974.7)
2340	2100	SQ YD STN DUMPED RIP RAP, TYPE III, 24 IN
950	1546	SQ YD GROOVING CONCRETE
1	1	EACH LOAD TEST, 12 BP 53 (IF REQ'D)
1	1	EACH LOAD TEST, 10 BP 42 (IF REQ'D)
286	459	CU YD BR BKFILL

DESIGN DATA

SPECIFICATIONS - AASHTO, 1977, INTERIM 1978 AND 1979.
TYPICAL HS20-44 AND/OR MILITARY LOADING - IMPACT ALLOWED
FUTURE PAVING ALLOWANCE = 30 LBS. PER SQ. FT.
CONCRETE: SUPERSTRUCTURE f'c = 3,500 PSI (EXCEPT PSC BEAMS, f'c = 5,000)
SUBSTRUCTURE f'c = 3,000 PSI
REINFORCEMENT: ASTM A-615, GRADE 40
ALLOWABLE fs = 20,000 PSI
fy = 40,000 PSI
PRESTRESSED STEEL: F*y = 270,000 PSI

BRIDGE CONSISTS OF:

LT.	RT.	
7	12	1 - 70'-0", 70'-0", 70'-0" PSC BEAM CONT. UNIT.....SPECIAL DESIGN (SIMPLE SPAN FOR DEAD LOAD;;;CONTINUOUS FOR LIVE LOAD)
2	2	CONCRETE END BENTS.....SPECIAL DESIGN
2	2	CONCRETE INTERMEDIATE BENTS.....SPECIAL DESIGN
√	√	END POST & END POST
√	√	GUARDRAIL ATTACHMENT L = VARIES; W = 1'-1": H = 2'-8".....GA. STD NO 3053 (2-1-75)
√	√	BAR BENDING DETAILS.....GA. STD. NO. 3901
√	√	TYPICAL FILL DETAIL AT END OF BRIDGE.....GA. STD. NO. 9037 (9-1-70)

DRAINAGE DATA

DRAINAGE AREA	43 SQ. MI.
AREA OF OPENING UNDER 50 YR HIGH WATER	1510 SQ. FT.
Q50	3410 C.F.S.
Q100	7380 C.F.S.
V50	4.3 F.P.S.

GENERAL NOTES

SPECIFICATIONS - GEORGIA STANDARD DATED 1977, AND SUPPLEMENTAL SPECIFICATIONS, DATED JULY 1, 1978.
WAITING PERIOD - NO WORK SHALL BE STARTED AT END BENTS UNTIL THE COMPLETED END FILLS HAVE BEEN IN PLACE FOR AN ESTIMATED PERIOD OF 45 DAYS.
REINFORCEMENT - ALL REINFORCEMENT SHALL BE PLACED AND TIED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. WELDING OF REINFORCEMENT WILL NOT BE PERMITTED.
PLAN DRIVING OBJECTIVE - SEE SUBSTRUCTURE DETAILS.
CHAMFERS - ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.
RIP-RAP - RIP RAP SHALL BE TYPE III, SEE SECTION 805.01. THE COURSE THICKNESS SHALL BE 24" MINIMUM.
GROOVED FINISH - BRIDGE DECK SHALL HAVE GROOVED FINISH IN ACCORDANCE WITH SECTION 500.11 C.6c(2).
PILOT HOLES - 18"φ X 8 FT. DEEP PILOT HOLES WILL BE REQUIRED AT END BENTS 1 AND 4. VOID AROUND EACH PILE SHALL BE FILLED WITH LOOSE DRY SAND.
PROTECTIVE SURFACE TREATMENT - PER SECTION 500.13C WILL BE REQUIRED AT THIS SITE.

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 11861 RICHARD E. WITTER

BY	REVISIONS	DATE
△		7-13-82
△ RJS	CHANGED FTG. ELEV.	10-14-81
△ RJS	FIX + EXP NOTATION	10-2-80

BRIDGE NO. 3L & 3R

STANLEY CONSULTANTS Atlanta, Georgia

GEORGIA DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION - BRIDGE DESIGN

I-575 OVER NOONDAY CREEK

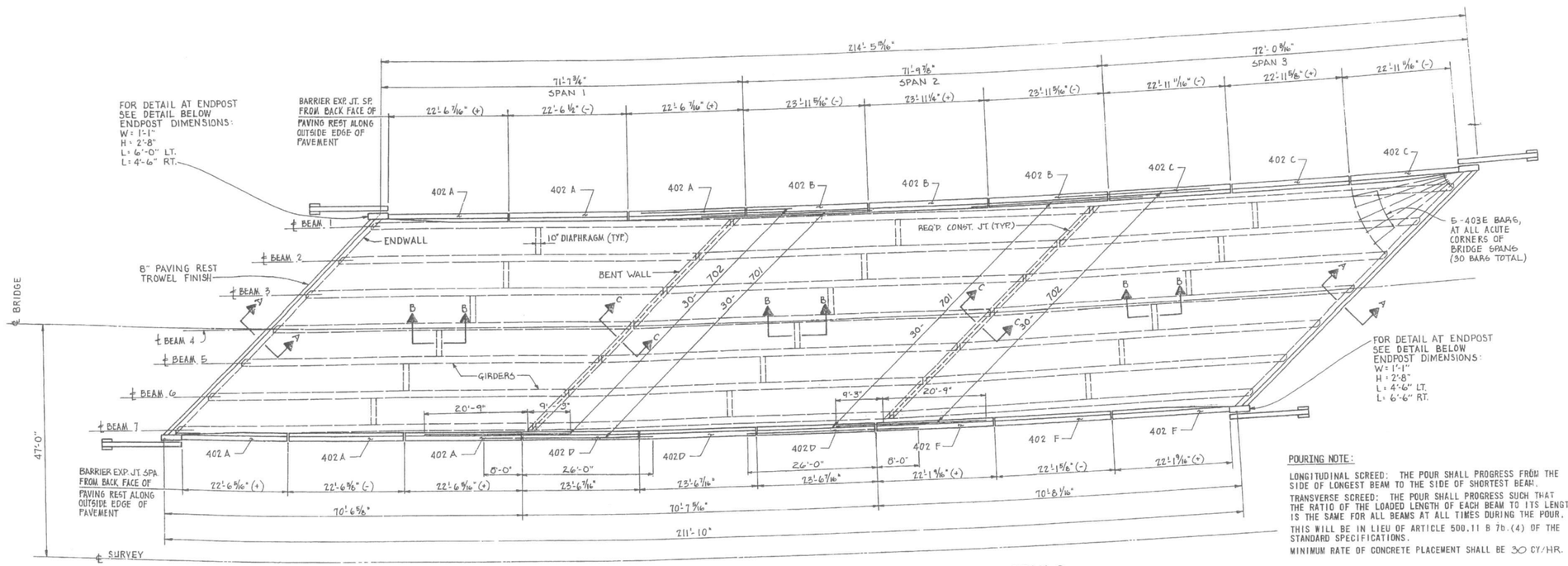
PLAN AND ELEVATION

CHEROKEE COUNTY, GEORGIA

GEORGIA STATE HIGHWAY PROJECT NO. I-575-1 (6) 07

DESIGNED RJB | CHECKED KRB | APPROVED | DRAWING NO.
DRAWN P. FEDELER | REVIEWED | APPROVED
SCALE 1"=20' | DATE JULY 25, 1980 | JOB NO. 7774 | S1

FED RD DIV NO	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO	TOTAL SHEETS
	GA	I-575-1(6)07			



PLAN

SCALE: 1" = 10'

NOTE:
PLACE MAIN SLAB TRANSVERSE REINF. STEEL NORMAL TO ℄ BRIDGE. AT SKEWED ENDS CUT STEEL AT B.F.R. LONG. SLAB REINF. SHALL BE PARALLEL TO BEAMS.

POURING NOTE:

LONGITUDINAL SCREED: THE POUR SHALL PROGRESS FROM THE SIDE OF LONGEST BEAM TO THE SIDE OF SHORTEST BEAM.

TRANSVERSE SCREED: THE POUR SHALL PROGRESS SUCH THAT THE RATIO OF THE LOADED LENGTH OF EACH BEAM TO ITS LENGTH IS THE SAME FOR ALL BEAMS AT ALL TIMES DURING THE POUR.

THIS WILL BE IN LIEU OF ARTICLE 500.11 B 7b.(4) OF THE STANDARD SPECIFICATIONS.

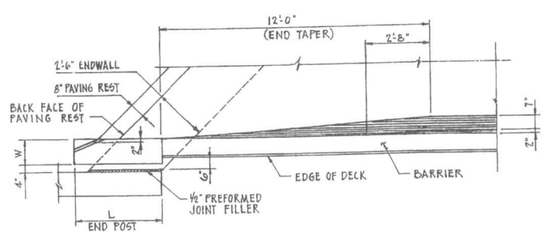
MINIMUM RATE OF CONCRETE PLACEMENT SHALL BE 30 CY/HR.

*QUANTITIES - LEFT BRIDGE				
ITEM	SPAN 1	SPAN 2	SPAN 3	TOTAL
CU. YDS. CLASS AACONC.	137.2	96.7	139.2	372.1
LBS. BAR. REINF. STEEL	13,705	11,986	13,892	39,583
LBS. REINF. STEEL EPOXY COATED	16,713	8,194	14,933	37,840

*END POST CONCRETE AND REINFORCEMENT STEEL IS INCLUDED IN END SPAN QUANTITIES. SEE GA. STD NO. 3053 FOR DETAILS.

P.S.C. BEAM QUANTITIES SHALL BE PAID FOR AS PER SECTION 507.06 OF STD SPECS AND SHALL INCLUDE 1 1/4" ϕ X 1'-6" SMOOTH DOWEL, 1" ϕ PLAIN DIAPHRAGM BARS, NUTS AND WASHERS FOR DIAPHRAGM ASSEMBLIES, ELASTOMERIC BEARING PADS, AND BAR REINF. MARKED 311, 312, 411, & 511.

⚠ GENERAL CONTRACTOR SHALL SUBMIT POUR SEQUENCE TO BRIDGE ENGINEER FOR APPROVAL. ANY POUR JOINTS SHALL BE EDGE SUPPORTED.



TRAFFIC BARRIER AND ENDPOST DETAIL

SCALE: 3/8" = 1'-0"

BRIDGE NO. 3L

STANLEY CONSULTANTS Atlanta, Georgia

GEORGIA DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION - BRIDGE DESIGN

I-575 OVER NOONDAY CREEK

SUPERSTRUCTURE DETAILS

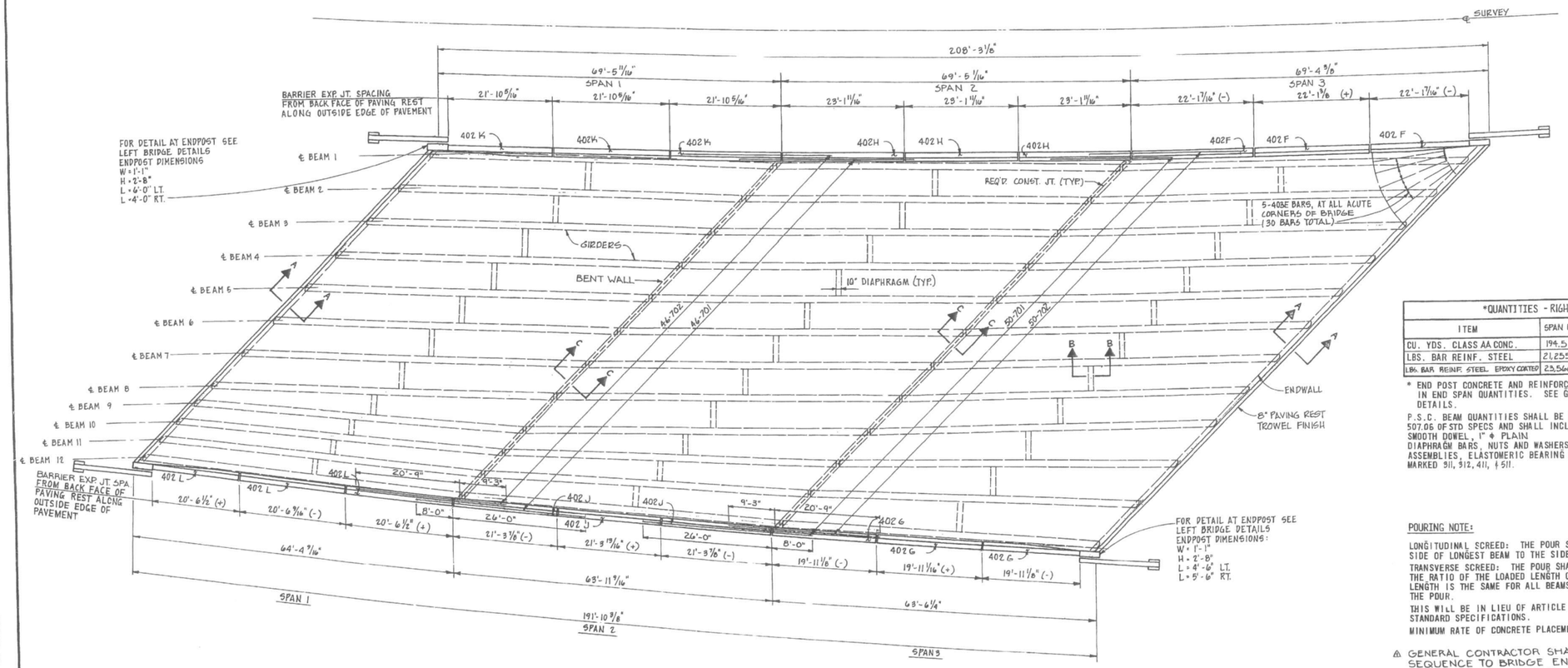
CHEROKEE COUNTY, GEORGIA

GEORGIA STATE HIGHWAY PROJECT NO. I-575-1 (6) 07

BY	REVISIONS	DATE
RJS	POUR SEQUENCE	10-2-80

DESIGNED KLB	CHECKED KEB	APPROVED [illegible]	DRAWING NO.
DRAWN J.J.A.	REVIEWED	APPROVED	S2
SCALE AS NOTED	DATE JULY 25, 1980	JOB NO. 7774	

FED. RD. DIV. NO.	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	GA.	I-575-1(6)07			



PLAN

SCALE: 1" = 10'

NOTE:
PLACE MAIN SLAB TRANSVERSE REINF. STEEL NORMAL TO ℄ BRIDGE AT SKEWED ENDS CUT STEEL AT BEFR. LONG. SLAB REINF. SHALL BE PARALLEL TO BEAMS.

*QUANTITIES - RIGHT BRIDGE				
ITEM	SPAN 1	SPAN 2	SPAN 3	TOTAL
CU. YDS. CLASS AA CONC.	194.5	147.6	220.2	562.3
LBS. BAR REINF. STEEL	21,255	18,834	22,686	62,775
LBS. BAR REINF. STEEL EPOXY COATED	23,566	13,939	25,466	62,971

* END POST CONCRETE AND REINFORCEMENT STEEL IS INCLUDED IN END SPAN QUANTITIES. SEE GA. STD NO. 3053 FOR DETAILS.

P.S.C. BEAM QUANTITIES SHALL BE PAID FOR AS PER SECTION 507.06 OF STD SPECS AND SHALL INCLUDE 1 1/4" ϕ X 1'-6" SMOOTH DOWEL, 1" ϕ PLAIN DIAPHRAGM BARS, NUTS AND WASHERS FOR DIAPHRAGM ASSEMBLIES, ELASTOMERIC BEARING PADS, AND BAR REINF. MARKED 311, 312, 411, & 511.

POURING NOTE:

LONGITUDINAL SCREED: THE POUR SHALL PROGRESS FROM THE SIDE OF LONGEST BEAM TO THE SIDE OF SHORTEST BEAM.

TRANSVERSE SCREED: THE POUR SHALL PROGRESS SUCH THAT THE RATIO OF THE LOADED LENGTH OF EACH BEAM TO ITS LENGTH IS THE SAME FOR ALL BEAMS AT ALL TIMES DURING THE POUR.

THIS WILL BE IN LIEU OF ARTICLE 500.11 B 7b.(4) OF THE STANDARD SPECIFICATIONS.

MINIMUM RATE OF CONCRETE PLACEMENT SHALL BE 40 CY/HR

⚠ GENERAL CONTRACTOR SHALL SUBMIT POUR SEQUENCE TO BRIDGE ENGINEER FOR APPROVAL. ANY POUR JOINTS SHALL BE EDGE SUPPORTED.

BRIDGE NO. 3R

STANLEY CONSULTANTS
Atlanta, Georgia

GEORGIA DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION - BRIDGE DESIGN

I-575 OVER NOONDAY CREEK

SUPERSTRUCTURE DETAILS

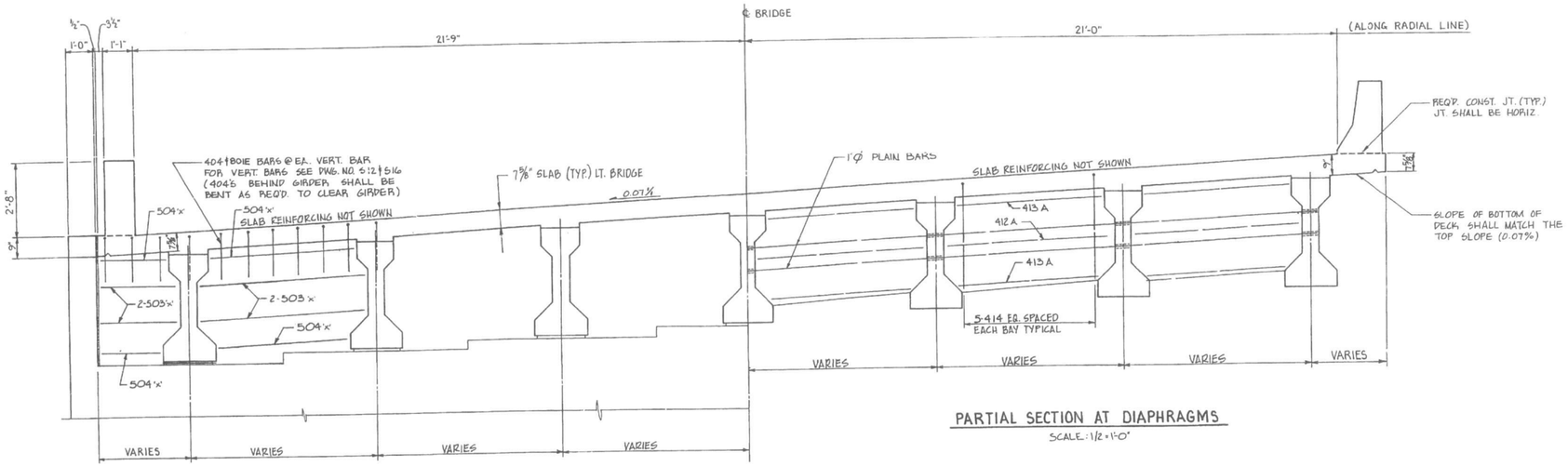
CHEROKEE COUNTY, GEORGIA

GEORGIA STATE HIGHWAY PROJECT NO. I-575-1 (6) 07

BY	REVISIONS	DATE
RJS	POUR SEQUENCE	10-2-80

DESIGNED RJB	CHECKED KRB	APPROVED	DRAWING NO.
DRAWN T.J.A.	REVIEWED	APPROVED	S3
SCALE 1"=10'	DATE JULY 25, 1980	JOB NO. 7774	

FED. RD. DIV. NO.	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	GA.	I-575-1(6)07			



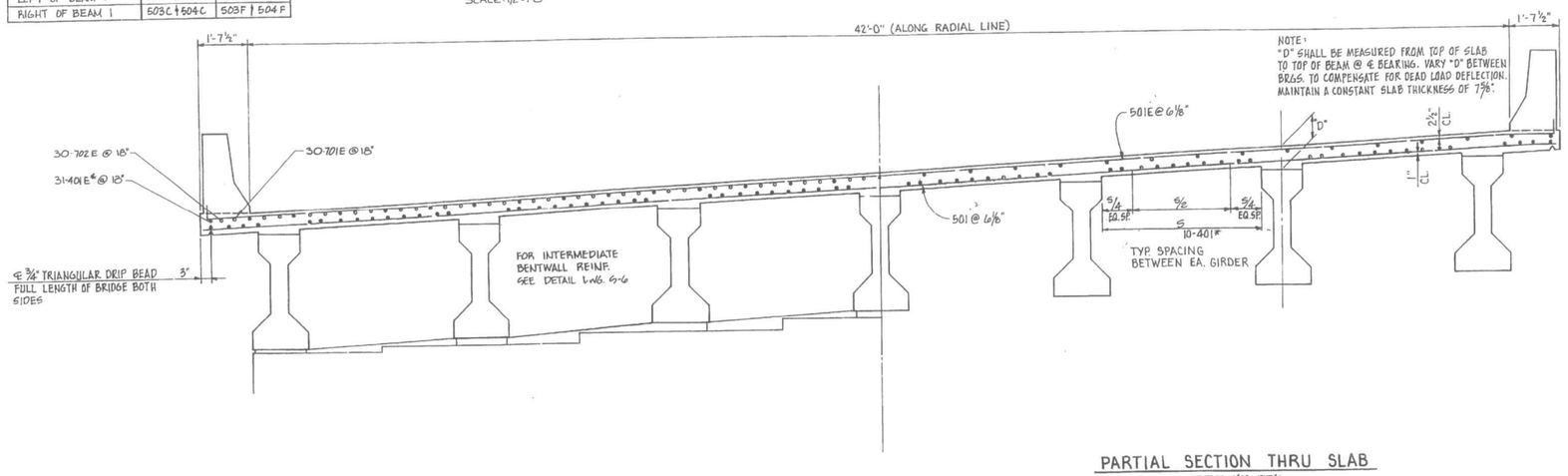
PARTIAL SECTION AT DIAPHRAGMS

SCALE: 1/2" = 1'-0"

END WALL REBAR SCHEDULE		
	BENT 1	BENT 4
BETWEEN BEAMS	503A & 504A	503A & 504A
LEFT OF BEAM 1	503B & 504B	503D & 504D
RIGHT OF BEAM 1	503C & 504C	503F & 504F

PARTIAL SECTION AT END BENT

SCALE: 1/2" = 1'-0"



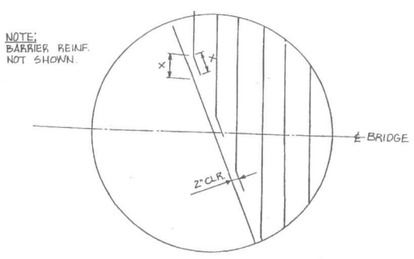
PARTIAL SECTION AT INTERMEDIATE BENT

SCALE: 1/2" = 1'-0"

PARTIAL SECTION THRU SLAB

SCALE: 1/2" = 1'-0"

NOTE:
BARRIER REINF.
NOT SHOWN.



BAR BENDING DETAILS AT B.F.P.R OR CONSTRUCTION JOINT

*LENGTH OF LAP FOR SPLICES SHALL BE 18'

NOTE:
ALL BARS WITH S-FFIX LETTER 'E'
SHALL BE EPOXY COATED.

BY	REVISIONS	DATE

BRIDGE NO. 3L

STANLEY CONSULTANTS
Atlanta, Georgia

GEORGIA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION - BRIDGE DESIGN

I-575 OVER NOONDAY CREEK

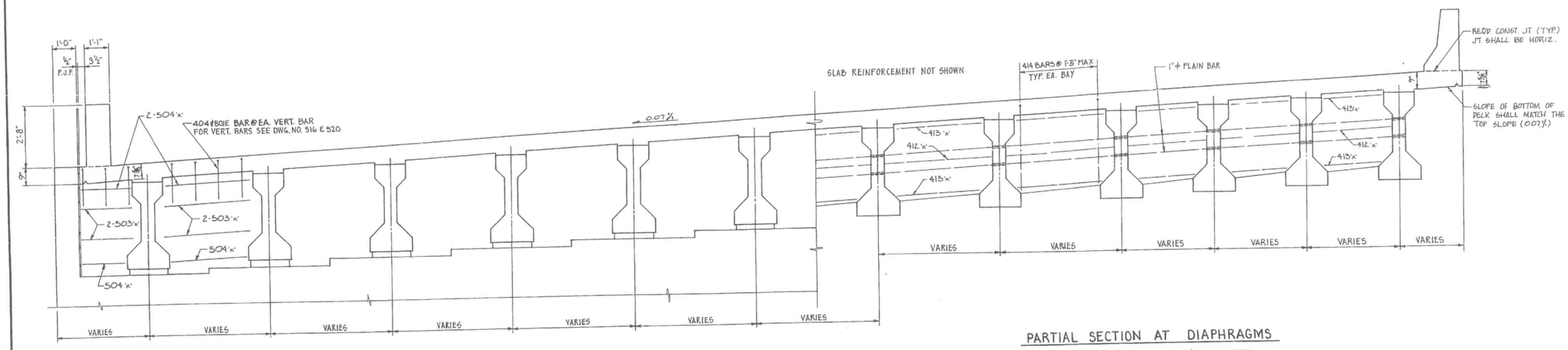
SUPERSTRUCTURE DETAILS

CHEROKEE COUNTY, GEORGIA

GEORGIA STATE HIGHWAY PROJECT NO. I-575-1 (6) 07

DESIGNED RWB	CHECKED KRB	APPROVED RBW	DRAWING No.
DRAWN	REVIEWED	APPROVED	S4
SCALE	DATE JULY 25, 1980	JOB NO. 7774	

FED. HD. DIV. NO.	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	GA.	I-575-1(6)07			

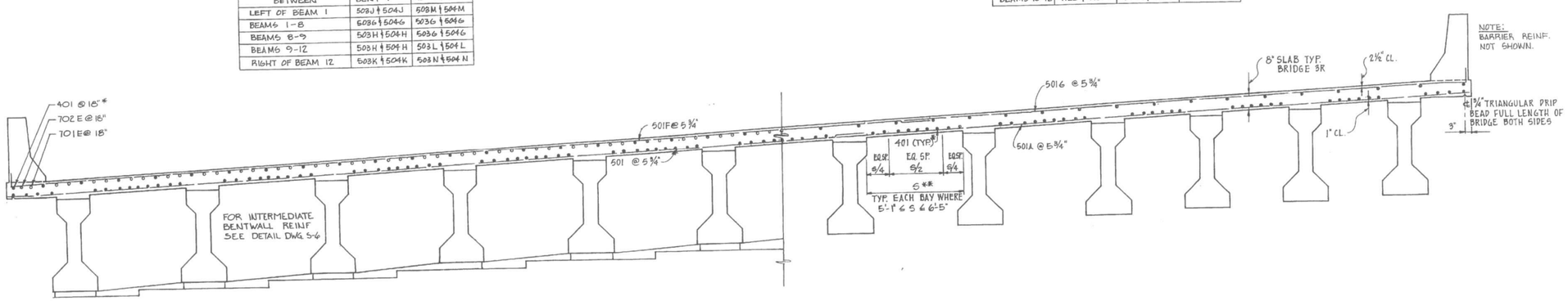


PARTIAL SECTION AT DIAPHRAGMS

DIAPHRAGM REBAR SCHEDULE			
BETWEEN	SPAN 1	SPAN 2	SPAN 3
BEAMS 1-8	412A ϕ 413A	412A ϕ 413A	412A ϕ 413A
BEAMS 8-9	412B ϕ 413B	412A ϕ 413A	412A ϕ 413A
BEAMS 9-10	412C ϕ 413C	412B ϕ 413B	412A ϕ 413A
BEAMS 10-12	412C ϕ 413C	412B ϕ 413B	412A ϕ 413A

PARTIAL SECTION AT END BENT

END WALL REBAR SCHEDULE		
BETWEEN	BENT 1	BENT 4
LEFT OF BEAM 1	503J ϕ 504J	503M ϕ 504M
BEAMS 1-8	503G ϕ 504G	503G ϕ 504G
BEAMS 8-9	503H ϕ 504H	503G ϕ 504G
BEAMS 9-12	503H ϕ 504H	503L ϕ 504L
RIGHT OF BEAM 12	503K ϕ 504K	503N ϕ 504N



PARTIAL SECTION THRU SLAB

* LENGTH OF LAP FOR SPLICES SHALL BE 18"

** S VARIES FROM 2'-3" TO 6'-5"
THE NUMBER OF BARS REQ'D. CHANGES AS S INCREASES.
SEE TABLE BELOW

S	NO. OF BOTTOM BARS	
	MIDDLE BARS	OUTER QUARTERS
5 ≤ 4'-4"	4	1
4'-4" < S ≤ 5'-1"	5	2
5'-1" < S ≤ 6'-5"	7	2

PARTIAL SECTION AT INTERIOR BENT

NOTE:
ALL BARS WITH SUFFIX LETTER 'E' AND
501F ϕ 501G SHALL BE EPOXY COATED

BY	REVISIONS	DATE

BRIDGE NO. 3R

STANLEY CONSULTANTS
Atlanta, Georgia

GEORGIA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION - BRIDGE DESIGN

I-575 OVER NOONDAY CREEK

SUPERSTRUCTURE DETAILS

CHEROKEE COUNTY, GEORGIA

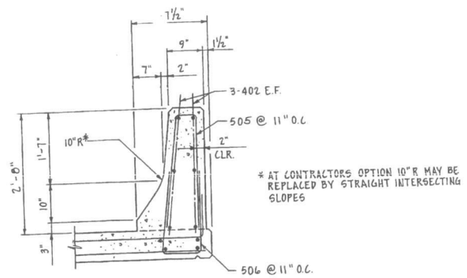
GEORGIA STATE HIGHWAY PROJECT NO. I-575-1 (6) 07

DESIGNED RVB CHECKED KRB APPROVED
DRAWN REVIEWED APPROVED

SCALE NONE DATE JULY 25, 1980 JOB NO. 7774

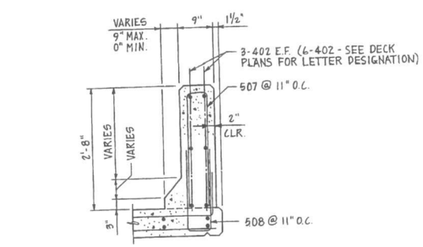
DRAWING NO. S5

FED. RD. DIV. NO.	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	GA.	I-575-1(6)07			



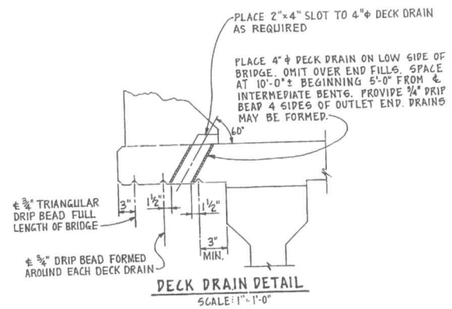
* AT CONTRACTORS OPTION 10"R MAY BE REPLACED BY STRAIGHT INTERSECTING SLOPES

NORMAL

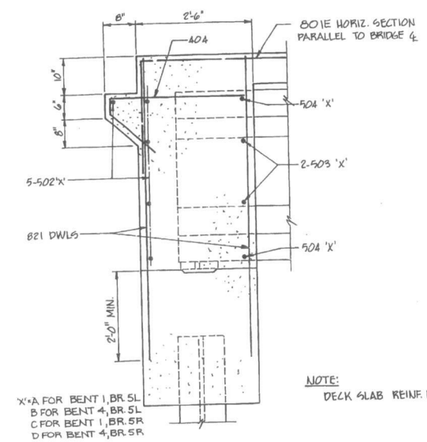


TRANSITION

TRAFFIC BARRIER REINFORCING
NO SCALE



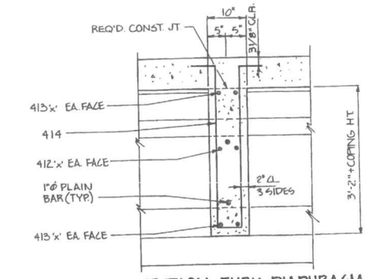
DECK DRAIN DETAIL
SCALE: 1" = 1'-0"



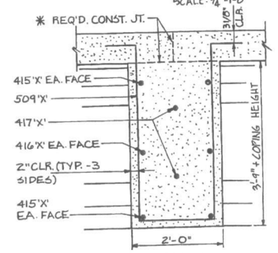
SECTION A-A
SCALE: ¾" = 1'-0"

NOTE:
SPLICE LENGTH FOR 502'X' BARS SHALL BE 2'-0".

NOTE:
DECK SLAB REINF. NOT SHOWN

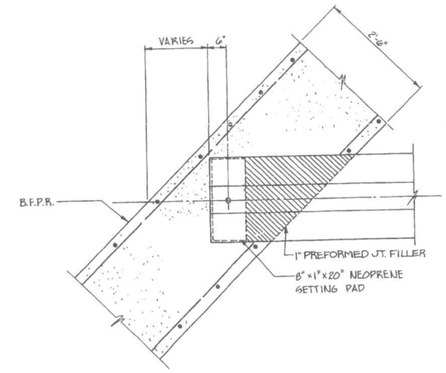


SECTION THRU DIAPHRAGM
SCALE: ¾" = 1'-0"



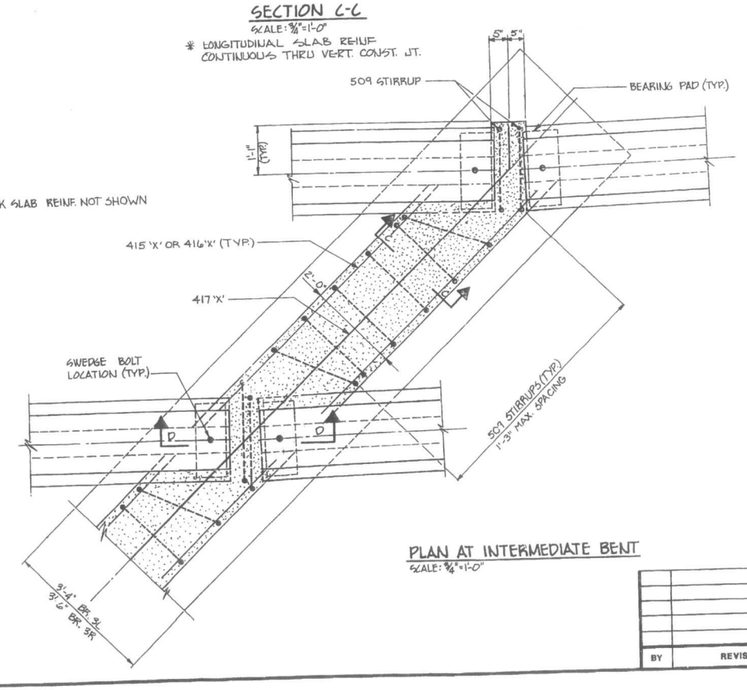
SECTION C-C
SCALE: ¾" = 1'-0"

* LONGITUDINAL SLAB REINF. CONTINUOUS THRU VERT. CONST. JT.

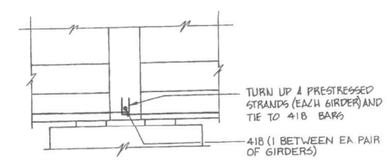


PLAN AT END BENT
SCALE: ¾" = 1'-0"

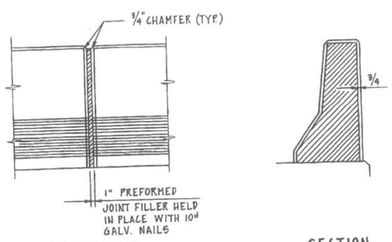
INTERMEDIATE BENT REBAR SCHEDULE			
BRIDGE	BETWEEN	BENT 2	BENT 3
5L	ALL BMS.	415A, 416A, 417A	415A, 416A, 417A
5R	BMS. 1-9	415B, 416B, 417B	415B, 416B, 417C
	BMS. 9-12	415C, 416C, 417B	415D, 416D, 417C



PLAN AT INTERMEDIATE BENT
SCALE: ¾" = 1'-0"

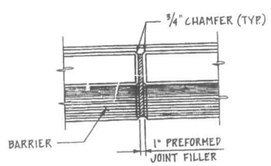


SECTION D-D
SCALE: ¾" = 1'-0"



ELEVATION

SECTION



PLAN

TRAFFIC BARRIER EXPANSION JOINT
NO SCALE

TRAFFIC BARRIER NOTES:

BARRIER SHALL RECEIVE SAME SURFACE FINISH AS MEDIAN BARRIER SPECIFIED IN SECTION 500.13 OF STANDARD SPECS.

PAYMENT FOR BARRIER CONCRETE SHALL BE INCLUDED IN PRICE BID FOR LUMP SUPERSTRUCTURE CONCRETE.

PAYMENT FOR BARRIER BAR REINF SHALL BE INCLUDED IN PRICE BID FOR LUMP SUPERSTRUCTURE REINF STEEL.

BARRIER SHALL CONFORM TO LINE AND GRADE.

BRIDGE NO. 3L & 3R

STANLEY CONSULTANTS
Atlanta, Georgia

GEORGIA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION - BRIDGE DESIGN

I-575 OVER NOONDAY CREEK

SUPERSTRUCTURE DETAILS

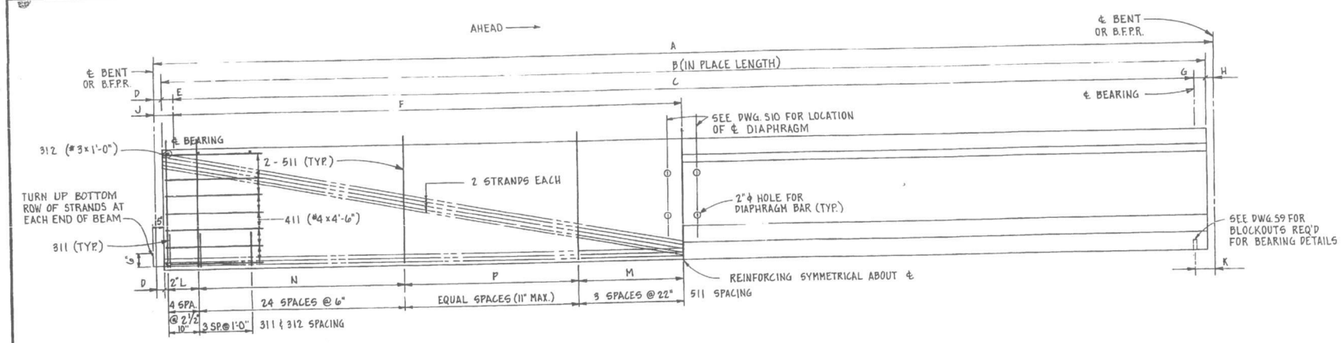
CHEROKEE COUNTY, GEORGIA

GEORGIA STATE HIGHWAY PROJECT NO. I-575-1 (6) 07

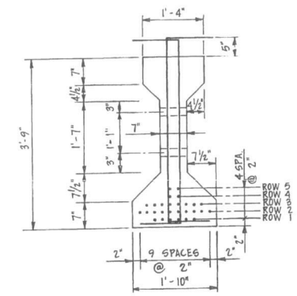
BY	REVISIONS	DATE

DESIGNED RWB	CHECKED KRB	APPROVED	DRAWING NO.
DRAWN	REVIEWED	APPROVED	S6
SCALE AS NOTED	DATE JULY 25, 1980	JOB NO. 7774	

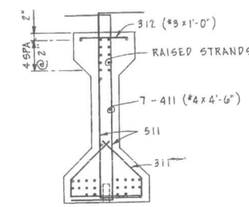
FED. RD DIV. NO.	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO	TOTAL SHEETS
	GA.	I-575-1(6)07			



ELEVATION
NO SCALE

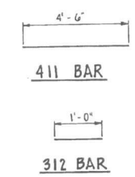


SECTION AT ℄ SPAN



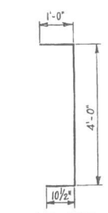
SECTION AT BEAM END

SCALE: 3/4" = 1'-0"

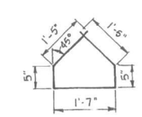


411 BAR

312 BAR



511 BAR



311 BAR

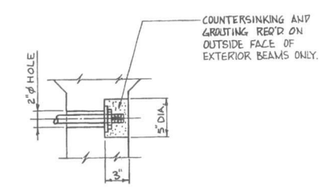
DIMENSION (IN FEET)																NUMBER OF STRANDS							INITIAL TENSION PER STRAND	INITIAL TENSION PER BEAM	FINAL TENSION PER BEAM	D.L. DEFL INCHES SEE NOTE 8
SPAN	BEAM	A	B	C	D	E	F	G	H	J	K	L	M	N	P	ROW 1	ROW 2	ROW 3	ROW 4	ROW 5	TOTAL	RAISED STRANDS				
1	1-7	71.0835	69.5002	68.5835	1.2500	0.5000	34.2918	0.4167	0.3333	1.7500	0.7500	1.00	5.50	12.00	16.25	6	10	8	2	2	28	10	28,936	810,208	580,384	0.604
2	1-7	71.1979	70.5312	69.6979	0.3333	0.4167	34.8490	0.4167	0.3333	0.7500	0.7500	1.00	5.50	12.00	16.77	6	10	6	2	2	26	10	28,936	752,336	549,276	0.644
3	1-7	71.3246	69.7413	68.8246	0.3333	0.4167	34.4123	0.5000	1.2500	0.7500	1.7500	1.00	5.50	12.80	16.37	6	10	8	2	2	28	10	28,936	810,208	580,692	0.614

PRESTRESSED BEAM NOTES

1. IN HANDLING, GIRDERS SHALL BE MAINTAINED IN UPRIGHT POSITION AT ALL TIMES AND SHALL BE PICKED UP AT POINTS WITHIN 36 INCHES FROM THEIR ENDS. DISREGARDING THIS REQUIREMENT COULD LEAD TO COLLAPSE OF THE MEMBER.
2. TOP OF GIRDERS SHALL BE ROUGH FLOATED AT APPROXIMATELY THE TIME OF INITIAL SET. ENTIRE TOP OF GIRDER SHALL BE SCRUBBED TRANSVERSELY WITH A COARSE WIRE BRUSH TO REMOVE ALL LAITANCE AND TO PRODUCE A VERTICAL FACE AT TOP EDGE OF GIRDER.
3. SHOP DRAWINGS SHALL BE SUBMITTED SHOWING COMPLETE DETAILS OF GIRDERS INCLUDING THE FOLLOWING: REINFORCING STEEL AND METHOD OF RETAINING DEPRESSED STRANDS IN PLACE. CALCULATIONS FOR DETERMINATION OF REQUIRED ELONGATION OF STRANDS TO PROVIDE NECESSARY FORCE, COMPLETE DETENSIONING SCHEDULE PROVIDING FOR MINIMUM DISTORTION IN THE CONCRETE DURING RELEASE OF STRANDS. AND DETAILS OF LIFTING DEVICE EMBEDDED IN GIRDER ENDS.
4. USE 270K 1/2" STRANDS FOR EACH GIRDER PRETENSIONED TO 28936 LBS. EACH. STRANDS SHALL MEET ALL REQUIREMENTS OF A.S.T.M. A416-74 GRADE 270. HOLD-DOWN FOR RAISED STRANDS SHALL BE LOW-FRICTION TYPE. STRANDS MAY BE RELEASED AFTER CONCRETE HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 4,500 P.S.I. ENTIRE END OF GIRDER INCLUDING STRAND ENDS SHALL BE COVERED WITH 1/8" EPOXY MORTAR AFTER DETENSIONING IS COMPLETE. IN PLACE LENGTH GIVEN IS HORIZONTAL AND INCLUDES EPOXY MORTAR.
5. PAINT 1"ϕ PLAIN BAR, NUTS, AND WASHERS IN ACCORDANCE WITH SECTION 535.04C OF THE STANDARD SPECIFICATIONS USING TWO COATS OF PAINT IP. NUTS SHALL BE BROUGHT TO A SNUG FIT AGAINST GIRDERS BEFORE POURING DIAPHRAGMS. AFTER DIAPHRAGMS HAVE BEEN POURED A MINIMUM OF 5 DAYS AND CONCRETE HAS REACHED A STRENGTH OF 1,500 P.S.I., NUTS SHALL BE TORQUED TO 180 FT. LBS. AFTER WHICH RECESSES IN EXTERIOR GIRDERS SHALL BE GROUTED AND DRESSED.
6. CHAMFER EDGES OF GIRDERS 3/4 .
7. THE PSC BEAM MANUFACTURER SHALL DESIGNATE EACH BEAM AS TO ITS LOCATION FOR BRIDGE NO. AND SPAN NO. THE I.D.NO. SHALL BE PAINTED STAMPED OR SUITABLY INDICATED ON THE BEAM ENDS OR TOP. AN EXAMPLE IDENTIFICATION WOULD BE IL3 OR 3R8 (SPAN 1, LEFT BRIDGE, BEAM 3 OR SPAN 3, RIGHT BRIDGE, BEAM 8).
8. D.L. DEFL. IS DEAD LOAD DEFLECTION AT ℄ BEAM DUE TO WEIGHT OF SLAB, COPING AND DIAPHRAGMS.

GIRDER REINFORCING		
MARK	NO. REQ'D.	LENGTH
311	210	5'-3"
312	210	1'-0"
411	294	4'-6"
511	4186	5'-10 1/2"

GIRDER QUANTITIES	
ITEM	TOTAL
CUBIC YARDS CLASS AAA CONCRETE	211.5
LBS BAR REINFORCING	27244.0
LIN.FT. 1/2"ϕ 270K PRESTRESSING STRAND	40127.8



RECESS DETAILS FOR DIAPHRAGM BAR
NO SCALE

BRIDGE NO. 3L

STANLEY CONSULTANTS
Atlanta, Georgia

GEORGIA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION - BRIDGE DESIGN

I-575 OVER NOONDAY CREEK

SUPERSTRUCTURE DETAILS

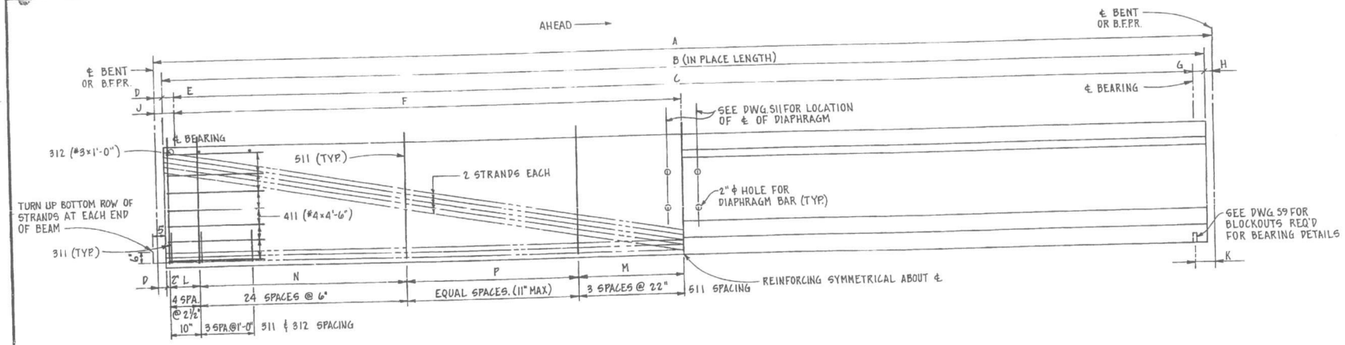
CHEROKEE COUNTY, GEORGIA

GEORGIA STATE HIGHWAY PROJECT NO. I-575-1 (6) 07

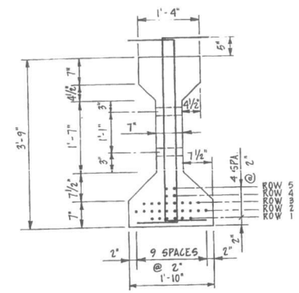
BY	REVISIONS	DATE

DESIGNED RUG	CHECKED KRB	APPROVED	DRAWING NO.
DRAWN	REVIEWED	APPROVED	S7
SCALE NONE	DATE JULY 25, 1980	JOB NO. 7774	

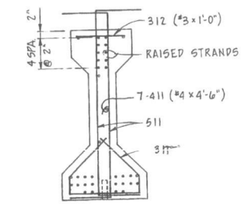
FED. RD. DIV. NO.	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	GA.	I-575-1(6) 07			



ELEVATION
NO SCALE



SECTION AT ℄ SPAN

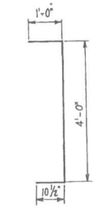


SECTION AT BEAM END

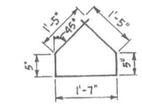
SCALE: 3/4"=1'-0"

411 BAR

312 BAR



511 BAR



311 BAR

DIMENSION (IN FEET)																NUMBER OF STRANDS							INITIAL TENSION PER STRAND	INITIAL TENSION PER BEAM	FINAL TENSION PER BEAM	D.L. DEFL. INCHES SEE NOTE 8
SPAN	BEAM	A	B	C	D	E	F	G	H	J	K	L	M	N	P	ROW 1	ROW 2	ROW 3	ROW 4	ROW 5	TOTAL	RAISED STRANDS				
1	1-8	69.0101	67.4268	66.5101	1.2500	0.5000	33.2551	0.4167	0.3333	1.7500	0.7500	1.00	5.50	12.00	15.21	6	10	6	2	2	26	10	28,936	752,336	547,248	0.570
1	9	65.9553	64.4495	63.5328	1.1725	0.5000	31.7664	0.4167	0.3333	1.6725	0.7500	1.00	5.50	12.00	13.72	6	10	0	0	0	16	4	28,936	462,976	363,088	0.268
1	10	65.4333	63.9407	63.0240	1.1593	0.5000	31.5120	0.4167	0.3333	1.6593	0.7500	1.00	5.50	12.00	13.47	6	10	0	0	0	16	4	28,936	462,976	363,088	0.257
1	11	64.9176	63.4381	62.5214	1.1462	0.5000	31.2607	0.4167	0.3333	1.6462	0.7500	1.00	5.50	12.00	13.22	6	10	0	0	0	16	4	28,936	462,976	363,088	0.249
1	12	64.4082	62.9416	62.0249	1.1333	0.5000	31.0125	0.4167	0.3333	1.6333	0.7500	1.00	5.50	12.00	12.97	6	10	0	0	0	16	4	28,936	462,976	363,088	0.241
2	1-9	68.9109	68.2442	67.4109	0.3533	0.4167	33.7055	0.4167	0.3333	0.7500	0.7500	1.00	5.50	12.00	15.62	6	10	6	2	0	24	8	28,936	694,464	512,544	0.601
2	10	67.2227	66.5561	65.7227	0.3333	0.4167	32.8614	0.4167	0.3333	0.7500	0.7500	1.00	5.50	12.00	14.78	6	10	2	0	0	18	6	28,936	520,848	402,084	0.341
2	11	65.5836	64.9169	64.0836	0.3333	0.4167	32.0418	0.4167	0.3333	0.7500	0.7500	1.00	5.50	12.00	13.96	6	10	2	0	0	18	6	28,936	520,848	402,084	0.309
2	12	63.8974	63.3307	62.4974	0.3333	0.4167	31.2487	0.4167	0.3333	0.7500	0.7500	1.00	5.50	12.00	13.17	6	10	2	0	0	18	6	28,936	520,848	402,084	0.280
3	1-9	68.8020	67.2167	66.3020	0.3333	0.4167	33.1510	0.5000	1.2500	0.7500	1.7500	1.00	5.50	12.00	15.11	6	10	6	2	2	26	10	28,936	752,336	547,014	0.563
3	10	67.0000	65.4625	64.5458	0.3333	0.4167	32.2729	0.5000	1.2042	0.7500	1.7042	1.00	5.50	12.00	14.23	6	10	6	2	0	24	8	28,936	694,464	510,048	0.492
3	11	65.2494	63.7565	62.8398	0.3333	0.4167	31.4199	0.5000	1.1596	0.7500	1.6596	1.00	5.50	12.00	13.38	6	10	6	2	0	24	8	28,936	694,464	510,048	0.443
3	12	63.5542	62.1044	61.1877	0.3333	0.4167	30.5939	0.5000	1.1165	0.7500	1.6165	1.00	5.50	12.00	12.55	6	10	6	2	0	24	8	28,936	694,464	510,048	0.399

PRESTRESSED BEAM NOTES

1. IN HANDLING, GIRDERS SHALL BE MAINTAINED IN UPRIGHT POSITION AT ALL TIMES AND SHALL BE PICKED UP AT POINTS WITHIN 36 INCHES FROM THEIR ENDS. DISREGARDING THIS REQUIREMENT COULD LEAD TO COLLAPSE OF THE MEMBER.
2. TOP OF GIRDERS SHALL BE ROUGH FLOATED AT APPROXIMATELY THE TIME OF INITIAL SET. ENTIRE TOP OF GIRDER SHALL BE SCRUBBED TRANSVERSELY WITH A COARSE WIRE BRUSH TO REMOVE ALL LAITANCE AND TO PRODUCE A VERTICAL FACE AT TOP EDGE OF GIRDER.
3. SHOP DRAWINGS SHALL BE SUBMITTED SHOWING COMPLETE DETAILS OF GIRDERS INCLUDING THE FOLLOWING: REINFORCING STEEL AND METHOD OF RETAINING DEPRESSED STRANDS IN PLACE, CALCULATIONS FOR DETERMINATION OF REQUIRED ELONGATION OF STRANDS TO PROVIDE NECESSARY FORCE, COMPLETE DETENSIONING SCHEDULE PROVIDING FOR MINIMUM DISTORTION IN THE CONCRETE DURING RELEASE OF STRANDS, AND DETAILS OF LIFTING DEVICE EMBEDDED IN GIRDER ENDS.
4. USE 270^{K} 1/2" STRANDS FOR EACH GIRDER PRETENSIONED TO 28936 LBS. EACH. STRANDS SHALL MEET ALL REQUIREMENTS OF A.S.T.M. A416-74 GRADE 270. HOLD-DOWN FOR RAISED STRANDS SHALL BE LOW-FRICTION TYPE. STRANDS MAY BE RELEASED AFTER CONCRETE HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 4,500 P.S.I. ENTIRE END OF GIRDER INCLUDING STRAND ENDS SHALL BE COVERED WITH 1/8" EPOXY MORTAR AFTER DETENSIONING IS COMPLETE. IN PLACE LENGTH GIVEN IS HORIZONTAL AND INCLUDES EPOXY MORTAR.
5. PAINT 1"ϕ PLAIN BAR, NUTS, AND WASHERS IN ACCORDANCE WITH SECTION 535.04C OF THE STANDARD SPECIFICATIONS USING TWO COATS OF PAINT IP. NUTS SHALL BE BROUGHT TO A SNUG FIT AGAINST GIRDERS BEFORE POURING DIAPHRAGMS. AFTER DIAPHRAGMS HAVE BEEN POURED A MINIMUM OF 5 DAYS AND CONCRETE HAS REACHED A STRENGTH OF 1,500 P.S.I., NUTS SHALL BE TORQUED TO 180 FT. LBS. AFTER WHICH RECESSES IN EXTERIOR GIRDERS SHALL BE GROUTED AND DRESSED.
6. CHAMFER EDGES OF GIRDERS 3/4".
7. THE PSC BEAM MANUFACTURER SHALL DESIGNATE EACH BEAM AS TO ITS LOCATION FOR BRIDGE NO. AND SPAN NO. THE I.D. NO. SHALL BE PAINTED STAMPED OR SUITABLY INDICATED ON THE BEAM ENDS OR TOP. AN EXAMPLE IDENTIFICATION WOULD BE 1L3 OR 3R6 (SPAN 1, LEFT BRIDGE, BEAM 3 OR SPAN 3, RIGHT BRIDGE, BEAM 6).
8. D.L. DEFL. IS DEAD LOAD DEFLECTION AT ℄ BEAM DUE TO WEIGHT OF SLAB, COPING AND DIAPHRAGMS.

GIRDER REINFORCING		
MARK	NO. REQ'D.	LENGTH
311	360	5'-3"
312	360	1'-0"
411	504	4'-6"
511	6952	5'-10 1/2"

GIRDER QUANTITIES	
ITEM	TOTAL
CUBIC YARDS CLASS AAA CONC.	345.6
LBS. BAR REINFORCING	45357.2
LIN. FT. 1/2" ϕ 270^{K} PRESTRESSING STEEL	56669.6

NOTE:
FOR DETAILS OF RECESS FOR DIAPHRAGM BAR, SEE DRAWING S7.

BRIDGE NO. 3R

STANLEY CONSULTANTS
Atlanta, Georgia

GEORGIA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION - BRIDGE DESIGN

I-575 OVER NOONDAY CREEK

SUPERSTRUCTURE DETAILS

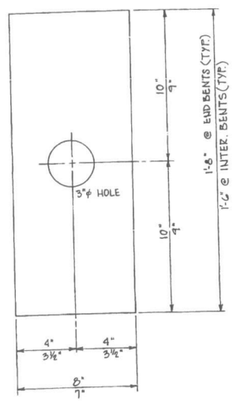
CHEROKEE COUNTY, GEORGIA

GEORGIA STATE HIGHWAY PROJECT NO. I-575-1 (6) 07

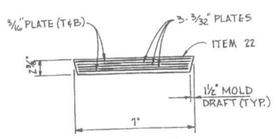
BY	REVISIONS	DATE

DESIGNED RVB CHECKED KEB APPROVED
DRAWN S. Albright REVIEWED APPROVED
SCALE NONE DATE JULY 25, 1980 JOB NO. 7774
DRAWING NO. S8

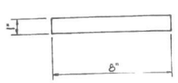
FED. RD. DIV. NO.	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO	TOTAL SHEETS
	GA.	I-575-1(6)07			



PLAN



AT INTERMEDIATE BENTS

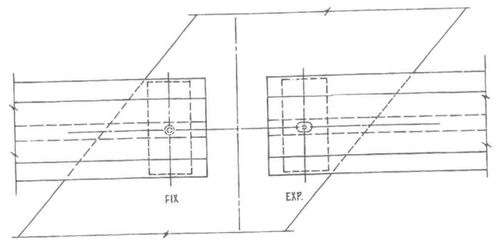


AT END BENTS

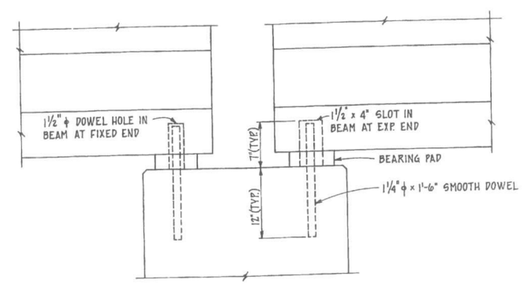
ELEVATION

BEARING PAD DETAILS

NO SCALE



PLAN



ELEVATION

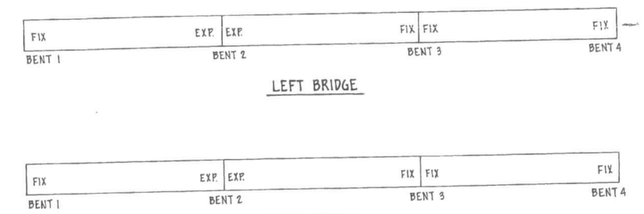
NOTES

ALL COMPONENTS OF BEARING ASSEMBLIES EXCEPT 14 GAGE INTERNAL PLATE IN BEARING PAD SHALL BE A-36. 14 GAGE INTERNAL PLATE SHALL BE HOT ROLLED PLATE, ASTM A-570.

BEARING PAD SHALL BE MADE OF 60 DUROMETER HARDNESS NEOPRENE.

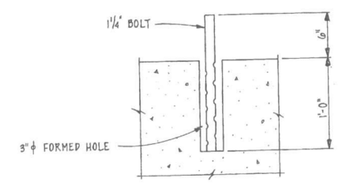
3"ϕ HOLE IN BEARING PAD MAY BE FORMED OR DRILLED.

IN LIEU OF 1¼"ϕ x 1'-6" SMOOTH DOWELS BEING IN PLACE PRIOR TO POURING OF CAP. 3"ϕ HOLES MAY BE FORMED 12" DEEP AND DOWELS GROUTED IN PLACE AFTER THE CAP IS POURED.



BEARING ASSEMBLY LAYOUT

NO SCALE



SWEDGE BOLT DETAIL

NO SCALE

BRIDGE NO. 3L & 3R

STANLEY CONSULTANTS Atlanta, Georgia

GEORGIA DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION - BRIDGE DESIGN

I-575 OVER NOONDAY CREEK

SUPERSTRUCTURE DETAILS

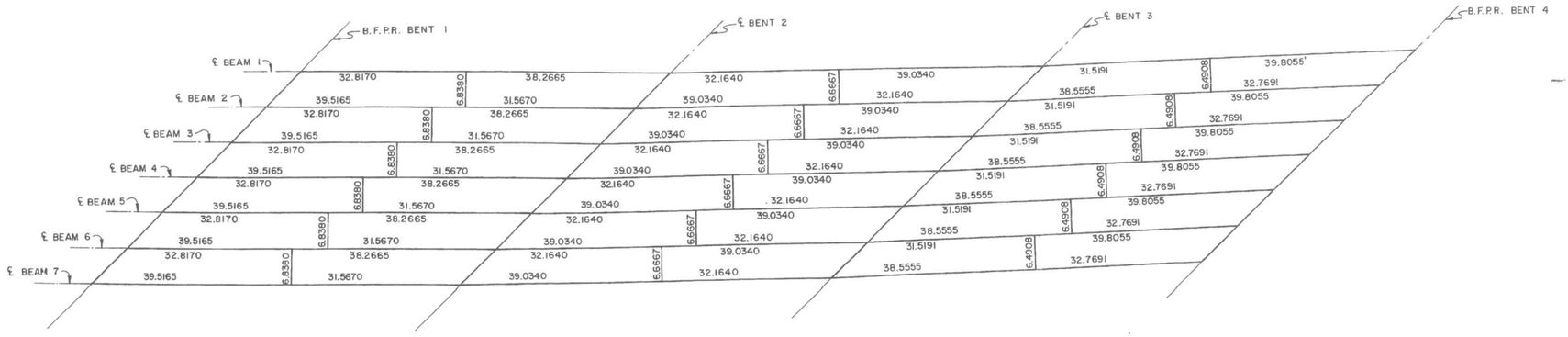
CHEROKEE COUNTY, GEORGIA

GEORGIA STATE HIGHWAY PROJECT NO. I-575-1 (6) 07

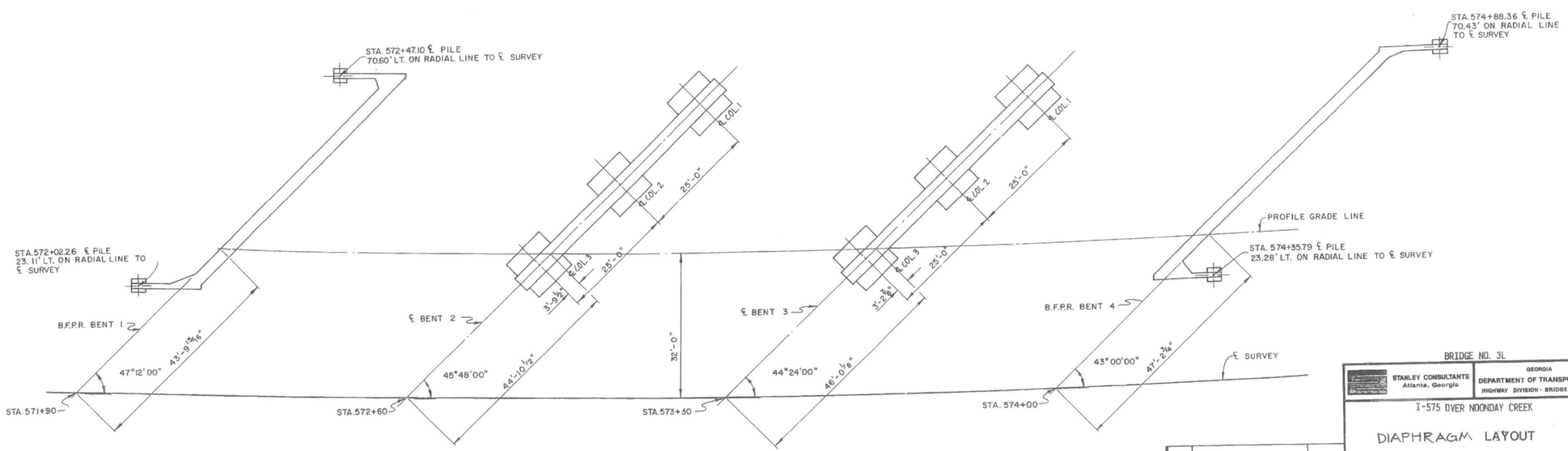
BY	REVISIONS	DATE

DESIGNED KWB	CHECKED KRB	APPROVED	DRAWING NO.
DRAWN	REVIEWED	APPROVED	S9
SCALE NONE	DATE JULY 25, 1980	JOB NO. 7774	

FED. RD. DIV. NO.	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	GA.	I-575-1(6)07			



DIAPHRAGM AND BEAM LAYOUT



BRIDGE NO. 3L

STANLEY CONSULTANTS
Atlanta, Georgia

GEORGIA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION - BRIDGE DESIGN

I-575 OVER NOONDAY CREEK

DIAPHRAGM LAYOUT

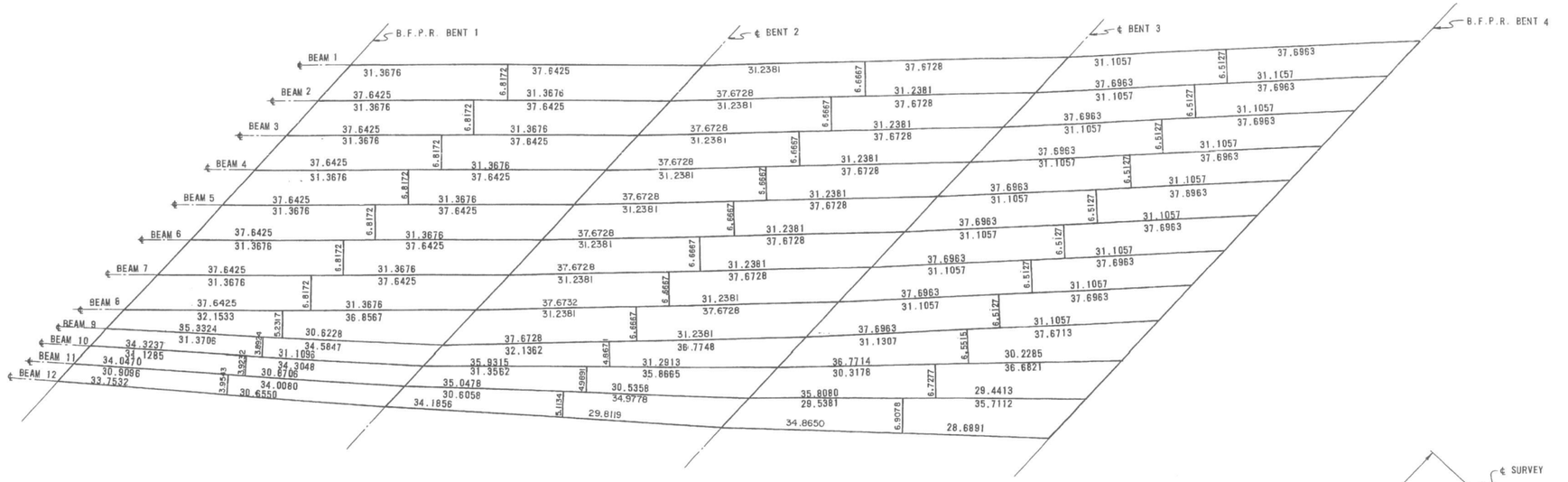
CHEROKEE COUNTY, GEORGIA

GEORGIA STATE HIGHWAY PROJECT NO. I-575-1 (6) 07

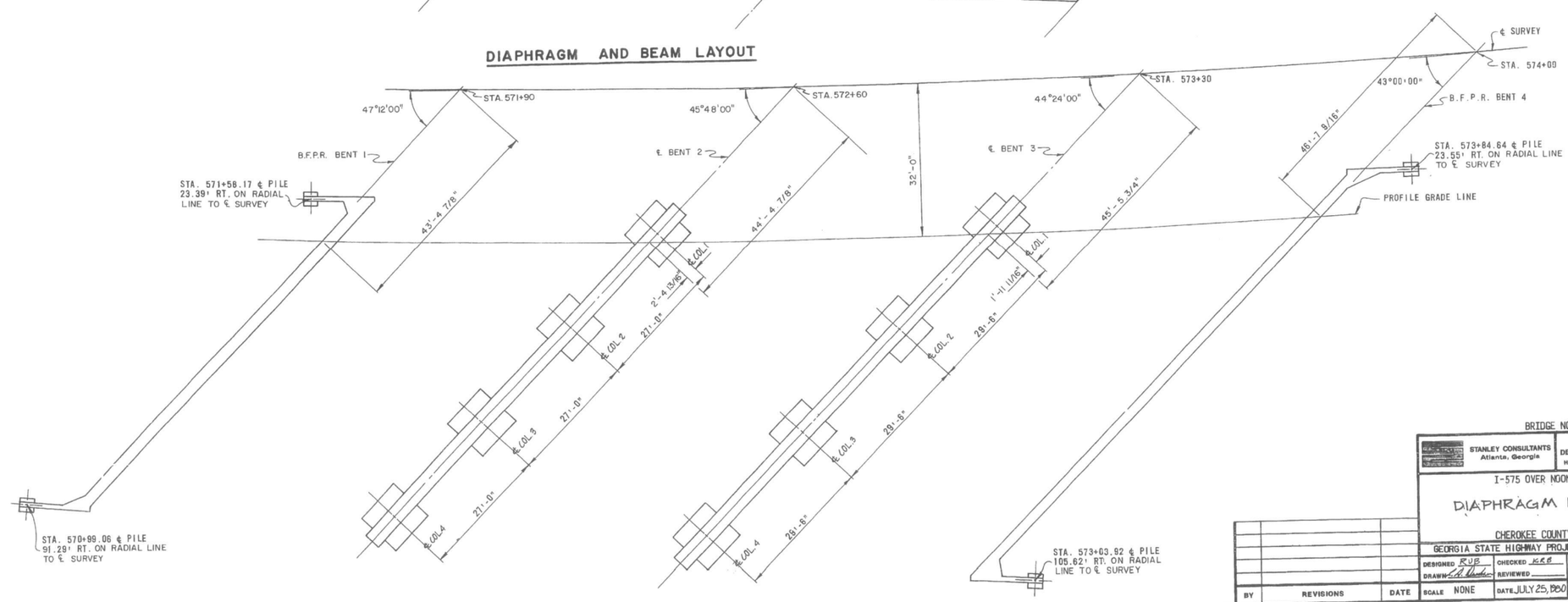
BY	REVISIONS	DATE

DESIGNED GWB	CHECKED KRB	APPROVED [signature]	DRAWING NO.
DRAWN [signature]	REVIEWED	APPROVED	S10
SCALE NONE	DATE JULY 25, 1980	JOB NO. 7774	

FED. RD DIV. NO.	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO	TOTAL SHEETS
	GA.	I-575-1(6)07		-	



DIAPHRAGM AND BEAM LAYOUT



BY	REVISIONS	DATE

BRIDGE NO. 3R

STANLEY CONSULTANTS Atlanta, Georgia

GEORGIA DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION - BRIDGE DESIGN

I-575 OVER NOONDAY CREEK

DIAPHRAGM LAYOUT

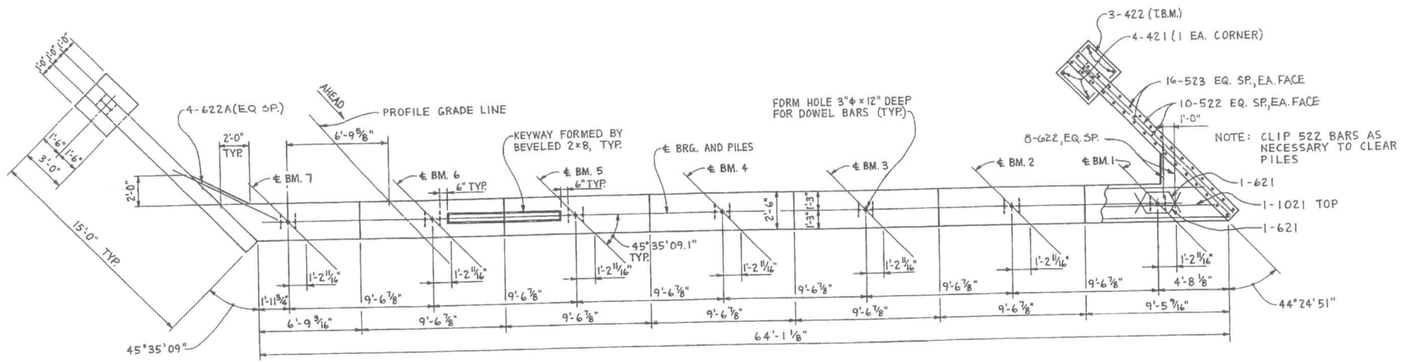
CHEROKEE COUNTY, GEORGIA

GEORGIA STATE HIGHWAY PROJECT NO. I-575-1 (6) 07

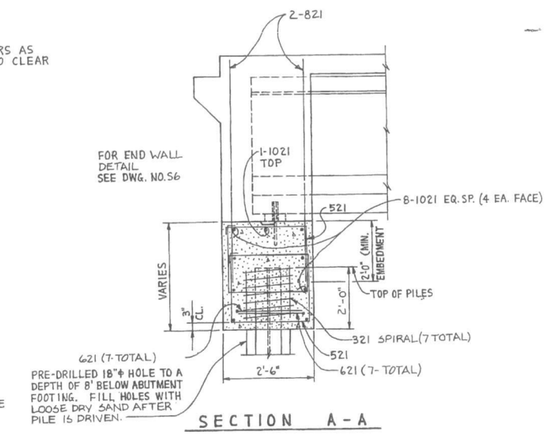
DESIGNED RJB CHECKED KRB APPROVED
DRAWN REVIEWED APPROVED
SCALE NONE DATE JULY 25, 1980 JOB NO. 7774

DRAWING NO. S11

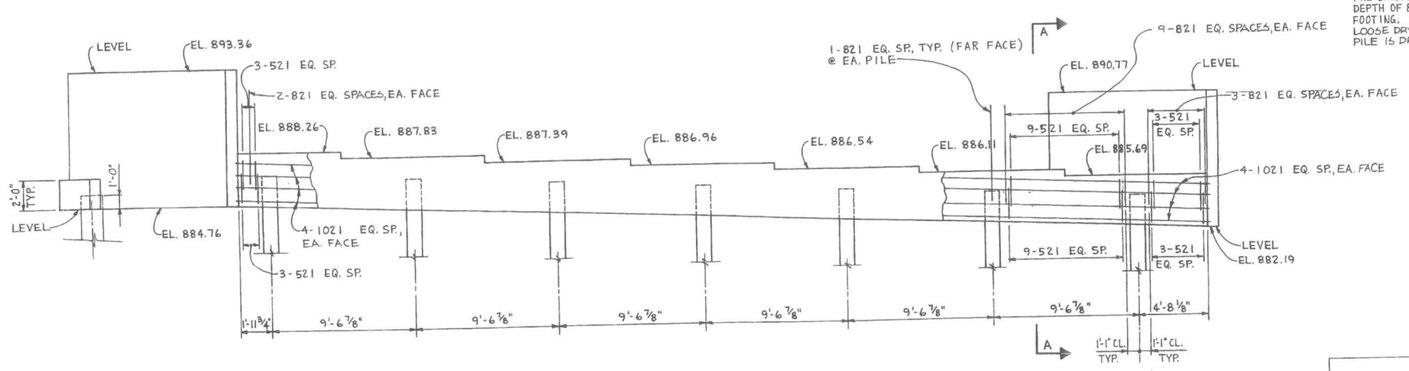
FED. RD. DIV. NO.	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	GA.	I-575-1(6)07			



PLAN



SECTION A-A



ELEVATION
LOOKING BACK

PILE DRIVING OBJECTIVE

DRIVE ALL PILES TO A DRIVING RESISTANCE OF 70 TONS AFTER A MINIMUM TIP ELEVATION OF 855 IS ACHIEVED. ALL PILES ARE 12 BP 53.

QUANTITIES	
CU. YDS. CLASS A CONC.	31.4
LBS. BAR REINF. STEEL	7589
LIN. FT. PILING, 12 BP 53	363

BRIDGE NO. 3L

STANLEY CONSULTANTS
Atlanta, Georgia

GEORGIA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION - BRIDGE DESIGN

I-575 OVER NOONDAY CREEK

BENT NO. 1

CHEROKEE COUNTY, GEORGIA

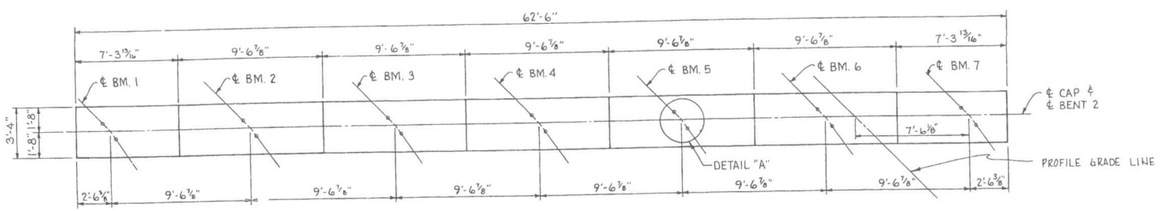
GEORGIA STATE HIGHWAY PROJECT NO. I-575-1 (6) 07

BY	REVISIONS	DATE

DESIGNED RDB | CHECKED KRB | APPROVED [signature] | DRAWING NO. S12
DRAWN L.J.O. | REVIEWED | APPROVED
SCALE NONE | DATE JULY 25, 1980 | JOB NO. 7774

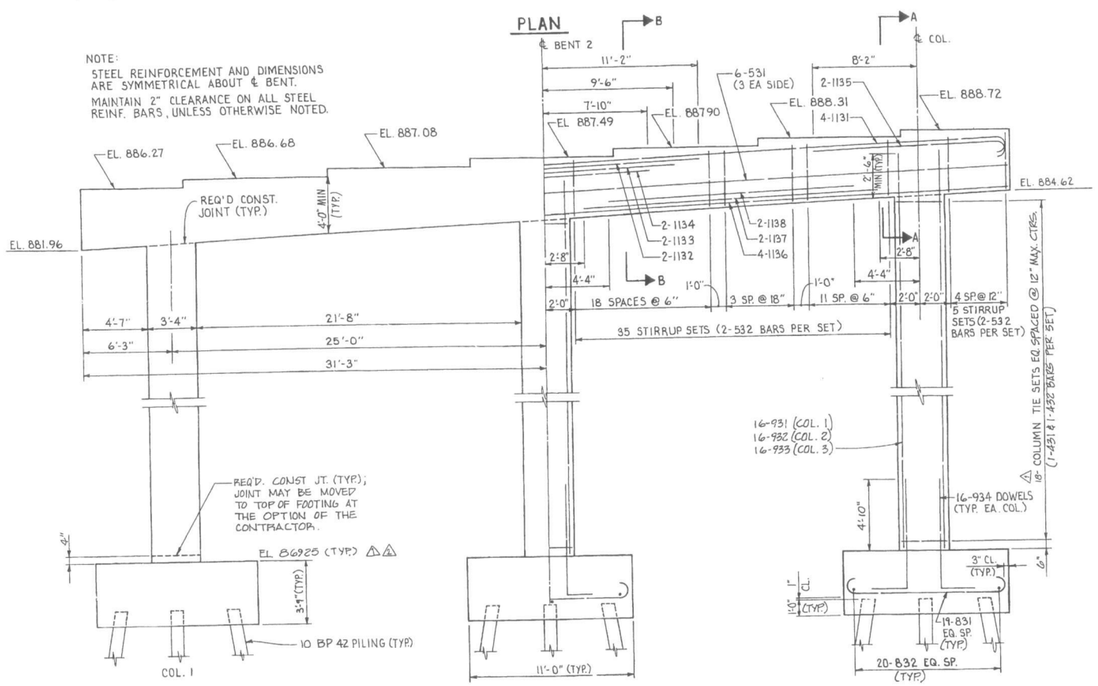
FED RD DIV NO	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO	TOTAL SHEETS
	GA	I-575-1(6) 07			

Rev. 7-13-82



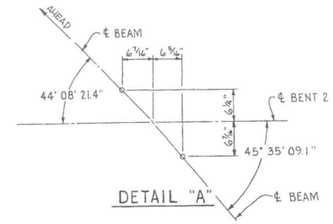
PLAN

NOTE:
STEEL REINFORCEMENT AND DIMENSIONS ARE SYMMETRICAL ABOUT ℄ BENT.
MAINTAIN 2" CLEARANCE ON ALL STEEL REINF. BARS, UNLESS OTHERWISE NOTED.

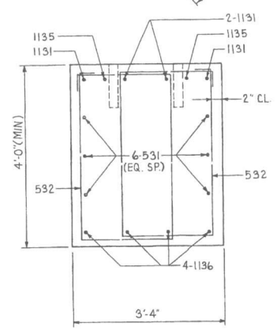


ELEVATION

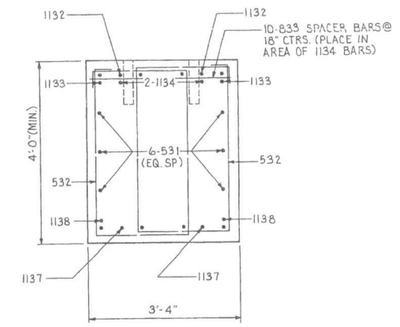
LOOKING AHEAD STATION
NOT TO SCALE



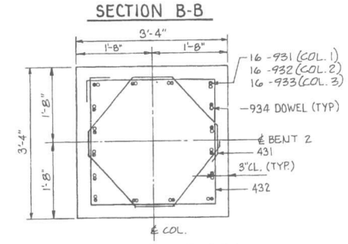
DETAIL "A"



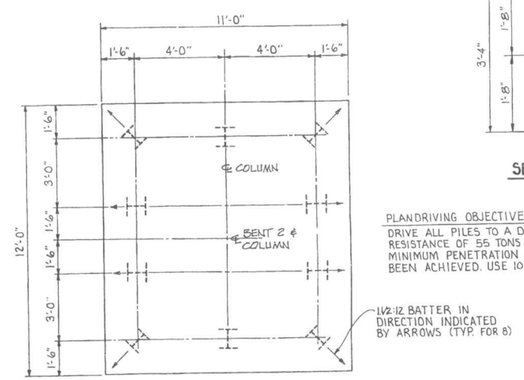
SECTION A-A



SECTION B-B



SECTION THRU COLUMN



TYPICAL PILE CAP PLAN

SCALE: 3/8"=1'-0"

PLANDRIVING OBJECTIVE
DRIVE ALL PILES TO A DRIVING RESISTANCE OF 55 TONS AFTER A MINIMUM PENETRATION OF 15' HAS BEEN ACHIEVED. USE 10 BP 42 PILES.

NOTES:

1. CONTRACTOR SHALL FURNISH FULL LENGTH BARS AS SHOWN OR SPLICE BARS AS FOLLOWS: SPLICE TOP BARS AND SIDE BARS AT MIDSPAN OF BEAM AND BOTTOM BARS AT ℄ OF CENTER COLUMN. DO NOT SPLICE MORE THAN 1/2 OF TOP BARS OR SIDE BARS AT ANY ONE LOCATION.
2. SPLICE LENGTHS:
   TOP BARS: 7'-0"
   BOT BARS: 5'-0"
   SIDE BARS: 1'-4"

QUANTITIES		
CU. YDS. CLASS A CONCRETE	~~109.8~~ 107.3	△1 104.83 △1
LBS. BAR REINF. STEEL	~~17,717~~ 16,288	△1 15,859 △1
LIN. FT. PILING 10 BP 42	525	

BY	REVISIONS	DATE
△1 RJS	TOP OF FOOTING	7-2-82
△1 RJS	TOP OF FOOTING	10-19-81

BRIDGE NO. 3L

STANLEY CONSULTANTS Atlanta, Georgia

GEORGIA DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION - BRIDGE DESIGN

I-575 OVER NOONDAY CREEK

BENT NO. 2

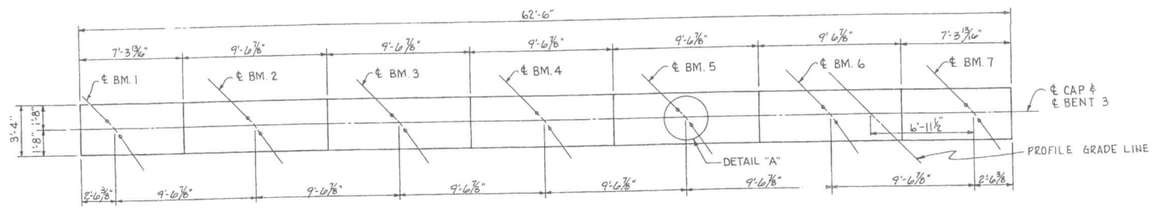
CHEROKEE COUNTY, GEORGIA

GEORGIA STATE HIGHWAY PROJECT NO. I-575-1 (6) 07

DESIGNED RJB | CHECKED KRB | APPROVED | DRAWING NO.
DRAWN P. FEDELER | REVIEWED | APPROVED
SCALE NONE | DATE JULY 25, 1980 | JOB NO. 7774 | S13

FED RD DIV NO	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO	TOTAL SHEETS
	GA	I-575-1(6)07			

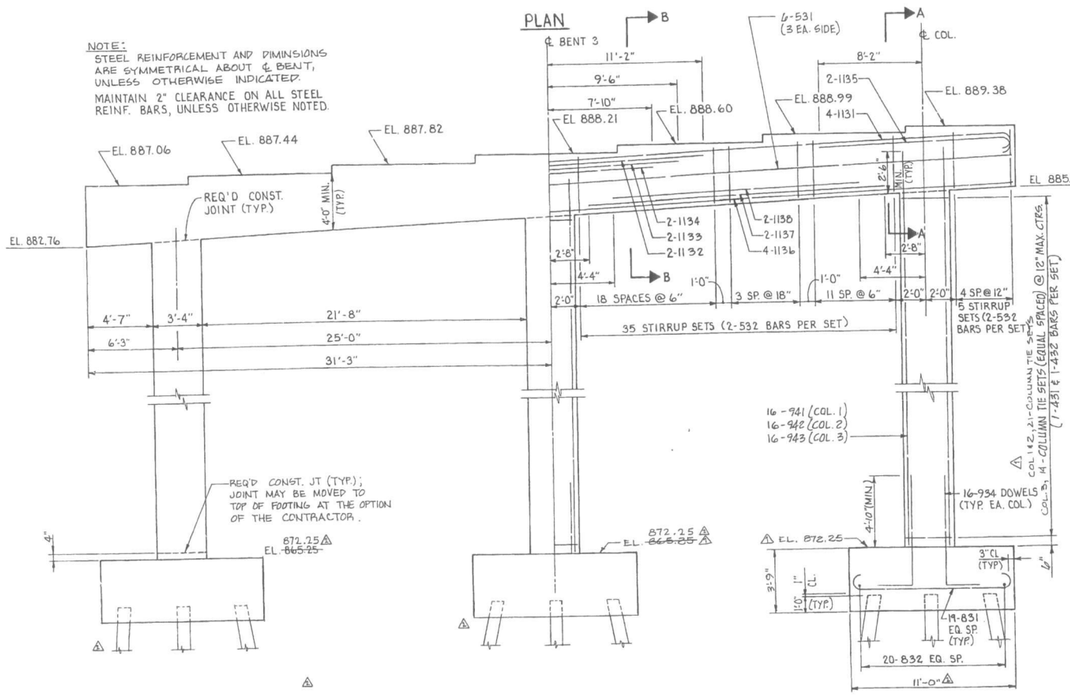
Rev 7-13-82



PLAN

NOTE:
STEEL REINFORCEMENT AND DIMINSIONS ARE SYMMETRICAL ABOUT ℄ BENT, UNLESS OTHERWISE INDICATED.

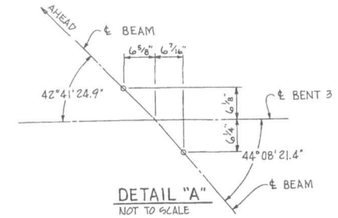
MAINTAIN 2" CLEARANCE ON ALL STEEL REINF. BARS, UNLESS OTHERWISE NOTED.



NOTE:
FOR BAR SPLICING INFORMATION, SEE DWG. NO. 513.

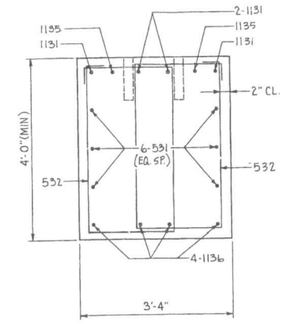
ELEVATION

LOOKING AHEAD
NOT TO SCALE



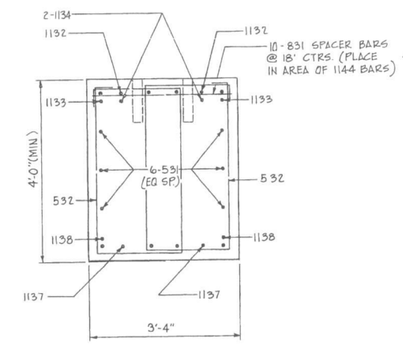
DETAIL "A"

NOT TO SCALE

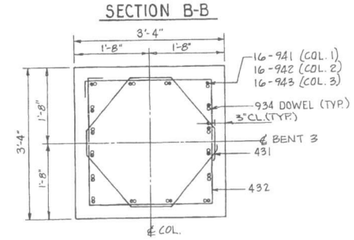


SECTION A-A

SCALE: 3/4" = 1'-0"

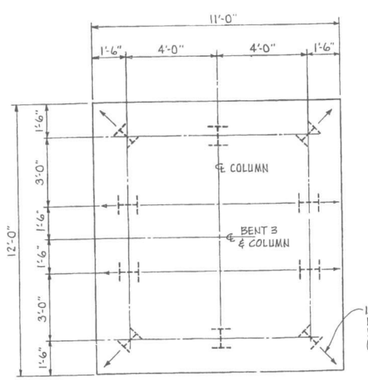


SECTION B-B



SECTION THRU COLUMN

SCALE: 3/4" = 1'-0"



TYPICAL PILE CAP PLAN

SCALE: 3/8" = 1'-0"

PLAN DRIVING OBJECTIVE

DRIVE ALL PILES TO A DRIVING RESISTANCE OF 55 TONS AFTER A MINIMUM PENETRATION OF 15' HAS BEEN ACHIEVED. USE 10 BP 42 PILES.

QUANTITIES		
CU. YDS. CLASS A CONCRETE	~~98.1~~ 95.2 △	102.0 △
LBS. BAR REINF. STEEL	~~15,405~~ 14,663 △	15,308 △
LIN. FT. PILING 10 BP 42	175	

BY	REVISIONS	DATE
RJS	COL. 1 & 2 PILE FTG. FTG. EL. REVISED	7-2-82
RJS	FOOTING ELEV. COL. 3	10-14-81

BRIDGE NO. 3L

STANLEY CONSULTANTS Atlanta, Georgia

GEORGIA DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION - BRIDGE DESIGN

I-575 OVER NOONDAY CREEK

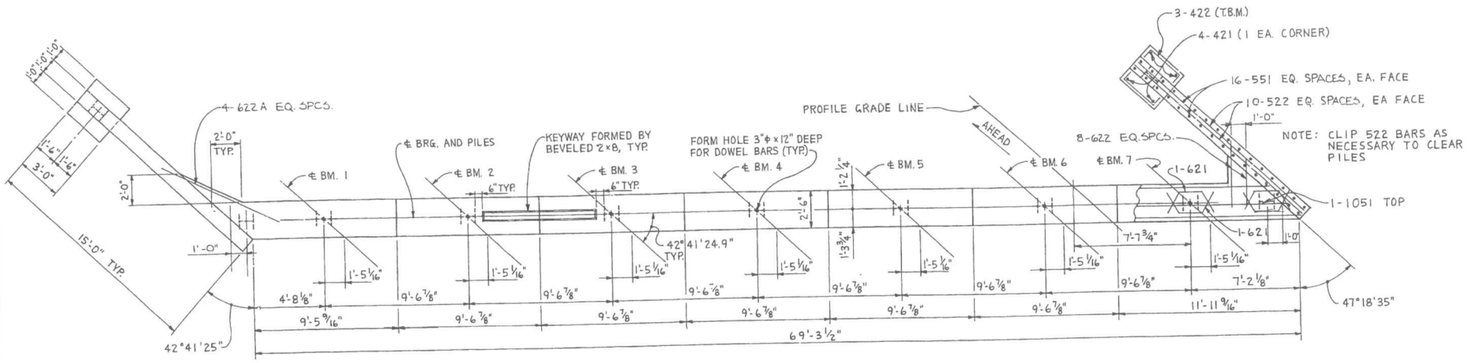
BENT NO. 3

CHEROKEE COUNTY, GEORGIA

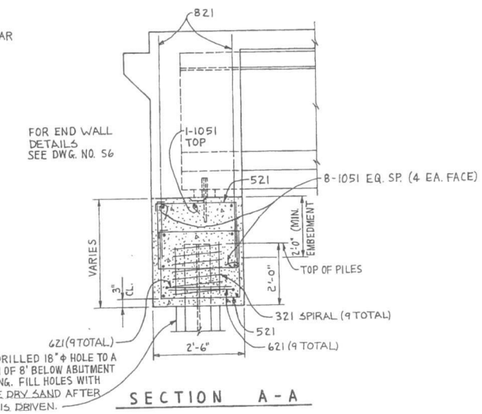
GEORGIA STATE HIGHWAY PROJECT NO. I-575-1 (6) 07

DESIGNED RUB	CHECKED KRB	APPROVED [illegible]	DRAWING NO.
DRAWN P. FEDELER	REVIEWED	APPROVED	S14
SCALE: AS NOTED	DATE JUNE 29, 1981	JOB NO. 7774	

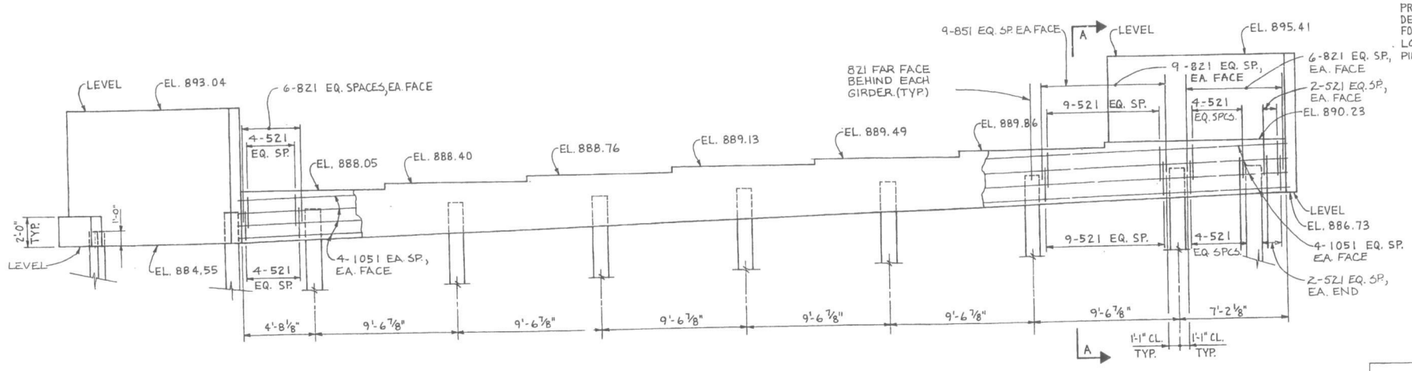
FED. RD DIV. NO	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO	TOTAL SHEETS
	GA.	I-575-1(6)07			



PLAN
SCALE: 1/4"=1'-0"



SECTION A-A



ELEVATION
LOOKING AHEAD
SCALE: 1/4"=1'-0"

PILE DRIVING OBJECTIVE

DRIVE ALL PILES TO A DRIVING RESISTANCE OF 70 TONS AFTER A MINIMUM TIP ELEVATION OF 855 IS ACHIEVED. ALL PILES ARE 12 BP 53.

QUANTITIES	
CU. YDS. CLASS A CONC.	33.6
LBS. BAR REINF. STEEL	8171
LIN. FT. PILING, 12 BP 53	467

BY	REVISIONS	DATE

BRIDGE NO. 3L

STANLEY CONSULTANTS Atlanta, Georgia

GEORGIA DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION - BRIDGE DESIGN

I-575 OVER NOONDAY CREEK

BENT NO. 4

CHEROKEE COUNTY, GEORGIA

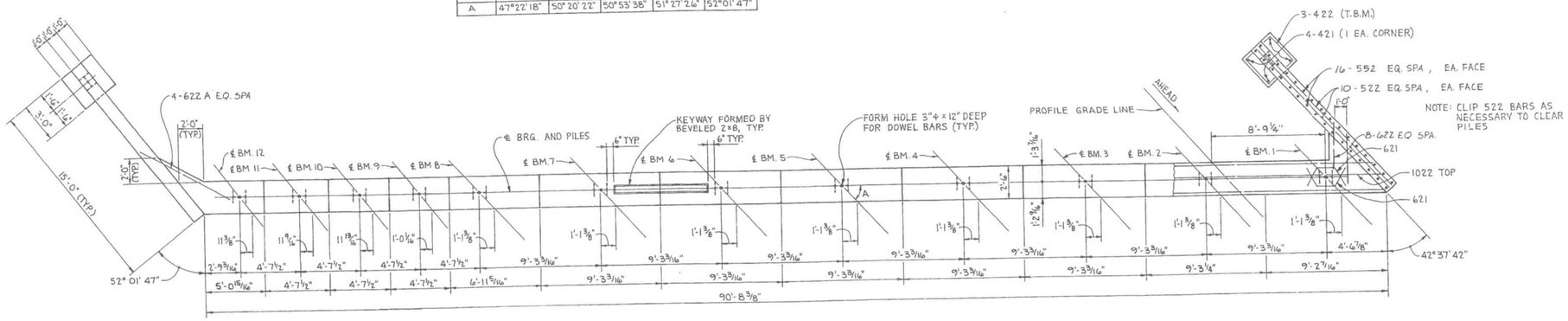
GEORGIA STATE HIGHWAY PROJECT NO. I-575-1 (6) 07

DESIGNED RJB CHECKED KRB APPROVED
DRAWN L.J.O. REVIEWED APPROVED
SCALE AS NOTED DATE JULY 26, 1980 JOB NO. 7774

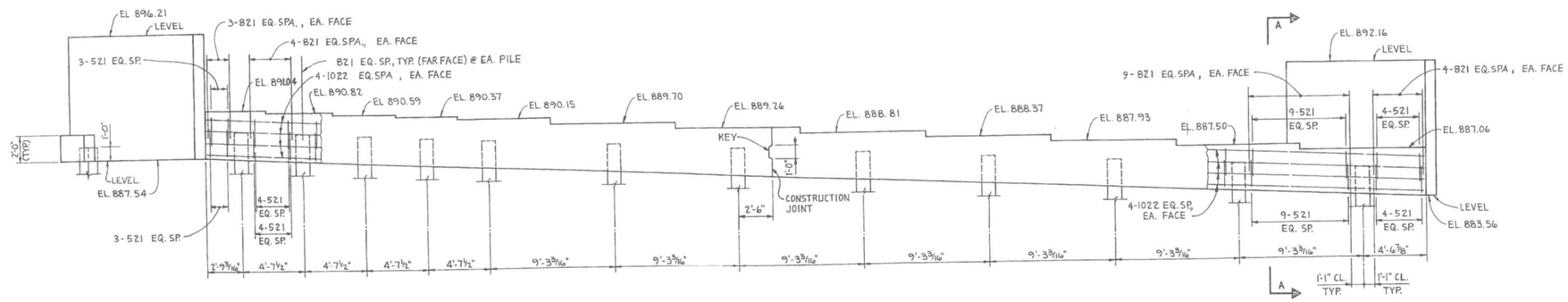
DRAWING NO. S15

FED RD DIV NO	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO	TOTAL SHEETS
	GA	I-575-1(6)07			

BEAM	1 THRU 8	9	10	11	12
A	47°22'18"	50°20'22"	50°53'38"	51°27'26"	52°01'47"



PLAN

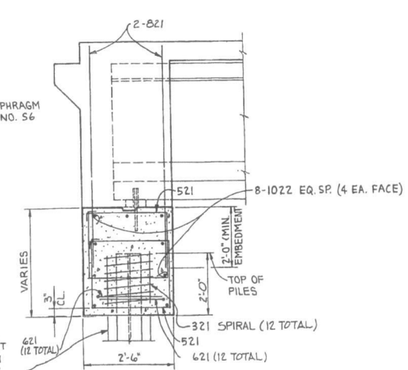


ELEVATION
LOOKING BACK

PILING DRIVING OBJECTIVE

DRIVE ALL PILES TO A DRIVING RESISTANCE OF 70 TONS AFTER A MINIMUM TIP ELEVATION OF 858 IS ACHIEVED. ALL PILES ARE 12 BP 53

FOR END BENT DIAPHRAGM DETAILS SEE DWG. NO. S6



SECTION A-A

QUANTITIES	
CU. YD. CLASS A CONC.	40.0
LBS. BAR REINF. STEEL	10,330
LIN. FT. PILING, 12 BP 53	594

BY	REVISIONS	DATE

BRIDGE NO. 3R

STANLEY CONSULTANTS Atlanta, Georgia

GEORGIA DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION - BRIDGE DESIGN

I-575 OVER NOONDAY CREEK

BENT NO. 1

CHEROKEE COUNTY, GEORGIA

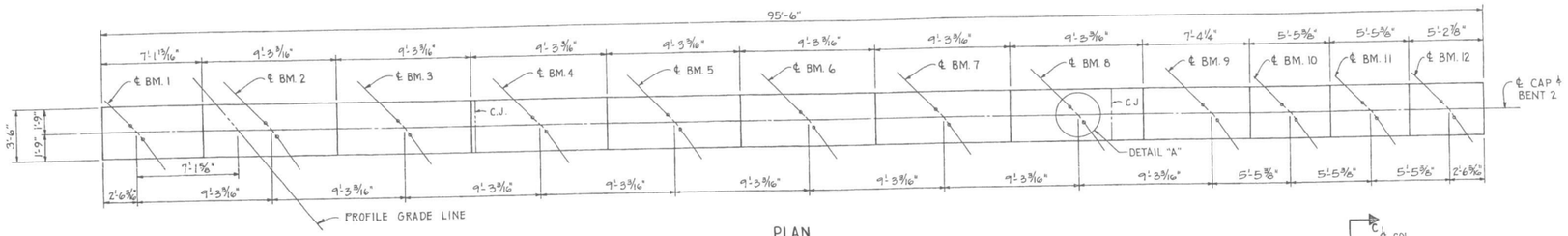
GEORGIA STATE HIGHWAY PROJECT NO. I-575-1 (6) 07

DESIGNED RUG CHECKED KRB APPROVED
DRAWN I.J.A. REVIEWED APPROVED

SCALE AS NOTED DATE July 25, 1980 JOB NO. 7774

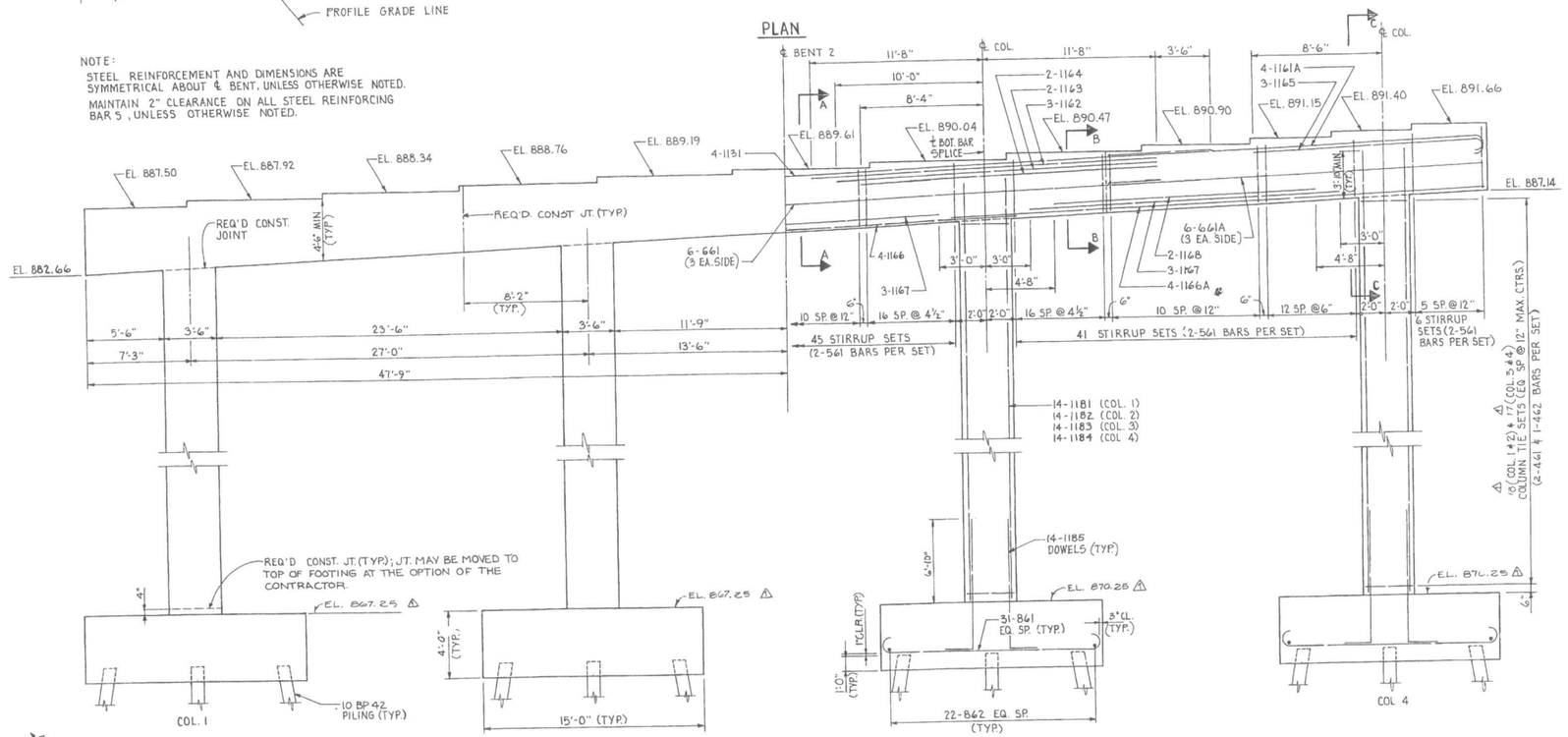
DRAWING NO. S16

FED RD DIV NO	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO	TOTAL SHEETS
	GA.	I-575-1(6)07			

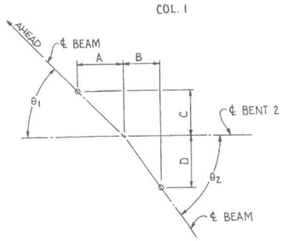


NOTE:
STEEL REINFORCEMENT AND DIMENSIONS ARE SYMMETRICAL ABOUT ℄ BENT, UNLESS OTHERWISE NOTED.
MAINTAIN 2" CLEARANCE ON ALL STEEL REINFORCING BAR 5, UNLESS OTHERWISE NOTED.

PLAN



ELEVATION



DETAIL "A"

	A	B	C	D	θ1	θ2
BEAMS 1-8	6 1/4"	6 1/8"	6 1/2"	6 5/8"	46°00'52.7"	47°22'17.8"
BEAM 9	6 1/4"	5 3/4"	6 1/2"	6 15/16"	46°00'52.7"	50°20'21.8"
BEAM 10	6 1/16"	5 11/16"	6 5/8"	7"	47°31'34.5"	50°53'38.3"
BEAM 11	5 7/8"	5 5/8"	6 13/16"	7 1/16"	49°06'53.0"	51°27'26.3"
BEAM 12	5 11/16"	5 9/16"	7"	7 1/8"	50°46'59.3"	52°01'47.0"

QUANTITIES		
CU. YDS. CLASS A CONC.	~~226.8~~	220.4 △
LBS. BAR REINF. STEEL	~~34,142~~	32,828 △
LIN. FT. PILING 10 BP 42	759	

BY	REVISIONS	DATE
△ RJS	FOOTING ELEVATIONS	10-14-81

BRIDGE NO. 3R

STANLEY CONSULTANTS Atlanta, Georgia

GEORGIA DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION - BRIDGE DESIGN

I-575 OVER NOONDAY CREEK

BENT NO. 2

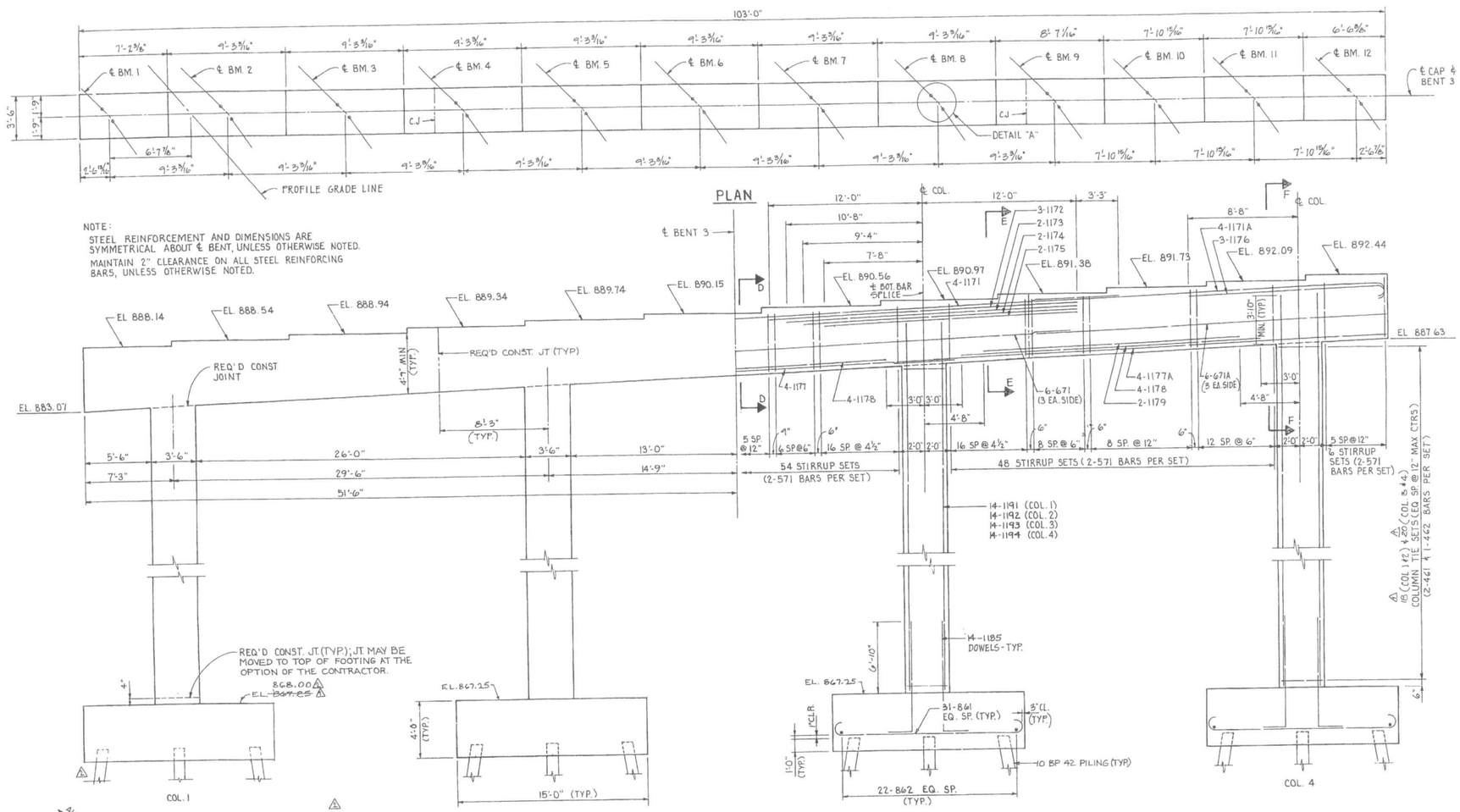
CHEROKEE COUNTY, GEORGIA

GEORGIA STATE HIGHWAY PROJECT NO. I-575-1 (6) 07

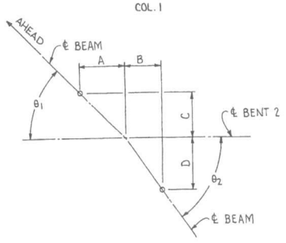
DESIGNED RJB | CHECKED KRB | APPROVED | DRAWING NO.
DRAWN P. FEDELER | REVIEWED | APPROVED
SCALE NONE | DATE July 25, 1980 | JOB NO. 7774 | S17

FED RD DIV NO	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO	TOTAL SHEETS
	GA	I-575-1(6)07			

Rev. 7-13-87



NOTE:
STEEL REINFORCEMENT AND DIMENSIONS ARE SYMMETRICAL ABOUT ℄ BENT, UNLESS OTHERWISE NOTED.
MAINTAIN 2" CLEARANCE ON ALL STEEL REINFORCING BARS, UNLESS OTHERWISE NOTED.



DETAIL "A"

	A	B	C	D	θ_1	θ_2
BEAMS 1-8	6 3/8"	6 1/4"	6 5/16"	6 1/2"	44°39'34.9"	46°00'52.7"
BEAM 9	6 3/8"	6 1/4"	6 5/16"	6 1/2"	44°39'34.9"	46°00'52.7"
BEAM 10	6 1/4"	6 1/16"	6 1/2"	6 5/8"	46°12'11.7"	47°31'34.5"
BEAM 11	6 1/16"	5 7/8"	6 11/16"	6 13/16"	47°49'50.8"	49°06'53.0"
BEAM 12	5 13/16"	5 11/16"	6 7/8"	7"	49°32'48.0"	50°46'59.3"

QUANTITIES		
CU. YDS. CLASS A CONC.	~~220.1~~	216.5 △1 232.2 △2
LBS. BAR REINF. STEEL	~~35,420~~	34,665 △1 36 079 △2
LIN. FT. PILING 10 BP 42	570	

BRIDGE NO. 3R

STANLEY CONSULTANTS Atlanta, Georgia

GEORGIA DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION - BRIDGE DESIGN

I-575 OVER NOONDAY CREEK

BENT NO. 3

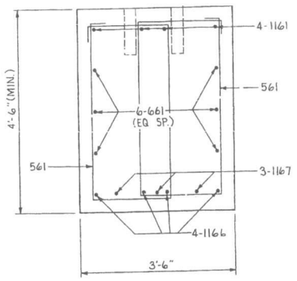
CHEROKEE COUNTY, GEORGIA

GEORGIA STATE HIGHWAY PROJECT NO. I-575-1 (6) 07

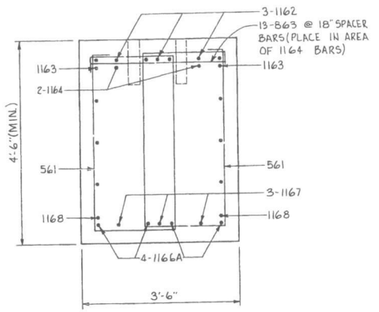
BY	REVISIONS	DATE
△2 RJS	COL. PILE FTG. & FTG. EL.	7-2-82
△1 RJS	FOOTING ELEVATIONS	10-14-81

DESIGNED RUB | CHECKED KRB | APPROVED [signature] | DRAWING NO. S18
DRAWN P. FEDELER | REVIEWED | APPROVED
SCALE NONE | DATE JULY 25, 1980 | JOB NO. 7774

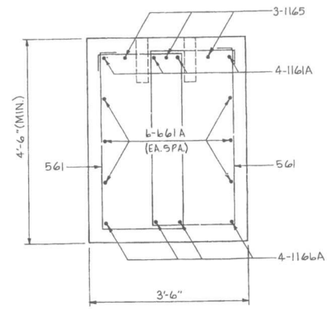
FED. RD DIV. NO	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO	TOTAL SHEETS
	GA	I-575-1(6)07			



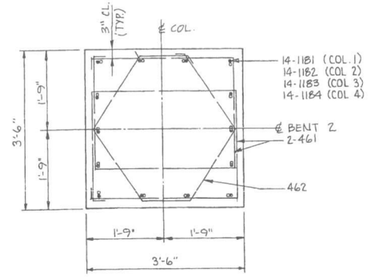
SECTION A-A
SCALE: 3/4"=1'-0"



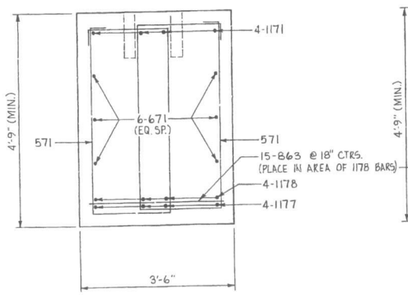
SECTION B-B
SCALE: 3/4"=1'-0"



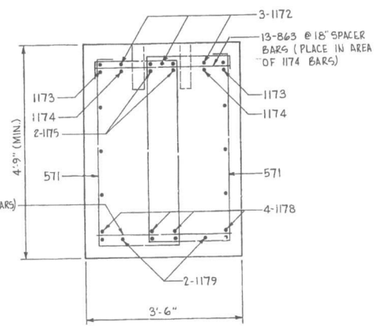
SECTION C-C
SCALE: 3/4"=1'-0"



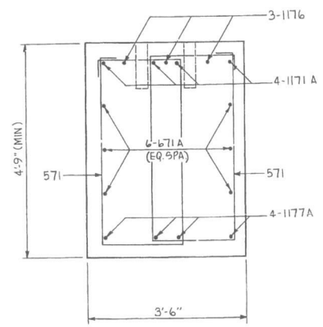
SECTION THRU COLUMNS
@ BENT 2
SCALE: 3/4"=1'-0"



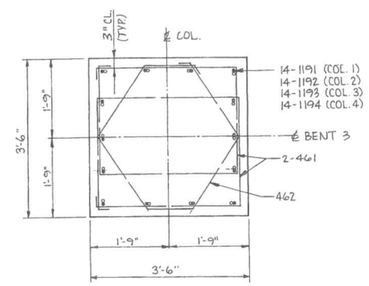
SECTION D-D
SCALE: 3/4"=1'-0"



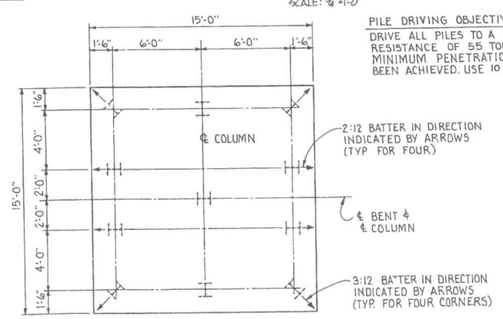
SECTION E-E
SCALE: 3/4"=1'-0"



SECTION F-F
SCALE: 3/4"=1'-0"



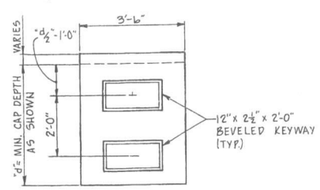
SECTION THRU COLUMNS
@ BENT 3
SCALE: 3/4"=1'-0"



PILE DRIVING OBJECTIVE

DRIVE ALL PILES TO A DRIVING RESISTANCE OF 55 TONS AFTER A MINIMUM PENETRATION OF 15' HAS BEEN ACHIEVED. USE 10 BP 42. PILES.

TYPICAL PILE CAP PLAN
BENTS 2 & 3
SCALE: 1/8"=1'-0"



PIER CAP CONSTRUCTION
JOINT DETAIL
(REBARS NOT SHOWN FOR CLARITY)
NOT TO SCALE

BY	REVISIONS	DATE

BRIDGE NO. 3R

STANLEY CONSULTANTS
Atlanta, Georgia

GEORGIA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION - BRIDGE DESIGN

I-575 OVER NOONDAY CREEK

BENT NO. 2 & 3 DETAILS

CHEROKEE COUNTY, GEORGIA

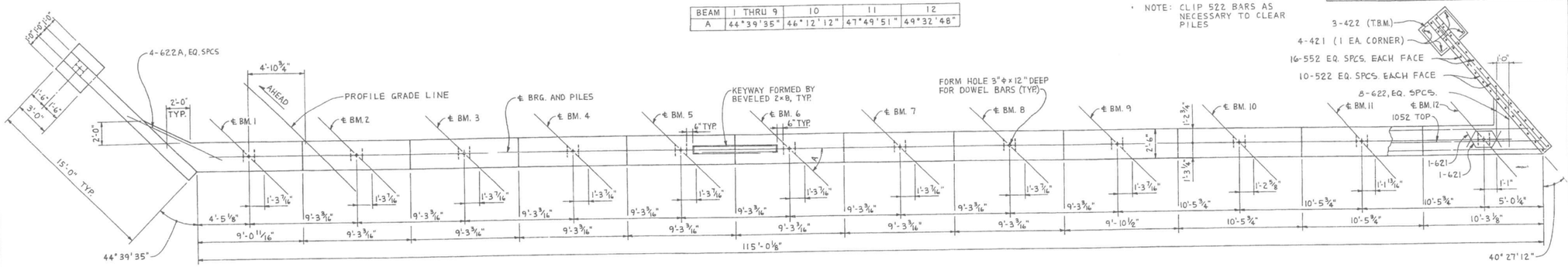
GEORGIA STATE HIGHWAY PROJECT NO. I-575-1 (6) 07

DESIGNED RVB CHECKED KRB APPROVED
DRAWN P. FEDELER REVIEWED APPROVED
SCALE: 1/8" NOTED DATE JULY 25, 1980 JOB NO. 7774
DRAWING NO. S19

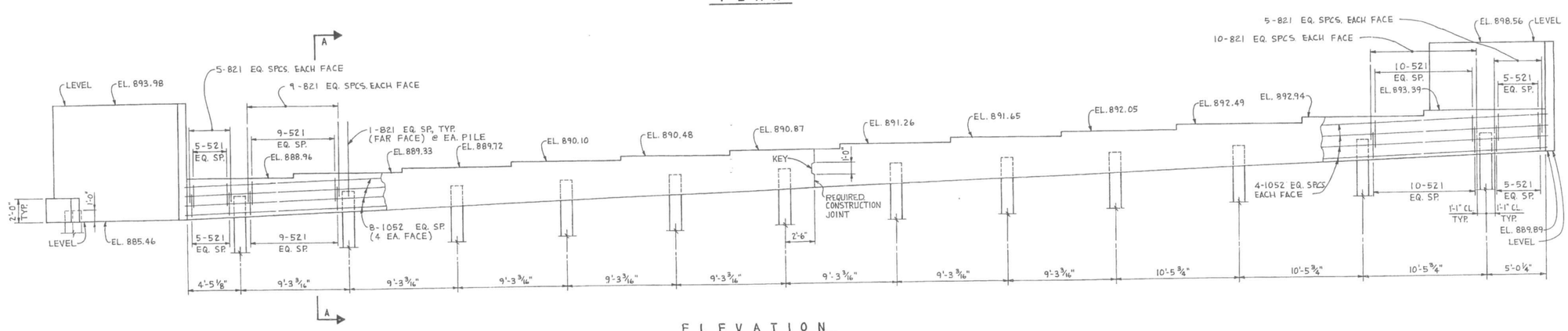
FED RD DIV NO	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NO	TOTAL SHEETS
	GA	I-575-1(8)07			

BEAM	1 THRU 9	10	11	12
A	44°39'35"	46°12'12"	47°49'51"	49°32'48"

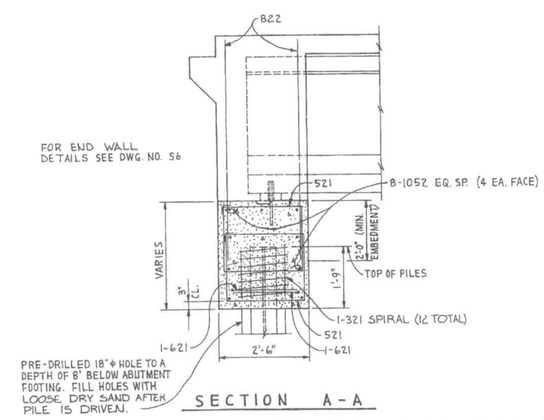
NOTE: CLIP 522 BARS AS NECESSARY TO CLEAR PILES



PLAN



ELEVATION
LOOKING AHEAD



SECTION A-A

PILE DRIVING OBJECTIVE

DRIVE ALL PILES TO A DRIVING RESISTANCE OF 70 TONS AFTER A MINIMUM TIP ELEVATION OF 856 IS ACHIEVED. ALL PILES ARE 12 BP 53

QUANTITIES	
CU. YDS. CLASS A CONC.	48.1
LBS. BAR REINF. STEEL	12,742
LIN. FT. PILING 12 BP 53	624

BRIDGE NO. 3R

STANLEY CONSULTANTS Atlanta, Georgia

GEORGIA DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION - BRIDGE DESIGN

I-575 OVER NOONDAY CREEK

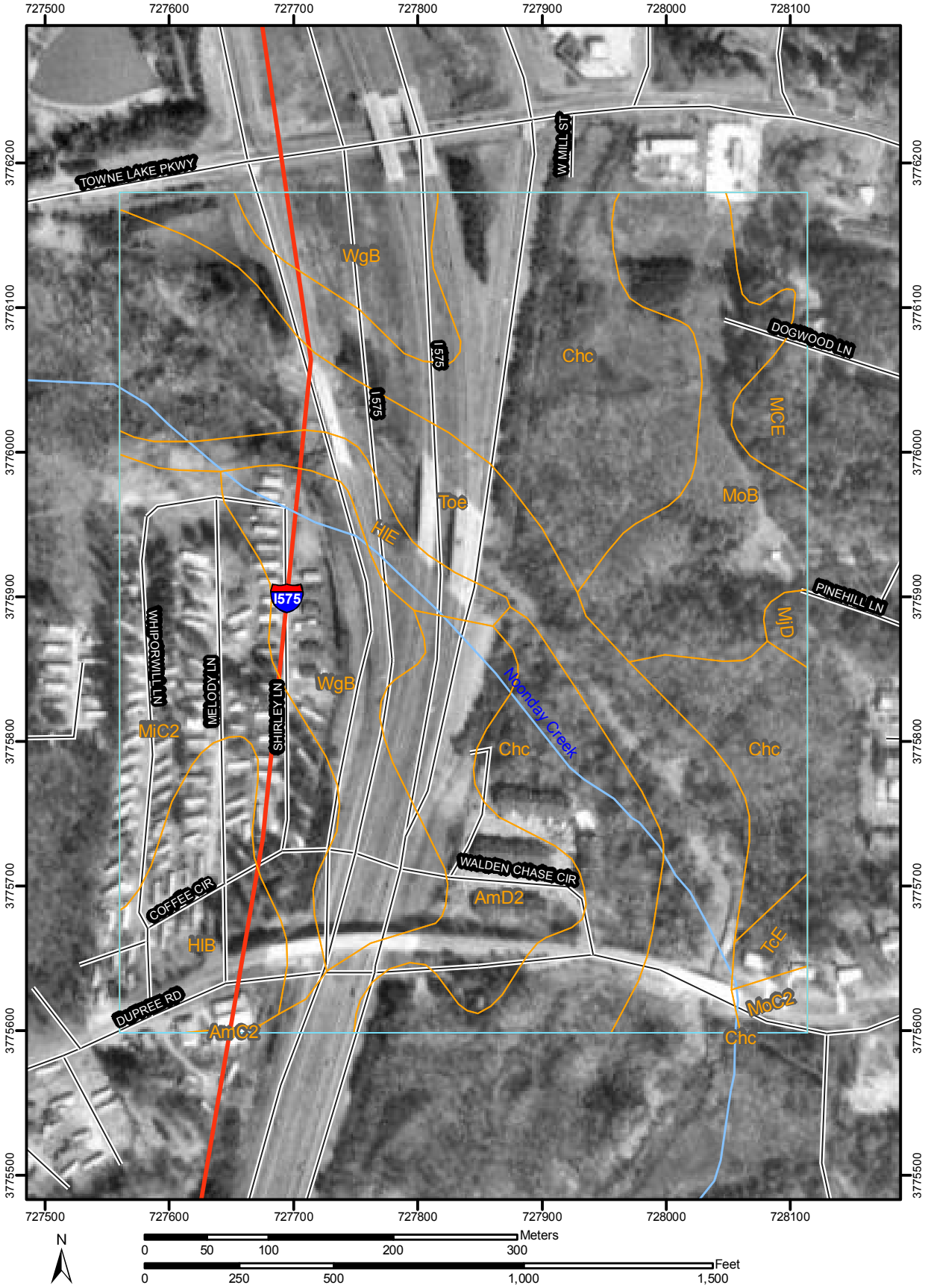
BENT NO. 4

CHEROKEE COUNTY, GEORGIA

GEORGIA STATE HIGHWAY PROJECT NO. I-575-1 (6) 07

BY	REVISIONS	DATE

DESIGNED RUB CHECKED KRB APPROVED
DRAWN L.J.O. REVIEWED APPROVED
SCALE AS NOTED DATE JULY 25, 1980 JOB NO. 7774
DRAWING NO S20


727500
727600
727700
727800
727900
728000
728100
3776200
3776100
3776000
3775900
3775800
3775700
3775600
3775500
TOWNE LAKE PKWY
W MILL ST
DOGWOOD LN
PINEHILL LN
WHIPORWILL LN
MELODY LN
SHIRLEY LN
COFFEE CIR
DUPREE RD
WALDEN CHASE CIR
I575
Noonday Creek
WgB
Chc
MCE
MoB
Toe
HIE
MiD
MiC2
AmD2
HIB
TcE
MoC2
AmC2
N
Meters
0
50
100
200
300
Feet
0
250
500
1,000
1,500

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Units

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Gully

Short Steep Slope

Other

Political Features

Municipalities

Cities

Urban Areas

Water Features

Oceans

Streams and Canals

Transportation

Rails

Roads

Interstate Highways

US Routes

State Highways

Local Roads

Other Roads

MAP INFORMATION

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 16N

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cherokee, Gilmer, and Pickens Counties, Georgia
Survey Area Data: Version 7, Apr 21, 2008

Date(s) aerial images were photographed: 1993

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Cherokee, Gilmer, and Pickens Counties, Georgia (GA622)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
AmC2	Appling sandy loam, 6 to 10 percent slopes, eroded	0.0	0.1%
AmD2	Appling sandy loam, 10 to 15 percent slopes, eroded	7.4	8.0%
Chc	Chewacla-Cartecay complex	26.0	28.1%
HlB	Hayesville fine sandy loam, 2 to 6 percent slopes	5.6	6.1%
HlE	Hayesville fine sandy loam, 10 to 25 percent slopes	2.7	2.9%
MCE	Musella cobbly loam, 10 to 25 percent slopes	2.6	2.8%
MiC2	Madison gravelly sandy clay loam, 2 to 10 percent slopes, eroded	10.0	10.8%
MjD	Madison fine sandy loam, 10 to 15 percent slopes	0.4	0.4%
MoB	Masada fine sandy loam, 2 to 6 percent slopes	9.0	9.7%
MoC2	Masada fine sandy loam, 6 to 10 percent slopes, eroded	0.6	0.7%
TcE	Tallapoosa fine sandy loam, 15 to 25 percent slopes	0.8	0.9%
Toe	Toccoa complex	15.6	16.8%
WgB	Wickham fine sandy loam, 2 to 6 percent slopes	11.9	12.8%
Totals for Area of Interest (AOI)		92.6	100.0%

Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Report—Engineering Properties

Engineering Properties– Cherokee, Gilmer, and Pickens Counties, Georgia												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
AmC2—Appling sandy loam, 6 to 10 percent slopes, eroded												
Appling	0-9	Sandy loam	SC-SM, SM	A-2	0	0-5	86-100	80-100	55-91	15-35	15-35	NP-7
	9-35	Sandy clay, clay loam, clay	CL, MH, ML	A-7	0	0-5	95-100	90-100	70-95	51-80	41-74	15-30
	35-46	Sandy clay, clay loam, sandy clay loam	CL, SC	A-4, A-6, A-7	0	0-5	95-100	85-100	70-90	40-75	25-45	8-22
	46-65	Sandy clay loam, clay loam, sandy loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0	0	80-100	70-100	60-80	30-60	20-54	5-18
AmD2—Appling sandy loam, 10 to 15 percent slopes, eroded												
Appling	0-9	Sandy loam	SM, SC-SM	A-2	0	0-5	86-100	80-100	55-91	15-35	15-35	NP-7
	9-35	Sandy clay, clay loam, clay	ML, CL, MH	A-7	0	0-5	95-100	90-100	70-95	51-80	41-74	15-30
	35-46	Sandy clay, clay loam, sandy clay loam	CL, SC	A-7, A-4, A-6	0	0-5	95-100	85-100	70-90	40-75	25-45	8-22
	46-65	Sandy clay loam, clay loam, sandy loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0	0	80-100	70-100	60-80	30-60	20-54	5-18

Engineering Properties– Cherokee, Gilmer, and Pickens Counties, Georgia												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
Chc—Chewacla-Cartecay complex												
Cartecay	0-9	Loam	ML, CL, CL-ML	A-4, A-6	0	0	98-100	95-100	90-100	51-95	15-40	NP-15
	9-40	Sandy loam, fine sandy loam, loam	SC, SC-SM, SM	A-2, A-4	0	0	90-100	75-100	60-85	25-50	15-30	NP-10
	40-60	Loamy sand, sand, sandy loam, stratified sand to loamy sand	SP-SM, SM	A-1, A-2, A-3	0	0	80-100	35-95	25-80	5-35	—	NP
Chewacla	0-8	Loam	CL-ML, ML, CL	A-4, A-6, A-7	0	0	98-100	95-100	70-100	55-90	25-49	4-20
	8-24	Silt loam, silty clay loam, clay loam	CL, ML	A-7, A-4, A-6	0	0	96-100	95-100	80-100	51-98	30-49	4-22
	24-34	Sandy clay loam, loam, sandy loam	SM, CL, ML, SC-SM	A-7-6, A-4, A-6	0	0	96-100	95-100	60-100	36-70	20-45	2-15
	34-58	Silt loam, clay loam, silty clay loam	MH, ML, CH, CL	A-4, A-6, A-7	0	0	85-100	75-100	60-100	51-98	22-61	4-28
	58-70	Sandy loam, fine sandy loam, loam, sandy clay loam, clay loam	CL, SM, ML, SC-SM, SC	A-2-4, A-6, A-7-6, A-4	0	0	80-100	75-100	45-100	25-80	10-45	NP-18

Engineering Properties– Cherokee, Gilmer, and Pickens Counties, Georgia												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
HIB—Hayesville fine sandy loam, 2 to 6 percent slopes												
Hayesville	0-5	Fine sandy loam	SC, SM, CL, ML	A-4	0	0-5	90-100	85-95	70-95	35-60	25-35	NP-10
	5-38	Clay loam, clay	CL, MH, ML, CH	A-6, A-7	0	0-5	90-100	85-100	70-100	55-80	36-66	11-35
	38-48	Sandy clay loam, clay loam, loam	MH, ML, SM, CL	A-6, A-7	0	0-5	90-100	90-100	85-95	45-65	36-55	11-25
	48-60	Fine sandy loam, loam, sandy clay loam	SM, CL, ML, SC	A-4, A-6	0	5-15	90-100	90-95	65-90	40-55	25-40	NP-12
HIE—Hayesville fine sandy loam, 10 to 25 percent slopes												
Hayesville	0-5	Fine sandy loam	CL, ML, SC, SM	A-4	0	0-5	90-100	85-95	70-95	35-60	25-35	NP-10
	5-38	Clay loam, clay	ML, CH, CL, MH	A-6, A-7	0	0-5	90-100	85-100	70-100	55-80	36-66	11-35
	38-48	Sandy clay loam, clay loam, loam	ML, SM, CL, MH	A-7, A-6	0	0-5	90-100	90-100	85-95	45-65	36-55	11-25
	48-60	Fine sandy loam, loam, sandy clay loam	SM, CL, ML, SC	A-4, A-6	0	5-15	90-100	90-95	65-90	40-55	25-40	NP-12

Engineering Properties– Cherokee, Gilmer, and Pickens Counties, Georgia												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
MCE—Musella cobbly loam, 10 to 25 percent slopes												
Musella	0-4	Stony sandy clay loam	SC, SC-SM, SM	A-2, A-4	0	5-20	75-90	60-90	50-70	30-45	15-37	NP-10
	4-14	Gravelly clay loam	SC, SM, CL, ML	A-6, A-7	0	10-20	75-90	60-85	55-80	43-64	34-48	11-20
	14-18	Very gravelly clay loam	GC, SC, SM	A-6, A-4	0	20-40	60-80	50-65	40-50	36-45	30-40	8-15
	18-60	Weathered bedrock	—	—	—	—	—	—	—	—	—	—
MiC2—Madison gravelly sandy clay loam, 2 to 10 percent slopes, eroded												
Madison	0-6	Gravelly fine sandy loam	SM	A-4, A-2	0	3-10	75-95	60-85	50-70	30-49	15-35	NP-7
	6-30	Clay, clay loam, sandy clay	ML, MH	A-7	0	0-3	90-100	85-100	75-97	57-85	43-75	12-35
	30-35	Loam, sandy clay loam, clay loam	CL	A-4, A-6	0	0-3	90-100	85-100	70-95	50-80	20-40	7-20
	35-66	Fine sandy loam, sandy loam, loam	ML, SM	A-2, A-4	0	0-5	85-100	80-100	60-90	26-55	15-35	NP-7

Engineering Properties– Cherokee, Gilmer, and Pickens Counties, Georgia												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
MjD—Madison fine sandy loam, 10 to 15 percent slopes												
Madison	0-6	Fine sandy loam	ML, SM, SC-SM	A-2, A-4	0	0-3	85-100	80-100	60-90	26-55	15-35	NP-8
	6-30	Clay, clay loam, sandy clay	MH, ML	A-7	0	0-3	90-100	85-100	75-97	57-85	43-75	12-35
	30-35	Loam, sandy clay loam, clay loam	CL	A-4, A-6	0	0-3	90-100	85-100	70-95	50-80	20-40	7-20
	35-66	Fine sandy loam, sandy loam, loam	ML, SM	A-2, A-4	0	0-5	85-100	80-100	60-90	26-55	15-35	NP-7
MoB—Masada fine sandy loam, 2 to 6 percent slopes												
Masada	0-10	Fine sandy loam	SC, SM, CL, ML	A-4, A-6	0	0-5	90-100	75-98	60-95	35-75	15-30	NP-15
	10-55	Clay loam, clay, gravelly clay	CH, CL	A-6, A-7	0	0-10	80-100	70-100	65-95	50-80	35-60	15-35
	55-72	Loam, clay loam, gravelly sandy clay loam	CL, ML	A-4, A-6, A-7	0	0-10	80-100	70-100	65-95	50-80	30-45	7-20
MoC2—Masada fine sandy loam, 6 to 10 percent slopes, eroded												
Masada	0-10	Fine sandy loam	ML, SC, SM, CL	A-4, A-6	0	0-5	90-100	75-98	60-95	35-75	15-30	NP-15
	10-55	Clay loam, clay, gravelly clay	CH, CL	A-6, A-7	0	0-10	80-100	70-100	65-95	50-80	35-60	15-35
	55-72	Loam, clay loam, gravelly sandy clay loam	ML, CL	A-6, A-7, A-4	0	0-10	80-100	70-100	65-95	50-80	30-45	7-20

Engineering Properties– Cherokee, Gilmer, and Pickens Counties, Georgia												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
TcE—Tallapoosa fine sandy loam, 15 to 25 percent slopes												
Tallapoosa	0-4	Fine sandy loam	ML, SC-SM, SM, CL-ML	A-4, A-2	0-5	0-10	85-100	85-95	55-80	30-55	15-20	NP-7
	4-10	Silty clay loam, clay loam, loam	CL, ML	A-6, A-4	0-5	0-10	85-100	85-100	70-85	50-70	28-39	3-14
	10-19	Loam	ML, SM	A-4	0-5	0-15	80-90	75-85	60-70	40-55	15-36	NP-6
	19-60	Weathered bedrock	—	—	—	—	—	—	—	—	—	—
Toe—Toccoa complex												
Toccoa	0-10	Fine sandy loam	SM	A-4, A-2	0	0	95-100	95-100	50-85	30-55	15-30	NP-4
	10-60	Sandy loam, loam	ML, SM	A-4, A-2	0	0	95-100	90-100	60-100	30-55	15-30	NP-4
WgB—Wickham fine sandy loam, 2 to 6 percent slopes												
Wickham	0-6	Fine sandy loam	SM, CL-ML, ML, SC-SM	A-4	0	0	95-100	90-100	70-100	45-80	15-25	NP-7
	6-50	Sandy clay loam, clay loam, loam	CL-ML, SC, SM, CL	A-7-6, A-2, A-4, A-6	0	0	95-100	90-100	75-100	30-70	20-41	3-15
	50-78	Loam, sandy loam, sandy clay loam, clay loam	SC, SM, SC-SM, CL, ML	A-7-6, A-2-4, A-4, A-6	0	0	80-100	75-100	60-100	25-80	15-45	1-18

Data Source Information

Soil Survey Area: Cherokee, Gilmer, and Pickens Counties, Georgia
Survey Area Data: Version 7, Apr 21, 2008

BRIDGE FOUNDATION INVESTIGATION REPORT
I-575 over Noonday Creek (North)
Northwest Corridor Project
GDOT Project No. CSNHS-0008-00(256), PI No. 0008256
Cherokee County, Georgia

WILLMER ENGINEERING INC.
Project No. ATL-171-3099H

Document No.: ATL-171-3099H
Revision: 0
Issue Date: January 11, 2008
Document Status: Issued for Use

Prepared For

GEORGIA TRANSPORTATION PARTNERS
Atlanta, Georgia

Prepared By

WILLMER ENGINEERING INC.
3772 Pleasantdale Road
Suite 165
Atlanta, Georgia 30340-4270

770.939.0089

WILLMER ENGINEERING INC. | WE

January 11, 2008

VIA COURIER

Pete M. McMahon, PE
Georgia Transportation Partners
c/o PBS&J, Inc.
5665 New Northside Drive
Suite 400
Atlanta, Georgia 30328

SUBJECT: **Bridge Foundation Investigation Report**
I-575 over Noonday Creek (North)
Northwest Corridor Project
GDOT Project No. CSNHS -0008-00(256), PI No. 0008256
Cherokee County, Georgia
Willmer Project No. ATL-171-3099H

Dear Mr. McMahon:

Willmer Engineering Inc. (Willmer) is pleased to provide this Bridge Foundation Investigation (BFI) report for the proposed widening of the I-575 bridge over Noonday Creek (North) in Cherokee County, Georgia. The BFI was performed in general accordance with our contract with Georgia Transportation Partners (GTP), dated May 12, 2007. The objective of this investigation was to gather sufficient geotechnical information to support the costing plans to be developed by GTP. Additional borings will be performed in the design/build phase of the project to provide additional information as required. This report was prepared in general accordance with Georgia Department of Transportation (GDOT) guidance documents for bridge foundation investigation. This report was revised to incorporate GTP comments dated January 4 and 9, 2008.

The attached summary presents the site and subsurface conditions along the proposed bridge alignment, and our geotechnical recommendations related to bridge foundation design and construction.

We appreciate the opportunity to be of service to you on this project and look forward to a continuing relationship. Please contact us if you have any questions concerning this report or require further assistance.

Sincerely,
WILLMER ENGINEERING INC.

Murthy S. Kotha
Project Engineer

Sujit K. Bhowmik, PhD, PE
Principal Geotechnical Consultant

REGISTERED No. 029802 PROFESSIONAL ENGINEER SUJIT K. BHOWMIK GEORGIA
01/11/08

James L. Willmer, PE
Vice President/Principal Consultant

MSK/SKB/JLW: ks
I:\Word Processing\Projects\171-GEO\171-3099 Northwest Corridor Project (Bechtel)\Reports\3099 H - Noonday Creek (North)\171-3099H REVISED BFI - Noonday Creek (North) - 01-11-2008.doc

3772 Pleasantdale Road
Suite 165
Atlanta, GA 30340-4270
P: 770-939-0089
F: 770-939-4299
www.willmerengineering.com

Attachments: **Bridge Foundation Investigation**

Figures

Figure 1 Project Location Map
Figure 2 Boring Location Plan
Figure 3 Generalized Subsurface Profile, Section A-A' (Bent - 1)
Figure 4 Generalized Subsurface Profile, Section B-B' (Bent - 2)
Figure 5 Generalized Subsurface Profile, Section C-C' (Bent - 3)
Figure 6 Generalized Subsurface Profile, Section D-D' (Bent - 4)

Appendix I

Boring Record Legend
Unified Soil Classification System Reference Sheet
Engineering Description of Rock Hardness
Boring Records: BB-1 through BB-4 (New Borings)
Laboratory Test Results

Appendix II

Boring Records: B-1 through B-5, B-7, B-8, B-10, B-12, B-14 through B-21 and B-23 through B-28 (Borings from Existing BFI Report)

As-Built Bridge Foundation Reports (for Existing Bridges)

Revision History:

Revision	Issue Date	Document Status
A	December 20, 2007	Issued for Review
0	January 11, 2008	Issued for Use

BRIDGE FOUNDATION INVESTIGATION	
Willmer Project Number	ATL-171-3099H
GDOT Project Number	CSNHS-0008-00(256)
Project P.I. Number	0008256
Location	I-575 Bridge over Noonday Creek (North), Cherokee County, Georgia (see Figure 1)
GENERAL INFORMATION	
Project Description	Three new parallel bridges (one in the center median area and one each on the left and right sides of existing bridge) are planned for the proposed I-575 widening over Noonday Creek (North). Each bridge will be a three-span, 210 feet long reinforced concrete structure. The design length for each span is 70 feet. The existing bridges are supported on H-pile bents at the end bents and H-pile footings at the intermediate bents. The BFI report and as-built bridge foundation reports for the existing bridges were obtained from GDOT. The BFI report includes twenty three borings performed by GDOT in 1978. Subsurface information from those borings was used along with four new borings performed as part of the present study.
Geologic Information	The project alignment is geologically sited within the Piedmont Physiographic Province of Georgia, and is underlain by Metamorphosed Maffic Rock Formations which include biotite gneiss, amphibolite and mica schist.
Subsurface Features	Subsurface information for this project was obtained from four borings (BB-1 through BB-4) performed by Willmer as part of the present study (see Appendix I) and twenty three borings (B-1 through B-5, B-7, B-8, B-10, B-12, B-14 through B-21 and B-23 through B-28) performed by GDOT in 1978 as part of the BFI for the existing bridges (see Appendix II). The subsurface profile is generally comprised of fill, alluvium and residuum underlain by partially weathered rock and parent bedrock, except at BB-1 where no alluvium was encountered. It should be noted that the available logs for the twenty three borings performed by GDOT in 1978 do not differentiate between fill, alluvium and residuum in the soil description. The fill material consists of medium dense silty sand. The alluvial soils consist of very loose to loose clayey/silty sand or firm sandy clay. The residual soils consist of very loose to very dense silty sand. (continued)

Subsurface Features (continued)	During the present field investigation groundwater was encountered at BB-2, BB-3 and BB-4 between elevations 870 and 872 feet, and during the field investigation by GDOT in 1978, groundwater was encountered between elevations 868 and 871 feet.

PWR AND AUGER REFUSAL ELEVATIONS (feet)

Bridge	Bent No.	Reference Boring No.	Top of PWR	Auger Refusal
Left	1	BB-1	851	846
		B-3	855	846
	2	B-15	*	851
		B-16	*	850
	3	BB-4	*	853
		B-21	*	862
	4	BB-4	*	853
		B-27	858	854
Center	1	B-5	852	851
		B-2	854	851
	2	B-10	849	846
		B-12	852	845
	3	B-23	856	852
		BB-2	860	855
		B-24	863	862
	4	B-27	858	854
		B-28	853	847
Right	1	B-2	854	851
		B-8	850	848
	2	B-14	850	847
	3	B-26	844	843
	4	BB-3	859	853

* PWR was not encountered in this boring.

MAXIMUM PILE DESIGN LOADS

Pile Type	Load Transfer (%)		Design Load
	Friction	End Bearing	
H-Piles	10	90	10 BP 42 = 55 Tons
			12 BP 53 = 70 Tons
			14 BP 73 = 96 Tons
			14 BP 89 = 117 Tons

FOUNDATION RECOMMENDATIONS			
Bridge	**Bent No.**	**Drilled Shaft (Bearing)**	**Pile Bent (Type)**
Left	1		H
	2	100 ksf on rock	
	3	100 ksf on rock	
	4		H
Center	1		H
	2	100 ksf on rock	
	3	100 ksf on rock	
	4		H
Right	1		H
	2	100 ksf on rock	
	3	100 ksf on rock	
	4		H

ELEVATIONS (feet)					
Bridge	**Bent No.**	**Reference Boring No.**	**Bottom of Drilled Shaft**	**H-Pile Tip Elevations**	
				Minimum Tip	**Estimated Tip**
Left	1 – Left	BB-1		846±	846±
	1 - Right	B-3		850±	850±
	2	B-15, B-16	846 or below		
	3 – Left	BB-4	848 or below		
	3 – Right	B-21	857 or below		
	4 – Left	BB-4		853±	853±
	4 - Right	B-27		854±	854±
Center	1- Left	B-5		851±	851±
	1 – Right	B-2		851±	851±
	2- Left	B-10	841 or below		
	2- Right	B-12	840 or below		
	3- Left	B-23	847 or below		
	3- Right	BB-2, B-24	850 or below		
	4- Left	B-27		854±	854±
	4- Right	B-28		847±	847±
Right	1	B-2,B-8		851±	851±
	2	B-14	842 or below		
	3	B-26	838 or below		
	4	BB-3		853±	853±

NOTES	
Elevations	All elevations referenced in this report are based on Control Points No. 9530 (5/8" rebar, EL. 891.24 feet) and No.9532 (5/8" rebar, EL. 891.58 feet) established by the surveyors.
Theoretical Scour	Hydraulic study for this project has not been completed yet and therefore, theoretical scour line is not available at this time.
Erosion	We recommend the use of 24 inches of Type I riprap and filter fabric.
As-built Information	As-built information should be forwarded to the Geotechnical Engineering Bureau upon completion of the foundation system.
NOTES: PILE BENTS	
PDO	Driving Resistance after Minimum Tip Elevations are achieved.
Points	Pile points are recommended for all piles driven at Bents 1 and 4 to insure adequate penetration into dense/very dense soils and PWR. The use of points should be at the direction of the project Geotechnical Engineer.
Waiting Period	We recommend that a minimum waiting period of 60 days be allowed between completion of fill placement and beginning of pile installation at Bents 1 and 4 of the left and right bridges where significant fill will be placed for embankment construction. Settlement of the embankment should be monitored, and the length of the waiting period may be increased or decreased based on the settlement monitoring data, at the discretion of the project Geotechnical Engineer.
NOTES: DRILLED SHAFTS	
Special Provision	The drilled shafts should be constructed as per Special Provision 524: Drilled Caisson Foundations
Rock Socket	A minimum 5-foot socket into sound rock will be required for all drilled shafts at this site.
Downhole Inspection	The drilled shaft excavations must be inspected by a geotechnical engineer to ensure that the bearing materials will provide suitable vertical and lateral foundation support, and to verify that all unsuitable materials are removed. A minimum shaft diameter of 48 inches shall be used, and the shaft excavations shall be dewatered to allow for the inspection. A minimum test hole depth of 6 feet will be required to insure that there are no weak seams under the shaft. It is critical that the drilled shafts be embedded below any weak layers.

Temporary Casing	Temporary steel casing will be required at all drilled shaft locations to provide for inspection of the rock bearing surface and test hole. The casing should be extended below the top of the bedrock surface if the bedrock is fractured and/or broken. The casing should be of sufficient strength to withstand handling stresses, concrete pressure, and surrounding earth and/or fluid pressures.
Permanent Casing	We do not anticipate needing permanent casing to install drilled shafts at this site.
Ground Water	At locations adjacent to the creek, groundwater should be expected at or slightly above the creek water level. Thus, seepage into the shaft excavations should be expected. It is anticipated that this seepage can be handled by pumping from the shaft excavations. Also, if the soil-bedrock interface becomes a conduit for groundwater infiltration or if fractures and/or voids in the rock produce groundwater seepage into the drilled shaft excavation, the temporary steel casing should be extended into the rock to seal off the groundwater flow.
Special Problems	If possible, all concrete for foundations should be poured the same day the excavation is made. If this is not practical, the foundation excavation should be adequately protected against any detrimental change in conditions such as from disturbance, sloughing, ground water and rainfall. Surface run off water must be drained away from all drilled shaft excavations and not allowed to pond.
Prepared By	Murthy S. Kotha / Sujit K. Bhowmik, PhD, PE
Senior Review By	James L. Willmer, PE

Revised: November 9, 2006

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SPECIAL PROVISION

PROJECT NO. CSNHS-0008-00(256), Cherokee County
P.I. NO. 0008256

SECTION 524 – DRILLED CAISSON FOUNDATIONS

524.1 General Description

This Work consists of furnishing all labor, materials, equipment, tools and services necessary for construction of drilled caisson foundations and includes all incidentals and additional work in conjunction therewith. Adhere to the Department's Plans, Special Provisions and Standard and Supplemental Specifications for all Work.

524.2 Materials

Use materials that meet the requirements of the Standard Specifications with the following exceptions:

- Use non-air-entrained Class AA concrete with a coarse aggregate size of No. 67 stone and a slump at time of placement of between 7 and 9 inches (178 mm and 229 mm). Use 10 percent additional cement and a retarder or water reducing agent in all concrete.
- Use Grade 60 (Grade 420) reinforcing bars that conform to ASTM 615 (ASTM A 615M). If wire spirals are used, use spirals that conform to ASTM A 82.
- Use Grade 2 steel casing that conforms to ASTM A 252.

524.3 Construction Requirements

524.3.01 Personnel

Construct drilled caissons and supervise the work with personnel who are experienced in this type work. Visit and examine the work site and all conditions, and take into consideration all such

conditions that may affect the work. At least 30 days prior to beginning drilled caisson work, submit to the Engineer for review and approval the following proof of the ability of the personnel to construct drilled caisson foundations:

1. Evidence of the successful completion of at least five projects similar in concept and scope to the proposed foundation. Include names, addresses and telephone numbers of the owners' representatives for verification.
2. Résumés of foreman and drilling operators to be employed on this project. Provide evidence showing that the drill operator has experience and knowledge of the drill rig to be used on the project. The Department will be sole judge of the qualifications of the foreman and drill rig operator.
3. A detailed sequence of construction for drilled caisson work that describes all materials, methods and equipment to be used, including, but not limited to the following:
   - casing sizes with proposed top and tip elevations
   - drilling equipment including the manufacturer's specifications on the drill rig
   - methods and equipment for stabilizing and cleaning shaft excavations
   - methods of materials handling and disposal
   - methods and equipment for placing concrete
   - details of tremie and sealing methods, if required
   - details of reinforcement placement, including support and centralization methods

Do not begin drilled caisson construction until the qualifications, construction plan and methods have been approved in writing by the Engineer.

524.3.02 Equipment

Use excavation and drilling equipment with a rated capacity (including power, torque and downward thrust) to excavate a caisson of the maximum specified diameter to a depth of 30 feet (9.1 meters) or 20 percent deeper than the deepest caisson indicated on the Plans, as measured from the ground or water surface elevation, whichever is higher.

524.3.03 Casing

Use casing that is a metal shell of a thickness to withstand handling, internal and external pressures, and that is watertight, smooth and clean. If the elevation of the top of the caisson is below ground level or water level at the time of concrete placement, use an oversize casing from ground elevation to a point below the top of the caisson to prevent caving into the fresh concrete. Do not allow the top of the permanent casing, if required, to extend above the top of the drilled caisson. Use casing in all

materials that do not have sufficient strength to safely remain open and stable during and after excavation.

When casing is used, do not use casing with an outside diameter less than the specified diameter of the caisson. That portion of the caisson below the casing may be slightly smaller than the normal outside diameter of the caisson. However, use drilling tools to excavate the caisson below the casing that are no smaller than the outside diameter of the casing minus 2 inches (51 mm). Do not leave casing in place unless permitted by the Engineer, and cut off any permanent casing as shown on the Plans.

Provide adequate equipment during concrete placement to prevent pulling up the reinforcing cage during casing extraction. The casing may be pulled in partial stages. Maintain a sufficient head of concrete above the bottom of the casing to overcome hydrostatic pressure. Extract the casing at a slow uniform rate with pull in line with the center of the caisson.

524.3.04 Protection of Existing Structures

Monitor structures for settlement that are within a distance of ten shaft diameters or the estimated shaft depth, whichever is greater, in a manner approved by the Engineer. Record elevations to an accuracy of 0.01 foot (3 mm). Record elevations before construction begins, during the driving of any required casings, during excavation or blasting, or as directed by the Engineer.

Document thoroughly the condition of the structures with descriptions and photographs made both before and after drilled caissons are constructed. Document all existing cracks, and provide copies of all documentation to the Engineer.

At any time settlement of 0.05 foot (15 mm) or damage to the structure is detected, immediately stop the source of vibrations, backfill any open drilled shaft excavations and contact the Engineer for instructions.

524.3.05 Excavation

Drill and excavate all caissons through whatever substances and to the elevations required. Excavate near the tip elevation in the presence of the Engineer. The Engineer may adjust the tip elevations depending on the quality of the bearing material found. Embed the caisson tips 5 feet (1.5 meters) into and on top of sound rock in accordance with Plan requirements and as determined by the Engineer. Sound rock is indicated by material that cannot be drilled with a conventional earth auger, and requires the use of special rock augers, core barrels, air tools, blasting and/or other methods of hand excavation. Sound rock is defined as material on which the rock auger penetration is equal to or less than 2 inches (51 mm) per five minutes of drilling with the auger subjected to a torque of 600,000 inch-pounds (67,791 kN-m) with a down thrust of 37,000 pounds (165 kN). There will be no additional compensation for removal of rock.

The Engineer will inspect the bottom of each caisson prior to setting the reinforcing cage and placing concrete. Obtain the Engineer's approval prior to placing the reinforcing cage. Remove water, sediment and debris from the bottom of the caissons to allow for a down-hole inspection. Bore the bottom of the caisson excavation a minimum of 6 feet (1.8 meters) into rock as outlined in

Specification 211.3.05.C, "Boring of Foundations and Seals". The Engineer will make a determination of the soundness and consistency of the rock and may adjust the tips of the caissons based on this information.

Where drilled caissons are located in other than open water areas, use casings or other methods approved by the Engineer to stabilize the excavation and control the hole size. When casing is not specifically required on the plans, fill in any over-excavations with Class AA concrete at no additional cost to the Department. Dispose of excess concrete, grout, displaced water and materials removed from the caisson excavation in areas approved by the Engineer, and in accordance with any Federal, State, or local code or ordinance. Verify the accuracy and existence of all applicable codes, ordinances or other regulations prior to disposing materials.

524.3.06 Reinforcing Steel

Assemble a cage of reinforcing steel and place it as a unit immediately prior to concrete placement. Assemble the cage so that the clearance between the cage and side of the caisson will be at least 5 inches (127 mm), and the clearance between the cage and bottom of the caisson will be 3 inches (76 mm).

If the caisson is lengthened, extend all reinforcement to within 3 inches (76 mm) of the bottom. If a splice is required, place it in the lower one-third of the caisson, or as shown on the Plans. Tie hoops or spirals to the caisson and column steel (vertical bars) at 100% of the junctions with double wire figure-eight ties. Do not weld the reinforcing steel. Support the cage from the top in a concentric manner to minimize its slumping downward during concrete placement and/or extracting the casing.

Check the elevation of the top of the steel cage before and after casing extraction. Any upward movement of the steel not exceeding 2 inches (51 mm) or any downward movement thereof not exceeding 6 inches (152 mm) will be acceptable. Any upward movement of the concrete or displacement of the steel beyond the above limits will be cause for rejection. Tie and support the reinforcing steel in the caisson so that the reinforcing steel will remain within allowable tolerances. In uncased caissons, use only heavy-duty plastic rollers (wheels). In cased caissons, use heavy-duty non-corrosive plastic rollers (wheels) or steel chairs. Place rollers at maximum intervals of 8 feet (2.4 meters) along the cage to ensure concentric spacing for the entire cage length. Use one roller for each one foot (305 mm) of diameter of the cage, with a minimum of four rollers at each interval. Do not use concrete spacer blocks. Use rollers that are constructed of a material approved by the Engineer and that have sufficient bearing surface to provide lateral support to the reinforcing cage.

Use rollers of adequate dimension to provide the annular spacing between the outside of the reinforcing cage and the side of the excavated hole or casing as shown on the Plans. If an oversize casing is used, use rollers that will provide concentric spacing. Use pre-cast concrete or heavy-duty plastic bottom supports (feet/boots) to provide a spacing of 3 inches (76 mm) between the cage and caisson bottom.

524.3.07 Concrete

Mix and place all concrete in accordance with Section 500 of the Specifications where applicable and the requirements herein stated.

Place concrete as soon as possible after all excavation is completed and reinforcing placed and supported. Place concrete continuously in the caisson to the top elevation of the caisson. The Engineer may allow free falling of concrete to a maximum of 60 feet (18.3 meters), if satisfactory methods are demonstrated.

If ground water is encountered and the hole can not be pumped dry, or if the Engineer does not approve free fall of concrete, place concrete using a gravity feed watertight tremie. Use a tremie pipe of at least 8 inches (203 mm) in diameter with a concrete hopper at the top. The Engineer may allow concrete to be placed by pumping through a supply line if satisfactory methods are demonstrated. If this method is allowed, use pump supply lines with watertight couplings. Seal the end of the pump line with a foam plug or other device approved by the Engineer to prevent concrete within the tremie or pump supply line from mixing with fluid in the excavation.

If a tremie is used, place it on the bottom of the excavation at the beginning of concrete placement, and keep it there until the tremie pipe and hopper are filled with concrete. Then raise the tremie only enough to induce concrete flow and do not lift the tremie further until the discharge end is immersed at least 10 feet (3.1 meters) into the deposited concrete. If concrete placement by pumping is used, secure the supply line in place so that the discharge end will not lift off the bottom of the excavation more than 6 inches (152 mm) until at least 10 feet (3.1 meters) of concrete has been placed. Embed the discharge end of the tremie or pump supply line a minimum of 10 feet (3.1 meters) in the concrete throughout the remainder of the concrete pour.

Complete the placement of all concrete in the caisson in two hours. Adjusted the retarder or water reducing agent as approved by the Engineer for the conditions encountered on the job so the concrete remains in a workable plastic state throughout the pour.

Prepare and cure the top surface of the construction joint in accordance with the requirements of Section 500. Locate construction joints as indicated on the Plans.

Do not place concrete under water in the caisson excavation without the permission of the Engineer. When permission is granted, place the concrete in accordance with the requirements of Section 500. Provide a sump to channel displaced water away from the caisson. Contain all displaced water to prevent water from entering into any body of water.

During the twenty-four hour period immediately following the completion of the placement of concrete in the caisson, do not install or extract casing within 50 feet (15.2 meters) of the completed caisson, and do not excavate any caissons within 15 feet (4.6 meters) of the completed caisson. If the Engineer determines that any construction adversely affects the recently constructed caisson, cease such activities immediately.

Protect any portion of drilled caissons exposed to a body of water from the action of water by leaving the forms in place for a minimum of seven days after pouring the concrete. Remove the forms prior to 7 days only if the concrete strength has reached 3000 psi (20.7 Mpa) or greater as tested by cylinder breaks.

524.3.08 Inspection and Safety

1. Check the dimensions and alignment of the caisson excavation under the observation of the Engineer.

2. Provide, use and maintain in good working order the following safety devices for the purpose of entering the caisson excavation for cleaning or inspection work:

   a. A safety harness attached to a separate safety line.

   b. OSHA-approved personnel lifting devices. Do not suspend any crane weights, blocks or other heavy weights above the head of any person entering the caisson excavation.

   c. Approved gas-testing equipment that tests for both oxygen level and percent explosion level. Provide and use an approved blower for fresh air if the testing equipment indicates the need.

   d. Casing of adequate thickness, size and depth to safely support the excavation.

   e. Non-electric pump(s) to adequately remove water from the excavation.

In addition, prior to entering the excavation, remove all loose and unnecessary objects from around the top of the caisson. Secure any caissons that will not be immediately poured after inspection and approval to prevent persons or objects from falling into the excavation.

524.3.08 Tolerances

Adhere to the following construction tolerances for drilled caissons:

1. Construct the drilled caisson to within 3 inches (76 mm) of the plan position plane, at the top-of-caisson elevation. Adhere to a vertical alignment tolerance of ¼-inch per 12 inches (6 mm per 305 mm) of depth.

2. Place reinforcement in accordance with the requirements of Section 511 of the Standard Specifications and Sub-section 524.3.06. Tie column steel (vertical bars) to hoops and spirals at 100% of the junctions with double wire figure-eight ties.

3. Placed vertical caisson reinforcing bars, including bars extending into columns or footings to within ½-inch (13 mm) of plan location. Place hoops or spirals to within 1 inch (25 mm) of their specified location. Adhere to a side form clearance of within ¼-inch (6 mm) of plan requirements.

4. Place the construction joint of the top of caissons used as caisson/column intermediate bents to within a tolerance of plus or minus 3 inches (76 mm) of the plan elevation.

524.4 Acceptability

In the event that significant voids are suspected in the concrete that were created during placement, verify the integrity of the caisson using a method that has been approved by the Engineer. If the caisson in question is found to be structurally deficient or out of tolerance in any way, the caisson will not be accepted unless corrective measures as approved by the Engineer are accomplished. Furnish additional materials and work necessary to effect corrections at no cost to the Department and with no increase in contract time.

524.5 Measurement

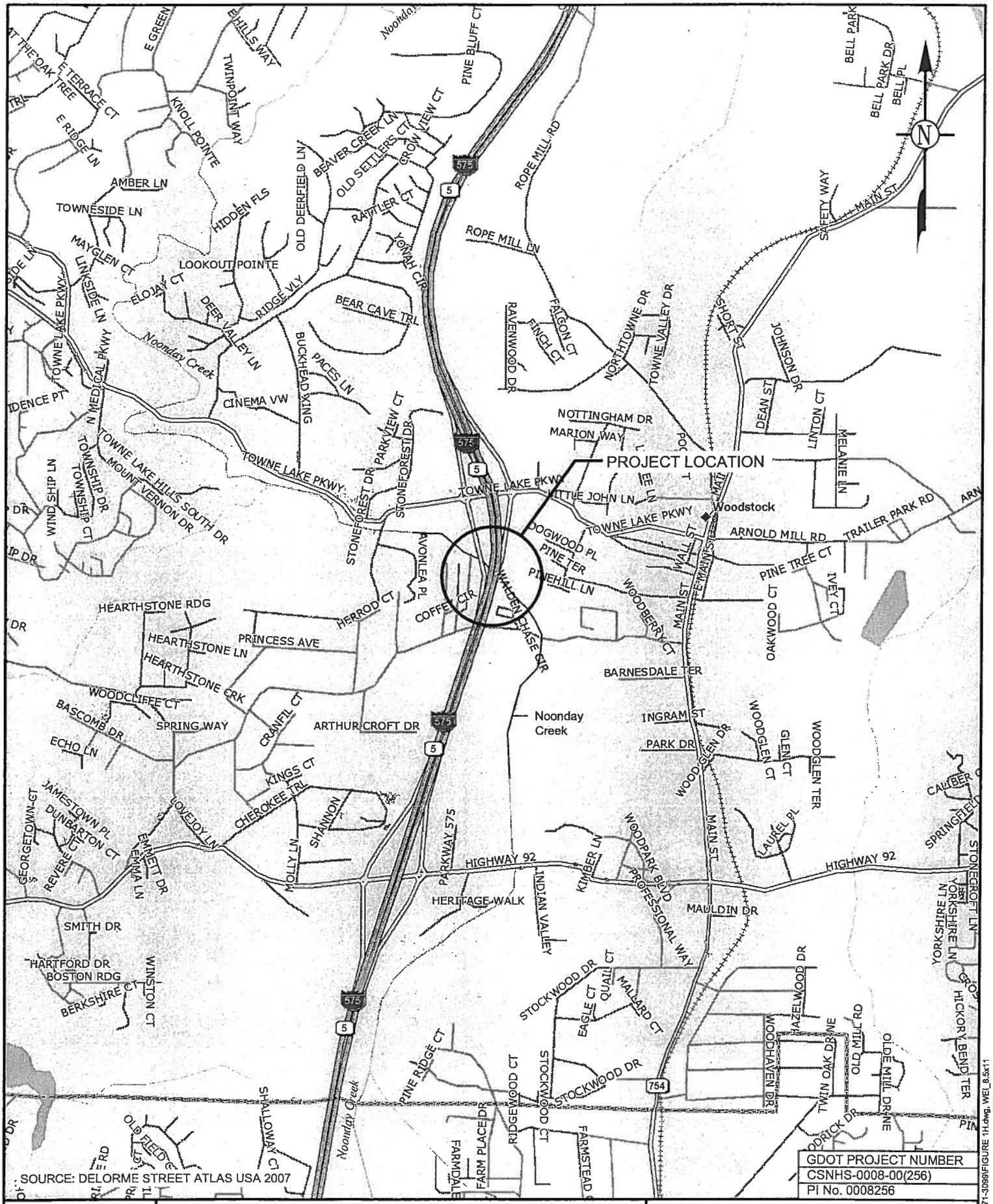
The length of accepted caisson foundation is measured in linear feet (meters) of caisson in place in the completed work. The length is measured from the final approved bottom elevation to 1 foot (305 mm) above the bottom of the footing cap where caissons are used in a footing or to the top of the caisson elevation detailed in the plans.

524.6 Payment

Drilled in place caisson foundations is paid for at the unit price bid per linear feet (meters) complete and in place as specified. The payment is full compensation for all excavation, furnishing and placement of reinforcing steel and concrete in the caisson, all temporary and permanent casing, disposal of excavated materials, and the cost of furnishing all tools, safety devices, labor, equipment and all other necessary items to complete the work.

Payment will be made under:

Item No. 524 DRILLED CAISSON_____INCHES (mm) DIA.....PER LINEAR FOOT (METER)



SOURCE: DELORME STREET ATLAS USA 2007

GDOT PROJECT NUMBER
CSNHS-0008-00(256)
PI No. 0008256

SCALE: 1" = 2000'

DATE: 12/12/2007

DRAWN BY: MDB

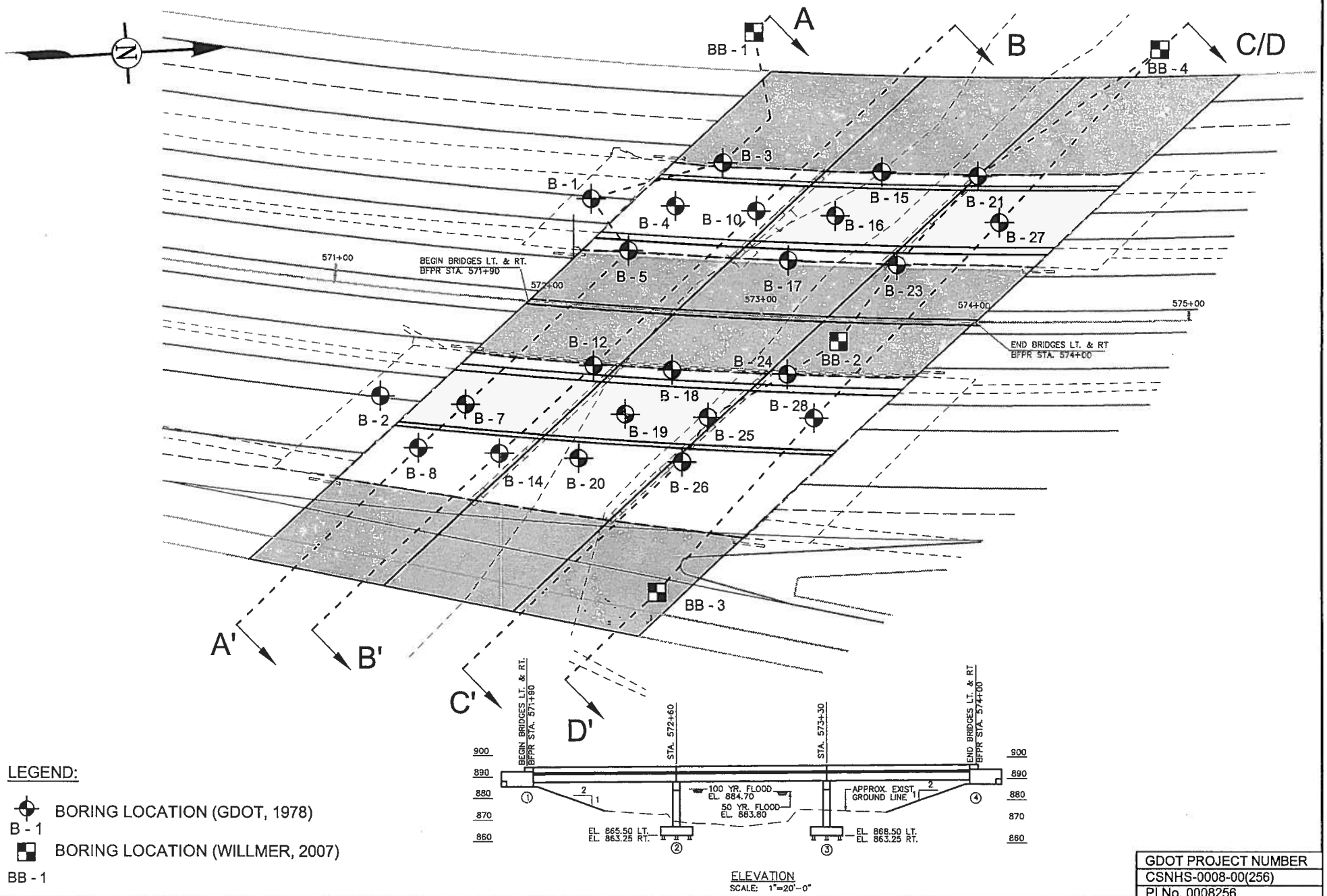
REVIEWED BY: MK

WILLMER ENGINEERING INC. WE

GEOTECHNICAL ENGINEERING
CONSTRUCTION SERVICES
ENVIRONMENTAL SERVICES AND ENGINEERING
3772 PLEASANTDALE ROAD - SUITE 165
ATLANTA, GA 30340-4270

FIGURE 1
PROJECT LOCATION MAP
I-575 OVER NOONDAY CREEK (NORTH)
NORTHWEST CORRIDOR PROJECT
CHEROKEE COUNTY, GEORGIA
WILLMER PROJECT No. ATL-171-3099H

I:\AutoCAD\171-GEO\171-3099\FIGURE 1H.dwg, WEI_8.5x11



LEGEND:

B - 1 BORING LOCATION (GDOT, 1978)

BB - 1 BORING LOCATION (WILLMER, 2007)

GDOT PROJECT NUMBER
CSNHS-0008-00(256)
PI No. 0008256

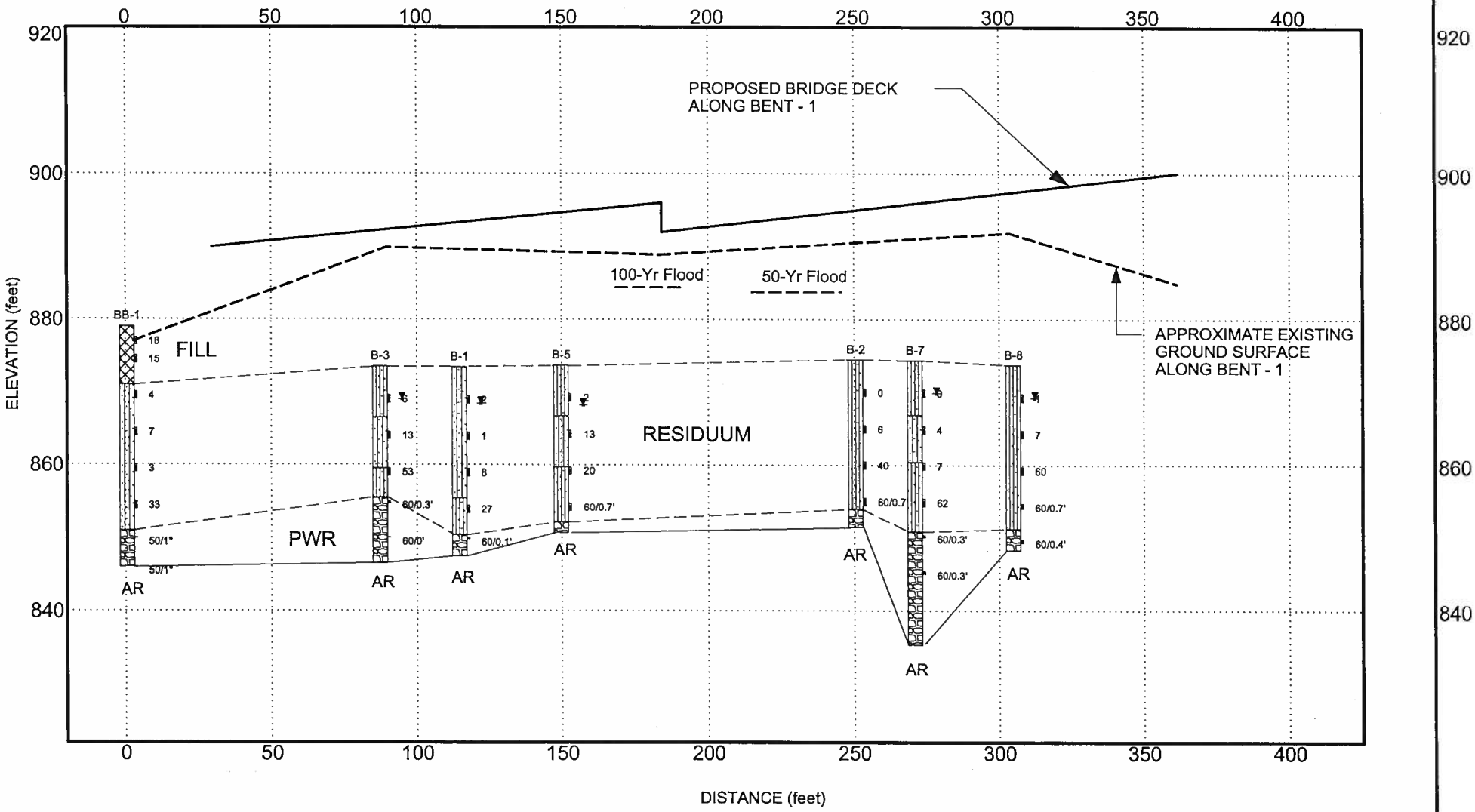
SCALE: 1" = 60'	
DATE: 12/14/2007	
DRAWN BY: MDB	
REVIEWED BY: MK	

WILLMER ENGINEERING INC.

GEOTECHNICAL ENGINEERING ▪ CONSTRUCTION SERVICES
ENVIRONMENTAL SERVICES AND ENGINEERING
3772 PLEASANTDALE ROAD - SUITE 165
ATLANTA, GA 30340-4270

FIGURE 2
BORING LOCATION PLAN
I-575 OVER NOONDAY CREEK (NORTH)
NORTHWEST CORRIDOR PROJECT
CHEROKEE COUNTY, GEORGIA
WILLMER PROJECT No. ATL-171-3099H

I:\AutoCAD\171-GEO\171-3099NoondayN_PE REVISED STATIONS.dwg, WEL_11x8.5



LEGEND:
- Groundwater Table @ 24 hours
- Groundwater Table @ Time of Boring
AR - Auger Refusal
PWR - Partially Weathered Rock

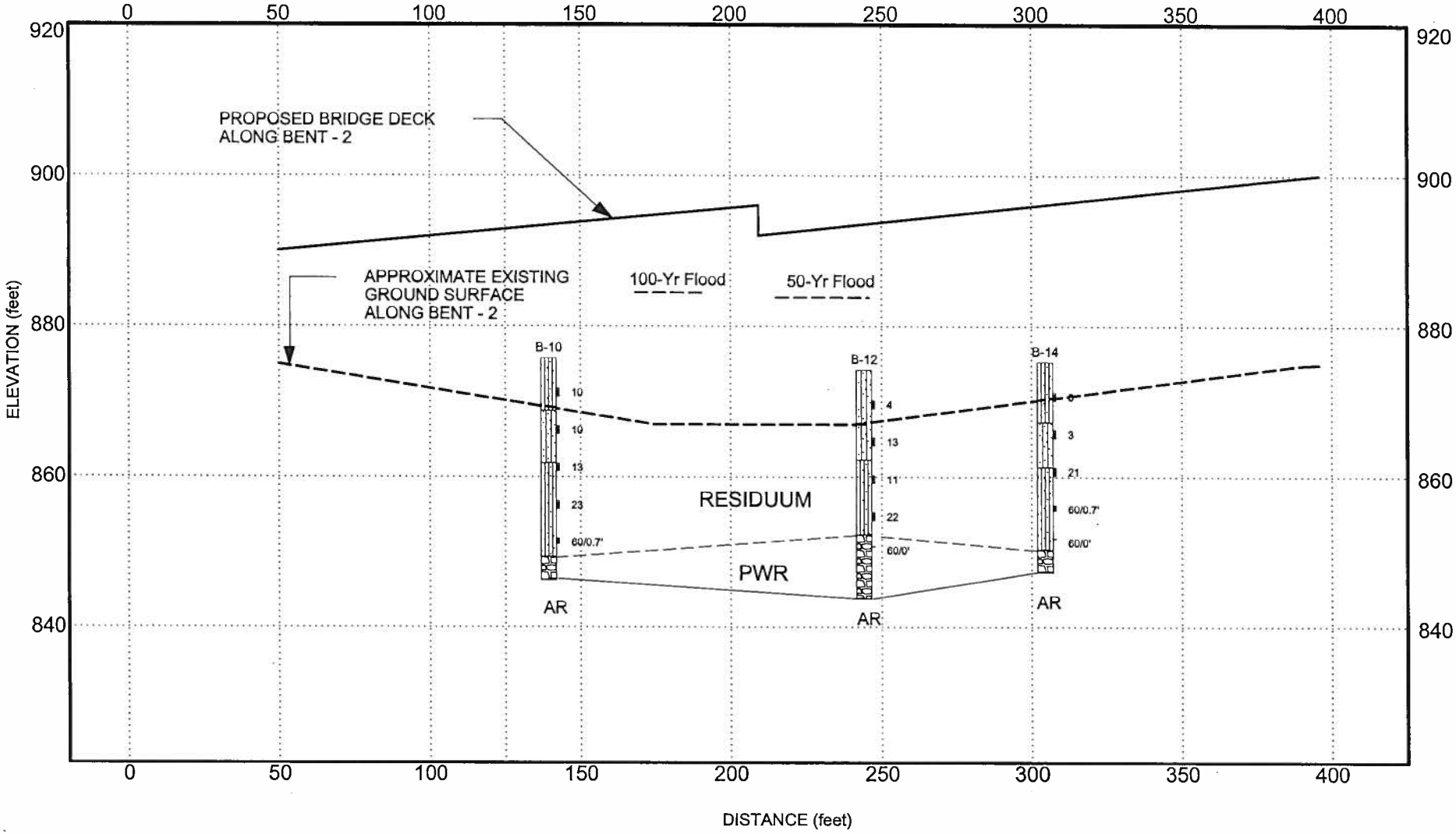
SCALE : 1 inch = 20 feet (vertical)
1 inch = 50 feet (horizontal)

NOTES:
1. Borings B-1, B-2, B-3, B-5, B-7 and B-8 were performed by GDOT in 1978.
2. Boring B-7 is plotted 15 feet right and B-8 is plotted 20 feet right from the original boring location for clarity.

GENERALIZED SUBSURFACE PROFILE
SECTION A-A' (BENT-1)

I-575 over Noonday Creek (North)
GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256
Cherokee County, Georgia

PROJECT #	DATE	FIGURE
171-3099H	Dec 13, 2007	3



LEGEND:
- ▼ - Groundwater Table @ 24 hours
- ▽ - Groundwater Table @ Time of Boring
- AR - Auger Refusal
- PWR - Partially Weathered Rock

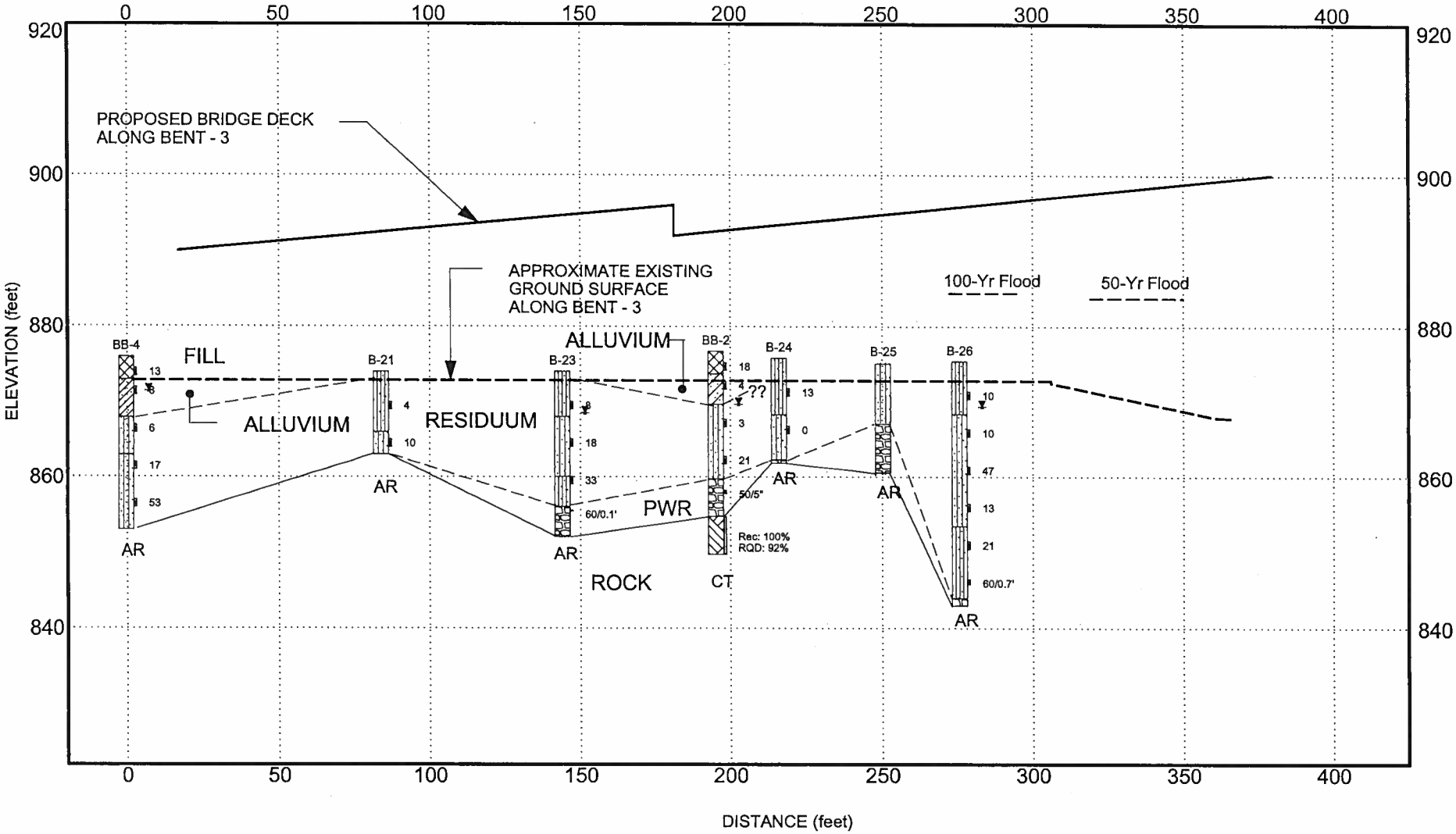
SCALE : 1 inch = 20 feet (vertical)
1 inch = 50 feet (horizontal)

NOTE:
1. Borings B-10, B-12 and B-14 were performed by GDOT in 1978.
2. The borings and the profile are not exactly along the bent-line.

GENERALIZED SUBSURFACE PROFILE
SECTION B-B' (BENT-2)

I-575 over Noonday Creek (North)
GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256
Cherokee County, Georgia

PROJECT #	DATE	FIGURE
171-3099H	Dec 12, 2007	4



LEGEND:
- ▼ - Groundwater Table @ 24 hours
- ▽ - Groundwater Table @ Time of Boring
- AR - Auger Refusal
- PWR - Partially Weathered Rock
- CT - Coring Terminated
- REC - Recovery
- RQD - Rock Quality Description

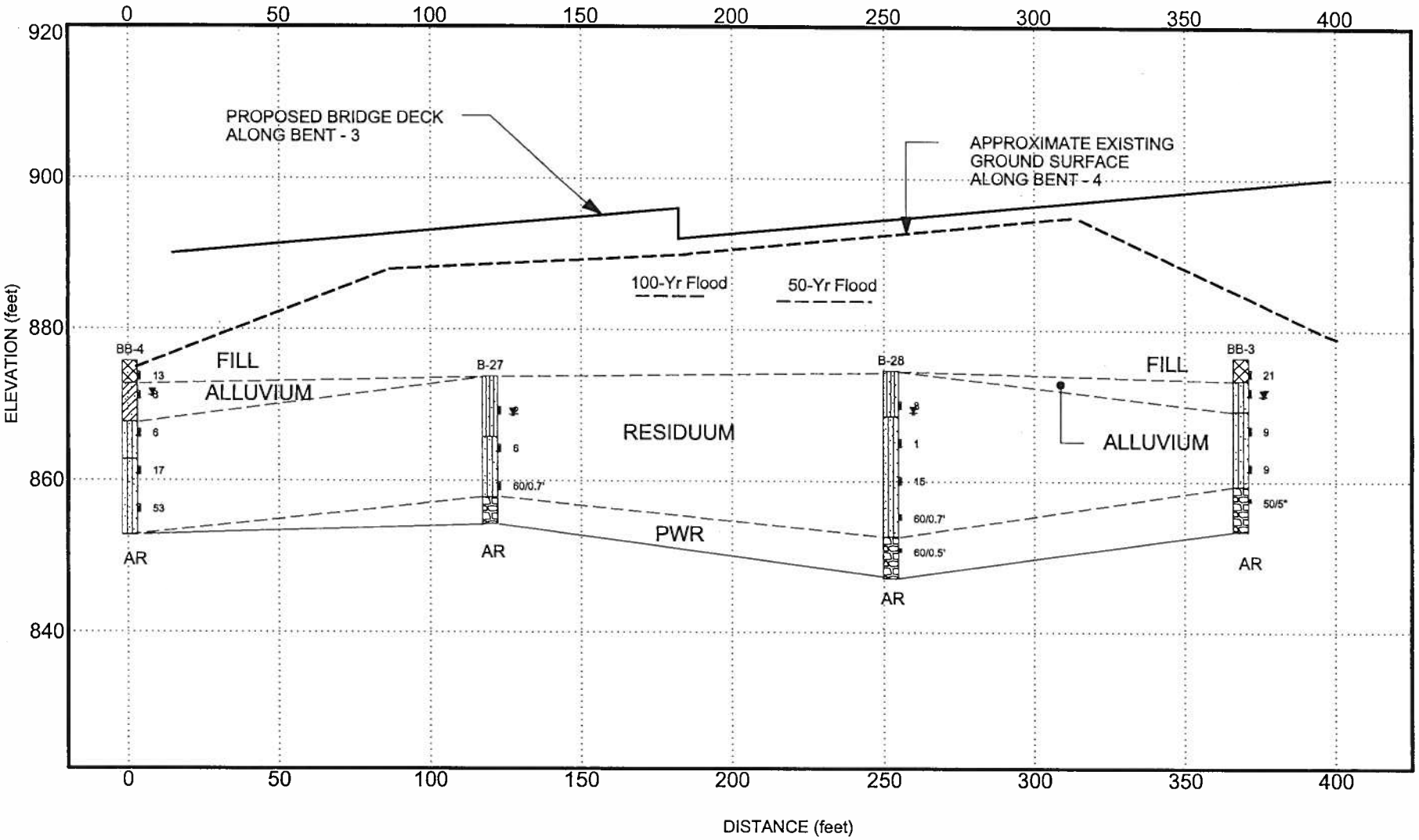
SCALE : 1 inch = 20 feet (vertical)
1 inch = 50 feet (horizontal)

NOTE:
1. Borings B-21, B-23, B-24, B-25 and B-26 were performed by GDOT in 1978.
2. The borings and the profile are not exactly along the bent-line.

GENERALIZED SUBSURFACE PROFILE
SECTION C-C' (Bent - 3)

I-575 over Noonday Creek (North)
GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256
Cherokee County, Georgia

PROJECT #	DATE	FIGURE
171-3099H	Dec 13, 2007	5



LEGEND:
- Groundwater Table @ 24 hours
- Groundwater Table @ Time of Boring

AR - Auger Refusal
PWR - Partially Weathered Rock

NOTE: Borings B-27 and B-28 were performed by GDOT in 1978.

SCALE : 1 inch = 20 feet (vertical)
1 inch = 50 feet (horizontal)

GENERALIZED SUBSURFACE PROFILE
SECTION D-D' (Bent - 4)

I-575 over Noonday Creek (North)
GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256
Cherokee County, Georgia

PROJECT #	DATE	FIGURE
171-3099H	Dec 13, 2007	6

WILLMER ENGINEERING INC. | WE

BORING RECORD LEGEND

SM, CL, etc: - GROUP SYMBOL based on Unified Soil Classification System.
(Refer to ASTM D-2488 and Table 1 of D-2487)

N-VALUE: BLOWS PER FOOT- Standard Penetration Resistance (SPT) blow count , the sum of the second and third 6-inch increments of the SPT test.
(Refer to ASTM D-1586)

CONSISTENCY / RELATIVE DENSITY Correlated with SPT Blow Count, N:

SILTS AND CLAYS

N (blows per foot)	Consistency
0 - 2	Very Soft
3 - 4	Soft
5 - 8	Firm
9 - 15	Stiff
16 - 30	Very Stiff
31 - 50	Hard
> 50	Very Hard

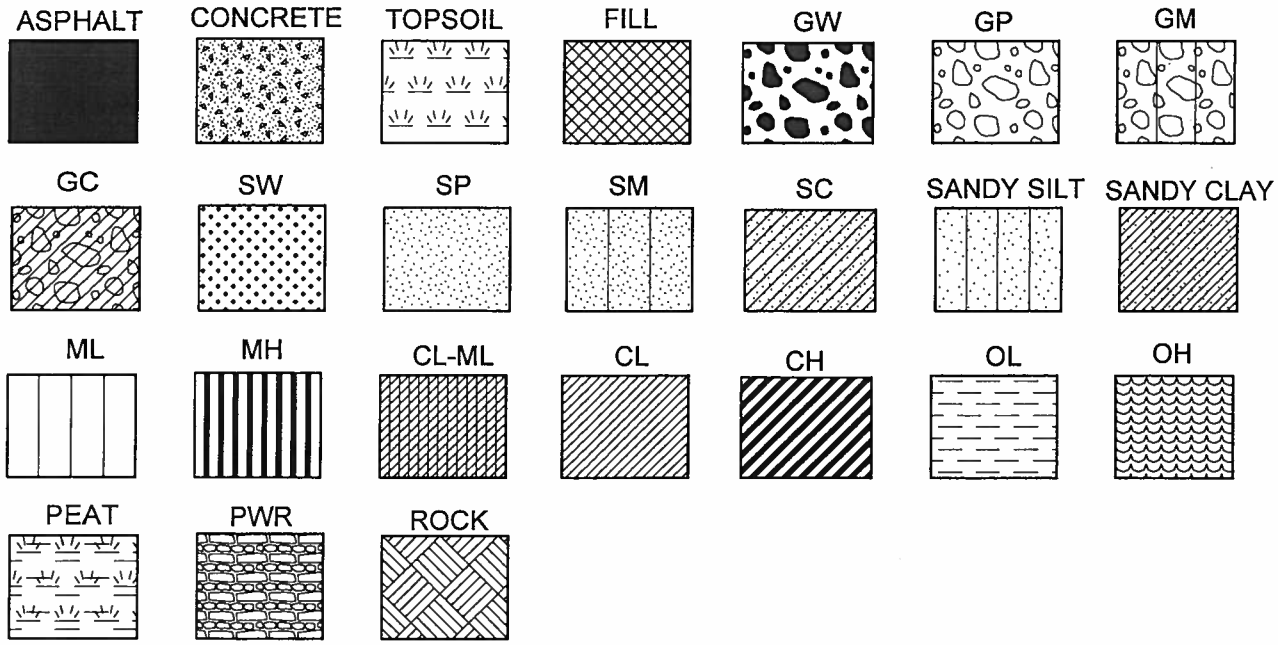
SANDS

N (blows per foot)	Relative Density
0 - 4	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
> 50	Very Dense

NOTES:

Groundwater Measurements:

- ▼ Water level at time of backfilling
- ▽ Water level at time of boring
- ▣ Caved level at 24 hours



WILLMER ENGINEERING INC. WE

Willmer Engineering Inc.
3772 Pleasantdale Road, Suite 165
Atlanta, Georgia 30340

UNIFIED SOIL CLASSIFICATION SYSTEM REFERENCE SHEET

MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN #200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED . #4 SIEVE	CLEAN GRAVELS LITTLE OR NO FINES	(GW)	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
			(GP)	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES APPRECIABLE AMOUNT OF FINES	(GM)	SILTY GRAVELS and GRAVEL-SAND-SILT MIXTURES
			(GC)	CLAYEY GRAVELS and GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING #4 SIEVE	CLEAN SAND LITTLE OR NO FINES	(SW)	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
			(SP)	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES APPRECIABLE AMOUNT OF FINES	(SM)	SILTY SANDS and SAND-SILT MIXTURES
			(SC)	CLAYEY SANDS and SAND-CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN #200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		(ML)	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR VERY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			(CL)	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			(OL)	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		(MH)	INORGANIC ELASTIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS
			(CH)	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			(OH)	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			(PT)	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

WILLMER ENGINEERING INC. | WE

ENGINEERING DESCRIPTION
OF
ROCK HARDNESS

Hardness	Description
Very hard	Cannot be scratched with knife or sharp pick. Breaking of hand specimens requires several hard blows of geologist's pick.
Hard	Can be scratched with knife or pick only with difficulty. Hard blow of hammer required to detach hand specimen.
Moderately hard	Can be scratched with knife or pick. can be excavated by hard blow of point of a geologist's pick. Hand specimens can be detached by moderate blow.
Medium	Can be grooved or gouged 1/16 inch deep by firm pressure on knife or pick point. Can be excavated in small chips to pieces about 1 inch maximum size by hard blows of the point of a geologist's pick.
Soft	Can be gouged or grooved readily with knife or pick point. Can be excavated in chips to pieces several inches in size by moderate blows of a pick point. Small thin pieces can be broken by finger pressure.
Very soft	Can be carved with knife. Can be excavated readily with point of pick. Pieces 1 inch or more in thickness can be broken with finger pressure. Can be scratched readily by fingernail.
Partially Weathered Rock	For engineering purposes, partially weathered rock (PWR) is locally defined as residual soils exhibiting Standard Penetration Test N-values in excess of 50 blows for 6 inches of penetration.

WILLMER ENGINEERING INC. | WE

Project: **I-575 over Noonday Creek (North)**	**HOLE No. BB-1**
Location: **Cherokee County, Georgia**	Sheet 1 of 1
Project Number: **171-3099H; GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256**	Location: **Bent- 1**

Azimuth: -- Angle from Horizontal: **90** Surface Elevation (ft): **878.99** Station: **ST 572+95, 130' Lt. of CL**

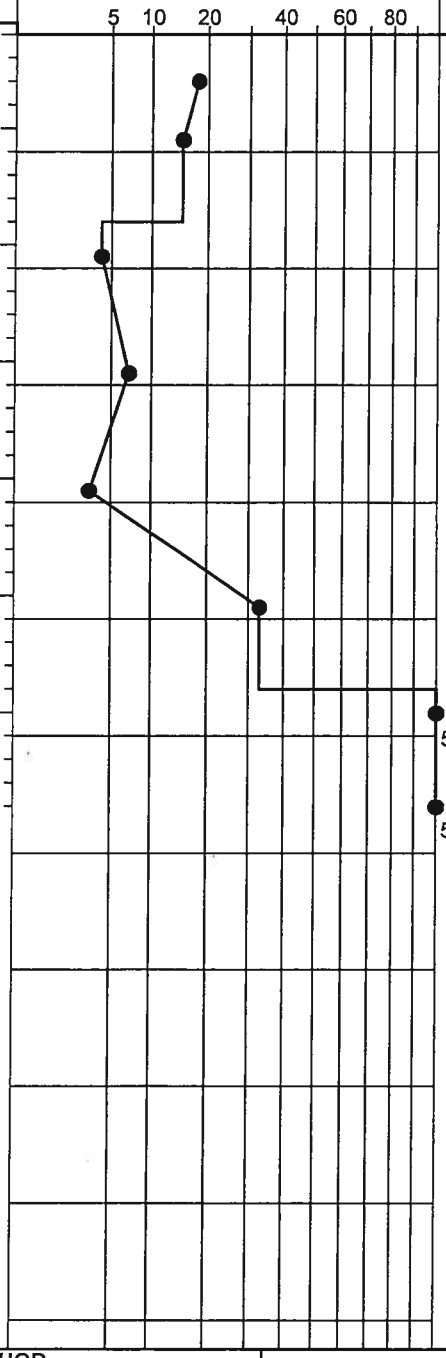
Drilling Equipment: **CME 550** Drilling Method: **HSA**

Core Boxes: -- Samples: **8** Overburden (ft): **33** Rock (ft): -- Total Depth (ft): **33.0**

Logged By: **PT** Date Drilled: **11/8/07**

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	N-VALUE
		SS			FILL : Medium dense reddish brown and brown silty medium to fine **SAND** with rock fragments	FILL	879.0	
		SS					875	18
5					Riprap was encountered between 0 to 2 feet below ground surface.			15
10		SS			RESIDUUM: Very loose, loose and dense gray and brown silty medium to fine **SAND** (micaceous)	SM	870	4
15		SS					865	7
20		SS					860	3
25		SS					855	33
30		SS			PARTIALLY WEATHERED ROCK : Sampled as very dense silty medium to fine **SAND** with rock fragments	PWR	850	50/1"
		SS						50/1"
					Auger refusal encountered at 33 feet below existing ground surface.			
					Groundwater was not encountered at time of boring completion.			

STANDARD PENETRATION TEST DATA (blows/foot)



SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NX - Rock Core, 2-1/8"
CU - Cuttings
NQ - Rock Core, 1-7/8"
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. BB-1

PTN 171-3099H.GPJ 12/13/07

WILLMER ENGINEERING INC. WE

Project: **I-575 over Noonday Creek (North)**	**HOLE No. BB-2**
Location: **Cherokee County, Georgia**	Sheet 1 of 1
Project Number: **171-3099H; GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256**	Location: **Bent- 3**

Azimuth: -- Angle from Horizontal: **90** Surface Elevation (ft): **876.72** Station: **ST 573+35, 10' RT. of CL**

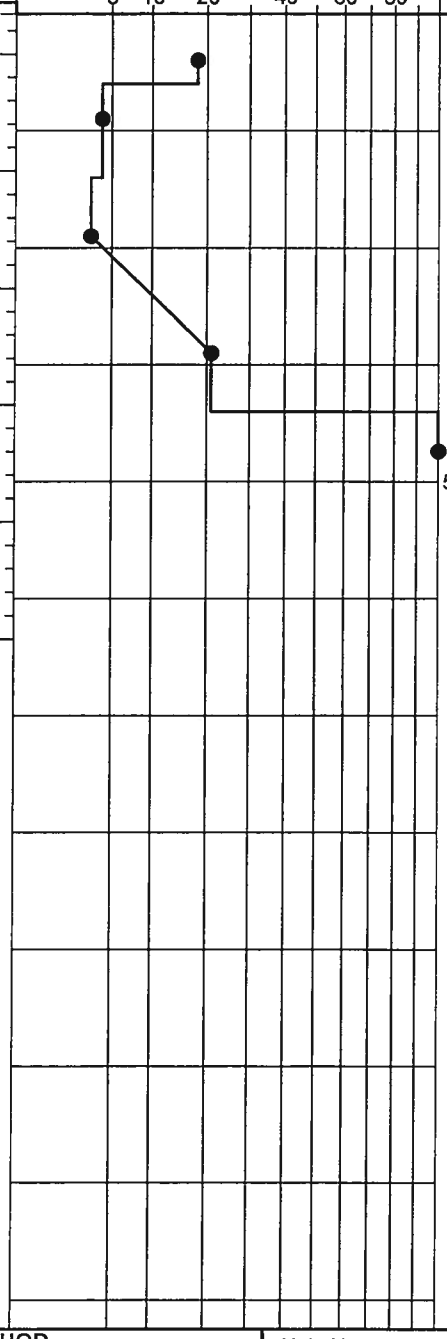
Drilling Equipment: **CME 550** Drilling Method: **HSA**

Core Boxes: **1** Samples: **5** Overburden (ft): **22** Rock (ft): **5** Total Depth (ft): **27.0**

Logged By: **EO** Date Drilled: **11/15/07**

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	N-VALUE
		SS			FILL: Medium dense reddish brown and gray medium to fine **SAND**	FILL	876.7	
		SS			ALLUVIUM: Very loose gray and black clayey medium to fine **SAND**	SC	875	18
5		SS			RESIDUUM: Very loose to medium dense gray and brown silty medium to fine **SAND** (micaeous)	SM	870	4
10		SS					865	3
15		SS					860	21
20		SS			PARTIALLY WEATHERED ROCK: Sampled ad gray and white silty medium to fine **SAND** (micaeous)	PWR	855	50/5"
25		NQ	100	92	ROCK CORE: Moderately hard gray and white **BIOTITE GNEISS** with oblique fracturing along foliations		850	

STANDARD PENETRATION TEST DATA (blows/foot)



Auger refusal encountered at 22 feet below existing ground surface.

Groundwater was encountered at 7 feet below existing ground surface at time of boring completion and at 24 hours after boring completion.

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. BB-2

PTN 171-3099H.GPJ 12/13/07

1-800-453-8740
LONGYEAR
I-575 over Noonday
Creek (North)
GDOT Proj:# CSNHS-0008-00(256)
PI No. 0008256
WEI No. 171-3099H
BB-2
22´to 27´
TOP
22´
END
27´

WILLMER ENGINEERING INC.

Project: **I-575 over Noonday Creek (North)**	**HOLE No. BB-3**
Location: **Cherokee County, Georgia**	Sheet 1 of 1
Project Number: **171-3099H; GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256**	Location: **Bent- 3**

Azimuth: -- Angle from Horizontal: **90** Surface Elevation (ft): **876.38** Station: **ST 572+55, 130' RT. of CL**

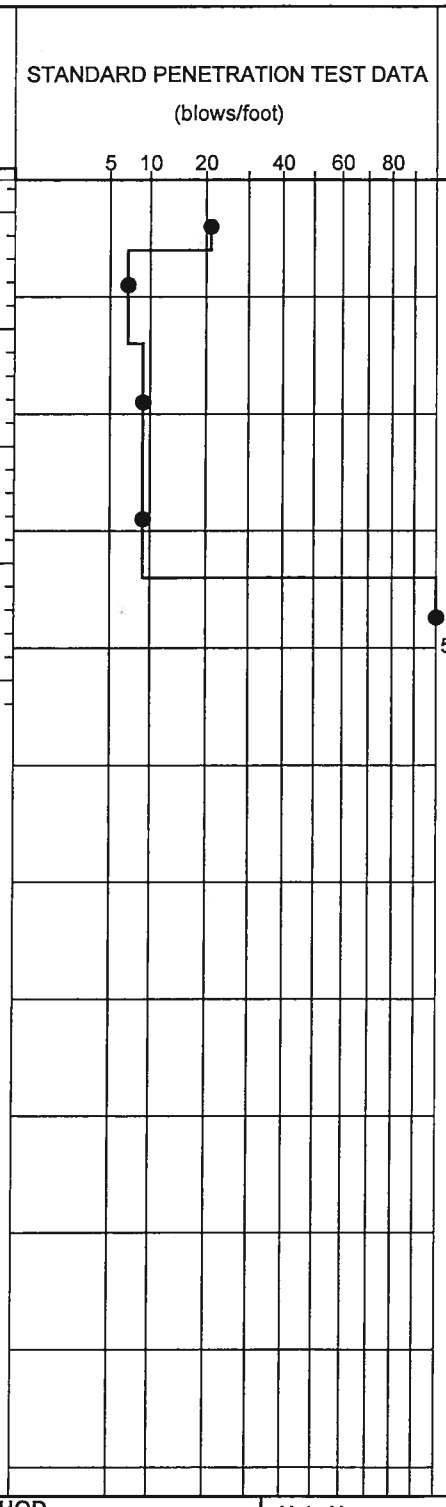
Drilling Equipment: **CME 550** Drilling Method: **HSA**

Core Boxes: -- Samples: **5** Overburden (ft): **23** Rock (ft): -- Total Depth (ft): **23.0**

Logged By: **EO** Date Drilled: **11/15/07**

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	N-VALUE
		SS			FILL: Medium dense brown silty medium to fine **SAND**	FILL	876.4	21
5		SS			ALLUVIUM: Loose gray silty medium to fine **SAND**	SM	875	7
10		SS			RESIDUUM:Loose gray and brown silty medium to fine **SAND** (micaceous)	SM	870	9
15		SS					865	9
20		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense gray silty coarse to fine **SAND** (micaceous)	PWR	860	50/5"
					Auger refusal encountered at 23 feet below existing ground surface.		855	

Groundwater was encountered at 5 feet below existing ground surface at time of boring completion and at 24 hours after boring completion.



SAMPLER TYPE		DRILLING METHOD		Hole No.
SS - Split Spoon	NX - Rock Core, 2-1/8"	HSA - Hollow Stem Auger	RW - Rotary Wash	BB-3
ST - Shelby Tube	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core	
NQ - Rock Core, 1-7/8"	CT - Continuous Tube	DC - Driving Casing		

WILLMER ENGINEERING INC. | WE

Project: **I-575 over Noonday Creek (North)**	**HOLE No. BB-4**
Location: **Cherokee County, Georgia**	Sheet 1 of 1
Project Number: **171-3099H; GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256**	Location: **Bent- 4**

Azimuth: -- Angle from Horizontal: **90** Surface Elevation (ft): **875.74** Station: **ST 574+85, 125' Lt. of CL**

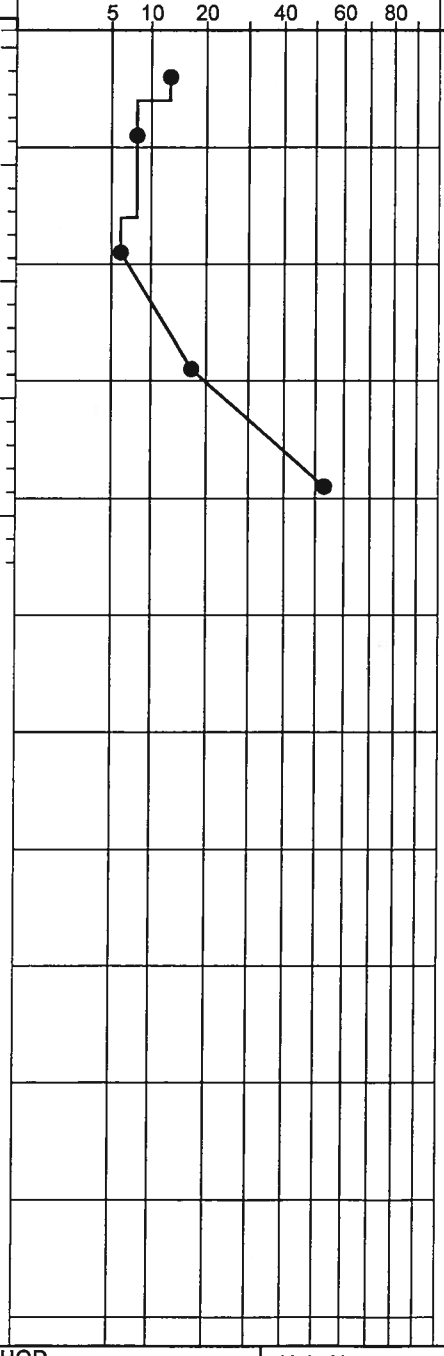
Drilling Equipment: **CME 550** Drilling Method: **HSA**

Core Boxes: -- Samples: **5** Overburden (ft): **23** Rock (ft): -- Total Depth (ft): **23.0**

Logged By: **EO** Date Drilled: **11/15/07**

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	N-VALUE
		SS			FILL: Medium dense brown silty medium to fine **SAND**	FILL	875.7	13
5		SS			ALLUVIUM: Firm gray and black medium to fine sandy **CLAY**	CL	875	8
10		SS			RESIDUUM: Loose gray and brown silty medium to fine **SAND** (micaceous)	SM	870	6
15		SS			Medium dense to very dense gray, tan and white silty coarse to fine **SAND**	SM	865	17
20		SS					860	53
					Auger refusal encountered at 23 feet below existing ground surface.		855	
					Groundwater was encountered at 4.5 feet below existing ground surface at the time of boring completion and at 24 hours after boring completion.			

STANDARD PENETRATION TEST DATA (blows/foot)



SAMPLER TYPE

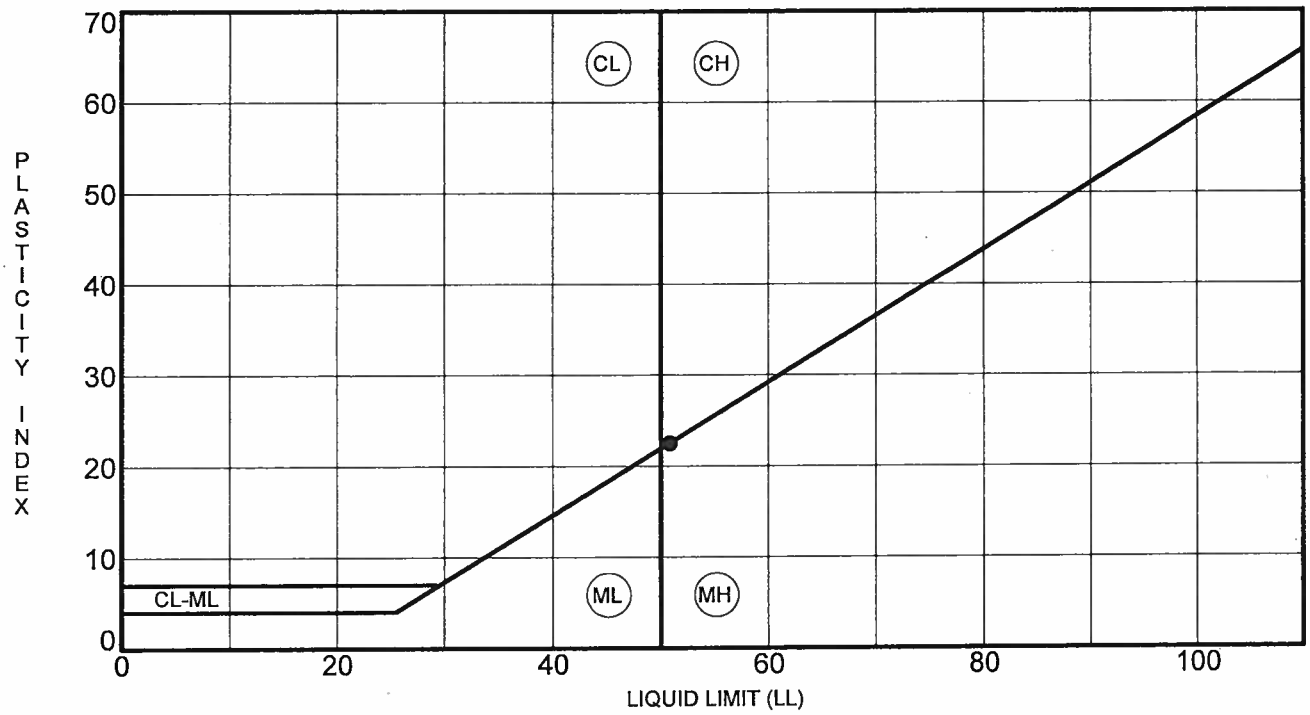
SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. **BB-4**

PTN 171-3099H.GPJ 12/13/07



	Specimen Identification	LL	PL	PI	Fines	Classification
●	BB-4 (3.5-5 ft)	51	28	23		Gray and black medium to fine sandy CLAY (CH) (NMC-35.2%)

PROJECT I-575/Noonday Creek (N), Cherokee County,GA
GDOT Proj. # CSNHS-0008-00(256); PI #: 0008256

JOB NO. 171-3099 H
DATE 12/20/07

WILLMER ENGINEERING INC. WE

ATTERBERG LIMIT RESULTS

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

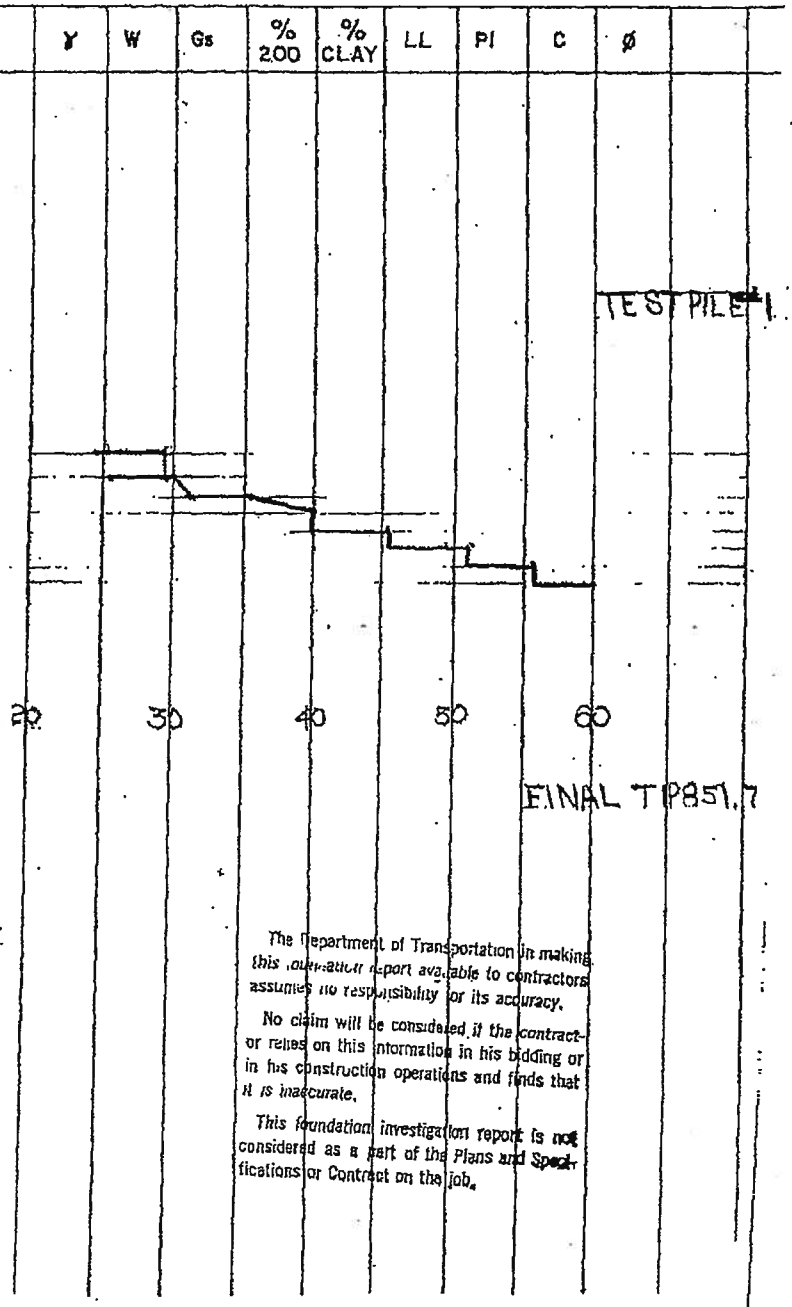
PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/5/78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 1 B-1

BENT NO. 1 Lt. Br FOOTING 67' LT. ℄ 18" BRK GROUND ELEV. 873.43

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

ELEV.	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	ø
	GR. EL.												
870	Very Loose Mltc. Micas. Silty Sand W/ Gravel	1s	2										TEST PILE 1
		2s	1										
860	Loose Same	3s	8										
	Dense Mltc. Micas. Sandy Silt (W.R.)	4s	27										
850	very dense same: rock	5	60=1"										
	Refusal on Rock W/ Button Bit												
840													FINAL TP851.7
830													
820													
810													



The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/11/78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 2 B-2

BENT NO. 1 FOOTING 67' Rt. ℄ 18' Bk. GROUND ELEV. 874.48

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

ELEV.	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	ø
	Gr. El. 7												
870	V. Loose Mltc. Micas. Sandy Silt (Org.)	1s	0									TEST PILE #3	
	Loose Mltc. Micas. Sandy Silt	2s	6										
860	Dense Same (W.R.)	3s	40										
	V. Dense Same (W.R.)	4s	60=.7'		40 50 60 70 80 90 100								
	Rock												
850	Refusal on Rock											FINAL TIP 861.42	
840													
830													
820													
810													

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/5 /78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 3 B-3

BENT NO. 1 Lt Br. FOOTING 97' Lt. ℄ 20' Fwd. GROUND ELEV. 873.53

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

ELEV.	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	ø
	Gr. El. 7												
870	Loose Mltc. Micas. Clayey Sdy. Silt												
Gwt		1s	6										
	Medium Dense Mltc. Micas. Silty Sand W/ Gravel	2s	13										
860		3s	53										
	Very Dense Mltc. Micas. Sandy Silt	4s	60=3"										
850		5s	60=0"										
	Rock												
	Refusal on Rock												
840													
830													
820													
810													

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the *Plans and Specifications or Contract* on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/10/78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 4 B-4

BENT NO. 1 Lt. Br. FOOTING 67' Lt. ℄ 20' Fwd. GROUND ELEV. 873.7'

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

ELEV.	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	ø
	Gr. El.												
870	V. Loose Mltc. Micas. Silty Sand W/ Grvl	1s	4										
Gwt													
860	Loose Same	2s	8										
	v.dse.mltc.micas.sdy.slt.	3s	60=.7'										
	Weath. Rock												
850	Refusal on Rock												
840													
830													
820													
810													

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/10/78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 5 B-5

BENT NO. 1 Lt. Br. FOOTING 37' Lt. ℄ 20' Fwd. GROUND ELEV. 873.71

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

ELEV	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	ø
	Gr. El.												
870	Very Loose Mltc.												
Gwt	Micas. Sandy Silt	1s	2										
	Medium Dense Mltc Micas. Silty Sand	2s	13										
860													
	Medium Dense Mltc. Micas. Sdy. Silt (W.R.)	3s	20										
	Very Dense Same weathered rock	4s	60=7'										
850	Refusal on Rock												
840													
830													
820													
810													

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/10/78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 7 B-7

BENT NO. 1 FOOTING 67' Rt. ℄ 20' Fwd. GROUND ELEV. 874.39

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

ELEV.	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	ø
	Gr. El. 7												
	V.Lse Mltc.Micas.Cy												
870	Swf. Sandy Silt (Org.)	1s	0										
	Very Loose Mltc. Micas. Silty Sand	2s	4										
860	Loose Mltc.Micas. Sandy Silt (W.R.)	3s	7										
		4s	62										
850	Very Dense Same	5s	60=3'										
		6s	60=3'										
840	Weathered Rock												
	Refusal on Rock												
830													
820													
810													

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/10/78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 8 B-8

BENT NO. 1 FOOTING 97' Rt.℄ 20' Fwd. GROUND ELEV. 873.77

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

ELEV.	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	ø		
	Gr. El.														
870	V. Loose Mltc. Micas.														
Gwt.	Sandy Silt (Org.)	1s	1												
	Loose Mltc. Micas. Sandy Silt	2s	7												
860		3s	60												
	Very Dense Same (W.R.)	4s	60=.7'												
850		5s	60=.4'												
	End Drilling														
840															
830															
820															
810															

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/12/78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 10. B-.10

BENT NO. 2 FOOTING 67' Lt. ℄ 12' Bk. GROUND ELEV. 875.72

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

ELEV.	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	ø
	Gr. El. 1												
870	Loose Mltc. Micas. Sandy Silt	1s	10										
	Loose Mltc. Micas. Silty Sand	2s	10										
860	Med. Dense Mltc. Micas. Sandy Silt (W.R.)	3s	13										
		4s	23										
850	Very Dense Same	5s	60=.7'										
	Rock												
	Refusal on Rock												
840													
830													
820													
810													

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/11/78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 12 B-G 12

BENT NO. 2 FOOTING 37' Rt. ℄ 12' Bk. GROUND ELEV. 874.41

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

ELEV.	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	ϕ
	Gr. El. ?												
870	V. Loose Mltc. Micas. Silty Sand W/ Wood	1s	4										
	Medium Dense Mltc. Micas. Silty Sand	2s	13										
860	Medium Dense Mltc. Micas. Sandy Silt (W.R.)	3s	11										
		4s	22										
850	Very Dense Same	5s	60=0'										
	Weathered Rock												
	Refusal on Rock												
840													
830													
820													
810													

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/11/78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 14 B-14

BENT NO. 2 FOOTING 97' Rt. ℄ 12' Bk. GROUND ELEV. 875.05

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

ELEV	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	ø		
	Gr. El.														
	Loose Mltc. Micas.														
870	Sandy Silt	1s	6												
	Very Loose Mltc. Micas. Silty Sand	2s	3												
860	med. dense mltc. micas. sdy. silt w/gravel	3s	21												
	V. Dense Mltc. Micas. Sandy Silt (W.R.)	4s	60=7												
850		5s	60=0'												
	Rock														
	Refusal on Rock														
840															
830															
820															
810															

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/17/78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 15 B-15

BENT NO. 2 FOOTING 97' Lt.℄ 25'Fwd. GROUND ELEV. 868.82

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

Washboring

ELEV.	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	ø.		
	Gr. El.														
870	Top of Water?														
860	Loose Silty Sand W/ Gravel														
850	Washboring Refusal on Rock														
840															
830															
820															
810															

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/17/78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 16 B-16

BENT NO. 2 FOOTING 67' Lt. ℄ 25' Fwd GROUND ELEV. 868.82

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

Washboring

ELEV.	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	ø	
870	Gr. El Top of Water													
860	Loose Silty Sand W/ Gravel													
850	Washboring Refusal on Rock													
840														
830														
820														
810														

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/17/78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 17-B-17

BENT NO. 2 FOOTING 37' Lt. ℄ O 25' Fwd. GROUND ELEV. 868.82

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

Washboring

ELEV.	BORING LOG		BLOW	UNIFIED	γ	W.	Gs	% 200	% CLAY	LL	PI	C	ø		
	Gr. El.														
870	Top of Water														
860	Loose Silty Sand W/ Gravel														
850	Washboring Refusal on Rock														
840															
830															
820															
810															

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/10/78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 18 B-18

BENT NO. 2 FOOTING 37' Rt. ℄ 25' Fwd. GROUND ELEV. 867.32

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

Washboring

ELEV.	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	ø		
870	Top of Water ?														
	Gr. El. ?														
	Very Loose Silty Sand W/ Gravel														
860	sand & gravel														
	Washboring Refusal on Rock														
850															
840															
830															
820															

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DDT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/17/78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 19 B-19

BENT NO. 2 FOOTING 67' Rt. ℄ 25' Fwd. GROUND ELEV. 869.32

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

Washboring

ELEV	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	ø		
	Gr. El.														
870	Very Loose Silty Sand W/ Gravel														
860	sand & gravel														
	Washboring Refusal on Rock														
850															
840															
830															
820															

The Department of Transportation in making this foundation data available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07. COUNTY CHEROKEE DATE 10/17/78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 20 B-20

BENT NO. 2 FOOTING 97' Rt. ℄ 25' Fwd GROUND ELEV. 869.32

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

Washboring

ELEV.	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	Ø		
870	Gr. El. 1														
	Very Loose Silty Sand W/ Gravel														
860	Sand & Gravel														
	Washboring Refusal on Rock														
850															
840															
830															
820															
810															

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/17/78
LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 21 B-21
BENT NO. 3 FOOTING 97' Lt. ℄ GROUND ELEV. 873.98
PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

ELEV.	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	Ø
	Gr. El.												
870	Very Loose Mltc. Micas. Sandy Silt	1s	4										
Gwt													
	Loose Mltc. Micas. Silty Sand	2s	10										
860	Refusal on Rock												
850													
840													
830													
820													
810													

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/17/78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 23 B-23

BENT NO. 3 FOOTING 37' Lt. ℄ 6' Fwd. GROUND ELEV. 874.03

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

ELEV.	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	ø		
	Gr.El. 7														
870	Loose Mltc. Micas. Sandy Silt	1s	8												
Gwt															
	Medium Dense Gray Silty Sand	2s	18												
860	Dense Mltc. Micas. Sandy Silt	3s	33												
	Very Dense Same	4s	60=.1'												
	Weathered Rock														
850	Refusal on Rock														
840															
830															
820															
810															

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on the information in his bidding or in his cost estimating operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/17/78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 24 B-24

BENT NO. 3 FOOTING 37' Rt. ℄ 9' Fwd. GROUND ELEV. 875.84

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

ELEV.	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	ø		
	Gr.El.														
	Medium Dense Mltc.														
870	Sandy Silt	1s	13												
	Very Loose Gray														
	Silty Sand	2s	0												
		rock													
860	Refusal on Rock														
850															
840															
830															
820															

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/18/78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 25 B-25

BENT NO. 3 FOOTING 67' Rt. ℄ 6' Bk. GROUND ELEV. 875.28

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

ELEV.	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	ø		
	Gr El.														
870	Very Loose Silty Sand														
860	Sand & Gravel														
	Weathered Rock														
850	Refusal on Rock														
840															
830															
820															
810															

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or in contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/16/78
LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 26 B-26
BENT NO. 3 FOOTING 97' Rt. ℄ 4' Fwd. GROUND ELEV. 875.44
PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

ELEV.	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	ø
	Gr. El. 7												
870	Loose Mltc. Micas. Sandy Silt	1s	10										
Gwt.													
	Loose Gray Silty Sand	2s	10										
860	dense mltc. micas. silty sand w/gravel	3s	47										
	Medium Dense Same	4s	13										
850	Medium Dense Mltc. Micas. Sdy. Silt (W.R.)	5s	21										
	Very Dense Same	6s	60-7"										
	weathered rock												
840	Refusal on Rock												
830													
820													
810													

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/18/78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 27 B-27

BENT NO. 3 FOOTING 67' Lt. ℄ 32' Fwd. GROUND ELEV. 873.59

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

ELEV.	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	ø
	Gr. El. ?												
870	Very Loose Mltc												
Gwt	Micas. Sandy Silt	ls	2										
	Loose Gray Silty	2s	6										
860	Sand												
	v.dsemltc.micassltysdw/grvl.	3s	60=7										
	Weathered Rock												
850	Refusal on Rock												
840													
830													
820													
810													

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
GEOTECHNICAL ENGINEERING

BRIDGE SUBSURFACE INVESTIGATION

PROJECT I-575-1(6) 07 COUNTY CHEROKEE DATE 10/16/78

LOCATION I-575 BRIDGE O/ NOONDAY CREEK BORING NO. 28 B-28

BENT NO. 4 FOOTING 67' Rt. ℄ 26' Bk. GROUND ELEV. 874.64

PROPOSED FOOTING ELEV. PARTY CHIEF HOLLIS

ELEV.	BORING LOG		BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	ø		
	Gr. El.														
870	Loose Mltc. Micas. Sandy Silt	1s	8												
Gwt	Very Loose Gray Silty Sand	2s	1												
860	med. dense mltc. micas. silty sand w/gravel	3s	15												
	Very Dense Same	4s	60=.7'												
850	V. Dense Mltc. Micas. Sandy Silt (W.R.)	5s	60=.5'												
	Weathered Rock														
	Refusal on Rock														
840															
830															
820															
810															

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

H.D. 499
(3-67)

"AS-BUILT" BRIDGE FOUNDATION REPORT

DATA FOR BRIDGE ENGINEER, ATLANTA

PROJECT NO. ACI-575-1(6)07 Cr. 5 COUNTY CHEROKEE

BRIDGE NO. THREE (~~Lt.~~) (Rt.) OVER/AT I-575 OVER NOONDAY CREEK AT STA. 573 + 00

DATE OF THIS REPORT 9-27-82 1982 BY RICHARD MARSHALL ENGINEER

ELEVATIONS OF BOTTOMS OF FOOTINGS (= BF) & LOWEST AND HIGHEST ELEVATIONS OF PILE TIPS (= LOW, HIGH)
(Express this data in whole numbers only — **NO DECIMALS**)

BENT NO.	ELEVATION OF	FOR FOUNDATION BENTS ONLY AT LEFT FOOTING		MIDDLE FOOTING		RIGHT FOOTING		FOR PILE BENTS ONLY LOW	HIGH	REMARKS, INCLUDING SURVEY ORIENTATION
1	BF	885								ELEVATION OF PILING @ END BENT #1
	LOW HIGH	850	859							
2	BF 4 FOOTINGS	863 COL #1		863 COL #2		866 COL #3		866 COL #4		FOOTING ELEVATIONS
	LOW HIGH	846	852	842	850	848	853	851	855	REV. 10-14-81
3	BF 4 FOOTINGS	864 COL #1		863 COL #2		863 COL #3		863	COL #4	REV. 7-2-82
	LOW HIGH	851	857	849	852	844	851	845	852	
4	BF	887								ELEVATION OF PILING @ END BENT #4
	LOW HIGH	853	862							
5	BF									
	LOW HIGH									
6	BF									
	LOW HIGH									
7	BF									
	LOW HIGH									
8	BF									
	LOW HIGH									
9	BF									
	LOW HIGH									
10	BF									
	LOW HIGH									
11	BF									
	LOW HIGH									
12	BF									
	LOW HIGH									
13	BF									
	LOW HIGH									
14	BF									
	LOW HIGH									
15	BF									
	LOW HIGH									
16	BF									
	LOW HIGH									
17	BF									
	LOW HIGH									
18	BF									
	LOW HIGH									
19	BF									
	LOW HIGH									
20	BF									
	LOW HIGH									
21	BF									
	LOW HIGH									
22	BF									
	LOW HIGH									

ORIGINAL TO: BRIDGE ENGINEER
COPY TO : DIVISION OFFICE

NOTE: COMPLETE THIS FORM FOR EVERY BRIDGE AS SOON AS THE INFORMATION IS KNOWN AND MAIL PROMPTLY.

H.D. 499
(3-67)

"AS-BUILT" BRIDGE FOUNDATION REPORT

DATA FOR BRIDGE ENGINEER, ATLANTA

PROJECT NO. ACI-575-16)07, CT. 5 COUNTY CHEROKEE

BRIDGE NO. THREE (Lt.) (~~Rt.~~) OVER/AT I-575 OVER NOONDAY CREEK AT STA. 573 + 00

DATE OF THIS REPORT 7-27 1982 BY RICHARD MARSHALL ENGINE

ELEVATIONS OF BOTTOMS OF FOOTINGS (= BF) & LOWEST AND HIGHEST ELEVATIONS OF PILE TIPS (= LOW, HIGH)
(Express this data in whole numbers only — **NO DECIMALS**)

BENT NO.	ELEVATION OF	FOR FOUNDATION BENTS ONLY AT LEFT FOOTING		MIDDLE FOOTING		RIGHT FOOTING		FOR PILE BENTS ONLY LOW	HIGH	REMARKS, INCLUDING SURVEY ORIENTATION
1	BF	883								ELEVATION OF
	LOW HIGH	850	855							PILING @ ENDBENT #1.
2	BF	865		865		865				FOOTINGS RAISED
	LOW HIGH	852	857	850	856	849	855			REV. 7-2-82
3	BF	868		868		868				~~[illegible]~~ COL #1 & 2
	LOW HIGH	845	851	850	854	850	856			FOOTINGS CHANGE TO PILE & RAISED 7-2-82
4	BF	885								ELEVATION OF
	LOW HIGH	850	859							PILING @ ENDBENT #4
5	BF									
	LOW HIGH									
6	BF									
	LOW HIGH									
7	BF									
	LOW HIGH									
8	BF									
	LOW HIGH									
9	BF									
	LOW HIGH									
10	BF									
	LOW HIGH									
11	BF									
	LOW HIGH									
12	BF									
	LOW HIGH									
13	BF									
	LOW HIGH									
14	BF									
	LOW HIGH									
15	BF									
	LOW HIGH									
16	BF									
	LOW HIGH									
17	BF									
	LOW HIGH									
18	BF									
	LOW HIGH									
19	BF									
	LOW HIGH									
20	BF									
	LOW HIGH									
21	BF									
	LOW HIGH									
22	BF									
	LOW HIGH									

ORIGINAL TO: BRIDGE ENGINEER
COPY TO : DIVISION OFFICE

NOTE: COMPLETE THIS FORM FOR EVERY BRIDGE AS SOON AS THE INFORMATION IS KNOWN AND MAIL PROMPTLY.

ROADWAY PLAN AND PROFILE

McWhorter III, John K

From: Moseley, Michael R [mrmoseley@pbsj.com]
nt: Friday, February 06, 2009 11:00 AM
To: McWhorter III, John K
Cc: Curtis, Steven
Subject: RE: I-575 Hydro reports
Attachments: DOC.PDF

John,

Use these traffic numbers for the preliminary layouts. Let me know if you need anything else.

Thanks,
Mike

Michael R. Moseley Jr., PE
Sr. Engineer II | PBS&J
770 933-0280

This electronic mail communication may contain privileged, confidential, and/or proprietary information which is the property of either The PBSJ Corporation or one of its affiliates. If you are not the intended recipient or an authorized agent of the intended recipient please delete this communication and notify the sender that you have received it in error.

From: McWhorter III, John K [mailto:John.McWhorter@hatchmott.com]
S : Friday, February 06, 2009 9:36 AM
To: Navarro, Hernan R
Cc: Moseley, Michael R; Curtis, Steven; Frizzell, Robbie L
Subject: RE: I-575 Hydro reports

Ricardo,

Would you please do me a quick favor and email Mike Moseley at PBS&J pdf's of the latest bridge layouts for the Noonday South, Noonday North and Little River bridges on I-575?

Thanks!

John

-----Original Message-----
From: Moseley, Michael R [mailto:mrmoseley@pbsj.com]
Sent: Fri 2/6/2009 9:02 AM
To: McWhorter III, John K
Cc: Curtis, Steven
Subject: I-575 Hydro reports

John,

C l you send me the preliminary layouts that you need traffic information on? Pdfs would be great.

Thanks,
Mike

Michael R. Moseley Jr., PE

PBS&J

1600 RiverEdge Pkwy NW, Suite 600

Atlanta, GA 30328

770 933-0280

mrmoseley@pbsj.com

www.pbsj.com

This electronic mail communication may contain privileged, confidential, and/or proprietary information which is the property of either The PBSJ Corporation or one of its affiliates. If you are not the intended recipient or an authorized agent of the intended recipient please delete this communication and notify the sender that you have received it in error.

This email has been scanned by the MessageLabs Email Security System.
For more information please visit http://www.messagelabs.com/email

Attention:
This e-mail and any files transmitted with it from Hatch Mott MacDonald are confidential and intended solely for use of the individual or entity to whom they are addressed. If you have received this e-mail in error please immediately notify the sender.

This email has been scanned by the MessageLabs Email Security System.
For more information please visit http://www.messagelabs.com/email

NOONDAY SOUTH

TRAFFIC - - - - ADT = 72,700 (2005)
ADT = 108,032 (2025)

DESIGN SPEED - - - 65 MPH

TRUCKS - - - - 3%

24 HR TRUCKS - - 10%

DIRECTIONAL - - - 58%

NOONDAY NORTH

TRAFFIC - - - ADT = 85,100 (2005)
ADT = 126,459 (2025)

DESIGN SPEED - - - 65 MPH

TRUCKS - - - - 3%

24 HR TRUCKS - - - 10%

DIRECTIONAL - - - 58%

LITTLE RIVER

TRAFFIC - - - ADT = 93,740 (2005)
ADT = 139,298 (2025)

DESIGN SPEED - 65 MPH

TRUCKS - - - 3%

24 HR TRUCKS - - - 10%

DIRECTIONAL - - - 58%

McWhorter III, John K

From: Curtis, Steven [sacurtis@bechtel.com]
Sent: Friday, February 13, 2009 7:53 AM
To: McWhorter III, John K
Cc: Powell-Kent, Maxine
Subject: RE: I-575 Hydro reports

John

Monday is OK for submittal.

I don't think Mike showed any traffic data on the plans. We are just doing Costing Plans (which aren't really identified in the GDOT PPG.

In terms of title block, You can say the title block is consistent with the Costing Plans set title block prepared by GTP as part of the PPI (Public Private Initiative).

Steve

From: McWhorter III, John K [mailto:John.McWhorter@hatchmott.com]
Sent: Friday, February 13, 2009 7:46 AM
To: Moseley, Michael R; Curtis, Steven
Cc: Frizzell, Robbie L; Powell-Kent, Maxine
Subject: RE: I-575 Hydro reports
Importance: Low

Mike,

Thanks for the traffic info. Have you added this info to your cover sheet? The Bridge Office typically compares the traffic data on the bridge layout with that shown on the roadway cover sheet. I can include the data you provided with the plans, but I can't guarantee that it would eliminate the comment.

Steve,

One comment was to use the GDOT title block, which we are not doing. How would you like me to respond to this? Also, I know I mentioned Friday (today) and Monday at the latest for the schedule to resubmit these studies. Would it be OK if it ends up being on Monday?

Thanks,

John

From: Moseley, Michael R [mailto:mrmoseley@pbsj.com]
Sent: Friday, February 06, 2009 11:00 AM
To: McWhorter III, John K
Cc: Curtis, Steven
Subject: RE: I-575 Hydro reports

Use these traffic numbers for the preliminary layouts. Let me know if you need anything else.

Thanks,

Mike

Michael R. Moseley Jr., PE
Sr Engineer II | PBS&J
7)33-0280

This electronic mail communication may contain privileged, confidential, and/or proprietary information which is the property of either The PBSJ Corporation or one of its affiliates. If you are not the intended recipient or an authorized agent of the intended recipient please delete this communication and notify the sender that you have received it in error.

From: McWhorter III, John K [mailto:John.McWhorter@hatchmott.com]
Sent: Friday, February 06, 2009 9:36 AM
To: Navarro, Hernan R
Cc: Moseley, Michael R; Curtis, Steven; Frizzell, Robbie L
Subject: RE: I-575 Hydro reports

Ricardo,

Would you please do me a quick favor and email Mike Moseley at PBS&J pdf's of the latest bridge layouts for the Noonday South, Noonday North and Little River bridges on I-575?

Thanks!

John

-----Original Message-----
Fr m: Moseley, Michael R [mailto:mrmoseley@pbsj.com]
S Fri 2/6/2009 9:02 AM
To: McWhorter III, John K
Cc: Curtis, Steven
Subject: I-575 Hydro reports

John,

Could you send me the preliminary layouts that you need traffic information on? Pdfs would be great.

Thanks,
Mike

Michael R. Moseley Jr., PE

PBS&J

1600 RiverEdge Pkwy NW, Suite 600

/ ta, GA 30328

770 933-0280

mrmoseley@pbsj.com

www.pbsj.com

This electronic mail communication may contain privileged, confidential, and/or proprietary information which is the property of either The PBSJ Corporation or one of its affiliates. If you are not the intended recipient or an authorized agent of the intended recipient please delete this communication and notify the sender that you have received it in error.

This email has been scanned by the MessageLabs Email Security System.
For more information please visit http://www.messagelabs.com/email

Attention:
This e-mail and any files transmitted with it from Hatch Mott MacDonald are confidential and intended solely for use of the individual or entity to whom they are addressed. If you have received this e-mail in error please immediately notify the sender.

email has been scanned by the MessageLabs Email Security System.
For more information please visit http://www.messagelabs.com/email

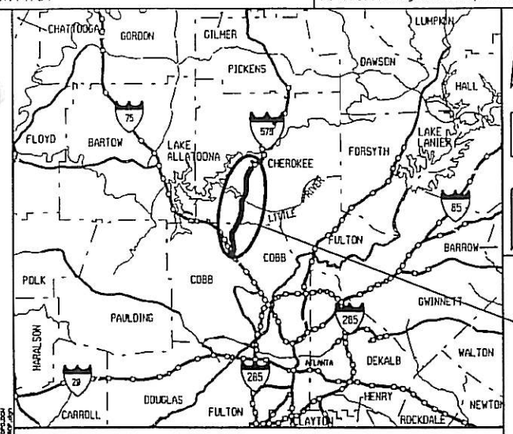
Attention:
This e-mail and any files transmitted with it from Hatch Mott MacDonald are confidential and intended solely for use of the individual or entity to whom they are addressed. If you have received this e-mail in error please immediately notify the sender.

This email has been scanned by the MessageLabs Email Security System.
For more information please visit http://www.messagelabs.com/email

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	NH000-0575-01(028)		

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PLAN AND PROFILE OF PROPOSED
I-575 FM I-75/COBB N TO SIXES ROAD/ CHEROKEE - FOR HOV LANES
NH000-0575-01(028)
COBB/CHEROKEE COUNTIES



LOCATION SKETCH

PROJECT NH000-0575-01(028)
COBB/CHEROKEE COUNTIES

NOTE :
ALL REFERENCES IN THIS DOCUMENT, WHICH INCLUDES ALL PAPERS, WRITINGS, DOCUMENTS, DRAWINGS, OR PHOTOGRAPHS USED, OR TO BE USED IN CONNECTION WITH THIS DOCUMENT, TO "STATE HIGHWAY DEPARTMENT OF GEORGIA", "STATE HIGHWAY DEPARTMENT", "GEORGIA STATE HIGHWAY DEPARTMENT", "HIGHWAY DEPARTMENT", OR "DEPARTMENT" WHEN THE CONTEXT THEREOF MEANS THE STATE HIGHWAY DEPARTMENT OF GEORGIA, AND SHALL BE DEEMED TO MEAN THE DEPARTMENT OF TRANSPORTATION.

DESIGN DATA:
TRAFFIC A.D.T.:
TRAFFIC A.D.T.:
TRAFFIC D.H.V.:
DIRECTIONAL DIST:
% TRUCKS:
24 HR. TRUCKS %:
SPEED DESIGN: 70 MPH

FEDERAL AID PROJECT

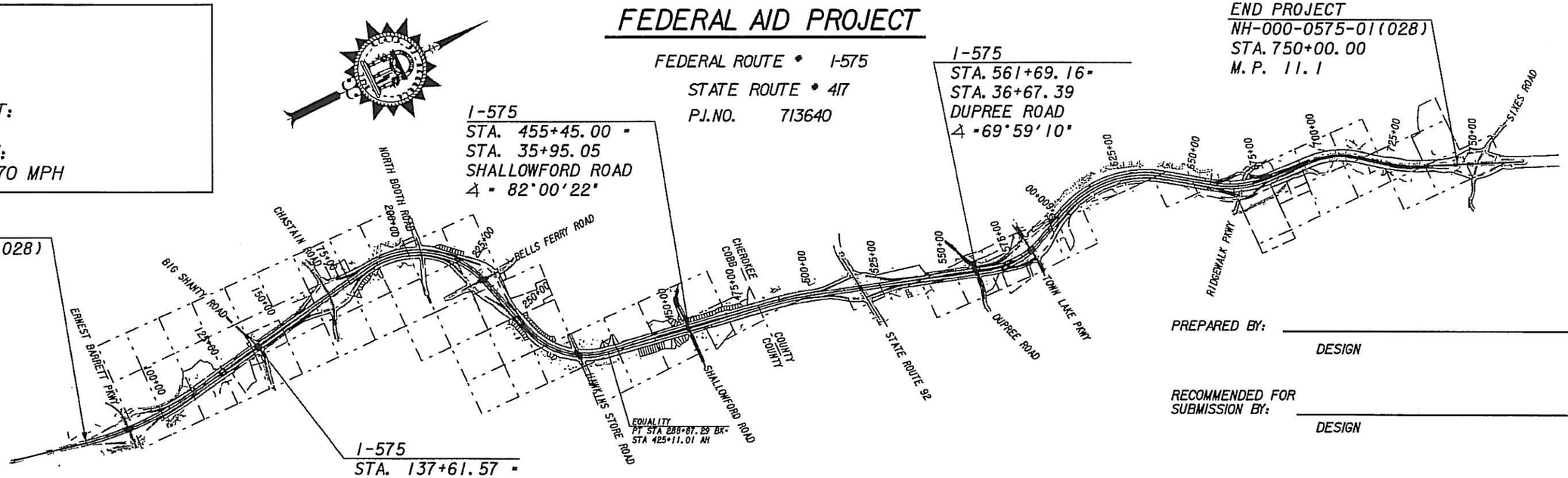
FEDERAL ROUTE * I-575
STATE ROUTE * 417
P.I.NO. 713640

BEGIN PROJECT
NH000-0575-01(028)
STA. 66+90.84
MP 0.7

I-575
STA. 455+45.00 =
STA. 35+95.05
SHALLOWFORD ROAD
∠ = 82°00'22"

I-575
STA. 561+69.16 =
STA. 36+67.39
DUPREE ROAD
∠ = 69°59'10"

END PROJECT
NH-000-0575-01(028)
STA. 750+00.00
M.P. 11.1



I-575
STA. 137+61.57 =
STA. 98+64.46
BIG SHANTY ROAD
∠ = 81°26'02"

PREPARED BY: _____
DESIGN

RECOMMENDED FOR SUBMISSION BY: _____
DESIGN

SUBMITTED BY: _____
STATE DESIGN ENGINEER

SCALE IN FEET
0 2000 4000 8000

THIS PROJECT HAS BEEN PREPARED USING THE HORIZONTAL GEORGIA COORDINATE SYSTEM OF 1984 (NAD 1983)/94 WEST ZONE, AND THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.

THE DATA, TOGETHER WITH ALL OTHER INFORMATION SHOWN ON THESE PLANS OR IN ANYWAY INDICATED THEREBY, WHETHER BY DRAWINGS OR NOTES, OR IN ANY OTHER MANNER, ARE BASED UPON FIELD INVESTIGATIONS AND ARE BELIEVED TO BE INDICATIVE OF ACTUAL CONDITIONS. HOWEVER, THE SAME ARE SHOWN AS INFORMATION ONLY, ARE NOT GUARANTEED, AND DO NOT BIND THE DEPARTMENT OF TRANSPORTATION IN ANY WAY. THE ATTENTION OF BIDDER IS SPECIFICALLY DIRECTED TO SUBSECTIONS 102.04, 102.05, AND 104.03 OF THE SPECIFICATIONS.

LENGTH OF PROJECT	COUNTY No. 067/057 Project No. 713640 MILES
NET LENGTH OF ROADWAY	10.033
NET LENGTH OF BRIDGES	0.324
NET LENGTH OF PROJECT	10.357
NET LENGTH OF EXCEPTIONS	0.000
GROSS LENGTH OF PROJECT	10.357

LOCATION & DESIGN APPROVAL DATE:

FUNCTIONAL CLASS:
INTERSTATE PRINCIPAL ARTERIAL

THIS PROJECT IS 51% IN COBB COUNTY AND 49% IN CHEROKEE COUNTY AND IS 60% IN CONG. DIST. NO. 11, 40% IN CONG. DIST. NO. 6

PROJECT DESIGNATION: EXEMPT

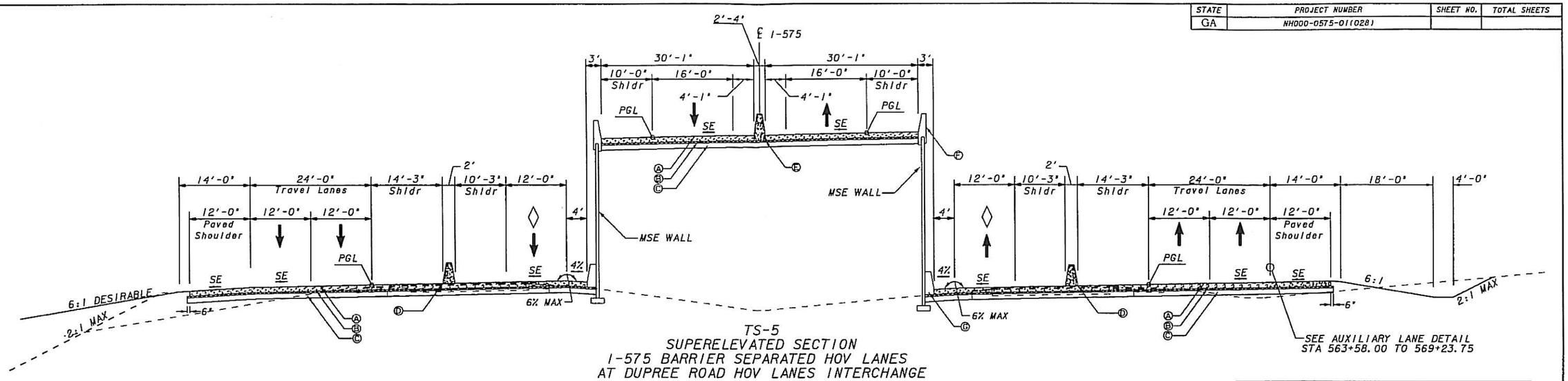
DESIGNED IN ENGLISH UNITS.

DATE CHIEF ENGINEER

PLANS COMPLETED 05-12-2008

REVISIONS: A	INTERDISCIPLINARY/CONSTRUCTABILITY REVIEW

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	NH000-0575-01(028)		



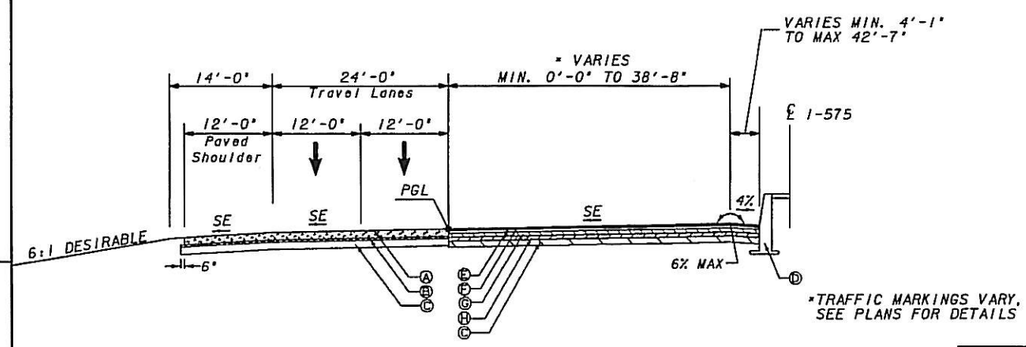
TS-5
SUPERELEVATED SECTION
I-575 BARRIER SEPARATED HOV LANES
AT DUPREE ROAD HOV LANES INTERCHANGE

STA 563+58.00 TO 571+58.00
STA 574+273.50 TO 574+73.75, RT
STA 574+27.50 TO 574+84.76, LT

SLOPE CONTROLS		
SLOPE	CUT	FILL
4:1	0-10'	0-10'
3:1	--	--
*2:1	OVER 10'	OVER 10'

*GUARDRAIL REQUIRED ON FILL SLOPES

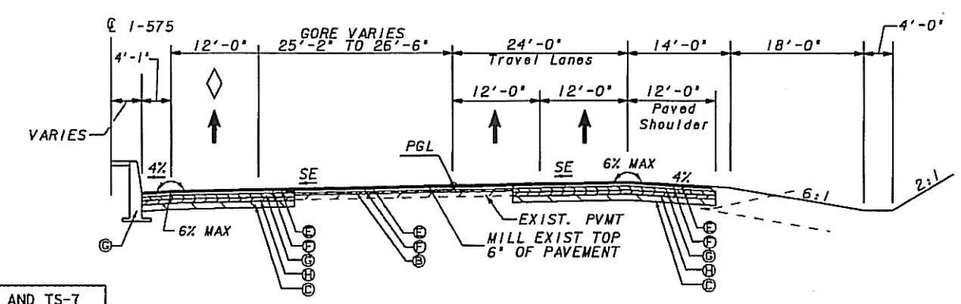
PAVEMENT MATERIAL SCHEDULE - TS-5
(A) CONTINUOUSLY REINFORCED CONCRETE PAVEMENT, 12 INCH
(B) RECYCLED ASPH. CONC. 19 mm SUPERPAVE, 330 LBS./SY
(C) GRADED AGGREGATE BASE, 12 INCH
(D) MOVEABLE HOV CONCRETE BARRIER
(E) CONCRETE MEDIAN BARRIER TP. S-2
(F) C.I.P. TRAFFIC BARRIER TP. V
(G) CONCRETE SIDE BARRIER TP. T-S



TS-6
SUPERELEVATED SECTION
I-575 SOUTHBOUND HOV ENTRANCE

STA 658+34.03 TO 674+00.00, LT

PAVEMENT MATERIAL SCHEDULE - TS-6 AND TS-7
(A) CONTINUOUSLY REINFORCED CONCRETE PAVEMENT, 12 INCH
(B) RECYCLED ASPH. CONC. 19 mm SUPERPAVE, 330 LBS./SY
(C) GRADED AGGREGATE BASE, 12 INCH
(D) CONCRETE SIDE BARRIER, TP. 2-S
(E) RECYCLED ASPH. CONC. 12.5 mm PEM, 135 LBS./SY
(F) RECYCLED ASPH. CONC. 12.5 mm SMA, 165 LBS./SY
(G) RECYCLED ASPH. CONC. 19 mm SUPERPAVE, 660 LBS./SY
(H) RECYCLED ASPH. CONC. 25 mm SUPERPAVE, 880 LBS./SY



TS-7
SUPERELEVATED SECTION
I-575 NORTHBOUND HOV EXIT

STA 670+00.00 TO 674+00.00, RT

TRACKING						
NO	DATE	DESCRIPTION	ORIG	CHKR	SUPV	APPR
A	5/12/08	INTERDISCIPLINARY/CONSTRUCTABILITY REVIEW	CEC	PCT	MRM	RHM

CLARA CASH DRAWN BY	11/20/07 DATE
PATRICK TSE CHECKED BY	11/23/07 DATE
MIKE MOSELEY SUPERVISOR	11/26/07 DATE
RON MORRIS APPROVED	11/26/07 DATE

GEORGIA TRANSPORTATION PARTNERS

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PBSJ

I-75 / I-575 NORTHWEST CORRIDOR

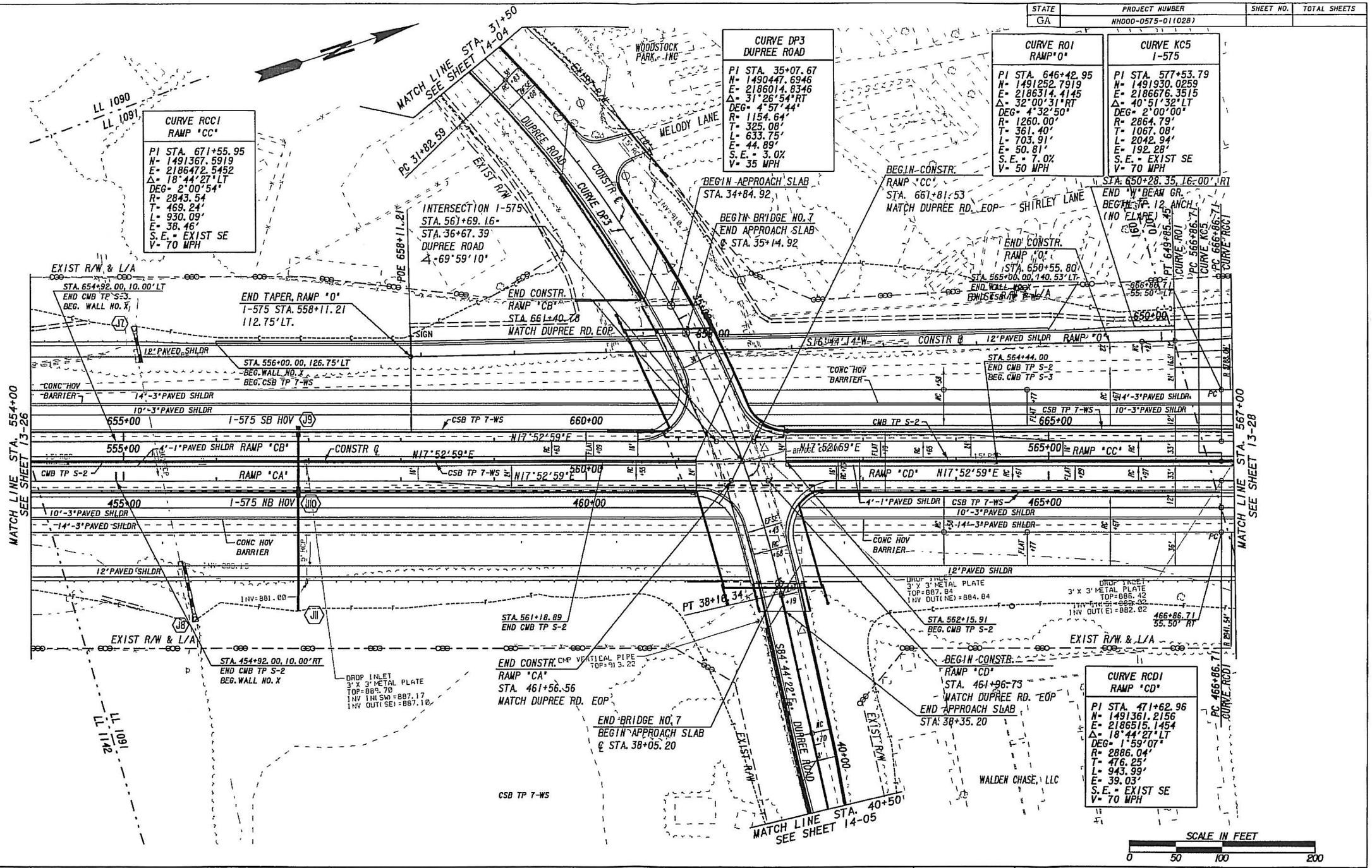
TYPICAL SECTIONS

I-575 HOV LANES

DRAWING No. 5-03

O:\008256\DGN\DGN 713640 Plans\713640TY03.dgn 7/3/2008 11:19:05 AM

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	NH000-0575-01(028)		



CLARA CASH	11/20/07	TRACKING						
DRAWN BY	DATE	NO	DATE	DESCRIPTION	ORIG	CHKR	SUPV	APPR
PATRICK TSE	11/23/07	A	5/12/08	INTERDISCIPLINARY/CONSTRUCTABILITY REVIEW	CEC	PCT	MRW	RHW
CHECKED BY	DATE							
MIKE MOSELEY	11/26/07							
SUPERVISOR	DATE							
RON MORRIS	11/26/07							
APPROVED	DATE							

GTP GEORGIA TRANSPORTATION PARTNERS

NORTHWEST I-75/I-575 CORRIDOR

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PBSJ

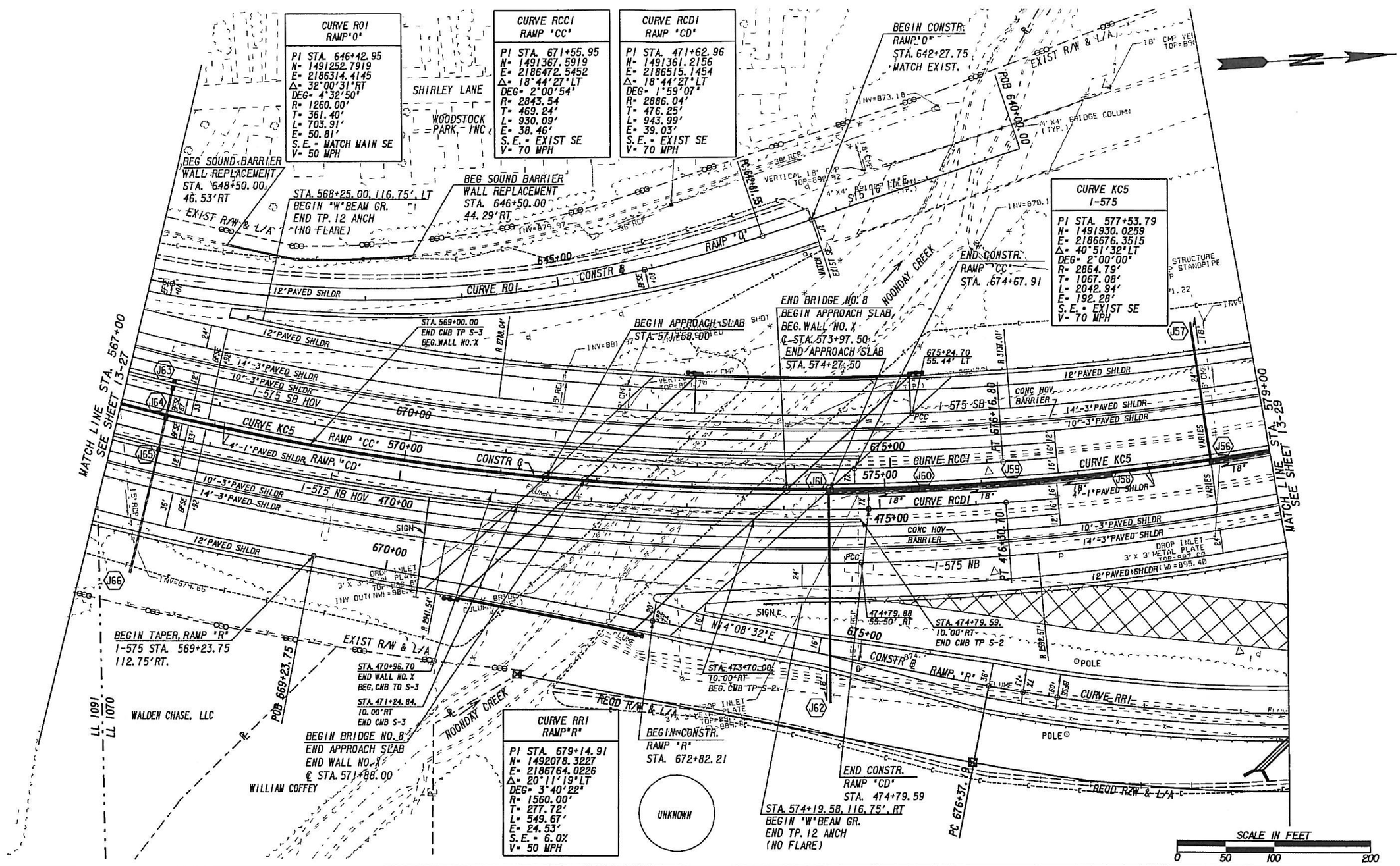
I-75 / I-575 NORTHWEST CORRIDOR

MAINLINE PLAN

I-575 HOV LANES
STA. 554+00 TO STA. 567+00

DRAWING No. 13-27

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	NH000-0575-01(028)		



TRACKING

NO	DATE	DESCRIPTION	ORIG	CHKR	SUPV	APPR
A	5/12/08	INTERDISCIPLINARY/CONSTRUCTABILITY REVIEW	CEC	PCT	MRW	RIW

CLARA CASH DRAWN BY	11/20/07 DATE
PATRICK TSE CHECKED BY	11/23/07 DATE
MIKE MOSELEY SUPERVISOR	11/26/07 DATE
RON MORRIS APPROVED	11/26/07 DATE

GTP GEORGIA TRANSPORTATION PARTNERS

NORTHWEST I-75/I-575 CORRIDOR

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PBSJ

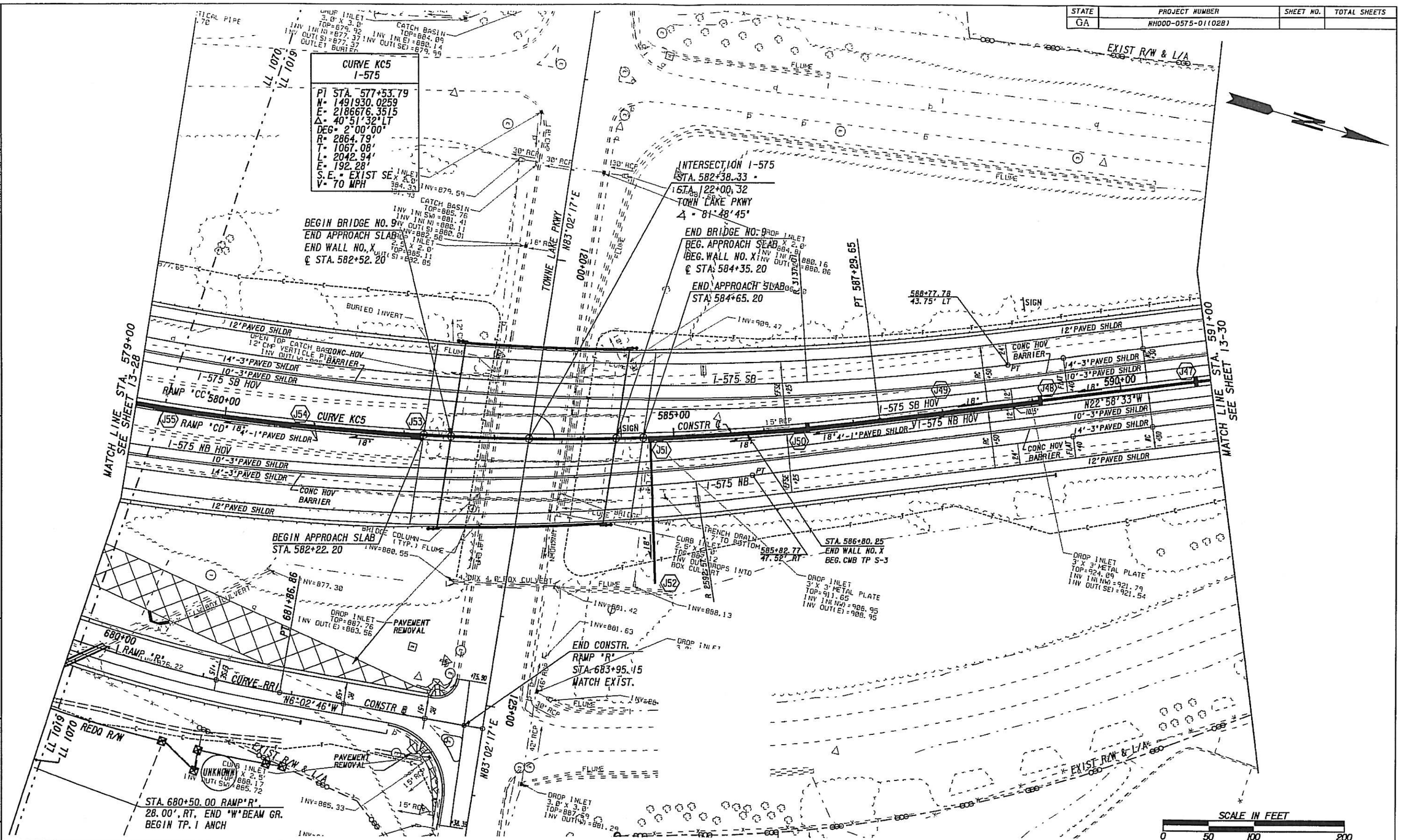
I-75 / I-575 NORTHWEST CORRIDOR

MAINLINE PLAN

I-575 HOV LANES
STA. 567+00 TO STA. 579+00

DRAWING No. 13-28

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	NH000-0575-01(028)		



CLARA CASH	11/20/07	DRAWN BY / DATE
PATRICK TSE	11/23/07	CHECKED BY / DATE
MIKE MOSELEY	11/26/07	SUPERVISOR / DATE
RON MORRIS	11/26/07	APPROVED / DATE

TRACKING

NO	DATE	DESCRIPTION	ORIG	CHKR	SUPV	APPR
A	5/12/08	INTERDISCIPLINARY/CONSTRUCTABILITY REVIEW	CEC	PCT	MRM	RGM

GEORGIA TRANSPORTATION PARTNERS

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PBSJ

I-75 / I-575 NORTHWEST CORRIDOR

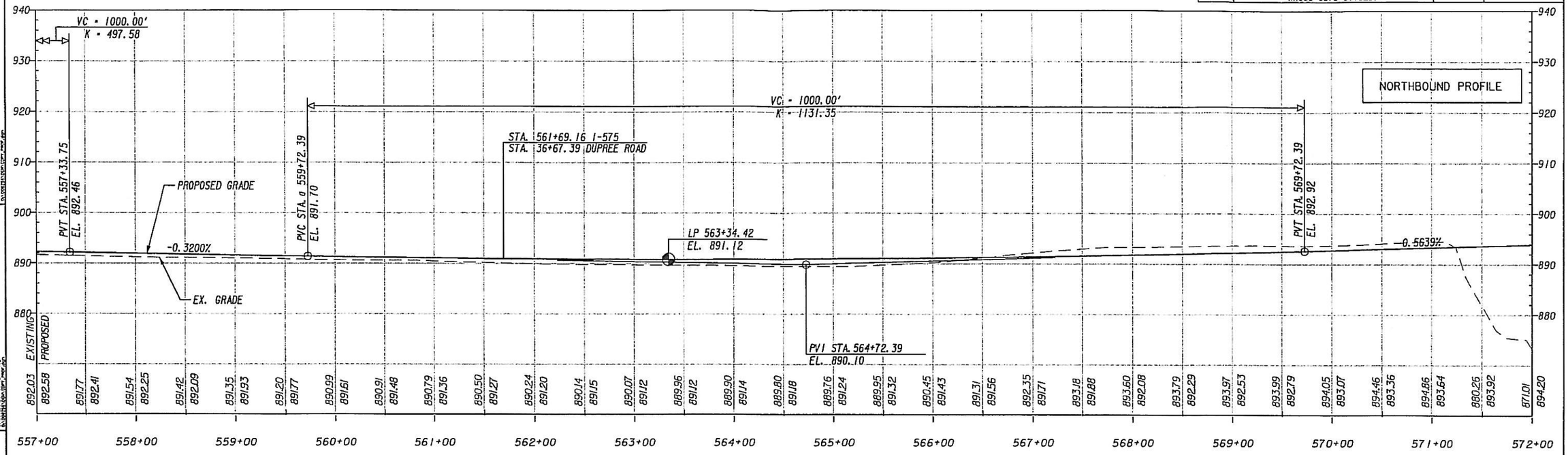
I-575 HOV LANES

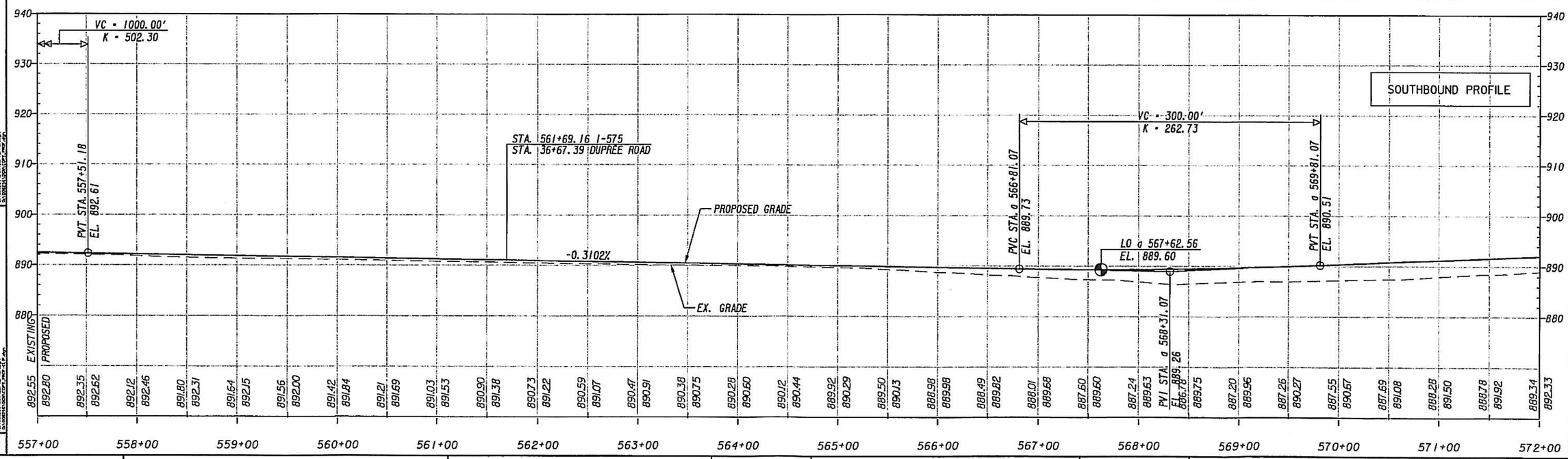
MAINLINE PLAN

I-575 HOV LANES
STA. 579+00 TO STA. 591+00

DRAWING NO. 13-29

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	NH000-0575-01(028)		





CLARA CASH	DRAWN BY	12/20/07 DATE
JOE DAVIS	CHECKED BY	12/28/07 DATE
MIKE MOSELEY	SUPERVISOR	12/28/07 DATE
RON MORRIS	APPROVED	12/28/07 DATE

REVISIONS

NO	DATE	DESCRIPTION	ORIG	CHKR	SUPV	APPR
A	5/12/08	INTERDISCIPLINARY/CONSTRUCTABILITY REVIEW	CEC	JHD	WRM	RHW

GTP GEORGIA TRANSPORTATION PARTNERS

NORTHWEST I-75/I-575 CORRIDOR

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PBSJ

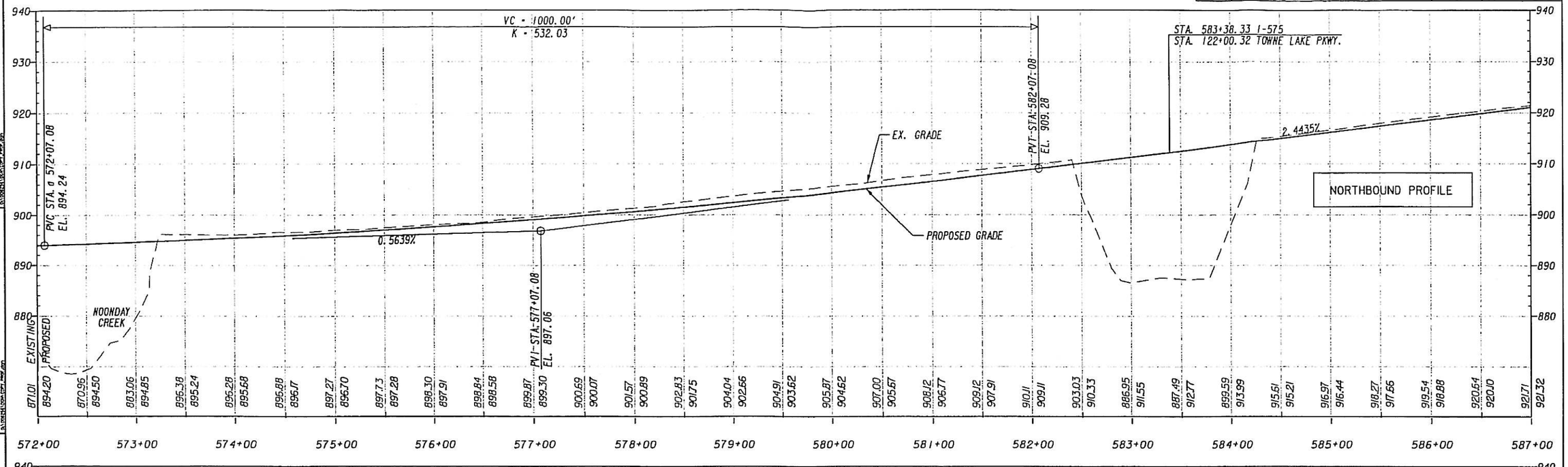
I-75 / I-575 NORTHWEST CORRIDOR

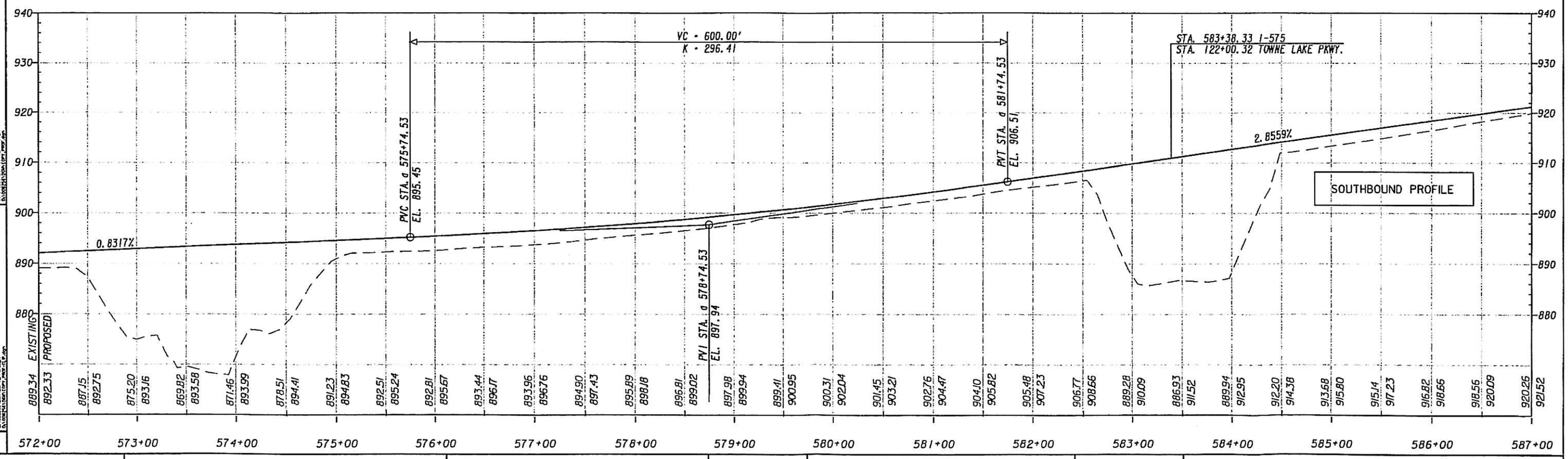
MAINLINE PROFILE

I-575 HOV LANES

DRAWING No. 15-25

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	NH000-0575-01(028)		





LARA CASH	DRAWN BY	12/20/07 DATE
JOE DAVIS	CHECKED BY	12/28/07 DATE
MIKE MOSELEY	SUPERVISOR	12/28/07 DATE
RON MORRIS	APPROVED	12/28/07 DATE

REVISIONS

NO	DATE	DESCRIPTION	ORIG	CHKR	SUPV	APPR
A	5/12/08	INTERDISCIPLINARY/CONSTRUCTABILITY REVIEW	CEC	JHD	MRW	RHM

GTP GEORGIA TRANSPORTATION PARTNERS

NORTHWEST I-75/I-575 CORRIDOR

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PBSJ

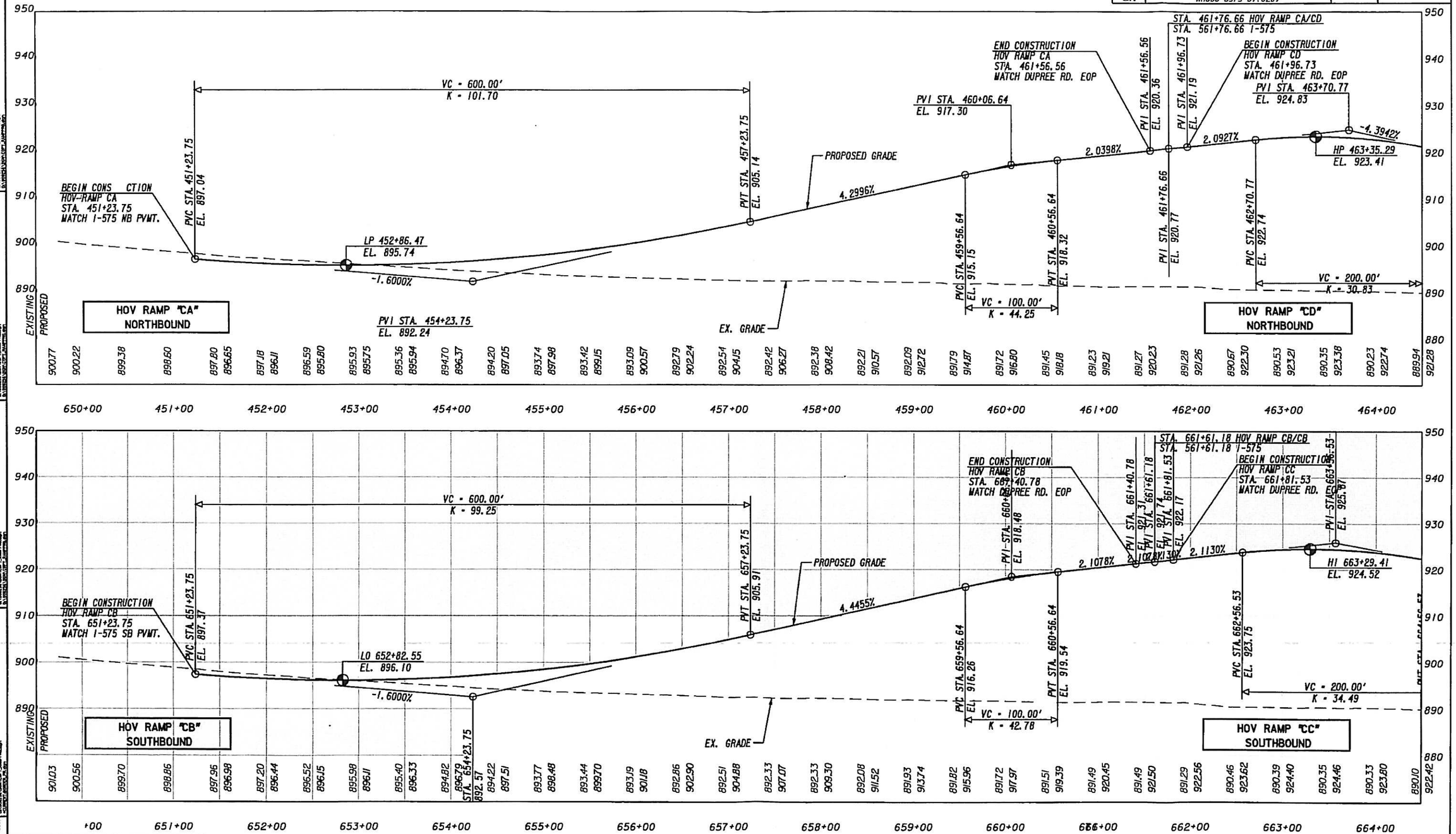
I-75 / I-575 NORTHWEST CORRIDOR

MAINLINE PROFILE

I-575 HOV LANES

DRAWING No. 15-26

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	NHOOD-0575-01(028)		



ARA CASH	DRAWN BY	12/20/07 DATE
JOE DAVIS	CHECKED BY	12/28/07 DATE
MIKE MOSELEY	SUPERVISOR	12/28/07 DATE
RON MORRIS	APPROVED	12/28/07 DATE

REVISIONS

NO	DATE	DESCRIPTION	DRIG	CHKR	SUPV	APPR
A	5/2/08	INTERDISCIPLINARY/CONSTRUCTABILITY REVIEW	CEC	JHD	WRM	RHM

GTP GEORGIA TRANSPORTATION PARTNERS

NORTHWEST I-75/I-575 CORRIDOR

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PBSJ

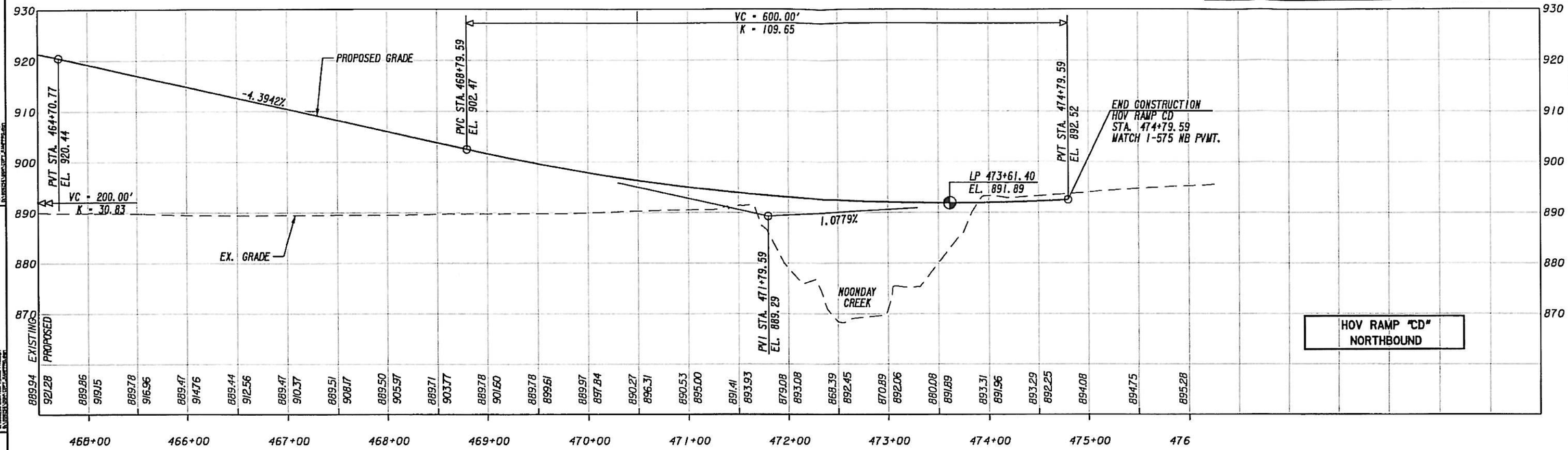
I-75 / I-575 NORTHWEST CORRIDOR

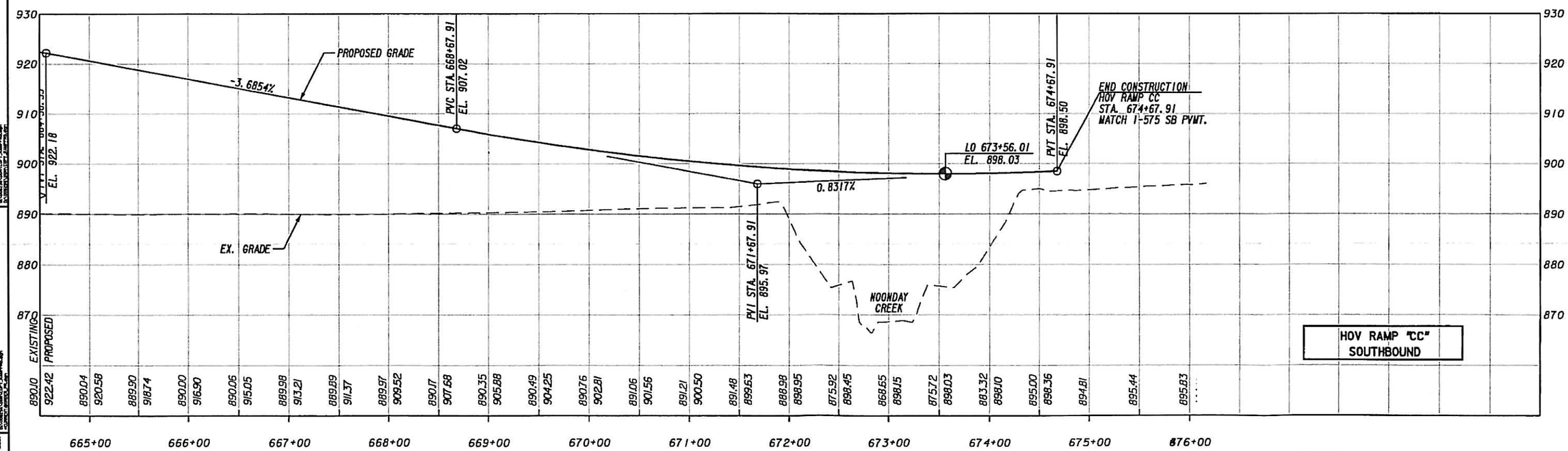
HOV RAMP PROFILE

DUPREE ROAD RAMP CA/CD & CB/CC
NORTHBOUND & SOUTHBOUND

DRAWING No. 16-12

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	NHDDD-0575-01(028)		





ARA CASH	DRAWN BY	12/20/07 DATE
JOE DAVIS	CHECKED BY	12/28/07 DATE
MIKE MOSELEY	SUPERVISOR	12/28/07 DATE
RON MORRIS	APPROVED	12/28/07 DATE

REVISIONS

NO	DATE	DESCRIPTION	ORIG	CHKR	SUPV	APPR
A	5/12/08	INTERDISCIPLINARY/CONSTRUCTABILITY REVIEW	CEC	JHD	MRM	RHM

GTP GEORGIA TRANSPORTATION PARTNERS

NORTHWEST I-75/I-575 CORRIDOR

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PBSJ

I-75 / I-575 NORTHWEST CORRIDOR

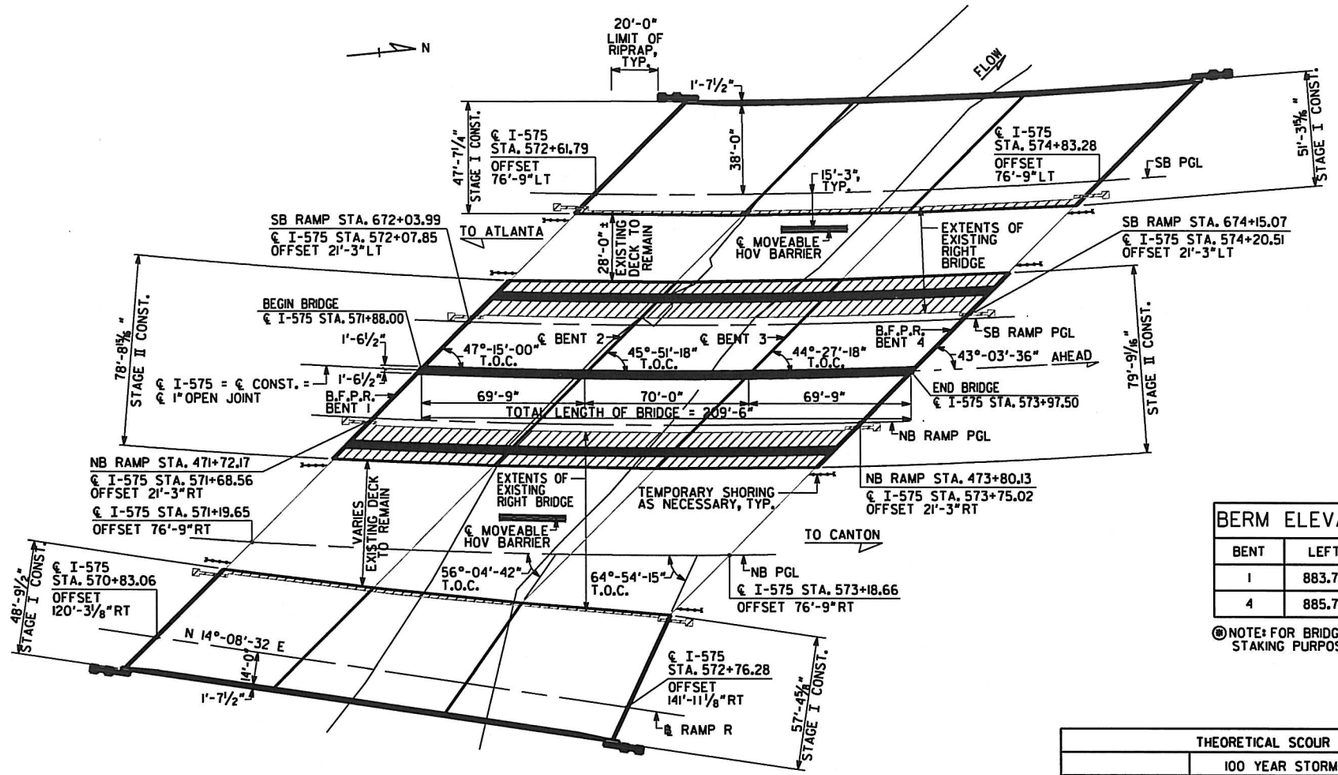
HOV RAMP PROFILE

DUPREE ROAD RAMP CA/CD & CB/CC
NORTHBOUND & SOUTHBOUND

DRAWING No. 16-13

PRELIMINARY BRIDGE PLAN AND ELEVATION SECTION

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	NH000-0575-01(028)		

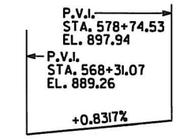


PLAN

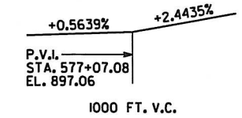
SCALE: 1" = 30'-0"

P.I. STA. = 577+53.79
Δ = 40°-51'-32" (LT.)
D = 2°-00'-00"
T = 1067.08 FT.
L = 2042.94 FT.
R = 2864.79 FT.

HORIZONTAL CURVE DATA ℄ I-575



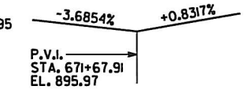
SB PGL GRADE DATA



NB PGL GRADE DATA

P.I. STA. = 671+55.95
Δ = 18°-44'-27"
D = 2°-00'-54"
T = 469.24 FT.
L = 930.09 FT.
R = 2843.54 FT.

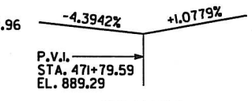
HORIZONTAL CURVE DATA SB RAMP



SB RAMP GRADE DATA

P.I. STA. = 471+62.96
Δ = 18°-44'-27"
D = 1°-59'-07"
T = 476.25 FT.
L = 943.99 FT.
R = 2886.04 FT.

HORIZONTAL CURVE DATA NB RAMP



NB RAMP GRADE DATA

DESIGN DATA

SPECIFICATIONS ---------- AASHTO 17TH EDITION, 2002
(DESIGNED FOR SEISMIC PERFORMANCE CATEGORY B)

TYPICAL HS20-44 AND/OR MILITARY LOADING --- IMPACT ALLOWED

FUTURE PAVING ALLOWANCE ---------- 30 LBS PER SQ FT

EACH WIDENED BRIDGE CONSISTS OF

2 - WIDENED 69'-9" TYPE III PSC BEAM SPANS --- SPECIAL DESIGN
1 - WIDENED 70'-0" TYPE III PSC BEAM SPAN ---- SPECIAL DESIGN
2 - WIDENED PILE END BENTS ---------- SPECIAL DESIGN
2 - WIDENED CONCRETE INTERMEDIATE BENTS ---- SPECIAL DESIGN
24" TYPE I RIP RAP

BERM ELEVATIONS ⊛

BENT	LEFT	RIGHT
1	883.72	890.55
4	885.79	893.12

⊛ NOTE: FOR BRIDGE ENDROLL STAKING PURPOSES ONLY.

THEORETICAL SCOUR DEPTHS (FT)						
	100 YEAR STORM			500 YEAR STORM		
BENT LOCATION	GENERAL	LOCAL	TOTAL	GENERAL	LOCAL	TOTAL
BENT 2 - 3	29.4	15.6	45.0	36.7	10.9	47.6

UTILITIES

NONE

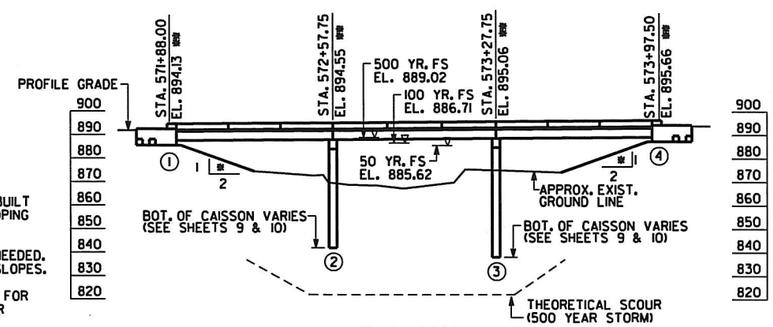
DRAINAGE DATA

DRAINAGE AREA ---------- 43.2 SQ MI

FLOOD FREQUENCY	DISCHARGE THRU BRIDGE	MEAN VELOCITY	AREA OF OPENING UNDER FLOODSTAGE	BACKWATER
50 YEAR	7774 CFS	6.63 FPS	1173 SQ FT	1.37 FT
100 YEAR	9108 CFS	6.98 FPS	1305 SQ FT	1.58 FT
500 YEAR	12749 CFS	7.61 FPS	1675 SQ FT	2.15 FT

NOTES:

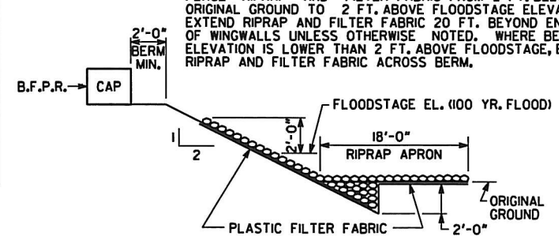
1. ⊛ SLOPE NORMAL TO END BENTS.
2. ⊛⊛ STATIONS ARE ALONG ℄ I-575 AT THE INTERSECTION OF ℄ I-575 AND BFPR OR ℄ BENT. ELEVATIONS ARE ALONG NB PROFILE GRADE LINE.
3. END BENT PILES NOT SHOWN.
4. THE PROPOSED BRIDGE DECKS ARE TO BE BUILT ON A CONSTANT CROSS SLOPE OF 7%, SLOPING DOWN TO THE LEFT.
5. REPAIR AND REPLACE EXISTING RIPRAP AS NEEDED. EXTEND APRON ACROSS TOE OF EXISTING SLOPES.
6. THE MINIMUM BOTTOM OF BEAM ELEVATION FOR THE PROPOSED BRIDGE SHALL BE NO LOWER THAN ELEVATION 885.90
7. THE PROPOSED BRIDGE BOTTOM OF BEAM ELEVATION IS 885.93



ELEVATION

SCALE: 1"=30'-0"

PLACE RIPRAP AND FILTER FABRIC FROM 2 FT. BELOW ORIGINAL GROUND TO 2 FT. ABOVE FLOODSTAGE ELEVATION. EXTEND RIPRAP AND FILTER FABRIC 20 FT. BEYOND END OF WINGWALLS UNLESS OTHERWISE NOTED. WHERE BERM ELEVATION IS LOWER THAN 2 FT. ABOVE FLOODSTAGE, EXTEND RIPRAP AND FILTER FABRIC ACROSS BERM.



RIPRAP DETAIL

NO SCALE

TRAFFIC DATA

TRAFFIC--------- ADT = 85,100 (2005)
ADT = 126,459 (2025)
DESIGN SPEED ---------- 65 MPH
TRUCKS ---------- 3%
24 HR TRUCKS ---------- 10%
DIRECTIONAL DIST. ---------- 58%

EXISTING LEFT BRIDGE SERIAL NO. 057-0041-0
EXISTING LEFT BRIDGE I.D. NO. 057-00417D-007.94N
EXISTING RIGHT BRIDGE SERIAL NO. 057-0040-0
EXISTING RIGHT BRIDGE I.D. NO. 057-00417D-007.93N
PROJECT P.I. NO. 713640

BRIDGE NO. 8 LT & RT

JOESEPH SMITH — DRAWN BY	4/11/08 — DATE
JOHN BROWN — CHECKED BY	5/1/08 — DATE
MARKUS RUSSELL — SUPERVISOR	5/07/08 — DATE
FRED ARNOLD — APPROVED	5/07/08 — DATE

REVISIONS

NO	DATE	DESCRIPTION	ORIG	CHKR	SUPV	APPR
A	5/12/08	INTERDISCIPLINARY/CONSTRUCTION REVIEW	JPS	JRB	MR	FLA
B	9/05/08	INTERDISCIPLINARY/CONSTRUCTION REVIEW	JPS	JRB	MR	FLA
C	9/29/08	GDOT SUBMITTAL	JPS	JRB	MR	FLA

GTP Georgia Transportation Partners

Hatch Mott MacDonald
2550 Heritage Ct. SE, Suite 250 Atlanta, GA 30339

NORTHWEST I-75/I-575 CORRIDOR

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PBSJ

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 32724 2-16-09 PROFESSIONAL ENGINEERING RICARDO ARNOLD

BRIDGE SHEET 1 OF 4

I-75 / I-575 NORTHWEST CORRIDOR

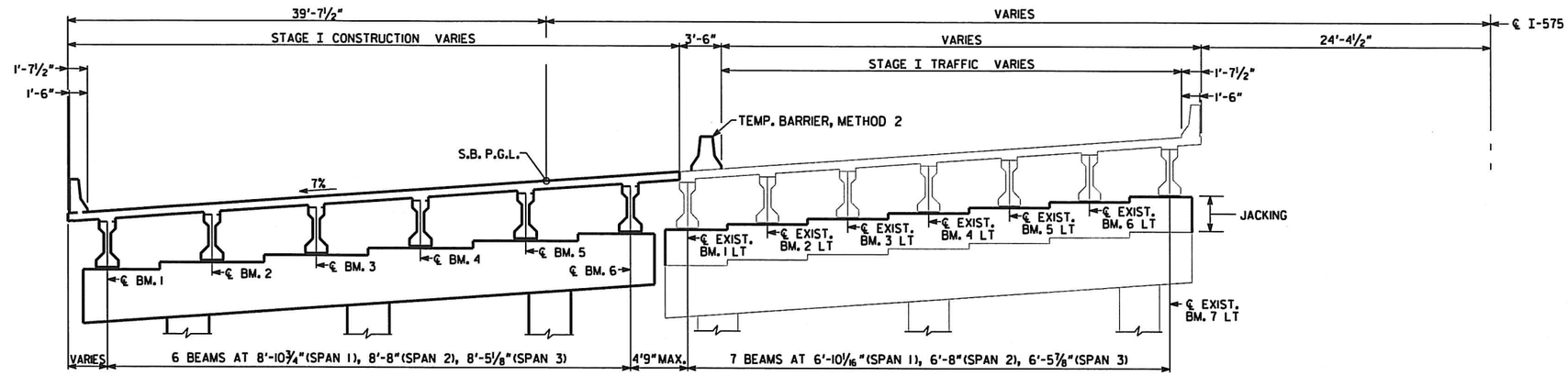
I-575 OVER NOONDAY CREEK NORTH

PRELIMINARY LAYOUT

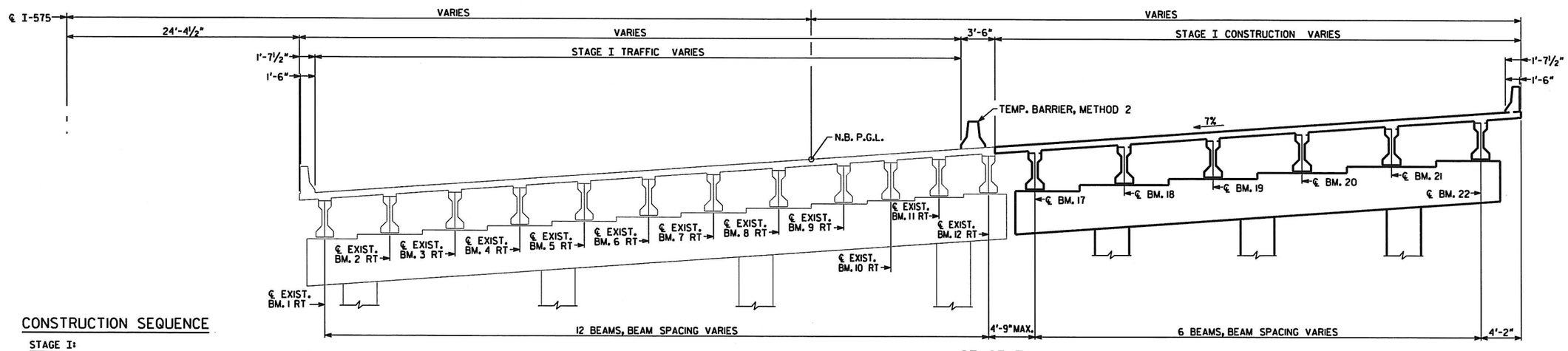
DRAWING No. 35 - 54

$TIME$ $DATE$ $FILE$ REF FILES:

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	NH000-0575-01(028)		



STAGE I
(LOOKING AHEAD, LEFT BRIDGE)



STAGE I
(LOOKING AHEAD, RIGHT BRIDGE)

CONSTRUCTION SEQUENCE

STAGE I:

1. JACK EXISTING SB BRIDGE UNDER TRAFFIC.
2. PLACE TEMPORARY BARRIER.
   MAINTAIN TWO 12'-0" LANES OF TRAFFIC IN EACH DIRECTION ON EXISTING BRIDGES. MAINTAIN EXIT LANE ON EXISTING NB BRIDGE.
3. REMOVE PORTIONS OF EXISTING BRIDGES AS NECESSARY FOR STAGE I CONSTRUCTION.
4. CONSTRUCT STAGE I SUBSTRUCTURE.
5. CONSTRUCT STAGE I SUPERSTRUCTURE.

$TIME$
$DATE$
$FILE$
REF. FILES

JOESEPH SMITH	4/11/08	
DRAWN BY	DATE	
JOHN BROWN	5/1/08	
CHECKED BY	DATE	
MARKUS RUSSELL	5/07/08	
SUPERVISOR	DATE	
FRED ARNOLD	5/07/08	
APPROVED	DATE	

REVISIONS

NO	DATE	DESCRIPTION	ORIG	CHKR	SUPV	APPR
A	5/12/08	INTERDISCIPLINARY/CONSTRUCTION REVIEW	JPS	JRB	MR	FLA
B	9/05/08	INTERDISCIPLINARY/CONSTRUCTION REVIEW	JPS	JRB	MR	FLA
C	9/29/08	GDOT SUBMITTAL	JPS	JRB	MR	FLA

GTP Georgia Transportation Partners

Hatch Mott MacDonald
2550 Heritage Ct. SE, Suite 250 Atlanta, GA 30339

NORTHWEST I-75/I-575 CORRIDOR

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PBSJ

BRIDGE SHEET
2 OF 4

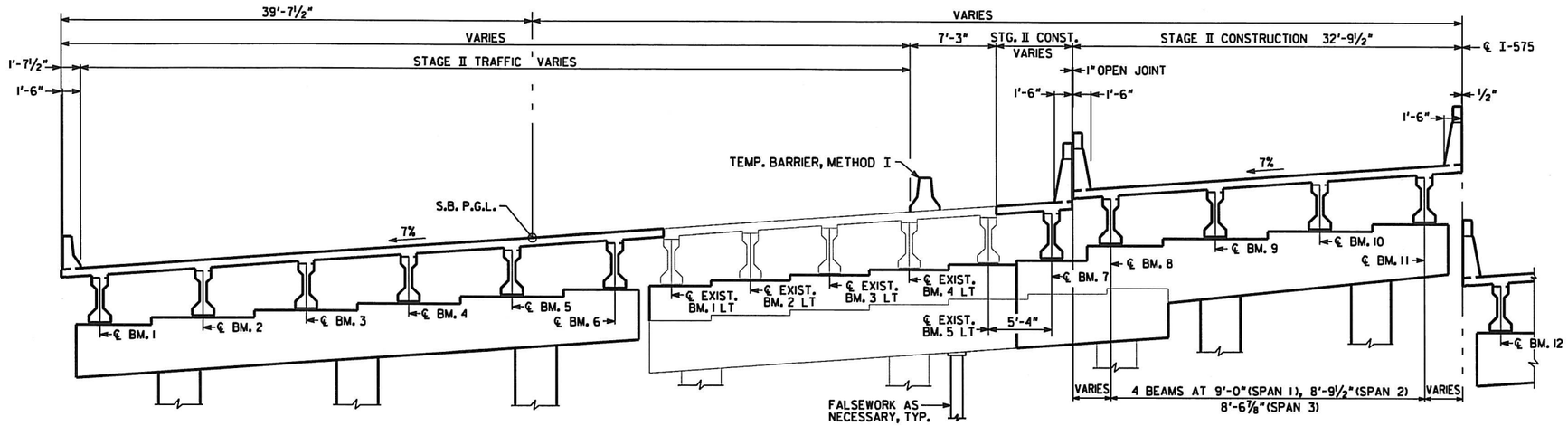
BRIDGE NO. 8 LT & RT

I-75 / I-575 NORTHWEST CORRIDOR

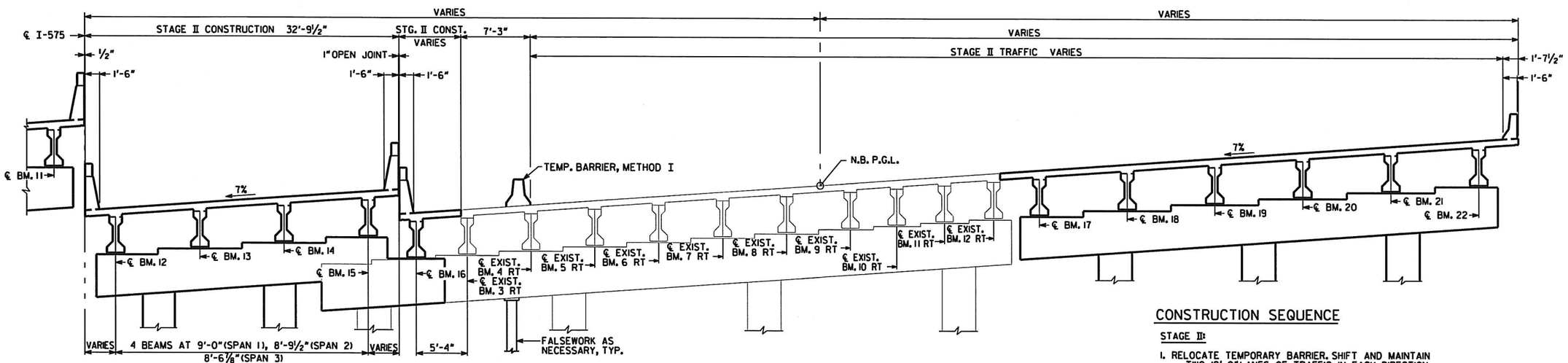
I-575 OVER NOONDAY CREEK NORTH PRELIMINARY LAYOUT STAGE I CONST. SEQUENCE

DRAWING No.
35 - 55

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	NH000-0575-01(028)		



STAGE II
(LOOKING AHEAD, LEFT BRIDGE)



STAGE II
(LOOKING AHEAD, RIGHT BRIDGE)

CONSTRUCTION SEQUENCE

STAGE II:

1. RELOCATE TEMPORARY BARRIER. SHIFT AND MAINTAIN TWO 12'-0" LANES OF TRAFFIC IN EACH DIRECTION ON STAGE I CONSTRUCTION. SHIFT AND MAINTAIN EXIT LANE ON NB BRIDGE.
2. REMOVE PORTIONS OF EXISTING BRIDGES AS NECESSARY FOR STAGE II CONSTRUCTION.
3. CONSTRUCT STAGE II SUBSTRUCTURE.
4. CONSTRUCT STAGE II SUPERSTRUCTURE.
5. REMOVE TEMPORARY BARRIER.
6. PLACE HOV BARRIER.

BRIDGE NO. 8 LT & RT

JOESEPH SMITH (DRAWN BY)	4/11/08 (DATE)
JOHN BROWN (CHECKED BY)	5/1/08 (DATE)
MARKUS RUSSELL (SUPERVISOR)	5/07/08 (DATE)
FRED ARNOLD (APPROVED)	5/07/08 (DATE)

REVISIONS

NO	DATE	DESCRIPTION	ORIG	CHKR	SUPV	APPR
A	5/12/08	INTERDISCIPLINARY/CONSTRUCTION REVIEW	JPS	JRB	MR	FLA
B	9/05/08	INTERDISCIPLINARY/CONSTRUCTION REVIEW	JPS	JRB	MR	FLA
C	9/29/08	GDOT SUBMITTAL	JPS	JRB	MR	FLA

GTP Georgia Transportation Partners

Hatch Mott MacDonald
2550 Heritage Ct. SE, Suite 250 Atlanta, GA 30339

NORTHWEST I-75/I-575 CORRIDOR

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PBSJ

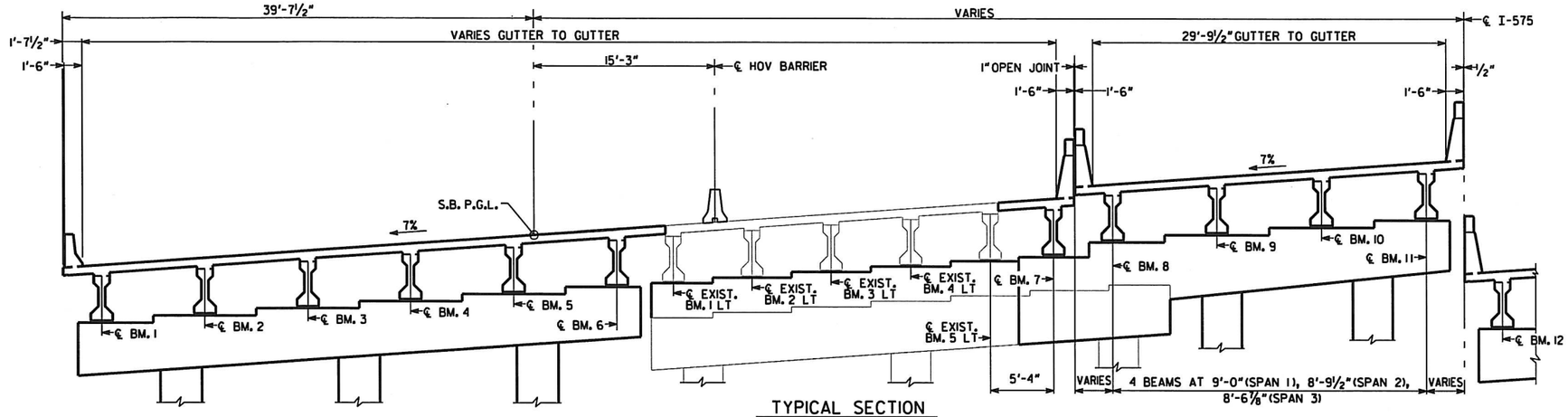
BRIDGE SHEET 3 OF 4

I-75 / I-575 NORTHWEST CORRIDOR

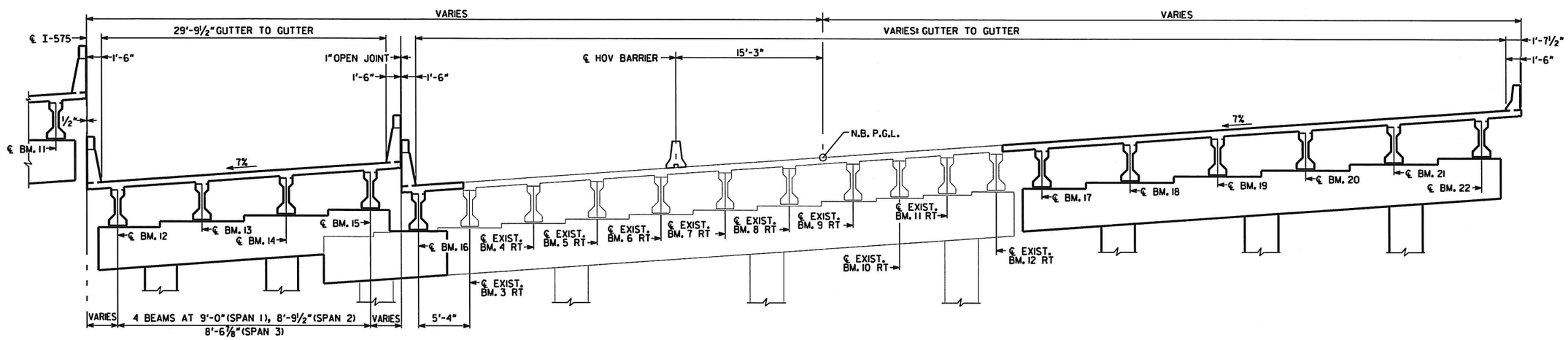
I-575 OVER NOONDAY CREEK NORTH
PRELIMINARY LAYOUT
STAGE II CONST. SEQUENCE

DRAWING No. 35 - 56

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	NH000-0575-01(028)		



TYPICAL SECTION
(LOOKING AHEAD, LEFT BRIDGE)



TYPICAL SECTION
(LOOKING AHEAD, RIGHT BRIDGE)

BRIDGE NO. 8 LT & RT

JOESEPH SMITH	DRAWN BY	4/11/08 DATE
JOHN BROWN	CHECKED BY	5/1/08 DATE
MARKUS RUSSELL	SUPERVISOR	5/07/08 DATE
FRED ARNOLD	APPROVED	5/07/08 DATE

REVISIONS

NO	DATE	DESCRIPTION	ORIG	CHKR	SUPV	APPR
A	5/12/08	INTERDISCIPLINARY/CONSTRUCTION REVIEW	JPS	JRB	MR	FLA
B	9/05/08	INTERDISCIPLINARY/CONSTRUCTION REVIEW	JPS	JRB	MR	FLA
C	9/29/08	GDOT SUBMITTAL	JPS	JRB	MR	FLA

GTP Georgia Transportation Partners

Hatch Mott MacDonald
2650 Heritage Ct. SE, Suite 250 Atlanta, GA 30339

NORTHWEST I-75/I-575 CORRIDOR

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PBSJ

BRIDGE SHEET
4 OF 4

I-75 / I-575 NORTHWEST CORRIDOR

I-575 OVER NOONDAY CREEK NORTH
PRELIMINARY LAYOUT
STAGE 11 CONST. SEQUENCE

DRAWING No.
35 - 57