

Office estimated min brg
length = 100'

PREDESIGN-PRESURVEY REPORT

Project# _____
TIP# _____
Let Date _____
WBS# _____

County Columbus

Bridge# 175
Road# SR 1504 (Williamson's Xrd
Stream Dunn Swamp (FIS - Princess Ann
Road)

Type Of Request: POC Force Account TIP NCMA

Date _____ Name ECA Assigned To _____

Checked By _____

Prior Survey Date _____ (attach copy of prior survey)

Study By Scour Section _____

Flood Zone Yes Detail Study Limited Date June 2, 2006 Panel# 0220

B.M. Info _____

Quad Map Chadbourne Drainage Area 16.8 Sq m From FIS
Q25 1354 Q50 1679 Q100 2031 Method _____

USGS - Rural Regression eqn,
Region 4, Coastal plain

FIS Q100 = 1024 cfs

EXISTING BRIDGE INFORMATION

Location 0.2 mi E Jct SR 1525

Average Daily Traffic 930 (2010)

Length 73' Bed- To Crown 13' Water Depth 5'

Type Structure RC Deck / 1-beam (BMD 6-1)

Type Spans 2 @ 18'2, 2 @ 18'4

Upstream Structure N/A

Location _____

Bed- To Crown _____ Prior Survey _____

Downstream Structure Brg # 40

Location 0.8 mi E Jct NC 242

Bed- To Crown 14' Prior Survey 4'

SCS Watershed _____

ENVIRONMENTAL

Trout Stream / Anadromous Fish _____ Primary Nursery Area /
High Quality Waters / Nutrient Sensitive Waters /
Near Water Supply Intake NO CAMA County /
Stream Classification C, SW
DENR River Basin Info. Lumber

$$13 \times 1.5 = 19.5 \times 2 = 39 + 20 + 37 = 96'$$



NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BRIDGE MANAGEMENT UNIT

ATTENTION TEMP REPAIRS: ENCASED PILES AT END BENT 1,
BENT 1 AND BENT 3

BRIDGE INSPECTION REPORT

INSPECTION TYPE: Routine Inspection

COUNTY COLUMBUS BRIDGE NUMBER 230175 INSPECTION CYCLE 2 YRS
ROUTE SR1504 ACROSS DUNN SWAMP M.P. 0

LOCATION 0.2 MI.E.JCT. SR1525

SUPERSTRUCTURE RC DECK/I-BEAMS (BMD 6-1)

SUBSTRUCTURE E.BTS&INT.BTS:RC CAP/TIMBER PILES @ 7'6 CTS.

SPANS 2@18'2 ;2@18'4

LONGITUDE 78° 52' 20.55"

LATITUDE 34° 20' 27.13"

PRESENT CONDITION FAIR

INVENTORY RATING

INSPECTION DATE 08/13/2012

OPERATING RATING

PRESENT POSTING SV 15 TTST 22 SV 15 TTST 22

PROPOSED POSTING

COMPUTER UPDATE

ANALYSIS DATE

POSTING LETTER DATE

SUFFICIENCY RATING

OTHER SIGNS PRESENT 4 DELINEATORS



LOOKING EAST (PRINCESS ANN ROAD)

SIGN NOTICE
ISSUED FOR

NUMBERED
REQUIRED

No WEIGHT LIMIT

No DELINEATORS

No NARROW BRIDGE

No ONE LANE BRIDGE

No LOW CLEARANCE

BRIDGE MANAGEMENT UNIT

DATA ON EXISTING STRUCTURE

Run Date: 09/11/2012

COUNTY : COLUMBUS DIVISION : 6 DISTRICT : 3 STRUCTURE NUMBER : 230175 LENGTH : 73 FEET

ROUTE CARRIED : SR1504 FEATURE INTERSECTED : DUNN SWAMP

LOCATED : 0.2 MI.E.JCT. SR1525 BRIDGE NAME : CITY :

FUNC. CLASS : 09 SYST.ON : NFA SYST.UNDER : NFA ADT & YR : 930 2010 RAIL TYPE : LT 241 RT 241

BUILT : 1958 BY : BMU PROJ : FED.AID PROJ : DESIGN LOAD : Unknown

REHAB : BY : PROJ : ALIGNMENT : TAN. SKEW : 90 LANES : ON 2 UNDER 0

NAVIGATION : VC 0 FT HC 0 FT HT. CRN. TO BED : 13 FT WATER DEPTH : 5 FT

SUPERSTRUCTURE : RC DECK/I-BEAMS (BMD 6-1)

SUBSTRUCTURE : E.BTS&INT.BTS:RC CAP/TIMBER PILES @ 7'6 CTS.

SPANS : 2@18'2 ;2@18'4

BEAMS OR GIRDERS : 12 LINES W12X16.5 I-BEAMS @ 2'-2.5 CENTERS

FLOOR : 5 RC/NO AWS ENCROACHMENT : DECK (OUT TO OUT) : 25.333 FT

CLEAR ROADWAY : 24 FT BETWEEN RAILS : 25.5 FT SIDEWALK OR CURB : LT .75 FT RT .75 FT

VERT.CL.OVER : 999.9 FT

INV.RTG. : HS-1 OPE.RTG. : HS-1 CONTR.MEMBER : ext.bmC POSTED : SV 16 TTST 24 DATE 09/11/2012

SYSTEM : Secondary S.R. Route GREEN LINE ROUTE : N

UNDER ROUTES AND CLEARANCES

REMARKS :

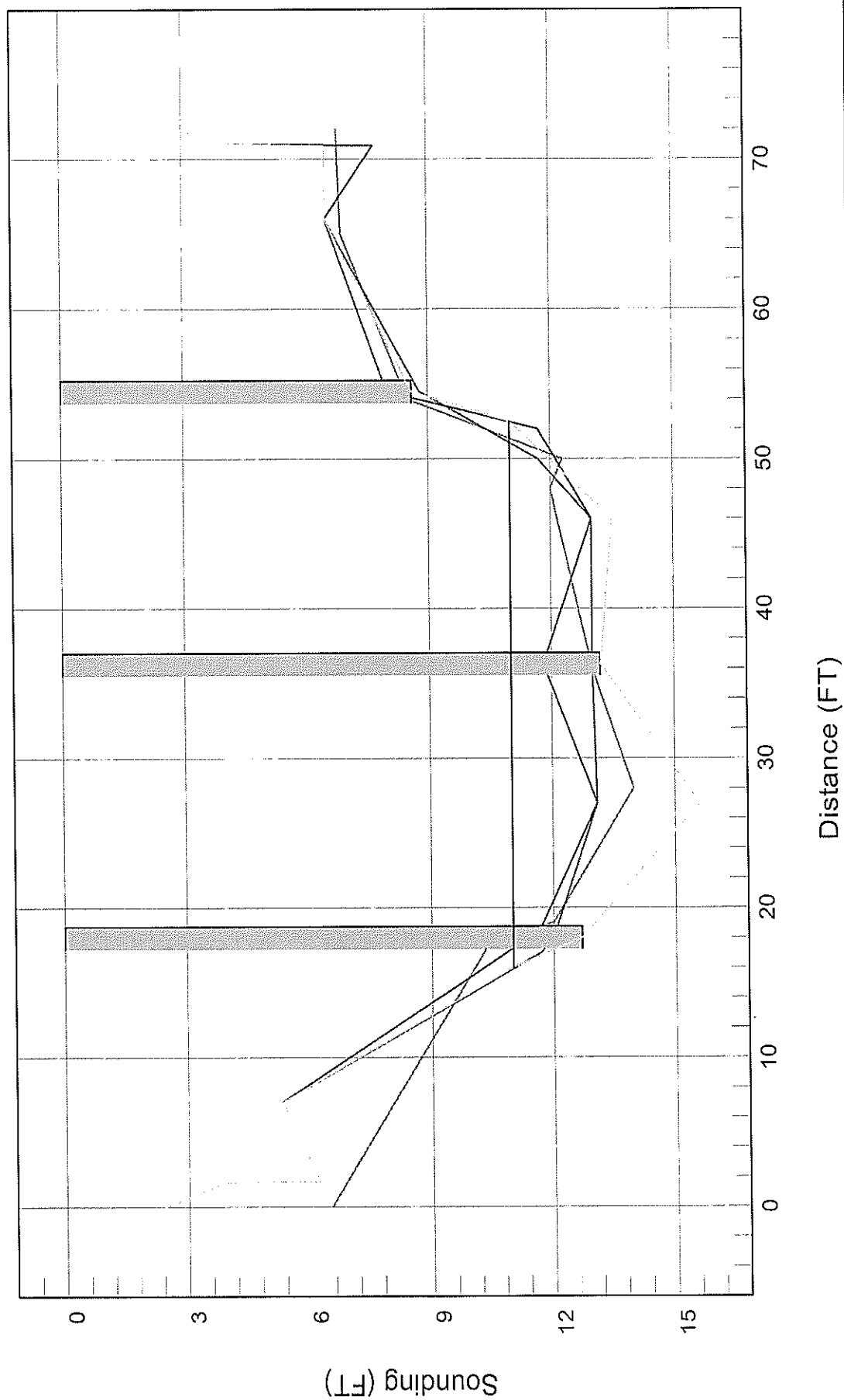
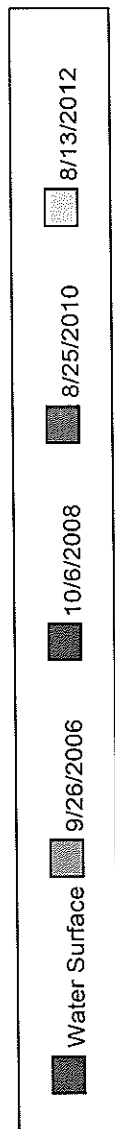
Bridge: 230175

County COLUMBUS

Date: 08/13/2012

STREAMBED PROFILE (Downstream)

Top of Rail = 0 FT (Sounding)





Columbus County
Unincorporated Areas
370305

ZONE AE

ZONE X

ZONE X

ZONE AE

PRINCESS ANN RD

PAUL BARNES RD

PRINCESS ANN RD

EMILY DR

CASEY WILLIAMS F

Dunn Swamp

Dunn Swamp

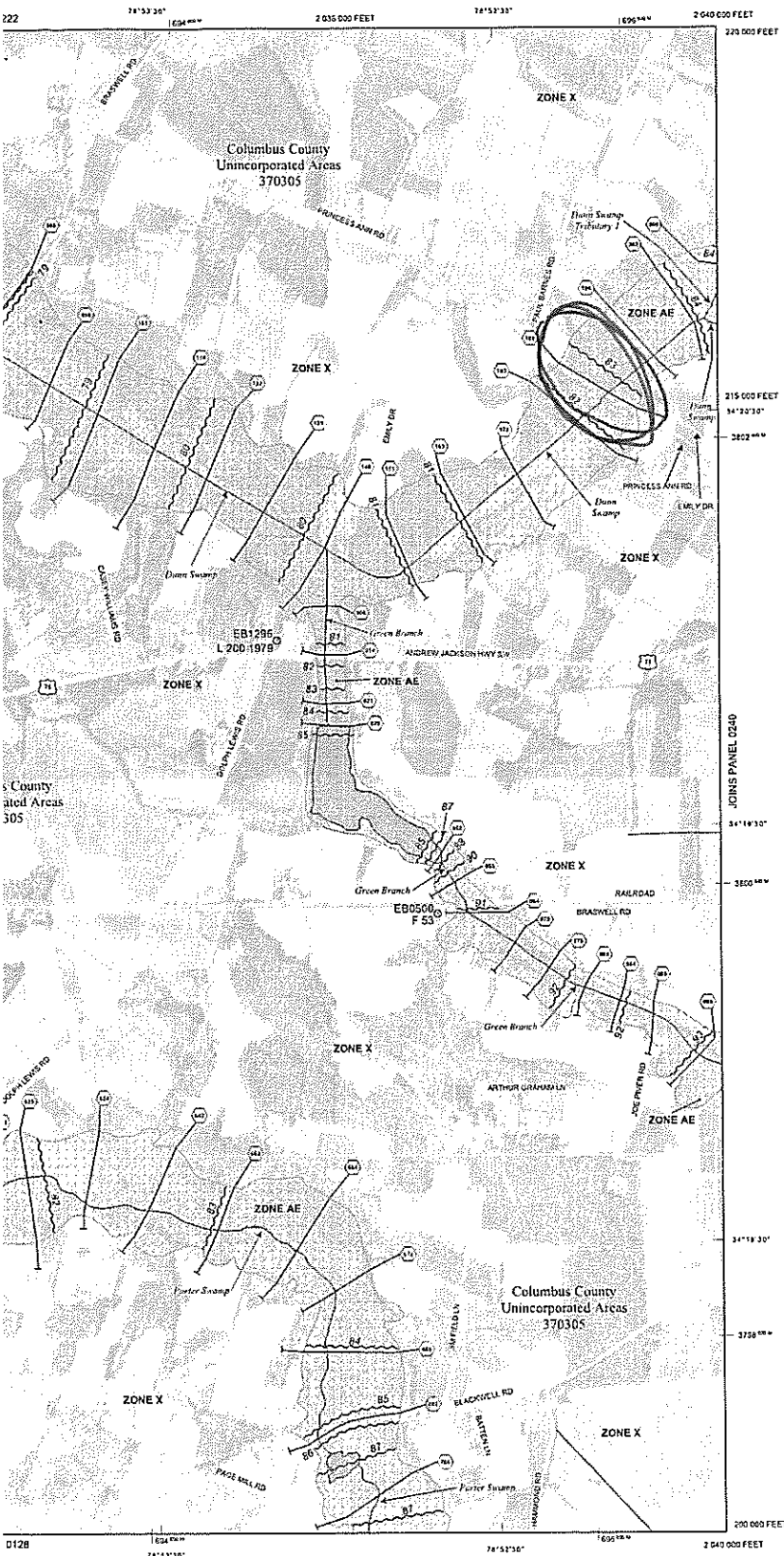
215 000 F
34° 20' 30
3802 000

Dunn Swamp
Tributary 1

BRASWELL RD

BRASWELL RD

NN RD



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, AD, 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 AD 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 Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently determined. 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 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 defining Special Flood Hazard Zones and boundary defining Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities. Base Flood Elevation line and value, elevation in feet.
Base Flood Elevation value where uniform within zone; elevation in feet.

*Referenced to the North American Vertical Datum of 1988

Cross section line
Traverse line
Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
200-meter Universal Transverse Mercator grid lines, zone 17
500-foot grid values North Carolina State Plane coordinate system (FIPS ZONE 3200, State Plane NAD 83 feet)
North Carolina Geodetic Survey bench mark (see explanation in the Datum Information section of this FIRM panel)
National Geodetic Survey bench mark (see explanation in the Datum Information section of this FIRM panel)
River Mile

MAP SCALE 1" = 1000' (1 : 12,000)

500 1000 2000 FEET
300 600 900 METERS

USERS

This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

lease 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. The National Flood Insurance Program dates for each community as well as a listing of the panels on which each is located.

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.

on accompanying Flood Insurance Study report, Letter of Map Revision (LOMR) or Letter of Map Amendment (LOMA) revising portions of this panel, and digital versions of this FIRM may be available. Visit the North Carolina Floodplain Mapping Program website at www.ncfloodmaps.com or contact the FEMA Map Service Center at 1-800-358-9616 for information on all related products associated with this FIRM. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at www.fema.gov/mfsc.

MAP REPOSITORY

Refer to Listing of Map Repositories on Map Index or visit www.ncfloodmaps.com

EFFECTIVE DATE OF FLOOD INSURANCE RATE MAP PANEL
JUNE 2, 2006

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to statewide 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, the North Carolina Division of Emergency Management or the National Flood Insurance Program at the following phone numbers or websites.

NC Division of Emergency Management
(919) 715-4000 www.ncemergency.com

National Flood Insurance Program
1-800-638-6470 www.fema.com

PANEL 0220J

FIRM

FLOOD INSURANCE RATE MAP

NORTH CAROLINA

PANEL 0220

(SEE LOCATOR DIAGRAM OR MAP INDEX FOR FIRM PANEL LAYOUT)

COMMUNITY	CEN No.	PANEL	SUFFIX
CENRO CORPO. TOWN OF COLUMBUS COUNTY	373311	0220	J
	373315	0220	J

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.

EFFECTIVE DATE
JUNE 2, 2006

MAP NUMBER
3720022000J

State of North Carolina
Federal Emergency Management Agency

Section 5.0 – Engineering Methods

Table 7—Summary of Discharges

Flooding Source	Location	Drainage Area (square miles)	Discharges (cfs)			
			10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Dunn Swamp	At Mouth	29.3	*	*	1,501	*
	Just upstream of the confluence of Green Branch	18.3	*	*	1,085	*
	Just downstream of the confluence of Dunn Swamp Tributary 1	16.8	*	*	1,024	*
	Just downstream of the confluence of Dunn Swamp Tributary 2	8.4	*	*	638	*
	Just downstream of the confluence of Dunn Swamp Tributary 3	5.2	*	*	457	*
	Approximately 1,500 feet downstream of Strawberry Boulevard	2.4	*	*	269	*
Dunn Swamp Tributary 1	At Mouth	7.1	*	*	567	*
Dunn Swamp Tributary 2	At Mouth	0.9	*	*	131	*
Dunn Swamp Tributary 3	At Mouth	2.8	*	*	298	*
Fivemile Branch	Approximately 4,550 feet downstream of Midway Road	9.18	*	*	1,550	*
	Approximately 4,450 feet downstream of Midway Road	5.13	*	*	1,110	*
	Approximately 600 feet downstream of Midway Road	4.73	*	*	1,060	*

Section 5.0 – Engineering Methods

Table 10—Limited Detailed Flood Hazard Data

Cross Section¹	Stream Station²	Flood Discharge (cfs)	1% Annual Chance Water- Surface Elevation (feet NAVD 88)	Non- Encroachment Width³ (feet)
DUNN SWAMP (continued)				
114	11,416	1,303	79.4	446 / 136
122	12,214	1,303	79.6	127 / 343
126	12,635	1,303	79.7	130 / 291
131	13,101	1,303	79.8	167 / 411
136	13,608	1,303	80.0	289 / 234
140	14,036	1,303	80.1	103 / 300
146	14,610	1,085	80.3	65 / 271
153	15,302	1,085	80.5	22 / 132
159	15,851	1,085	80.9	93 / 248
163	16,294	1,085	81.0	216 / 31
168	16,750	1,085	81.2	244 / 34
172	17,208	1,085	81.4	334 / 22
176	17,606	1,085	81.6	461 / 99
183	18,275	1,024	81.9	273 / 128
188	18,768	1,024	82.3	35 / 35
189	18,850	1,024	82.7	50 / 20
193	19,319	1,024	83.3	11 / 221
196	19,630	1,024	83.4	54 / 265
201	20,090	1,024	83.4	85 / 219
203	20,327	1,024	83.5	53 / 133
206	20,582	701	83.6	31 / 428
210	21,034	701	83.6	124 / 298
216	21,590	701	84.3	23 / 278
220	22,002	701	84.4	52 / 185
224	22,381	701	84.5	230 / 26
231	23,088	548	84.6	216 / 15
238	23,772	548	84.8	185 / 21
242	24,178	548	85.1	205 / 23
245	24,547	548	85.4	273 / 17
248	24,829	548	85.5	264 / 14
251	25,109	548	85.8	205 / 16
253	25,303	548	86.0	166 / 12
259	25,901	457	86.6	191 / 20
264	26,409	457	86.7	25 / 143
270	26,966	269	87.2	13 / 13
271	27,145	269	87.3	17 / 17
272	27,233	269	87.4	13 / 10
273	27,347	269	87.5	28 / 58
278	27,804	269	87.6	20 / 20
282	28,224	269	88.0	75 / 12
286	28,588	269	88.1	17 / 17
290	28,981	269	88.2	20 / 20
293	29,282	269	88.7	10 / 10

10/21/2002

The figure is a cross-section plot of a river channel. The y-axis is labeled 'Elevation (ft)' and ranges from 70 to 95. The x-axis is labeled 'Station (ft)' and ranges from 0 to 1200. The plot shows a V-shaped channel with a central point of interest at station 500, elevation 75. The ground profile is shown as a line with square markers. The floodway profile is shown as a line with triangle markers. The critical profile is shown as a line with circle markers. A shaded area represents the floodway. A legend on the right defines the symbols: EG FLOODWAY, WS FLOODWAY, EG PF 1, WS PF 1, Crit PF 1, Crit FLOODWAY, Ground, Ineff, and Bank Sta. The plot shows a V-shaped channel with a central point of interest at station 500, elevation 75.

