INFORMATION TO BE SHOWN ON PLANS

Design:	Discharge 700 c.f.s.	Frequency 25 YR	Elev. 2895.4'
Base Flood:	Discharge 1100 c.f.s.	Frequency 100 yr.	Elev. 2896.5'
Overtopping:	Discharge 1700+ c.f.s.	Frequency 500 YR+	Elev. 2898'

ADDITIONAL INFORMATION AND COMPUTATIONS

USGS RURAL REGRESSION

D.A. (SQ. MI.) = 1.8

	SAY
$Q_2 = 135DA^{0.702} = 204$ CFS	200 CFS
$Q_5 = 242DA^{0.677} = 361$ CFS	360 CFS
$Q_{10} = 334DA^{0.662} = 493$ CFS	490 CFS
$Q_{25} = 476DA^{0.645} = 695$ CFS	700 CFS
$Q_{50} = 602DA^{0.635} = 874$ CFS	900 CFS
$Q_{100} = 745DA^{0.625} = 1076$ CFS	1100 CFS
$Q_{200} = 908DA^{0.616} = 1304$ CFS	1300 CFS
$Q_{500} = 1160DA^{0.605} = 1655$ CFS	1700 CFS

SCOUR

THE 100 YR AND 500 YR STORMS ARE CONTAINED IN THE CHANNEL. THEREFORE THERE IS NO CONTRACTION SCOUR.

SITE DATA

Drainage Area 1.8 SQ. MI. Source FRENCH BROAD RIVER BASIN USGS QUAD

River Basin FRENCH BROAD RIVER BASIN Character RURAL AND MOUNTAINOUS

Stream Classification (Such as Trout, High Quality Water, etc.) TROUT & ORW

Data on Existing Structure 1@16.2', 1@35.8', 1@15.9' TIMBER DECK ON STEEL I-BEAMS, TIMBER BENTS AND TIMBER ABUTMENTS Waterway Opening 329 SF

Debris Potential: Low ...... Moderate X High ......

Data on Structures Up and Down Stream UPSTREAM-NONE
DOWNSTREAM-SR 1191 1@35.5' TIMBER DECK ON STEEL I-BEAMS AND TIMBER ABUTMENTS

Design Control Elev. MATCH EXISTING— 25 YR (DESIGN) = 2895.4

Gage Station No. NONE Period of Records N/A

Max. Discharge .... c.f.s. Date .... Frequency ....

Historical Flood Information: NEVER SEEN WATER OUT OF BANKS OR NEAR BOTTOM OF BRIDGE

Date ...... Elev. ...... Est. Freq. ...... Source RONNIE HUDGINS-RESIDENT Period of Knowledge 15 YR

Date ...... Elev. ...... Est. Freq. ...... Source ...... Period of Knowledge ......

Date ...... Elev. ...... Est. Freq. ...... Source ...... Period of Knowledge ......

Historical Scour Info.: General NONE OBSERVED Contraction ...... Local 2888.7

Channel Slope 0.06 Source FIELD SURVEY Normal Water Surface Elev. ......

Manning's n : Left O.B. .11 Channel .05 Right O.B. .11 Source FIELD RECONN.

Flood Study / Status NONE Floodway Established? N/A

Flood Study 100 yr. Discharge ...... c.f.s.; W.S. Elev.: With Floodway ...... Without Floodway ......

DESIGN DATA

Hydrological Method USGS RURAL REGRESSION

Hydraulic Design Method HEC-RAS 3.1.3

Floods Evaluated:

Freq.	Q	Elev.	Backwater	Bridge Opening Velocity
10 YR	490 CFS	2894.7	0.0	7.9
25 YR	700 CFS	2895.4	0.0	8.7
100 YR	1100 CFS	2896.5	0.0	9.7
500 YR	1700 CFS	2897.8	0.0	10.7

* FROM SECTION 1610 TOTAL WATERWAY OPENING = 412 SF

Waterway Opening Provided Below: Design W.S. Elev. 81.0 SF, 100yr W.S. Elev. 113.5 SF

Average Channel Velocity (Design) 8.7 Average Overbank Velocity (Design) N/A

Computed Scour : General N/A Contraction NONE Local NONE

Is a Floodway Revision Required? N/A

NOT IN FEMA AREA
FRENCH BROAD RIVER BASIN

REPORT 1 OF

MK

BRIDGE SURVEY & HYDRAULIC DESIGN REPORT

N. C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
HYDRAULICS UNIT
RALEIGH, N. C.

Stream COLBERT'S CREEK Bridge Inv. No. 289 I.D. No. B-4330 Project No. 33667.7.7

I.D. No. B-4330 Project No. 33667.7.7 Proj. Station 14+42.50

County YANCEY Bridge Over COLBERT'S CREEK Bridge Inv. No. 289

On Highway SR 1158 Between DEAD END and SR 1191

Recommended Structure 1@85, 39" BOX BEAM OAL=85'

Recommended Width of Roadway ...... Skew 120.00

Recommended Location is ([✓ Up], At, ~~Down~~) Stream from Existing Crossing. DOWNSTREAM

Nearest Shipping Point SPRUCE PINE On CSX R.R., 16.8 Miles From Bridge

Bench Mark is BM 2-RR SPIKE IN POWER POLE -BL- STA 12+05 50' RT

Elev. 2900.35 Datum: NAVD 88

Temporary Crossing NOT REQUIRED

Designed by: SUNGATE DESIGN GROUP, PA

Date 5/5/06

Assisted by: WHW, RHK, JRH, FFF

Project Engineer: W. HENRY WELLS, JR

Reviewed by: Galen Cail

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 9334 W. HENRY WELLS, JR.

5/2/06