

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 NA
 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 0.11 Channel 0.05 Right 0.11 Source FIELD RECONN.
 Flood Study / Status NONE Floodway Established? NA
 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) NA
 Computed Scour: General NA Contraction NONE Local NONE
 Is a Floodway Revision Required? NA

BRIDGE SURVEY & HYDRAULIC DESIGN REPORT

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

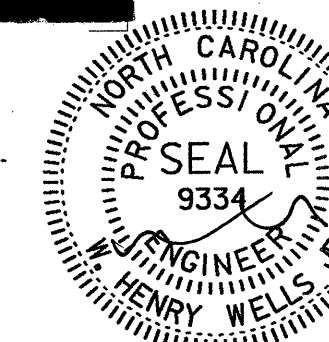
I.D. No. B-4330 Project No. 33667.7.7 Proj. Station 14±42.50
 County YANCEY Bridge Over COLBERT'S CREEK Bridge Inv. No. 289
 On Highway SR 1158 Between DEAD END and SR 1191
 Recommended Structure 1@85, 39" BOX BEAM OAL=85'
 Recommended Width of Roadway..... Skew 120.00
 Recommended Location Is (Up, At, 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



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

Designed by: SUNGATE DESIGN GROUP, PA
 Assisted by: WHW, RHK, JRH, FFF
 Project Engineer: W. HENRY WELLS, JR.
 Reviewed by: Galen Cail

Date 5/5/06



5/2/06