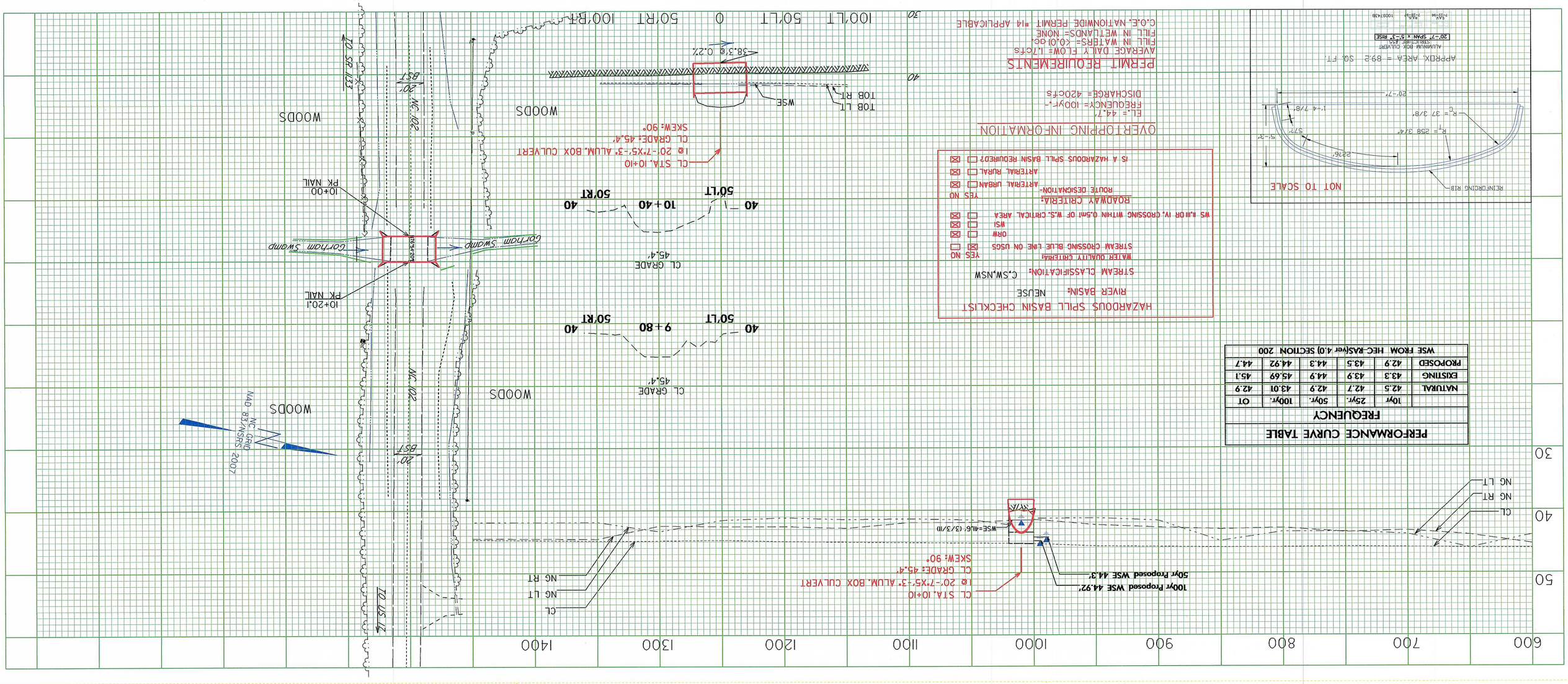

ADDITIONAL INFORMATION AND COMPUTATIONS

HYDROLOGY:

DA: 1.5 sq mi All discharges from USGS(regression eqn.) rural-coastal plain.

Q_{10} = 225 cfs

Q_{25} = 315 cfs

Q_{50} = 400 cfs

Q_{100} = 485 cfs

PERMIT REQUIREMENT :

Average daily flow : 1.7cfs

Fill in waters : <.01 AC

Fill in wetlands : <0.1 AC

NW #14 applicable.

CAMA APPROVAL REQUIRED.

State stormwater certification required.(or state stormwater permit)

HISTORICAL HIGH WATER INFO.

1) A local mailman has only seen the creek up to about 1' below low steel during major storm events.

SITE DATA

Drainage Area 1.5 Sq mi Source Prior Survey / USGS Quad Map

River Basin Neuse Character Rural/Wooded

Stream Classification (Such as Trout, High Quality Water, etc.) C,Sw,Nsw

Data on Existing Structure Reinforced conc. floor on timber joist BMD-10.

Debris Potential: Low ____ Moderate X High ____

Data on Structures Up and Down Stream Upstream: None, Downstream: N/A

Gage Station No. ____ Period of Records ____

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

Historical Flood Information:

Date ____ Elev. 42.5' Est. Freq. 5yr Source Mailman Period of Knowledge 7yrs

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

Allowable HW Elev. Match existing Ordinary High Water Elev. 41.60'

Manning's n : Left O.B. .15 Channel .05 Right O.B. .15 Obtained From Field investigation

Flood Study / Status NO / N/A Floodway Established? N/A

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

DESIGN DATA

Hydrological Method Usgs, Rural regression eq. (Coastal plain)

Hydraulic Design Method Hec-Ras (VER 4.0)

Design Tailwater : Q_{10} 42.5' ; Q_{25} 42.7' ; Q_{50} 42.7' ; Q_{100} 42.92' ; Q_{500} OT = 44.72'

Size & Type	Q	Ke	Inlet Control HW/D	Inlet Control H.W.	Outlet Control dc	Outlet Control $\frac{dc+D}{2}$	Outlet Control h_o	Outlet Control H	Outlet Control LS_o	Outlet Control H.W.	Remarks
				Computations from Hec-Ras model.							

Is a Floodway Revision Required? NOT REQUIRED.

Outlet Velocity,(V_{10}) 5.03 ft/s Natural Channel Velocity,(V_{10}) 5.0 ft/s

Required Outlet Protection NOT REQUIRED.

INFORMATION TO BE SHOWN ON PLANS

Design: Discharge 400 c.f.s. Frequency 50 yr Elev. 44.3'

Base Flood: Discharge 485 c.f.s. Frequency 100 yr. Elev. 44.92'

Overtopping: Discharge 420 c.f.s. Frequency 50 yr+ Elev. 44.7'

CULVERT SURVEY & HYDRAULIC DESIGN REPORT

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

I.D. No. ____ Project No. 2B.2007111 Proj. Station 10+10

County Beaufort Stream Gorham Swamp Stru. No. 0023

On Highway NC 102 Between US 17 and SR 1133

Recommended Structure 1 @ 20'-7" X 5'-3" Alum. Box Culvert.

Recommended Width of Roadway 22' Skew 90°

Recommended Location is (Up, At, Down) ~~Stream~~ ~~from~~ Existing Crossing.

Bench Mark is Brg nail at the base of an 18" hard wood tree. Approx. location is at 10+84, o/s 38' RT Elev. 44.14' Datum: NAVD 88

Temporary Crossing NOT REQUIRED

Designed by: ECA

Assisted by: RAB

Project Engineer: RAB

Reviewed by: RAB

Date 7/11/11

NORTH CAROLINA PROFESSIONAL SEAL 022507 ENGINEER RANDALL A. BOYD

Stream Gorham Swamp Struc. Inv. No. 0023 I.D. No. ____ Project No. 2B.2007111 File 060023 2011FA GORHAM SWAMP CRK.PDF