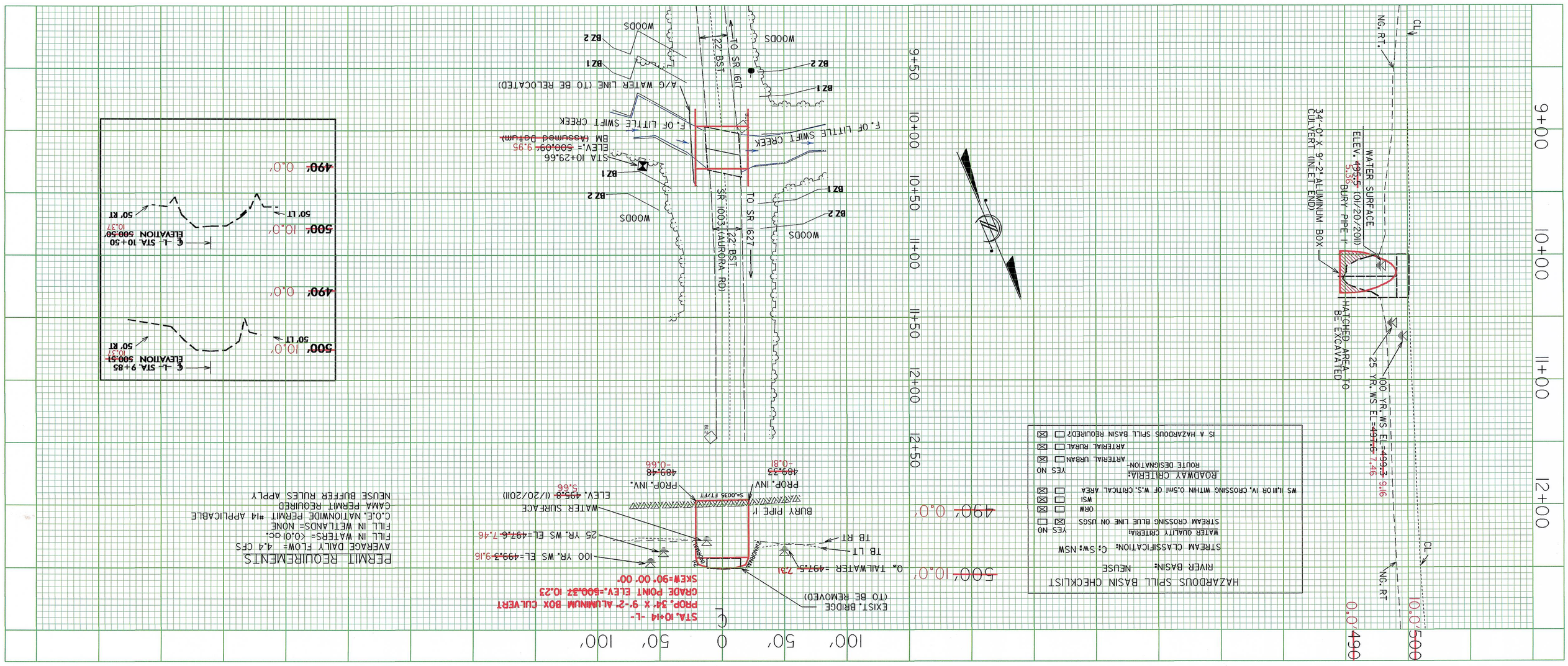

ADDITIONAL INFORMATION AND COMPUTATIONS

HYDROLOGY:

USGS-RURAL REGRESSION EQUATIONS (WRI01-4207)

COASTAL PLAIN

DA: 3.8 SQ MI

Q_2 = 430 CFS USGS-RURAL/COASTAL PLAIN

Q_5 = 620 CFS USGS-RURAL/COASTAL PLAIN

Q_{10} = 800 CFS USGS-RURAL/COASTAL PLAIN

Q_{25} = 1000 CFS USGS-RURAL/COASTAL PLAIN

Q_{50} = 1,150 USGS-RURAL/COASTAL PLAIN

PERFORMANCE TABLE

FREQUENCY	NATURAL	EXISTING	PROPOSED
10 YR	~~496.70~~ 6.56	~~496.75~~ 6.61	~~496.68~~ 6.54
25 YR	~~497.54~~ 7.4	~~497.64~~ 7.5	~~497.59~~ 7.45
50 YR	~~498.29~~ 8.15	~~498.41~~ 8.27	~~498.41~~ 8.27
100 YR	~~498.94~~ 8.8	~~499.44~~ 9.3	~~499.31~~ 9.17
OT	~~499.72~~ 9.58	~~500.61~~ 10.47	~~500.53~~ 10.39

Banks are unstable.

Bed material is composed of muck.

SITE DATA

Drainage Area 3.8 SQ MI Source 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 RC FLOOR ON TIMBER JOIST, E.BTS&INT.BTS.: TIM. CAP ON TIM. PILES SPANS: 1@17'-7"; 1@17'-9". WATERWAY OPENING 203 SQ FT

Debris Potential: Low ____ Moderate X High ____

Data on Structures Up and Down Stream U/S: Brg 240064, 3 LNS 87X63 CMPA

Gage Station No. – Period of Records –

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

Historical Flood Information:

Date 9/2010 Elev. ~~499.71 +/-~~ 7.56 +/- Est. Freq. ____ Source Bridge Maintenance Period of Knowledge ____

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

Allowable HW Elev. ~~499.44~~ 9.3 (EX. 100 YR WSEL) Normal Water Surface Elev. ~~495.8~~ 5.66 Adjacent Stream

Manning's n : Left O.B. 0.13 Channel 0.049 Right O.B. 0.13 Obtained From Fisher Swamp

Flood Study / Status N/A Floodway Established? No

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

DESIGN DATA

Hydrological Method USGS(rural-regression eqn. coastal).

Hydraulic Design Method Hec-Ras(ver.4.1)

Design Tailwater : Q_{10} ~~496.59~~ 6.45 ; Q_{25} ~~497.45~~ 7.31 ; Q_{50} ~~498.19~~ 8.05 ; Q_{100} ~~498.88~~ 8.84 ; Q_{500} ~~499.31~~ 9.17

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 VER 4.1											

Is a Floodway Revision Required? NO

Outlet Velocity, (V_{10}) 3.12 ft/s Natural Channel Velocity, (V_{10}) 3.12 ft/s

Required Outlet Protection NO

INFORMATION TO BE SHOWN ON PLANS

Design: Discharge 620 c.f.s. Frequency 25 yr. Elev. ~~497.59~~ 7.31

Base Flood: Discharge 1000 c.f.s. Frequency **100 yr.** Elev. ~~499.31~~ 9.17

Overtopping: Discharge 1300 c.f.s. Frequency OT Elev. ~~500.53~~ 10.39

F. OF LITTLE SWAMP Stream ____ Struc. Inv. No. 0019 I.D. No. ____ Project No. ____ PDF File 240019 2011 F.A. F. OF LITTLE SWAMP CREEK

CULVERT SURVEY & HYDRAULIC DESIGN REPORT

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

I.D. No. FA Project No. ____ Proj. Station 10+14

County CRAVEN Stream FORK OF LITTLE SWAMP CREEK Stru. No. 0019

On Highway SR 1003 Between SR 1617 and SR 1627

Recommended Structure 34' x 9'-2" ALUMINUM BOX CULVERT (TOTAL LENTGH=42.4 FT)

Recommended Width of Roadway 38' SHLDR. PT. TO SHLDR. PT. Skew 90°

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

Bench Mark is an assumed datum, bridge nail at the base of a twin 12"/24" hardwood tree approximately @ sta. 10+29.66'o/s right. Elev. ~~500.09'~~ 9.95' Datum: ~~Assumed~~

Temporary Crossing NOT REQUIRED

Designed by: BMR

Assisted by: ECA

Project Engineer: RAB

Reviewed by: RAB

Date ____

ORIGINAL SEALED BY R.A. BOYD ON 5/24/11. REVISED TO SHOW CORRECT DATUM

*NEW SEAL IS FOR ELEVATION CORRECTIONS ~~ONLY~~

NORTH CAROLINA PROFESSIONAL SEAL 038249 ENGINEER PAUL A. JORDAN, JR. PE

1-9-12