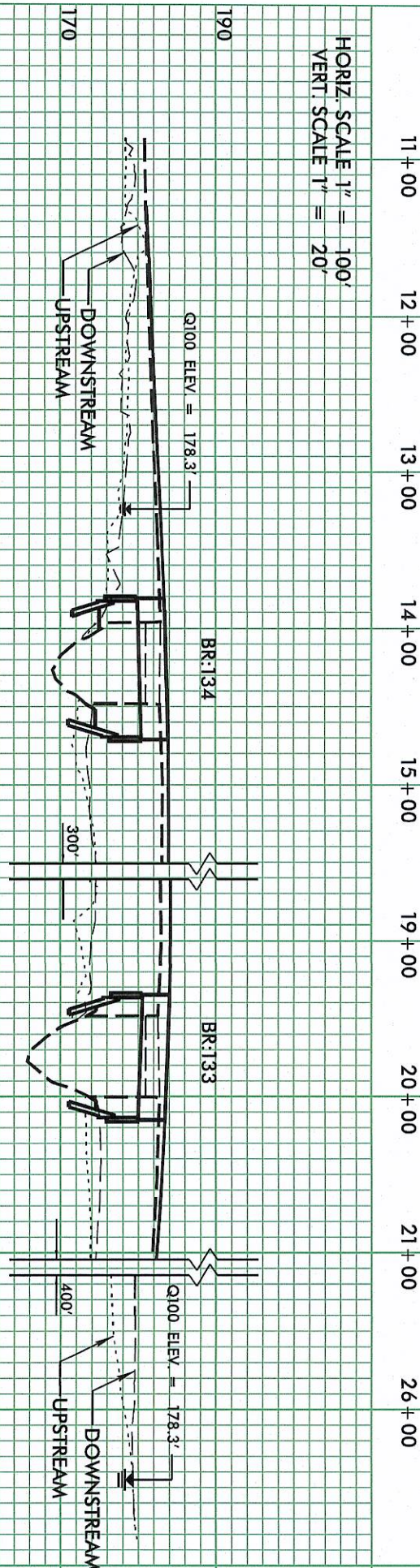
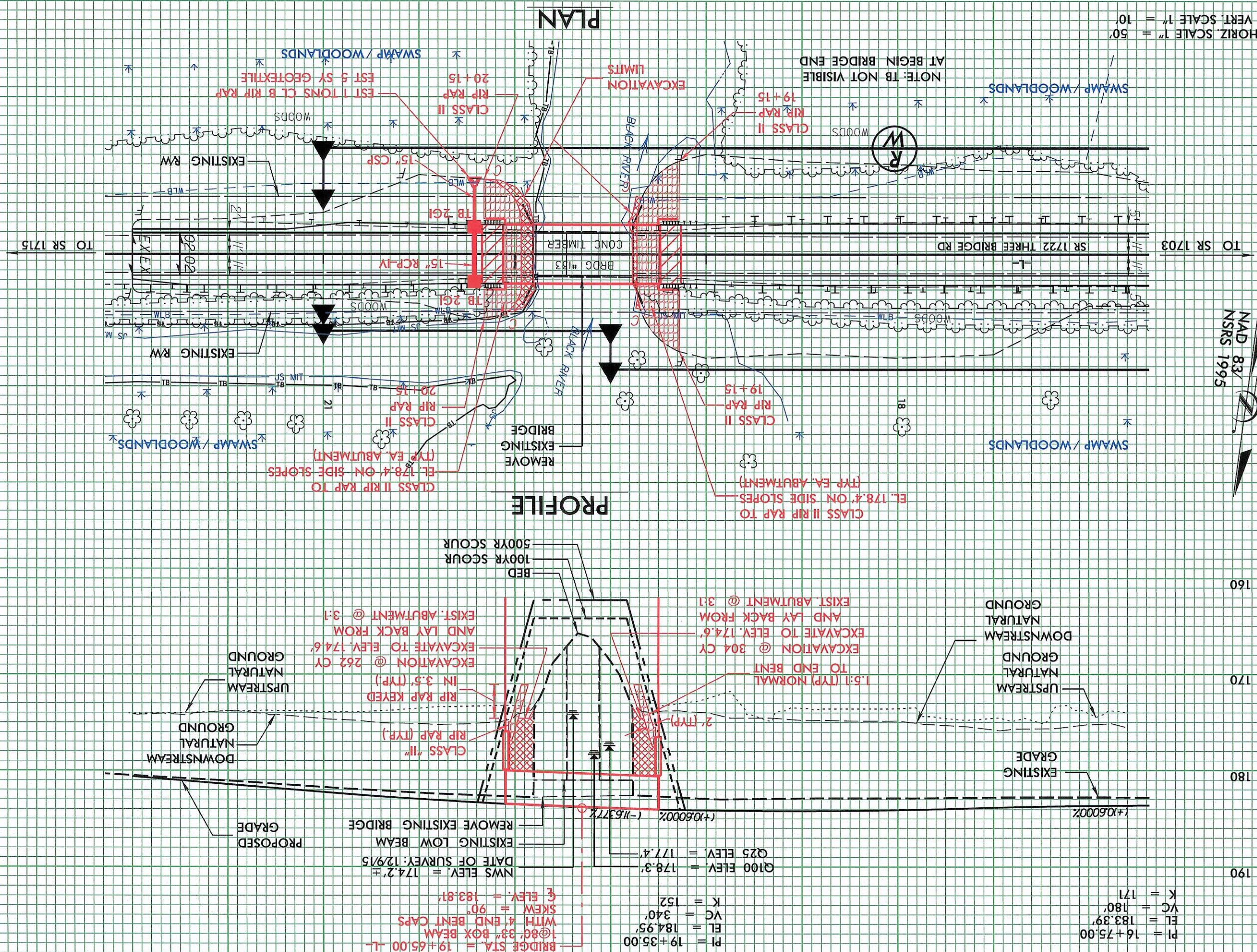
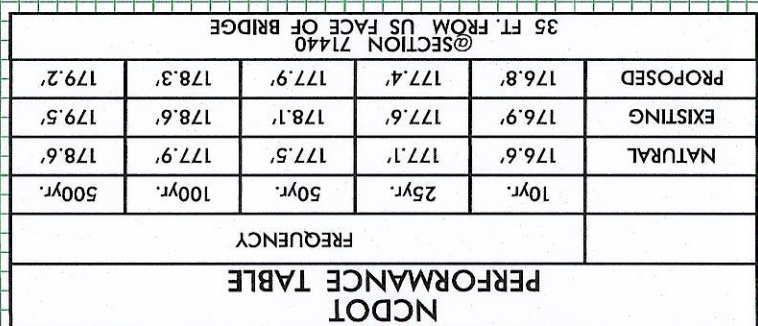




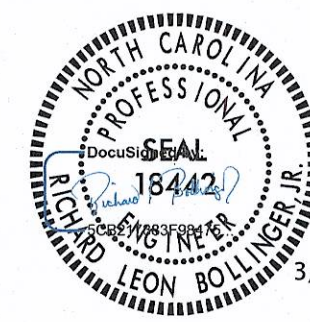
NO STRUCTURES WILL BE ADVERSELY IMPACTED BY WSEL'S FROM THIS PROJECT.

SITE DATA
 DELINEATED USGS STREAMSTATS &
 Drainage Area 37.4 SQ. MI. Source ArcGIS USGS TOPO BASEMAP
 River Basin CAPE FEAR Character RURAL
 Stream Classification (Such as Trout, High Quality Water, etc.) C;Sw
 Data on Existing Structure 1 SPAN @ 18', 1 SPAN @ 17', 1 SPAN @ 18'; RC DECK ON TIMBER JOISTS
WITH TIMBER CAPS & PILES W/STEEL CRUTCH BENTS Total Waterway Opening 514 s.f.
 Waterway Opening Below 100yr. WS EL. 371 s.f.
 Debris Potential: Low Moderate High X
 Data on Structures Up and Down Stream US: BR420017 SPANS: 1@51'1", 1@51'1", 1@51'1"; PPC CORED
SLAB W/RC CAPS ON H.PILES; HEIGHT CROWN TO BED = 10' | D/S: BR 420131 SPANS: 1@28'9"
1@29', 1@28'9"; PPC CORED SLAB W/PPC CAPS/H-PILES, CROWN TO BED = 12'
 Design Control Elev. 178.6 ft. EXISTING Q100 WSEL @ RS 71440
 Gage Station No. N/A Period of Records N/A yrs.
 Max. Discharge N/A c.f.s. Date N/A Frequency N/A
 Historical Flood Information: *SEE ADDITIONAL INFORMATION AND COMPUTATIONS SECTION
 Date N/A Elev. N/A ft. Est. Freq. N/A yr. Source JAMES LEE (LOCAL RESIDENT) Period of Knowledge 5 yrs.
DARREN PITTMAN Period of Knowledge 20+ yrs.
 Date N/A Elev. 179.2' ± ft. Est. Freq. 500 yr. Source (DIVISION BRIDGE SUPERVISOR)
 Flood History Scour Info. : General N/A ft. Contraction N/A ft. Local N/A ft.
 Channel Slope 0.00075 f/ft Source USGS TOPO Normal Water Surface Elev. 174.2' ± ft.
 Manning's n: Left 0.15 Channel 0.06 Right 0.15 Source EFFECTIVE MODEL & FIELD VISIT PHOTOS
FEMA FIS LIMITED DETAIL STUDY
 Flood Study /Status (EFF 10/3/2016; REV 7/17/2007) Non-Encroachment Established? YES
 Flood Study 100yr. Discharge 4604 c.f.s. WS Elev.: With Non-Encroachment 182.15 ft. Without Non-Encroachment 182.16 ft.
DESIGN DATA @ River Station 71411
 Hydrological Method USGS SIR 2009-5158 (REGION IV)
 Hydraulic Design Method HEC-RAS VERSION 4.1.0 B4544 BLACK RIVER SR1722
 Floods Evaluated:

Freq. (yr.)	Q (c.f.s)	Elev. (ft.)	Backwater (ft.)	Bridge Opening Velocity (f.p.s.)
<u>10</u>	<u>1600</u>	<u>176.8</u>	<u>0.2</u>	<u>2.6</u>
<u>25</u>	<u>2200</u>	<u>177.4</u>	<u>0.3</u>	<u>3.2</u>
<u>50</u>	<u>2700</u>	<u>177.9</u>	<u>0.4</u>	<u>3.6</u>
<u>100</u>	<u>3300</u>	<u>178.3</u>	<u>0.4</u>	<u>4.0</u>
<u>100 FEMA</u>	<u>4604</u>	<u>179.3</u>	<u>-</u>	<u>5.3</u>
<u>500</u>	<u>4500</u>	<u>179.2</u>	<u>0.6</u>	<u>5.1</u>
<u>OT</u>	<u>5575</u>	<u>179.8</u>	<u>0.7</u>	<u>5.7</u>

 Waterway Opening Provided Below: Design W.S. Elev. 409 s.f., 100yr W.S. Elev. 470 s.f., Total 645 s.f.,
 Average Channel Velocity (Design) 2.3 f.p.s. Average Overbank Velocity (Design) 0.9 f.p.s.
 Computed Scour: General N/A ft. Contraction 100YR: 1.5' 500YR: 3.5' ft. Local N/A ft.
 Is a Floodway Revision Required? MOA TYPE 2A; MAX DECREASE 0.3' @ RS 71440

Reviewed by: Craig A. Freeman Jr.



3/22/201