Combined Concurrence

Point 2A (Revised) and 4B Meeting

NC 143 Improvements

From West Buffalo Creek to NC 143 Business, west of Robbinsville

Graham County

WBS No. 34508.1.1

STIP Project No. R-2822B

May 18, 2022, at 1:00 pm
North Carolina Department of Transportation

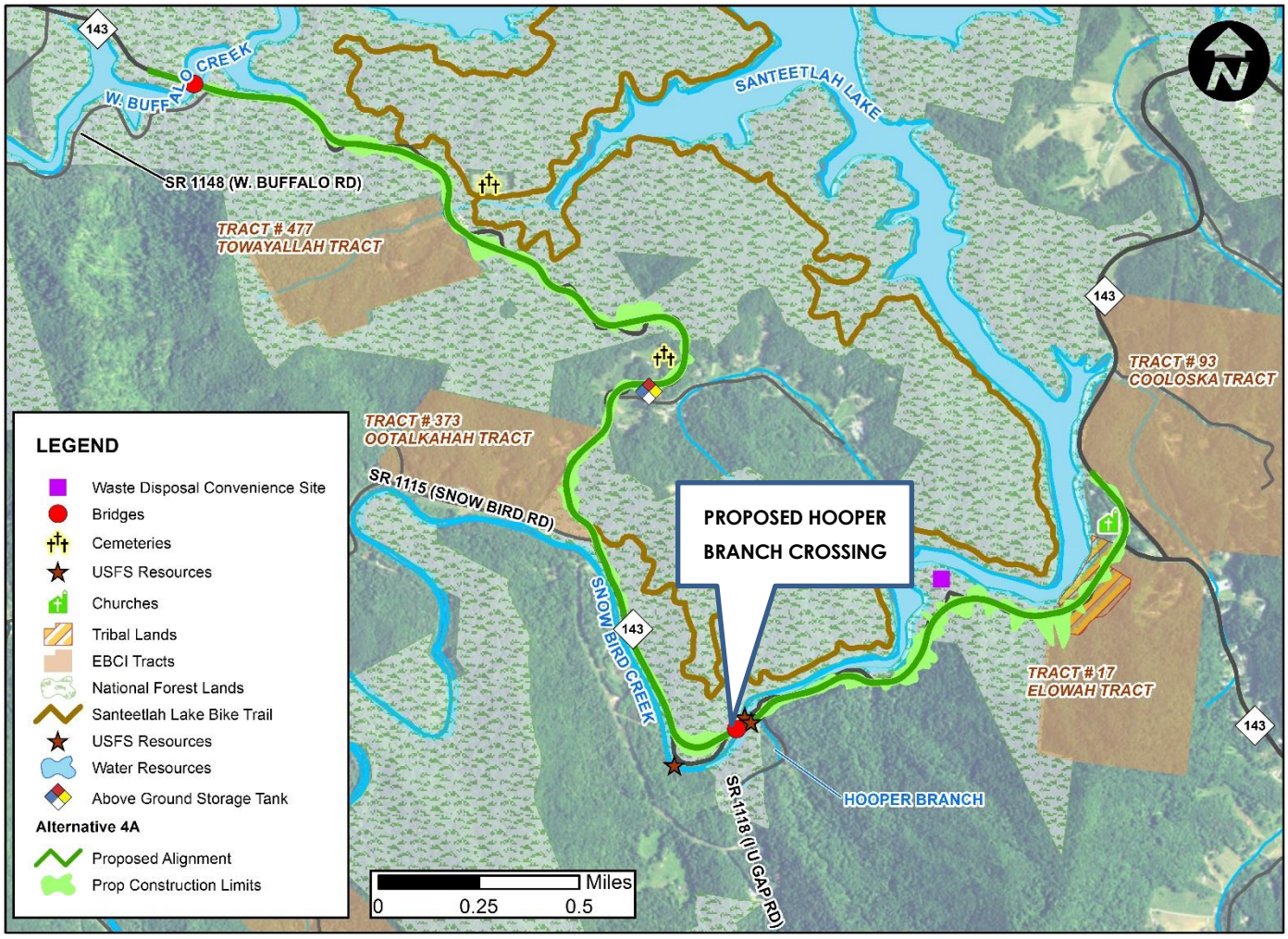
Prepared By
Stantec Consulting Services, Inc.
801 Jones Franklin Road, Suite 300
Raleigh, NC 27606
919-851-6866

1.0 Project Description

The North Carolina Department of Transportation (NCDOT) proposes to make safety improvements along NC 143 from West Buffalo Creek to NC 143 Business, west of Robbinsville in Graham County. The project corridor is approximately 4.5 miles long. The project location is shown below in Figure 1. This project is included in the 2020 - 2029 State Transportation Improvement Program (STIP) as Project R-2822B.

The proposed improvements include upgrading NC 143 to ensure that all vertical and horizontal curves have a minimal design speed of 35-mph. The project will widen the lanes to 11feet and widen the shoulders to 6feet (4-foot paved), which is consistent with the minimal recommendations for a Rural Collector in the NCDOT 3-R guidance.

Figure 1: Build Alternative



2.0 Concurrence Point 2 Recap

- During the **March 22, 2018**, Combined Concurrence Point 1, 2, and 2A Meeting, it was concurred that a 115-foot long, 8x8 reinforced concrete box culvert (RCBC) would be constructed at the new Hooper Branch crossing along each of the Alternatives Carried Forward.
- The replacement of Bridge #13 over Snowbird Creek was added to the scope of the LEDPA (Alternative 4A) during the Concurrence Point 3 Meeting, which was

conducted on **March 20, 2019**. Staged construction would be the method of reconstruction for Bridge #13 due to no feasible off-site detours.

- Due to the staged construction, the modified alignment would require a new approximately 60-foot long hydraulic structure at Hooper Branch instead of the previously recommended 115-foot long 8x8 RCBC. This would also allow for the removal of the 48-inch Corrugated Metal Pipe (CMP) along existing NC 143.
- During the meeting, the US Fish and Wildlife Service (USFWS) and the US Forest Service (USFS) requested a bottomless hydraulic structure be evaluated at this location. The following commitment was developed and included in the draft MCDC:

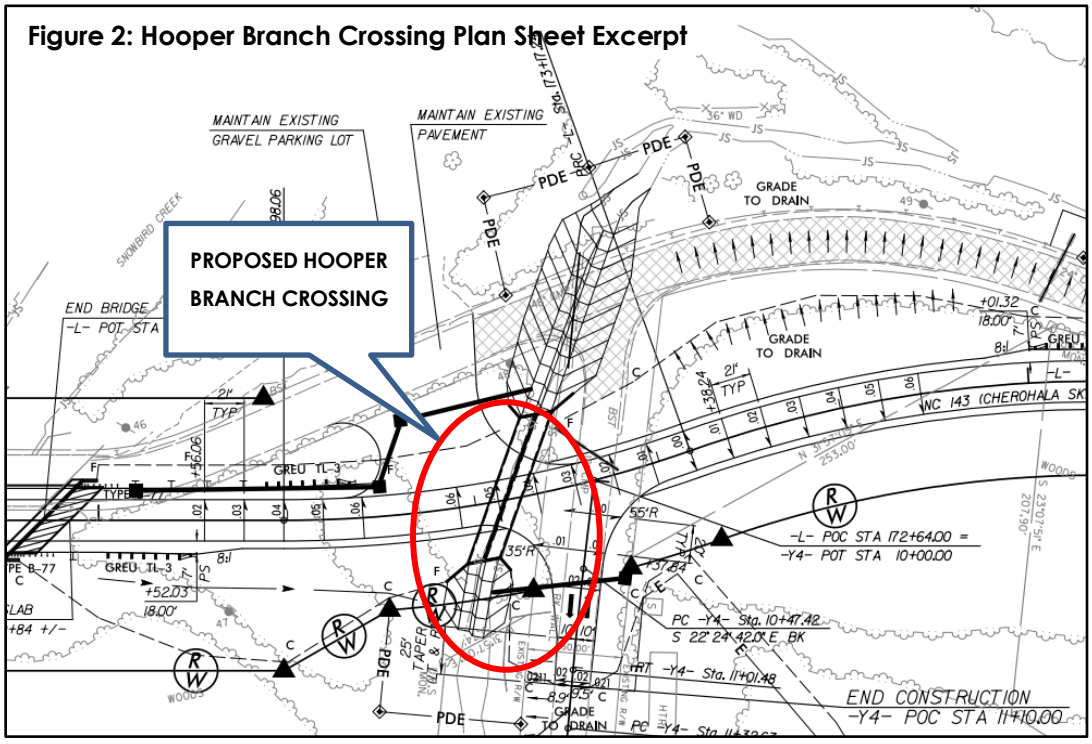
"NCDOT will evaluate the feasibility of a bottomless hydraulic structure at the Hooper Branch crossing. Geotechnical information is required to make a final determination. NCDOT will provide the Merger Team with final hydraulic recommendations once information is available.

- NCDOT committed to revisiting CP2A if the geology prohibited the construction of a bottomless culvert and necessitated the need for a standard box culvert at Hooper Branch.

3.0 Concurrence Point 2A Update

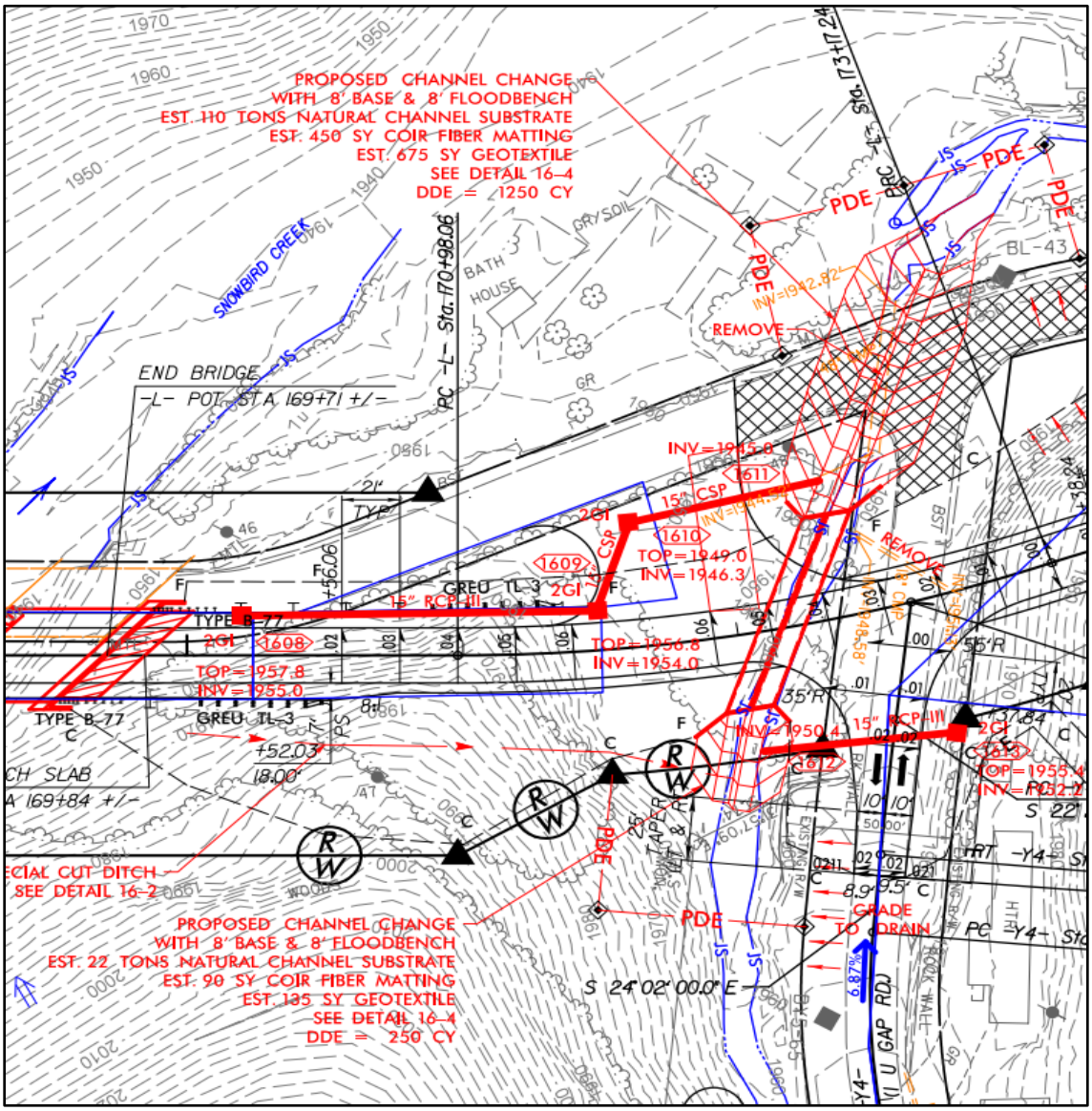
- NCDOT Hydraulics Unit design guidelines dictate that three-sided culverts must be founded on shallow rock (<3-feet deep).
  - Geotechnical investigations found that bedrock was approximately 13feet deep at the proposed location of the Hooper Branch crossing.
  - Based on NCDOT Hydraulic Unit guidelines, a three-sided culvert is not at viable at the proposed location.
- It is recommended that a **double 8-foot x 7-foot, 82-foot long RCBC**, with low and high flow barrels buried one foot in the ground be constructed at Hooper Branch. The low flow culvert will have a 1-foot sill at each end and the high flow culvert will have a 2-foot sill at each end. Figure 2 shows the location of the Hooper Branch Crossing.

Figure 2: Hooper Branch Crossing Plan Sheet Excerpt



- The existing culvert is proposed to be removed and a ditch will be graded from the proposed culvert to the main channel of Snowbird Creek.
  - During the April 18, 2022, Field Meeting, USFS noted "*the final look [of the graded portion of Hooper Branch] should not be a ditch but restored in cohesion with the natural surroundings that exist.* "
- Impacts to the EBCI cultural wash site must be coordinated with the US Army Corps of Engineers (USACE). The site is identified roughly as the area bordered by existing NC 143, Snowbird Creek, and Hooper Branch including the picnic area.
  - USACE noted "impacts [to Hooper Branch] should not exceed what is shown in the current plans as this was the design used during tribal consultation."
- Figure 3 shows the Recommended Hydraulics Design in the vicinity of the Hooper Branch crossing.

Figure 3: Red Line Hydraulic Plans Sheet Excerpt



- Figure 4 is an excerpt from the Culvert Conceptual Design showing the stream profile and the placement of the proposed new culvert in relation to the existing roadbed and culvert.

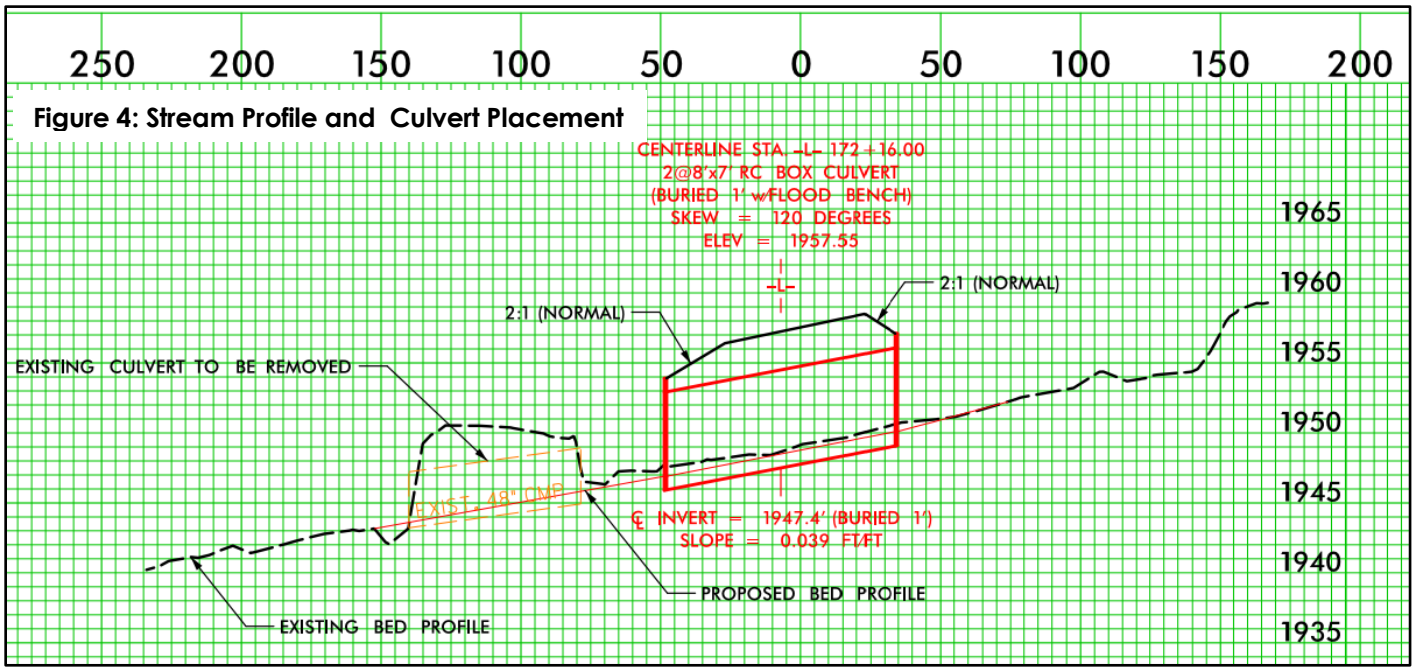


Figure 4: Stream Profile and Culvert Placement

Table1: Additional Stream Information

	Hooper Branch
DWQ Index Number	*2-190-9-(15.5)*
Best Usage Classification	*C; Tr*
Bank Height (ft)	*0.5*
Bankfull Width (ft)	*3*
Water Depth (in)	*2 – 3*
Channel Substrate	*Cobble, Gravel*
Velocity	*Moderate*
Clarity	*Clear*
Classification	*Perennial*
River Basin Buffer Rules	*Not Subject*