



**STATE OF TENNESSEE**  
**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF STRUCTURES**  
SUITE 1100, JAMES K. POLK BUILDING  
NASHVILLE, TENNESSEE 37243-1402  
(615) 741-3351

**BUTCH ELEY**  
DEPUTY GOVERNOR &  
COMMISSIONER OF TRANSPORTATION

**BILL LEE**  
GOVERNOR

19 May 2023

Mr. Steve Sellers, P.E.  
Blue Oval City Program Manager  
Headquarters Construction Division  
James K. Polk Building, Suite 700  
505 Deaderick Street  
Nashville, Tennessee 37243

**Subject:** PIN 132709.00  
State Route 222 Widening  
Over Unnamed Branch  
L.M. 2.30  
Haywood County

Dear Mr. Sellers:

This office has completed the hydraulic analysis of the subject project and is forwarding the following hydraulic information for your use in completing plans. The proposed grade, dated March 8, 2023, is satisfactory for final design.

The proposed structure at station 3088+79.46 ( $\pm$ ) over an unnamed branch will include an inlet and outlet extension of the existing 3 @ 14' x 10', 60° skew, reinforced concrete box bridge. The following information must be included in the plans profile sheet.

Station 3088+79.46 ( $\pm$ ) ----- 3 @ 14' x 10', 60° skew, RCBB  
Drainage Area ----- 0.99 mi<sup>2</sup>  
Design Discharge (100 YR) ----- 1070 cfs  
100 YR Backwater ----- 0.37 ft. at El. 309.96 ft.  
100 YR Velocity ----- 2.98 fps  
500 YR Discharge ----- 1300 cfs at El. 310.28 ft.  
Inlet Invert Elevation ----- 301.56 ft.  
Outlet Invert Elevation ----- 300.65 ft.  
Approach Overtopping Elevation ----- 316.08 ft.  
Standard Drawing Numbers ----- STD-17-100

Comments:

- Adequate ROW should be provided for rip-rap slope protection at the culvert headwalls.
- The two-year flow of 434 cfs should be used for channel diversion design, if needed.
- Traffic is to be maintained utilizing phased construction.

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- The stream channel shall be constructed so that it aligns with a single barrel of the stream conveyance structure, to provide a “low flow” channel within a multiple barrel embedded structure.
- Standard 2’ embedment may not be possible due to culvert extension, rather than replacement.
- This project is in a designated FEMA floodplain, but no detailed study has been done. Our office has determined that we have not increased the base flood elevation by more than one foot and that we are in compliance with FEMA standards.

If you have any questions or if we can be of any further assistance, you may contact this office.

Sincerely,

*Amanda P. Whitlock*

(for)  
Ted Kniazewycz, P.E.  
Engineering Director, Structures

WWP: apw

cc: Mr. Brandon Akins, P.E.  
Mr. John Pankey, P.E.  
Ms. Jill Stanko, P.E.  
R4 EnvTechOffice  
Mr. Robbie Stephens, P.E.  
TDOT.Env Permits  
TDOT.Env. NEPA  
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Ms. Kathleen McLaughlin, P.E.  
Mr. Wesley Peck, P.E.