

SITE ID: 044-01-876e9

Site address: 175 MCCLURE COVE, CLYDE, NC, 28721

North Carolina Emergency Management – Private Roads and Bridges

Site Information Form

Site Number: 044-01-876e9

Site Address: 175 McClure Cove, Clyde, NC, 28721

GPS Coordinates: 35.5507, -82.9295

County: Haywood

Bridge Type: Steel I-beam with Timber Decking or Modular Steel Bridge

Span Length: 50 ft Standard Bridge or 60 ft Modular Bridge. Refer to BSR for required waterway opening.

Bridge Width: 12'-0" Clear Width

Substructure Type: Concrete Cap on Drilled-in Piles

Geotechnical Information: See Standard Bridge Plans or the Modular Bridge Substructure Plans for Notes

Additional Notes:

Timber bridge railing not required for Steel I-beam with timber decking option.

Modular Steel Bridge option shall include guardrail as part of the system.

Wingwalls are not required.

The existing bridge is in place and must be removed by the Contractor prior to the start of construction.

No known debris or obstructions in the stream requiring removal.

BRIDGE SURVEY & HYDRAULIC DESIGN REPORT

NC DEPARTMENT OF EMERGENCY MANAGEMENT
PRIVATE ROADS AND BRIDGES PROGRAM

Site Number 044-01-876e9 Latitude 35.55074 Longitude -82.92967

County Haywood Address near 175 McClure Cove Rd.

City Clyde, NC Zip Code 28721

Recommended Structure 1 @ 60' Modular Bridge (50' effective length)

Recommended Width of Roadway ____ Skew ____

Recommended Location is (At, Upstream, Downstream) of Existing Crossing

Temporary Crossing



I hereby certify that that I have reviewed the existing hydraulic conveyance at this site which was a 35 ft existing bridge with the proposed conveyance provided by the proposed 60.0 ft. span bridge.

The proposed bridge low chord for the bridge shall be set in accordance with the the FEMA Disaster Specific Guidance for the Replacement of Private Roads and Bridges issued on 14 February 2025, "to provide bridge/culvert design plans certified (sealed, signed, and dated) by a Professional Engineer licensed in the State of North Carolina demonstrating that the newly designed and installed private bridge/culvert provides conveyance greater than or equal to the original destroyed crossing".

This certification demonstrates that the newly designed and installed private bridge/culvert provides conveyance greater than or equal to the original destroyed crossing. This is based on the best available data provided from post storm evaluations. Portions of the existing structures may have been destroyed, removed, modified or shifted from their original location or elevation.

Designed by ____

Assisted by ____

Date ____

NORTH CAROLINA PROFESSIONAL SEAL 20646 ENGINEER MATTHEW D. FOSTER

Signed by: Matthew D Foster 9/28/2026 | 12:46:34 PM EDT
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Johnson, Mirmiran, & Thompson Inc.
108 Asheville Commerce Parkway
Candler, NC, 28715
License No: C-3097

Reviewed by ____ Date ____

SITE DATA

Drainage Area ____ Source ____

River Basin French Broad River Character ____

Stream Classification (e.g., Trout, High Quality Water) N/A

Debris Potential: Low ☐ Moderate ☒ High ☐

Existing Structure - Source of Available Data NCEM Private Roads and Bridges Inspection Team

Existing Structure - Description 1 @ 35' private bridge (damaged abutments by Helene)

Estimated Waterway Opening 203.7 ft²

Design Control Elev ____ ft Source ____

Gage Station No ____ Period of Records ____

Max Discharge ____ cfs Date ____ Frequency ____

Historical Flood Information:

Date ____ Elev ____ ft Est Freq ____ yr Source ____ Period of Knowledge ____ yrs

Historical Scour Info: General ____ ft Contraction ____ ft Local ____ ft

Channel Slope ____ ft/ft Source ____ Normal Water Surface Elev ____ ft

Manning's n: Left OB ____ Channel ____ Right OB ____ Source ____

Flood Study / Status No FEMA Study (UT to Pigeon River)

Flood Study 100-yr Discharge ____ cfs WS Elev: With Floodway ____ ft Without Floodway ____ ft River Station ____

DESIGN DATA

Hydrological Method ____

Hydraulic Design Method Disaster Specific Guidance for the Replacement of Private Roads and Bridges 2/14/2025

Floods Evaluated	Frequency (year)	Discharge (cfs)	Elevation (ft)	Backwater (ft)	Bridge Opening Velocity (fps)

Waterway Opening Provided Below: Design WS Elev ____ sf 100-yr WS Elev ____ sf Total 322.4 sf

Average Channel Velocity (Design) ____ fps Average Overbank Velocity (Design) ____ fps

Computed Scour: General ____ ft Contraction ____ ft Local ____ ft

INFORMATION TO BE SHOWN ON PLANS

HYDRAULIC DATA

DESIGN DISCHARGE	= 110	C.F.S.
FREQUENCY OF DESIGN FLOOD	= 25	YRS.
DESIGN HIGH WATER ELEVATION	= ____	
DRAINAGE AREA	= 0.32	SQ. MI.
BASIC DISCHARGE (Q100)	= 180	C.F.S.
BASIC HIGH WATER ELEVATION	= ____	

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= ____	C.F.S.
FREQUENCY OF OVERRTOPPING FLOOD	= ____	YRS.
OVERTOPPING FLOOD ELEVATION	= ____	*

*NOTE LOCATION OF OVERTOPPING

WS EL. Taken @ River Station ?

ADDITIONAL INFORMATION AND COMPUTATIONS

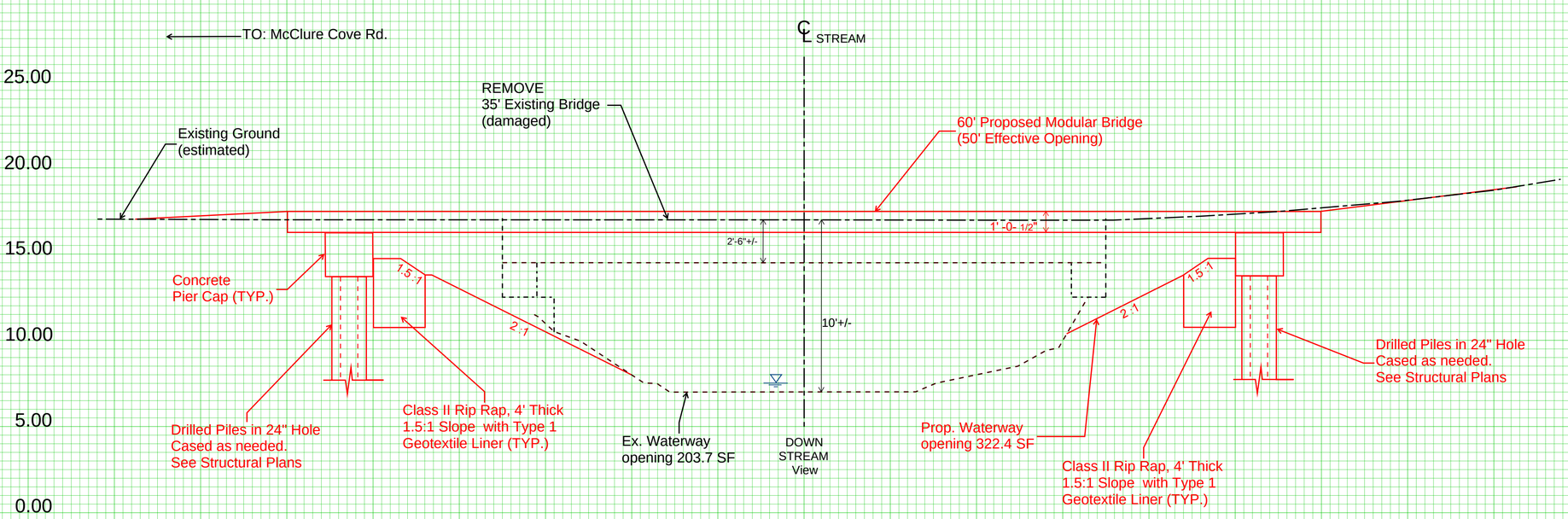
Emergency Vehicle Access Possible?	No
Number of Homes Confirmed	Yes
Number of Homes	1
Churches Confirmed	Yes
Number of Churches	0
Schools Confirmed	Yes
Number of Schools	0
Recreational/Business Areas Confirmed	Yes
Number of Recreational/Business Areas	0
General Description	Steel superstructure with metal deck (railcart) on concrete abutments servicing one property over a stream. Bridge surrounded by heavy vegetation. One lane gravel approaches leading to steel deck.(see sketch)
Overall Condition	Damage
Condition Other	
Site Repair Status	No Repair
Condition Description	Abutment on main road side is severally undermined and cracked with rotation (see photo). Obvious attempts to retain soil on that side has failed. Pitting and rust cover the entire superstructure. Structure not safe for emergency vehicle access.
Expected Level of Effort	Replace
Other Level of Effort	
Horizontal Curve	No
Number of Travel Lanes (LOS)	1
Inclination	No
Roadway Divider	No
Road/Bridge Width (ft)	12.00
Span/Gap Estimate (ft)	35.00
Surface to Water (ft)	10.00
Utility/Mechanical	No

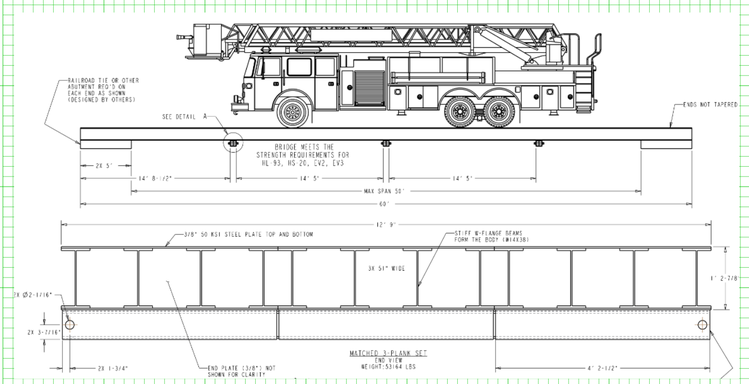


Existing Abutment

12" W12X22 beam
+ 0.25" Steel Plate
+ 0.25" Steel Plate
=12.5" (1'-1/2") ft structure depth)

Proposed Conveyance Area has been reduced by 0.9 sf to account for blockage created by 3 Plank Connectors as shown in Detail A of the Typical Section.





Stationing and elevations shown are relative to the site.
Based on an assumed datum.
No survey grade field work was performed.

BSR based on MODULAR BRIDGE PLANS

BRIDGE SURVEY & HYDRAULIC DESIGN REPORT

NC DEPARTMENT OF EMERGENCY MANAGEMENT
PRIVATE ROADS AND BRIDGES PROGRAM

Site Number 044-01-876e9 Latitude 35.55074 Longitude -82.92967

County Haywood Address near 175 McClure Cove Rd.

City Clyde, NC Zip Code 28721

Recommended Structure 1 @ 50' Steel Girder Bridge

Recommended Width of Roadway ____ Skew ____

Recommended Location is (At, Upstream, Downstream) of Existing Crossing

Temporary Crossing



I hereby certify that that I have reviewed the existing hydraulic conveyance at this site which was a 35 ft existing bridge with the proposed conveyance provided by the proposed 50.0 ft. span bridge.

The proposed bridge low chord for the bridge shall be set in accordance with the the FEMA Disaster Specific Guidance for the Replacement of Private Roads and Bridges issued on 14 February 2025, "to provide bridge/culvert design plans certified (sealed, signed, and dated) by a Professional Engineer licensed in the State of North Carolina demonstrating that the newly designed and installed private bridge/culvert provides conveyance greater than or equal to the original destroyed crossing".

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NORTH CAROLINA PROFESSIONAL SEAL 20646 ENGINEER MATTHEW D. FOSTER

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SITE DATA

Drainage Area ____ Source ____

River Basin French Broad River Character ____

Stream Classification (e.g., Trout, High Quality Water) N/A

Debris Potential: Low ☐ Moderate ☒ High ☐

Existing Structure - Source of Available Data NCEM Private Roads and Bridges Inspection Team

Existing Structure - Description 1 @ 35' private bridge (damaged abutments by Helene)

Estimated Waterway Opening 203.7 ft²

Design Control Elev ____ ft Source ____

Gage Station No ____ Period of Records ____

Max Discharge ____ cfs Date ____ Frequency ____

Historical Flood Information:

Date ____ Elev ____ ft Est Freq ____ yr Source ____ Period of Knowledge ____ yrs

Historical Scour Info: General ____ ft Contraction ____ ft Local ____ ft

Channel Slope ____ ft/ft Source ____ Normal Water Surface Elev ____ ft

Manning's n: Left OB ____ Channel ____ Right OB ____ Source ____

Flood Study / Status No FEMA Study (UT to Pigeon River)

Flood Study 100-yr Discharge ____ cfs WS Elev: With Floodway ____ ft Without Floodway ____ ft River Station ____

DESIGN DATA

Hydrological Method ____

Hydraulic Design Method Disaster Specific Guidance for the Replacement of Private Roads and Bridges 2/14/2025

Floods Evaluated	Frequency (year)	Discharge (cfs)	Elevation (ft)	Backwater (ft)	Bridge Opening Velocity (fps)

Waterway Opening Provided Below: Design WS Elev ____ sf 100-yr WS Elev ____ sf Total 250.0 sf

Average Channel Velocity (Design) ____ fps Average Overbank Velocity (Design) ____ fps

Computed Scour: General ____ ft Contraction ____ ft Local ____ ft

INFORMATION TO BE SHOWN ON PLANS

HYDRAULIC DATA

DESIGN DISCHARGE	= 110	C.F.S.
FREQUENCY OF DESIGN FLOOD	= 25	YRS.
DESIGN HIGH WATER ELEVATION	= ____	
DRAINAGE AREA	= 0.32	SQ. MI.
BASIC DISCHARGE (Q100)	= 180	C.F.S.
BASIC HIGH WATER ELEVATION	= ____	

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= ____	C.F.S.
FREQUENCY OF OVERRTOPPING FLOOD	= ____	YRS.
OVERTOPPING FLOOD ELEVATION	= ____	*

** NOTE LOCATION OF OVERTOPPING*

WS EL. Taken @ River Station ?

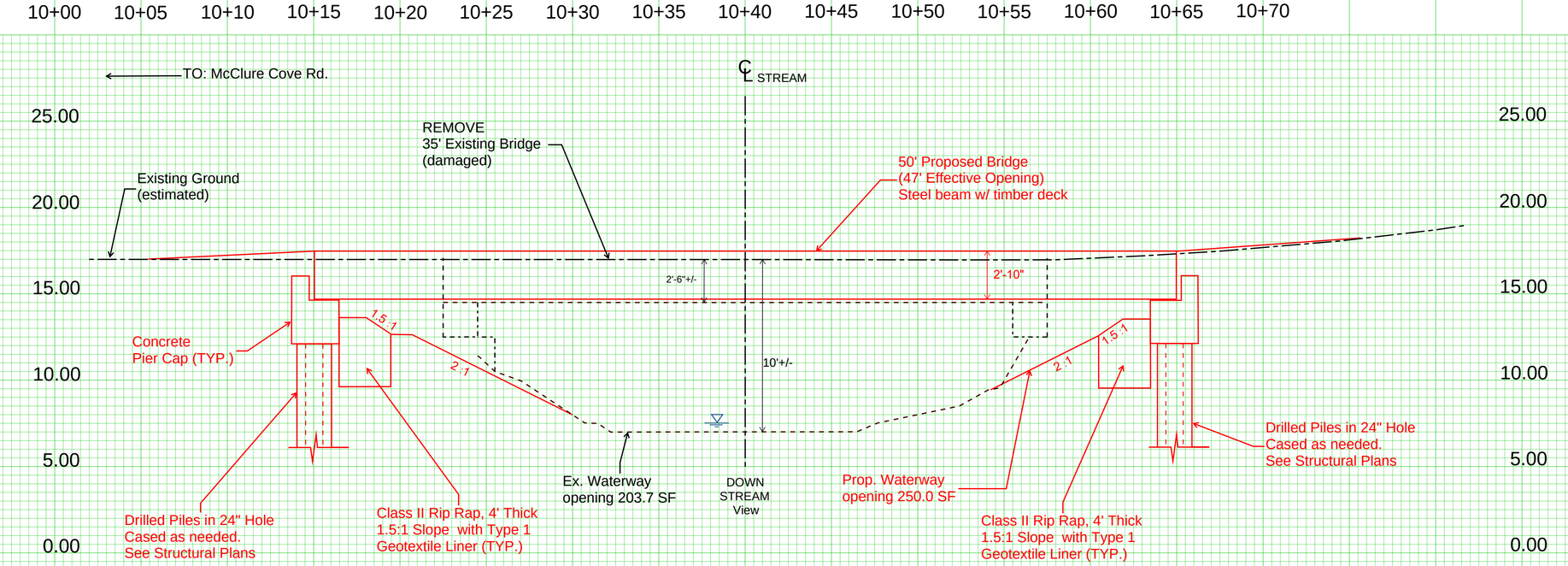
ADDITIONAL INFORMATION AND COMPUTATIONS

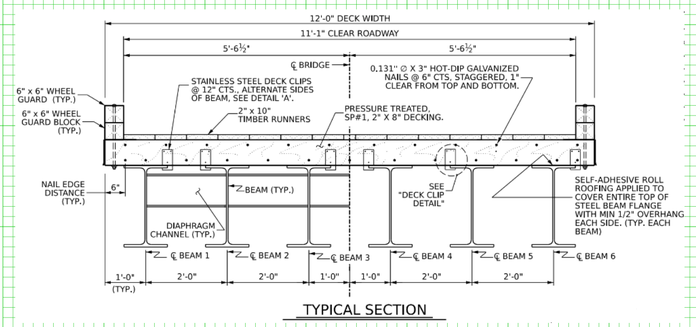
Emergency Vehicle Access Possible?	No
Number of Homes Confirmed	Yes
Number of Homes	1
Churches Confirmed	Yes
Number of Churches	0
Schools Confirmed	Yes
Number of Schools	0
Recreational/Business Areas Confirmed	Yes
Number of Recreational/Business Areas	0
General Description	Steel superstructure with metal deck (railcart) on concrete abutments servicing one property over a stream. Bridge surrounded by heavy vegetation. One lane gravel approaches leading to steel deck.(see sketch)
Overall Condition	Damage
Condition Other	
Site Repair Status	No Repair
Condition Description	Abutment on main road side is severally undermined and cracked with rotation (see photo). Obvious attempts to retain soil on that side has failed. Pitting and rust cover the entire superstructure. Structure not safe for emergency vehicle access.
Expected Level of Effort	Replace
Other Level of Effort	
Horizontal Curve	No
Number of Travel Lanes (LOS)	1
Inclination	No
Roadway Divider	No
Road/Bridge Width (ft)	12.00
Span/Gap Estimate (ft)	35.00
Surface to Water (ft)	10.00
Utility/Mechanical	No



Existing Abutment

24" W24X104 beam
+ 8" Deck
+ 2" Runner
=34" (2'-10") ft structure depth)





TYPICAL SECTION

Stationing and elevations shown are relative to the site.
Based on an assumed datum.
No survey grade field work was performed.

BSR based on STANDARD BRIDGE PLANS

FOR INFORMATION ONLY

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 044-01-876e9	**TIP** N/A	**COUNTY** HAYWOOD	**GEOLOGIST** J. Baskin
SITE DESCRIPTION 175 McClure Cove for Bridge over Unnamed Creek			**GROUND WTR (ft)**
BORING NO. EB1	**STATION** N/A	**OFFSET** N/A	**ALIGNMENT** -L-	**0 HR.** 16.3
COLLAR ELEV. 0.0 ft	**TOTAL DEPTH** 39.0 ft	**NORTHING** 678,492	**EASTING** 831,451	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE F&R3147 CME-75 88% 05/18/2026		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic
DRILLER T. Beard	**START DATE** 07/30/26	**COMP. DATE** 07/30/26	**SURFACE WATER DEPTH** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
0										0.0 GROUND SURFACE 0.0
	0.0	0.0	3	2	2	4		M		**ARTIFICIAL FILL** Brown-Gray and Tan-Orange, Fine to Coarse Sandy Clayey SILT (A-4) with Trace Gravel and Mica
-5	-3.5	3.5	18	8	8	16		M		
-10	-8.5	8.5	15	11	9	20		M		-7.0 7.0 **ALLUVIAL** Tan, Silty Fine to Coarse SAND (A-1-b) with Little Gravel -12.0 12.0
-15	-13.5	13.5	1	1	1	2		W		**RESIDUAL** White-Tan-Orange, Clayey Fine to Coarse SILT (A-4) with Trace Rock Fragments and Mica
-20	-18.5	18.5	11	17	18	35		W		
-25	-23.5	23.5	7	16	25	41		M		
-30	-28.5	28.5	28	75	25/0.1	100/0.6		M		-29.0 29.0 **WEATHERED ROCK** Maroon-Black to White-Gray GNEISS
-35	-33.5	33.5	100/0.4			100/0.4				
	-38.5	38.5	100/0.5			100/0.5				-39.0 39.0 Boring Terminated at Elevation -39.0 ft in WEATHERED ROCK (GNEISS)

Notes:
1. Surficial Organic Soil: 0.0'-0.3'
2. 0 HR Cave Depth= 16.6'

DRAFT