

SITE ID: 059-01-9f2af

SITE ADDRESS: 49 Hummingbird Dr., Old Fort Area, NC 28762

North Carolina Emergency Management – Private Roads and Bridges

Site Information Form

Site Number: 059-01-9f2af

Site Address: 49 Hummingbird Dr., Old Fort, NC, 28762

GPS Coordinates: 35.6742, -82.2059

County: McDowell

Bridge Type: Steel I-beam with Timber Decking

Span Length: 60 ft Standard 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 Substructure Plans for Notes

Additional Notes:

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

Wingwalls are not required.

The existing bridge is in not place.

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 059-01-9f2af Latitude 35.674098 Longitude -82.20583

County McDowell Address 49 Hummingbird Lane

City Old Fort, NC Zip Code 28762

Recommended Structure 1 @ 60' Steel Girder Bridge with timber deck

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 approximately a 2@10 ft 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 10/6/2026 | 6:41:47 PM EDT
7B1932BFAFC8472...

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 Catawba Character .....

Stream Classification (e.g., Trout, High Quality Water) C; Tr

Debris Potential: Low ☐ Moderate ☐ High ☒

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

Existing Structure - Description 2@10' Bridge (based on FEMA model- existing bridge destroyed)

Estimated Waterway Opening 44.9 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 Newberry Creek, LDS

Flood Study 100-yr Discharge 2610 cfs WS Elev: With Floodway 1771.19 ft Without Floodway 1771.17 ft River Station 3382.61

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 145.6 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	= 1020	C.F.S.
FREQUENCY OF DESIGN FLOOD	= 25	YRS.
DESIGN HIGH WATER ELEVATION	= _____	
DRAINAGE AREA	= 5.26	SQ. MI.
BASIC DISCHARGE (Q100)	= 1560	C.F.S.
BASIC HIGH WATER ELEVATION	= _____	

OVERTOPPING FLOOD DATA

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

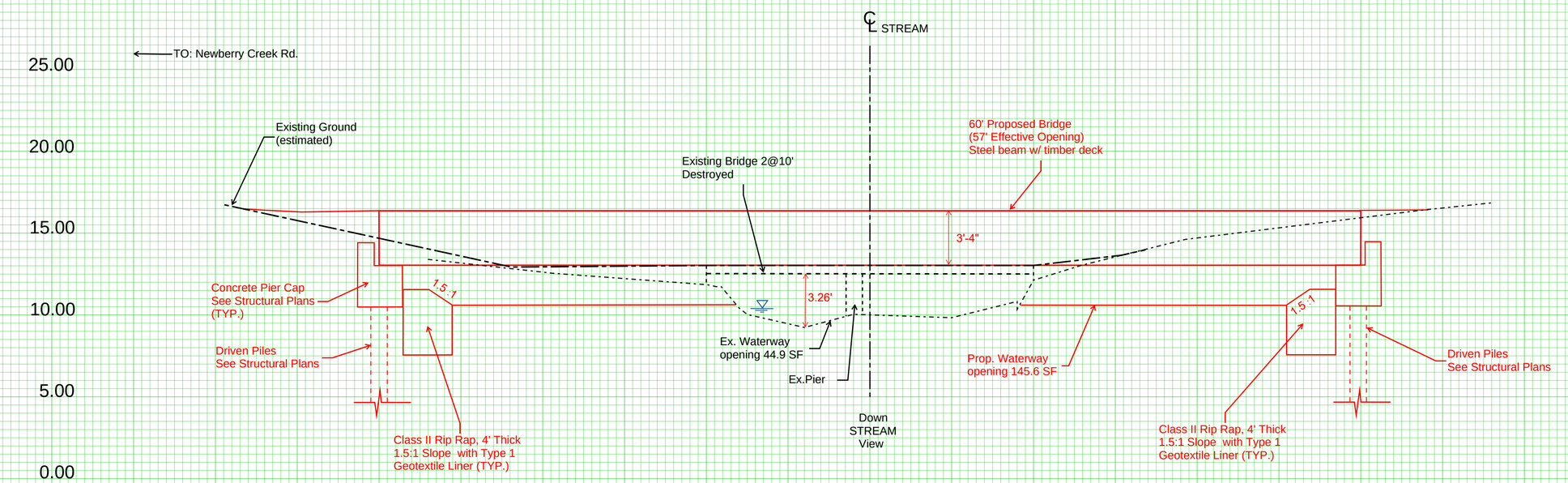
*NOTE LOCATION OF OVERTOPPING

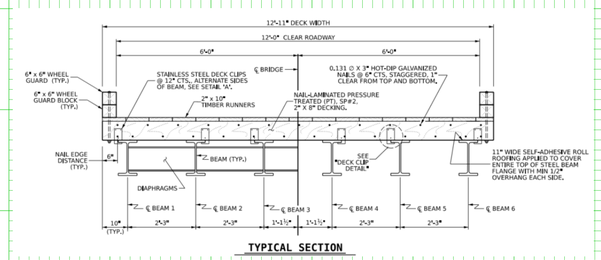
WS EL. Taken @ River Station ?

ADDITIONAL INFORMATION AND COMPUTATIONS

General Description	1 full-time + 8 part-time residents have lost access to properties due to loss of bridge, culvert and roadway.
Overall Condition	Collapse
Condition Other	
Site Repair Status	No Repair
Condition Description	Structures are no longer in place and requires full re-design. Approximate bridge length = 40lf. Smaller culvert structures for foot traffic span 10lf.
Expected Level of Effort	Full Redesign
Other Level of Effort	
Horizontal Curve	Yes
Number of Travel Lanes (LOS)	1
Inclination	Yes
Roadway Divider	No
Road/Bridge Width (ft)	10.00
Span/Gap Estimate (ft)	50.00
Surface to Water (ft)	0.00
Utility/Mechanical	No
Utility Types	
Pipe Needs Sizing	Yes
Depth of Pipe	
Geotechnical	Slumping/landslide
Other Geotechnical	

30" W30X116 beam
+ 8" Deck
+ 2" Runner
=40" (3'-4") 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.

FOR INFORMATION ONLY

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 059-01-9f2af	**TIP** N/A	**COUNTY** McDOWELL	**GEOLOGIST** J. Baskin
SITE DESCRIPTION 49 Hummingbird Drive for Bridge over Newberry Creek			**GROUND WTR (ft)**
BORING NO. EB1	**STATION** N/A	**OFFSET** N/A	**ALIGNMENT** -L-	**0 HR.** 5.6
COLLAR ELEV. 0.0 ft	**TOTAL DEPTH** 23.8 ft	**NORTHING** 715,681	**EASTING** 1,048,065	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE F&R3147 CME-75 89% 12/20/2024		**DRILL METHOD** SPT Core Boring	**HAMMER TYPE** Automatic
DRILLER T. Beard	**START DATE** 06/02/26	**COMP. DATE** 06/02/26	**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	7	7	18	25		D		**ARTIFICIAL FILL** Brown, Fine to Coarse Sandy SILT (A-4) with Trace Gravel and Mica
-5	-3.5	3.5	13	6	9	15		M		
	-8.4	8.4	60/0.1			60/0.1				-8.4 8.4
-10	-11.0	11.0								-8.5 8.5 **ALLUVIAL** Boulders/Cobbles -9.3 9.3 -11.0 11.0
	-13.1	13.1	12	18	16	34		W		**RESIDUAL** Brown, Fine to Coarse Sandy SILT (A-4) with Trace Rock Fragments and Mica
-15			12	12	16	28		M		Brown-Red, Fine Sandy SILT (A-4) with Trace Mica
	-18.1	18.1	10	8	13	21				
-20	-23.1	23.1						M		-23.1 23.1
	-23.7	23.7	60/0.1			60/0.1				-23.8 23.8 **CRYSTALLINE ROCK** Brown-Orange PHYLLITE
			60/0.1			60/0.1				Boring Terminated with Standard Penetration Test Refusal at Elevation -23.8 ft in CRYSTALLINE ROCK (PHYLLITE)

Note:
1. Auger Refusal at 8.4', Began Coring at 8.5'. Casing and Advancer used from 11.0' to 23.7'. Casing Advancer Refusal at 23.7'.

NCDOT BORE SINGLE SITE 059-01-9F2AF MCDOWELL COUNTY BORING LOGS.GPJ NC_DOT.GDT 6/12/26

FOR INFORMATION ONLY

GEOTECHNICAL BORING REPORT
CORE LOG

WBS 059-01-9f2af	**TIP** N/A	**COUNTY** McDOWELL	**GEOLOGIST** J. Baskin
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DRILL RIG/HAMMER EFF./DATE F&R3147 CME-75 89% 12/20/2024		**DRILL METHOD** SPT Core Boring	**HAMMER TYPE** Automatic
DRILLER T. Beard	**START DATE** 06/02/26	**COMP. DATE** 06/02/26	**SURFACE WATER DEPTH** N/A
CORE SIZE NQ	**TOTAL RUN** 2.5 ft		

ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %	RUN RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %	STRATA RQD (ft) %	LOG	DESCRIPTION AND REMARKS
											ELEV. (ft) / DEPTH (ft)
-8.5											Begin Coring @ 8.5 ft
-10	-8.5	8.5	2.5	0:41/0.5 1:44/1.0 0:32/1.0	(0.9) 36%	(0.7) 28%		(0.8) 100%	(0.8) 100%		-8.5 / 8.5 **ALLUVIAL** Boulders/Cobbles
	-11.0	11.0		*N=34*				(0.0) 0%	(0.0) 0%		-9.3 / 9.3 -11.0 / 11.0 **RESIDUAL** Brown, Fine to Coarse Sandy SILT (A-4) with Trace Rock Fragments and Mica
-15				*N=28*							Brown-Red, Fine Sandy SILT (A-4) with Trace Mica
-20				*N=21*							-23.1 / 23.1 -23.8 / 23.8 **CRYSTALLINE ROCK** Brown-Orange PHYLLITE
				N=60/0.1 *N=60/0.1*							Boring Terminated with Standard Penetration Test Refusal at Elevation -23.8 ft in CRYSTALLINE ROCK (PHYLLITE)

Note:
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