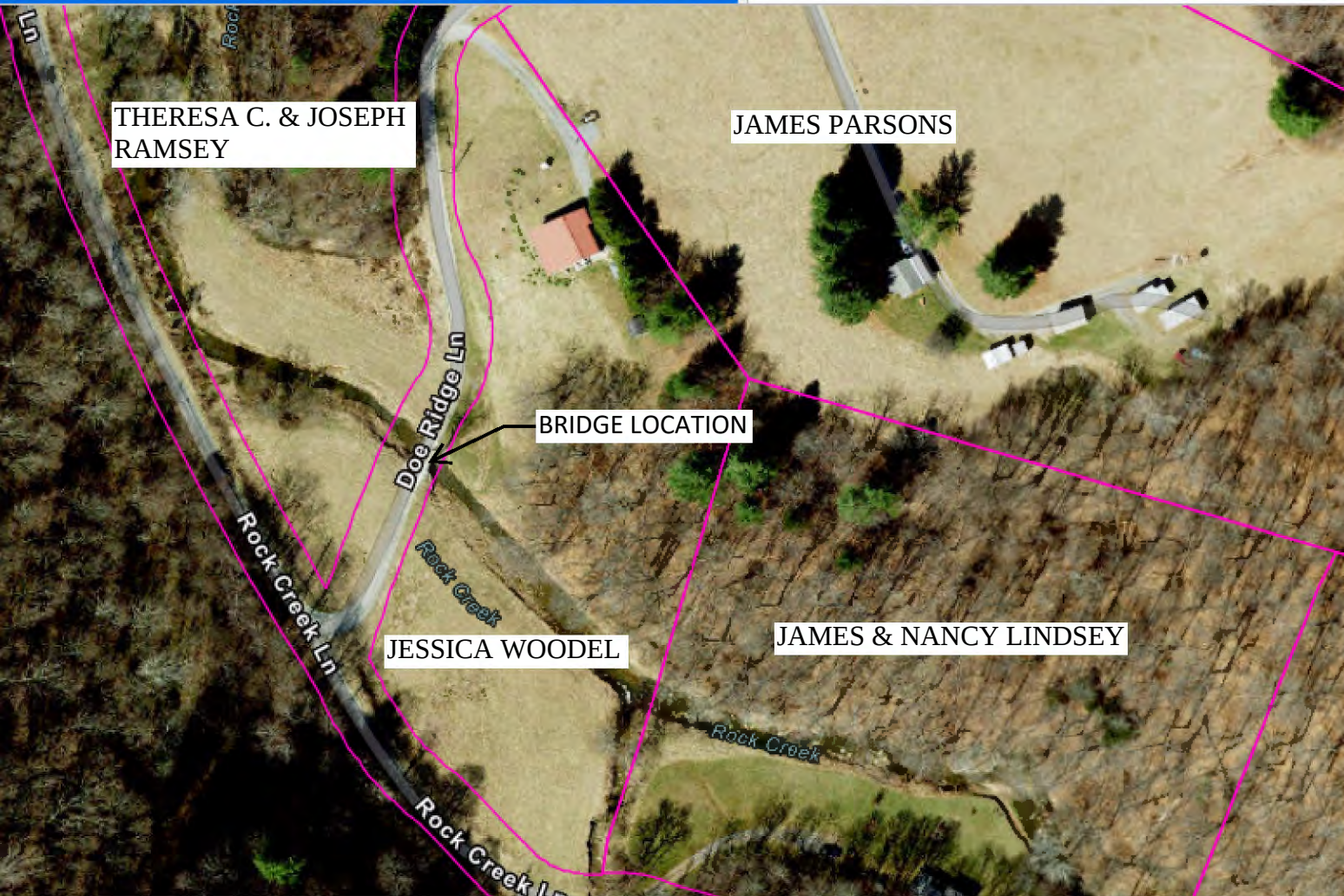




SITE ID: 003-01-6d96a

SITE ADDRESS: 142 DOE RIDGE LANE,
SPARTA, NC

North Carolina Emergency Management – Private Roads and Bridges

Site Information Form

Site Number: _____

Site Address: _____

GPS Coordinates: _____

County: _____

Bridge Type: _____

Span Length: _____

Bridge Width: _____

Substructure Type: _____

Geotechnical Information: _____

Additional Notes: _____

BRIDGE SURVEY & HYDRAULIC DESIGN REPORT

NC DEPARTMENT OF EMERGENCY MANAGEMENT
PRIVATE ROADS AND BRIDGES PROGRAM

Site Number003-01-6d96aLatitude36.54348Longitude-81.18679

CountyAlleghanyAddressnear 142 Doe Ridge Lane

CitySparta, NCZip Code28675

Recommended Structure1 @ 50' Steel Modular Bridge (40' effective length)

Recommended Width of RoadwaySkew

Recommended Location is (A) 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 21 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".

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

Signed by:Matthew D Foster7B1932BFAFC6472...9/3/202611:08:53 AM EDT

Reviewed by

DateREVISED 9/3/2026

InitialMDF

SITE DATA

Drainage AreaSource

River BasinNew RiverCharacter

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

Debris Potential: Low ☐ Moderate ☒ High ☐

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

Existing Structure - Description1 @ 21' private bridge (damaged by Helene)

Estimated Waterway Opening84.1ft²

Design Control ElevftSource

Gage Station NoPeriod of Records

Max DischargecfsDateFrequency

Historical Flood Information:

DateElevftEst FreqyrSourcePeriod of Knowledgeyrs

Historical Scour Info: GeneralftContractionftLocalft

Channel Slopeft/ftSourceNormal Water Surface Elevft

Manning's n: Left OBChannelRight OBSource

Flood Study / StatusN/A (Rock Creek is a tributary to the New River, DS)

Flood StudyWithWithout

100-yr DischargecfsWS Elev: FloodwayftFloodwayftRiver Station

DESIGN DATA

Hydrological Method

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

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

Waterway Opening Provided Below: Design WS Elevsf100-yr WS ElevsfTotal181.7sf

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

Computed Scour: GeneralftContractionftLocalft

INFORMATION TO BE SHOWN ON PLANS

HYDRAULIC DATA

DESIGN DISCHARGE= 845 C.F.S.

FREQUENCY OF DESIGN FLOOD= 25 YRS.

DESIGN HIGH WATER ELEVATION= 4.13 SQ. MI.

DRAINAGE AREA= 1290 C.F.S.

BASIC DISCHARGE (Q100)=

BASIC HIGH WATER ELEVATION=

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE= C.F.S.

FREQUENCY OF OVERTTOPPING FLOOD= YRS.

OVERTOPPING FLOOD ELEVATION= *

* NOTE LOCATION OF OVERTOPPING

WS EL. Taken @ River Station ?

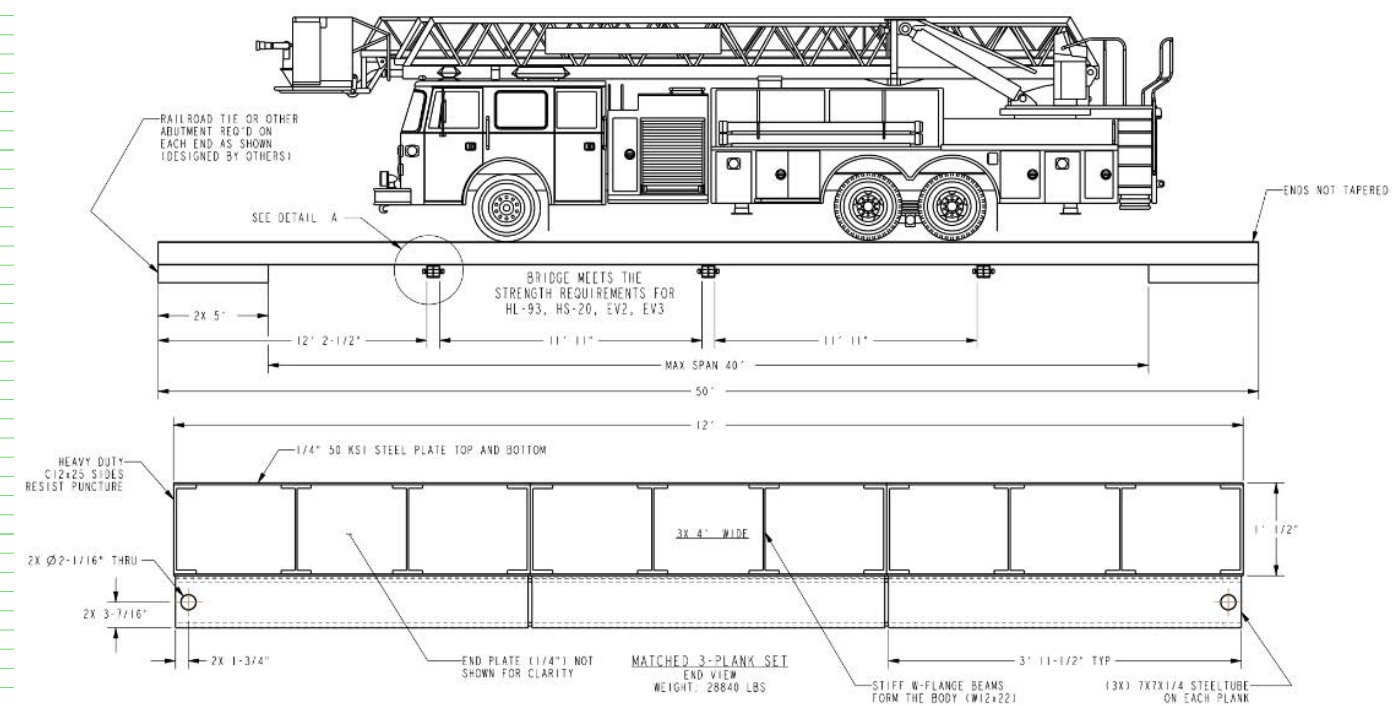
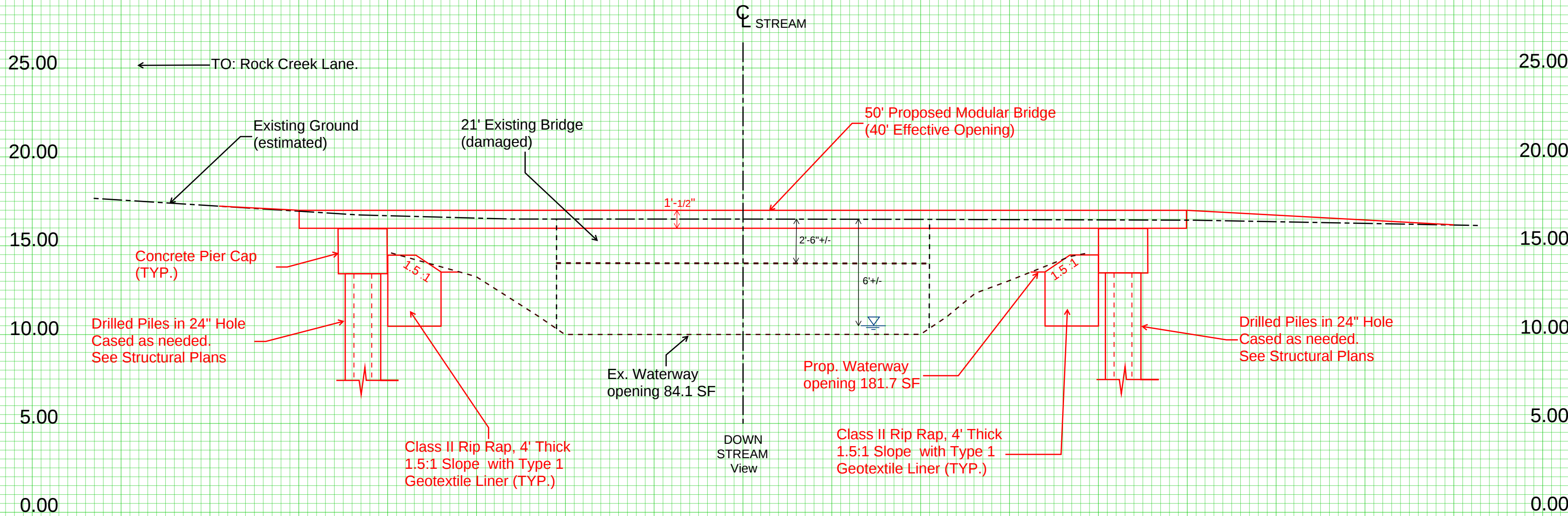
ADDITIONAL INFORMATION AND COMPUTATIONS

Emergency Vehicle Access Possible?	No
Number of Homes Confirmed	Yes
Number of Homes	2
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	Bridge replacement, 37' bridge span
Overall Condition	Damage
Condition Other	
Site Repair Status	Temporary Repair
Condition Description	Full bridge replacement needed along with rip rap for slope stability. Current bridge missing outside girders. Inside girders damaged. Severe scour observed. Bridge deck damaged. Bridge use not advised. Homeowners elderly.
Expected Level of Effort	Full Redesign
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)	37.00
Surface to Water (ft)	6.00
Utility/Mechanical	No

12" W12X25 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.

10+00 10+05 10+10 10+15 10+20 10+25 10+30 10+35 10+40 10+45 10+50 10+55 10+60 10+65 10+70



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

NC DEPARTMENT OF EMERGENCY MANAGEMENT
PRIVATE ROADS AND BRIDGES PROGRAM

A photograph of a concrete bridge over a river. A person in a yellow safety vest is walking on the bridge deck. A red arrow points to the left abutment of the bridge.

Designed by _____

Assisted by _____

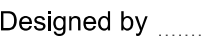
Date _____

Signed by:
Matthew D Foster
781932BFAFC6472

9/3/2026 11:08:53 AM EDT

Reviewed by _____

Date REVISED 9/3/2026

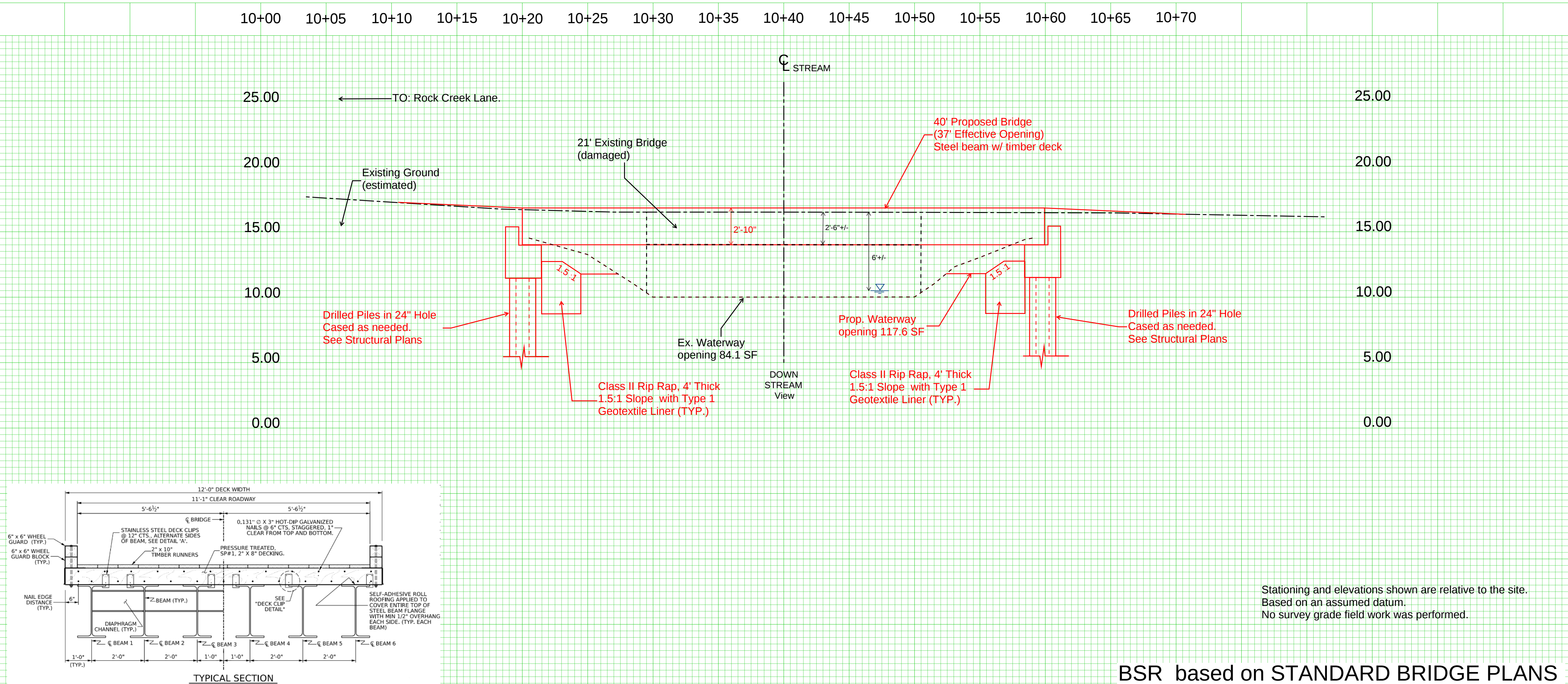
  **Johnson, Mirmiran, & Thompson Inc.**
108 Asheville Commerce Parkway
Candler, NC, 28715
License No: C-3097

Flood Study / Status	N/A (Rock Creek is a tributary to the New River, DS)		
Flood Study	With	Without	
100-yr Discharge	cfs WS Elev: Floodway	ft Floodway	ft River Station

[illegible]

Emergency Vehicle Access Possible?	No
Number of Homes Confirmed	Yes
Number of Homes	2
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	Bridge replacement, 37' bridge span
Overall Condition	Damage
Condition Other	
Site Repair Status	Temporary Repair
Condition Description	Full bridge replacement needed along with rip rap for slope stability. Current bridge missing outside girders. Inside girders damaged. Severe scour observed. Bridge deck damaged. Bridge use not advised. Homeowners elderly.
Expected Level of Effort	Full Redesign
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)	37.00
Surface to Water (ft)	6.00
Utility/Mechanical	No

24" W24X76 beam
+ 8" Deck
+ 2" Runner
=34" (2'-10") ft structure depth)



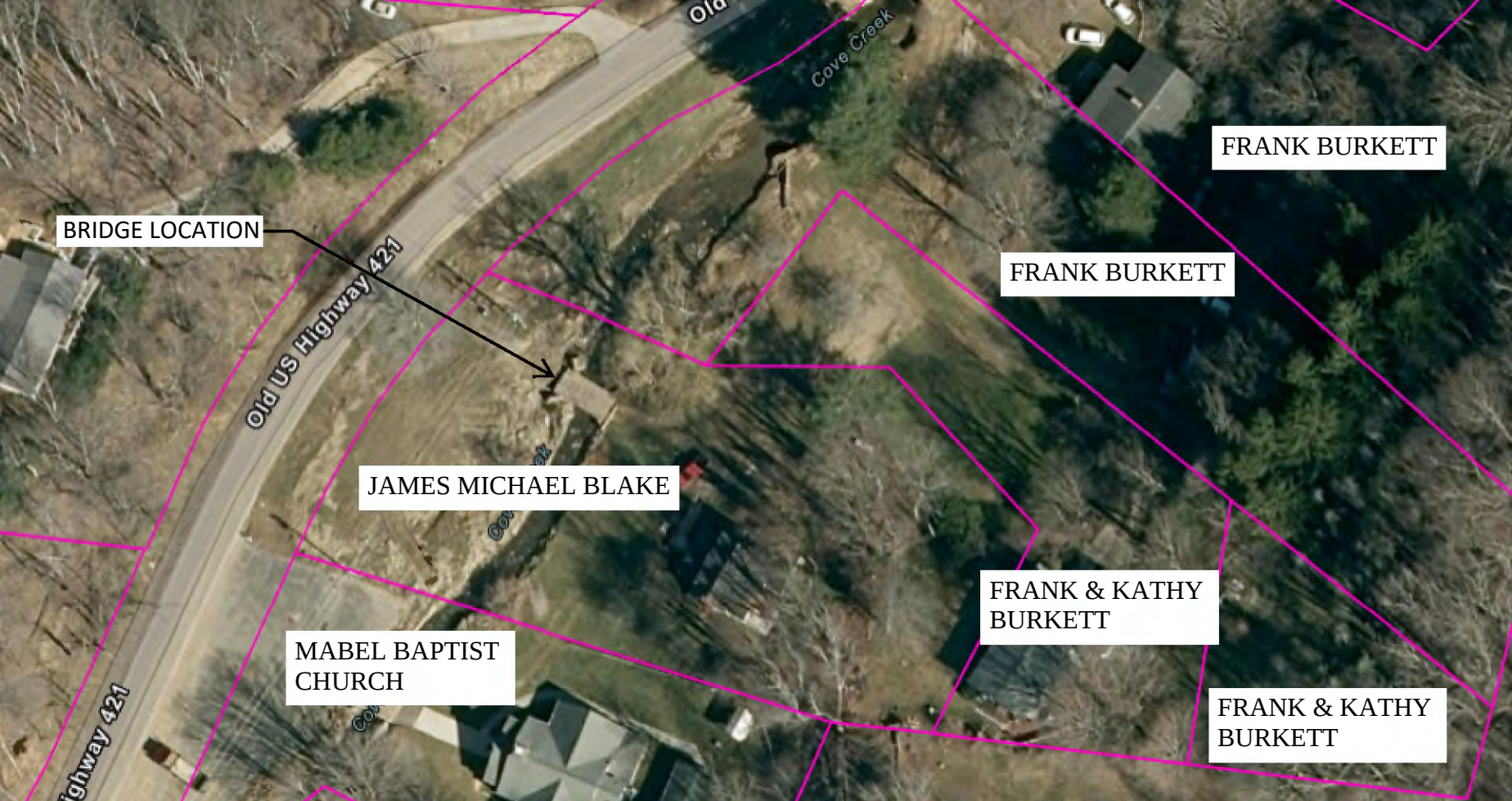
GEOTECHNICAL BORING REPORT

BORE LOG

WBS 003-01-6d96a			TIP N/A			COUNTY ALLEGHANY			GEOLOGIST C. Brake		
SITE DESCRIPTION 142 Doe Ridge Lane for Bridge over Rock Creek									GROUND WTR (ft)		
BORING NO. EB1			STATION N/A			OFFSET N/A			ALIGNMENT -L-		
COLLAR ELEV. 0.0 ft			TOTAL DEPTH 29.4 ft			NORTHING 1,023,798			EASTING 1,357,542		
DRILL RIG/HAMMER EFF./DATE F&R4637 CME-75 78% 03/28/2025						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic		
DRILLER W. Shenberger			START DATE 06/01/26			COMP. DATE 06/01/26			SURFACE WATER DEPTH N/A		

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)		
0															0.0	GROUND SURFACE	0.0
-5	0.0	0.0	2	2	3										-2.0	ARTIFICIAL FILL Brown, Fine to Coarse Sandy SILT (A-4) with Gravel and Mica	-2.0
	-3.5	3.5	3	1	1										-7.0	ALLUVIAL Gray, Fine Sandy SILT (A-4) with Trace Mica	7.0
-10	-8.5	8.5	8	7	8											RESIDUAL Brown-Gray, Fine to Coarse Sandy SILT (A-4) with Trace Mica and Trace Rock Fragments	
-15	-13.5	13.5	3	2	4												
	-16.4	16.4	100/0.5												-16.1	WEATHERED ROCK Gray-Brown MICA SCHIST	16.1
-20	-18.5	18.5	100/0.2														
	-23.5	23.5	37	63/0.2													
-25	-28.5	28.5	35	65/0.4											-29.4	Boring Terminated at Elevation -29.4 ft in WEATHERED ROCK (MICA SCHIST)	29.4
																Notes: 1. Surficial Organic Soil: 0.0'-0.2' 2. Driller Noted Harder Drilling at 16.1'.	

WBS 003-01-6d96a			TIP N/A			COUNTY ALLEGHANY			GEOLOGIST C. Brake						
SITE DESCRIPTION 142 Doe Ridge Lane for Bridge over Rock Creek										GROUND WTR (ft)					
BORING NO. EB2			STATION N/A			OFFSET N/A			ALIGNMENT -L-		0 HR. 6.0				
COLLAR ELEV. 0.0 ft			TOTAL DEPTH 28.8 ft			NORTHING 1,023,829			EASTING 1,357,582		24 HR. FIAD				
DRILL RIG/HAMMER EFF./DATE F&R4637 CME-75 78% 03/28/2025						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER W. Shenberger			START DATE 06/02/26			COMP. DATE 06/02/26			SURFACE WATER DEPTH N/A						
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT				SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
0														0.0 GROUND SURFACE	0.0
	0.0	0.0	3	1	2									ALLUVIAL	
	-3.5	3.5	1	1	2									Gray-Brown, Fine Sandy SILT (A-4) with Trace Mica, Roots, and Trace Gravel	
-5															
	-8.5	8.5	20	24	72									RESIDUAL	7.5
-10														Gray-Brown-White, Fine to Coarse Sandy SILT (A-4) with Trace Mica	
	-13.5	13.5	30	70/0.4										WEATHERED ROCK	12.0
-15														Black-White MICA SCHIST	
	-18.5	18.5	10	65	35/0.1									RESIDUAL	17.5
-20														Gray-White, Fine Sandy SILT (A-4) with Trace Mica	19.0
	-23.5	23.5	75	25/0.2										WEATHERED ROCK	
-25														Gray-White MICA SCHIST	
	-28.5	28.5	100/0.3												
														Boring Terminated at Elevation -28.8 ft in WEATHERED ROCK (MICA SHIST)	28.8
Notes: 1. Surficial Organic Soil: 0.0'-0.2' 2. Driller Noted Harder Drilling at 7.5' and 1.0' to 2.0' Softer Layers Throughout.															



SITE ID: 095-01-F5F4A

SITE ADDRESS: 6252 OLD US HIGHWAY 421,
ZIONVILLE, NC

North Carolina Emergency Management – Private Roads and Bridges
Site Information Form

Site Number: 095-01-f5f4a

Site Address: 6252 Old US Highway 421, Zionville, NC

GPS Coordinates: 36.3207, -81.7641

County: Watauga

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

Span Length: 40 ft Standard Bridge or 50 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.

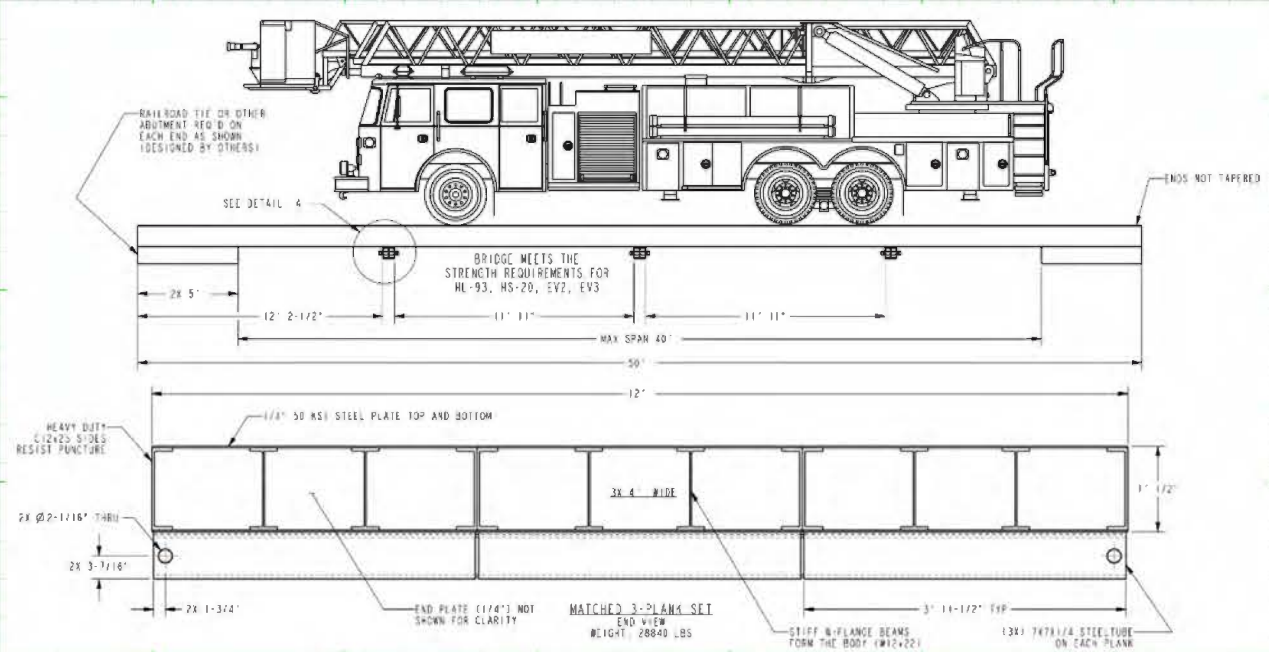
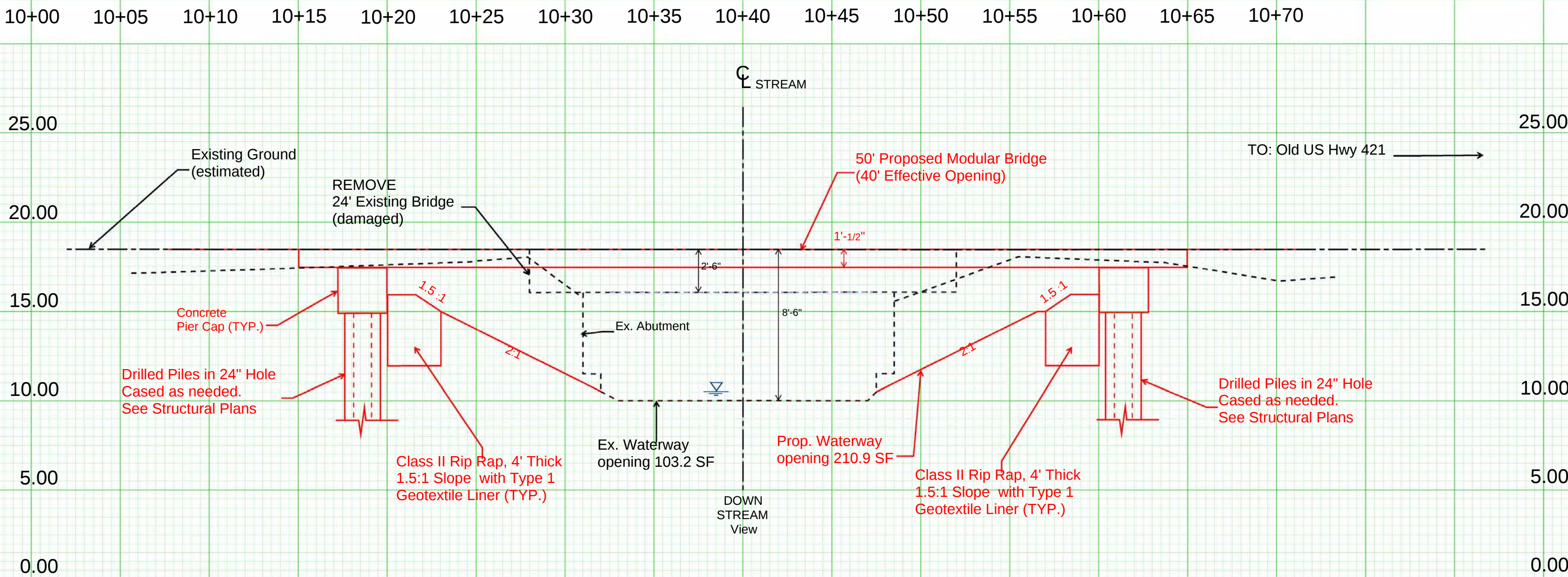
NC DEPARTMENT OF EMERGENCY MANAGEMENT
PRIVATE ROADS AND BRIDGES PROGRAM

Date _____

[illegible]

WS EL. Taken @ River Station ?

Emergency Vehicle Access Possible?	No	
Number of Homes Confirmed	Yes	
Number of Homes	1	
Churches Confirmed	Yes	
Number of Churches	1	
Schools Confirmed	Yes	
Number of Schools	0	
Recreational/Business Areas Confirmed	Yes	
Number of Recreational/Business Areas	0	
General Description	Bridge replacement	
Overall Condition	Collapse	
Condition Other		
Site Repair Status	No Repair	Note: the existing bridge shown in the assessment
Condition Description	Absolutely not useable even for foot traffic	does not match the bridge shown in the old FEMA model. It appears that bridge was replaced with a
Expected Level of Effort	Full Redesign	longer structure at some point prior to Helene event.
Other Level of Effort		
Horizontal Curve	No	
Number of Travel Lanes (LOS)	1	12" W12X25 beam
Inclination	No	+ 0.25" Steel Plate
Roadway Divider	No	+ 0.25" Steel Plate
Road/Bridge Width (ft)	12.00	=12.5" (1'-1/2") ft structure depth)
Span/Gap Estimate (ft)	24.00	Proposed Conveyance Area has been reduced
Surface to Water (ft)	8.00	by 0.9 sf to account for blockage created by 3
Utility/Mechanical	No	Plank Connectors as shown in Detail A of the
Utility Types		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

095-01-f5f4a

Latitude

36.32092

Longitude

-81.76431

County

Watauga

Address

6252 Old US Hwy 421

City

Zionville, NC

Zip Code

28698

Recommended Structure

1 @ 40' Steel Girder Bridge

with Drilled Pile Abutment

Recommended Width of Roadway

Skew

Recommended Location is

(A) 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 24 ft existing bridge with the proposed conveyance provided by the proposed 40.0 ft. span bridge.

The proposed bridge low chord for the bridge shall be set in accordance with 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

Signed by:

Matthew D Foster

7/9/2026

4:40:42 PM EDT

Reviewed by

Date

JOHNSON, MIRIRAN, & THOMPSON, INC.

108 Asheville Commerce Parkway

Candler, NC, 28715

License No: C-3097

SITE DATA

Drainage Area

Source

River Basin

Watauga River

Character

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

C

Debris Potential: Low

☐ Moderate

☒ High

☐

Existing Structure - Source of Available Data

NCEM Private Roads and Bridges Inspection Team

Existing Structure - Description

1 @ 24' private bridge (damaged by Helene)

Estimated Waterway Opening

103.2

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

Cove Creek, LDS

Flood Study

100-yr Discharge

2864

cfs

WS Elev: Floodway

2957.84

ft

Without Floodway

2957.81

ft

River Station

50648

DESIGN DATA

Hydrological Method

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

Hydraulic Design Method

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

147.0

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

= 750

C.F.S.

FREQUENCY OF DESIGN FLOOD

= 25

YRS.

DESIGN HIGH WATER ELEVATION

=

DRAINAGE AREA

= 3.53

SQ. MI.

BASIC DISCHARGE (Q100)

= 1150

C.F.S.

BASIC HIGH WATER ELEVATION

=

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE

=

C.F.S.

FREQUENCY OF OVERTTOPPING FLOOD

=

YRS.

OVERTOPPING FLOOD ELEVATION

=

*

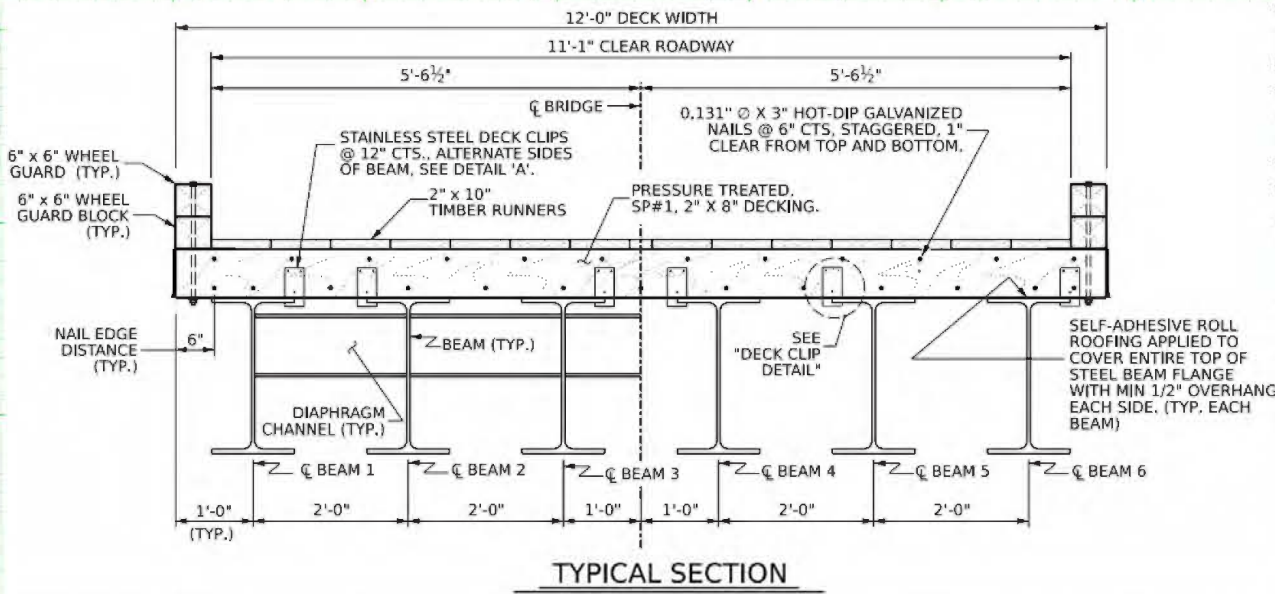
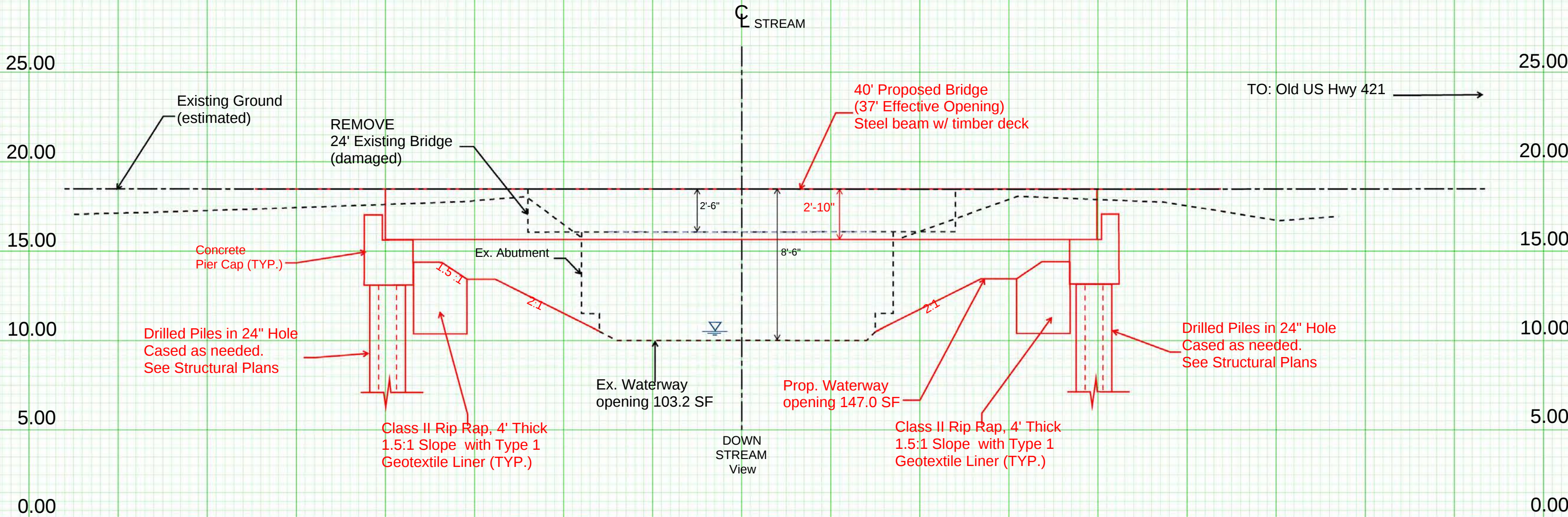
*NOTE LOCATION OF OVERTOPPING

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	1	
Schools Confirmed	Yes	
Number of Schools	0	
Recreational/Business Areas Confirmed	Yes	
Number of Recreational/Business Areas	0	
General Description	Bridge replacement	
Overall Condition	Collapse	
Condition Other		
Site Repair Status	No Repair	
Condition Description	Absolutely not useable even for foot traffic.	Note: the existing bridge shown in the assessment does not match the bridge shown in the old FEMA model. It appears that bridge was replaced with a longer structure at some point prior to Helene event.
Expected Level of Effort	Full Redesign	
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)	24.00	24" W24X76 beam
Surface to Water (ft)	8.00	+ 8" Deck
Utility/Mechanical	No	+ 2" Runner
Utility Types		=34" (2'-10") ft structure depth)

10+00 10+05 10+10 10+15 10+20 10+25 10+30 10+35 10+40 10+45 10+50 10+55 10+60 10+65 10+70



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

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 095-01-f5f4a		TIP N/A		COUNTY WATAUGA		GEOLOGIST C. Brake							
SITE DESCRIPTION 6252 Old US Hwy 421 for Bridge over Cove Creek							GROUND WTR (ft)						
BORING NO. EB1		STATION N/A		OFFSET N/A		ALIGNMENT -L-		0 HR. Dry					
COLLAR ELEV. 0.0 ft		TOTAL DEPTH 17.8 ft		NORTHING 947,052		EASTING 1,185,645		24 HR. FIAD					
DRILL RIG/HAMMER EFF./DATE F&R4637 CME-75 78% 03/28/2025				DRILL METHOD SPT Core Boring			HAMMER TYPE Automatic						
DRILLER W. Shenberger		START DATE 06/03/26		COMP. DATE 06/03/26		SURFACE WATER DEPTH N/A							
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT			SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100			ELEV. (ft) DEPTH (ft)
0													0.0 GROUND SURFACE 0.0
	0.0	0.0	4	6	8						M		
	-3.5	3.5											
-5	-4.8	4.8	12	12	60/0.0								-4.0 Brown, Silty Fine to Coarse SAND (A-2-4) with Some Gravel 4.0
													-4.5 RESIDUAL 4.5
													Brown, Fine to Coarse Sandy SILT (A-4)
													CRYSTALLINE ROCK
													Fresh, Moderately Hard to Very Hard, Very Thinly Foliated to Thinly Laminated, Black-White AUGEN GNEISS with Minor AMPHIBOLITE with Close to Wide Fracture Spacing
-10													
-15													
													-17.8 Boring Terminated at Elevation -17.8 ft in CRYSTALLINE ROCK (AUGEN GNEISS) 17.8
Note: Auger Refusal at 4.8', Began Coring.													

GEOTECHNICAL BORING REPORT

CORE LOG

WBS 095-01-f5f4a				TIP N/A		COUNTY WATAUGA				GEOLOGIST C. Brake			
SITE DESCRIPTION 6252 Old US Hwy 421 for Bridge over Cove Creek										GROUND WTR (ft)			
BORING NO. EB1				STATION N/A				OFFSET N/A		ALIGNMENT -L-		0 HR. Dry	
COLLAR ELEV. 0.0 ft				TOTAL DEPTH 17.8 ft				NORTHING 947,052		EASTING 1,185,645		24 HR. FIAD	
DRILL RIG/HAMMER EFF./DATE F&R4637 CME-75 78% 03/28/2025								DRILL METHOD SPT Core Boring				HAMMER TYPE Automatic	
DRILLER W. Shenberger				START DATE 06/03/26				COMP. DATE 06/03/26		SURFACE WATER DEPTH N/A			
CORE SIZE NQ				TOTAL RUN 13.0 ft									
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) % ROD (ft) %		SAMP. NO.	STRATA REC. (ft) % ROD (ft) %		L O G	DESCRIPTION AND REMARKS ELEV. (ft) DEPTH (ft)		
-4.8											Begin Coring @ 4.8 ft		
	-4.8	4.8	3.0	2:03/1.0 3:03/1.0 3:00/1.0	(2.6) 87%	(2.6) 87%					CRYSTALLINE ROCK		
	-7.8	7.8									Fresh, Moderately Hard to Very Hard, Very Thinly Foliated to Thinly Laminated, Black-White AUGEN GNEISS with Minor AMPHIBOLITE with Close to Wide Fracture Spacing (continued)		
-10			5.0	2:31/1.0 2:26/1.0 3:26/1.0	(5.0) 100%	(5.0) 100%							
	-12.8	12.8		2:47/1.0 3:02/1.0									
-15			5.0	2:34/1.0 3:05/1.0 2:51/1.0	(5.0) 100%	(4.9) 98%							
	-17.8	17.8		3:00/1.0 3:34/1.0							-17.8		
Boring Terminated at Elevation -17.8 ft in CRYSTALLINE ROCK (AUGEN GNEISS)													
Note: Auger Refusal at 4.8', Began Coring.													

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 095-01-f5f4a			TIP N/A		COUNTY WATAUGA			GEOLOGIST C. Brake								
SITE DESCRIPTION 6252 Old US Hwy 421 for Bridge over Cove Creek								GROUND WTR (ft)								
BORING NO. EB1A		STATION N/A		OFFSET N/A		ALIGNMENT -L-		0 HR. Dry								
COLLAR ELEV. 0.0 ft		TOTAL DEPTH 4.8 ft		NORTHING 947,046		EASTING 1,185,646		24 HR. FIAD								
DRILL RIG/HAMMER EFF./DATE F&R4637 CME-75 78% 03/28/2025				DRILL METHOD H.S. Augers			HAMMER TYPE Automatic									
DRILLER W. Shenberger		START DATE 06/03/26		COMP. DATE 06/03/26		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)	
0														0.0	GROUND SURFACE	0.0
	-4.8	4.8												-4.8	ALLUVIAL Brown, Silty Fine to Coarse SAND (A-2-4) with Some Gravel	4.8
		60/0.0													Boring Terminated with Standard Penetration Test Refusal at Elevation -4.8 ft on CRYSTALLINE ROCK (AUGEN GNEISS)	
															Note: Auger Refusal at 4.8'	