

BRIDGE FOUNDATION INVESTIGATION

PROJECT NUMBER EDS-441(33) Rabun
P.I. NUMBER 122320
LOCATION (See Map) US441 over Tallulah River, Left and Right, Bridge No. 2

GENERAL INFORMATION

GEOLOGIC FORMATION Quartzite Formation of the Georgia Blue Ridge and Piedmont Region.

SUBSURFACE FEATURES The subsurface is comprised of hard and weathered rock overlain by silty sand.

MAXIMUM PILE DESIGN LOADS

END BEARING = 100 %	14" MS =	14" PSC =	10 BP 42 = 55 Tons
FRICTION = 0 %	16" MS =	16" PSC =	12 BP 53 = 70 Tons
	18" MS =	18" PSC =	14 BP 73 = 96 Tons
		20" PSC =	
		24" PSC =	TIMBER =
		30" PSC =	
		36" PSC =	

FOUNDATION RECOMMENDATIONS – NEW RIGHT BRIDGE

<u>BENTS</u>	<u>DRILLED SHAFT (BEARING)</u>	<u>SPREAD FTG (BEARING)</u>	<u>PILE FOOTING (PILE TYPE)</u>	<u>PILE BENT (PILE TYPE)</u>
1, 2, 3		575 kPa		
4			Steel H	
5				Steel H

ELEVATIONS – NEW RIGHT BRIDGE

<u>BENTS</u>	<u>BOTTOM OF FTG</u>	<u>MINIMUM TIP</u>	<u>ESTIMATED TIP</u>
1	489.5 or below		
2	476 or below		
3	476 or below		
4		477.5	477.5
5		477	477

FOUNDATION RECOMMENDATIONS – WIDENING OF LEFT BRIDGE

<u>BENTS</u>	<u>DRILLED SHAFT (BEARING)</u>	<u>SPREAD FTG (BEARING)</u>	<u>PILE FOOTING (PILE TYPE)</u>	<u>PILE BENT (PILE TYPE)</u>
1 - 4		575 kPa		
5				Steel H

ELEVATIONS – WIDENING OF LEFT BRIDGE

<u>BENTS</u>	<u>BOTTOM OF FTG</u>	<u>MINIMUM TIP</u>	<u>ESTIMATED TIP</u>
1	489.5 or below		
2	477.2 or below		
3	476.2 or below		
4	476.0 or below		
5		477	477

NOTES

PDO Driving resistance after Minimum Tip Elevations are achieved.

Waiting Period None required.

Theoretical Scour The theoretical scour line may be raised to Elevation 477 at Bent 2 of the proposed Right Bridge because of the presence of scour resistant rock that was encountered during our subsurface investigations.

In addition, the theoretical scour line may be raised to Elevation 476 at Bents 2 and 3 of the existing Left Bridge because of the presence of scour resistant rock that was encountered during our subsurface investigations.

Erosion We concur with the use of 600 mm of Type I riprap and filter fabric.

Spread Footings Should be embedded 600 mm feet into hard rock to protect the footing from scour. The footing elevations reflect this embedment.

Cofferdams/Shoring Cofferdams or temporary shoring may be required to construct the pile footings and spread footings at the following locations. Seal concrete may also be required.

<u>Bridge</u>	<u>Bent</u>
Right	2 - 4
Left	2 - 4

Special Problems Due to the erratic nature of the rock in this area, adjustments to bottom of spread footing elevations can be expected to be made during construction.

As Built Information The as built foundation information should be forwarded to the Geotechnical Engineering Bureau upon completion of the foundation system.



Georgia Department of Transportation
Office of Materials and Research
Geotechnical Engineering Bureau



"Working
Together
Works"

Project: EDS-441(33) RABUN US 441 OVER TALLULAH RIVER

1-14-03

Boring Number: 8

Boring Location: BENT 3, 20m RT CONST CL

Ground Elev: 479.185 m

P.I. Number: 122320

Drilling Method: Rotary

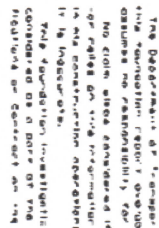
Water Level:

Crew Chief: PAYNE

Elevation m	Strata Description		USCS	Sample No.	SPT	Unit Wt.	% Moist.	LL	PI	% Pass 75 μ	Rock RQD	% Rock Rec.
480	Ground Line											
	med dse mltc micas sdy slit w/bldrs		ML									
	med dse mltc micas sdy slit (wthrd rock)		ML	1s	20							
	hd drilling in wthrd rock w/Tri-cone bit											
	v hd drilling in wthrd rock & rock lyrs w/Tri-cone bit			2s	HB							
475	v hd drilling in rock & wthrd rock lyrs w/Tri-cone bit			3s	HB							
	End Boring at 5.1 m											

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy. He alone will be considered if the contract or base on this information in his bidding or in his construction operations and finds that it is inaccurate. This foundation investigation report is not considered as a part of the Plans and specifications or contract on the job.

Notes: PROR @ 5.10m; Drilled w/CME 850
Drilled w/Tri-cone bit



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EXHIBIT NO. 2 EFFA

CEPARTY 001

BOF 1.0 : 0.000000

CL:5 42

5.4.1

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