

DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA

121-0754-0

INTERDEPARTMENT CORRESPONDENCE

FILE MLP-400 (27) Fulton County OFFICE Materials & Research  
 P.I. No. 720790 Forest Park, Georgia  
 Bridge #20 Douglas Road over Ga. 400 DATE December 14, 1988

FROM David A. Mitchell, Chief, Geotechnical Engineering Bureau

TO Paul Liles, State Bridge and Structural Design Engineer

SUBJECT BRIDGE FOUNDATION INVESTIGATION

As requested, a bridge foundation investigation has been made at the above listed site. The results of this work are attached.

If any additional information is needed, please advise.

*George M. Geary*  
 George M. Geary  
 Engineering Design Unit

DAM:GG:dc  
 Attachment  
 copy: Paul V. Mullins

BRIDGE FOUNDATION INVESTIGATION

MLP-400 (27) Fulton County

P.I. No. 720790

Douglas Road over Georgia 400 Bridge #20

1. Location - This structure will be a bridge located on Douglas Road crossing the proposed Georgia 400. This project is just south of the intersection of Georgia 400 and I-285 in Fulton County.
2. Geology - This project will be geologically sited in the Button Mica Schist Formation of the Georgia Piedmont Region.
3. Subsurface Details - Very dense weathered rock found below elevation 1020+. See boring logs for further information.
4. Foundation Recommendations - H-pile footings are a suitable foundation for bents 1, 2, and 4-6. Maximum pile design loads and estimated tip elevations are given as follows:

<u>PILE TYPE</u>	<u>MAXIMUM DESIGN BEARING</u>
10 BP 42	55 <sup>T</sup>
12 BP 53	70 <sup>T</sup>
14 BP 73	96 <sup>T</sup>

<u>BENT</u>	<u>MINIMUM TIP</u>	<u>ESTIMATED TIP</u>
1	Minimum 15' Penetration	1005 - 995
2	" "	1015 - 1005
4 & 5	" "	1020 - 1010
6	" "	1030 - 1020

PDO is driving resistance after minimum 15 Ft. penetration is achieved.

A spread footing will provide a suitable foundation for Bent 3. A maximum design bearing of 8 KSF (weathered rock) can be used for a bottom of footing elevation of 1022 or below.

5. Alternate Foundation Recommendations -

Drilled shafts would provide a suitable foundation alternate for any or all bents 1-6.

Design recommendations are as follows:

Maximum Design Bearing = 50 KSF (partially weathered rock)

Coefficients of Subgrade Reaction:

$$k_h = 300 \text{ KCF (medium dense soil, } N = 11-50)$$

$$k_h = 5000 \text{ KCF (} N = 50^+, \text{ dense to very dense soil)}$$

Drilled shafts should be socketed at least 5' into partially weathered rock.

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction contracts and holds the

This Foundation Investigation report is not considered as a part of the Plans and Specifications or Contract on the part

Estimated Tip Elevations:

<u>BENT</u>	<u>ELEVATION *</u>
1	1000 or below
2	1010 or below
3	1006 or below
4	1015 or below
5	1014 or below
6	1025 or below

\* Estimate includes 5 ft. embedment.

Reported by: Georgene Geary

Drafted by: Gisela Callaway

Reviewed by:

Wam Bay, P.E.

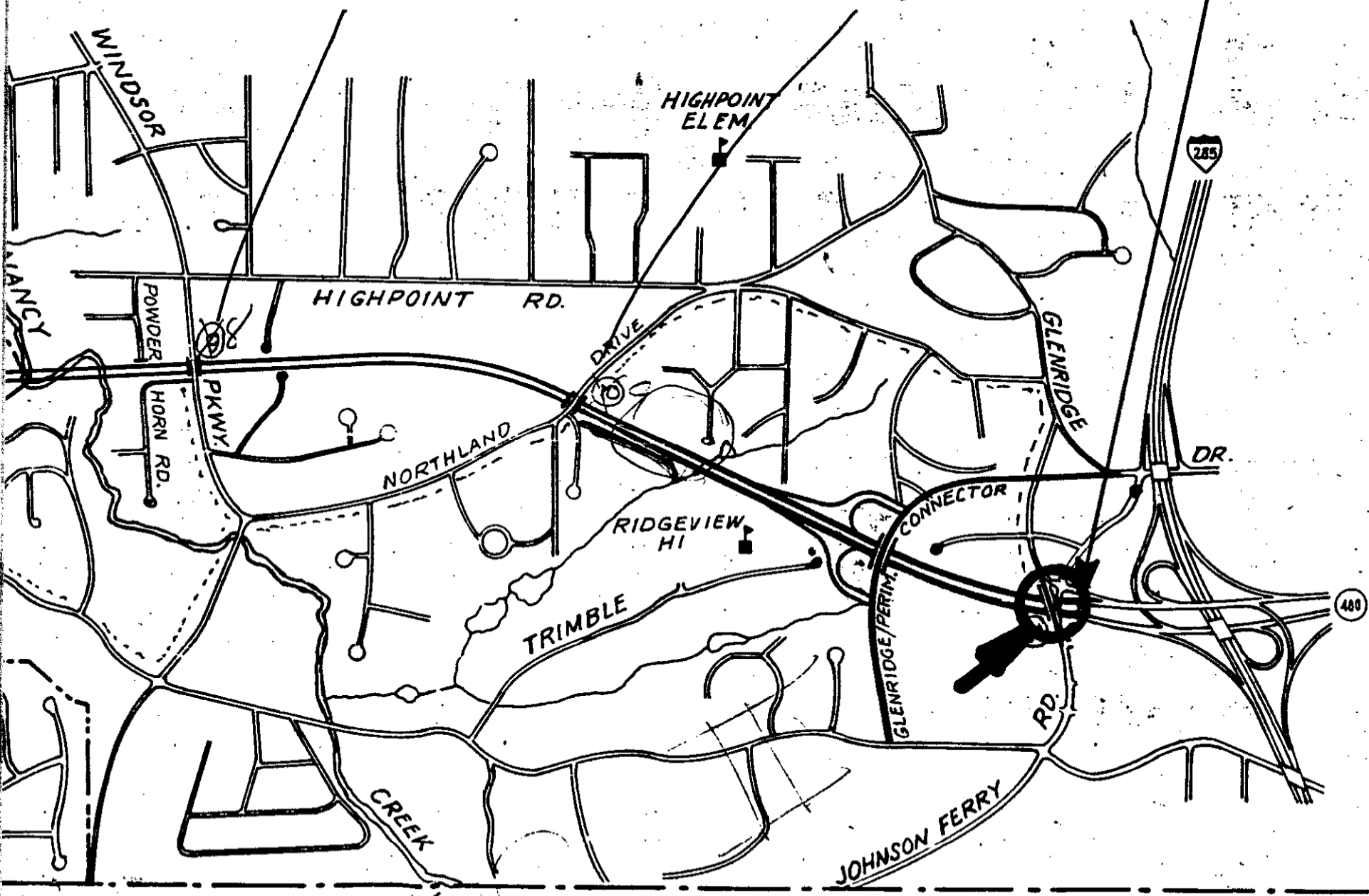
The Department of Transportation in making this foundation report available to contractor assumes no responsibility for its accuracy. No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

3/4" ASP.  
3/8" Stabs  
Mac. Base

3/4" ASP.  
3/8" Per.  
Soil AG

2" ASP. CONC.  
8 1/2" CRUSHED STONE  
(2" PER)



# DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA  
 GEOTECHNICAL ENGINEERING

## BRIDGE SUBSURFACE INVESTIGATION

PROJECT MLP-400(27) COUNTY FULTON DATE 6/16/88  
 LOCATION BR. NO. 20 DOUGLAS RD. O/ GA. 400 BORING NO. 2  
 BENT NO. 1 FOOTING 15' RT. E GROUND ELEV. 1069.41

PROPOSED FOOTING ELEV. \_\_\_\_\_ PARTY CHIEF SPORNBERGER

ELEV	BORING LOG	BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	φ	
1070	Gt. Elev. <i>J</i>  Med. Dec. Miltc. Micac Sdy. Silt  V. Dse. Same (Cont.)	1s											
1060		2s											
		3s											
1050		4s											
		5s											
1040		6s											
		7s											
1030		8s											
		9s											
1020		10s											
1010		11s											

The investigation was conducted in accordance with the provisions of the contract for the purpose of determining the bearing capacity of the foundation and to provide information for the design of the foundation. The results of this investigation are as follows:

This foundation investigation report is not considered as a part of the Plans and Specifications of Contract on the job.

# DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA  
 GEOTECHNICAL ENGINEERING

## BRIDGE SUBSURFACE INVESTIGATION

PROJECT MLP-400(27) COUNTY FULTON DATE 6/16/88  
 LOCATION BR. NO. 20 DOUGLAS RD. O/GA. 400 BORING NO. 2 (CONT.)  
 BENT NO. \_\_\_\_\_ FOOTING \_\_\_\_\_ GROUND ELEV. \_\_\_\_\_  
 PROPOSED FOOTING ELEV. \_\_\_\_\_ PARTY CHIEF SPORNBERGER

ELEV.	BORING LOG	BLOW	UNIFIED	$\gamma$	W	Gs	% 200 CLAY	LL	PI	C	$\phi$
1000	Same (Cont.)	12s									
990											
980	Refusal	60=.5'									
970											
960											
950											
940											

The Department of Transportation is not responsible for the accuracy of the foundation report available to contractors. This foundation report is the property of the contractor and no responsibility for its accuracy or content will be assumed by the Department of Transportation. No claim will be considered if the contractor relies on this information in the absence of his own independent investigation. This foundation investigation report is not to be used as a part of the plans and specifications for Contract on the F.B.


## DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA  
GEOTECHNICAL ENGINEERING

## BRIDGE SUBSURFACE INVESTIGATION

PROJECT MLP-400(27) COUNTY FULTON DATE 6/16/88  
 LOCATION BR. NO. 20 DOUGLAS RD. O/ GA. 400 BORING NO. 4  
 BENT NO. 2 FOOTING 25' RT. E GROUND ELEV. 1072.41

PROPOSED FOOTING ELEV. \_\_\_\_\_ PARTY CHIEF SPORNBERGER

ELEV.	BORING LOG	BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	φ
1070	Gr. Elev. 											
1060												
1050	Med. Dsc. Mltc. Micac Sdy. Silt											
1040		1s										
		2s										
1030	Dsc. Same	3s										
		4s										
1020		5s										
	V. Dsc. Mltc. Micac Sdy. Silt (Weath. Rock)	6s										
1010	(Cont.)	7s										
		60=7										
		HB										

The Department of Transportation is not responsible for the accuracy of the foundation report prepared by the contractor. The contractor assumes full responsibility for the accuracy of the data and conclusions presented in this report. No claim will be considered in this report. The contractor is responsible for the accuracy of the data and conclusions presented in this report. The foundation investigation was conducted in accordance with the specifications of the contract.

# DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA  
 GEOTECHNICAL ENGINEERING

## BRIDGE SUBSURFACE INVESTIGATION

PROJECT MLP-400(27) COUNTY FULTON DATE 6/16/88

LOCATION BR. NO. 20 DOUGLAS RD. O/GA. 400 BORING NO. 4 (CONT.)

BENT NO. \_\_\_\_\_ FOOTING \_\_\_\_\_ GROUND ELEV. \_\_\_\_\_

PROPOSED FOOTING ELEV. \_\_\_\_\_ PARTY CHIEF SPORNBERGER

ELEV.	BORING LOG	BLOW	UNIFIED	γ	W	Gs	% 200 CLAY	LL	PI	C	φ	
1000	Same (Cont.) Refusal											
990												
980												
970												
960												
950												
940												

The responsibility of this report rests with the party who prepared it. It is not intended to be used for any other purpose. No claim will be made for the accuracy of the data or the results of the investigation. This investigation report is not to be used as a part of the plans and specifications of a contract on the job. It is intended for the use of the party who prepared it.




# DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA  
 GEOTECHNICAL ENGINEERING

## BRIDGE SUBSURFACE INVESTIGATION

PROJECT MLP-400(27) COUNTY FULTON DATE 6/21/88  
 LOCATION BR. NO. 20 DOUGLAS RD. O/ GA. 400 BORING NO. 5  
 BENT NO. 3 FOOTING E GROUND ELEV. 1076.71

PROPOSED FOOTING ELEV. \_\_\_\_\_ PARTY CHIEF SPORNBERGER

ELEV	BORING LOG	BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	φ
1070	Gr. Elev. 											
1060												
1050	Med. Dsc. Mlt. Mic. Sdy. Silt											
1040												
1030												
1020	V. Dsc. Same. W/ Weath. Lys. HB											
1010												

This report was prepared by the Georgia Department of Transportation, Office of Materials and Research, Forest Park, Georgia. It is the property of the Georgia Department of Transportation and is loaned to you for your information only. It is not to be distributed outside your organization. It is to be returned to the Georgia Department of Transportation, Office of Materials and Research, Forest Park, Georgia, upon completion of your project.

# DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA  
GEOTECHNICAL ENGINEERING

## BRIDGE SUBSURFACE INVESTIGATION

PROJECT MLP-400 (27) COUNTY FULTON DATE 6/21/88

LOCATION BR. NO. 20 DOUGLAS RD. O/GA. 400 BORING NO. 5 (CONT.)

BENT NO. \_\_\_\_\_ FOOTING \_\_\_\_\_ GROUND ELEV. \_\_\_\_\_

PROPOSED FOOTING ELEV. \_\_\_\_\_ PARTY CHIEF SPORNBERGER

ELEV	BORING LOG	BLOW	UNIFIED	$\gamma$	W	Gs	% 200	% CLAY	LL	PI	C	$\phi$
1000	Same (Cont.)											
	Refusal											
990												
980												
970												
960												
950												
940												

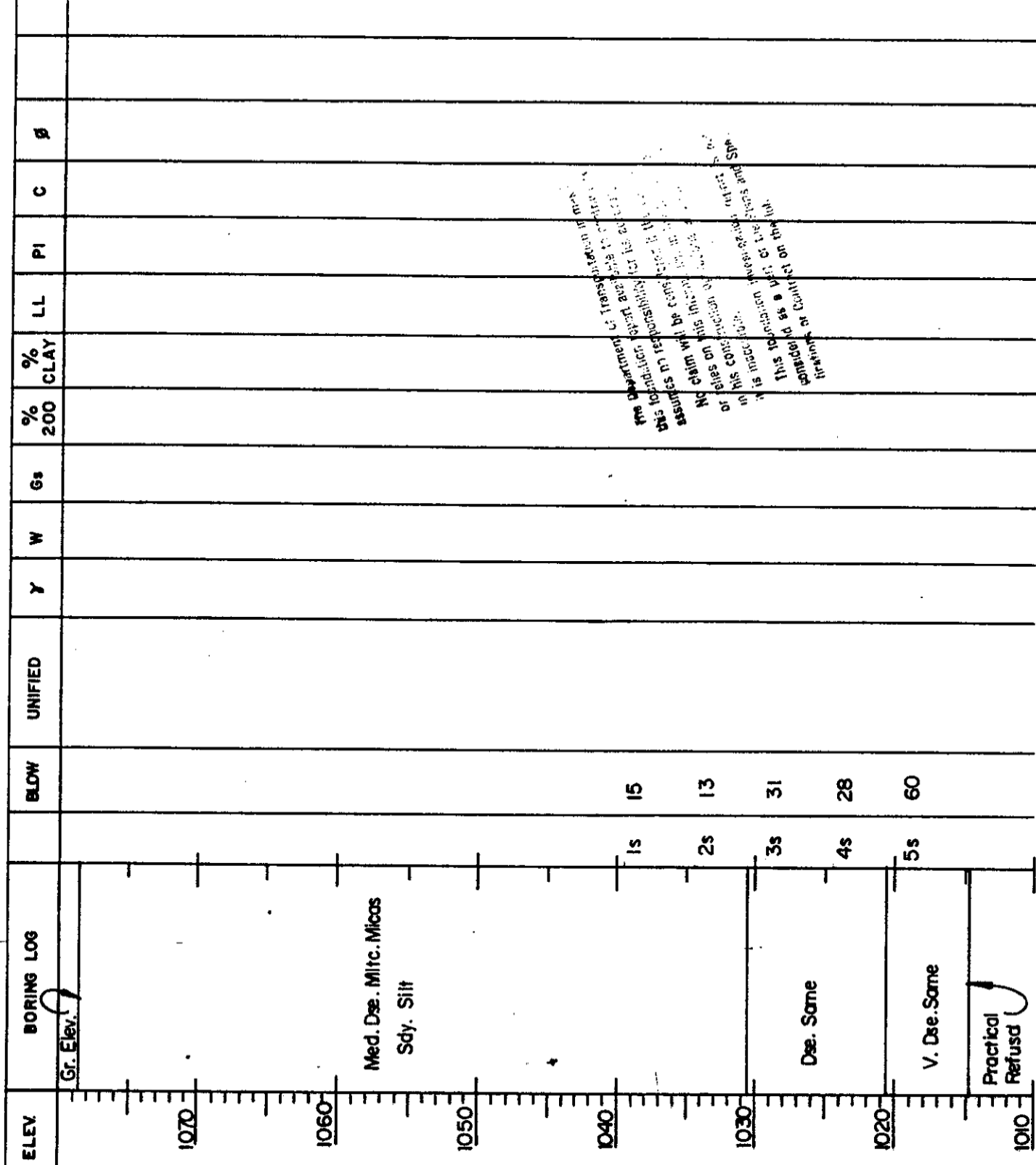
The Department of Transportation is not responsible for the accuracy of the data reported in this report. It is the responsibility of the user to verify the data and to assume all liability for any errors or omissions. No claim will be made for the accuracy of the data reported in this report.

## DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA  
GEOTECHNICAL ENGINEERING

## BRIDGE SUBSURFACE INVESTIGATION

PROJECT MLP-400(27) COUNTY FULTON DATE 6/21/88  
 LOCATION BR. NO. 20 DOUGLAS RD. O/ GA. 400 BORING NO. 8  
 BENT NO. 4 FOOTING 20' RT. E GROUND ELEV. 1078.66

PROPOSED FOOTING ELEV. \_\_\_\_\_ PARTY CHIEF SPORNBERGER

# DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA  
 GEOTECHNICAL ENGINEERING

## BRIDGE SUBSURFACE INVESTIGATION

PROJECT MLP-400(27) COUNTY FULTON DATE 6/22/88  
 LOCATION BR. NO. 20 DOUGLAS RD. O/ GA. 400 BORING NO. 10  
 BENT NO. 5 FOOTING 16' RT. E GROUND ELEV. 1081.91

PROPOSED FOOTING ELEV. \_\_\_\_\_ PARTY CHIEF SPORNBERGER

ELEV	BORING LOG	BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	φ
1080	Gr. Elev. <i>9</i>											
1070												
1060	Med. Dse. Mitr. Micac Sdy. Silt											
1050												
1040		23										
		30										
1030	Dse. Same	37										
		60										
1020	V. Dse. Same (Cont.)	60										

The Department of Transportation and its employees  
 are not responsible for the accuracy of the data  
 furnished by the contractor for this contract.  
 No claim will be considered in this contract  
 unless the contractor is notified in writing  
 within 30 days of the date of the report.  
 This investigation is not a part of the  
 conditions of Contract on this job.

*ELEV  
FOOTING  
1036.5*

# DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA  
 GEOTECHNICAL ENGINEERING

## BRIDGE SUBSURFACE INVESTIGATION

PROJECT MLP-400(27) COUNTY FULTON DATE 6/22/88  
 LOCATION BR. NO. 20 DOUGLAS RD. O/GA. 400 BORING NO. 10 (CONT.)  
 BENT NO. \_\_\_\_\_ FOOTING \_\_\_\_\_ GROUND ELEV. \_\_\_\_\_  
 PROPOSED FOOTING ELEV. \_\_\_\_\_ PARTY CHIEF SPORNBERGER

ELEV.	BORING LOG	BLOW	UNIFIED	$\gamma$	W	Gs	% 200 CLAY	% CLAY	LL	PI	C	$\phi$
1010	Same (Cont.)											
1000	Practical Refusal											
990												
980												
970												
960												
950												

The Department of Transportation is not responsible for the accuracy of the data reported in this foundation log. The contractor is responsible for the accuracy of the data reported in this foundation log. No claim will be made by the Department of Transportation or its consultants in connection with this investigation report. This foundation investigation report is prepared as a part of the plans and specifications of the contract for the bridge.

# DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA  
 GEOTECHNICAL ENGINEERING

## BRIDGE SUBSURFACE INVESTIGATION

PROJECT MLP-400(27) COUNTY FULTON DATE 6/21/88  
 LOCATION BR. NO. 20 DOUGLAS RD. O/ GA. 400 BORING NO. 11  
 BENT NO. 6 FOOTING 26' LT. E GROUND ELEV. 1085.23

PROPOSED FOOTING ELEV. \_\_\_\_\_ PARTY CHIEF SPORNBERGER

ELEV	BORING LOG	BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	φ
1080	Gr. Elev. <i>9</i> Med. Dse. Milt. Micacs Sdy. Silt	1s										
1070		2s										
1060		3s										
1050	Dse. Same	4s										
		5s										
		6s										
		7s										
1040	V. Dse. Same	8s										
1030		9s										
1020		10s										
		HB										

The Department of Transportation in making this foundation report, is not responsible for its accuracy. This foundation report is not to be relied upon in the bidding of any claim. No claim will be considered in this bidding and hence that relies on this report. This foundation investigation report is not to be relied upon. This foundation investigation report is not considered as a part of the Plans and Specifications of Contract on the job.

# DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS, AND RESEARCH, FOREST PARK, GEORGIA  
 GEOTECHNICAL ENGINEERING

## BRIDGE SUBSURFACE INVESTIGATION

PROJECT MLP-400(27) COUNTY FULTON DATE 6/21/88

LOCATION BR. NO. 20 DOUGLAS RD. O/GA. 400 BORING NO. 11 (CONT.)

BENT NO. \_\_\_\_\_ FOOTING \_\_\_\_\_ GROUND ELEV. \_\_\_\_\_

PROPOSED FOOTING ELEV. \_\_\_\_\_ PARTY CHIEF SPORNBERGER

ELEV	BORING LOG	BLOW	UNIFIED	$\gamma$	W	Gs	% 200	% CLAY	LL	PI	C	$\phi$
1010	BORING LOG Same (Cont.) Practical Refusal											
1000												
990												
980												
970												
960												
950												

The Department of Transportation in making the foundation report available to contractors assumes no responsibility for its contents. No claim will be considered in his liability or falls on this information and does not in his capacity. Investigation report is not in his capacity. This investigation is not a part of the Plans and Specifications. Considered on the part of the Department of Transportation.