

BUCHAN _____
BOWMAN _____
RICHARDSON *Albert Shelby*
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FILE _____

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

INTERDEPARTMENTAL CORRESPONDENCE



FILE STP-9252(6) & STP-9250(1),
Fulton-Cobb Counties
PI No. 751300 & 751310
Johnson Ferry Road & Abernathy
Road Widening

OFFICE Materials and Research

DATE May 9, 2005

E.S.G.
FROM Georgene M. Geary, P. E., State Materials and Research Engineer

TO James Buchan P.E., State Urban Design Engineer
~~Attention: Albert Shelby~~

SUBJECT Soil Survey Summary
JOHNSON FERRY ROAD & ABERNATHY ROAD WIDENING FROM THE
CHATTAHOOCHEE RIVER TO ROSWELL ROAD

As requested, a soil survey investigation has been performed at the
aforementioned site. The results of this work are attached.

If additional information is needed, please contact Neoma Cole of the
Geotechnical Engineering Bureau at 404-363-7546.

GMG: NKC

Attachments

Copy: Bryant Poole, District Engineer, Chamblee
Jeff Woodward, Area Engineer, Marietta
AJ Jubran, P.E., State Pavement Engineer, Forest Park

SOIL SURVEY SUMMARY

For

Project No. STP-9252(6) & STP-9250(1), Fulton/Cobb Counties

PI No. 751300 & 751310

1. Location / Description This project is for the widening of Johnson Ferry Road and Abernathy Road. The project STP-9252(6) begins at Sta. 106+12.06± and continues East to Sta. 187+89.53± and the project STP-9250(1) begins at Sta. 200+00± and continues East to Sta. 247+25±. The project is located North of Atlanta in Fulton and Cobb Counties.

2. Geology This project will be located in the Biotitic Gneiss/Mica Schist/Amphibolite Formation of the Georgia Piedmont Region.

3. Rock Rock in the form of rock layers, which may be removed by heavy equipment and/ or light blasting, was encountered on this project. We estimate that this material will be encountered at the following locations:

<u>Station to Station</u>	<u>Location</u>
127+40 to 130+00	Right
132+00 to 133+00	Right

Also hard rock, noted as auger refusal and requiring blasting for removal, was encountered at, near, and above grade at the following locations:

<u>Station to Station</u>	<u>Location</u>
106+50 to 108+50	Right
124+00 to 124+50	Right
133+00 to 137+00	Right
136+50 to 137+50	Left

4. Removal No material requiring removal.

5. Waste None of the soils encountered on this project will require wasting.

6. Subgrade Materials No additional subgrade material will be required for this project.

**7. Pavement
Design Values**

We recommend the following values for use in the pavement design calculations for this project:

Soil Support Value = 2.0
Regional Factor = 1.8
Subgrade Reaction, k = 110 pci
Erosion Index = 7.5

Graded aggregate base is acceptable base material for use on this project.

8. Slopes

Maximum 2:1 slopes will be safe for this project, except for the cut slopes in the areas listed below. Hard rock was encountered in these areas and steepened slopes are feasible. We recommend steepened slopes in these areas to be 1:1 in accordance with the attached detail:

<u>Station to Station</u>	<u>Location</u>
106+50 to 108+50	Right
124+00 to 124+50	Right
133+00 to 137+00	Right
136+50 to 137+50	Left

9. Groundwater

Groundwater was not encountered at locations of subsurface borings on the project at the time of the investigation.

10. Shrinkage

We recommend an average shrinkage factor of 20 % for use in the earthwork calculations for this project.

11. Culverts

We recommend that a 12-inch blanket of Type II Foundation Backfill material be placed under the barrel of all culverts and 46-inch diameter and larger cross-drains on this project.

12. Corrosion

Reference should be made to the attached "Pipe Culvert Materials Recommendations" for materials allowable by the Laboratory corrosion test.

13. Bench

Where new fills are to be placed on existing slopes steeper than 3:1, the existing slope should be benched in accordance with the attached detail.

**14. Pavement
Design**

We recommend the use of a minimum 10 inches of graded aggregate base in the pavement section for this project due to subgrade soils of low soil support values. However, this depth of base material may be slightly reduced on side streets with low-volume traffic.

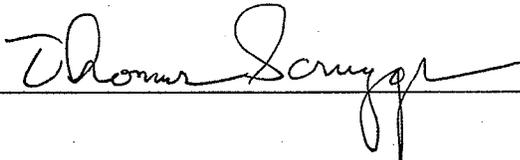
15. Serrated Slopes Serrated slopes will not be required on this project.

16. Special Problems

- A. Several residences are located very close to the construction limits of this project. Vibrations from construction may cause some concern with property owners. We recommend that the Project Engineer contact the Geotechnical Engineering Bureau prior to construction to evaluate the need for crack surveys and vibration monitoring.
- B. We recommend that all bridge approach slabs on this project be constructed in accordance with the notched detail on Georgia Standard 9017-R.
- C. In areas where guardrail is to be installed, we recommend that curbing and slope drains be installed in vertical sags and at low ends of superelevations to prevent surface erosion from concentrated surface runoff.

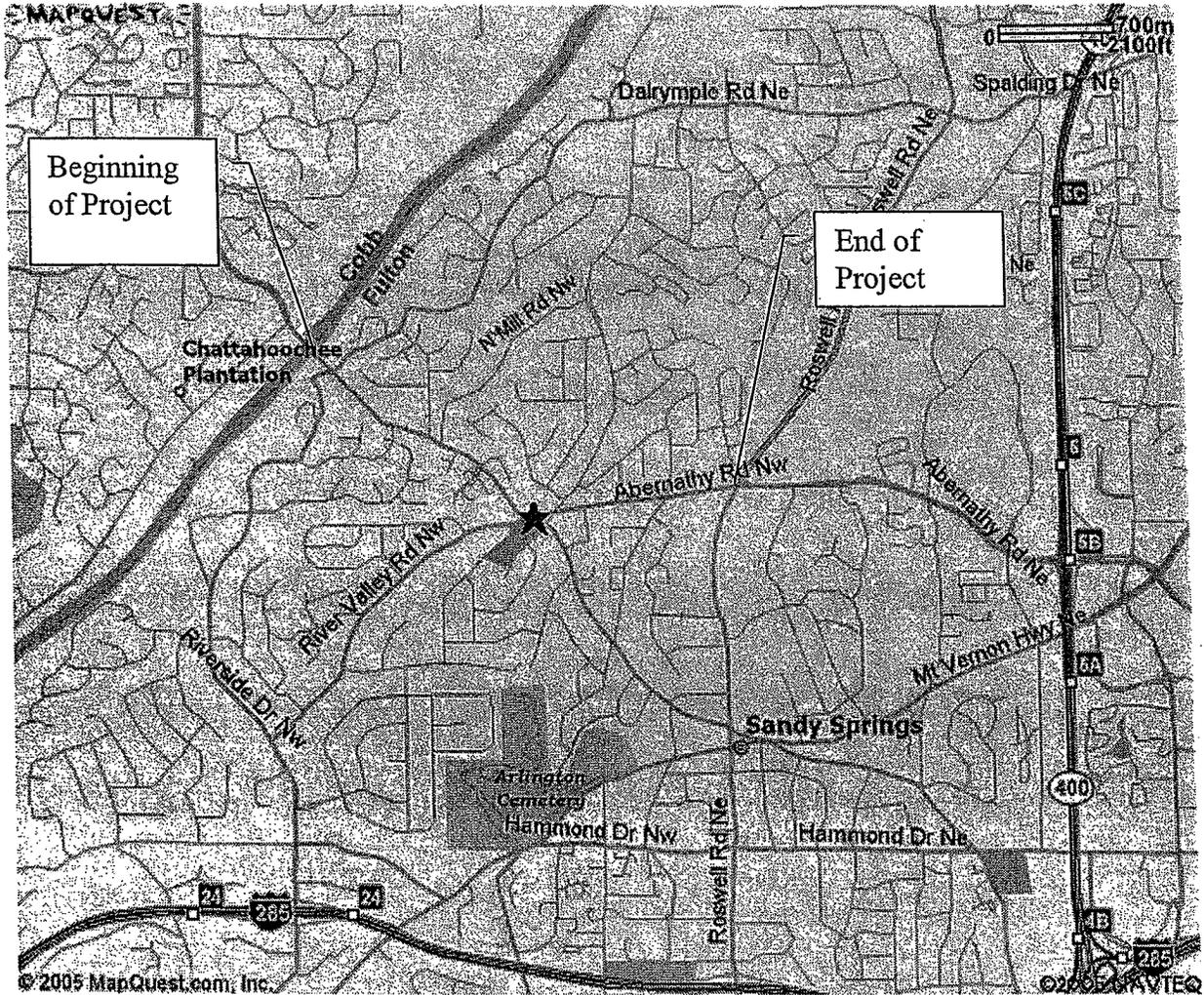
Reported By Neoma K. Cole, EIT

Reviewed By

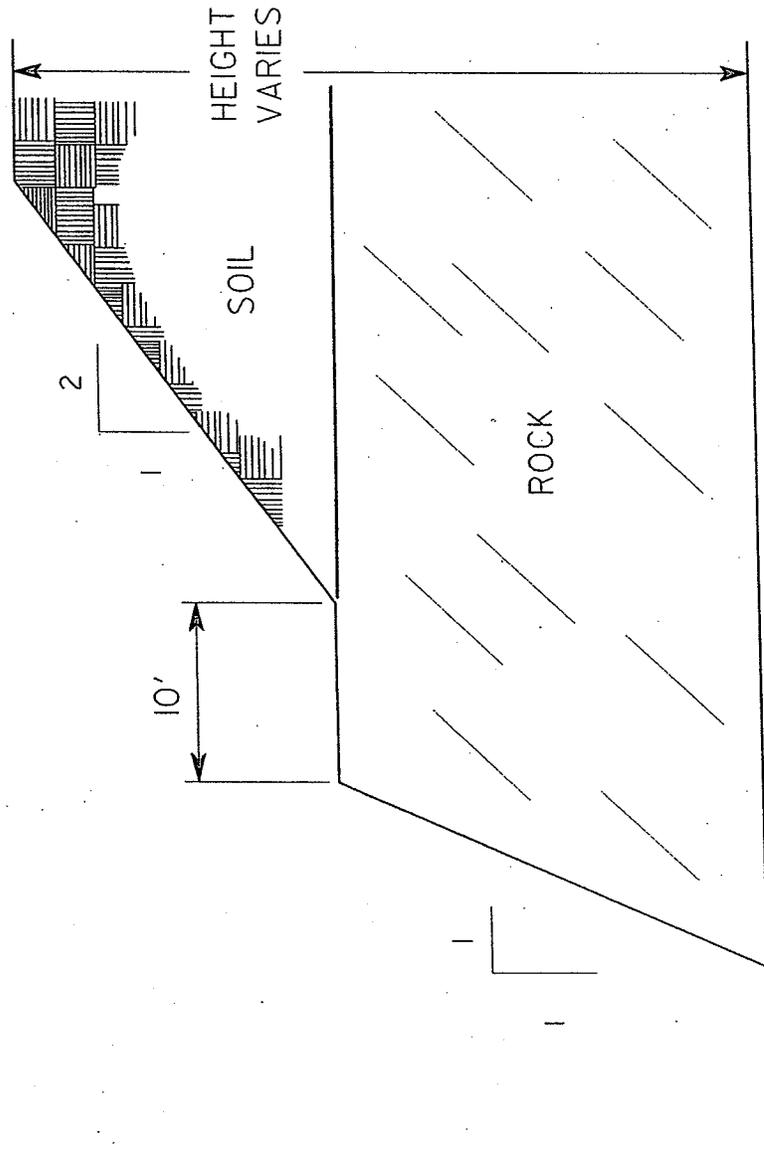
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STP-9252(6) & STP-9250(1), Fulton/Cobb Counties

Widening of Abernathy Road and Johnson Ferry Road from the Chattahoochee River to Roswell Road



STP-9252(6) & STP-9250 (1), FULTON-COBB COS:



APPLIES TO STATION TO STATION	LOCATION
106+50 ± TO 108+50 ±	RIGHT
124+00 ± TO 124+50 ±	RIGHT
133+00 ± TO 137+00 ±	RIGHT
136+50 ± TO 137+50 ±	LEFT

DETAIL FOR ROCK CUT

NO SCALE

Pipe Culvert Material Alternates For Piedmont/Blue Ridge Region

TYPE OF PIPE INSTALLATION		CONCRETE	CORRUGATED STEEL AASHTO M-36		CORRUGATED ALUMINUM AASHTO M-196	PLASTIC			
			ALUMINUM COATED (TYPE 2) CORR. STEEL	PLAIN ZINC COATED	PLAIN UNCOATED ALUMINUM	CORR. POLY-ETHYLENE AASHTO M-252	CORR. POLY-ETHYLENE SMOOTHED LINED AASHTO M-294 TYPE "S"	POLY VINYL CHLORIDE (PVC) PROFILE WALL AASHTO M-304	
STORM DRAIN	LONGITUDINAL INTERSTATE AND TRAVEL BEARING	X							
	LONGITUDINAL NON-INTERSTATE AND NON-TRAVEL BEARING	X	X		X		X	X	
	CROSS DRAIN	ADT < 250	X	X	X	X		X	X
		GRADE ≤ 10% 250 < ADT < 1500	X	X*		X			
		ADT > 1500	X						
	GRADE > 10%	ADT < 250		X	X	X		X	X
		ADT > 250				X			
SIDE DRAIN		X	X	X	X		X	X	
PERMANENT SLOPE DRAIN			X	X	X		X	X	
PERFORATED UNDERDRAIN			X	X	X	X	X		

* This type pipe can be used if the addition of Type "B" Coating (AASHTO M-190, Half Bituminous Coated with Paved Invert) is utilized.

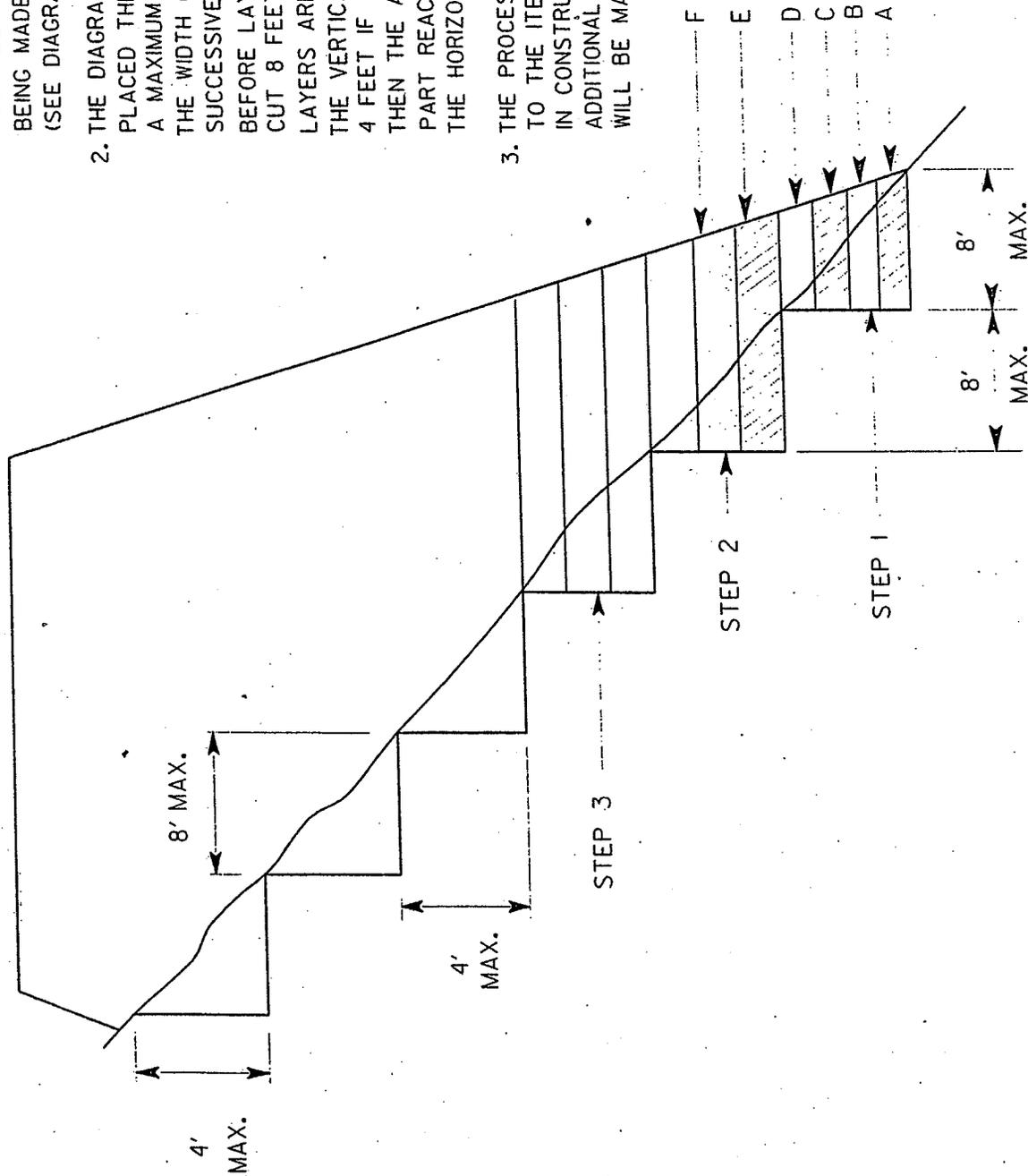
NOTES:

1. Allowable materials are indicated by an "X".
2. Structural requirements of storm drain pipe will be in accordance with Georgia Standard 1030-D or 1030-P, whichever is applicable, and the Standard Specifications.

1. WHERE THE EMBANKMENT IS TO BE PLACED ON A HILLSIDE OR ANOTHER EXISTING EMBANKMENT HAVING A SLOPE OF 3 TO 1 OR STEEPER, THE FOUNDATION MUST BE BENCHING WHILE THE EMBANKMENT IS BEING MADE.
(SEE DIAGRAM AT LEFT.)

2. THE DIAGRAM SHOWS THAT BEFORE LAYER "A" IS PLACED THE FIRST STEP (D) IS CUT INTO THE SLOPE A MAXIMUM DISTANCE OF ABOUT 8 FEET (ABOUT $\frac{3}{4}$ THE WIDTH OF THE TYPICAL D-8 BULLDOZER BLADE). SUCCESSIVE LAYERS B, C, AND D ARE THEN PLACED BEFORE LAYER "E" IS PLACED, THE SECOND STEP IS CUT 8 FEET INTO THE SLOPE AND SUCCESSIVE LAYERS ARE AGAIN PLACED. IF IT IS ANTICIPATED THAT THE VERTICAL PART OF THE STEP WILL EXCEED 4 FEET IF A 8 FEET HORIZONTAL CUT IS MADE, THEN THE ACTUAL CUT STOPS WHEN THE VERTICAL PART REACHES A MAXIMUM OF 4 FEET ALLOWING THE HORIZONTAL DISTANCE TO VARY.

3. THE PROCESS OF BENCHING IS CONSIDERED INCIDENTAL TO THE ITEM OF UNCLASSIFIED EXCAVATION AND BORROW IN CONSTRUCTION OF THE EMBANKMENT AND NO ADDITIONAL MEASUREMENT OF QUANTITY OR PAYMENT WILL BE MADE FOR BENCHING.



BENCHING DETAIL

NO SCALE