BFI 309-0024-0

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

INTERDEPARTMENTAL CORRESPONDENCE

FILE PR000-S007-00(337), Wheeler County
CR-178 over Ochwalkee Creek
PI No. S007337

OFFICE Materials and Research

DATE August 8, 2006

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

TO Terry Gable, State Aid Administrator
Attention: David Huff , Assistant State Aid Administrator

SUBJECT Bridge Foundation Investigation
CR-178 over Ochwalkee Creek in Wheeler County

As requested, a Bridge Foundation Investigation has been performed for the project mentioned above. The results of this work are attached. This project proposes the replacement of the following piling:

Bent	Pile No.
1	5
2	1, 3
3	1, 2, 3, 4
4	2, 3, 4
5	2
6	3, 4

However, it is more economical to replace the entire bridge with longer spans to decrease the number of bents required. The information provided in this report may be used if a total bridge replacement is deemed necessary. If additional information is needed, please contact Melissa Quinton, E.I.T. of the Geotechnical Engineering Bureau at 404-363-7546.

GMG: MAQ

Attachments

Copy: Glenn W. Durrence, District Engineer, Jesup
Scott Taylor, Area Engineer, Baxley
Paul Liles, P.E., State Bridge and Structural Design Engineer
David Crim, State Maintenance Engineer, TMC
Attention: Ben Rabun, P.E., State Bridge Maintenance Engineer, TMC

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BRIDGE FOUNDATION INVESTIGATION

Project Number PR000-S007-00(337), Wheeler County
P.I. Number S007337
Location (See Map) CR-178 over Ochwalkee Creek

GENERAL INFORMATION

Geologic Formation Neogene Undifferentiated Formation of the Vidalia Uplands Region of the Georgia Coastal Plain Province.

Subsurface Features

Groundwater elevations were not measured.

MAXIMUM PILE DESIGN LOADS

End Bearing = 80%
Friction = 20%

10 BP 42 = 55 Tons
12 BP 53 = 70 Tons
14 BP 73 = 96 Tons

FOUNDATION RECOMMENDATIONS

Bent	Pile No.	Pile Bent
1	5	Steel H
2	1, 3	Steel H
3	1, 2, 3, 4	Steel H
4	2, 3, 4	Steel H
5	2	Steel H
6	3, 4	Steel H

ELEVATIONS

Bent	Minimum Tip	Estimated Tip
1, 6	180	165
2 – 5	175	165

NOTES

Elevations All elevations are based on an assumed Elevation of 200 feet at the end of the West end of the bridge deck.

PDO Driving resistance after Minimum Tip Elevations are achieved.

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Waiting Period	None required.
Theoretical Scour	Information not provided for evaluation.
Erosion	We recommend the use of 24 inches of Type I riprap and filter fabric.
Freeze Bearing	Piles should not be overdriven at this site. If dynamic bearing has not been achieved by 2 feet above the Estimated Tip Elevation, pile driving should be stopped for a minimum of 24 hours and re-started with a warm hammer to check for "freeze" bearing.
Pile Protection	All exposed H-piles shall be painted using special protective coating system 1P or 2P.
As Built Foundation Information	The as built foundation information should be forwarded to the Geotechnical Engineering Bureau upon completion of the foundation system.

Prepared By Melissa Quinton, E.I.T.

Reviewed By _____, P.E.

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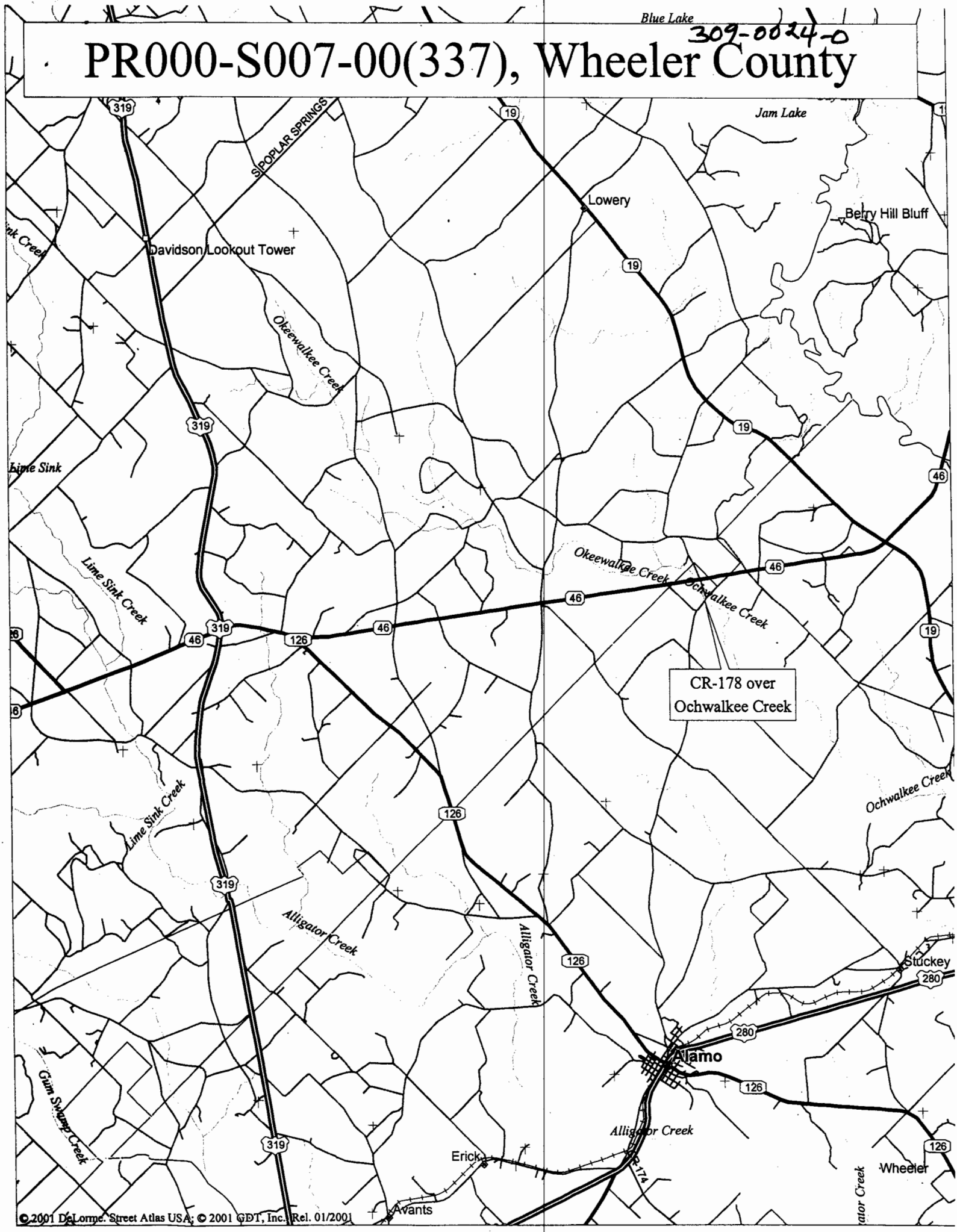

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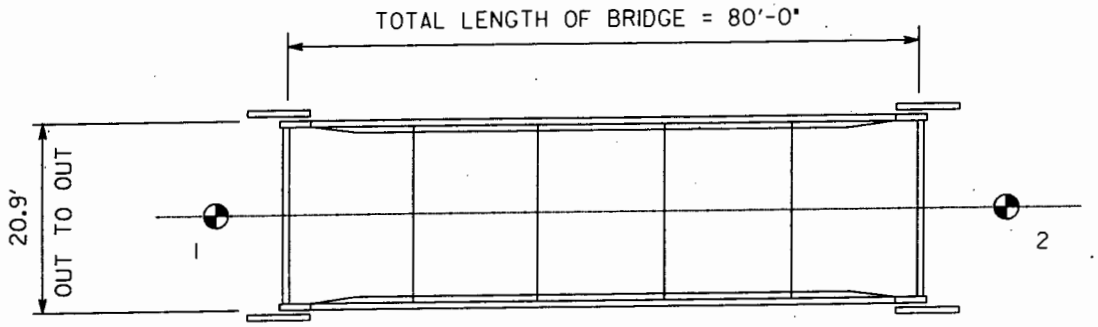

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor refies 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.

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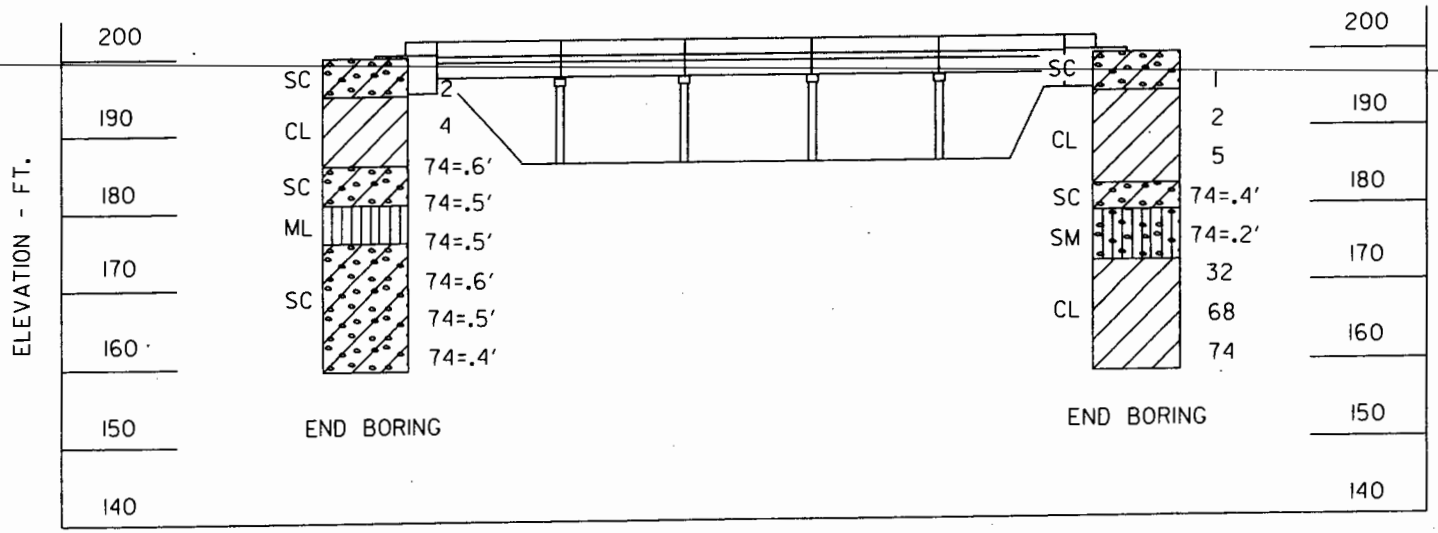
SPT VALUES HAVE BEEN ADJUSTED TO REFLECT THE USE OF THE AUTOMATIC HAMMER



CLASSIFICATION OF SOILS FOR REPORT PURPOSES

(UNIFIED CLASSIFICATION SYSTEM)

NAME	LETTER	NAME	LETTER
WELL-GRADED SILTY SAND	SW-SM	CLAYEY SAND	SC
WELL-GRADED SILTY GRAVEL	GW-GM	CLAYEY SAND, HIGH LIQUID LIMIT	SC-SC
WELL-GRADED GRAVEL	GW	SILTY SAND, HIGH LIQUID LIMIT	SM-SC
POORLY-GRADED GRAVEL	GP	INORGANIC SILTY, LOW LIQUID LIMIT OR INORGANIC CLAY, LOW LIQUID LIMIT	ML
SILTY GRAVEL	GM	INORGANIC SILTY, LOW LIQUID LIMIT	ML
CLAYEY GRAVEL	GC	INORGANIC SILTY LEAN CLAY	ML-CL
CLAYEY SILTY GRAVEL	GM-GC	LEAN CLAY	CL
WELL-GRADED SAND	SW	INORGANIC SILTY, HIGH LIQUID LIMIT	MH
POORLY-GRADED SAND	SP	INORGANIC CLAY, HIGH LIQUID LIMIT OR INORGANIC SILTY, HIGH LIQUID LIMIT	CH
POORLY-GRADED SILTY SAND	SP-SM	FAT CLAY	CH
SILTY SAND	SM	PEAT	PT
SILTY CLAYEY SAND	SM-SC	GROUND WATER LEVEL	

GEORGIA
DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL ENGINEERING BUREAU

BORING LOCATION & SOIL PROFILE
PR000-S007-00(337)
C.R. 178 OVER OCHWALKEE CREEK
WHEELER CO. 7/21/2006

NO SCALE

DATE | REVISIONS | BY

DRAWN W.B. PA NUMBER 007337

7/20/2006

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

QUALITY 1 "Working Together Works"

Project: PR000-S007-00(337) Wheeler CR-178 over Ochwalkee Creek — **6-20-06**

Boring Number: 1 — **Boring Location:** 5 feet West of Bent 1 — **Ground Elev:** 199.87 ft

P.I. Number: 007337 — **Drilling Method:** Rotary — **Water Level:** — **Crew Chief:** Perrien

Elevation ft	Strata Description	USCS	Sample No.	SPT	Unit Wt.	% Moist.	LL	PI	% Pass 75µ	Rock RQD	% Rock Rec.
	Ground Line										
200	cy sd	SC									
195	sft gr sdy cly	CL	1-s	2							
190			2-s	4							
185	v dse mltc cy sd	SC	3-s	74=.6'							
180	v hd mltc sdy cy slt	ML	4-s	74=.5'							
175	v dse mltc cy sd	SC	5-s	74=.5'							
170			6-s	74=.6'							
165			7-s	74=.5'							
160			8-s	74=.4'							
	End Boring at 40.4 ft										

Notes: SPT values have been adjusted to reflect the use of the Automatic Hammer
Very hard drilling from depth 14 feet to depth 40 feet.

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Geotechnical Engineering Bureau

QUALITY 1 "Working Together Works"

Project: PR000-S007-00(337) Wheeler CR-178 over Ochwalkee Creek — **6-20-06**
Boring Number: 2 — **Boring Location:** 5 feet East of end of bridge — **Ground Elev:** 199.74 ft
P.I. Number: 007337 — **Drilling Method:** Rotary — **Water Level:** — **Crew Chief:** Perrien

Elevation ft	Strata Description	USCS	Sample No.	SPT	Unit Wt.	% Moist.	LL	PI	% Pass 75µ	Rock RQD	% Rock Rec.
200	Ground Line										
	cy sd	SC									
195	sft mltc sdy cly	CL	1-s	1							
190			2-s	2							
185			3-s	5							
	v dse mltc cy slty sd	SC									
180	v dse tn slty sd with ss layers	SM	4-s	74=.4'							
175			5-s	74=.2'							
170	v stf gr slty cly	CL	6-s	32							
165	hd gr sdy cly	CL	7-s	68							
160			8-s	74							
	End Boring at 41.0 ft										

Notes: SPT values have been adjusted to reflect the use of the Automatic Hammer

CLASSIFICATION OF SOILS FOR REPORT PURPOSES

(UNIFIED CLASSIFICATION SYSTEM)

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WELL-GRADED SILTY GRAVEL	GW-GM
WELL-GRADED GRAVEL	GW
POORLY-GRADED GRAVEL	GP
SILTY GRAVEL	GM
CLAYEY GRAVEL	GC
CLAYEY SILTY GRAVEL	GM-GC
WELL-GRADED SAND	SW
POORLY-GRADED SAND	SP
POORLY-GRADED SILTY SAND	SP-SM
SILTY SAND	SM
SILTY CLAYEY SAND	SM-SC

NAME	LETTER
CLAYEY SAND	SC
CLAYEY SAND, HIGH LIQUID LIMIT	SC-H
SILTY SAND, HIGH LIQUID LIMIT	SM-H
ORGANIC SILT, LOW LIQUID LIMIT OR ORGANIC CLAY, LOW LIQUID LIMIT	OL
INORGANIC SILT, LOW LIQUID LIMIT	ML
INORGANIC SILTY LEAN CLAY	ML-CL
LEAN CLAY	CL
INORGANIC SILT, HIGH LIQUID LIMIT	MH
ORGANIC CLAY, HIGH LIQUID LIMIT OR ORGANIC SILT, HIGH LIQUID LIMIT	OH
FAT CLAY	CH
PEAT	PT
GROUND WATER LEVEL	

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