Preliminary Site Assessment
Patsy Smith Property Parcel #83
Franklin, Macon County, NC

H&H Job No. ROW-150
State Project R-2408A and B
WBS Element # 34427.1.1
July 14, 2008

Hart & Hickman

2923 South Tryon Street
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Preliminary Site Assessment
Patsy Smith Property Parcel #83
Franklin, Macon County, North Carolina
H&H Project ROW-150

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Preliminary Site Assessment Report
Patsy Smith Property Parcel #83
Franklin, Macon County, North Carolina
H&H Project ROW-150

1.0 Introduction

Hart & Hickman PC (H&H) has prepared this Preliminary Site Assessment (PSA) report to document assessment activities performed at the Patsy Smith property (NC DOT Parcel #83) located at 3423 Bryson City Road Franklin, Macon County, North Carolina. This assessment was conducted on behalf of the North Carolina Department of Transportation (NC DOT) in accordance with the scope of work outlined in our May 21, 2008 proposal.

The purpose of this assessment was to check for the presence or absence of impacted soil at the subject property in the proposed construction areas related to the widening of NC Highway 28 (Bryson City Road) and State Road 1363 (Riverview Street, State Project R-2408A and B). A site location map is included as Figure 1 and a site map is presented as Figure 2. The NC DOT preliminary plan of the Bryson City Road widening area near the Patsy Smith property is included in Appendix A.

Based on information provided by the NC DOT, the Patsy Smith property currently operates as an active gasoline station/convenience store. According to the North Carolina Department of Environment and Natural Resources (NC DENR) Underground Storage Tank (UST) database, there are currently three USTs present at the site, all located outside of the proposed right-of-way along Bryson City Road. Additionally, there are five active above ground storage tanks (ASTs) located in the south of the store building.

H&H searched NC DENR files at the Asheville Regional Office (ARO) to determine if a release had been reported. There were no files for the site that indicated a petroleum release had occurred at the site. H&H reviewed the UST compliance files for the active UST system at the site. The files indicate that no USTs are located within the proposed right-of-way at the Patsy Smith Property.

2.0 Site Assessment

Soil Assessment Field Activities

H&H mobilized to the subject property on May 28, 2008 to advance six soil borings (83-1 through 83-6) by direct push technology (DPT). Prior to advancing the soil borings, H&H reviewed a geophysical survey performed by Schnabel Engineering South (Schnabel) of Greensboro, North Carolina between May 22 and May 27, 2008. Schnabel utilized ground penetrating radar (GPR) and time domain electromagnetic (TDEM) technology to identify geophysical anomalies and potential USTs at the site. No anomalies or USTs were noted within the proposed right-of-way at the subject property. Schnabel's report including a site map depicting the results of the GPR and TDEM survey is included in Appendix B.

Prior to conducting soil borings, utilities were marked by NC One Call and by Schnabel. Borings were also cleared to a four to five foot depth by hand auger. H&H utilized Subsurface Environmental Investigations, LLC (SEI) of Statesville, North Carolina to advance soil borings 83-1 through 83-6 (Figure 2). To facilitate the selection of soil samples for laboratory analysis, soil from each boring was screened continuously for the presence of volatile organic compounds (VOCs) with an organic vapor analyzer (OVA). Additionally, H&H observed the soil for visual and olfactory indications of petroleum impacts. In general, soil samples that exhibited the highest readings on the OVA were to be selected for laboratory analysis. No elevated OVA readings were detected. Soil boring logs are included in Appendix C.

H&H submitted five samples (83-1, 83-2, 83-3, 83-4, 83-5, and 83-6 all at 10-12 ft) for laboratory analysis. Soil samples are identified by the NC DOT Parcel number, soil boring, and the depth interval in ft. Samples were sent to Research and Analytical Laboratories, Inc (RAL) for analysis using standard chain-of-custody protocol. All soil samples were analyzed for total petroleum hydrocarbons (TPH) for gasoline-range organics (GRO) by EPA Method 5030/8015B and diesel-range organics (DRO) by EPA Method 3550/8015B. Sample depths and analytical results are summarized in Table 1. Laboratory analytical data sheets for the Parcel 83 samples and chain-of-custody documentation are provided in Appendix D. Data for other sites unrelated to Parcel 83 are also shown on the laboratory report. The analytical results are discussed below.

3.0 Analytical Results

TPH GRO and DRO were not detected in the soil samples analyzed for Parcel #39. Based on laboratory analytical results and OVA readings, it appears that no impacted soil is present at the site in the vicinity of the soil boring locations. DOT plans indicate proposed cut and fill activities in this area. Based on the soil sampling activities described above, impacted soil should not be encountered at this site during NC DOT road work.

4.0 Summary and Regulatory Considerations

H&H has reviewed geophysical survey results and collected soil samples at Parcel 83. No geophysical anomalies were detected at the Patsy Smith property within the proposed new right-of-way along Bryson City Road. Target compounds were not detected in six soil samples collected on Parcel #83. Based on the results of soil sampling activities, impacted soil should not be encountered at this site during NC DOT road work.

5.0 Signature Page

This report was prepared by:

Matthew J. Tendam, PE
Senior Project Engineer for
Hart and Hickman, PC

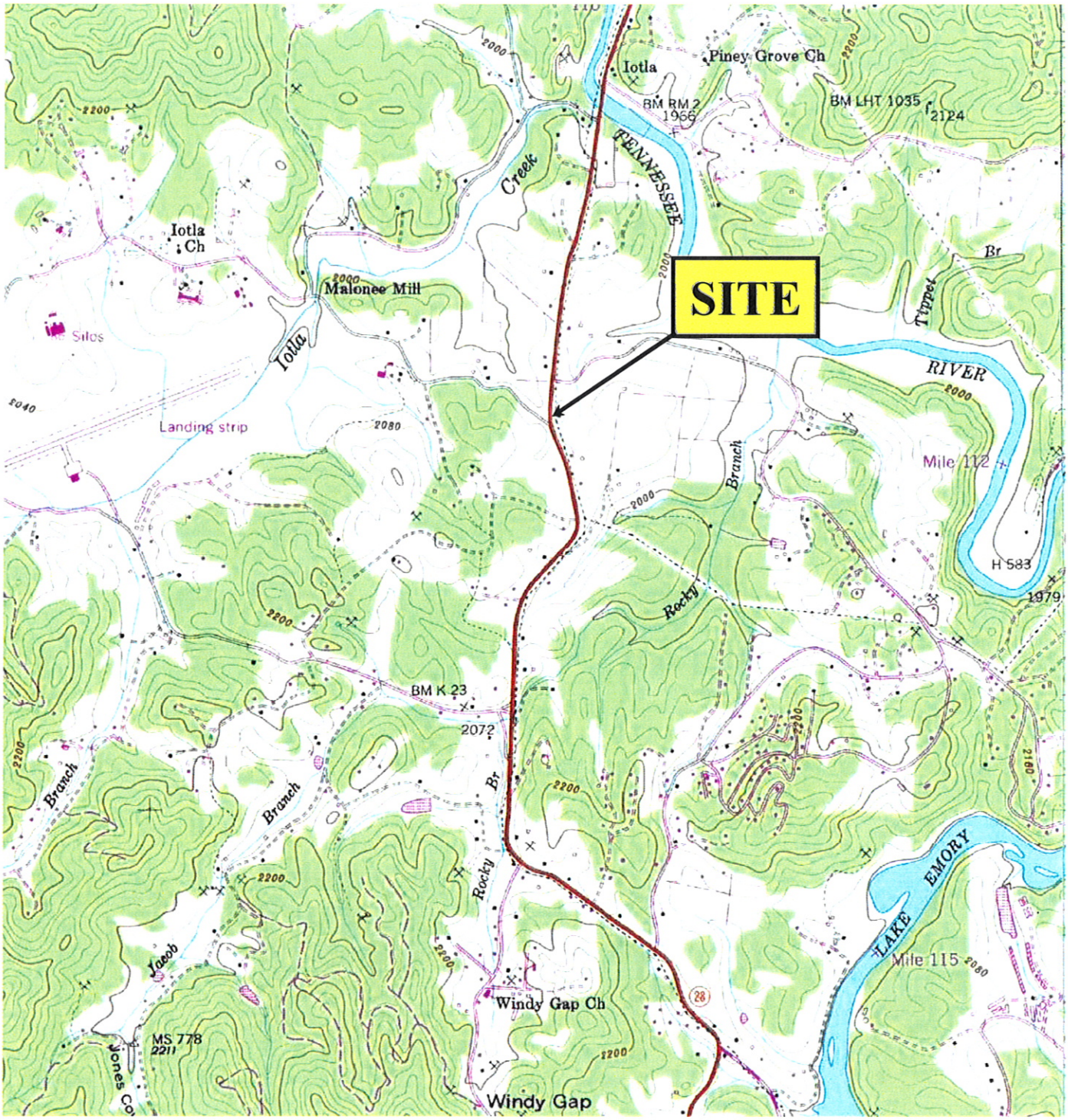
This report was reviewed by:

Matt Bramblett, PE
Principal and Project Manager for
Hart and Hickman, PC

Table 1
Soil Analytical Results - Patsy Smith Property Parcel 83
Franklin, Macon County, North Carolina
H&H Job No. ROW-150

Sample ID	83-1	83-2	83-3	83-4	83-5	83-6	NC DENR
Sample Depth (ft)	10-12	10-12	10-12	10-12	10-12	10-12	Action
Sample Date	5/28/2008	5/28/2008	5/28/2008	5/28/2008	5/28/2008	5/28/2008	Level
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
TPH-GRO (EPA Method 5030)							
Gasoline-Range Organics (GRO)	<10	<10	<10	<10	<10	<10	10
TPH-DRO (EPA Method 3550)							
Diesel-Range Organics (DRO)	<10	<10	<10	<10	<10	<10	10

Notes:
TPH=total petroleum hydrocarbons
mg/kg=milligrams per kilogram



N

APPROXIMATE

0 2000 4000

SCALE IN FEET

U.S.G.S. QUADRANGLE MAP

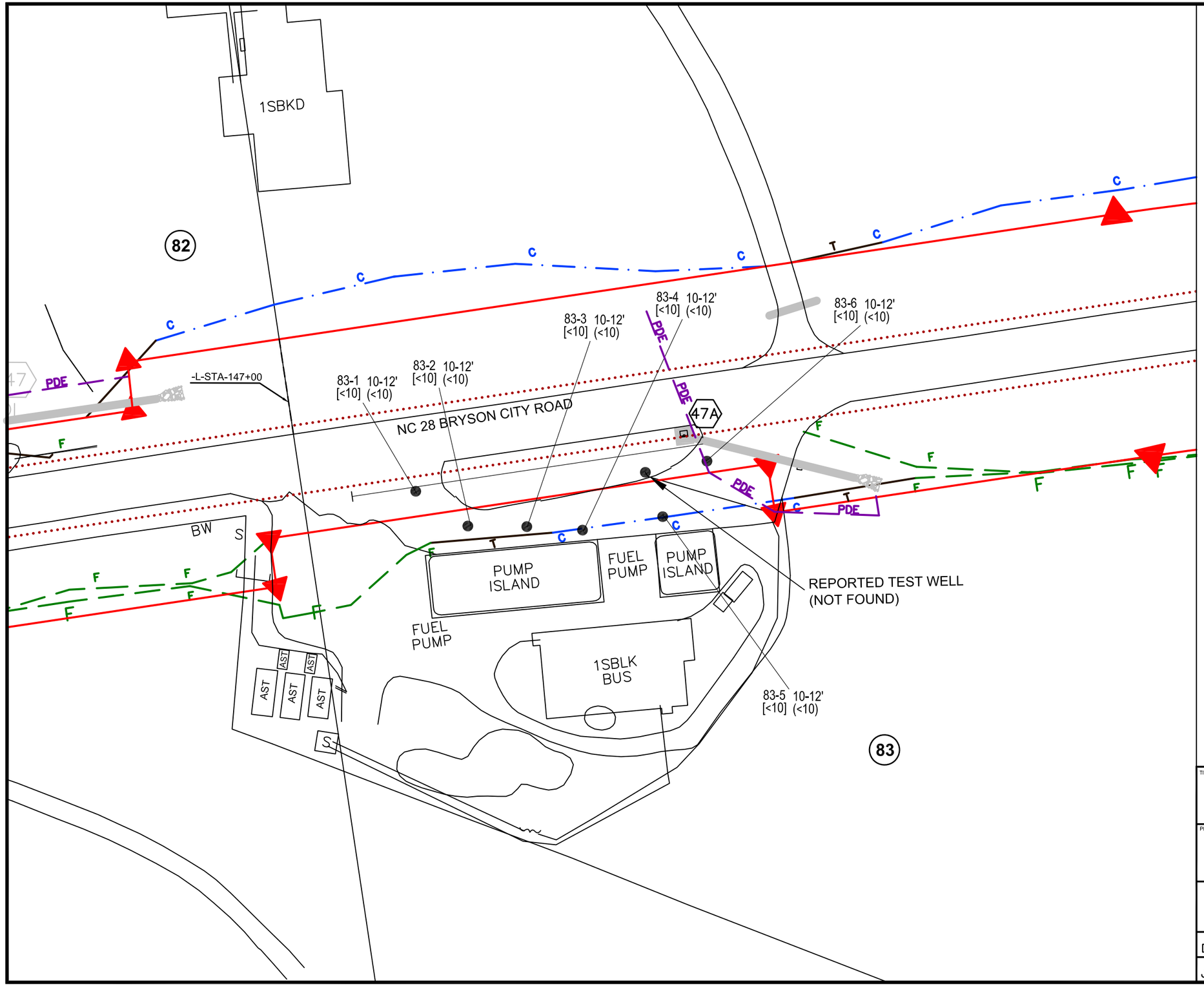
FRANKLIN, NC 1946
PHOTOREVISED 1978

QUADRANGLE
7.5 MINUTE SERIES (TOPOGRAPHIC)

TITLE	SITE LOCATION MAP
PROJECT	PATSY SMITH PROPERTY; PARCEL 83 GREENSBORO, NORTH CAROLINA

Hart & Hickman
A Professional Corporation
2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007 (p) 704-586-0373 (f)

DATE:	7/08/08	REVISION NO:	0
JOB NO:	ROW-150	FIGURE NO:	1



LEGEND

- PROPERTY LINE
- EXISTING RIGHT–OF–WAY
- PROPOSED RIGHT–OF–WAY
- C — PROPOSED CUT LINE
- F — PROPOSED FILL LINE
- T — PROPOSED TRANSITION LINE
- PDE — PROPOSED DRAINAGE EASEMENT
- PROPOSED DRAINAGE PIPE AND CATCH BASIN
- SOIL BORING
- 83 — PARCEL NUMBER
- AST — ABOVE GROUND STORAGE TANK
- [] = TPH GRO IN mg/kg
- () = TPH DRO IN mg/kg

N

APPROXIMATE
0 40 80
SCALE IN FEET

TITLE

SITE MAP AND SOIL ANALYTICAL RESULTS

PROJECT

PATSY SMITH PROPERTY
PARCEL #83
FRANKLIN, NORTH CAROLINA

Hart & Hickman
A PROFESSIONAL CORPORATION
2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

DATE: 6–9–08	REVISION NO. 0
JOB NO: ROW–150	FIGURE: 2

S:\AAA-Master Projects\NC DOT Right-of-Way -ROW\ROW-150 Franklin PSAs\FIGURES\DWGS-BINDED\ALL (7-9-08).dwg, 83, 7/23/2008 9:42:18 AM, 1:1

Appendix A

NC DOT Preliminary Plan

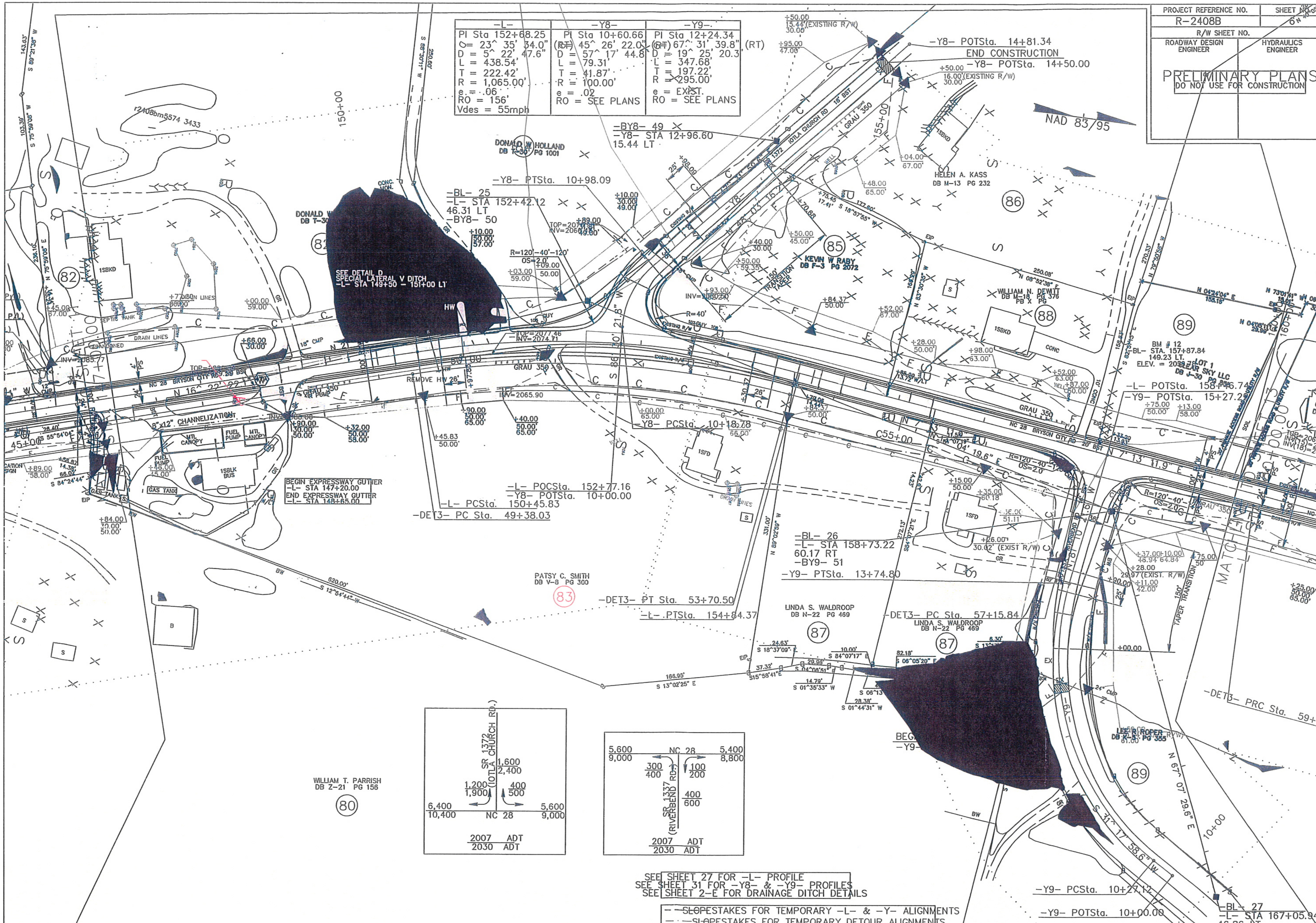
PROJECT REFERENCE NO.	SHEET NO.
R-2408B	6

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-	-Y8-	-Y9-
PI Sta 152+68.25	PI Sta 10+60.66	PI Sta 12+24.34
Δ = 23^ 35' 34.0"	Δ = 45^ 26' 22.0" (RT)	Δ = 67^ 31' 39.8" (RT)
D = 5^ 22' 47.6"	D = 57^ 17' 44.8"	D = 19^ 25' 20.3"
L = 438.54'	L = 79.31'	L = 347.68'
T = 222.42'	T = 41.87'	T = 197.22'
R = 1,065.00'	R = 100.00'	R = 295.00'
e = .06	e = .02	e = EXIST.
RO = 156'	RO = SEE PLANS	RO = SEE PLANS
Vdes = 55mph		



NAD 83/95
-Y8- POTSta. 14+81.34
END CONSTRUCTION
-Y8- POTSta. 14+50.00
-BY8- 49
-Y8- STA 12+96.60
15.44 LT
-Y8- PTSta. 10+98.09
-BL- 25
-L- STA 152+42.12
46.31 LT
-BY8- 50
DONALD W. HOLLAND
DB T-30 PG 1001
[redacted]
SEE DETAIL D
SPECIAL LATERAL V DITCH
-L- STA 149+50 - 151+00 LT
HELEN A. KASS
DB M-13 PG 232
KEVIN W RABY
DB F-3 PG 2072
WILLIAM N. DEWITT
BM # 12
-BL- STA. 157+87.84
149.23 LT.
-L- POTSta. 158+46.74
-Y9- POTSta. 15+27.2
NC 28 BRYSON CITY RD
IOTLA CHURCH RD
CHANNELIZATION
BEGIN EXPRESSWAY GUTTER
-L- STA 147+20.00
END EXPRESSWAY GUTTER
-L- STA 148+65.00
-L- POCSta. 152+77.16
-Y8- POTSta. 10+00.00
-L- PCSta. 150+45.83
-DET3- PC Sta. 49+38.03
-Y8- PCSta. 10+18.78
-BL- 26
-L- STA 158+73.22
60.17 RT
-BY9- 51
-Y9- PTSta. 13+74.80
PATSY C. SMITH
DB V-8 PG 300
-DET3- PT Sta. 53+70.50
-L- PTSta. 154+84.37
LINDA S. WALDROOP
DB N-22 PG 469
-DET3- PC Sta. 57+15.84
-DET3- PRC Sta. 59+13
[redacted]
LEE R. ROPER
WILLIAM T. PARRISH
DB Z-21 PG 156
SR 1372 (IOTLA CHURCH RD.)
NC 28
2007 ADT
2030 ADT
SR 1337 (RIVERBEND RD.)
[redacted]
-Y9- PCSta. 10+27.12
-Y9- POTSta. 10+00.00
-BL- 27
-L- STA 167+05.94
16.86 LT

SEE SHEET 27 FOR -L- PROFILE
SEE SHEET 31 FOR -Y8- & -Y9- PROFILES
SEE SHEET 2-E FOR DRAINAGE DITCH DETAILS

SLOPESTAKES FOR TEMPORARY -L- & -Y- ALIGNMENTS
SLOPESTAKES FOR TEMPORARY DETOUR ALIGNMENTS

Appendix B

Schnabel Geophysical Report

Schnabel Engineering South

11-A Oak Branch Drive
Greensboro, NC 27407

Phone (336) 274-9456
Fax (336) 274-9486
www.schnabel-eng.com

June 5, 2008

Mr. Matt Bramblett, PE
Hart & Hickman, PC
2923 South Tryon Street, Suite 100
Charlotte, NC 28203

Via email (pdf)

cc: Mr. Cyrus Parker, NCDOT

State Project:	R-2408A and B
WBS Element:	34427.1.1
County:	Macon
Description:	Riverview Street (SR 1323) and Bryson City Road (NC 28) from Depot Street Extension (SR 1729) to Bennett Road (SR 1378)

SUBJECT: **Parcel #83, Patsy Smith Property**
Report on Geophysical Surveys to Locate Possible UST's
Schnabel Engineering Project No. 07210023.10

Dear Mr. Bramblett:

This letter contains our report on the geophysical surveys we conducted on the subject property. We understand this letter report will be included as an appendix in your report to the NCDOT. The report includes one 8.5x11 color figure and two 11x17 color figures.

1.0 INTRODUCTION

Schnabel Engineering conducted geophysical surveys on May 22 and May 27, 2008, in the accessible areas of the proposed right-of-way (ROW) section of Parcel 83 (Patsy Smith Property) under our 2007 contract with the NCDOT. Parcel 83 is located on the east side of NC 28 (Bryson City Road) approximately 200 feet north of Site #2. A site photo of the parcel is shown in Figure 1. The work was conducted at the locations indicated by Hart & Hickman to support their environmental assessment of the subject parcel. The purpose of the geophysical surveys was to locate possible metal

underground storage tanks (UST's) and associated metal product lines in the accessible areas of the site, and to investigate planned boring locations for the presence of buried utilities.

2.0 FIELD METHODOLOGY

Locations of geophysical data points were obtained using a sub-meter Trimble Pro-XRS DGPS system. References to direction and location in this report are based on the US State Plane 1983 system, North Carolina 3200 zone, using the NAD 83 datum, with units in US survey feet. The locations of existing site features (building, curbs, signs, etc.) were recorded for later correlation with the geophysical data and for location references to the NCDOT drawings. The geophysical investigation consisted of an electromagnetic (EM) induction survey using a Geonics EM61-MK2 instrument, and a Ground-Penetrating Radar (GPR) survey using a Geophysical Survey Systems SIR-3000 system equipped with a 400 MHz antenna.

The EM61 data were collected along parallel survey lines spaced about 2.5 feet apart. The EM61 and DGPS data were recorded digitally using a field computer and later transferred to a desktop computer for data processing. The GPR data were collected over selected EM61 anomalies and over the planned boring locations.

3.0 DISCUSSION OF RESULTS

The contoured EM61 data are shown on Figures 2 and 3. The EM61 early time gate results are plotted on Figure 2. The early time gate data provide the most sensitive detection of metal object targets, regardless of size. Figure 3 shows the difference between the response of the top and bottom coils of the EM61 instrument (differential response). The difference is taken to remove the effect of surface and very shallowly buried metallic objects. Typically, the differential response emphasizes anomalies from deeper and larger objects such as UST's.

The early time gate and differential results show several anomalies attributed to known site features, and anomalies probably in response to the reinforced concrete beneath the canopies (Figures 3 and 4). GPR data were collected over the reinforced concrete beneath the canopies. The geophysical data do not indicate the presence of metal UST's in the areas surveyed on Parcel 83.

4.0 CONCLUSIONS

Our evaluation of the geophysical data collected on Parcel 83 of Project R-2408A and B in Franklin, NC indicates the following:

- The geophysical data do not indicate the presence of metal UST's in the areas surveyed.

5.0 LIMITATIONS

These services have been performed and this report prepared for Hart & Hickman and the North Carolina Department of Transportation in accordance with generally accepted guidelines for conducting geophysical surveys. It is generally recognized that the results of geophysical surveys are non-unique and may not represent actual subsurface conditions.

Thank you for the opportunity to serve you on this project. Please call if you need additional information or have any questions.

Sincerely,

SCHNABEL ENGINEERING SOUTH, P.C.

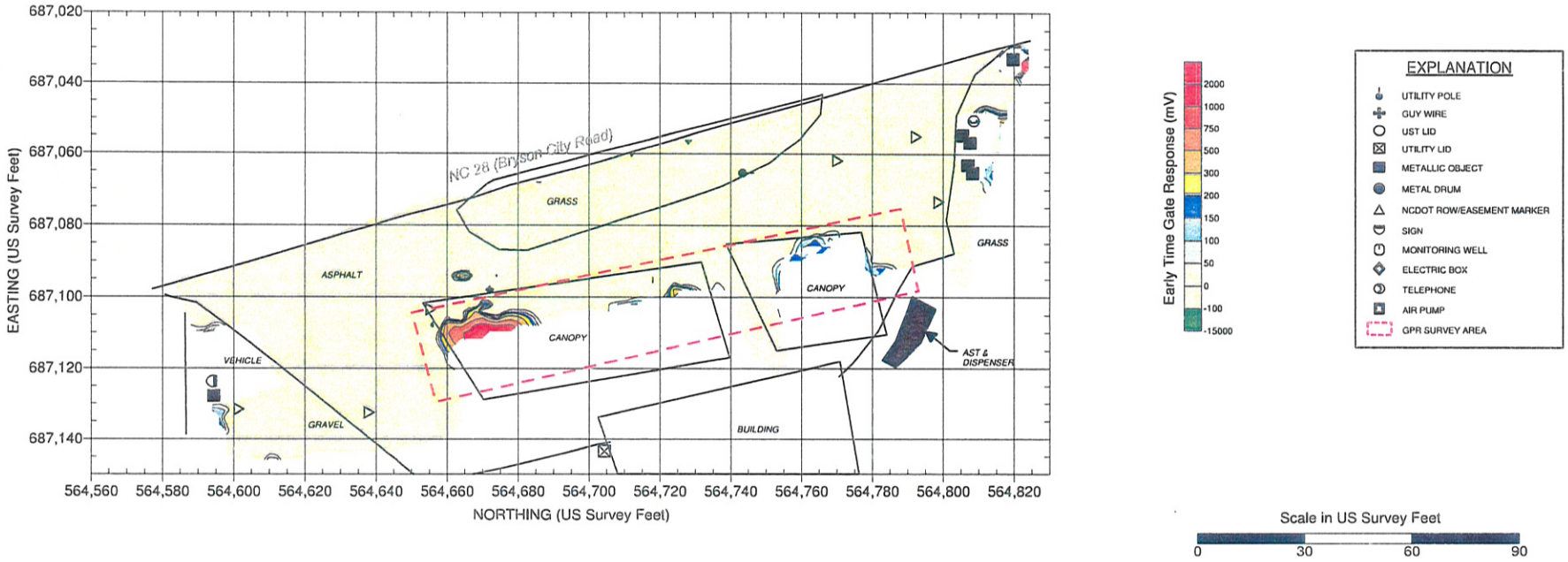
Jeremy S. Strohmeyer, L.G.
Project Manager

Edward D. Billington, L.G.
Senior Vice President

JS/NB
Attachment: Figures (3)
FILE: G:\2007 PROJECTS\07210023 (NCDOT 2007 GEOPHYSICAL SERVICES)\PHASE 10 (R-2408A AND B - FRANKLIN AND MACON CO)\REPORT\PARCEL 83\REPORT ON PARCEL 83.DOC

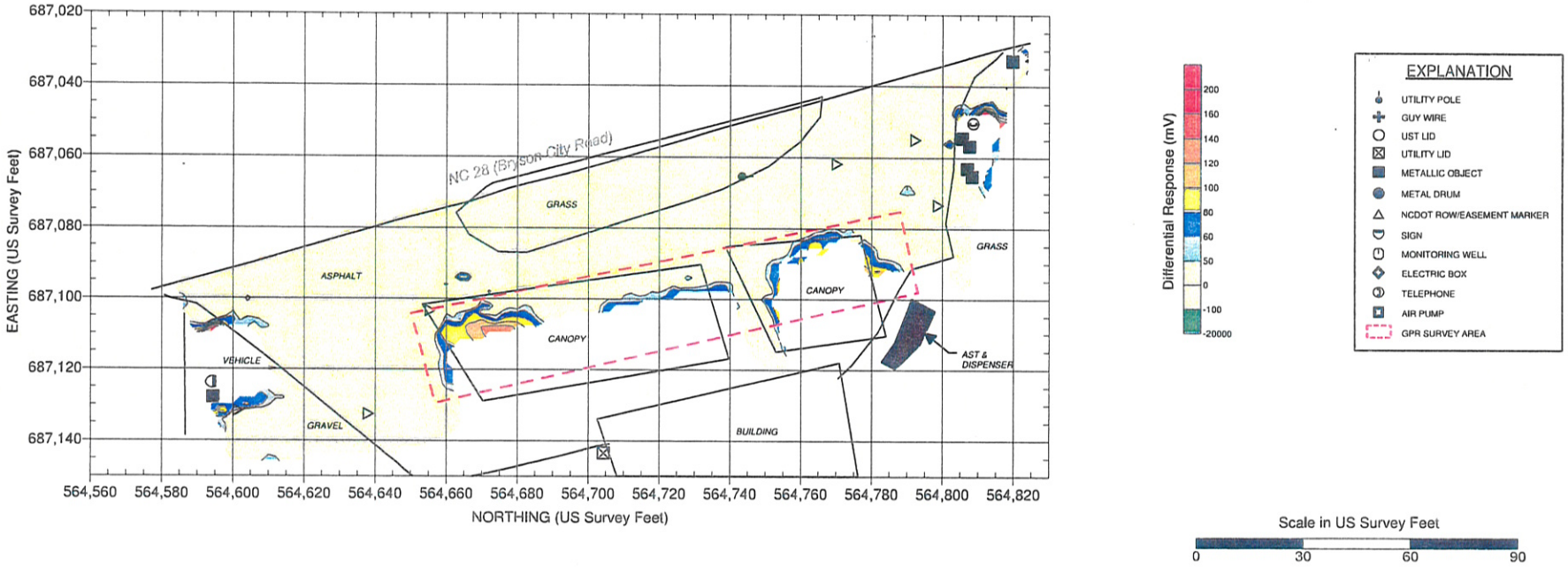
Parcel 83 – Patsy Smith Property, looking southeast

Schnabel Engineering	NC Department of Transportation Geotechnical Engineering Unit	**PARCEL 83** **SITE PHOTO**
	State Project No. R-2408A and B Macon County, North Carolina	FIGURE 1



Note: The contour plot shows the earliest and most sensitive time gate of the EM61 bottom coil/channel in millivolts (mV). The EM data were collected on May 22, 2008, using a Geonics EM61-MK2 instrument. Positioning for EM61 survey provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina Zone 3200, using the NAD 1983 datum. GPR data were acquired on May 27, 2008, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

Schnabel Engineering	NC Department of Transportation Geotechnical Engineering Group State Project R-2408A and B Macon County, NC	**PARCEL 83** **EM61 EARLY TIME GATE RESULTS** FIGURE 2



Note: The contour plot shows the difference, in millivolts (mV), between the readings from the top and bottom coils of the EM61. The difference is taken to reduce the effect of shallow metal objects and emphasize anomalies caused by deeper metallic objects, such as pipes and tanks. The EM data were collected on May 22, 2008, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 1983 datum. GPR data were acquired on May 27, 2008, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

Schnabel Engineering	NC Department of Transportation Geotechnical Engineering Group State Project R-2408A and B Macon County, NC	**PARCEL 83** **EM61 DIFFERENTIAL RESULTS** FIGURE 3

Appendix C

Soil Boring Logs

Hart & Hickman
ENVIRONMENTAL CONSULTANTS

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

BORING NUMBER 83-1

PROJECT: Franklin PSAs
JOB NUMBER: ROW.150
LOCATION: Franklin, NC

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm) BKG.	OVA (ppm) SAMP.	LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
0						Asphalt.		0
			0	0		Asphalt at surface. Brown silty-sand with gravel. Dry.		
	100			0		Red-brown clayey-silt. Dry.		
5	100			0		Red clayey-silt. Dry. Stiff.		5
				0				
10	100			0				10
				0		Bottom of borehole at 12.0 feet.		
15								15
20								20
25								25

DRILLING CONTRACTOR: SEI
DRILL RIG/ METHOD: 6620 DT / Direct-Push Sleeve
SAMPLING METHOD: DPT Sleeves
LOGGED BY WP
DRAWN BY:

BORING STARTED 5/28/08
BORING COMPLETED: 5/28/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:

Borehole hand-augered to 4 feet. Soil sample collected at 10-12 feet for laboratory analysis.

LOG OF BORING - HART HICKMAN.GDT - 7/8/08 15:12 - S:\AAA-MASTER GINT PROJECTS\ROW.150.GPJ

Hart & Hickman
ENVIRONMENTAL CONSULTANTS

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

BORING NUMBER 83-2

PROJECT: Franklin PSAs
JOB NUMBER: ROW.150
LOCATION: Franklin, NC

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm) BKG.	OVA (ppm) SAMP.	LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Asphalt.	
			0	0		Brown silty-sand with gravel. Dry.	
	100			0		Red-brown clayey-silt. Dry.	
5	100			0		Red clayey-silt. Dry. Stiff.	
				0			
10	100			0			
						Bottom of borehole at 12.0 feet.	
15							
20							
25							

DRILLING CONTRACTOR: SEI
DRILL RIG/ METHOD: 6620 DT / Direct-Push Sleeve
SAMPLING METHOD: DPT Sleeves
LOGGED BY WP
DRAWN BY:

BORING STARTED 5/28/08
BORING COMPLETED: 5/28/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:

Borehole hand-augered to 4 feet. Soil sample collected at 10-12 feet for laboratory analysis.

LOG OF BORING - HART HICKMAN.GDT - 7/8/08 15:12 - S:\AAA-MASTER GINT PROJECTS\ROW.150.GPJ

Hart & Hickman
ENVIRONMENTAL CONSULTANTS

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

BORING NUMBER 83-3

PROJECT: Franklin PSAs
JOB NUMBER: ROW.150
LOCATION: Franklin, NC

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm) BKG.	OVA (ppm) SAMP.	LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Asphalt.	
	100		0	0		Red-brown clayey-silt. Dry.	
				0			
				0		Red clayey-silt. Dry. Stiff.	
5	100			0			
				0			
	100			0		Orange clayey-silt. Dry. Stiff.	
10				0			
						Bottom of borehole at 12.0 feet.	
15							
20							
25							

DRILLING CONTRACTOR: SEI
DRILL RIG/ METHOD: 6620 DT / Direct-Push Sleeve
SAMPLING METHOD: DPT Sleeves
LOGGED BY WP
DRAWN BY:

BORING STARTED 5/28/08
BORING COMPLETED: 5/28/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:

Borehole hand-augered to 4 feet. Soil sample collected at 10-12 feet for laboratory analysis.

LOG OF BORING - HART HICKMAN.GDT - 7/8/08 15:12 - S:\AAA-MASTER GINT PROJECTS\ROW.150.GPJ

Hart & Hickman
ENVIRONMENTAL CONSULTANTS

2923 South Tryon Street-Suite 100
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3334 Hillsborough Street
Raleigh, North Carolina 27607
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BORING NUMBER 83-4

PROJECT: Franklin PSAs
JOB NUMBER: ROW.150
LOCATION: Franklin, NC

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm) BKG.	OVA (ppm) SAMP.	LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
0						Asphalt.		0
	100		0	0		Asphalt at surface. Brown silty-sand with gravel. Dry.		
				0		Red-brown clayey-silt. Dry.		
5	75			0		Red clayey-silt. Dry. Stiff.		5
				0				
10	100			0				10
						Bottom of borehole at 12.0 feet.		
15								15
20								20
25								25

DRILLING CONTRACTOR: SEI
DRILL RIG/ METHOD: 6620 DT / Direct-Push Sleeve
SAMPLING METHOD: DPT Sleeves
LOGGED BY WP
DRAWN BY:

BORING STARTED 5/28/08
BORING COMPLETED: 5/28/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:

Borehole hand-augered to 4 feet. Soil sample collected at 10-12 feet for laboratory analysis.

LOG OF BORING - HART HICKMAN.GDT - 7/8/08 15:12 - S:\AAA-MASTER GINT PROJECTS\ROW.150.GPJ

Hart & Hickman
ENVIRONMENTAL CONSULTANTS

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
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3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

BORING NUMBER 83-5

PROJECT: Franklin PSAs
JOB NUMBER: ROW.150
LOCATION: Franklin, NC

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm) BKG.	OVA (ppm) SAMP.	LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
0						Asphalt.		0
	100		0	0		Brown silty-sand with gravel. Dry.		
				0		Red-brown clayey-silt. Dry. Stiff.		
5	100			0				5
				0				
				0		Tan coarse sand. Dry. Loose.		
	100			0		Red clayey-silt. Dry. Stiff.		
10				0				10
						Bottom of borehole at 12.0 feet.		
15								15
20								20
25								25

DRILLING CONTRACTOR: SEI
DRILL RIG/ METHOD: 6620 DT / Direct-Push Sleeve
SAMPLING METHOD: DPT Sleeves
LOGGED BY WP
DRAWN BY:

BORING STARTED 5/28/08
BORING COMPLETED: 5/28/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:

Borehole hand-augered to 4 feet. Soil sample collected at 10-12 feet for laboratory analysis.

LOG OF BORING - HART HICKMAN.GDT - 7/8/08 15:12 - S:\AAA-MASTER GINT PROJECTS\ROW.150.GPJ

Hart & Hickman
ENVIRONMENTAL CONSULTANTS

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

BORING NUMBER 83-6

PROJECT: Franklin PSAs
JOB NUMBER: ROW.150
LOCATION: Franklin, NC

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm) BKG.	OVA (ppm) SAMP.	LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
0						Asphalt.		0
	100		0	0		Brown silty-sand with gravel. Dry.		
				0		Red-brown clayey-silt. Stiff. Dry.		
5	100			0		Red clayey-silt. Stiff. Dry.		5
				0				
10	100			0		Red clayey-silt with some mica. Stiff. Moist.		10
				0				
						Bottom of borehole at 12.0 feet.		
15								15
20								20
25								25

DRILLING CONTRACTOR: SEI
DRILL RIG/ METHOD: 6620 DT / Direct-Push Sleeve
SAMPLING METHOD: DPT Sleeves
LOGGED BY WP
DRAWN BY:

BORING STARTED 5/28/08
BORING COMPLETED: 5/28/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:

Borehole hand-augered to 4 feet. Soil sample collected at 10-12 feet for laboratory analysis.

LOG OF BORING - HART HICKMAN.GDT - 7/8/08 15:12 - S:\AAA-MASTER GINT PROJECTS\ROW.150.GPJ

Appendix D

Laboratory Analytical Report

Research & Analytical Laboratories, Inc.
Analytical/Process Consultations

RESEARCH & ANALYTICAL LABS. SIDNEY L. CHAMPION NC #34 DIRECTOR CERTIFIED ANALYSIS

RECEIVED
JUN 16 2008
BY:

June 11, 2008

Hart & Hickman, PC
2923 S. Tryon St. Suite 100
Charlotte, NC 28203
Attention: Matt Tendam

Chemical Analysis for Total Petroleum Hydrocarbons (TPH) Sampling identified as Franklin PSA's (A Hart & Hickman, PC Project #ROW.150, collected 28-29 May 2008)

Sample Identification	RAL Sample#	Date Taken	Time (hrs)	Quantitation Limit (mg/kg)	EPA Method 5030 (mg/kg)	EPA Method 3550 (mg/kg)
39-1 (2-4')	618465	05/29/08	1245	10	BQL	BQL
39-2 (2-4')	618466	05/29/08	1300	10	BQL	BQL
39-3 (2-4')	618467	05/29/08	1310	10	BQL	BQL
39-4 (2-4')	618468	05/29/08	1320	10	BQL	BQL
39-5 (2-4')	618469	05/29/08	1330	10	BQL	BQL
24-1 (0-2')	618470	05/29/08	0845	10	**13.3**	**17.4**
24-2 (8-10')	618471	05/29/08	0910	10	BQL	BQL
24-3 (8-10')	618472	05/29/08	0925	10	BQL	BQL
24-4 (2-4')	618473	05/29/08	1020	10	BQL	BQL
24-5 (2-4')	618474	05/29/08	1030	10	BQL	BQL
24-6 (2-4')	618475	05/29/08	1040	10	BQL	BQL
24-7 (2-4')	618476	05/29/08	1055	10	BQL	BQL
83-1 (10-12')	618477	05/28/08	1945	10	BQL	BQL
83-2 (10-12')	618478	05/28/08	2000	10	BQL	BQL
83-3 (10-12')	618479	05/28/08	2005	10	BQL	BQL
83-4 (10-12')	618480	05/28/08	2016	10	BQL	BQL
83-5 (10-12')	618481	05/28/08	2025	10	BQL	BQL
83-6 (10-12')	618482	05/28/08	2040	10	BQL	BQL
81-1 (3-5')	618483	05/28/08	1835	10	BQL	**31.6**
81-1 (10-12')	618484	05/28/08	1840	10	**13.6**	**59.4**
81-2 (0-2')	618485	05/28/08	1815	10	**23.2**	**375**
81-3 (10-12')	618486	05/28/08	1855	10	BQL	**13.3**

mg/kg = milligrams per kilogram = parts per million (ppm)

BQL = Below Quantitation Limit

---- = Not Requested

EPA Method 3550 = Total Petroleum Hydrocarbons as Diesel

EPA Method 5030 = Total Petroleum Hydrocarbons as Gasoline

Research & Analytical Laboratories, Inc.
Analytical/Process Consultations

RESEARCH & ANALYTICAL LABS. SIDNEY L. CHAMPION NC #34 DIRECTOR CERTIFIED ANALYSIS

June 11, 2008

Hart & Hickman, PC
2923 S. Tryon St. Suite 100
Charlotte, NC 28203
Attention: Matt Tendam

Chemical Analysis for Sample Locations Identified as Franklin PSA's
(A Hart & Hickman, PC Project #ROW.150, collected 28-29 May 2008)

Sample Identification	RAL Sample#	Date Taken	Time (hrs)	Moisture (%)
39-1 (2-4')	618465	05/29/08	1245	**17.8**
39-2 (2-4')	618466	05/29/08	1300	**19.6**
39-3 (2-4')	618467	05/29/08	1310	**20.9**
39-4 (2-4')	618468	05/29/08	1320	**21.4**
39-5 (2-4')	618469	05/29/08	1330	**23.4**
24-1 (0-2')	618470	05/29/08	0845	**25**
24-2 (8-10')	618471	05/29/08	0910	**18.2**
24-3 (8-10')	618472	05/29/08	0925	**22.2**
24-4 (2-4')	618473	05/29/08	1020	**20.9**
24-5 (2-4')	618474	05/29/08	1030	**20.5**
24-6 (2-4')	618475	05/29/08	1040	**16.1**
24-7 (2-4')	618476	05/29/08	1055	**20.5**
83-1 (10-12')	618477	05/28/08	1945	**22.3**
83-2 (10-12')	618478	05/28/08	2000	**19.7**
83-3 (10-12')	618479	05/28/08	2005	**33.4**
83-4 (10-12')	618480	05/28/08	2016	**20.8**
83-5 (10-12')	618481	05/28/08	2025	**20.2**
83-6 (10-12')	618482	05/28/08	2040	**37.3**
81-1 (3-5')	618483	05/28/08	1835	**26.2**
81-1 (10-12')	618484	05/28/08	1840	**23.2**
81-2 (0-2')	618485	05/28/08	1815	**5.1**
81-3 (10-12')	618486	05/28/08	1855	**15.5**

% = Percent

---- = Not Requested

RESEARCH & ANALYTICAL LABORATORIES, INC.

Analytical / Process Consultations
Phone (336) 996-2841

CHAIN OF CUSTODY RECORD

COMPANY: HART & HICKMAN
STREET ADDRESS: 2923 S. TRYON ST. SUITE 100
CITY, STATE, ZIP: CHARLOTTE, NC 28203
CONTACT: MATT TENDAM PHONE: 704-887-4623

JOB NO.: ROW. 150
PROJECT: FRANKLIN PSAs
SAMPLER NAME (PLEASE PRINT): CAROL MATTHEWS
SAMPLER SIGNATURE: C.V.P. Matthews

SAMPLE NUMBER (LAB USE ONLY)	DATE	TIME	COMP	GRAB	TEMP °C	RES Cl	CHLORINE REMOVED (Y or N)	SAMPLE MATRIX (S or W)	SAMPLE LOCATION / I.D.	NO. OF CONTAINERS	40 ml vials (VOA) CH_3OH	40 ml Vial (VOA)	4 oz. G	REQUESTED ANALYSIS
618477	052808	1945						S	83-1 (10-12')	4	2	1	1	TPH-GRO/DRO & % Moisture
478		2000							83-2 (10-12')	4				
479		2005							83-3 (10-12')	4				
480		2016							83-4 (10-12')	4				
481		2025							83-5 (10-12')	4				
482		2040							83-6 (10-12')	4				

WATER / WASTEWATER: 2L G (BNA, Herb. / Pest.); 2 40ml Vials (VOA) HCL; 250ml G (TOX); 250ml P (TOC) H_2SO_4; 1L P.G (BOD, TSS, Unpreserved, etc.); 1L G (Phenol, Oil & Grease) H_2SO_4; 1L P. G (COD, N, P) H_2SO_4; 1L P. G (Metals, Hardness) HNO_3; 1L P. G (CYANIDE) NaOH; Sterile P. G (Coliform)
MISC.

RELINQUISHED BY	DATE/TIME	RECEIVED BY
C.V.P. Matthews	053008 1080	M Bowman 5/30/08 10:20
M Bowman	5/30/08	Anthony

REMARKS: INVOICE TO NCDOT - WBS #: 34427.1.1
PROJECT: R-2408A & B

SAMPLE TEMPERATURE AT RECEIPT: ONICE 3 °C