

Phase II Site Assessment Report

August 9, 2021

WBS Element: 44691.1.1

State Project: R-5759

Wilkes County

At

Parcel #002

Flynn Harrold Property

3048 Statesville Road, North Wilkesboro, NC 28659

PIN #: 3877-84-5252

Facility ID No.: N/A

Groundwater Incident No.: N/A

Prepared For:

Mr. Gordon Box

NCDOT, Geotechnical Engineering Unit

GeoEnvironmental Section

1589 Mail Service Center

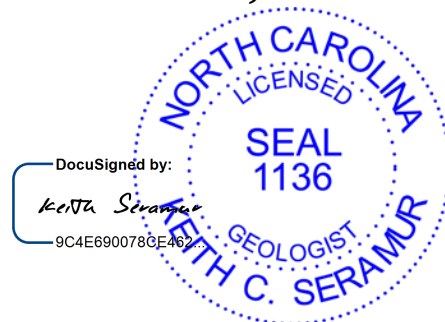
Raleigh, NC 27699-1589

Prepared By:

Seramur & Associates, PC

165 Knoll Drive

Boone, NC 28607



Keith C. Seramur, P.G.

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1.0 Introduction

1.1 General Site Background Information

Seramur & Associates, PC was contracted to complete a Phase II Site Assessment (PSA) at:

Parcel #002
Flynn Harrold Property
PIN #: 3877-84-5252
3048 Statesville Road, North Wilkesboro, NC 28659
Facility ID No.: N/A

This parcel is located on the west side of Statesville Road approximately 300 feet south of the US 421 off-ramp (Figure 1). The property is located on an upland west of the Fishing Creek stream valley. Fishing Creek is approximately 450 feet east of Parcel #002. Bedrock at the property is mapped as gneiss, described as mainly monzonite, granodiorite with some quartz-diorite (Rankin, D.W., Espenshade, G.H., Shaw, K.W., and Neumann, R.B.. Geologic map of the west half of the Winston-Salem quadrangle, North Carolina-Virginia, U.S. Geologic Survey Misc. Inv. Series Map I-709-B, 1975).

A Notice to Proceed was obtained from NCDOT on June 25, 2021. This investigation covered areas within the proposed Permanent Utility Easement (PUE) and proposed and existing Right-of-Way (R/W) along the western side of Statesville Road (Figure 2). The Phase II Site Assessment scope of work included completing a geophysical survey at the property to investigate the potential for unknown underground storage tanks and remnant infrastructure. Background research for this project included reviewing historic aerial photographs and NCDEQ databases.

2.0 Scope of Work

2.1 Background Research

According to Wilkes County Tax Administration records, the parcel is owned by Flynn Harrold. Available historic aerial photographs from the USGS EarthExplorer website and Google Earth Pro were reviewed.

The following NCDEQ databases were queried for incidents at Parcel #002:

- Active USTs
- UST Incident Map
- UST Database
- Hazardous Waste Sites

2.2 Geophysical Surveys

Seramur & Associates used the Pythagorean Theorem to establish one rectangular grid across the proposed easement for a geophysical survey at Parcel #002 (Figure 3). Grid 1 extends along the east edge of the property, bordering Statesville Road. Geophysical grid data was collected along transects at a two-foot spacing.

The magnetometer data was collected with a GEM Systems GSM-19W Walking Overhauser Gradiometer. This data was compiled in an Excel spreadsheet and a contour map of the magnetometer data was drafted using Golden Software's Surfer® modeling program (Figure 4). The lighter shades are lower magnetic readings and the darker shades are higher magnetic readings (Figure 4). Ferrous objects in the subsurface are more magnetic than the surrounding soil and can produce positive and negative magnetic anomalies on the contour maps.

A Ground Penetrating Radar (GPR) survey was completed across the grid using Geophysical Survey Systems, Inc. UtilityScan GPR System with a 350 MHz hyperstacking antenna. This GPR system is equipped with a calibrated survey wheel. The GPR data was downloaded and saved onto a computer. The GPR grid data has been processed and modeled using GPR Slice® software. The GPR data processing included adjusting time zero, completing a background removal and adjusting the time variable gain to enhance deep reflections. Three-dimensional models of the GPR grid data were produced with GPR Slice® software. Three time slices (or depth slices) were imaged in each grid at depths of 0.3 to 0.6 feet, 1.6 to 1.9 feet and 2.7 to 3.0 feet (Figures 5 through 7). Each depth slice is a horizontal slice or plan view of the reflections across a 0.3-foot thickness of the subsurface. For example, the deep GPR depth slices for the grid shows reflections in the radar data between depths of 2.7 and 3.0 feet.

2.3 Plate 1 – Photographs of Parcel #002



3.0 Results of Investigation

Parcel #002 does not appear to be an active business. Historic photographs did not show evidence of past use of the property that could indicate a potential environmental condition. The NCDEQ databases do not indicate that this property has operated as a gas station in the past or that there have been any reported spills or leaks that have affected Parcel #002.

SAPC personnel made a pedestrian reconnaissance of the property during the initial site visit on June 29, 2021. No evidence of a UST system or typical gas station infrastructure was observed within the R/W or PUE. One heating oil UST was observed on the west side of the building out of the R/W and PUE. It is not known if this tank is still in use. Should a release have occurred from this UST, it would have migrated downgradient to the west and would not affect soil quality in the R/W and/or PUE.

3.1 Geophysical Surveys

A grid of magnetometer data was collected parallel to Statesville Road (Figure 5). One localized negative magnetic anomaly was detected near the eastern edge of the grid (Figure 5). This anomaly turned out to be a piece of scrap metal. Magnetic anomalies characteristic of a UST were not detected at Parcel #002.

The shallow GPR depth slice (0.3-0.6 feet) for Grid 1 shows one linear set of high amplitude reflections extending east to west across the grid and another along the eastern edge of the grid (Figure 5). These reflections show the change from lawn to the paved parking lot. A faint linear set of reflections extending from the northwest side of the grid towards the southeast were produced by a speed bump on the pavement. There are a few other areas where medium amplitude reflections (green) appear, but they are not consistent with any type of buried infrastructure.

There are two linear higher amplitude sets of reflections on the 1.6-1.9 feet intermediate depth slice (Figure 6). The set of reflections in the northwest corner of the grid is related to a drain pipe (storm drain?) observed near the northeast corner of the grid. The other linear set of reflections follows a meandering path and is likely some type of utility line.

The deep GPR depth slice (2.7 to 3.0 feet) shows a linear set of high amplitude reflections extending across the grid from east to west (Figure 7). This anomaly is related to the ditch for an electric line as a line of red paint was observed on the pavement at this location. The eastern end of the drain pipe is also observed along the northern edge of the grid.

The magnetometer and GPR surveys did not detect anomalies indicative of buried USTs or infrastructure related to a UST system.

3.2 Conclusions

Parcel #002 has a commercial building but does not appear to be an active business currently. Evidence of a UST system was not identified within the Right-of-Way or easements of Parcel #002 during our geophysical investigation.

4.0 Recommendations

Seramur & Associates does not recommend any further assessment work for Parcel #002.

Appendix A

Figures

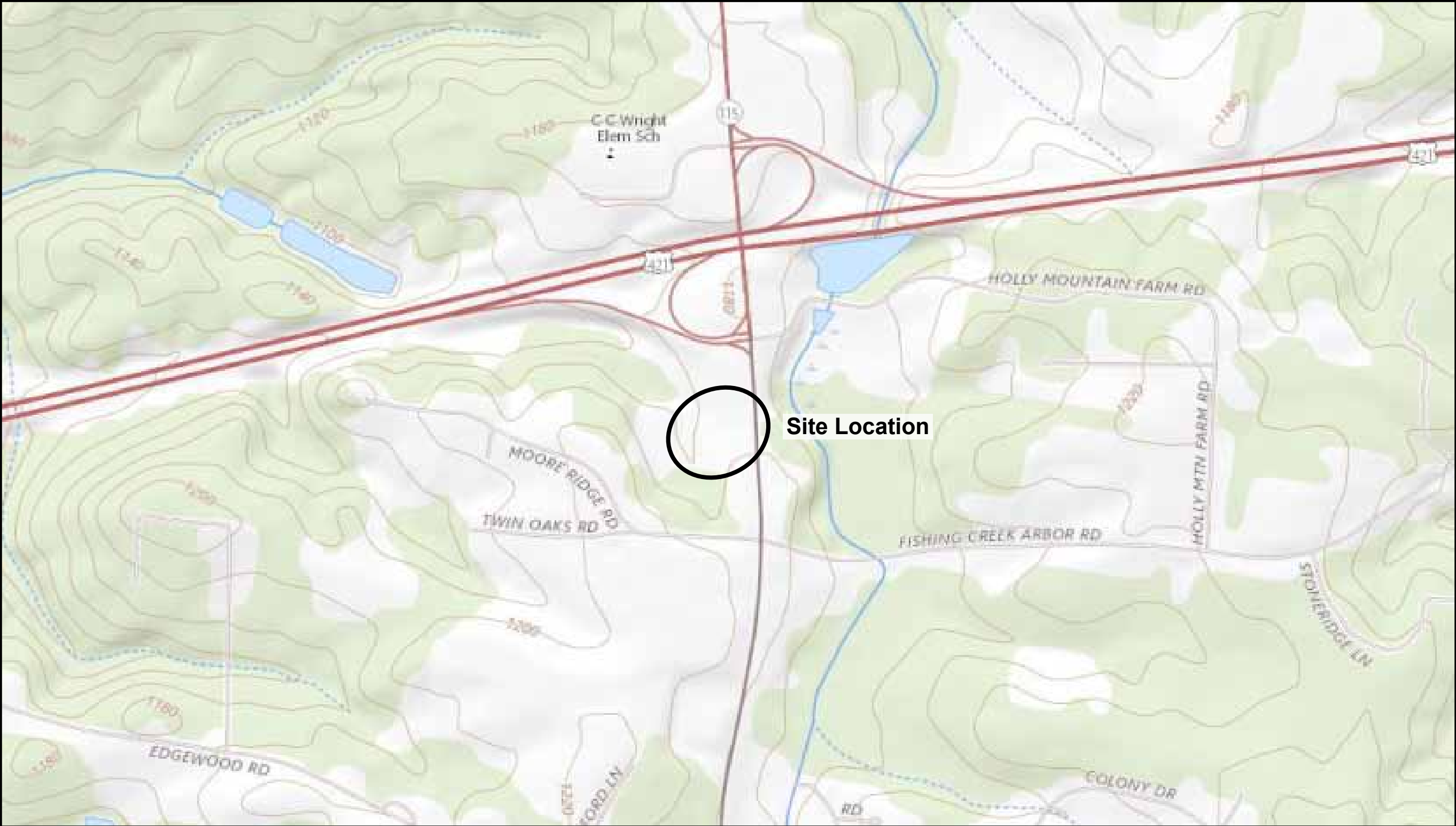
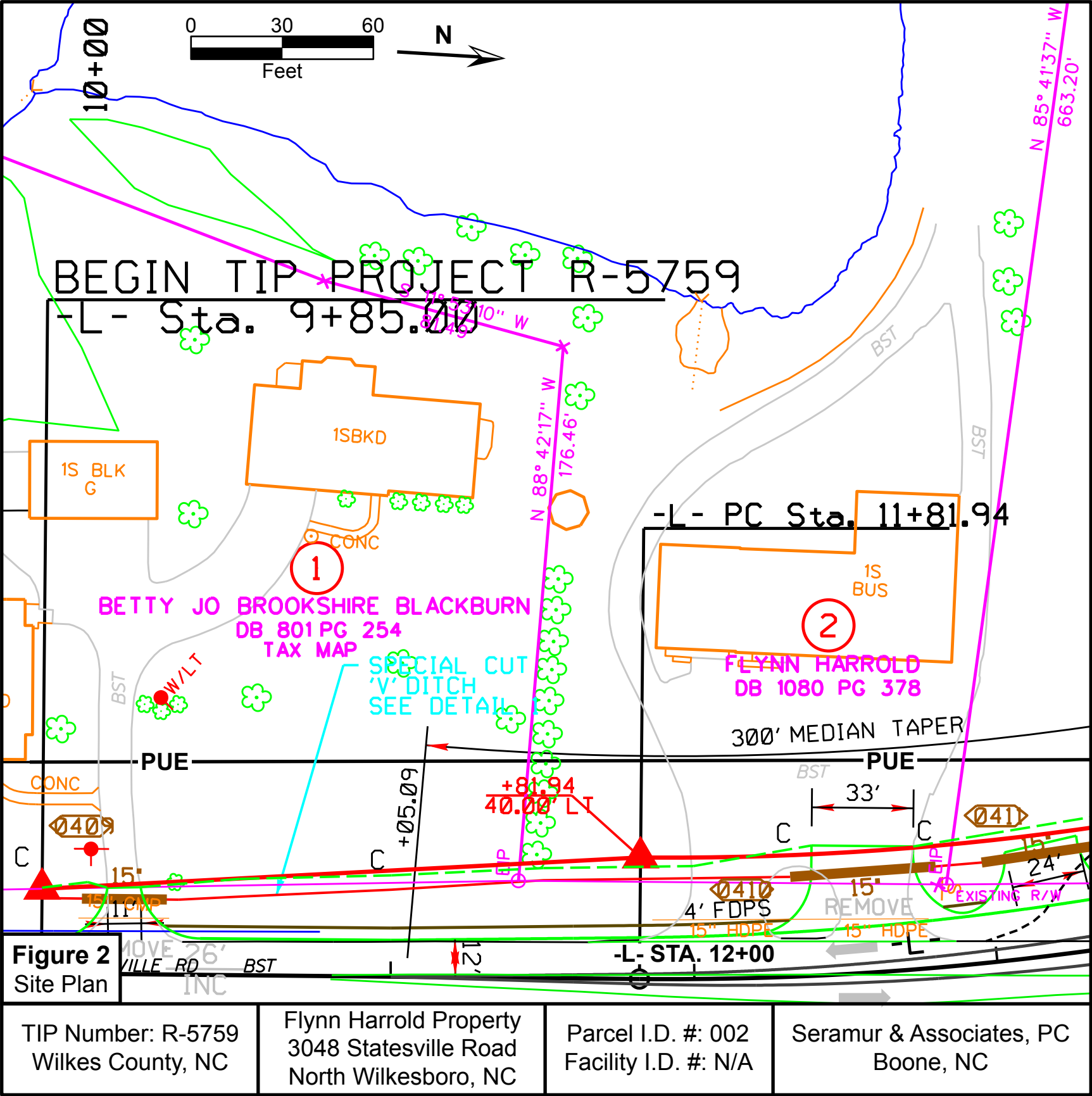
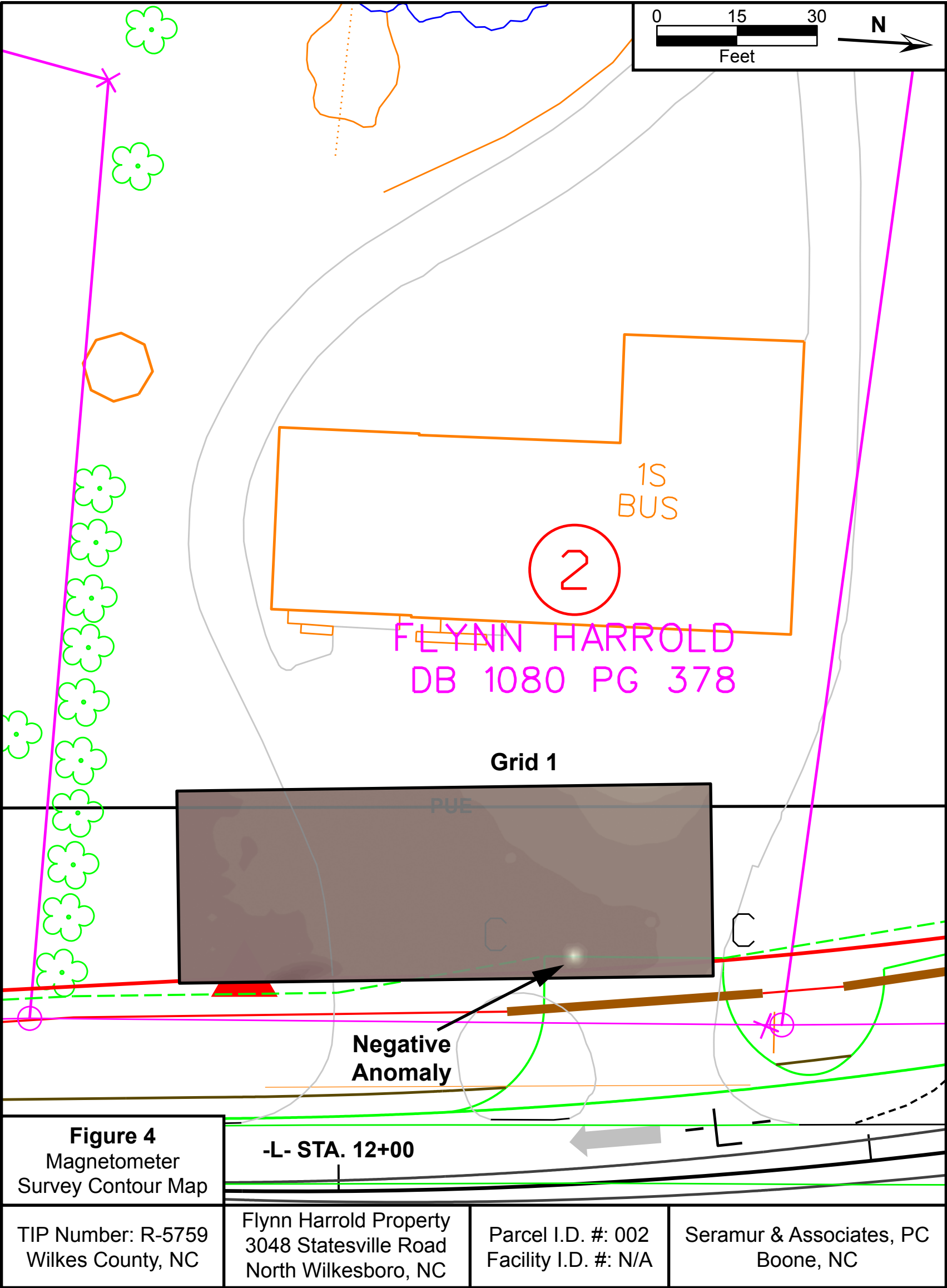
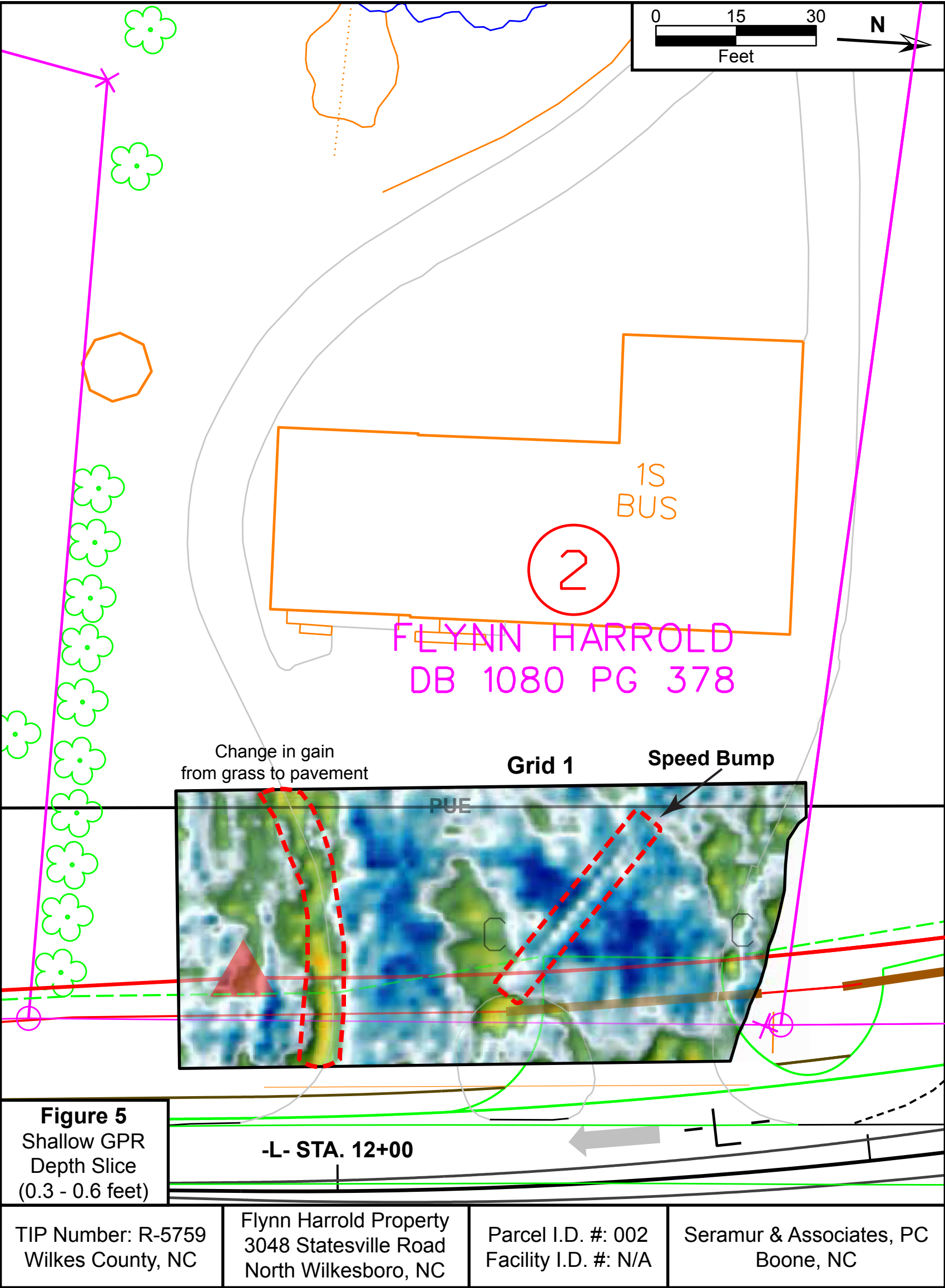
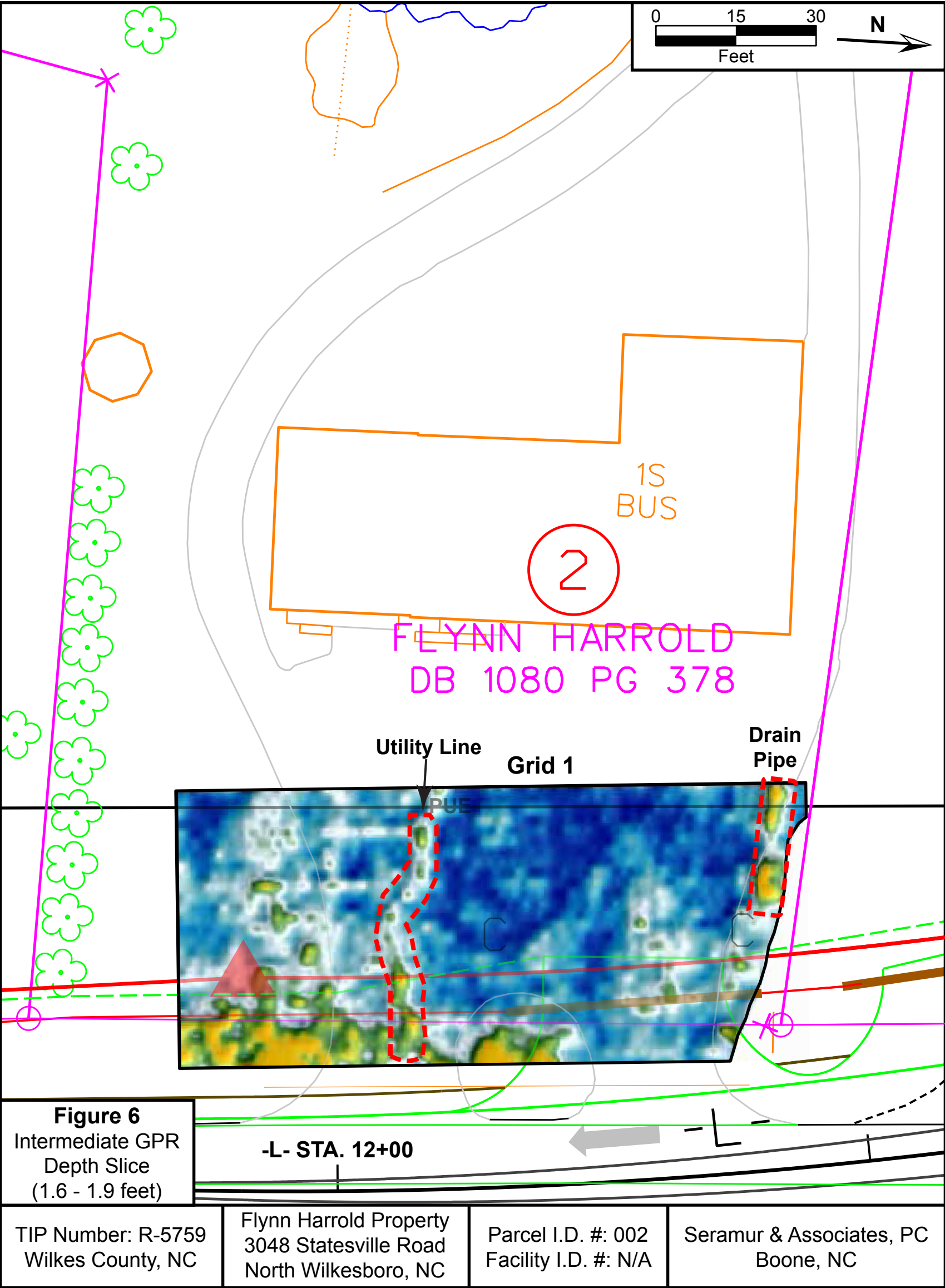


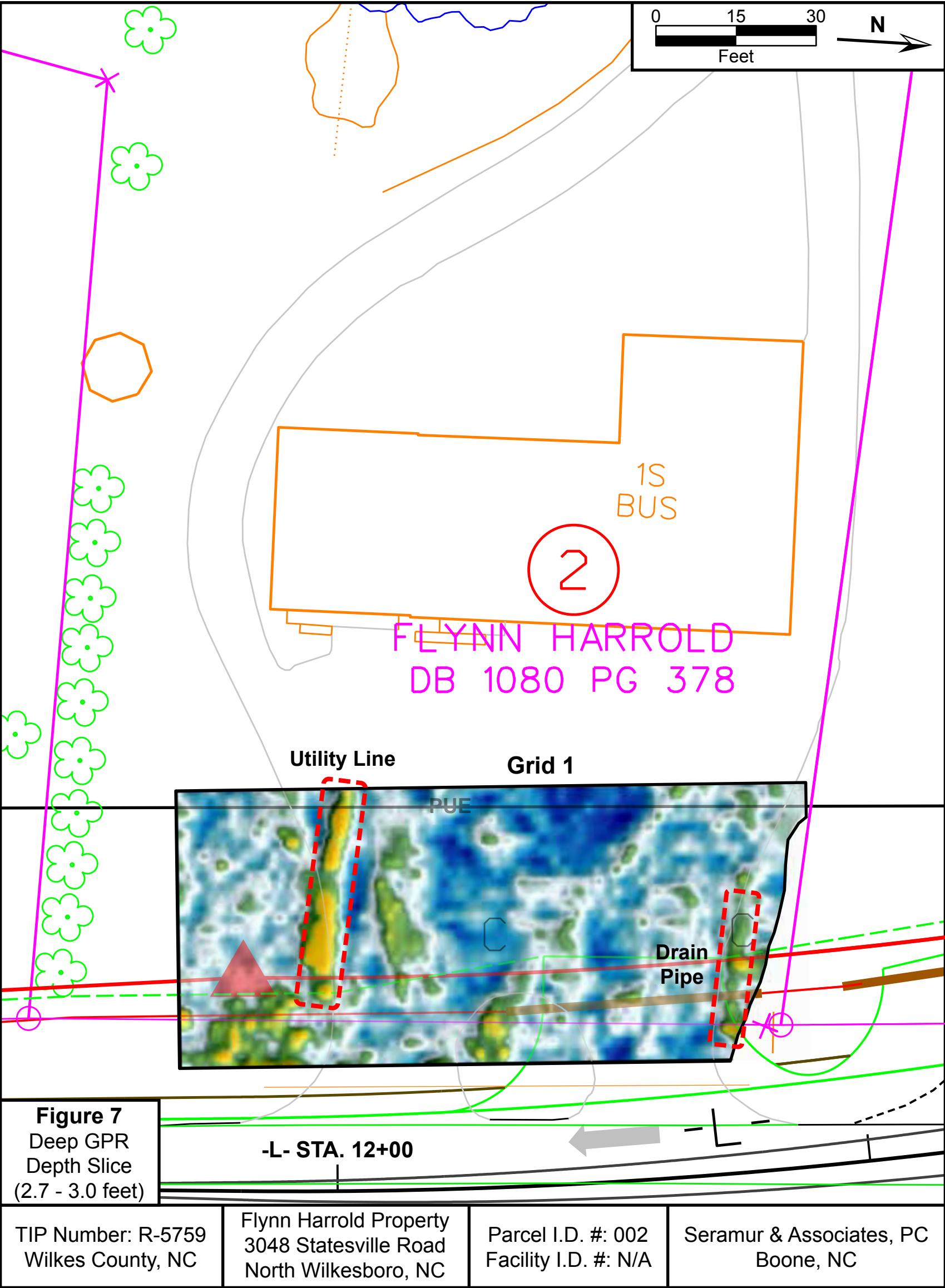
Figure 1 Site Location Map Source: U.S.G.S. The National Map	TIP Number: R-5759 Wilkes County, NC	Flynn Harrold Property 3048 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 002 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	0 400 800 Feet N
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Phase II Site Assessment Report

August 9, 2021

WBS Element: 44691.1.1

State Project: R-5759

Wilkes County

At

Parcel #003

Janet & James Hartley Property

NA Statesville Road, North Wilkesboro, NC 28659

PIN #: 3877-84-1782

Facility ID No.: N/A

Groundwater Incident No.: N/A

Prepared For:

Mr. Gordon Box

NCDOT, Geotechnical Engineering Unit

GeoEnvironmental Section

1589 Mail Service Center

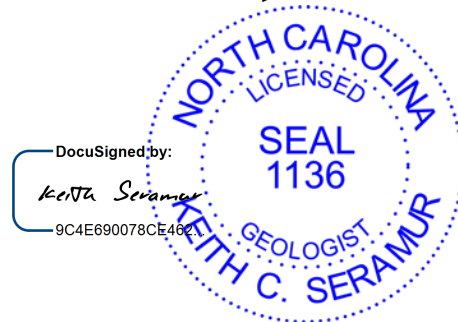
Raleigh, NC 27699-1589

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1.0 Introduction

1.1 General Site Background Information

Seramur & Associates, PC was contracted to complete a Phase II Site Assessment (PSA) at:

Parcel #003
Janet & James Hartley
PIN #: 3877-84-1782
NA Statesville Road, North Wilkesboro, NC 28659
Facility ID No.: N/A

This parcel is located along the western side of Statesville Road adjacent to the US 421 on-ramp. The property is located on an upland west of the Fishing Creek stream valley. Fishing Creek is approximately 450 feet east of Parcel #003. Bedrock at the property is mapped as gneiss, described as mainly monzonite, granodiorite with some quartz-diorite (Rankin, D.W., Espenshade, G.H., Shaw, K.W., and Neumann, R.B.. Geologic map of the west half of the Winston-Salem quadrangle, North Carolina-Virginia, U.S. Geologic Survey Misc. Inv. Series Map I-709-B, 1975).

A Notice to Proceed was obtained from NCDOT on June 25, 2021. This investigation covered accessible areas within the proposed easements, proposed and existing Control of Access (C/A), and proposed and existing Right-of-Way (R/W) along the western side of Statesville Rd. (Figure 2). The proposed easements include a Permanent Utility Easement (PUE) along the southeast side of the property and Temporary Construction Easements (E) along the east and north sides of the property. The easement along the northwest side of the property is woods with thick underbrush and was not accessible. The easement along the north side of the property was just within the tree line of the woods and was observed visually. The Phase II Site Assessment scope of work included visual reconnaissance and completing a geophysical survey at the property to investigate the potential for unknown underground storage tanks and remnant infrastructure. Background research for this project included reviewing historic aerial photographs and NCDEQ databases.

2.0 Scope of Work

2.1 Background Research

According to Wilkes County Tax Administration records, the parcel is owned by Janet & James Hartley. Available historic aerial photographs from the USGS EarthExplorer website and the ArcGIS Online website were reviewed.

The following NCDEQ databases were queried for incidents at Parcel #002:

- Active USTs
- UST Incident Map
- UST Database
- Hazardous Waste Sites

2.2 Geophysical Surveys

Seramur & Associates used the Pythagorean Theorem to establish one rectangular grid across the PUE, E, C/A and R/W for a geophysical survey at Parcel #003 (Figure 3). Grid 1 extends along the east edge of the property, bordering Statesville Road. Geophysical grid data was collected along transects at a two-foot spacing. Seven additional transects were collected in the grassy area along the northeast corner of the property within the E and C/A. These transects were collected parallel to each other at an approximate 5-10 foot spacing and processed into a 2D grid. The locations of the transects within the grid are shown in Figure 3.

The magnetometer data was collected with a GEM Systems GSM-19W Walking Overhauser Gradiometer. This data was compiled in an Excel spreadsheet and a contour map of the magnetometer data was drafted using Golden Software's Surfer® modeling program (Figure 4). The lighter shades are lower magnetic readings and the darker shades are higher magnetic readings (Figure 4). Ferrous objects in the subsurface are more magnetic than the surrounding soil and can produce positive and negative magnetic anomalies on the contour maps.

A Ground Penetrating Radar (GPR) survey was completed across the grid using Geophysical Survey Systems, Inc. UtilityScan GPR System with a 350 MHz hyperstacking antenna. This GPR system is equipped with a calibrated survey wheel. The GPR data was downloaded and saved onto a computer. The GPR grid data has been processed and modeled using GPR Slice® software. The GPR data processing included adjusting time zero, completing a background removal and adjusting the time variable gain to enhance deep reflections. Three-dimensional models of the GPR grid data were produced with GPR Slice® software. Three time slices (or depth slices) were imaged in each grid at depths of 0.3 to 0.6 feet, 1.9 to 2.2 feet and 3.5 to 3.8 feet (Figures 5 through 7). Each depth slice is a horizontal slice or plan view of the reflections across a 0.3-foot thickness of the subsurface. For example, the deep GPR depth slices for the grids show reflections in the radar data between depths of 3.5 and 3.8 feet.

3.0 Results of Investigation

Parcel #003 is currently an empty lot with tall grass and woods. Historic aerial photographs show that the property was developed with numerous structures in 1960 (Plate 1, Photo 1). Some of these structures appear to have been in the proposed E, C/A and R/W (Plate 1, Photo 2). It is not possible to determine the use of these structures because of the quality of the image. The NCDEQ databases do not indicate that this property operated as a gas station or as any other type of facility that may have used hazardous substances. There are no incident reports mapped on or near the property. These databases typically do not list sites that were active prior to the 1980's. Deed records for the property were searched to look for evidence of prior use. Parcel #003 seems to have been owned by individuals rather than commercial businesses back to at least the 1960's.

Historic aerial photographs from the 1980's until as recent as 1998 (Plate 1, Photo 3) show Parcel #003 covered in what appears to be junk cars. The property was cleared of these vehicles by 2005. Parcel #003 likely operated as a salvage yard which could have resulted in surface spills and possible contaminated soil. Stained soil was not observed during our reconnaissance, but vegetation obstructed our view of much of the ground surface.

3.1 Plate 1 – Aerial Photographs of Parcel #003



Photo 1. 1960 Aerial Photograph showing structures on Parcel #003. Note that Highway 421 has not been built in its current alignment and the pond across Statesville Road is farther to the north.



Photo 2. Recent Aerial Photograph of Parcel #003.

Photo 3. 1998 Aerial Photograph showing what appears to be numerous vehicles scattered across Parcel #003. No structures appear to be present on the eastern side of the property.



3.2 Geophysical Surveys

A grid of magnetometer data was collected along the eastern edge of the property parallel to Statesville Road (Figure 4). A small area of elevated readings in the northeast corner was later identified as a piece of scrap metal and should not be of concern. Four additional magnetometer transects were run over an area where GPR anomalies were observed (Transects 4 through 7). The results were reviewed and showed no evidence of magnetic anomalies characteristic of a UST system.

The shallow GPR depth slice (0.3-0.6 feet) for Grid 1 shows a rectangular higher amplitude reflection that could be an old roadbed/driveway that led to the west side of the property. Scattered reflections were detected across Grids 1 and 2, but these reflections are not characteristic of remnant infrastructure of a former UST system. Magnetic readings were not elevated in the areas of these scattered reflections.

The intermediate GPR depth slice (1.9-2.2 feet) for Grid 1 (Figure 6) shows some scattered reflections. The two high amplitude sets of reflections are observed on the east side of the grid. These are interpreted as likely foundation remnants from the buildings observed in the 1960 aerial photograph (Plate 1, Photo 1). There is a set of high amplitude reflections along the west side of Grid 2. This reflector extends over a distance of at least 10 feet. This set of reflections is not interpreted as a UST system as elevated magnetic readings were not recorded across this anomaly. This set of reflections could also be foundation remnants, or a rubble filled basement of one of the former structures.

The deep GPR depth slice (3.5-3.8 feet) for Grid 1 (Figure 7) shows three areas of high amplitude reflections. Elevated magnetic readings were not detected these anomalies, so they are not likely to be related to a former UST system. The high amplitude set of reflections on the GPR depth slice in Grid 2 appears as an area of discontinuous to chaotic, high amplitude reflections on the GPR profiles (Inset A on Figure 7). These reflections occur at a depth of about 2 feet and extend for 20 feet across the profiles. These reflection characteristics are not consistent with USTs in a tank pit. Additionally, elevated magnetic readings were not detected across this anomaly. This anomaly is likely related to the former structures on Parcel #003.

3.3 Plate 2 – Photographs of Parcel #003



3.4 Visual Reconnaissance

A small area on the north side of the property contains a proposed E. It appears that this area will be used to construct a skim basin, or EC device (per the CAD plans). The thick woods and other underbrush prevented the collection of geophysical data in this area. A visual reconnaissance of the ground surface across this area was conducted.

Photos 1 and 2 in Plate 3 show an example of some of the dense vegetation encountered within the E. Photos 3, 4 and 5 show examples of discarded scrap metal, what appears to be a water pressure tank, a 55-gallon drum and old vehicle parts. It is possible that these objects have been dumped here from the off ramp over the last few decades, but it would seem likely that these objects are material discarded when the property was used as a junk yard. Photo 2 in Plate 1 shows what may be a house and possibly a chicken house in the vicinity of the E.

3.5 Plate 3 – Photographs of Parcel #003



3.6 Conclusions

Parcel #003 is currently an undeveloped parcel. It contained several structures in the past and at one time what appears to be rows of cars in a junk yard. There is no evidence that the property has operated as a gas station or a facility that used hazardous substances. The geophysical survey did not show evidence of USTs or remnant infrastructure of a UST system. Scrap metal, including a 55-gallon drum was observed in the Temporary Construction Easement found along the north side of the property.

4.0 Recommendations

It is possible that there are localized areas of contaminated soil because of past use of the property but locating this type of dispersed soil staining would require stripping a few inches of soil across the entire parcel. Seramur & Associates does not recommend any further assessment work for Parcel #003 at this time.

Appendix A

Figures

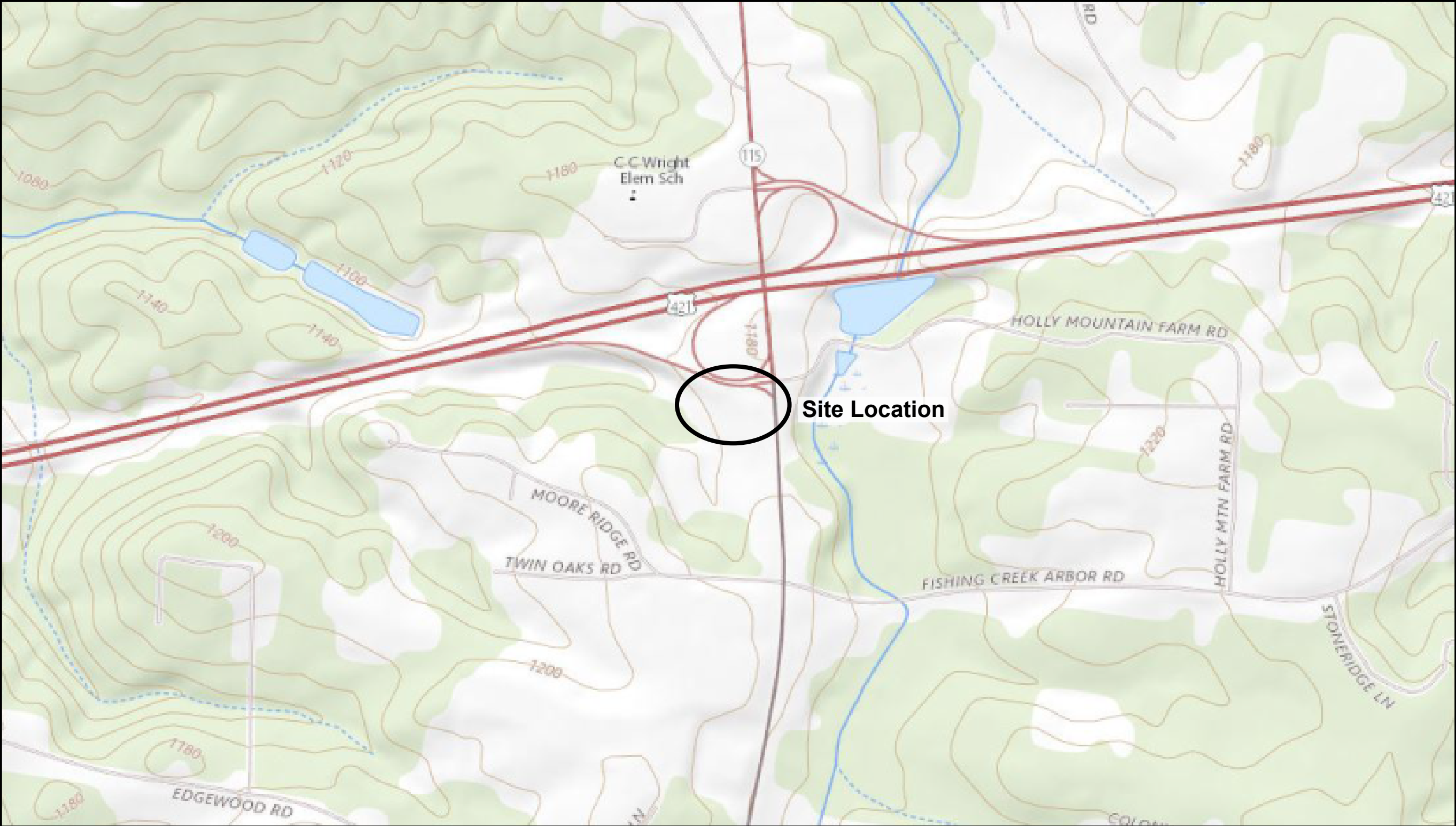


Figure 1 Site Location Map Source: U.S.G.S. The National Map	TIP Number: R-5759 Wilkes County, NC	Janet and James Hartley Property Statesville Road North Wilkesboro, NC	Parcel I.D. #: 003 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	0 400 800 Feet N
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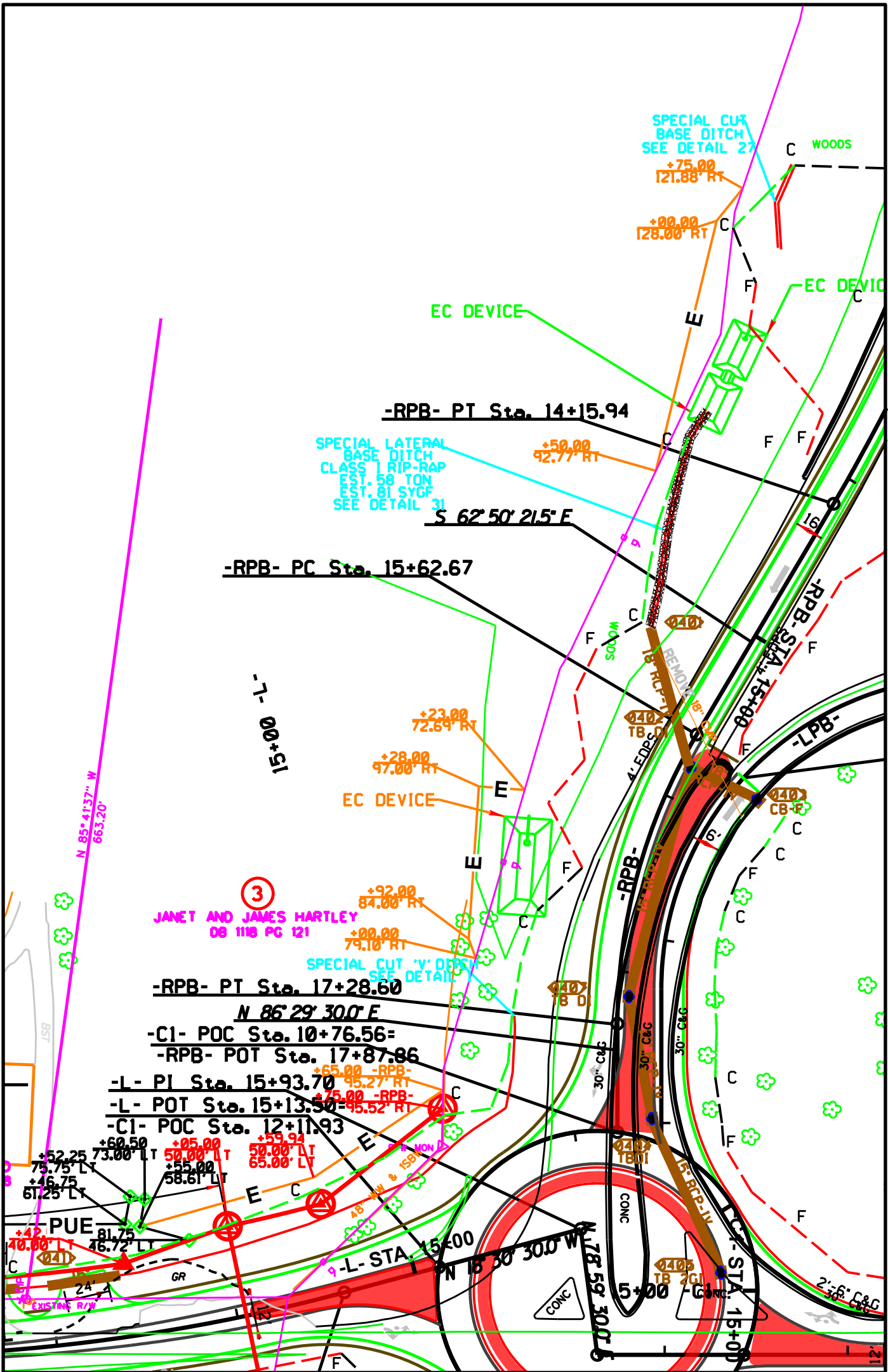
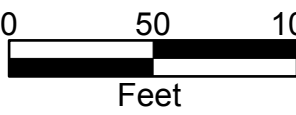
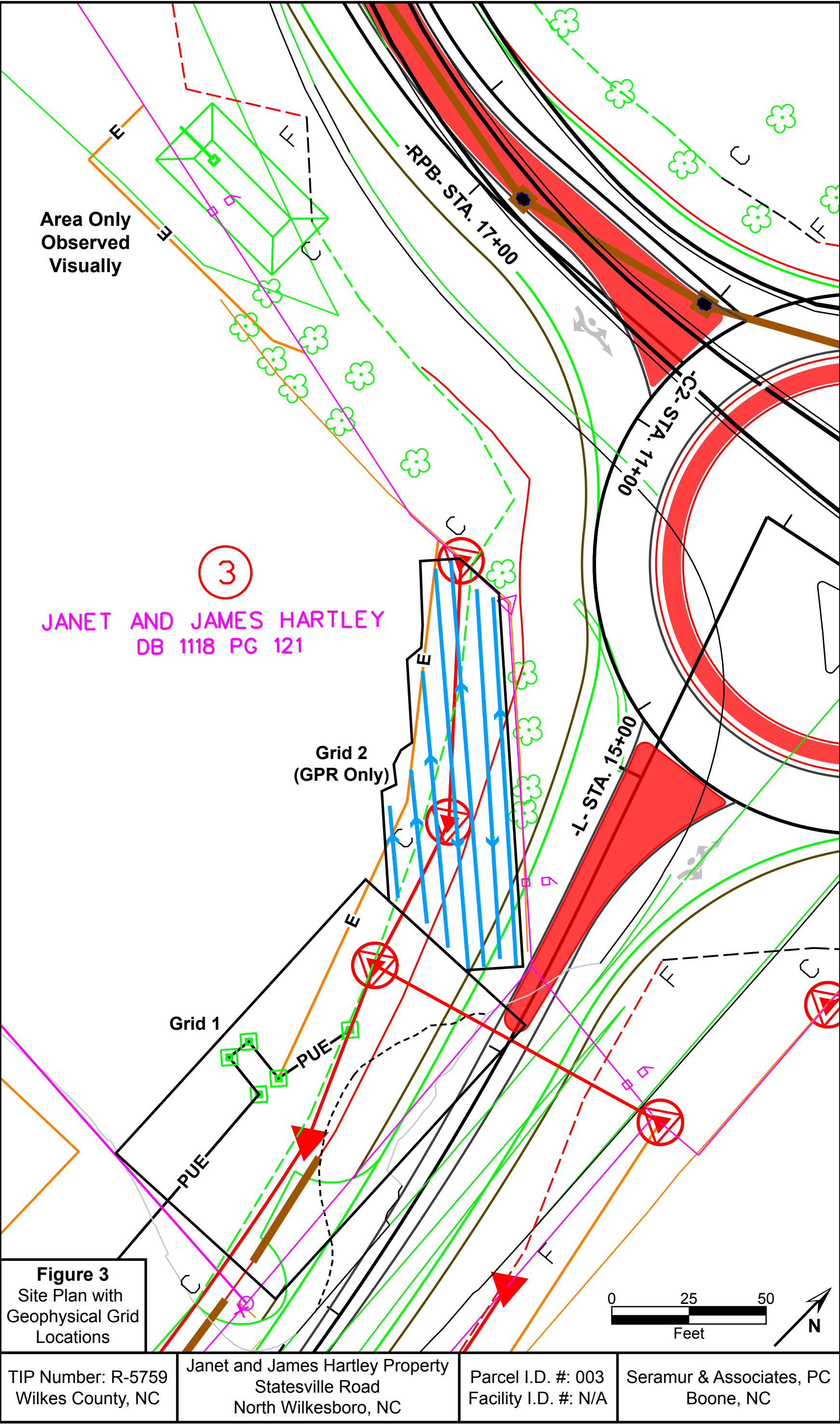


Figure 2 Site Plan	TIP Number: R-5759 Wilkes County, NC	 N 	
Janet and James Hartley Property Statesville Road North Wilkesboro, NC	Parcel I.D. #: 003 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	



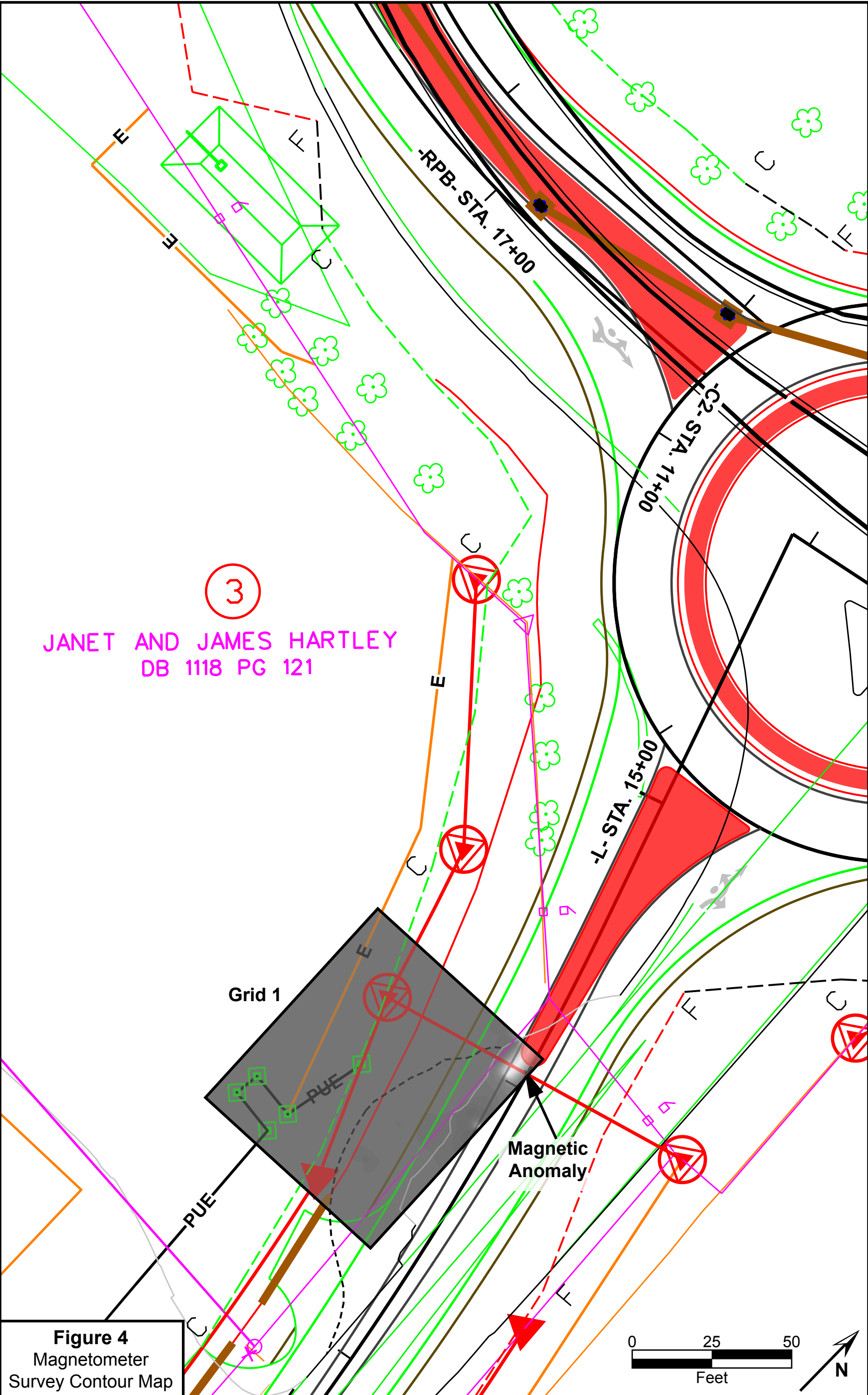


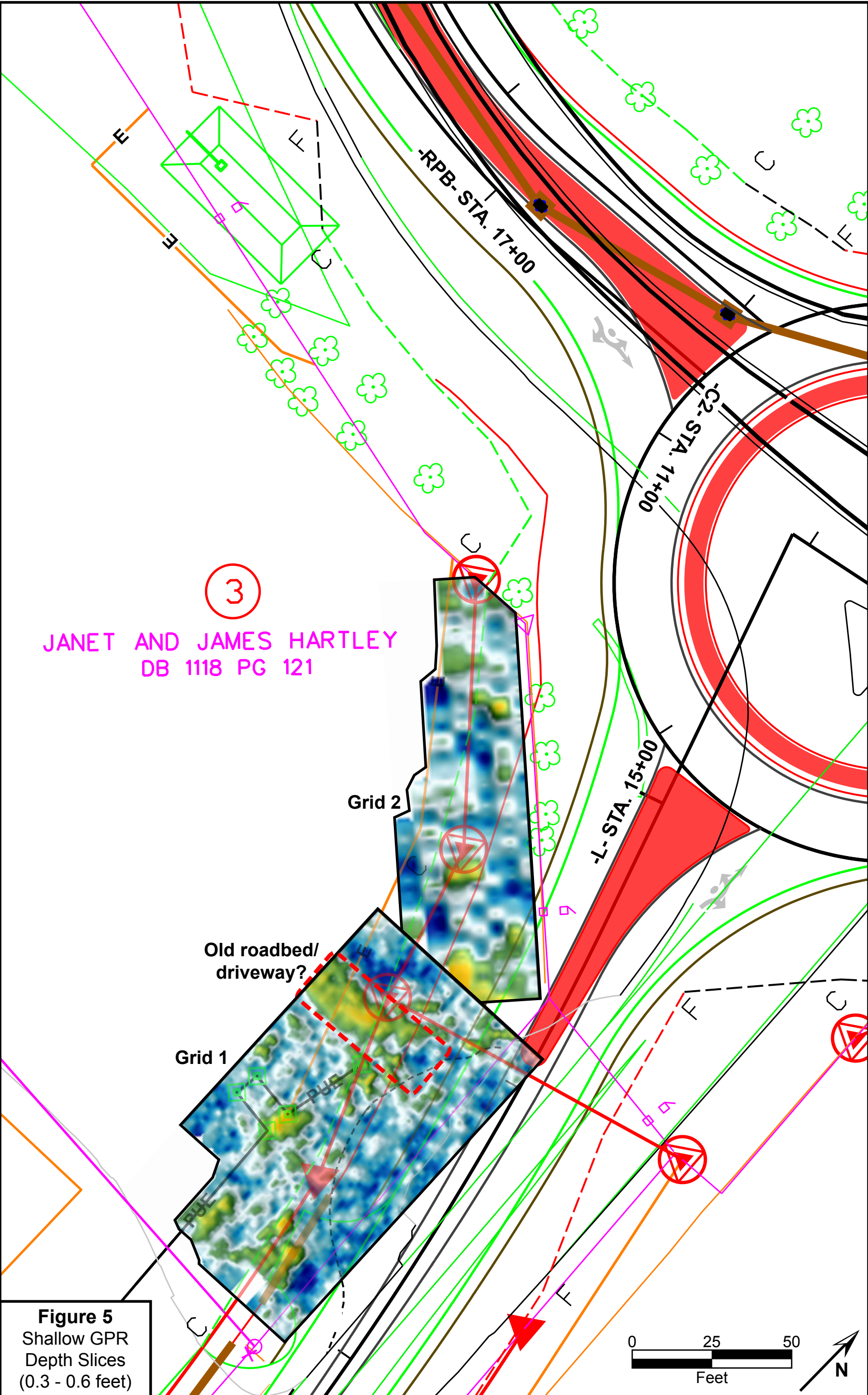
Figure 4
Magnetometer
Survey Contour Map

TIP Number: R-5759
Wilkes County, NC

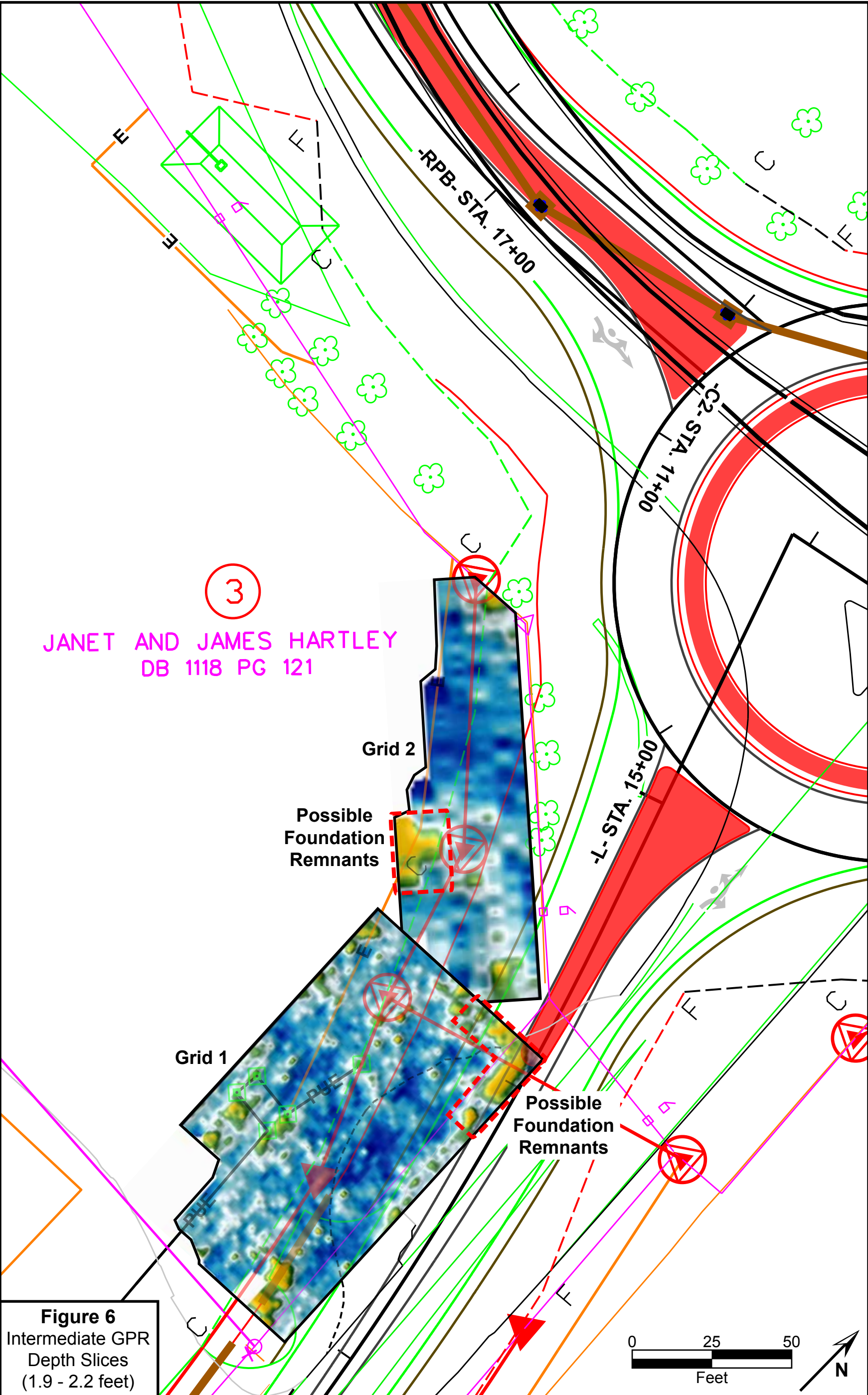
Janet and James Hartley Property
Statesville Road
North Wilkesboro, NC

Parcel I.D. #: 003
Facility I.D. #: N/A

Seramur & Associates, PC
Boone, NC



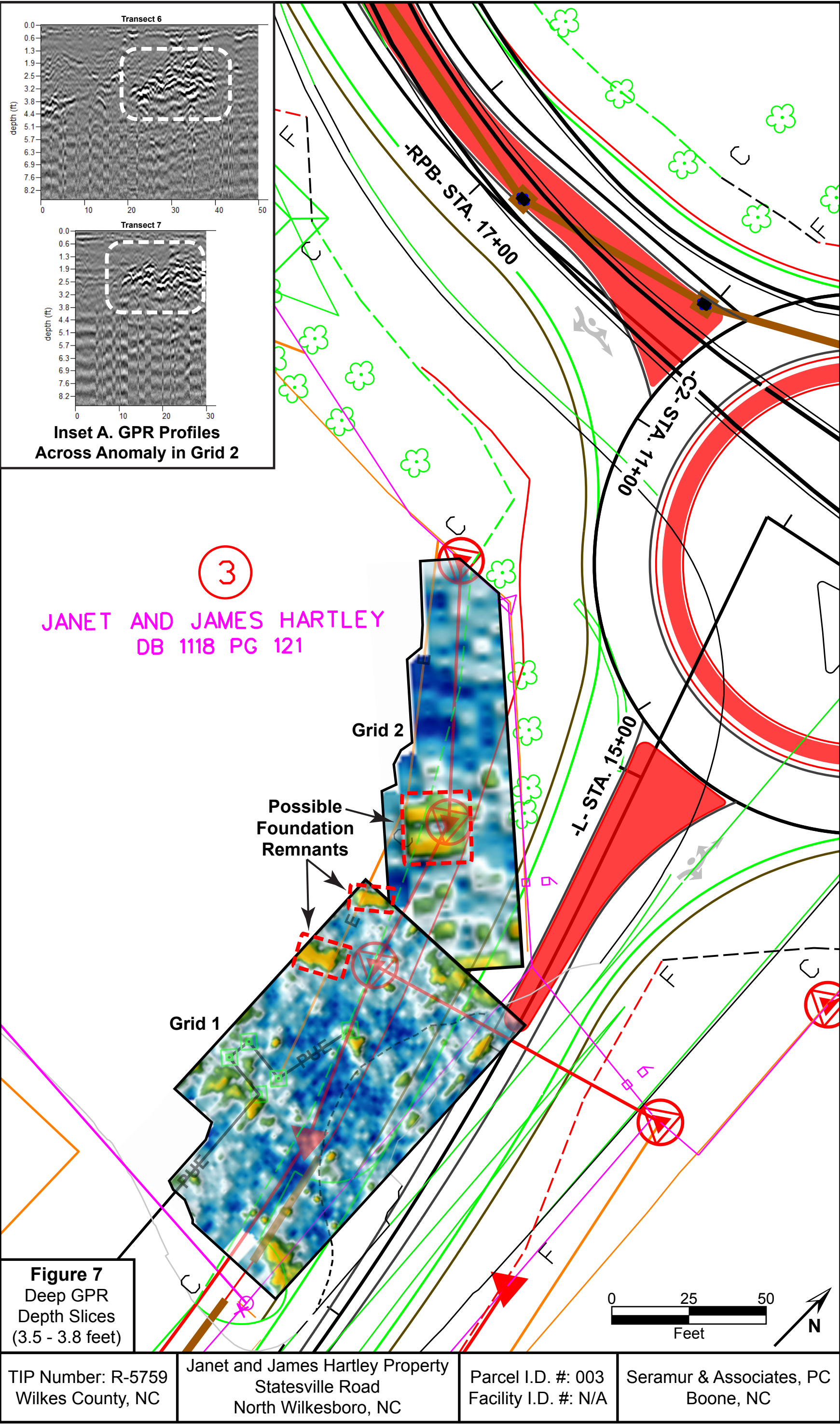
TIP Number: R-5759 Wilkes County, NC	Janet and James Hartley Property Statesville Road North Wilkesboro, NC	Parcel I.D. #: 003 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC
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3
JANET AND JAMES HARTLEY
DB 1118 PG 121

Figure 6
Intermediate GPR
Depth Slices
(1.9 - 2.2 feet)

TIP Number: R-5759 Wilkes County, NC	Janet and James Hartley Property Statesville Road North Wilkesboro, NC	Parcel I.D. #: 003 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC
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Phase II Site Assessment Report

August 9, 2021

WBS Element: 44691.1.1

State Project: R-5759

Wilkes County

At

Wilkes Co Board of Education (BOE)

Parcel #009

200 CC Wright School Road, North Wilkesboro, NC 28659

PIN #: 3877-85-3727

Facility ID No.: 00-0-0000028789

Groundwater Incident No.: N/A

Prepared For:

Mr. Gordon Box

NCDOT, Geotechnical Engineering Unit

GeoEnvironmental Section

1589 Mail Service Center

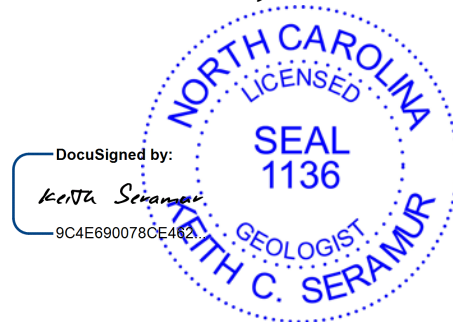
Raleigh, NC 27699-1589

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1.0 Introduction

1.1 General Site Background Information

Seramur & Associates, PC was contracted to complete a Phase II Site Assessment (PSA) at:

Wilkes County Board of Education
Parcel #009
PIN #: 3877-85-3727
200 CC Wright School Road, North Wilkesboro, NC 28659
Facility ID No.: 00-0-0000028789

This parcel is located along the west side of Statesville Rd. at the intersection with CC Wright School Road. The property is situated on a ridge crest between the Fishing Creek and Little Cub Creek stream valleys. Bedrock in the area is mapped as Henderson Gneiss, a biotitic augen gneiss (Rankin, D.W., Espenshade, G.H., Shaw, K.W., and Neumann, R.B.. Geologic map of the west half of the Winston-Salem quadrangle, North Carolina-Virginia, U.S. Geologic Survey Misc. Inv. Series Map I-709-B, 1975).

A Notice to Proceed was obtained from NCDOT on June 25, 2021. Our investigation was limited to visual reconnaissance of the areas within the proposed easements, Control of Access (C/A), and Right-of-Way (R/W) surrounding the school property. Background research for this project included reviewing historic aerial photographs and NCDEQ databases.

2.0 Scope of Work

2.1 Background Research

According to Wilkes County Tax Administration records, the parcel is owned by Wilkes County Board of Education. Available historic aerial photographs from the USGS EarthExplorer website and the ArcGIS Online website were reviewed.

The following NCDEQ databases were queried for incidents at Parcel #009:

- Active USTs
- UST Incident Map
- UST Database
- Hazardous Waste Sites

2.2 Visual Reconnaissance

The proposed easements, C/A and R/W along CC Wright School Road and the northern side of the property were systematically traversed to look for evidence of drums, USTs, and other objects that could pose an environmental threat to the property. The alignment for a new roadway on the north side of the school runs through a playground near the northeast corner of the property and primarily through the wooded area on the north side of the property. It appears that this new roadway will link up with the existing road and driveway on the south side of the school to facilitate traffic flow.

3.0 Results of Investigation

Parcel #009 currently operates as CC Wright Elementary School. Historic photographs did not show evidence of past use of the property that could indicate a potential environmental condition. The NCDEQ database indicates there have been no reported incidents at Parcel #009. The property has a Facility ID Number (00-0-0000028789) because it has a large volume heating oil UST on the property (See Table 1 for tank information)

SAPC personnel made a pedestrian reconnaissance of the property during the initial site visit on June 29, 2021.

3.1 Visual Reconnaissance

The visual reconnaissance of the property started at the area along CC Wright School Road. Nothing was observed that would indicate a recognized environmental condition (REC) on the property. Then the new road alignment along the north side of the property was traversed. The area was primarily observed from the Temporary Construction Easement south of the fence line. There was some relatively dense vegetation in the woods, but the ground surface could be observed across most of the alignment. Drainpipes that were observed within the easement (see Plate 1, Photo 4). These appear to be storm water drains and should not be discharging hazardous substances into the work area.

The new roadway alignment continues along the north side of the building and connects with the student drop-off area on the west side of the school. There is a storage shed just east of the Temporary Construction Easement on the west side of the school. This shed appears to store fuel for maintenance equipment (Plate 2, Photo 3). There was no evidence of stained soil or stressed vegetation near the shed that would indicate spillage has occurred in or around the shed.

Two septic tank risers are present near the southwest corner of the easement (Plate 2, Photo 4). The dimensions of the septic tank are not known, but it could extend into or near the Temporary Construction Easement. An area of cut extends to the corner of the easement closest to the risers.

There is a 10,000 gallon heating oil UST at this facility according to the NCDEQ UST Database. This tank appears to be located under the parking lot on the south side of the school. This UST is not near the Easements, C/A and R/W (Plate 2, Photo 5). There was no evidence of fill ports or vent pipes in any other area of the property. The UST is far enough away from the Easements, C/A and R/W that even if a release has occurred, it would likely not impact the soil in these areas.

3.2 Conclusions

Parcel #009 currently operates as CC Wright Elementary School. The property is a registered UST Facility because of a large volume heating oil UST located on the south side of the school. This UST is not in the proposed work area. A visual reconnaissance of the property did not find evidence of any unknown USTs, solid waste dumping or 55-gallon drums and other containers that could affect the environmental quality of the property.

4.0 Recommendations

Seramur and Associates does not recommend any further assessment work on this property.

5.0 Photographs

Plate 1 – Photographs of Parcel #009



Photo 1. Tree line along the Temporary Construction Easement near the northeast corner of the property.



Photo 2. Dense vegetation along the northeast property line.



Photo 3. View of the Temporary Construction Easement along the north side of the building.



Photo 4. Example of a drain pipe located along the northern side of the property within the Temporary Construction Easement.

Plate 2 – Photographs of Parcel #009



Photo 1. Example of less dense vegetation in woods near the western side of the new alignment.



Photo 2. Playground near the entrance on CC Wright School Road.



Photo 3. Storage shed west of the school building. The sign on the left side of the building indicates that the shed contains gasoline and/or diesel fuel.



Photo 4. Risers near the southwest corner of the building likely related to a septic tank.



Photo 5. UST Fill and Vent pipe located in the parking lot on the south side of the school building.

Appendix A

Tables and Figures

Table 1. UST Information						
Facility ID	Facility Name	Address	City	State	Contact	Contact Address
00-0-0000028789	CC WRIGHT ELEMENTARY SCHOOL	200 CC WRIGHT SCHOOL RD	NORTH WILKESBORO	NC	WILKES COUNTY BOARD OF EDUCATION	613 CHERRY STREET
Contact City	Tank ID	Installation Date	Capacity	Commercial	Regulated	Product Name
NORTH WILKESBORO	1	*1/1/1971	10000	Yes	No	Heating Oil/ Fuel



Figure 1 Site Location Map Source: U.S.G.S. The National Map	TIP Number: R-5759 Wilkes County, NC	Wilkes County Board of Education Property 200 CC Wright School Road North Wilkesboro, NC	Parcel I.D. #: 009 Facility I.D. #: 00-0-28789	Seramur & Associates, PC Boone, NC	0 400 800 Feet N
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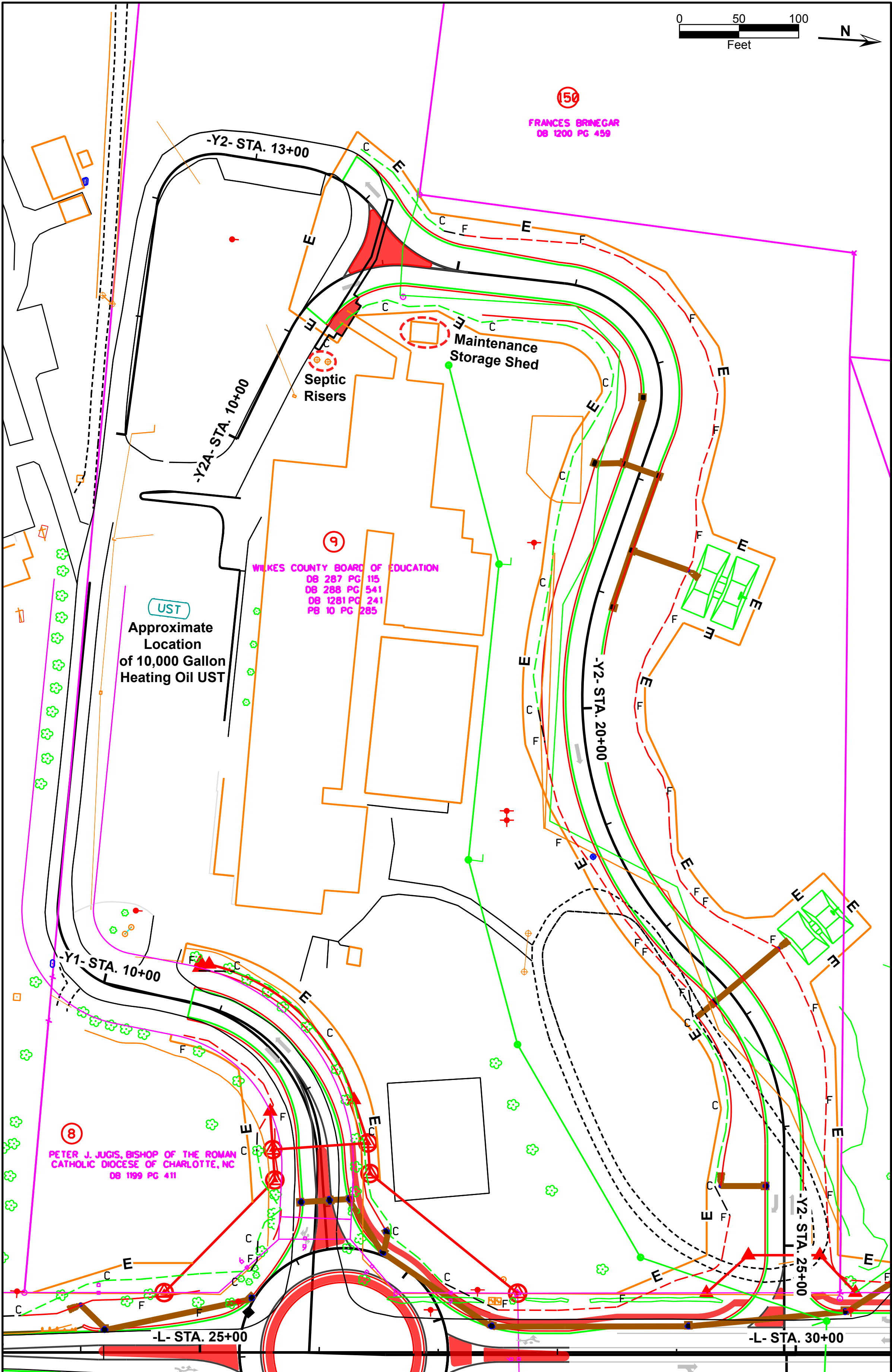


Figure 3 Annotated Site Plan	TIP Number: R-5759 Wilkes County, NC	Wilkes County Board of Education Property 200 CC Wright School Road North Wilkesboro, NC	Parcel I.D. #: 009 Facility I.D. #: 00-0-28789	Seramur & Associates, PC Boone, NC
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Phase II Site Assessment Report

August 27, 2022

WBS Element: 44691.1.1

State Project: R-5759

Wilkes County

At

Angel Lois Foster and Sheila Elizabeth Pait Property

Parcel #013

NA Statesville Road, North Wilkesboro, NC 28659

PIN #: 3877-86-9367

Facility ID No.: N/A

Groundwater Incident No.: N/A

Prepared For:

Mr. Gordon Box

NCDOT, Geotechnical Engineering Unit

GeoEnvironmental Section

1589 Mail Service Center

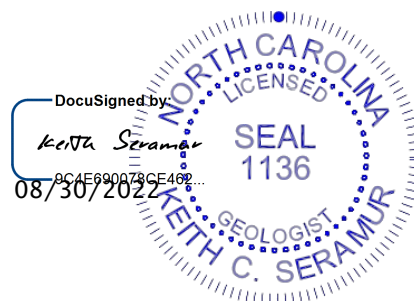
Raleigh, NC 27699-1589

Prepared By:

Seramur & Associates, PC

165 Knoll Drive

Boone, NC 28607



Keith C. Seramur, P.G.

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1.0 Introduction

1.1 General Site Background Information

Seramur & Associates, PC was contracted to complete a Phase II Site Assessment (PSA) at:

Angel Lois Foster and Sheila Elizabeth Pait Property
Parcel #013
PIN #: 3877-86-9367
NA Statesville Road, North Wilkesboro, NC 28659
Facility ID No.: N/A

This parcel is located along the eastern side of Statesville Road near the intersection with Hunter Road. The property is situated on the ridge crest approximately 650 feet west of Fishing Creek (Figure 1). Bedrock in the area is mapped as Henderson Gneiss, a biotitic augen gneiss (Rankin, D.W., Espenshade, G.H., Shaw, K.W., and Neumann, R.B.. Geologic map of the west half of the Winston-Salem quadrangle, North Carolina-Virginia, U.S. Geologic Survey Misc. Inv. Series Map I-709-B, 1975).

A Notice to Proceed was obtained from NCDOT on June 25, 2021. Our investigation included areas within the proposed easements and proposed and existing Right-of-Way (R/W) along the eastern side of Statesville Rd. (Figure 2). Our work was delayed because access to the southern portion of the property was blocked by abandoned vehicles. It is our understanding that the cars were placed on the property by the occupants of Parcel #018 and were only removed when the threat of a \$250-per-day fine was to be issued to the occupants. We were informed by the current property occupants that the cars were cleared at the end of July or the first of August, 2022.

The Phase II Site Assessment scope of work included completing a geophysical survey at the property to investigate the potential for unknown underground storage tanks and remnant infrastructure. Background research for this project included reviewing historic aerial photographs and NCDEQ databases.

2.0 Scope of Work

2.1 Background Research

According to Wilkes County Tax Administration records, the parcel is currently owned by Dennis M. Brown. Angel Lois Foster & Sheila Elizabeth Pait are listed as the owners of the property in NCDOT CAD and R/W Records. The property boundary also appears differently in the Wilkes County Tax Administration records. Available historic aerial photographs from the USGS EarthExplorer website and the ArcGIS Online website were reviewed.

The following NCDEQ databases were queried for incidents at Parcel #013:

- Dry Cleaners
- UST Incident Map
- Hazardous Waste Sites
- Active USTs
- UST Database

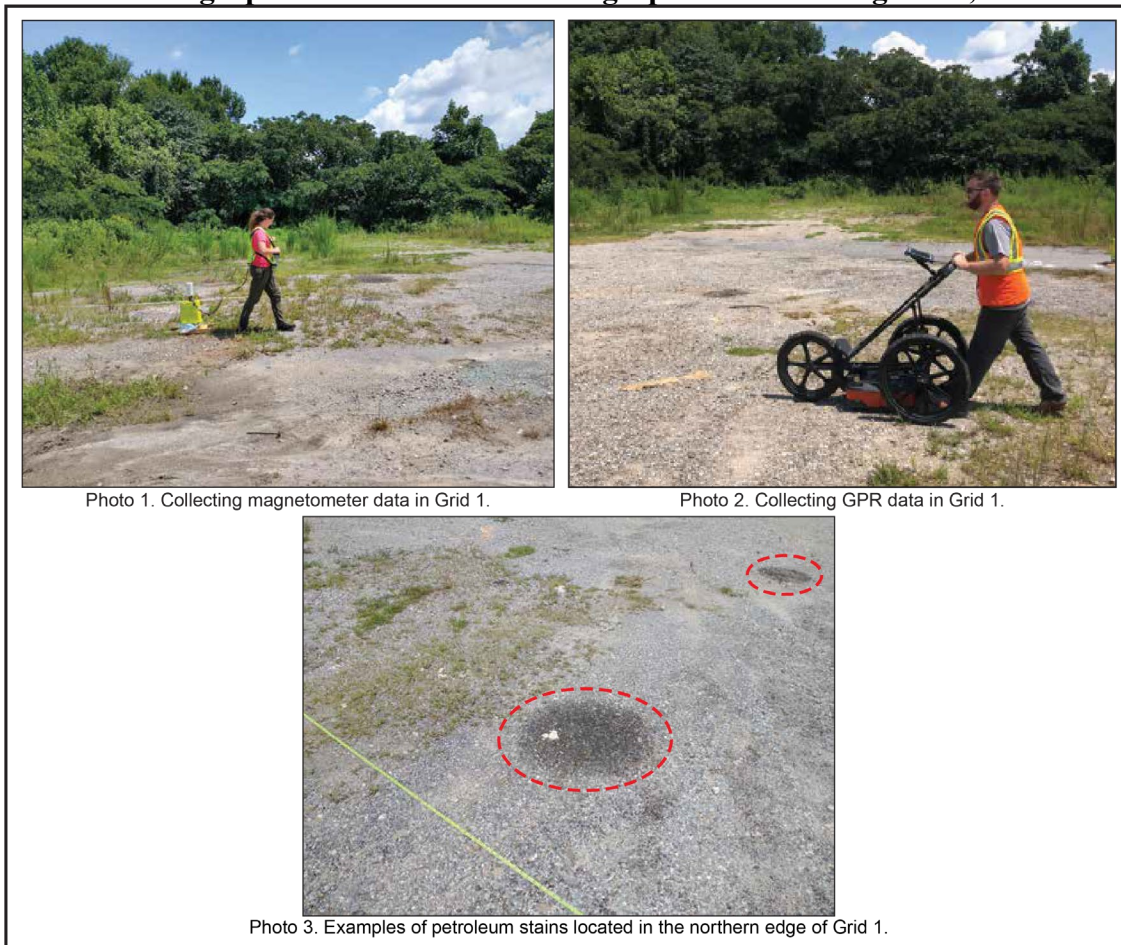
2.2 Geophysical Surveys

Seramur & Associates used the Pythagorean Theorem to establish one rectangular grid across the proposed PUE and proposed and existing R/W for a geophysical survey at Parcel #013 (Figure 3). Grid 1 extends along the west side of the property, bordering Statesville Road. Geophysical grid data was collected along transects at a two-foot spacing.

The magnetometer data was collected with a GEM Systems GSM-19W Walking Overhauser Magnetometer. This data was compiled in an Excel spreadsheet and a hillshade map of the magnetometer data was drafted using Golden Software's Surfer® modeling program (Figure 4). Ferrous objects in the subsurface are more magnetic than the surrounding soil and produce magnetic anomalies on the hillshade maps.

A Ground Penetrating Radar (GPR) survey was completed across the grid using a Geophysical Survey Systems, Inc. UtilityScan GPR System with a 350 MHz hyperstacking antenna. This GPR system is equipped with a calibrated survey wheel. The GPR data was downloaded and saved onto a computer. The GPR grid data has been processed and modeled using GPR Slice® software. The GPR data processing included adjusting time zero, completing a background removal and adjusting the time variable gain to enhance deep reflections. Three-dimensional models of the GPR grid data were produced with GPR Slice® software. Three time slices (or depth slices) were imaged in each grid at depths of 0.2 to 0.5 feet, 1.4 to 1.7 feet and 2.8 to 3.1 feet (Figures 5 through 7). Each depth slice is a horizontal slice or plan view of the reflections across a 0.3-foot thickness of the subsurface. For example, the deep GPR depth slices for the grids show reflections in the radar data between depths of 2.8 and 3.1 feet.

2.3 Plate 1 – Photographs of Parcel #013 - Photographs taken on August 12, 2022



3.0 Results of Investigation

Parcel #013 is currently inactive but is being cleared for potential future use. Our government records search did not find any evidence that Parcel #25 had been used as a gas station in the past.

SAPC personnel made a pedestrian reconnaissance of the cleared property during a site visit on August 12, 2022. No evidence of a UST system was observed. A local informant familiar with the North Wilkesboro area stated during our work on August 16, 2022, that the property had not been used as a fuel station in the last 40 years.

3.1 Geophysical Surveys

The hillshade map of the magnetometer survey data (Figure 4) shows a series of small magnetic anomalies across the grid. Various small metal objects related to vehicles were strewn across the property at the time of our survey. The magnetometer did not record any evidence of large anomalies that might indicate remnants of a former UST system.

The shallow GPR depth slice (0.2-0.5 feet) shows one amorphous set of medium to high amplitude reflections in a small area of pavement (Figure 5). There are a series of other small medium amplitude reflections across the rest of Grid 1 that do not indicate the presence of tanks or other UST infrastructure. The intermediate GPR depth slice (1.4-1.7 feet) shows this same anomaly as observed in the shallow depth slice and additional reflections extending into the northeast portion of the grid (Figure 6). The deep GPR depth slice (2.8-3.1 feet) is primarily reflection-free with a few small medium to high amplitude reflections dispersed across the northeast portion of the grid (Figure 7).

3.2 Conclusions

Parcel #013 is not currently active as a commercial business. Historical research did not find evidence that the property has ever operated as a gas station. Dozens of junk cars were recently removed from the property. A few areas of stained soil, likely from oil and fuel leaking from the cars, are present across the property. This petroleum impacted soil is likely limited to the surface.

4.0 Recommendations

Seramur & Associates does not recommend any further assessment work for Parcel #013.

Appendix A

Figures

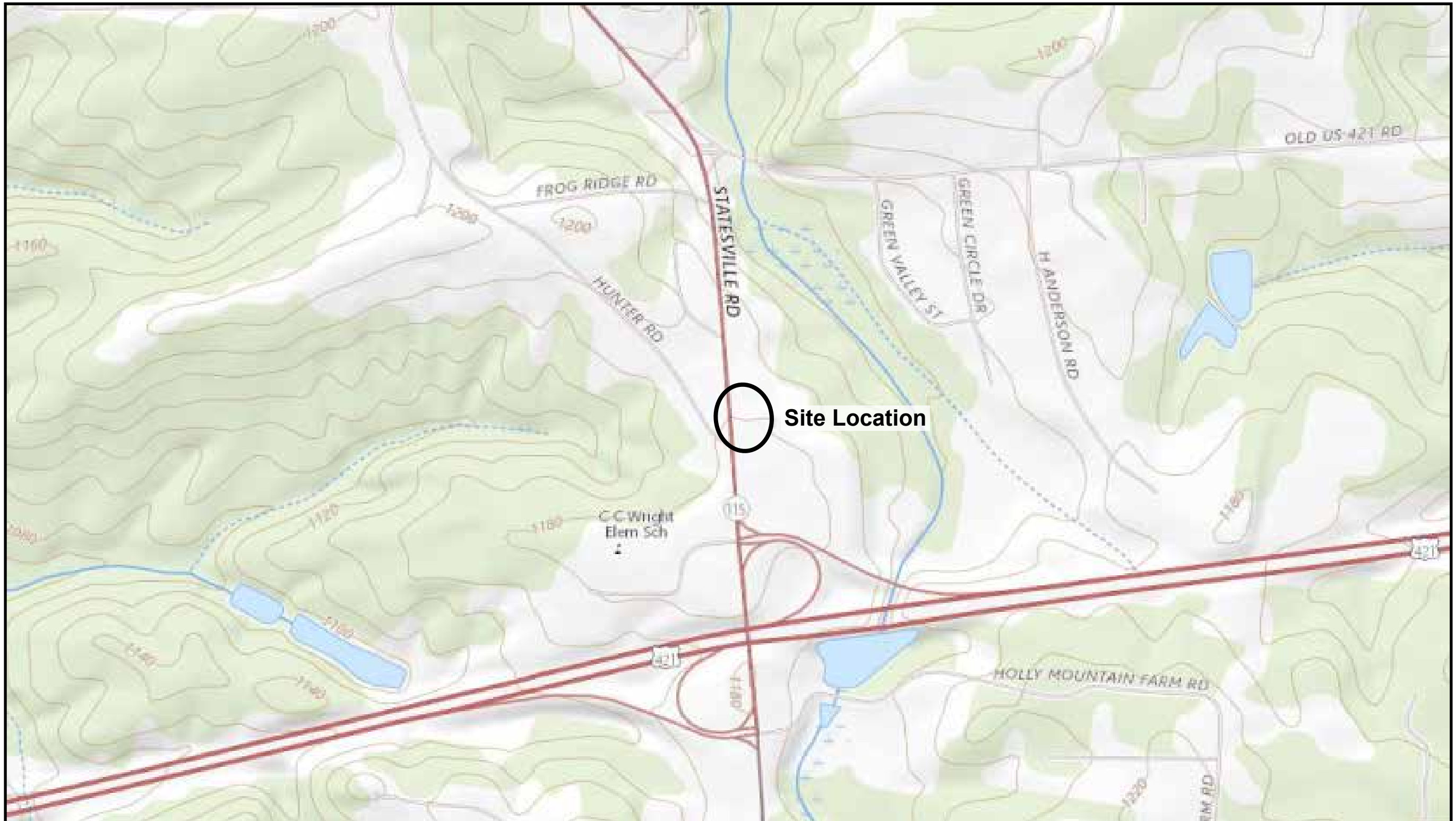
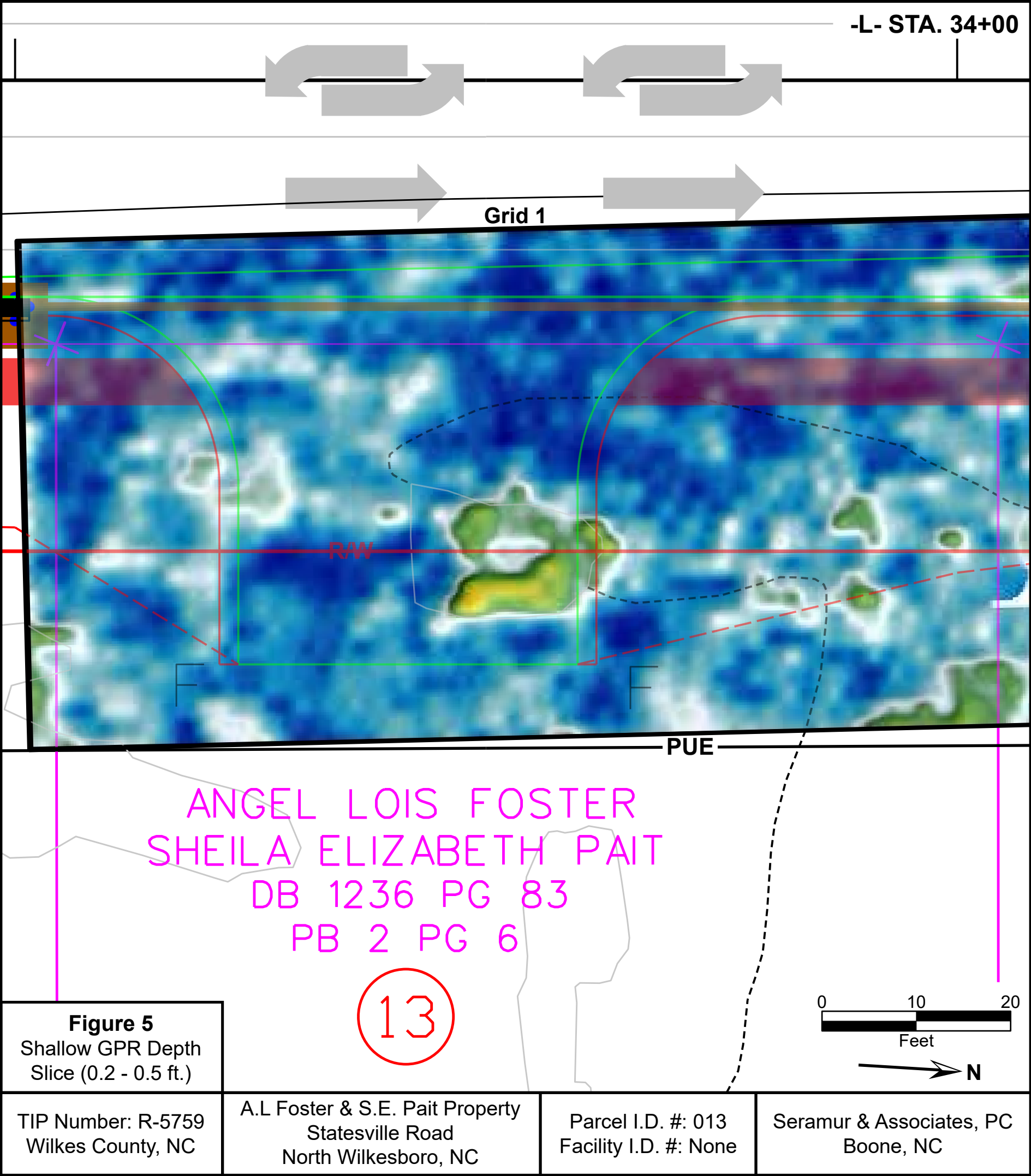
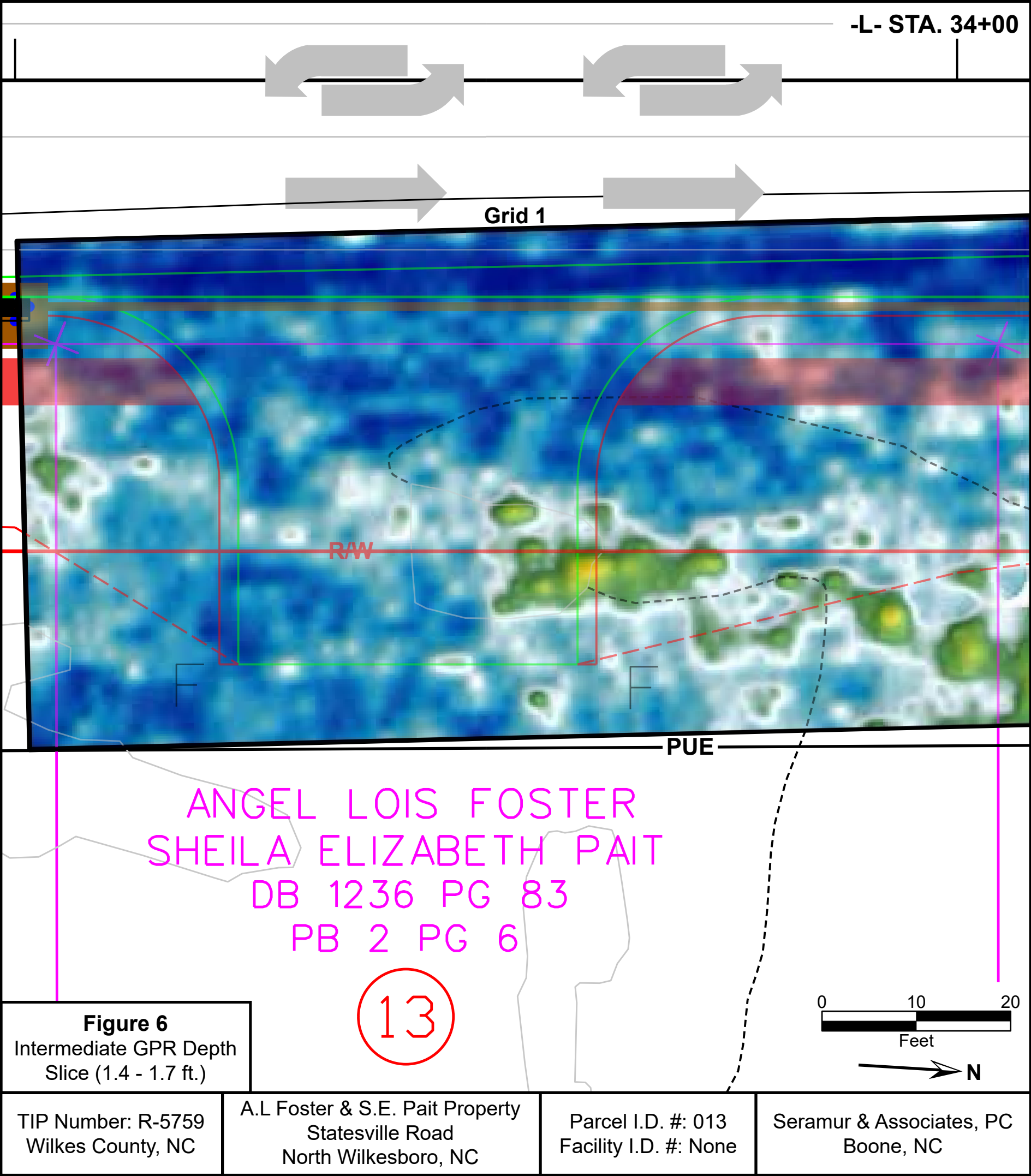


Figure 1 Site Location Map Source: U.S.G.S. The National Map	TIP Number: R-5759 Wilkes County, NC	A.L Foster & S.E. Pait Property Statesville Road North Wilkesboro, NC	Parcel I.D. #: 013 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	0 400 800 Feet N
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Phase II Site Assessment Report

August 26, 2022

WBS Element: 44691.1.1

State Project: R-5759

Wilkes County

At

Dennis M. Brown Property

Parcel #014

NA Statesville Road, North Wilkesboro, NC 28659

PIN #: 3877-96-3413

Facility ID No.: N/A

Groundwater Incident No.: N/A

Prepared For:

Mr. Gordon Box

NCDOT, Geotechnical Engineering Unit

GeoEnvironmental Section

1589 Mail Service Center

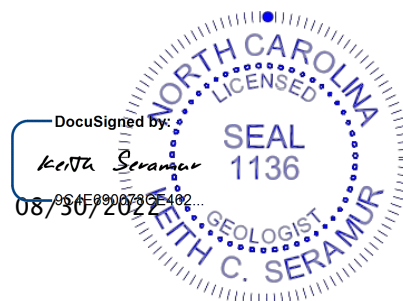
Raleigh, NC 27699-1589

Prepared By:

Seramur & Associates, PC

165 Knoll Drive

Boone, NC 28607



Keith C. Seramur, P.G.

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Figure 7 – Deep GPR Depth Slices	

1.0 Introduction

1.1 General Site Background Information

Seramur & Associates, PC was contracted to complete a Phase II Site Assessment (PSA) at:

Dennis M. Brown Property
Parcel #014
PIN #: 3877-96-3413
NA Statesville Road, North Wilkesboro, NC 28659
Facility ID No.: N/A

This parcel is located along the eastern side of Statesville Road near the intersection with Hunter Road. The property is situated on the ridge crest approximately 750-800 feet west of Fishing Creek (Figure 1). Bedrock in the area is mapped as Henderson Gneiss, a biotitic augen gneiss (Rankin, D.W., Espenshade, G.H., Shaw, K.W., and Neumann, R.B.. Geologic map of the west half of the Winston-Salem quadrangle, North Carolina-Virginia, U.S. Geologic Survey Misc. Inv. Series Map I-709-B, 1975).

A Notice to Proceed was obtained from NCDOT on June 25, 2021. Our investigation included areas within the proposed easements and proposed and existing Right-of-Way (R/W) along the eastern side of Statesville Rd. (Figure 2). Our work was delayed because access to the northern portion of the property was blocked by abandoned vehicles. It is our understanding that the cars were placed on the property by the occupants of Parcel #018 and were only removed when the threat of a \$250-per-day fine was to be issued to the occupants. We were informed by the current property occupants that the cars were cleared at the end of July or the first of August, 2022.

The Phase II Site Assessment scope of work included completing a geophysical survey at the property to investigate the potential for unknown underground storage tanks and remnant infrastructure. Background research for this project included reviewing historic aerial photographs and NCDEQ databases.

2.0 Scope of Work

2.1 Background Research

According to Wilkes County Tax Administration records, the parcel is currently owned by Dennis M. Brown. The property boundary appears differently in the Wilkes County Tax Administration than it does in the NCDOT CAD Files. Available historic aerial photographs from the USGS EarthExplorer website and the ArcGIS Online website were reviewed.

The following NCDEQ databases were queried for incidents at Parcel #014:

- Dry Cleaners
- UST Incident Map
- Hazardous Waste Sites
- Active USTs
- UST Database

2.2 Geophysical Surveys

Seramur & Associates used the Pythagorean Theorem to establish two rectangular grids across the proposed PUE and proposed and existing R/W for a geophysical survey at Parcel #014 (Figure 3).

Grid 1 extends along the southwest side of the property and Grid 2 extends along the northwest side of the property, both bordering Statesville Road. Geophysical grid data was collected along transects at a two-foot spacing.

The magnetometer data was collected with a GEM Systems GSM-19W Walking Overhauser Magnetometer. This data was compiled in an Excel spreadsheet and a hillshade map of the magnetometer data was drafted using Golden Software's Surfer® modeling program (Figure 4). Ferrous objects in the subsurface are more magnetic than the surrounding soil and produce magnetic anomalies on the hillshade maps.

A Ground Penetrating Radar (GPR) survey was completed across the grid using a Geophysical Survey Systems, Inc. UtilityScan GPR System with a 350 MHz hyperstacking antenna. This GPR system is equipped with a calibrated survey wheel. The GPR data was downloaded and saved onto a computer. The GPR grid data has been processed and modeled using GPR Slice® software. The GPR data processing included adjusting time zero, completing a background removal and adjusting the time variable gain to enhance deep reflections. Three-dimensional models of the GPR grid data were produced with GPR Slice® software. Three time slices (or depth slices) were imaged in each grid at depths of 0.2 to 0.5 feet, 1.6 to 1.9 feet and 2.9 to 3.2 feet (Figures 5 through 7). Each depth slice is a horizontal slice or plan view of the reflections across a 0.3-foot thickness of the subsurface. For example, the deep GPR depth slices for the grids show reflections in the radar data between depths of 2.9 and 3.2 feet.

2.3 Plate 1 – Photographs of Parcel #014 - Photographs taken on August 12, 2022



Photo 1. Collecting GPR data at Parcel #014.



Photo 2. Collecting magnetometer data at Parcel #014.



Photo 3. Large area of stained soil located on the northern side of Grid 2.

3.0 Results of Investigation

Parcel #014 is currently inactive but is being cleared for potential future use. It is our understanding that the current occupants intend to clean up the property and refurbish the garage on the east side of the parcel.

SAPC personnel made a pedestrian reconnaissance of the cleared property during a site visit on August 12, 2022. No evidence of a UST system was observed. A local informant familiar with the North Wilkesboro area stated during our work on August 16, 2022, that the property had not been used as a fuel station in the last 40 years.

Our government records search did not find any evidence that Parcel #25 had been used as a gas station in the past. A 1950 aerial photograph shows what appears to be a building within the proposed R/W and PUE along the west side of the parcel. Photographs from the 1960s are unclear. The structure is not present in photographs from the 1980s. The garage on the east side of the property appears in photos dating back to the 1960s. Junk cars were being stored at Parcel #014 dating back to the 1960s.

3.1 Geophysical Surveys

The hillshade map of the magnetometer survey data (Figure 4) shows a series of small magnetic anomalies across the grid. Various small metal objects related to vehicles were strewn across the property at the time of our survey. There are no large anomalies that might indicate remnants of a former UST system.

The shallow GPR depth slice (0.2-0.5 feet) for Grid 1 shows a linear high amplitude reflection along the south side of the grid and amorphous, medium amplitude reflections in other areas of the grid (Figure 5). Linear set of high amplitude reflections in Grid 2 form a rectangular shape. These could be the footings of a former building.

The high amplitude reflection along the southern side of Grid 1 is not present on the intermediate GPR depth slice (1.4-1.7 feet) (Figure 6). Amorphous, disorganized reflections are present in the north end of Grids 1 and 2.

The deep GPR depth slices (2.9-3.2 feet) are mostly reflection-free. Numerous medium amplitude reflections are present in the unpaved area on the north side of Grid 1 and in the center of Grid 2 (Figure 7). The reflections present in the two grids are not indicative of a former or remnant UST system.

3.2 Conclusions

Parcel #014 is not currently active as a commercial business. Historical research found that a building was once located on the western side of the parcel and could have been a gas station. No evidence of a UST system or remnant UST infrastructure were detected by the geophysical survey at Parcel #014. Dozens of junk cars were recently removed from the property. A few areas of stained soil, likely from oil and fuel leaking from the cars, are present across the property. This petroleum impacted soil is likely limited to the surface. The current occupants are refurbishing the garage on the east side of the property which is not within the proposed R/W and PUE.

4.0 Recommendations

Seramur & Associates does not recommend any further assessment work for Parcel #014.

Appendix A

Figures

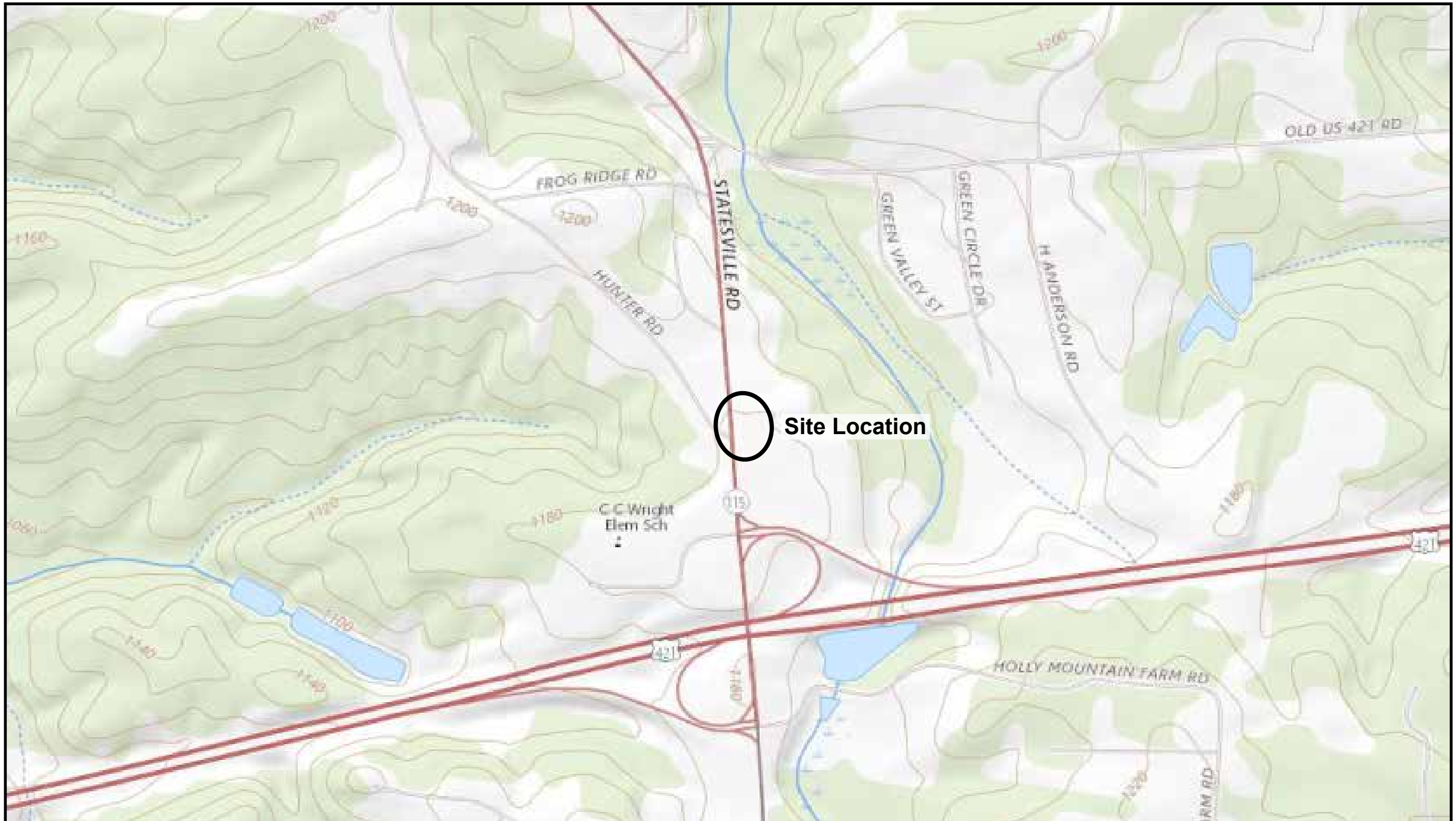


Figure 1 Site Location Map Source: U.S.G.S. The National Map	TIP Number: R-5759 Wilkes County, NC	Dennis M. Brown Property Statesville Road North Wilkesboro, NC	Parcel I.D. #: 014 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	0 400 800 Feet N
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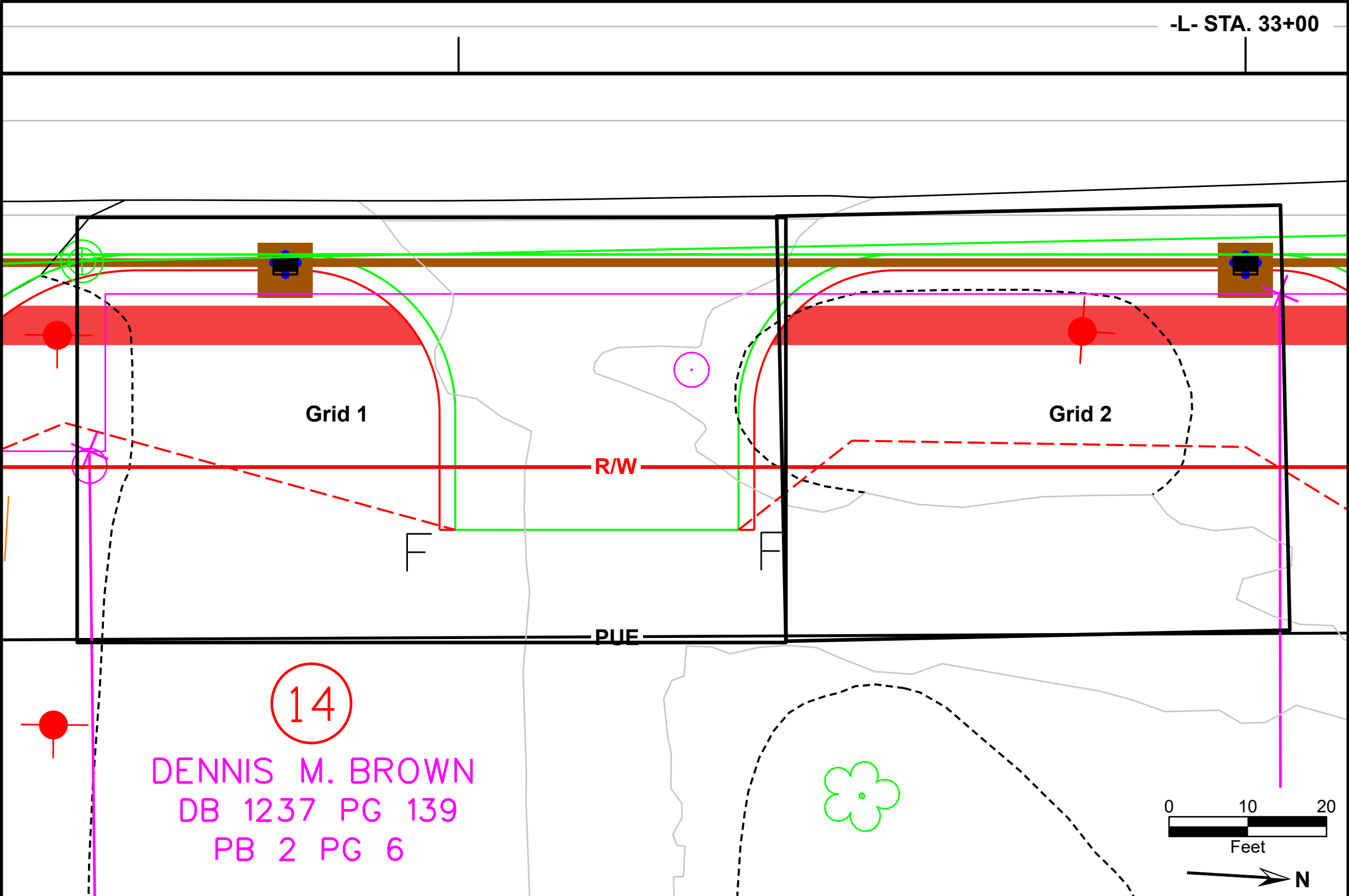
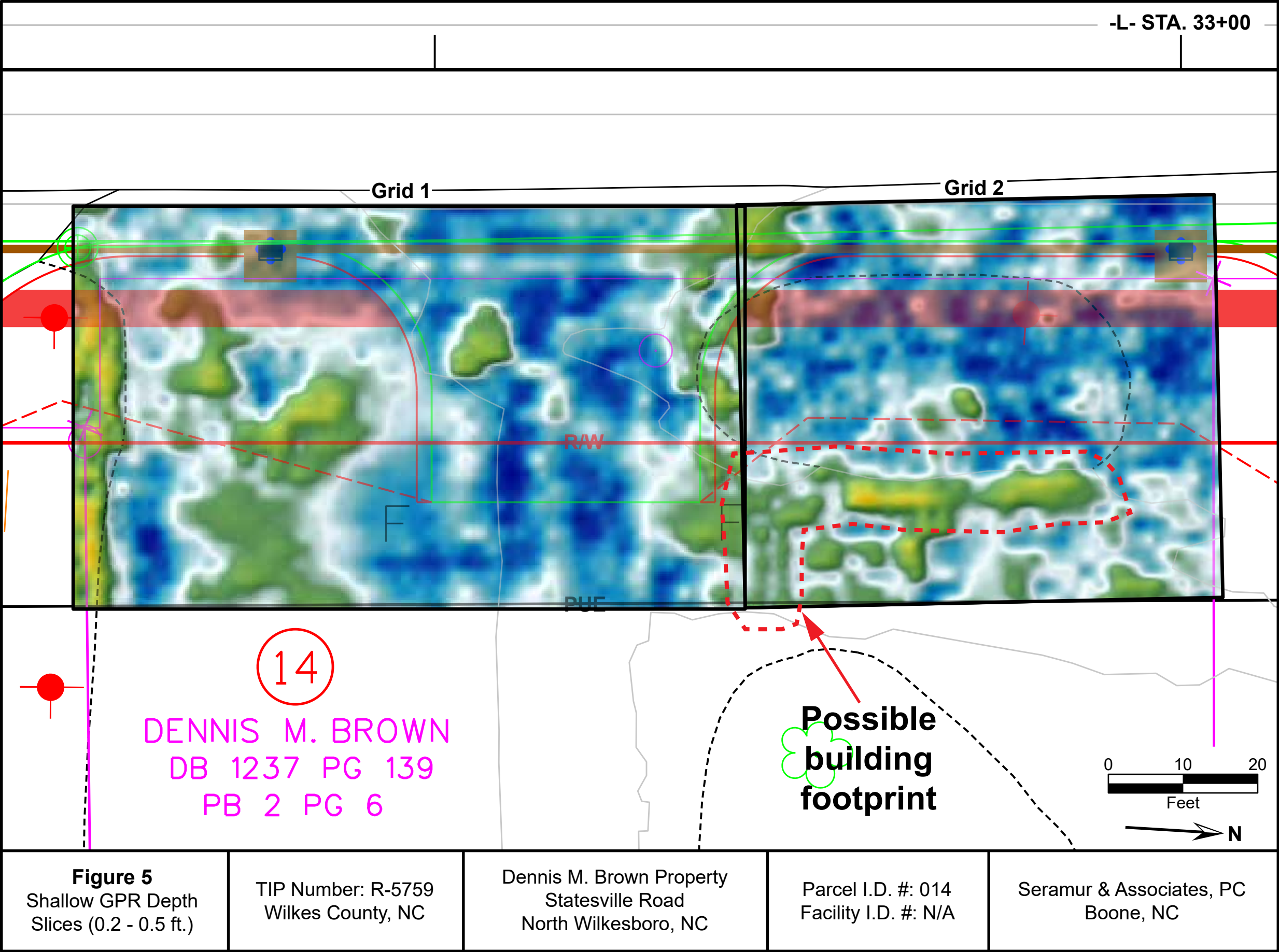
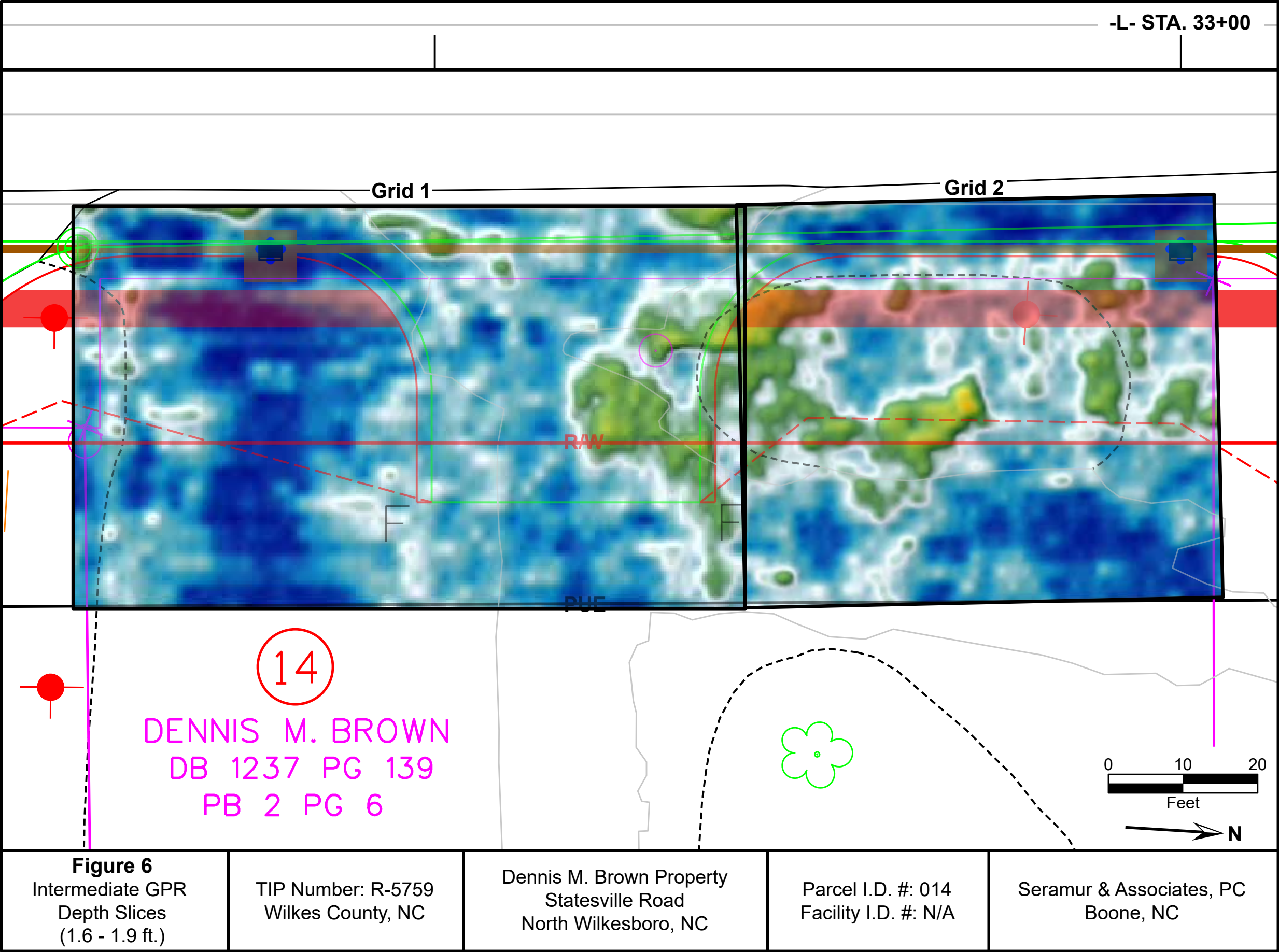


Figure 3 Site Plan with Geophysical Grid Locations	TIP Number: R-5759 Wilkes County, NC	Dennis M. Brown Property Statesville Road North Wilkesboro, NC	Parcel I.D. #: 014 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC
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**Phase II Site Assessment Report
August 14, 2021
WBS Element: 44691.1.1
State Project: R-5759
Wilkes County**

at

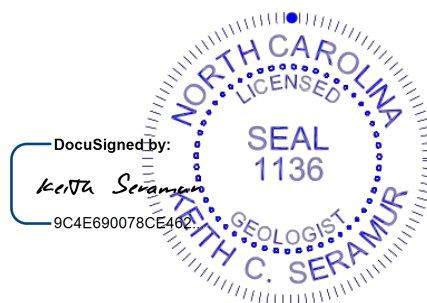
**Parcel #: 017
Thurman & Jewel Brown Property
2698 Statesville Road; North Wilkesboro, NC, 28659
PIN #: 3877-86-7338
Facility ID No.: 00-0-0000000790
Groundwater Incident #: 22405**

Prepared For:

**Mr. Gordon Box
NCDOT, Geotechnical Engineering Unit
GeoEnvironmental Section
1589 Mail Service Center
Raleigh, NC 27699-1589**

Prepared By:

**Seramur & Associates, PC
165 Knoll Drive
Boone, NC 28607**



Keith C. Seramur, P.G.

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1.0 Introduction

1.1 General Site Background Information

Seramur & Associates, PC was contracted to complete a Phase II Environmental Site Assessment at:

Parcel #: 017
Thurman & Jewel Brown Property
2698 Statesville Road; North Wilkesboro, NC, 28659
PIN #: 3877-86-7338
Facility ID No.: 00-0-0000000790
Groundwater Incident #: 22405

Parcel #017 is located along the western side of Statesville Road at the intersection with Hunter Road. The property is located on a drainage divide west of the Fishing Creek stream valley approximately 900 feet west of the stream channel. Bedrock in the area is mapped as Henderson Gneiss, a biotitic augen gneiss (Rankin, D.W., Espenshade, G.H., Shaw, K.W., and Neumann, R.B.. Geologic map of the west half of the Winston-Salem quadrangle, North Carolina-Virginia, U.S. Geologic Survey Misc. Inv. Series Map I-709-B, 1975).

A Notice to Proceed was obtained from NCDOT on June 25, 2021. Our investigation included areas within the proposed Temporary Construction Easements (E), Permanent Drainage Easement (PDE) and proposed and existing Right-of-Way (R/W) along the Statesville Road and Hunter Road. (Figure 2). The Phase II Site Assessment scope of work included completing a geophysical survey at the property to investigate the potential for unknown underground storage tanks and remnant UST infrastructure. The geophysical survey was followed by soil borings, sample collection and laboratory analyses to assess soil quality across the property (Figures 3 and 4). Background research for this project included reviewing historic aerial photographs and NCDEQ databases.

2.0 Scope of Work

2.1 Background Research

According to the Wilkes County Tax Administration records, this property is owned by Jewel A. Brown. It appears that Mr. Thurmond Brown passed away around 2016 as Jewel Brown is listed as a widow on the most recent deed. Available historic aerial photographs from the USGS EarthExplorer website and Google Earth Pro were reviewed.

The following NCDEQ databases were queried for incidents at Parcel #017:

- Dry Cleaners
- Active USTs
- UST Incident Map
- UST Database
- Hazardous Waste Sites

2.2 Geophysical Surveys

Seramur & Associates used the Pythagorean Theorem to establish three rectangular grids within the R/W, E, and PDE along Statesville Road and Hunter Road. Eighteen additional transects of geophysical data were collected within the proposed R/W and easements (Figure 5a). Twelve of these transects were collected on the new roadway alignment on the north side of the property (Figure 5b). Geophysical grid data were collected along transects at a two-foot spacing.

The magnetometer data was collected with a GEM Systems GSM-19W Walking Overhauser magnetometer. The data was compiled in Excel spreadsheets and a hillshade map of the magnetic data was drafted using Golden Software's Surfer® modeling program. The white areas are lower magnetic readings, and the grey colors are higher background magnetic readings (Figure 6). Ferrous objects in the subsurface are more magnetic than the surrounding soil and produce positive and negative magnetic anomalies on the contour maps.

A Ground Penetrating Radar (GPR) survey was completed across the grids and transects using Geophysical Survey Systems, Inc. UtilityScan GPR System with a 350 MHz hyperstacking antenna. This GPR system is equipped with a calibrated survey wheel. The GPR data was downloaded and saved onto a computer. The GPR grid data has been processed and modeled using GPR Slice® software. The GPR data processing included adjusting time zero, completing a background removal and adjusting the time variable gain to enhance deep reflections. Three-dimensional models of the GPR grid and transect data were produced with GPR Slice® software. Three time slices (or depth slices) were imaged in each 3D model at depths of 0.3 to 0.6 feet, 1.6 to 1.9 feet and 2.7 to 3.0 feet (Figures 7 through 9). Each depth slice is a horizontal slice or plan view of the reflections across a 0.3-foot thickness of the subsurface. For example, the deep GPR depth slices show reflections in the radar data between depths of 2.7 and 3.0 feet.

The GPR transects not collected within the grids were processed using Radan® software. Similar to the grid processing, the GPR data processing included adjusting time zero, completing a background removal and adjusting the time variable gain to enhance deep reflections (Figures 10a through 10g).

2.3 Soil Sampling and Analyses

On July 14, 2021 Carolina Soil Investigations, LLC mobilized to the site to drill Geoprobe borings and collect soil samples. Our project design typically calls for collecting a shallow and deep soil sample from each boring (Figure 3). The purpose of collecting samples at a depth of ~3.0 feet is to test for petroleum releases related to surface spills and releases from product lines. The purpose of collecting samples at a depth of ~9.0 feet is to test for petroleum releases related to underground storage tanks. Soil borings were drilled within the proposed R/W and easements on Parcel #017.

A track-mounted Geoprobe rig was used to drill nineteen soil borings. A new pair of Nitrile gloves was worn while collecting each soil sample. A representative portion of each soil sample was placed in a zip lock bag and allowed to rest for a period of time to allow volatile vapors to accumulate in the headspace of the bag. A calibrated PhoCheck Tiger Photoionization Detector

(PID) was used to screen the headspace in each bag and the concentration of volatile petroleum vapors was measured and recorded (Table 1). The texture and type of soil material in the Geoprobe cores was described and recorded. Table 1 lists the boring data including sample number, depth, PID reading, lithology, and type of soil material.

REDLab, LLC provided onsite laboratory analyses for the soil samples collected from the Geoprobe cores. REDLab analyzed the soil samples for petroleum constituents by Ultra-Violet Fluorescence using a QED HC-1 analyzer. The analytical results are reported as Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) and Total Petroleum Hydrocarbons (TPH). REDLab provided a hydrocarbon spectrum with each of the sample results. This spectrum is used for a tentative identification of the type of hydrocarbon detected by the analytical method. A hydrocarbon fingerprint is interpreted by REDLab for each sample using a library search of spectra for known hydrocarbon types and concentrations. The laboratory reports and fingerprint spectra are included in Appendix B.

2.4 Plate 1 – Photographs of Parcel #017



3.0 Results of Investigation

Parcel #017 is a former gas station/convenience store that is now operated as a bar. There is a vacant building that appears to have last been used as a barber shop to the north of the former gas station. A mobile home park is located on the north side of the property. The NCDOT Division 11 Right-of-Way has reportedly not determined whether it is necessary to take the entire property. Therefore, we limited our investigation only to the proposed R/W and easements.

A search of NCDEQ Records indicated that this facility did have a release from the former UST system. A review of the available reports for the facility indicate that Mr. Thurmond Brown constructed the facility in 1970 and operated it as a gas station until 1988. Five USTs were

installed at this time (Table 2). These tanks were removed between September 5th and 8th, 2000. During the tank closure, a release was discovered near the kerosene tank that was located on the south side of the building, east of the freezer addition. Petroleum constituents were not detected in soil samples collected around the gasoline UST excavation. A later soil sampling report submitted in 2006 indicated that petroleum constituents remained present in the soil below the former kerosene tank, but the concentrations were below the MSCCs. NCDEQ then issued a Notice of No Further Action for this incident. Select pages from these documents are included in Appendix C of this report.

SAPC personnel made a pedestrian reconnaissance of the property during the initial site visit on June 29, 2021. Evidence of an active UST system was not observed on the property, though the vent lines remain in place from the former UST system.

3.1 Geophysical Surveys

A grid of magnetometer data was collected along the eastern edge of the property (Figure 6). A linear set of elevated magnetometer readings were recorded in the center of Grid 1. These elevated magnetometer readings are likely related to a utility line. Elevated magnetic readings were recorded across the northeast quarter of Grid 3 (Figure 6). This is an area that appears to contain numerous utility lines as imaged in the GPR grids (Figures 8 and 9).

The shallow GPR depth slice (0.3-0.6 feet) for Grid 1 shows scattered medium amplitude (green) reflections across the grid with an area of higher amplitude reflections in the eastern part of the grid (Figure 7). The eastern and western edge of the UST excavation can be seen in the center of the grid. A large reflection free area appears along the west side of the grid. This is the concrete slab surrounding the dispenser island. Medium to high amplitude reflections are scattered across Grid 3, like Grid 1. A linear, slightly curved medium to high amplitude reflection extends across the center of the grid. This anomaly is partially in a grassy area between two parking lots, but it does not exactly follow this boundary and therefore is probably related to a utility.

The intermediate GPR depth slices (1.6-1.9 feet) for all three grids have large reflection free areas (Figure 8). Grid 1 shows a high amplitude linear anomaly towards the east side of the grid. This appears to be the remnants of the vent lines for the UST system. A wide linear set of high amplitude reflections run along the west side of the grid. In a slightly shallower depth slice, two linear sets of high amplitude reflections follow the same trend (see Inset A on Figure 8). These linear anomalies appear to be utilities. In Grid 2, a linear, curved anomaly runs along the south side of the grid. This anomaly appears to lead towards the light pole in the grass island along Statesville Road and is possibly an electric line running to the light. A broad linear set of high amplitude reflections extend from the middle of the Grid 3 toward the northeast corner. This anomaly is likely related to utility lines.

The deep GPR depth slice (2.7 to 3.0 feet) shows a few scattered high amplitude reflections in Grid 1 (Figure 9). These anomalies are not characteristic of a UST and are located on the edge of the roadway. The magnetic survey did not detect an anomaly characteristic of a UST at this

location (Figure 6). Anomalies of interest observed along the GPR transects are related to the storm drains and other subsurface utilities (Figures 10a-g).

3.2 Soil Borings, Sampling and Laboratory Analysis

The soil at Parcel #017 consists of fill material over residuum (saprolite) (Table 1). The fill material and the residuum are primarily loamy sand and sandy loam. Some shallow samples had small amounts of gravel within sandy loam. Groundwater was not encountered at this site. A soil sample was collected from the shallow and deep portions of the Geoprobe cores at each boring. Nineteen borings were drilled, and thirty-eight soil samples collected. Twenty-two of these soil samples were analyzed for TPH-GRO and DRO (Table B-3).

Soil borings B-1 through B-9 were drilled on the south side of the parcel in the area around the former gas station UST System infrastructure. Borings B-1 through B-5 were drilled near the fuel dispenser canopy. Borings B-6 and B-9 were drilled near the remaining UST vent lines. Borings B-7 and B-8 were drilled in the small E southwest of the building that is located west of the former tank pit. Borings B-10 and B-11 were drilled in the E that is on the northwest side of the former gas station building. Borings B-12 and B-13 were drilled in the center of the property in the parking area to the east of the former barber shop.

Borings B-14 through B-19 were drilled on the north side of the parcel around the three mobile homes. These borings extended across the R/W along the new roadway alignment and a drainage feature by the western mobile homes. A local informant who is familiar with the property spoke with SAPC personnel during the completion of the geophysical survey and stated that he did not believe USTs for heating oil had ever been used in the portion of the property that contains mobile homes. Borings were drilled near anomalies found in the GPR transects. These anomalies are likely related to sewer lines or septic tanks.

Petroleum constituents were not detected at or above NCDEQ UST Action Levels in any of the twenty-two soil samples analyzed at Parcel #017 (Table B-3 and Figure 4).

3.3 Conclusions

Parcel #017 is currently a bar and mobile home park. The geophysical surveys did not image anomalies consistent with USTs. Petroleum constituents were not detected above the UST Action Levels in any soil samples analyzed from the soil borings drilled at Parcel #017. There is evidence of a previous UST system at this property, but no existing system.

4.0 Recommendations

Seramur & Associates does not recommend any further assessment work for Parcel #017.

Appendix A

Tables and Figures

Table 1. Soil Boring Data - Parcel #017						
Boring No.	Depth (ft)	Lithology	Soil type	Soil Sample	PID ppm	Comments
B-1	0.0 to 2.0	Sandy loam	Fill	N/A	N/A	
B-1	2.0 to 5.0	Loamy sand	Residuum	S-1	0.0	Sample at 3.5 feet.
B-1	5.0 to 10.0	Loamy sand	Fill	S-2	0.0	Sample at 8.5 feet.
B-2	0.0 to 2.5	Sandy loam	Fill	N/A	N/A	
B-2	2.5 to 5.0	Loamy sand	Residuum	S-3	0.0	Sample at 3.5 feet.
B-2	5.0 to 10.0	Loamy sand	Residuum	S-4	0.0	Sample at 9.0 feet.
B-3	0.0 to 3.0	Sandy loam	Fill	N/A	N/A	
B-3	3.0 to 5.0	Loamy sand	Residuum	S-5	0.0	Sample at 3.0 feet.
B-3	5.0 to 10.0	Loamy sand	Residuum	S-6	0.0	Sample at 8.0 feet.
B-4	0.0 to 1.5	Gravel	Fill	N/A	N/A	
B-4	1.5 to 5.0	Loamy sand	Residuum	S-7	0.0	Sample at 3.0 feet.
B-4	5.0 to 10.0	Loamy sand	Residuum	S-8	0.0	Sample at 8.0 feet.
B-5	0.0 to 1.0	Sandy loam	Fill	N/A	N/A	
B-5	1.0 to 5.0	Loamy sand	Residuum	S-9	0.0	Sample at 3.0 feet.
B-5	5.0 to 10.0	Loamy sand	Residuum	S-10	0.0	Sample at 8.0 feet.
B-6	0.0 to 1.5	Sandy loam	Fill	N/A	N/A	
B-6	1.5 to 5.0	Loamy sand	Residuum	S-11	0.0	Sample at 3.0 feet.
B-6	5.0 to 10.0	Loamy sand	Residuum	S-12	0.0	Sample at 8.0 feet.
B-7	0.0 to 1.5	Sandy loam	Fill	N/A	N/A	
B-7	1.5 to 5.0	Loamy sand	Residuum	S-13	0.0	Sample at 3.0 feet.
B-7	5.0 to 10.0	Loamy sand	Residuum	S-14	0.0	Sample at 8.0 feet.
B-8	0.0 to 2.0	Sandy loam	Fill	N/A	N/A	
B-8	2.0 to 5.0	Loamy sand	Residuum	S-15	0.0	Sample at 3.0 feet.
B-8	5.0 to 10.0	Loamy sand	Residuum	S-16	0.0	Sample at 8.0 feet.
B-9	0.0 to 2.0	Sandy loam	Fill	N/A	N/A	
B-9	2.0 to 5.0	Loamy sand	Residuum	S-17	0.0	Sample at 3.0 feet.
B-9	5.0 to 10.0	Loamy sand	Residuum	S-18	0.0	Sample at 8.0 feet.
B-10	0.0 to 3.0	Sandy loam	Fill	N/A	N/A	
B-10	3.0 to 5.0	Loamy sand	Residuum	S-19	0.0	Sample at 3.0 feet.
B-10	5.0 to 10.0	Loamy sand	Residuum	S-20	0.0	Sample at 8.0 feet.
B-11	0.0 to 3.0	Sandy loam	Fill	N/A	N/A	
B-11	3.0 to 5.0	Loamy sand	Residuum	S-21	0.0	Sample at 3.0 feet.
B-11	5.0 to 10.0	Loamy sand	Residuum	S-22	0.0	Sample at 8.0 feet.
B-12	0.0 to 2.0	Sandy loam	Fill	N/A	N/A	
B-12	2.0 to 5.0	Loamy sand	Residuum	S-23	0.0	Sample at 3.0 feet.
B-12	5.0 to 10.0	Loamy sand	Residuum	S-24	0.0	Sample at 8.0 feet.
B-13	0.0 to 5.0	Sandy loam	Fill	S-25	0.0	Sample at 3.0 feet.
B-13	5.0 to 6.0	Sandy loam	Fill	N/A	N/A	
B-13	6.0 to 10.0	Loamy sand	Residuum	S-26	0.0	Sample at 8.0 feet.
B-14	0.0 to 5.0	Sandy loam	Fill	S-27	0.0	Sample at 3.0 feet.
B-14	5.0 to 6.0	Sandy loam	Fill	N/A	N/A	
B-14	6.0 to 10.0	Loamy sand	Residuum	S-28	0.0	Sample at 8.0 feet.
B-15	0.0 to 5.0	Sandy loam	Fill	S-29	0.0	Sample at 3.0 feet.
B-15	5.0 to 9.0	Sandy loam	Fill	S-30	0.0	Sample at 8.0 feet.
B-15	9.0 to 10.0	Loamy sand	Residuum	N/A	N/A	
B-16	0.0 to 5.0	Sandy loam	Fill	S-31	0.0	Sample at 3.0 feet.
B-16	5.0 to 6.5	Sandy loam	Fill	N/A	N/A	
B-16	6.5 to 10.0	Silty sand w/ gravel	Residuum	S-32	0.0	Sample at 8.0 feet.
B-17	0.0 to 5.0	Sandy loam	Fill	S-33	0.0	Sample at 3.0 feet.
B-17	5.0 to 6.5	Sandy loam	Fill	N/A	N/A	
B-17	6.5 to 10.0	Loamy sand	Residuum	S-34	0.0	Sample at 8.0 feet.
B-18	0.0 to 5.0	Sandy loam	Fill	S-35	0.0	Sample at 3.0 feet.
B-18	5.0 to 9.0	Sandy loam	Fill	S-36	0.0	Sample at 8.0 feet.
B-18	9.0 to 10.0	Loamy sand	Residuum	N/A	N/A	
B-19	0.0 to 5.0	Sandy loam	Fill	S-37	0.0	Sample at 3.0 feet.
B-19	5.0 to 9.0	Sandy loam	Fill	S-38	0.0	Sample at 8.0 feet.
B-19	9.0 to 10.0	Loamy sand	Residuum	N/A	N/A	

Table 2. UST Information						
Facility ID	Facility Name	Address1	City	Zip	Contact	Contact City
00-0-0000000790	B&D QUICK STOP 3	HWY 115 SOUTH	N. WILKESBORO	28659	THURMOND BROWN	N. WILKESBORO
Tank ID	Installation Date	Perm Close Date	Capacity	Commercial	Regulated	Product Name
1	4/11/1970	9/7/2000	3000	N	Y	Gasoline, Gas Mix
2	4/11/1970	9/7/2000	3000	N	Y	Gasoline, Gas Mix
3	4/11/1970	9/7/2000	3000	N	Y	Gasoline, Gas Mix
4	4/11/1970	9/7/2000	3000	N	Y	Gasoline, Gas Mix
5	4/11/1970	9/7/2000	550	N	Y	Kerosene, Kero Mix

Table B-3: Summary of Soil Sampling Results

Revision Date: 07/22/21

Incident Name: Parcel #017

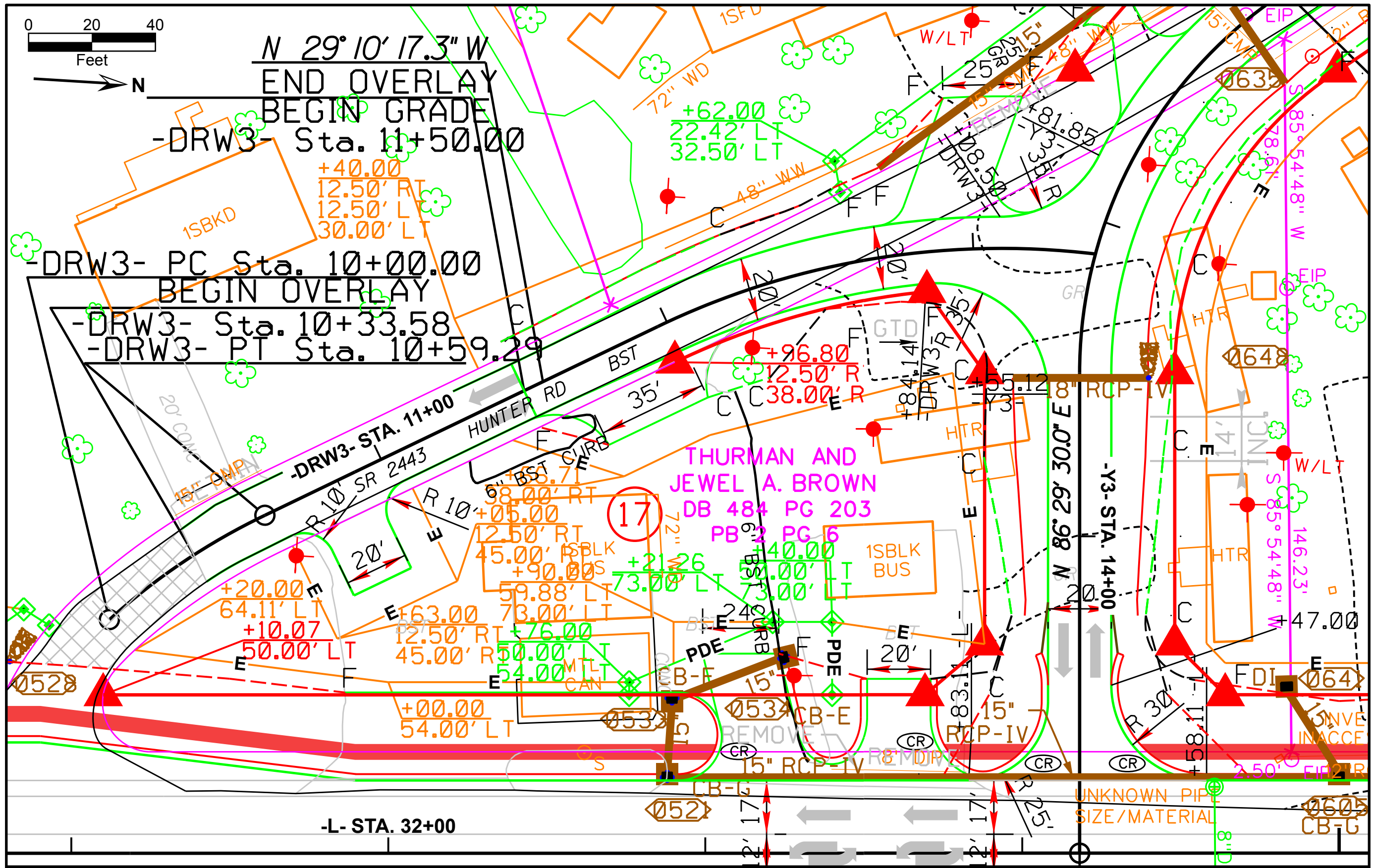
Analytical Method (e.g., VOC by EPA 8260) →					UVF	UVF
Contaminant of Concern →					TPH GRO (mg/kg)	TPH DRO (mg/kg)
Sample ID	Date Collected (mm/dd/yy)	Source Area	Sample Depth (ft. BGS)	Incident Phase		
S-1	07/14/21	B-1	3.5	Phase II	<0.6	1.4
S-2	07/14/21	B-1	8.5	Phase II	<0.5	0.8
S-3	07/14/21	B-2	3.5	Phase II	<0.5	3.6
S-4	07/14/21	B-2	9.0	Phase II	<0.5	0.6
S-5	07/14/21	B-3	3.0	Phase II	<0.6	<0.25
S-6	07/14/21	B-3	8.0	Phase II	<0.5	<0.23
S-7	07/14/21	B-4	3.0	Phase II	<0.5	<0.2
S-8	07/14/21	B-4	8.0	Phase II	<0.6	<0.24
S-10	07/14/21	B-5	8.0	Phase II	<0.5	1.5
S-12	07/14/21	B-6	8.0	Phase II	<0.6	<0.25
S-14	07/14/21	B-7	8.0	Phase II	<0.5	0.08
S-16	07/14/21	B-8	8.0	Phase II	<0.5	0.4
S-20	07/14/21	B-10	8.0	Phase II	<0.5	0.12
S-22	07/14/21	B-11	8.0	Phase II	<0.5	0.3
S-24	07/14/21	B-12	8.0	Phase II	<0.4	0.5
S-26	07/14/21	B-13	8.0	Phase II	<0.5	3.2
S-28	07/14/21	B-14	8.0	Phase II	<0.25	<0.1
S-30	07/14/21	B-15	8.0	Phase II	<0.4	<0.19
S-32	07/14/21	B-16	8.0	Phase II	<0.6	<0.24
S-34	07/14/21	B-17	8.0	Phase II	<0.25	<0.1
S-36	07/14/21	B-18	8.0	Phase II	<0.4	0.5
S-38	07/14/21	B-19	8.0	Phase II	<0.4	<0.19
NC DEQ Action Level (mg/kg)					50	100

ft. BGS = feet below ground surface

mg/kg = milligrams per kilogram



Figure 1 Site Location Map Source: U.S.G.S. The National Map	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC	0 400 800 Feet N
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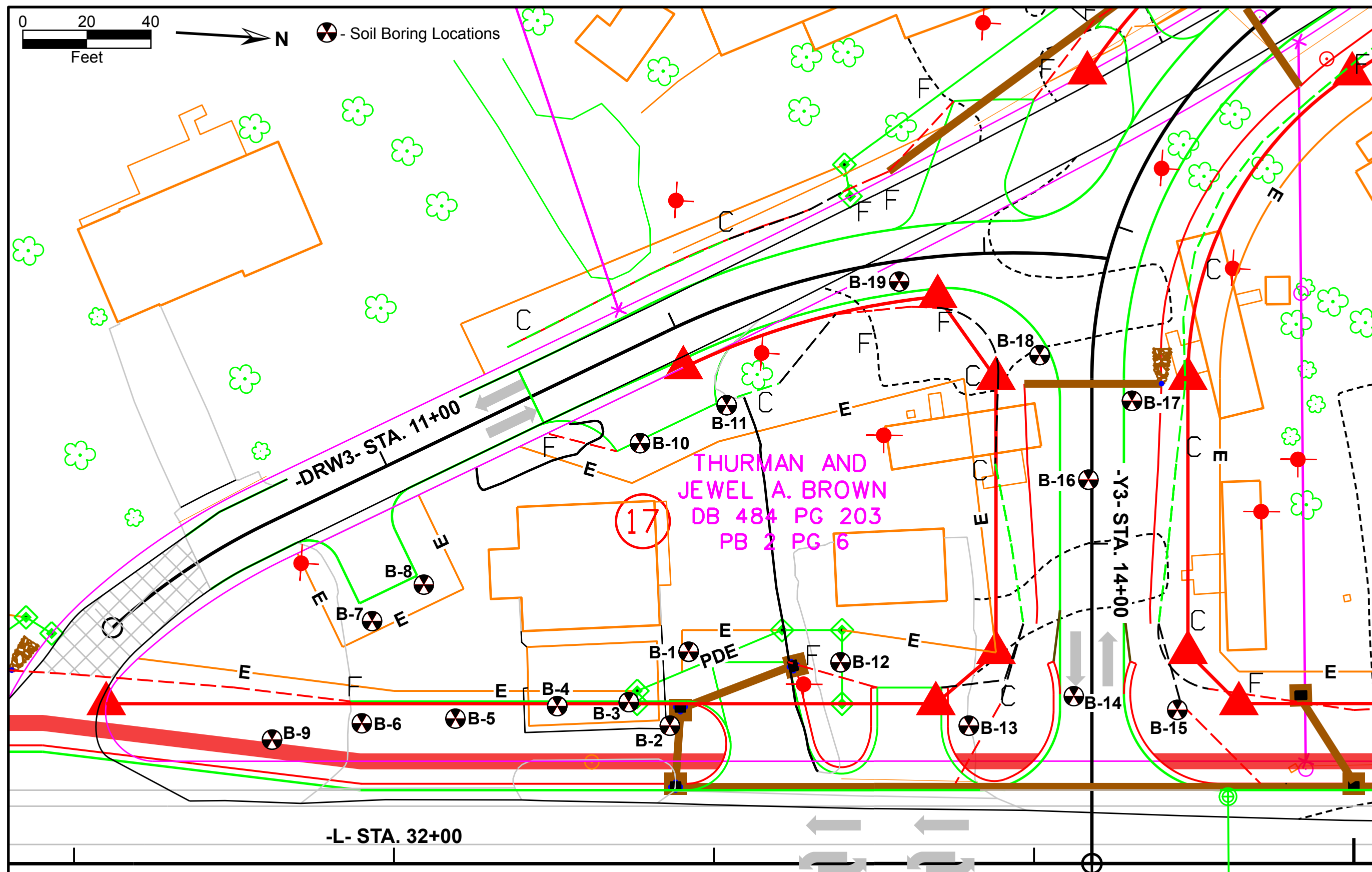


Figure 3 Site Plan with Soil Boring Locations	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
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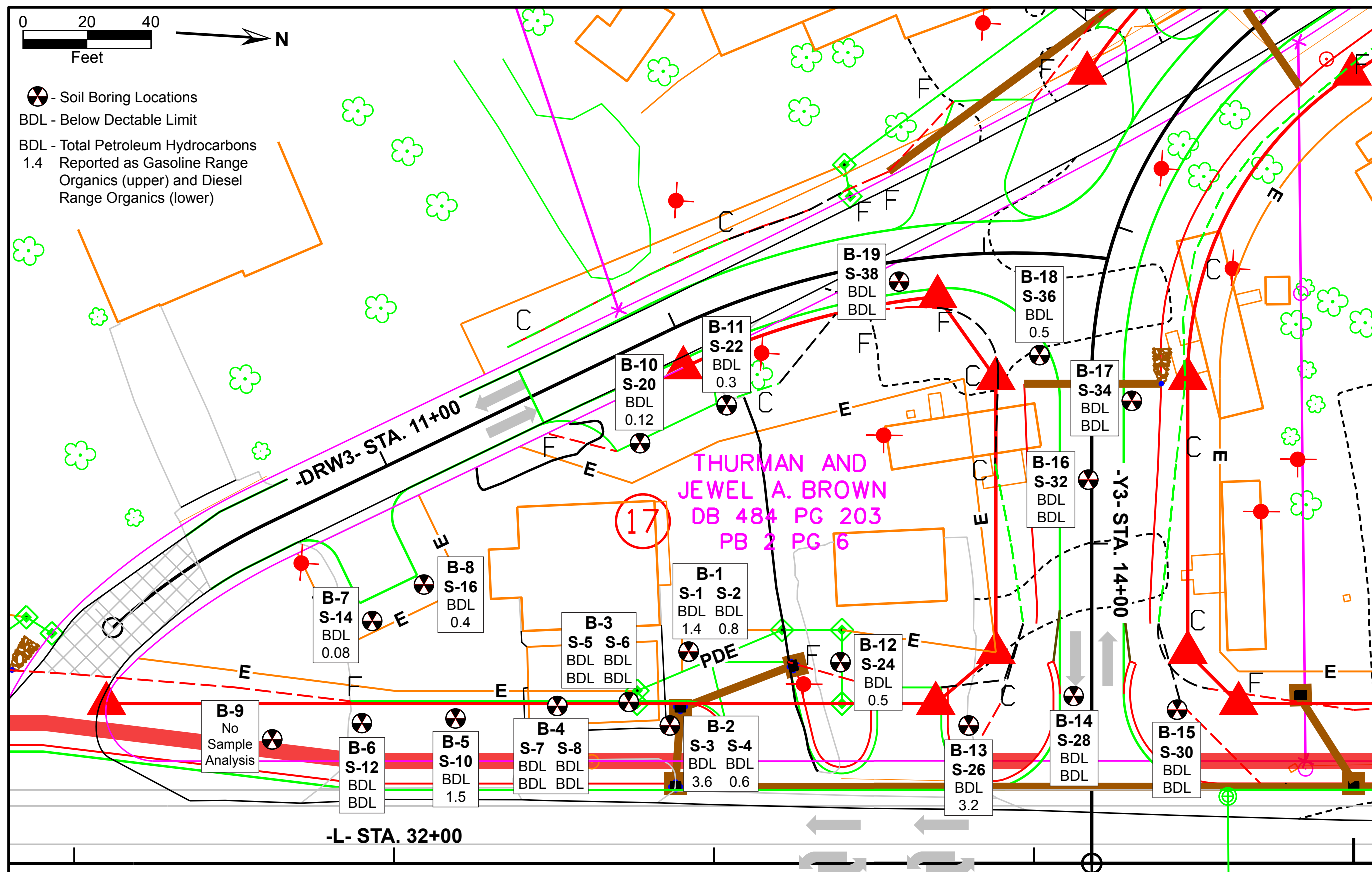


Figure 4
Soil Analytical
Results

TIP Number: R-5759
Wilkes County, NC

Thurman and Jewel Brown Property
2698 Statesville Road
North Wilkesboro, NC

Parcel I.D. #: 017
Facility I.D. #: 00-0-00790

Seramur & Associates, PC
Boone, NC

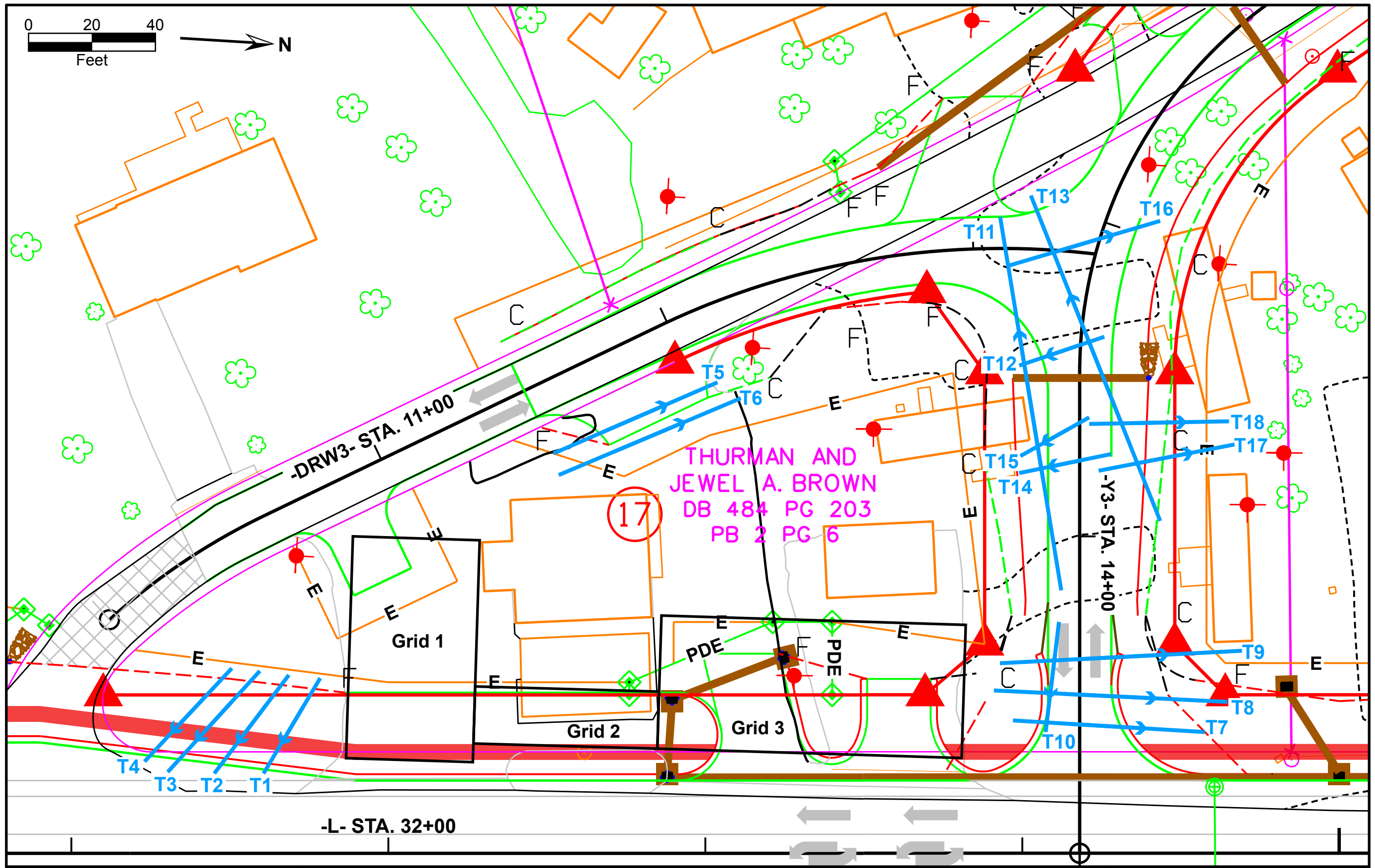


Figure 5a Full Site Plan with Geophysical Grid and Transect Locations	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
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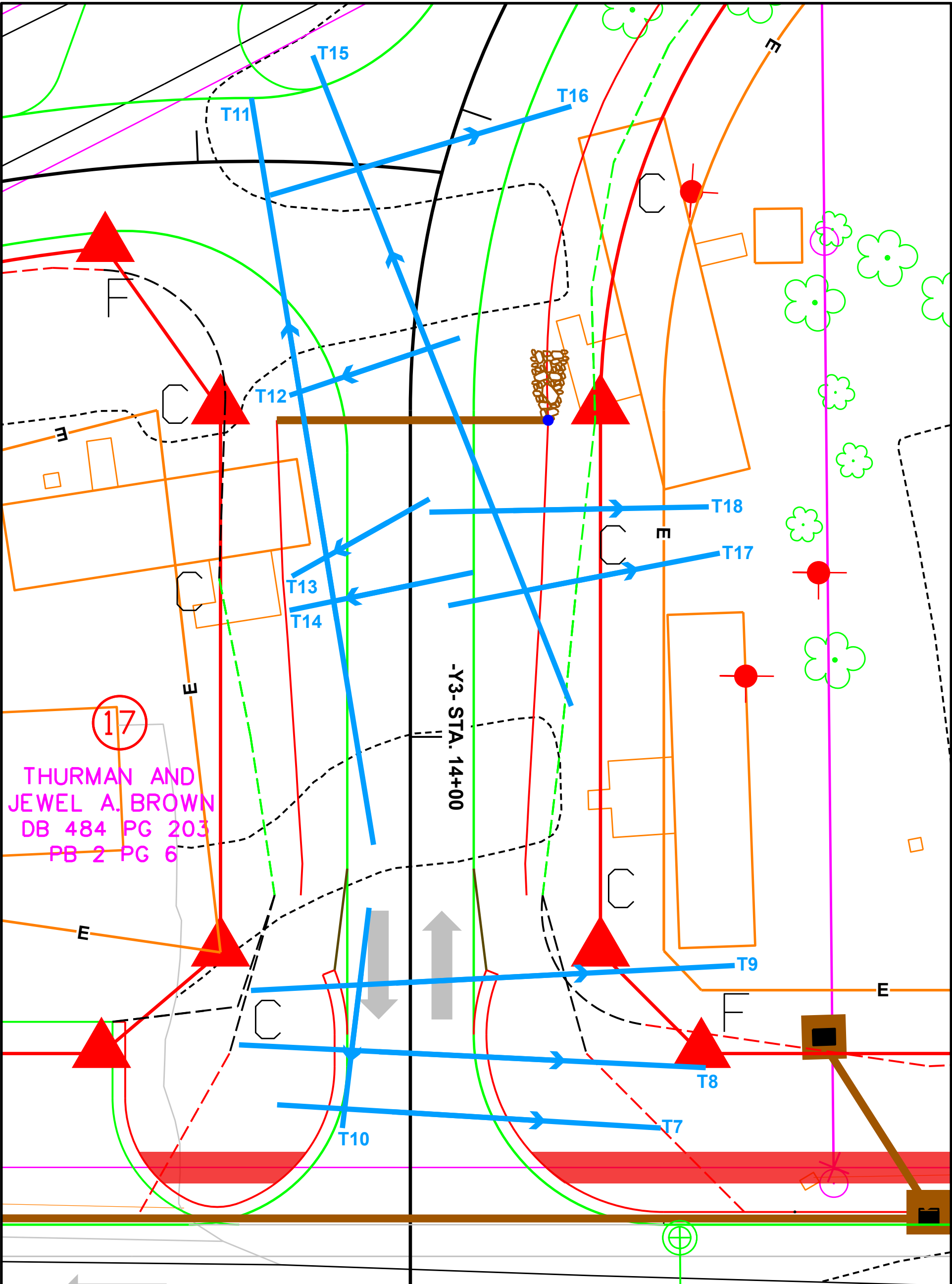


Figure 5b
Northern Site Plan
with GPR Transect
Locations

TIP Number: R-5759
Wilkes County, NC

Thurman and Jewel
Brown Property
2698 Statesville Road
North Wilkesboro, NC

Parcel I.D. #: 017
Facility I.D. #: 00-0-00790

Seramur & Associates, PC
Boone, NC

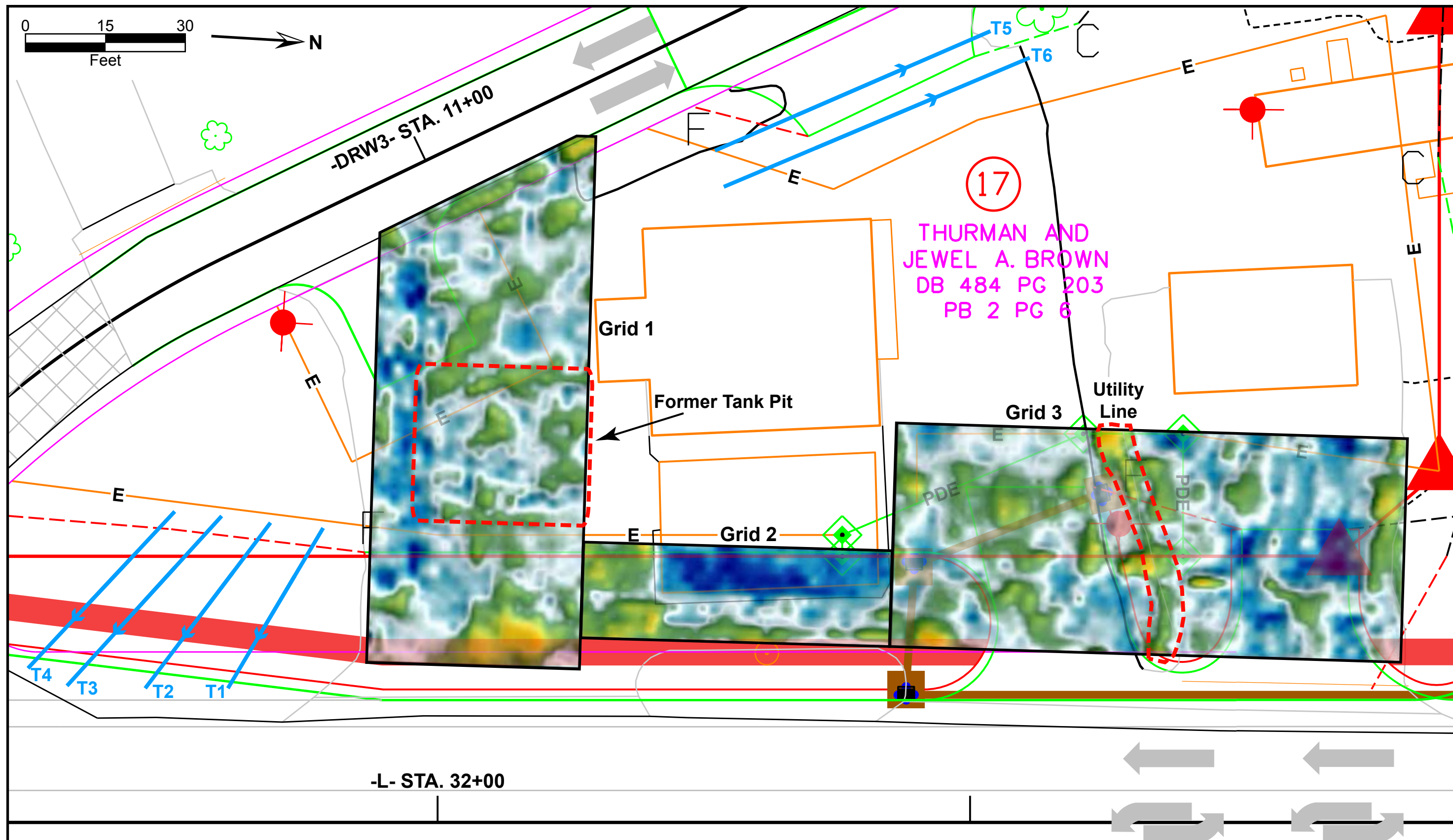


Figure 7 Shallow GPR Depth Slices (0.3 - 0.6 feet)	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
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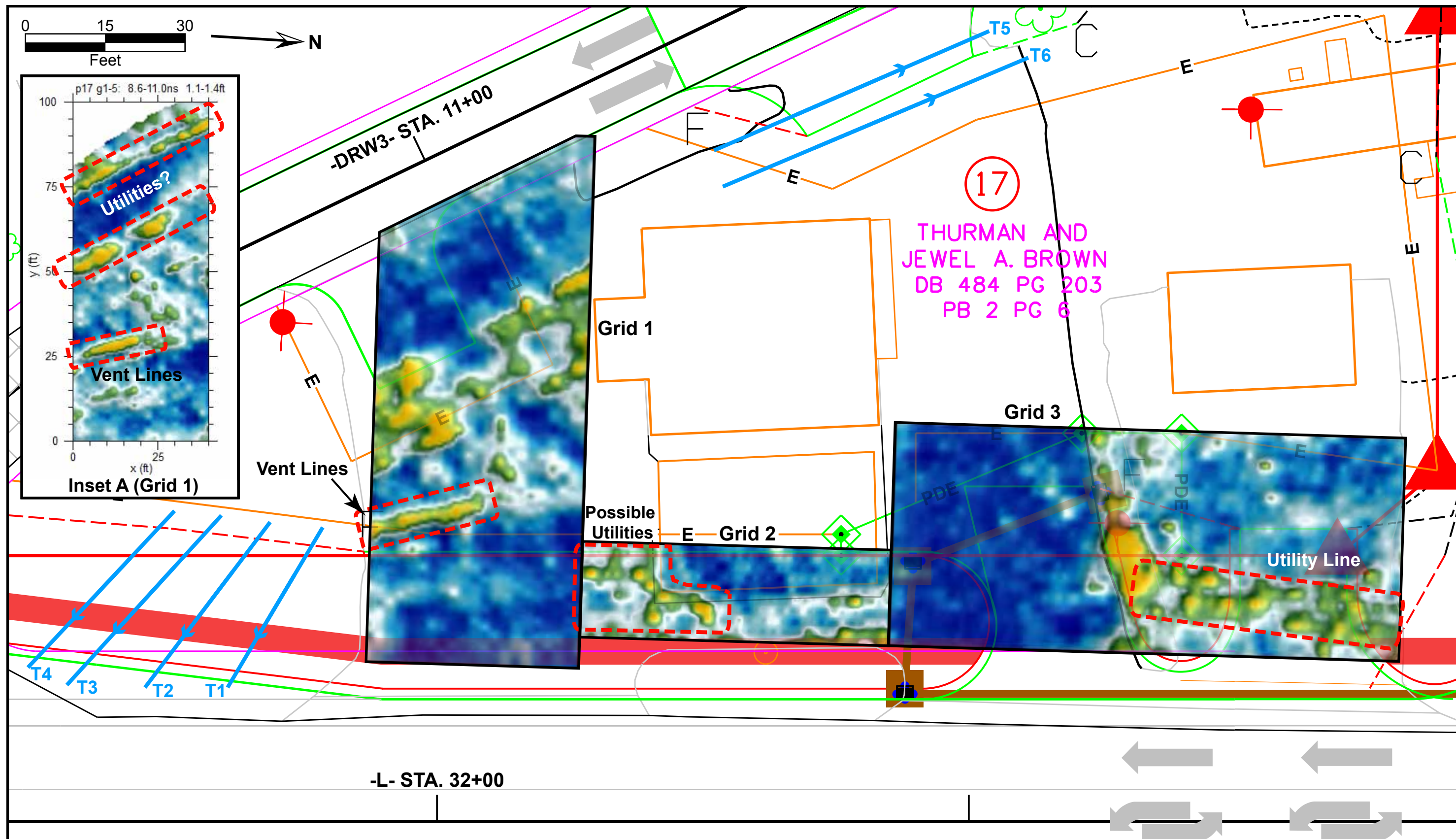


Figure 8

Intermediate GPR Depth Slices
(1.6 - 1.9 feet)

TIP Number: R-5759
Wilkes County, NC

Thurman and Jewel Brown Property
2698 Statesville Road
North Wilkesboro, NC

Parcel I.D. #: 017
Facility I.D. #: 00-0-00790

Seramur & Associates, PC
Boone, NC

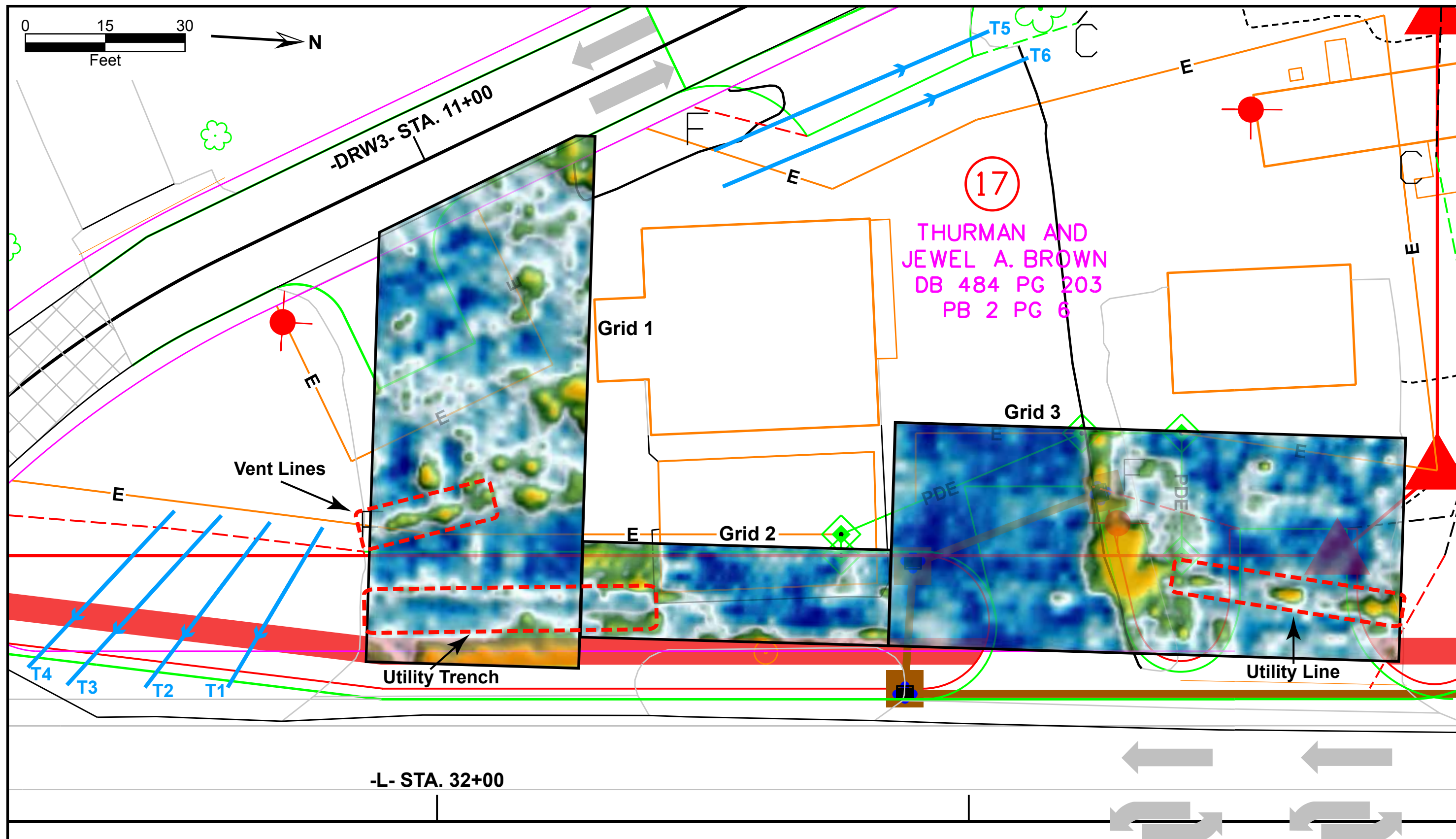


Figure 9 Deep GPR Depth Slices (2.7 - 3.0 feet)	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
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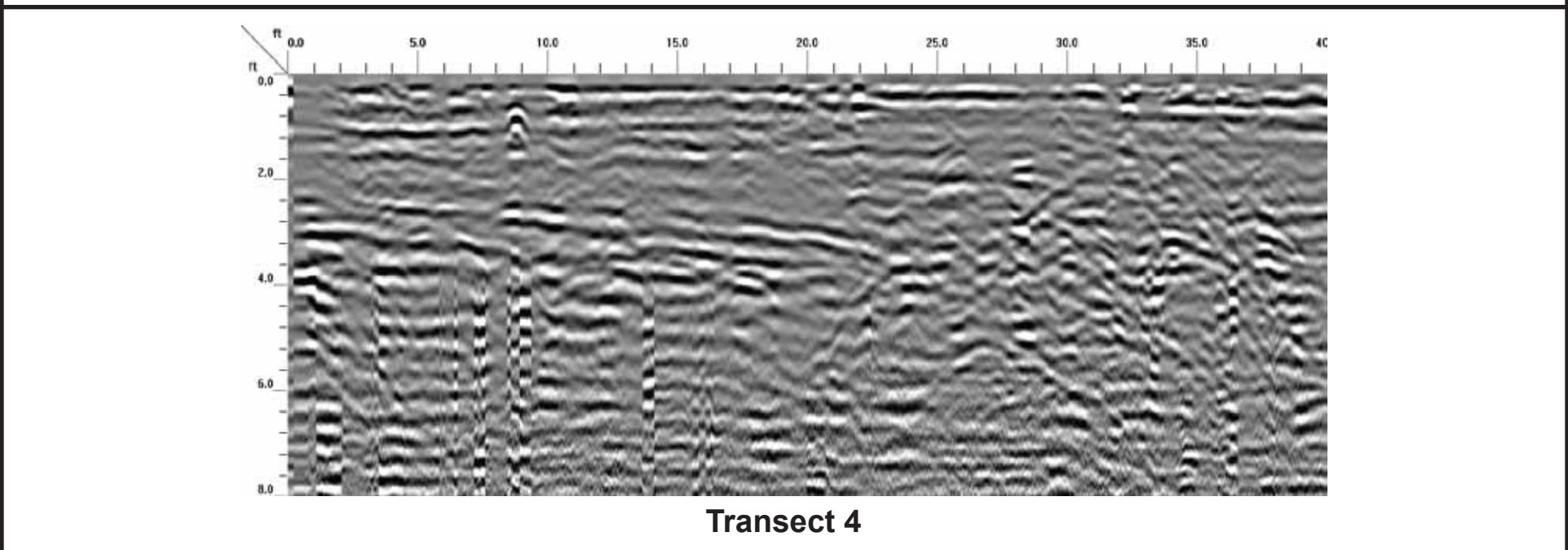
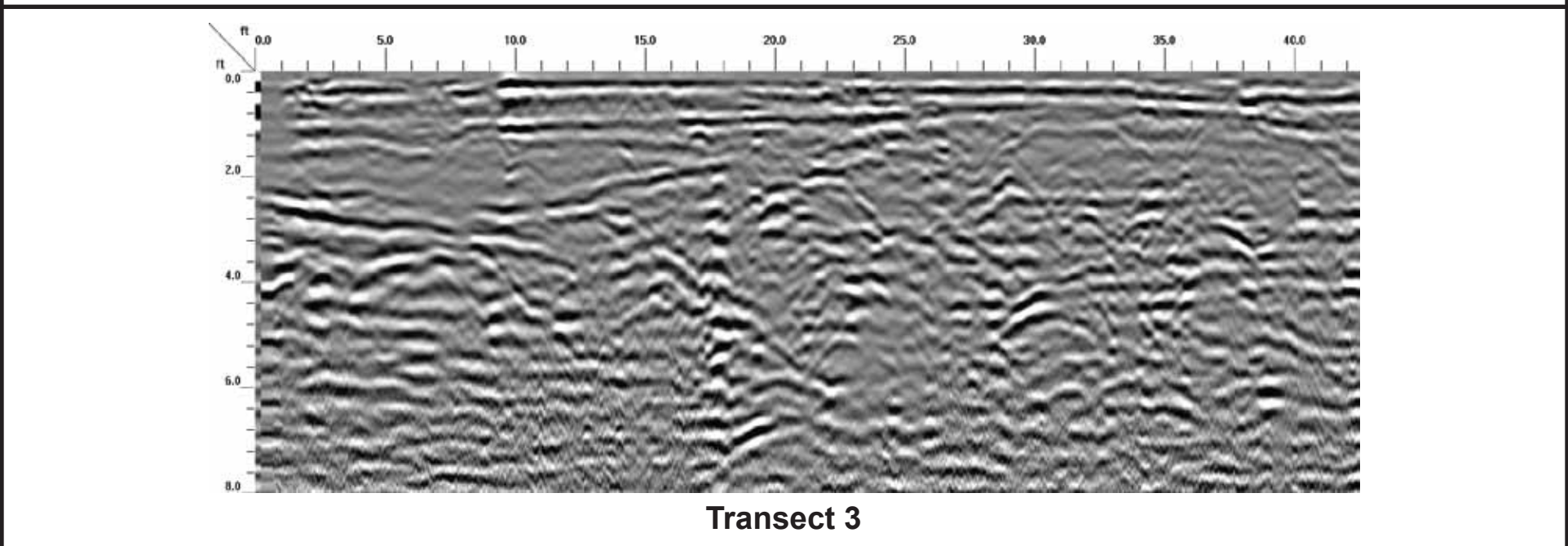
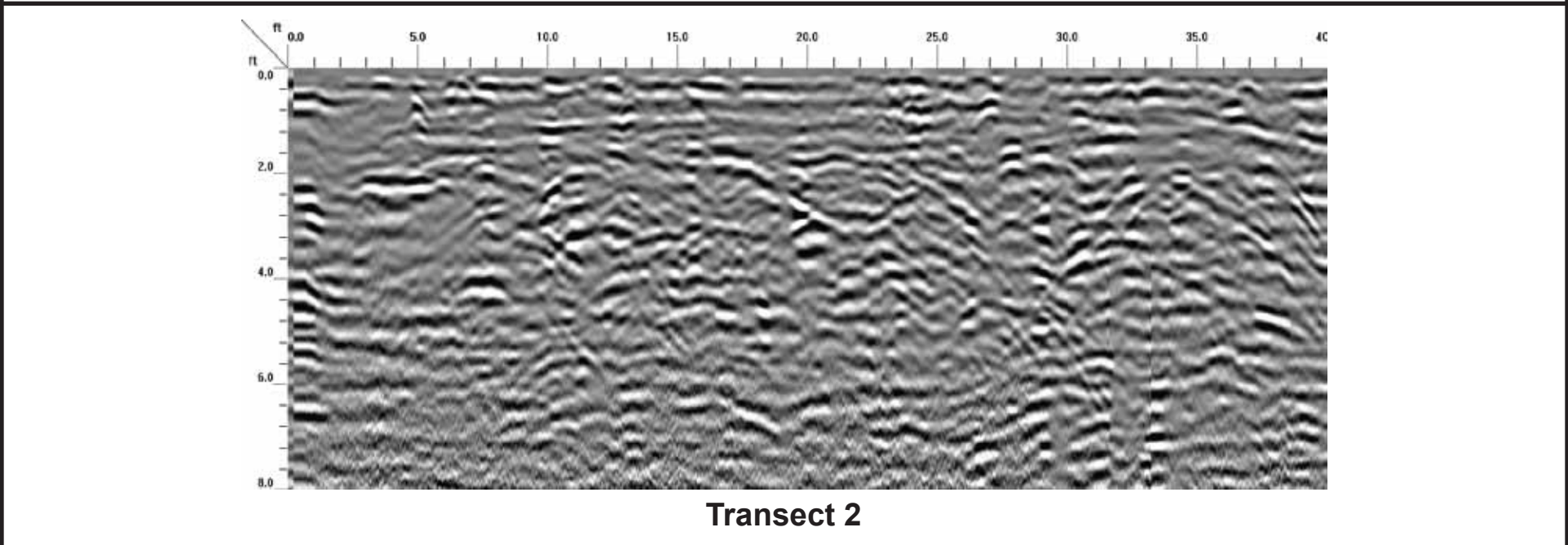
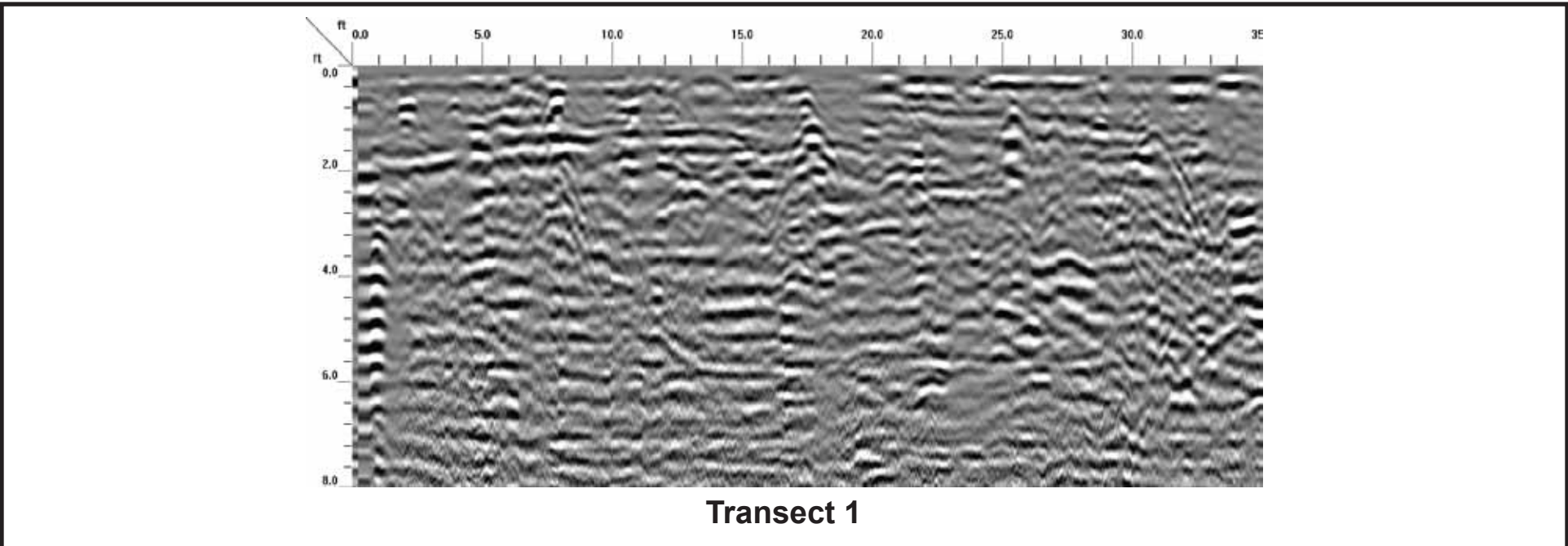
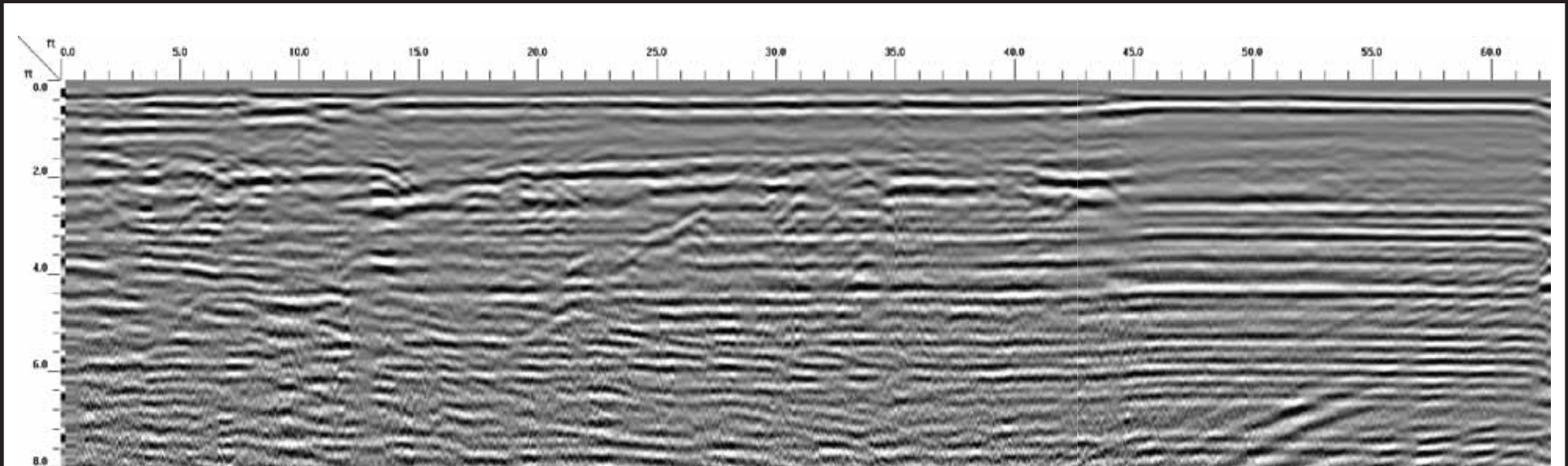
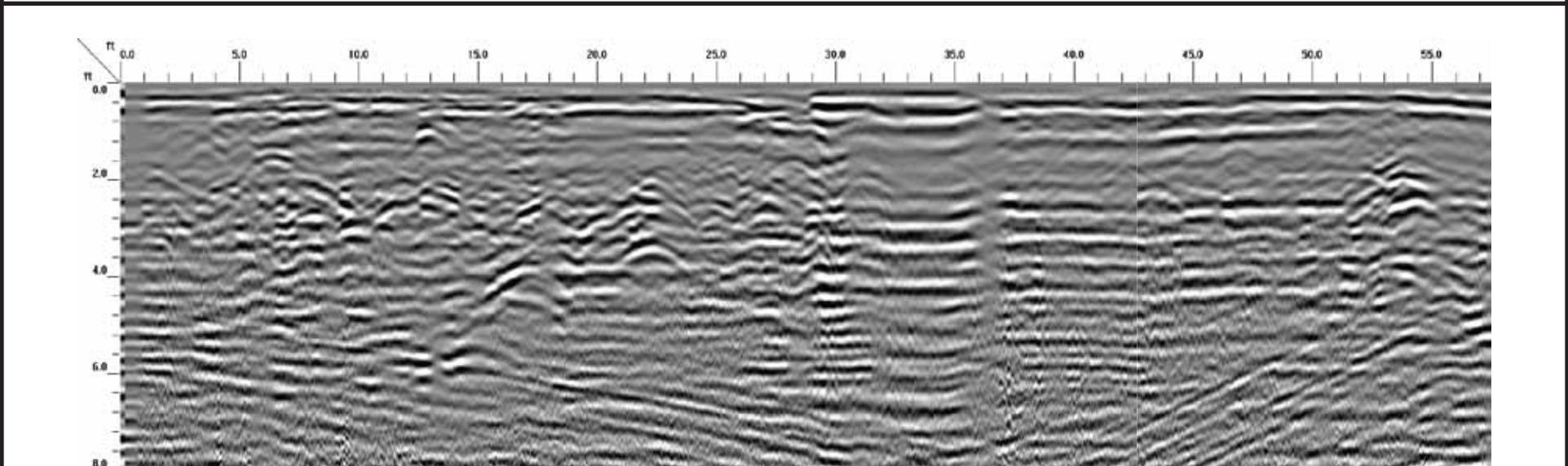


Figure 10a GPR Transects 1 through 4	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
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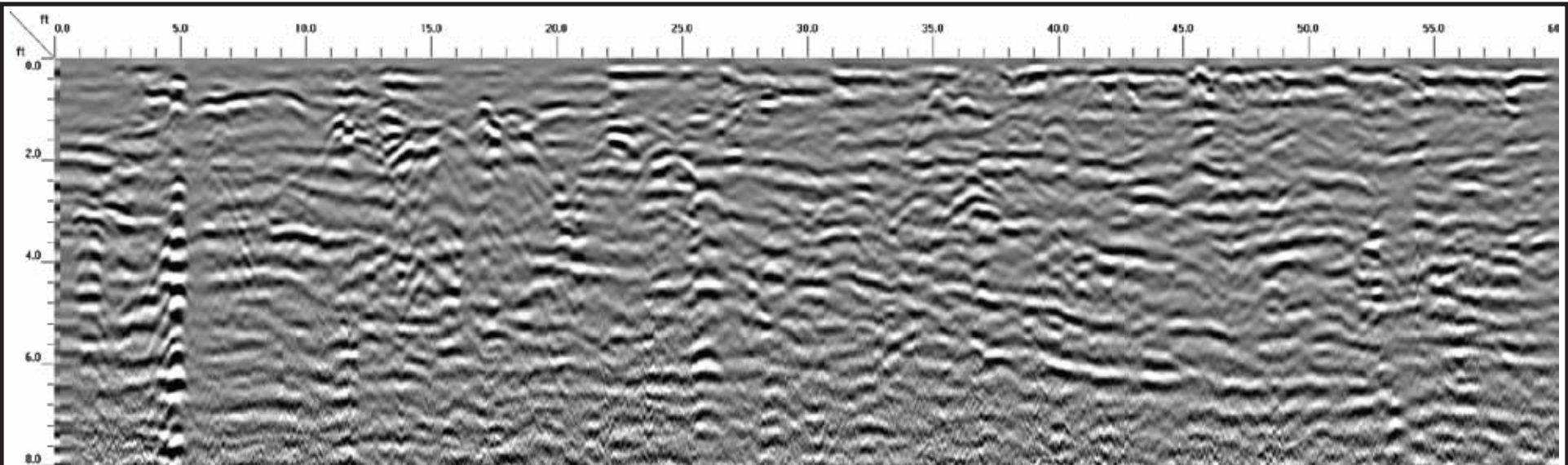


Transect 5

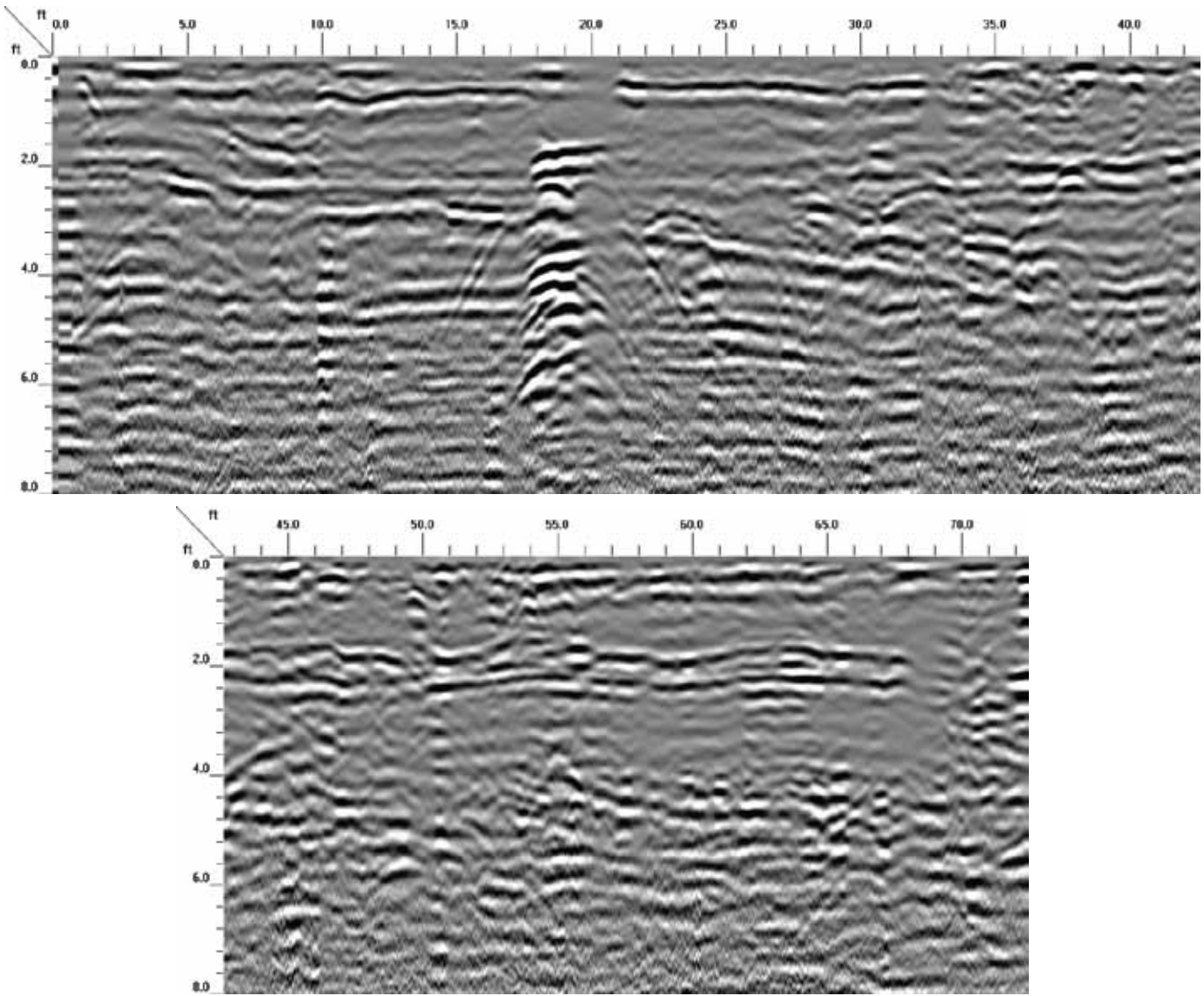


Transect 6

Figure 10b GPR Transects 5 and 6	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
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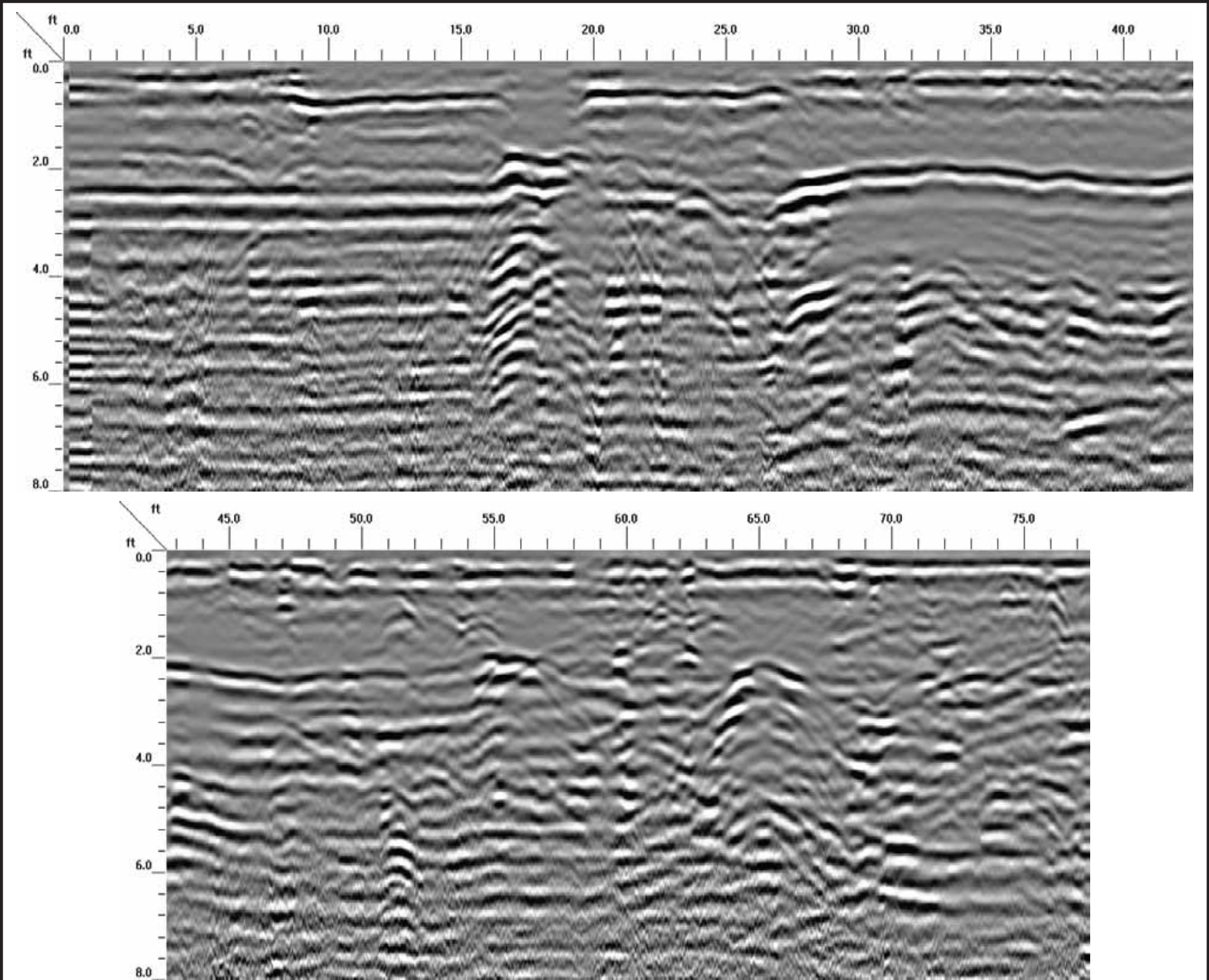


Transect 7

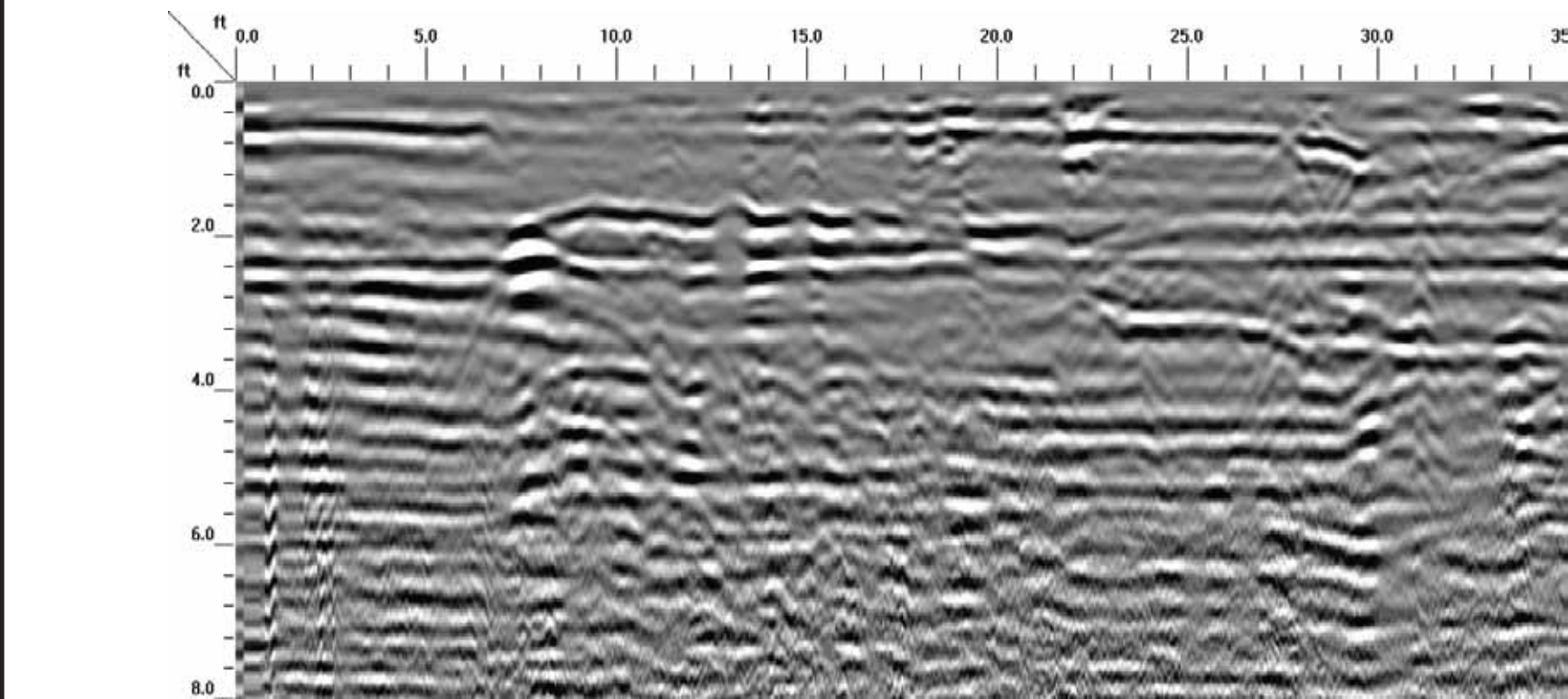


Transect 8

Figure 10c GPR Transects 7 and 8	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
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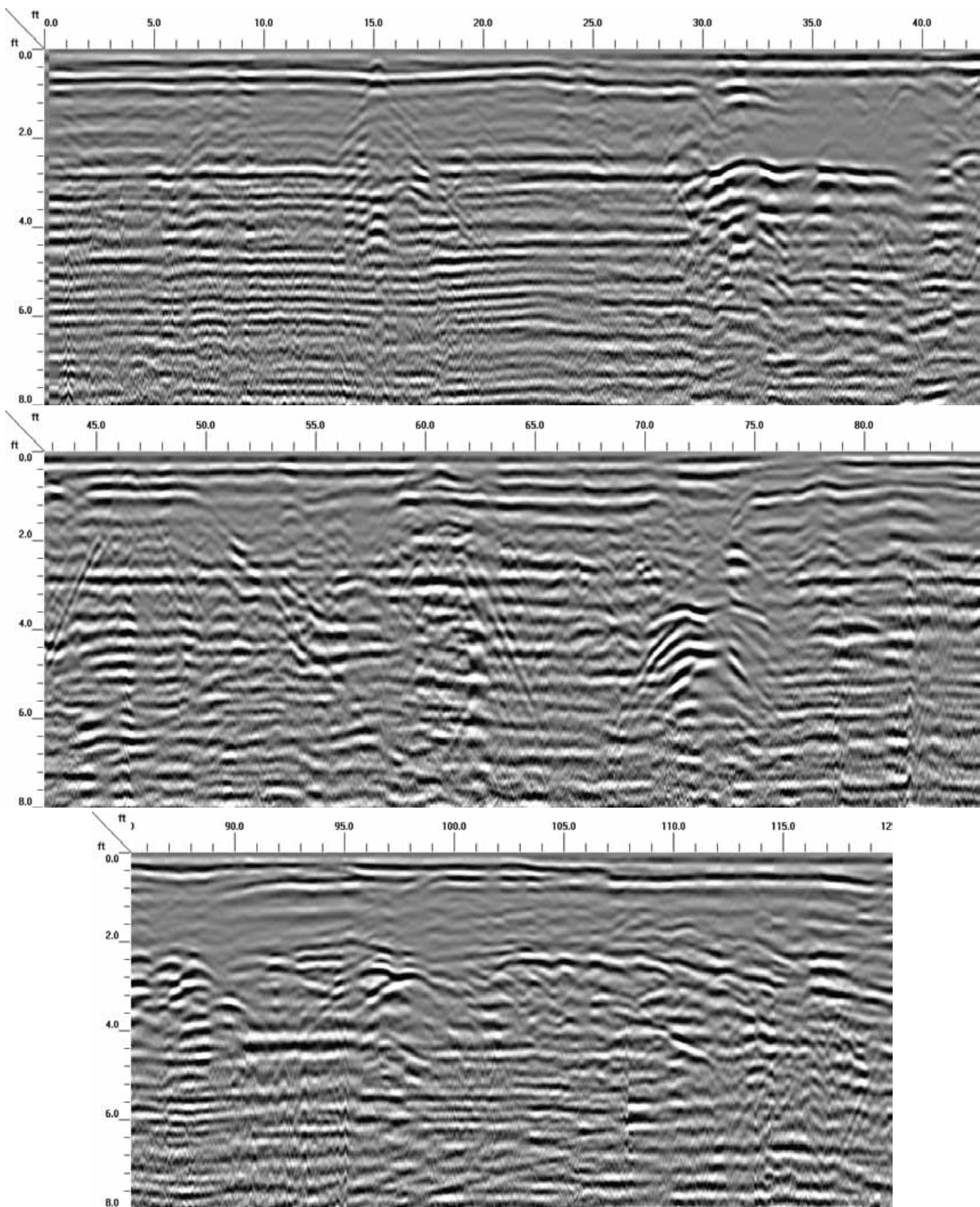


Transect 9

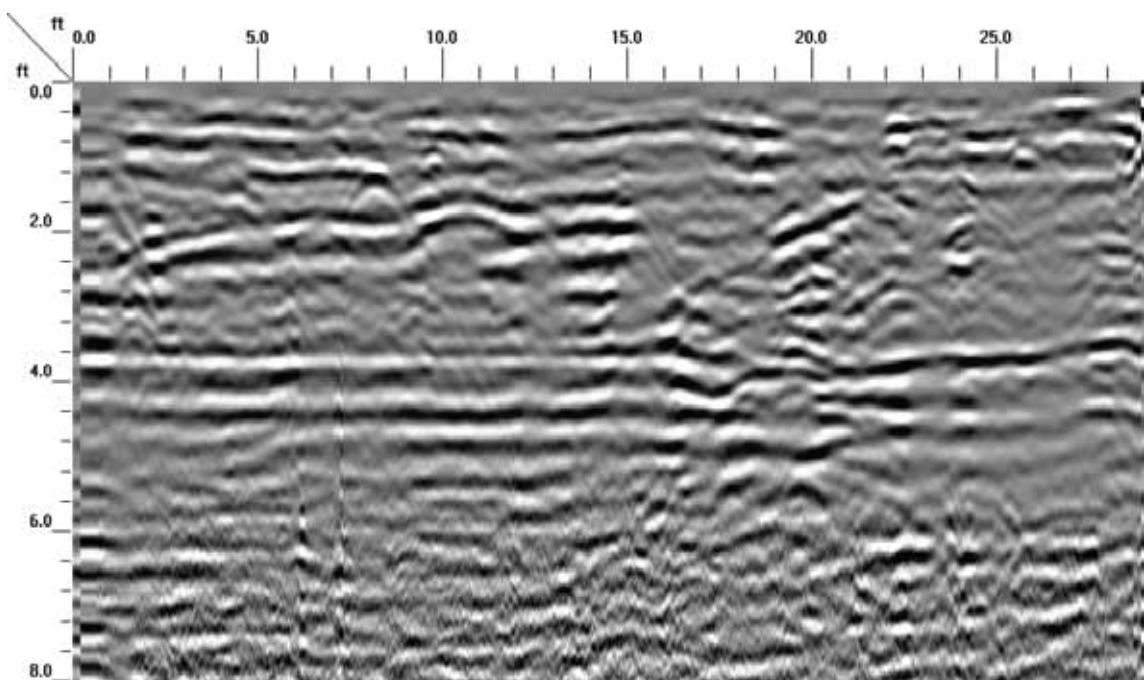


Transect 10

Figure 10d GPR Transects 9 and 10	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
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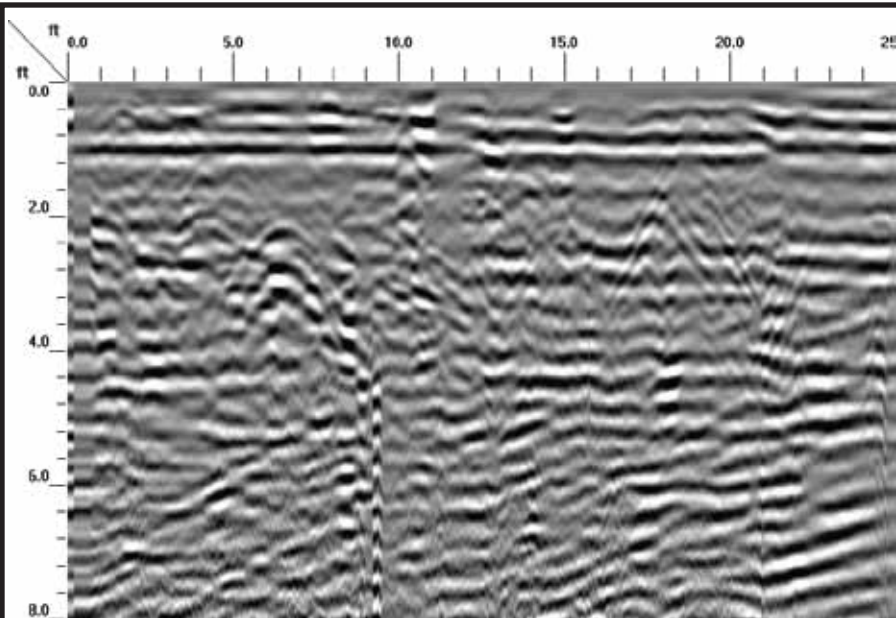


Transect 11

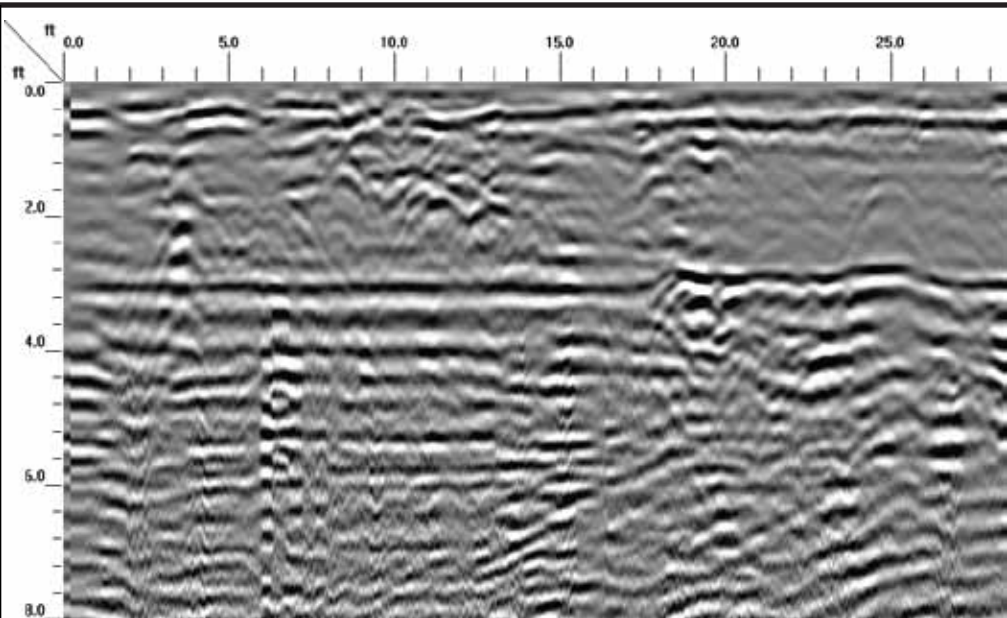


Transect 12

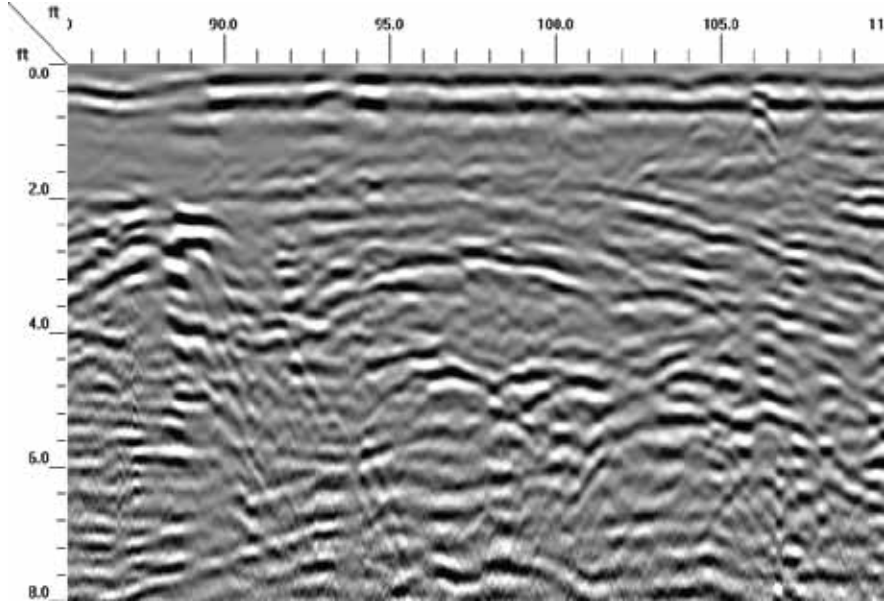
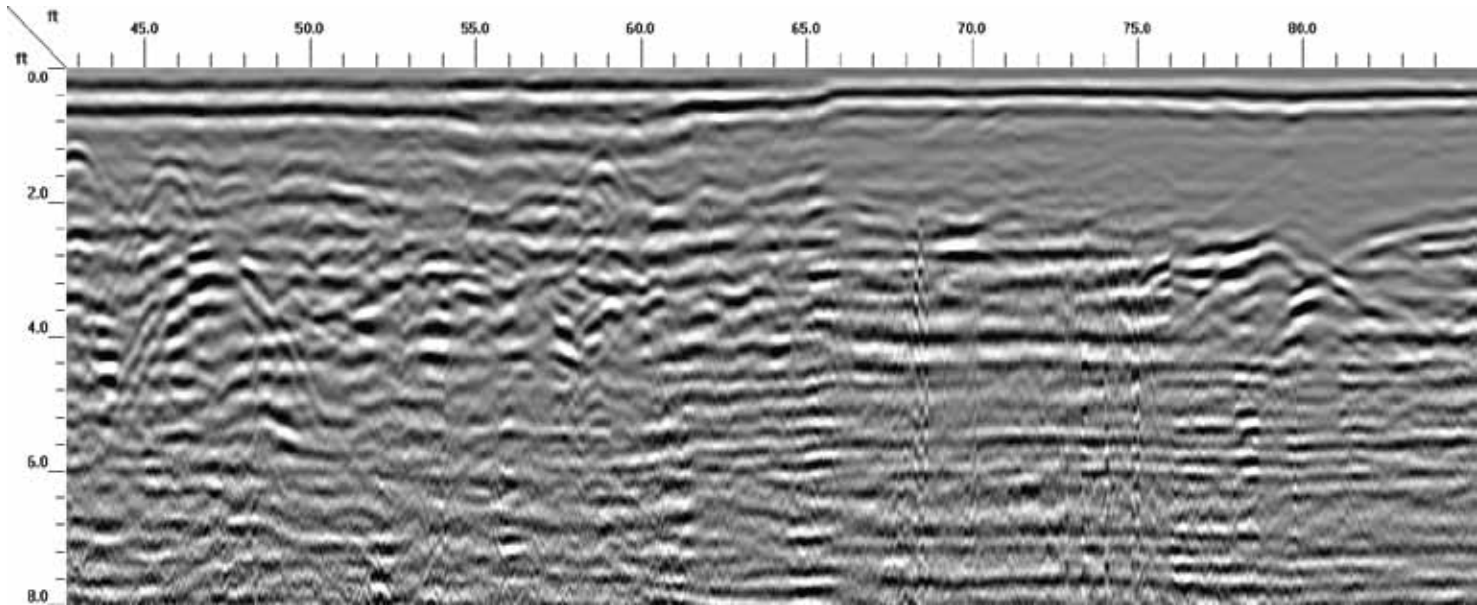
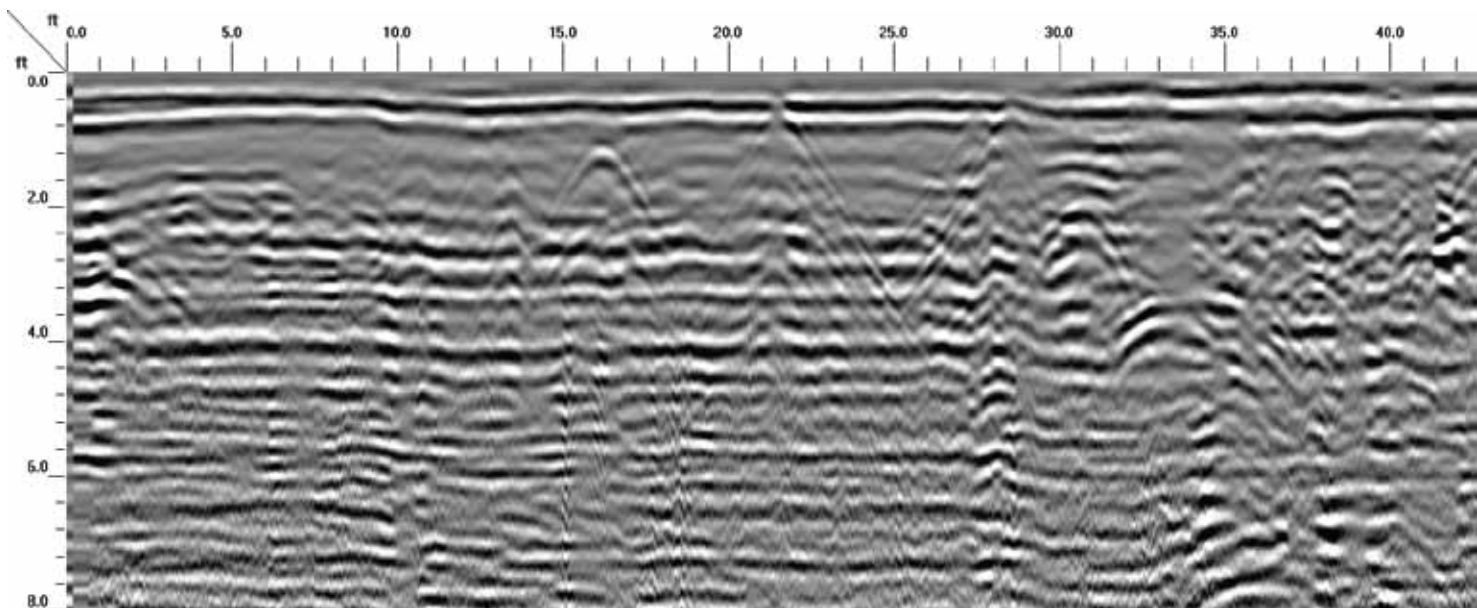
Figure 10e GPR Transects 11 and 12	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
--	---	--	---	---



Transect 13

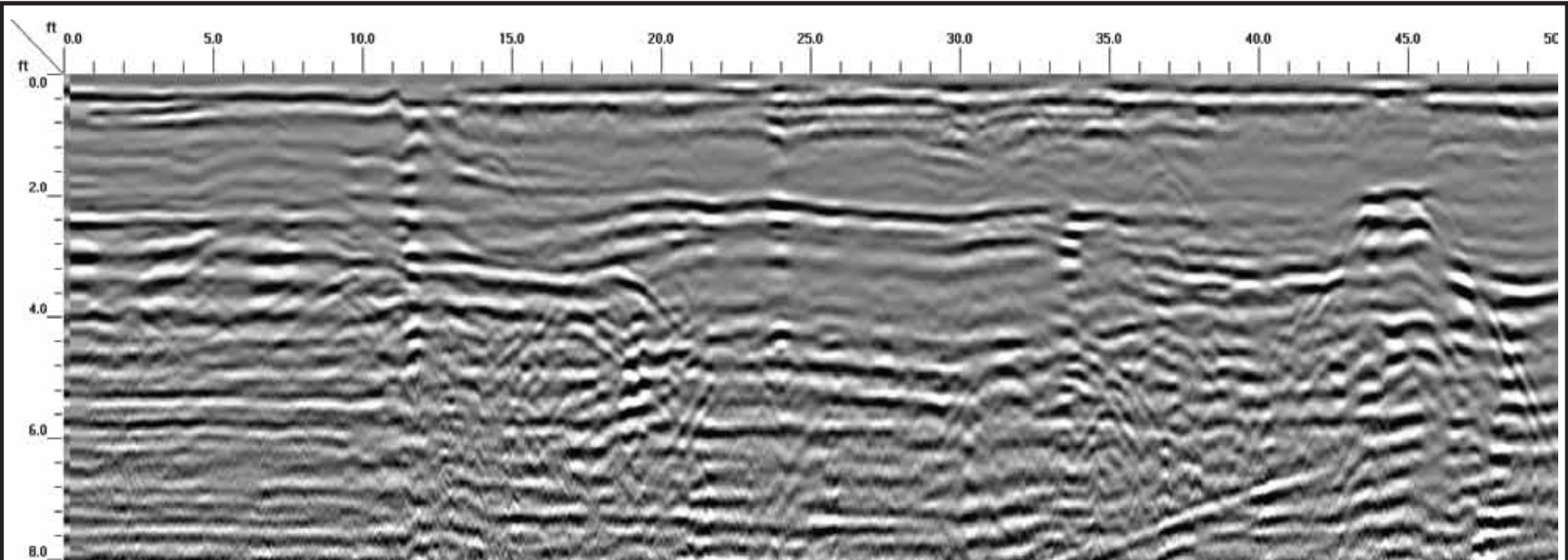


Transect 14

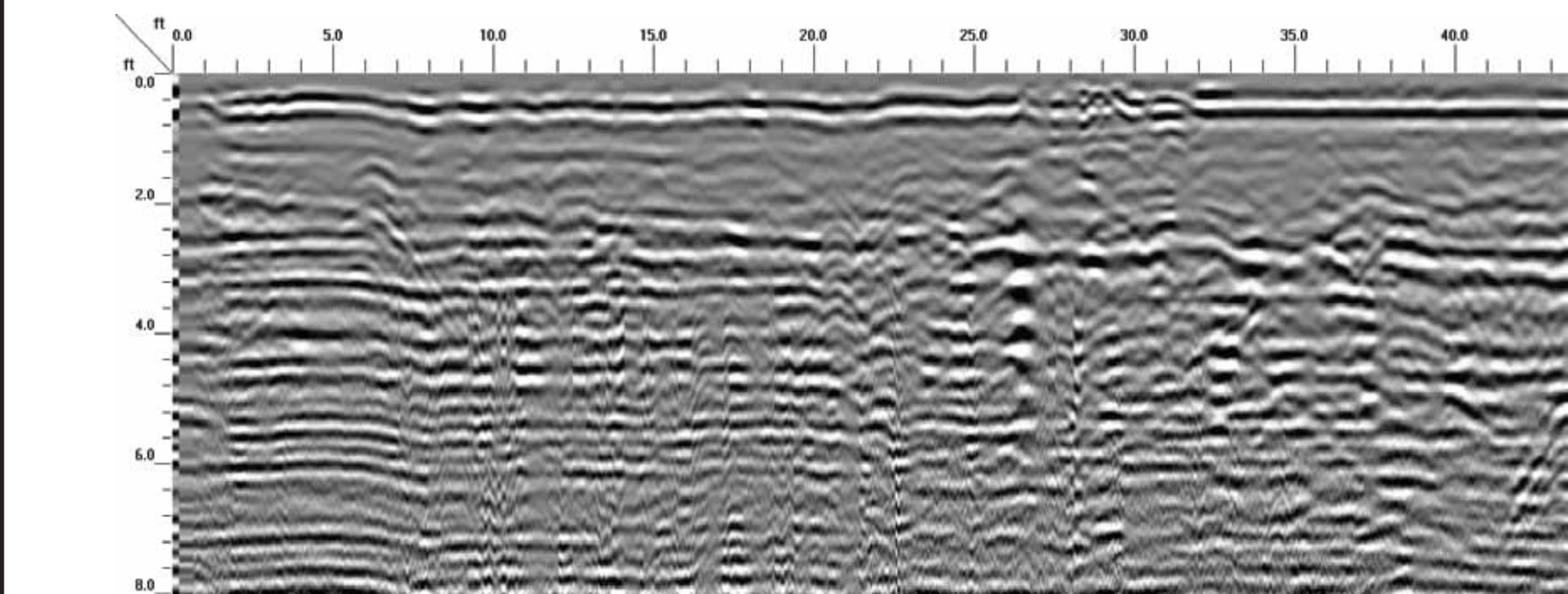


Transect 15

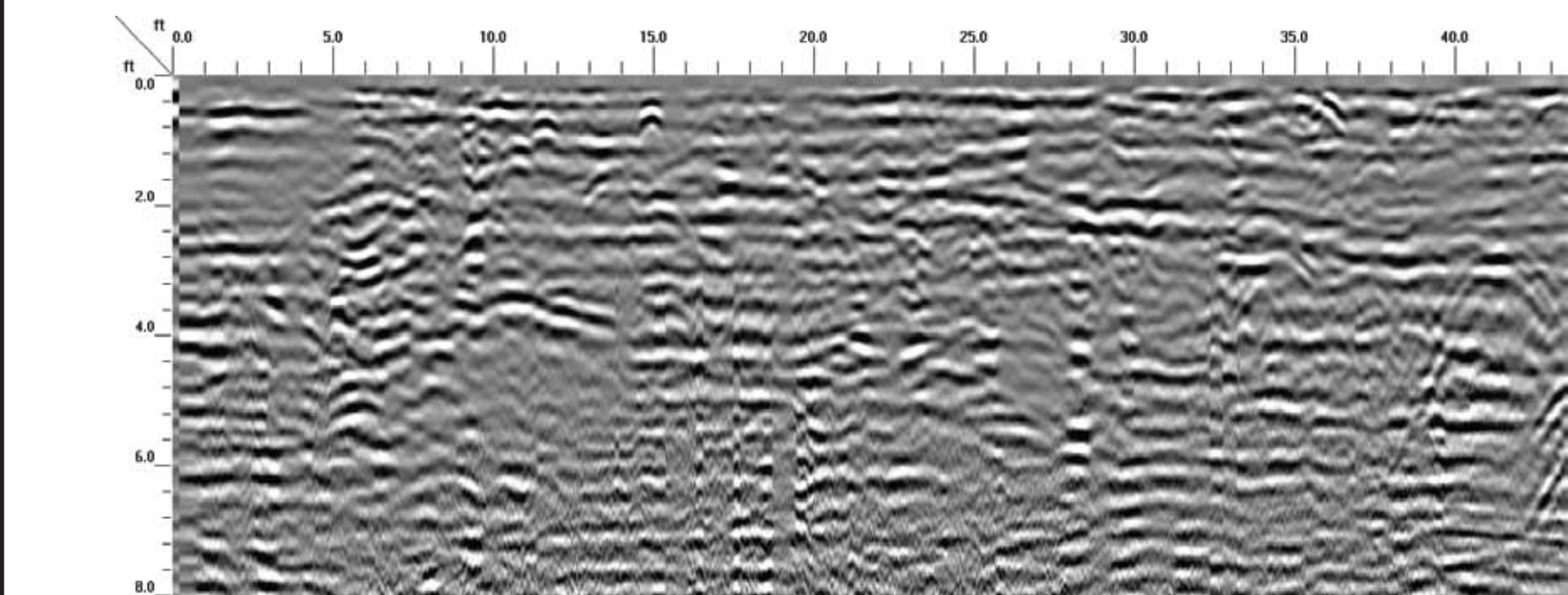
Figure 10f GPR Transects 13 through 15	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
--	---	--	---	---



Transect 16



Transect 17



Transect 18

Figure 10g GPR Transects 16 through 18	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
---	---	--	---	---------------------------------------

Appendix B
Laboratory Reports

Hydrocarbon Analysis Results



Client: SERAMUR & ASSOCIATES

Address:



Samples taken
Samples extracted
Samples analysed

Wednesday, July 14, 2021
Wednesday, July 14, 2021
Wednesday, July 14, 2021

Contact: KEITH SERAMUR

Operator

MAX MOYER

Project: NCDOT R-5759 ; PARCEL 17

T03308

Matrix	Sample ID	Dilution used	BTEX	GRO	DRO	TPH	Total Aromatics	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
			C6-C9	C5-C10	C10-C35	C5-C35	C10-C35			C5:10	C10:C18	C18+	
Soil	S-1	24.0	<0.6	<0.6	1.4	1.4	0.4	0.02	<0.007	0	91.4	8.6	V.Deg.Light Fuel 87.6%,(FCM)
Soil	S-2	20.0	<0.5	<0.5	0.8	0.8	0.08	0.006	<0.006	0	100	0	Deg Fuel 75.6%,(FCM)
Soil	S-3	23.0	<0.5	<0.5	3.6	3.6	1.7	0.09	0.001	0	86.6	13.4	V.Deg.Light Fuel 90.5%,(FCM)
Soil	S-4	21.0	<0.5	<0.5	0.6	0.6	0.6	0.06	<0.006	0	91.9	8.1	Residual PHC
Soil	S-5	25.0	<0.6	<0.6	<0.25	<0.6	<0.013	<0.013	<0.008	0	0	0	PHC ND,(FCM)
Soil	S-6	23.0	<0.5	<0.5	<0.23	<0.5	<0.012	<0.012	<0.007	0	0	0	PHC ND,(FCM)
Soil	S-7	20.0	<0.5	<0.5	<0.2	<0.5	<0.01	<0.01	<0.006	0	0	0	PHC ND,(FCM)
Soil	S-8	24.0	<0.6	<0.6	<0.24	<0.6	<0.012	<0.012	<0.007	0	0	0	PHC ND,(FCM)
Soil	S-10	23.0	<0.5	<0.5	1.5	1.5	1.1	0.07	<0.007	0	92.1	7.9	Deg Fuel 83.2%,(FCM)
Soil	S-12	25.0	<0.6	<0.6	<0.25	<0.6	<0.013	<0.013	<0.008	0	100	0	PHC ND,(FCM)
	Initial Calibrator QC check			OK			Final FCM QC Check			OK			96.9%

Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values uncorrected for moisture or stone content. Fingerprints provide a tentative hydrocarbon identification.

Abbreviations :- FCM = Results calculated using Fundamental Calibration Mode : % = confidence of hydrocarbon identification : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate detected

B = Blank Drift : (SBS)/(LBS) = Site Specific or Library Background Subtraction applied to result : (BO) = Background Organics detected : (OCR) = Outside cal range : (M) = Modified Result.

% Ratios estimated aromatic carbon number proportions : HC = Hydrocarbon : PHC = Petroleum HC : FP = Fingerprint only.

Data generated by HC-1 Analyser

Hydrocarbon Analysis Results



Client: SERAMUR & ASSOCIATES

Address:



Samples taken
Samples extracted
Samples analysed

Wednesday, July 14, 2021
Wednesday, July 14, 2021
Wednesday, July 14, 2021

Contact: KEITH SERAMUR

Operator

MAX MOYER

Project: NCDOT R-5759 ; PARCEL 17

													T03308	
Matrix	Sample ID	Dilution used	BTEX	GRO	DRO	TPH	Total Aromatics	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match	
			C6-C9	C5-C10	C10-C35	C5-C35	C10-C35				C5:10	C10:C18		C18+
Soil	S-14	22.0	<0.5	<0.5	0.08	0.08	0.06	0.007	<0.007	0	100	0	PHC ND,(FCM)	
Soil	S-16	22.0	<0.5	<0.5	0.4	0.4	0.3	0.04	<0.007	0	94.3	5.7	Residual PHC	
Soil	S-20	20.0	<0.5	<0.5	0.12	0.12	0.11	0.013	<0.006	0	70.7	29.3	Residual HC	
Soil	S-22	20.0	<0.5	<0.5	0.3	0.3	0.3	0.04	<0.006	0	92.6	7.4	Residual PHC	
Soil	S-24	18.0	<0.4	<0.4	0.5	0.5	0.26	0.014	<0.001	0	76	24	V.Deg.PHC 81.6%,(FCM)	
Soil	S-26	22.0	<0.5	<0.5	3.2	3.2	1.4	0.08	0.002	0	78.1	21.9	V.Deg.PHC 89.7%,(FCM)	
Soil	S-28	10.0	<0.25	<0.25	<0.1	<0.25	<0.005	<0.005	<0.003	0	0	0	PHC ND,(FCM)	
Soil	S-30	19.0	<0.4	<0.4	<0.19	<0.4	<0.01	<0.01	<0.006	0	0	0	PHC ND,(FCM)	
Soil	S-32	24.0	<0.6	<0.6	<0.24	<0.6	<0.012	<0.012	<0.007	0	0	0	PHC ND,(FCM)	
Soil	S-34	10.0	<0.25	<0.25	<0.1	<0.25	<0.005	<0.005	<0.003	0	0	0	PHC ND,(FCM)	
	Initial Calibrator QC check			OK						Final FCM QC Check		OK		103.5%

Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values uncorrected for moisture or stone content. Fingerprints provide a tentative hydrocarbon identification.

Abbreviations :- FCM = Results calculated using Fundamental Calibration Mode : % = confidence of hydrocarbon identification : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate detected

B = Blank Drift : (SBS)/(LBS) = Site Specific or Library Background Subtraction applied to result : (BO) = Background Organics detected : (OCR) = Outside cal range : (M) = Modified Result.

% Ratios estimated aromatic carbon number proportions : HC = Hydrocarbon : PHC = Petroleum HC : FP = Fingerprint only.

Data generated by HC-1 Analyser

Hydrocarbon Analysis Results



Client: SERAMUR & ASSOCIATES

Address:



Samples taken
Samples extracted
Samples analysed

Wednesday, July 14, 2021
Wednesday, July 14, 2021
Wednesday, July 14, 2021

Contact: KEITH SERAMUR

Operator

MAX MOYER

Project: NCDOT R-5759 ; PARCEL 17

T03308

Matrix	Sample ID	Dilution used	BTEX	GRO	DRO	TPH	Total Aromatics	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
			C6-C9	C5-C10	C10-C35	C5-C35	C10-C35			C5:10	C10:C18	C18+	
Soil	S-36	16.0	<0.4	<0.4	0.5	0.5	0.23	0.012	<0.002	0	80.8	19.2	V.Deg.PHC 93%,(FCM)
Soil	S-38	19.0	<0.4	<0.4	<0.19	<0.4	<0.01	<0.01	<0.006	0	0	0	PHC ND,(FCM)
Initial Calibrator QC check			OK		Final FCM QC Check			OK		100.6%			

Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values uncorrected for moisture or stone content. Fingerprints provide a tentative hydrocarbon identification.

Abbreviations :- FCM = Results calculated using Fundamental Calibration Mode : % = confidence of hydrocarbon identification : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate detected

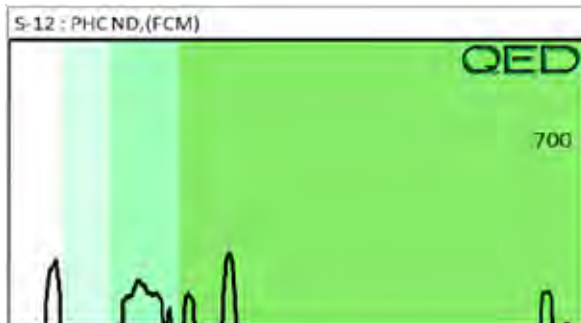
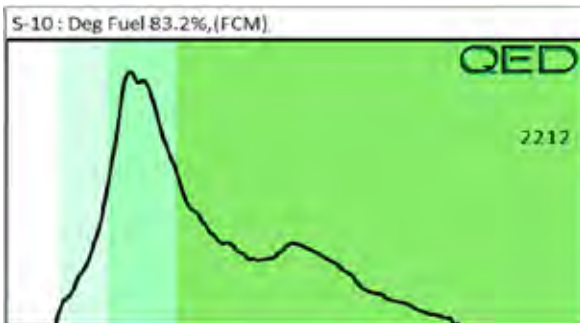
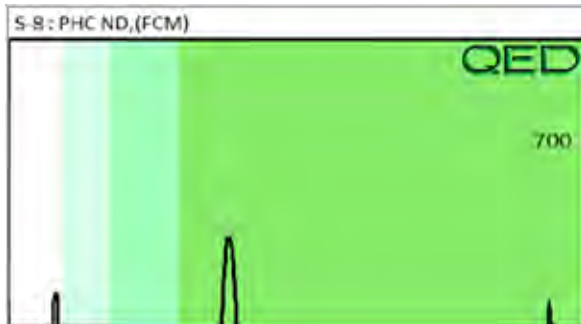
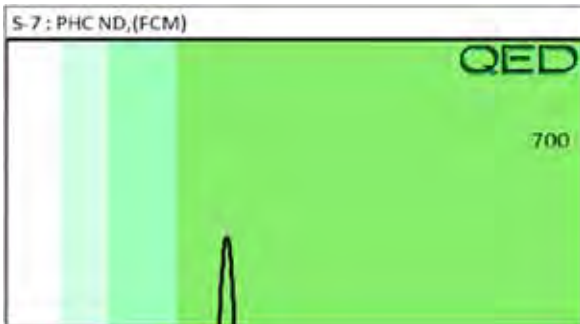
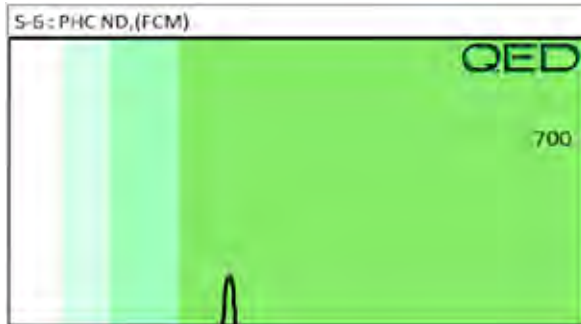
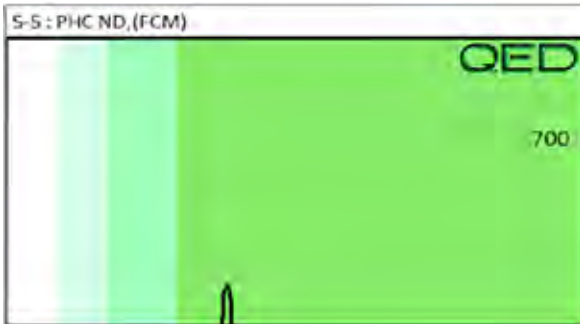
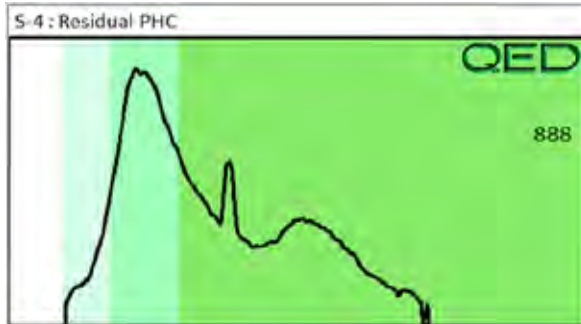
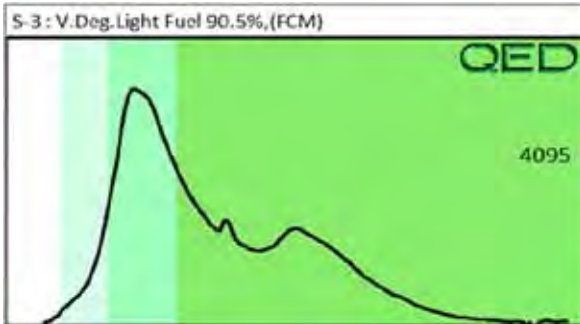
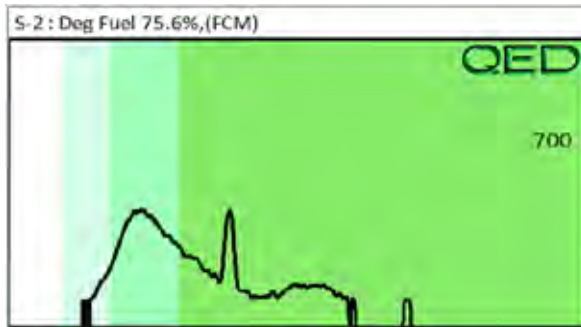
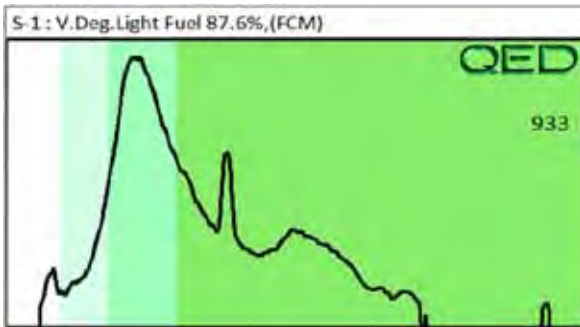
B = Blank Drift : (SBS)/(LBS) = Site Specific or Library Background Subtraction applied to result : (BO) = Background Organics detected : (OCR) = Outside cal range : (M) = Modified Result.

% Ratios estimated aromatic carbon number proportions : HC = Hydrocarbon : PHC = Petroleum HC : FP = Fingerprint only. **Data generated by HC-1 Analyser**

QED Hydrocarbon Fingerprints

Project: NCDOT R-5759 ; PARCEL 14

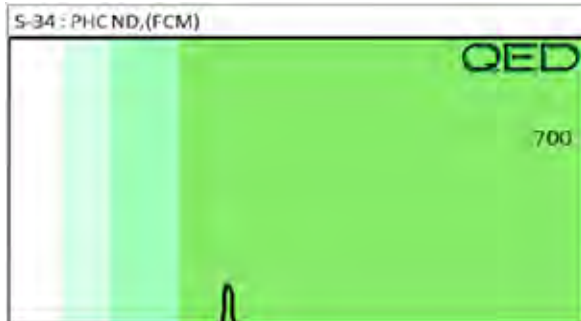
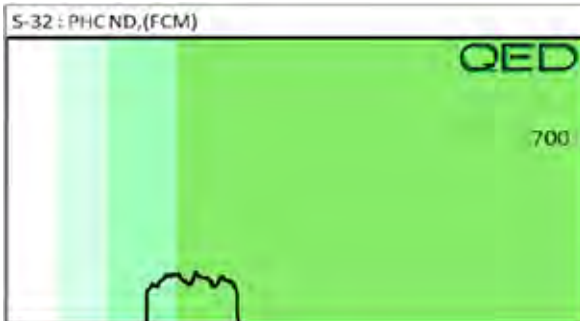
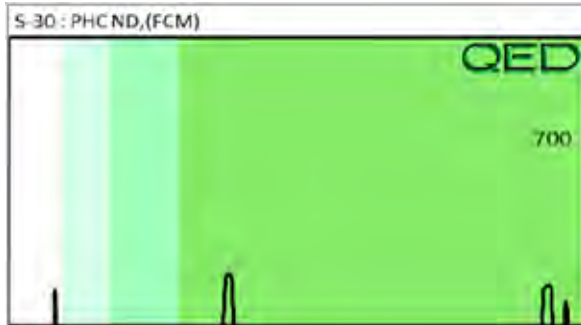
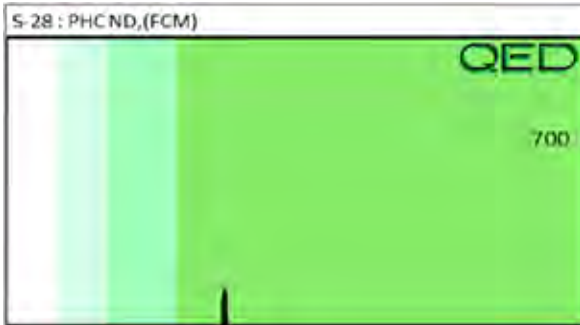
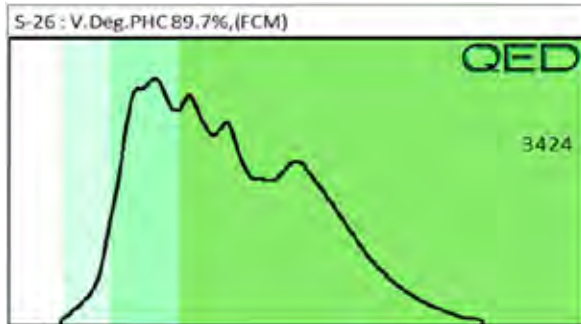
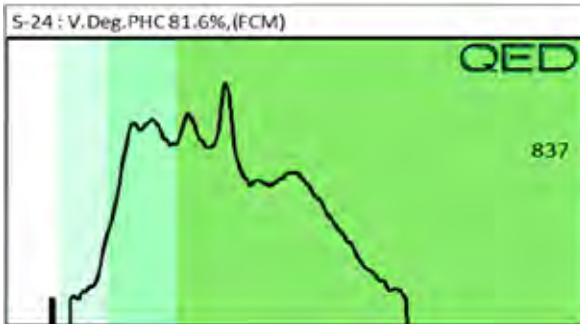
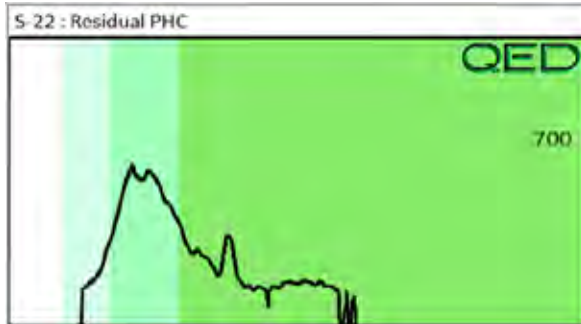
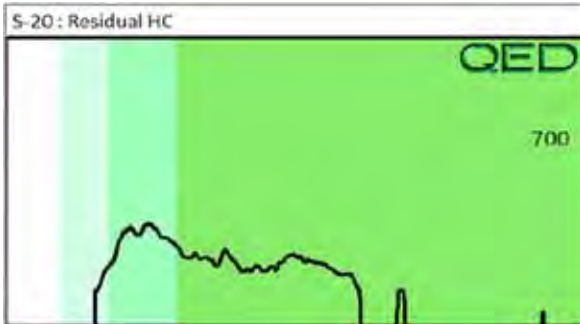
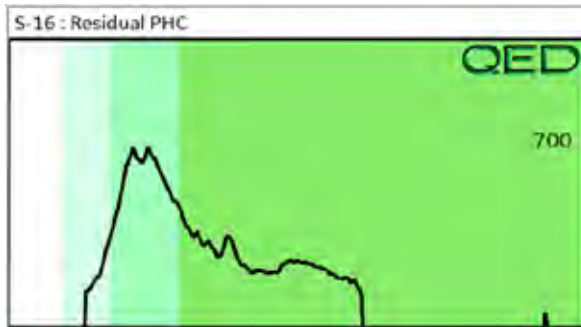
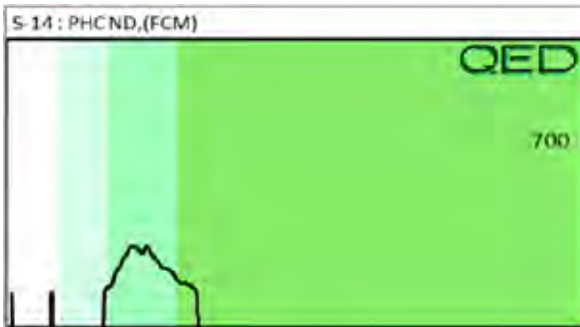
Wednesday, July 14, 2021



QED Hydrocarbon Fingerprints

Project: NCDOT R-5759 ; PARCEL 17

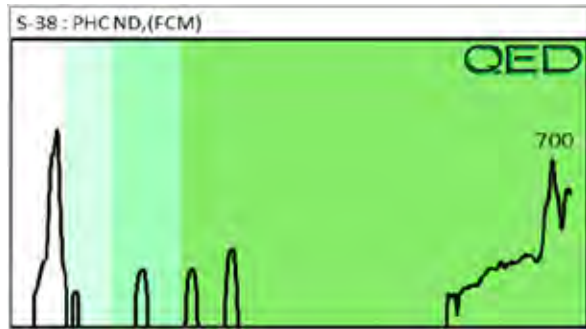
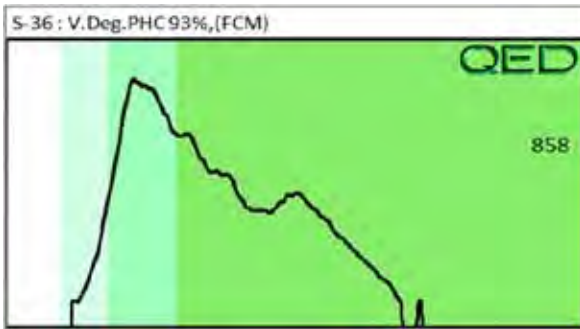
Wednesday, July 14, 2021



QED Hydrocarbon Fingerprints

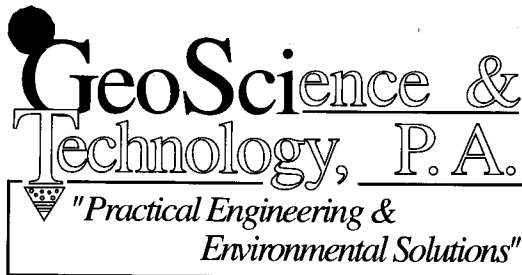
Project: NCDOT R-5759 ; PARCEL 17

Wednesday, July 14, 2021



Appendix C

NCDEQ Incident Files



RECEIVED
N.C. Dept. of EHNR
SEP 18 2000
Winston-Salem
Regional Office

2050 Northpoint Drive • Suite A • Winston-Salem, NC 27106

Phone: (336) 896-1300 • Fax: (336) 896-1020
e-mail: geosci@geotec.com

September 18, 2000

Mr. Steven Williams
NCDENR/DWM – UST Section
585 Waughtown Street
Winston-Salem, NC 27107-2241

*Perf form found
in another file. Use
Perf generated by UST
Section*

Re: 24 Hour Report and Release Reporting Form
Thurmond Brown UST/GeoSci Project No. 00.200
Former B&D Quick Stop No. 3
2698 Statesville Road (Hwy 115)
North Wilkesboro, Wilkes Co., NC
Facility ID No. 0-000790

Dear Mr. Williams:

Per our phone conversation today, attached is the State's copy of the "24 Hour Release and UST Leak Reporting Form" for the above referenced site. GeoSci is currently preparing the 20 Day Report and UST Closure Report for this location. Should you have any questions or require further information, please contact me.

Sincerely,
Geoscience and Technology, P.A.

M. Alex McGilvary, P.G.
Project Geologist

cc: Mr. Thurmond Brown

24-Hour Release and UST Leak Reporting Form

This form should be completed and submitted to the UST Section's regional office following a known or suspected release from an underground storage tank (UST) system. This form is required to be submitted within 24 hours of discovery of a known or suspected release.

(DWM USE ONLY)		Suspected Contamination? (Y/N) <u>Y</u> Confirmed GW Contamination? (Y/N) <u>N</u> Confirmed Soil Contamination? (Y/N) <u>Y</u> Free Product? (Y/N) <u>N</u> If Yes, State Greatest Thickness _____	Facility ID Number <u>0-000790</u> Date Leak Discovered <u>9/5/00</u> Comm/Non-Commercial? <u>Comm.</u> Reg/Non-regulated? <u>Regulated</u>
Incident # _____	Risk (H,I,L,U) _____		
Received On _____	Received By _____		
Reported by (circle one): Phone, Fax or Report			
Region _____			

INCIDENT DESCRIPTION

Incident Name: B & D QUICK STOP # 3

Address: 2698 STATESVILLE ROAD County: WILKES

City/Town: N. WILKESBORO, NC Regional Office (circle one): Asheville, Mooresville, Fayetteville, Raleigh, Washington, Wilmington, Winston-Salem

Latitude (dd.mm.ssss): 36° 8' 26.5" N Longitude (ddd.mm.ssss): 81° 6' 17.3" W Confirmed by GPS? (Y/N) N

Briefly describe suspected or confirmed release: (including but not limited to: Nature and extent of release, date of release, amount of release, amount of free product present and recovery efforts, initial responses conducted, impacts to receptors)

KEROSENE RELEASE SUSPECTED AT TANK REMOVAL 9/5/00. FIVE FOOT RULE

EXCAVATION PERFORMED 9/6/00. VERBAL LABORATORY REPORT FROM RFA

LABS ON 9/13/00 AFTERNOON. TELEPHONE REPORT TO MR. STEVEN WILLIAMS

VOICE MAIL SYSTEM ON 9/14/00. PHONE CONVERSATION WITH STEVE WILLIAMS

9/18/00.

HOW RELEASE WAS DISCOVERED

(Check one)

☐ Release Detection Equipment or Methods	☐ Visual/Odor	☐ Groundwater Contamination
☒ During UST Closure/Removal	☐ Water in Tank	☐ Surface Water Contamination
☐ Property Transfer	☐ Water Supply Well Contamination	☐ Other (specify) _____

SOURCE OF CONTAMINATION

Primary Source of Contamination

(Check one)

☐ Suspected UST Release

☒ Confirmed UST Release (Also check one below):

☐ A. Dispenser

☐ B. Line Release

☒ C. Tank Release

☐ D. Spill/Overfill

☐ E. Exact Failure Location Unknown or Multiple Failures

☐ Unknown Source (Believed to be UST Source, explain in "Incident Description" above)

Primary Contaminant Type

(Check one)

☒ Gasoline/Diesel/Kerosene

☐ Heating Oil

☐ Other Petroleum Products

☐ Metals

☐ Other Inorganics

☐ Other Organics

Location

(Check one)

☒ Facility

☐ Residence

☐ Other

Setting

(Check one)

☐ Residential

☐ Industrial

☐ Urban

☒ Rural

Ownership

1. Municipal 2. Military 3. Unknown (4) Private 5. Federal 6. County 7. State

Operation Type

1. Public Service 2. Agricultural 3. Residential 4. Education/Relig. 5. Industrial (6) Commercial 7. Mining

IMPACT ON DRINKING WATER SUPPLIES

Water Supply Wells Affected? 1. Yes 2. No 3. Unknown

Number of Water Supply Wells Affected N/A

Water Supply Wells Contaminated: (Include Users Names, Addresses and Phone Numbers. Attach additional sheet if necessary)

1.
2.
3.

UST SYSTEM OWNER

UST Owner/Company

MR. THURMOND BROWN

Point of Contact

Address

5431 STATESVILLE ROAD

City

NORTH WILKESBORO

State

NC

Zip Code

28659

Telephone Number

(336) 838-3308

UST SYSTEM OPERATOR

UST Operator/Company

N/A

Address

City

State

Zip Code

Telephone Number

LANDOWNER AT LOCATION OF UST INCIDENT

Landowner

MR. THURMOND BROWN

Address

5431 STATESVILLE ROAD

City

NORTH WILKESBORO

State

NC

Zip Code

28659

Telephone Number

(336) 838-3308

Draw Sketch of Area (showing two major road intersections) or Attach Map

SKETCH ATTACHED

Person Reporting Incident

M. ALEX MEGILVARY, P.G.

Company

GEOSCIENCE & TECHNOLOGY, P.A.

Telephone Number

(336) 896-1300

Title

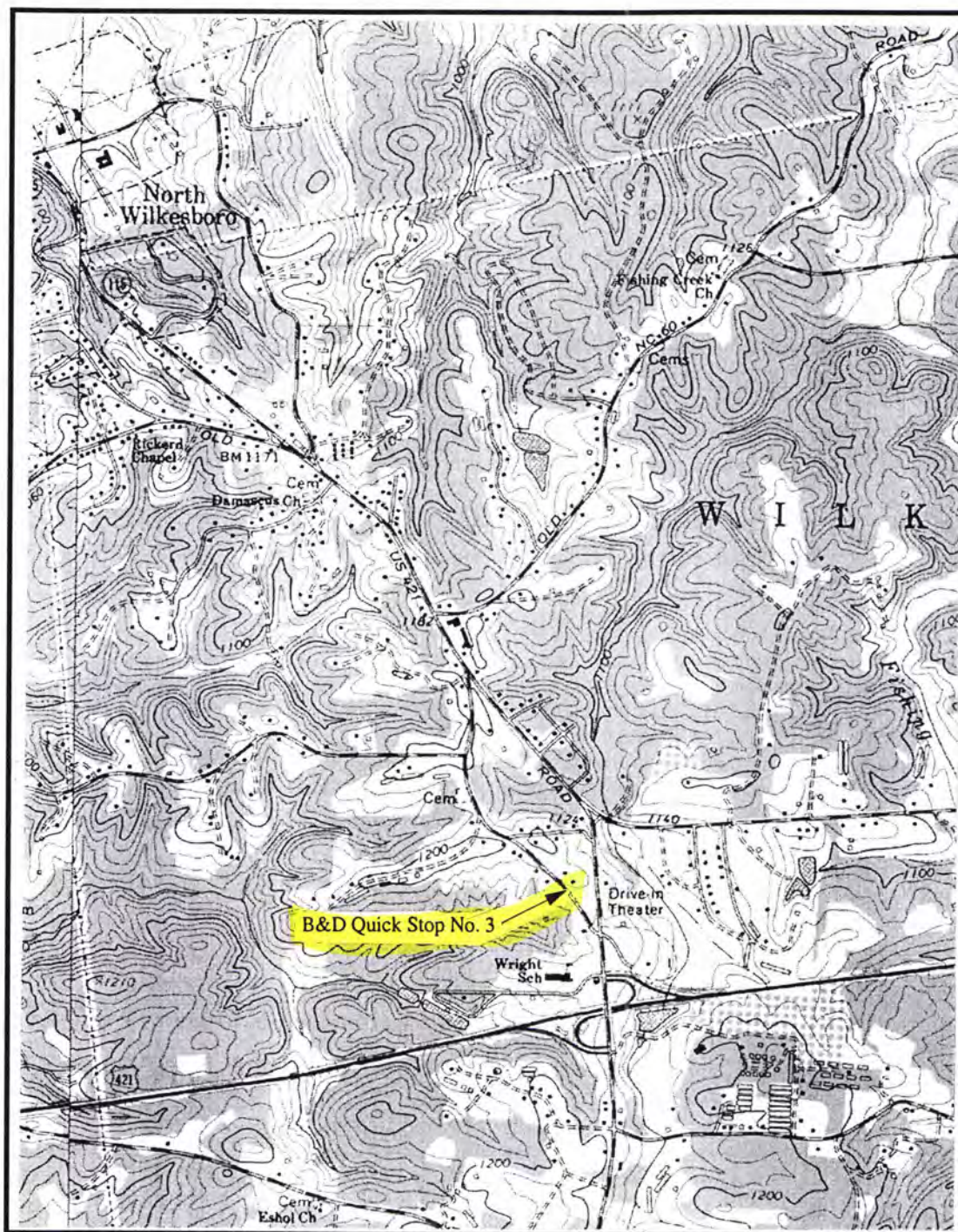
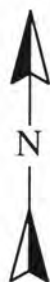
PROJECT GEOLOGIST

Address

2050 N. POINT DR., WINSTON-SALEM, NC

Date

9/18/00



Title:
Site Location Map
Wilkesboro, NC
USGS Quadrangle

Project:
B&D Quick Stop

Scale:
1" = 2000'

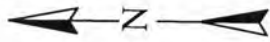
Job No.:
00.200

Location:
N. Wilkesboro, NC

Figure No.:
1

GeoScience &
Technology, P. A.
"Practical Engineering &
Environmental Solutions"

Winston-Salem, NC (336) 896-1300



Hwy 115 (Statesville Road)

Grass island

Asphalt area

Concrete area

Cinderblock Building
31' x 40'

3' sidewalk

Kerosene dispenser

Kerosene UST

Product lines

11' x 15' building addition (cooler)

fill (typ.)

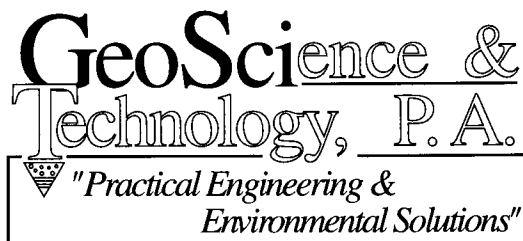
Asphalt area

UST area

5'3"

18'

LOCATION: B&D Quick Stop No. 3 2698 Statesville Rd. N. Wilkesboro, NC 28659		General Site Plan With Former UST Locations	
SCALE: 1" = 20'	JOB NUMBER 00.200	FIGURE 2	REV. 0
GeoScience & Technology, P.A. "Practical Engineering & Environmental Solutions"		DATE: 9.11.2000	
Winston-Salem, NC (336) 896-1300			



2050 Northpoint Drive • Suite A • Winston-Salem, NC 27106

Phone: (336) 896-1300 • Fax: (336) 896-1020
e-mail: geosci@geotec.com

RECEIVED
N.C. Dept. of EHN
SEP 21 2000
Winston-Salem
Regional Office

September 21, 2000

Mr. Steven Williams
NCDENR/DWM – UST Section
585 Waughtown Street
Winston-Salem, NC 27107-2241

Re: 20 Day Report
Thurmond Brown UST/GeoSci Project No. 00.200
Former B&D Quick Stop No. 3
2698 Statesville Road (Hwy 115)
North Wilkesboro, Wilkes Co., NC
Facility ID No. 0-000790

Dear Mr. Williams:

Attached is the State's copy of the 20 Day Report for the above referenced site. GeoSci is currently preparing the UST Closure Report for this location. Should you have any questions or require further information, please contact me.

Sincerely,
Geoscience and Technology, P.A.

A handwritten signature in black ink, appearing to read "Alex M. McGilvary".

M. Alex McGilvary, P.G.
Project Geologist

cc: Mr. Thurmond Brown

GeoScience & Technology, P.A.

 "Practical Engineering &
Environmental Solutions"

2050 Northpoint Drive • Suite A • Winston-Salem, NC 27106

Phone: (336) 896-1300 • Fax: (336) 896-1020
e-mail: geosci@geotec.com

20 Day Report

**B&D Quick Stop #3 UST
2698 Statesville Rd. (NC Highway 115)
N. Wilkesboro, Wilkes County, NC
September 21, 2000**

RECEIVED
N.C. Dept. of EHNR

SEP 21 2000

Winston-Salem
Regional Office

A. Site Information

1. Site Name and Location:

The B&D Quick Stop site is not currently an operating UST facility. The site is located at 2698 Statesville Road (NC Highway 115) in N. Wilkesboro, NC. Figure 1 is a site location map; Figure 2 is a site map; Figure 3 illustrates UST Closure soil sampling locations.

Incident #:

No incident number has yet been assigned to this release.

1. Facility #:

ID No. 0-000790

3. Current UST Owner:

Tank Owner:

Mr. Thurmond Brown
5431 Statesville Road
N. Wilkesboro, NC 28659
336-838-3308

4. Most recent UST operator:

The most recent UST operators are Benny and Shirley Combs

5. Current owner and representative information:

Land Owner:

Mr. Thurmond Brown
5431 Statesville Road
N. Wilkesboro, NC 28659
336-838-3308

B & D Quick Stop/T. Brown UST
GeoSci Project 00.200
20 Day Report
September 2000

6. Consultant/Contractor Information:

Primary Consultant:

Geoscience & Technology, P.A.
2050 Northpoint Drive, Suite A
Winston-Salem, NC 27106
336-896-1300

UST Removal Contractor:

Mr. Carlos Johnson
7831 Statesville Road
N. Wilkesboro, NC 28659
336-984-2525

Analytical Laboratory:

Research and Analytical Laboratories, Inc. (R&A)
106 Short Street
Kernersville, NC 27284
NC Certification #34

7. Release information:

Discovery date: Suspected based on soil samples collected at tank removal.

Release suspected: September 5, 2000;

Release reported: Thursday, September 14, 2000 by phone to Mr. Steven

Williams of the NCDENR-UST (within 24 hrs. of receipt of verbal laboratory results).

24 hour Release and UST leak reporting Form submitted to WSRO on September 18, 2000

Quantity of release: Unknown

Probable Release Source: 550 kerosene UST

UST Sizes: 4-3K gasoline, 1-550 gallon kerosene

Last Contents: Gasoline and kerosene, respectively

Tanks last filled: This station was last operated in 1988.

8. Approximate Latitude/Longitude of release site:

~36° 8' 26.5" N Latitude X ~81° 6' 17.3" W Longitude

9. Seal and Signature:

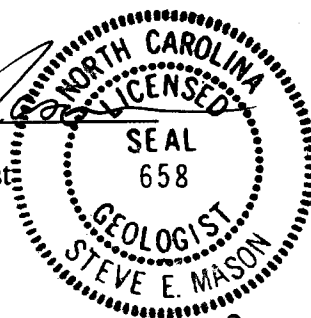
I hereby certify this 21st day of September 2000 that this report was prepared by me or under my direct supervision.

M. Alex McGilvary

M. Alex McGilvary, P.G.
Project Geologist



Steve E. Mason
Steve E. Mason, P.G.
Principal Hydrogeologist



B. Site History

UST Information

Mr. Thurmond Brown has owned this property since the 1960s. According to Mr. Brown, the station was constructed in 1970 and the USTs were last used in 1988. Table 1 summarizes the information about the tanks.

Table 1: Tank Information Summary, Facility ID 0-000790						
ID	Tank Owner	Size (Gals)	Dimensions	Install. Date	Product	Tank Status
1	Thurmond Brown	550	3.5' dia x 7.8' L	1970	Kerosene	Removed 9/5-7/2000
2	Thurmond Brown	3,000	5.33' dia X 18' L	1970	Gasoline	Removed 9/5-7/2000
3	Thurmond Brown	3,000	5.33' dia X 18' L	1970	Gasoline	Removed 9/5-7/2000
4	Thurmond Brown	3,000	5.33' dia X 18' L	1970	Gasoline	Removed 9/5-7/2000
5	Thurmond Brown	3,000	5.33' dia X 18' L	1970	Gasoline	Removed 9/5-7/2000

2. Ownership History:

1. Current land owner:

Mr. Thurmond Brown
5431 Statesville Road
N. Wilkesboro, NC 28659
336-838-3308

C. Initial Abatement Measures

1a. Quantity of regulated substance removed:

Prior to the removal of the tanks, Shamrock Environmental Corporation visited the site with a vacuum truck and removed the residual product from tanks 1-5. Shamrock personnel pumped 1110 gallons of residuals from the tanks on August 29, 2000. The manifest for the removal and acceptance of these liquids is included in Appendix A.

1b. Fire Marshal:

Prior to the tank removal, M. Alex McGilvary of GeoSci contacted Mr. Ken Stoker of the Wilkes County Fire Inspectors office. Mr. Stoker visited the site prior to tank removal on September 5, 2000 and witnessed GeoSci personnel placing dry ice nuggets in the gasoline tanks to displace the vapors. A Wilkes County tank removal permit was issued by Mr. Stoker. A copy of this permit is included in Appendix B.

2. Contaminated Soils Information:

Soils excavated during the removal of the gasoline USTs were stockpiled on-site. A composite sample (CS-1) was collected from this material and submitted for laboratory analysis. Soil excavated from the kerosene tank excavation area were suspected of being impacted. These soils were also stockpiled and a composite sample (CS-2) was collected. Mr. Brown chose to transport these kerosene impacted soils to his other property at 5431 Statesville Road and stockpiled them on, and covered them with, plastic sheeting. According to Mr. Brown, he intends to request a "Certificate of Disposal" from the State for this material.

3. Free Product:

No free product was observed in the tank, dispenser or piping excavations.

D. Source Investigation

1. Soil Samples

a. General Information

Removal of USTs/components and related soil sampling occurred on September 5, 6 and 8, 2000. On September 5, 2000, soil samples were collected from beneath the kerosene UST, which had been located adjacent to the south side of the building and north of the gasoline UST pit, and from gasoline USTs T-2 and T-3 (the southernmost gasoline USTs). Gasoline USTs T-4 and T-5, in the northern portion of the gasoline UST pit, were sampled on September 6, 2000. On that date, soils were excavated from the kerosene UST excavation and a deeper sample (T1-2-10) was also collected. On September 8, 2000, soil samples were collected from beneath gasoline product dispensers and along the gasoline product piping trench. Figure 2 illustrates locations of former USTs and components; Figure 3 shows the locations of soil samples collected for UST Closure.

b. Sample Collection Information and Soil Sample Results

The tank closure and composite samples were submitted to R & A Laboratories for analyses by Method 5030 and Method 3550 as appropriate for the tank contents: One (1) sample, T1-2-10, was also analyzed by Methods 8260, 8270, and the Massachusetts Methods for VPH and EPH. Table 2 is a summary of the soil sample information and OVA evaluation data. The results of the soil sample analyses are summarized in Tables 3a and 3b:

Table 2: Soil Sample OVA Evaluation Summary (ppm)					
Sample ID	Location	Date	Time	Depth (ft)	OVA
T1-1-5	N end 550 K kero UST	9/5/2000	1525	5	5
T1-2-5	S end 550 K kero UST	9/5/2000	1540	5	28
T1-2-10	S end 550 K kero UST	9/6/2000	1245	5	40
T2-1-8	E end 3K Gas UST	9/5/2000	1615	8	8
T2-2-8	W end 3K Gas UST	9/5/2000	1620	8	6
T3-1-8	E end 3K Gas UST	9/5/2000	1715	8	8
T3-2-8	W end 3K Gas UST	9/5/2000	1650	8	2
T4-1-8	E end 3K Gas UST	9/6/2000	1345	8	Non-detect
T4-2-8	W end 3K Gas UST	9/6/2000	1145	8	Non-detect
T5-1-8	E end 3K Gas UST	9/6/2000	1405	8	Non-detect
T5-2-8	W end 3K Gas UST	9/6/2000	1355	8	Non-detect
PT-1-3	N end Piping trench	9/8/2000	1355	3	1
PT-2-3.5	Ctr. Piping trench	9/8/2000	1430	3.5	2
PT-3-3.5	S end Piping trench	9/8/2000	1505	3.5	2
DI-1-2.5	N end Disp. Island	9/8/2000	1440	2.5	1
DI-2-2.5	N ctr Disp Island	9/8/2000	1450	2.5	2
DI-3-2.5	S ctr Disp Island	9/8/2000	1515	2.5	1
DI-4-2.5	S end Disp. Island	9/8/2000	1530	2.5	1

Table 3a: UST Closure Soil Sample Laboratory Results Summary (ppm)						
Sample ID	Location	Date	Time	Depth (ft)	Method 5030	Method 3550
T1-1-5	N end 550K kero UST	9/5/2000	1525	5	<10	<10
T1-2-5	S end 550K kero UST	9/5/2000	1540	5	NA	NA
T1-2-10	S end 550K kero UST	9/6/2000	1245	5	488	2,890
T2-1-8	E end 3K Gas UST	9/5/2000	1615	8	<10	NA
T2-2-8	W end 3K Gas UST	9/5/2000	1620	8	<10	NA
T3-1-8	E end 3K Gas UST	9/5/2000	1715	8	<10	NA
T3-2-8	W end 3K Gas UST	9/5/2000	1650	8	<10	NA
T4-1-8	E end 3K Gas UST	9/6/2000	1345	8	<10	NA
T4-2-8	W end 3K Gas UST	9/6/2000	1145	8	<10	NA
T5-1-8	E end 3K Gas UST	9/6/2000	1405	8	<10	NA
T5-2-8	W end 3K Gas UST	9/6/2000	1355	8	<10	NA
PT-1-3	N end Piping trench	9/8/2000	1355	3	<10	NA
PT-2-3.5	Ctr. Piping trench	9/8/2000	1430	3.5	<10	NA
PT-3-3.5	S end Piping trench	9/8/2000	1505	3.5	<10	NA
DI-1-2.5	N end Disp. Island	9/8/2000	1440	2.5	<10	NA
DI-2-2.5	N ctr Disp Island	9/8/2000	1450	2.5	<10	NA
DI-3-2.5	S ctr Disp Island	9/8/2000	1515	2.5	<10	NA
DI-4-2.5	S end Disp. Island	9/8/2000	1530	2.5	<10	NA
CS-1	Comp. of Kero. UST exc. Soils	9/6/2000	1200	Comp.	718	4,150
CS-2	Comp. of Gas. UST exc. Soils	9/6/2000	1240	Comp.	<10	NA

NA - Not analyzed; this sample not tested by this method.

Table 3b: UST Closure Soil Sample RBCA Laboratory Results: Sample T1-2-10 (ppm)				
	Kerosene UST	Res. Std	Comm/ Ind Std	Soil:GW Std
Sample ID	T1-2-10'			
Location	S. End 550 kero UST			
Date	9/6/2000			
Time	1245			
Depth (ft.)	10			
OVA (ppm)	40			
Method 8260				
<i>p</i> -Isopropyltoluene	0.311	NIS	NIS	NIS
1,3,5-Trimethylbenzene	0.238	782	20440	7
1,245-Trimethylbenzene	0.108	782	20440	8
Method 8270	All BQL			
MADEP-VPH				
C5-C8 Aliphatics	BQL	939	24528	72
C9-C12 Aliphatics	127			
C9-C10 Aromatics	49.5			
MADEP-EPH				
C9-C18 Aliphatics	1080			
C19-C36 Aliphatics	90	93860	HB>100%	immobile
C11-C22 Aromatics	360			
sum C9-C18 Aliphatics	1207	9386	245280	3255
sum C9-C22 Aromatics	409.5	469	12264	34

NA - Not analyzed; this sample not tested by this method, NIS = No individual Standard.

The soil samples collected from beneath the 3,000 gallon gasoline USTs, the gasoline dispenser and piping areas tested below the laboratory detection limits. The soil sample T1-2-10, collected from beneath the eastern end of the 550 gallon kerosene tank tested at 488 parts per million (ppm) Method 5030 and 2,890 ppm Method 3550. Because of the presence of Total Petroleum Hydrocarbons greater than the initial State action level of 10 ppm, this sample was also analyzed by Method 8260/8270 and the MADEP methods. The results of these analyses indicated the presence of kerosene constituents; however, none of the detected compounds, except the MADEP aromatic range, exceeded the allowable soil to groundwater concentration.

The composite sample CS-1, collected from the soil excavated from the gasoline tank top areas, did not indicate the presence of petroleum constituents. These soils will be used as backfill for the gasoline UST excavation. The composite sample CS-2, collected from the soil excavated from the kerosene dispenser, piping and tank top area, indicated the presence of petroleum constituents and will require treatment.

Chain of custody records and laboratory reports are included in Appendices C and D, respectively.

2. Groundwater Samples

Groundwater was not encountered during the tank excavation.

E. Conclusions

The tank closure soil samples collected from the gasoline USTs, dispenser and piping areas tested below the laboratory detection limits. Soil samples collected beneath the 550 gallon kerosene tank indicate a release has occurred from this tank. The Massachusetts VPH Method analyses indicate that the Aromatic range (Sum C9-C22) exceed the allowable Soil to Groundwater concentration.

Excavation has been performed to a depth of 5 feet below the kerosene UST. Because a release was discovered, additional work is planned. The soils excavated during the removal of the kerosene tank and the subsequent excavation enlargement contain petroleum concentrations above 10 ppm and require treatment.

F. Enclosures

A. Figures

1. Site Location Map
2. General Site Plan With Former UST Locations
3. UST Closure Soil Sampling Location Map

B. Tables (within body of report)

1. Tank Information-Facility ID No. 0-000790
2. Soil Sample OVA Evaluation Summary
- 3a. UST Closure Soil Sample Laboratory Results Summary (ppm)
- 3b. UST Closure Soil Sample RBCA Laboratory Results: Sample T1-2-10 (ppm)

C. Appendices

- Appendix A: Shamrock Env. Corp. Manifest
- Appendix B: Wilkes County Fire Inspection Report
- Appendix C: Chain of Custody Records
- Appendix D: Laboratory Reports

✓ MAY 17 2006

Winston-Salem
Regional Office

**Soil Sampling Report
B&D Quick Stop #3
2698 Statesville Road,
North Wilkesboro, Wilkes County**

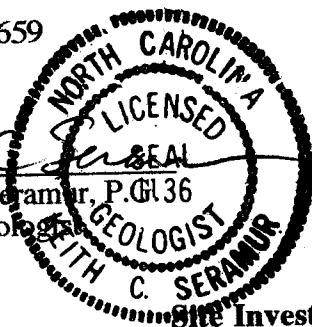
Consultant:
Geonetics Corporation
P.O. Box 1577
Boone, NC 28607
(828) 265-1577

Site Name: B&D Quick Stop #3
Date of Report: 5/14/06
Location: 2698 Statesville Road, North Wilkesboro 28659, Wilkes County,
Incident #: 22405, Facility ID: 0-000790
Risk Category: NA, Reason: NA
Land Use Category: NA

Former Property owner/Responsible Party:
Mr. Thurmond Brown
5431 Statesville Road
North Wilkesboro, NC 28659

Report Author: *Keith C. Seramur*

Keith C. Seramur, P.G. 36
Senior Geologist



Site Investigation

As requested by Mr. Williams of the Winston-Salem Regional Office of the NC DENR, Geonetics has completed the soil sampling and analyses below the former kerosene tank. It is our understanding that Mr. Brown had this tank closed by another consulting company. Mr. Brown showed Geonetics personnel the location of the former tank.

Geonetics personnel contacted Mr. Williams to inquire about the specific sampling protocol that would be required for this phase of assessment. Mr. Williams instructed us to collect two soil samples from the base of the former excavation. Mr. Brown reported that several truckloads of soil had been removed from around the former kerosene tank at closure.

On April 6, 2006, Geonetics personnel drilled two soil test borings through the backfill material that had been placed in the former excavation. Boring B-1 was drilled to a depth of 13.5 feet and a decontaminated split spoon was driven to a depth of 15.0 feet. Soil sample S-1 was collected from this split spoon sample. Soil was a foliated maroon Saprolite (very silty sand), so we knew the boring had extended through the backfill material into residual soils. Boring B-2 was drilled slowly to watch for a change in the cuttings and obtain a soil sample from just below the backfill material. The cuttings began to resemble the Saprolite at a depth of about 10 feet. The boring was terminated and a decontaminated split spoon was driven from a depth of 11.0 to 12.5 feet. Soil sample S-2 was collected from this split spoon sample.

These samples were placed in laboratory-cleaned jars and sealed with Teflon-lined lids. The samples were labeled, chilled, a chain of custody was initiated and then they were transported to Blue Ridge Laboratories for analysis. Soil samples S-1 and S-2 were analyzed for risk-based methods EPA 5035/8021 and 8270, and the MADEP VPH and EPH Methods.

SBW
6/7/06

Volatile petroleum constituents were detected in soil sample S-1 at a concentration of 121.3 ppb and in soil sample S-2 at a concentration of 70.6 ppb. These petroleum constituents did not exceed the residential or soil-to-groundwater maximum soil contaminant concentrations. Applicable soil clean-up levels for soil contamination are the lowest of the residential or soil-to-groundwater maximum soil contaminant concentrations.

Conclusions

Residual petroleum constituent concentrations in soil along the base of the former excavation do not exceed the residential or soil-to-groundwater maximum soil contaminant concentrations. Geonetics does not recommend any additional assessment activity for soil below the former kerosene tank.

Standard Operating Procedures

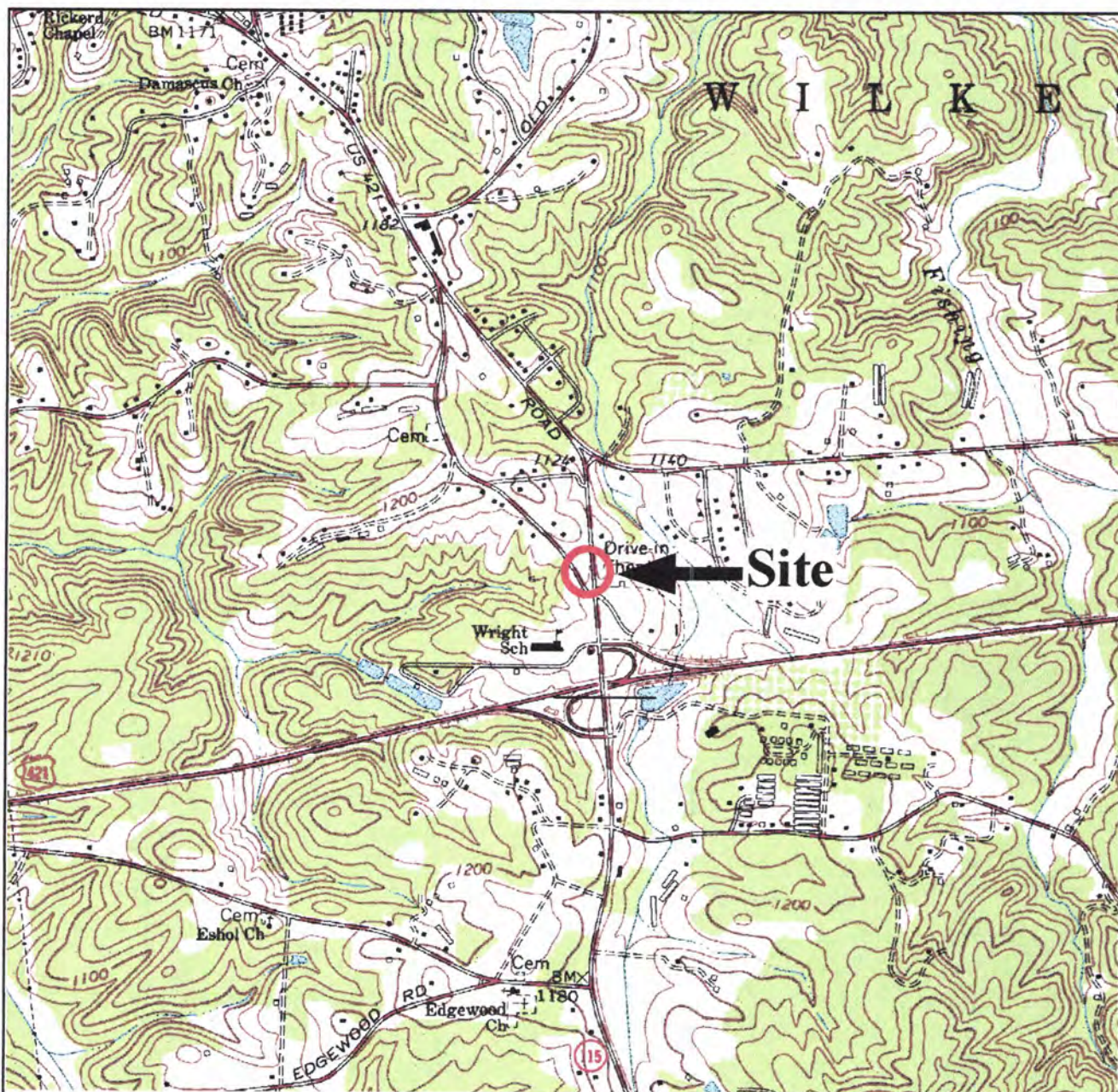
Soil samples S-1 and S-2 were collected from the decontaminated split spoons. The spoons were decontaminated with non-phosphate detergent, distilled water and isopropyl alcohol. Soil samples collected for laboratory analysis were placed in sample jars with Teflon-lined lids, chilled and Chain of Custody record was initiated. Soil samples were transport to Blue Ridge Labs, Inc. in Lenoir, North Carolina for analyses. A new pair of disposable latex gloves was worn while collecting each sample. Horizontal and vertical location of the soil samples were identified by measuring with a fiber-glass tape, estimating right angles and referencing site features.

Appendix A
Table and Figures

Table B-3 Summary of Soil Sampling Results
 Date: May 13, 2006 Incident Number and Name: 2698, B&D Quick Stop #3 Facility ID#: 0-000790

Sample Number	S-1	S-2	MSCC
Date Sampled	4/6/06	4/6/06	
Depth of Sampled (feet)	13.5-15.0	11.0-12.5	
Butylbenzene, n- (ppb)	51	16.8	4,300
Butylbenzene, sec- (ppb)	54.5	ND	3,300
Butylbenzene, tert- (ppb)	ND	15	3,400
Isopropyltoluene, p-(ppb)	15.8	ND	Not Listed
Toluene (ppb)	ND	14.6	7,300
Trimethylbenzene, 1,2,4-(ppb)	ND	24.2	7,500
Sampling Method	Split- Spoon	Split- Spoon	
Analyses	EPA Method 5035/8021, 8270, MADEP VPH/EPH	EPA Method 5035/8021, 8270, MADEP VPH/EPH	

NOTE: 1). ND = Not detected at or above minimum quantification limits listed on the analytical reports.



0 2000
FEET

Ref.: U.S.G.S. 7.5 Minute Topographic
Quadrangle for Roaring River, NC, 1966.



GEONETICS CORPORATION

P.O. Box 1577 Boone, North Carolina 28607

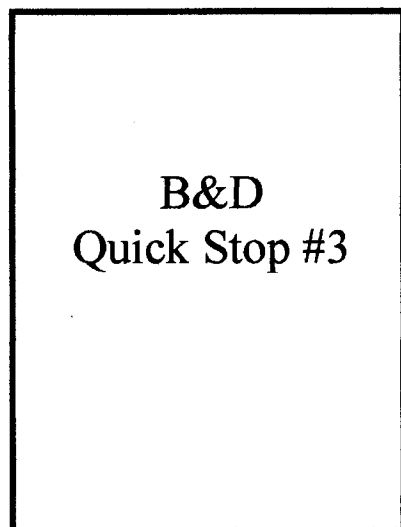
828-265-1577

B&D Quick Stop #3
North Wilkesboro, North Carolina

Site Location Map

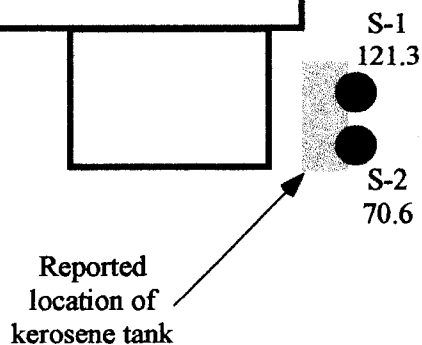
FIGURE 1

Soil Sample	Depth(in feet)
S-1	13.5-15
S-2	11-12



Dispenser Island

Business 421



Explanation

● - Soil sample Location

70.6 - Concentration of Volatile Petroleum Constituents detected by EPA Method 3550/8021 in ppb

0 20
FEET



GEONETICS CORPORATION
P.O. Box 1577 Boone, North Carolina 28607
828-265-1577

B&D Quick Stop #3
North Wilkesboro, North Carolina

Site Plan

FIGURE 2



North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor
William G. Ross Jr., Secretary

Division of Waste Management
Underground Storage Tank Section

Dexter R. Matthews, Director

June 7, 2006

Thurmond Brown
5431 Statesville Road
North Wilkesboro, NC 28659

Re: Notice of No Further Action
15A NCAC 2L .0407(d)
Risk-based Assessment and Corrective
Action for Petroleum Underground Storage
Tanks

B & D Quick Stop #3
2698 Statesville Road, North Wilkesboro
Wilkes County
Incident Number: 22405
Risk Classification: Low
Ranking: LOR

Dear Mr. Brown:

The Soil Sampling Report received by the Underground Storage Tank (UST) Section, Winston-Salem Regional Office on May 17, 2006 has been reviewed. The review indicates that after tank closure and soil excavation, soil contamination does not exceed the soil-to-groundwater maximum soil contaminant concentrations (MSCCs), established in Title 15A NCAC 2L .0411.

The UST Section determines that no further action is warranted for this incident. This determination shall apply unless the UST Section later finds that the discharge or release poses an unacceptable risk or a potentially unacceptable risk to human health or the environment. Pursuant to Title 15A NCAC 2L .0407(a) you have a continuing obligation to notify the Department of any changes that might affect the risk or land use classifications that have been assigned.

This No Further Action determination applies only to the subject incident; for any other incidents at the subject site, the responsible party must continue to address contamination as required.

If you have any questions regarding this notice, please contact me at the address or telephone number listed below.

Sincerely,



Cindy Rintoul
UST Regional Supervisor
Winston-Salem Regional Office

cc: Wilkes County Health Department
↳WSRO files

UST Regional Offices

Asheville (ARO) – 2090 US Highway 70, Swannanoa, NC 28778 **(828) 296-4500**

Fayetteville (FAY) – 225 Green Street, Suite 714, Systel Building, Fayetteville, NC 28301 **(910) 486-1541**

Mooresville (MOR) – 610 East Center Avenue, Suite 301, Mooresville, NC 28115 **(704) 663-1699**

Raleigh (RRO) – 1628 Mail Service Center, Raleigh, NC 27699 **(919) 791-4200**

Washington (WAS) – 943 Washington Square Mall, Washington, NC 27889 **(252) 946-6481**

Wilmington (WIL) – 127 Cardinal Drive Extension, Wilmington, NC 28405 **(910) 796-7215**

Winston-Salem (WS) – 585 Waughtown Street, Winston-Salem, NC 27107 **(336) 771-5348**

Guilford County Environmental Health, 1203 Maple Street, Greensboro, NC 27405, **(336) 641-3771**

**Phase II Site Assessment Report
January 30, 2023
WBS Element: 44691.1.1
State Project: R-5759
Wilkes County**

At

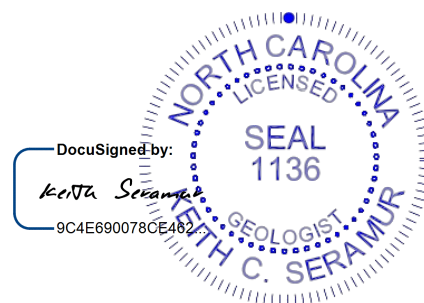
**Parcel #: 018
AB Holdings, LLC Property
2650 Statesville Road, North Wilkesboro, NC 28659
PIN #: 3877-86-7526
Facility ID #: N/A
Groundwater Incident #: N/A**

Prepared For:

**Mr. Gordon Box
NCDOT, Geotechnical Engineering Unit
GeoEnvironmental Section
1589 Mail Service Center
Raleigh, NC 27699-1589**

Prepared By:

**Seramur & Associates, PC
165 Knoll Drive
Boone, NC 28607**



Keith C. Seramur, P.G.

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Appendix B – Laboratory Reports

1.0 Introduction

1.1 General Site Background Information

Seramur & Associates, PC was contracted to complete a Phase II Environmental Site Assessment at:

AB Holdings, LLC Property
Parcel #: 018
2650 Statesville Road, North Wilkesboro, NC 28659
PIN #: 3877-86-7526
Facility ID #: N/A
Groundwater Incident #: N/A

Parcel #018 is located along the western side of Statesville Road approximately 450 feet north of the Statesville Road and Hunter Road intersection. The property is situated atop a slope approximately 725 feet west of the Fishing Creek stream valley. Bedrock in the area is mapped as Henderson Gneiss, a biotitic augen gneiss (Rankin, D.W., Espenshade, G.H., Shaw, K.W., and Neumann, R.B. Geologic map of the west half of the Winston-Salem quadrangle, North Carolina-Virginia, U.S. Geologic Survey Misc. Inv. Series Map I-709-A, 1975).

A Notice to Proceed was obtained from NCDOT on June 25, 2021, however the project was put on hold due to accessibility issues. Our investigation included areas within the proposed temporary construction easement (E), permanent drainage easement (PDE) and proposed and existing Right-of-Way (R/W) along the western side of Statesville Rd. (Figure 2). The Phase II Site Assessment scope of work included completing a geophysical survey, soil sample collection and soil laboratory analysis. Geophysical investigations evaluate the potential for underground storage tanks and remanent UST system infrastructure. The purpose of soil analysis is to assess soil quality across the easement (Figure 3). Background research for this project included reviewing historic aerial photographs and NCDEQ databases.

2.0 Scope of Work

2.1 Background Research

According to the Wilkes County Tax Administration records, the property owner is listed as AB Holdings, LLC. Available historic aerial photographs from the USGS EarthExplorer website and Google Earth Pro were reviewed.

The following NCDEQ databases were queried for incidents at Parcel #018:

- | | | |
|----------------|--------------------|-------------------------|
| • Dry Cleaners | • UST Incident Map | • Hazardous Waste Sites |
| • Active USTs | • UST Database | |

2.2 Geophysical Surveys

Seramur & Associates used the Pythagorean Theorem to establish three rectangular grids covering the proposed and existing R/W and easements along Statesville Road (Figure 4). Geophysical grid data was collected along transects at a two-foot spacing. Many transects were extended past the established rectangular grid corners in the GPR survey.

The magnetometer data was collected with a GEM Systems GSM-19W Walking Overhauser magnetometer. The data was compiled in Excel spreadsheets and a grayscale contour map of the magnetic data was drafted using Golden Software's Surfer® modeling program. The white colors are lower magnetic readings, and the black colors are higher magnetic readings (Figure 5). Ferrous objects in the subsurface are more magnetic than the surrounding soil and produce magnetic anomalies on the contour maps. Two additional transects of magnetic data were collected along Statesville Road where grid data could not be collected.

A Ground Penetrating Radar (GPR) survey was completed across the grid using Geophysical Survey Systems, Inc. SIR-3000 control unit with a 400 MHz antenna. This GPR system is equipped with a calibrated survey wheel. The GPR data was downloaded and saved onto a computer. The GPR grid and transect data has been processed and modeled using GPR Slice® software. The GPR data processing included adjusting time zero, completing a background removal and adjusting the time variable gain to enhance deep reflections. Three-dimensional models of the GPR grid and transect data were produced with GPR Slice® software. Three time slices (or depth slices) were imaged in the 3D model at depths of 0.2 to 0.5 feet, 1.8 to 2.1 feet and 3.8 to 4.1 feet (Figures 6 through 8). Each depth slice is a horizontal slice or plan view of the reflections across a 0.3-foot thickness of the subsurface. For example, the deep GPR depth slices show reflections in the radar data between depths of 3.8 and 4.1 feet.

The southern central portion of the grid that was not surveyed could not be accessed due to very thick brush and other debris. This area also was part of a slope and likely would not be the location of USTs or other gas station infrastructure.

2.3 Soil Sampling and Analyses

Carolina Soil Investigations, LLC mobilized to the site on December 20, 2022, to drill Geoprobe borings and collect soil samples. Our project design typically calls for collecting a shallow and deep soil sample from each boring (Figure 3). The purpose of collecting samples at a depth of ~3.0 feet is to test for petroleum releases related to surface spills and releases from product lines. The purpose of collecting samples at a depth of ~9.0 feet is to test for petroleum releases related to underground storage tanks. Soil borings were drilled within the proposed R/W and easements along Statesville Road.

A track-mounted Geoprobe rig was used to drill nine soil borings. The texture and type of soil material in the Geoprobe cores was described and recorded. A new pair of Nitrile gloves was worn while collecting each soil sample. A representative portion of each soil sample was placed in a zip lock bag and allowed to rest for a period of time to allow volatile vapors to accumulate in the headspace of the bag. A calibrated PhoCheck Tiger Photoionization Detector (PID) was used to screen the headspace in each bag and the concentration of volatile petroleum vapors was measured and recorded (Table 1). Table 1 lists the boring data including sample number, depth, PID reading, lithology, and type of soil material.

The soil samples were collected in the field, placed in laboratory provided sample jars with Terra-Core samplers and shipped on ice to REDLab, LLC in Wilmington, NC for laboratory analyses.

REDLab analyzed the soil samples for petroleum constituents with the Ultra-Violet Fluorescence (UVF) Method using a QED HC-1 analyzer. The analytical results are reported as Gasoline Range Organics (GRO), Diesel Range Organics (DRO) and Total Petroleum Hydrocarbons (TPH). REDLab provides a hydrocarbon fingerprint spectrum with the sample results. This spectrum is used for a tentative identification of the type of hydrocarbon detected by the analytical method. The hydrocarbon fingerprint is interpreted by REDLab using a library search of spectra for known hydrocarbon types and concentrations. The laboratory reports and fingerprint spectra are included in Appendix B.

2.4 Plate 1 – Photographs of Parcel #018



Photo 1. Collecting GPR data in Grid 1.



Photo 2. Checking Grid 1 for magnetic anomalies with the Schonstedt.

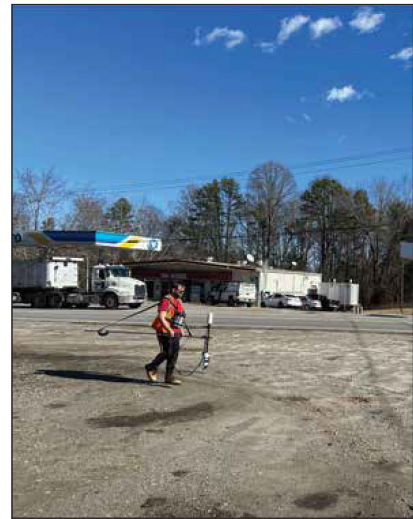


Photo 3. Collecting magnetometer data in Grid 2.



Photo 4. Carolina Soil Investigations drilling boring B-1.



Photo 5. Describing soil cores.

2.5 Plate 2 – Photographs of Parcel #018



Photo 1. AST on the south side of the building (not within R/W).



Photo 2. Drum and bucket with unknown contents (north side).



Photo 3. Example of surface staining at the property.



Photo 4. Another example of surface staining.

3.0 Results of Investigation

Parcel #018 is vacant but recently operated as an Automotive Repair Shop. The property does not appear on other NCDEQ Databases or Incident Maps. An AST likely used for heating the building was located on the south side of the building outside of the proposed R/W and easements (photo 1 in Plate 2). A 55 gallon plastic drum and a bucket with unknown contents are on the north side of the property straddling the proposed R/W (photo 2 in Plate 2). Soil staining related to leaking vehicles was observed across much of the property within the proposed R/W and easements (photos 3 and 4 in Plate 2).

SAPC personnel made a pedestrian reconnaissance of the property during a site visit on December 19, 2022. No evidence of a UST system was observed on the property within the existing or proposed R/W or the proposed easements. The site had been observed previously during the completion of work at other parcels in the area but was covered by junk cars at those times. Therefore, the ground surface could not be sufficiently surveyed until the removal of all the cars sometime in late 2022. It is our understanding that the owner of the property intends to lease the building out to a new tenant in the coming months.

3.1 Geophysical Surveys

Two grids of magnetometer data were collected along the eastern side of the property (Figure 5). An area of higher magnetic readings in the southeastern part of Grid 2 is related to a storm drain cover. A small magnetic anomaly in the southwest corner of Grid 3 is likely related to a car part buried just under the ground surface or possibly to the PDE marker in this location.

Magnetometer data was also collected along two transects. Transect 1 and 2 extend along eastern edge of the property along Statesville Road. The magnetometer survey did not detect elevated magnetic readings related to USTs. The Schonstedt Magnetic Locator was also used to confirm that magnetic anomalies related to USTs were not present along the road.

The shallow GPR depth slice (0.2-0.5 feet) for Grid 1 shows a few amorphous areas of medium-to-high amplitude reflections dispersed throughout a primarily reflection free area (Figure 6). The size and shape of these reflections are not consistent with USTs, other infrastructure, or a backfilled excavation of a UST pit.

The intermediate GPR depth slice (1.8-2.1 feet) for Grid 1 is very similar to the shallow GPR depth slice (Figure 7). The medium amplitude reflection that was present on the north side of the grid is no longer present and the medium-to-high amplitude amorphous reflection in the central portion of the grid is slightly larger. Protruding from this anomaly in the central portion of the grid is a linear medium-to-high amplitude reflection that is most likely a buried drainpipe. It appears to be aligned with the storm drain near the southeast corner of the grid. Otherwise, the size and shape of these reflections are not consistent with USTs or infrastructure related to a UST system.

The deep GPR depth slice (3.8 to 4.1 feet) for Grid 1 is very similar to the shallow and intermediate GPR depth slice (Figure 8). The medium-to-high amplitude amorphous reflection in the central portion of the grid is slightly larger and encompasses most of the southern portion of the grid. The northern side and eastern edges of the grid appear primarily reflection free. The size and shape of the reflections present are not consistent with USTs or infrastructure related to a UST system.

3.2 Soil Borings, Sampling and Laboratory Analysis

The soil at Parcel #018 consists entirely of fill material (Table 1). The fill material is primarily silt loam and silty sand. Several samples had small amounts of gravel within silty sand. Groundwater was not encountered at this site. A soil sample was collected from the shallow and deep portions of the Geoprobe cores at each boring. Two additional samples were collected from shallow cores (B-2 and B-9) where stained soil was present. The PID did not detect petroleum

vapors in any of the Geoprobe cores (Table 1). Nine borings were drilled, and 20 soil samples were collected. Fourteen of the soil samples collected were analyzed for TPH, GRO, and DRO (Table B-3).

Boring B-1 was drilled within the PDE. Soil borings B-2, B-8 and B-9 were drilled in the E. Borings B-3 through B-7 were drilled on the east side of the property within the proposed R/W while avoiding existing utilities. Every sample that was analyzed contained minimal amounts of petroleum constituents. This is likely due to petroleum that has leaked from vehicles at the property over the years. Petroleum constituents were not detected above NCDEQ UST Action Levels in any of the soil samples collected at Parcel #018 (Table B-3 and Figure 9).

3.3 Conclusions

Parcel #018 is currently vacant, but most recently operated as an automotive repair facility. The geophysical surveys did not image anomalies consistent with USTs or infrastructure related to a former UST system. Petroleum constituents were not detected above the NCDEQ Action Levels in any soil samples collected at Parcel #018. Additionally, there was no observed evidence of existing or previous UST systems at this property.

4.0 Recommendations

Seramur & Associates does not recommend any further assessment work for Parcel #018.

Appendix A

Tables and Figures

Table 1. Soil Boring Data - Parcel #018 - AB Holdings, LLC Property

Boring No.	Depth (ft)	Lithology	Soil Type	Soil Sample	PID ppm	Comments
B-1	0.0 to 5.0	Silt loam	Fill	S-1	0.0	Sample at 3.0 feet.
B-1	5.0 to 8.5	Silt loam	Fill	N/A	N/A	
B-1	8.5 to 10.0	Silty sand	Fill	S-2	0.0	Sample at 9.0 feet.
B-2	5.0 to 10.0	Sandy Silt	Fill	N/A	N/A	
B-2	0.0 to 1.0	Silty sand	Fill	S-3	0.0	Sample at 1.0 foot. Stained soil at 1.0 foot.
B-2	1.0 to 5.0	Silt loam	Fill	S-4	0.0	Sample at 2.5 feet.
B-2	5.0 to 10.0	Silt loam	Fill	S-5	0.0	Sample at 9.0 feet.
B-3	0.0 to 3.25	Silt loam	Fill	S-6	0.0	Sample at 2.5 feet.
B-3	3.25 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-3	5.0 to 8.0	Silt loam	Fill	S-7	0.0	Sample at 8.0 feet.
B-3	8.0 to 10.0	N/A	N/A	N/A	N/A	No recovery.
B-4	0.0 to 1.25	Silty sand	Fill	N/A	N/A	Gravel from 0.0 to 0.5 feet.
B-4	1.25 to 3.25	Silt loam	Fill	S-8	0.0	Sample at 3.0 feet.
B-4	3.25 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-4	5.0 to 10.0	Silt loam	Fill	S-9	0.0	Sample at 9.0 feet.
B-5	0.0 to 1.5	Silty sand w/ gravel	Fill	N/A	N/A	
B-5	1.5 to 3.25	Silt loam	Fill	S-10	0.0	Sample at 3.0 feet.
B-5	3.25 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-5	5.0 to 7.0	Silt loam	Fill	S-11	0.0	Sample at 7.0 feet.
B-5	7.0 to 10.0	N/A	N/A	N/A	N/A	No recovery.
B-6	0.0 to 1.5	Silty sand w/ gravel	Fill	N/A	N/A	
B-6	1.5 to 5.0	Silt loam	Fill	S-12	0.0	Sample at 3.0 feet.
B-6	5.0 to 10.0	Silt loam	Fill	S-13	0.0	Sample at 9.0 feet.
B-7	0.0 to 1.5	Silty sand w/ gravel	Fill	S-14	0.0	Sample at 1.5 feet.
B-7	1.5 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-7	5.0 to 10.0	Silt loam	Fill	S-15	0.0	Sample at 9.0 feet.
B-8	0.0 to 1.25	Silt loam w/ gravel	Fill	N/A	N/A	
B-8	1.25 to 3.0	Silt loam	Fill	S-16	0.0	Sample at 2.5 feet.
B-8	3.0 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-8	5.0 to 10.0	Silt loam	Fill	S-17	0.0	Sample at 9.0 feet.
B-9	0.0 to 1.25	Silty sand	Fill	S-18	0.0	Sample at 0.5 feet. Stained soil.
B-9	1.25 to 5.0	Silt loam	Fill	S-19	0.0	Sample at 3.0 feet.
B-9	5.0 to 10.0	Silt loam	Fill	S-20	0.0	Sample at 9.0 feet.

Table B-3: Summary of Soil Sampling Results

Revision Date: 01/11/23

Site Name: Parcel #018

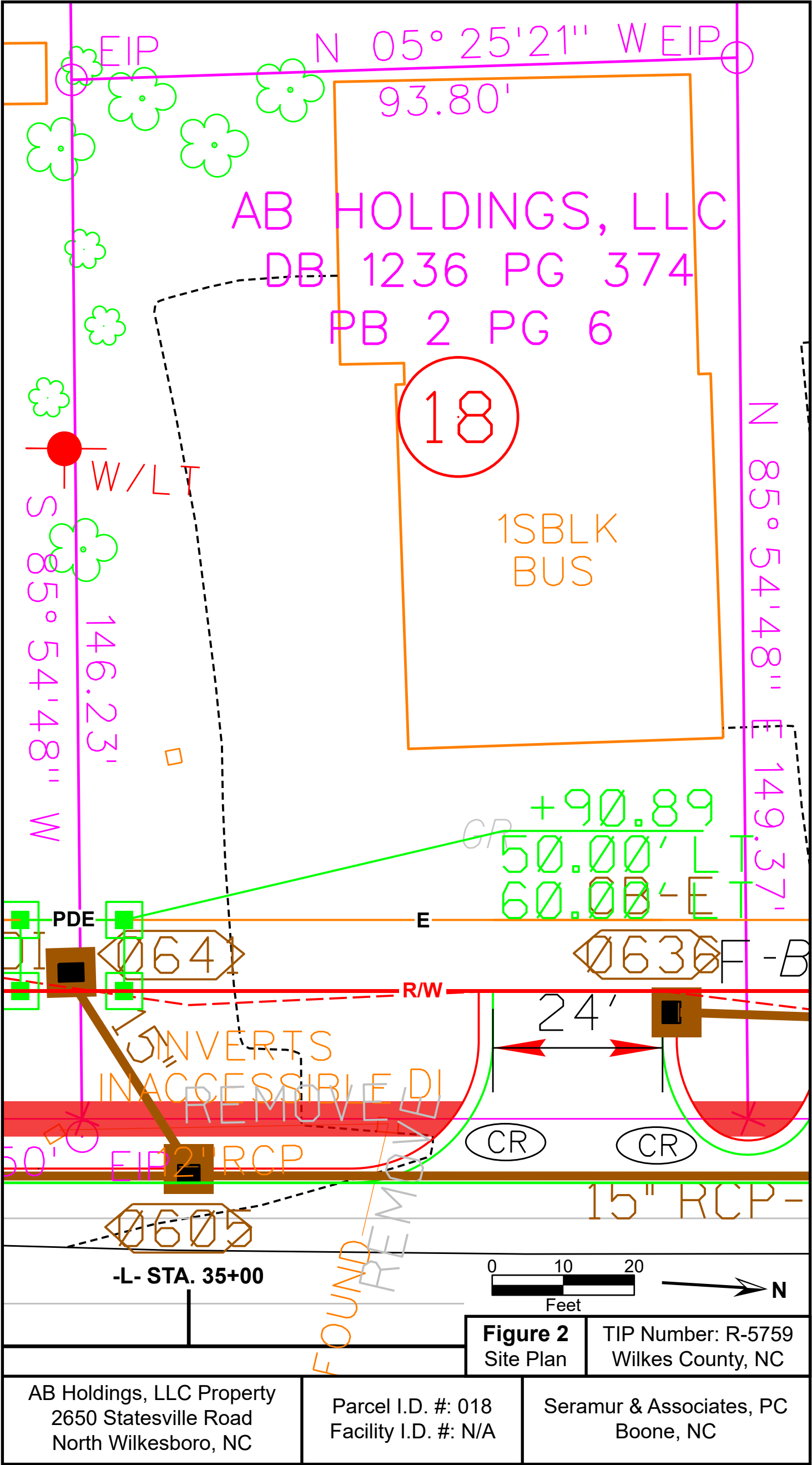
Analytical Method (e.g., VOC by EPA 8260) →					UVF	UVF	UVF
Contaminant of Concern →					GRO (mg/kg)	DRO (mg/kg)	TPH (mg/kg)
Sample ID	Date Collected (mm/dd/yy)	Source Area	Sample Depth (ft. BGS)	Incident Phase			
S-1	12/20/22	B-1	3.0	Phase II	2.6	12.3	14.9
S-2	12/20/22	B-1	9.0	Phase II	2.4	14.2	16.6
S-4	12/20/22	B-2	2.5	Phase II	2.8	10.2	13.0
S-6	12/20/22	B-3	2.5	Phase II	2.0	10.6	12.6
S-7	12/20/22	B-3	8.0	Phase II	3.3	13.1	16.4
S-8	12/20/22	B-4	3.0	Phase II	<0.51	8.5	8.5
S-10	12/20/22	B-5	3.0	Phase II	3.8	12.2	16.0
S-11	12/20/22	B-5	7.0	Phase II	3.0	14.1	17.1
S-12	12/20/22	B-6	3.0	Phase II	2.8	11.9	14.7
S-13	12/20/22	B-6	9.0	Phase II	2.1	13.8	15.9
S-14	12/20/22	B-7	1.5	Phase II	3.1	12.1	15.2
S-15	12/20/22	B-7	9.0	Phase II	3.8	12.9	16.7
S-16	12/20/22	B-8	2.5	Phase II	2.7	10.9	13.6
S-19	12/20/22	B-9	3.0	Phase II	2.4	14.1	16.5
NC DEQ Action Level (mg/kg)					50	100	N/A

ft. BGS = feet below ground surface

mg/kg = milligrams per kilogram



Figure 1 Site Location Map Source: U.S.G.S. The National Map	TIP Number: R-5759 Wilkes County, NC	AB Holdings, LLC Property 2650 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 018 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	0 400 800 Feet N
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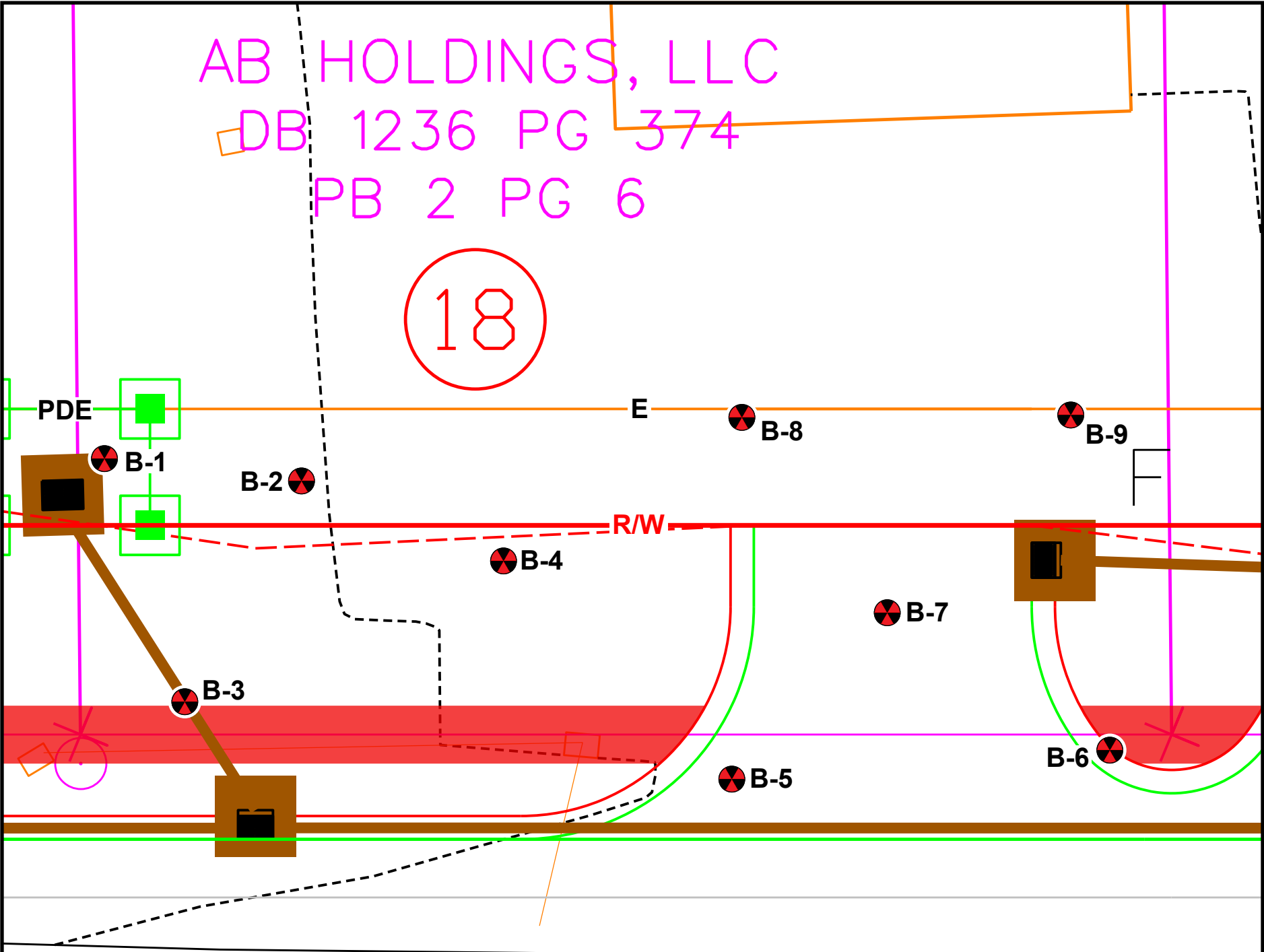
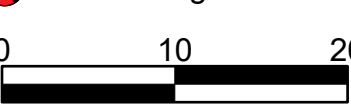
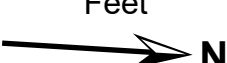


Figure 3 Site Plan with Soil Boring Locations	-L- STA. 35+00			 - Soil Boring Locations
	 0 10 20 Feet			 N
TIP Number: R-5759 Wilkes County, NC	AB Holdings, LLC Property 2650 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 018 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	

AB HOLDINGS, LLC

DB 1236 PG 374

PB 2 PG 6

18

Grid 1

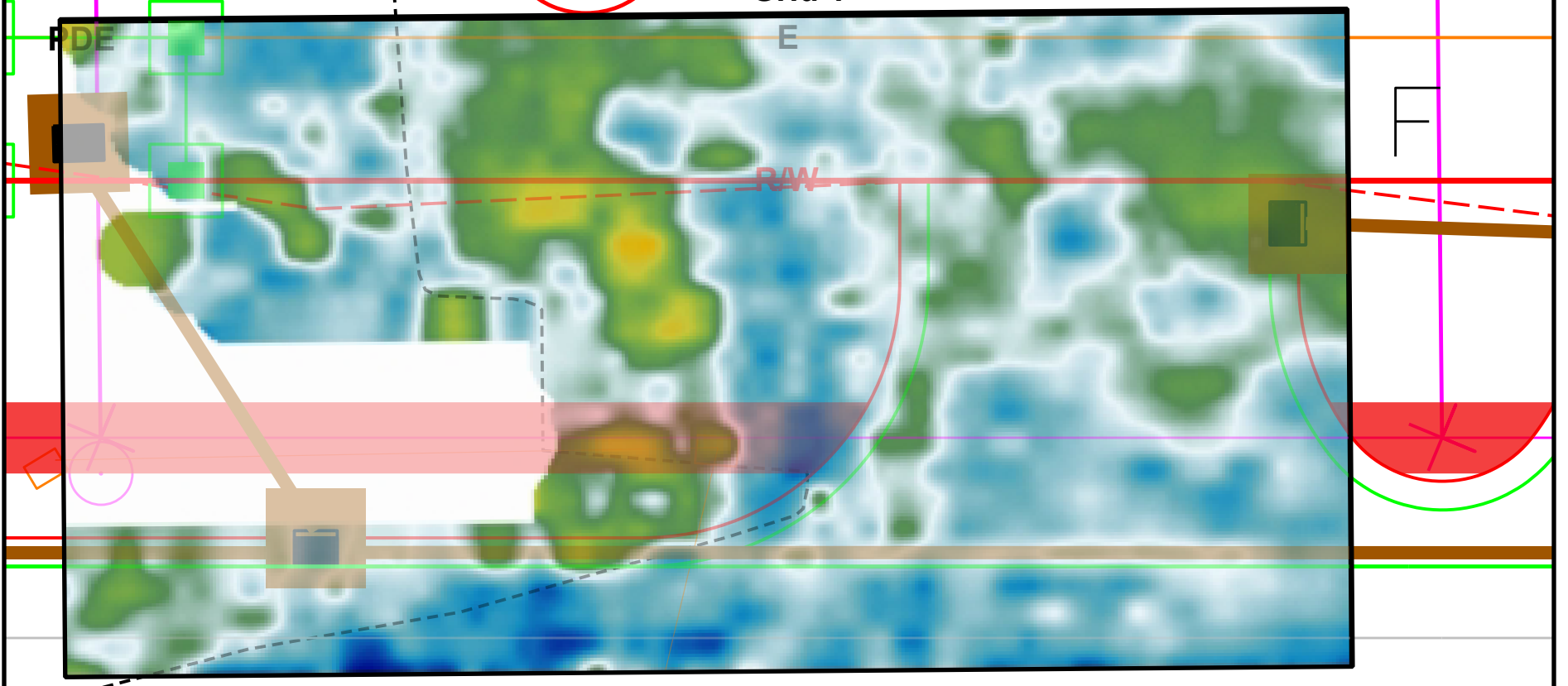
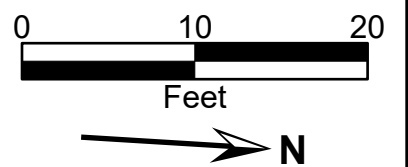


Figure 6
Shallow GPR
Depth Slice
(0.2 - 0.5 feet)

-L- STA. 35+00



TIP Number: R-5759
Wilkes County, NC

AB Holdings, LLC Property
2650 Statesville Road
North Wilkesboro, NC

Parcel I.D. #: 018
Facility I.D. #: N/A

Seramur & Associates, PC
Boone, NC

Appendix B
Laboratory Reports



Hydrocarbon Analysis Results

Client: SERAMUR & ASSOCIATES, PC
Address: 165 KNOLL DR.
 BOONE, NC 28607

Samples taken Tuesday, December 20, 2022
Samples extracted Tuesday, December 20, 2022
Samples analysed Thursday, December 22, 2022

Contact: KEITH SERAMAR & JOEY ANDERSON

Operator CLAIRE NAKAMURA

Project: NCDOT R-5759 PARCEL 018

													U04049
Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	S-1	20.0	<0.5	2.6	12.3	14.9	8.1	0.43	<0.02	33	59.1	7.9	Deg Fuel 81.5%,(FCM)
s	S-2	20.8	<0.52	2.4	14.2	16.6	9.8	0.52	<0.021	27.1	64.8	8.1	Deg Fuel 80.2%,(FCM)
s	S-4	20.6	<0.52	2.8	10.2	13	7.7	0.4	<0.021	37.6	56.8	5.6	Deg Fuel 62.6%,(FCM)
s	S-6	19.4	<0.49	2	10.6	12.6	7.4	0.39	<0.019	29.9	62.8	7.3	Deg Fuel 78.7%,(FCM)
s	S-7	18.7	<0.47	3.3	13.1	16.4	9.3	0.49	<0.019	34.8	58.4	6.8	Deg Fuel 79.2%,(FCM)
s	S-8	20.5	<0.51	<0.51	8.5	8.5	6.4	0.33	<0.02	0	90.9	9.1	Deg Fuel 62.5%,(FCM)
s	S-10	19.8	<0.5	3.8	12.2	16	9.1	0.48	<0.02	39.9	54.4	5.7	Deg Fuel 65.9%,(FCM)
s	S-11	19.8	<0.5	3	14.1	17.1	9.9	0.53	<0.02	31.6	61.2	7.2	Deg Fuel 79.5%,(FCM)
s	S-12	20.3	<0.51	2.8	11.9	14.7	9.1	0.47	<0.02	33.2	60.8	6	Deg Fuel 64.3%,(FCM)
s	S-13	20.0	<0.5	2.1	13.8	15.9	9.8	0.52	<0.02	24.5	67.7	7.8	Deg Fuel 79.2%,(FCM)
	Initial Calibrator QC check			OK		Final FCM QC Check				OK		111.2 %	

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library (SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present



Hydrocarbon Analysis Results

Client: SERAMUR & ASSOCIATES, PC
Address: 165 KNOLL DR.
 BOONE, NC 28607

Samples taken Tuesday, December 20, 2022
Samples extracted Tuesday, December 20, 2022
Samples analysed Thursday, December 22, 2022

Contact: KEITH SERAMAR & JOEY ANDERSON

Operator CLAIRE NAKAMURA

Project: NCDOT R-5759 PARCEL 018

													U04049
Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	S-14	19.0	<0.47	3.1	12.1	15.2	9.1	0.48	<0.019	34.8	59.2	6	Deg Fuel 65.3%,(FCM)
s	S-15	19.1	<0.48	3.8	12.9	16.7	9.4	0.5	<0.019	38.2	55.7	6	Deg Fuel 77.9%,(FCM)
s	S-16	21.3	<0.53	2.7	10.9	13.6	8.9	0.46	<0.021	34.2	60.4	5.3	Deg Fuel 60%,(FCM)
s	S-19	19.1	<0.48	2.4	14.1	16.5	10.6	0.56	<0.019	25.7	67.4	6.9	Deg Fuel 77.2%,(FCM)
	Initial Calibrator QC check			OK		Final FCM QC Check				OK		110.1 %	

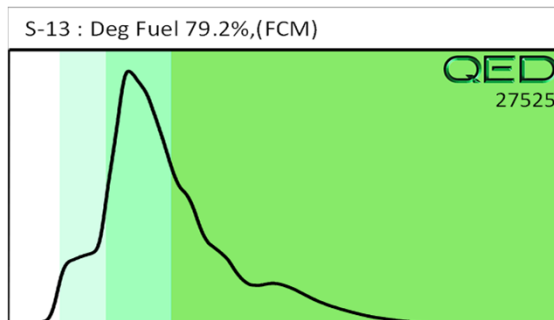
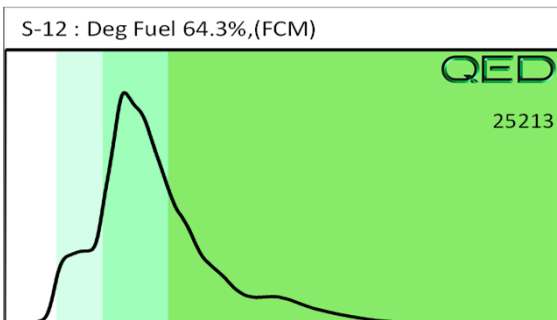
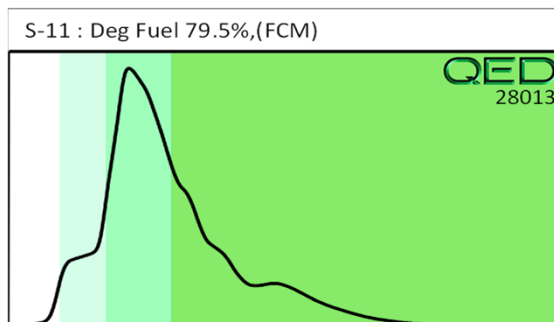
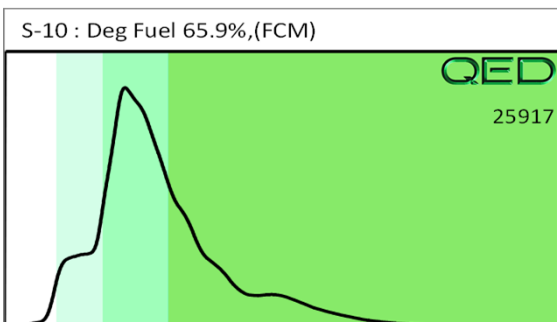
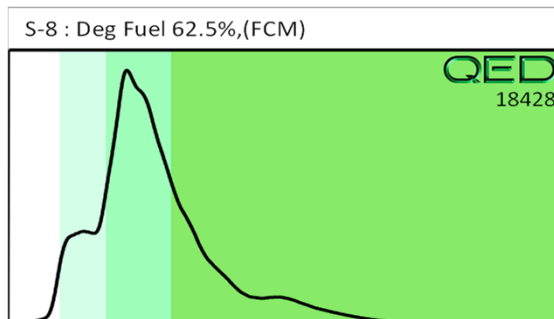
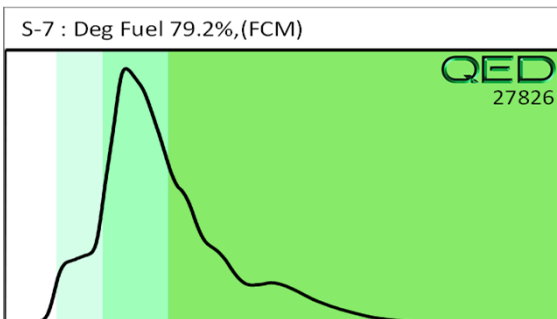
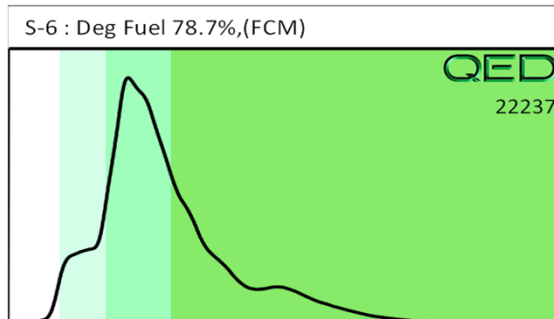
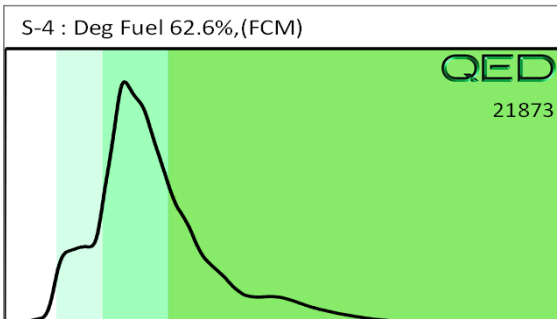
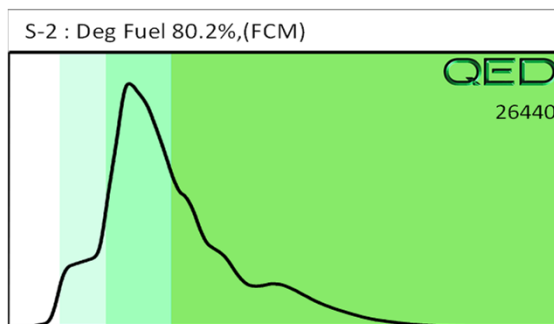
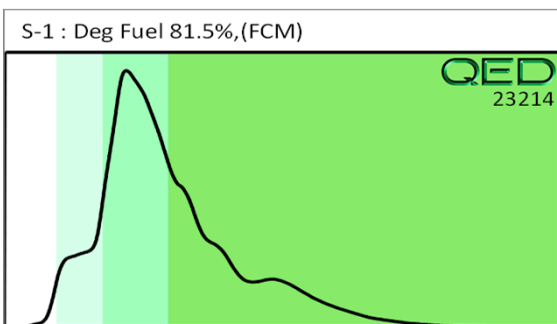
Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library (SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

QED Hydrocarbon Fingerprints

Project: NCDOT R-5759 PARCEL 018

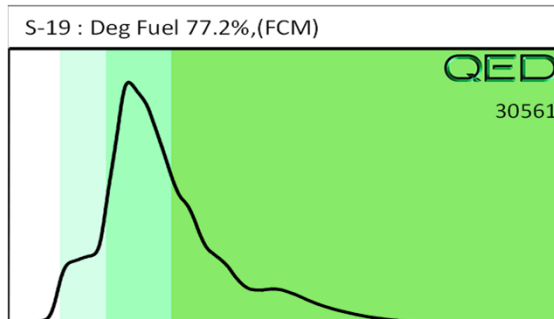
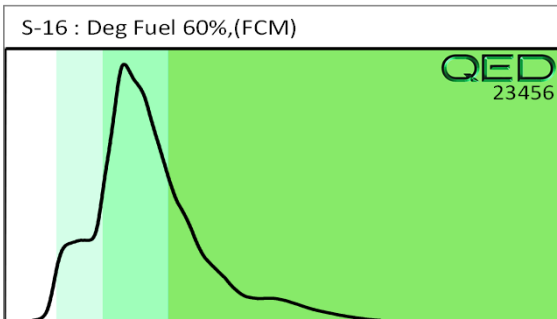
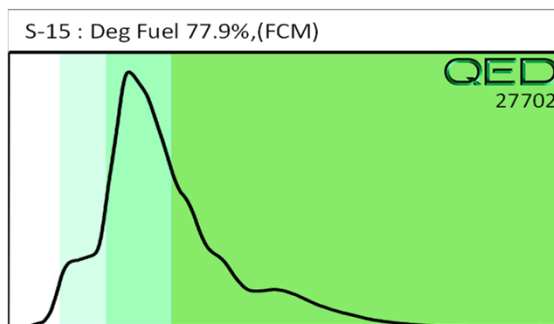
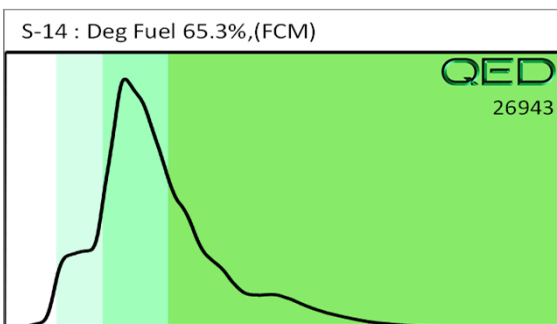
Thursday, December 22, 2022



QED Hydrocarbon Fingerprints

Project: NCDOT R-5759 PARCEL 018

Thursday, December 22, 2022



Client Name:	Seramur & Associates, PC
Address:	165 Knoll Drive Boone, NC 28607
Contact:	Keith Seramur/Joey Anderson
Project Ref.:	NCDOT R-5759 Parcel 018
Email:	seramur@icloud.com jbanderson4593@gmail.com
Phone #:	(828) 264-0289
Collected by:	Joey Anderson & Brooke Steenwyk



RED Lab, LLC
105 Portwatch Way
Suite F
Wilmington, NC 28412

Each UVF sample will be analyzed for total BTEX, GRO, DRO, TPH, PAH total aromatics and BaP. Standard GC Analyses are for BTEX and Chlorinated Solvents: VC, 1,1 DCE, 1,2 cis DCE, 1,2 trans DCE, TCE, and PCE. Specify target analytes in the space provided below.

CHAIN OF CUSTODY AND ANALYTICAL REQUEST FORM

Sample Collection Date/Time	TAT Requested		Analysis Type		Initials	Sample ID	Total Wt.	Tare Wt.	Sample Wt.
	24 Hour	48 Hour	UVF	GC					
12/20/22 14:02		X	X		JBA	S-1	53.5	40.5	13.0
12/20/22 14:03		X	X		JBA	S-2	53.1	40.6	12.5
12/20/22 14:07		X	X		JBA	S-4	53.2	40.6	12.6
12/20/22 14:08		X	X		JBA	S-6	53.8	40.4	13.4
12/20/22 14:10		X	X		JBA	S-7	54.4	40.5	13.9
12/20/22 14:12		X	X		JBA	S-8	53.3	40.6	12.7
12/20/22 14:14		X	X		JBA	S-10	53.6	40.5	13.1
12/20/22 14:15		X	X		JBA	S-11	53.7	40.6	13.1
12/20/22 14:16		X	X		JBA	S-12	53.3	40.5	12.8
12/20/22 14:18		X	X		JBA	S-13	53.5	40.5	13.0
12/20/22 14:20		X	X		JBA	S-14	54.2	40.5	13.7
12/20/22 14:22		X	X		JBA	S-15	54.2	40.6	13.6
12/20/22 14:23		X	X		JBA	S-16	52.9	40.7	12.2
12/20/22 14:25		X	X		JBA	S-19	54.2	40.6	13.6

COMMENTS/REQUESTS:	TARGET GC/UVF ANALYTES:
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Relinquished by	12/20/22	Accepted by	Date/Time	RED Lab USE ONLY 14
	15:15		12/21/22	
Relinquished by		Accepted by	Date/Time	
				Ref. No