

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

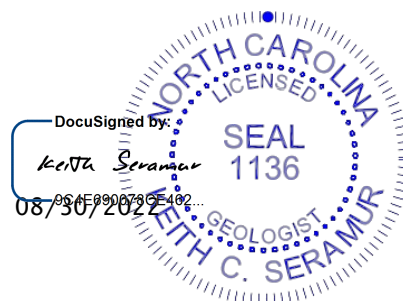
Raleigh, NC 27699-1589

Prepared By:

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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:

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

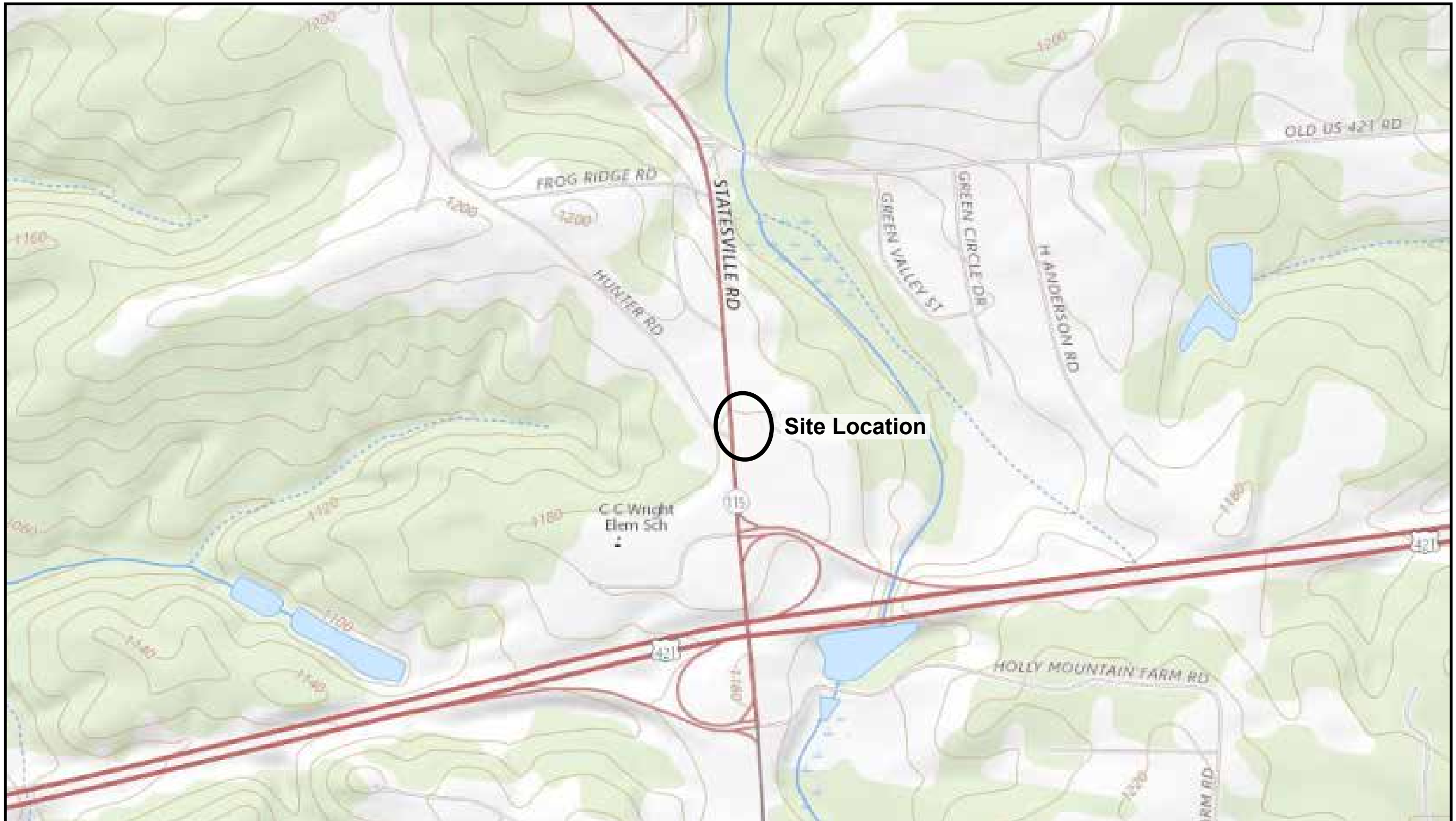
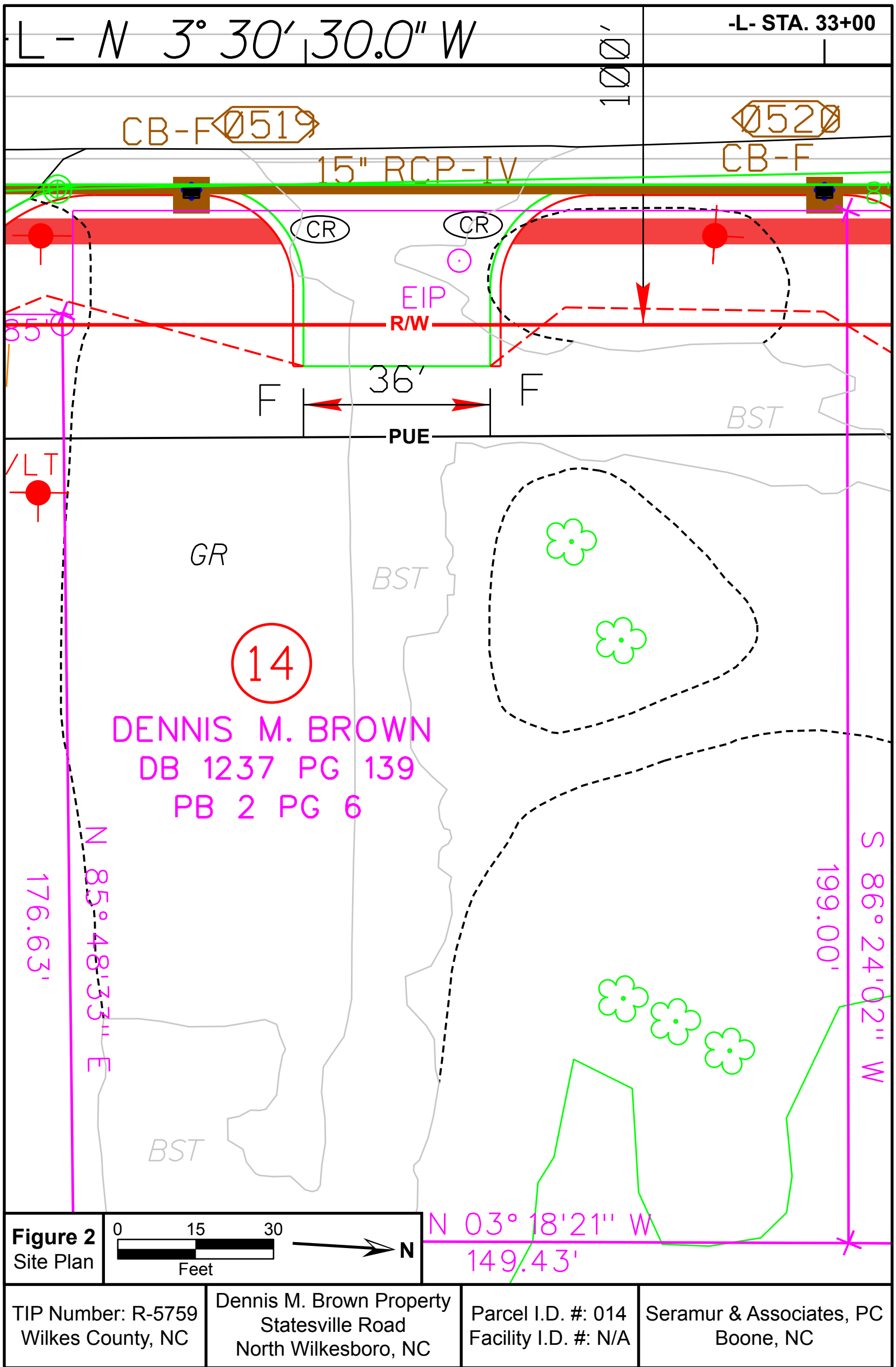


Figure 1 Site Location Map Source: U.S.G.S. The National Map	TIP Number: R-5759 Wilkes County, NC	Dennis M. Brown Property Statesville Road North Wilkesboro, NC	Parcel I.D. #: 014 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	0 400 800 Feet N
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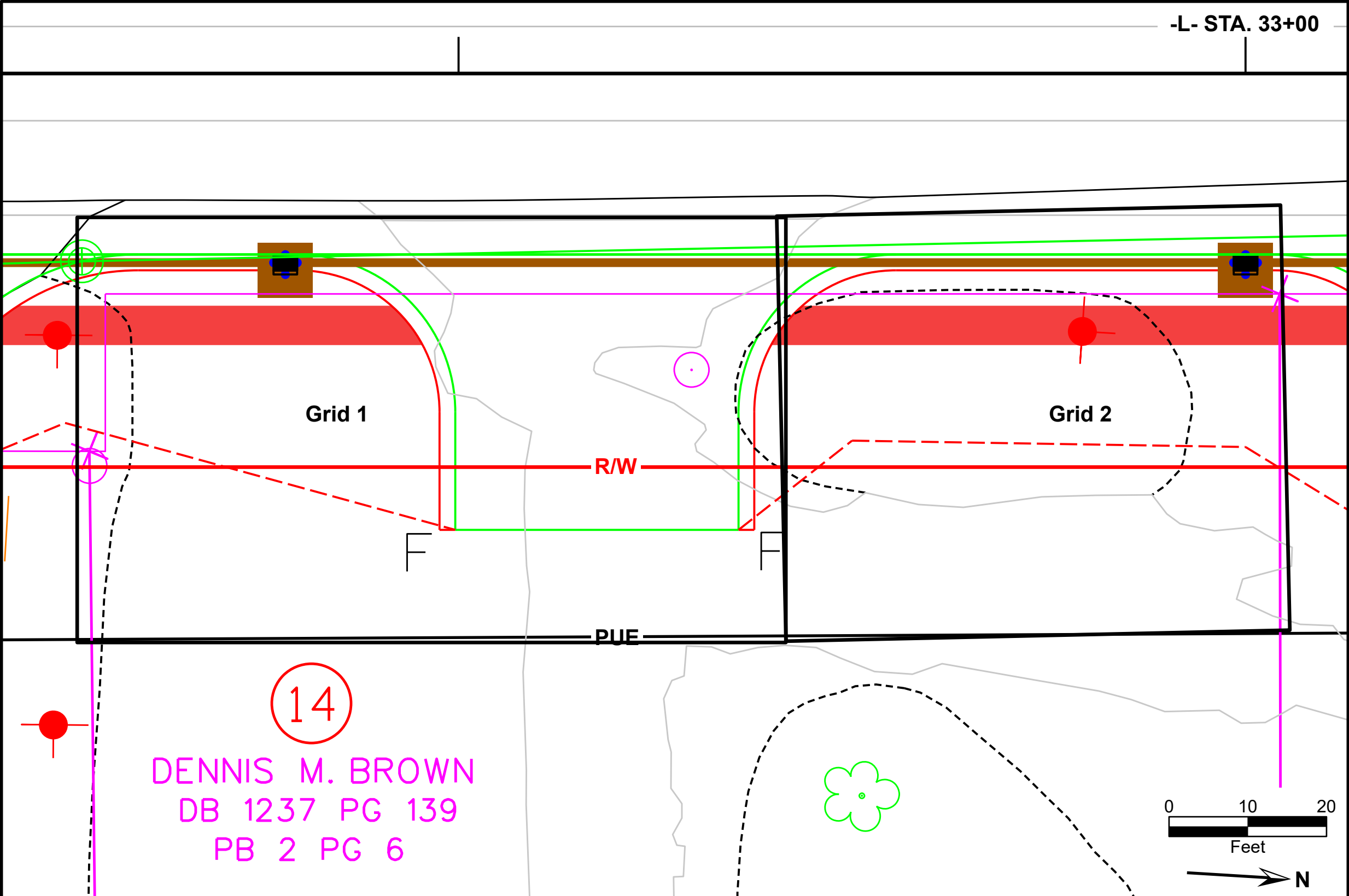
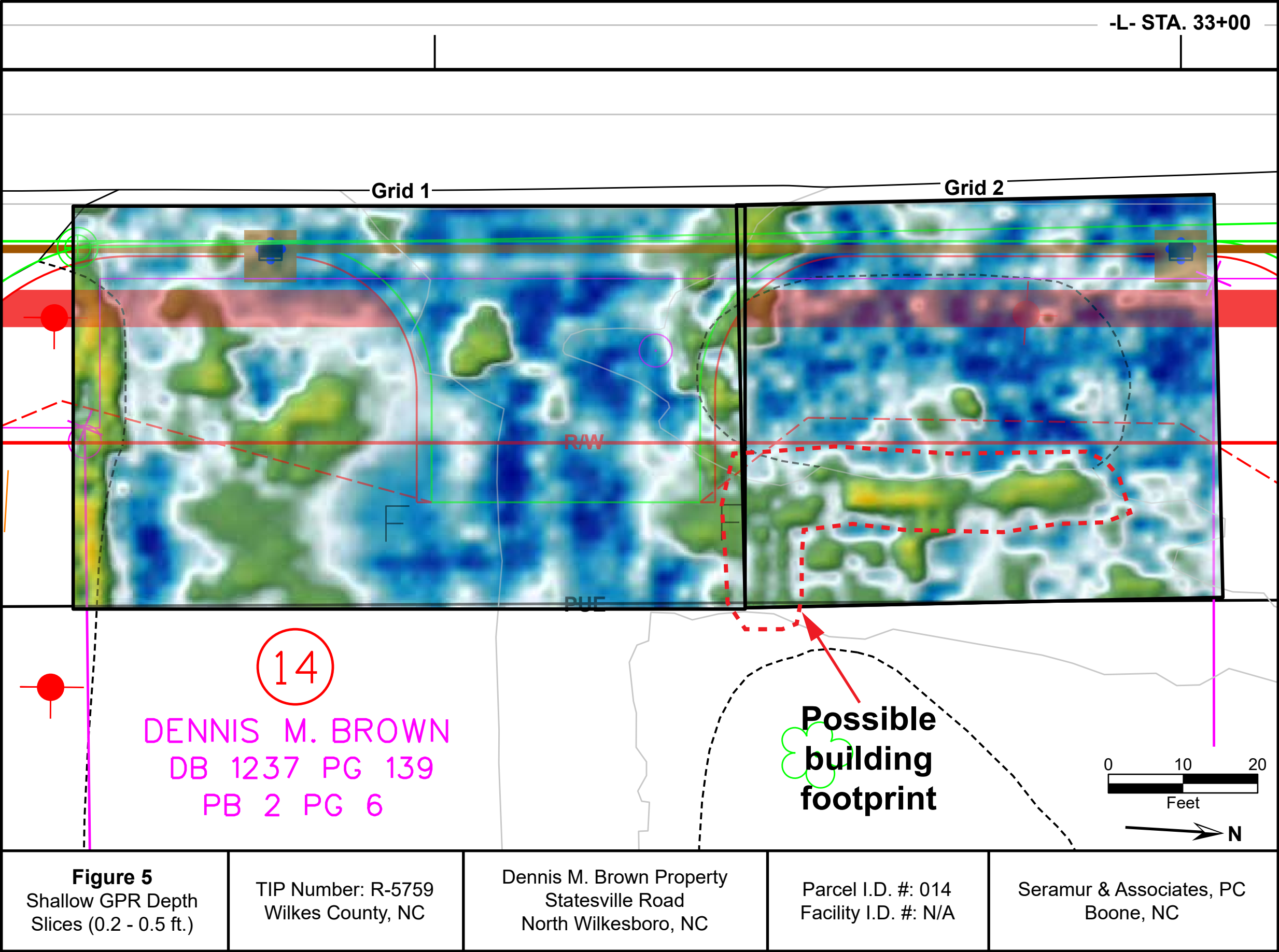


Figure 3 Site Plan with Geophysical Grid Locations	TIP Number: R-5759 Wilkes County, NC	Dennis M. Brown Property Statesville Road North Wilkesboro, NC	Parcel I.D. #: 014 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC
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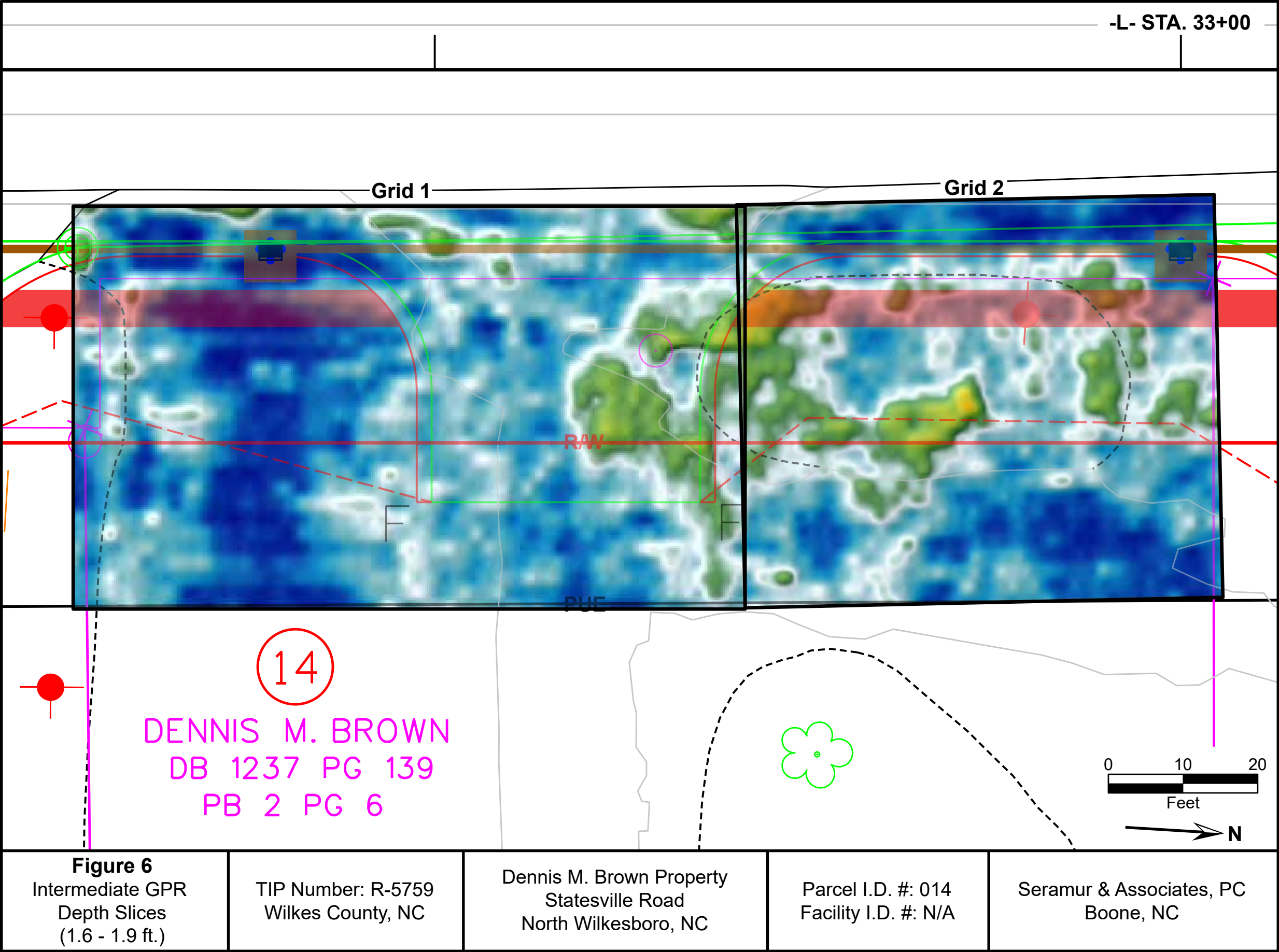


Figure 6
Intermediate GPR
Depth Slices
(1.6 - 1.9 ft.)

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