



March 18, 2022

Mr. Gordon Box, PG
Geotechnical Engineering Unit
North Carolina Department of Transportation
1020 Birch Ridge Drive
Raleigh, NC 27610

RE: PHASE II INVESTIGATION OF PARCEL 99
Julius Conrad Frazier
2301 Sandy Ridge Road, High Point, NC 27265
ESP Project No. IS14.314

TIP Number: U-4758
WBS Number: 40251.1.1
County: GUILFORD
Description: Johnson St – Sandy Ridge Road from Skeet Club Road to I-40

Dear Mr. Box:

ESP Associates, Inc. (ESP) is pleased to submit this report on our GeoEnvironmental Phase II Investigation of the subject parcel. This work was performed in accordance with your Request for Proposal dated December 7, 2021 and our Cost Proposal dated December 13, 2021.

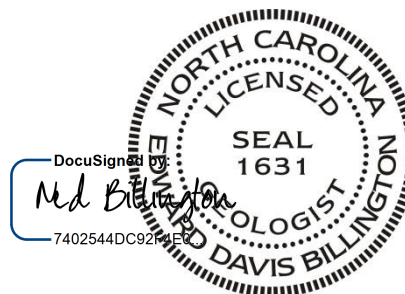
We appreciate the opportunity to assist you during this phase of the project. If you should have any questions concerning this report, or if we may be of further assistance, please contact us.

Sincerely,

ESP Associates, Inc.

A handwritten signature in blue ink, appearing to read "Edward D. Billington".

Edward D. Billington, PG
Senior Geologist/Geophysicist
EDB/CRP/CJW



not considered Final unless all signatures are completed

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1.0 INTRODUCTION

The North Carolina Department of Transportation (NCDOT) is planning to improve Johnson Street – Sandy Ridge Road from Skeet Club Road to I-40 in High Point. The NCDOT requested that ESP Associates, Inc. (ESP) perform a Phase II geoenvironmental investigation of the proposed right-of-way (ROW), proposed temporary construction easement, proposed permanent utility easement (PUE), proposed permanent drainage easement (PDE), and the proposed permanent drainage/utility easement (DUE) (collectively, easements) for Parcel 99 to locate abandoned underground storage tanks (USTs) and buried drums, sample soil, and delineate potential contaminated soil. Parcel 99 is located at 2301 Sandy Ridge Road in High Point on the north side of the intersection with Sandy Camp Road (Figure 1).

2.0 HISTORY

2.1 Phase I Report

According to the *2015 Johnson Street – Sandy Ridge Road Environmental Report for Planning* (Phase I Report) for U-4758, Parcel 99 may have been a former gas station where a “suspect groundwater monitoring well” and a possible former fuel dispenser were observed. No USTs were observed on site. There is a single-story building with an adjacent barn to the northeast. This site was anticipated to present low geoenvironmental impacts to the project.

2.2 Background Research

We checked the following online sources with the results summarized below:

- North Carolina Department of Environmental Quality (NCDEQ) Division of Waste Management Site Locator Tool
 - Nothing found for this site.
- NCDEQ UST Databases
 - Nothing found for this site.
- Guilford County GIS
 - Property owner is listed as 350 South Land Holdings, LLC (formerly Julius Conrad Frazier).

3.0 SITE OBSERVATIONS

During our February and March 2022 field work, the site contained an active, one-story building occupied by the business Shrimp Connection (Figures 2 and 3). The ground surface in the study area was covered by grass, gravel, debris, and leaf litter in the wooded areas. There was a concrete pad located on the southwest corner of the building which appeared to be a former fuel dispenser location. A possible heating oil line that was disconnected and continued underground was seen on the west side of the house. A discarded, apparently empty above-ground storage tank (AST)

was located in the wooded area approximately 200 feet north of the barn. No monitoring wells were observed on the site.

4.0 METHODS

A portion of the study area was cleared by a subcontractor, HPC, on February 7, 2022 using a rubber-tracked bushhog equipped with a mulching head. ESP performed a geophysical study of the area designated by the NCDOT on February 10 and March 1, 2, and 4, 2022. The geophysical investigation area was approximately 2.0 acres in size and encompassed the accessible areas of the parcel. We performed direct-push drilling and sampling of subsurface soils to depths of 10 feet on March 8, 2022. A photoionization detector (PID) was used to screen subsurface soils in the field and select soil samples for laboratory analysis. Groundwater was encountered during the drilling investigation at one boring (B99-11) located by a dry creek.

4.1 Geophysics

ESP performed a metal detector study over the accessible areas of the site using a Geonics EM61 MK2 with a line spacing of approximately three feet followed by ground-penetrating radar (GPR) data collected over selected EM61 anomalies (Figures 4, 5, and 6). Location control was provided in real-time using a differential global positioning system (DGPS).

4.2 Borings

ESP performed direct-push drilling on Parcel 99 using a subcontractor, SAEDACCO of Fort Mill, South Carolina. Fifteen borings were drilled, designated B99-1 through B99-15 (Figure 11). The soil borings were advanced to 10 feet depth below ground surface (bgs) using a hand auger for the first 5 feet and a GeoProbe 54DT drill rig for the second 5 feet. Soil samples were obtained from each boring using the hand auger cuttings and a 5-foot long Macro-Core® tube. Soil cores from the Macro-Core tubes varied in recovery from 36 to 100 percent. The sampling equipment was decontaminated prior to drilling and between borings by the driller by scrubbing the equipment with a Liquinox® detergent solution.

4.3 Soil Sample Protocol

Representative soil samples were taken from the borings at approximate one-foot intervals by the ESP field geologist while wearing nitrile disposable gloves. Each sample was placed in a sealed plastic bag and then kept in a warm area for approximately 10 to 15 minutes prior to measuring volatile organic compound (VOC) levels in the head space with the PID. The maximum PID readings per boring ranged from 0.2 to 4.9 parts per million (ppm) (Table 1).

Thirteen soil samples were selected for ultraviolet fluorescence (UVF) laboratory analysis, as listed in Table 2. For each selected sample, an approximate 10-gram soil sample was collected from the sample bag using a Terra Core™ sampler and placed into a laboratory-supplied 40-

milliliter volatile organic analysis (VOA) vial containing methanol. Once sealed, the vial was labeled with the sample identification number and then shaken vigorously for about one minute. The samples were packed on ice and sent via overnight delivery to RED Lab, LLC (RED Lab), located in Wilmington, North Carolina, following proper chain-of-custody procedures (Appendix C).

RED Lab used a QED Hydrocarbon Analyzer to quantitatively analyze the soil samples using the UVF method for benzene, toluene, ethylbenzene, and xylene (BTEX); gasoline range organics (GRO); diesel range organics (DRO); total petroleum hydrocarbons (TPH); total aromatics; polycyclic aromatic hydrocarbons (PAHs); and benzo(a)pyrene (BaP).

4.4 Groundwater

Groundwater was encountered at a depth of 3.5 feet in Boring B99-11, located by a dry creek (Figure 11). At the instruction of the NCDOT, the groundwater was not sampled, as the PID readings of the site soil samples did not indicate soil contamination.

5.0 RESULTS

5.1 Geophysics

The EM61 early time gate data show the response from both shallow and deeper metallic objects (Figure 4). The differential response reduces the effect of shallow anomalies and emphasizes anomalies from larger and more deeply buried metallic objects, such as USTs (Figures 5 and 6). Our evaluation of the EM61 data indicated several anomalies that could not be attributed to known cultural features. GPR data collected over these anomalies indicated that they were caused buried debris, a culvert, metal siding on the east side of the barn, and 4 probable USTs, designated UST-1 through UST-4. GPR data collected over the 4 probable USTs are shown on Figures 7 and 8, respectively.

UST-1 is located by the northwest corner of the building, UST-2 is located on the west side of the building, and UST-3 and UST-4 are located at the front of the building by the southwest corner. Based on the GPR data, UST-1 is buried approximately 2 feet bgs and has an approximate diameter of 3 feet, a minimum length of 5 feet, and an approximate volume of 300 gallons. Due to obstructions, GPR data could not be collected over the entire length of UST-1. UST-2 is buried approximately 3 feet bgs and has an approximate diameter of 4 feet, an approximate length of 8 feet, and an approximate volume of 750 gallons.

UST-3 and UST-4 are located side-by-side by the southeast corner of the building. UST-3 is offset to the north by approximately 2 feet compared to UST-4. Based on the GPR data, both probable USTs are buried approximately 3 feet bgs and have approximate diameters of 6 feet, approximate lengths of 12 feet, and approximate volumes of 2,500 gallons each. Apparent product lines extend north from the tanks and turn east towards the relic dispenser island.

In the vicinity of UST-3 and UST-4, the Phase I report indicated a probable monitoring well. GPR data collected in the vicinity of the two USTs indicated 2 shallow reflectors about 6 inches bgs. One of these reflectors was excavated and appeared to be a fill port for UST-4 (Figure 3.H).

5.2 Sample Data

The soil sample UVF hydrocarbon analysis results for BTEX, GRO, DRO, and PAHs are presented in Table 2. The RED Lab laboratory report, which also includes results for TPH, total aromatics, and BaP, is provided in Appendix B. Values are provided in mg/kg (ppm).

5.3 Sample Observations

The results of the laboratory testing indicate that BTEX, GRO, PAHs, and BAP were below the laboratory detection limits in the 13 samples tested (Table 2). DRO was detected in 6 samples, with readings below the NCDEQ action level of 100 ppm for DRO (Figure 12).

6.0 CONCLUSIONS

The results of the Phase II investigation of Parcel 99 for NCDOT Project U-4758 indicates the presence of 4 probable USTs within the proposed ROW and easements. DRO was detected in 6 soil samples but below the NCDEQ Action Level of 100 ppm.

6.1 Geophysics

The geophysical data indicated the presence of 4 probable USTs. UST-2, UST-3, and UST-4 are located on the south and west sides of the building within the proposed ROW and UST-1 is located on the north side of the building just outside of the proposed ROW but within the proposed PUE (Figure 11). The probable USTs are buried approximately 2 and 3 feet bgs with estimated volumes ranging from 300 to 2,500 gallons.

6.2 Soil

The results of the Phase II investigation for Parcel 99 of NCDOT Project U-4758 did not indicate soil contamination above the NCDEQ Action Levels for GRO and DRO in the upper 10 feet in the areas sampled. DRO was detected in 6 samples at levels below the NCDEQ Action Level of 100 ppm for DRO (Figure 12).

7.0 RECOMMENDATIONS

ESP recommends that the 4 probable USTs on Parcel 99 that are located within the proposed ROW and easements be removed in accordance with NCDEQ regulations. ESP also recommends that soil removed in the vicinity of the USTs, the product lines, and the dispenser island be screened for petroleum hydrocarbon contamination, properly handled, segregated, and disposed of offsite in accordance with NCDEQ regulations.

8.0 LIMITATIONS

ESP's professional services have been performed, findings obtained, and recommendations prepared in accordance with customary principles and practices in the fields of environmental science and engineering. ESP is not responsible for the independent conclusions, opinions, or recommendations made by others based on the data presented in this report.

The passage of time may result in a change in the environmental characteristics at this site and surrounding properties. ESP does not warrant against future operations or conditions, or against operations or conditions present of a type or at a location not investigated. ESP does not assume responsibility for other environmental issues that may be associated with the subject site.

TABLES

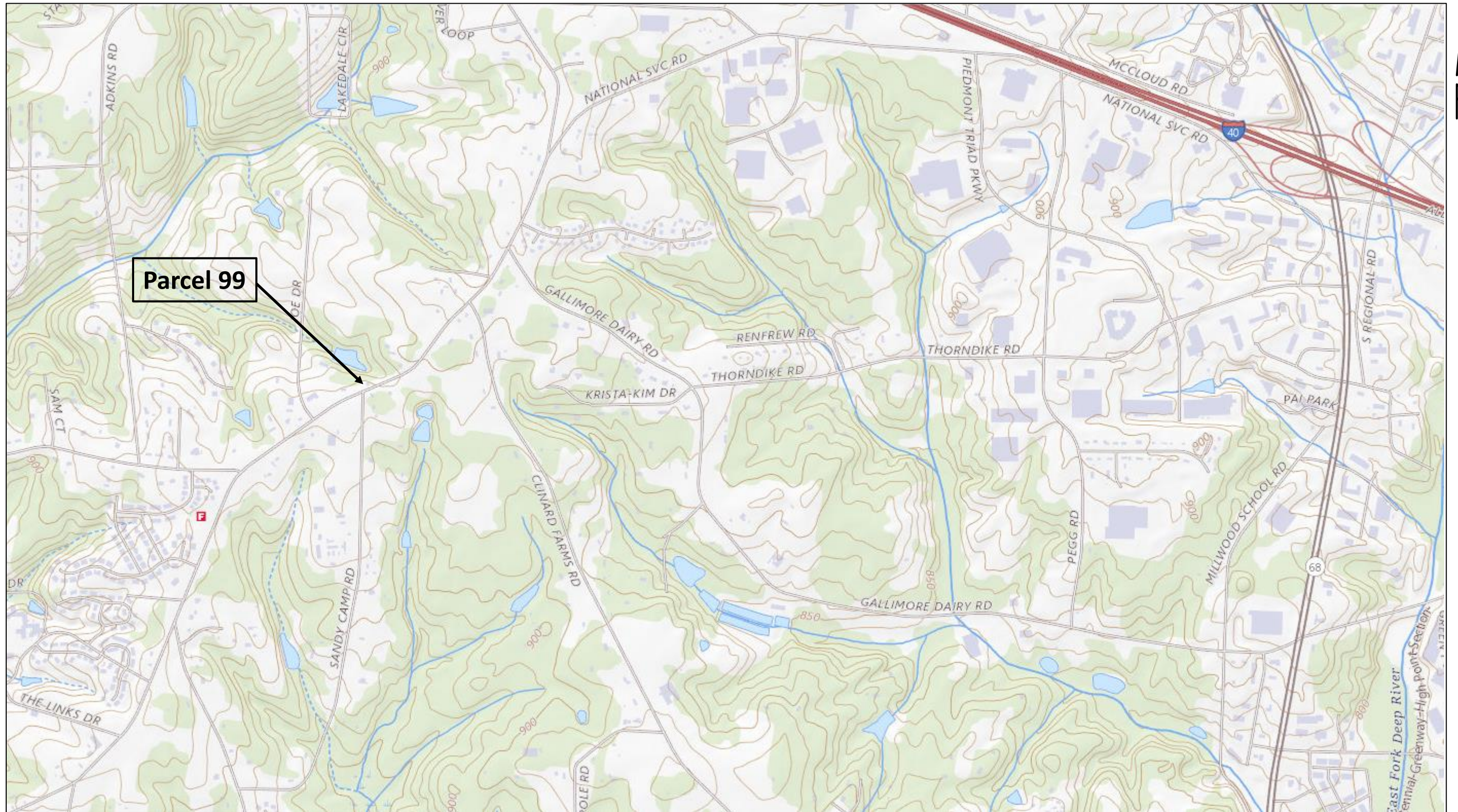
TABLE 1
SOIL SAMPLE PID READINGS

Boring	Sample Depth Range with PID > 10 ppm (feet bgs)	Maximum PID Reading (ppm) and Sample Depth (feet bgs)
B99-1	None	0.2 (7.0 – 7.5)
B99-2	None	0.3 (1.0 – 1.5, 6.0 – 6.5)
B99-3	None	0.3 (1.0 – 1.5, 9.0 – 9.5)
B99-4	None	4.9 (9.0 – 9.5)
B99-5	None	0.7 (9.0 – 9.5)
B99-6	None	0.8 (1.0 – 1.5)
B99-7	None	0.4 (9.0 – 9.5)
B99-8	None	0.6 (2.0 – 2.5)
B99-9	None	0.3 (6.0 – 6.5)
B99-10	None	0.6 (6.0 – 6.5)
B99-11	None	0.5 (8.0 – 8.5)
B99-12	None	0.6 (1.0 – 1.5)
B99-13	None	1.3 (8.0 – 8.5)
B99-14	None	1.0 (1.0 – 1.5)
B99-15	None	1.1 (8.0 – 8.5)

TABLE 2
SOIL SAMPLE UVF RESULTS SUMMARY

Boring	Sample ID (depth in feet bgs)	Date Collected	BTEX (C6-C9) (mg/kg)	GRO (C5-C10) (mg/kg)	DRO (C10-C35) (mg/kg)	PAHs (mg/kg)
B99-2	S-6	3/8/22	<0.39	<0.39	0.96	<0.13
B99-4	S-7	3/8/22	<0.36	<0.36	5.1	<0.12
B99-4	S-9	3/8/22	<0.64	<0.64	10.6	<0.2
B99-5	S-9	3/8/22	<0.54	<0.54	3.5	<0.17
B99-6	S-1	3/8/22	<0.29	<0.29	<0.29	<0.09
B99-6	S-9	3/8/22	<0.25	<0.25	<0.25	<0.08
B99-8	S-2	3/8/22	<0.38	<0.38	<0.38	<0.12
B99-9	S-6	3/8/22	<0.42	<0.42	<0.42	<0.13
B99-10	S-6	3/8/22	<0.42	<0.42	2.5	<0.13
B99-11	S-3	3/8/22	<0.27	<0.27	<0.27	<0.09
B99-12	S-7	3/8/22	<0.38	<0.38	<0.38	<0.12
B99-13	S-8	3/8/22	<0.32	<0.32	<0.32	<0.1
B99-15	S-8	3/8/22	<0.28	<0.28	2.0	<0.09

FIGURES



From: USGS US Topo 7.5 - minute map for GUILFORD QUADRANGLE, NC, Date: 2019, Original Scale: 1:24,000

PROJECT NO. IS14.314	FIGURE 1 – PARCEL 99, JULIUS CONRAD FRAZIER SITE VICINITY MAP	 ESP Associates, Inc. 7011 Albert Pick Rd., Suite E Greensboro, NC 27409 336.334.7724 www.espassociates.com
SCALE AS SHOWN		
DATE 3/17/2022	NCDOT PROJECT U-4758	
BY CRP/EDB	JOHNSON ST– SANDY RIDGE RD FROM SKEET CLUB RD TO I-40 GUILFORD COUNTY, NORTH CAROLINA	



A. Photograph from southeast corner of parcel, looking west.



B. Photograph of north end of the building, looking east towards the location of the proposed detention pond.



C. Photograph of the area of buried debris near the west end of the parcel, looking west. Pin flags were for GPR data collection.

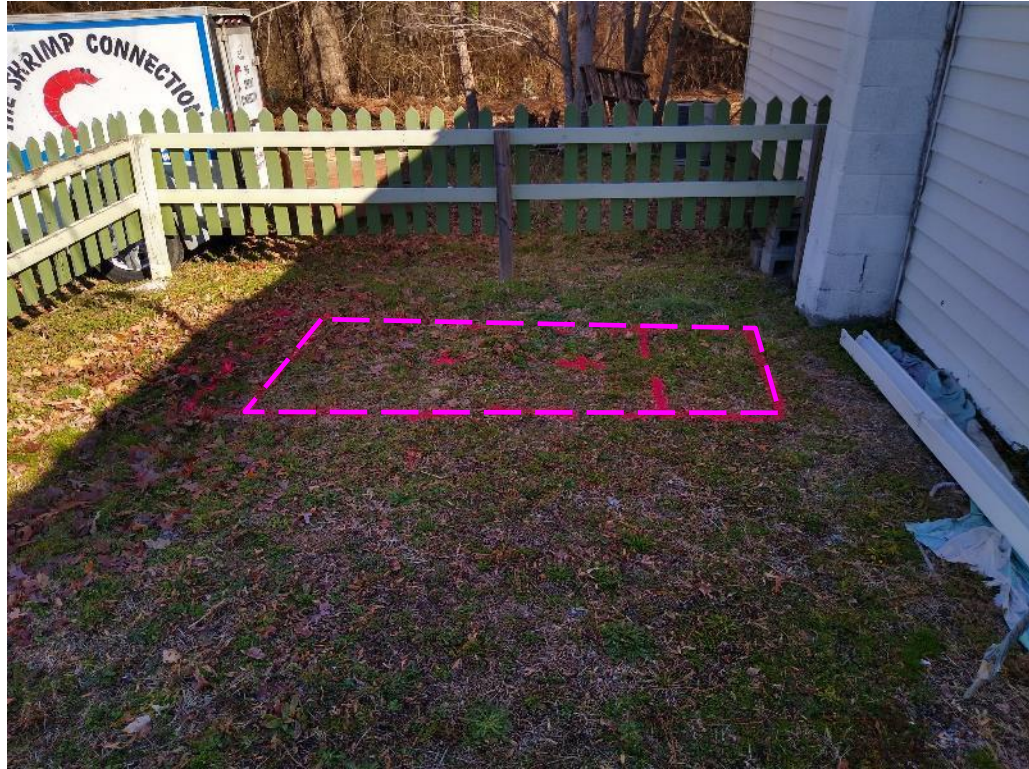


D. Photograph of approximate location of UST-1 located on the north end of the building, looking west.

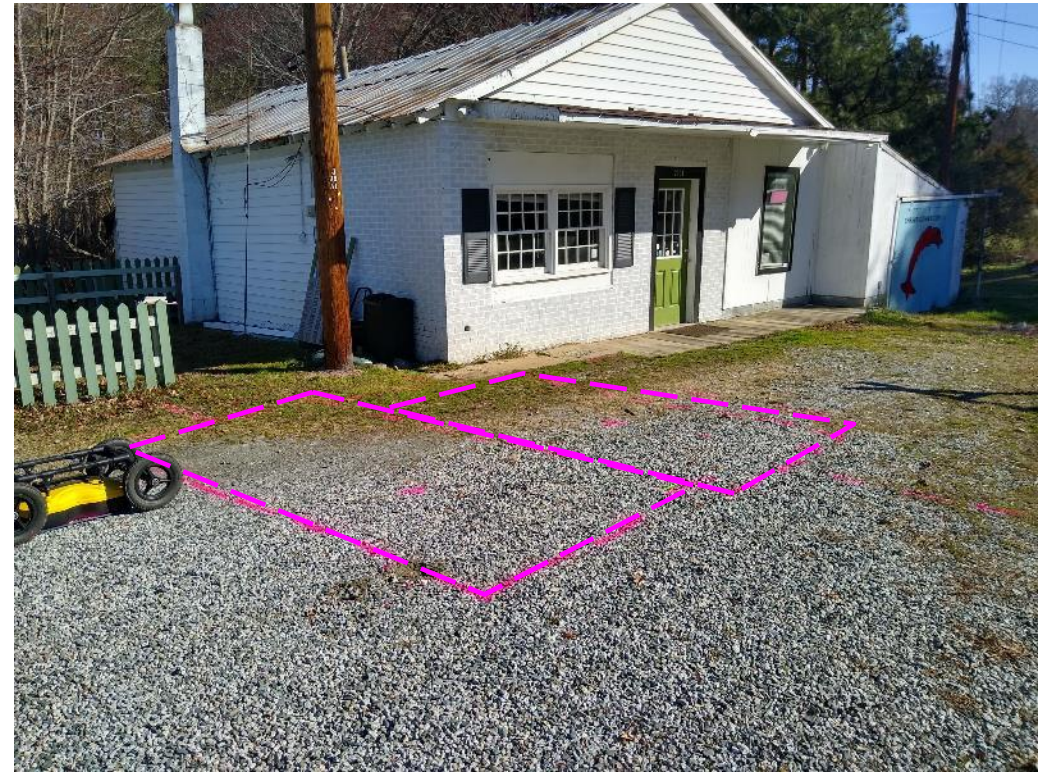
PROJECT NO.	IS14.314	FIGURE 2 – PARCEL 99, JULIUS CONRAD FRAZIER SITE PHOTOGRAPHS, 1 OF 2
SCALE	N/A	
DATE	3/17/2022	NCDOT PROJECT U-4758 JOHNSON ST– SANDY RIDGE RD FROM SKEET CLUB RD TO I-40 GUILFORD COUNTY, NORTH CAROLINA
BY	CRP/EDB	



ESP Associates, Inc.
7011 Albert Pick Rd.,
Suite E
Greensboro, NC 27409
336.334.7724
www.espassociates.com



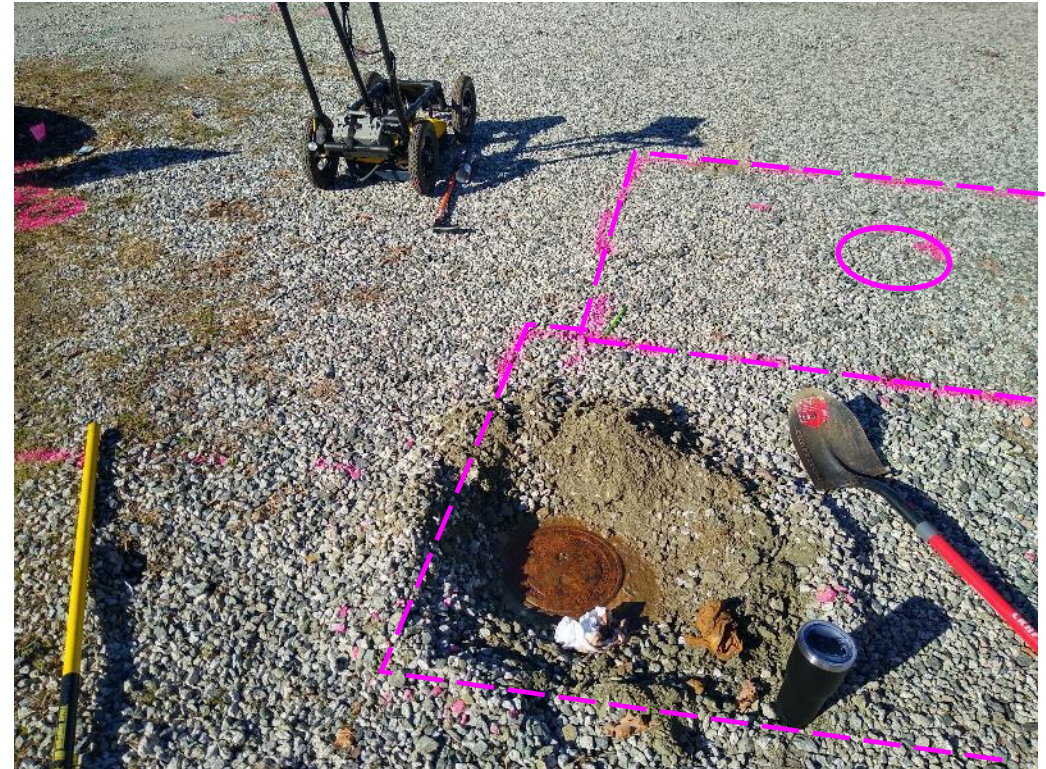
E. Photograph of approximate location of UST-2 on the west side of the building, looking north.



F. Photograph of approximate location of UST-3 (left) and UST-4 (right), looking northeast.

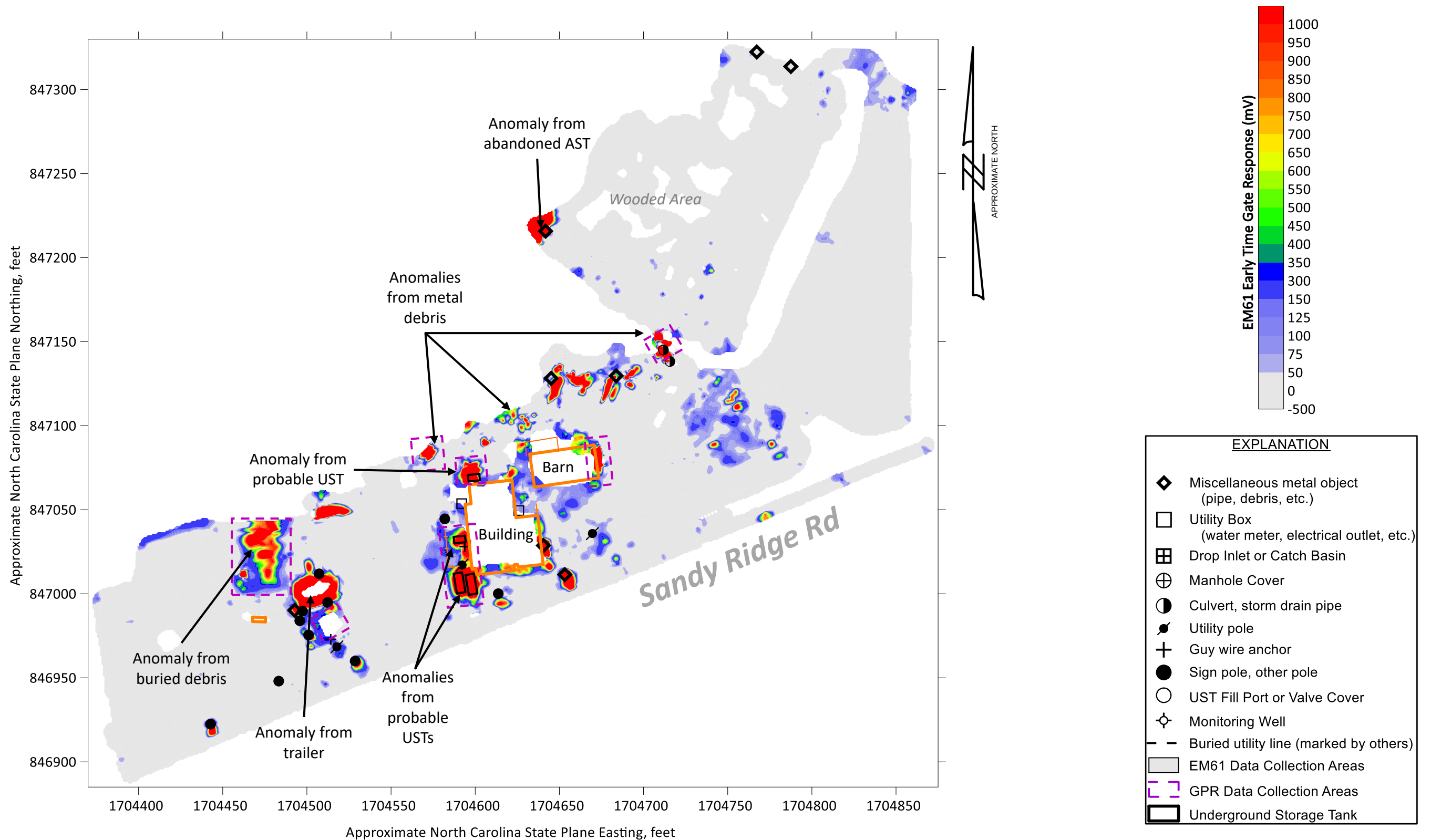


G. Photograph of probable former dispenser island for UST-3 and UST-4, looking north.



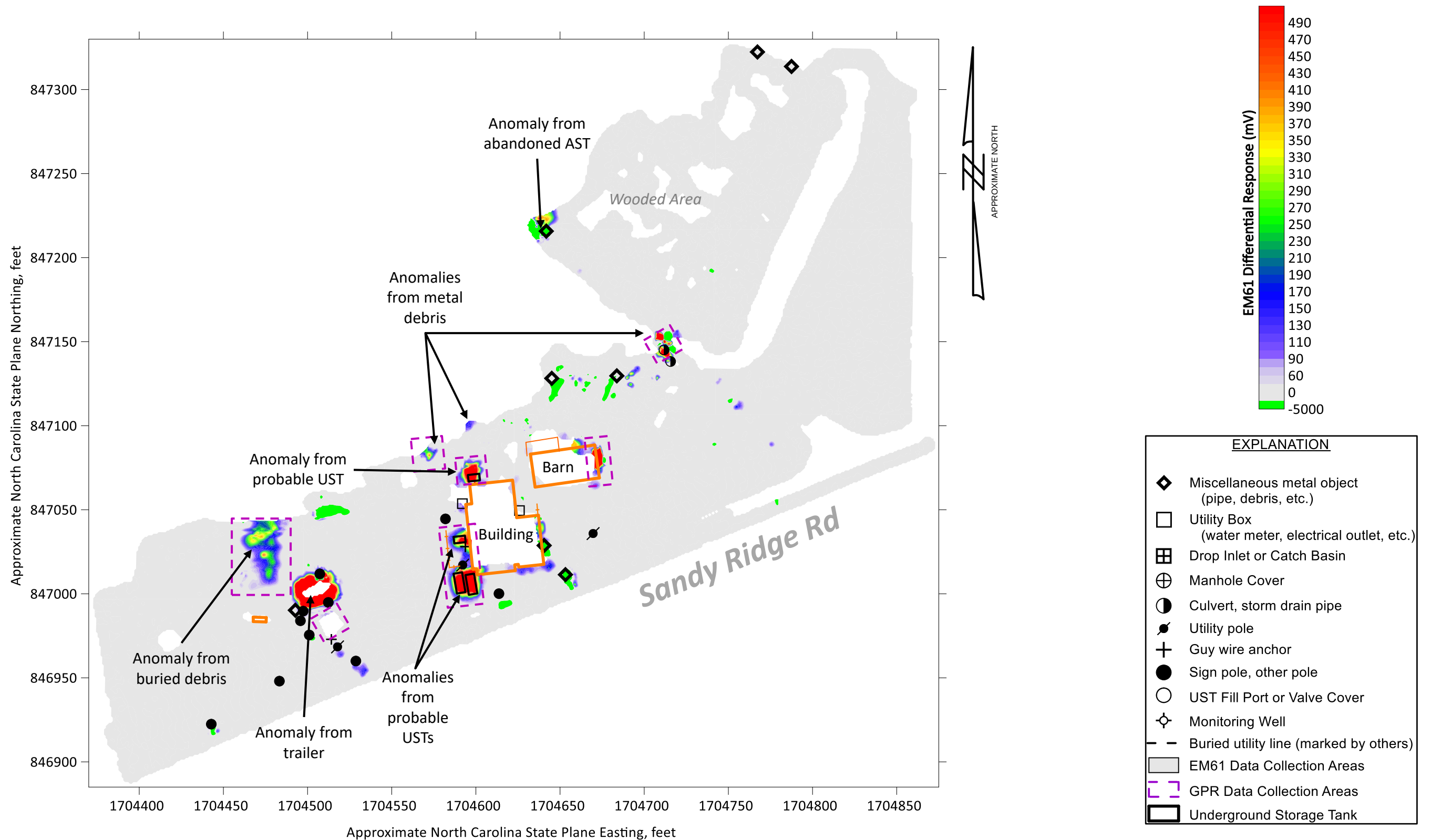
H. Photograph of probable fill port for UST-4, looking west. Ellipse shows the approximate location of the probable fill port for UST-3.

PROJECT NO. IS14.314	FIGURE 3 – PARCEL 99, JULIUS CONRAD FRAZIER SITE PHOTOGRAPHS, 2 OF 2		ESP Associates, Inc.
SCALE N/A			7011 Albert Pick Rd., Suite E Greensboro, NC 27409
DATE 3/17/2022	NCDOT PROJECT U-4758 JOHNSON ST– SANDY RIDGE RD FROM SKEET CLUB RD TO I-40 GUILFORD COUNTY, NORTH CAROLINA		336.334.7724
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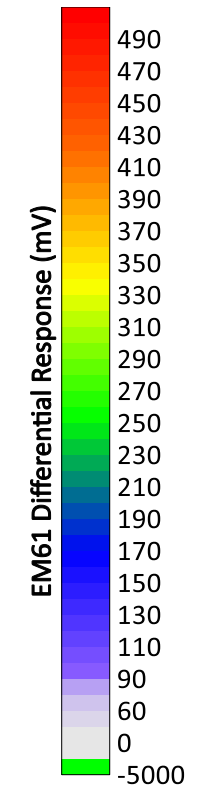
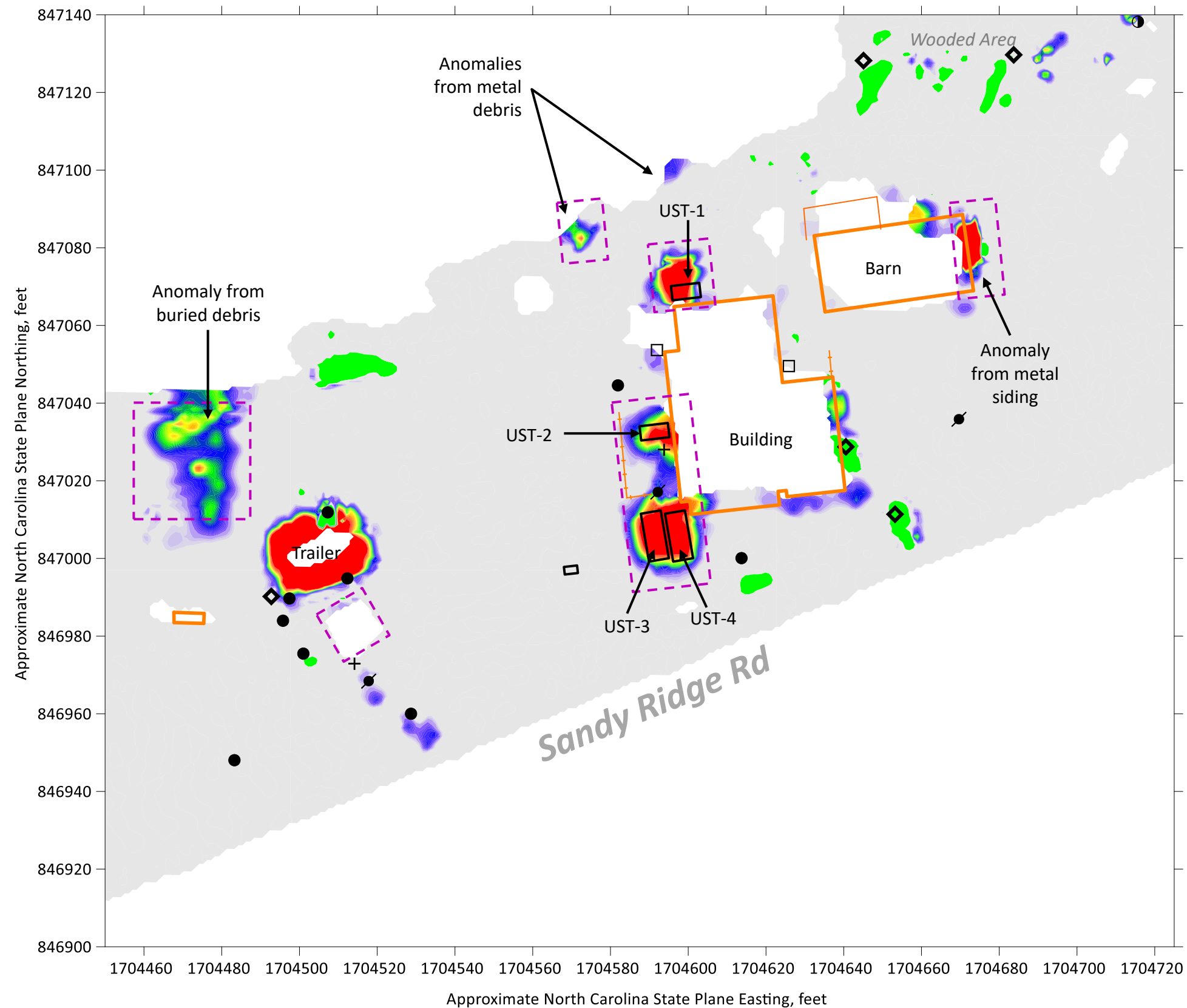
Note: Locations of data and features are approximate and were collected using a DGPS instrument. ESP makes no guarantees as to the accuracy of these locations. Coordinates on the axes of the maps are approximate and provided for general reference only.

PROJECT NO. IS14.314	FIGURE 4 – PARCEL 99, JULIUS CONRAD FRAZIER EM61 EARLY TIME GATE DATA	 ESP Associates, Inc. 7011 Albert Pick Rd., Suite E Greensboro, NC 27409 336.334.7724 www.espassociates.com
SCALE AS SHOWN		
DATE 3/17/2022	NCDOT PROJECT U-4758	
BY CRP/EDB	JOHNSON ST– SANDY RIDGE RD FROM SKEET CLUB RD TO I-40 GUILFORD COUNTY, NORTH CAROLINA	



Note: Locations of data and features are approximate and were collected using a DGPS instrument. ESP makes no guarantees as to the accuracy of these locations. Coordinates on the axes of the maps are approximate and provided for general reference only.

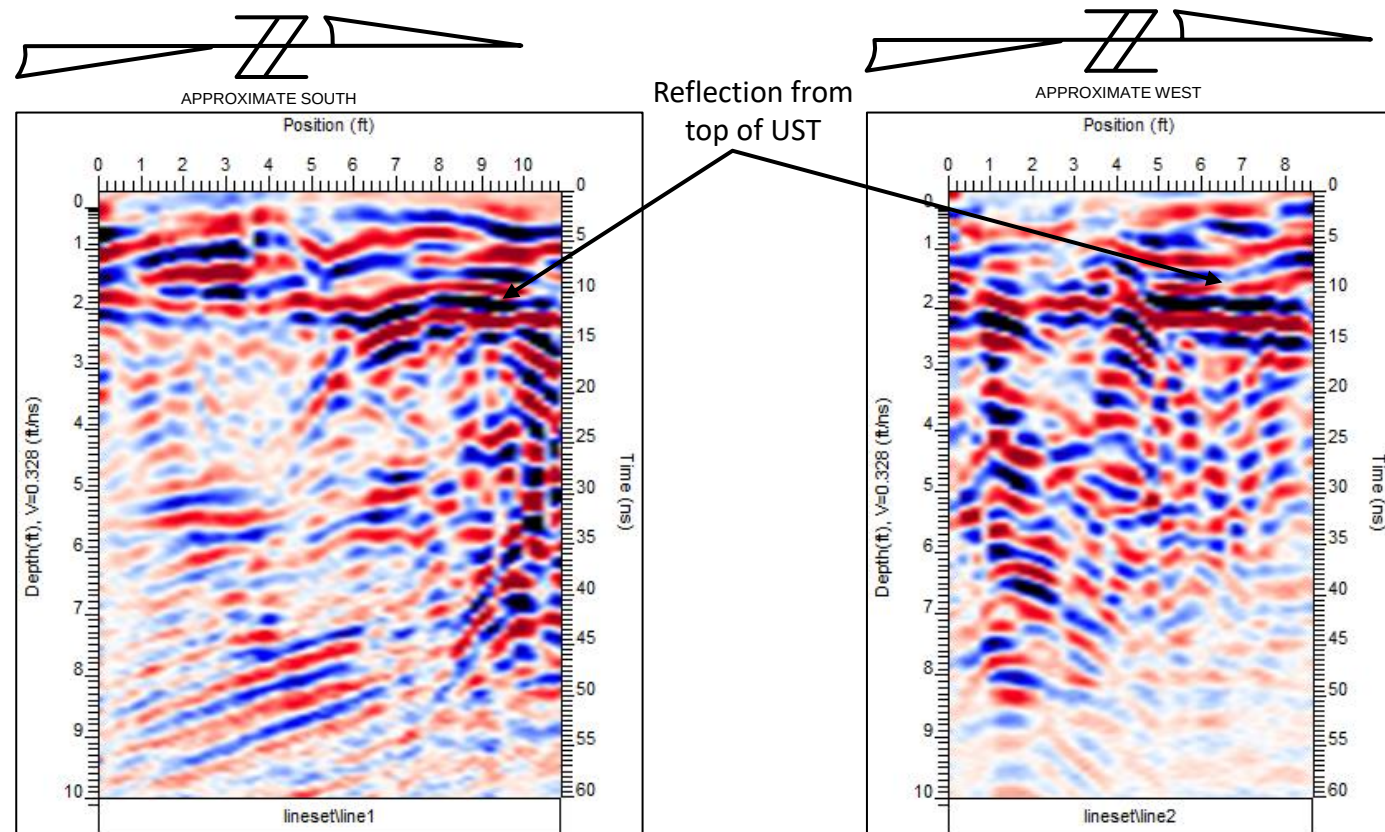
PROJECT NO. IS14.314	FIGURE 5 – PARCEL 99, JULIUS CONRAD FRAZIER EM61 DIFFERENTIAL DATA	 ESP Associates, Inc. 7011 Albert Pick Rd., Suite E Greensboro, NC 27409 336.334.7724 www.espassociates.com	
SCALE AS SHOWN			
DATE 3/17/2022	NCDOT PROJECT U-4758 JOHNSON ST– SANDY RIDGE RD FROM SKEET CLUB RD TO I-40 GUILFORD COUNTY, NORTH CAROLINA		
BY CRP/EDB			



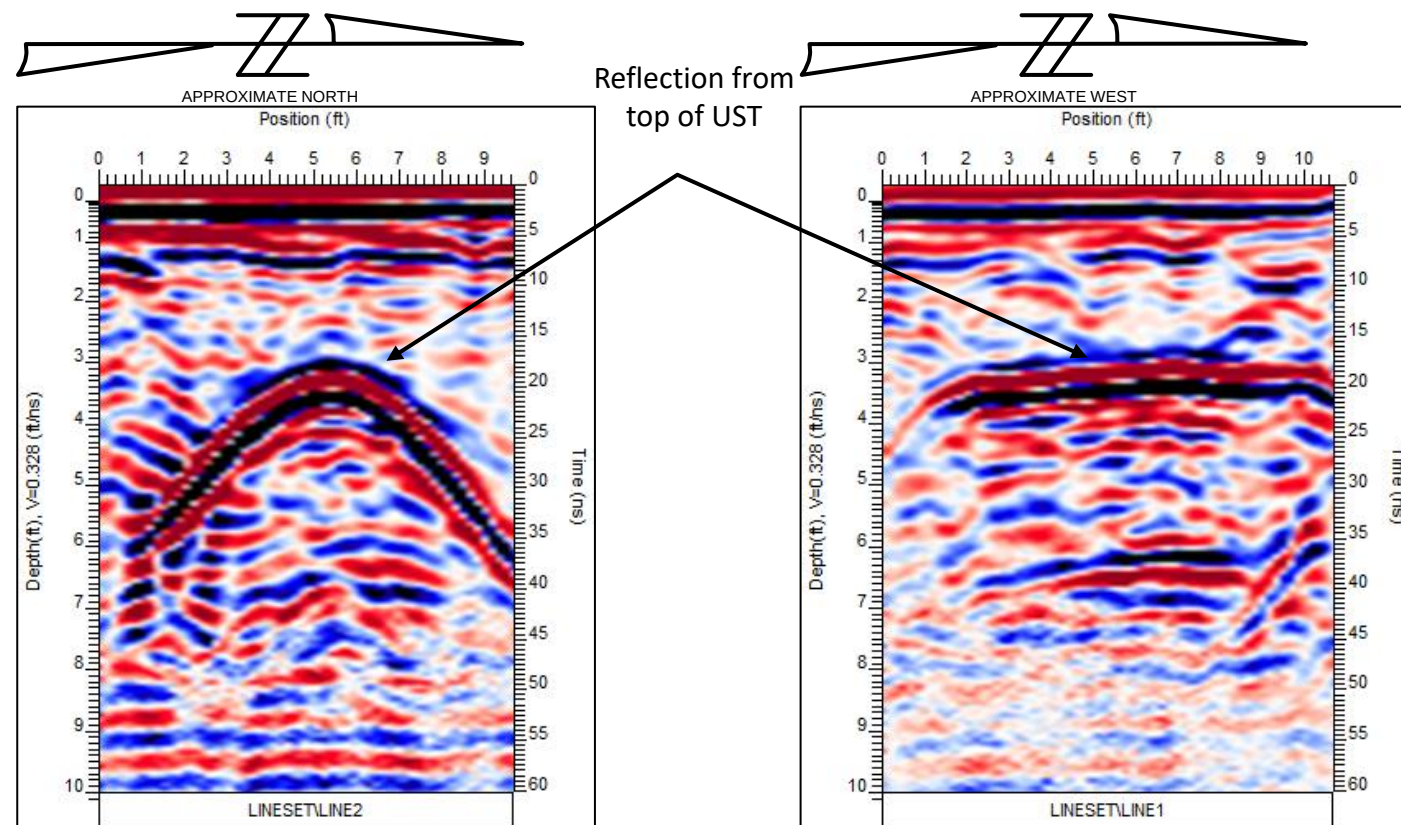
EXPLANATION	
	Miscellaneous metal object (pipe, debris, etc.)
	Utility Box (water meter, electrical outlet, etc.)
	Drop Inlet or Catch Basin
	Manhole Cover
	Culvert, storm drain pipe
	Utility pole
	Guy wire anchor
	Sign pole, other pole
	UST Fill Port or Valve Cover
	Monitoring Well
	Buried utility line (marked by others)
	EM61 Data Collection Areas
	GPR Data Collection Areas
	Underground Storage Tank

Note: Locations of data and features are approximate and were collected using a DGPS instrument. ESP makes no guarantees as to the accuracy of these locations. Coordinates on the axes of the maps are approximate and provided for general reference only.

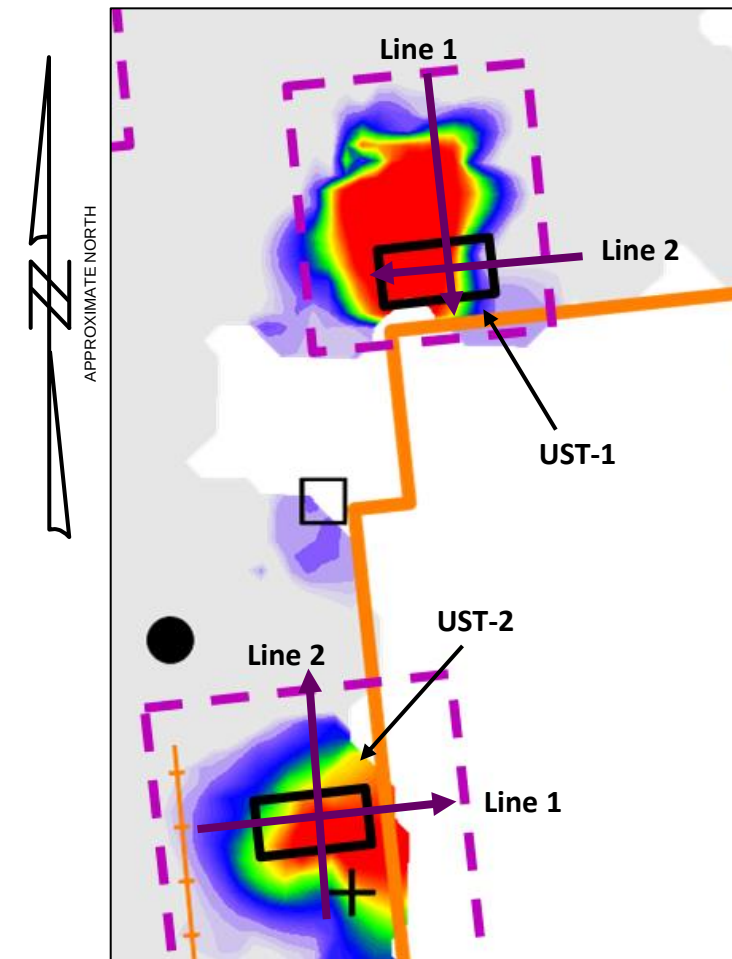
PROJECT NO. IS14.314	FIGURE 6 – PARCEL 99, JULIUS CONRAD FRAZIER DETAIL AREA, EM61 DIFFERENTIAL DATA	ESP Associates, Inc. 7011 Albert Pick Rd., Suite E Greensboro, NC 27409 336.334.7724 www.espassociates.com
SCALE AS SHOWN		
DATE 3/17/2022	NCDOT PROJECT U-4758 JOHNSON ST– SANDY RIDGE RD FROM SKEET CLUB RD TO I-40 GUILFORD COUNTY, NORTH CAROLINA	
BY CRP/EDB		



B. Example GPR Line 1 (left) over short axis and Line 2 (right) over long axis of probable UST-1. UST-1 has minimum length of 5 feet but due to the side of the building and obstructions, the full length of UST-1 could not be determined.

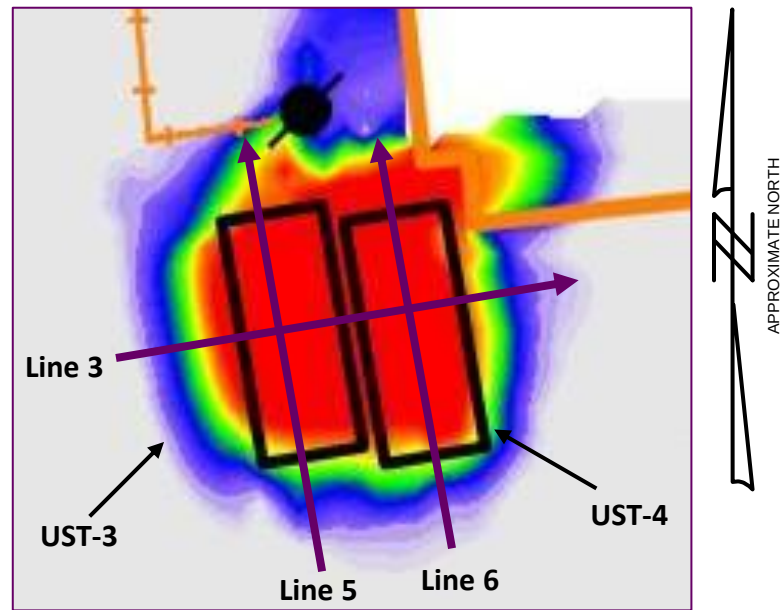


C. Example GPR Line 2 (left) over short axis and Line 1 (right) over long axis of probable UST-2.

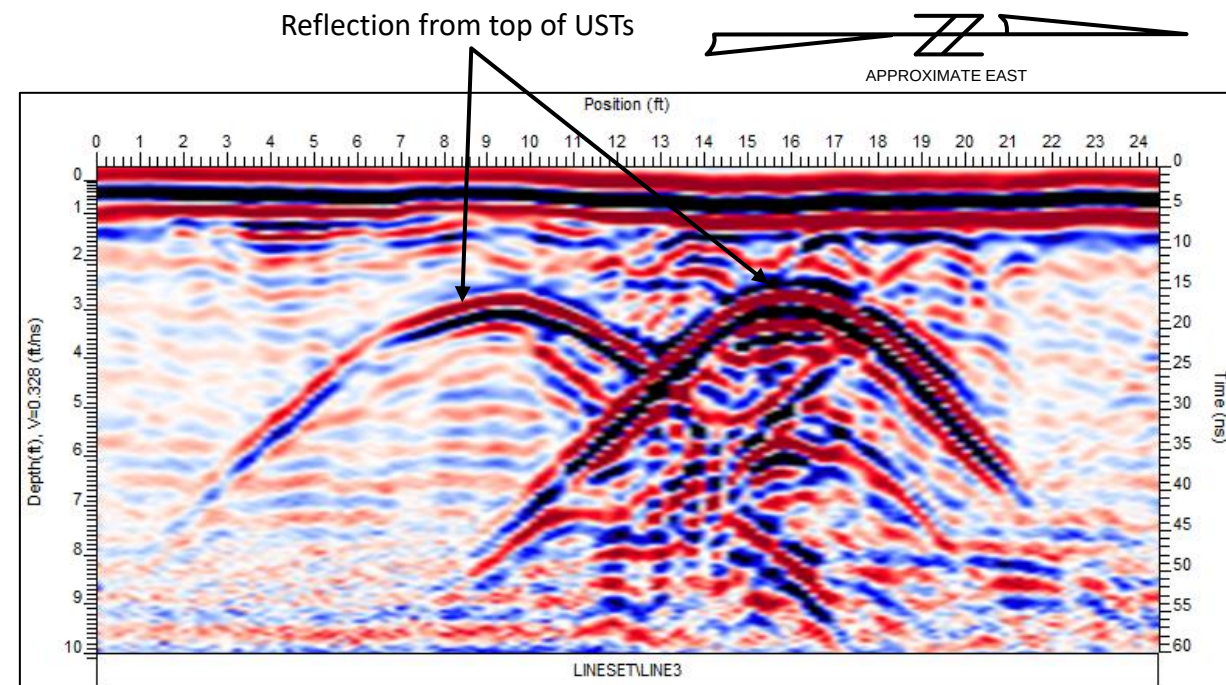


A. Approximate location of example GPR lines over probable UST-1 (top) located on the northwest corner of the building and probable UST-2 (bottom) located on the west side of the building.

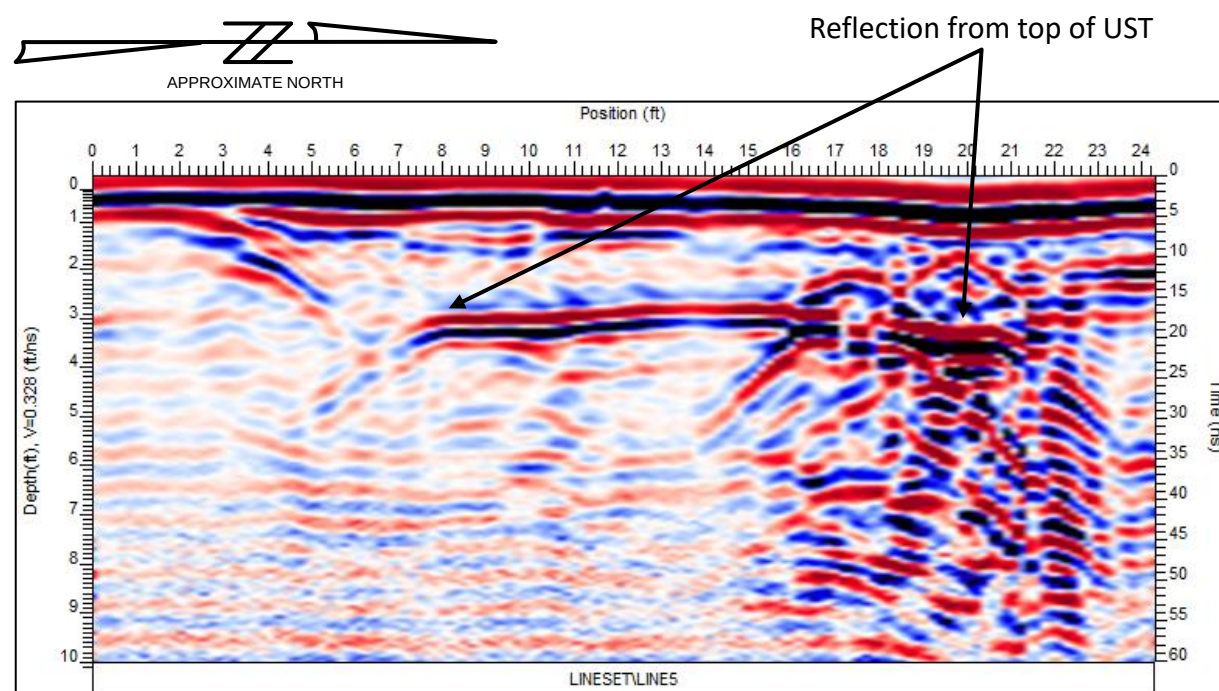
PROJECT NO.	IS14.314	FIGURE 7 - PARCEL 99, JULIUS CONRAD FRAZIER GPR IMAGES OF PROBABLE USTS, 1 OF 2		ESP Associates, Inc.
SCALE	AS SHOWN			7011 Albert Pick Rd., Suite E Greensboro, NC 27409
DATE	3/17/2022	NCDOT PROJECT U-4758		336.334.7724
BY	CRP/EDB	JOHNSON ST- SANDY RIDGE RD FROM SKEET CLUB RD TO I-40 GUILFORD COUNTY, NORTH CAROLINA		www.espassociates.com



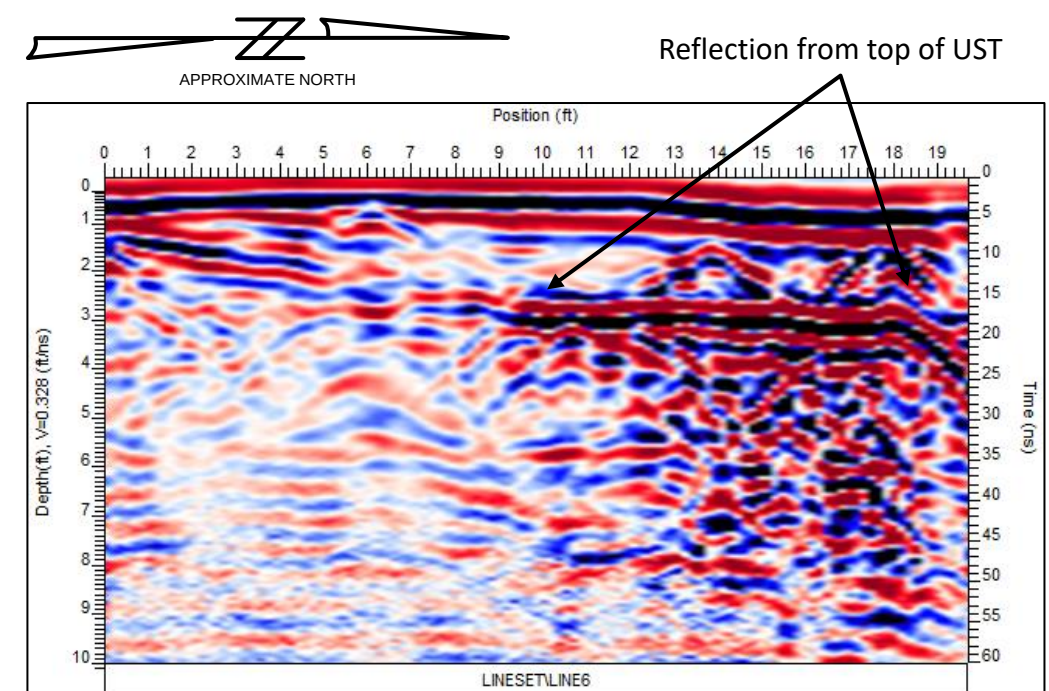
A. Approximate location of example GPR lines over 2 probable USTs located at the southwest corner of the building.

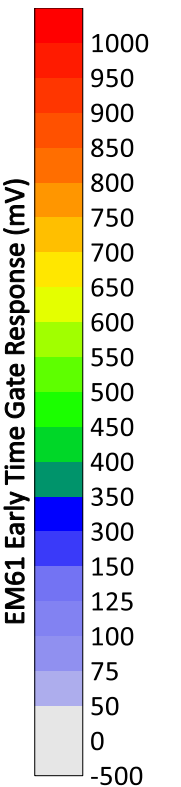
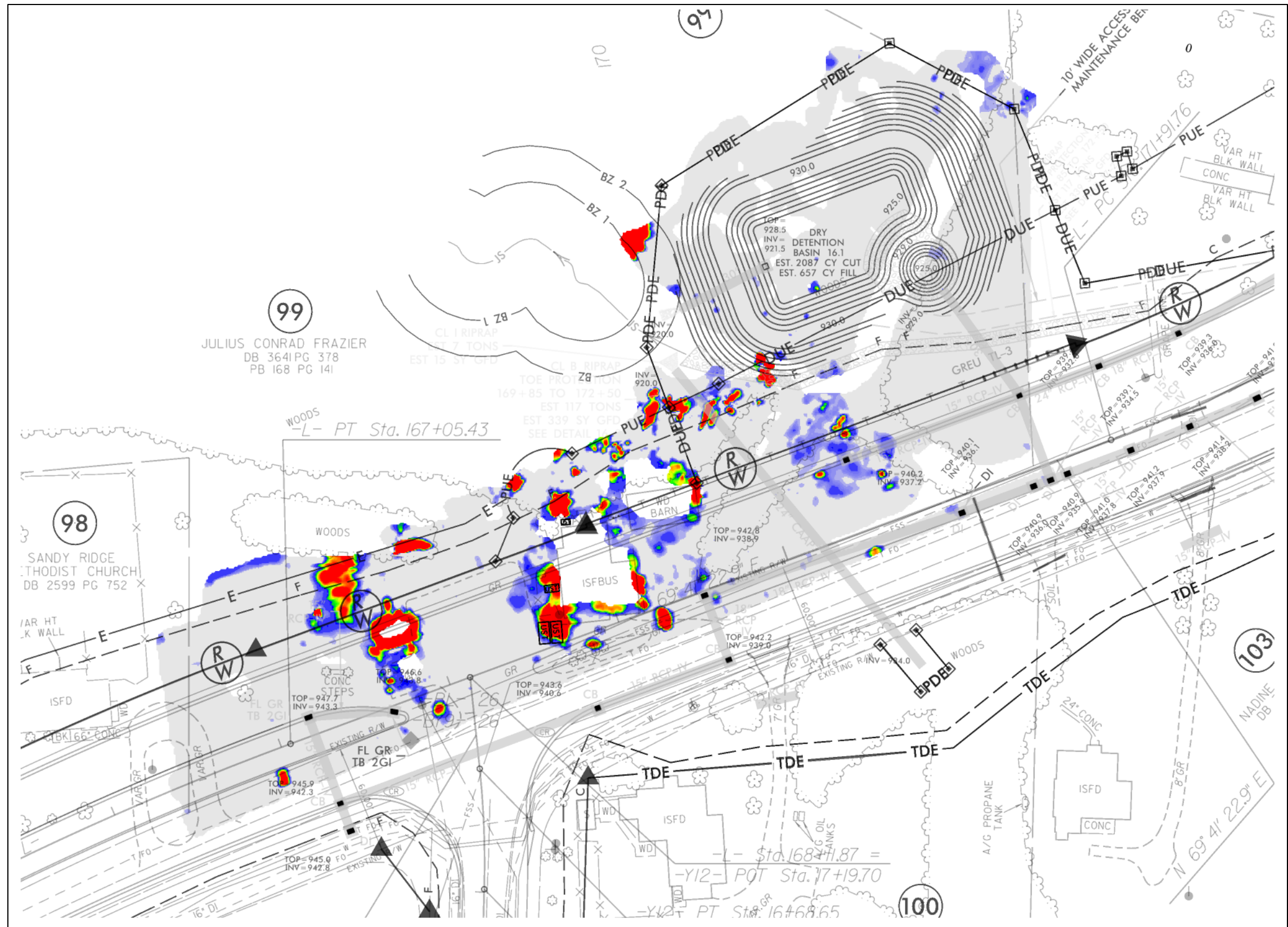


B. Example GPR Line 3 over short axes of 2 probable USTs.



C. Example GPR Lines 5 (left) and 6 (right) over long axis of the western UST (Line 5) and the eastern UST (Line 6).





List of Microstation References

- U4758_Geo_env.dgn
- U4758_HYD_DRN.dgn
- U4758_ncdot_fs.dgn
- U4758_rdy_dsn.dgn
- U4758_rdy_row.dgn
- U4758_rdy_ss.dgn

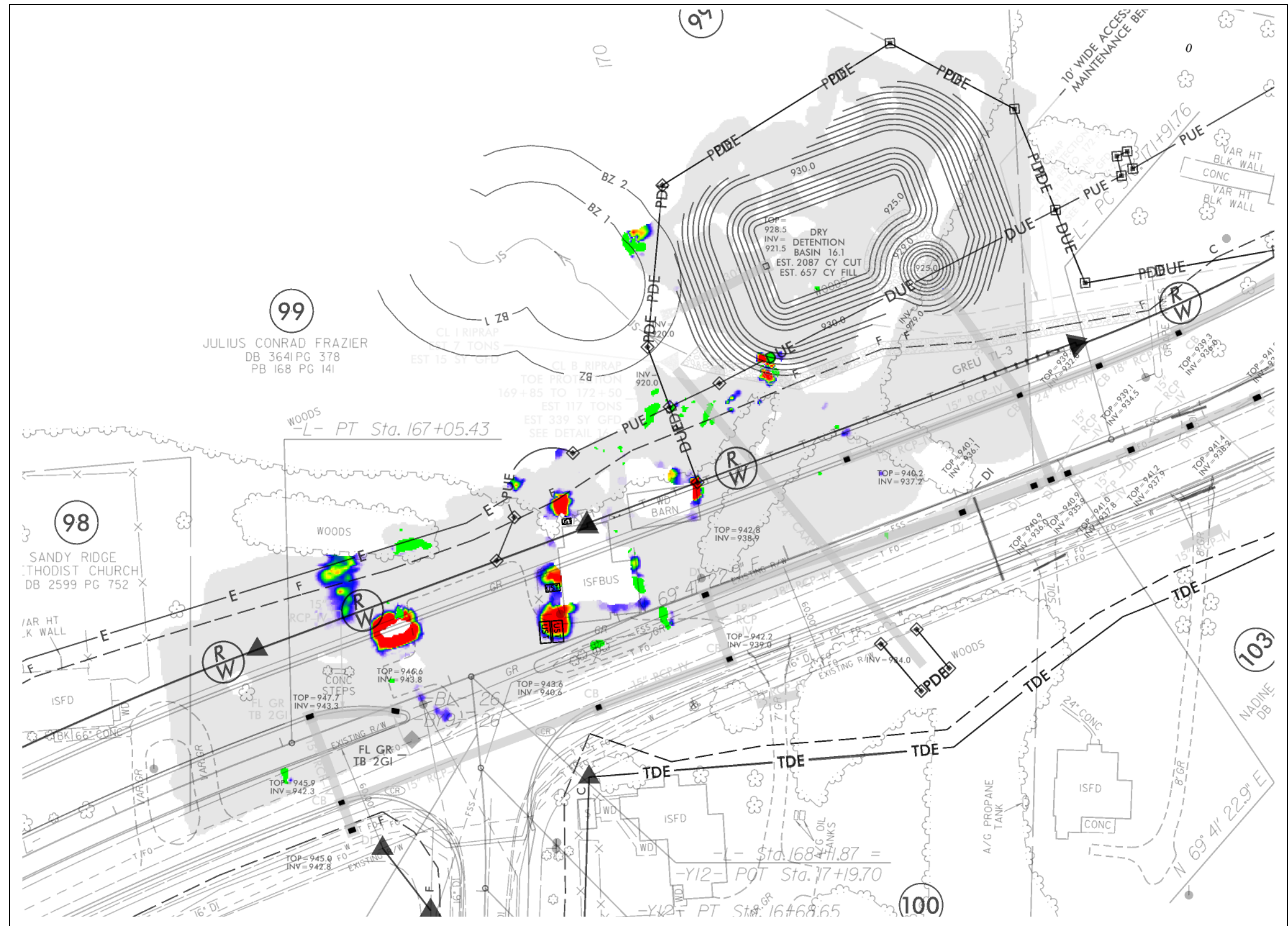


See Figure 13 for explanation of symbols and line types

PROJECT NO.	IS14.314
SCALE	1" = 60'
DATE	3/17/2022
BY	CRP/EDB
FIGURE 9 –PARCEL 99, JULIUS CONRAD FRAZIER EM61 EARLY TIME GATE DATA ON PLAN SHEET	
NCDOT PROJECT U-4758 JOHNSON ST– SANDY RIDGE RD FROM SKEET CLUB RD TO I-40 GUILFORD COUNTY, NORTH CAROLINA	



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List of Microstation References

- U4758_Geo_env.dgn
- U4758_HYD_DRN.dgn
- U4758_ncdot_fs.dgn
- U4758_rdy_dsn.dgn
- U4758_rdy_row.dgn
- U4758_rdy_ss.dgn



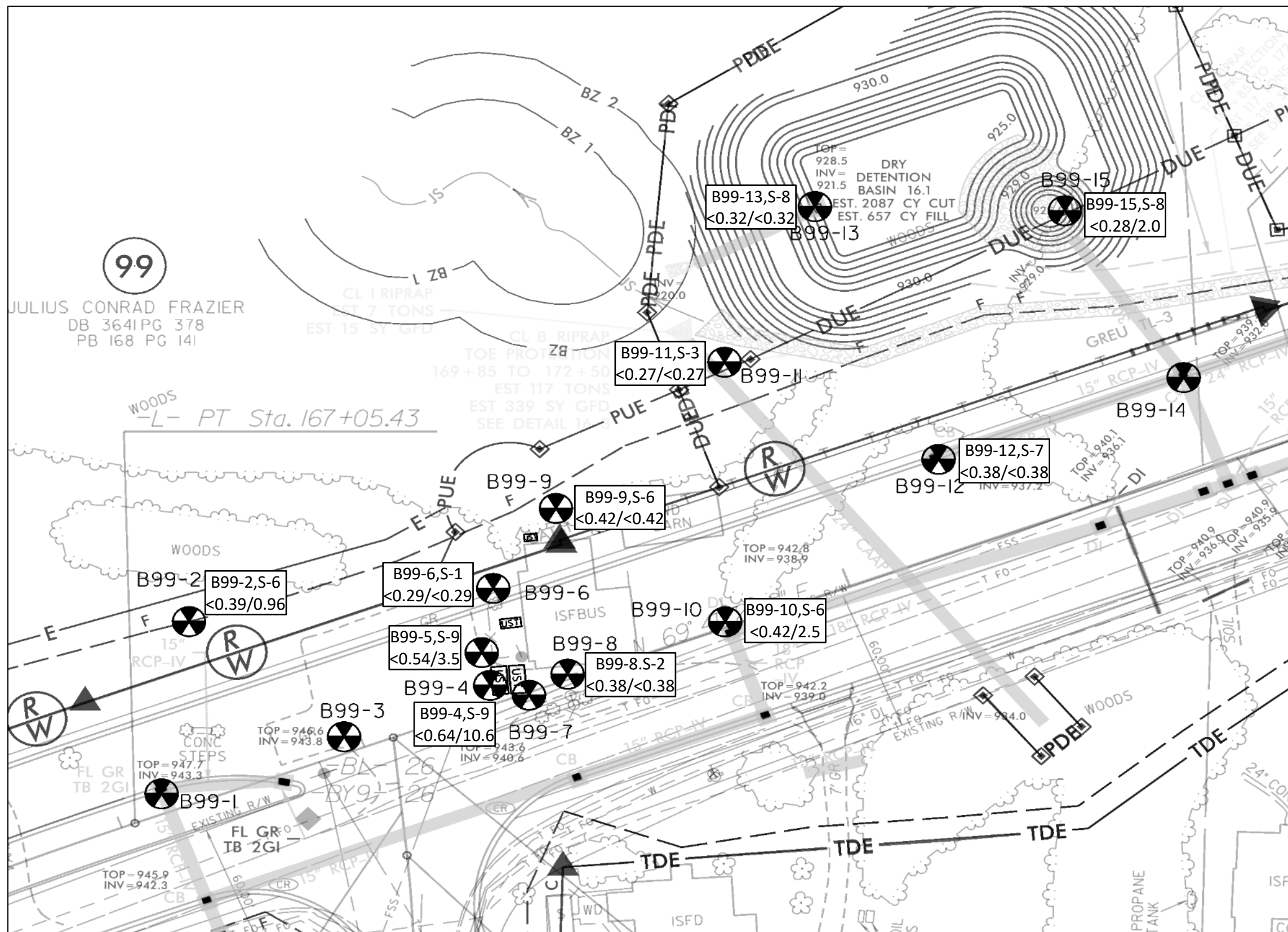
See Figure 13 for explanation of symbols and line types

PROJECT NO.	IS14.314
SCALE	1" = 60'
DATE	3/17/2022
BY	CRP/EDB

FIGURE 10 –PARCEL 99, JULIUS CONRAD FRAZIER
EM61 DIFFERENTIAL DATA ON PLAN SHEET
NCDOT PROJECT U-4758
JOHNSON ST– SANDY RIDGE RD FROM SKEET CLUB RD TO I-40
GUILFORD COUNTY, NORTH CAROLINA



ESP Associates, Inc.
7011 Albert Pick Rd.,
Suite E
Greensboro, NC 27409
336.334.7724
www.espassociates.com



Explanation	
	B99-2,S-6 <0.39/0.96
Maximum Analytical Results per Boring	
Boring No./Sample No.	GRO/DRO (mg/kg, ppm)

List of Microstation References

- U4758_Geo_env.dgn
- U4758_HYD_DRN.dgn
- U4758_ncdot_fs.dgn
- U4758_rdy_dsn.dgn
- U4758_rdy_row.dgn
- U4758_rdy_ss.dgn



See Figure 13 for explanation of symbols and line types

PROJECT NO.	IS14.314
SCALE	1" = 60'
DATE	3/17/2022
BY	CRP/EDB
FIGURE 12 –PARCEL 99, JULIUS CONRAD FRAZIER SOIL ANALYTICAL RESULTS ON PLAN SHEET	
NCDOT PROJECT U-4758 JOHNSON ST– SANDY RIDGE RD FROM SKEET CLUB RD TO I-40 GUILFORD COUNTY, NORTH CAROLINA	



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STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

PROJECT REFERENCE NO. SHEET NO.

BOUNDARIES AND PROPERTY:

State Line	_____
County Line	_____
Township Line	_____
City Line	_____
Reservation Line	_____
Property Line	_____
Existing Iron Pin	_____
Computed Property Corner	_____
Property Monument	_____
Parcel/Sequence Number	_____
Existing Fence Line	_____
Proposed Woven Wire Fence	_____
Proposed Chain Link Fence	_____
Proposed Barbed Wire Fence	_____
Existing Wetland Boundary	_____
Proposed Wetland Boundary	_____
Existing Endangered Animal Boundary	_____
Existing Endangered Plant Boundary	_____
Existing Historic Property Boundary	_____
Known Contamination Area: Soil	_____
Potential Contamination Area: Soil	_____
Known Contamination Area: Water	_____
Potential Contamination Area: Water	_____
Contaminated Site: Known or Potential	_____

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	_____
Sign	_____
Well	_____
Small Mine	_____
Foundation	_____
Area Outline	_____
Cemetery	_____
Building	_____
School	_____
Church	_____
Dam	_____

HYDROLOGY:

Stream or Body of Water	_____
Hydro, Pool or Reservoir	_____
Jurisdictional Stream	_____
Buffer Zone 1	_____
Buffer Zone 2	_____
Flow Arrow	_____
Disappearing Stream	_____
Spring	_____
Wetland	_____
Proposed Lateral, Tail, Head Ditch	_____
False Sump	_____

RAILROADS:

Standard Gauge	_____
RR Signal Milepost	_____
Switch	_____
RR Abandoned	_____
RR Dismantled	_____

RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	_____
Primary Horiz Control Point	_____
Primary Horiz and Vert Control Point	_____
Exist Permanent Easement Pin and Cap	_____
New Permanent Easement Pin and Cap	_____
Vertical Benchmark	_____
Existing Right of Way Marker	_____
Existing Right of Way Line	_____
New Right of Way Line	_____
New Right of Way Line with Pin and Cap	_____
New Right of Way Line with Concrete or Granite R/W Marker	_____
New Control of Access Line with Concrete C/A Marker	_____
Existing Control of Access	_____
New Control of Access	_____
Existing Easement Line	_____
New Temporary Construction Easement	_____
New Temporary Drainage Easement	_____
New Permanent Drainage Easement	_____
New Permanent Drainage / Utility Easement	_____
New Permanent Utility Easement	_____
New Temporary Utility Easement	_____
New Aerial Utility Easement	_____

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	_____
Existing Curb	_____
Proposed Slope Stakes Cut	_____
Proposed Slope Stakes Fill	_____
Proposed Curb Ramp	_____
Existing Metal Guardrail	_____
Proposed Guardrail	_____
Existing Cable Guidrail	_____
Proposed Cable Guidrail	_____
Equality Symbol	_____
Pavement Removal	_____

VEGETATION:

Single Tree	_____
Single Shrub	_____

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

Hedge	_____
Woods Line	_____
Orchard	_____
Vineyard	_____

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	_____
Bridge Wing Wall, Head Wall and End Wall	_____
MINOR:	
Head and End Wall	_____
Pipe Culvert	_____
Footbridge	_____
Drainage Box: Catch Basin, DI or JB	_____
Paved Ditch Gutter	_____
Storm Sewer Manhole	_____
Storm Sewer	_____

UTILITIES:

POWER:	
Existing Power Pole	_____
Proposed Power Pole	_____
Existing Joint Use Pole	_____
Proposed Joint Use Pole	_____
Power Manhole	_____
Power Line Tower	_____
Power Transformer	_____
U/G Power Cable Hand Hole	_____
H-Frame Pole	_____
U/G Power Line LOS B (S.U.E.*)	_____
U/G Power Line LOS C (S.U.E.*)	_____
U/G Power Line LOS D (S.U.E.*)	_____

TELEPHONE:

Existing Telephone Pole	_____
Proposed Telephone Pole	_____
Telephone Manhole	_____
Telephone Pedestal	_____
Telephone Cell Tower	_____
U/G Telephone Cable Hand Hole	_____
U/G Telephone Cable LOS B (S.U.E.*)	_____
U/G Telephone Cable LOS C (S.U.E.*)	_____
U/G Telephone Cable LOS D (S.U.E.*)	_____
U/G Telephone Conduit LOS B (S.U.E.*)	_____
U/G Telephone Conduit LOS C (S.U.E.*)	_____
U/G Telephone Conduit LOS D (S.U.E.*)	_____
U/G Fiber Optics Cable LOS B (S.U.E.*)	_____
U/G Fiber Optics Cable LOS C (S.U.E.*)	_____
U/G Fiber Optics Cable LOS D (S.U.E.*)	_____

WATER:

Water Manhole	_____
Water Meter	_____
Water Valve	_____
Water Hydrant	_____
U/G Water Line LOS B (S.U.E.*)	_____
U/G Water Line LOS C (S.U.E.*)	_____
U/G Water Line LOS D (S.U.E.*)	_____
Above Ground Water Line	_____

TV:

TV Pedestal	_____
TV Tower	_____
U/G TV Cable Hand Hole	_____
U/G TV Cable LOS B (S.U.E.*)	_____
U/G TV Cable LOS C (S.U.E.*)	_____
U/G TV Cable LOS D (S.U.E.*)	_____
U/G Fiber Optic Cable LOS B (S.U.E.*)	_____
U/G Fiber Optic Cable LOS C (S.U.E.*)	_____
U/G Fiber Optic Cable LOS D (S.U.E.*)	_____

GAS:

Gas Valve	_____
Gas Meter	_____
U/G Gas Line LOS B (S.U.E.*)	_____
U/G Gas Line LOS C (S.U.E.*)	_____
U/G Gas Line LOS D (S.U.E.*)	_____
Above Ground Gas Line	_____

SANITARY SEWER:

Sanitary Sewer Manhole	_____
Sanitary Sewer Cleanout	_____
U/G Sanitary Sewer Line	_____
Above Ground Sanitary Sewer	_____
SS Forced Main Line LOS B (S.U.E.*)	_____
SS Forced Main Line LOS C (S.U.E.*)	_____
SS Forced Main Line LOS D (S.U.E.*)	_____

MISCELLANEOUS:

Utility Pole	_____
Utility Pole with Base	_____
Utility Located Object	_____
Utility Traffic Signal Box	_____
Utility Unknown U/G Line LOS B (S.U.E.*)	_____
U/G Tank; Water, Gas, Oil	_____
Underground Storage Tank, Approx. Loc.	_____
A/G Tank; Water, Gas, Oil	_____
Geoenvironmental Boring	_____
U/G Test Hole LOS A (S.U.E.*)	_____
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

PROJECT NO.

IS14.314

SCALE

N/A

DATE

3/17/2022

BY

CRP/EDB

FIGURE 13**LEGEND FOR PLAN SHEET FIGURES****NCDOT PROJECT U-4758****JOHNSON ST- SANDY RIDGE RD FROM SKEET CLUB RD TO I-40
GUILFORD COUNTY, NORTH CAROLINA**

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APPENDIX A
SOIL BORING LOGS



FIELD BORING LOG

BORING NO.

B99-1

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 152.0' southwest of southwest corner of building

TYPE OF BORING: Direct Push & Hand Auger

DATE STARTED: 3/8/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 3/8/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Scott Hunt

SAMPLE METHOD: Hand Auger & Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 944.8'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Topsoil	Hand Auger 0.0'-5.0'
				0.3'-2.8' Yellow to Red Coarse to Fine Sandy CLAY, Moist	
1	S-1	1.0-1.5	0.1		
2	S-2	2.0-2.5	0.1		
				2.8'-8.3' Orange, Fine Sandy SILT, Moist	
3	S-3	3.0-3.5	0.0		
4	S-4	4.0-4.5	0.1		
5	S-5	5.0-5.5	0.1		Macrocore 5.0'-10.0' Core Rec 4.7'/5.0'
6	S-6	6.0-6.5	0.1		
				6.8' Grading to Tan	
7	S-7	7.0-7.5	0.2		
8	S-8	8.0-8.5	0.1		
				8.3'-8.8' White to Tan Silty SAND, Moist	
				8.8'-9.5' Tan, Coarse to Fine Sandy SILT	
9	S-9	9.0-9.5	0.1		
				9.5'-10.0' White to Tan Silty SAND, Moist	
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B99-2

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 151.3' west of southwest corner of building

TYPE OF BORING: Direct Push

DATE STARTED: 3/8/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 3/8/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Scott Hunt

SAMPLE METHOD: Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 942.2'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Topsoil	Macrocore 0.0'-5.0'
				0.3'-1.3' Gray to Brown Sandy SILT, Moist	Core Rec 1.8'/5.0'
1	S-1	1.0-1.5	0.3		
				1.3'-5.3' Asphalt and Concrete Debris	
2	S-2	2.0-2.5	no sample		
3	S-3	3.0-3.5	no sample		
4	S-4	4.0-4.5	no sample		
5	S-5	5.0-5.5	no sample		
				Refusal at 5.3'. Offset 3.0' north and drilled to 6.0'	
6	S-6	6.0-6.5	0.3	6.0'-10.0' White to Orange to Brown Coarse to Fine Sandy SILT, Moist	Macrocore 6.0'/10.0'
					Core Rec 3.4'/4.0'
7	S-7	7.0-7.5	0.2		
8	S-8	8.0-8.5	0.2		
9	S-9	9.0-9.5	0.1		
10					
11					
12					
13					
14					
15					

Samples highlighted red selected for analytical



FIELD BORING LOG

BORING NO.

B99-3

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 72.7' southwest of southwest corner of building

TYPE OF BORING: Direct Push & Hand Auger

DATE STARTED: 3/8/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 3/8/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Scott Hunt

SAMPLE METHOD: Hand Auger & Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 944.8'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Gravel	Hand Auger 0.0'-5.0'
				0.3'-2.3' Red to Yellow Coarse to Fine Sandy CLAY, Moist	
1	S-1	1.0-1.5	0.3		
2	S-2	2.0-2.5	0.1		
				2.3'-9.4' Red to Yellow Fine Sandy SILT, Moist	
3	S-3	3.0-3.5	0.1		
4	S-4	4.0-4.5	0.1		
5	S-5	5.0-5.5	0.2		Macrocore 5.0'-10.0' Core Rec 4.6'/5.0'
6	S-6	6.0-6.5	0.2		
7	S-7	7.0-7.5	0.2		
8	S-8	8.0-8.5	0.1		
				9.4'-10.0' White to Tan Silty SAND, Moist	
9	S-9	9.0-9.5	0.3		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B99-4

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 28.9' southwest of southwest corner of building

TYPE OF BORING: Direct Push

DATE STARTED: 3/8/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 3/8/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Scott Hunt

SAMPLE METHOD: Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 943.6'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Gravel	Macrocore 0.0'-5.0'
				0.3'-3.2' Red to Orange Silty CLAY, Moist	Core Rec 3.6'/5.0'
1	S-1	1.0-1.5	0.2		
2	S-2	2.0-2.5	0.2		
3	S-3	3.0-3.5	0.2		
				3.2'-7.0' Red to Orange Sandy SILT, Moist	
4	S-4	4.0-4.5	no sample		
5	S-5	5.0-5.5	no sample		Macrocore 5.0'-10.0'
					Core Rec 3.5'/5.0'
6	S-6	6.0-6.5	0.2		
7	S-7	7.0-7.5	0.3	7.0'-10.0' Orange to White Silty SAND, Moist	
8	S-8	8.0-8.5	2.5		
9	S-9	9.0-9.5	4.9		
				9.3' Grading to White and Gray	
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B99-5

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 16.0' west of southwest corner of building

TYPE OF BORING: Direct Push

DATE STARTED: 3/8/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 3/8/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Scott Hunt

SAMPLE METHOD: Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 943.8'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Topsoil	Macrocore 0.0'-5.0'
				0.3'-3.4' Red to Orange Silty CLAY, Moist	Core Rec 4.4'/5.0'
1	S-1	1.0-1.5	0.2		
2	S-2	2.0-2.5	0.1		
3	S-3	3.0-3.5	0.1		
				3.4'-8.1' Red to Orange Clayey SILT, Moist	
4	S-4	4.0-4.5	0.1		
5	S-5	5.0-5.5	no sample		Macrocore 5.0'-10.0'
					Core Rec 4.0'/5.0'
6	S-6	6.0-6.5	0.2		
				6.6' Grading to Orange	
7	S-7	7.0-7.5	0.3		
8	S-8	8.0-8.5	0.6		
				8.1'-10.0' White to Orange Silty SAND, Moist	
9	S-9	9.0-9.5	0.7		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B99-6

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 15.6' southwest of northwest corner of building

TYPE OF BORING: Direct Push

DATE STARTED: 3/8/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 3/8/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Scott Hunt

SAMPLE METHOD: Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 942.8'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Topsoil	Macrocore 0.0'-5.0'
				0.3'-2.6' Red to Orange Sandy CLAY, Moist	Core Rec 3.5'/5.0'
1	S-1	1.0-1.5	0.8		
2	S-2	2.0-2.5	0.6		
				2.6'-10.0' Red to White to Orange Silty SAND, Moist	
3	S-3	3.0-3.5	0.7		
4	S-4	4.0-4.5	no sample		
5	S-5	5.0-5.5	0.5		Macrocore 5.0'-8.0'
				5.1' Grading to Brown and White and Orange	Core Rec 3.0'/3.0'
6	S-6	6.0-6.5	0.5		
7	S-7	7.0-7.5	0.6		
8	S-8	8.0-8.5	0.3		Macrocore 8.0'-10.0'
					Core Rec 2.0'/2.0'
9	S-9	9.0-9.5	0.6		
				9.3'-10.0' Grading to Red and Brown	
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B99-7

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 26.3' south of southwest corner of building

TYPE OF BORING: Direct Push & Hand Auger

DATE STARTED: 3/8/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 3/8/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Scott Hunt

SAMPLE METHOD: Hand Auger & Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 943.5'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Topsoil	Hand Auger 0.0'-5.0'
				0.3'-1.9' Red Clayey SAND, Moist	
1	S-1	1.0-1.5	0.2		
				1.9'-10.0' Orange to White Silty SAND, Moist	
2	S-2	2.0-2.5	0.2		
3	S-3	3.0-3.5	0.2		
4	S-4	4.0-4.5	0.2		
5	S-5	5.0-5.5	no sample		Macrocore 5.0'-10.0' Core Rec 3.4'/5.0'
6	S-6	6.0-6.5	0.3		
7	S-7	7.0-7.5	0.2		
8	S-8	8.0-8.5	0.2	8.1' Grading to White	
9	S-9	9.0-9.5	0.4		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B99-8

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 27.25' southeast of southwest corner of building

TYPE OF BORING: Direct Push & Hand Auger

DATE STARTED: 3/8/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 3/8/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Scott Hunt

SAMPLE METHOD: Hand Auger & Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 943.0'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Topsoil	Hand Auger 0.0'-5.0' Core Rec
				0.3'-5.0' Red to Orange Clayey SAND	
1	S-1	1.0-1.5	0.1		
2	S-2	2.0-2.5	0.6		
3	S-3	3.0-3.5	0.2		
4	S-4	4.0-4.5	0.4		
5	S-5	5.0-5.5	0.2	5.0'-8.1' Red to Orange, Micaceous, Clayey SILT, Moist	Macrocore 5.0'-10.0' Core Rec 5.0'/5.0'
6	S-6	6.0-6.5	0.2		
7	S-7	7.0-7.5	0.2		
8	S-8	8.0-8.5	0.2	8.1'-10.0' Brown to Orange, Micaceous, Fine Sandy SILT, Moist	
9	S-9	9.0-9.5	0.3		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B99-9

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 35.3' north of northwest corner of building

TYPE OF BORING: Direct Push

DATE STARTED: 3/8/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 3/8/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Scott Hunt

SAMPLE METHOD: Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 939.3'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Topsoil	Macrocore 0.0'-5.0'
				0.3'-3.8' Red to Brown to Orange Sandy CLAY, Moist	Core Rec 3.9'/5.0'
1	S-1	1.0-1.5	0.2		
2	S-2	2.0-2.5	0.2		
3	S-3	3.0-3.5	0.2		
4	S-4	4.0-4.5	no sample	3.8'-8.7' Orange to Brown Coarse Sandy SILT, Moist	
5	S-5	5.0-5.5	no sample		Macrocore 5.0'-10.0'
					Core Rec 4.1'/5.0'
6	S-6	6.0-6.5	0.3		
7	S-7	7.0-7.5	0.2		
8	S-8	8.0-8.5	0.1		
9	S-9	9.0-9.5	0.1	8.7'-10.0' White to Tan to Gray Silty SAND, Moist	
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B99-10

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 37.8' east of southeast corner of building

TYPE OF BORING: Direct Push

DATE STARTED: 3/8/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 3/8/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Scott Hunt

SAMPLE METHOD: Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 939.2'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Topsoil	Macrocore 0.0'-5.0'
				0.3'-2.8' Tan to Brown Sandy CLAY, Moist	Core Rec 3.5'/5.0'
1	S-1	1.0-1.5	0.5		
2	S-2	2.0-2.5	0.4		
3	S-3	3.0-3.5	0.2	2.8'-10.0' Tan to White to Brown Sandy SILT, Moist	
4	S-4	4.0-4.5	no sample		
5	S-5	5.0-5.5	no sample		Macrocore 5.0'-10.0'
					Core Rec 3.5'/5.0'
6	S-6	6.0-6.5	0.6		
7	S-7	7.0-7.5	0.4		
8	S-8	8.0-8.5	0.4		
9	S-9	9.0-9.5	1.1		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B99-11

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 122.2' northeast of southeast corner of building

TYPE OF BORING: Direct Push

DATE STARTED: 3/8/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 3/8/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Scott Hunt

SAMPLE METHOD: Macrocore

DEPTH TO GW: 3.5 ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 923.4'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Topsoil	Macrocore 0.0'-5.0'
				0.3'-2.7' Tan Coarse Sandy CLAY, Moist	Core Rec 3.8'/5.0'
1	S-1	1.0-1.5	0.3		
2	S-2	2.0-2.5	0.1		
3	S-3	3.0-3.5	0.3	2.7'-8.3' Tan to Gray Micaceous Sandy SILT, Moist	
4	S-4	4.0-4.5	no sample		
5	S-5	5.0-5.5	no sample		Macrocore 5.0'-10.0'
					Core Rec 3.3'/5.0'
6	S-6	6.0-6.5	0.3		
7	S-7	7.0-7.5	0.3		
8	S-8	8.0-8.5	0.5		
				8.3'-10.0' Orange to White to Gray Silty SAND, Wet	
9	S-9	9.0-9.5	0.4		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B99-12

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 140.5' northeast of southeast corner of building

TYPE OF BORING: Direct Push

DATE STARTED: 3/8/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 3/8/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Scott Hunt

SAMPLE METHOD: Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 929.0'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Topsoil	Macrocore 0.0'-5.0'
				0.3'-9.8' Tan Sandy CLAY, Moist	Core Rec 3.7'/5.0'
1	S-1	1.0-1.5	0.6		
2	S-2	2.0-2.5	0.5		
3	S-3	3.0-3.5	0.5		
4	S-4	4.0-4.5	no sample		
5	S-5	5.0-5.5	0.4		Macrocore 5.0'-10.0'
					Core Rec 5.0'/5.0'
6	S-6	6.0-6.5	0.3		
7	S-7	7.0-7.5	0.5		
8	S-8	8.0-8.5	0.3		
				8.4' Grading to Gray with Orange	
9	S-9	9.0-9.5	0.4		
				9.8'-10.0' Orange Clayey SAND, Moist	
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B99-13

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 173.1' from edge of pavement on east side of parcel

TYPE OF BORING: Direct Push

DATE STARTED: 3/8/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 3/8/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Scott Hunt

SAMPLE METHOD: Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 926.2'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Topsoil	Macrocore 0.0'/5.0'
				0.3'-2.3' Tan and Brown Sandy CLAY, Moist	Core Rec 4.6'/5.0'
1	S-1	1.0-1.5	0.2		
2	S-2	2.0-2.5	0.3		
				2.3'-7.2' Tan and Gray Clayey SAND, Moist	
3	S-3	3.0-3.5	0.3		
4	S-4	4.0-4.5	0.3		
5	S-5	5.0-5.5	no sample		Macrocore 5.0'-10.0'
					Core Rec 4.0'/5.0'
6	S-6	6.0-6.5	0.2		
7	S-7	7.0-7.5	0.3		
				7.2'-10.0' Gray to Brown to White Micaceous Sandy SILT, Moist	
8	S-8	8.0-8.5	1.3		
9	S-9	9.0-9.5	0.4		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B99-14

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 50.0' northwest from edge of pavement on east side of parcel

TYPE OF BORING: Direct Push

DATE STARTED: 3/8/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 3/8/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Scott Hunt

SAMPLE METHOD: Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 932.5'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Topsoil	Macrocore 0.0'-5.0'
				0.3'-10.0' Brown Sandy CLAY, Moist	Core Rec 4.0'/5.0'
1	S-1	1.0-1.5	1.0		
				1.7' Grading to Tan	
2	S-2	2.0-2.5	0.4		
3	S-3	3.0-3.5	0.4		
4	S-4	4.0-4.5	no sample		
5	S-5	5.0-5.5	0.6		Macrocore 5.0'-10.0'
					Core Rec 5.0'/5.0'
6	S-6	6.0-6.5	0.3		
				6.2' Grading to Tan and Gray	
7	S-7	7.0-7.5	0.5		
8	S-8	8.0-8.5	0.3		
9	S-9	9.0-9.5	0.7		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B99-15

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 133.9' northwest from edge of pavement on east side of parcel

TYPE OF BORING: Direct Push

DATE STARTED: 3/8/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 3/8/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Scott Hunt

SAMPLE METHOD: Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 933.5'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Topsoil	Macrocore 0.0'-5.0'
				0.3'-3.4' Red to Tan Sandy CLAY, Moist	Core Rec 5.0'/5.0'
1	S-1	1.0-1.5	0.2		
2	S-2	2.0-2.5	0.3		
3	S-3	3.0-3.5	0.4		
4	S-4	4.0-4.5	0.4	3.4'-4.5' Red to Tan to White Coarse Sandy SILT, Moist	
5	S-5	5.0-5.5	0.2	4.5'-7.9' Tan to Orange, Micaceous Fine Sandy SILT, Moist	
					Macrocore 5.0'-10.0'
					Core Rec 4.3'/5.0'
6	S-6	6.0-6.5	0.9		
7	S-7	7.0-7.5	0.8		
8	S-8	8.0-8.5	1.1	7.9'-10.0' Tan to White to Gray Silty Coarse SAND, Moist	
9	S-9	9.0-9.5	0.4		
10					
11					
12					
13					
14					
15					

APPENDIX B

RED LAB LABORATORY TESTING REPORT



Hydrocarbon Analysis Results

Client: ESP
Address: GREENSBORO, NC

Samples taken Tuesday, March 8, 2022
Samples extracted Tuesday, March 8, 2022
Samples analysed Friday, March 11, 2022

Contact: NED BILLINGTON

Operator TORI KELLY

Project: I514.314

													U00904	
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	B99-2, S-6	15.7	<0.39	<0.39	0.96	0.96	0.33	<0.13	<0.016	0	76.4	23.6	V.Deg.Diesel 78.5%,(FCM)	
s	B99-4, S-9	25.5	<0.64	<0.64	10.6	10.6	2.9	<0.2	<0.025	0	86.2	13.8	Deg.Diesel 63.6%,(FCM),(BO)	
s	B99-5, S-9	21.5	<0.54	<0.54	3.5	3.5	1.4	<0.17	<0.022	0	76.1	23.9	Deg.Fuel 60.5%,(FCM)	
s	B99-6, S-9	10.1	<0.25	<0.25	<0.25	<0.25	<0.05	<0.08	<0.01	0	0	0	,(FCM)	
s	B99-8, S-2	15.2	<0.38	<0.38	<0.38	<0.38	<0.08	<0.12	<0.015	0	0	0	PHC not detected	
s	B99-9, S-6	16.7	<0.42	<0.42	<0.42	<0.42	<0.08	<0.13	<0.017	0	0	0	PHC not detected	
s	B99-10, S-6	16.9	<0.42	<0.42	2.5	2.5	0.58	<0.13	<0.017	0	100	0	Deg.Diesel 75.8%,(FCM)	
s	B99-11, S-3	10.9	<0.27	<0.27	<0.27	<0.27	<0.05	<0.09	<0.011	0	0	0	,(FCM)	
s	BPP-12, S-7	15.2	<0.38	<0.38	<0.38	<0.38	<0.08	<0.12	<0.015	0	0	0	PHC not detected,(BO)	
s	BPP-13, S-8	12.8	<0.32	<0.32	<0.32	<0.32	<0.06	<0.1	<0.013	0	100	0	Residual HC	
	Initial Calibrator QC check			OK		Final FCM QC Check					OK		100.8 %	

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

**Project:** 1514.314[illegible]

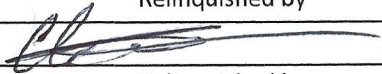
Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

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

APPENDIX C
CHAIN-OF-CUSTODY FORM

Client Name:	ESP		RED Lab, LLC
Address:	ON FILE		5598 Marvin K Moss Lane
Contact:	NED BILLINGTON		MARBIONC Bldg, Suite 2003
Project Ref.:	W-4758 IS14.314		Wilmington, NC 28409
Email:	ON FILE		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.
Phone #:	ON FILE		
Collected by:	ANNA ROEMER	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					
3-8-22		✓	✓		CLP	B99-2, S-6	48.7	39.8	8.9
						B99-4, S-9	49.9	39.7	10.2
						B99-5, S-9	45.8	39.3	6.5
						B99-6, S-9	50.0	40.1	9.9
						B99-8, S-2	49.1	39.9	9.2
						B99-9, S-6	48.5	40.1	8.4
						B99-10, S-6	47.7	39.4	8.3
						B99-11, S-3	51.8	39.0	12.8
						B99-12, S-7	48.9	39.7	9.2
						B99-13, S-8	50.7	39.8	10.9
3-8-22		✓	✓		CLP	B99-15, S-8	52.7	40.4	12.3
3-8-22		✓	✓		CLP	B99-6, S-1	48.6	40.0	8.6
3-8-22		✓	✓		CLP	B99-4, S-7	49.8	40.1	9.7

COMMENTS/REQUESTS:			TARGET GC/UVF ANALYTES:		
Relinquished by		Accepted by	Date/Time	RED Lab USE ONLY (13) Ref. No 3-2022-1	
	3-9-22				
Relinquished by		Accepted by	Date/Time		
		ECN 3/10/22 11:30AM			