



February 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 176
Circle K Store 1526, Circle K Stores, Inc.
8400 Norcross Road, Colfax, NC 27235
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.

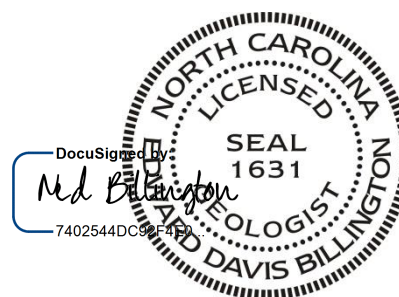
We appreciate the opportunity to assist you during this phase of the project. If you should have any questions concerning this report, or if we may be of further assistance, please contact us.

Sincerely,

ESP Associates, Inc.

A handwritten signature in blue ink, appearing to read "Edward D. Billington", is written over a blue line.

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



not considered Final unless all signatures are completed

TABLE OF CONTENTS

1.0	INTRODUCTION	1
2.0	HISTORY	1
2.1	Phase I Report	1
2.2	Background Research.....	1
2.3	Other Information.....	3
3.0	SITE OBSERVATIONS.....	3
4.0	METHODS	4
4.1	Geophysics	4
4.2	Borings	4
4.3	Soil Sample Protocol.....	5
4.4	Groundwater.....	5
5.0	RESULTS	5
5.1	Geophysics	5
5.2	Sample Data	6
5.3	Sample Observations.....	6
6.0	CONCLUSIONS.....	6
6.1	Geophysics	6
6.2	Soil	6
6.3	Estimated Quantities	7
7.0	RECOMMENDATIONS.....	7
8.0	LIMITATIONS.....	7

TABLES

Table 1	Soil Sample PID Readings
Table 2	Soil Sample UVF Results Summary
Table 3	Monitoring Well Locations With 2019 Monitoring Report Results

TABLE OF CONTENTS (continued)

FIGURES

Figure 1	Parcel 176, Circle K Stores, Inc., Site Vicinity Map
Figure 2	Parcel 176, Circle K Stores, Inc., Site Photographs, 1 of 2
Figure 3	Parcel 176, Circle K Stores, Inc., Site Photographs, 2 of 2
Figure 4	Parcel 176, Circle K Stores, Inc., Monitoring Well Locations on Plan Sheet
Figure 5	Parcel 176, Circle K Stores, Inc., EM61 Early Time Gate Data
Figure 6	Parcel 176, Circle K Stores, Inc., EM61 Differential Data
Figure 7	Parcel 176, Circle K Stores, Inc., Detail Area, EM61 Differential Data
Figure 8	Parcel 176, Circle K Stores, Inc., GPR Images of Four Automobile Fuel USTs
Figure 9	Parcel 176, Circle K Stores, Inc., GPR Images of Two Truck Diesel USTs
Figure 10	Parcel 176, Circle K Stores, Inc., EM61 Early Time Gate Data on Plan Sheet
Figure 11	Parcel 176, Circle K Stores, Inc., EM61 Differential Data on Plan Sheet
Figure 12	Parcel 176, Circle K Stores, Inc., Detail Area, EM61 Differential Data on Plan Sheet
Figure 13	Parcel 176, Circle K Stores, Inc., Boring Locations on Plan Sheet
Figure 14	Parcel 176, Circle K Stores, Inc., Soil Analytical Results on Plan Sheet
Figure 15	Parcel 176, Circle K Stores, Inc., Soil Contamination Shown for Project I-5712
Figure 16	Legend for Plan Sheet Figures

APPENDICES

Appendix A	Soil Boring Logs
Appendix B	RED Lab Laboratory Testing Report
Appendix C	Chain-of-Custody Form
Appendix D	Relevant NCDEQ Information

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 Parcel 176 to locate underground storage tanks (USTs), sample soil, and delineate potential contaminated soil. Parcel 176 is located at 8400 Norcross Road in Colfax on the west side of the intersection with Sandy Ridge 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 176 is an active gasoline service station with 7 USTs on site. Petroleum releases were recorded in 1986 (closed in 1987) and in 2014. This site was anticipated to present low geoenvironmental impacts to the project.

2.2 Background Research

We checked the following NCDEQ online sources: Division of Waste Management Site Locator Tool and linked files, the UST Incident Management Database, and the Registered Tanks Database.

The Registered Tanks Database indicated 7 USTs were installed on September 30, 1984:

Tank ID	Type	Volume, gallons	Tank Basin
1	Gasoline	10,000	Automobile
2	Gasoline	10,000	Automobile
3	Gasoline	8,000	Automobile
4	Kerosene	8,000	Other
5	Diesel	20,000	Truck
6	Diesel	20,000	Truck
7	Diesel	8,000	Automobile

The Site Locator Tool shows above-ground storage tank (AST) Incident No. 3216 and UST Incident Nos. 44346, 44550, 47300, and 47682 with linked online files for each. There are comments for each of these incidents in the UST Incident Management Database. ESP observed overlap between the referenced incidents in the online files and database comments.

Significant information from the incidents is provided below:

- **AST Incident No. 3216 with Notice of Violation dated April 28, 1986.** This report indicated that eight petroleum spills occurred from January 1, 1985 to

February 12, 1986 with volumes ranging from 5 to 50 gallons. Investigations were associated with the sump pit to the west (Figure D-1). The incident was closed out on October 13, 1987.

- **UST Incident No. 44346 dated June 20, 2014.** The online files for this incident were limited to two cost reimbursement memos.
 - The UST Incident Management Database included comments that indicated the following:
 - 4,000-gallons of diesel were released from the diesel UST (UST No. 7, automobile tank basin) via the flex connector in the sump on June 20, 2014 (Figure D-2). The diesel sump assessment report indicated total petroleum hydrocarbons (TPH) of 1,900 milligrams per kilogram (mg/kg) detected via soft dig sampling near the sump and the diesel UST No. 7. Free product (FP) was detected in monitoring wells MW-2 and MW-3 with thicknesses of 2.72 and 5.54 feet, respectively. The NCDEQ indicated that a Comprehensive Site Assessment (CSA) and FP recovery were required. Benzene, toluene, ethylbenzene, and xylene (BTEX) were detected in soil and groundwater (GW) samples collected during the CSA investigation, indicating a release from the gasoline tanks. A letter was sent by NCDEQ requesting additional information to complete the CSA.
 - Note dated 11/12/2019. Additional GW and FP assessment indicated no GW contamination had migrated off of the site. FP was detected in three monitoring wells within the automobile tank basin at thicknesses greater than 2 feet. The NCDEQ indicated that FP needs to be addressed and the CSA needs to be completed by January 20, 2019.
 - The 2015 report discussed below referenced an Initial Abatement Action (IAA) completed on September 2, 2014 and a Phase II Limited Site Assessment (LSA) completed on November 21, 2014. The LSA reported no contaminants above the Ground Water Quality Standards; however, the site was classified as a high risk due to nearby potable water wells. Additional GW monitoring was performed in April and July of 2015, when low levels of MTBE and benzene were detected above the North Carolina Code 2L Drinking Water Standards (NCAC 2L) Standards.
- **UST Incident No. 44550 dated July 30, 2015.** The following reports were included in the linked files:
 - Initial Abatement Action (IAA) and Limited Site Assessment (LSA) dated December 7, 2015. Soil samples tested from the base of the excavation for a new product line from the 20,000-gallon truck diesel USTs indicated petroleum contamination (Figure D-3). Approximately 63 tons of contaminated soil were removed but no over-excavation could be performed due to various obstacles. The LSA included installation of two

monitoring wells (MW-5 and MW-6) and six soil borings around the two 20,000-gallon USTs. Groundwater was encountered approximately 42 feet below ground surface (bgs). There was no contamination in the soil or groundwater identified above regulatory limits.

- GW Monitoring Report dated November 11, 2019. This is the most recent GW report received by the NCDEQ and addresses GW contamination in the vicinity of the automobile tank pit in the southeastern corner of the parcel. The GW report concluded that dissolved groundwater concentrations exceed 2L Standards in monitoring wells MW-1 and MW-14 (Figure D-4). Light Non-Aqueous Phase Liquid (LNAPL) was observed in MW-2, MW-3, and MW-11. Groundwater flow in the area is generally towards the east-southeast (Figure D-5). The GW sample results are provided in Figure D-6 and summarized in Table 3. The closest water-supply wells are located approximately 550 feet downgradient and are used for potable supply.
- **UST Incident No. 47300 dated October 7, 2020.** A UST-61 form was submitted for a release discovered on October 7, 2020. During diesel fuel delivery, approximately 40 to 50 gallons of diesel fuel were released around the fill ports for UST Nos. 5 and 6. The released fuel flowed into a stormwater inlet and the soils were impacted. After the remediation of the area, soil samples indicated that the contamination did not exceed the soil to groundwater maximum soil contaminant concentrations (MSCCs). A NCDEQ Letter of No Further Action was issued on December 16, 2020.
- **UST Incident No. 47682 dated March 29, 2021.** Approximately 60 to 80 gallons of gasoline were released from the fill port on UST No. 7. A vacuum truck was utilized to remove the contaminated water from the stormwater inlet. No documents are linked to this Incident.

2.3 Other Information

ESP's recent email correspondence with Carin Kromm, L.G., NCDEQ Winston-Salem Regional Office, indicated that the 2019 GW monitoring report was the latest report received. The site incident manager, Gene Mao, Guilford County, also indicated no further GW reports have been received. However, Mr. Mao did provide a copy of a 20-Day report regarding the October 7, 2020 diesel spill referenced above (Incident No. 47300).

The Guilford County GIS indicates that the property owner is listed as Circle K Stores, Inc.

3.0 SITE OBSERVATIONS

During our December 2021 and January 2022 field work, the site was occupied by an active Circle K gas station (Figure 2 and 3). The ground surface in the study area was covered by grass and concrete pavement. There are three tank beds located within the study area. The automobile fuel

tank bed is located on the southeastern corner, the truck diesel tank bed is located on the north side of the diesel canopy, and the kerosene tank bed is located north of the building. The automobile tank bed is partially within the proposed temporary construction easement for NCDOT Project U-5748. In addition, the kerosene tank bed and part of the truck diesel tank bed are located with the proposed temporary construction easement for NCDOT Project I-5712.

The inventory report provided by Circle K lists three 8,000-gallon tanks (one regular gasoline, one diesel, and one kerosene), two 10,000-gallon tanks (one regular gasoline and one supreme gasoline), and two 20,000-gallon diesel tanks. One AST is located at the northwest end of the diesel canopy and is listed as a 6,000-gallon Diesel Exhaust Fluid (DEF) tank. A total of 15 monitoring wells should be present on the parcel, including 3 not numbered and one not found (MW-10) (Figure 4). Note that Figure 4 also shows the 2 offsite monitoring wells, MW-13 and MW-14. The coordinates for the identified monitoring wells are provided in Table 3.

4.0 METHODS

ESP performed a geophysical study of the area designated by the NCDOT on December 28 and 29, 2021 and January 24 and 25, 2022. The geophysical investigation area was approximately 3.1 acres and encompassed the accessible areas of the parcel. We performed direct-push drilling and sampling of subsurface soils to depths of 10 feet on January 24 and 25, 2022. A photoionization detector (PID) was used to screen subsurface soils in the field and select soil samples to send for laboratory analysis. Groundwater was not encountered during the drilling investigation.

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 5, 6, and 7). Location control was provided in real-time using a differential global positioning system (DGPS).

4.2 Borings

ESP performed direct-push drilling on Parcel 176 using a subcontractor, SAEDACCO of Fort Mill, South Carolina. Twenty borings were drilled, designated B176-1 through B176-20 (Figure 13). The soil borings were advanced using a hand auger and a GeoProbe 54DT drill rig. Soil samples were obtained to a depth of approximately 10 feet using hand auger cuttings and 4-foot long Macro-Core® tubes. Soil cores varied in recovery from 80 to 100 percent. The sampling equipment was decontaminated prior to drilling and between borings by the driller using a pressure washer with Liquinox® detergent solution.

4.3 Soil Sample Protocol

Representative soil samples were taken from hand auger cuttings and the Macro-Core (core) tubes 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 0.5 to 43.7 parts per million (ppm) (Table 1).

Seventeen 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 BTEX; gasoline range organics (GRO); diesel range organics (DRO); TPH; total aromatics; polycyclic aromatic hydrocarbons (PAHs); and benzo(a)pyrene (BaP).

4.4 Groundwater

Groundwater was not encountered in the 20 borings.

5.0 RESULTS

5.1 Geophysics

The EM61 early time gate data show the response from both shallow and deeper metallic objects (Figure 5). The differential response reduces the effect of shallow anomalies and emphasizes anomalies from larger and more deeply buried metallic objects, such as USTs (Figures 6 and 7). Our evaluation of the EM61 data indicated several anomalies at the north end of the building that could not be attributed to known cultural features; GPR data collected over these anomalies indicated that they were caused by reinforced concrete. GPR data collected over the 4 known USTs in the automobile tank bed and over the 2 USTs in the truck diesel tank bed are shown on Figures 8 and 9, respectively.

The automobile fuel tank bed GPR data indicated that the four tanks are buried approximately 6 feet bgs. The two northern USTs have approximate diameters of 9 feet and lengths of 22 feet. The two southern USTs have approximate diameters of 8 feet and lengths of 25 feet. The truck diesel tank bed GPR data indicated that the two tanks are buried approximately 6 feet bgs and have

approximated diameters of 11 feet and lengths of 30 feet. No GPR data were collected over the kerosene tank bed due to two dumpsters located directly on top of the UST.

The EM61 early time gate response and differential response are shown on the plan sheet for NCDOT Project U-4758 on Figures 9, 10, and 12.

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, or ppm.

5.3 Sample Observations

The results of the laboratory testing indicate that BTEX and BAP were below the laboratory detection limits in the 17 samples tested. GRO was detected in one sample with values of 17.9 ppm, below the NCDEQ action level of 50 ppm for GRO. DRO was detected in 12 samples, with one sample above the NCDEQ action level of 100 ppm for DRO with a value of 868.2 ppm (Sample S1 in Boring B176-13). PAHs were detected in 3 samples with values ranging from 0.83 to 12.1 ppm.

6.0 CONCLUSIONS

The results of the Phase II investigation of Parcel 176 for NCDOT Project U-4758 indicates one boring location where DRO was above the NCDEQ Action Level for DRO. Groundwater was not encountered in the upper 10 feet at the site. However, groundwater contamination is known to be present on the parcel, based on previous investigations.

6.1 Geophysics

The geophysical data did not indicate the presence of abandoned USTs. The 4 known USTs in the automobile fuel tank bed on the southeast corner of the site are located partially within the proposed temporary construction easement for NCDOT Project U-4758. The two known USTs in the truck diesel tank bed and the single kerosene UST are within the proposed temporary construction easement for NCDOT Project I-5712 (Figure 15).

6.2 Soil

The results of the Phase II investigation for Parcel 176 of NCDOT Project U-4758 indicates that DRO was detected in Sample S1 (1.0 - 1.5 feet bgs) in Boring B176-13 at levels above the NCDEQ Action Level of 100 ppm for DRO (Figure 14). This boring is located outside of the proposed ROW and easements for Project U-4758 but within the proposed temporary construction easement for Project I-5712 (Figure 15).

6.3 Estimated Quantities

Based on the laboratory results and field observations, the petroleum contamination appears to be between ground surface and 4 feet bgs at and in the vicinity of Boring B176-13. The PID readings and UVF results from adjacent borings indicates the contamination does not extend to those borings. Using an average contaminated soil thickness of 4.0 feet and an area of 491 square feet, the volume of contaminated soil above 10 feet bgs is estimated as follows:

Total Estimated Volume of Contaminated Soil above 10 feet depth bgs
491 square feet * 4.0 feet = 1,964 cubic feet = 73 cubic yards

Assuming 100 pounds per cubic foot, the estimated amount of contaminated soil to be removed for construction is approximately 98 tons in the vicinity of Boring B176-13.

Additional soil contamination may be discovered when the 7 USTs and the dispenser islands are removed, so this should be considered when planning demolition and construction.

7.0 RECOMMENDATIONS

ESP recommends that the 4 known USTs in the automobile tank bed at the southeast corner that are located partially within the proposed temporary construction easement be removed in accordance with NCDEQ regulations. ESP also recommends that soil removed from the site as part of NCDOT construction activities in the vicinity of B176-13 be screened for petroleum hydrocarbon contamination, properly handled, segregated, and disposed of in accordance with NCDEQ regulations. Additionally, soil removed in the vicinity of the USTs, the product lines, and the dispenser islands also should be screened for petroleum hydrocarbon contamination, properly handled, segregated, and disposed of in accordance with NCDEQ regulations.

For NCDOT Project I-5712, the two USTs in the truck diesel tank pit, the kerosene UST, and Boring P176-13 are within the proposed temporary construction easement as shown on the 25 percent plans (Figure 15).

Groundwater was not encountered in the upper 10 feet in the study area. Based on the planned cut depths and proposed drainage features, it does not appear that groundwater will be encountered during construction. However, if groundwater is encountered during construction, it may be contaminated and should be screened for petroleum hydrocarbons, properly handled, segregated, and disposed of 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)
B176-1	None	0.6 (7.0 – 7.5)
B176-2	None	1.3 (4.0 – 4.5)
B176-3	None	0.6 (1.0 – 1.5, 8.0 – 8.5)
B176-4	None	1.5 (1.0 – 1.5)
B176-5	None	1.9 (1.0 – 1.5)
B176-6	None	1.6 (9.0 – 9.5)
B176-7	None	0.5 (4.0 – 4.5, 8.0 – 8.5)
B176-8	None	1.1 (9.0 – 9.5)
B176-9	None	0.8 (2.0 – 2.5)
B176-10	None	0.8 (5.0 – 5.5, 7.0 – 7.5)
B176-11	None	3.2 (9.0 – 9.5)
B176-12	None	1.2 (9.0 – 9.5)
B176-13	1.0 – 1.5	43.7 (1.0 – 1.5)
B176-14	None	1.6 (7.0 – 7.5)
B176-15	None	0.9 (1.0 – 1.5)
B176-16	None	0.8 (4.0 – 6.5)
B176-17	None	0.9 (5.0 – 5.5)
B176-18	None	1.1 (8.0 – 8.5)
B176-19	None	1.8 (2.0 – 2.5)
B176-20	None	1.4 (2.0 – 2.5)

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)
B176-1	S5	1/24/22	<0.64	<0.64	<0.64	<0.2
B176-1	S7	1/24/22	<0.53	<0.53	0.64	<0.17
B176-2	S4	1/24/22	<0.34	<0.34	<0.34	<0.11
B176-3	S1	1/24/22	<0.59	<0.59	0.85	<0.19
B176-3	S5	1/24/22	<0.54	<0.54	0.54	<0.17
B176-5	S4	1/24/22	<0.58	<0.58	<0.58	<0.19
B176-8	S6	1/24/22	<0.49	<0.49	0.67	<0.16
B176-9	S2	1/24/22	<0.61	<0.61	<0.61	<0.2
B176-10	S4	1/25/22	<0.54	<0.54	0.83	<0.17
B176-11	S2	1/24/22	<0.58	<0.58	<0.58	<0.19
B176-12	S6	1/25/22	<0.66	<0.66	0.66	<0.21
B176-13	S1	1/24/22	<7.5	<7.5	868.2	12.1
B176-13	S4	1/24/22	<1.2	17.9	68.8	0.83
B176-13	S8	1/24/22	<0.73	<0.73	11.7	<0.23
B176-17	S5	1/25/22	<0.52	<0.52	19.8	1.0
B176-19	S4	1/25/22	<0.33	<0.33	0.33	<0.11
B176-20	S2	1/25/22	<0.57	<0.57	0.57	<0.18

TABLE 3
MONITORING WELL LOCATIONS WITH 2019 MONITORING REPORT RESULTS

Monitoring Well	Northing	Easting	Depth to Groundwater, feet	2019 Monitoring Report Results		
				Detected Compound	Detected Level, ug/L	NC 2L Groundwater Standard ug/L
MW-1	853361	1705573	39.39	Benzene	15.4	1
				Toluene	27	600
				Ethylbenzene	47.1	600
				Xylenes, Total	109	500
				MTBE	15.2	20
				Naphthalene	9.8	6
MW-2 ¹	853345	1705578	40.73	Free Product 1.95ft thick	-	-
MW-3 ¹	853332	1705603	42.59	Free Product 4.18ft thick	-	-
MW-4	853332	1705603	39.08	MTBE	0.4	20
MW-5	853458	1705250	39.40	Not Sampled	-	-
MW-6	853493	1705254	38.50	Not Sampled	-	-
MW-7	853364	1705550	39.18	MTBE	10.1	20
MW-8	853384	1705595	39.53	MTBE	7.2	20
MW-9	853356	1705624	39.59	MTBE	0.46	20
MW-10 ⁴	NL		-	-	-	-
MW-11 ¹	853352	1705587	42.68	Free Product 4.30ft thick	-	-
MW-12D	853335	1705588	39.20	MTBE	1.1	20
MW-13	NL ³		36.19	All Below Detection Limits	-	-
MW-14	NL ³		38.77	MTBE	26.7	20
MW ²	853341	1705580	N/A	N/A	-	-
MW ²	853366	1705624	N/A	N/A	-	-
MW ²	853351	1705624	N/A	N/A	-	-

The complete summary of GW sampling results from the 2019 MR is provided in Appendix D-6

NL = Not Located

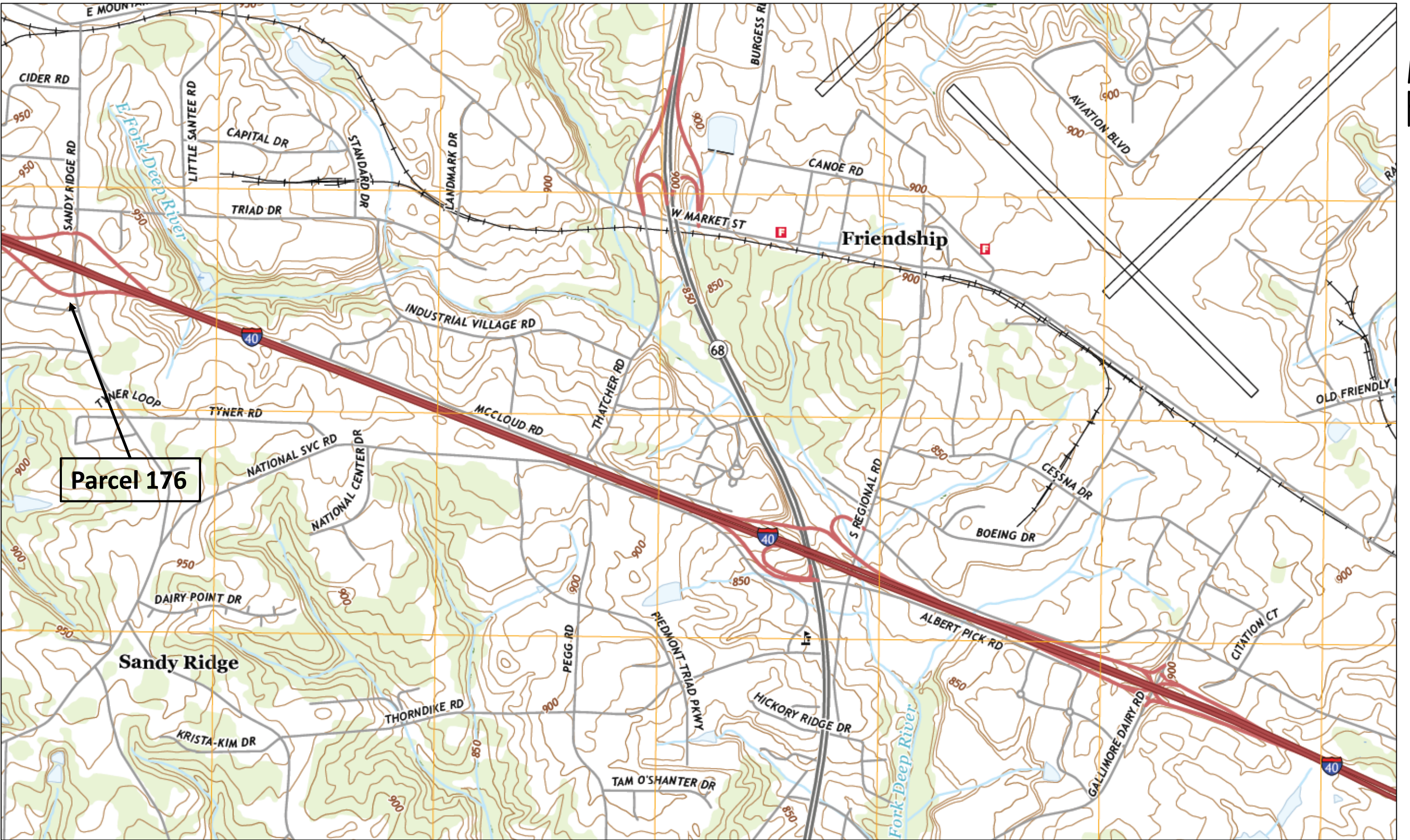
¹ Monitoring well not sampled due to free product

² Monitoring well not associated with 2019 Monitoring Report

³ Monitoring well not located during 2022 Phase II Investigation

⁴ MW-10 not located in the 2019 MR or 2022 Phase II Investigation

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 176, CIRCLE K STORES, INC 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 2/17/2022	NCDOT PROJECT U-4758 JOHNSON ST– SANDY RIDGE RD FROM SKEET CLUB RD TO I-40 GUILFORD COUNTY, NORTH CAROLINA	
BY CRP/EDB		



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



B. Photograph from southwest corner of parcel, looking east.



C. Photograph from northeast end of parcel, looking west.



D. Photograph of west end of parcel, looking north.

PROJECT NO. IS14.314	FIGURE 2 – PARCEL 176, CIRCLE K STORES, INC SITE PHOTOGRAPHS, 1 OF 2		ESP Associates, Inc.
SCALE N/A			7011 Albert Pick Rd., Suite E Greensboro, NC 27409
DATE 2/17/2022	NCDOT PROJECT U-4758 JOHNSON ST– SANDY RIDGE RD FROM SKEET CLUB RD TO I-40 GUILFORD COUNTY, NORTH CAROLINA		336.334.7724
BY CRP/EDB			www.espassociates.com



E. Photograph of the southeastern tank pit, looking south.



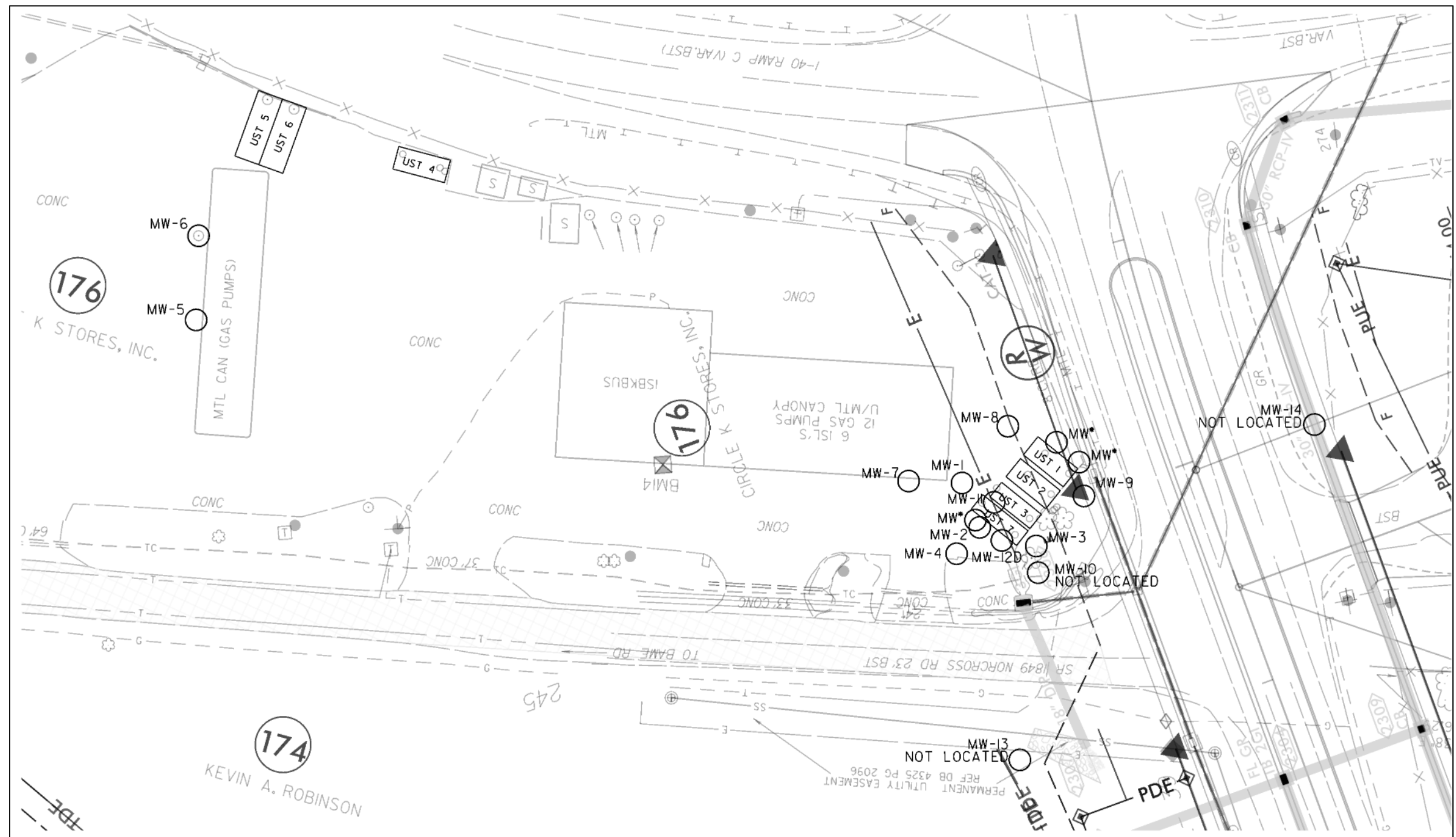
F. Photograph of the kerosene UST, looking northeast.



G. Photograph of the tank pit located on the north end of the diesel canopy, looking north.



H. Photograph of DEF AST located at the northwest end of the diesel canopy, looking south east. DEF is reportedly non-hazardous.



MW* - Monitoring well not associated with the 2019 Monitoring Report

List of Microstation References

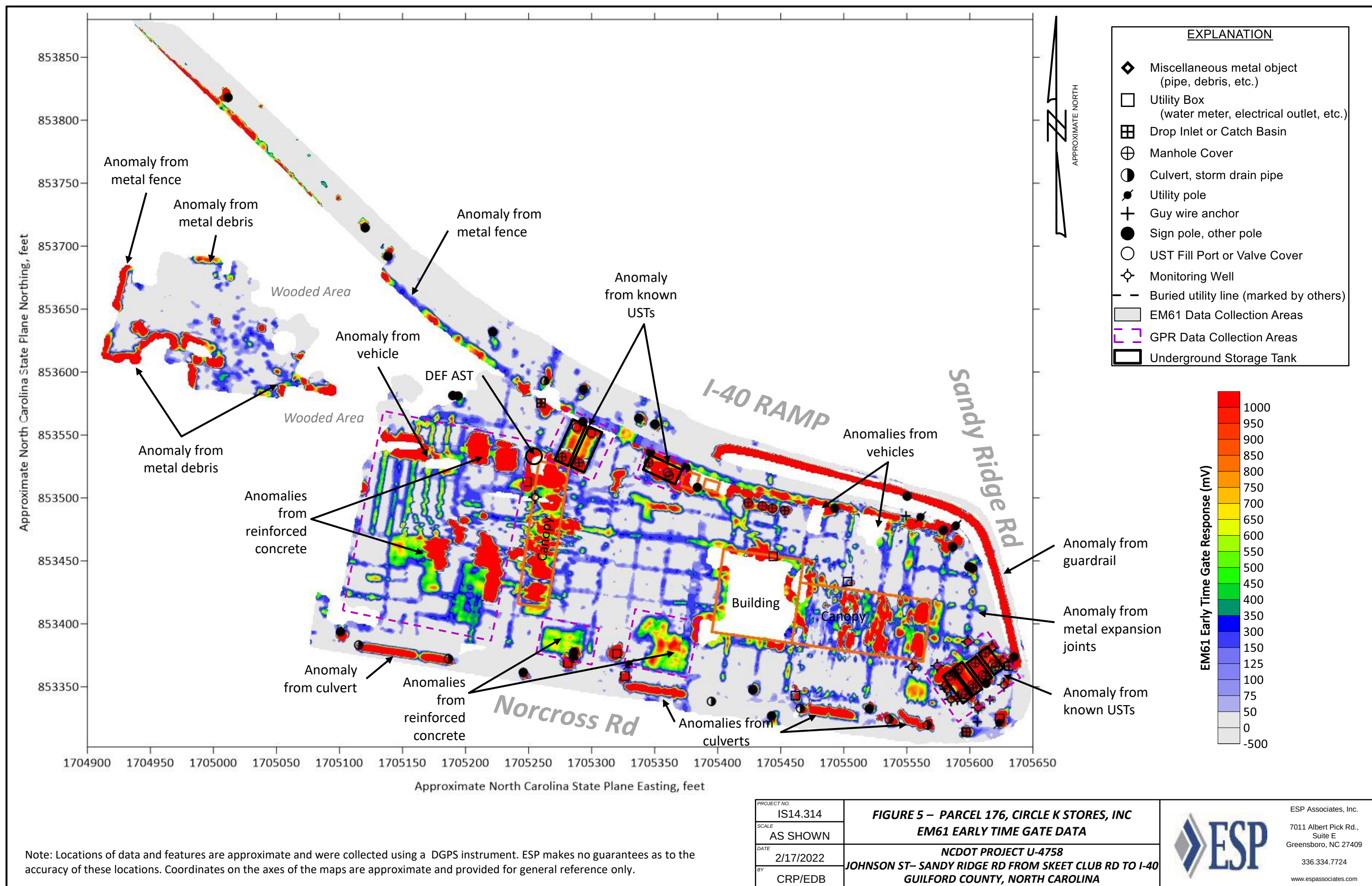
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- U4758_ncdot_fs.dgn
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- U4758_rdy_row.dgn
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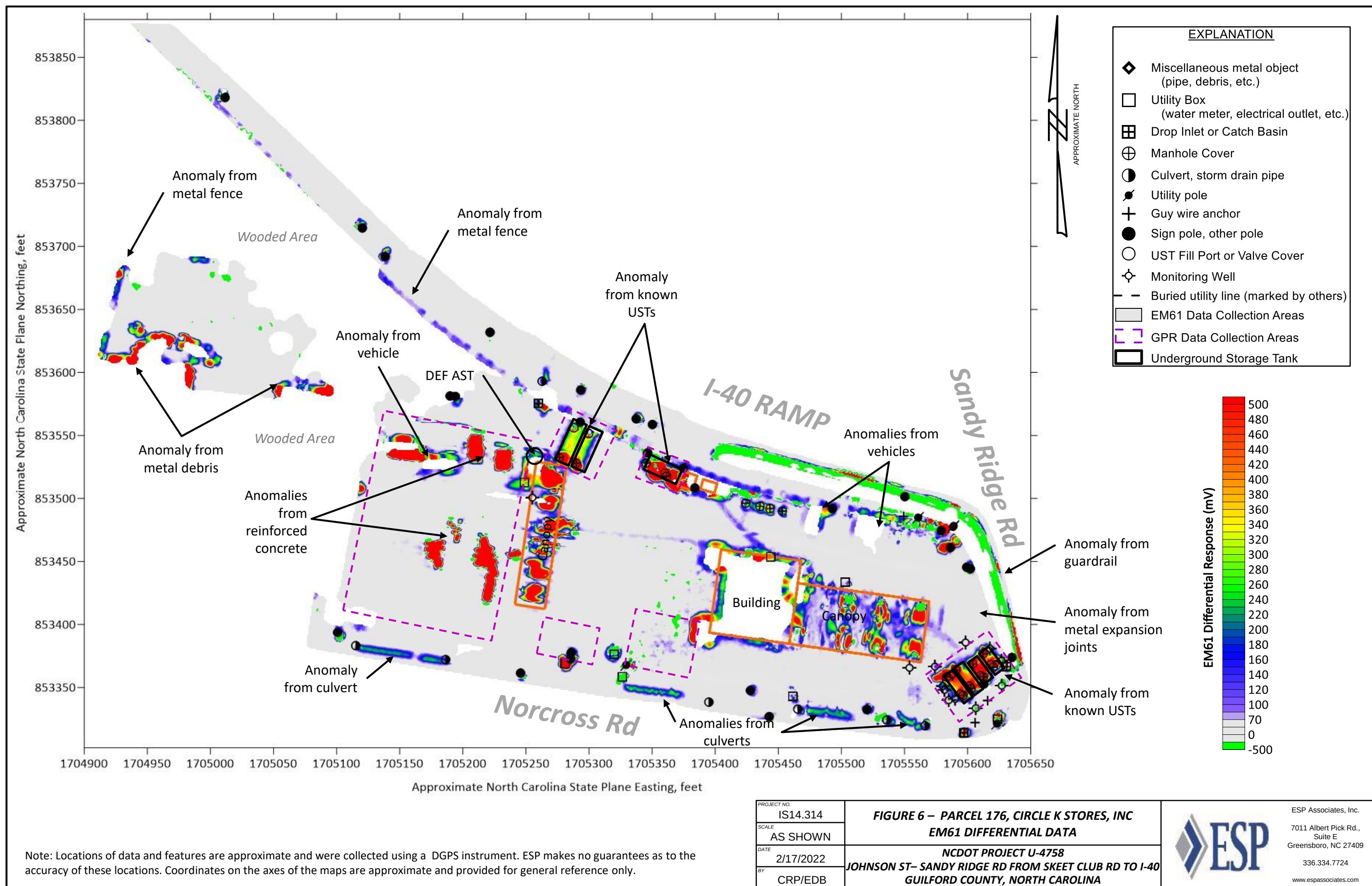


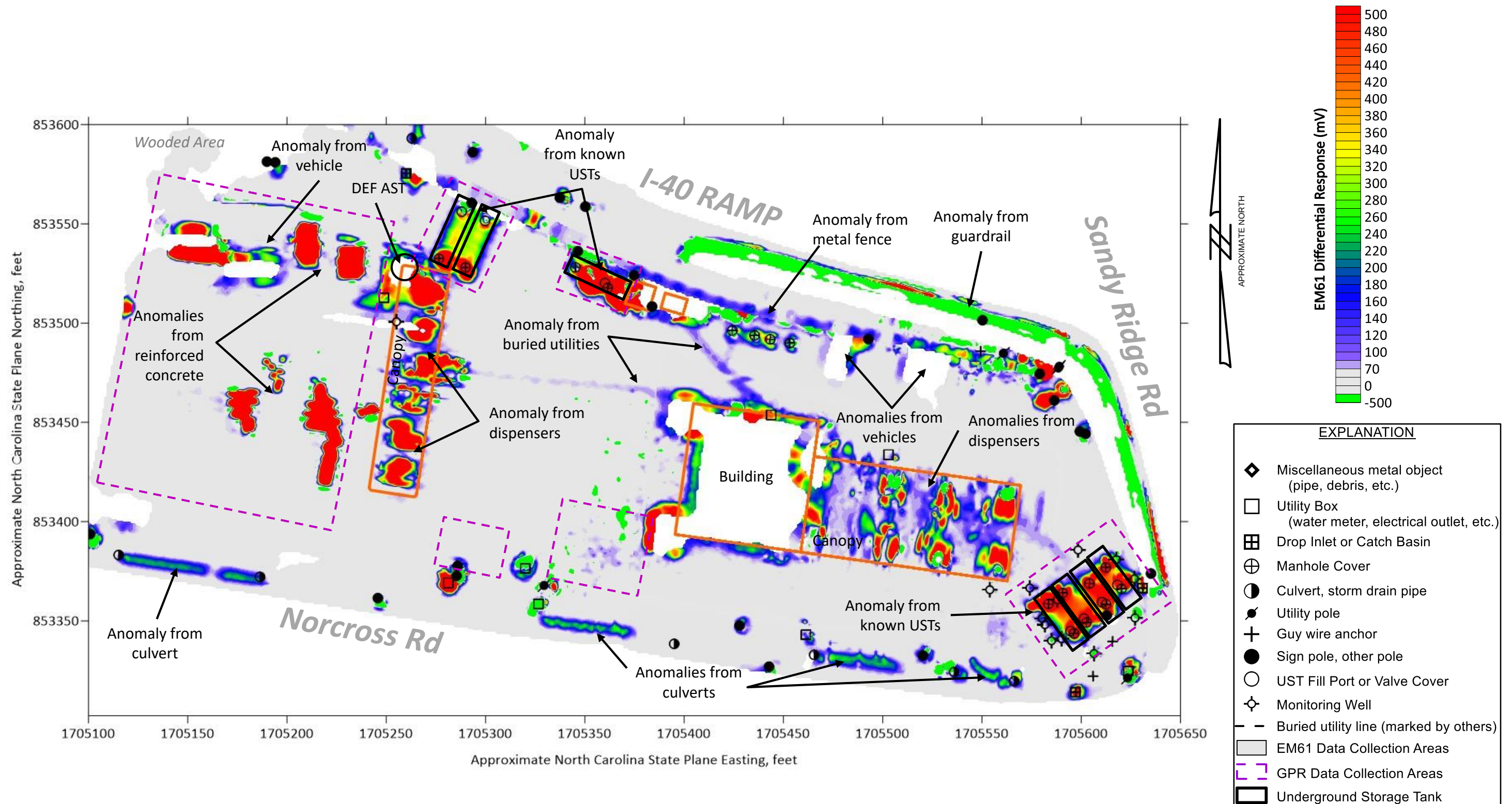
See Figure 16 for explanation of symbols and line types

PROJECT NO. IS14.314	FIGURE 4 – PARCEL 176, CIRCLE K STORES, INC MONITORING WELL LOCATIONS ON PLAN SHEET		ESP Associates, Inc. 7011 Albert Pick Rd., Suite E Greensboro, NC 27409 336.334.7724 www.espassociates.com
SCALE 1" = 50'			
DATE 2/17/2022			
BY CRP/EDB			

**NCDOT PROJECT U-4758
JOHNSON ST- SANDY RIDGE RD FROM SKEET CLUB RD TO I-40
GUILFORD COUNTY, NORTH CAROLINA**

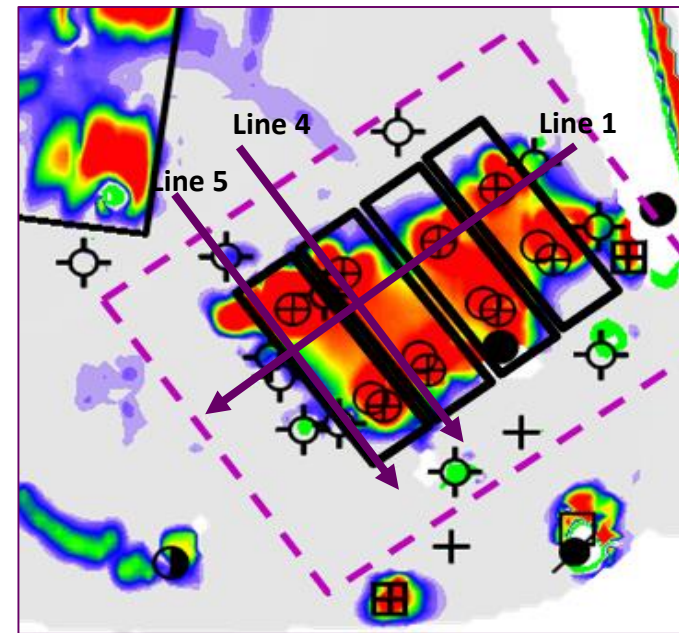




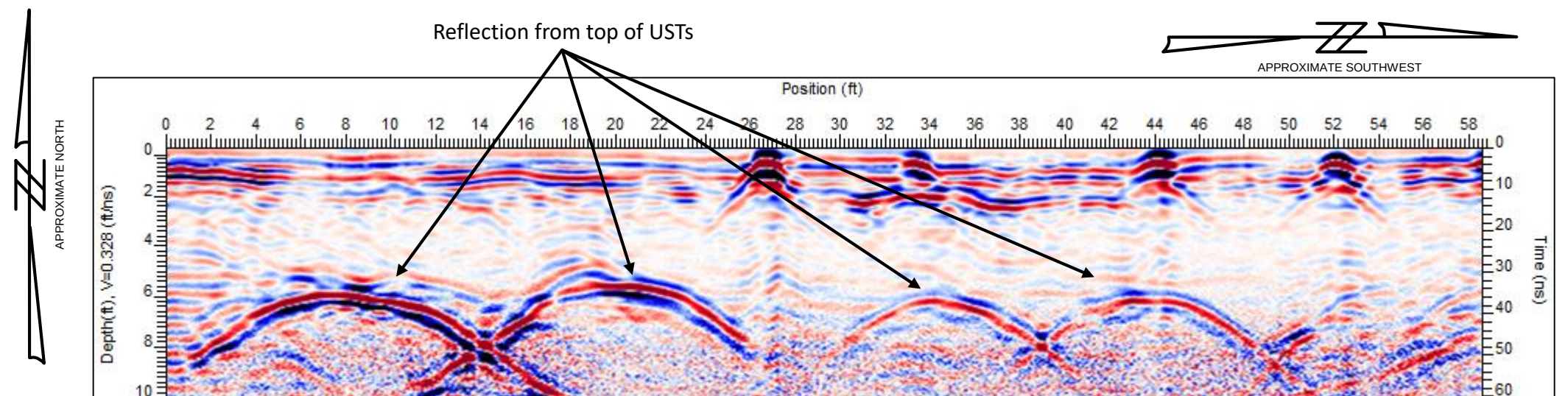


Note: Locations of data and features are approximate and were collected using a DGPS instrument. ESP makes no guarantees as to the accuracy of these locations. Coordinates on the axes of the maps are approximate and provided for general reference only.

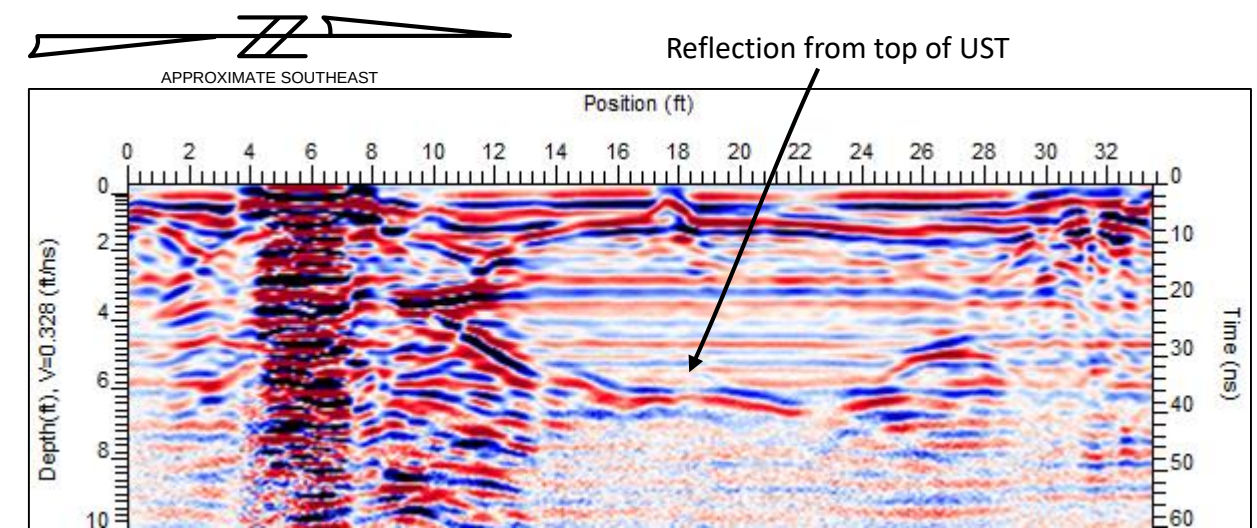
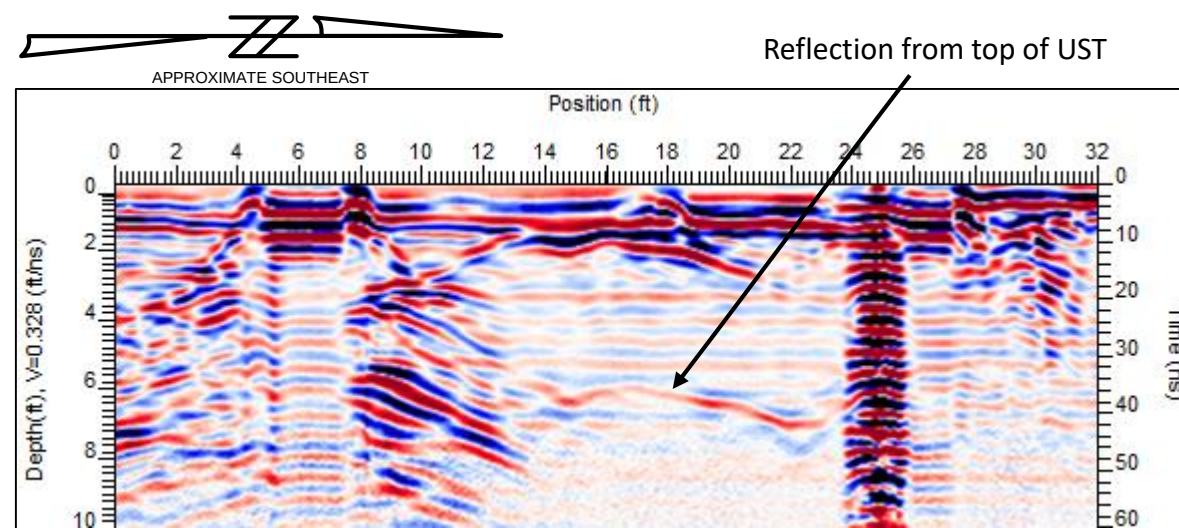
PROJECT NO. IS14.314	FIGURE 7 – PARCEL 176, CIRCLE K STORES, INC DETAIL AREA, EM61 DIFFERENTIAL DATA	 ESP Associates, Inc. 7011 Albert Pick Rd., Suite E Greensboro, NC 27409 336.334.7724 www.espassociates.com	
SCALE AS SHOWN			
DATE 2/17/2022	NCDOT PROJECT U-4758 JOHNSON ST– SANDY RIDGE RD FROM SKEET CLUB RD TO I-40 GUILFORD COUNTY, NORTH CAROLINA		
BY CRP/EDB			



A. Approximate location of example GPR lines over 4 known USTs in southeastern corner of site.

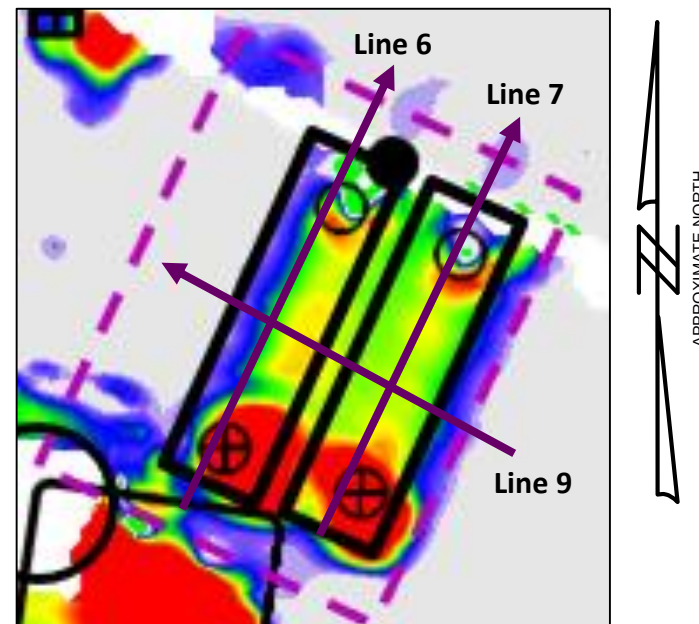


B. Example GPR Line 1 over short axes of 4 known USTs in southeastern corner of site.

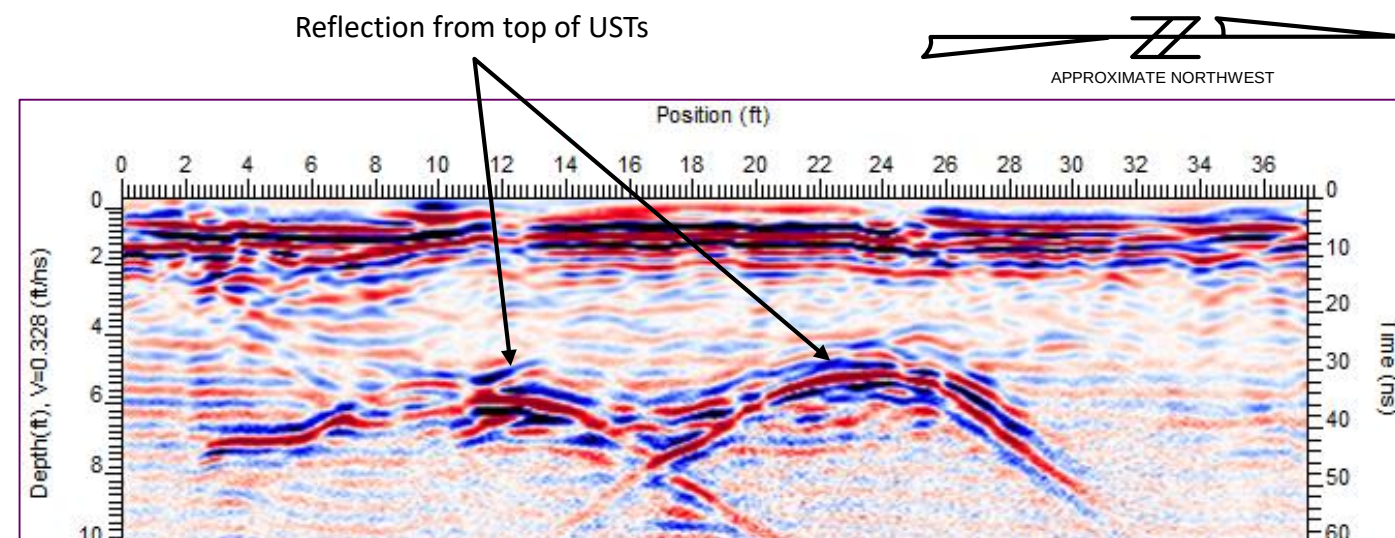


C. Example GPR Lines 4 (left) and 5 (right) over long axis of second UST from the south (Line 4) and the southern UST (Line 5). Reflection from UST is partially blocked by steel plates on surface.

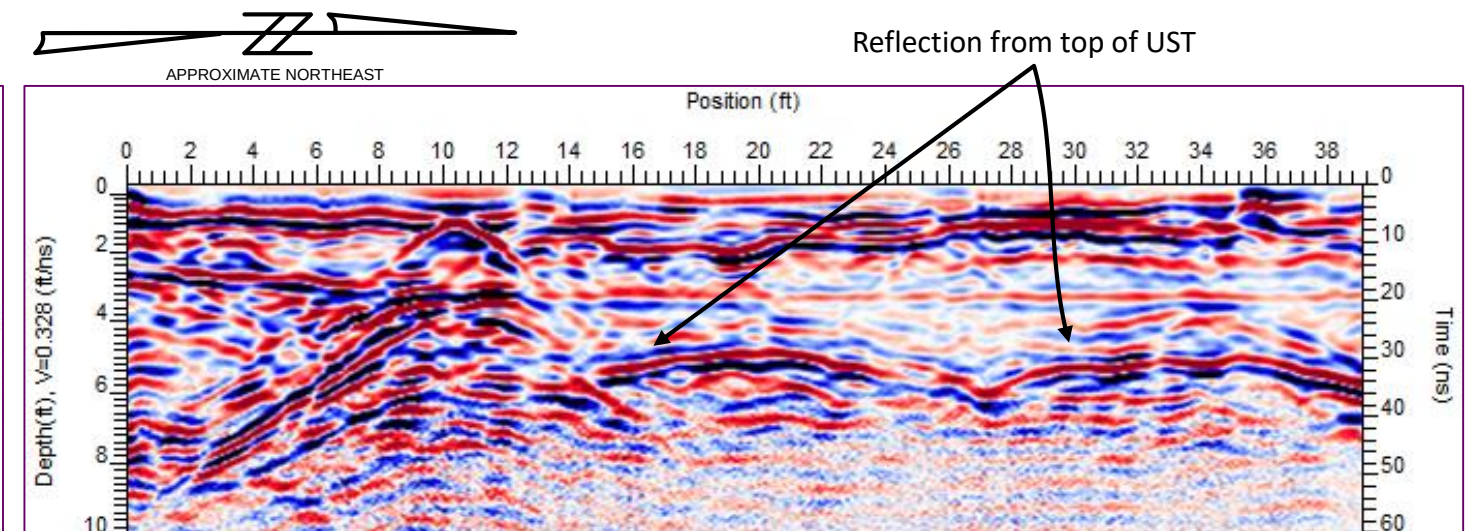
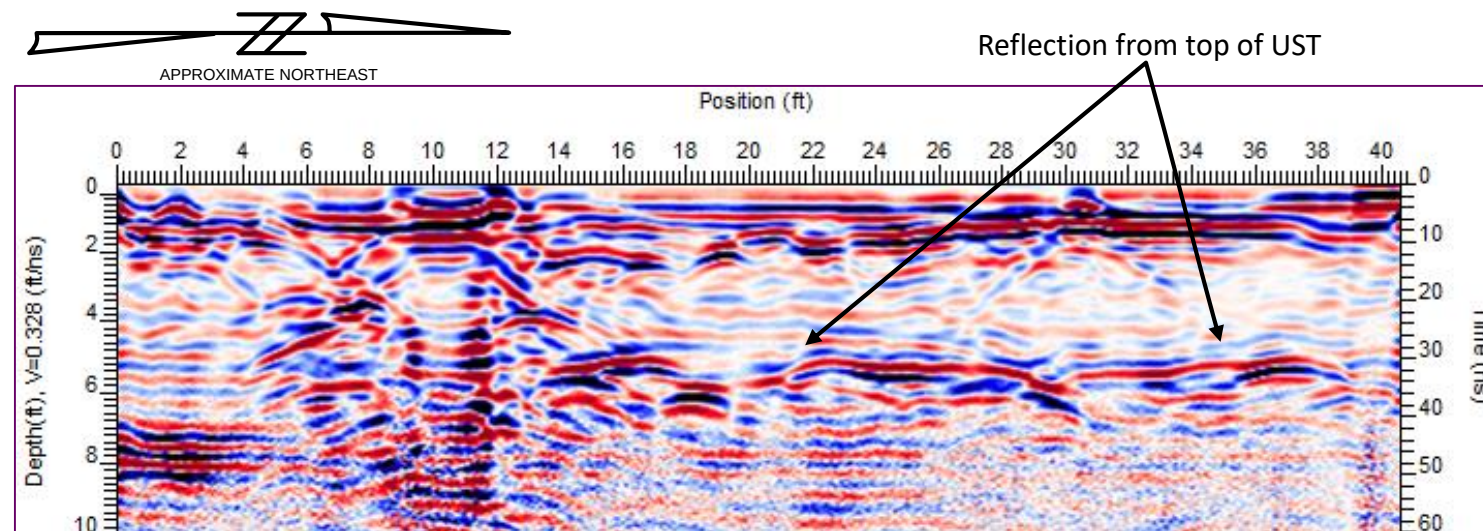
PROJECT NO. IS14.314	FIGURE 8 - PARCEL 176, CIRCLE K STORES, INC GPR IMAGES OF FOUR AUTOMOBILE FUEL USTS		ESP Associates, Inc.
SCALE AS SHOWN			7011 Albert Pick Rd., Suite E Greensboro, NC 27409
DATE 2/17/2022	NCDOT PROJECT U-4758 JOHNSON ST- SANDY RIDGE RD FROM SKEET CLUB RD TO I-40 GUILFORD COUNTY, NORTH CAROLINA		336.334.7724
BY CRP/EDB			www.espassociates.com



A. Approximate location of example GPR lines over 2 truck diesel USTs.



B. Example GPR Line 9 over short axes of 2 truck diesel USTs.

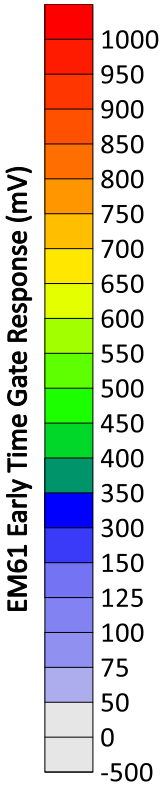


C. Example GPR Lines 6 (left) and 7 (right) over long axis of the western UST (Line 6) and the eastern UST (Line 7). Reflection from USTs are partially blocked by steel plates on surface.

PROJECT NO. IS14.314	FIGURE 9 - PARCEL 176, CIRCLE K STORES, INC GPR IMAGES OF TWO TRUCK DIESEL USTS		ESP Associates, Inc.
SCALE AS SHOWN			7011 Albert Pick Rd., Suite E Greensboro, NC 27409
DATE 2/17/2022	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



USTS ON PARCEL 176		
UST 1	- 10,000	GAL GASOLINE
UST 2	- 10,000	GAL GASOLINE
UST 3	- 8,000	GAL GASOLINE
UST 4	- 8,000	GAL KEROSENE
UST 5	- 20,000	GAL DIESEL
UST 6	- 20,000	GAL DIESEL
UST 7	- 8,000	GAL DIESEL



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

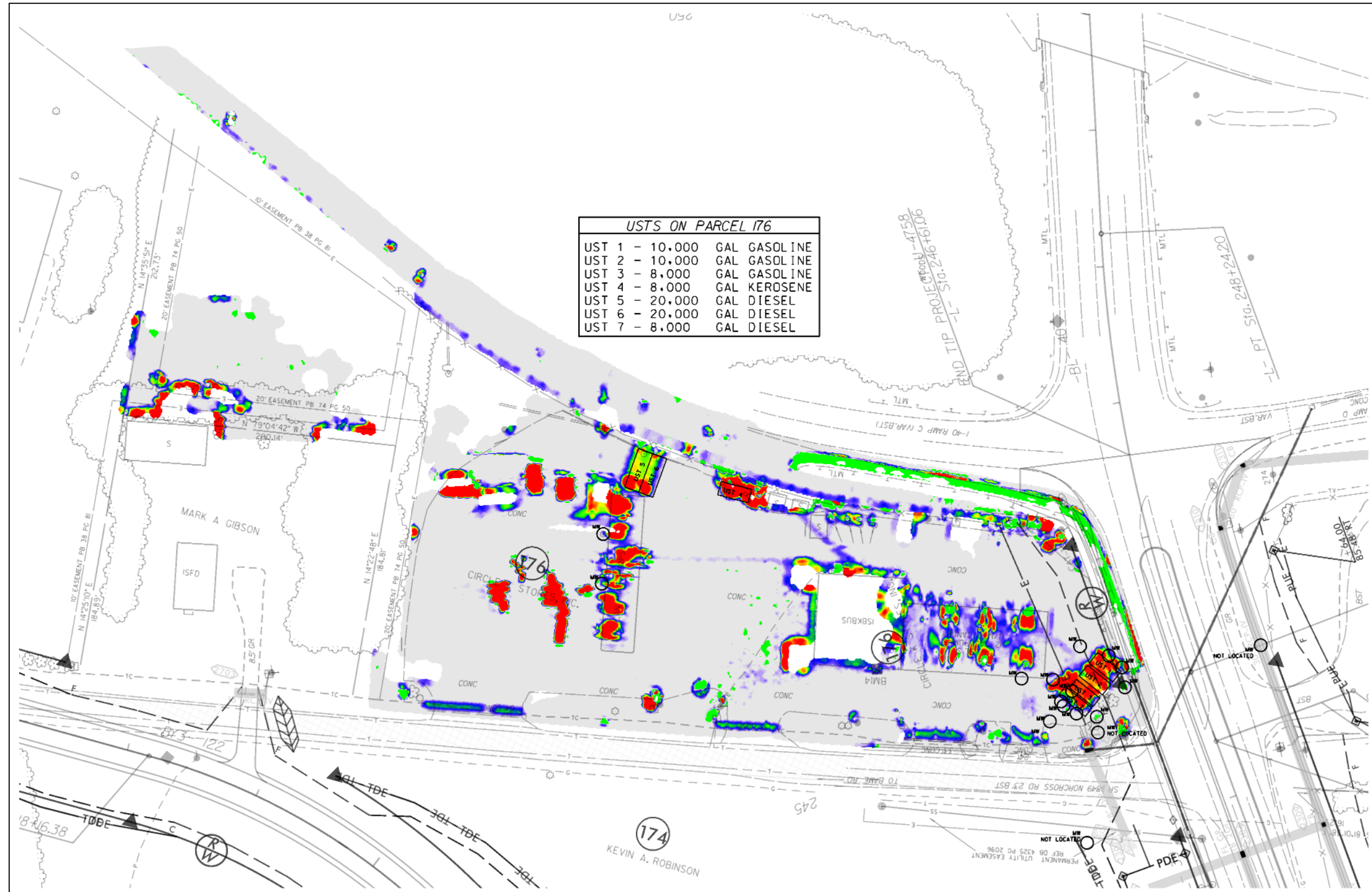


See Figure 16 for explanation of symbols and line types

PROJECT NO.	IS14.314	FIGURE 10 – PARCEL 176, CIRCLE K STORES, INC EM61 EARLY TIME GATE DATA ON PLAN SHEET
SCALE	1" = 80'	
DATE	2/17/2022	NCDOT PROJECT U-4758 JOHNSON ST– SANDY RIDGE RD FROM SKEET CLUB RD TO I-40 GUILFORD COUNTY, NORTH CAROLINA
BY	CRP/EDB	



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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 16 for explanation of symbols and line types

0 80 160
FEET

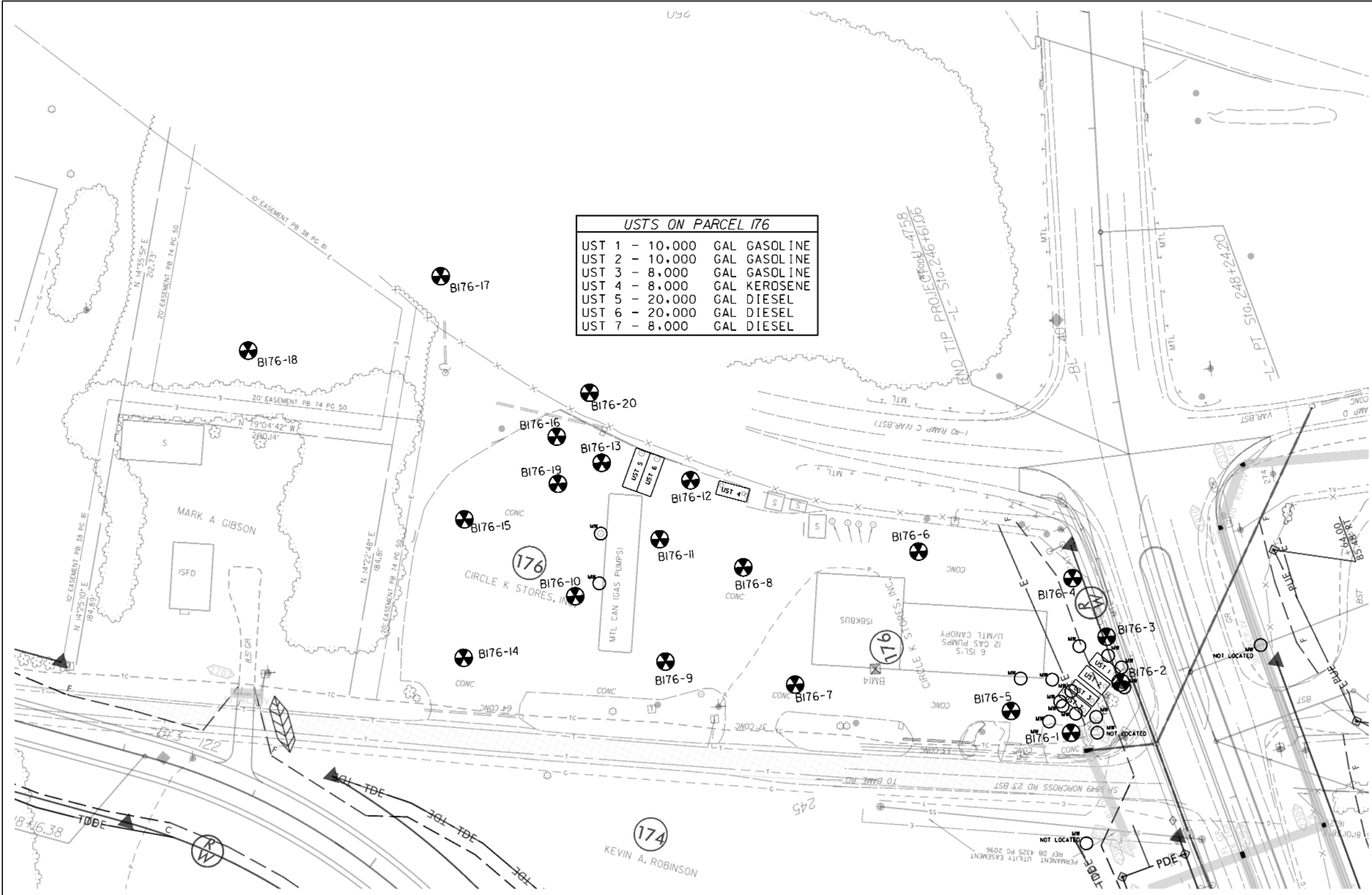
PROJECT NO.	IS14.314
SCALE	1" = 80'
DATE	2/17/2022
BY	CRP/EDB

FIGURE 11 – PARCEL 176, CIRCLE K STORES, INC
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



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USTS ON PARCEL 176		
UST 1	- 10,000	GAL GASOLINE
UST 2	- 10,000	GAL GASOLINE
UST 3	- 8,000	GAL GASOLINE
UST 4	- 8,000	GAL KEROSENE
UST 5	- 20,000	GAL DIESEL
UST 6	- 20,000	GAL DIESEL
UST 7	- 8,000	GAL DIESEL

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 16 for explanation of symbols and line types



PROJECT NO.
IS14.314

SCALE
1" = 80'

DATE
2/17/2022

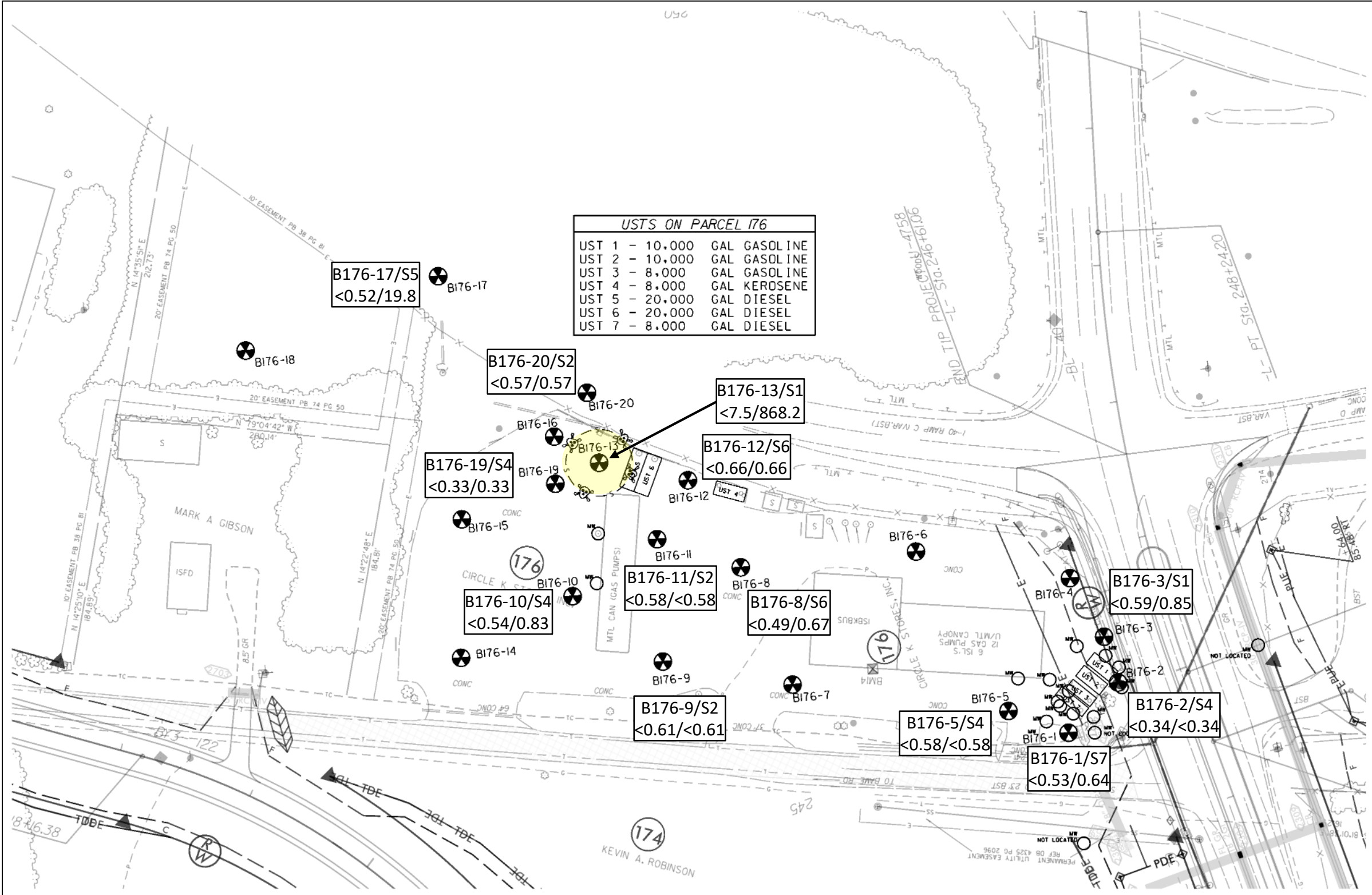
BY
CRP/EDB

FIGURE 13 – PARCEL 176, CIRCLE K STORES, INC
BORING LOCATIONS 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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Explanation	
B176-1/S7	<0.53/0.64
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

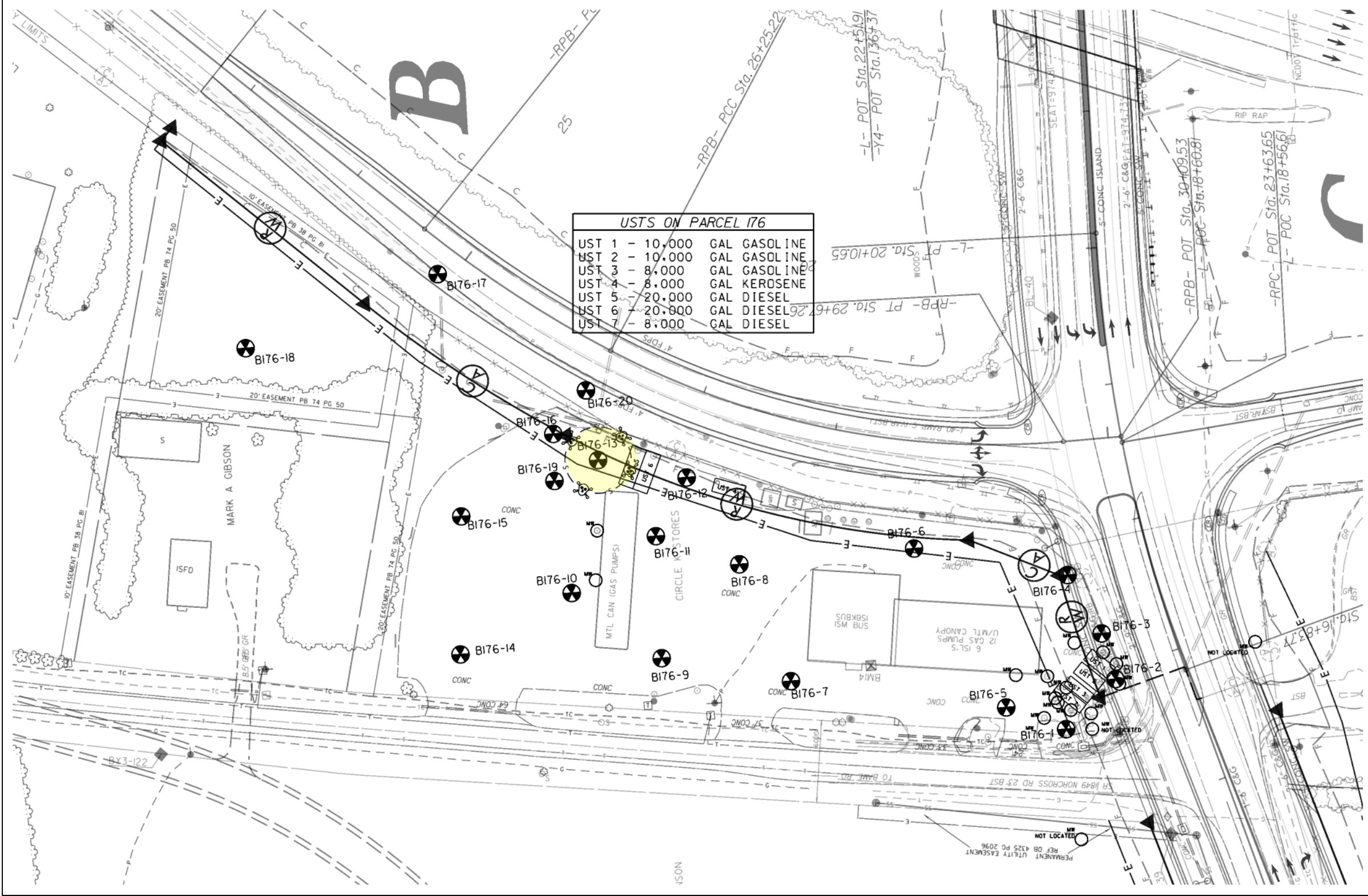


See Figure 16 for explanation of symbols and line types

PROJECT NO.	IS14.314
SCALE	1" = 80'
DATE	2/17/2022
BY	CRP/EDB
FIGURE 14 – PARCEL 176, CIRCLE K STORES, INC 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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USTS ON PARCEL 176		
UST 1	- 10,000	GAL GASOLINE
UST 2	- 10,000	GAL GASOLINE
UST 3	- 8,000	GAL GASOLINE
UST 4	- 8,000	GAL KEROSENE
UST 5	- 20,000	GAL DIESEL
UST 6	- 20,000	GAL DIESEL
UST 7	- 8,000	GAL DIESEL

List of Microstation References

- U4758_Geo_env.dgn
- Ref, I-5712_rdy_row.dgn
- I-5712_rdy_ss.dgn
- i5712_ncdot_fs.dgn
- I-5712_rdy_row.dgn

See Figure 16 for explanation of symbols and line types

PROJECT NO.	IS14.314
SCALE	1" = 80'
DATE	2/17/2022
BY	CRP/EDB

FIGURE 15 – PARCEL 176, CIRCLE K STORES, INC

SOIL CONTAMINATION SHOWN FOR PROJECT I-5712

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	2/17/2022
BY	CRP/EDB

FIGURE 16 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.**B176-1**

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 43' southeast of southeast corner of gas canopy

TYPE OF BORING: Hand Auger and Direct Push

DATE STARTED: 1/24/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 1/24/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Robert Miller

SAMPLE METHOD: Hand Auger / 4' Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 968.9'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.2' Topsoil	Hand Auger 0.0'-5.0'
				0.3'-8.3' Red Sandy CLAY, Moist	
1	S-1	1.0-1.5	0.1		
2	S-2	2.0-2.5	0.2		
3	S-3	3.0-3.5	0.3		
4	S-4	4.0-4.5	0.4		
5	S-5	5.0-5.5	0.5		Macrocore 5.0'-9.0' Core Rec 3.5'/4.0'
6	S-6	6.0-6.5	0.3		
7	S-7	7.0-7.5	0.6		
8	S-8	8.0-8.5	0.3	8.3'-10.0' Reddish Brown and White Micaceous Silty CLAY, Moist	Macrocore 9.0'-10.0' Core Rec 1.0'/1.0'
9	S-9	9.0-9.5	0.4		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B176-2

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 52' east of southeast corner of gas canopy

TYPE OF BORING: Direct Push

DATE STARTED: 1/24/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 1/24/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Robert Miller

SAMPLE METHOD: 4' Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 969.3'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Topsoil	Macrocore 0.0'-4.0'
				0.3'-8.7' Red Silty CLAY, Moist	Core Rec 3.7'/4.0'
1	S-1	1.0-1.5	1.1		
2	S-2	2.0-2.5	0.9		
3	S-3	3.0-3.5	1.0		
4	S-4	4.0-4.5	1.3		Macrocore 4.0'-8.0'
					Core Rec 4.0'/4.0'
5	S-5	5.0-5.5	0.8		
6	S-6	6.0-6.5	0.6		
7	S-7	7.0-7.5	0.7		
8	S-8	8.0-8.5	1.1		Macrocore 8.0'-10.0'
				8.7'-10' Yellow-Brown Clayey SILT, Moist	Core Rec 2.0'/2.0'
9	S-9	9.0-9.5	0.5		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B176-3

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 50' northeast of southeast corner of gas canopy

TYPE OF BORING: Hand Auger and Direct Push

DATE STARTED: 1/24/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 1/24/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Robert Miller

SAMPLE METHOD: Hand Auger/4' Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 969.7'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Concrete	Hand Auger 0.0'-2.0'
				0.3'-8.7' Red Sandy CLAY, Moist	
1	S-1	1.0-1.5	0.6		
2	S-2	2.0-2.5	0.4		Macrocore 2.0'-4.0' Core Rec 2.0'/2.0'
3	S-3	3.0-3.5	0.4		
4	S-4	4.0-4.5	0.1		Macrocore 4.0'/8.0' Core Rec 4.0'/4.0'
5	S-5	5.0-5.5	0.5		
6	S-6	6.0-6.5	0.5		
7	S-7	7.0-7.5	0.4		
8	S-8	8.0-8.5	0.6		Macrocore 8.0'-10.0' Core Rec 2.0'/2.0'
				8.7'-10.0' Red Micaceous Silty CLAY, Moist	
9	S-9	9.0-9.5	0.5		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B176-4

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 26' northeast of northeast corner of gas canopy

TYPE OF BORING: Direct Push

DATE STARTED: 1/24/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 1/24/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Robert Miller

SAMPLE METHOD: 4' Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 970.2'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Concrete	Macrocore 0.0'-4.0'
				0.3'-5.8' Red Sandy CLAY, Moist	Core Rec 3.3'/4.0'
1	S-1	1.0-1.5	1.5		
2	S-2	2.0-2.5	0.7		
3	S-3	3.0-3.5	0.6		
4	S-4	4.0-4.5	0.5		Macrocore 4.0'-8.0'
					Core Rec 4.0'/4.0'
5	S-5	5.0-5.5	0.6		
6	S-6	6.0-6.5	0.6	5.8'-10.0' Red Micaceous Clayey SILT, Moist	
7	S-7	7.0-7.5	0.9		
8	S-8	8.0-8.5	0.8		Macrocore 8.0'-10.0'
					Core Rec 2.0'/2.0'
9	S-9	9.0-9.5	1.2		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B176-5

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 38' feet southwest of southeast corner of gas canopy

TYPE OF BORING: Hand Auger and Direct Push

DATE STARTED: 1/24/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 1/24/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Robert Miller

SAMPLE METHOD: Hand Auger/4' Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 969.6

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Concrete	Hand Auger 0.0'-1.5'
				0.3'-10.0' Red-Brown Sandy CLAY, Moist	
1	S-1	1.0-1.5	1.9		
					Macrocore 1.5'-4.0'
2	S-2	2.0-2.5	1.7	2.0' Grading to Gray	Core Rec 2.5'/2.5'
3	S-3	3.0-3.5	1.0		
				3.3' Grading to Yellow-Brown	
4	S-4	4.0-4.5	0.5		Macrocore 4.0'-8.0'
					Core Rec 4.0'/4.0'
					4.0'-5.0' Petroleum Odor
5	S-5	5.0-5.5	0.4		
6	S-6	6.0-6.5	0.7		
7	S-7	7.0-7.5	0.7		
8	S-8	8.0-8.5	0.4		Macrocore 8.0'-10.0'
					Core Rec 2.0'/2.0'
9	S-9	9.0-9.5	1.0		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B176-6

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 28' northeast of northeast corner of building

TYPE OF BORING: Direct Push

DATE STARTED: 1/24/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 1/24/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Robert Miller

SAMPLE METHOD: 4' Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 971.2'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Concrete	Macrocore 0.0'-4.0'
				0.3'-5.8' Dark Gray Sandy CLAY, Moist	Core Rec 4.0'/4.0'
1	S-1	1.0-1.5	0.7		
				1.5' Grading to Red	
2	S-2	2.0-2.5	0.4		
3	S-3	3.0-3.5	0.5		
4	S-4	4.0-4.5	0.5		Macrocore 4.0'-8.0'
					Core Rec 4.0'/4.0'
5	S-5	5.0-5.5	0.4		
				5.8'-10.0' Orange and Red Micaceous Clayey SILT, Moist	
6	S-6	6.0-6.5	0.6		
7	S-7	7.0-7.5	0.5		
8	S-8	8.0-8.5	0.9		Macrocore 8.0'-10.0'
					Core Rec 2.0'/2.0'
9	S-9	9.0-9.5	1.6	9.0' Grading to White	
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B176-7

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 21' southwest of southwest corner of building

TYPE OF BORING: Direct Push

DATE STARTED: 1/24/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 1/24/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Robert Miller

SAMPLE METHOD: 4' Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 972.0'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Concrete	Macrocore 0.0'-4.0'
					Core Rec 3.5'/4.0'
1	S-1	1.0-1.5	0.4	0.3'-7.7' Red-Brown and Gray Sandy CLAY, Moist	
				1.9' Grading to Brown-Red	
2	S-2	2.0-2.5			
3	S-3	3.0-3.5	0.4		
4	S-4	4.0-4.5	0.5		Macrocore 4.0'-8.0'
					Core Rec 4.0'/4.0'
5	S-5	5.0-5.5	0.3		
6	S-6	6.0-6.5	0.3		
7	S-7	7.0-7.5	0.4		
				7.7'-10.0' Brown-Red Silty CLAY, Moist	
8	S-8	8.0-8.5	0.5		Macrocore 8.0'-10.0'
					Core Rec 2.0'/2.0'
9	S-9	9.0-9.5	0.3		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B176-8

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 52' west from northwest corner of building

TYPE OF BORING: Direct Push

DATE STARTED: 1/24/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 1/24/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Robert Miller

SAMPLE METHOD: 4' Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 971.5'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Concrete	Macrocore 0.0'-4.0'
				0.3'-5.6' Red Silty CLAY, Moist	Core Rec 4.0'/4.0'
1	S-1	1.0-1.5	0.9		
2	S-2	2.0-2.5	0.3		
3	S-3	3.0-3.5	0.5		
4	S-4	4.0-4.5	0.3		Macrocore 4.0'-8.0'
					Core Rec 4.0'/4.0'
5	S-5	5.0-5.5	0.4		
				5.6'-10.0' Red and Orange Micaceous Clayey SILT, Moist	
6	S-6	6.0-6.5	0.7		
7	S-7	7.0-7.5	0.5		
8	S-8	8.0-8.5	0.7		Macrocore 8.0'-10.0'
					Core Rec 2.0'/2.0'
9	S-9	9.0-9.5	1.1	9.0' Grading to Yellow	
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B176-9

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 107' feet west of southwest corner of building

TYPE OF BORING: Direct Push

DATE STARTED: 1/24/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 1/24/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Robert Miller

SAMPLE METHOD: 4' Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 972.5'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Concrete	Macrocore 0.0'-4.0'
				0.3'-5.6' Red Silty CLAY, Moist	Core Rec 4.0'/4.0'
1	S-1	1.0-1.5	0.6		
2	S-2	2.0-2.5	0.8		
3	S-3	3.0-3.5	0.4		
4	S-4	4.0-4.5	0.4		Macrocore 4.0'-8.0'
					Core Rec 4.0'/4.0'
5	S-5	5.0-5.5	0.3		
				5.6'-10.0' Orange-Red Micaceous Clayey SILT, Moist	
6	S-6	6.0-6.5	0.5		
7	S-7	7.0-7.5	0.5		
8	S-8	8.0-8.5	0.6		Macrocore 8.0'-10.0'
					Core Rec 2.0'/2.0'
9	S-9	9.0-9.5	0.5		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B176-10

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 39' north from southwest corner of diesel canopy

TYPE OF BORING: Direct Push

DATE STARTED: 1/25/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 1/25/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Robert Miller

SAMPLE METHOD: 4' Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 971.3'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Concrete	Macrocore 0.0'-4.0'
				0.3'-6.2' Red Silty CLAY, Moist	Core Rec 4.0'-4.0'
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	0.5		
4	S-4	4.0-4.5	0.7		Macrocore 4.0'-8.0'
					Core Rec 4.0'-4.0'
5	S-5	5.0-5.5	0.8		
6	S-6	6.0-6.5	0.7		
				6.2'-10.0' Red and Orange Micaceous Clayey SILT, Moist	
7	S-7	7.0-7.5	0.8		
8	S-8	8.0-8.5	0.7		Macrocore 8.0'-10.0'
					Core Rec 2.0'/2.0'
9	S-9	9.0-9.5	1.1	8.9' Grading to Black	
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B176-11

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 42' southeast of northeast corner of diesel canopy

TYPE OF BORING: Direct Push

DATE STARTED: 1/24/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 1/24/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Robert Miller

SAMPLE METHOD: 4' Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 970.8'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Concrete	Macrocore 0.0'-4.0'
				0.3'-5.3' Red Silty CLAY, Moist	Core Rec 4.0'/4.0'
1	S-1	1.0-1.5	0.9		
2	S-2	2.0-2.5	1.9		
3	S-3	3.0-3.5	1.3		
4	S-4	4.0-4.5	2.1		Macrocore 4.0'-8.0'
					Core Rec 4.0'/4.0'
5	S-5	5.0-5.5	1.9	5.3'-10.0' Red-Brown Micaceous Clayey SILT, Moist	
6	S-6	6.0-6.5	2.0		
7	S-7	7.0-7.5	1.9		
8	S-8	8.0-8.5	3.0	8.0' Grading to Yellow	Macrocore 8.0'-10.0'
					Core Rec 2.0'/2.0'
9	S-9	9.0-9.5	3.2		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B176-12

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 35' west of the kerosene tank pit

TYPE OF BORING: Direct Push

DATE STARTED: 1/25/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 1/25/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Robert Miller

SAMPLE METHOD: 4' Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 970.4'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Concrete	Macrocore 0.0'-4.0'
				0.3'-5.6' Red Silty CLAY, Moist	Core Rec 4.0'/4.0'
1	S-1	1.0-1.5	0.6		
2	S-2	2.0-2.5	0.7		
3	S-3	3.0-3.5	0.5		
4	S-4	4.0-4.5	0.3		Macrocore 4.0'-8.0'
					Core Rec 4.0'/4.0'
5	S-5	5.0-5.5	0.5		
				5.6'-10.0' Orange Micaceous Clayey SILT, Moist	
6	S-6	6.0-6.5	0.8		
7	S-7	7.0-7.5	0.5		
8	S-8	8.0-8.5	0.7	8.0' Grading to Yellow	Macrocore 8.0'-10.0'
					Core Rec 2.0'/2.0'
9	S-9	9.0-9.5	1.2		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B176-13

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 15' north from the northwest corner of diesel canopy

TYPE OF BORING: Hand Auger and Direct Push

DATE STARTED: 1/24/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 1/24/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Robert Miller

SAMPLE METHOD: Hand Auger and 4' Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 969.2'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Concrete	Hand Auger 0.0'-5.0'
1	S-1	1.0-1.5	43.7	0.3'-4.7' Gray and Black Silty CLAY, Moist	0.5'-1.5' petroleum odor
2	S-2	2.0-2.5	3.8	1.8' Grading to Red	
3	S-3	3.0-3.5	0.6		
4	S-4	4.0-4.5	3.6		
				4.7'-10.0' Red Micaceous Clayey SILT, Moist	
5	S-5	5.0-5.5	1.3		Macrocore 5.0'-9.0' Core Rec 4.0'/4.0'
6	S-6	6.0-6.5	1.1		
7	S-7	7.0-7.5	0.9	7.3' Grading to Yellow-Brown	
8	S-8	8.0-8.5	3.2		
9	S-9	9.0-9.5	1.6		Macrocore 9.0'-10.0' Core Rec 1.0'/1.0'
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B176-14

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approx. 45' north from edge of pavement from the middle of the fourth entrance off of Norcross

TYPE OF BORING: Direct Push

DATE STARTED: 1/25/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 1/25/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Robert Miller

SAMPLE METHOD: 4' Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 971.6'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Concrete	Macrocore 0.0'-4.0'
				0.3'-10.0' Red Silty CLAY, Moist	Core Rec 4.0'/4.0'
1	S-1	1.0-1.5	1.1		
2	S-2	2.0-2.5	1.0		
3	S-3	3.0-3.5	0.8		
4	S-4	4.0-4.5	0.6		Macrocore 4.0'-8.0'
					Core Rec 4.0'/4.0'
5	S-5	5.0-5.5	1.1		
6	S-6	6.0-6.5	0.8		
7	S-7	7.0-7.5	1.6		
8	S-8	8.0-8.5	1.1		Macrocore 8.0'-10.0'
				8.8' Grading to White	Core Rec 2.0'/2.0'
9	S-9	9.0-9.5	1.2		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B176-15

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 100' west of the diesel canopy

TYPE OF BORING: Direct Push

DATE STARTED: 1/25/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 1/25/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Robert Miller

SAMPLE METHOD: 4' Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 970.1'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Concrete	Macrocore 0.0'-4.0'
				0.3'-6.3' Dark Gray Silty CLAY, Moist	Core Rec 4.0'/4.0'
1	S-1	1.0-1.5	0.9		
				1.8' Grading to Red	
2	S-2	2.0-2.5	0.6		
3	S-3	3.0-3.5	0.5		
4	S-4	4.0-4.5	0.4		Macrocore 4.0'-8.0'
					Core Rec 4.0'/4.0'
5	S-5	5.0-5.5	0.4		
6	S-6	6.0-6.5	0.3	6.3'-9.3' Red Micaceous Clay SILT, Moist	
7	S-7	7.0-7.5	0.2		
8	S-8	8.0-8.5	0.7		Macrocore 8.0'-10.0'
				8.7' Grading to Orange	Core Rec 2.0'/2.0'
9	S-9	9.0-9.5	0.5	9.3'-10.0 Orange and White Sandy SILT, Moist	
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B176-16

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 48' northwest from the northwest corner of the diesel canopy

TYPE OF BORING: Direct Push

DATE STARTED: 1/25/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 1/25/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Robert Miller

SAMPLE METHOD: 4' Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 969.4'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Concrete	Macrocore 0.0'-4.0'
				0.3'-5.8' Red Silty CLAY, Moist	Core Rec 4.0'/4.0'
1	S-1	1.0-1.5	0.3		
2	S-2	2.0-2.5	0.6		
3	S-3	3.0-3.5	0.3		
4	S-4	4.0-4.5	0.8		Macrocore 4.0'-8.0'
					Core Rec 4.0'/4.0'
5	S-5	5.0-5.5	0.8		
6	S-6	6.0-6.5	0.8	5.8'-10.0' Yellow-Brown, Micaceous Clayey SILT, Moist	
7	S-7	7.0-7.5	0.5		
8	S-8	8.0-8.5	1.0		Macrocore 8.0'-10.0'
					Core Rec 2.0'/2.0'
9	S-9	9.0-9.5	1.3	9.0' Grading to Yellow	
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B176-17

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 15' east of the gas stores sign on the I-40 East exit ramp

TYPE OF BORING: Hand Auger and Direct Push

DATE STARTED: 1/25/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 1/25/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Robert Miller

SAMPLE METHOD: Hand Auger and 4' Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: N/A

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Gravel and Topsoil	Hand Auger 0.0'-5.0'
				0.3'-5.4' Red Sandy CLAY, Moist	
1	S-1	1.0-1.5	0.4		
2	S-2	2.0-2.5	0.5		
3	S-3	3.0-3.5	0.3		
4	S-4	4.0-4.5	0.5	4.0' Grading to Yellow	
5	S-5	5.0-5.5	0.9		Macrocore 5.0'-9.0'
				5.4'-8.8' Orange and White Silty SAND, Moist	Core Rec 3.2'/4.0'
6	S-6	6.0-6.5	0.4		
7	S-7	7.0-7.5	0.4		
8	S-8	8.0-8.5	0.4		
				8.8'-10.0' Yellow-Brown Micaceous Clayey SILT, Moist	
9	S-9	9.0-9.5	0.6		Macrocore 9.0'-10.0'
					Core Rec 1.0'/1.0'
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.**B176-18**

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 70' northeast from the northwest corner of garage

TYPE OF BORING: Direct Push

DATE STARTED: 1/25/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 1/25/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Robert Miller

SAMPLE METHOD: 4' Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 966.9'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Topsoil	Macrocore 0.0'-4.0'
				0.3'-6.2' Red Silty CLAY, Moist	Core Rec 3.5'/4.0'
1	S-1	1.0-1.5	0.6		
2	S-2	2.0-2.5	0.4		
3	S-3	3.0-3.5	0.3		
4	S-4	4.0-4.5	0.3		Macrocore 4.0'-8.0'
					Core Rec 4.0'/4.0'
5	S-5	5.0-5.5	0.7		
				5.3' Grading to Orange	
6	S-6	6.0-6.5	0.6		
				6.2'-10.0' Orange Micaceous Clayey SILT, Moist	
7	S-7	7.0-7.5	0.9		
8	S-8	8.0-8.5	1.1		Macrocore 8.0'-10.0'
					Core Rec 2.0'/2.0'
9	S-9	9.0-9.5	1.0	9.0' Grading to Yellow-Brown	
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B176-19

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 20' west of the DEF AST

TYPE OF BORING: Direct Push

DATE STARTED: 1/25/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 1/25/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Robert Miller

SAMPLE METHOD: 4' Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: 969.7'

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Concrete	Macrocore 0.0'-4.0'
				0.3'-4.4' Red Silty CLAY, Moist	Core Rec 3.4'/4.0'
1	S-1	1.0-1.5	1.2		
2	S-2	2.0-2.5	1.8		
3	S-3	3.0-3.5	0.7		
4	S-4	4.0-4.5	1.0		Macrocore 4.0'-8.0'
				4.4'-10.0' Red Micaceous Clayey SILT, Moist	Core Rec 4.0'/4.0'
5	S-5	5.0-5.5	0.6		
6	S-6	6.0-6.5	0.8		
7	S-7	7.0-7.5	1.0		
				7.2' Grading to Yellow-Brown	
8	S-8	8.0-8.5	1.1		Macrocore 8.0'-10.0'
					Core Rec 2.0'/2.0'
9	S-9	9.0-9.5	0.9		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B176-20

PROJECT NAME: NCDOT U-4758 Phase II

PROJ. NO.: IS14.314

LOCATION: Approximately 50' northwest of B176-13, located at the end of a drain pipe

TYPE OF BORING: Direct Push

DATE STARTED: 1/25/2022

SHEET: 1 of 1

DRILLING FIRM: SAEDACCO

DATE FINISHED: 1/25/2022

TOTAL DEPTH: 10.0 ft

DRILLER: Robert Miller

SAMPLE METHOD: 4' Macrocore

DEPTH TO GW: Dry ft

DRILL RIG: Geoprobe 54DT

LOGGED BY: A. Roseman

COMMENT: Elev: N/A

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0'-0.3' Topsoil	Macrocore 0.0'-4.0'
				0.3'-4.0' Red Silty CLAY, Moist	Core Rec 4.0'/4.0'
1	S-1	1.0-1.5	0.8		
2	S-2	2.0-2.5	1.4		
3	S-3	3.0-3.5	0.9		
4	S-4	4.0-4.5	0.8	4.0'-10.0' Orange Micaceous Clayey SILT, Moist	Macrocore 4.0'-8.0'
					Core Rec 4.0'/4.0'
5	S-5	5.0-5.5	0.6		
6	S-6	6.0-6.5	0.6		
7	S-7	7.0-7.5	0.2		
8	S-8	8.0-8.5	0.4	8.0' Grading to Gray	Macrocore 8.0'/10.0'
					Core Rec 2.0'/2.0'
9	S-9	9.0-9.5	0.6		
10					
11					
12					
13					
14					
15					

APPENDIX B

RED LAB LABORATORY TESTING REPORT



Hydrocarbon Analysis Results

Client: ESP
Address: GREENSBORO, NC

Samples taken Monday, January 24, 2022
Samples extracted Monday, January 24, 2022
Samples analysed Thursday, January 27, 2022

Contact: NED BILLINGTON

Operator CLAIRE NAKAMURA

Project: I514.314

													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	B176-1, S5	25.5	<0.64	<0.64	<0.64	<0.64	<0.13	<0.2	<0.025	0	0	0	PHC not detected,(BO)	
s	B176-1, S7	21.1	<0.53	<0.53	0.64	0.64	0.61	<0.17	<0.021	0	18.1	81.9	Residual HC,(BO)	
s	B176-2, S4	13.6	<0.34	<0.34	<0.34	<0.34	<0.07	<0.11	<0.014	0	100	0	,(FCM)	
s	B176-3, S1	23.6	<0.59	<0.59	0.85	0.85	0.43	<0.19	<0.024	0	87.6	12.4	V.Deg.PHC 49.3%,(FCM)	
s	B176-3, S5	21.7	<0.54	<0.54	0.54	0.54	0.31	<0.17	<0.022	0	0	100	PHC not detected,(BO)	
s	B176-5, S4	23.2	<0.58	<0.58	<0.58	<0.58	<0.12	<0.19	<0.023	0	100	0	PHC not detected	
s	B176-8, S6	19.4	<0.49	<0.49	0.67	0.67	0.64	<0.16	<0.019	0	10.9	89.1	Residual HC,(BO)	
s	B176-9, S2	24.5	<0.61	<0.61	<0.61	<0.61	<0.12	<0.2	<0.025	0	0	0	PHC not detected	
s	B176-10, S4	21.5	<0.54	<0.54	0.83	0.83	0.79	<0.17	<0.021	0	7.5	92.5	Residual HC,(BO)	
s	B176-11, S2	23.2	<0.58	<0.58	<0.58	<0.58	<0.12	<0.19	<0.023	0	100	0	Residual HC	
	Initial Calibrator QC check			OK		Final FCM QC Check					OK		102.7 %	

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



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



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
Address:	ON FILE
Contact:	NED BILLINGTON
Project Ref.:	ISH.314
Email:	ON FILE
Phone #:	ON FILE
Collected by:	ANNA ROSEMAN



RED Lab, LLC
5598 Marvin K Moss Lane
MARBIONC Bldg, Suite 2003
Wilmington, NC 28409

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					
1-24-22		✓	✓		CRP	B176-1, S5	50.5	40.3	10.2
1-24-22						B176-1, S7	52.2	39.9	12.3
1-24-22						B176-2, S4	50.5	40.2	10.3
1-24-22						B176-3, S1	51.1	40.1	11.0
1-24-22						B176-3, S5	52.1	40.1	12.0
1-24-22						B176-5, S4	51.3	40.1	11.2
1-24-22						B176-8, S6	53.6	40.2	13.4
1-24-22						B176-9, S2	50.7	40.1	10.6
1-25-22						B176-10, S4	52.2	40.1	12.1
1-24-22						B176-11, S2	51.3	40.1	11.2
1-25-22						B176-12, S6	49.7	39.9	9.8
1-24-22						B176-13, S1	51.4	40.2	11.2
1-24-22						B176-13, S4	50.8	40.2	10.6
1-24-22						B176-13, S8	49.1	40.2	8.9
1-25-22						B176-17, S5	52.6	40.1	12.5
1-25-22						B176-19, S4	50.7	40.2	10.5
1-25-22		✓	✓		CRP	B176-20, S2	51.7	40.3	11.4

COMMENTS/REQUESTS:

TARGET GC/UVF ANALYTES:

Relinquished by		Accepted by	Date/Time	RED Lab USE ONLY (17) Ref. No 1-2022-2
	1-26-22			
Relinquished by		Accepted by	Date/Time	
		ECU 1/27/2022 12:17 PM		

APPENDIX D
RELEVANT NCDEQ INFORMATION

SCALE 1" = 20'

Q-11-86
B-3

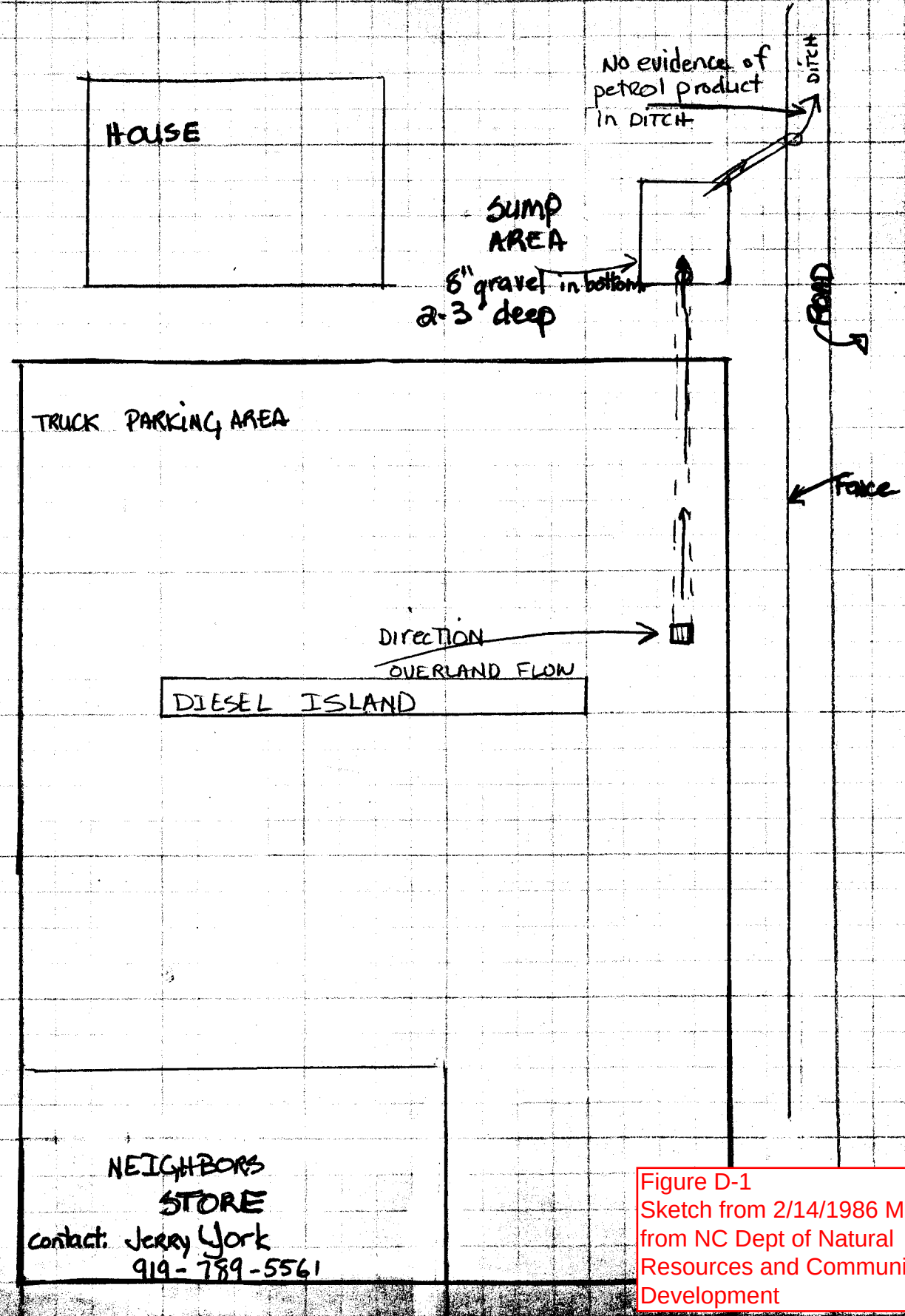


Figure D-1
Sketch from 2/14/1986 Memo
from NC Dept of Natural
Resources and Community
Development

SANDY RIDGE ROAD (SR1850)

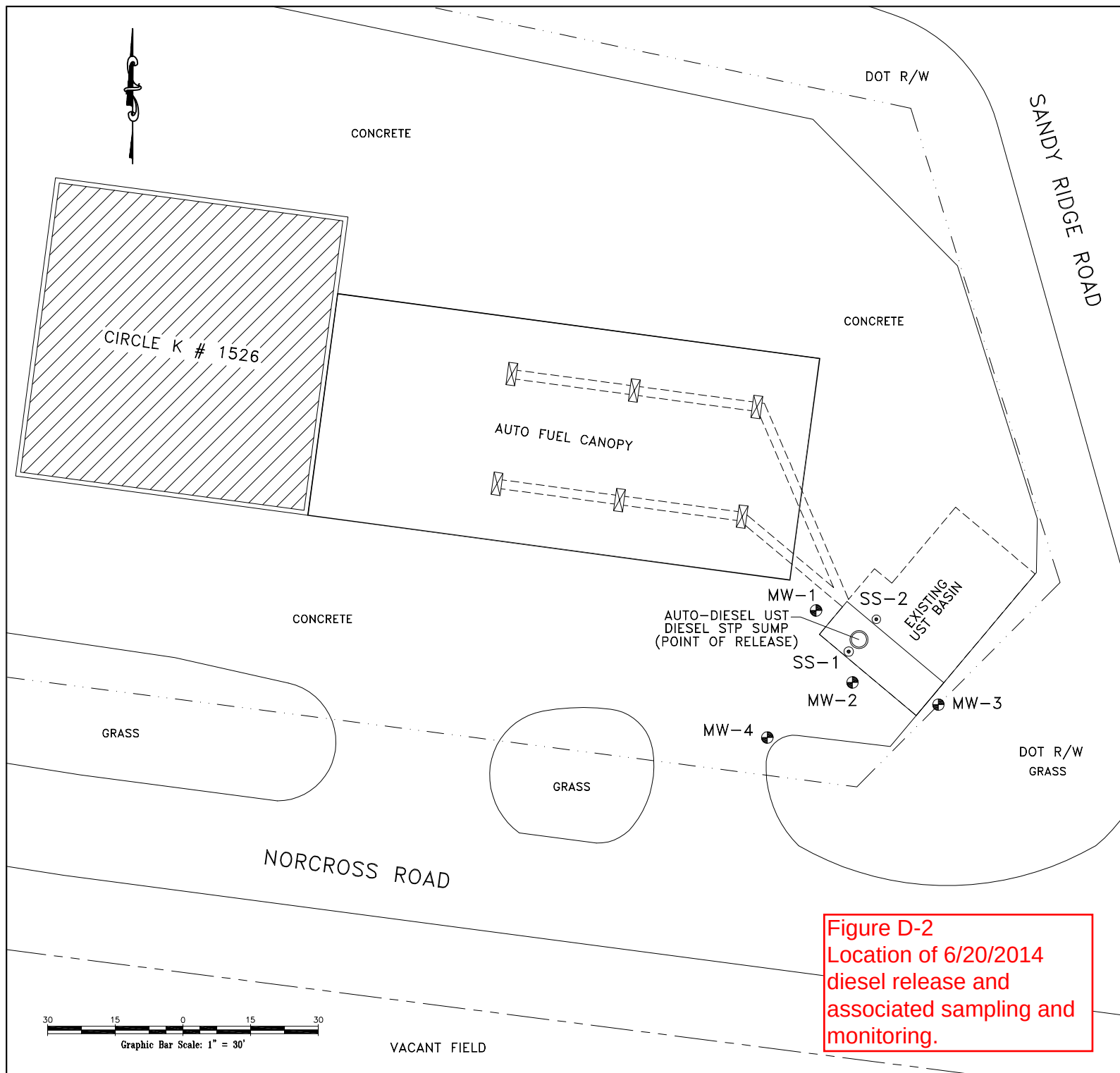


Figure D-2
Location of 6/20/2014
diesel release and
associated sampling and
monitoring.

Legend

- Property Line (Approx)
- Right-of-Way (Approx)
- UST System (Approx)
- ⊕ Monitoring Well Location
- ⊗ Fuel Dispenser
- Soft Dig Boring

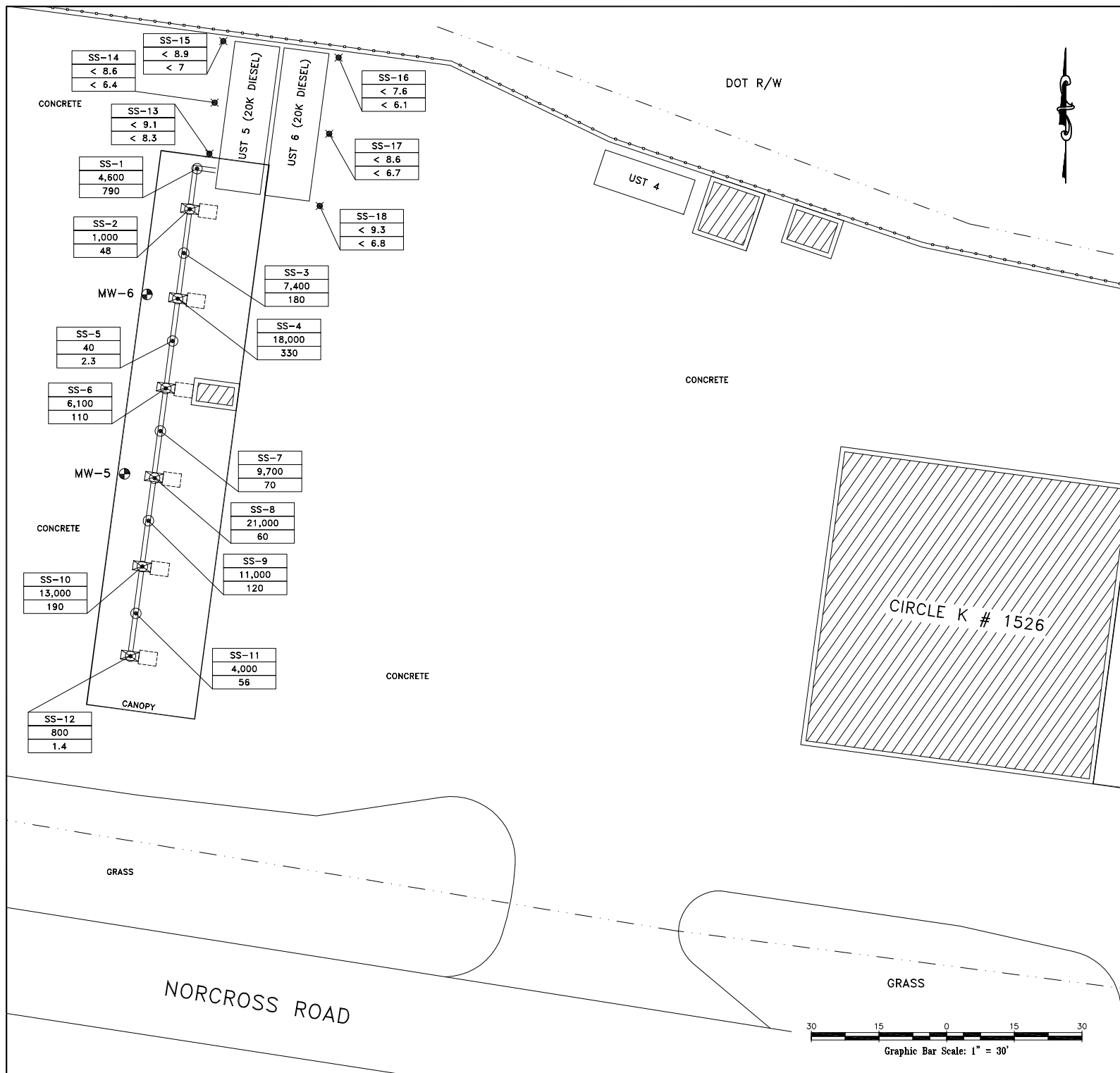
General Notes

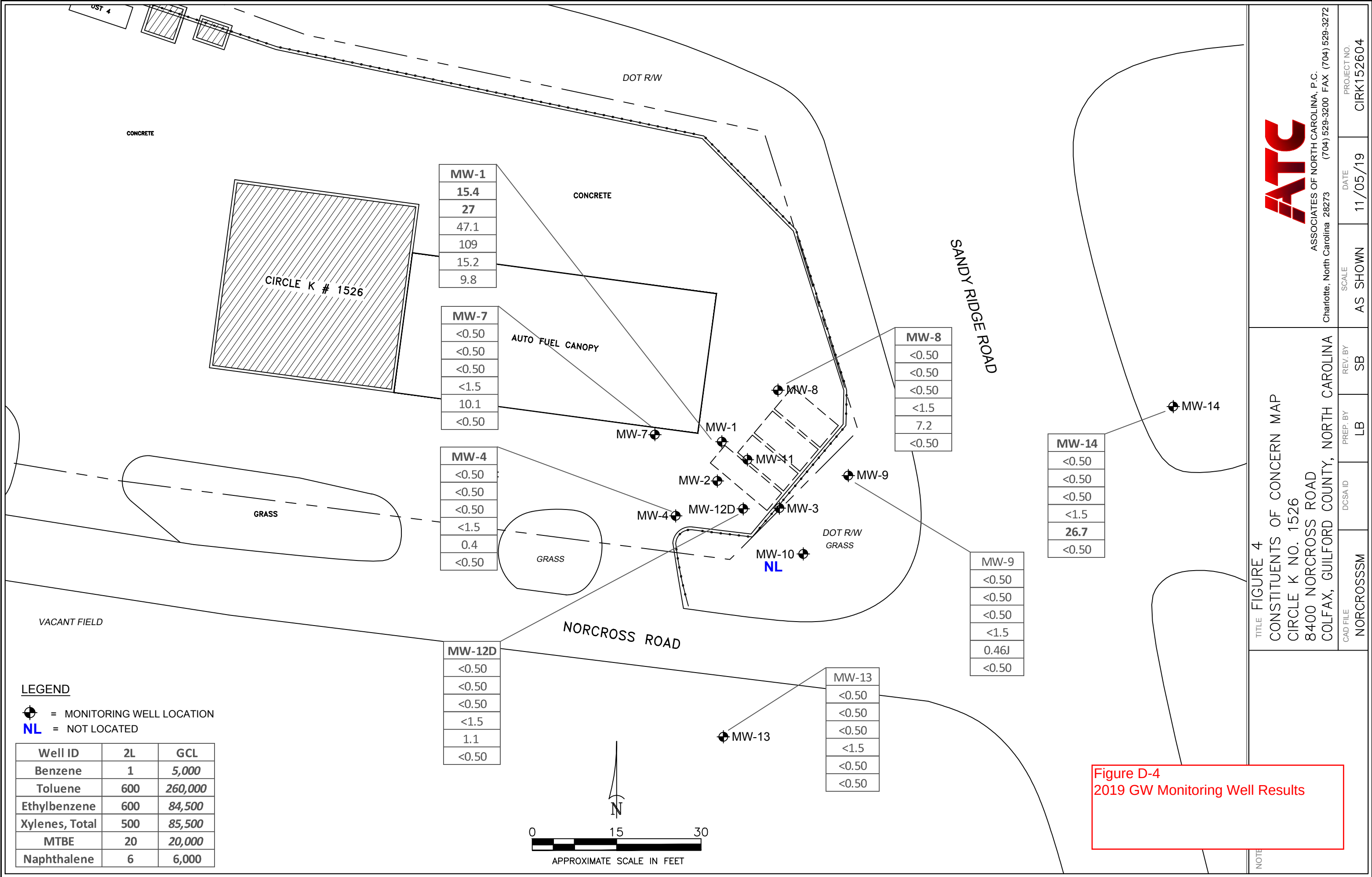
Map adapted from aerial photograph from Guilford County GIS.
 Structure locations are approximate
 UST – Underground Storage Tank



7606 Whitehall Executive Center Drive, Suite 600
 Charlotte, North Carolina 28273
 Phone: (704)563-2711 Fax: (704)563-2744

PROJECT:	Circle K No. 1526 8400 Norcross Road Colfax, North Carolina		
TITLE:	Soil Sample Locations		
CLIENT:	Circle K Stores Inc.		
COMPUTER CADFILE:	https://ecscounsel.app.box.com		
DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
TG	TG	TG	TG
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1" = 30'	2/2/17	14-223176	2

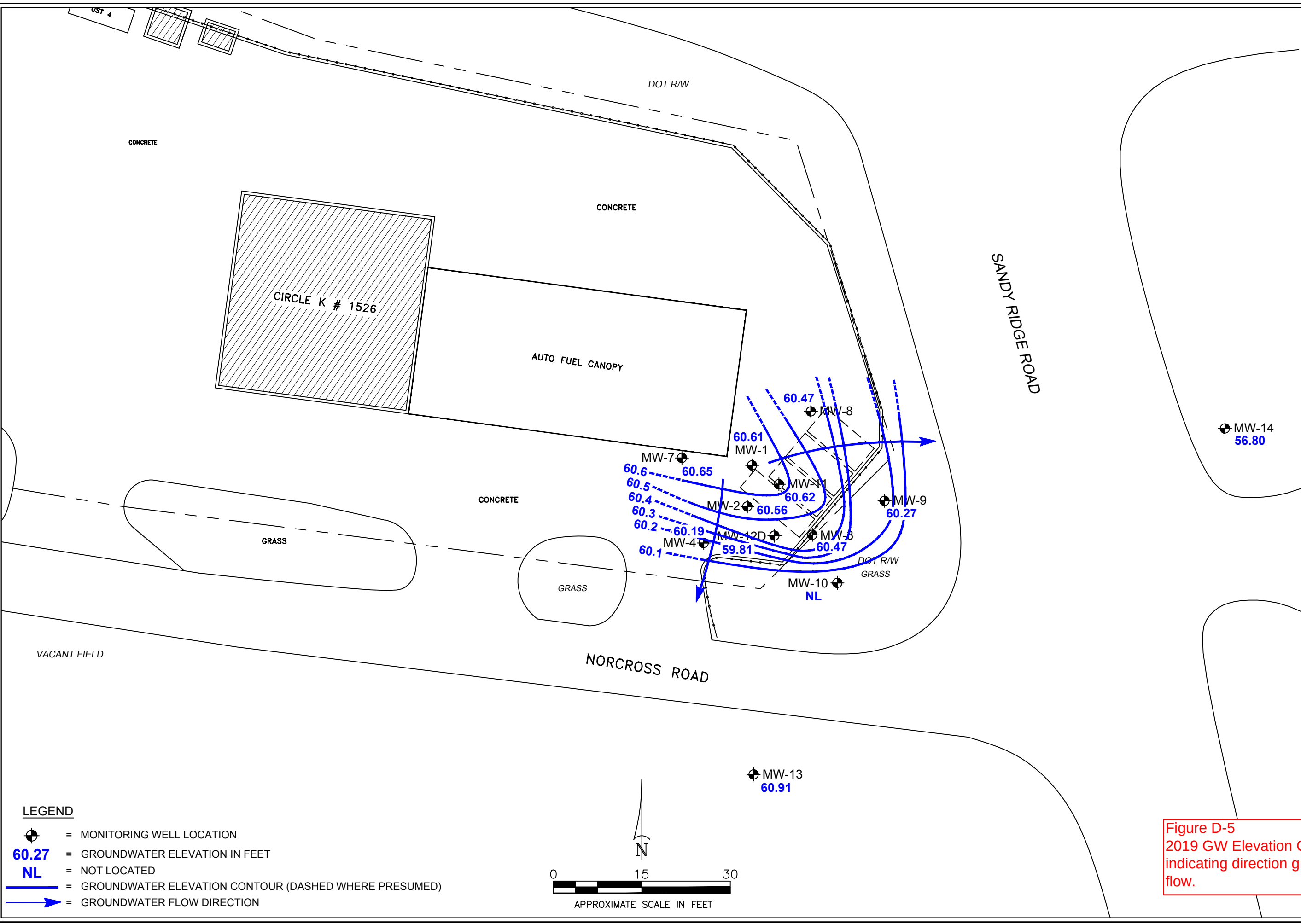




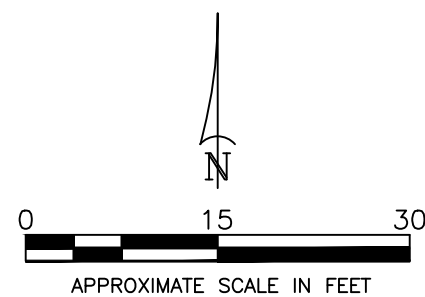
ASSOCIATES OF NORTH CAROLINA, P.C.
Charlotte, North Carolina 28273 (704) 529-3200 FAX (704) 529-3272

FIGURE 4
CONSTITUENTS OF CONCERN MAP
CIRCLE K NO. 1526
8400 NORCROSS ROAD
COLFAX, GUILFORD COUNTY, NORTH CAROLINA

CAD FILE	DCSA ID	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
NORCROSSM		LB	SB	AS SHOWN	11/05/19	CIRK152604



- LEGEND**
- = MONITORING WELL LOCATION
 - 60.27** = GROUNDWATER ELEVATION IN FEET
 - NL** = NOT LOCATED
 - = GROUNDWATER ELEVATION CONTOUR (DASHED WHERE PRESUMED)
 - = GROUNDWATER FLOW DIRECTION



TITLE FIGURE 3 GROUNDWATER ELEVATION CONTOUR MAP CIRCLE K NO. 1526 8400 NORCROSS ROAD COLFAX, GUILFORD COUNTY, NORTH CAROLINA				SCALE AS SHOWN		DATE 11/05/19	PROJECT NO. CIRK152604
CAD FILE NORCROSSM	DCSA ID	PREP. BY LB	REV. BY SB	ATC ASSOCIATES OF NORTH CAROLINA, P.C. Charlotte, North Carolina 28273 (704) 529-3200 FAX (704) 529-3272			

Figure D-5
2019 GW Elevation Contour Map
indicating direction groundwater GW
flow.

