

Prepared for:

North Carolina Department of Transportation
Geotechnical Engineering Unit
GeoEnvironmental Section
1589 Mail Service Center
Raleigh, North Carolina, 27699-1589

Preliminary Site Assessment Report

Kornegay Properties & Investments Property
Parcel # 9
1516 N. William Street
Goldsboro, Wayne County, North Carolina
US 117 Alternate from US 70 Bypass to Belfast
TIP Number: U-2714
WBS Element: 38979.1.2



Apex Companies, LLC
10610 Metromont Parkway, Suite 206
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July 14, 2017

not considered final unless all signatures are completed

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1.0 INTRODUCTION

This report presents the results of a Preliminary Site Assessment (PSA) for the North Carolina Department of Transportation (NCDOT) Parcel 9 performed by Apex Companies, LLC (Apex) on behalf of the NCDOT. The subject site of this PSA report will be affected by the widening of the US Highway 117 from US Highway 70 to Belfast Road. The Site is comprised of one parcel and is located at 1516 North William Street and is identified as Parcel 9, Kornegay Properties & Investments Property, within the NCDOT U-2714 design project. The property is located on the northeastern quadrant of North William Street and the East US Highway 70 Interchange in Goldsboro, Wayne County, North Carolina, as shown in the attached Site Location Map (**Figure 1**). The site investigation was conducted in accordance with Apex Company's Technical and Cost proposal dated June 7, 2017.

NCDOT contracted Apex to perform the PSA within the proposed right-of-way (ROW) and/or easement of the Parcel 9 Property due to the potential presence of contamination at the site and the fact that excavation and grading may occur within the area. The PSA was performed to evaluate if soils have been impacted as a result of past and present uses of the property within the proposed investigation area, if buried underground storage tanks (USTs) are present in the area of investigation, and if groundwater is impacted.

The following report presents the results of a ground penetrating radar (GPR) evaluation to identify underground storage tanks (USTs) in the investigation area, and describes the subsurface field investigation at the site. The report includes the evaluation of field screening, as well as field and laboratory analyses with regards to the presence or absence of soil and groundwater contamination within the area of investigation across Parcel 9. **Appendix A** includes a Photograph log for the site.

1.1 Site History

Parcel 9 has been identified with the address of 1516 N William Street. Based on a search of the North Carolina Department of Environmental Quality (NCDEQ) UST database registry, no registered tanks were identified for the 1516 N William Street site. No visual evidence of USTs were noted during field activities. Currently the site operates as Fringe Salon in a one-story stucco building. Apex personnel also reviewed the NCDEQ Incident Management Database and no groundwater incidents are associated with this parcel.

1.2 Site Description

The site is located in a mixed commercial and residential area of Goldsboro in Wayne County. The property currently operates as Fringe Salon and is developed with one structure and an asphalt-paved parking area to the south and east. The site is bordered by roadways on all

sides. East US Highway 70 borders the site to the north, east, and south. A U-Haul Neighborhood Dealer/Top Motor Sales property is located to the north beyond US Highway 70. North William Street followed by a vacant lot borders the site to the west. Parcel 9 does not appear on the NCDEQ UST database registry and is not associated with known USTs. The geophysical surveyor, Pyramid Environmental & Engineering, PC, (Pyramid) did not identify anomalies characteristic of a UST in the investigation area.

2.0 GEOLOGY

2.1 Regional Geology

Parcel 9 is located within the Coastal Plain Physiographic Province. The Coastal Plain is the largest physiographic province in the state, covering about 45 percent of the land area. According to the US Geological Survey Professional Paper 1404-I entitled "Hydrogeologic Framework of the North Carolina Coastal Plain" (Winner and Coble, 1996), the geology consists of an eastward-dipping and eastward-thickening series of sedimentary rocks which range in age from Holocene to Cretaceous. The most common type of sediment types are sand and clay, although a significant amount of limestone occurs in the southern part of the coastal plain. The site overlies the Black Creek Formation. The Black Creek Formation is Late Cretaceous in age and was deposited in a lagoonal to marine environment. It generally consists of thinly laminated gray to black clay with interbedded gray to tan sands. The most notable characteristic of the formation is the high concentration of wood and organic material. Shells and glauconite are also common.

2.2 Site Geology

Site geology was observed through the drilling and sampling of six direct push probe soil borings (SB) onsite. **Figure 2** presents the boring locations and site layout. Borings did not exceed a total depth of ten feet below ground surface (bgs) since that depth was the maximum excavation depth for proposed drainage features. Soil consisting predominantly of orange-brown clayey silt and orange to brown sand was observed across the parcel. The soils were unconsolidated and as a result the borings often collapsed. There is little topographic relief to the site and there are streams located to the west and south. So determining groundwater flow directions can be difficult and would require at least three well locations. However, it appeared that borings on the north side of the property (believed to be the upgradient location) intercepted water at approximately five feet bgs while those borings on the south side of the property (likely down-gradient location) intercepted water at approximately four and a half feet bgs. Boring logs are presented in **Appendix B**.

3.0 FIELD ACTIVITIES

3.1 Preliminary Activities

Prior to commencing field sampling activities at the site, several tasks were accomplished in preparation for the subsurface investigation. A Health and Safety Plan (HASP) was prepared to include the site-specific health and safety information necessary for the field activities. North Carolina-One Call was contacted on May 31, 2017 to report the proposed drilling activities and notify affected utilities. Apex subcontracted Pyramid to locate subsurface utilities and other subsurface drilling hazards as well as to perform a geophysical survey. Carolina Soil Investigations, LLC (CSI) of Olin, North Carolina was retained by Apex to perform the direct push sampling for soil borings. REDLAB, LLC (REDLAB) provided an ultraviolet fluorescence (UVF) Hydrocarbon Analyzer and Eastern Solutions provided a calibrated Flame Ionization/Photoionization Detector (FID/PID). Boring locations were strategically placed in a pattern within the area of investigation to maximize the opportunity to encounter potentially contaminated soil.

3.2 Site Reconnaissance

Apex personnel performed a site reconnaissance on June 6, 2017. During the site reconnaissance, the area was visually examined for the presence of USTs or areas/obstructions that could potentially affect the subsurface investigation. The proposed boring locations were marked based on the site inspection and geophysical survey results. Apex personnel also used the site visit as an opportunity to contact the property manager/owner to inform them of upcoming field activities.

3.3 Geophysics Survey Results

The geophysical survey of the site was conducted on June 6 and 7, 2017. Pyramid performed an electromagnetic (EM) induction metal survey followed by a GPR survey. A copy of the Geophysical Report is presented in **Appendix C**. The results of the geophysical survey did not record any evidence of unknown metallic USTs at the property. Follow-up GPR scans near the building and adjacent to areas of EM interference associated with parked vehicles did not record any evidence of subsurface structures such as USTs.

3.4 Well Survey

No water supply or groundwater monitoring wells were observed on Parcel 9.

3.5 Soil Sampling

Apex conducted drilling activities at the site on June 8, 2017. Apex drilling subcontractor, CSI, advanced six direct push soil borings within the proposed investigation area. These six boring

locations were placed in a pattern to maximize the likelihood of intercepting potential soil contamination. **Figure 2** presents the Site Map with boring locations and identifications.

The purpose of soil sampling was to determine if a petroleum release has occurred within the investigation area, and if so, to estimate the volume of impacted soil that might require special handling during construction activities.

Soil sampling was performed utilizing hand auger and direct push methods accompanied by field screening with the FID/PID unit and onsite quantitative analyses with the UVF Hydrocarbon Analyzer. One to two intervals of the soil boring, exhibiting the most elevated FID/PID readings, were selected for onsite quantitative analysis of total petroleum hydrocarbons (TPH) and polycyclic aromatic hydrocarbons (PAH) in soil using the REDLAB UVF Hydrocarbon Analyzer. The analysis was performed onsite by Kristen Hartsen, a certified REDLAB UVF technician with Apex. The UVF results were generated concurrent with soil boring activities so that rapid assessment could be utilized for strategic boring placement.

3.6 Groundwater Sampling

Apex personnel mobilized to the Site on June 8th, 2017 to obtain groundwater grab samples. Groundwater grab sample locations were chosen based on data generated from the UVF analyzer and on site conditions such as the likely groundwater gradient and UST locations. The soils encountered were very sandy and unconsolidated, and as a result the borings would not stand open. Apex instructed CSI personnel to temporarily install a one inch diameter 10-slot screen into two of the soil borings for the purposes of collecting a groundwater grab sample. Apex personnel collected groundwater grab samples from borings P9-SB1 and P9-SB3 for onsite quantitative analysis of TPH using the REDLAB UVF Hydrocarbon Analyzer. The analysis was performed onsite by Kristen Hartsen, a certified REDLAB UVF technician with Apex.

4.0 SAMPLING RESULTS

4.1 Soil Sampling Results

Based on FID/PID field screening and onsite UVF hydrocarbon analysis from the June 2017 soil sampling there is no evidence of petroleum hydrocarbon contamination onsite, within the area of investigation.

Onsite Soil Screening and UVF Analysis

Elevated FID/PID readings, above ten parts per million (ppm), were not observed in the borings conducted at the site above the smear zone. The FID readings ranged from non-detectable to

1.0 ppm and the PID readings ranged from non-detectable to 1.26 ppm. The FID/PID field screening results are provided on the boring logs in **Appendix B**.

Soil concentrations of TPH gasoline range organics (GRO) and diesel range organics (DRO) measured using the onsite UVF unit are presented in **Table 1**, with instrument generated tables and chromatographs in **Appendix D**. **Figure 3** presents the TPH-GRO and TPH-DRO results at each boring.

Based on the UVF analyses, TPH-GRO and TPH-DRO was identified in soils on Parcel 9. TPH-GRO concentrations ranged from below detectable levels to 6.4 milligram per kilogram (mg/kg) (P9-SB1). TPH-DRO concentrations ranged from below detectable levels to 15.2 mg/kg (P9-SB1). TPH-GRO concentrations did not exceed the regulatory action level of 50 mg/kg and the TPH-DRO concentrations did not exceed the regulatory action level of 100 mg/kg.

4.2 Groundwater Sampling Results

Apex personnel collected groundwater grab samples from two soil borings (P9-SB1 and P9-SB3) for onsite quantitative analysis of TPH using the REDLAB UVF Hydrocarbon Analyzer. Based on the real time UVF analysis of the two groundwater grab samples, significant groundwater impact is not present on Parcel 9. P9-SB1-WATER indicated TPH-GRO concentrations of 0.06 mg/L and TPH-DRO concentrations of 0.12 mg/L, and sample P9-SB3-WATER indicated TPH-GRO concentrations 0.16 mg/L and TPH-DRO concentrations of 0.03 mg/L. The groundwater UVF results are tabulated in **Table 1**. The instrument generated tables and chromatographs are included in **Appendix D**. Groundwater analytical data are summarized on **Figure 4**.

5.0 CONCLUSIONS

Based on site observations and onsite UVF analysis, no petroleum-impacted soil contamination was identified above the NCDEQ Action level of 50 mg/kg for TPH-GRO or above the NCDEQ Action level of 100 mg/kg for TPH-DRO. The onsite UVF analysis of groundwater did not indicate significant groundwater contamination to be present.

The following bulleted summary is based upon Apex's evaluation of field observations and onsite quantitative analyses of samples collected from the Site on June 8, 2017.

- Results of the geophysical survey did not produce evidence of anomalies characteristic of USTs.
- Six soil borings were advanced onsite. Soil samples collected from each boring were analyzed in the field using a REDLAB UVF Hydrocarbon Analyzer.

- Soil samples analyzed using the UVF did not contain either TPH-DRO or TPH-GRO concentrations above their respective NCDEQ Action levels of 100 mg/kg and 50 mg/kg.
- Two groundwater grab samples were collected and analyzed for TPH-DRO and TPH-GRO with the REDLAB UVF Hydrocarbon Analyzer. These samples did not contain any significant concentrations of the constituents of concern.

6.0 RECOMMENDATIONS

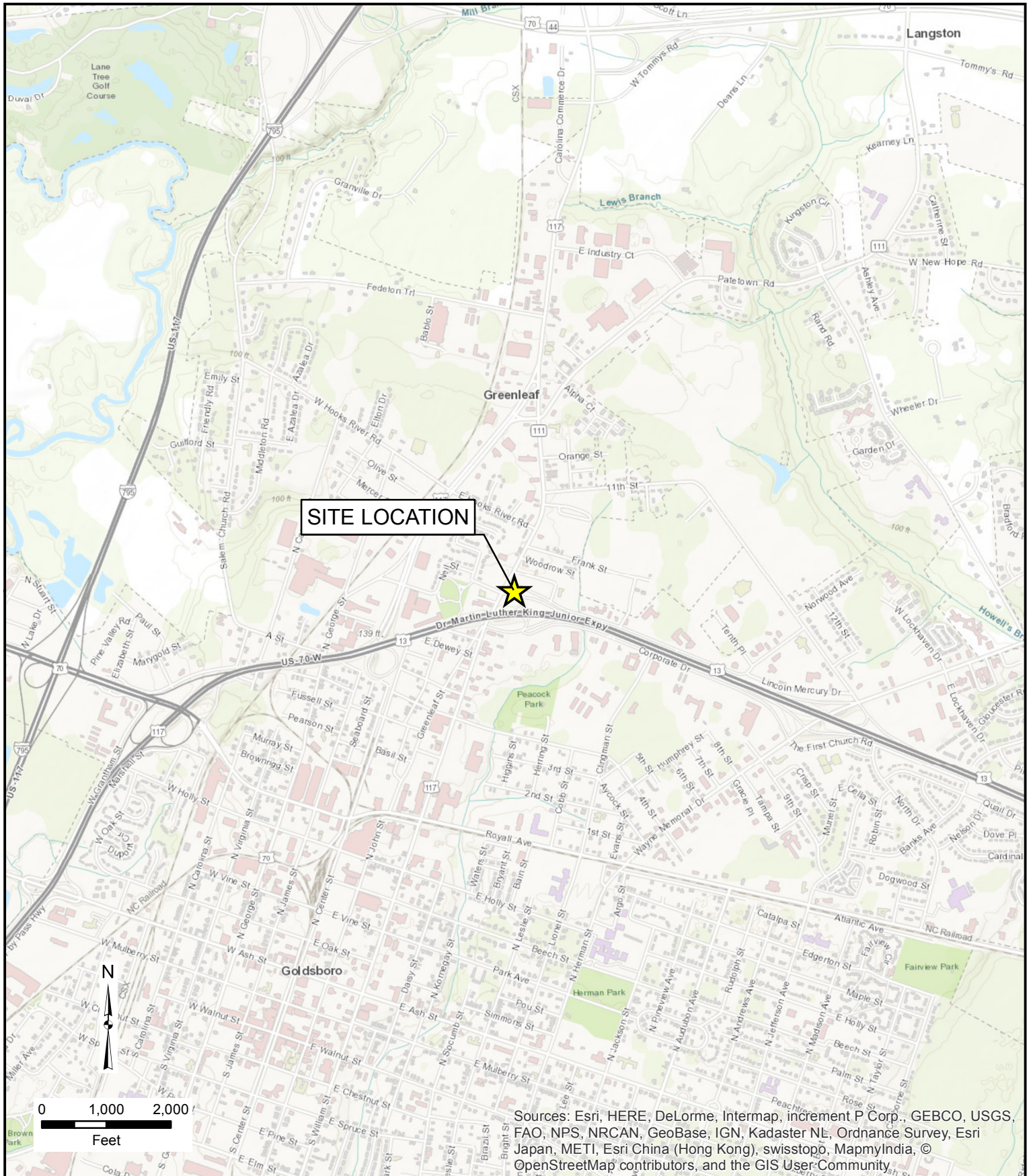
Based on these PSA results, Apex does not recommend further assessment or soil sampling in the area of investigation.

TABLES

Table 1
UVF Onsite Hydrocarbon Analytical Soil and Groundwater Data from June 2017
U-2714, Parcel 09, Kornegay Properties Investments Property
Goldsboro, North Carolina

Sample ID Number	Sample Date	Sample Depth (ft bgs)	GRO (mg/kg) (C5-C10)	DRO (mg/kg) (C10-C35)
SOIL				
NCDEQ Action Level in mg/kg			50	100
P9-SB1	6/8/2017	2	6.4	15.2
P9-SB2	6/8/2017	2	<0.47	<0.47
P9-SB3	6/8/2017	2	<0.5	4.4
P9-SB4	6/8/2017	2	<0.49	2.8
P9-SB5	6/8/2017	2	<0.5	1.1
P9-SB6	6/8/2017	2	0.65	0.49
GROUNDWATER (mg/L)				
P9-SB1-WATER	6/8/2017	NM	0.06	0.12
P9-SB3-WATER	6/8/2017	NM	0.16	0.03
NOTES:				
(mg/kg) = Milligrams per kilogram				
(mg/L) = Milligrams per liter				
GRO = Gasoline Range Organics				
DRO = Diesel Range Organics				
ft bgs = feet below ground surface				
NM = Not Measured				
TPH - GRO values in exceedance of NCDEQ Action Level of 50 mg/kg are shown in Bold				
TPH - DRO values in exceedance of NCDEQ Action Level of 100 mg/kg are shown in Bold				

FIGURES



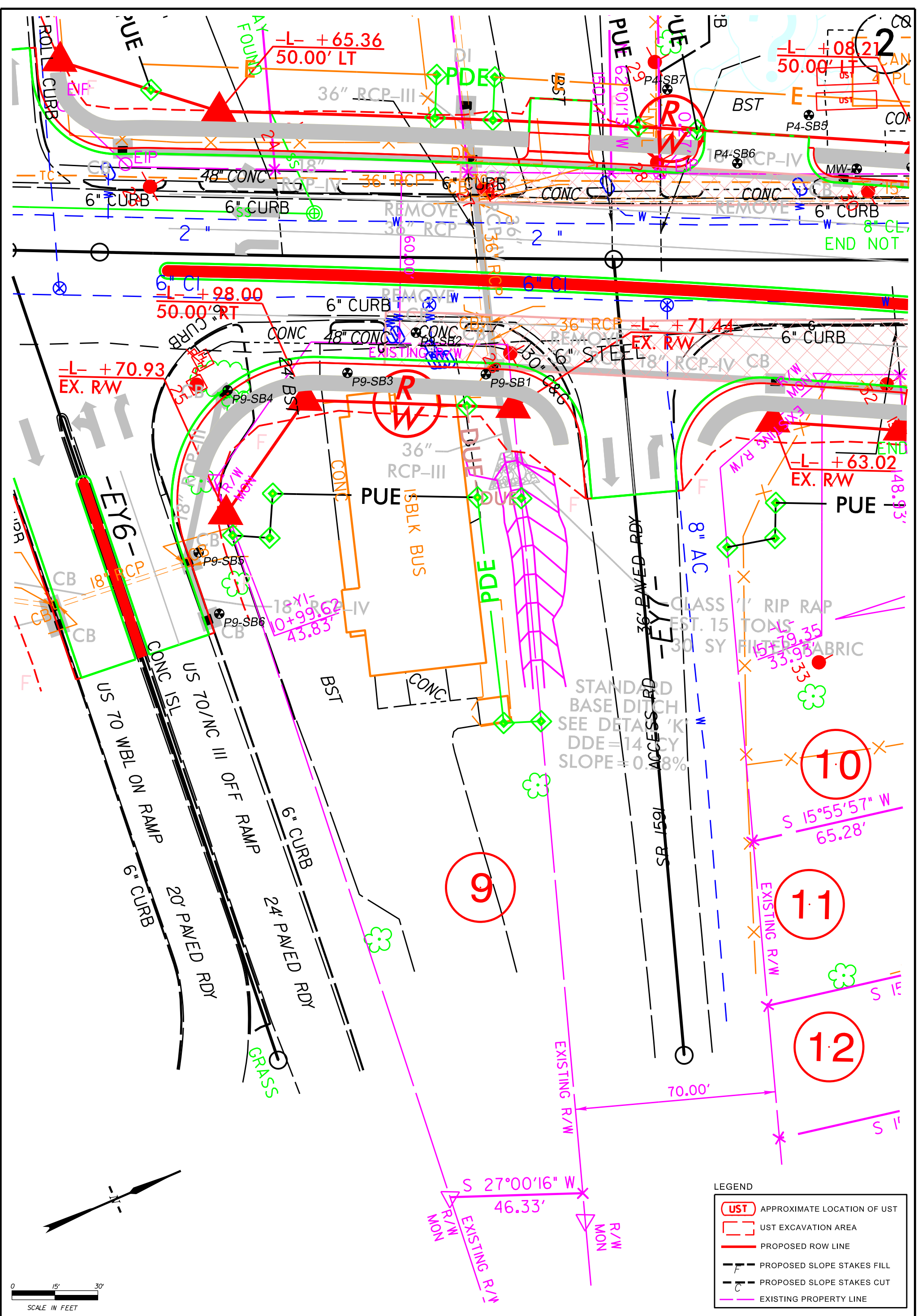
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User-Community.

CHECK BY: TH
DRAWN BY: SP
DATE: 7/17/17
SCALE: AS SHOWN
CAD NO.: 510497-003
PRJ NO.: 510497-003

SITE LOCATION MAP
PARCEL #9
1516 N. WILLIAM STREET
GOLDSBORO, NORTH CAROLINA



FIGURE
1



LEGEND

	APPROXIMATE LOCATION OF UST
	UST EXCAVATION AREA
	PROPOSED ROW LINE
	PROPOSED SLOPE STAKES FILL
	PROPOSED SLOPE STAKES CUT
	EXISTING PROPERTY LINE



**FIGURE 2
PARCEL 9
SITE MAP WITH SOIL BORING
LOCATIONS**

APEX
APEX COMPANIES, LLC
10610 METROMONT PARKWAY
SUITE 206
CHARLOTTE, NC 28117
PHONE: (704) 799-6390

Date:	7/15/17	GOLDSBORO U-2714			
Proj. #	510497-003				
CAD File:	pc_9_fig 2.dgn	Project Title:			
Approx. Scale:	1" = 30'	Drawn by:	MJO	Client:	NC DOT

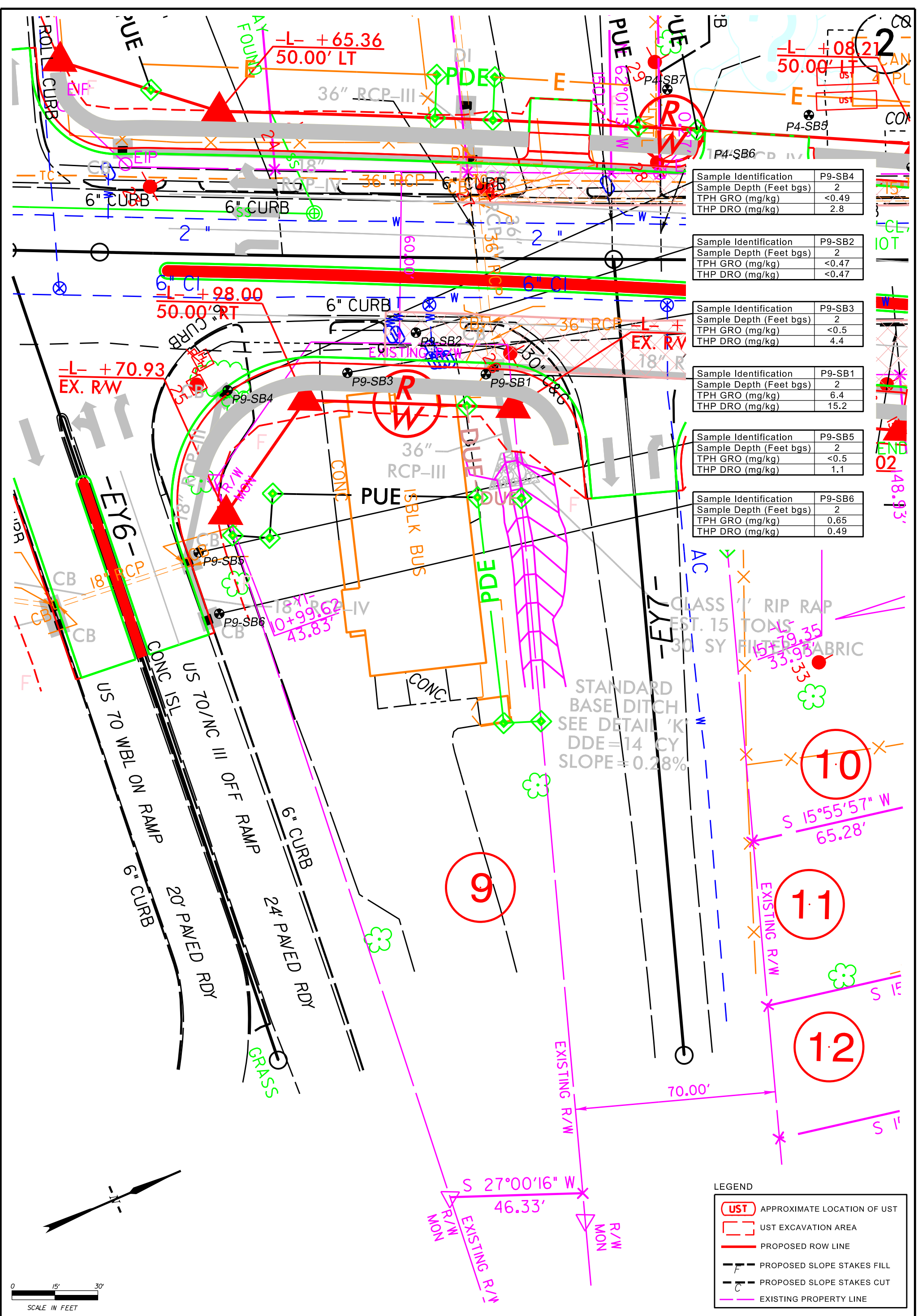
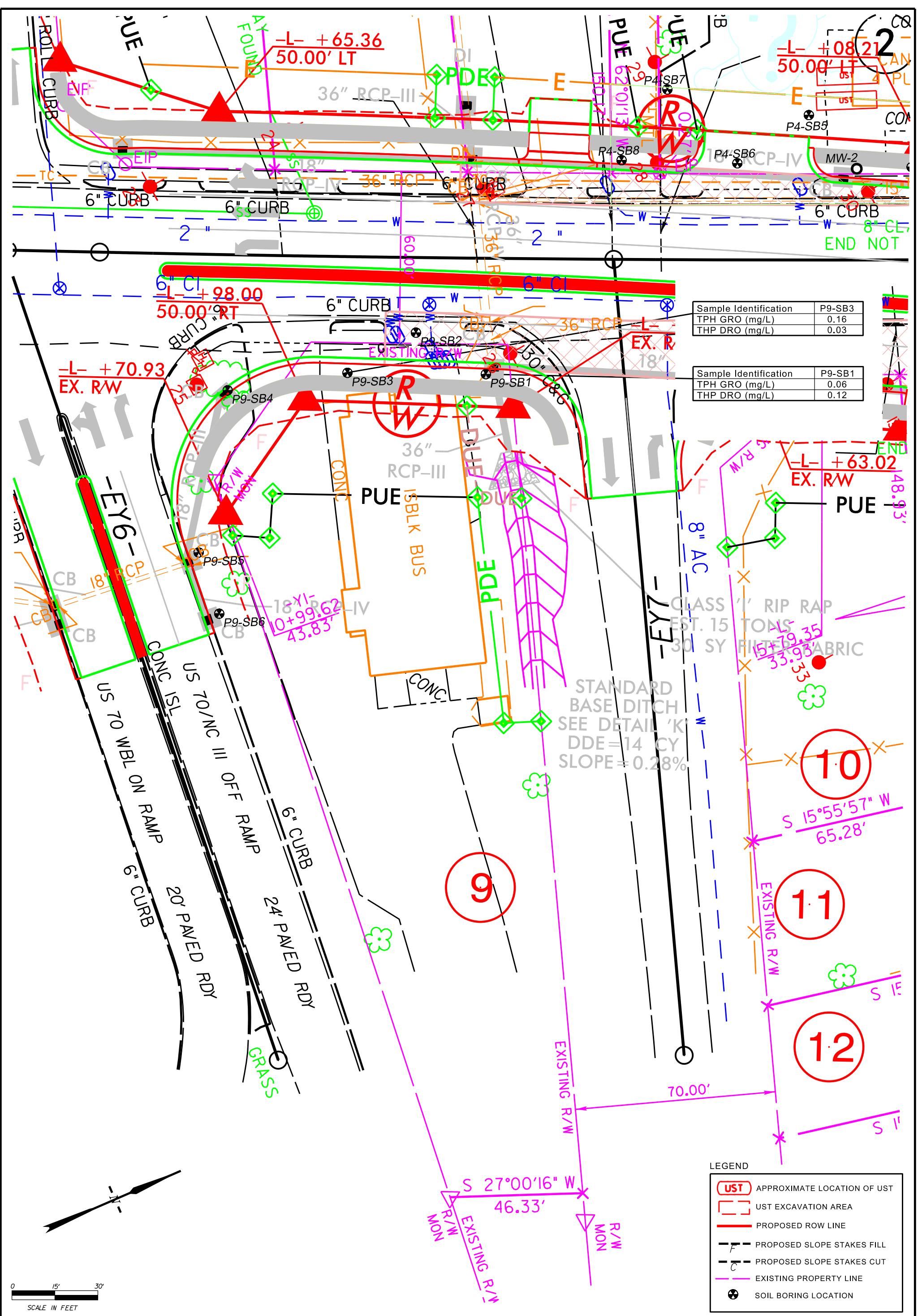


FIGURE 3
 PARCEL 9
 ONSITE UVF HYDROCARBON
 ANALYSIS RESULTS - SOIL
 (6-8-17)



Sample Identification	P9-SB3
TPH GRO (mg/L)	0.16
THP DRO (mg/L)	0.03

Sample Identification	P9-SB1
TPH GRO (mg/L)	0.06
THP DRO (mg/L)	0.12

LEGEND

- UST APPROXIMATE LOCATION OF UST
- UST EXCAVATION AREA
- PROPOSED ROW LINE
- PROPOSED SLOPE STAKES FILL
- PROPOSED SLOPE STAKES CUT
- EXISTING PROPERTY LINE
- SOIL BORING LOCATION

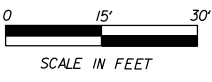


FIGURE 4
PARCEL 9
ONSITE UVF HYDROCARBON
ANALYSIS RESULTS -
GROUNDWATER (6-8-17)

APEX
 APEX COMPANIES, LLC
 10610 METROMONT PARKWAY
 SUITE 206
 CHARLOTTE, NC 28117
 PHONE: (704) 799-6390

Date:	7/15/17	Project #	GOLDSBORO	
Proj. #	510497-003		U-2714	
CAD File:	pc_9_fig 4.dgn	Project Title:	MJO	NC DOT
Approx. Scale:	1" = 30'	Drawn by:		Client:

APPENDIX A
PHOTOGRAPH LOG



Photo 1

Overview of site prior to preliminary site assessment activities.



Photo 2

View of the southern end of the investigation area.

10610 Metromont Pkwy
Suite 206
Charlotte, NC 28269



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PHOTOGRAPHIC LOG

PSA Field Activities
Parcel 9
1516 N. William Street, Goldsboro, NC



Photo 3

View of utility mark outs prior to investigation activities.



Photo 4

View of CSI preparing to drill.

APPENDIX B
BORING LOGS



Apex Companies, LLC

Boring Log

Boring/Well No.: P9-SB1	Site Name: Parcel 9 - Kornegay Properties & Investment
Date: 06/08/17	Location: Goldsboro, Wayne County, NC
Job No.: 510497-003	Sample Method: Hand Auger and Direct Push
Apex Rep: Troy L. Holzschuh	Drilling Method: Hand Auger and Direct Push
Drilling Company: Carolina Soil Investigations	Driller Name/Cert #: Danny Summers/2579

Remarks:

Depth (ft) BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Grass
1				Brown, Sandy Silt
2	0	0	Sample at 2'	
3				Brown, Clayey Sandy Silt, Moist
4	0	0		Smear
5				Tan, Clayey Sand, Wet. Water at 4.5 feet
6				
7	0	0		
8				White Sand, Medium, Wet
9				
10	0	0		
				Boring terminated at 10 feet
11				
12				
13				
14				

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:



Apex Companies, LLC

Boring Log

Boring/Well No.: P9-SB2	Site Name: Parcel 9 - Kornegay Properties & Investment
Date: 06/08/17	Location: Goldsboro, Wayne County, NC
Job No.: 510497-003	Sample Method: Hand Auger and Direct Push
Apex Rep: Troy L. Holzschuh	Drilling Method: Hand Auger and Direct Push
Drilling Company: Carolina Soil Investigations	Driller Name/Cert #: Danny Summers/2579

Remarks:

Depth BLS)	(ft)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
					Grass
1					Reddish Orange, Sand, Medium
2		0.5	0	Sample at 2'	
3					Yellowish Brown, Clayey, Sandy Silt
4		0.95	0.5		Smear
5					Water
					Boring terminated at 5 feet
6					
7					
8					
9					
10					
11					
12					
13					
14					

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:



Apex Companies, LLC

Boring Log

Boring/Well No.: P9-SB3	Site Name: Parcel 9 - Kornegay Properties & Investment
Date: 06/08/17	Location: Goldsboro, Wayne County, NC
Job No.: 510497-003	Sample Method: Hand Auger and Direct Push
Apex Rep: Troy L. Holzschuh	Drilling Method: Hand Auger and Direct Push
Drilling Company: Carolina Soil Investigations	Driller Name/Cert #: Danny Summers/2579

Remarks:

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Grass
1				Orange Sand, Medium
2	1	1.26	Sample at 2'	
3				
4	22.6	2.5		Smear
5				Gray-Orange Marbled, Sandy Silt
6	44.8	1.5		
7				Gray-Orange Marbled, Clayey Silt
8	16.2	1.8		
9				White Sand
10	8.5	0.75		
				Boring terminated at 10 feet
11				
12				
13				
14				

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:



Apex Companies, LLC

Boring Log

Boring/Well No.: P9-SB4	Site Name: Parcel 9 - Kornegay Properties & Investment
Date: 06/08/17	Location: Goldsboro, Wayne County, NC
Job No.: 510497-003	Sample Method: Hand Auger and Direct Push
Apex Rep: Troy L. Holzschuh	Drilling Method: Hand Auger and Direct Push
Drilling Company: Carolina Soil Investigations	Driller Name/Cert #: Danny Summers/2579

Remarks:

Depth BLS)	(ft)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
					Grass
1					Black Silt
2		0	0	Sample at 2'	
3					Orange-Brown, Sandy, Clayey Silt
4		0	0		Smear Zone
5					Water
					Boring terminated at 5 feet
6					
7					
8					
9					
10					
11					
12					
13					
14					

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:



Apex Companies, LLC

Boring Log

Boring/Well No.: P9-SB5	Site Name: Parcel 9 - Kornegay Properties & Investment
Date: 06/08/17	Location: Goldsboro, Wayne County, NC
Job No.: 510497-003	Sample Method: Hand Auger and Direct Push
Apex Rep: Troy L. Holzschuh	Drilling Method: Hand Auger and Direct Push
Drilling Company: Carolina Soil Investigations	Driller Name/Cert #: Danny Summers/2579

Remarks:

Depth BLS)	(ft)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
					Grass
1					Black, Sandy Silt
2		0	0.2	Sample at 2'	
3					Orange-Brown, Sandy, Clayey Silt Smear
4		1	1.2		
5					Water
					Boring terminated at 5 feet
6					
7					
8					
9					
10					
11					
12					
13					
14					

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:



Apex Companies, LLC

Boring Log

Boring/Well No.: P9-SB6	Site Name: Parcel 9 - Kornegay Properties & Investment
Date: 06/08/17	Location: Goldsboro, Wayne County, NC
Job No.: 510497-003	Sample Method: Hand Auger and Direct Push
Apex Rep: Troy L. Holzschuh	Drilling Method: Hand Auger and Direct Push
Drilling Company: Carolina Soil Investigations	Driller Name/Cert #: Danny Summers/2579

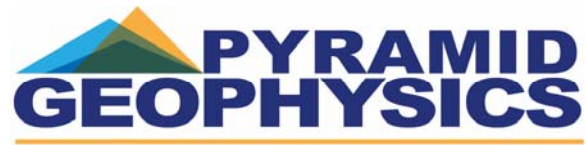
Remarks:

Depth BLS)	(ft)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
					Grass
1					Tan, Sandy Silt
2		0.25	1.8	Sample at 2'	
3					Brown Sand
4		0.28	1.5		Smear Zone
5					Water
					Boring terminated at 5 feet
6					
7					
8					
9					
10					
11					
12					
13					
14					

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:

APPENDIX C
GEOPHYSICAL REPORT



July 6, 2017

Mr. Troy Holzschuh
Apex Companies, LLC
10610 Metromont Parkway, Suite 206
Charlotte, NC 28269
Sent via email to THolzschuh@apexcos.com

**SUBJECT: Results of Geophysical Survey for Metallic Underground Storage Tanks
Parcel 009 - NCDOT Project UU-2714
1516 N. William St. Goldsboro, Wayne County, North Carolina**

Mr. Holzschuh:

Pyramid Environmental & Engineering, P.C. (Pyramid) conducted a geophysical investigation for Apex Companies, LLC (Apex) at Parcel 009, located at 1516 N. William Street, Goldsboro, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project U-2714). Apex directed Pyramid as to the geophysical survey boundaries at the project site, which were designed to extend from the existing edge of pavement into the proposed Right-Of-Way (ROW) and/or proposed easements, whichever distance was greater. Conducted from June 6-7, 2017, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

Based on the technical cost proposal provided by Pyramid and discussions with Apex and the NCDOT, abbreviated letter reports are being submitted for all parcels where no evidence of unknown metallic USTs was recorded by the geophysical survey. As discussed below, this is the letter report for Parcel 009.

Figure 1 provides an overlay of the geophysical survey area onto the NCDOT MicroStation engineering plans (proposed ROW and easements) for reference.

The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. Pyramid collected the EM data using a Geonics EM61 metal detector integrated with a Trimble AG-114 GPS antenna. The integrated GPS system allows the location of the instrument to be recorded in real-time during data collection, resulting in an EM data set that is geo-referenced and can be overlain on aerial photographs and CADD drawings. A boundary grid was established around the perimeter of the site with marks every 10 feet to maintain orientation of the instrument throughout the survey and assure complete coverage of the area.

According to the instrument specifications, the EM61 can detect a metal drum down to a maximum depth of approximately 8 feet. Smaller objects (1-foot or less in size) can be detected to a maximum depth of 4 to 5 feet. The EM61 data were digitally collected at

approximately 0.8-foot intervals along north-south trending or east-west trending, generally parallel survey lines spaced five feet apart. The data were downloaded to a computer and reviewed in the field and office using the Geonics NAV61 and Surfer for Windows Version 14.0 software programs.

GPR data were acquired across select EM anomalies on June 7, 2017, using a Geophysical Survey Systems, Inc. (GSSI) UtilityScan DF unit equipped with a dual frequency 300/800 MHz antenna. Data were collected both in reconnaissance fashion as well as along formal transect lines across EM features. The GPR data were viewed in real-time using a vertical scan of 512 samples, at a rate of 48 scans per second. GPR data were viewed down to a maximum depth of approximately 6 feet, based on dielectric constants calculated by the DF unit in the field during the reconnaissance scans. GPR transects across specific anomalies were saved to the hard drive of the DF unit for post-processing and figure generation.

The results of the geophysical survey did not record any evidence of unknown metallic USTs at the property. All of the EM features observed were the result of visible cultural features at the ground surface. Follow-up GPR scans near the building and adjacent to areas of EM interference associated with parked vehicles did not record any evidence of subsurface structures such as USTs.

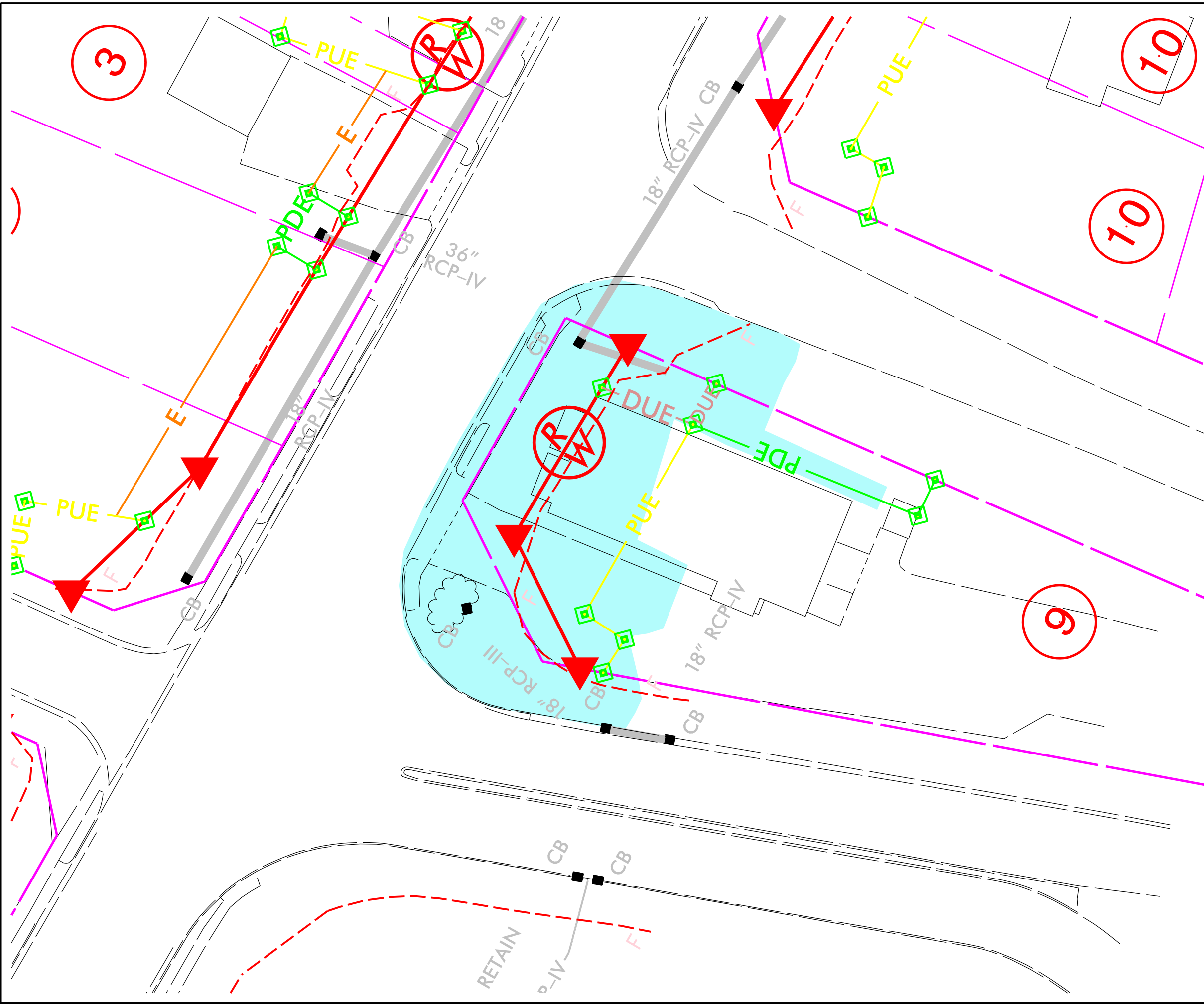
This abbreviated letter report is being submitted based on the guidelines in Pyramid's technical cost proposal and discussions with Apex and the NCDOT. All electronic data files from the EM and GPR surveys will be stored on Pyramid's internal servers for retrieval in the future, if necessary.

Geophysical surveys have been performed and this report was prepared for Apex in accordance with generally accepted guidelines for EM61 and GPR surveys. It is generally recognized that the results of the EM61 and GPR surveys are non-unique and may not represent actual subsurface conditions. The EM61 and GPR results obtained for this project have not conclusively determined the definitive presence or absence of metallic USTs, but the evidence collected is sufficient to result in the conclusions made in this report. Additionally, it should be understood that areas containing extensive vegetation, reinforced concrete, or other restrictions to the accessibility of the geophysical instruments could not be fully investigated.









Sincerely,

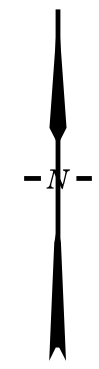
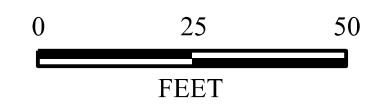



Eric Cross, P.G.
Senior Geophysicist



LEGEND

-  EXISTING ROW
-  EXISTING PROPERTY BOUNDARY
-  PROPOSED ROW LINE
-  PROPOSED UTILITY EASEMENT
-  PROPOSED DRAINAGE EASEMENT
-  PROPOSED SS FILL LINE
-  PROPOSED SS CUT LINE
-  GEOPHYSICAL SURVEY AREA



TITLE OVERLAY OF GEOPHYSICAL SURVEY BOUNDARIES ON NCDOT ENGINEERING PLANS	
PROJECT PARCEL 009 GOLDSBORO, NORTH CAROLINA NCDOT PROJECT U-2714	
 503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 336.335.3174 (p) 336.691.0648 (f) License # C1251 Eng. / #C257 Geology	
DATE: 6-30-17	REVISION NO. 0
PYRAMID PROJECT NO. 2017-156	FIGURE NO. 1

APPENDIX D
UVF HYDROCARBON ANALYSIS RESULTS



Hydrocarbon Analysis Results

Client: NCDOT
Address: PARCEL 9
 1516 N William St
 Goldsboro, NC

Samples taken Thursday, June 08, 2017
Samples extracted Thursday, June 08, 2017
Samples analysed Thursday, June 08, 2017

Contact: Dennis Li

Operator KH

Project: 510497-003

											F03640															
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	P9-SB1 (2)	21.0	<0.52	6.4	15.2	21.6	6.7	0.38	0.012	51	38.8	10.1	Deg.PHC (FCM) (P) 53.1%													
s	P9-SB2 (2)	19.0	<0.95	<0.47	<0.47	<0.47	<0.09	<0.02	0.002	0	12.7	87.3	Residual.PHC (P)													
s	P9-SB3 (2)	19.8	<0.5	<0.5	4.4	4.4	3.6	0.38	0.014	0	73.6	26.4	Deg.PHC (FCM) (P) 51.9%													
s	P9 -SB4 (2)	19.7	<0.49	<0.49	2.8	2.8	2.4	0.24	<0.002	0	79.2	20.8	Deg.PHC (FCM) 58.2%													
s	P9-SB5 (2)	20.0	<0.5	<0.5	1.1	1.1	0.49	0.03	0.002	0	71.1	28.9	Residual.PHC (FCM) (P) 53.3%													
W	P9-SB3 - WATER	1.0	0.16	0.16	0.03	0.19	0.03	0.002	<0	84.2	8.5	7.3	V.Deg.Gas (FCM) (P) 43%													
W	P9-SB1 - WATER	1.0	<0.05	0.06	0.12	0.18	0.11	0.01	<0	34.8	44.1	21.1	Deg.PHC (FCM)													
s	P9-SB6 (2)	19.7	<0.49	0.65	0.49	1.14	0.3	<0.02	<0.002	70.7	17.9	11.4	Deg.PHC (FCM) 59.8%													
Initial Calibrator QC check											OK		Final FCM QC Check											OK		112.1 %

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content
 Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library
 (SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

