June 5, 2020

Ashley B. Cox, Jr, LG
Geotechnical Engineering Unit
North Carolina Department of Transportation
1020 Birch Ridge Drive
Raleigh, NC 27610

RE: **PHASE II INVESTIGATION OF PARCEL 261**
The Auto Store, William R. Vaughn
4964 Reidsville Road, Walkertown, NC
ESP Project No. GR22.325

TIP Number:	R-2577A
WBS Number:	37405.1.2
County:	FORSYTH
Description:	US 158 from North of US 421 to SR 1965 (Belews Creek Road)

Dear Mr. Cox:

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 received on April 14, 2020, and our Cost Proposal dated April 23, 2020.

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.

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

NORTH CAROLINA LICENSED SEAL 1631 GEOLOGIST EDWARD DAVIS BILLINGTON

DocuSigned by:
Ed Billington
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1.0 INTRODUCTION

The North Carolina Department of Transportation (NCDOT) is planning to widen U.S. 158 (Reidsville Road) from north of U.S. 421/I-40 Business to Belews Creek Road (S.R. 1965) in Forsyth County. The primary purpose of this project is to improve traffic operations. The NCDOT requested that ESP Associates, Inc. (ESP) perform a Phase II geoenvironmental investigation of the existing right-of-way (ROW), the proposed ROW, the proposed temporary construction easement (E), and the proposed permanent utility easement (PUE) (collectively, ROW/easements) of Parcel 261 to locate possible underground storage tanks (USTs), sample soil, and delineate potential contaminated soil. Parcel 261 is located on the south side of US 158 (Reidsville Road) approximately 1000 feet southwest of the Darrow Road intersection (SR 2405). (Figure 1).

2.0 HISTORY

2.1 Ownership

The following is the current parcel ownership, according to the Forsyth County GIS (https://www.forsyth.cc/Tax/geodata.aspx):

- Deed Date: 05/06/1993
- Current Owner: Vaughn, William Ronald
- Owner's Address: 3850 Beeson Dairy Rd., Winston Salem, NC 27105

2.2 NCDEQ Information

This parcel was listed as Site 4 in the 2004 Phase 1 report that was provided by the NCDOT. We checked the following sources at the NCDEQ with the results summarized below:

- Division of Waste Management Site Locator Tool
    - No listing.
- NC UST Facility Operating Permits
    - No listing.
- Registered USTs Database
    - No listing.
- Incident Management Database (Regional USTs)
    - No listing.
- Winston-Salem Regional NCDEQ Office
    - No files available.

3.0 SITE OBSERVATIONS

During our May 2020 field work, the site was occupied by three buildings associated with a used vehicle business (The Auto Store) (Figure 2). The ground in the study area was covered by asphalt pavement, gravel, and grass.

4.0 METHODS

ESP performed a geophysical study of the area designated by the NCDOT on May 4 and 11, 2020. The geophysical investigation area was approximately 0.34 acres and encompassed the ROW/easements. We performed direct-push drilling and sampling of subsurface soils on May 14, 2020. 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 (Figures 3 and 4). Location control was provided in real-time using a differential global positioning system (DGPS). One EM61 anomaly was observed that required additional investigation using a Noggin 250 MHz ground-penetrating radar (GPR).

4.2 Borings

ESP performed direct-push drilling activities within the ROW/easements of Parcel 261 using a subcontractor, SAEDACCO of Fort Mill, South Carolina. Seven borings were drilled, designated B261-1 through B261-7 (Figure 8). The soil borings were advanced using a GeoProbe 7822DT drill rig. Soil samples were obtained to a maximum depth of approximately 10 feet using two 5-foot long Macro-Core® tubes. Soil cores varied in recovery from 3.4 to 5.0 feet (68 to 100 percent recovery). Boring B261-1 had initial poor recovery due to loose gravel and mulch, and had to be offset 3 times to obtain acceptable recovery (B261-1A, B261-1B, and B261-1C). Likewise, Borings B261-3, B261-5, and B261-6 had to be offset once each due to poor initial recovery. The sampling equipment was decontaminated prior to drilling and between borings by the driller using a Liquinox® detergent solution.

4.3 Soil Sample Protocol

Representative soil samples were taken from the Macro-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 PID readings ranged from 0.1 to 5.6 parts per million (ppm) (Table 1 and Appendix A).

Five soil samples were selected for 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 ultraviolet fluorescence (UVF) method for benzene, toluene, ethylbenzene, and xylene (BTEX); gasoline range organics (GRO); diesel range organics (DRO); total petroleum hydrocarbons (TPH); total aromatics; polycyclic aromatic hydrocarbons (PAHs); and benzo(a)pyrene (BaP).

4.4 Groundwater

Groundwater was not encountered in the 7 borings.

5.0 RESULTS

5.1 Geophysics

The EM61 early time gate data show the response from both shallow and deeper metallic objects (Figure 3). The differential response reduces the effect of shallow anomalies and emphasizes anomalies from larger and more deeply buried metallic objects, such as USTs (Figure 4). Our evaluation of the differential response indicated the anomalies within the ROW/easements were caused by known site features.

One EM61 anomaly next to the northeast corner of the office building outside of the proposed ROW/easements was evaluated further with GPR and indicated a possible UST (Figure 5). The GPR data indicated that this possible UST was approximately 5 feet in diameter and 12 feet long, and buried approximately 6 feet below ground surface.

The EM61 early time gate data and differential data are shown on the plan sheet on Figures 6 and 7, respectively.

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 milligrams per kilogram (mg/kg or ppm).

5.3 Sample Observations

The results of the laboratory testing indicate that DRO was detected in 4 samples but the concentrations were well below the NCDEQ action level of 100 ppm (Table 2, Figure 9). BTEX, GRO, PAHs, and BaP values were below the laboratory detection limits for the 5 samples tested.

6.0 CONCLUSIONS

The results of the Phase II investigation for Parcel 261 of NCDOT Project R-2577A indicates that there is no evidence for abandoned USTs in the proposed ROW/easements. The geophysical data did indicate a possible UST outside of the proposed ROW/easements. Laboratory testing detected DRO in 4 of the 5 soil samples tested but the readings were well below the NCDEQ action level of 100 ppm for DRO. The PID readings during sampling ranged from 0.1 to 5.6 ppm.

7.0 RECOMMENDATIONS

No limitations on construction activities or special handling of excavated soil are recommended for Parcel 261. Groundwater was not encountered in the upper 10 feet in the study area.

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

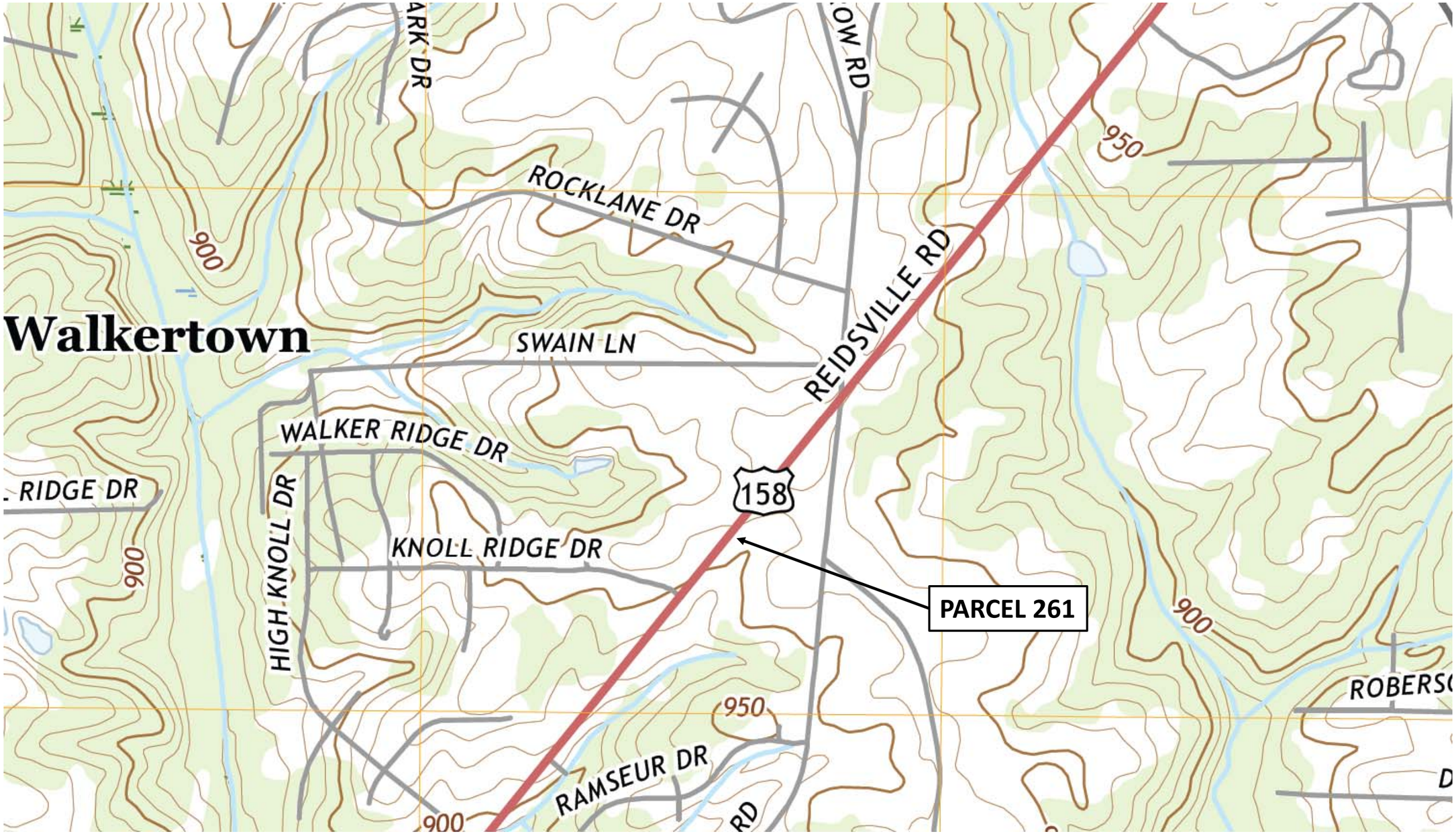
TABLE 1
SOIL SAMPLE PID READINGS

Boring	Sample Depth Range with PID > 10 ppm (feet bgs)	Maximum PID Reading (ppm) and Sample Depth (feet bgs)
B261-1	none	1.9 (1.0-1.5)
B261-2	none	1.1 (9.0-9.5)
B261-3	none	0.5 (7.0-7.5)
B261-4	none	0.8 (1.0-1.5)
B261-5	none	1.0 (9.0-9.5)
B261-6	none	5.6 (3.0-3.5)
B261-7	none	0.8 (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)
B261-1	S6 (6.0-6.5)	5/14/20	<0.4	<0.4	1.4	<0.13
B261-4	S5 (5.0-5.5)	5/14/20	<0.46	<0.46	<0.46	<0.15
B261-5	S6 (6.0-6.5)	5/14/20	<0.43	<0.43	0.43	<0.14
B261-6	S8 (8.0-8.5)	5/14/20	<0.47	<0.47	1.8	<0.15
B261-7	S2 (2.0-2.5)	5/14/20	<0.47	<0.47	1.1	<0.15

FIGURES



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

PROJECT NO. GR22.325	***FIGURE 1 – PARCEL 261, WILLIAM R. VAUGHN SITE VICINITY MAP***
SCALE AS SHOWN	***NCDOT PROJECT R-2577A***
DATE 5/29/2020	***US 158 FROM NORTH OF US 421 TO SR 1965***
BY CRP/EDB	***FORSYTH COUNTY, NORTH CAROLINA***

ESP Associates, Inc.
7011 Albert Pick Rd., Suite E
Greensboro, NC 27409
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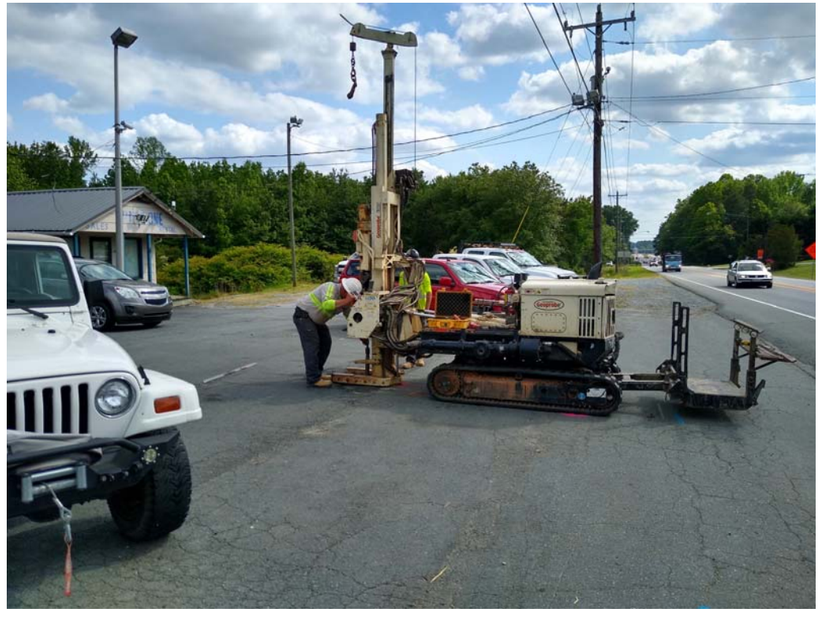
A. Photograph from northeast end, looking southwest.

B. Photograph from middle of parcel, looking northeast.

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



D. Photograph of drilling operations, looking southwest.

PROJECT NO. GR22.325	***FIGURE 2 – PARCEL 261 , WILLIAM R. VAUGHN SITE PHOTOGRAPHS***	ESP Associates, Inc.
SCALE N/A		7011 Albert Pick Rd., Suite E Greensboro, NC 27409
DATE 5/29/2020	***NCDOT PROJECT R-2577A US 158 FROM NORTH OF US 421 TO SR 1965 FORSYTH COUNTY, NORTH CAROLINA***	336.334.7724
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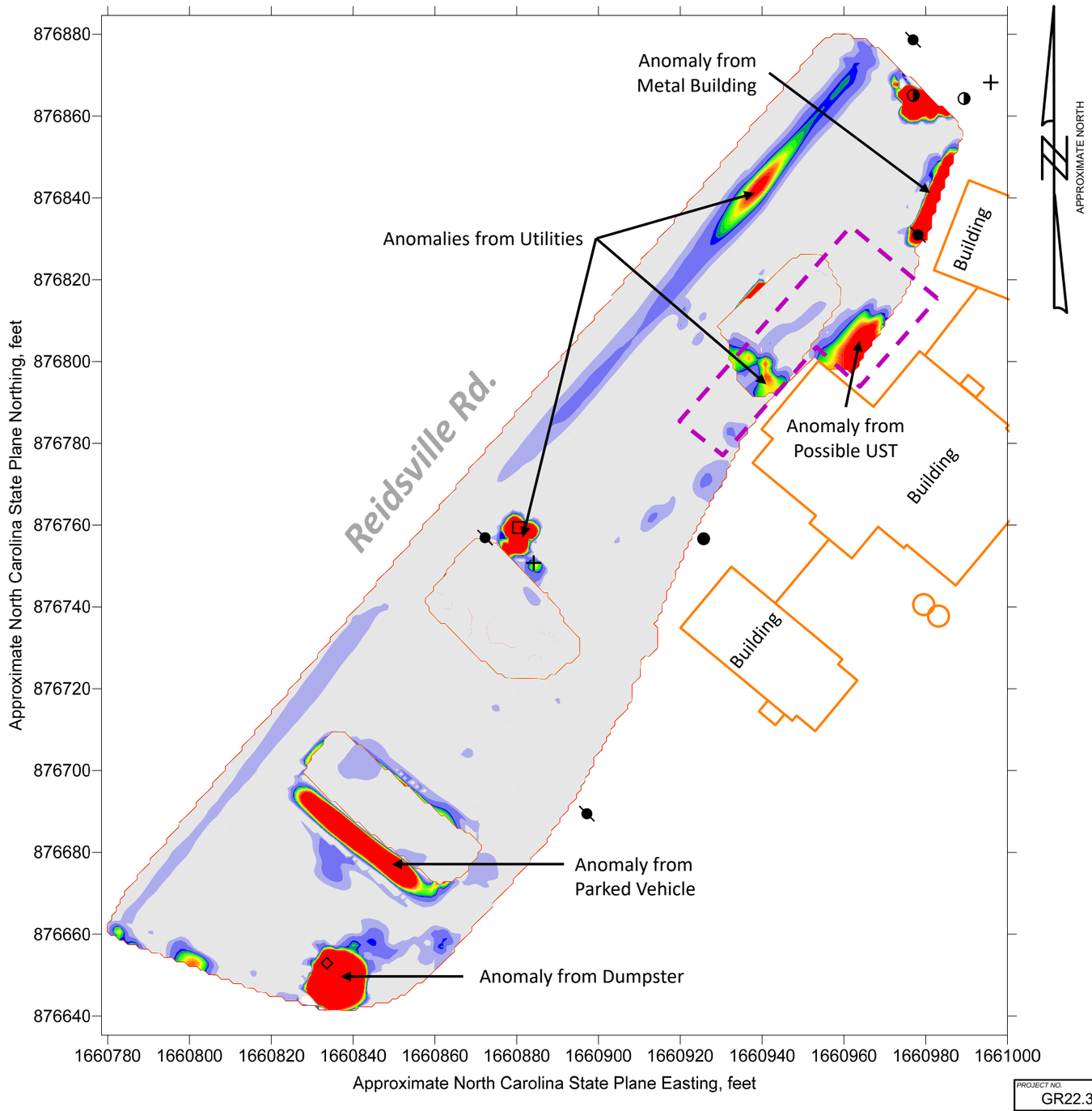

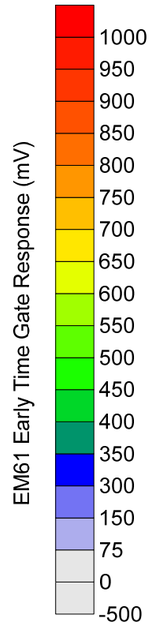

EXPLANATION

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

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

PROJECT NO.	GR22.325
SCALE	AS SHOWN
DATE	5/29/2020
BY	CRP/EDB

FIGURE 3 – PARCEL 261 , WILLIAM R. VAUGHN
EM61 EARLY TIME GATE DATA

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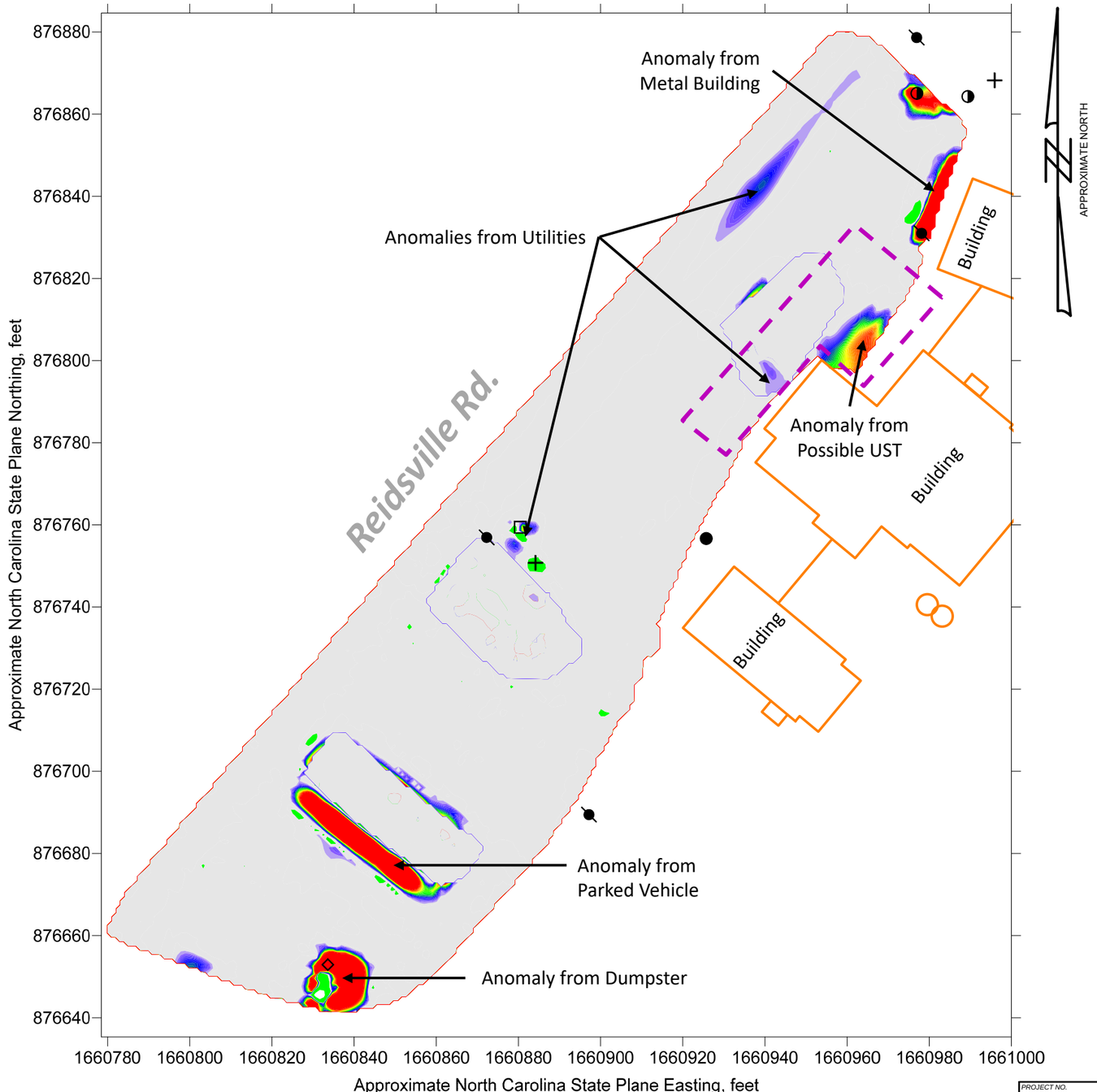

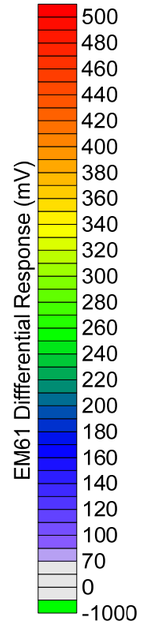

EXPLANATION

- Miscellaneous metal object (pipe, debris, etc.)
- Utility Box (water meter, electrical outlet, etc.)
- Drop Inlet, Catch Basin, Manhole
- Culvert, storm drain pipe
- Utility pole
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PROJECT NO.	GR22.325
SCALE	AS SHOWN
DATE	5/29/2020
BY	CRP/EDB

FIGURE 4 – PARCEL 261 , WILLIAM R. VAUGHN
EM61 DIFFERENTIAL DATA

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US 158 FROM NORTH OF US 421 TO SR 1965
FORSYTH COUNTY, NORTH CAROLINA

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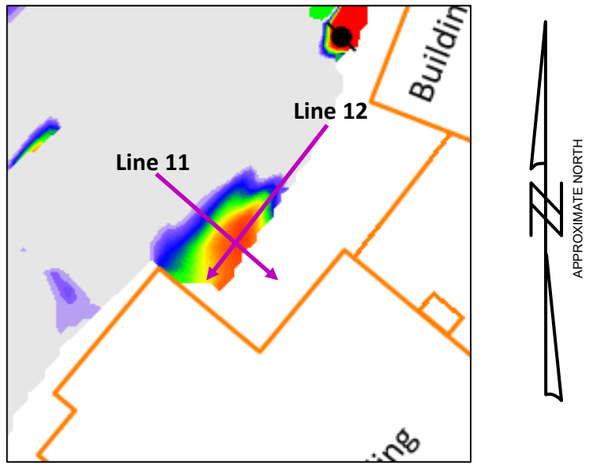
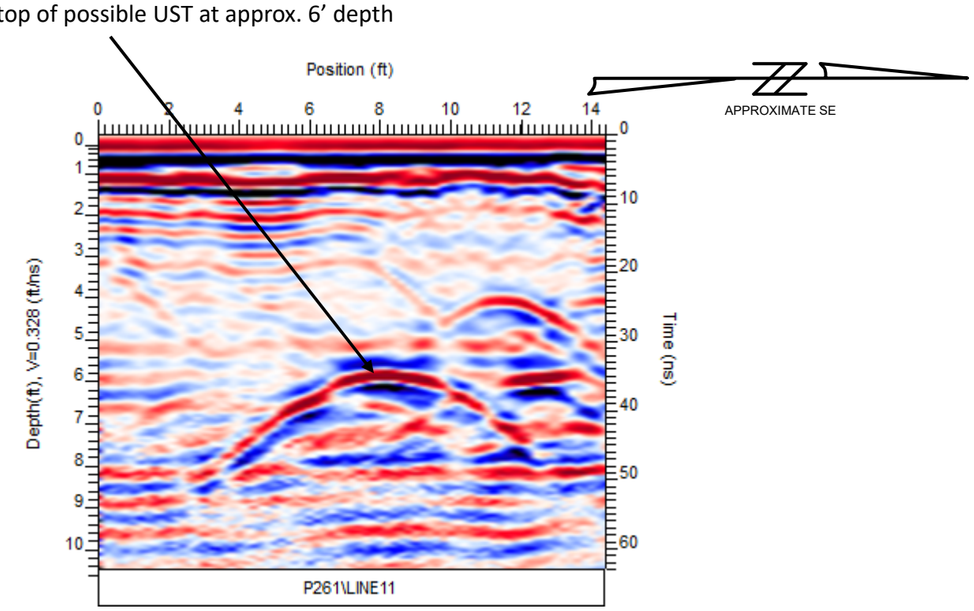
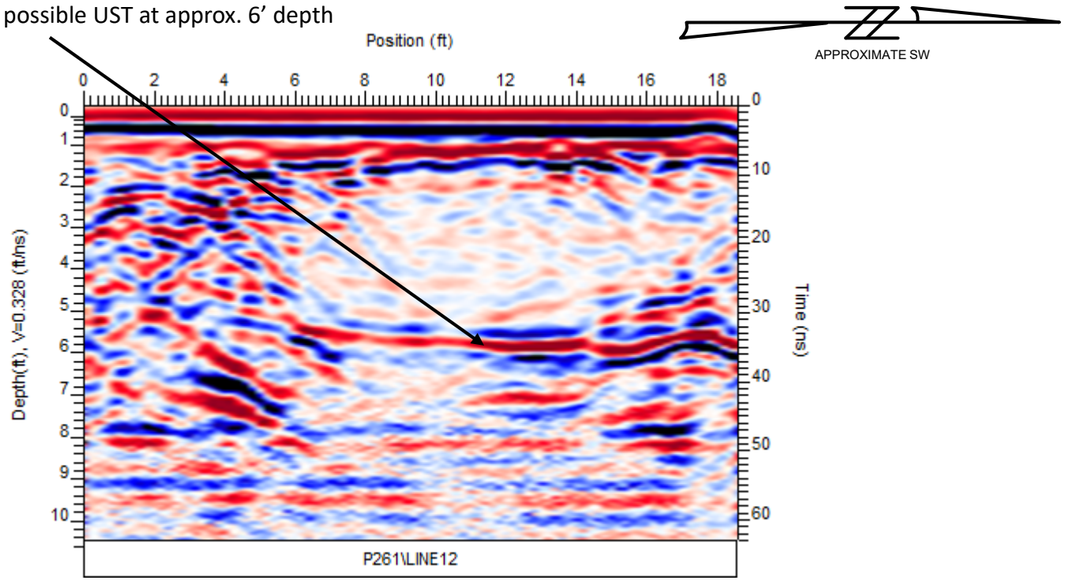


A. EM61 differential data with example GPR line locations.



B. GPR Line 11 over short axis of possible UST. GPR data indicate approximate diameter of 5 feet.



C. GPR Line 12 over long axis of possible UST. GPR data indicate approximate length of 12 feet.

PROJECT NO. GR22.325	***FIGURE 5 – PARCEL 261 , WILLIAM R. VAUGHN GPR IMAGES OVER POSSIBLE UST***
SCALE AS SHOWN	
DATE 5/29/2020	***NCDOT PROJECT R-2577A US 158 FROM NORTH OF US 421 TO SR 1965 FORSYTH COUNTY, NORTH CAROLINA***
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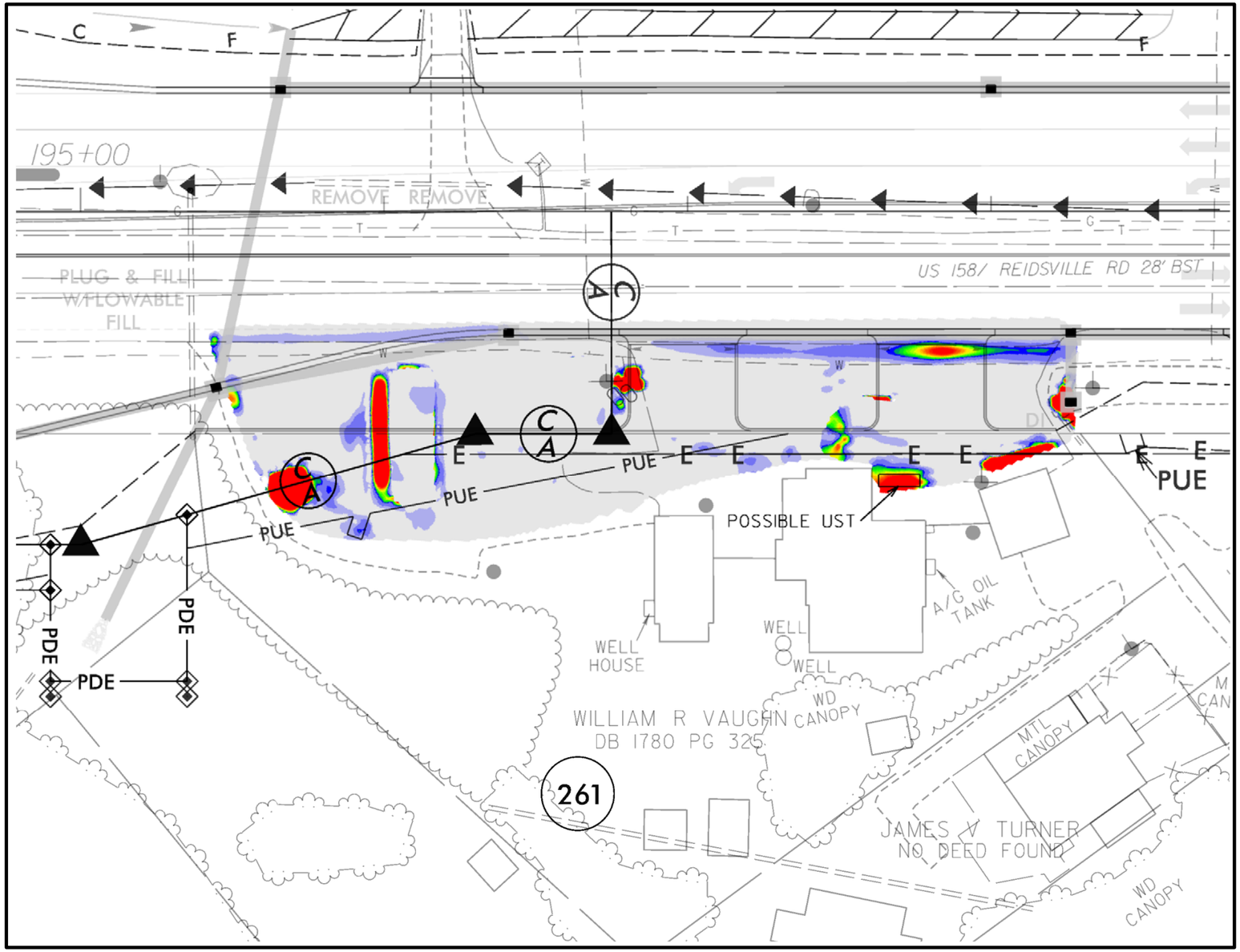

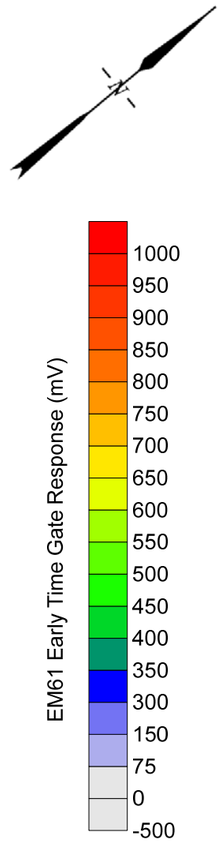

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  - R-2577A_rdy_dsn_driveways.dgn
  - R-2577A_rdy_dsn_guardrail.dgn
  - R-2577A_rdy_HISTORIC.dgn
  - R-2577A_rdy_map_owner_no.dgn
  - R-2577A_rdy_row.dgn
  - R-2577A_rdy_row_AG.dgn
  - R-2577A_rdy_row_SB.dgn
  - R-2577A_rdy_ss.dgn

0 40 80
FEET

See Figure 10 for explanation of symbols and line types

PROJECT NO. GR22.325	***FIGURE 6 – PARCEL 261 , WILLIAM R. VAUGHN EM61 EARLY TIME GATE DATA ON PLAN SHEET***
SCALE 1" = 40'	
DATE 5/29/2020	***NCDOT PROJECT R-2577A US 158 FROM NORTH OF US 421 TO SR 1965 FORSYTH COUNTY, NORTH CAROLINA***
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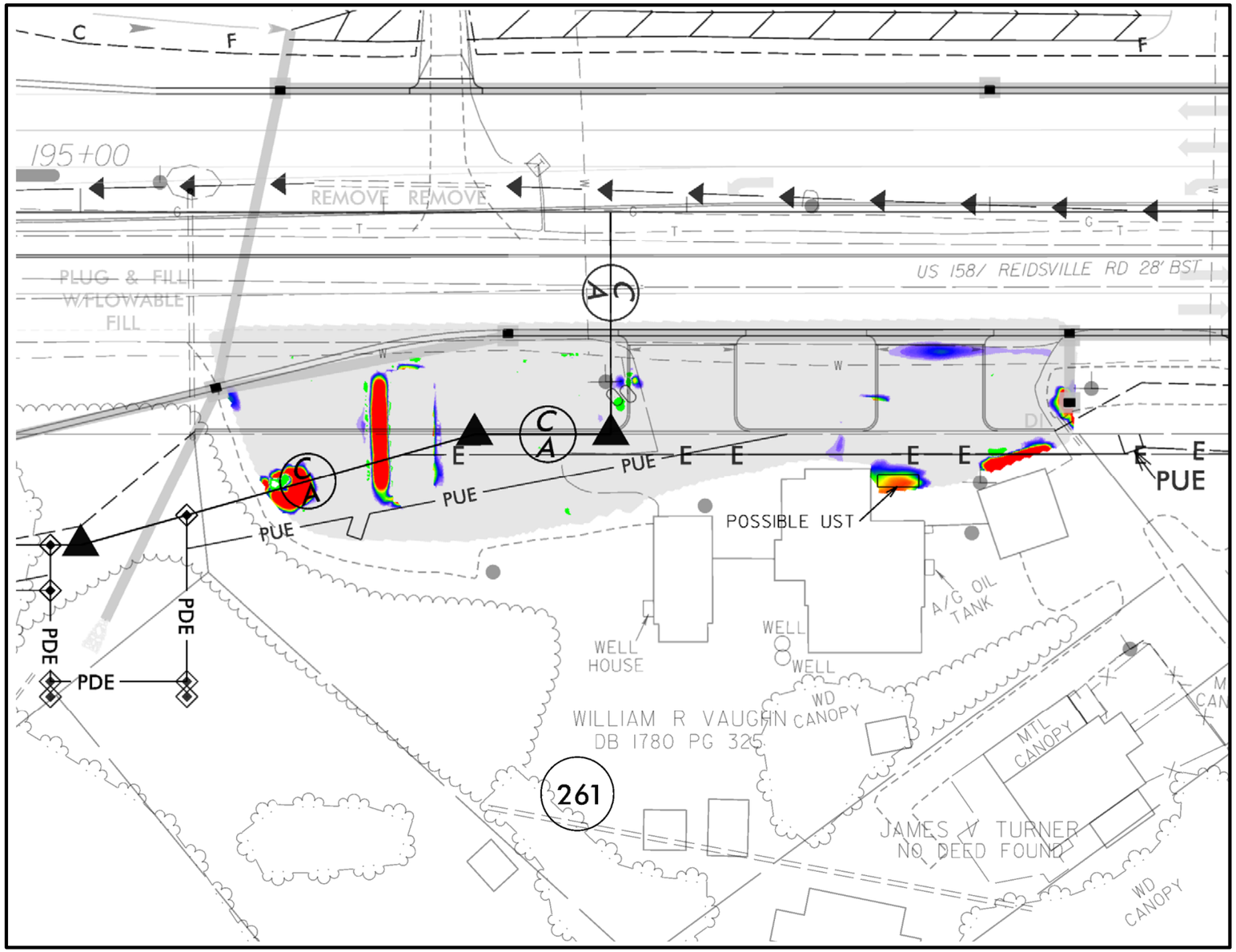

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  - R-2577A_hyd_drn.dgn
  - R2577A_ncdot_fs.dgn
  - R-2577A_rdy_dsn.dgn
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  - R-2577A_rdy_dsn_guardrail.dgn
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  - R-2577A_rdy_row.dgn
  - R-2577A_rdy_row_AG.dgn
  - R-2577A_rdy_row_SB.dgn
  - R-2577A_rdy_ss.dgn

0 40 80
FEET

See Figure 10 for explanation of symbols and line types

PROJECT NO. GR22.325	***FIGURE 7 – PARCEL 261 , WILLIAM R. VAUGHN EM61 DIFFERENTIAL DATA ON PLAN SHEET***
SCALE 1" = 40'	***NCDOT PROJECT R-2577A US 158 FROM NORTH OF US 421 TO SR 1965 FORSYTH COUNTY, NORTH CAROLINA***
DATE 5/29/2020	
BY CRP/EDB	

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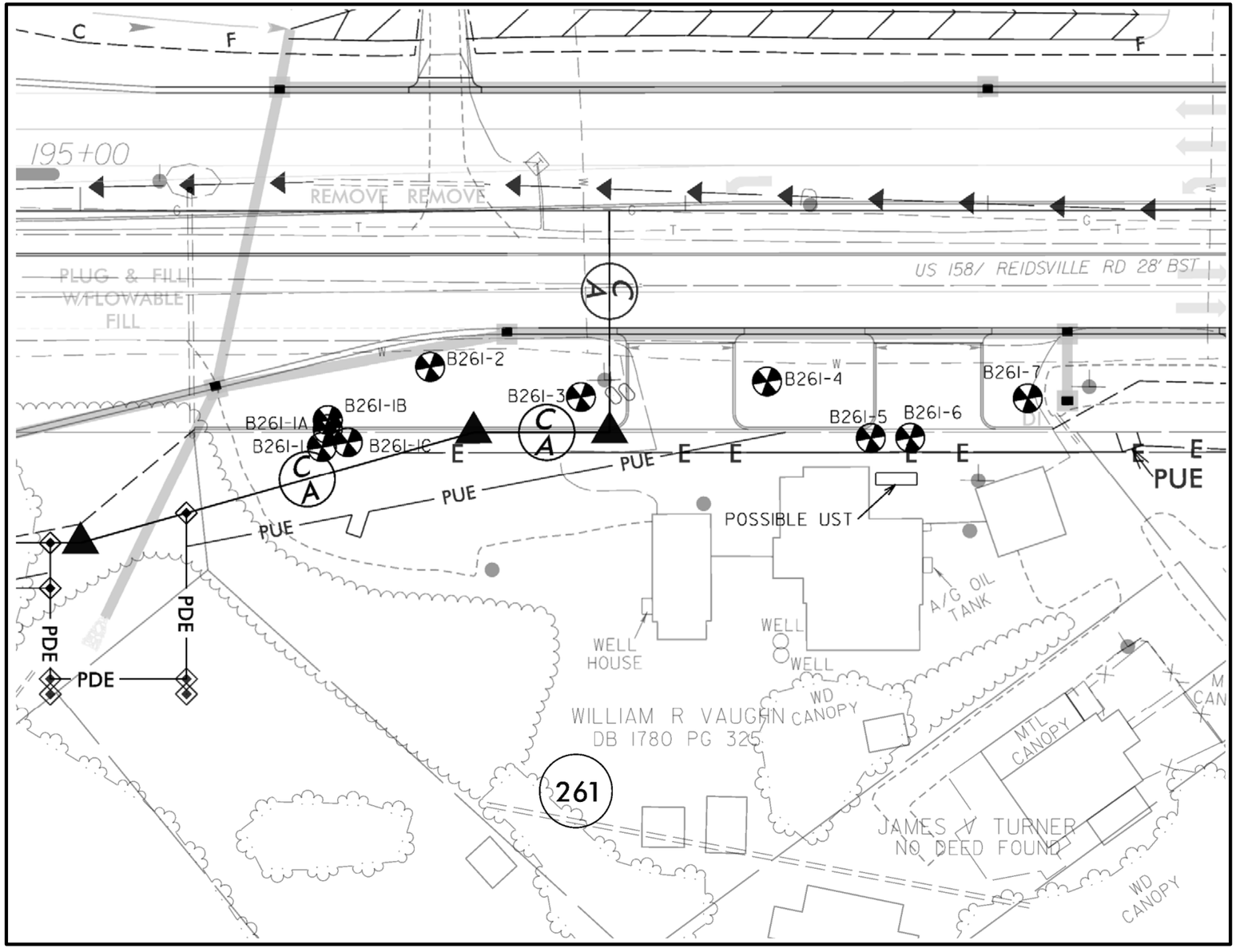

- R-2577A_Geo_env.dgn
  - R-2577A_hyd_drn.dgn
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  - R-2577A_rdy_dsn_driveways.dgn
  - R-2577A_rdy_dsn_guardrail.dgn
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  - R-2577A_rdy_map_owner_no.dgn
  - R-2577A_rdy_row.dgn
  - R-2577A_rdy_row_AG.dgn
  - R-2577A_rdy_row_SB.dgn
  - R-2577A_rdy_ss.dgn

0 40 80
FEET

See Figure 10 for explanation of symbols and line types

PROJECT NO. GR22.325	***FIGURE 8 – PARCEL 261 , WILLIAM R. VAUGHN BORING LOCATIONS ON PLAN SHEET***
SCALE 1" = 40'	
DATE 5/29/2020	***NCDOT PROJECT R-2577A***
BY CRP/EDB	***US 158 FROM NORTH OF US 421 TO SR 1965***
	FORSYTH COUNTY, NORTH CAROLINA

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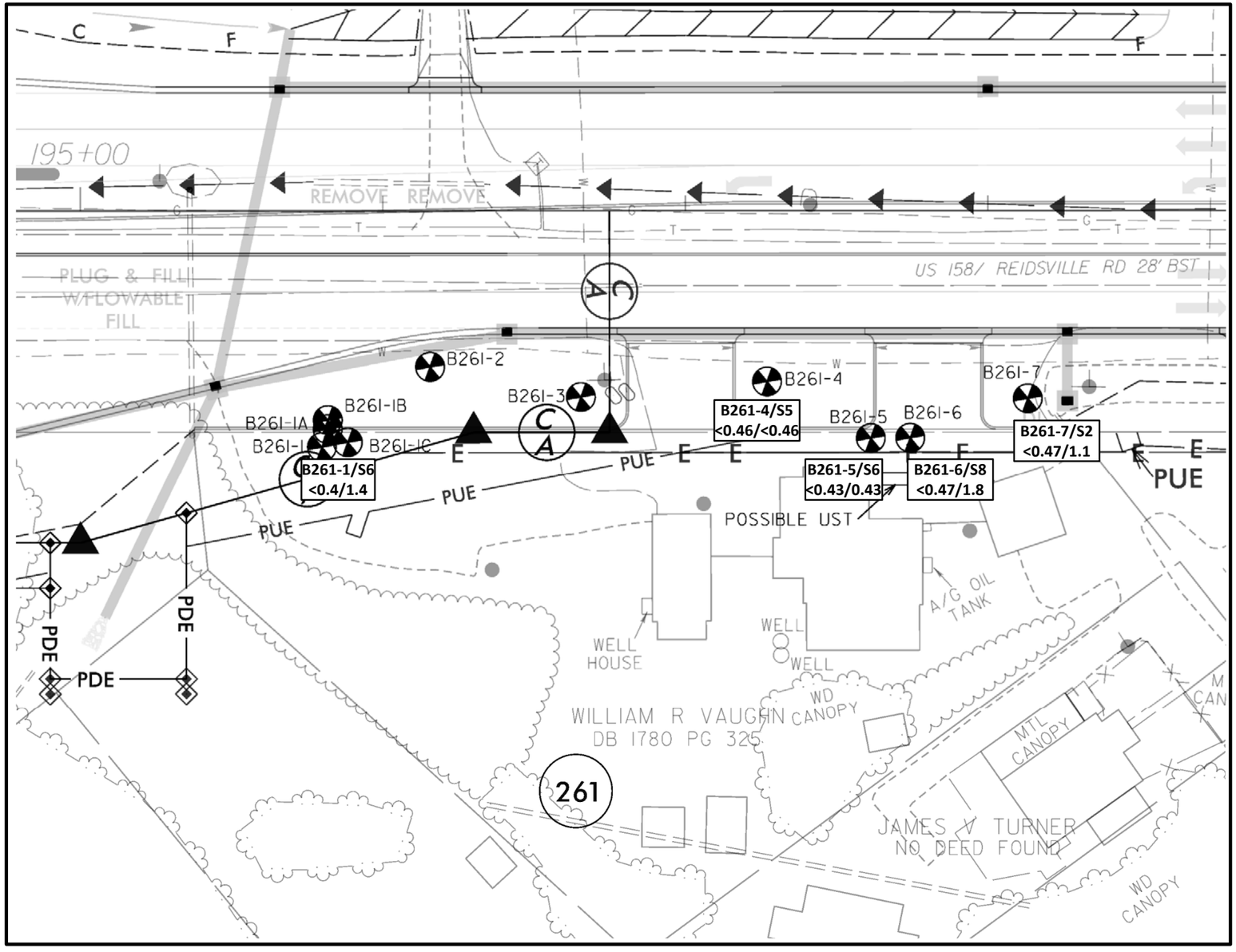

Explanation

B261-1/S6 <0.4/1.4

Maximum Analytical Results per Boring
Boring No./Sample No.
GRO/DRO (mg/kg, ppm)

- R-2577A_Geo_env.dgn
  - R-2577A_hyd_drn.dgn
  - R2577A_ncdot_fs.dgn
  - R-2577A_rdy_dsn.dgn
  - R-2577A_rdy_dsn_driveways.dgn
  - R-2577A_rdy_dsn_guardrail.dgn
  - R-2577A_rdy_HISTORIC.dgn
  - R-2577A_rdy_map_owner_no.dgn
  - R-2577A_rdy_row.dgn
  - R-2577A_rdy_row_AG.dgn
  - R-2577A_rdy_row_SB.dgn
  - R-2577A_rdy_ss.dgn

0 40 80
FEET

See Figure 10 for explanation of symbols and line types

PROJECT NO. GR22.325	***FIGURE 9 – PARCEL 261 , WILLIAM R. VAUGHN SOIL ANALYTICAL RESULTS ON PLAN SHEET***
SCALE 1" = 40'	***NCDOT PROJECT R-2577A US 158 FROM NORTH OF US 421 TO SR 1965 FORSYTH COUNTY, NORTH CAROLINA***
DATE 5/29/2020	
BY CRP/EDB	

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12/2/2016

PROJECT REFERENCE NO.	SHEET NO.

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

Note: Not to Scale **S.U.E. = Subsurface Utility Engineering*

BOUNDARIES AND PROPERTY:
- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Computed Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 23
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil — S
- Potential Contamination Area: Soil — S
- Known Contamination Area: Water — W
- Potential Contamination Area: Water — W
- 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 — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — Flow
- False Sump

RAILROADS:
- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — 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 Easment 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 — RW
- New Right of Way Line with Pin and Cap — RW
- New Right of Way Line with Concrete or Granite R/W Marker — RW
- New Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- New Control of Access — CA
- Existing Easement Line — E
- New Temporary Construction Easement — E
- New Temporary Drainage Easement — TDE
- New Permanent Drainage Easement — PDE
- New Permanent Drainage / Utility Easement — DUE
- New Permanent Utility Easement — PUE
- New Temporary Utility Easement — TUE
- New Aerial Utility Easement — AUE

ROADS AND RELATED FEATURES:
- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:
- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:
MAJOR:
- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:
- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

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

TELEPHONE:
- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- U/G Telephone Cable LOS B (S.U.E.*) — T
- U/G Telephone Cable LOS C (S.U.E.*) — T
- U/G Telephone Cable LOS D (S.U.E.*) — T
- U/G Telephone Conduit LOS B (S.U.E.*) — TC
- U/G Telephone Conduit LOS C (S.U.E.*) — TC
- U/G Telephone Conduit LOS D (S.U.E.*) — TC
- U/G Fiber Optics Cable LOS B (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS C (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS D (S.U.E.*) — T FO

WATER:
- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line LOS B (S.U.E.*) — W
- U/G Water Line LOS C (S.U.E.*) — W
- U/G Water Line LOS D (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:
- TV Pedestal — TV
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Cable LOS B (S.U.E.*) — TV
- U/G TV Cable LOS C (S.U.E.*) — TV
- U/G TV Cable LOS D (S.U.E.*) — TV
- U/G Fiber Optic Cable LOS B (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS C (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS D (S.U.E.*) — TV FO

GAS:
- Gas Valve
- Gas Meter
- U/G Gas Line LOS B (S.U.E.*) — G
- U/G Gas Line LOS C (S.U.E.*) — G
- U/G Gas Line LOS D (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:
- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

MISCELLANEOUS:
- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line LOS B (S.U.E.*) — W/S
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- 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. GR22.325	**FIGURE 10** **LEGEND FOR PLAN SHEET FIGURES**
SCALE N/A	
DATE 5/29/2020	**NCDOT PROJECT R-2577A** **US 158 FROM NORTH OF US 421 TO SR 1965** **FORSYTH COUNTY, NORTH CAROLINA**
BY CRP/EDB	

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

APPENDIX A
SOIL BORING LOGS

FIELD BORING LOG

BORING NO. B261-1

PROJECT NAME: NCDOT R-2577A Phase II | PROJ. NO.: GR22.325
LOCATION: Southwest End of Parcel
TYPE OF BORING: Direct Push | DATE STARTED: 5/14/20 | SHEET: 1 of 1
DRILLING FIRM: SAEDACCO | DATE FINISHED: 5/14/20 | TOTAL DEPTH: 10.0 ft
DRILLER: Brian Ewing | SAMPLE METHOD: 5' Macrocore | DEPTH TO GW: N/A ft
DRILL RIG: GeoProbe 722DT | LOGGED BY: R. Pastrana | COMMENT:

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' - 0.7' - Gravel and Soil Mix	Core 1 Rec 3.9'/5.0'
				0.7' - 1.4' - Organics (Mulch)	
					B261-1 -REC 2.7'/5.0'
1	S-1	1.0-1.5	1.9		
				1.4' - 4.0' - Red-Brown, Clayey SILT, Moist	B261-1A - Offset 5'
					Rec 3.9'/5.0'
2	S-2	2.0-2.5	0.6		
3	S-3	3.0-3.5	0.5	3.0' - Brown	
4	S-4	4.0-4.5	0.3	4.0' - 5.0' - White and Black, Silty SAND, with Rock Fragments, Dry	
5	S-5	5.0-5.5	0.3	5.0' - 10.0' - Tan-Brown to Gray-Brown, Sandy CLAY with Layers of Clayey	Core 2 Rec 3.7'/5.0'
				SAND, Moist to Very Moist	
					B261-1 -REC 0.4'/5.0'
6	S-6	6.0-6.5	0.4		B261-1A - Offset 5'
					Rec 0.2'/5.0'
					B261-1B - Offset 5'
7	S-7	7.0-7.5	0.1		Rec 0.0'/5.0'
					B261-1C - Offset 5'
					Rec 3.7'/5.0'
8	S-8	8.0-8.5	0.2		
9					
10					
11					
12					
13					
14					
15					

FIELD BORING LOG

BORING NO. B261-2

PROJECT NAME: NCDOT R-2577A Phase II | PROJ. NO.: GR22.325
LOCATION: Approximately 50 feet N of B261-1, next to highway
TYPE OF BORING: Direct Push | DATE STARTED: 5/14/20 | SHEET: 1 of 1
DRILLING FIRM: SAEDACCO | DATE FINISHED: 5/14/20 | TOTAL DEPTH: 10.0 ft
DRILLER: Brian Ewing | SAMPLE METHOD: 5' Macrocore | DEPTH TO GW: N/A ft
DRILL RIG: GeoProbe 722DT | LOGGED BY: R. Pastrana | COMMENT:

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' - 0.6' - Gravel	Core 1 Rec 3.7'/5.0'
				0.6' - 1.2' - Organics (Mulch)	
1	S-1	1.0-1.5	1.0		
				1.2' - 10.0' - Red-Brown to Brown, Clayey and Sandy SILT, Moist	
2	S-2	2.0-2.5	0.4		
3	S-3	3.0-3.5	0.6		
4					
5	S-5	5.0-5.5	0.5		Core 2 Rec 4.4'/5.0'
6	S-6	6.0-6.5	0.5		
7	S-7	7.0-7.5	0.8		
8	S-8	8.0-8.5	0.7		
9	S-9	9.0-9.5	1.1		
10					
11					
12					
13					
14					
15					

FIELD BORING LOG

BORING NO. B261-3

PROJECT NAME: NCDOT R-2577A Phase II | PROJ. NO.: GR22.325
LOCATION: Middle of Parcel / Next to Gravel and Asphalt Transition
TYPE OF BORING: Direct Push | DATE STARTED: 5/14/20 | SHEET: 1 of 1
DRILLING FIRM: SAEDACCO | DATE FINISHED: 5/14/20 | TOTAL DEPTH: 10.0 ft
DRILLER: Brian Ewing | SAMPLE METHOD: 5' Macrocore | DEPTH TO GW: N/A ft
DRILL RIG: GeoProbe 722DT | LOGGED BY: R. Pastrana | COMMENT:

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' - 0.5' - Gravel	Core 1 Rec 4.2'/5.0'
				0.5' - 5.0' - Red-Brown to Brown, Clayey and Sandy SILT, Moist	
					1st Attempt Rec 1.3'/5.0'
1	S-1	1.0-1.5	0.3		
					2nd Attempt Rec 4.2'/5.0'
2	S-2	2.0-2.5	0.3		
3	S-3	3.0-3.5	0.2		
4	S-4	4.0-4.5	0.2		
5	S-5	5.0-5.5	0.4	5.0' - 7.6' - Red-Brown, Sandy SILT, Moist	Core 2 Rec 4.7'/5.0'
6	S-6	6.0-6.5	0.3		
7	S-7	7.0-7.5	0.5		
				7.6' -10.0' - Tan-Brown, Sandy CLAY, Moist	
8	S-8	8.0-8.5	0.3		
9	S-9	9.0-9.5	0.2		
10					
11					
12					
13					
14					
15					

FIELD BORING LOG

BORING NO. B261-4

PROJECT NAME: NCDOT R-2577A Phase II | PROJ. NO.: GR22.325
LOCATION: Middle of Asphalt / near Office Building
TYPE OF BORING: Direct Push | DATE STARTED: 5/14/20 | SHEET: 1 of 1
DRILLING FIRM: SAEDACCO | DATE FINISHED: 5/14/20 | TOTAL DEPTH: 10.0 ft
DRILLER: Brian Ewing | SAMPLE METHOD: 5' Macrocore | DEPTH TO GW: N/A ft
DRILL RIG: GeoProbe 722DT | LOGGED BY: R. Pastrana | COMMENT:

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' - 0.4' Asphalt	Core 1 Rec 3.8'/5.0'
				0.4' - 5.0' - Red-Brown to Orange-Brown, Clayey SILT, Moist	
1	S-1	1.0-1.5	0.8		
2	S-2	2.0-2.5	0.5		
3	S-3	3.0-3.5	0.5		
4					
5	S-5	5.0-5.5	0.4	5.0' - 10.0' - Orange-Brown to Red-Brown, Silty CLAY, Dry to Moist	Core 2 Rec 5.0'/5.0'
6	S-6	6.0-6.5	0.4		
7	S-7	7.0-7.5	0.2		
8	S-8	8.0-8.5	0.3		
9	S-9	9.0-9.5	0.3		
10					
11					
12					
13					
14					
15					

FIELD BORING LOG

BORING NO. B261-5

PROJECT NAME: NCDOT R-2577A Phase II | PROJ. NO.: GR22.325
LOCATION: Adjacent to Southwest End of Possible UST
TYPE OF BORING: Direct Push | DATE STARTED: 5/14/20 | SHEET: 1 of 1
DRILLING FIRM: SAEDACCO | DATE FINISHED: 5/14/20 | TOTAL DEPTH: 10.0 ft
DRILLER: Brian Ewing | SAMPLE METHOD: 5' Macrocore | DEPTH TO GW: N/A ft
DRILL RIG: GeoProbe 722DT | LOGGED BY: R. Pastrana | COMMENT:

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' - 0.4' Asphalt	Core 1 Rec 4.1'/5.0'
				0.4' - 5.0' - Red-Brown, Sandy SILT, Micaceous, Moist	
					1st Attempt Rec 1.7'/5.0'
1	S-1	1.0-1.5	0.2		
					2nd Attempt Rec 4.1'/5.0'
2	S-2	2.0-2.5	0.3		
3	S-3	3.0-3.5	0.1		
4	S-4	4.0-4.5	0.6		
5	S-5	5.0-5.5	0.5	5.0' - 7.0' - Red-Brown, Clayey SILT, Moist	Core 2 Rec 4.2'/5.0'
6	S-6	6.0-6.5	0.7		
7	S-7	7.0-7.5	0.4	7.0' - 10.0' - Red-Brown to Tan-Brown, Silty CLAY, Moist to Dry	
8	S-8	8.0-8.5	0.6		
9	S-9	9.0-9.5	1.0		
10					
11					
12					
13					
14					
15					

FIELD BORING LOG

BORING NO. B261-6

PROJECT NAME: NCDOT R-2577A Phase II | PROJ. NO.: GR22.325
LOCATION: Adjacent to Northeast End of Possible UST
TYPE OF BORING: Direct Push | DATE STARTED: 5/14/20 | SHEET: 1 of 1
DRILLING FIRM: SAEDACCO | DATE FINISHED: 5/14/20 | TOTAL DEPTH: 10.0 ft
DRILLER: Brian Ewing | SAMPLE METHOD: 5' Macrocore | DEPTH TO GW: N/A ft
DRILL RIG: GeoProbe 722DT | LOGGED BY: R. Pastrana | COMMENT:

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' - 0.4' Asphalt	Core 1 Rec 3.6'/5.0'
				0.4' - 5.0' - Red-Brown, Clayey and Sandy SILT, Moist	
					1st Attempt Rec 2.3'/5.0'
1	S-1	1.0-1.5	1.5		
					2nd Attempt Rec 3.6'/5.0'
2	S-2	2.0-2.5	0.7	2.0' - with Asphalt Fragments	
3	S-3	3.0-3.5	5.6		
4					
5	S-5	5.0-5.5	0.4	5.0' - 10.0' - Red-Brown to Tan-Brown, Sandy and Silty CLAY, Dry to Moist	Core 2 Rec 4.5'/5.0'
6	S-6	6.0-6.5	0.9		
7	S-7	7.0-7.5	1.4		
8	S-8	8.0-8.5	4.2		
9	S-9	9.0-9.5	3.9		
10					
11					
12					
13					
14					
15					

FIELD BORING LOG

BORING NO. B261-7

PROJECT NAME: NCDOT R-2577A Phase II | PROJ. NO.: GR22.325
LOCATION: Northeast End of Parcel near Proposed Drop Inlet
TYPE OF BORING: Direct Push | DATE STARTED: 5/14/20 | SHEET: 1 of 1
DRILLING FIRM: SAEDACCO | DATE FINISHED: 5/14/20 | TOTAL DEPTH: 10.0 ft
DRILLER: Brian Ewing | SAMPLE METHOD: 5' Macrocore | DEPTH TO GW: N/A ft
DRILL RIG: GeoProbe 722DT | LOGGED BY: R. Pastrana | COMMENT:

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' - 0.4' Asphalt	Core 1 Rec 3.4'/5.0'
				0.4' - 1.7' - Brown, Clayey SAND, Moist	
1	S-1	1.0-1.5	0.6		
				1.7' - 10.0' - Red-Brown to Brown, Sandy SILT, Micaceous, Moist	
2	S-2	2.0-2.5	0.8		
3	S-3	3.0-3.5	0.5		
4					
5	S-5	5.0-5.5	0.4		Core 2 Rec 5.0'/5.0'
6	S-6	6.0-6.5	0.5		
7	S-7	7.0-7.5	0.3		
8	S-8	8.0-8.5	0.7		
9	S-9	9.0-9.5	0.6		
10					
11					
12					
13					
14					
15					

APPENDIX B

RED LAB LABORATORY TESTING REPORT

QED REDLAB RAPID ENVIRONMENTAL DIAGNOSTICS AQROS

Hydrocarbon Analysis Results

Client: ESP
Address: 7011 Albert Pick Rd
Ste E
Greensboro, NC 27409

Contact: Ned Billington

Project: GR22.325

Samples taken Thursday, May 14, 2020
Samples extracted Thursday, May 14, 2020
Samples analysed Monday, May 18, 2020

Operator Harry Wooten

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	B261-1 , S6	15.9	<0.4	<0.4	1.4	1.4	0.72	<0.13	<0.016	0	83.3	16.7	V.Deg.PHC 94.3%,(FCM)
s	B261-4 , S5	18.5	<0.46	<0.46	<0.46	<0.46	<0.09	<0.15	<0.018	0	80.6	19.4	PHC not detected
s	B261-5 , S6	17.2	<0.43	<0.43	0.43	0.43	0.24	<0.14	<0.017	0	89.2	10.8	Residual HC
s	B261-6 , S8	18.8	<0.47	<0.47	1.8	1.8	0.85	<0.15	<0.019	0	90.9	9.1	Road Tar 94.3%,(FCM)
s	B261-7 , S2	19.0	<0.47	<0.47	1.1	1.1	0.55	<0.15	<0.019	0	92.4	7.6	Road Tar 93.5%,(FCM)

Initial Calibrator QC check OK Final FCM QC Check OK 101.8 %

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

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

APPENDIX C
CHAIN-OF-CUSTODY FORM

Client Name:	ESP
Address:	Greensboro
Contact:	Ned Billington
Project Ref.:	GR22.325
Email:	On file
Phone #:	
Collected by:	R. Pastrana

REDLAB™
RAPID ENVIRONMENTAL DIAGNOSTICS

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 24 Hour	TAT Requested 48 Hour	Analysis Type UVF	Analysis Type GC	Initials	Sample ID (letter "S")	Total Wt.	Tare Wt.	Sample Wt.
5/14/20		✓	✓		SDS				
BROKEN UPON ARRIVAL						B261-1, 56	58.6	44.8	13.8
						B261-2, 57		~~44.9~~	
						B261-4, 55	56.4	44.5	11.9
						B261-5, 56 *	57.5	44.7	12.8
						B261-6, 58	56.9	44.2	11.7
						B261-7, 52	56.7	45.1	11.6

COMMENTS/REQUESTS:
* Report bracketed samples separately

TARGET GC/UVF ANALYTES:

Relinquished by		Accepted by	Date/Time
[signature]	5/15/20	[signature]	5/18/20 12:30
Relinquished by		Accepted by	Date/Time

RED Lab USE ONLY
(13)
Ref. No H02

June 5, 2020

Ashley B. Cox, Jr, LG
Geotechnical Engineering Unit
North Carolina Department of Transportation
1020 Birch Ridge Drive
Raleigh, NC 27610

RE: **PHASE II INVESTIGATION OF PARCEL 265**
Texas Quick Fuel, Laxmi Food Mart, Inc.
4990 Reidsville Road, Walkertown, NC
ESP Project No. GR22.325

TIP Number:	R-2577A
WBS Number:	37405.1.2
County:	FORSYTH
Description:	US 158 from North of US 421 to SR 1965 (Belews Creek Road)

Dear Mr. Cox:

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 received on April 14, 2020, and our Cost Proposal dated April 23, 2020.

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.

Edward D. Billington, PG
Senior Geologist/Geophysicist
EDB/CRB/NAZ

NORTH CAROLINA LICENSED SEAL 1631 GEOLOGIST EDWARD DAVIS BILLINGTON

DocuSigned by:
Edward Billington
2402544DC92F4E0...

TABLE OF CONTENTS

TABLES

TABLE OF CONTENTS (continued)

FIGURES

APPENDICES

1.0 INTRODUCTION

The North Carolina Department of Transportation (NCDOT) is planning to widen U.S. 158 (Reidsville Road) from north of U.S. 421/I-40 Business to Belews Creek Road (S.R. 1965) in Forsyth County. The primary purpose of this project is to improve traffic operations. The NCDOT requested that ESP Associates, Inc. (ESP) perform a Phase II geoenvironmental investigation of the proposed right-of-way (ROW) and proposed temporary construction easement (E) (collectively, proposed ROW/easement) of Parcel 265 to locate possible underground storage tanks (USTs), sample soil, and delineate potential contaminated soil. Parcel 265 is located on the south side of Reidsville Road between at the intersection with Old Belews Creek Road (Figure 1).

2.0 HISTORY

2.1 Ownership

The following is the current parcel ownership, according to the Forsyth County GIS (https://www.forsyth.cc/Tax/geodata.aspx):

- Deed Date: 5/26/2005
- Current Owner: Laxmi Food Mart, Inc
- Owner's Address: 2184 Cherrywood Dr., Clemmons NC 27012

2.2 NCDEQ Information

This parcel was listed as Site 5 in the 2004 Phase 1 report that was provided by the NCDOT. We checked the following sources at the NCDEQ with the results summarized below:

- Division of Waste Management Site Locator Tool
    - Facility #16179
    - Indicated UST Incident #30195
    - Site Name: Caudles Tire Sales - B
    - Numerous files in Documents Link from 1997 to 1998.
- NC UST Facility Operating Permits
    - Facility #16179 (3 USTs)
- Registered USTs Database
    - 1 UST closed by removal on 7/15/1992
        - Facility: Caudles Discount Tire Sales
    - 3 Registered USTs installed on 9/29/1998
        - Facility: Quick Mart
        - 10,000 and 8,000-gallon gasoline USTs
        - 8,000-gallon kerosene UST
- Incident Management Database (Regional USTs)
    - Incident: None listed

        - Name: Caudles Tire Sales
        - UST No.: WS-1994
        - Date Occurred: None listed
        - Closed out: 4/14/1993
        - Contamination: No
        - Comment: None
    - Incident: 18056
        - Name: Caudles Tire Sales - B
        - UST No.: WS-5245
        - Date Occurred: 7/14/1997
        - Closed out: 12/8/1997
        - Contamination: None listed (probably TPH contaminated soil from the former dispenser island that was land-farmed on the south end of the parcel).
        - Comment: Samples from Pump Island Associated with Prev. Removed USTs.
- Winston-Salem Regional NCDEQ Office
    - Provided copies of the several reports that were duplicates of reports in NCDEQ Site Locator linked documents.
- Summary
    - NCDEQ-held reports reference closure of USTs probably in the 1970s.
    - The former tank pit for the UST removed in 1992 was located approximately at the north end of the current canopy. The dispenser island was located approximately 10 feet south of the former tank pit. Our closest boring is B265-3.
    - A copy of a schematic figure from the July 1997 Site Sensitivity Evaluation (SSE) report showing the relative locations of pertinent site features in included in Appendix D.

3.0 SITE OBSERVATIONS

During our May 2020 field work, the site was occupied by a petroleum station and market (Texas Quik Fuel). The ground in the study area was covered by asphalt pavement and grass. We could not locate a water meter for the site. The existing tank pit and the dispensers were located outside of the proposed ROW/easement.

4.0 METHODS

ESP performed a geophysical study of the area designated by the NCDOT on May 4, 2020. The geophysical investigation area was approximately 0.25 acres and encompassed the proposed ROW/easement. We performed direct-push drilling and sampling of subsurface soils on May 15, 2020. 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 (Figures 3 and 4). Location control was provided in real-time using a differential global positioning system (DGPS). No EM61 anomalies were observed that required additional investigation using ground-penetrating radar (GPR). We use a Noggin 250 MHz GPR to confirm the limits of the active USTs and mark a few unknown lines in the study area.

4.2 Borings

ESP performed direct-push drilling activities within the proposed ROW/easement of Parcel 265 using a subcontractor, SAEDACCO of Fort Mill, South Carolina. Eight borings were drilled, designated B265-1 through B265-8 (Figure 7). The soil borings were advanced using a GeoProbe 7822DT drill rig. Boring B265-3 was located near the previous tank pit. Borings B265-5 and B265-7 were located near proposed drop inlets. Boring B265-6 was located near the existing diesel dispenser.

Soil samples were obtained to a maximum depth of approximately 10 feet using two 5-foot long Macro-Core® tubes. Soil cores varied in recovery from 3.4 to 5.0 feet (68 to 100 percent recovery). The sampling equipment was decontaminated prior to drilling and between borings by the driller using a Liquinox® detergent solution.

4.3 Soil Sample Protocol

Representative soil samples were taken from the Macro-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 in each boring ranged from 0.4 to 1.4 parts per million (ppm) (Table 1).

Seven soil samples were selected for 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 ultraviolet fluorescence (UVF) method for benzene, toluene, ethylbenzene, and xylene (BTEX);

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

4.4 Groundwater

Groundwater was not encountered in the 8 borings.

5.0 RESULTS

5.1 Geophysics

The EM61 early time gate data show the response from both shallow and deeper metallic objects (Figure 3). The differential response reduces the effect of shallow anomalies and emphasizes anomalies from larger and more deeply buried metallic objects, such as USTs (Figure 4). Our evaluation of the differential response indicated the anomalies were caused by known site features. The GPR data indicated that the known USTs did not extend outside the edges of the concrete slab over the USTs.

The EM61 early time gate response and differential response are shown on the plan sheet on Figures 5 and 6, respectively.

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 milligrams per kilogram (mg/kg or ppm).

5.3 Sample Observations

The results of the laboratory testing indicated that DRO was detected in 3 samples but the readings were below the NCDEQ action level of 100 ppm for DRO (Table 2). BTEX, GRO, and BaP values were below the laboratory detection limits for the 7 samples tested. PAHs were detected in one sample with a value of 0.21 ppm (Appendix B).

6.0 CONCLUSIONS

The results of the Phase II investigation for Parcel 265 of NCDOT Project R-2577A indicate that there is no evidence for abandoned USTs in the proposed ROW/easement. Laboratory testing detected DRO petroleum compounds in 3 of the 7 soil samples tested but the readings were less than the NCDEQ action level of 100 ppm for DRO. The PID readings during sampling ranged from 0.1 to 1.4 ppm.

7.0 RECOMMENDATIONS

No limitations on construction activities or special handling of excavated soil are recommended for Parcel 265. Groundwater was not encountered in the upper 10 feet in the study area. The existing tank pit and dispenser islands are outside of the proposed ROW/easement.

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

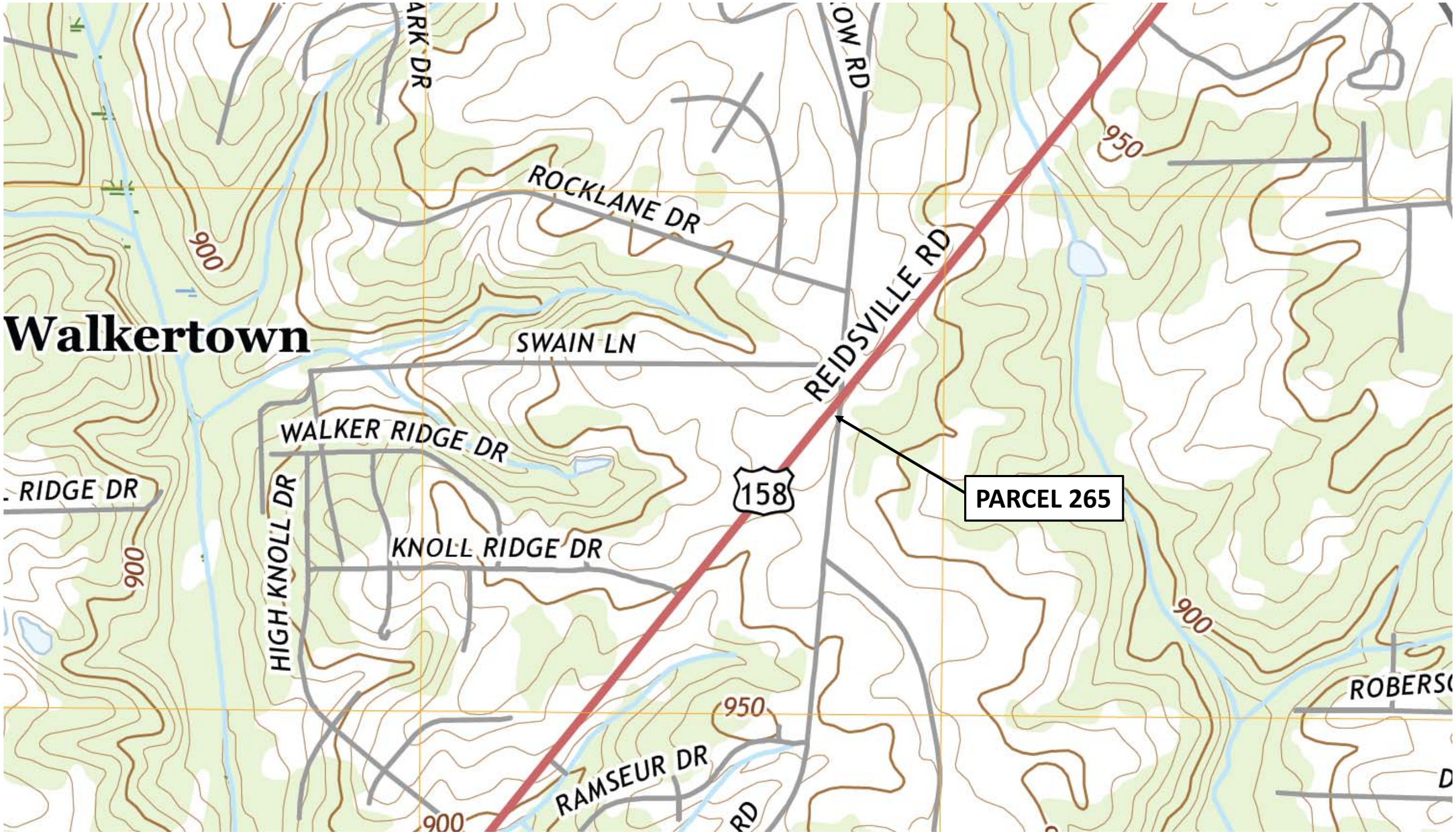
TABLE 1
SOIL SAMPLE PID READINGS

Boring	Sample Depth Range with PID > 10 ppm (feet bgs)	Maximum PID Reading (ppm) and Sample Depth (feet bgs)
B265-1	none	0.4 (2.0-2.5)
B265-2	none	1.4 (3.0-3.5)
B265-3	none	0.9 (1.0-1.5)
B265-4	none	0.6 (3.0-3.5)
B265-5	none	1.3 (3.0-3.5)
B265-6	none	0.5 (2.0-2.5)
B265-7	none	0.6 (3.0-3.5)
B265-8	none	0.6 (5.0-5.5)

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)
B265-2	S3 (3.0-3.5)	5/15/20	<0.5	<0.5	3.9	0.21
B265-3	S9 (9.0-9.5)	5/15/20	<0.49	<0.49	<0.49	<0.16
B265-4	S3 (3.0-3.5)	5/15/20	<0.54	<0.54	1.1	<0.17
B265-5	S7 (7.0-7.5)	5/15/20	<0.47	<0.47	<0.47	<0.15
B265-6	S6 (6.0-6.5)	5/15/20	<0.47	<0.47	<0.47	<0.15
B265-7	S3 (3.0-3.5)	5/15/20	<0.45	<0.45	0.72	<0.14
B265-8	S6 (6.0-6.5)	5/15/20	<0.34	<0.34	<0.34	<0.11

FIGURES



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

PROJECT NO. GR22.325	***FIGURE 1 – PARCEL 265, LAXMI FOOD MART, INC SITE VICINITY MAP***
SCALE AS SHOWN	***NCDOT PROJECT R-2577A***
DATE 5/29/2020	***US 158 FROM NORTH OF US 421 TO SR 1965***
BY CRP/EDB	***FORSYTH COUNTY, NORTH CAROLINA***

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

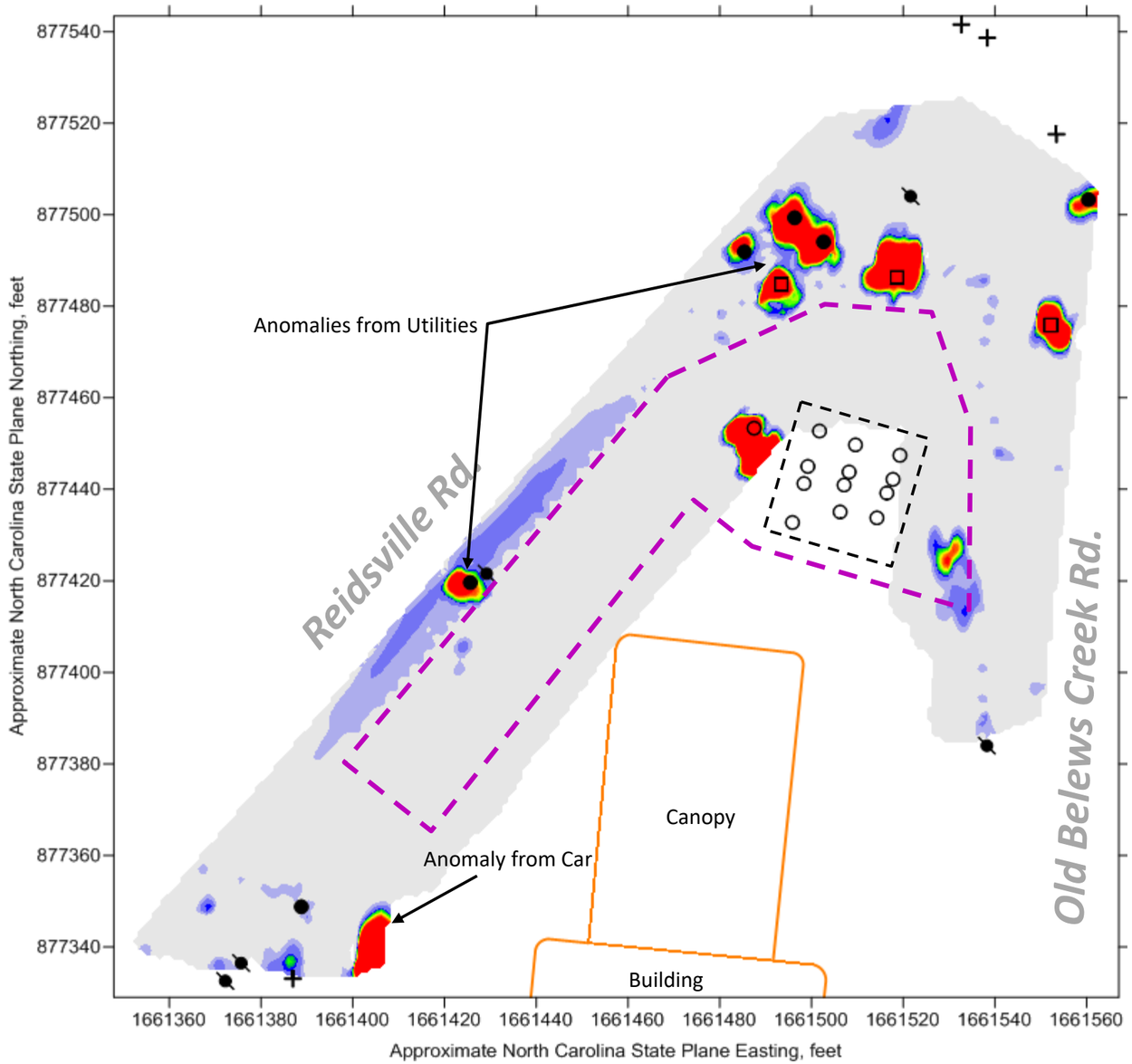
A. Photograph from north end of parcel, looking south. Diesel dispenser in foreground.

B. Photograph from southeast end of parcel, looking north.

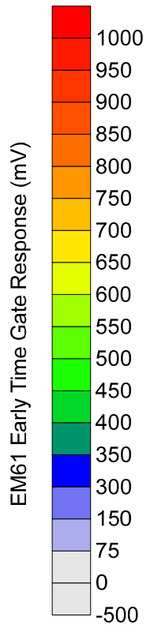
C. Photograph from southwest end of parcel, looking northeast.

D. Photograph of tank bed, looking south.

PROJECT NO. GR22.325	***FIGURE 2 – PARCEL 265, LAXMI FOOD MART, INC SITE PHOTOGRAPHS***	ESP Associates, Inc.
SCALE N/A		7011 Albert Pick Rd., Suite E Greensboro, NC 27409
DATE 5/29/2020	***NCDOT PROJECT R-2577A US 158 FROM NORTH OF US 421 TO SR 1965 FORSYTH COUNTY, NORTH CAROLINA***	336.334.7724
BY CRP/EDB		www.espassociates.com



APPROXIMATE NORTH



EXPLANATION

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

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

PROJECT NO.	GR22.325
SCALE	AS SHOWN
DATE	5/29/2020
BY	CRP/EDB

FIGURE 3 – PARCEL 265 , LAXMI FOOD MART, INC
EM61 EARLY TIME GATE DATA

NCDOT PROJECT R-2577A
US 158 FROM NORTH OF US 421 TO SR 1965
FORSYTH COUNTY, NORTH CAROLINA

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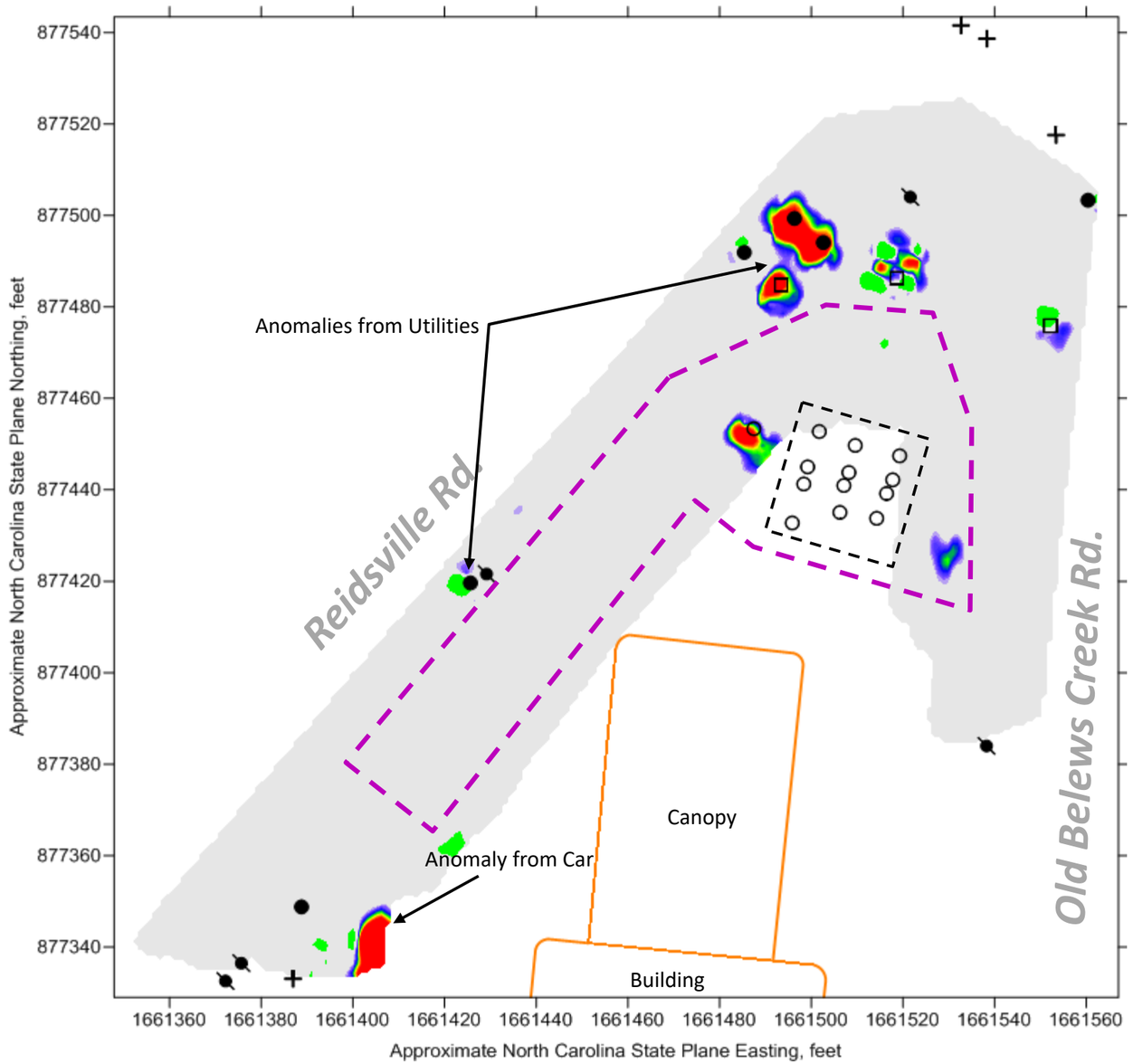

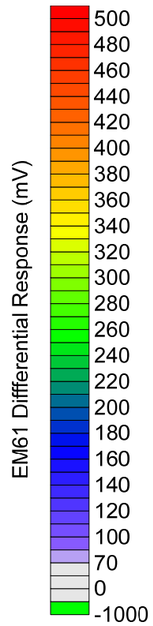

EXPLANATION

- Miscellaneous metal object (pipe, debris, etc.)
- Utility Box (water meter, electrical outlet, etc.)
- Drop Inlet, Catch Basin, Manhole
- Culvert, storm drain pipe
- Utility pole
- Guy wire anchor
- Sign pole, other pole
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- Buried utility line (marked by others)
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- GPR Data Collection Areas
- Underground Storage Tank

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

PROJECT NO. GR22.325	***FIGURE 4 – PARCEL 265 , LAXMI FOOD MART, INC EM61 DIFFERENTIAL DATA***
SCALE AS SHOWN	***NCDOT PROJECT R-2577A US 158 FROM NORTH OF US 421 TO SR 1965 FORSYTH COUNTY, NORTH CAROLINA***
DATE 5/29/2020	
BY CRP/EDB	

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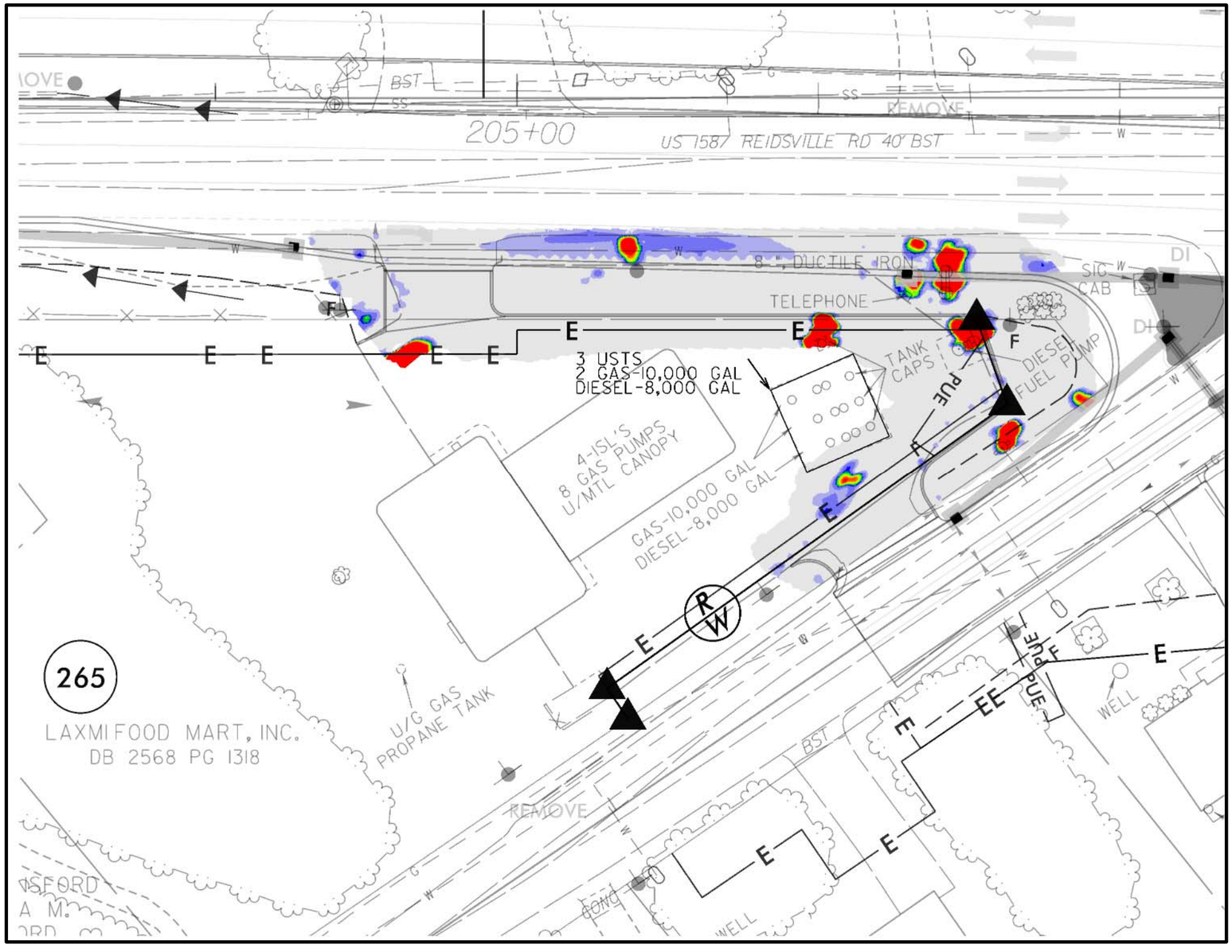

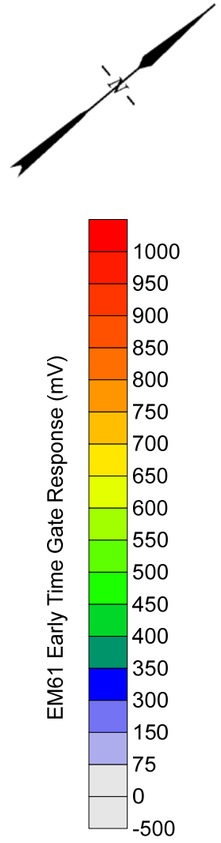

- R-2577A_Geo_env.dgn
  - R-2577A_hyd_drn.dgn
  - R2577A_ncdot_fs.dgn
  - R-2577A_rdy_dsn.dgn
  - R-2577A_rdy_dsn_driveways.dgn
  - R-2577A_rdy_dsn_guardrail.dgn
  - R-2577A_rdy_HISTORIC.dgn
  - R-2577A_rdy_map_owner_no.dgn
  - R-2577A_rdy_row.dgn
  - R-2577A_rdy_row_AG.dgn
  - R-2577A_rdy_row_SB.dgn
  - R-2577A_rdy_ss.dgn

0 40 80
FEET

See Figure 9 for explanation of symbols and line types

PROJECT NO. GR22.325	***FIGURE 5 – PARCEL 265 , LAXMI FOOD MART, INC EM61 EARLY TIME GATE DATA ON PLAN SHEET***
SCALE 1" = 40'	
DATE 5/29/2020	***NCDOT PROJECT R-2577A***
BY CRP/EDB	***US 158 FROM NORTH OF US 421 TO SR 1965***
	FORSYTH COUNTY, NORTH CAROLINA

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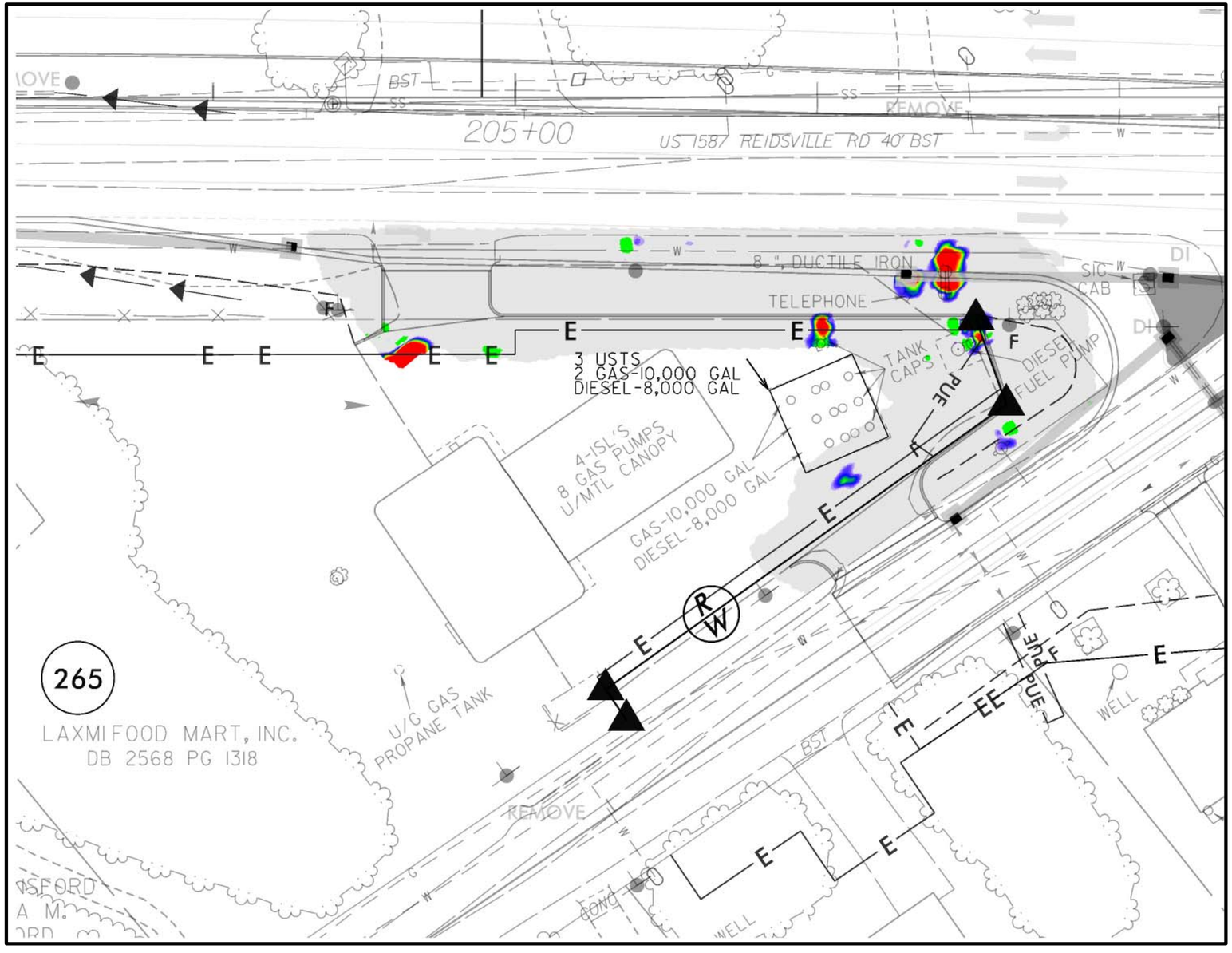

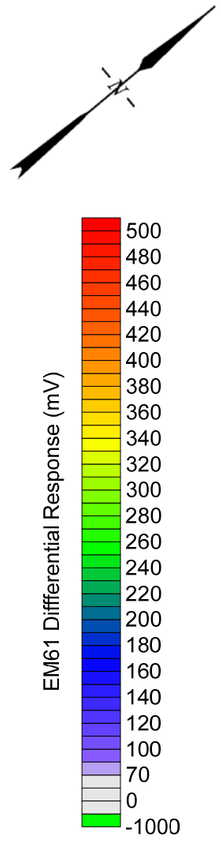

- R-2577A_Geo_env.dgn
  - R-2577A_hyd_drn.dgn
  - R2577A_ncdot_fs.dgn
  - R-2577A_rdy_dsn.dgn
  - R-2577A_rdy_dsn_driveways.dgn
  - R-2577A_rdy_dsn_guardrail.dgn
  - R-2577A_rdy_HISTORIC.dgn
  - R-2577A_rdy_map_owner_no.dgn
  - R-2577A_rdy_row.dgn
  - R-2577A_rdy_row_AG.dgn
  - R-2577A_rdy_row_SB.dgn
  - R-2577A_rdy_ss.dgn

0 40 80
FEET

See Figure 9 for explanation of symbols and line types

PROJECT NO. GR22.325	***FIGURE 6 – PARCEL 265 , LAXMI FOOD MART, INC EM61 DIFFERENTIAL DATA ON PLAN SHEET***
SCALE 1" = 40'	***NCDOT PROJECT R-2577A US 158 FROM NORTH OF US 421 TO SR 1965 FORSYTH COUNTY, NORTH CAROLINA***
DATE 5/29/2020	
BY CRP/EDB	

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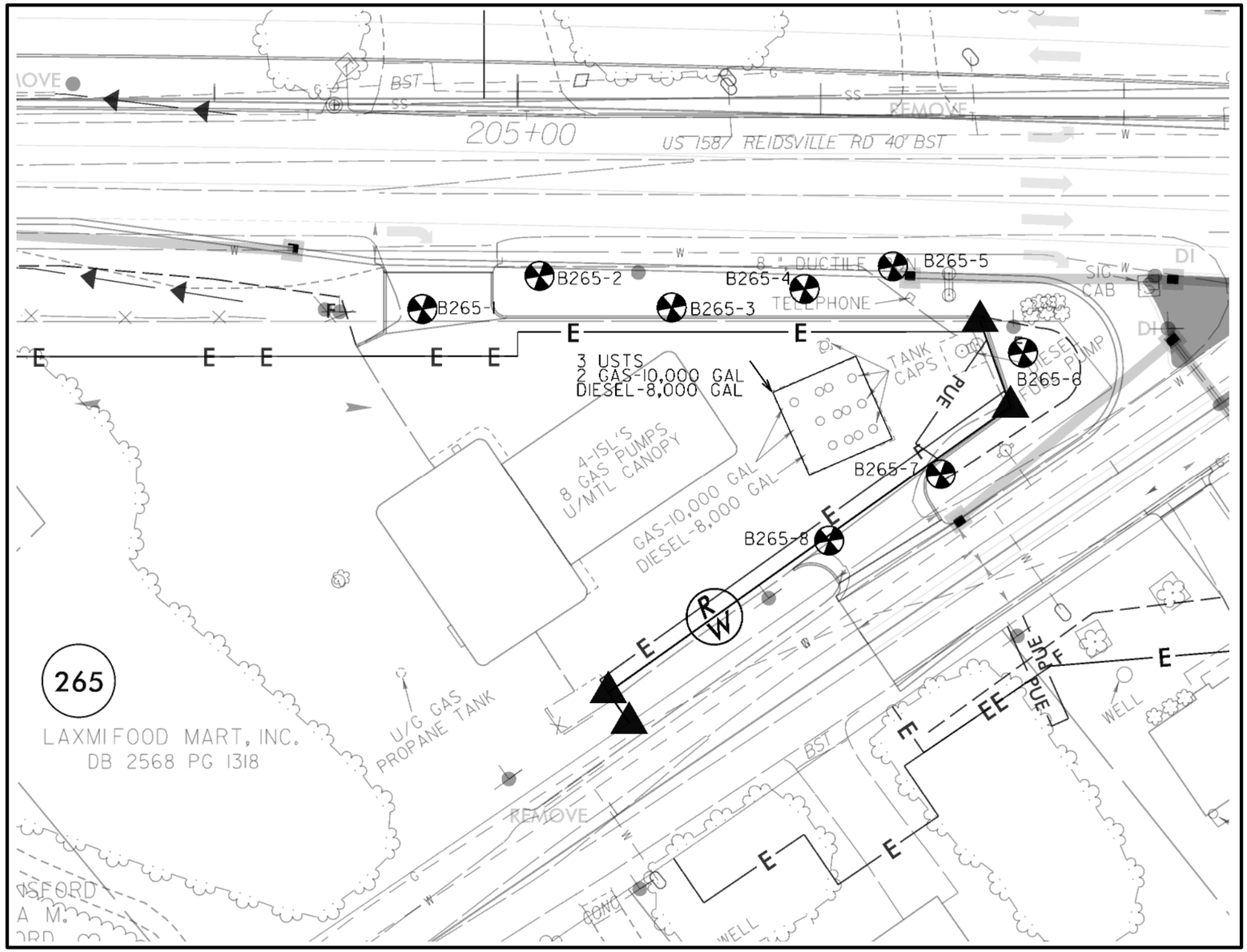

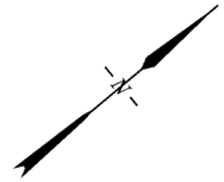

- R-2577A_Geo_env.dgn
  - R-2577A_hyd_drn.dgn
  - R2577A_ncdot_fs.dgn
  - R-2577A_rdy_dsn.dgn
  - R-2577A_rdy_dsn_driveways.dgn
  - R-2577A_rdy_dsn_guardrail.dgn
  - R-2577A_rdy_HISTORIC.dgn
  - R-2577A_rdy_map_owner_no.dgn
  - R-2577A_rdy_row.dgn
  - R-2577A_rdy_row_AG.dgn
  - R-2577A_rdy_row_SB.dgn
  - R-2577A_rdy_ss.dgn

0 40 80
FEET

See Figure 9 for explanation of symbols and line types

PROJECT NO. GR22.325	***FIGURE 7 – PARCEL 265 , LAXMI FOOD MART, INC BORING LOCATIONS ON PLAN SHEET***
SCALE 1" = 40'	***NCDOT PROJECT R-2577A***
DATE 5/29/2020	***US 158 FROM NORTH OF US 421 TO SR 1965***
BY CRP/EDB	***FORSYTH COUNTY, NORTH CAROLINA***

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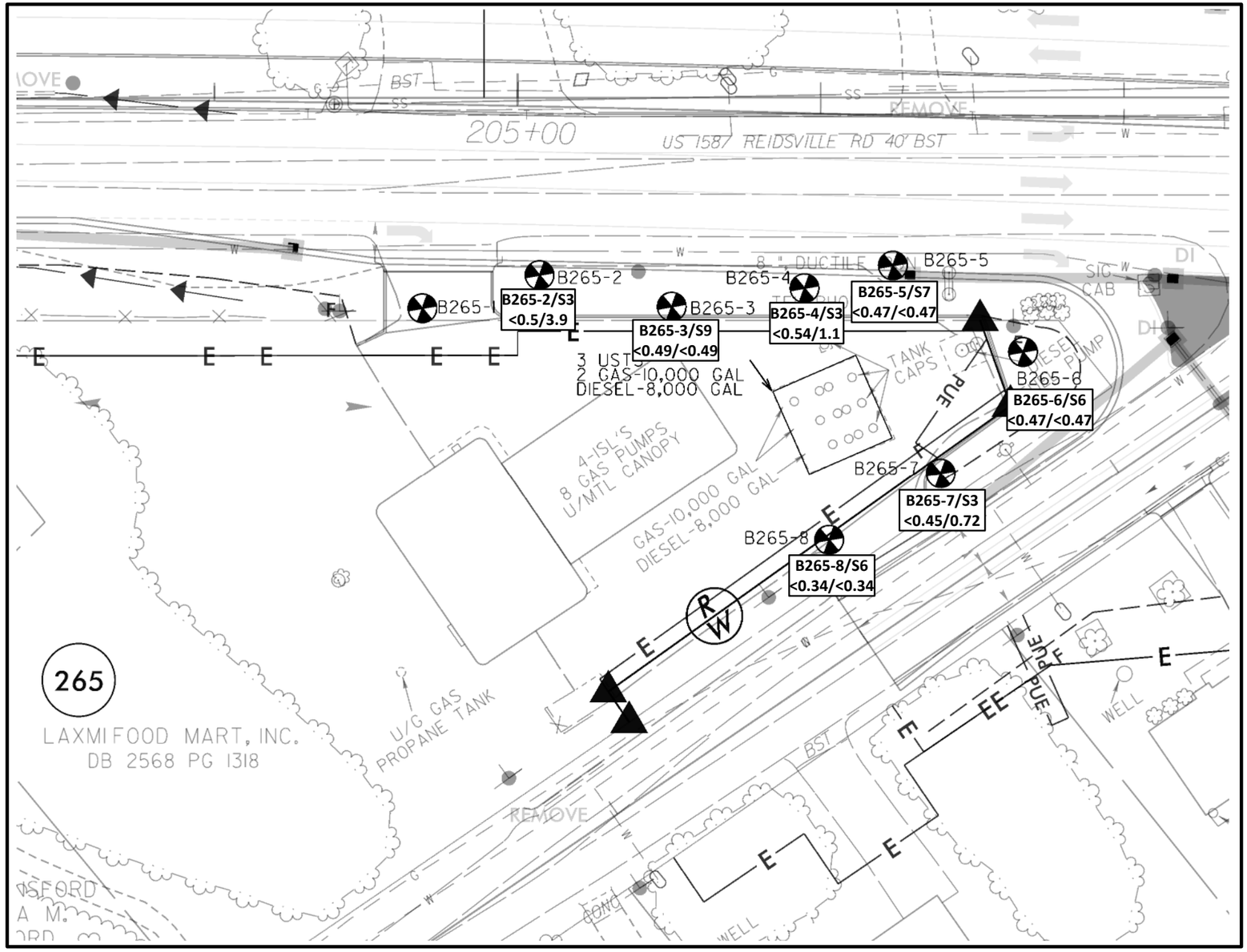

Explanation

Maximum Analytical Results per Boring

B265-2/S3
<0.5/3.9

Boring No./Sample No.
GRO/DRO (mg/kg, ppm)

- R-2577A_Geo_env.dgn
  - R-2577A_hyd_drn.dgn
  - R2577A_ncdot_fs.dgn
  - R-2577A_rdy_dsn.dgn
  - R-2577A_rdy_dsn_driveways.dgn
  - R-2577A_rdy_dsn_guardrail.dgn
  - R-2577A_rdy_HISTORIC.dgn
  - R-2577A_rdy_map_owner_no.dgn
  - R-2577A_rdy_row.dgn
  - R-2577A_rdy_row_AG.dgn
  - R-2577A_rdy_row_SB.dgn
  - R-2577A_rdy_ss.dgn

0 40 80
FEET

See Figure 9 for explanation of symbols and line types

PROJECT NO. GR22.325	***FIGURE 8 – PARCEL 265 , LAXMI FOOD MART, INC SOIL ANALYTICAL RESULTS ON PLAN SHEET***
SCALE 1" = 40'	
DATE 5/29/2020	***NCDOT PROJECT R-2577A US 158 FROM NORTH OF US 421 TO SR 1965 FORSYTH COUNTY, NORTH CAROLINA***
BY CRP/EDB	

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336.334.7724
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12/2/2016

PROJECT REFERENCE NO.	SHEET NO.

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

Note: Not to Scale **S.U.E. = Subsurface Utility Engineering*

BOUNDARIES AND PROPERTY:
- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin (IP)
- Computed Property Corner
- Property Monument (CM)
- Parcel/Sequence Number (123)
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary (W,B)
- Proposed Wetland Boundary (W,B)
- Existing Endangered Animal Boundary (EAB)
- Existing Endangered Plant Boundary (EPB)
- Existing Historic Property Boundary (HPB)
- Known Contamination Area: Soil (S)
- Potential Contamination Area: Soil (S)
- Known Contamination Area: Water (W)
- Potential Contamination Area: Water (W)
- 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 (JS)
- Buffer Zone 1 (BZ 1)
- Buffer Zone 2 (BZ 2)
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch (Flow)
- False Sump

RAILROADS:
- Standard Gauge (CSX TRANSPORTATION)
- RR Signal Milepost (MILEPOST 35)
- Switch (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 (RW)
- New Right of Way Line with Pin and Cap (RW)
- New Right of Way Line with Concrete or Granite R/W Marker (RW)
- New Control of Access Line with Concrete C/A Marker (CA)
- Existing Control of Access (CA)
- New Control of Access (CA)
- Existing Easement Line (E)
- New Temporary Construction Easement (E)
- New Temporary Drainage Easement (TDE)
- New Permanent Drainage Easement (PDE)
- New Permanent Drainage / Utility Easement (DUE)
- New Permanent Utility Easement (PUE)
- New Temporary Utility Easement (TUE)
- New Aerial Utility Easement (AUE)

ROADS AND RELATED FEATURES:
- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut (C)
- Proposed Slope Stakes Fill (F)
- Proposed Curb Ramp (CR)
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:
- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard (Vineyard)

EXISTING STRUCTURES:
MAJOR:
- Bridge, Tunnel or Box Culvert (CONC)
- Bridge Wing Wall, Head Wall and End Wall (CONC WW)

MINOR:
- Head and End Wall (CONC HW)
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB (CB)
- Paved Ditch Gutter
- Storm Sewer Manhole (S)
- Storm Sewer (S)

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

TELEPHONE:
- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole (T)
- Telephone Pedestal (T)
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole (HH)
- U/G Telephone Cable LOS B (S.U.E.*) (T)
- U/G Telephone Cable LOS C (S.U.E.*) (T)
- U/G Telephone Cable LOS D (S.U.E.*) (T)
- U/G Telephone Conduit LOS B (S.U.E.*) (TC)
- U/G Telephone Conduit LOS C (S.U.E.*) (TC)
- U/G Telephone Conduit LOS D (S.U.E.*) (TC)
- U/G Fiber Optics Cable LOS B (S.U.E.*) (T FO)
- U/G Fiber Optics Cable LOS C (S.U.E.*) (T FO)
- U/G Fiber Optics Cable LOS D (S.U.E.*) (T FO)

WATER:
- Water Manhole (W)
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line LOS B (S.U.E.*) (W)
- U/G Water Line LOS C (S.U.E.*) (W)
- U/G Water Line LOS D (S.U.E.*) (W)
- Above Ground Water Line (A/G Water)

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

GAS:
- Gas Valve
- Gas Meter
- U/G Gas Line LOS B (S.U.E.*) (G)
- U/G Gas Line LOS C (S.U.E.*) (G)
- U/G Gas Line LOS D (S.U.E.*) (G)
- Above Ground Gas Line (A/G Gas)

SANITARY SEWER:
- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line (SS)
- Above Ground Sanitary Sewer (A/G Sanitary Sewer)
- SS Forced Main Line LOS B (S.U.E.*) (FSS)
- SS Forced Main Line LOS C (S.U.E.*) (FSS)
- SS Forced Main Line LOS D (S.U.E.*) (FSS)

MISCELLANEOUS:
- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box (S)
- Utility Unknown U/G Line LOS B (S.U.E.*) (?/U)
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. (UST)
- 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. GR22.325	**FIGURE 9** **LEGEND FOR PLAN SHEET FIGURES**
SCALE N/A	
DATE 5/29/2020	**NCDOT PROJECT R-2577A** **US 158 FROM NORTH OF US 421 TO SR 1965** **FORSYTH COUNTY, NORTH CAROLINA**
BY CRP/EDB	

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

APPENDIX A
SOIL BORING LOGS

FIELD BORING LOG

BORING NO. B265-1

PROJECT NAME: NCDOT R-2577A Phase II | PROJ. NO.: GR22.325
LOCATION: Southwest Corner of Parcel
TYPE OF BORING: Direct Push | DATE STARTED: 5/15/20 | SHEET: 1 of 1
DRILLING FIRM: SAEDACCO | DATE FINISHED: 5/15/20 | TOTAL DEPTH: 10.0 ft
DRILLER: Brian Ewing | SAMPLE METHOD: 5' Macrocore | DEPTH TO GW: N/A ft
DRILL RIG: GeoProbe 722DT | LOGGED BY: R. Pastrana | COMMENT:

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' -0.4' - Asphalt	Core 1 Rec 4.3'/5.0'
				0.4' - 0.8' - ABC Stone	
				0.8' - 10.0' - Red-Brown, Sandy SILT, Micaceous, Moist	
1	S-1	1.0-1.5	0.3		
2	S-2	2.0-2.5	0.4		
3	S-3	3.0-3.5	0.2		
4	S-4	4.0-4.5	0.3		
5	S-5	5.0-5.5	0.2	5.0' - Grading to Brown, Mottled	Core 2 Rec 4.8'/5.0'
6	S-6	6.0-6.5	0.1		
7	S-7	7.0-7.5	0.1		
8	S-8	8.0-8.5	0.2		
9	S-9	9.0-9.5	0.2		
10					
11					
12					
13					
14					
15					

FIELD BORING LOG

BORING NO. B265-2

PROJECT NAME: NCDOT R-2577A Phase II | PROJ. NO.: GR22.325
LOCATION: Edge of asphalt on N side of West entrance
TYPE OF BORING: Direct Push | DATE STARTED: 5/15/20 | SHEET: 1 of 1
DRILLING FIRM: SAEDACCO | DATE FINISHED: 5/15/20 | TOTAL DEPTH: 10.0 ft
DRILLER: Brian Ewing | SAMPLE METHOD: 5' Macrocore | DEPTH TO GW: N/A ft
DRILL RIG: GeoProbe 722DT | LOGGED BY: R. Pastrana | COMMENT:

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' -0.5' - Asphalt	Core 1 Rec 4.3'/5.0'
				0.5' - 1.2' - ABC Stone	
1	S-1	1.0-1.5	0.6		
				1.2' - 10.0' - Red-Brown, Sandy SILT, Dry	
2	S-2	2.0-2.5	0.8		
3	S-3	3.0-3.5	1.4		
4	S-4	4.0-4.5	0.5		
5	S-5	5.0-5.5	0.5		Core 2 Rec 4.7'/5.0'
6	S-6	6.0-6.5	0.6		
7	S-7	7.0-7.5	0.4		
8	S-8	8.0-8.5	0.4		
9	S-9	9.0-9.5	0.7		
10					
11					
12					
13					
14					
15					

FIELD BORING LOG

BORING NO. B265-3

PROJECT NAME: NCDOT R-2577A Phase II | PROJ. NO.: GR22.325
LOCATION: On edge of Asphalt near NW Corner of Canopy
TYPE OF BORING: Direct Push | DATE STARTED: 5/15/20 | SHEET: 1 of 1
DRILLING FIRM: SAEDACCO | DATE FINISHED: 5/15/20 | TOTAL DEPTH: 10.0 ft
DRILLER: Brian Ewing | SAMPLE METHOD: 5' Macrocore | DEPTH TO GW: N/A ft
DRILL RIG: GeoProbe 722DT | LOGGED BY: R. Pastrana | COMMENT:

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' -0.4' - Asphalt	Core 1 Rec 4.6'/5.0'
				0.4' - 1.3' - ABC Stone	
1	S-1	1.0-1.5	0.9		
				1.3' - 7.0' - Red-Brown, Clayey SILT, Moist	
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	0.6		
5	S-5	5.0-5.5	0.3		Core 2 Rec 4.3'/5.0'
6	S-6	6.0-6.5	0.4		
7	S-7	7.0-7.5	0.2	7.0' -10.0' - Red-Brown, Sandy SILT, Moist	
8	S-8	8.0-8.5	0.3		
9	S-9	9.0-9.5	0.3		
10					
11					
12					
13					
14					
15					

FIELD BORING LOG

BORING NO. B265-4

PROJECT NAME: NCDOT R-2577A Phase II | PROJ. NO.: GR22.325
LOCATION: West Side of Known UST's
TYPE OF BORING: Direct Push | DATE STARTED: 5/15/20 | SHEET: 1 of 1
DRILLING FIRM: SAEDACCO | DATE FINISHED: 5/15/20 | TOTAL DEPTH: 10.0 ft
DRILLER: Brian Ewing | SAMPLE METHOD: 5' Macrocore | DEPTH TO GW: N/A ft
DRILL RIG: GeoProbe 722DT | LOGGED BY: R. Pastrana | COMMENT:

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

FIELD BORING LOG

BORING NO. B265-5

PROJECT NAME: NCDOT R-2577A Phase II | PROJ. NO.: GR22.325
LOCATION: Northwest Corner of Parcel
TYPE OF BORING: Direct Push | DATE STARTED: 5/15/20 | SHEET: 1 of 1
DRILLING FIRM: SAEDACCO | DATE FINISHED: 5/15/20 | TOTAL DEPTH: 10.0 ft
DRILLER: Brian Ewing | SAMPLE METHOD: 5' Macrocore | DEPTH TO GW: N/A ft
DRILL RIG: GeoProbe 722DT | LOGGED BY: R. Pastrana | COMMENT:

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' - 0.2' - Topsoil	Core 1 Rec 3.6'/5.0'
				0.2' - 2.0' - Red-Brown, Silty CLAY, Moist	
1	S-1	1.0-1.5	0.4		
2	S-2	2.0-2.5	0.5	2.0' - 10.0' - Red-Brown, Sandy SILT, Moist to Dry	
3	S-3	3.0-3.5	1.3		
4					
5	S-5	5.0-5.5	0.5	5.0' - Grading to Brown, Some Mica	Core 2 Rec 5.0'/5.0'
6	S-6	6.0-6.5	0.8		
7	S-7	7.0-7.5	0.9		
8	S-8	8.0-8.5	0.5		
9	S-9	9.0-9.5	0.6		
10					
11					
12					
13					
14					
15					

FIELD BORING LOG

BORING NO. B265-6

PROJECT NAME: NCDOT R-2577A Phase II | PROJ. NO.: GR22.325

LOCATION: Northeast End of Parking Area / 10' into Grass, near Diesel Dispenser

TYPE OF BORING	Direct Push	DATE STARTED:	5/15/20	SHEET:	1 of 1
DRILLING FIRM:	SAEDACCO	DATE FINISHED:	5/15/20	TOTAL DEPTH:	10.0 ft
DRILLER:	Brian Ewing	SAMPLE METHOD:	5' Macrocore	DEPTH TO GW:	N/A ft
DRILL RIG:	GeoProbe 722DT	LOGGED BY:	R. Pastrana	COMMENT:	

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' - 0.3' - Topsoil	Core 1 Rec 3.4'/5.0'
				0.3' - 5.5' - Red-Brown, Silty CLAY, Moist	
1	S-1	1.0-1.5	0.1		
2	S-2	2.0-2.5	0.5		
3	S-3	3.0-3.5	0.3		
4					
5	S-5	5.0-5.5	0.4		Core 2 Rec 5.0'/5.0'
				5.5' -10.0' - Red-Brown to Brown, Sandy SILT, Moist	
6	S-6	6.0-6.5	0.4		
7	S-7	7.0-7.5	0.2		
8	S-8	8.0-8.5	0.3		
9	S-9	9.0-9.5	0.1		
10					
11					
12					
13					
14					
15					

FIELD BORING LOG

BORING NO. B265-7

PROJECT NAME: NCDOT R-2577A Phase II | PROJ. NO.: GR22.325
LOCATION: North Side of East Entrance
TYPE OF BORING: Direct Push | DATE STARTED: 5/15/20 | SHEET: 1 of 1
DRILLING FIRM: SAEDACCO | DATE FINISHED: 5/15/20 | TOTAL DEPTH: 10.0 ft
DRILLER: Brian Ewing | SAMPLE METHOD: 5' Macrocore | DEPTH TO GW: N/A ft
DRILL RIG: GeoProbe 722DT | LOGGED BY: R. Pastrana | COMMENT:

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' - 1.0' - Topsoil and Gravel Mix	Core 1 Rec 4.2'/5.0'
1				1.0' - 6.0' - Red-Brown to Brown, Clayey Silt, Trace Mica, Moist	
2	S-2	2.0-2.5	0.1		
3	S-3	3.0-3.5	0.6		
4	S-4	4.0-4.5	0.1		
5					Core 2 Rec 5.0'/5.0'
6	S-6	6.0-6.5	0.2	6.0' - 10.0' - Red-Brown to Brown, Sandy SILT, Trace Mica, Moist	
7					
8	S-8	8.0-8.5	0.5		
9	S-9	9.0-9.5	0.3		
10					
11					
12					
13					
14					
15					

FIELD BORING LOG

BORING NO. B265-8

PROJECT NAME: NCDOT R-2577A Phase II | PROJ. NO.: GR22.325
LOCATION: South Side of East Entrance
TYPE OF BORING: Direct Push | DATE STARTED: 5/15/20 | SHEET: 1 of 1
DRILLING FIRM: SAEDACCO | DATE FINISHED: 5/15/20 | TOTAL DEPTH: 10.0 ft
DRILLER: Brian Ewing | SAMPLE METHOD: 5' Macrocore | DEPTH TO GW: N/A ft
DRILL RIG: GeoProbe 722DT | LOGGED BY: R. Pastrana | COMMENT:

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' - 1.0' - Topsoil and Gravel Mix	Core 1 Rec 4.3'/5.0'
1	S-1	1.0-1.5	0.5	1.0' - 2.5' - Tan-Brown, Clayey SAND, Moist	
2	S-2	2.0-2.5	0.3		
				2.5' - 4.0' - Red-Brown, Silty CLAY, Moist	
3	S-3	3.0-3.5	0.2		
4	S-4	4.0-4.5	0.3	4.0' - 10.0' - Red-Brown to Brown, Sandy SILT, Moist	
5	S-5	5.0-5.5	0.6		Core 2 Rec 5.0'/5.0'
6	S-6	6.0-6.5	0.4	6.0' - grading to with Trace Mica, Moist	
7	S-7	7.0-7.5	0.4		
8	S-8	8.0-8.5	0.1		
9	S-9	9.0-9.5	0.5		
10					
11					
12					
13					
14					
15					

APPENDIX B

RED LAB LABORATORY TESTING REPORT

QED REDLAB RAPID ENVIRONMENTAL DIAGNOSTICS QROS

Hydrocarbon Analysis Results

Client: ESP
Address: 7011 Albert Pick Rd
Ste E
Greensboro, NC 27409

Contact: Ned Billington

Project: GR22.325

Samples taken Friday, May 15, 2020
Samples extracted Friday, May 15, 2020
Samples analysed Monday, May 18, 2020

Operator Harry Wooten

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	B265-2 , S3	20.2	<0.5	<0.5	3.9	3.9	1.9	0.21	<0.02	0	93	7	Road Tar 96.3%,(FCM)
s	B265-3 , S9	19.6	<0.49	<0.49	<0.49	<0.49	<0.1	<0.16	<0.02	0	0	0	PHC not detected,(BO)
s	B265-4 , S3	21.6	<0.54	<0.54	1.1	1.1	0.46	<0.17	<0.022	0	97.6	2.4	Deg Fuel 90.6%,(FCM)
s	B265-5 , S7	19.0	<0.47	<0.47	<0.47	<0.47	<0.09	<0.15	<0.019	0	0	0	PHC not detected,(BO)
s	B265-6 , S6	19.0	<0.47	<0.47	<0.47	<0.47	<0.09	<0.15	<0.019	0	0	0	PHC not detected,(BO)
s	B265-7 , S3	18.0	<0.45	<0.45	0.72	0.72	0.35	<0.14	<0.018	0	86.2	13.8	V.Deg.PHC 90%,(FCM)
s	B265-8 , S6	13.6	<0.34	<0.34	<0.34	<0.34	<0.07	<0.11	<0.014	0	0	0	,(FCM),(BO)

Initial Calibrator QC check OK Final FCM QC Check OK 96.8 %

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

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

APPENDIX C
CHAIN-OF-CUSTODY FORM

Client Name:	ESP
Address:	Greensboro
Contact:	Ned Billington
Project Ref.:	GR22.325
Email:	on file
Phone #:	
Collected by:	

REDLAB™
RAPID ENVIRONMENTAL DIAGNOSTICS

CHAIN OF CUSTODY AND ANALYTICAL REQUEST FORM

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.

Sample Collection	TAT Requested		Analysis Type		Initials	Letter "S" → Sample ID	Total Wt.	Tare Wt.	Sample Wt.
Date/Time	24 Hour	48 Hour	UVF	GC					
5/15/20		✓	✓		EQB	B265-2, S3	54.7	43.8	10.9
						B265-3, S9	56.7	44.5	11.2
						B265-4, S3	53.8	43.7	10.2
						B265-5, S7 *	56.3	44.7	11.6
						B265-6, S6	56.5	44.9	11.6
						B265-7, S3	56.9	44.7	12.2
						B265-8, S6	56.3	45.0	11.3

COMMENTS/REQUESTS:
* Report bracketed samples separately

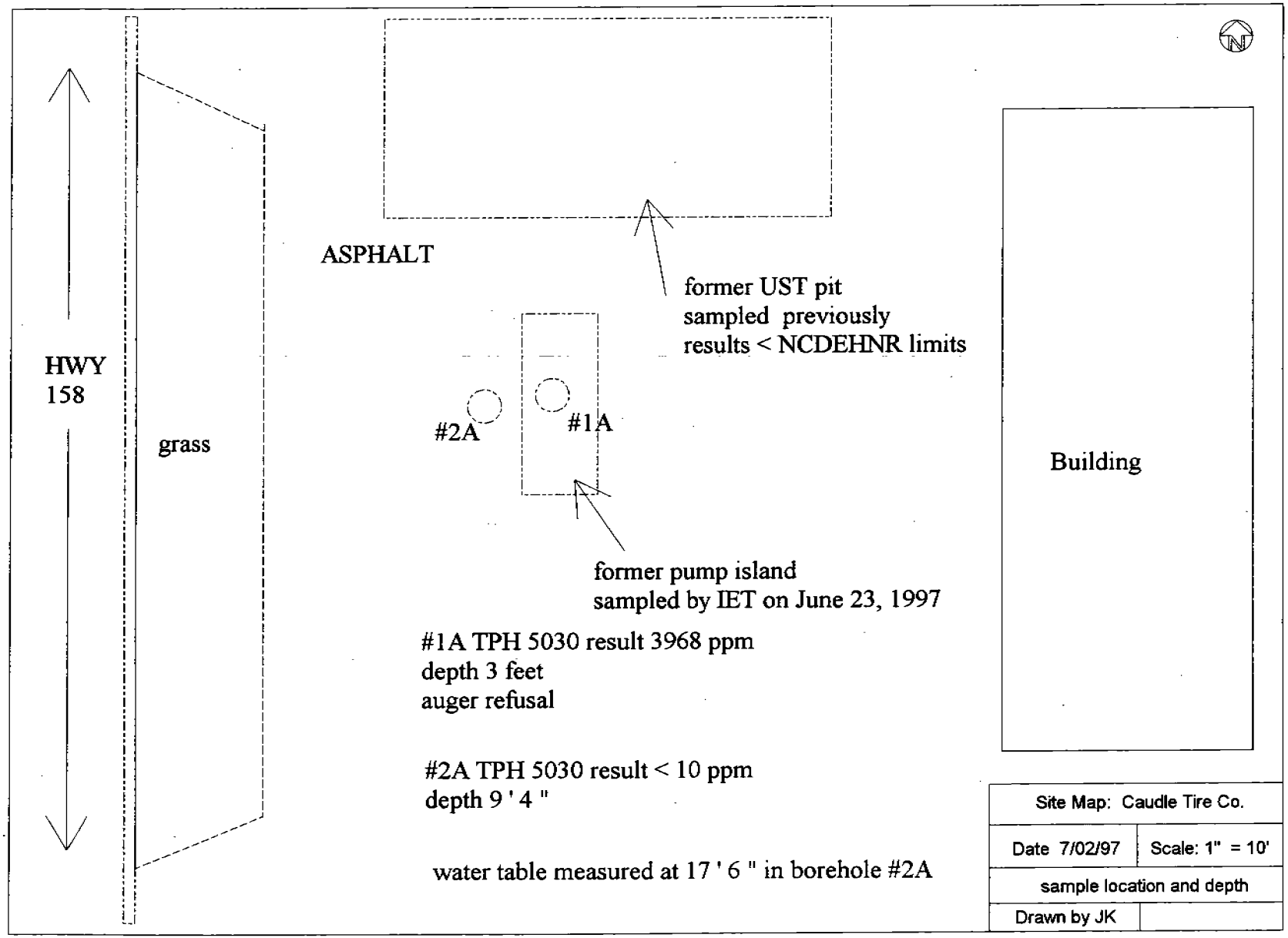
TARGET GC/UVF ANALYTES:

Relinquished by		Accepted by	Date/Time
[signature]	5/15/20	[signature]	5/18/20 1300
Relinquished by		Accepted by	Date/Time

RED Lab USE ONLY
(97)
Ref. No H02

APPENDIX D

FIGURE FROM 1997 SSE REPORT


HWY
158
grass
ASPHALT
former UST pit
sampled previously
results < NCDEHNR limits
#2A
#1A
Building
former pump island
sampled by IET on June 23, 1997
#1A TPH 5030 result 3968 ppm
depth 3 feet
auger refusal
#2A TPH 5030 result < 10 ppm
depth 9 ' 4 "
water table measured at 17 ' 6 " in borehole #2A
Site Map: Caudle Tire Co.
Date 7/02/97
Scale: 1" = 10'
sample location and depth
Drawn by JK