

January 19, 2012

Mr. Terry Fox, LG
NCDOT Geotechnical Engineering Unit
1589 Mail Service Center
Raleigh, North Carolina 27699-1589

Re: Attempted Closure of Two Suspected Underground Storage Tanks
Parcel 335, 2774 Piney Green Road
Jacksonville, Onslow County, North Carolina
TIP: U-3810, WBS No. 35801.1.1

Dear Terry:

GEL Engineering of NC, Inc. (GEL) is submitting this letter report for the referenced UST closure task, which was completed following issuance of the Notice to Proceed for TIP No. U-3810 on October 20, 2011. The purpose of this report is to provide documentation of GEL's findings for the attempted closure of two suspected petroleum underground storage tanks (USTs) in November 2011.

Background

The location of Parcel 335 is shown in Figure 1. The site currently houses the Word of God Church, but previously operated as a service station. GEL performed a preliminary site assessment (PSA) at Parcel 335 in March 2010, as requested by the North Carolina Department of Transportation (NCDOT). The PSA included a geophysical investigation conducted in late February 2010, in which ground penetrating radar (GPR) and Time Domain Electromagnetic Methodology (TDEM) were used to perform the investigation.

The results of the PSA geophysical investigation indicated the presence of two "Possible USTs" at the location shown in Figure 2 (presented as Figure 4 in the April 2010 PSA Report for Parcel 335). The two anomalies shown were identified using TDEM, but were not confirmed by GPR data collected in the same area. Therefore, the two anomalies were designated as "Possible USTs."

The PSA results also indicated petroleum-impacted soil in an area approximately 75 feet south of the "Possible USTs." Therefore, NCDOT requested GEL to excavate in the area of the two "Possible USTs" and close the USTs through removal and offsite disposal if they were present.

GEL excavated the "Possible USTs" area at the site on November 8, 2011, following a Notice to Proceed from NCDOT on October 20, 2011. The results of our excavation activities are discussed below.

Excavation of the “Possible USTs” Area

Prior to commencement of the field activities, GEL submitted notification of the planned closure of two USTs at the site (form UST-3) to the North Carolina Department of Environment and Natural Resources. The City of Jacksonville Fire Marshal stated that a UST removal permit would be required for each UST since Parcel 335 is located within the City of Jacksonville city limits.

GEL and its subcontractor, A&D Environmental Services, Inc. (A&D), arrived at the site on November 8, 2011, and initiated an excavation in the center of the two identified anomaly locations, as shown in Figure 3 and in Photograph 1 of Attachment A. A&D removed the concrete paving over an area approximately 12 feet long and 3 feet wide, and excavated the underlying soil to a total depth of approximately 5 feet below land surface (bls). Sections of 1-inch and 2-inch diameter steel piping (suspected product lines or vent piping) were encountered in the excavation, as shown in Photograph 2, but no USTs (or indications of a petroleum release) were encountered.

The soil encountered beneath the concrete paving was orange/tan fine-grained sand to depth of approximately 3 feet bls, and was underlain by undisturbed plastic gray/tan sandy/silty clay, as shown in Photograph 3. A photoionization detector (PID) was used to measure organic vapors in three soil grab samples collected from the excavation during soil removal. The three PID measurements ranged from 0 to 2 parts per million (ppm).

No groundwater was encountered during the excavation. No soil samples were collected for analysis. The excavated area was backfilled with the stockpiled soil and concrete that had been excavated, then compacted by A&D using a trackhoe, and topped with compacted ABC stone. Photograph 4 shows the backfilled excavation.

Absence of USTs

As stated in the April 2010 PSA report, the known history of Parcel 335 as a previous service station, as well as the presence of two former pump islands at the site in the vicinity of the identified anomalies, supported the designation of the two identified anomalies as “Possible USTs.” Possible factors that may have contributed in the identification of the apparent “false positive” anomalies during the 2010 PSA geophysical investigation at the site are:

1. Underground steel piping that was encountered during excavation;
2. Concrete overlying the “Possible USTs” area; and
3. Changes in the bulk characteristics of the soil where the two anomalies were identified.

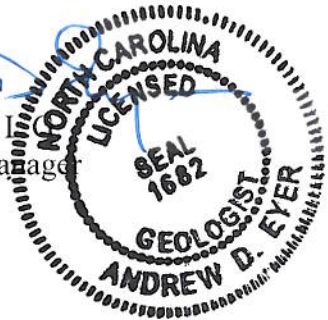
Mr. Terry Fox, LG
January 19, 2012
Page 2

Based on the results on the results of the excavation performed at Parcel 335 in November 2011, GEL has concluded that the two identified anomalies are not USTs and that soil in the area where the anomalies were identified does not appear to be impacted by released petroleum. There, no further action is recommended regarding the previously designated "Possible USTs" at the site.

Thank you for the opportunity to assist NCDOT with this project. Please call me at (919) 323-8828 if you have any further questions or need additional information.

Sincerely,

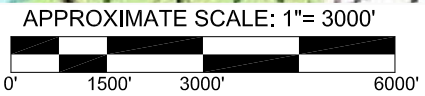
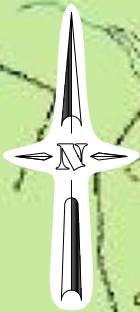
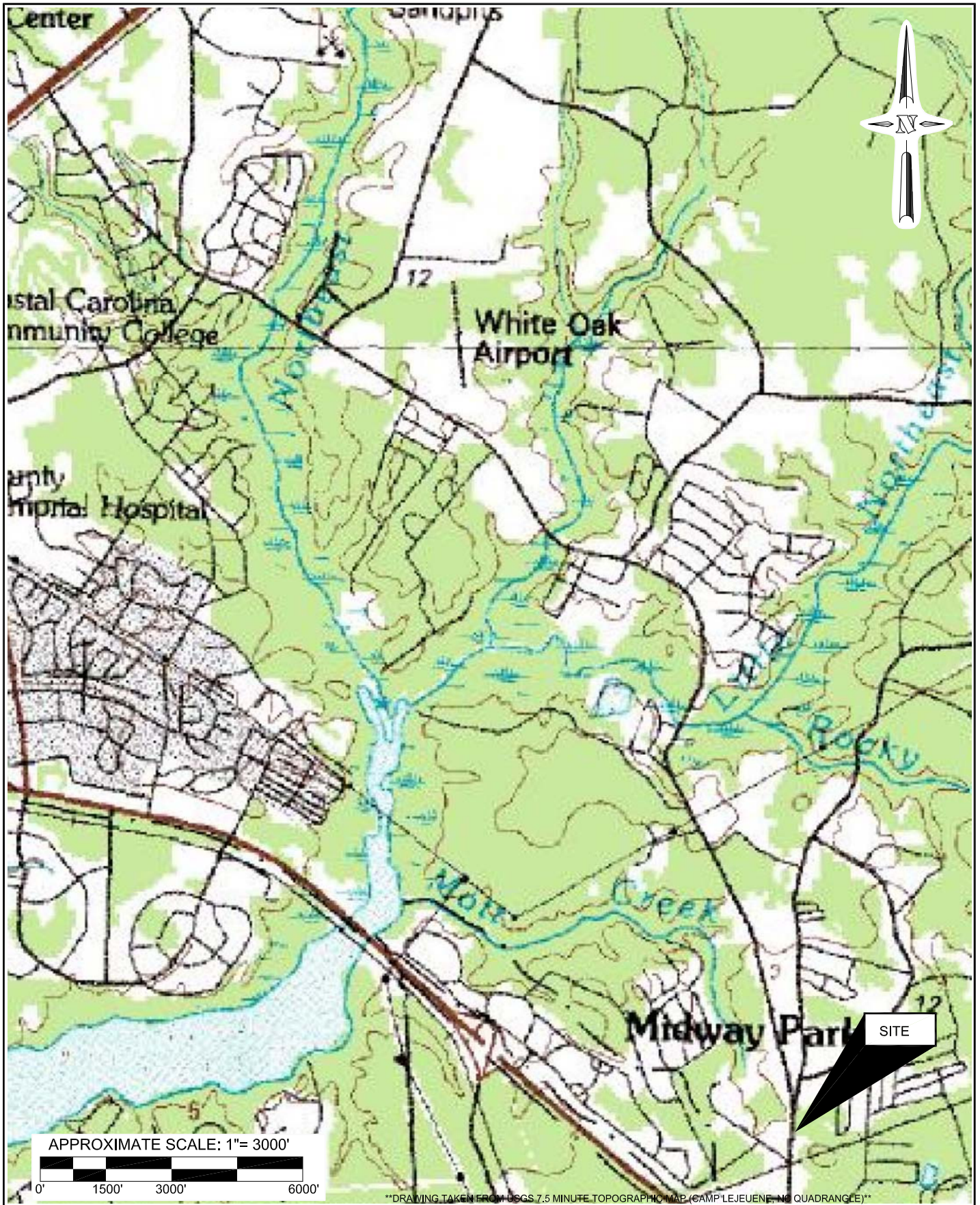
Andrew D. Eyer, I
Senior Project Manager



attachments

fc: ncddt00711_335.011912

FIGURES

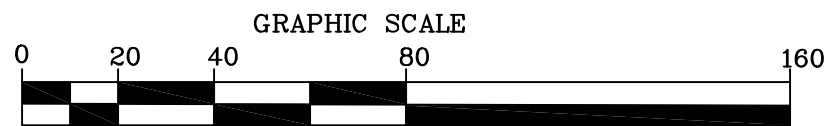
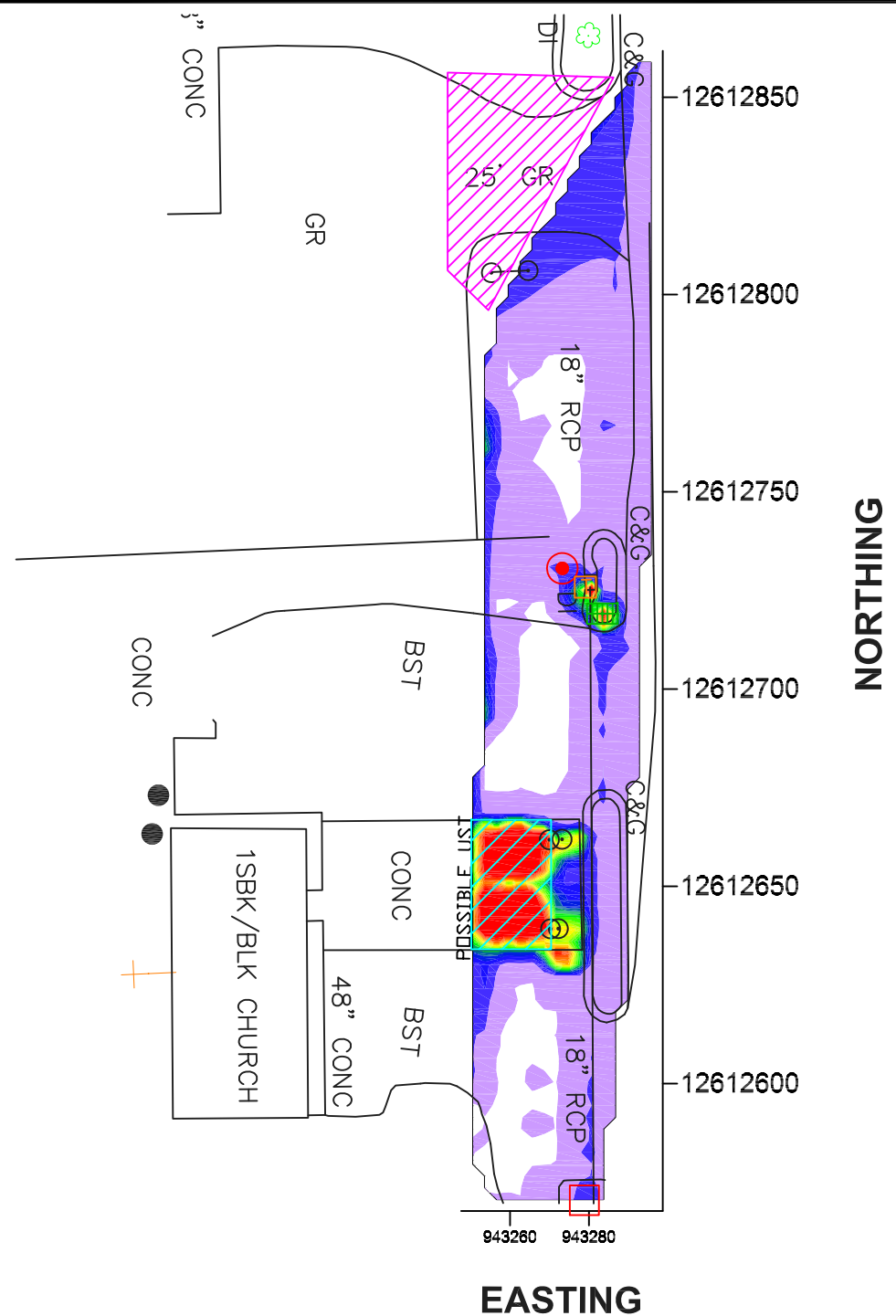
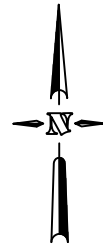


DRAWING TAKEN FROM USGS 7.5 MINUTE TOPOGRAPHIC MAP (CAMP LEJEUENE, NC QUADRANGLE)

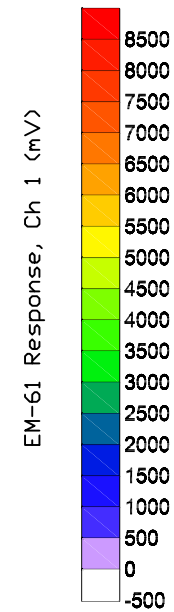
Engineering of NC Inc. an Affiliate of THE GEL GROUP INC P.O. Box 14262 RTP, NC 27709 P: 919.544.1100 F: 919.406.1807 www.gel.com	PROJECT: ncdt00711	USGS TOPOGRAPHIC LOCATION MAP	FIGURE 1
	PARCEL 335 JACKSONVILLE, ONSLOW COUNTY, NC STATE PROJECT U-3810, WBS NO. 35801.1.1		
problem solved	DATE: January 13, 2012		

FIGURE 2

(Figure 4 from April 2010 PSA Report for Parcel 335)



(IN FEET)
1 INCH = 40 ft.



LEGEND

- COMMUNICATIONS HANDHOLE
- UTILITY POLE
- UNKNOWN UTILITY
- STORMWATER DRAINAGE GRATE
- CONSTRUCTION EQUIPMENT IN AREA, INCOMPLETE DATA
- POSSIBLE UST

NOTES

- 1) UNDERGROUND FEATURES WERE LOCATED USING VISUAL EVIDENCE, GROUND PENETRATING RADAR (GPR), AND TIME DOMAIN ELECTROMAGNETIC (TDEM) METHODS. OTHER BURIED UTILITIES AND STRUCTURES MAY EXIST BUT WERE NOT DETECTED DUE TO LIMITATIONS OF THE GEOPHYSICAL METHODS, SITE ACCESS, AND/OR HIGH TARGET CONGESTION. THEREFORE, DUE CAUTION SHOULD BE USED WHEN PERFORMING SUBSURFACE EXCAVATION ACTIVITIES WHERE POTENTIAL CONFLICTS EXIST. GEL ENGINEERING OF NC INC. IS NOT RESPONSIBLE FOR DAMAGES THAT MAY OCCUR. IDENTIFYING THE LOCATION OF SOME UTILITIES AND/OR STRUCTURES MAY ONLY BE POSSIBLE WITH VACUUM OR OTHER EXCAVATION METHODS.
- 2) DATA FROM GEONICS, LTD. EM-61 MKII AND MALA GEOSCIENCE GROUND PENETRATING RADAR.
- 3) COORDINATES IN US STATE PLANE NAD 1983 DATUM.
- 4) PROJECT MICROSTATION BASEMAPS PROVIDED BY NCDOT.
- 5) **NO UNKNOWN UNDERGROUND STORAGE TANKS FOUND UNLESS NOTED IN DRAWING**



GEL Engineering of NC INC.

An Affiliate a member of THE GEL GROUP, INC.

problem solved

P.O. Box 14262
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PROJECT: NCDT00110

Preliminary Site Assessment
SR 1406 (Piney Green Rd) From NC 24 to US 17
Onslow County, North Carolina
State Project U-3810, WBS# 35801.1.1

March 11, 2010

Site Map Showing Results Of
Geophysical Survey Investigation
Parcel 335

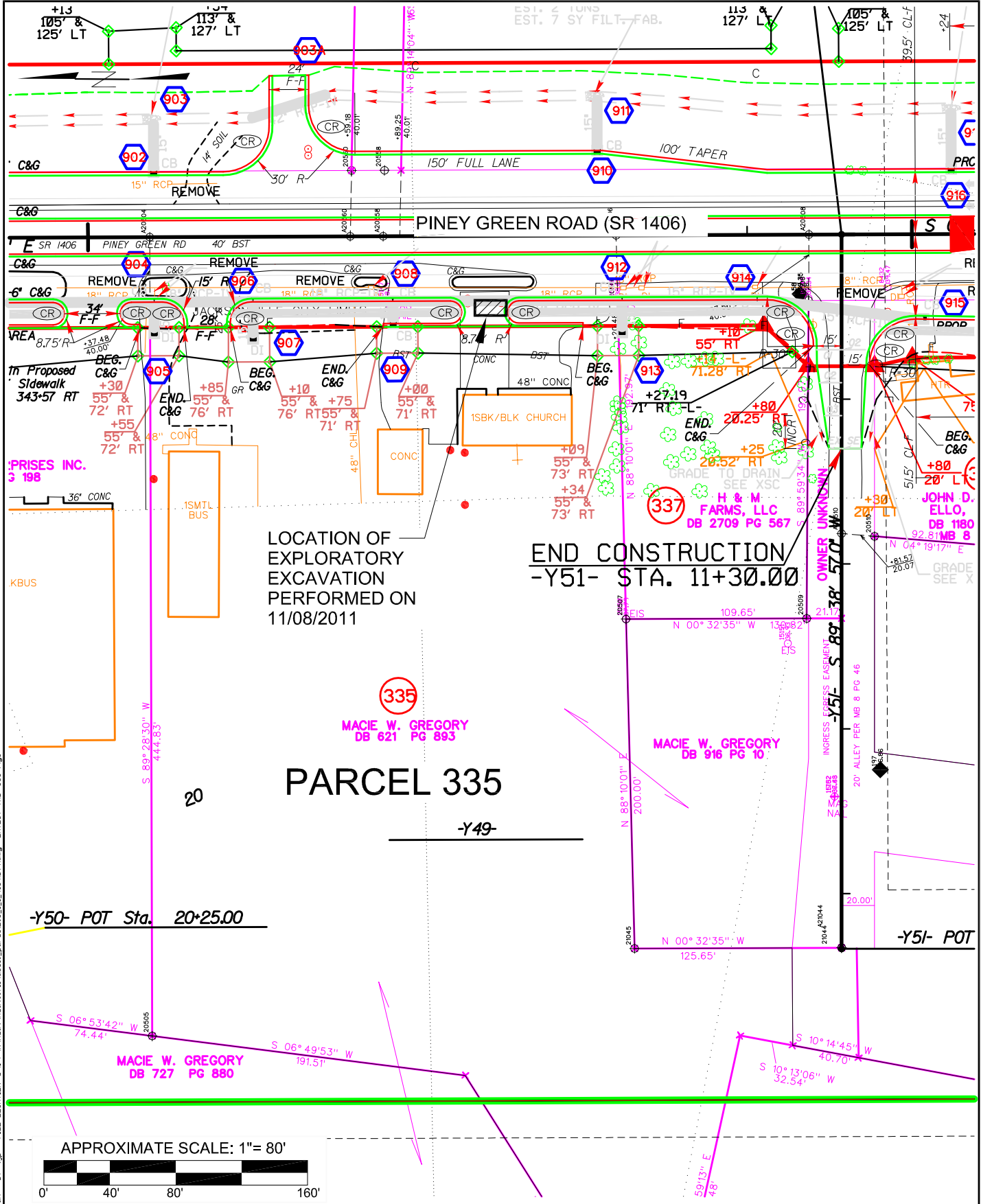
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APPRV. BY: CMS

FIGURE

4

FIGURE 3



LOCATION OF EXPLORATORY EXCAVATION PERFORMED ON 11/08/2011

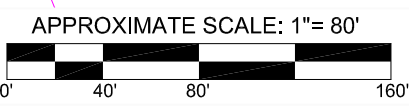
END CONSTRUCTION
-Y51- STA. 11+30.00

PARCEL 335

-Y49-

-Y50- POT Sta. 20+25.00

-Y51- POT



GEL Engineering of NC Inc. an Affiliate of THE GEL GROUP INC problem solved	PROJECT: ncd100711 ATTEMPTED CLOSURE OF TWO USTS PARCEL 335, 2774 PINEY GREEN ROAD JACKSONVILLE, ONSLOW COUNTY, NORTH CAROLINA STATE PROJECT U-3810, WBS NO. 35801.1.1	SITE MAP SHOWING LOCATION OF EXPLORATORY EXCAVATION, NOVEMBER 2011	FIGURE 3
	Post Office Box 14262 Research Triangle Park, NC 27709 P 919-544-1100 F 919-406-1807 www.gel.com	DATE: January 16, 2012	DRAWN BY: TJP APPRV. BY: ADE

PLOTTED Jan 19, 2012 - 8:43am BY: tjp FILE LOCATION: G:\P\N\ncd100711\w2810\parcel335.dwg LAYOUT: TAB 335 Fig3

ATTACHMENT A

Photographs



Photograph 1: View looking south at beginning of excavation across "Possible USTs" area.



Photograph 2: View looking east at excavation, showing some of piping encountered beneath concrete.



Photograph 3: View looking south at completed excavation.



Photograph 4: View looking east at backfilled and compacted excavation.