

# Safety Through the Soil and Concrete Permitting Processes at LLNS



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**July 24, 2011**

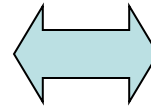
# Overview

- Main Drivers
  - ❖ Personnel Safety and Property Damage
  - ❖ Preventing unplanned outages = cost savings
  - ❖ Originally a Navy Base, Limited As-built documentation
  
- Program conception began 1992
  - ❖ Started with 2 part time employees – currently 4 full time – protecting 12 underground utility systems
  - ❖ Covers Sites 200/300 and outside perimeters – We cover over 12 square miles in Soil Excavations and 6.278 million square feet Concrete Penetration
  - ❖ Supervise two Outside Contractors available as added resources to handle fluctuating workloads
  
- Locating / scanning Tools & Process
  - ❖ We use the Metrotech 810 and 9890 cable locator, along with the GSSI ground penetrating radar SIR 3000 with the 400 GHz antenna for sweeps and non-traceable
  - ❖ On concrete scans we use GSSI Ground Penetrating Radar SIR 3000 with the 2.0 GHz palm and antennas for 2D scanning, and the SIR 3000 with 2.0 palm, 2.6 and 1.5 GHz's for structure scanning.
  - ❖ All Soil Excavation Procedures are under Proc-Con 0003 with 19 revisions and the Concrete Penetration Procedure under Proc-Con-0002 all driven by Lessons Learned and improvements.
  - ❖ All soil locates and concrete scans reports, sketches photos and permits are stored in our permit database

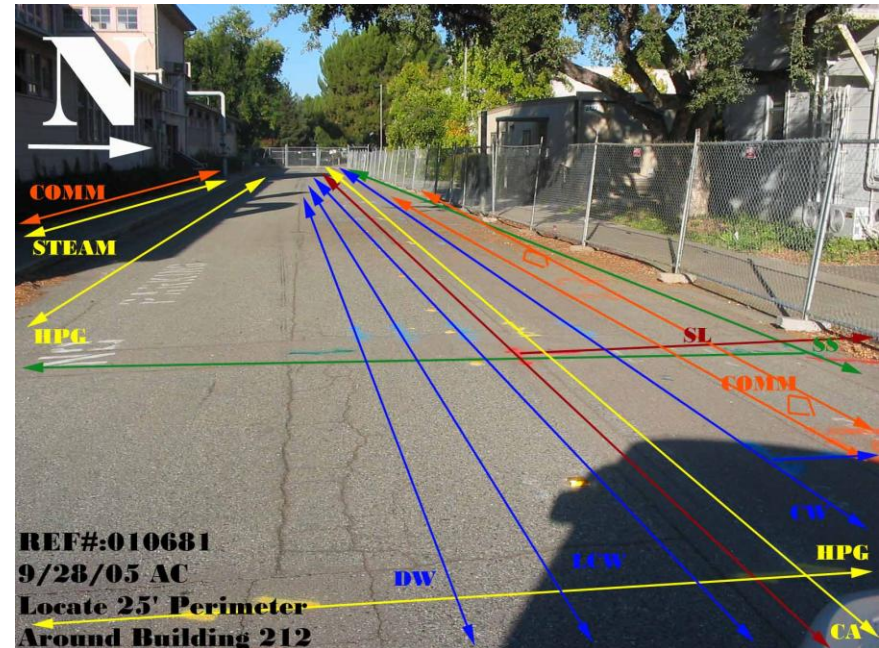
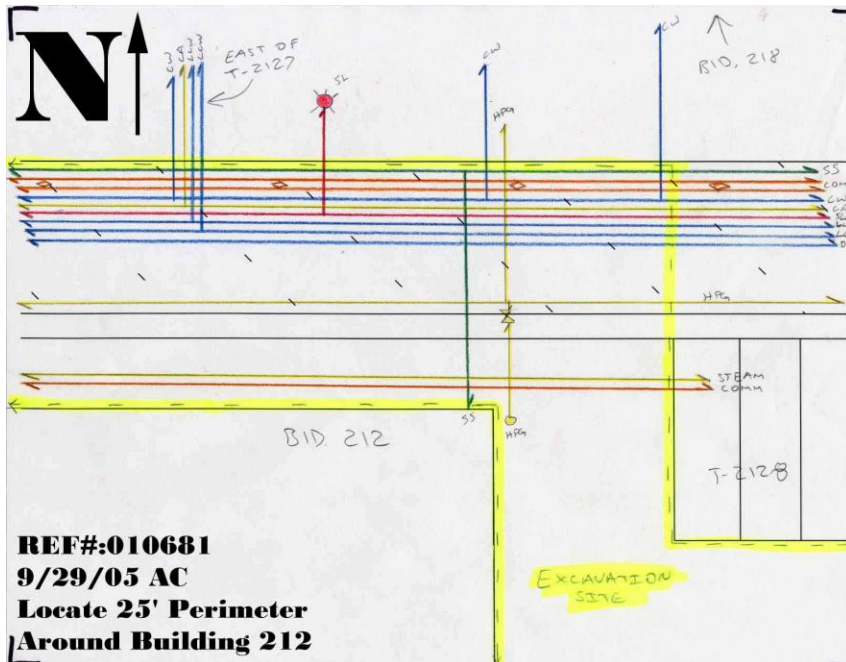
**Mandatory viewing of the Permit Process Awareness Video by ALL involved personnel**

# The Permit Process

Utility Location  
Database



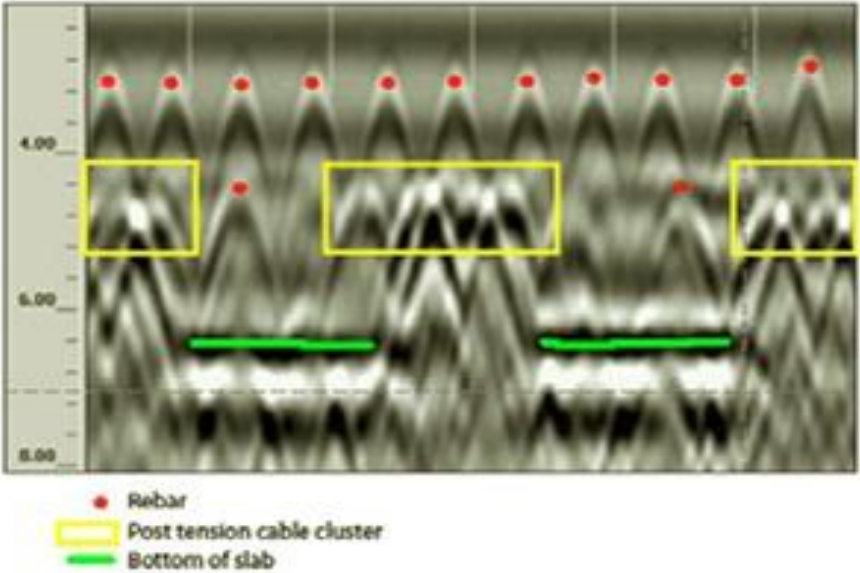
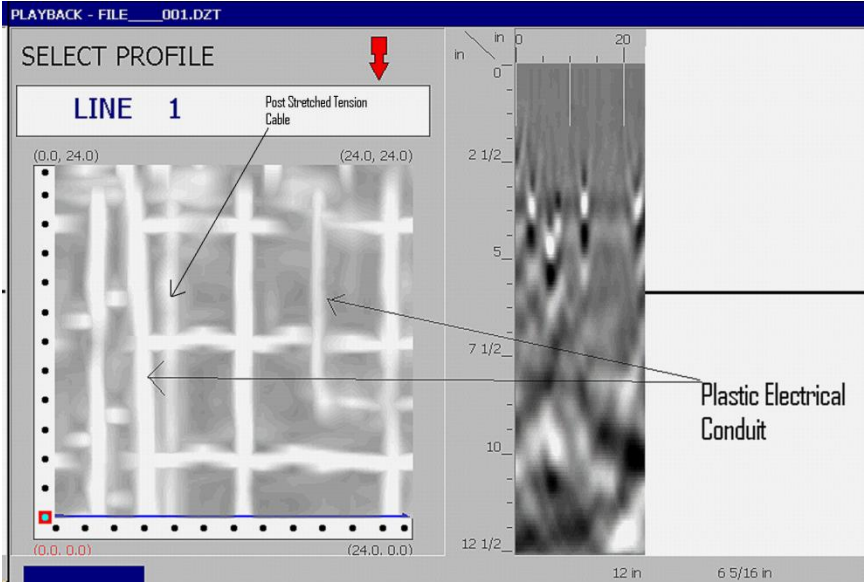
Locate Findings / Field  
Markings



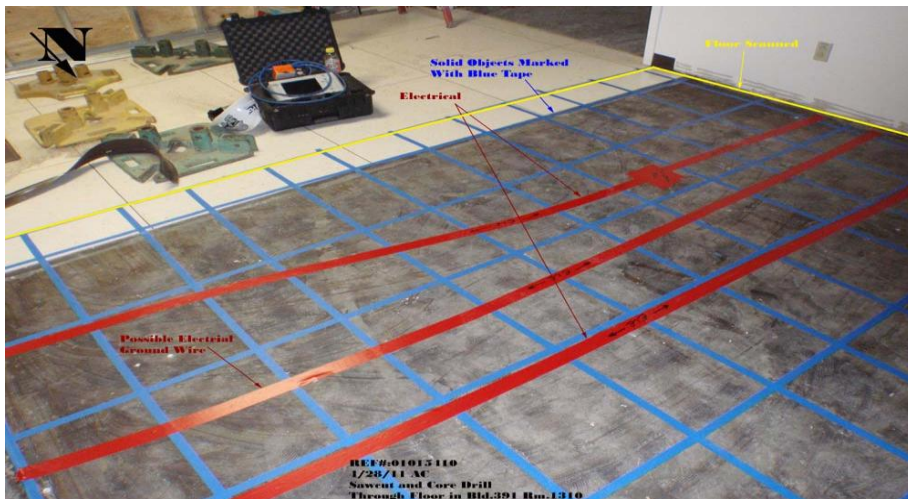
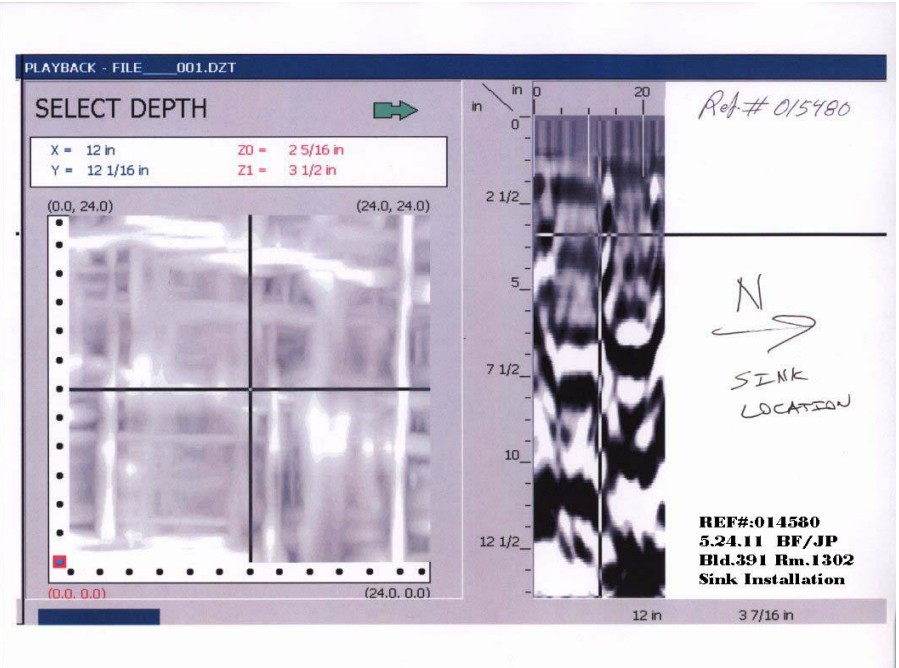
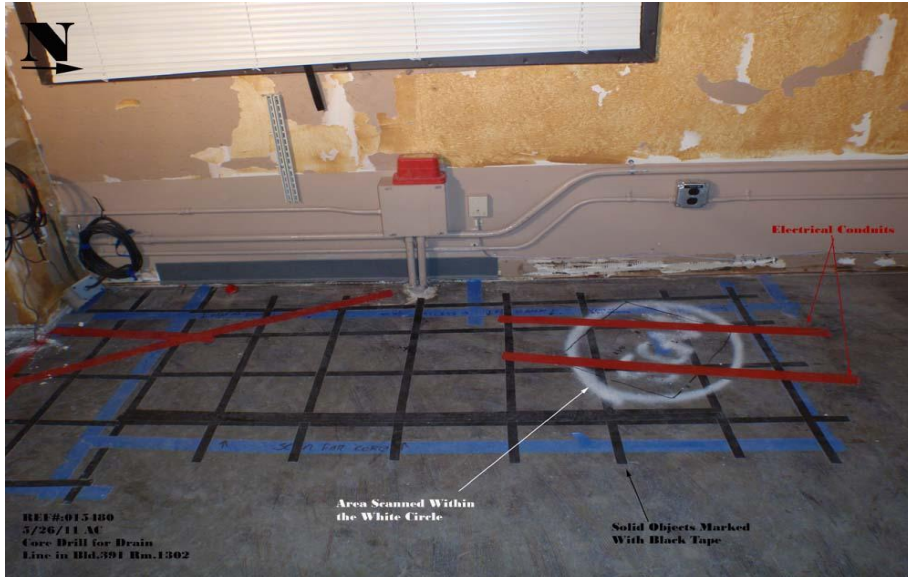
# Locating Instruments



# Scanning Instruments



# 3-D Scans



# Overview

## ➤ Performance

- ❖ Approximately 850 successful locates/scans this fiscal year with only one incident and one near miss.
- ❖ We have continued our marker ball policy by installing 24 this year.
- ❖ Utilized outside contractor to locate and videoing for a 6 month project.

## ➤ Improvements

- ❖ We have implemented 3D scanning on all core-drill, saw-cuts and jackhammer scans.
- ❖ All soil locates must have two person sweep verification
- ❖ Updated our software in order to develop and analyze all 3D scans