



ARCHAEOLOGICAL BACKHOE TRENCHING

PURPOSE

Archaeological backhoe trenches are required to obtain a construction permit from the U.S. Army Corps of Engineers. Portions of the Midland to Baytown Pipeline alignment cross as many as 20 floodplains that are geological young and have the potential to contain deeply buried cultural materials below the level accessible through standard hand excavation. As such, mechanical excavation, utilizing a backhoe, will be necessary to assess the potential for deeply buried archaeological sites at these crossings.

METHODS

All trench excavation is preceded by the completion of utility locates (OneCall/811). Trench placement is based on the level of disturbance within the study area, the location of any buried utilities, and the preservation potential for archaeological sites. Equipment utilized will be based on the location and environment of the trenches, but generally is limited to mini or small-tracked excavators or backhoe loaders. Roughly one backhoe trench is placed every 200-300 meters until older deposits (i.e., Pleistocene or older) are observed. Backhoe trenches are excavated to a depth sufficient to determine the presence/absence of buried cultural materials and allow the complete recording of all features and geomorphic information to depths of project impacts. Generally, trenches will measure 2 meters (6.5 feet) deep, 8 meters (26.2 feet) long, and 1 meter (3.2 feet) wide.

All trench excavation will be performed in accordance with Occupational Safety and Health Administration (OSHA) guidelines (29 CFR Part 1926) and the Texas Trench Safety Act (9 Texas Health and Safety Code 756). Appropriate measures will be taken for any trenches that will exceed 2 meters in depth, utilizing shoring or the stepping back of sidewalls to ensure that all OSHA protocols are followed.



Figure 1. Monitoring trench excavation (left) and excavating a column sample (right).

An experienced archaeologist will monitor all trenching while excavations are underway (Figure 1). Once excavation is complete, the archaeologist will scrape down the trench walls to identify artifacts or cultural features. Stratigraphic profile drawings with soils descriptions will be recorded for each trench. SWCA will map and photograph all features encountered during trenching. In addition, a column of soil will be excavated down one side of select trenches and screened for cultural materials (see Figure 1). The columns will be roughly 30×30 centimeters in size, extending from the ground surface to the base of the trench. Soil from the column will be removed in 20-centimeter levels and screened through ¼-inch hardware screen mesh.

Trenches are generally open for approximately 1 hour and are continuously monitored during that period. All trenches will be backfilled and leveled upon completion of excavation and recording (Figure 2). SWCA will thoroughly photograph the entire process.



Figure 2. Backhoe trench after completion.