

UNDERGROUND STORAGE TANK REMOVAL  
INITIAL SITE CHARACTERIZATION  
ALLIED AUTOMOTIVE  
BENDIX AUTOMOTIVE BRAKE SYSTEMS  
NORTH AMERICA  
SOUTH BEND, INDIANA

28 February 1990

PROJECT # ASBSNA SBIN 001

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TITLE

Table 1

Total Petroleum Hydrocarbons

## 1.0 INTRODUCTION

Presented herein is T A Gleason Associates (TAGA) report on activities and findings relevant to the removal of an Underground Fuel Storage Tank (UST) and initial site characterization at the Bendix Automotive Brake Systems - North America (Bendix) facility in South Bend, Indiana (see Figure 1).

## 2.0 PURPOSE

The work was completed at the request of Bendix in order to effect removal and closure of an underground tank used for gasoline storage. This work was requested by Bendix after the discovery of a potential leak and notification to the Indiana Department of Environmental Management (IDEM) on December 20, 1989 that the tank would be removed. The tank was located outside Plant 9 on Bertrand Street (see Figure 2). This report details the activities associated with the removal and disposal of the UST and the results of the excavation zone assessment (40 CFR 280.52 and 280.72) and site characterization (40 CFR 280.63).

## 3.0 OBJECTIVE

The objectives of the work were to:

- o Remove and dispose of the UST.
- o Conduct a release investigation and an excavation zone assessment for any evidence of tank leakage or subsurface soil contamination resulting from such leakage.

#### 4.0 SCOPE

The scope of work performed included the following tasks:

- o Removal of concrete above the tank
- o Excavation to expose the tank
- o Cleaning of residual material from the tank
- o Removal of the tank
- o Visual inspection of the tank
- o Cleaning of the tank
- o Delivery of the tank to an approved scrap metal facility
- o Soil sampling and analysis
- o Report of field activities and findings
- o Site characterization

#### 5.0 METHODOLOGY

##### 5.1 TANK REMOVAL

Warner & Sons Excavation (W&S) were contracted by TAGA to perform the excavation, removal, and cleaning of the UST. Tank removal was accomplished by cutting and removing the concrete and asphalt above the UST, excavating to expose the manway of the tank, and cleaning of approximately seventy-five (75) gallons of residual material from within the tank. Tank removal activities were conducted in accordance with OSHA regulations and TAGA's Health and Safety Plan. The tank was physically entered to remove all sludge and residual materials. Upon removal of the sludge and residual material the tank was aerated. Once the cleaning and aerating was completed, additional excavation was performed to expose the top and one side of the tank. Once exposed, the tank was pulled out using a

track mounted backhoe and the tank was placed on a flatbed trailer and appropriately marked for transport. All sludge and residual liquids removed from the tank were placed in 55 gallon drums and stored on site for later disposal by Bendix. The transfer lines and pump were removed and retained by Bendix personnel.

## 5.2 TANK INSPECTION

After the tank was removed and placed on the flatbed trailer, a visual inspection of the tank was made. The tank appeared to be in good condition and no obvious evidence of holes or leakage was found. The tank size was measured and found to be 8 ft in diameter and 28 ft long, with an estimated capacity of 10,500 gallons (see Figure 3).

## 5.3 SOIL SCREENING AND SAMPLING

As the excavation work proceeded, TAGA made periodic scans of the soil and excavation area for organic vapors using an HNU Organic Vapor Monitor. This was done to assess the excavated soil for evidence of gasoline. The "clean" and "dirty" soil were separated based on these readings. The "clean" soil was later used as a portion of the backfill material after a composite soil sample (sample #7) analyzed for total petroleum hydrocarbons (TPH) confirmed the soil to be clean. A minimal amount of apparently "dirty" soil, based on HNU readings, was found in the tank filling area and pump area and was stockpiled on site for testing and disposal by Bendix. Additionally, six (6) soil samples were collected from the excavation and analyzed for TPH to assess the presence of gasoline in the subsurface soils below the tank and transfer lines. Sample locations are

shown on Figure 4 and sample results show that TPH was below laboratory detection limits in all of the samples (see Table 1). All samples were analyzed for TPH using a GC/PID method. All sampling procedures were in accordance with current EPA guidelines and performed in compliance with TAGA's Quality Assurance Procedure Plan (QAPP) and Standard Operating Procedures.

The excavation was left open until analytical results were received. Upon receipt of the lab results, which confirmed no contamination, the excavation was backfilled with clean fill material and compacted to grade.

#### 6.0 SITE CHARACTERIZATION

In addition to the tank removal and soil sampling, TAGA performed additional site characterization assessments in accordance with 40 CFR 280.63. These assessments included data collection and review of the following:

- o Surrounding population and land use
- o Location and use of groundwater wells within 1/4 mile of the tank location
- o Subsurface soil characterization
- o Location of nearby subsurface sewers
- o Location of surface water and drainage ditches within 1/4 mile of the tank location
- o Depth to groundwater
- o Presence of free product



## 6.1 SURROUNDING POPULATION AND LAND USE

The tank was located in an industrial and residential area. To the north of the tank location is Bertrand street and a city park (Bendix Park). North of Bendix Park is residential and the area east of the tank location is residential. The Bendix facility is located immediately south and west of the tank location (see Figure 1).

## 6.2 LOCATION AND USE OF GROUNDWATER WELLS WITHIN 1/4 MILE

There are no known drinking water wells within 1/4 mile of the tank location. There are numerous groundwater monitor wells (see Figure 1) within 1/4 mile of the tank facility. These wells have been installed as part of previous investigations at the Bendix facility. Several of these wells are being sampled on a quarterly basis for volatile organic compounds (VOC) using EPA method 8240. Additionally, there are several groundwater recovery wells located along Bertrand street immediately downgradient from the tank location which are also sampled and analyzed for VOC method 8240 on a quarterly basis. Analytical results show no evidence of gasoline contamination in any of the monitor wells or recovery wells in the proximity of the tank. The most recent sampling of these wells was conducted in December 1989. The sampling results were reported to Bendix in TAGA's 4th Quarter 1989 Monitoring Report.

## 6.3 SUBSURFACE SOIL CHARACTERIZATION

The subsurface soils at the tank location are predominantly sandy clay topsoil underlain by a clayey sand to approximately 8 ft. From approximately 8 ft to 15 ft is a fine sand. From

approximately 15 ft to the water table (approximately 20 ft) the soil is predominantly a medium sand with traces of coarse sand and fine gravel. A stiff clayey till is encountered at a depth of approximately 25 to 30 ft. This data was obtained from test boring logs completed by TAGA during the installation of the groundwater recovery wells along Bertrand Street.

#### 6.4 LOCATION OF SUBSURFACE SEWERS

A 12 inch underground city sewer line is located beneath Bertrand Street approximately 50 ft north of the tank location. The sewer line flows west to east. Additionally, a sewer lateral from Plant 9 is located 20 ft west of the tank. This line services Plant 9 and flows south to north into the city sewer line located under Bertrand Street (see Figure 2).

#### 6.5 LOCATION OF SURFACE WATER AND DRAINAGE DITCHES WITHIN 1/4 MILE OF THE TANK LOCATION

There are no surface water bodies or drainage ditches within 1/4 mile of the tank location. The area is industrial and residential and surface runoff discharges to the sewers as discussed in section 6.4.

#### 6.6 DEPTH TO GROUNDWATER

Depth to groundwater in the area of the tank is approximately 20 ft based on the most recent groundwater elevation measurements taken during the 4th quarter sampling episode.

## 6.7 PRESENCE OF FREE PRODUCT

No free product was found during excavation or sampling. Additionally, no free product has been observed in any monitor wells or recovery wells in the proximity of the tank during any previous investigations or quarterly sampling.

## 7.0 CERTIFICATIONS

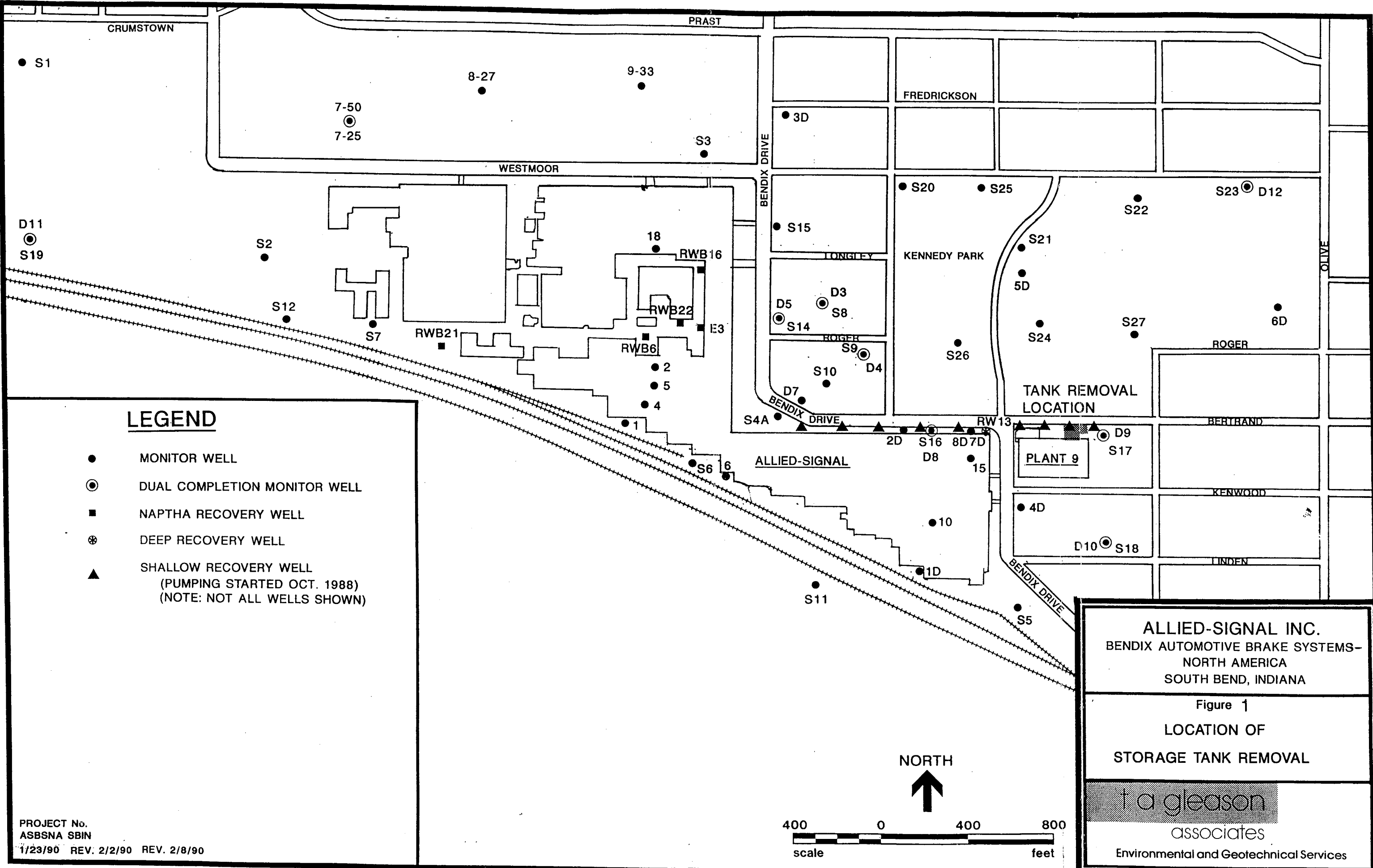
Mr. Richard E. Fogle, inspector for the City of South Bend Fire Department, was present during the removal process and stated that "everything looked good" and that he would provide a letter to Bendix confirming the tank removal. Additionally, W&S provided certification that the tank was properly cleaned and disposed at Sturgis Scrap and Iron in Elkhart, Indiana.

## 8.0 CONCLUSIONS

Based on the findings and test results, TAGA concludes that no evidence of gasoline contamination was observed or found in the subsurface soils remaining at the tank location. Therefore, TAGA confirms that tank closure, removal, and disposal were in accordance with applicable state and federal guidelines. The only soil which may have been contaminated (based on HNu scan) was that soil immediately surrounding the tank filling area and the pump area. These small amounts of soil were removed during the tank removal process and were stockpiled on site for appropriate testing and disposal by Bendix.

TAGA concludes that no further investigations or corrective action are necessary and that tank closure is complete in accordance with 40 CFR 280, Subpart G, with the exception of final testing and disposal of the soils stockpiled on site which is being handled by Bendix.

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**LEGEND**

- MONITOR WELL
- ⊙ DUAL COMPLETION MONITOR WELL
- NAPTHA RECOVERY WELL
- ⊗ DEEP RECOVERY WELL
- ▲ SHALLOW RECOVERY WELL  
(PUMPING STARTED OCT. 1988)  
(NOTE: NOT ALL WELLS SHOWN)

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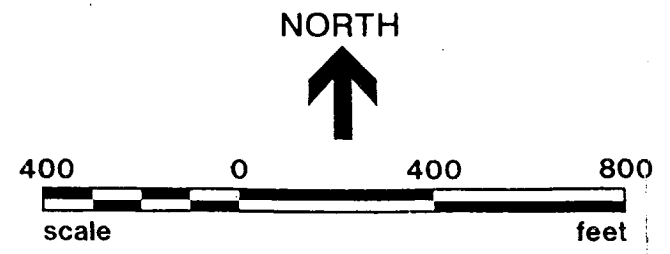
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Figure 1  
 LOCATION OF  
 STORAGE TANK REMOVAL

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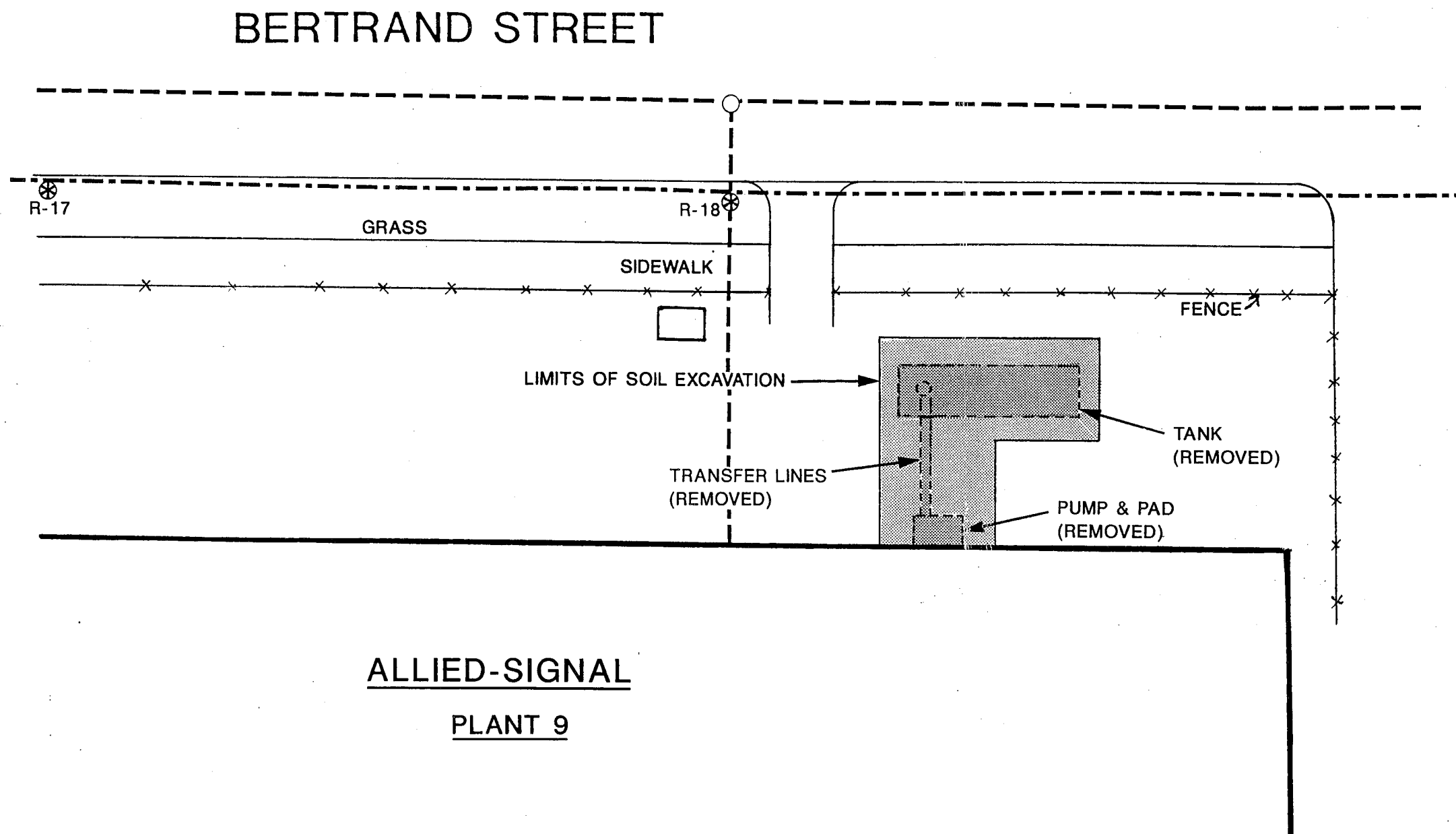
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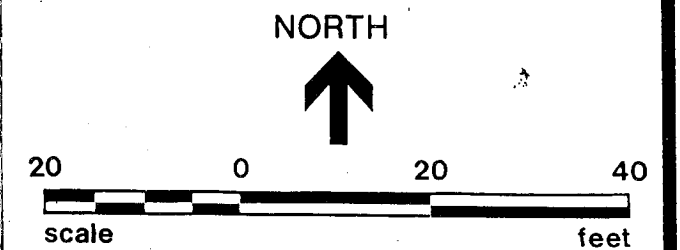
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## LEGEND

-  RECOVERY WELL
-  RECOVERY SYSTEM HEADER LINE
-  DRAIN/SEWER LINES
-  MANHOLE



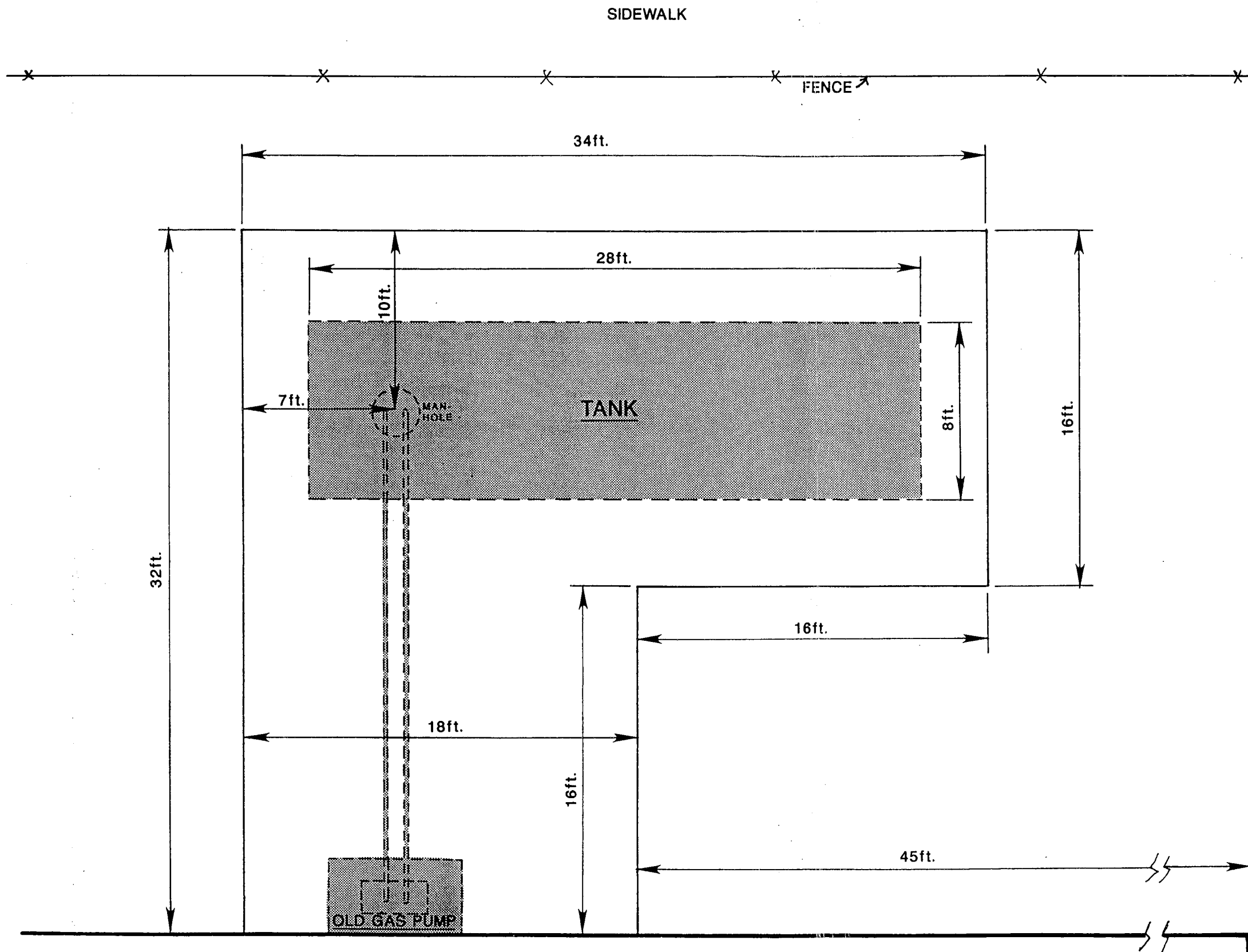
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Figure 2  
DETAIL OF STORAGE  
TANK REMOVAL

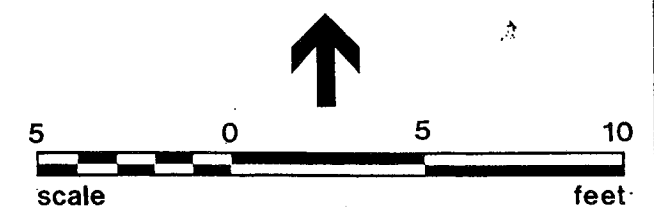
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ALLIED-SIGNAL PLANT 9



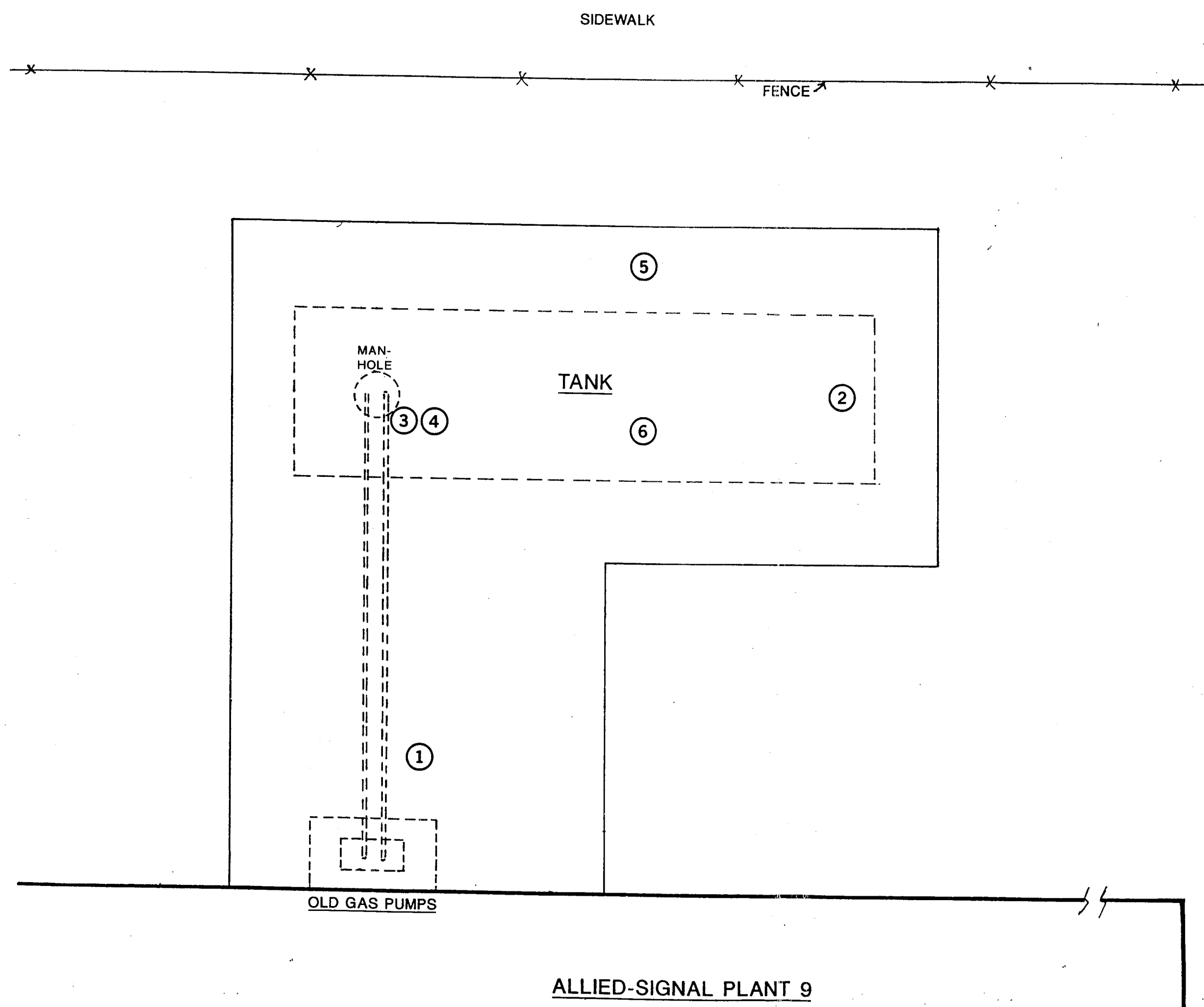
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Figure 3  
TANK AND EXCAVATION  
MEASUREMENTS

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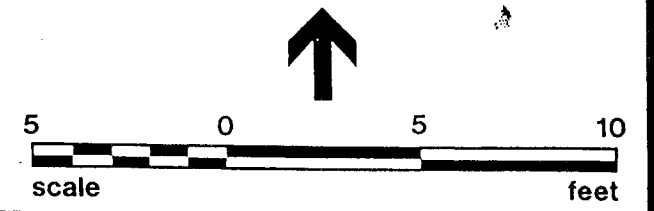
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ALLIED-SIGNAL PLANT 9

### LEGEND

① SOIL SAMPLE LOCATION



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Figure 4

SOIL SAMPLE LOCATIONS

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